

# DSR-45/45P

## RMT-DS5

# SERVICE MANUAL

*Self Diagnosis*  
Supported model

Ver. 1.5 2007.09



*US Model*  
*Canadian Model*  
DSR-45  
*AEP Model*  
*UK Model*  
*E Model*  
*Australian Model*  
*New Zealand Model*  
DSR-45P

R MECHANISM

## SPECIFICATIONS

<b>System</b>		<b>Clock</b>		<b>TC IN</b>	BNC type 0.5 to 18 Vp-p (time code input) 0.5 to 4 Vp-p (through output)
Recording format	DVCAM/DV (SP) format, rotating 2-head helical scan, digital component recording	System	Quartz locked, digital display		
		Power back-up	Back-up duration: up to two weeks (after an 8-hour charge)		
<b>Video signal</b>		<b>Inputs</b>		<b>Outputs</b>	
	DSR-45: EIA STANDARD, NTSC color system	VIDEO IN REF.IN	BNC type 1 Vp-p (75 ohms, unbalanced)	MONITOR VIDEO	Phono jack, 1 Vp-p (75 ohms, unbalanced) (superimpose)
	DSR-45P: CCIR STANDARD, PAL colour system	S VIDEO IN	Mini DIN 4-pin Luminance signal: 1 Vp-p (75 ohms, unbalanced) Chrominance signal: 0.286 Vp-p (DSR-45) 0.3 Vp-p (DSR-45P) (75 ohms unbalanced)	VIDEO OUT	BNC type, 1 Vp-p (75 ohms, unbalanced)
<b>Video</b>		COMPONENT IN		COMPONENT OUT	Y: BNC type 1.0 Vp-p (75 ohms, unbalanced) R-Y: BNC type 0.7 Vp-p (75 ohms, unbalanced) (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars) B-Y: BNC type 0.7 Vp-p (75 ohms, unbalanced) (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)
Quantization	8-bit		Y: BNC type 1.0 Vp-p (75 ohms, unbalanced) R-Y: BNC type 0.7 Vp-p (75 ohms, unbalanced) (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)	S VIDEO OUT	Mini DIN 4-pin Luminance signal: 1.0 Vp-p (75 ohms, unbalanced) Chrominance signal: 0.286 Vp-p (DSR-45) 0.3 Vp-p (DSR-45P) (75 ohms, unbalanced)
Sampling frequency	DSR-45: 13.5 MHz (4:1:1 Component) DSR-45P: 13.5 MHz (4:2:0 Component)		B-Y: BNC type 0.7 Vp-p (75 ohms, unbalanced) (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)	AUDIO OUT (CH-1 to CH-4)	XLR 3-pin, male, +4 dBu, 600 ohms loading, balanced
<b>Audio</b>		DV IN/OUT	4-pin jack (i.LINK)	MONITOR AUDIO	Phono jack
Quantization	12-bit (non-linear) or 16-bit (linear)	AUDIO IN (CH-1 to CH-4)	Phono jack, -10/-2/+4 dBu, Impedance more than 47 kohms, unbalanced Maximum input level: DSR-45: -10 : +18 dBu (about 6 Vrms) -2 : +24 dBu (about 12.5 Vrms) +4 : +30 dBu (about 25 Vrms) DSR-45P: -10 : +16 dBu (about 5 Vrms) -2 : +22 dBu (about 10 Vrms) +4 : +28 dBu (about 20 Vrms)	TC OUT	BNC type, 2.2 Vp-p, 600 ohms / 1.2 Vp-p, 75 ohms 0.5 to 4 Vp-p (through output, 600 ohms)
Sampling frequency	32 kHz (12-bit recording) or 48 kHz (16-bit recording)			PHONES	Stereo minijack, 8 Ω
Usable cassettes	Standard-DVCAM cassettes and Mini-DVCAM cassettes				
Recording time	Standard cassette DVCAM: 184 minutes (PDV184) 180 minutes (DV270) DV: 270 minutes (PDV184/DV270) Mini cassette DVCAM: 40 minutes (PDVM40/DVM60) DV: 60 minutes (PDVM40/DVM60) (We recommend that you use DVCAM cassettes.)				

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**DVCAM**™

**DIGITAL VIDEO CASSETTE RECORDER**

**SONY**®

# DSR-45/45P

## Remote control

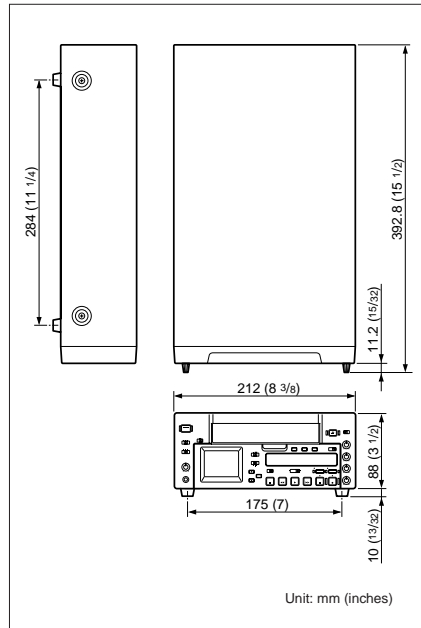
RS-232C	D-sub 9-pin (male)
RS-422A	D-sub 9-pin (female)
CONTROLS IN	Stereo minijack
LANC	Stereo mini-minijack

## LCD screen

Picture	5.1 cm (2 type)
Total dot number	123 200 (560 × 220)

## General

Power requirements	100 to 240 V AC, 50/60 Hz
Power consumption	22 W (during playback)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Dimensions	Approx. 212 × 98 × 392.8 mm (8 3/8 × 3 7/8 × 15 1/2 inches) (w/h/d, including projecting parts and controls)



Mass Approx. 4.6 kg (10 lb. 2 oz.)

## Supplied accessories

- Remote Commander (1)
- AC power cord (1)
- Size AA batteries (2)
- Cleaning cassette (1)
- Operating instructions
- Interface Manual for Programmers (1)

Design and specifications are subject to change without notice.

## CAUTION

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

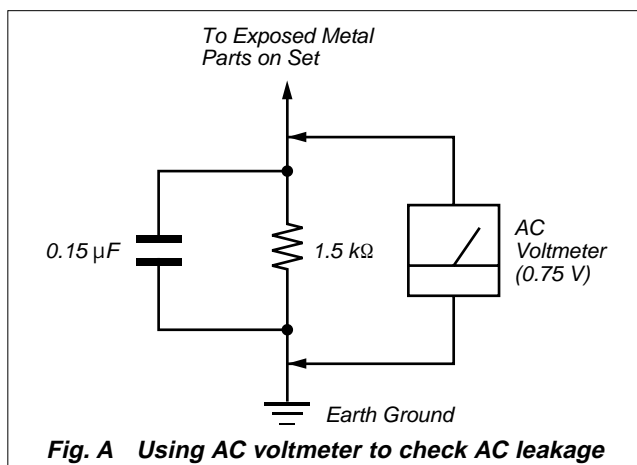


## SAFETY CHECK-OUT

(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



**Fig. A** Using AC voltmeter to check AC leakage

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

### UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

### **LF**: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.  
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.  
Soldering irons using a temperature regulator should be set to about 350 °C .  
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity  
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder  
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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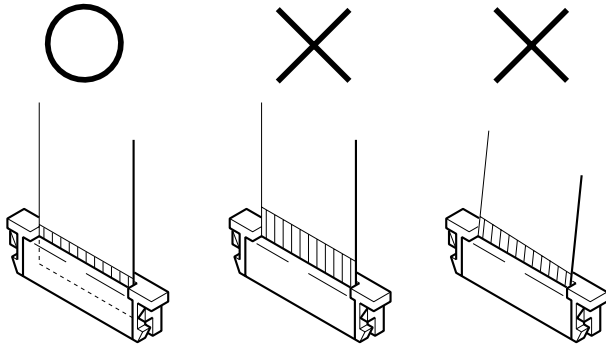
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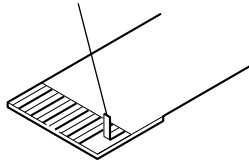
**SERVICE NOTE**

**1. NOTE FOR REPAIR**

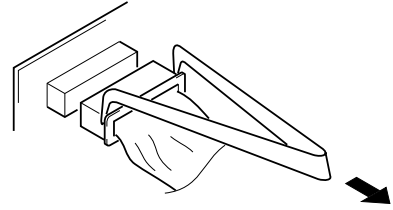
Make sure that the flat cable and flexible board are not cracked or bent at the terminal.  
Do not insert the cable insufficiently nor crookedly.



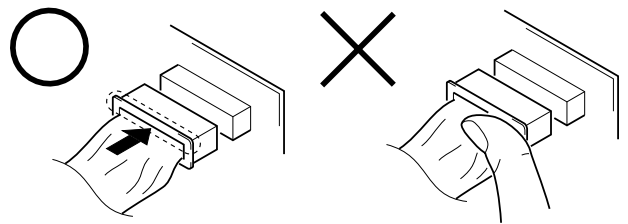
Cut and remove the part of gilt which comes off at the point.  
(Be careful or some pieces of gilt may be left inside)



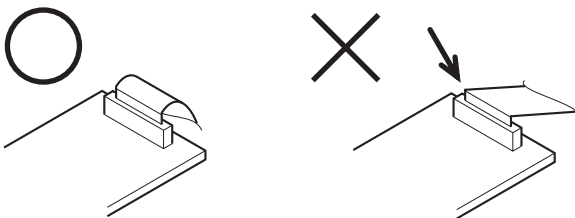
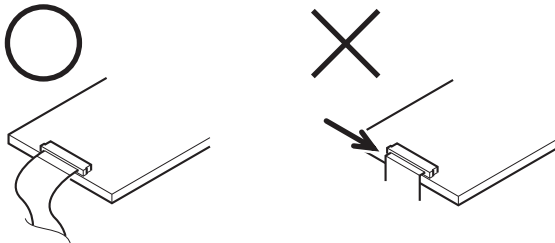
When remove a connector, don't pull at wire of connector.  
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector.  
It is possible that a wire is snapped.



Do not fold down a flat cable at the edge of the inforing board which is the reverse side of pins when the flat cable is connected to a connector.  
If the flat cable is folded at that point, it may be a cause of breaking of foil inside of the cable.



## SELF-DIAGNOSIS FUNCTION

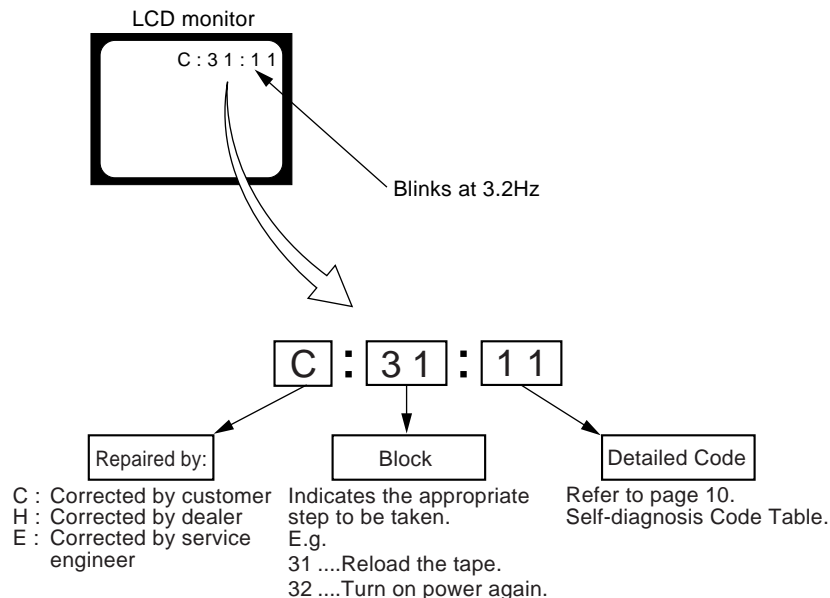
### 1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the LCD monitor what to do. This function consists of two display; self-diagnosis display and service mode display.

Details of the self-diagnosis functions are provided in the Instruction manual.

### 2. Self-diagnosis Display

When problems occur while the unit is operating, the time code of the LCD monitor shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.

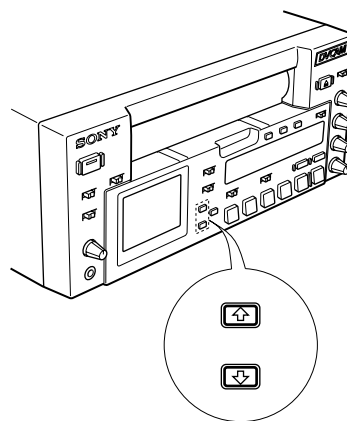
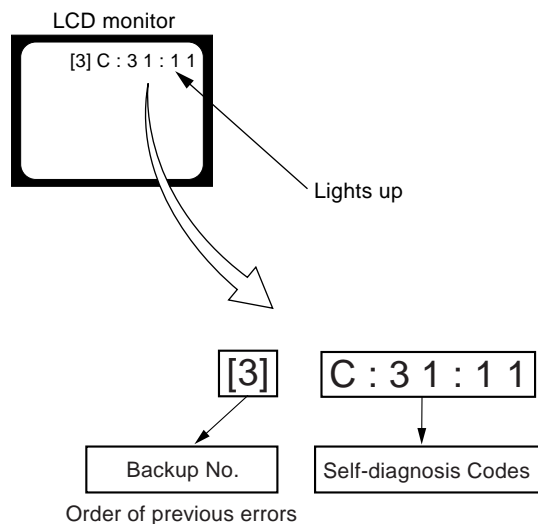


### 3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

#### 3-1. Display Method

Set the “DISPLAY SELECT” switch to “DATA”, turn on the power by the “POWER” switch while pressing the “STOP” key, and continue pressing the “STOP” key for 5 seconds continuously. The service mode will be displayed, and the time code will show the backup No. and the 5-character self-diagnosis codes.



#### 3-2. Switching of Backup No.

By pressing the “⬆” or “⬇” key, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

- |                            |                              |
|----------------------------|------------------------------|
| [1] : Occurred first time  | [4] : Occurred fourth time   |
| [2] : Occurred second time | [5] : Occurred fifth time    |
| [3] : Occurred third time  | [6] : Occurred the last time |

#### 3-3. End of Display

Turning OFF the power supply will end the service mode display.

**Note:** The “self-diagnosis display” data will be backed up by the coin-type lithium battery (VD-032 board BT701). When this coin-type lithium battery is disconnected, the “self-diagnosis display” data will be lost by initialization.

#### 4. Self-diagnosis Code Table

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	2 1	0 0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2 2	0 0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3 1	1 0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	2 2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	3 0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3 1	4 0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 2	1 0	LOAD direction loading motor time-out.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	1 1	UNLOAD direction loading motor time-out.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	2 2	T reel fault.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	2 3	S reel fault.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	3 0	FG fault when starting capstan.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	4 0	FG fault when starting drum.	Disconnect the AC power cord. After reconnecting it, operate the unit.
C	3 2	4 2	FG fault during normal drum operations.	Disconnect the AC power cord. After reconnecting it, operate the unit.



# SECTION 1 GENERAL

This section is extracted from DSR-45/45P instruction manual.

## Chapter 1

### Overview

#### Features

The DSR-45/45P is a digital videocassette recorder using 1/2-inch tape. Offering the DVCAM™ digital recording format, the DSR-45/45P produces stable, superior picture quality by digitally processing and separating image signals into color difference signals and a luminance signal (component video). Equipped with five kinds of remote control connector (RS-422A/RS-232C/LANC/CONTROL S/i.LINK), the DSR-45/45P allows you to configure various connection. The built-in color LCD monitor lets you check images easily.

The main features of the DSR-45/45P are described below.

#### DVCAM Format

DVCAM is based on the consumer DV format, which uses the 4:1:1 component digital format (DSR-45) or the 4:2:0 format (DSR-45P), and provides a 1/2-inch digital recording format for professional use.

For details, see "Compatibility of DVCAM and DV Format" on page 101 (GB).

#### High picture quality, high stability

Video signals are separated into color difference signals and a luminance signal, which are encoded and compressed to one-fifth size before being recorded to ensure stable and superb picture quality. Because the recording is digital, multi-generation digital dubbing can be performed with virtually no deterioration of quality.

#### Wide track pitch

The recording track pitch is about 15 μm, fully 50 percent wider than the DV format's 10 μm track pitch. Thanks to this feature, the DVCAM format fully meets the reliability and precision requirements of professional editing.

#### High-quality PCM digital audio

PCM recording makes for a wide dynamic range and a high signal-to-noise ratio, thereby enhancing sound quality.

There are two recording modes: 2-channel mode (48 kHz sampling and 16 bit linear code), which offers sound quality equivalent to the DAT (Digital Audio Tape) format, or 4-channel mode (32 kHz sampling and 12 bit nonlinear code), which provides four channel simultaneous recording/playback.

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#### Features

##### DV format compatibility

The unit can perform recording and playback in the DV-format (SP mode only). (Recording/playing an image in LP mode is not available.)

##### Choice of two cassette sizes

The unit can use both standard-size and mini-size DVCAM/DV cassettes.  
 • According to cassette size, the position of the reel drive plates automatically changes.  
 • The maximum recording/playback times are 184 minutes for standard size cassettes and 40 minutes for mini-size cassettes (DVCAM format).

##### Remote control

The unit can be operated by remote control from the CONTROL S system Remote Control Unit (DSRM-20, not supplied), or an editing controller that has an RS-422A, RS-232C, or LANC jack.

##### High-speed search function

If you use an editing controller or the Remote Control Unit (DSRM-20, not supplied), the unit has a picture search function that allows you to view color pictures at playback speeds up to 14 times normal speed (DSR-45) or up to 17 times normal speed (DSR-45P) in both forward and reverse directions. You can also search frame-by-frame in jog mode. While searching for scenes, you can also hear playback audio.

##### Internal time code generator/reader

The unit contains a time code generator/reader that can generate and read longitudinal time code (LTC) in the SMPTE format (DSR-45) or EBU format (DSR-45P). The unit can output the time code read from tape as an analog (LTC) signal, and receive externally generated time code (LTC).

1) i.LINK and the i.LINK logo are trademarks and indicate that this product is in agreement with IEEE 1394-1995 specifications and their revisions.

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#### Other Features

##### Built-in color LCD monitor

The unit has a 2-type color LCD (liquid crystal display) monitor that lets you verify images on the spot. You can see the setup menus, audio levels, and system statuses. Menus and data can be superimposed over the picture being displayed.

##### Duplicate, including cassette memory data

Using an i.LINK cable, you can duplicate a tape that includes time code and cassette memory data, etc. If the original tape has blank portions, you can duplicate the tape skipping those portions.

##### Audio dubbing function

The unit allows you to record just the sound onto the recorded tape (audio dubbing). (The tape must be recorded in DVCAM format and the audio mode must be 32 kHz.)

##### Menu system for functionality and operation settings

The unit provides a menu system to make its various functions easier to use and set up.

##### Superimposition function

Time code, warnings, menus, and other text data can be superimposed on the MONITOR VIDEO output and the LCD monitor.

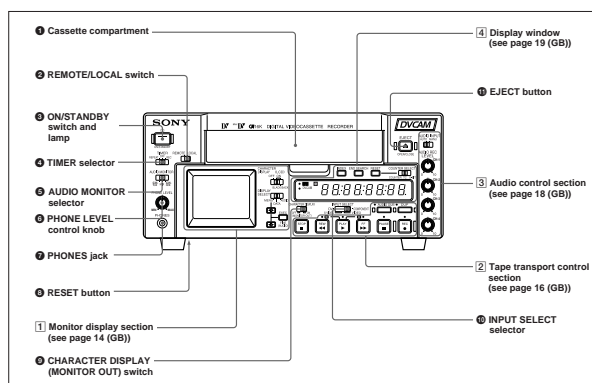
#### Easy maintenance functions

• **Self-diagnostics/alarm functions:** The system automatically detects an invalid operation, an invalid connection or a malfunction, and displays a description, a cause and a recovery method on the LCD monitor and outputs the data from the MONITOR VIDEO connector.  
 • **Digital hours meter:** A digital hours meter counts four types of time data—operating time, drum rotation time, tape running time, and tape threading/unthreading. The digital hours data are indicated on the menu.

DVCAM, i.LINK, and i.LINK are trademarks of Sony Corporation.

### Location and Function of Parts

#### Front Panel



##### 1 Cassette compartment

Insert a standard-size or mini-size DVCAM cassette. To open or close the compartment, press the EJECT button.

For details of cassettes that can be used, see "Notes on Video Cassettes" on page 30 (GB).

##### 2 REMOTE/LOCAL switch

Set this switch to REMOTE when controlling the unit from an external device connected to the RS-422A/RS-232C connector on the rear panel.

**REMOTE:** Enables an external device connected to the RS-422A/RS-232C connector.

When setting this switch to REMOTE, you can restrict the tape transport and menu control buttons on the front panel, the Remote Commander, and the optional Remote Control Unit connected to the CONTROL S IN jack using LOCAL ENBL on the REMOTE menu.

For details on the REMOTE menu, see "REMOTE menu" on page 80 (GB).

**LOCAL:** Disables an external device connected to the RS-422A/RS-232C connector.

The switch setting enables/disables external devices as follows.

	REMOTE	LOCAL
RS-422A <sup>a)</sup>	Enabled	Disabled
RS-232C <sup>a)</sup>	Enabled	Disabled
LANC <sup>a)</sup>	Enabled	Enabled
CONTROL S IN <sup>b)</sup>	Depending on the setting of LOCAL ENBL on the REMOTE menu	Enabled
Remote Commander <sup>b)</sup>	Depending on the setting of LOCAL ENBL on the REMOTE menu	Enabled
DV (i.LINK)	Enabled	Enabled

a) You also need to set the remote selector on the rear panel according to the connector to which you connect a device.

b) Depending on the setting of COMMANDER on the OTHERS menu.

##### Notes

• An external device connected to the LANC jack can operate the unit regardless the setting of this switch as long as the remote selector is set to LANC.

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• In addition to the Remote Commander supplied with the unit, the unit accepts signals from any Sony Remote Commander whose command mode is set to VTR4. When this switch is set to REMOTE, the Remote Commander functions depending on the setting of LOCAL ENBL on the REMOTE menu. If you want to disable the control from any Remote Commander, set COMMANDER on the OTHERS menu to CONTROL S.

• The TIMER selector ② setting has a higher priority than this switch setting.

• When this switch is set to REMOTE, the ON/STANDBY switch ③ does not work. To enable the ON/STANDBY switch, set this switch to LOCAL or set LOCAL ENBL on the REMOTE menu to ALL KEYS.

**③ ON/STANDBY switch and lamp**

Press this switch to turn the unit on. The ON/STANDBY lamp lights up in green. When you press this switch again, the unit goes into the standby mode and the lamp lights up in red.

**Note**

When the REMOTE/LOCAL switch is set to REMOTE, this switch does not work. To enable this switch, set the REMOTE/LOCAL switch to LOCAL or set LOCAL ENBL on the REMOTE menu to ALL KEYS.

**④ TIMER selector**

Use to select Auto Repeat or recording using an external AC timer (not supplied).

**REPEAT:** Whenever the power is connected to this unit, a tape rewinds to its beginning automatically and playback starts. The unit repeats the playback from the beginning to the first index (if there is no index on the tape, to an unrecorded portion; if there is no unrecorded portion, to the tape end). Auto Repeat also functions if you set this selector to REPEAT during playback or rewinding.

*For details on Auto Repeat, see "Automatically playing back a tape repeatedly (Auto Repeat)" on page 39 (GB).*

**OFF:** Auto Repeat or timer recording is released.

**REC:** Recording begins the moment the power is connected to the unit.

**Note**

This selector setting has a higher priority than the REMOTE/LOCAL switch ② setting.

**⑤ AUDIO MONITOR selector**

Use to select the audio track you want to listen to through the PHONES jack ⑦ or MONITOR AUDIO jack.

**CH-1/2:** channels 1/2 only  
**MIX:** channels 1/2 and channels 3/4  
**CH-3/4:** channels 3/4 only

**⑥ PHONE LEVEL control knob**

Controls the volume of the headphones connected to the PHONES jack ⑦.

**⑦ PHONES jack**

Connect stereo headphones for monitoring sounds during recording or playback. The audio signal you want to monitor can be selected with the AUDIO MONITOR selector ⑤.

**⑧ RESET button**

Press this button to initialize the time set on the internal clock and the time code of the FREE RUN setting. Use the tip of a ball-point pen or similar tool to press this button. (The menu item settings are maintained.)

**⑨ CHARACTER DISPLAY (MONITOR OUT) (data items superimposed on an external monitor) switch**

Set this switch to ON to superimpose data items on the MONITOR VIDEO output. Even if you set it to OFF, the tape label, title and data codes (camera data and date/time recorded by a camera) are superimposed.

**Note**

To choose whether or not the tape label, title, or data codes are displayed, use the menu items. Also, you can select the data code items to be displayed by pressing the DATA CODE button on the Remote Commander.

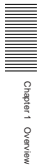
**⑩ INPUT SELECT selector**

You can select DV, S VIDEO, VIDEO, or COMPONENT to input signals. The type of signal selected is displayed on the Data screen on the LCD monitor on the front panel.

**Notes**

- When you input signals to the DV jack, the following settings are disabled:
  - Setting of the audio input level control selector (–10/–2/+4)
  - Audio recording level

(Continued)



**Location and Function of Parts**

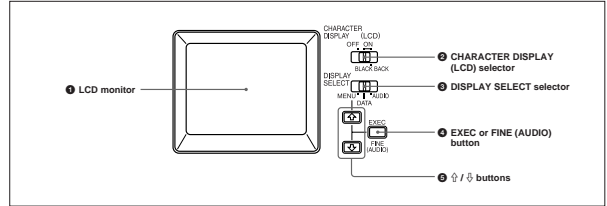
- Audio recording level adjustment mode (AUTO/MANU)
- Audio mode (32 kHz/48 kHz)
- Audio limiter
- Color bars (Cannot be displayed)
- If you change this selector, the screen may momentarily become bright or noise may appear. This noise will be recorded.
- Do not change this selector setting during recording. Otherwise, the recorded image will be distorted or the signal output from the DV jack will be interrupted. Also, the unit may mistakenly recognize that a copyright protected signal has been input.

**① EJECT (OPEN/CLOSE) (open/close the cassette compartment) button**

Press this button to open or close the cassette compartment. If you press this button while a cassette is inside the unit, the compartment opens and the cassette is ejected.

After removing the cassette, press this button again to close the compartment.

**1 Monitor display section**



**① LCD (Liquid Crystal Display) monitor**

Displays the playback or EE<sup>1)</sup> pictures. Also, superimposed time data, status information, menu, audio levels meters, etc. are displayed.

**Notes**

- The data items superimposed on the LCD monitor are the same as items superimposed on a monitor connected to the MONITOR VIDEO jack. You cannot make two monitors display different data items individually.
- The backlight used in the built-in LCD monitor deteriorates with prolonged use. If the brightness of the LCD monitor cannot be adjusted, consult your Sony dealer.

*For details on the maintenance of the LCD monitor, see page 99 (GB).*

**② CHARACTER DISPLAY (LCD) (data items superimposed on the LCD monitor) selector**

Use to superimpose data items on the LCD monitor.

**OFF:** No data items are superimposed except the tape label, title, data codes (camera data, and date/time recorded by a camera).

**ON:** Data items are superimposed.

**ON (BLACK BACK):** Data items are displayed on a black background.

1) "EE" stands for "Electric to Electric." In EE mode, the video and audio signals that are input to the VCR's recording circuitry do not pass through any magnetic conversion circuits but instead are output via electric

circuits only. This mode is used to check the input signals and adjust input levels. The pictures output in EE mode are referred to as EE pictures.

**Notes**

• To choose whether or not the tape label, title, or data codes are displayed, use the menu items. Also, you can select the data code items to be displayed by pressing the DATA CODE button on the Remote Commander.

• To adjust the menu items, set the LCD monitor or a monitor connected to the MONITOR VIDEO jack to display the menu. When neither of the monitors is set, you cannot adjust the menu items.

**③ DISPLAY SELECT selector**

Selects the data items displayed on the LCD monitor or a monitor connected to the MONITOR VIDEO jack.

**MENU:** displays the menu.  
**DATA:** displays time code, remaining tape time, type of input signal selected, audio mode, presence or absence of cassette memory, tape label, title, etc.  
**AUDIO:** displays audio levels.

**Notes**

- You can use the Remote Control Unit (DSRM-20, not supplied) or the supplied Remote Commander to search for a scene using search signals on the tape. In this case, you can search for the scene regardless of this selector setting.
- To display the "–/+," which indicates the direction to search, set this selector to DATA.
- If you change the selector setting during a search with the cassette memory, the search aborts.

**④ EXEC (execute) or FINE (AUDIO) (fine audio levels) button**

When the DISPLAY SELECT selector ③ is set to MENU, the button functions as the EXEC (execute) button. Press this button to change the setting on the menu items.

*For details on the menu, see "Operating the Menus" on page 76 (GB).*

When the DISPLAY SELECT selector ③ is set to AUDIO, the button functions as the FINE (fine audio levels) button. While you are holding this button down, the enlarged audio levels meters are displayed. You can confirm or adjust audio levels precisely on these enlarged audio levels meters. To select an enlarged portion, use REF LEVEL on the AUDIO SET menu.

*For details on fine audio levels screen, see "Fine audio levels screen" on page 29 (GB).*  
*For details on the AUDIO SET menu, see "AUDIO SET menu" on page 88 (GB).*

**⑤ Q/T buttons**

When the DISPLAY SELECT selector ③ is set to MENU, you can select a menu item by pressing these buttons.

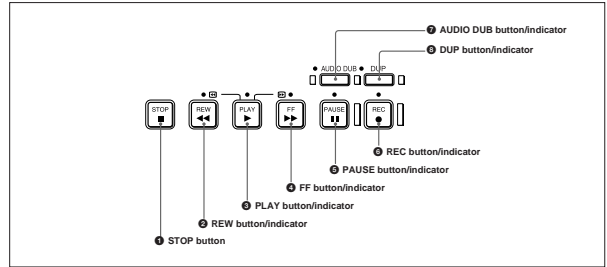
*For details on the menu, see "Operating the Menus" on page 76 (GB).*

When the DISPLAY SELECT selector ③ is set to DATA, you can adjust the brightness of the LCD monitor by pressing these buttons. During the adjustment, the brightness level is displayed as illustrated below. It disappears one second after you have adjusted the brightness.



**Location and Function of Parts**

**2 Tape transport control section**



**① STOP button**

Press this button to stop the current tape transport operation.

**② REW (rewind) button/indicator**

When you press this button, the indicator lights and the tape starts rewinding. During rewind, the picture does not appear on the monitor (you can see the picture as it is seen in the EE mode).

To locate a scene while monitoring the picture, hold this button down during rewind, playback or in the playback pause mode.

If you press the PLAY button while holding this button down during stop, the tape is rewound to its beginning and starts playback automatically (during rewind, the REW indicator lights and the PLAY indicator flashes). You can change the tape transport mode in FF/REW SPD on the VTR SET menu.

*For details on the VTR SET menu, see "VTR SET menu" on page 90 (GB).*

**Notes**

- If you set EE/PB SEL on the DISPLAY SET menu to PB, the EE pictures or EE sounds are not output while the tape rewinds.
- If you set FF/REW SPD on the VTR SET menu to SHUTTLEMAX, you can display the picture while the tape rewinds.
- For details on the tape transport speed of the SHUTTLEMAX setting, see "FF/REW SPD" in the "VTR SET menu" on page 90 (GB).*

**③ PLAY button/indicator**

When you press this button, the indicator lights and playback begins.

**Notes**

- If the unit is playing a part of the tape where the format has been changed between the DVCAM format and the DV format or where the color system of the recorded signals has been changed between PAL and NTSC, the picture and sound are distorted.
- The unit can play back only tapes recorded in the DVCAM format or in the SP mode of the DV format.

**④ FF (fast forward) button/indicator**

When you press this button, the indicator lights and the tape is fast forwarded. During fast forward, the picture does not appear on the monitor (you can see the picture as it is seen in the EE mode).

To locate a scene while monitoring the picture, hold this button down during fast forward, playback or in the playback pause mode.

You can change the tape transport mode in FF/REW SPD on the VTR SET menu.

*For details on the VTR SET menu, see "VTR SET menu" on page 90 (GB).*

**Notes**

- If you set EE/PB SEL on the DISPLAY SET menu to PB, the EE pictures or EE sounds are not output while the tape is fast-forwarded.

• If you set FF/REW SPD on the VTR SET menu to SHUTTLEMAX, you can display the picture while fast-forwarding the tape.

For details on the tape transport speed of the SHUTTLEMAX setting, see "FF/REW SPD" in the "VTR SET menu" on page 90 (GB).

**PAUSE button/indicator**

When you press this button during recording, playing, or audio dubbing, the current operation goes into the pause mode. Pressing this button again resumes the operation. The indicator lights while the unit is in the pause mode.

**REC (record) button/indicator**

When you press the PLAY button while holding this button down, the PLAY and REC indicators light and recording starts.

When the unit is in the stop mode, you can check EE signals for an image, sound and time code by pressing this button. During this check, the REC indicator lights. To stop this operation, press the STOP button. For details, see "EE/PB SEL" in the "DISPLAY SET menu" on page 85 (GB). For details on time codes, see "DSR-45/45P time codes" on page 63 (GB).

**Note**

The unit can record only in the DVCAM format or in the SP mode of the DV format.

**AUDIO DUB (audio dubbing) button/indicator**

Use this button to dub sounds. The indicator lights while sounds are being dubbed. For details on audio dubbing, see "Audio Dubbing" on page 74 (GB).

When the unit is in the stop mode and the INPUT SELECT selector is set to other than DV, you can listen to the EE sound by pressing this button. During this operation, the indicator lights. To stop this operation, press the STOP button.

For details, see "EE/PB SEL" in the "DISPLAY SET menu" on page 85 (GB).

**DUP (duplicate) button/indicator**

Use to duplicate a tape, including the time code. During duplication, the indicator lights.

For details on the duplicate function, see "Duplication (generating a work tape with the same time code)" on page 69 (GB).

When the unit is in the stop mode and a DV signal is selected and input, you can check the EE signals for an image, sound and time code by pressing this button. During the check, the indicator lights. To stop this operation, press the STOP button.

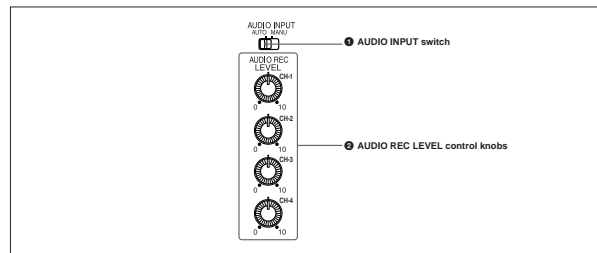
For details, see "EE/PB SEL" in the "DISPLAY SET menu" on page 85 (GB). For details on time codes, see "DSR-45/45P time codes" on page 63 (GB).

Chapter 1 Overview

Chapter 1 Overview

**Location and Function of Parts**

**3 Audio control section**



**AUDIO INPUT (AUTO/MANU) switch**

Switches the audio recording level adjustment mode.

**AUTO:** Adjusts the recording level automatically. The AUDIO REC LEVEL control knobs (CH-1 to CH-4) are disabled.

To link the AGC (Auto Gain Control) of the audio channels (CH-1/2 or CH-3/4), set AGC CH1,2 (AGC CH3,4) on the AUDIO SET menu to LINKED.

**MANU:** Enables the AUDIO REC LEVEL control knobs (CH-1 to CH-4) to manually adjust the recording level.

**Notes**

- When DV signals are input to the unit, the sound recorded retains the signal level, regardless of the setting of this switch.
- If the sound is louder than the input amplifier's dynamic range, the AUTO setting is ineffective.
- Even if you set this switch to AUTO, unless the setting of the INPUT LEVEL selector on the rear panel is appropriate, there may be clipping and noise.
- The audio level is automatically adjusted to an appropriate level when you select AUTO. It takes about 20 seconds for the audio level to be stabilized in the following cases.
  - immediately after powering on
  - immediately after stopping a playback operation
  - immediately after switching the audio mode in AUDIO MODE on the AUDIO SET menu

• If LIMITER on the AUDIO SET menu has been set to ON while you are manually adjusting the audio level, you can record the sound without clipping even if the audio input level is high as long as the level is within the amplifier's dynamic range. The LIMITER setting is available only when this switch is set to MANU.

**AUDIO REC LEVEL control knobs (CH-1 to CH-4)**

By turning these knobs, you can adjust the analog audio input signal levels for CH-1 to CH-4 respectively. You can adjust the audio signal level only if the AUDIO INPUT (AUTO/MANU) switch has been set to MANU.

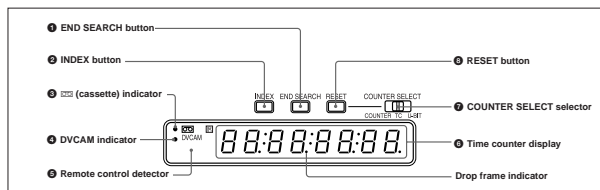
To display the audio levels meters on the LCD monitor, set the DISPLAY SELECT selector on the monitor display section to AUDIO (audio screen). While you are holding down the FINE (fine audio levels) button when the audio levels meters are displayed, a part of the audio levels meters will be enlarged (Fine audio levels screen). To select the enlarged portion, use REF LEVEL on the AUDIO SET menu. You can adjust the audio levels precisely on this screen.

For details on the audio screen, see "Audio screen" on page 28 (GB).

**Note**

You cannot adjust the audio level of the DV signal.

**4 Display window**



**END SEARCH button**

When you press this button, the unit searches the tape and plays back the last five-second recorded picture. After playback, the unit turns to the stop mode. Use this function to record another image at the end of the last recorded portion or to check the image itself.

**Note**

If you use a cassette without cassette memory, the end search function does not work once you eject the cassette after you have recorded on the tape. If you use a cassette with cassette memory, the end search function works even if you have ejected the cassette one or more times. If there is a blank portion at the beginning or between recorded portions, the end search function may not work correctly.

**INDEX button**

Press this button during recording to mark an index. If you mark an index at the scene you want to search for, you can easily find the scene later. For details on index, see "Recording Functions" on page 44 (GB).

**(cassette) indicator**

Lights when a digital video cassette is loaded. Even if the unit is in the standby mode, the indicator lights as long as a cassette is inside of the unit. While a cassette is being ejected, the indicator flashes.

**DVCAM indicator**

Lights when the unit is playing back a tape recorded in the DVCAM format. When REC MODE on the VTR SET menu is set to DVCAM, this indicator also lights during recording or when the unit is in the EE mode. For details on the VTR SET menu, see "VTR SET menu" on page 90 (GB).

**Remote control detector**

**Time counter display**

Displays time data (count value of the counter / time code / user bits), the self-diagnostics code numbers (page 100 (GB)), or the alarm messages ("Err") (page 97 (GB)).

When the count value of the counter is negative, "--" appears as the first digit (leftmost digit). When that value is positive, the first digit is blank. When the format of the displayed time code is drop frame mode, the drop frame indicator, located between minutes and seconds, lights. The user bits are displayed with periods (.) after each digit.

**Notes**

- In the playback mode, if the tape has a portion where recorded signals are not continuous;
  - The count value of the counter may not advance correctly from that portion.
  - The displayed value of the time code or user bits may be temporarily inaccurate.
- When this unit plays back a part of the tape where the recording color system has been changed between PAL and NTSC, the displayed value may be inaccurate.
- When this unit plays back a part of the tape where the recording format has been changed between DVCAM and DV, the displayed value may be inaccurate.
- The counter operates on a ±12-hour cycle. You cannot make the counter operate on a 24-hour cycle.
- The count value of the counter consists of seven digits. The leftmost digit is not displayed. (i.e.: If the actual count value is "11:22:11:22," the displayed value will be "1:22:11:22.") However, the unit recognizes that the hours value is 11.

(Continued)

Chapter 1 Overview

Chapter 1 Overview

**Location and Function of Parts**

**COUNTER SELECT selector**

Selects the time data to be indicated on the time counter display. Selected time data is also displayed on the LCD monitor or on the counter display of a monitor connected to the MONITOR VIDEO jack.

**COUNTER:** Count value of the counter (seven digits). The value is displayed on a ±12-hour cycle.

**TC:** Time code  
**U-BIT:** User bits

**Notes**

- The count value of the counter of this unit is determined by calculation based on the time code, that is, simple approximation. Therefore, in cases such as the following, the value may be inaccurate.
  - There is a portion where the time code is not continuous on the tape you are using.
  - The time code in both the drop frame mode and the non-drop frame mode are recorded on the tape you are using (For DSR-45 only).
  - There is a blank portion between recorded portions on the tape you are using.
  - A tape recorded using the PAL color system is being used in the DSR-45.

- A tape recorded using the NTSC color system is being used in the DSR-45P.  
- You are using an external time code.  
- TC RUN on the TC/UB SET menu is set to FREE RUN.

• If you intend to edit using an RS-422A connection, set the editing mode of the controller to time code (TC), and set the COUNTER SELECT selector of this unit to TC.

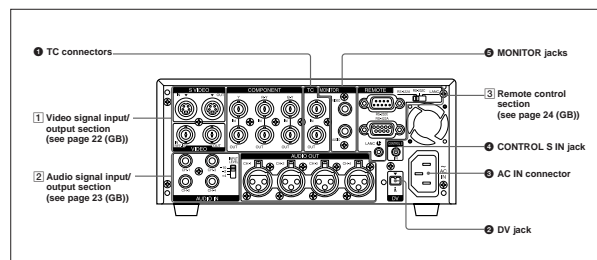
**RESET (counter reset) button**

When the COUNTER SELECT selector is set to COUNTER, pressing this button resets the value indicated on the time counter display to 0:00:00:00 (0H00M00S00F).

**Notes**

- This button cannot reset the value of the time code or user bits.
- To reset the value of the time code or user bits, use TC PRESET or UB PRESET on the TC/UB SET menu.

**Rear Panel**



**1 TC (time code) connectors (BNC-type)**

Used to input or output time code.  
**TC IN (time code input) connector:** Connects to the time code output connector on external devices such as a time code generator or a VCR. Use this connector to synchronize the internal time code generator of this unit with an external time code.

**Note**  
 The unit can read the time code input to this connector only when the time code is output at normal play speed.

**TC OUT (time code output) connector:** Connects to the time code input connector on external devices such as a time code reader or a VCR. The unit outputs the time code depending on the operating state as follows:

**Playing:** The time code on the tape is output.  
**Recording:** Either the time code generated by the internal time code generator or the time code input from a device connected to the TC IN connector is output.

For details, see "DSR-45/45P time codes" on page 63 (GB).

**Note**  
 If JOG TC OUT on the TC/UB SET menu has been set to ON, the time code is output during search mode, but the output time code is not continuous.

**2 DV jack (4-pin)**

Used to input/output the digital signal that complies with the i.LINK standard (Recommended cable: VMC-IL4415 (A), VMC-IL4615 (A)). Use when a device connected to the unit has a DV jack. If you connect the unit and another device using DV jacks, you can minimize deterioration of picture quality during recording, dubbing, or capturing still pictures, all by means of digital signal processing. For details, refer to the instruction manual of the external device.

**Note**  
 • If video signals have been input to the DV jack and you output these video signals to the MONITOR VIDEO, VIDEO OUT, or S VIDEO OUT connectors, the sync and burst of the corresponding EE pictures are not synchronized.

• i.LINK and the i.LINK logo are trademarks and indicate that this product is in agreement with IEEE 1394-1995 specifications and their revisions.  
 • This jack can accept only DV signals.  
 • If the unit is connected to a device equipped with a 6-pin DV jack, when you intend to disconnect or reconnect the DV cable, turn off the device and pull

out the plug of its power cord from the AC outlet beforehand. If you connect or disconnect the DV cable while the device is connected to the AC outlet, high-voltage current (8 to 40 V) is output from the DV jack of the device to this unit, which may cause a malfunction.

• When connecting a device that has a 6-pin DV jack to this unit, first, connect the plug of the cable to the 6-pin DV jack.

**3 AC IN connector**

Connects to an AC outlet using the supplied power cord. Even if the unit is in the standby mode, it consumes power. To turn the unit off completely, pull the plug out from the AC outlet.

**4 CONTROL S IN jack (stereo minijack)**

Connects to the Remote Control Unit (DSRM-20, not supplied) for controlling this unit.

**Notes**

• When using the Remote Control Unit (DSRM-20, not supplied), set COMMANDER on the OTHERS menu to CONTROL S.  
 • If the REMOTE/LOCAL switch is set to REMOTE, the control of a device connected to the CONTROL S jack is restricted by the setting of LOCAL ENBL on the REMOTE menu.

**5 MONITOR jacks (phono jack)**

Output video and audio signals for monitoring.  
**MONITOR VIDEO jack:** Outputs composite video signals. Connect the input jack of an external monitor to this jack. When you set the CHARACTER DISPLAY (MONITOR OUT) switch on the front panel to ON, data items such as time data, menus or alarm messages are superimposed on the external monitor.

For details on the superimposed data items, see "Displaying Various Data" on page 27 (GB).

**Notes**

• When video sync signals of the EE pictures output from the MONITOR VIDEO jack, sync and burst are not synchronized.  
 • The video signal output from this connector is not synchronized with the video signal output from the line-out connectors (COMPONENT OUT, S VIDEO OUT, VIDEO OUT). When the unit is in the EE mode, the output pictures are delayed by several lines. When played back, the picture is not exactly externally synchronized — only vertically synchronized. You cannot adjust the sync and subcarrier phases.

(Continued)

Chapter 1 Overview

Chapter 1 Overview

**Location and Function of Parts**

- If DV input has been selected, color and luminance may be distorted in the EE mode, depending on the monitor.
- The data items superimposed on a monitor connected to this jack are the same as the items superimposed on the LCD monitor.
- You cannot make two monitors display different data items individually.
- The adjustment of PB LEVEL on the VIDEO SET menu does not affect the MONITOR VIDEO output.
- While the unit is externally synchronized, the sync signal frequency and the burst signals of the video signals output to the LCD monitor and the MONITOR VIDEO jack are not synchronized. Therefore, jitter may appear on those output signals.

If the unit is externally synchronized, use the VIDEO OUT connector. If you use the MONITOR VIDEO jack, set EXT SYNC on the VIDEO SET menu to OFF.

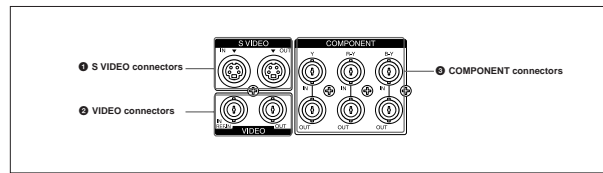
**MONITOR AUDIO jack:** Outputs the audio signals for monitoring. Select the audio channels you want to monitor as follows.  
**CH-1/2:** channels 1/2  
**MIX:** channels 1 to 4  
**CH-3/4:** channels 3/4

**1 Video signal input/output section**

**Note**

The unit can only accept standard video signals. If you input the types of video signals shown below, recorded picture, sound, and the EE picture output via the VIDEO OUT, S VIDEO OUT and COMPONENT OUT connectors may be distorted.  
 • Signals from some home game machines  
 • Blue background screen or gray background screen from a consumer VCR

- Pictures played at a speed other than normal by a VCR that does not have the TBC (Time Base Corrector)
- Video signals in which the sync signals are distorted
- Signals from a defective cassette (tape or recording condition is bad) played by an analog VCR that does not have TBC



**1 S VIDEO connectors (4-pin)**

Inputs/Outputs the S-video signal with Y (luminance) and the C (chroma: 3.58 MHz for DSR-45 and 4.43 MHz for DSR-45P) separated.

**VIDEO OUT (composite video output) connector:** Outputs composite video signals. The data items are not superimposed.

**2 VIDEO connectors (BNC-type)**

**VIDEO IN REF.IN (reference video / composite video input) connector:** Inputs composite video signals to this unit. When performing a playback synchronized with an external sync signal, this connector inputs a reference video (black burst) signal.

**3 COMPONENT connectors (BNC-type)**

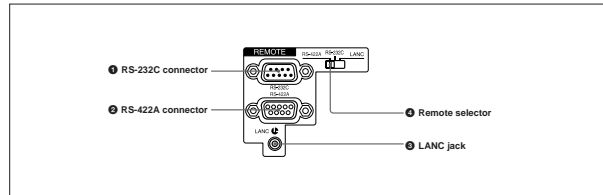
Inputs/Outputs component video signals (Y/R-Y/B-Y).

Chapter 1 Overview

Chapter 1 Overview

**Location and Function of Parts**

**3 Remote control section**



**Notes**

• When controlling the unit using a device connected to the RS-232C connector 1 or the RS-422A connector 2, set the REMOTE/LOCAL switch on the front panel to REMOTE. (Regardless of the setting of the REMOTE/LOCAL switch, you can use a device connected to the LANC jack 3 to control the unit.)  
 • Even when the DSR-45 plays back a PAL formatted tape (or the DSR-45P plays back a NTSC formatted tape), you can control the basic tape transport functions using a device connected to the RS-232C connector 1 or the RS-422A connector 2. However, editing operations attempted in this case are not guaranteed.  
 • For editing, if you intend to use this unit as a recorder and to use the FXE-120/120P or the FXE-100/100P upgraded by installing the FXE-KIT1 as an editing controller, you also need to use the IF-FXE2 LANC Interface Box.

**2 RS-422A connector (9-pin)**

Use when controlling the unit using an editing controller that has an RS-422A interface.

**3 LANC jack**

Use when controlling the tape transport operation of the unit using a device that has a LANC<sup>®</sup> jack.

**Notes**

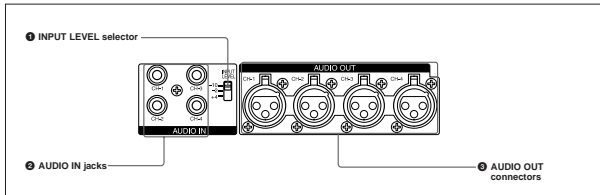
• Regardless of the setting of the REMOTE/LOCAL switch, you can use a device connected to the LANC jack to control the unit.  
 • The LANC jack on the unit has only LANC-S functions. The unit has no LANC-M functions. A device that is set to LANC-S mode cannot be connected to this unit. Either this, the unit or the other device may not operate properly.  
 • If the device that you connect to this unit has a SHUTTLE A/B switching function and a LANC-M function, set the device to the SHUTTLE B mode.  
 • The LANC connection transmits signals such as control signals, time code, time counter data, and status data.  
 • Jacks labeled CONTROL L have the same function as LANC jacks.  
 • When using this unit as a player, set the LANC mode on the recorder to M. A device that does not have an M / S switching function cannot be used to control this unit.

**4 Remote selector**

Selects one from among RS-422A, RS-232C, or LANC according to a device connected to the unit.

1) LANC (Local Application Control bus system): Bidirectional interface used to control a consumer VCR

**2 Audio signal input/output section**



**1 INPUT LEVEL (-10/-2/+4) selector**

Selects one from among -10 dB, -2 dB, or +4 dB according to the audio level of the signal input via the AUDIO IN jacks 2.

**Note**

If this selector setting is not appropriate, clipping distortion or noise may occur even if the AUDIO INPUT switch has been set to AUTO.  
 For more information on the setting of this selector, see "When you set the INPUT LEVEL selector" on page 96 (GB).

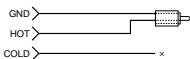
**2 AUDIO IN CH-1 to CH-4 jacks (phono jack)**

Inputs audio signals (CH-1 to CH-4).

**Note**

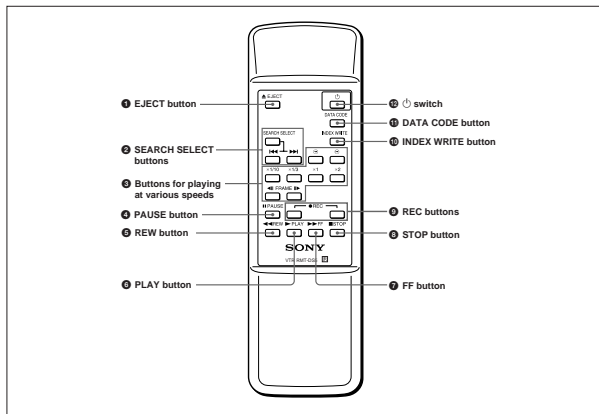
To input balanced audio signals via these jacks, use a conversion cable as shown below. (The COLD side is open.)

For details on conversion cables, refer to the instruction manual of the devices you use.





Supplied Remote Commander



- 1 EJECT button**  
**Note**  
When there is no cassette inside the unit, you cannot open/close the cassette compartment, even if you press this button. In this case, press the EJECT button on the front panel of the unit instead.
- 2 SEARCH SELECT buttons**  
Press these buttons to search for scenes using the search function. For details on the search function, see "Searching using the search function" on page 37 (GB).
- 3 Buttons for playing at various speeds**  
You can play back a tape at normal speed or at a speed other than normal with these buttons. For details, see "Playing at various speeds" on page 37 (GB).
- 4 PAUSE button**  
When there is no cassette inside the unit, you cannot open/close the cassette compartment, even if you press this button. In this case, press the EJECT button on the front panel of the unit instead.
- 5 REW (rewind) button**
- 6 PLAY button**
- 7 FF (fast forward) button**
- 8 STOP button**  
When you press both these buttons at the same time, the REC indicator and PLAY indicator on the front panel light and recording begins.
- 9 REC (record) buttons**  
When you press both these buttons at the same time, the REC indicator and PLAY indicator on the front panel light and recording begins.
- 10 DATA CODE button**  
Press this button to display the data codes (recording date/time, camera data). For details on data codes, see "Displaying information (data codes) recorded on a tape" on page 36 (GB).
- 11 INDEX WRITE button**  
Press this button during recording to mark an index. For details on an index, see "Marking an index" on page 44 (GB).
- 12 (on/standby) switch**

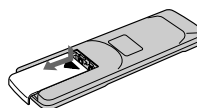
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Location and Function of Parts

- 1 INDEX WRITE button**  
Press this button during recording to mark an index. For details on an index, see "Marking an index" on page 44 (GB).
- 2 DATA CODE button**  
Press this button to display the data codes (recording date/time, camera data). For details on data codes, see "Displaying information (data codes) recorded on a tape" on page 36 (GB).
- 3 (on/standby) switch**  
**Notes**
  - The command mode of the supplied Remote Commander is set to VTR4. You cannot change this setting.
  - Set COMMANDER on the OTHERS menu to WIRELESS to enable the Remote Commander to control the unit.
  - In addition to the Remote Commander supplied with the unit, the unit accepts signals from any Sony Remote Commander whose command mode is set to VTR4. If you want to disable the control from any Remote Commander, set COMMANDER on the OTHERS menu to CONTROL S.
  - If the REMOTE/LOCAL switch is set to REMOTE, the control of the Remote Commander is restricted by the setting of LOCAL ENBL on the REMOTE menu.

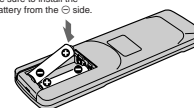
Battery installation

- 1** Push and slide the lid to open.

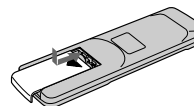


- 2** Install two size AA (R6) batteries (supplied) with the correct polarity.

Be sure to install the battery from the (+) side.



- 3** Replace the lid.



Notes on batteries

- Make sure that the battery orientation is correct when inserting batteries.
- Do not mix an old battery with a new one, or mix different types of batteries.
- If you do not intend to use the Remote Commander for a long time, remove the batteries to avoid damage from battery leakage. If the batteries have leaked, remove them, wipe the battery compartment dry and replace the batteries with new ones.

To remove the batteries

Remove the lid as step 1 and take out the batteries.

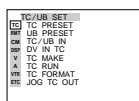
Displaying Various Data

The unit can display various superimposed data items on the built-in LCD monitor or on a monitor connected to the MONITOR VIDEO jack. To display various data items on the LCD monitor, set the CHARACTER DISPLAY (LCD) selector to ON or ON (BLACK BACK). To display various data items on an external monitor, set the CHARACTER DISPLAY (MONITOR OUT) switch to ON.

You can select data items to be displayed using the DISPLAY SELECT selector.

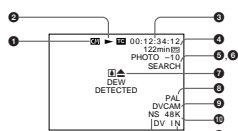
Menu screen

To display the menu screen, set the DISPLAY SELECT selector to MENU. You can change or confirm the menu item settings on this screen. For details on the menu, see "Chapter 6 Adjusting and Setting Through Menus" on page 76 (GB).



Data screen

To display the data screen, set the DISPLAY SELECT selector to DATA. You can confirm important information for recording or playback, such as time code or remaining tape time, on this screen.



- 1 Cassette memory indicator**  
This item is shown when a cassette with cassette memory has been loaded. If the cassette is ejected while data is being written on the cassette memory, the indicator flashes.
- 2 Tape transport mode indicator**  
Displays the tape transport mode.
- 3 Time counter (time code/user bits/count value of the counter) indicator**  
Displays the count value of the counter, time code, or user bits. By setting the COUNTER SELECT selector on the front panel, you can select the item to be displayed. When the time code is displayed, **TC** appears to its left. In the drop frame mode, a period is displayed between the minutes and seconds. (Example: 00:12:58:00) When the user bits are displayed, **UB** appears to their left. When the count value of the counter is negative, "-" appears as the first digit (leftmost digit). When that value is positive, the first digit is blank. The count value of the counter consists of seven digits. If the self-diagnostic function is enabled, diagnostics code numbers are displayed.  
**Notes**
  - The counter operates on a ±12-hour cycle. You cannot make the counter operate on a 24-hour cycle.
  - The count value of the counter consists of seven digits. The leftmost digit is not displayed. (i.e.: If the actual count value is "1:22:11:22," the displayed value will be "1:22:11:22.") However, the unit recognizes that the hours value is 11.
- 4 Remaining tape time indicator**  
Displays the remaining tape time.  
**Note**  
When you insert a cassette in which the tape has been rewound to the beginning, this indicator will not show the remaining tape time. The remaining tape time is displayed after the tape runs for a while.
- 5 Search indicator**  
Displays the search mode when you search for scenes using the Remote Commander or the DSRM-20 (not supplied). For details on the search function, see "Searching using the search function" on page 37 (GB).

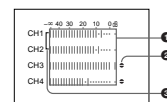
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Displaying Various Data

- 1 Index indicator**  
Displays INDEX MARK when an index has been marked.
- 2 Caution indicator**  
Displays a caution. For details on cautions, see "Alarm Messages" on page 97 (GB).
- 3 PAL (DSR-45)/NTSC (DSR-45P) indicator**  
**DSR-45:** Appears for five seconds when you play back a PAL formatted tape.  
**DSR-45P:** Appears for five seconds when you play back an NTSC formatted tape.
- 4 DVCAM/DV indicator**  
In the EE or recording mode, displays the recording format selected in REC MODE on the VTR SET menu. During playback, displays the recording format of the picture.
- 5 Audio mode indicator**  
In the EE or recording mode, displays the audio mode selected in AUDIO MODE on the AUDIO SET menu. During playback or audio dubbing, displays the audio mode recorded on the tape. When you input a signal to the DV jack, displays the audio mode of that signal.
- 6 Input signal indicator**  
Displays the INPUT SELECT selector setting.
- 7 NS (Non standard) audio mode indicator**  
This item is shown when a tape recorded in the unlock audio mode is played back or when an unlock mode signal has been input to the DV jack. In EE mode, when REC MODE in the VTR SET menu is set to DV SP, this item is always shown. For details on the unlock mode, see "Compatibility of DVCAM and DV Format" on page 101 (GB).

Audio screen

To display the audio screen, set the DISPLAY SELECT selector to AUDIO. You can confirm or adjust the audio levels and confirm the audio input signal settings on this screen.



- 1 Audio levels**  
Displays the audio levels for each channel independently. When the audio mode is FS32K, the audio levels of four channels, channel 1 to 4, are displayed. When the audio mode is FS48K, the audio levels of channel 1 and 2 are displayed. The unit detects the audio mode as follows.  
**In the playback mode:** Detects the audio mode recorded on the tape.  
**In the recording/EE mode:** Detects the selected audio mode in AUDIO MODE on the AUDIO SET menu.  
**When the INPUT SELECT selector is set to DV and a DV signal is being input:** Detects the audio mode of the signals being input. (The setting of AUDIO MODE on the AUDIO SET menu becomes invalid.)

In the EE, recording, or audio dubbing (only the audio dubbing channel) modes, if the input levels exceed 0 dB, the portions of the meters that exceed 0 dB turn to red. During playback, while DV signals are input or the AUDIO INPUT switch is set to AUTO, those portions of the levels meters do not turn to red.

2 Audio dubbing symbol

This symbol appears associated with a channel on which you can dub sounds. Appears when:  
• a tape is being transported and pictures are displayed on the LCD monitor or on an external monitor.  
• the unit is in the stop mode, a signal other than DV is selected, and you press the AUDIO DUB button.

Playback and Recording

Chapter 1 Overview

**Notes**

- You can dub sounds only on a tape on which signals are recorded in the 32 kHz audio mode (4 channels, 12 bit) and in the DVCAM format.
- You can select a pair of channels to dub sounds using AUDIO DUB on the AUDIO SET menu.
- You cannot perform audio dubbing using a sound signal input via the DV jack. This symbol does not appear when DV signals are input.

**Link symbol**

If the AGC (Auto Gain Control) of a pair of channels is linked, this symbol is placed between the channels. In the EE mode, if AGC CH1, 2 on the AUDIO SET menu is set to LINKED and the AUDIO INPUT switch is set to AUTO, channels 1 and 2 can be linked for AGC operation and for stereo sound where channel 1 is set for the left sound and channel 2 is set for the right sound.

In the EE mode, if AGC CH3, 4 on the AUDIO SET menu is set to LINKED and the AUDIO INPUT switch is set to AUTO, channels 3 and 4 can be linked for AGC operation and for stereo sound where channel 3 is set for the left sound and channel 4 is set for the right sound.

**Note**

When DV signals are input, the AGC does not function and channels are not linked. This symbol does not appear with a DV connection.

**Fine audio levels screen**

When the audio screen is displayed, pressing the FINE (AUDIO) button displays the fine audio levels screen. The screen is displayed only while you are pressing the FINE (AUDIO) button. You can adjust the audio recording levels precisely on this screen.



The fine audio levels screen displays narrower audio levels around the audio levels (-12 to -18/-20 dB) selected in REF LEVEL on the AUDIO SET menu.

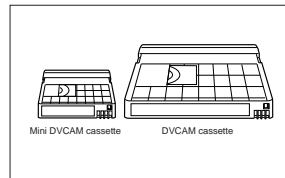
**Notes**

- Changing REF LEVEL on the AUDIO SET menu does not change the audio gain of the unit. According to the level of sounds you want to record, select an appropriate gain by setting the INPUT LEVEL selector on the rear panel. Then, adjust the audio recording levels using the AUDIO REC LEVEL control knobs.
- The standard output level of the AUDIO OUT connectors of the unit is +4 dBu. This is equivalent to -20 dB level for the full-bit maximum audio level (-18 dB level for the DSR-45P). This value is fixed and is not affected by the setting of REF LEVEL on the AUDIO SET menu.

Notes on Video Cassettes

**Usable cassettes**

Use Standard-DVCAM cassettes or Mini-DVCAM cassettes with this unit. The PDV-184 can record programs for 184 minutes and the PDVM-40 can record for 40 minutes (DVCAM format). You can get the highest quality pictures with this digital videocassette recorder using DVCAM cassettes. Using other cassettes does not ensure sufficient reliability. We recommend using DVCAM cassettes so that you can record your one-time events in the highest quality.

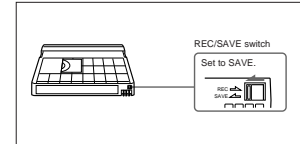


**Cassette memory**

Cassette memory is an optional feature that is mounted on some Standard DVCAM cassettes and Mini DVCAM cassettes. When you record a program, the recording date and time, and the programs' position on the tape are stored in the cassette memory so that you can quickly locate the program later on. **CH16K** on a cassette indicates that you can use the cassettes to store up to 16 kbits of data. On this unit, you can use cassettes on which up to 16 kbits of data can be stored.

**To save a recording**

To prevent accidental erasure of a recording, slide in the REC/SAVE switch on the cassette so that the red portion becomes visible. To record on a tape, slide out the switch so that the red portion is hidden.



Notes on Video Cassettes

**Notes on Playback/Recording**

**No compensation for contents of the recording**

Contents of the recording cannot be compensated for if recording or playback is not successful due to a malfunction of the unit, video tape, etc.

**Copyright precautions**

**On recording**  
You cannot record any software having copyright protection signals on this unit. If you start recording protected video and audio signals, a warning appears on the monitor screen and the unit stops recording. During recording, if you change the INPUT SELECT selector setting, the unit may mistakenly recognize that a copyright protected signal has been input.

**On playback**  
When you play back software having copyright protected signals on this unit, you may not be able to copy it onto other equipment.

**Limitations caused by differences in format**  
The unit can record and play back tapes recorded in DVCAM format. It can also record and play back tapes recorded in DV format (SP mode). However, due to differences in format, you may not be able to play back or edit some tapes affected by recording conditions of the tape (e.g., a tape originally recorded in DV format is dubbed in DVCAM format). For details, see "Compatibility of DVCAM and DV Format" on page 101 (GB).

If a tape has both a portion recorded in the DVCAM format and one recorded in the DV format (SP mode), the following limitations are applied when you play back the tape with this unit:

- The image may be distorted and noise may occur at the point where the recording format changes on the tape.
- The tape transport control buttons may be disabled until the tape speed is stabilized.

**Simple playback function for a tape recorded using the PAL system (for the DSR-45) or the NTSC system (for the DSR-45P)**

The DSR-45 can play a PAL tape (the DSR-45P can play an NTSC tape) recorded in the DVCAM format or consumer DV format (SP mode only). This function has the following limitations:

- The video signals are output only to the LCD monitor and the MONITOR VIDEO output.

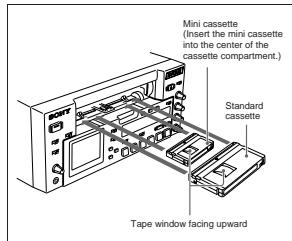
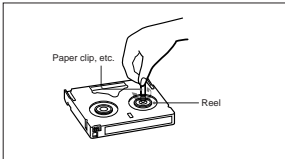
- The color system of the output video signal is that of the signals recorded on the tape played back. You cannot convert the signals into the other color system. If you want to display the MONITOR VIDEO output, you will need a video monitor able to handle the color system recorded on the tape.
- The MONITOR VIDEO output is optimized and adjusted for one color system (DSR-45: NTSC system; DSR-45P: PAL system). If you play back a tape recorded in the other color system, the levels and phases of the video signal may not be correct.
- The outputs from the VIDEO OUT, S VIDEO OUT and COMPONENT OUT connectors are muted.
- When the unit plays a tape recorded in the other color system (i.e., PAL for the DSR-45, or NTSC for the DSR-45P), the image, sound and time code may be distorted for a while at the beginning and the end of playback.
- The TC OUT connector outputs incorrect time code. Do not use this time code.
- The unit cannot play back in synchronization with the external sync signal.
- Noise reduction results for the luminance and chrominance signals may differ between PAL formatted tapes and NTSC formatted tapes.
- Even when the DSR-45 plays back a PAL formatted tape (or the DSR-45P plays back an NTSC formatted tape), you can control the basic tape transport functions using a device connected to the RS-422A or RS-232C connectors. However, any editing operations attempted in this case are not guaranteed.

**Limitations regarding the differences in color systems**

- Except for the simple playback function for a tape recorded in the other color system, this unit is not compatible with any other color systems.
- This unit cannot record video signals of the other color system.
- Inputting the other format video signals does not output the E/P pictures correctly. The video output may be muted and some signals may not be displayed.
- You may not be able to dub sound correctly from a tape recorded in the other color system in this unit.
- If a tape has both NTSC and PAL formatted video signals, the following limitations are applied when you play that tape with this unit:
  - The image may be distorted and noise may occur at the point where the recording format changes on the tape.
  - The tape transport control buttons may be disabled until the tape speed is stabilized.

**Checking the tape for slack**

Using a paper clip or a similar object, turn the reel gently in the direction shown by the arrow. If the reel does not move, there is no slack.



The cassette is automatically loaded into the unit and the cassette compartment closes.

**Inserting/Ejecting Cassettes**

**To insert a cassette**

**Notes**

- Do not insert the cassette forcibly. The unit may be damaged.
- Do not eject/load the cassette in a place subject to light. The internal sensor of the unit may operate incorrectly if too much light falls on the unit.

1 With the unit powered on, press the EJECT button. The cassette compartment opens.

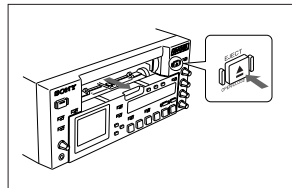
2 After checking the tape for slack, hold the cassette so that the tape window is facing upward, then insert it into the unit.

**Notes**

- When inserting a cassette, hold the back edge of the cassette in the center and push it until the cassette is inserted deep into the unit. If you hold the ends, the cassette may not be loaded properly.
- If the cassette does not load or is loaded only halfway, eject it once, then insert it again. In such a case, if you insert the cassette forcibly, the cassette may not be loaded properly or malfunctions may occur.
- It takes a few seconds for the unit to recognize the cassette and find the proper location on the tape being loaded.

**To eject the cassette**

1 With the unit powered on, press the EJECT button.



The cassette is unloaded and ejected.

2 Remove the cassette from the unit. Press the EJECT button to close the cassette compartment.

Chapter 2 Playback and Recording

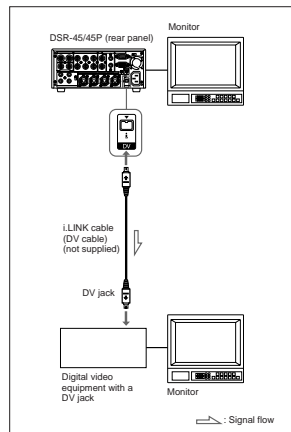
## Playback

This section describes the connections, settings and operations necessary to perform playback on this unit. The same settings and operations apply whether you are using the unit as part of an editing system, for dubbing, or as a stand-alone videocassette player.

### Connections for Playback

#### To digital video equipment with a DV jack

The video and audio signals are sent with hardly any degradation, enabling high-quality recording. The signal flow is automatically detected so you do not need to make separate connections for input and output.



#### Notes

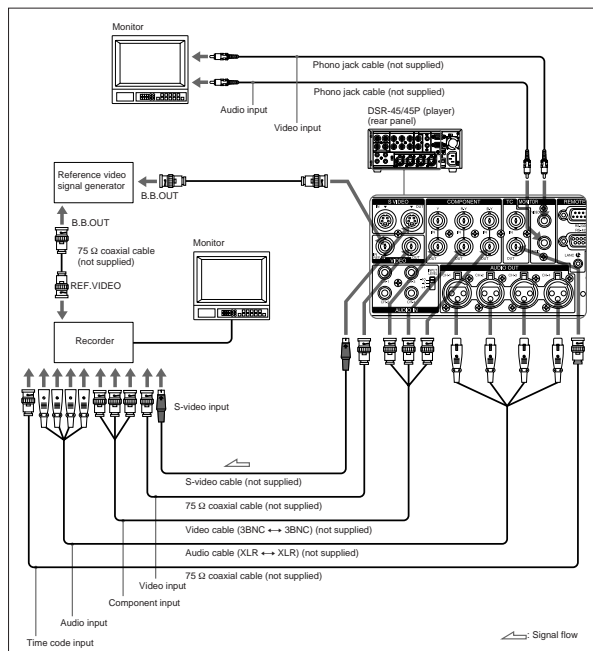
- With the DV connection, data codes (recording date/time, camera data) recorded on the source tape are transmitted to the recorder. As a result, when you play back a recorded tape on this unit and press the DATA CODE button on the Remote Commander, the same data codes as those recorded on the source tape are displayed on the monitor screen.
- The external lock function of this unit only supports the standard sync signals. With the DV connection, set EXT SYNC on the VIDEO SET menu to OFF to prevent malfunction resulting from noise, etc. For details on the VIDEO SET menu, see "VIDEO SET menu" on page 86 (GB).
- If no picture appears via the DV jack, disconnect the i.LINK cable (DV cable), then reinsert it straight.
- When connecting a device that has a 6-pin DV jack to this unit, first, connect the plug of the cable to the 6-pin DV jack.
- If the unit is connected to a device equipped with a 6-pin DV jack, when you intend to disconnect or reconnect the DV cable, turn off the device and pull out the plug of its power cord from the AC outlet beforehand. If you connect or disconnect the DV cable while the device is connected to the AC outlet, high-voltage current (8 to 40 V) is output from the DV jack of this unit as a result, which may cause a malfunction.
- If you connect the input connectors of this unit to the output connectors of a recorder or that of a monitor, a humming noise may be generated or the image may be distorted. If these phenomena occur, perform one of the following:
  - Set DV EE OUT on the VTR SET menu to OFF.
  - Set the INPUT SELECT selector to a position where a signal is not currently being input.
  - Disconnect the cables.

## Playback

#### To video equipment without a DV jack

You can connect this unit to video equipment without a DV jack. Use this unit as follows. The following illustration shows an example of a

configuration for dubbing a tape with its time code in the externally-synchronized playback mode. In this configuration, the recorder is a VCR equipped with XLR input connectors.



Connect one of the following as a video cable: video cable (3BNC ↔ 3BNC), S-video cable, 75 Ω coaxial cable.

#### Notes

- If you connect the input connectors of this unit to the output connectors of a recorder or that of a monitor, a humming noise may be generated or the image may be distorted. If these phenomena occur, perform one of the following:
  - Set EE/PB SEL on the DISPLAY SET menu to PB.
  - Set the INPUT SELECT selector to a position where a signal is not currently being input.
  - Disconnect the cables.
- Text data (time code, warnings, menus, etc.) are superimposed only on the MONITOR VIDEO output.
- To play back in synchronization with the reference video (black burst) signal, set EXT SYNC on the VIDEO SET menu to ON.

### Settings for Playback

#### Preparation on the player (this unit)

- 1 Power on the video monitor, then set the monitor's input switch according to the signals input.
- 2 Set up the recorder. For details, refer to the instruction manual of the recorder.
- 3 Turn this unit on.

### Playback Procedures

This section describes the procedures used to play back a tape and send signals to another VCR. For details on the procedures required when using a computer as a recorder, refer to the instruction manual of your computer or the user's manuals of the software installed on it.

When controlling this unit from an editing controller connected to the RS-232C or RS-422A connectors, see "Chapter 3 Using the Unit as a Player in an Editing System" on page 46 (GB).

- 1 After checking the tape for slack and confirming that the indicator is off, hold the cassette so that the tape window is facing upward, then insert it into this unit.

The cassette is automatically loaded into the unit.

For details on checking the tape for slack, see "Notes on Video Cassettes" on page 30 (GB). For details on inserting a cassette, see "To insert a cassette" on page 31 (GB).

**Note**  
Do not insert the cassette forcibly. The unit may be damaged.

- 2 Press the PLAY button on this unit.

This unit starts playback.

**To stop playback**  
Press the STOP button on this unit.

**To pause playback**  
Press the PAUSE button on this unit.

#### Notes

- When this unit plays back a part of the tape where the recording format has been changed between the DVCAM format and the DV format, the picture and sound may be distorted.
- The unit can play back only tapes recorded in the DVCAM format or in the SP mode of the DV format.

## Playback

### Playback Functions

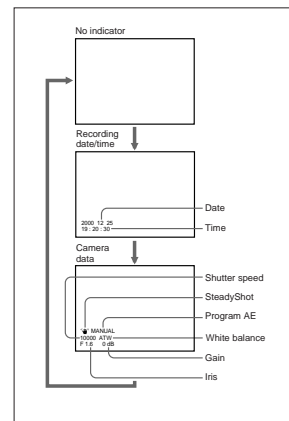
#### Displaying information (data codes) recorded on a tape

If you record on a tape using a Sony digital camcorder (DSR-200/200P, 200A/200AP, PD100/PD100P, PD100A/PD100AP, PD150/PD150P, 250/250P, etc.), data codes can be recorded on the tape. The data codes consist of recording date/time and camera data (the shutter speed, SteadyShot, iris, white balance, program AE mode, gain, date and time). You can check these data items during playback on this unit.

First, set the DISPLAY SELECT selector to DATA. If the selector is set to other than DATA, the data codes are not displayed.

Press the DATA CODE button on the Remote Commander during playback. Each time you press the DATA CODE button, the display changes in sequence as follows: no data code → recording date/time → camera data → no data code ....

Also, using DATA CODE on the DISPLAY SET menu, you can select a data item to be displayed. For details on the DISPLAY SET menu, see "DISPLAY SET menu" on page 85 (GB).



#### Notes

- If the data codes were not recorded, " - - - " appears instead.
- This unit cannot record camera data. Camera data items show the settings of a tape recorded by a digital camcorder (DSR-200/200P, 200A/200AP, PD100/PD100P, PD100A/PD100AP, PD150/PD150P, 250/250P, etc.).
- Some of the camera data items displayed by this unit are different from those shown on the digital camcorder.



**Playing at various speeds**

You can enjoy playback functions using the Remote Commander.

Playback options	Operation
Play at 1/10 of normal speed	Press $\times 1/10$ button during playback.
Play at 1/3 of normal speed	Press $\times 1/3$ button during playback.
Play at normal speed	Press $\times 1$ button during playback.
Play at twice the normal speed	Press $\times 2$ button during playback.
Play frame by frame	Press FRAME $\lll$ or $\lll$ buttons during pause. If you keep pressing one of these buttons, playback continues, frame by frame.
Fast forward the tape while monitoring pictures	Press the $\Rightarrow$ button during normal playback or when playing at various speeds.
Rewind the tape while monitoring pictures	Press the $\Leftarrow$ button during normal playback or when playing at various speeds.

**To change playback direction**

Press the FRAME  $\lll$  or  $\lll$  buttons during normal playback or when playing at various speeds. To play back in the forward direction, press the  $\lll$  button; in the backward direction, press the  $\lll$  button.

**To hear the sound while playing at various speeds**

If you want to hear the sound when playing at various speeds, set JOG AUDIO on the AUDIO SET menu to ON.

For details on the AUDIO SET menu, see "AUDIO SET menu" on page 88 (GB).

**Notes**

- When the command mode of a Sony device / remote commander is set to VTR4;
  - if you press the  $\times 1/3$  button on the supplied Remote Commander while pointing it toward a Sony device other than this unit, the playback speed may turn to 1/5 of normal speed.
  - if you press the  $\times 1/5$  button on a remote commander while pointing it toward this unit, the playback speed will turn to 1/3 of normal speed.

- If the unit keeps playing at 1/10 of normal speed in forward or reverse for more than one minute, the unit will begin to play back forward at normal speed.
- Even if you set JOG AUDIO on the AUDIO SET menu to ON, sound may not be output or may be interrupted depending on differences in the recording formats (DVCAM/DV) or the condition of the tape.

**Searching using the search function**

There are four kinds of search available on this unit:

- Searching for the beginnings of recordings: Index search
  - Searching for the boundaries of recorded tape by title: Title search\*
  - Searching for a point on the tape where the recorded date changes: Date search
  - Searching for scenes recorded in the photo mode with a digital camcorder: Photo search
- \* A function available only on a cassette with cassette memory

To search for scenes, use the supplied Remote Commander or the Remote Control Unit (DSRM-20, not supplied).

**To search with the cassette memory**

If you set CM SEARCH on the CM SET menu to ON and the cassette has cassette memory, the scenes are listed in the chronological order in which they were made. You can search using this chronological list.

If the cassette does not have cassette memory, you cannot search for scenes in chronological order. For details on the CM SET menu, see "CM SET menu" on page 81 (GB).

- Press the SEARCH SELECT button on the Remote Commander or the SEARCH MODE button on the Remote Control Unit (DSRM-20, not supplied) to select the search type: INDEX, TITLE, DATE or PHOTO SEARCH.

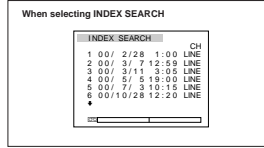
(Continued)

Chapter 2 Playback and Recording

Chapter 2 Playback and Recording

**Playback**

A chronological list appears on the monitor screen.



The displayed forms of the date and time can be changed by setting DATE DISP and TIME DISP on the DISPLAY SET menu. For the DSR-45P, "PROG" is displayed instead of "CH." For details on the DISPLAY SET menu, see "DISPLAY SET menu" on page 85 (GB).

- Press the  $\lll$  or  $\lll$  button to select a scene.

The unit starts searching and when it locates the scene, begins playback. During Photo search, the unit turns to the playback pause mode.

**To search without cassette memory**

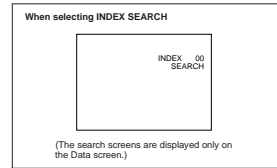
When you use a cassette without cassette memory, the unit searches in the order of the actual positions of the scenes, regardless of the setting of CM SEARCH on the CM SET menu.

On a cassette with cassette memory, when you want to perform searches with this procedure, set CM SEARCH on the CM SET menu to OFF. For details on the CM SET menu, see "CM SET menu" on page 81 (GB).

**Note**

Title search is not available when searching a cassette without cassette memory.

- Press the SEARCH SELECT button on the Remote Commander or the SEARCH MODE button on the Remote Control Unit (DSRM-20, not supplied) to select the search type.



- Press the  $\lll$  or  $\lll$  button repeatedly to locate the scene you want.

Each time you press the  $\lll$  or  $\lll$  button, the unit searches for the previous or next search point. When a search point is located, its number is indicated on the monitor screen. The unit starts searching backwards or forwards until the number comes to zero, then plays back the scene. During Photo search, the unit turns to the playback pause mode.

**How signals are recorded**

There are four different signal types, one for each search method; index, title, date and photo signals. They are recorded by the digital camcorder (DSR-200/200P, 200A/200AP, PD100/PD100P, PD100A/PD100AP, PD150/PD150P, 250/250P, etc.). However, the type of signal recorded and where it is recorded (on the tape or in the cassette memory) depend on whether the cassette has cassette memory or which type of video equipment is used for recording. Please note that if the signals for a certain search type are not recorded, you cannot perform that type of search. For details on the signals used for a particular type of search, refer to the instruction manual of the recorder.

Chapter 2 Playback and Recording

Chapter 2 Playback and Recording

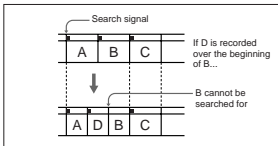
Signals that can be recorded on this unit are as follows.

Signals for	In cassette memory	On tape
Index search*	Yes	Yes
Title search	No	No
Date search	No	Yes
Photo search	No	No

\* If AUTO INDEX on the VTR SET menu is set to ON and the unit is in the stop mode, when you start recording, the unit automatically marks a signal for Index search. If AUTO INDEX is set to OFF, the unit does not mark it. During recording, pressing the INDEX button on the unit or the INDEX WRITE button on the Remote Commander marks a signal for Index search regardless of the AUTO INDEX setting.

**Notes**

- If you record another program over the beginning of the search signals, you will not be able to locate the original program.



- You cannot add search signals after recording. To add a search signal for Auto Repeat, start recording from the point where you want to add it.
- When recording on this unit, signals for Index search do not have information on the day of the week.
- Searching may not be done correctly if the tapes were not recorded on Sony-brand digital video equipment.

**About the cassette memory**

A tape with the CH mark has cassette memory. When using the 16 kbit cassette memory, you can store up to 135 search signals. (The number changes depending on the memory capacity of various cassettes. It also changes depending on the data size combination of index, title, date, photo, and tape label data stored on a tape.) This unit is capable of storing and retrieving up to 16 kbits of information in cassette memory.

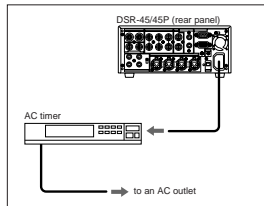
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**Playback**

**Auto Repeat using an external AC timer**

If you connect an external AC timer (not supplied) to this unit, you can repeat playback automatically at a preset time.

- Connect this unit to an external AC timer (not supplied).



- Set the TIMER selector on the front panel of this unit to REPEAT.
- Set the starting time on the external AC timer.

At the preset time, the power of this unit turns on, and after a few seconds (no more than 30), Auto Repeat playback starts automatically. The unit repeats the playback from the beginning to the first index (if there is no signal for Index search on the tape, to the next unrecorded portion; if there is no unrecorded portion, to the end of the tape).

**Notes**

- The unit cannot detect a signal for Index search or an unrecorded portion within 20 seconds of the beginning of the playback.
- When you intend to turn the unit off, press the STOP button on this unit to stop the tape transport operation beforehand. If you turn the unit off while a tape is running, for example, by using an AC timer, the unit or the tape may be damaged.
- The editing software used on the digital non-linear editing system may mark an index signal on a tape itself. Therefore, if you use a tape on which signals transmitted from a digital non-linear editing controller are recorded or a copy tape made from one, using digital dubbing, Auto Repeat may not be performed correctly.

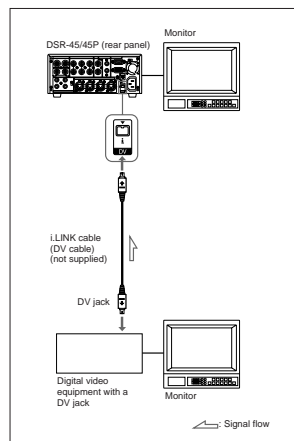
## Recording

This section describes the connections, settings and operations necessary to perform recording on this unit. The same settings and operations apply whether you are using the unit for dubbing or as a stand-alone recorder.

### Connections for Recording

#### To digital video equipment with a DV jack

The video and audio signals are sent with hardly any degradation, enabling high-quality recording. The signal flow is automatically detected so you do not need to make separate connections for input and output.



#### Notes

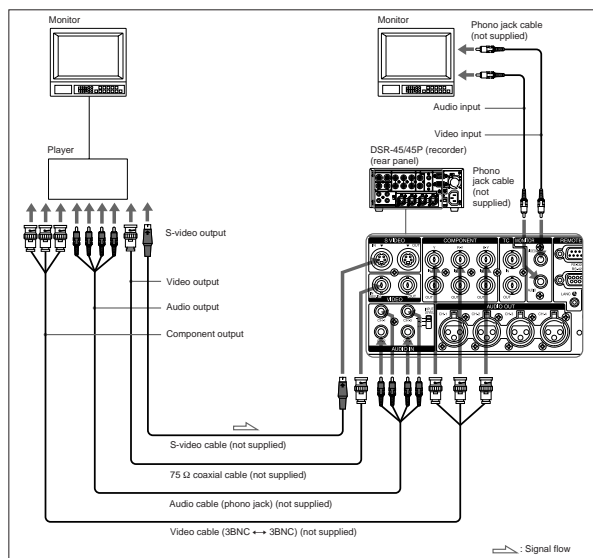
- With the DV connection, the sound is recorded in the same audio recording mode as that of the source tape. To record in a different audio recording mode from the source tape, use the analog connection instead.
- With the DV connection, data codes (recording date/time, camera data) recorded on the source tape are transmitted to the recorder (this unit). As a result, when you play back a recorded tape on this unit and press the DATA CODE button on the Remote Commander, the same data codes as those recorded on the source tape are displayed on the monitor screen. However, the contents of the cassette memory are not transmitted. If you want to transmit the contents of the cassette memory, use the duplicate function.
- If no picture appears via the DV jack, disconnect the i.LINK cable (DV cable), then reinsert it straight.
- When connecting a device that has a 6-pin DV jack to this unit, first, connect the plug of the cable to the 6-pin DV jack.
- If the unit is connected to a device equipped with a 6-pin DV jack, when you intend to disconnect or reconnect the DV cable, turn off the device and pull out the plug of its power cord from the AC outlet beforehand. If you connect or disconnect the DV cable while the device is connected to the AC outlet, high-voltage current (8 to 40 V) is output from the DV jack of the device to this unit, which may cause a malfunction.
- If you connect the output connectors of this unit to the input connectors of a player or that of a monitor, a humming noise may be generated or the image may be distorted. If these phenomena occur, perform one of the following:
  - Set DV EE OUT on the VTR SET menu to OFF.
  - Set the INPUT SELECT selector to a position where a signal is not currently being input.
  - Disconnect the cables.

Chapter 2 Playback and Recording

## Recording

#### To video equipment without a DV jack

You can connect this unit to video equipment without a DV jack. Use this unit as a recorder as follows.



Connect one of the following as a video cable: video cable (3BNC ↔ 3BNC), S-video cable, or 75 Ω coaxial cable. Use a conversion cable for the audio connection, depending on types of audio output connectors on the player (see page on 23 (GB)).

EE OUT on the VTR SET menu to ON. For details on the VTR SET menu, see "VTR SET menu" on page 90 (GB). If you connect the output connectors of this unit to the input connectors of the player, a humming noise may be generated or the image may be distorted. If these phenomena occur, set the INPUT SELECT selector to a position where a signal is not currently being input, or disconnect the cables.

- During recording, analog input signals can be output simultaneously from the DV jack for backup. Set DV

Chapter 2 Playback and Recording

- Distorted signals (e.g., when played back at a speed other than normal) may not be recorded or may be distorted.

### Settings for Recording

#### Preparation on the recorder (this unit)

#### Notes

- Before recording, set the date and time on the unit so that the recording time can be written into the search signal. You can set the date and time by setting CLOCK SET on the OTHERS menu. For details on the OTHERS menu, see "OTHERS menu" on page 92 (GB).
- Editing may not be possible with a signal that is copyright protected.

- 1 Power on the video monitor, then set the monitor's input according to the input signals.
- 2 Set up the player to play back a tape. For details, refer to the instruction manual of the player.
- 3 Turn this unit on.
- 4 Select an input signal by switching the INPUT SELECT selector on this unit.

**DV:** to record input signals from the DV jack  
**S VIDEO:** to record input signals from the S VIDEO IN connector  
**VIDEO:** to record input signals from the VIDEO IN REF IN connector  
**COMPONENT:** to record input signals from the COMPONENT IN connector

#### Note

Do not change the selector setting during recording. Otherwise, noise is output to the picture and sound and that portion will not be recorded properly.

- 5 Select the audio mode. (With a DV connection, skip this step.)

Select the desired mode by setting AUDIO MODE on the AUDIO SET menu.

Audio mode	Set the menu to
4-channel mode	FS32K
2-channel mode	FS48K

For details on the AUDIO SET menu, see "AUDIO SET menu" on page 88 (GB).

- 6 Set the INPUT LEVEL selector on the rear panel properly according to the audio level of the player.
- 7 Select the audio recording level adjustment mode using the AUDIO INPUT switch.

#### Note

You cannot adjust the recording level if you record signals input via the DV jack.

- 8 If necessary, adjust the audio recording level by turning the AUDIO REC LEVEL control knobs.

You can adjust the recording level with the AUDIO REC LEVEL control knobs if you have selected MANU in step 7. While looking at the audio level meters on the LCD monitor, turn the AUDIO REC LEVEL control knobs to adjust the recording level. Adjust the audio recording level so that it does not exceed 0 dB when the audio signal is at its maximum. If the recording level exceeds 0 dB, the recorded sound will be distorted.

#### Notes

- In the DV CAM format, there are two audio modes, with either two channels at FS48K or four channels at FS32K. It is not possible to select other modes (for example with two channels at FS32K).
- During recording, you cannot change the audio mode.
- If you intend to dub a sound on the tape after it has been recorded, set AUDIO MODE on the AUDIO SET menu to FS32K (4-channel mode) before recording.

For details on the AUDIO SET menu, see "AUDIO SET menu" on page 88 (GB).

Chapter 2 Playback and Recording

## Recording

### Recording Procedures

This section describes the procedures used to record signals sent from another VCR to this unit. For details on the procedures required when using a computer as a player, refer to the instruction manual of your computer or the user's manuals of the software installed on it.

- 1 After checking that the REC/SAVE switch on the cassette is set to REC, checking the tape for slack and confirming that the indicator is off, hold the cassette so that the tape window is facing upward, then insert it into this unit.

The cassette is automatically loaded into the unit and the tape will be ready to record.

For details on the REC/SAVE switch and checking the tape for slack, see "Notes on Video Cassettes" on page 30 (GB). For details on inserting a cassette, see "To insert a cassette" on page 31 (GB).

#### Note

Do not insert the cassette forcibly. The unit may be damaged.

- 2 Press the playback button on the player. The player starts playback.
- 3 On this unit, press the PLAY button while holding the REC button down.

The unit starts recording. If AUTO INDEX on the VTR SET menu is set to ON, the index is marked.

#### Note

When you do not want to mark an index at the beginning of the recording, set AUTO INDEX on the VTR SET menu to OFF. For details on the VTR SET menu, see "VTR SET menu" on page 90 (GB).

- To stop recording**  
Press the STOP button on this unit.

- To pause recording**  
Press the PAUSE button on this unit.

**To start recording using the Remote Control Unit (DSRM-20, not supplied)**  
On the Remote Control Unit, press the PLAY button while holding the REC button down.

### Recording Functions

#### Marking an index

By pressing the INDEX button on the unit or the INDEX WRITE button on the Remote Commander during recording, you can mark an index signal at any place on the tape. The index signal is inserted for five seconds. If you mark an index at the scene you want to search for, you can easily find the scene later. If AUTO INDEX on the VTR SET menu is set to ON, the index signal is marked automatically when the unit in the stop mode starts recording. While the index is being marked, the "INDEX MARK" indicator appears for about seven seconds on the Data screen (see page 27 (GB)). If you use a cassette with cassette memory, the index will also be marked in the cassette memory.

#### Notes

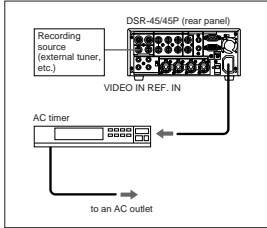
- You cannot mark a new index while the "INDEX MARK" indicator is being displayed.
- If you record on a portion of the tape where an index has been marked, the index will be erased. You cannot delete just an index while keeping the image or sound.
- You cannot mark an index during playback, duplicating or audio dubbing operations. The INDEX button and the INDEX WRITE button are disabled in these operations.
- The cassette memory space available limits the number of indexes that you can mark. When you use a previously recorded tape for repeated recordings, make more memory space available by erasing unwanted items using ITEM ERASE or ERASE ALL on the CM SET menu before you start recording.

**To use an index during playback**  
You will need the Remote Commander or the Remote Control Unit (DSRM-20, not supplied). For details on the playback functions using the Remote Commander, see "Searching using the search function" in "Playback Functions" on page 37 (GB).

AC timer recording

By connecting this unit to an external AC timer (not supplied), you can start recording at a preset time.

- 1 Connect this unit to an external AC timer (not supplied).



- 2 Insert a tape for recording.
- 3 Set the INPUT SELECT selector of this unit to select the input signal.
- 4 Set the TIMER selector on the front panel of this unit to REC.
- 5 Set the timer-on time on the connected AC timer.

At the preset time, the power of this unit turns on automatically and recording starts after a few seconds (no more than 30). Set the timer allowing a margin for the recording to start. You do not need to press the REC button.

**Note**  
When you intend to turn the unit off, press the STOP button on this unit to stop the tape transport operation beforehand.  
If you turn the unit off while a tape is running, for example, by using an AC timer, the unit or the tape may be damaged.

**If the tape ends before the recording source stops operation**  
The tape stops.

**To stop recording during timer recording**  
Press the STOP button on this unit.

**To release the AC timer recording mode**  
Set the TIMER selector on the front panel of this unit to OFF.

Chapter 2 Playback and Recording

# Using the Unit as a Player in an Editing System

## Notes on Usage in the Editing System

If you use the unit in an editing system, the following functions are limited.

**Notes on general**

- When using the RS-422A/232C connectors to connect this unit to other equipment, you cannot place the unit as a recorder.
- This unit is not equipped with a synchronization function. Adjust the edit timing with the editing controller, and set sync grade to Preroll & Play.
- To make the unit comply with a command sent from an editing controller to locate a scene, set FF/REW SPD on the VTR SET menu to SHUTTLEMAX.
- Except when editing with the RS-422A connection, if the unit has been in the pause mode for the period specified in the menu, the unit will go into the tape protection mode.
- When you control this unit from an editing controller connected to the RS-422A connector:
  - if the TIMER selector is set to REPEAT, and the tape reaches its end point by fast-forwarding using the FF button, jog dial control via the editing controller is not available.
  - if the tape reaches its beginning or end using the REW or FF button, the unit turns to playback pause mode at a point a few seconds from its beginning or end.

- The TIMER selector setting has higher priority than the REMOTE/LOCAL switch setting. In an editing system, set the TIMER selector to OFF.
- Even if the REMOTE/LOCAL switch is set to REMOTE, the Remote Commander may function depending on the setting of LOCAL ENBL on the REMOTE menu. If you want to disable the Remote Commander, set COMMANDER on the OTHERS menu to CONTROL S.

**Notes on editing**

- When you control this unit from an editing controller connected to the RS-422A/232C connector in the editing system, editing via a DV connection is less accurate than editing via an analog connection.
- This unit is not equipped with the first edit function.
- Since this unit does not support CTL, if the time code recorded on the tape is out of sequence or the tape has a blank portion between recorded portions, you may not be able to use it for editing. In such a case, adjust the editing IN point.

• When the COUNTER SELECT selector on the front panel of this unit is set to COUNTER, the value determined by calculation based on the time code is displayed. The value is a simple approximation. Therefore, if you intend to use this unit as a player in the editing system, set the COUNTER SELECT selector to TC and also set the edit mode (EDIT REFERENCE) of the editing controller to time code (TC).

Right switch (RM-450CE)

7	6	5	4	3	2	1	0
ON	–	OFF	ON	OFF	OFF	ON	ON

If the edit timing is out of adjustment, change the setting of items 0 to 2 of the right switch.

Settings on editing controller

When connecting an editing controller, make the following settings, according to the model used.

**FXE-100/120**

Set the VCR device constants as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
80	31	00	96	05	0A	8A	0A	08	FE	00	80	5A	FF	

**FXE-100P/120P**

Set the VCR device constants as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
81	31	00	7D	05	0A	8A	0A	08	FE	00	80	5A	FF	

**BVE-600/2000 (NTSC model)**

Set the VCR device constants as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
80	31	00	96	05	0A	8A	0A	09	FE	00	80	5A	FF	

**BVE-600/2000 (PAL model)**

Set the VCR device constants as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
81	31	00	7D	05	0A	8A	0A	09	FE	00	80	5A	FF	

**RM-450/450CE**

Set the DIP switches as follows:

Left switch

7	6	5	4	3	2	1	0
OFF	–	–	OFF	–	–	–	–

Right switch (RM-450)

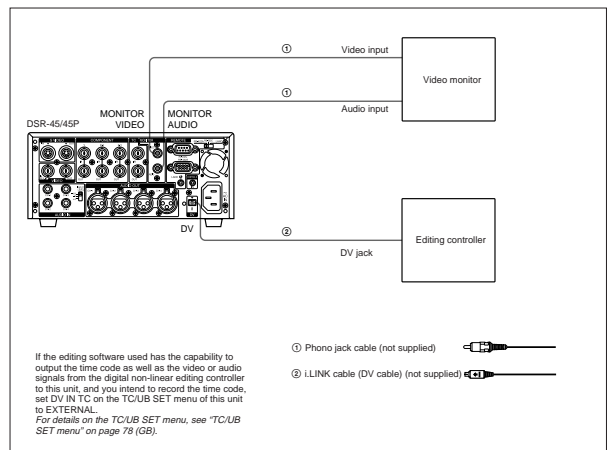
7	6	5	4	3	2	1	0
OFF	–	OFF	ON	OFF	OFF	ON	ON

Chapter 3 Using the Unit as a Player in an Editing System

## Connections for Digital Non-linear Editing

The unit can be connected to an editing controller via DV jacks to configure a digital non-linear editing system.  
The following figure shows a connection diagram for non-linear editing system in which this unit serves.

For connection of the editing controller and its peripheral devices, refer to the instruction manual of the editing controller and that of the editing software you use. Edit functions are specified by the editing software. For details on the editing methods used, refer to the instruction manual of the editing software.

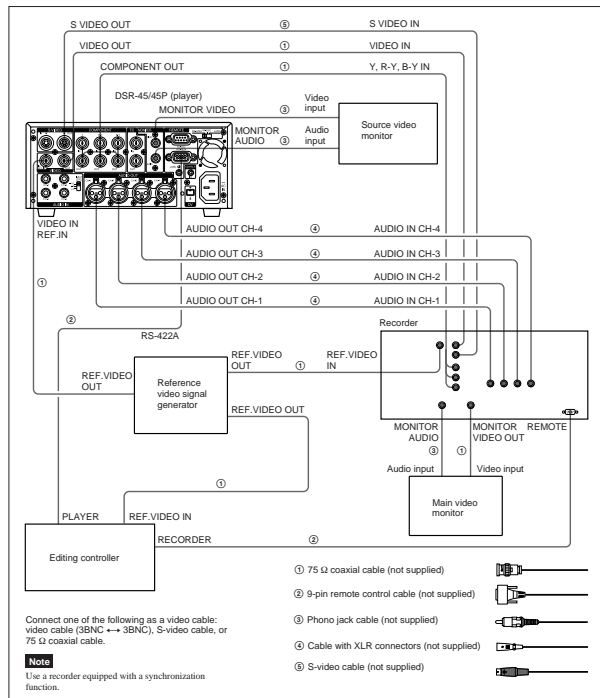


**Note**  
If the unit is connected to a device equipped with a 6-pin DV jack, when you intend to disconnect or reconnect the DV cable, turn off the device and pull out the plug of its power cord from the AC outlet beforehand. If you connect or disconnect the DV cable while the device is connected to the AC outlet, high-voltage current (8 to 40 V) is output from the DV jack of the device to this unit, which may cause a malfunction.

## Connections for a Cut Editing System

The following figure shows a cut editing system configuration that uses this unit as the player.

**Note**  
The preroll time of the setting on the editing controller is required to be more than five seconds.



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## Connections for a Cut Editing System

### Settings on the Editing Control Unit

For details on the settings of the Editing Control Unit, refer to "Adjusting Edit Timing" on page 56 (GB).

### Settings on the DSR-45/45P (player) and a recorder

Switch	DSR-45/45P	Recorder
REMOTE/LOCAL	REMOTE	REMOTE
REMOTE	RS-422A	

For details, refer to the instruction manual of the recorder.

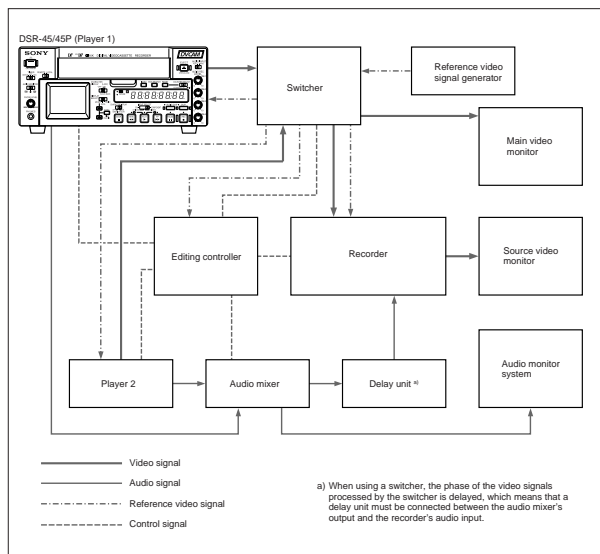
### About reference video signals

- In order to provide stable video and audio signals for analog editing, it is necessary for the built-in time base corrector (TBC) to operate correctly. To ensure this, input a reference video signal synchronized with the video signal to the VIDEO IN REF.IN connector.
- Set EXT SYNC on the VIDEO SET menu to ON.

## Connections for an A/B Roll Editing System

The following is an example of a configuration of an A/B roll editing system using the DSR-45/45P and a recorder.

The purpose of the following figure is to clearly indicate the flow of signals among the component devices in this system. The specific connections and the recorder settings for this system are described on the following pages.



**Note**  
Use a recorder equipped with a synchronization function.

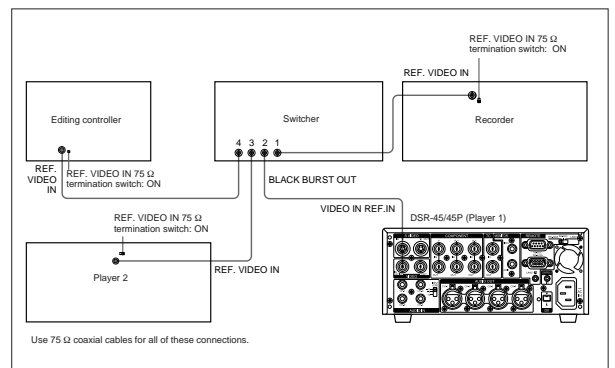
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## Connections for an A/B Roll Editing System

### Reference video signal connection

When you perform editing, be sure to use a reference video signal. For details on reference video signals, see "About reference video signals" on page 50 (GB).

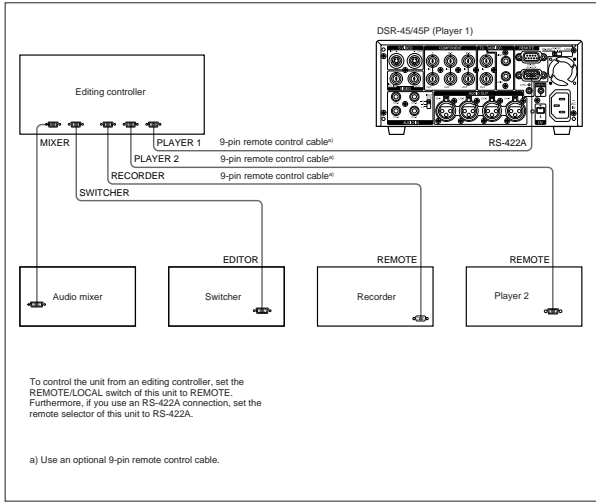
If you intend to make this unit perform playback synchronized with an external reference video signal, set EXT SYNC on the VIDEO SET menu to ON.



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**Control signal connections**

The following shows an example of the control signal connections needed to enable the editing controller to control all other A/B roll editing system devices.

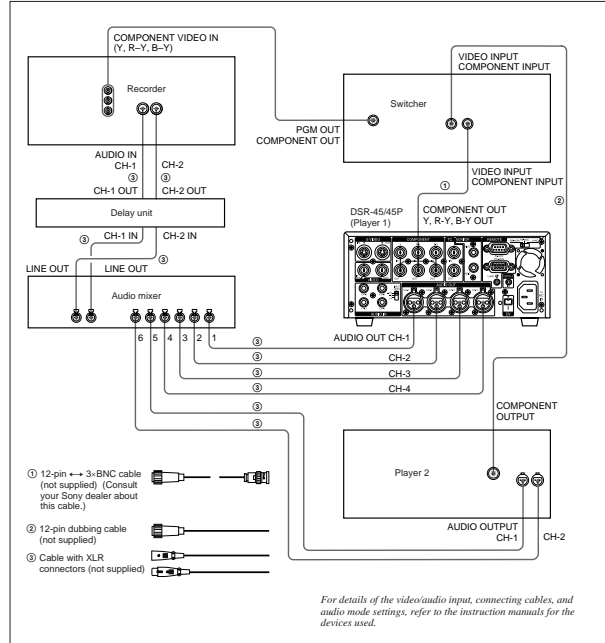


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**Connections for an A/B Roll Editing System**

**Video/audio signal connections**

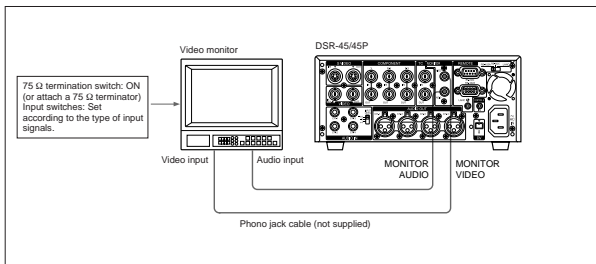
The following shows an example of video/audio signal connections in an A/B roll editing system. In this example, analog component signals are used as the video signals and XLR 3-pin connectors are used as audio output connectors.



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**Connection of a video monitor**

Set up the following connections to enable monitoring of video and audio signals on a video monitor. In addition to video signals, you can check time data, the DSR-45/45P's operation mode, alarm messages, and other information displayed as text on the monitor screen.



**Note**  
When you want to monitor the edited tape, use the monitor output connector on the recording VCR.

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**Adjusting Edit Timing**

For details, refer to the instruction manuals of the editing controller you use.

**Using this unit as a player with the RM-450/450CE**

- 1 Set the SYNCHRO selector to ON.
- 2 Set item number 3 of the SYSTEM PRESET right switch to OFF (it is set to OFF at factory).  
Setting this to OFF adjusts the synchronization of the recorder.
- 3 Execute the LEARN function.

**Using this unit as player 1 with the PVE-500**

When using this unit as player 2, the relevant menu item is indicated in ( ).

- 1 Set Sync Edit of SETUP-10 to OFF in the SETUP menu.
- 2 Set P1 DELAY (P2 DELAY) of SETUP-13 (SETUP-14) to LEARN in the SETUP menu.
- 3 Set REC Sync of SETUP-15 to On in the SETUP menu.
- 4 Set P1 Sync (P2 Sync) of SETUP-16 (SETUP-17) to OFF in the SETUP menu.
- 5 Execute the LEARN function.

**Using this unit as a player 1 with the FXE-120/120P**

- When using this unit as player 2, the relevant menu item is indicated in ( ).
- When using an FXE-100/100P that has been upgraded with an FXE-KIT1, the relevant menu item is indicated in [ ].

- 1 Display item 104 [301] SYNC GRADE in the SETUP menu, and set PLAYER1 (PLAYER2) to PREROLL & PLAY.
- 2 Display item 301 (302) [401 as player 1, 402 as player 2] DEVICE TYPE PLAYER1 (DEVICE TYPE PLAYER2) in the SETUP menu, and set the VCR device constants.  
*For details on device constants, see page 47 (GB).*
- 3 Execute the LEARN function.

If the edit timing is out of adjustment, follow the instruction given in "Adjusting the IN point" below.

**Adjusting the IN point**

If the actual edited point does not accurately coincide with the preset editing point, perform a fine adjustment of the edit timing using the SETUP menu of the editing controller. This improves the editing accuracy.

- 1 Display item 301 (302) [401 as player 1, 402 as player 2] DEVICE TYPE PLAYER1 (DEVICE TYPE PLAYER2) in the SETUP menu, and change it from DISABLE to ENABLE.
- 2 Repeat the editing process several times and check the shift of the editing point; that is, count the number of frames to be adjusted.

**Note**  
The editing results may differ between the DISABLE and ENABLE settings of SETUP menu item 301 (302) [401 as player 1, 402 as player 2]. Be sure to check the editing results after changing the setting to ENABLE.

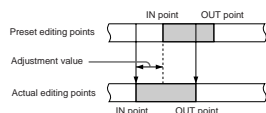
56 (GB) Chapter 3 Using the Unit as a Player in an Editing System



# Setting the Time Code and Adjusting the Video Signals

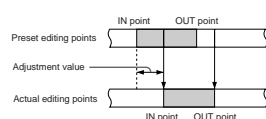
3 Change SETUP menu item 301 (302) [401 as player 1, 402 as player 2] from BYTE 01 to BYTE 10, and calculate the adjustment value.

**How to calculate the adjustment value**  
If the actual IN point shifts forward to the IN point preset on the player;



08 (default setting) + number of frames obtained in step 2  
Example: To adjust 5 frames  
08 + 05 = 0D  
The adjustment value is calculated in hexadecimal.

If the actual IN point shifts backward to the IN point preset on the player;



08 (default setting) - number of frames obtained in step 2  
Example: To adjust 5 frames  
08 - 05 = 03

4 Perform a trial editing process and confirm the results of the adjustment.

Repeat steps 3 and 4 until the best possible result is obtained.

## Using this unit as a player with the BVE-600

- 1 Set the sync grade (menu 2) to mode number 4, PREROLL & PLAY in auxiliary mode.
- 2 Set the VCR device constants in the setting mode.  
*For details on device constants, see page 47 (GB).*

- Notes**
- If FF/REW SPD on the VTR SET menu of this unit is set to FF/REW when the unit rewinds or fast-forwards the tape, the time code may not be displayed on the editing controller. In this case, set FF/REW SPD to SHUTTLEMAX.  
*For details on FF/REW SPD, see page 90 (GB).*
  - When editing, use a time code.
  - Depending on the type of device you are using as a recorder, the actual edited point may not accurately coincide with the preset editing point. In this case, adjust the VCR device constants of the editing controller (CONST8 (Start Delay) in BYTE-2 in BLOCK-2).

## Using this unit as a player with the BVE-2000

- 1 Set SYNC GRADE (synchronous accuracy) in the AUX mode to PREROLL & PLAY.
- 2 Display VTR CONSTANT or OPTION VTR CONSTANT on the setup menu, and set the VCR device constants.

- Notes**
- It is advisable to set JOG DIAL RESPONSE in SYSTEM CONFIGURATION on the setup menu to LOW.
  - When editing, use a time code.

Chapter 3 Using the Unit as a Player in an Editing System

## Setting the Time Code and User Bits

This unit can set, display, record and play back the time code and user bits. The unit can also output the time code read from the tape as an analog (LTC) signal when it is played back at normal speed, and receive an external analog time code (LTC) signal.

**Note**  
The items other than JOG TC OUT on the TC/UB SET menu can be set only when you record in DVCAM format.

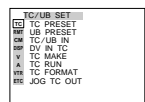
### Using the Internal Time Code Generator

You can set the initial time code value generated by the internal time code generator. In addition, you can set the user bits to record data such as the date, time, scene number, reel number, or other useful information. The time data settings are set by using the menu.  
*For details on the menu, see "Chapter 6 Adjusting and Setting Through Menus" on page 76 (GB).*

**To set the initial time code value**  
This section describes how to set the time code's initial value.

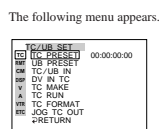
- Notes**
- The time code can be set only in a DVCAM format recording. It cannot be set in a DV format recording. Make sure to set REC MODE on the VTR SET menu to DVCAM.
  - To set the initial time code value, you need to set TC/UB IN on the TC/UB SET menu to INTERNAL and TC MAKE to PRESET beforehand.  
*For details on TC/UB IN and TC MAKE, see "TC/UB SET menu" on page 78 (GB).*
  - While you are setting the initial time code value using a device connected to the RS-422A/232C connector, TC PRESET on the TC/UB SET menu is disabled.

- 1 Display the menu on the monitor.  
*For details on displaying the menu, see "Operating the Menus" on page 76 (GB).*

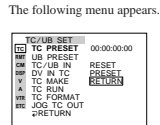


(The TC FORMAT submenu is only available on the DSR-45.)

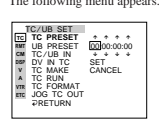
2 Press the  $\uparrow/\downarrow$  buttons to select TC/UB SET, then press the EXEC button.



3 Press the  $\uparrow/\downarrow$  buttons to select TC PRESET, then press the EXEC button.



4 Press the  $\uparrow/\downarrow$  buttons to select PRESET, then press the EXEC button.



5 Set the first two digits. Press the  $\uparrow/\downarrow$  buttons to select the number, then press the EXEC button.

6 Repeat step 5 to set the other digits.

7 Press the  $\uparrow/\downarrow$  buttons to select SET, then press the EXEC button.

The initial time code value is set and the menu display returns to that of step 2.

8 Press the  $\uparrow/\downarrow$  buttons to select  $\rightarrow$ RETURN, then press the EXEC button.

The menu display returns to that of step 1.

**To cancel the time code setting**  
Select CANCEL in step 7, then press the EXEC button.

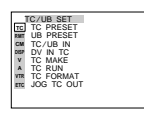
**To reset the time code**  
Select RESET in step 4, then press the EXEC button.

**To set the value of the user bits**

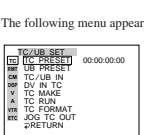
You can set the user bits as eight-digit hexadecimal values (base 16) to have the date, time, scene number, and other information inserted into the time code track.

- Notes**
- The user bits can be set only in a DVCAM format recording. They cannot be set in a DV format recording.
  - To set the user bits, you need to set TC/UB IN on the TC/UB SET menu to INTERNAL beforehand.  
*For details on TC/UB IN, see "TC/UB SET menu" on page 78 (GB).*
  - While you are setting the user bits using a device connected to the RS-422A/232C connector, UB PRESET on the TC/UB SET menu is disabled.

- 1 Display the menu on the monitor.  
*For details on displaying the menu, see "Operating the Menus" on page 76 (GB).*

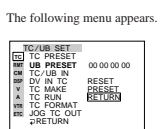


2 Press the  $\uparrow/\downarrow$  buttons to select TC/UB SET, then press the EXEC button.

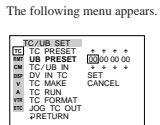


## Setting the Time Code and User Bits

3 Press the  $\uparrow/\downarrow$  buttons to select UB PRESET, then press the EXEC button.



4 Press the  $\uparrow/\downarrow$  buttons to select PRESET, then press the EXEC button.



5 Set the first two digits. Press the  $\uparrow/\downarrow$  buttons to select the number, then press the EXEC button.

6 Repeat step 5 to set the other digits.

7 Press the  $\uparrow/\downarrow$  buttons to select SET, then press the EXEC button.

The user bits are set and the menu display returns to that of step 2.

8 Press the  $\uparrow/\downarrow$  buttons to select  $\rightarrow$ RETURN, then press the EXEC button.

The menu display returns to that of step 1.

**To cancel the user bits setting**  
Select CANCEL in step 7, then press the EXEC button.

**To reset the user bits**  
Select RESET in step 4, then press the EXEC button.

**To select the time code/user bits to be recorded on the tape**

You can set the time code and user bits to be recorded on the tape by setting TC/UB IN on the TC/UB SET menu.

- INTERNAL:** Uses the internal time code/user bits.
- TC/UB EXT:** Uses the external time code/user bits.
- TC EXT:** Uses the external time code and internal user bits.
- UB EXT:** Uses the internal time code and external user bits.

- Notes**
- This unit has a DV jack. The time code input or output is different when you connect the unit to an external device via this DV jack or via another input/output connector.  
*For details, see "DSR-45/45P time codes" on page 63 (GB).*
  - The time code output from this unit has some restrictions.  
*For details, see "Notes on the Time Codes" on page 64 (GB).*

**To select the time code to be recorded when DV signals are recorded in DVCAM format**

Set DV IN TC on the TC/UB SET menu to select whether to record the internal time code or an external one.

- INTERNAL:** Records the time code internally generated.
- EXTERNAL:** Records the time code with video and audio signals input via the DV jack.

- Notes**
- When this item is set to EXTERNAL, the setting of TC/UB IN on the TC/UB SET menu turns to invalid. The time code input via the DV jack and the user bits set in UB PRESET are recorded.
  - When you set REC MODE on the VTR SET menu to DV SP, this item cannot be used. Even if this item is set to EXTERNAL, when you set REC MODE on the VTR SET menu to DV SP, the setting becomes invalid and the unit records the internal time code.

Chapter 4 Setting the Time Code and Adjusting the Video Signals

## Synchronizing the Time Codes

- When this item is set to EXTERNAL, the INPUT SELECT selector on the front panel is set to DV, and no signal is input via the DV jack, or the software of the editing controller does not output a time code, if you start recording, bars (---) are recorded as time code. At the point that the input of a signal begins, the time code of that signal will be recorded.
- When this item is set to EXTERNAL, if you input time code to the DV jack that is not continuous or does not advance correctly, the value of the recorded or displayed time code may not be equal to the actual value of the input one. If you use a tape with this problem, you may not be able to perform search or edit, depending on the devices you use.

### To set the time code when the recording starts

Set TC MAKE on the TC/UB SET menu to select the time code to be recorded when recording starts.

**REGEN:** The time code value is set to continue the time code from the time code already recorded on the tape. If you start recording from a blank portion of the tape, the time code starts from 00:00:00.00.

**PRESET:** The time code starts from the value set in TC PRESET on the TC/UB SET menu.

### To set the advancement mode

Set TC RUN on the TC/UB SET menu to switch the advancement mode (counting up).

**REC RUN:** Time code advances only while recording.

**FREE RUN:** Time code advances even when the unit is not recording. This mode is used to set the current time as the initial time code value, or to synchronize the internal time code to an external one.

**Notes**

- If you set the advancement mode to FREE RUN, the time code will be updated by the internal clock while the unit's power is off. The time code may have been delayed or advanced somewhat if you turn on the unit power again, play back a tape, or set the INPUT SELECT selector to DV.

- If the internal backup battery charge is exhausted, the time code of the FREE RUN setting will be initialized. The internal backup battery is fully charged if you connect the power to the unit for about 8 hours. A fully charged internal battery can run for about two weeks.

### To set the frame mode (DSR-45 only)

Set TC FORMAT on the TC/UB SET menu to switch the frame mode.

**AUTO:** Automatically sets the mode in accordance with the loaded tape.

If nothing is recorded on the tape, the mode is set to the non-drop frame mode. If the unit cannot read the frame mode correctly from the tape, the unit will use the mode that was set in the last position it was able to read correctly on the tape. If you remove the cassette, the mode of the last position it was able to read correctly is cleared and the mode is set to the non-drop frame mode. If TC MAKE is set to PRESET, the mode is also set to the non-drop frame mode.

**DF:** Selects the drop frame mode.

**NDF:** Selects the non-drop frame mode.

**Note**

In a DV format recording, the drop-frame mode is used automatically.

### To switch the time code output when playing at various speeds (JOG)

Set JOG TC OUT on the TC/UB SET menu to control the time code output from the TC OUT connector when the tape is played at various speeds.

**OFF:** Does not output the time code.

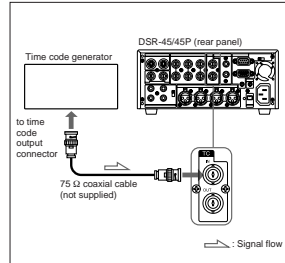
**ON:** Outputs the time code.

**Note**

Continuous time code is output only when the tape is played at normal speed. When the unit is in the jog or search mode, discontinuous time code is output.

You can synchronize the internal time code generator of the unit with an external time code signal (LTC).

### Connecting to the Time Code Generator



### To synchronize the internal time code to an external time code

- Set the INPUT SELECT selector to other than DV.
- Input an external time code (LTC) signal to the TC IN connector of the unit.
- Set TC/UB IN on the TC/UB SET menu to TC&UB EXT or TC EXT.
- Set TC RUN on the TC/UB SET menu to FREE RUN.

The internal time code generator locks onto the external time code and starts advancing. Once the internal time code generator has become synchronized in this way, you can disconnect the external time code input and this unit will maintain the time code.

**Notes**

- This unit has a DV jack. The time code input/output with a DV connection is different from that with other analog connections. For details, see "DSR-45/45P time codes" on page 63 (GB).
- The time code output from this unit has some restrictions. For details, see "Notes on the Time Codes" on page 64 (GB).

### To confirm external synchronization

Before you start recording, check that the internal time code is synchronized with the external time code. Press the STOP button to turn the unit to the stop mode, then press the REC button. Look at the time counter display and check that the time code value displayed there matches the external time code value.

## DSR-45/45P time codes

This unit has a DV jack. The time code output and recorded on the tape differs as shown below when the INPUT SELECT selector is set to DV and when it is set to other than DV.

### When DV IN TC is set to INTERNAL

	TC/UB IN menu	INPUT SELECT selector	Mode	TC IN	The time code output from the TC OUT connector and the time code/user bits recorded on the tape
Playback			Playback Audio dubbing		Time code/user bits on the tape
			Playback at various speeds <sup>a)</sup> DUB1 <sup>b)</sup>		JOG TC OUT: ON - Time code/user bits on the tape; JOG TC OUT: OFF - Mute (No output)
EE	INTERNAL	DV	Duplicate DUP1 <sup>b)</sup>		Time code/user bits of another device connected to the DV jack <sup>c)</sup>
			Recording Recording Pause REC1 <sup>b)</sup>		Time code/user bits internally generated <sup>d)</sup>
			S VIDEO VIDEO COMPONENT (Except DV)		Time code/user bits internally generated <sup>d)</sup>
	TC&UB EXT TC EXT UB EXT	DV	Duplicate DUP1 <sup>b)</sup>		Time code/user bits of another device connected to the DV jack <sup>c)</sup>
			Recording Recording Pause REC1 <sup>b)</sup>		Time code/user bits internally generated <sup>d)</sup>
			S VIDEO VIDEO COMPONENT (Except DV)		Recording Recording Pause REC1 <sup>b)</sup>

### When DV IN TC is set to EXTERNAL and the INPUT SELECT selector is set to DV

	Mode	The time code output from the TC OUT connector and the time code/user bits recorded on the tape
EE	Duplicate DUP1 <sup>b)</sup>	Time code/user bits of another device connected to the DV jack <sup>c)</sup>
	Recording Recording Pause REC1 <sup>b)</sup>	Time code input of another device connected to the DV jack and user bits internally generated <sup>d)</sup>

a) This includes stop, fast-forward or rewind. If the unit cannot read the time code on the tape correctly, the counter displays "----" and the time code is not output from the TC OUT connector.

b) "DUB1", "DUP1" and "REC1" represent the state of the unit when you press each of these buttons (AUDIO DUB, DUP or REC) in the stop mode. If the counter displays "----", the time code is not output from the TC OUT connector when you press the AUDIO DUB button in the stop mode.

c) The time code is also displayed on the time counter display in the display window.

d) When TC/UB IN is set to TC EXT, the user bits set in UB PRESET are recorded. When TC/UB IN is set to UB EXT or TC&UB EXT, "00 00 00" is recorded as the user bits.

e) Only when REC MODE on the VTR SET menu is set to DVCAM. When REC MODE is set to DV SP, the internally generated time code is output.

## Synchronizing the Time Codes

### Notes on the Time Codes

Time codes output from the unit have the following restrictions:

- The unit outputs an EE signal when it is in recording or recording pause modes, or when you press the REC button.

While the unit is outputting an EE signal, only the time code from an external device that is connected to the TC IN connector will be through-output from the TC OUT connector when the INPUT SELECT selector is set to other than DV, and TC/UB IN on the TC/UB SET menu has been set to other than INTERNAL. (The time code and user bits that are internally generated are not output from the TC OUT connector.)

In this case, as a result, the time code will not be output from the TC OUT connector when the time code is not input from the external device connected to the TC IN connector.

You need to set TC/UB IN on the TC/UB SET menu to INTERNAL to output a time code from the TC OUT connector even if no time code has been input from an external device connected to the TC IN connector.

To set the unit to inherit a time code from the external device even after you set TC/UB IN to INTERNAL from some other setting, follow the steps below.

- Match the settings (used when TC/UB IN is set to INTERNAL) of the unit with the external device format. (See the duplicate below.)
- After setting TC/UB IN to other than INTERNAL, connect the external device to the TC IN connector to input the time code.
- Set TC/UB IN on the TC/UB SET menu to INTERNAL.
- Disconnect the external device from the TC IN connector.

**Setting example**

If the time code setting of the external device is TC: Drop frame; UB: 12 34 56 78.

This unit's menu	Setting
TC RUN	FREE RUN
TC FORMAT	DF
UB PRESET	12 34 56 78

(The TC FORMAT submenu is only for the DSR-45.)

- The internal time code is output with the phase synchronized to the line-outs (COMPONENT OUT, S VIDEO OUT, VIDEO OUT) when TC/UB IN on the TC/UB SET menu is set to INTERNAL. (When the EE signal is output, the output signals of the line-outs are delayed for one line from the input video signal when component video or S-video is input, and delayed for two lines from the input video signal when composite video (VIDEO IN REF.IN) is input.)
- When inputting signals from the DV jack, if you set DV IN TC to INTERNAL, the time code and user bits generated internally are recorded under the INTERNAL setting in TC/UB IN on the TC/UB SET menu. If you want to record with the time code input from the DV jack, set DV IN TC to EXTERNAL or use the duplicate function.
- When REC MODE on the VTR SET menu is set to DVCAM, if you set DV IN TC to EXTERNAL, this unit records the time code input via the DV jack and the user bits internally generated, and the TC OUT connector outputs the same time code and user bits.
- During the duplicate operation, this unit records the time code and user bits on the source tape currently being duplicated and the TC OUT connector outputs the same time code and user bits. The time code and user bits are output with the phase synchronized to the line-outs (COMPONENT OUT, S VIDEO OUT, VIDEO OUT) during the duplicate operation. For details on the duplicate function, see "Duplication (generating a work tape with the same time code)" on page 69 (GB).
- During the audio dubbing operation, the TC OUT connector outputs the time code and user bits on the tape currently being played. For details on audio dubbing, see "Audio Dubbing" on page 74 (GB).
- To display and check the time code currently being advanced with the FREE RUN setting, press the REC button when all the conditions below are met.
  - The unit is in the stop mode.
  - The COUNTER SELECT selector is set to TC.
  - TC RUN on the TC/UB SET menu is set to FREE RUN.
  - TC MAKE on the TC/UB SET menu is set to PRESET.

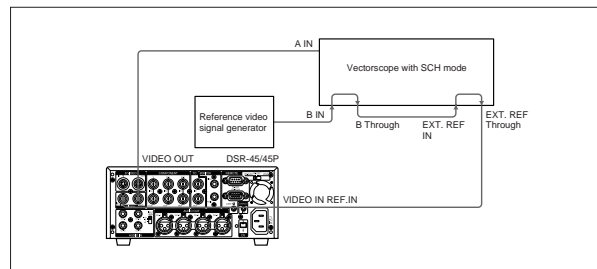
If you press the STOP button, the time code display returns to the last time code value it was able to read on the tape.



- If the external time code input is discontinuous or does not advance correctly, the time code input may be delayed compared to the time code recorded on tape or the time code shown on the display of this unit. If there is a discontinuous time code on your recorded tape, you may not be able to edit or search correctly, depending on the device connected to this unit.

## Adjusting the Sync and Subcarrier Phases of the Video Signals

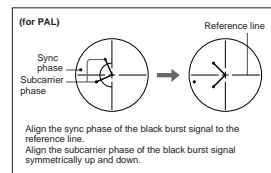
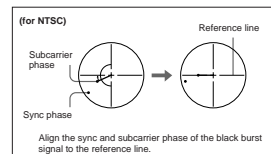
When you adjust the phases of the video signals, follow the steps below.



### Performing a phase adjustment operation

- 1 Press the SCH button on the vectorscope.  
The vectorscope goes into the "SCH" mode.
- 2 Press the B channel button on the vectorscope.  
The black burst signal from the reference video signal generator is selected.
- 3 Press the EXT button on the vectorscope.  
The vectorscope goes into the external synchronization mode.

- 4 Adjust the phase synchronization control on the vectorscope so that the sync and subcarrier phases are close to the reference line.

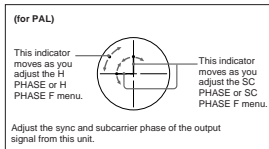
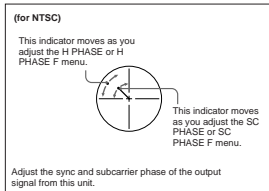


Chapter 4 Setting the Time Code and Adjusting the Video Signals

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- 5 Set EXT SYNC on the VIDEO SET menu to ON, then play back a tape on this unit.
- 6 Press the A channel button on the vectorscope.  
The vectorscope displays the sync phase and subcarrier phase (composite signals only) of the signal from this unit.
- 7 Adjust the SYNC control using H PHASE on the VIDEO SET menu for rough adjustment, then adjust H PHASE F for fine adjustment, so that the output from this unit on channel (A) is in correct phase alignment with the black burst signal on channel (B).

- 8 Adjust the SC control using SC PHASE on the VIDEO SET menu for rough adjustment, then adjust SC PHASE F for fine adjustment, so that the output from this unit on channel (A) is in correct phase alignment with the black burst signal on channel (B).

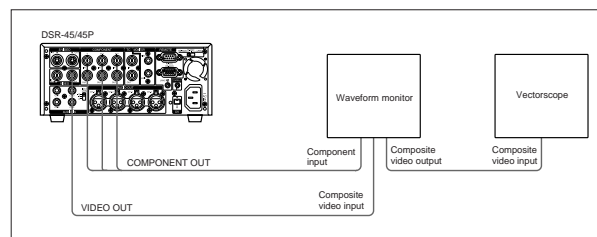


**Note**  
When component signals are used, the subcarrier phase indicator does not appear.

## Adjusting the Signals

You can adjust each signal level of the component output signal and the chrominance signal gain level of the composite signal. Connect the reference video (black burst) signal one-to-one with a device that generates the reference video signal, or make a loop-through connection. If the device has a terminal switch, terminate the connection properly. You need both a waveform monitor and a vectorscope to display the component signals.

- Notes**
- You cannot adjust the Y level of the component signal, that of the composite signal and that of the S-video signal independently.
  - The chrominance levels of the composite and S-video signals are affected by the adjustment of the R-Y and B-Y levels of the component signal.
  - Adjust the output level while playing the tape.
  - You cannot adjust the signals output from the DV jack.



### Adjusting the component signal level

- 1 Play back a tape to output the signals from the Y, R-Y and B-Y connectors of the COMPONENT OUT connectors.  
The waveform monitor displays the relevant information.
- 2 Adjust the Y, R-Y, and B-Y signal levels in PB LEVEL on the VIDEO SET menu.  
**Y LEVEL:** Adjusts the Y signal level.  
**R-Y LEVEL:** Adjusts the R-Y signal level.  
**B-Y LEVEL:** Adjusts the B-Y signal level.  
For details on "PB LEVEL," see "VIDEO SET menu" on page 86 (GB).

### Adjusting the chrominance signal gain level of the composite signal

- 1 Play back a tape to output the signals from the VIDEO OUT connector.  
The vectorscope displays the relevant information.
- 2 Adjust the chrominance signal gain level in PB LEVEL on the VIDEO SET menu.  
For details on "PB LEVEL," see "VIDEO SET menu" on page 86 (GB).

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Chapter 4 Setting the Time Code and Adjusting the Video Signals

# Duplication and Audio Dubbing

## Duplication (generating a work tape with the same time code)

If you copy a source tape using the DUP (duplicate) button on this unit, you can copy the time codes recorded on the source tape as they are. You can easily make a work tape having the same time codes as the source tape.

The duplicate function on this unit works only when using a source tape recorded in DVCAM format and with DV connections.

This unit functions as a recorder. To perform duplication on this unit, make sure to change REC MODE on the VTR SET menu to DVCAM first.

### To set the duplicate mode

This unit has three duplicate modes. Set DUPLICATE on the VTR SET menu to select a duplicate mode as follows.

- AUTO [C] (AUTO TAPE COPY WITH CASSETTE MEMORY COPY):** The player and the recorder automatically rewind the tape to the beginning to start duplicating. The cassette memory is also duplicated.
- AUTO [C] (AUTO TAPE COPY):** The player and the recorder automatically rewind the tape to the beginning to start duplicating. The cassette memory is not duplicated.

**MANUAL [C] (MANUAL TAPE COPY):** The tape is duplicated from any location. The cassette memory is not duplicated.

### Duplicating a tape

The duplicate procedure differs depending on the duplicate mode.

#### Notes

- If you operate the player while duplicating, the duplicate process may be interrupted and the tape may not be correctly duplicated. Do not operate the player while duplicating.
- You can duplicate a tape regardless of the DISPLAY SELECT selector setting, but the duplication screen will be displayed only when the DISPLAY SELECT selector has been set to DATA.

### AUTO [C] or AUTO [C] duplicate mode

- Connect this unit and the player using an i.LINK cable (DV cable, not supplied). After turning on the power of this unit and the player, set the INPUT SELECT selector on this unit to DV.
- Press the STOP button on this unit to stop the tape transport operation.

(Continued)



Chapter 5 Duplication and Audio Dubbing

## Duplication (generating a work tape with the same time code)

- While holding the DUP button down, press the PLAY button on this unit.

This unit and the player will automatically rewind the tape to the beginning. This unit enters the duplicate-standby mode. The player enters the playback pause mode. Then the DUP and PLAY indicators on this unit light and the duplication starts.

### If you press the PAUSE and PLAY buttons while holding the DUP button down in step 3

This unit and the player will automatically rewind the tape to the beginning. This unit enters the duplicate-standby mode. The player enters the playback pause mode. This unit does not start duplication until you press the PAUSE button.

### To stop duplication

Press the STOP button on this unit.

#### Notes

- You cannot pause during a duplicate process.
- Before you start duplication, make sure that the player has finished loading the cassette.
- The duplication starts after the i.LINK communication is established so that the first part of the source tape is dropped on the copied tape.
- Set auto repeat to OFF when the player has an auto repeat function and set auto rewind to ON when the player has an auto rewind function.
- If the player has a still timer function, set the still timer to the longest time possible to ensure enough time for rewinding the tape to the beginning.
- If you have selected AUTO [C] duplicate mode, the cassette memory will be duplicated after the tape has been duplicated. While the cassette memory is being duplicated, an indicator showing the progress of the duplication appears on the LCD monitor and on the MONITOR VIDEO output. Duplicating the cassette memory takes up to a few minutes depending on the amount of data.
- In the following cases, duplication of the cassette memory will be cancelled and the duplicate operation will be completed without duplicating the cassette memory.
  - If, while the cassette memory is being duplicated;
    - you press the STOP button.
    - you turn off the power of this unit or of the player.
    - you eject the cassette.
    - you disconnect the DV cable.

If the duplication of the cassette memory stops for some reason, the cassette memory on the duplicated tape will be completely erased.

- When both the recorder and the player are DSR-45/45Ps, set the REMOTE/LOCAL switch of the player as well as that of the recorder to LOCAL.
- If you operate the player while duplicating and the PLAYER UNCONTROLLABLE warning message appears and duplication is stopped, press the STOP button on this unit, then repeat the procedure from step 3.
- Normally, the player and recorder rewind their tapes automatically after duplication. However, depending on the specifications, some players do not.

### MANUAL [C] duplicate mode

- Connect this unit and the player using an i.LINK cable (DV cable, not supplied). After turning on power of this unit and the player, set the INPUT SELECT selector on this unit to DV.
- Locate the points where you want to start playback and recording.
- Press the STOP button on this unit to stop the tape transport operation.
- While holding the DUP button down, press the PLAY button on this unit.

This unit enters the duplicate-standby mode. The player enters the playback pause mode. Then the DUP and PLAY indicators on this unit light and duplication starts.

**To adjust the point where duplication starts**  
In step 4, while holding the DUP button down, press the PAUSE button and the PLAY button. This unit will not start duplication until you press the PAUSE button again. After confirming that the PLAYER display has changed to READY (flashing) on the LCD monitor, adjust the duplication start point using the player, then press the PAUSE button on this unit to start duplication.

### To stop duplication

Press the STOP button on this unit.

## Duplication (generating a work tape with the same time code)

### Warnings about duplication

If an error occurs during duplication, a STOP/CAUTION number and warning message will be displayed on the LCD monitor and the MONITOR VIDEO output screen. Except for STOP/CAUTION No. 60 (RECORDER: SHORTER TAPE), "Err" is displayed on the display window.

The following table lists these warnings and messages. If a warning message is displayed, check this table and take the appropriate action.

STOP/CAUTION No.	Warning Message	Cause/Remedy
00	RECORDER: (DV IN) NOT SELECTED	The INPUT SELECT selector on the recorder (this unit) is not set to DV. → Set the INPUT SELECT selector to DV.
01	i.LINK CABLE: DISCONNECTED	The DV cable is not connected correctly. → Connect the DV cable correctly.
02	i.LINK CABLE: MULTI CONNECTION	There are multiple DV connections or the DV connection is looped. → You cannot connect multiple devices. Connect only one player to this unit.
03	i.LINK CABLE: BUS RESET	The DV cable has been unplugged and plugged in again. → Check the DV cable connection. Try to duplicate again.
10	PLAYER: RECORDING	The player is in the recording mode.
11	PLAYER: NO CASSETTE	There is no cassette in the player.
12	PLAYER: UNCONTROLLABLE	The player cannot be controlled, or the duplicate mode has been set to MANUAL [C] and the source tape has reached the end of the tape.
13	PLAYER: UNCONTROLLABLE	The player rejects control.
14	PLAYER: UNCONTROLLABLE	The player is disabled or is in a different mode than the recorder (this unit) has requested.
15	PLAYER: NOT DVCAM	The source tape is not recorded in the DVCAM format. → You can only duplicate a tape recorded in the DVCAM format.
16	PLAYER: UNCONTROLLABLE	The player has been manually operated or the player's protection function cancelled the playback pause mode when the duplicate mode was set to AUTO [C] or AUTO [C].
18	PLAYER: TAPE INFO. UNKNOWN	The information on the cassette in the player cannot be read. → If the cassette information is correct, clean the terminal on the cassette and insert the cassette again (see page 99 (GB)).
19 <sup>a</sup>	PLAYER: CM ERROR	The player could not read the cassette memory during duplication. → If the cassette memory is correct, insert the cassette again.
21	PLAYER: EMERGENCY STOP	The player has detected self-diagnostics. → Refer to the instruction manual of the player.
22	PLAYER: DEW STOP	Moisture condensation has occurred in the player. → Refer to the instruction manual of the player.
35	RECORDER: DVCAM NOT SELECTED	REC MODE on the VTR SET menu of the recorder (this unit) is set to DV SP. → Set REC MODE to DVCAM.
37	RECORDER: NO CM	The cassette in the recorder (this unit) does not have cassette memory, but the recorder tried to duplicate the cassette memory. → Insert a cassette with cassette memory.
39	RECORDER: CM ERROR	The cassette memory data cannot be written in the cassette in the recorder (this unit). → Clean the terminals on the cassette (see page 99 (GB)).
40	RECORDER: STOP	The recorder (this unit) stopped while duplicating.



Chapter 5 Duplication and Audio Dubbing



Chapter 5 Duplication and Audio Dubbing

### Detecting a blank portion during duplication

If the unit detects a blank portion on the source tape during duplication, the skip function will automatically skip the blank portion, reducing the length of the recorded part of the tape. (This function is available only when the duplicate mode is AUTO [C] or AUTO [C].)

The operations of the player and recorder (this unit) when a blank portion is detected are as follows:

Detected status on source tape	Player/Recorder (this unit) operation
Detects a blank portion	Player: Continues playing the tape. Recorder: Continues recording.
10 seconds after detection of a blank portion	Player: Continues playing the tape another 10 seconds and searches forward. Recorder: Stops.
Detects next recorded portion	Player: Rewinds the tape at about 2 times normal speed to the location immediately before the blank portion ends. Recorder: Remains stopped.
Returns to the location immediately before the blank portion ends	Player: After entering the playback pause mode, starts playing the tape. Recorder: After entering the recording pause mode, starts recording.

This unit performs the above operations automatically, reducing the blank portion by 10 or more seconds in duplicating a tape.

#### Notes

- If the duplicate mode has been set to MANUAL [C], this unit will not skip a blank portion even if detects one.
- Depending on the specifications, the skip function may not work on some players.
- When this unit resumes duplication, the first part of the recorded portion on the source tape may be dropped on the copied tape.
- A recorded portion of less than one minute between two blank portions may not be duplicated.

## Audio Dubbing

STOP/ CAUTION No.	Warning Message	Cause/Remedy
41		The recorder (this unit) detected self-diagnostics. → For details on self-diagnostics, see page 100 (GB).
42		Moisture condensation has occurred in the recorder (this unit). → If a cassette is in the unit, remove the cassette and power on and wait more than one hour.
43	RECORDER: HEAD CLOG	The recorder's (this unit) video heads are clogged. → Clean the video heads with the supplied cleaning cassette (see page 98 (GB)).
44	PLAYER: COPYRIGHT PROTECTED	A copyright protected signal is recorded on the cassette in the player. → You cannot copy a copyright protected signal.
50	RECORDER: SMALLER CM SIZE	The cassette memory in the recorder (this unit) is smaller than the cassette memory on the source tape. → Use a cassette that has larger cassette memory than the one on the source tape. (This error is displayed only when the duplicate mode has been set to AUTO.)
51	RECORDER: SHORTER TAPE	The player's cassette tape length is longer than that of the recorder's (this unit) cassette and duplication has failed. → Use a cassette with a tape length that is longer than the one in the player.
60	RECORDER: SHORTER TAPE	The player's cassette tape length is longer than that of the recorder's (this unit) cassette and there is a possibility that the duplication may fail. → Use a cassette with a tape length that is longer than the one in the player. (This message is displayed as a caution for 10 seconds after the start of duplication.)

- If the player could not read the cassette memory when duplication started, this unit determines that the player's cassette does not have cassette memory and duplication of the cassette memory will be cancelled. The duplicate operation will be completed without duplicating the cassette memory and this warning message will not be displayed.
- This unit detects tape length from the cassette memory data. Even if two tapes with the same length in the DVCAM format have been inserted in the player and the recorder (this unit), complete duplication may not be done due to the tape length error and this warning may not be displayed. As a result, if you search the cassette memory in the duplicated tape, the tape may not have a search point even though the cassette memory has the search point data.
- If the cassette in the player does not have cassette memory, this warning is not displayed.

**Note**

If any warning message not listed in the table is displayed, consult your Sony dealer.

Chapter 5 Duplication and Audio Dubbing

Chapter 5 Duplication and Audio Dubbing

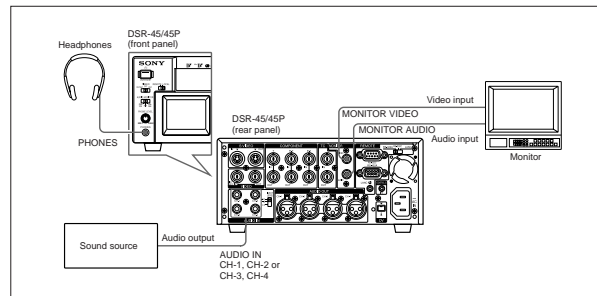
You can record just sound on a recorded tape. (Audio dubbing)

**Note**

You can dub the sound onto a DVCAM-formatted tape (recorded) in the 32 kHz audio mode (4-channel/12 bits). You cannot dub the sound on a tape in the 48 kHz audio mode (2-channel/16 bits). If the audio mode of the recorded tape is 32 kHz, you can dub the sound regardless of the AUDIO MODE setting on the AUDIO SET menu. For details on "AUDIO MODE," see "AUDIO SET menu" on page 88 (GB).

### Connection of external devices

The following shows an example of a basic connection for audio dubbing.



### Selecting the input channels for audio dubbing

You can dub the sound in the following channel combinations: channels 1/2 or channels 3/4. Set AUDIO DUB on the AUDIO SET menu to select the input channels for audio dubbing. **CH1,2:** Selects the channel 1/2 combination. **CH3,4:** Selects the channel 3/4 combination. **OFF:** Disables audio dubbing.

**Note**

You cannot dub sound in the following channel combinations:  
 • Channels 1 to 4 simultaneously  
 • Only one channel  
 • Three channels simultaneously (excluding one channel)  
 • Channel 1/3, channel 2/4, channel 1/4 and channel 2/3 combinations

### Dubbing sound

- Connect the unit and the sound source using a phono jack cable (not supplied).
- Set the INPUT SELECT selector to a setting other than DV.
- Switch the INPUT LEVEL selector to select the audio input signal level (-10, -2 or +4).
- Play back the tape inserted in this unit.
- At the point you want to start dubbing, press the PAUSE button to turn the unit to the playback pause mode.
- While holding the AUDIO DUB button down, press the PLAY button to turn the unit to the audio dubbing pause mode.

The AUDIO DUB indicator on this unit lights.

- Set the AUDIO INPUT switch to AUTO or MANU.
- Adjust the recording level by turning the AUDIO REC LEVEL control knobs.

You can adjust the recording level with the AUDIO REC LEVEL control knobs if you have selected MANU in step 7. While looking at the audio level meters on the LCD monitor, turn the AUDIO REC LEVEL control knobs and adjust the recording level. Adjust the audio recording level so that the recording level does not exceed 0 dB when the audio signal is at its maximum. If the recording level exceeds 0 dB, the sound will be distorted.

- Press the PAUSE button.

The PAUSE indicator goes off and audio dubbing starts.

### To pause audio dubbing

Press the PAUSE button. Pressing the PAUSE button again resumes audio dubbing.

### To stop audio dubbing

Press the STOP button.

### To monitor the sound you want

Set the AUDIO MONITOR selector as follows:  
**CH-1/2:** You can listen to sound on channels 1/2 on the tape or the sound to be dubbed.  
**CH-3/4:** You can listen to sound on channels 3/4 on the tape or the sound to be dubbed.  
**MIX:** You can listen to the sound on the tape and the dubbed sound.

**Notes**

- You can monitor the sound on the tape while dubbing the sound. However, there are some delays between the sound being recorded and the sound being played. When you play back the tape after audio dubbing, you might hear the dubbed sound later than the sound monitored during audio dubbing.
- You cannot dub sounds onto a blank portion of the tape.

Chapter 5 Duplication and Audio Dubbing

# Chapter 6

## Adjusting and Setting Through Menus

### Operating the Menus

The unit allows you to set various parameters in the menus. Before you start using the unit, set the internal clock in CLOCK SET on the OTHERS menu. Except for clock setting, you can use all other factory-set default parameters but change them as needed.

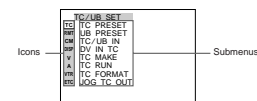
**Notes**

- If the internal backup battery is exhausted, the time set in the internal clock and the time code of the FREE RUN setting will be initialized. The internal backup battery is fully charged if you connect the power to the unit for about 8 hours. A fully charged internal battery can run for about two weeks.
- Do not pull out the plug of the power cord from an AC outlet or the unit while adjusting the menu or the brightness of the LCD monitor. Otherwise, the settings of the menu may be changed accidentally.

### Displaying the menu

- Set the CHARACTER DISPLAY (LCD) selector to ON or ON (BLACK BACK).
- Set the DISPLAY SELECT selector to MENU.

The menu is superimposed on the LCD monitor.



**Changing the menu settings**

- Pressing the  $\uparrow/\downarrow$  buttons, select the menu icon you want to change, then press the EXEC button.
- Pressing the  $\uparrow/\downarrow$  buttons, select the submenu you want to change, then press the EXEC button.
- Pressing the  $\uparrow/\downarrow$  buttons, change the setting.
- Press the EXEC button to return to the submenu.
- Repeat steps 1 to 4, as needed.

**To return to step 1**

Press the  $\uparrow/\downarrow$  buttons to select  $\rightarrow$ RETURN, then press the EXEC button.

**Menu Organization**

The menu of this unit consists of the following menus and submenus.

<b>TC/UB SET</b>	TC PRESET (page 78 (GB)) UB PRESET (page 78 (GB)) TC/UB IN (page 78 (GB)) DV IN TC (page 79 (GB)) TC MAKE (page 79 (GB)) TC RUN (page 79 (GB)) TC FORMAT (page 79 (GB)) <sup>a)</sup> JOB TO OUT (page 80 (GB))
<b>REMOTE</b>	LOCAL ENBL (page 80 (GB)) PREROLL (page 80 (GB)) POST CUEUP (page 80 (GB)) STILL DLY (page 80 (GB)) 232C RATE (page 80 (GB))
<b>CM SET</b>	CM SEARCH (page 81 (GB)) TITLE DISP (page 81 (GB)) LABEL DISP (page 81 (GB)) TAPE LABEL (page 82 (GB)) ITEM ERASE (page 83 (GB)) ERASE ALL (page 84 (GB))
<b>DISPLAY SET</b>	DATA CODE (page 85 (GB)) EEPSEL (page 85 (GB)) LTR SIZE (page 85 (GB)) COLOR BAR (page 85 (GB)) <sup>b)</sup> DATE DISP (page 86 (GB)) TIME DISP (page 86 (GB))
<b>VIDEO SET</b>	PB YNR (page 86 (GB)) PB CNR (page 86 (GB)) PB LEVEL (page 87 (GB)) EXT SYNC (page 87 (GB)) H PHASE (page 87 (GB)) H PHASE F (page 87 (GB)) SC PHASE (page 88 (GB)) SC PHASE F (page 88 (GB))
<b>AUDIO SET</b>	AUDIO MODE (page 88 (GB)) AUDIO DUB (page 88 (GB)) JOG AUDIO (page 88 (GB)) REF LEVEL (page 89 (GB)) AGC CH1,2 (page 89 (GB)) AGC CH3,4 (page 89 (GB)) LIMITER (page 89 (GB))
<b>VTR SET</b>	REC MODE (page 90 (GB)) AUTO INDEX (page 90 (GB)) STILL PICT (page 90 (GB)) FFREV SPD (page 90 (GB)) DUPLICATE (page 91 (GB)) DV EE OUT (page 91 (GB)) STILL TIME (page 91 (GB)) FROM STILL (page 91 (GB))
<b>OTHERS</b>	COMMANDER (page 92 (GB)) AC ON MODE (page 92 (GB)) AUTO STBY (page 92 (GB)) BEEP (page 92 (GB)) LCD BRIGHT (page 92 (GB)) LCD COLOR (page 92 (GB)) <sup>c)</sup> CLOCK SET (page 92 (GB)) HRS METER (page 92 (GB))

- a) DSR-45 only  
b) COLOUR BAR for DSR-45P  
c) LCD COLOUR for DSR-45P

Chapter 6 Adjusting and Setting Through Menu

Chapter 6 Adjusting and Setting Through Menu

**Operating the Menus**

**Menu Contents**

Initial settings are indicated with rectangles.

**TC/UB SET menu**

**Note**

All items other than JOG TC OUT can be set only when you record in DVCAM format.

Icon/Menu	Submenu (page)	Setting
$\square$ TC/UB SET	TC PRESET (page 58 (GB))	Resets/Sets the time code value. <b>RESET</b> : Resets the time code value to 00:00:00.00. <b>PRESET</b> : Sets the time code value. <b>RETURN</b> : Returns to the TC/UB SET menu without changing the time code value. <b>Note</b> To set the initial time code value, you need to set TC MAKE to PRESET first. If TC MAKE has been set to REGEN, you cannot change the time code using this item.
	UB PRESET (page 59 (GB))	Resets/Sets the user bits value. <b>RESET</b> : Resets the user bits value to 00 00 00. <b>PRESET</b> : Sets the user bits value. (You can set the user bits as eight-digit hexadecimal values (0 to 9, A to F) (base 16) to have the date, time, scene number, and other information inserted into the user bits.) <b>RETURN</b> : Returns to the TC/UB SET menu without changing the user bits value.
	TC/UB IN (page 60 (GB))	Selects the time code and user bits to record on the tape. <b>INTERNAL</b> : Uses the internal time code/user bits. <b>TC/UB EXT</b> : Uses external time code/user bits. <b>TC EXT</b> : Uses an external time code and internal user bits. <b>UB EXT</b> : Uses the internal time code and external user bits. <b>Notes</b> • The time code output from this unit has some restrictions. For details, see pages 64 (GB), 65 (GB). • Press the EXEC button to change the setting of this item. This will also be carried out the moment you switch the position of the DISPLAY SELECT selector to DATA or AUDIO.

**Operating the Menus**

Icon/Menu	Submenu (page)	Setting
$\square$ TC/UB SET	JOG TC OUT (page 61 (GB))	Controls the time code output from the TC OUT connector when the tape is played at a speed other than normal. <b>OFF</b> : Does not output the time code. <b>ON</b> : Outputs the time code. <b>Note</b> Continuous time code is output only when the tape is played at a normal speed. When the unit is in the search mode, discontinuous time code is output.

**REMOTE menu**

Icon/Menu	Submenu (page)	Setting
$\square$ REMOTE	LOCAL ENBL (page 12 (GB))	Restricts the functions of the buttons on the front panel, the Remote Commander, and the Remote Control Unit (not supplied) connected to the CONTROL S IN jack, when the REMOTE/LOCAL switch is set to REMOTE. <b>NO KEY</b> : Disables all buttons on the devices described above. <b>EJECT</b> : Disables all buttons except EJECT on the devices described above. <b>STOP&amp;EJECT</b> : Disables all buttons except EJECT and STOP on the devices described above. <b>ALL KEYS</b> : Enables all buttons on the devices described above. <b>Notes</b> • Even if the REMOTE/LOCAL switch is set to REMOTE, the Remote Commander functions depend on the setting of this item. If you want to disable the Remote Commander, set COMMANDER on the OTHERS menu to CONTROL S. • Press the EXEC button to change the setting of this item. This will also be carried out the moment you switch the position of the DISPLAY SELECT selector to DATA or AUDIO. • While the REMOTE/LOCAL switch is set to REMOTE, if you change this item from ALL KEYS to any other setting, the setting is activated at that instant and the $\uparrow$ , $\downarrow$ , and EXEC buttons, which are used to adjust the menus, are disabled. To enable those buttons again, set the REMOTE/LOCAL switch to LOCAL.
	PREROLL	Sets the duration of the preroll time. (only for an RS-422A connection) 3 SEC: Three seconds 5 SEC: Five seconds 7 SEC: Seven seconds 10 SEC: 10 seconds <b>Note</b> • Depending on the types of editing controller used, the unit may take the preroll time set by the editing controller, ignoring setting of this item. • On the editing controller, set the preroll time to five seconds or longer.
	POST CUEUP	Selects the information which the unit sends to an editing controller to let it know the state of the unit when the tape reaches a searched for point. (only for an RS-422A connection) <b>STOP</b> : Informs the editing controller that the unit is in the stop mode. <b>STILL</b> : Informs the editing controller that the unit is in the playback pause mode.
	STILL DLY	Playback still delay can be set between 0 and 10 frames by 11 steps. You can set the delay which the unit turns to playback mode from still mode. (only for an RS-422A connection) <b>Note</b> The default is 0 frame.

Chapter 6 Adjusting and Setting Through Menu

Chapter 6 Adjusting and Setting Through Menu

Operating the Menus





Icon/Menu	Submenu (page)	Setting
	232C RATE	Selects the baud rate via the RS-232C connector. <b>[9600]</b> : 9600 bps <b>[19200]</b> : 19200 bps <b>Note</b> For editing, if you intend to use this unit as a player and the FXE-120/120P or FXE-100/100P as an editing controller, set the baud rate of both devices to 19200 bps.

CM SET menu






Icon/Menu	Submenu (page)	Setting
	CM SEARCH	Selects the mode used to search scenes. <b>[ON]</b> : Searches scenes using the cassette memory. (If the cassette does not have cassette memory, the search for the scenes can be done using the search signals on the tape.) <b>[OFF]</b> : Always searches scenes using the search signals on the tape.
	TITLE DISP	Selects whether or not to display the title. <b>[ON]</b> : Displays the title. <b>[OFF]</b> : Hides the title. <b>Notes</b> • The title input with the camera or external device is displayed. You cannot enter a title using this unit. • The unit cannot display a font that the unit does not have. • The title is displayed only on the LCD monitor or MONITOR VIDEO output. • The title is only displayed if you have set the DISPLAY SELECT selector to DATA.
	LABEL DISP	Selects whether or not to display the tape label. <b>[ON]</b> : Displays the tape label. <b>[OFF]</b> : Hides the tape label. <b>Notes</b> • The tape label is displayed only on the LCD monitor or MONITOR VIDEO output. • The tape label is only displayed if you have set the DISPLAY SELECT selector to DATA. • If the tape label has been made with another VCR or camcorder, this unit cannot display a tape label that includes a font that the unit does not have.

Chapter 6 Adjusting and Setting Through Menus

Chapter 6 Adjusting and Setting Through Menus





Icon/Menu	Submenu (page)	Setting
	TAPE LABEL	Makes a tape label. (You can enter up to 10 characters on a tape label.) If you select this item, one of the following symbols appears. If no cassette is loaded, nothing is displayed. <b>C/M</b> : Cassette with cassette memory <b>C/M</b> : Cassette without cassette memory You can make a tape label as follows: <ol style="list-style-type: none"> <li>On the TAPE LABEL screen, select a line that has the alphabet character you want by pressing the <math>\leftarrow</math>/<math>\rightarrow</math> buttons and the EXEC button. (The cursor moves to the first character of the line.)</li> </ol>   <ol style="list-style-type: none"> <li>Select a character by pressing the <math>\leftarrow</math>/<math>\rightarrow</math> buttons and the EXEC button. (The selected character is entered. To erase a character, select [+]; the last character is erased.)</li> </ol>   <ol style="list-style-type: none"> <li>Repeat steps 1 and 2. After entering all characters for the tape label, select [SET].</li> </ol> <b>Note</b> The unit cannot display the TAPE LABEL screen in the following cases: • The unit does not have a cassette inserted or the tape is being unloaded. • The cassette does not have cassette memory. • The cassette memory is full of data other than the tape label data. • The cassette is write-protected. • The tape is being recorded. • The tape is being duplicated. • The cassette memory is being used.

Operating the Menus

Icon/Menu	Submenu (page)	Setting
	ITEM ERASE	Erases a cassette memory item. If you select this item, one of the following symbols appears. If no cassette is loaded, nothing is displayed. <b>C/M</b> : Cassette with cassette memory <b>C/M</b> : Cassette without cassette memory The available items are as follows: <b>INDEX ALL</b> : Erases the index data. <b>TITLE ALL</b> : Erases the title data. <b>DATE ALL</b> : Erases the date data. <b>PHOTO ALL</b> : Erases the photo data. You can erase an item as follows: <ol style="list-style-type: none"> <li>Select an item to erase by pressing the <math>\leftarrow</math>/<math>\rightarrow</math> buttons and the EXEC button.</li> <li>To erase the item, select OK, otherwise select RETURN. (If you select OK, the unit will check again to see if you really want to erase the item.)</li> </ol>    <ol style="list-style-type: none"> <li>To erase the item, select EXECUTE, otherwise select RETURN. (If you select EXECUTE, the ERASING message will flash, and the unit will start erasing the item in the cassette memory. While the ERASING message is flashing, you cannot use the <math>\leftarrow</math>/<math>\rightarrow</math> buttons or the EXEC button. After the item has been erased, the COMPLETE message appears. Press the <math>\leftarrow</math>/<math>\rightarrow</math> buttons or the EXEC button to erase the COMPLETE message.)</li> </ol>   <b>Notes</b> • You cannot make a title, mark the date for date search, or record in the photo mode. • You cannot erase an item in the cassette memory in the following cases: – The unit does not have a cassette inserted or the tape is being unloaded. – The cassette does not have cassette memory. – The cassette is write-protected. – The tape is being recorded. – The tape is being duplicated.

Chapter 6 Adjusting and Setting Through Menus

Chapter 6 Adjusting and Setting Through Menus

Icon/Menu	Submenu (page)	Setting
	ERASE ALL	Erases all the items in the cassette memory. If you select this item, one of the following symbols appears. If no cassette is loaded, nothing is displayed. <b>C/M</b> : Tape with cassette memory <b>C/M</b> : Tape without cassette memory Erase all items in the cassette memory as follows: <ol style="list-style-type: none"> <li>To erase all items, select OK, otherwise select RETURN. (If you select OK, the unit will check again to see if you really want to erase all items.)</li> </ol>   <ol style="list-style-type: none"> <li>To erase all items, select EXECUTE, otherwise select RETURN. (If you select EXECUTE, the ERASING message will flash, and the unit starts erasing all items in the cassette memory. While the ERASING message is flashing, you cannot use the <math>\leftarrow</math>/<math>\rightarrow</math> buttons or the EXEC button. After all items have been erased, the COMPLETE message appears. Press the <math>\leftarrow</math>/<math>\rightarrow</math> buttons or the EXEC button to erase the COMPLETE message.)</li> </ol>   <b>Note</b> You cannot erase all the items in the cassette memory in the following cases: • The unit does not have a cassette inserted or the tape is being unloaded. • The cassette does not have cassette memory. • The cassette is write-protected. • The tape is being recorded. • The tape is being duplicated.

DISPLAY SET menu

Icon/Menu	Submenu (page)	Setting																	
DISPLAY SET	DATA CODE (page 36 (GB))	Selects whether or not to display the data codes on the LCD monitor and the MONITOR VIDEO output. [OFF]: Does not display the data codes. [DATE]: Displays the date when recorded. [CAMERA]: Displays the camera data.																	
	EE/PB SEL (page 17 (GB))	Sets the stop, fast-forward and rewind modes. [EE]: Outputs EE pictures (sound, time code). [PB]: Mutes the image and sound.  <b>Notes</b> • Even if EXT SYNC on the VIDEO SET menu is set to ON, the line-outs (VIDEO OUT, COMPONENT OUT, S VIDEO OUT) in the EE mode are delayed from those of the input signals as follows: – delayed for two lines when signals are input via the VIDEO IN REF.IN connector. – delayed for one line when signals are input via the S VIDEO IN or COMPONENT IN connector. • If this item is set to PB, the output from the unit will be as follows when you press any of the REC, DUP, or AUDIO DUB buttons separately when the unit is stopped (unless the cassette has been write-protected). <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Image</th> <th>Sound</th> <th>Time code</th> </tr> </thead> <tbody> <tr> <td>REC button</td> <td>EE picture of the input image</td> <td>EE sound of the input sound</td> <td rowspan="3" style="text-align: center;">(See page 63 (GB))</td> </tr> <tr> <td>DUP button</td> <td>Image input to the DV jack</td> <td>Sound input to the DV jack</td> </tr> <tr> <td>AUDIO DUB button</td> <td>Mute screen (black)</td> <td>EE sound of the input sound</td> </tr> <tr> <td>No button is pressed</td> <td>Mute screen (black)</td> <td>Mute (no sound)</td> <td></td> </tr> </tbody> </table>		Image	Sound	Time code	REC button	EE picture of the input image	EE sound of the input sound	(See page 63 (GB))	DUP button	Image input to the DV jack	Sound input to the DV jack	AUDIO DUB button	Mute screen (black)	EE sound of the input sound	No button is pressed	Mute screen (black)	Mute (no sound)
	Image	Sound	Time code																
REC button	EE picture of the input image	EE sound of the input sound	(See page 63 (GB))																
DUP button	Image input to the DV jack	Sound input to the DV jack																	
AUDIO DUB button	Mute screen (black)	EE sound of the input sound																	
No button is pressed	Mute screen (black)	Mute (no sound)																	
	LTR SIZE	Changes the font size of the menu line at the cursor. [NORMAL]: Normal size [Z]: Double height size																	
	COLOR BAR (for DSR-45) / COLOUR BAR (for DSR-45P)	Displays/hides the color bars. [OFF]: Does not display the color bars. [ON]: Displays the color bars.  <b>Notes</b> • You cannot display the color bars while the unit is playing the tape or when the INPUT SELECT selector is set to DV. • The color bars are displayed only on the LCD monitor or MONITOR VIDEO output. • If you record when the color bars are displayed, the color bars will also be recorded on the tape. • You cannot adjust the MONITOR VIDEO output. Do not use the color bars output from the MONITOR VIDEO jack as a reference signal. • The reference sound signals are not output even if this item is set to ON. • This item will be automatically set to OFF if you set the INPUT SELECT selector to DV or you operate the unit to play back a tape.																	

Chapter 6 Adjusting and Setting Through Menus

Chapter 6 Adjusting and Setting Through Menus

Operating the Menus

Icon/Menu	Submenu (page)	Setting
DISPLAY SET	DATE DISP	Selects the form of the date displayed on the search screen or of the data codes and so on. [Y/M/D]: Displays YY/MM/DD (year/month/day). [M/D/Y]: Displays MM/DD/YY (month/day/year). [D/M/Y]: Displays DD/MM/YY (day/month/year). <b>Note</b> The default is M/D/Y for the DSR-45; and D/M/Y for the DSR-45P.
	TIME DISP	Selects the form of the time displayed on the search screen or of the data codes and so on. [24H]: Displays 24-hour time. [12H]: Displays 12-hour time. <b>Note</b> The counter of this unit operates only on a 12-hour cycle. Even if you set this item to 24H, the counter value is displayed on a 12-hour cycle.

VIDEO SET menu

**Note**  
To perform the adjustment in H PHASE, H PHASE F, SC PHASE, or SC PHASE F, you must set EXT SYNC to ON and input the reference video signals to the VIDEO IN REF.IN connector.

Icon/Menu	Submenu (page)	Setting
VIDEO SET	PB YNR	Switches the noise reduction level for the luminance signals when a tape is played. [OFF]: No noise reduction [LOW]: Low noise reduction [HIGH]: High noise reduction <b>Notes</b> • When you use noise reduction, there may be an afterimage depending on the condition of the picture. • The setting of this item does not affect a signal output via the DV jack.
	PB CNR	Switches the noise reduction level for the chrominance signals when a tape is played. [OFF]: No noise reduction [LOW]: Low noise reduction [HIGH]: High noise reduction <b>Notes</b> • When you use noise reduction, there may be an afterimage depending on the condition of the picture. • The setting of this item does not affect a signal output via the DV jack.

Operating the Menus

Icon/Menu	Submenu (page)	Setting
VIDEO SET	PB LEVEL (page 68 (GB))	Adjusts the output video signal levels. (This is available only when the mode is playback, playback pause, slow playback, cue, or review.) [SETUP]: Switches the luminance signal setup level (0% or 7.5%). (This item is only for the DSR-45. The setup level for the DSR-45P is fixed to 0%.) [Y LEVEL]: Adjusts the Y signal level of the component signals. (If you change this, the Y signal level of the composite video and S VIDEO will also be changed.) [R-Y LEVEL]: Adjusts the R-Y signal level of the component signals. (If you change this, the chrominance level of the composite video and S VIDEO will also be changed.) [B-Y LEVEL]: Adjusts the B-Y signal level of the component signals. (If you change this, the chrominance level of the composite video and S VIDEO will also be changed.) [CHROMA]: Adjusts the chrominance level in the composite signals.  <b>Notes</b> • You can adjust the video levels only while playing the tape. • Adjust the video levels by looking at the bars (except [SETUP]). (The triangles under the bars are displayed in green when the settings are set to the factory preset values.) • The [SETUP] default is 0%. Other defaults are their center values. • The output video signals can be adjusted only for VIDEO OUT, COMPONENT OUT, or S VIDEO OUT. • Set [SETUP] to 7.5% only if the tape has been recorded at 0% and you want to play back the tape at 7.5%. If you play back a 7.5% tape at the 7.5% setting, the tape will not be played at the proper brightness. If you set [SETUP] at 0% and if you play back a 7.5% tape, the tape will be played at 7.5%. (You cannot play the tape at 0%.)
	EXT SYNC	Switches the externally synchronized playback setting. [OFF]: No external synchronization [ON]: External synchronization  <b>Notes</b> • It may take three or more seconds until a stable image is output in the externally-synchronized playback mode. • In the externally-synchronized playback mode, jitter may appear on the MONITOR VIDEO output or on the LCD monitor image. Use the VIDEO OUT connector to output an externally-synchronized image. Set this item to OFF when you use the MONITOR VIDEO output.
	H PHASE (page 66 (GB))	Roughly adjusts the sync phase in the externally-synchronized playback mode. Press the $\uparrow/\downarrow$ buttons to move the bar and press the EXEC button to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)  <b>Notes</b> • You can adjust this item only in the externally-synchronized playback mode. • If you change this item, the H PHASE F value will be set to the factory preset value.
	H PHASE F (page 66 (GB))	Finely adjusts the sync phase in the externally-synchronized playback mode. Press the $\uparrow/\downarrow$ buttons to move the bar and press the EXEC button to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)  <b>Notes</b> • You can adjust this item only in the externally-synchronized playback mode. • If you change the H PHASE value, this item is set to the factory preset value.

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(Continued)

Icon/Menu	Submenu (page)	Setting
VIDEO SET	SC PHASE (page 66 (GB))	Reverses the subcarrier phase in the externally-synchronized playback mode. [0 DEG]: The subcarrier phase is not reversed. [180 DEG]: The subcarrier phase is reversed.  <b>Note</b> You can adjust this item only in the externally-synchronized playback mode.
	SC PHASE F (page 66 (GB))	Finely adjusts the subcarrier phase in the externally-synchronized playback mode. Press the $\uparrow/\downarrow$ buttons to move the bar and press the EXEC button to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)  <b>Note</b> You can adjust this item only in the externally-synchronized playback mode.

AUDIO SET menu

Icon/Menu	Submenu (page)	Setting
AUDIO SET	AUDIO MODE (page 74 (GB))	Selects the audio mode. [FS32K]: Switches the audio mode to the four channel mode (12-bit mode). [FS48K]: Switches the audio mode to the two channel stereo mode (16-bit mode). (This setting records the sound in all audio ranges, providing a high-quality sound recording.)  <b>Notes</b> • When signals are input via the DV jack, the audio mode of the signals to be recorded is the same as that of the input signals. The setting of this item is ignored. • You cannot change the setting of this item during recording. • Noise may occur at the instant you switch the audio mode.
	AUDIO DUB (page 74 (GB))	Selects the input channel for audio dubbing. [CH1,2]: Selects channels 1 and 2. [CH3,4]: Selects channels 3 and 4. [OFF]: Disables audio dubbing.  <b>Note</b> You cannot change the setting of this item while dubbing the sound.
	JOG AUDIO	Turns sound output on/off when the tape is played at a speed other than normal. [OFF]: Does not output the sound when playing a tape at a speed other than normal. [ON]: Outputs the sound when playing a tape at a speed other than normal.  <b>Note</b> Even if you have set this item to ON, the sound may not be output or interrupted depending on the tape format (DVCAM/DV) or tape conditions.



Operating the Menus

Icon/Menu	Submenu (page)	Setting
AUDIO SET	REF LEVEL (page 29 (GB))	Switches the center levels of the audio level meters displayed on the fine audio levels screen. → <b>12dB</b> : Sets the level to -12 dB. → <b>18dB</b> : Sets the level to -18 dB. → <b>20dB</b> : Sets the level to -20 dB. <b>Notes</b> • The default is -20 dB for DSR-45; -18 dB for DSR-45P. • The standard output level of the AUDIO OUT connectors is +4 dBu. This is equivalent to -20 dB for the DSR-45, or -18 dB for the DSR-45P from full bit (maximum audio level). This level is fixed and does not change even if you change this item setting. • Changing this level does not change the audio gain of this unit. Turn the AUDIO REC LEVEL control knobs to adjust the recording level accordingly.
	AGC CH1, 2 (page 29 (GB))	Links/separates the AGC (Auto Gain Control) in channels 1 and 2. <b>[SEPARATE]</b> : AGC is not linked. (Channels 1 and 2 sound gains are separated.) <b>LINKED</b> : AGC is linked. (Channels 1 and 2 sound gains are linked as a pair.) <b>Notes</b> • This setting is disabled when inputting signals from the DV jack. • The LINKED setting changes to enabled after you set the AUDIO INPUT switch on the front panel to AUTO.
	AGC CH3, 4 (page 29 (GB))	Links/separates the AGC (Auto Gain Control) in channels 3 and 4. <b>[SEPARATE]</b> : AGC is not linked. (Channels 3 and 4 sound gains are separated.) <b>LINKED</b> : AGC is linked. (Channels 3 and 4 sound gains are linked as a pair.) <b>Notes</b> • This setting is disabled when inputting signals from the DV jack. • The LINKED setting changes to enabled after you set the AUDIO INPUT switch on the front panel to AUTO.
	LIMITER	Turns the limiter on/off. <b>OFF</b> : No limiter. <b>ON</b> : Uses the limiter. <b>Notes</b> • This setting is disabled when inputting signals from the DV jack. • This setting is available only when you have set the AUDIO INPUT switch on the front panel to MANU. • Make sure to set the INPUT LEVEL selector on the rear panel correctly. Even if you have set this item to ON, the limiter will not work for a sound that exceeds the dynamic range of the input amplifier.

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VTR SET menu

Icon/Menu	Submenu (page)	Setting
VTR SET	REC MODE	Switches the recording mode between DVCAM and DV (SP mode only). When you play back a tape, the DVCAM/DV setting will be automatically switched; you do not need to use this item. <b>DVCAM</b> : Records in DVCAM format. <b>DV SP</b> : Records in DV format (SP mode). <b>Notes</b> • The unit can record only in the DVCAM format or in the SP mode of the DV format. • You cannot change the setting while recording. • It is recommended that you record in the DVCAM format. There are some limitations with respect to DV recording depending on machine specifications and the consumer DV format as follows: – The head system is optimized for DVCAM recording. A DV recording overwrites the last track just before the beginning of the recording. As a result, at the border of these two recorded portions, picture and sound may be distorted. – The picture and sound will be recorded unsynchronized. (unlock mode) – The time code is fixed to the drop frame mode. (only for DSR-45) – The DV IN TC setting on the TC/UB SET menu becomes invalid. The unit records internal time code. • If you dub a consumer DV tape from the DV jack on this unit, keep the following in mind: – Set REC MODE to DV SP. If REC MODE has been set to DVCAM, a tape with an invalid format (recording speed: DVCAM, sound: unsynchronized, unlock mode) will be made. (The unit cannot convert unlock mode sound to lock mode sound.) – If you edit a tape with an invalid format in the DSR-7070P, DSR-70A/70AP, DSR-80/80P, DSR-85/85P, DSR-1800/1800P, DSR-2000/2000P, etc., there may be some restrictions. For details on DVCAM/DV format compatibility, see "Compatibility of DVCAM and DV Format" on page 101 (GB).
	AUTO INDEX (page 44 (GB))	Selects whether or not the unit automatically marks an index signal when the unit in the stop mode starts recording. <b>ON</b> : Marks an index signal at the beginning of the recording. <b>OFF</b> : Does not mark an index signal at the beginning of the recording.
	STILL PICT	Switches the image displayed in the still mode. <b>[AUTO]</b> : Displays an optimized image according to the movement in the image. <b>FIELD</b> : Displays a field image. <b>FRAME</b> : Displays a frame image. <b>Note</b> If you select FIELD, the image of field 2 is displayed.
	FF/REW SPD	Selects the tape transport mode in fast-forward and rewind. <b>[FF/REW]</b> : Fast-forwards or rewinds the tape at maximum speed without displaying the picture. <b>SHUTTLEMAX</b> : Fast-forwards or rewinds the tape at maximum speed (DVCAM: about 14 times normal speed for the DSR-45; about 17 times normal speed for the DSR-45P) while displaying the picture. However, if you use a tape recorded in the SP mode of the DV format, the maximum tape speed will be about 24 times normal speed, on both models. <b>Note</b> If you intend to edit using an RS-422A connection, set this item to SHUTTLEMAX.

Operating the Menus

Icon/Menu	Submenu (page)	Setting
VTR SET	DUPLICATE (page 69 (GB))	Switches the duplicate mode. <b>[AUTO]</b> : Starts duplication after rewinding the tape to the beginning in the player and recorder. (The cassette memory is also duplicated.) <b>AUTO</b> : Starts duplication after rewinding the tape to the beginning in the player and recorder. (The cassette memory is not duplicated.) <b>MANUAL</b> : Duplicates the tape from any point. (The cassette memory is not duplicated.) <b>Note</b> You cannot change the setting of this item during duplication.
	DV EE OUT (page 42 (GB))	Selects the output from the DV jack in the EE mode. <b>OFF</b> : Outputs only the playback video and audio signals from the DV jack. <b>ON</b> : Outputs the selected analog input signals from the DV jack. <b>Note</b> When you connect a computer to the DV jack, depending on your computer software, the selected analog input signals may be output to the computer even if this item is set to OFF.
	STILL TIME	Selects the length of time that elapses before switching to the tape protection mode from the still mode. <b>[30 SEC]</b> : 30 seconds <b>1 MIN</b> : 1 minute <b>2 MIN</b> : 2 minutes <b>3 MIN</b> : 3 minutes <b>5 MIN</b> : 5 minutes <b>Notes</b> • If the unit is left in playback pause mode for a long time, the tape or the video heads may be damaged or the video heads may become clogged. Select the shortest time possible—particularly when using a Mini-DV cassette that is longer than 60 minutes, select 30 SEC or 1 MIN. • If you change the setting of this item while the unit is in the playback pause mode, the first tape protection mode change uses the time setting from before the settings were changed. From the second tape protection mode change, the new time setting is used.
	FROM STILL	Selects the tape protection mode to which the unit switches after the still mode continues for the time interval set in STILL TIME. <b>[STOP]</b> : Stops the tape. <b>STEP FWD</b> : Forwards one frame.

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OTHERS menu

Icon/Menu	Submenu (page)	Setting
OTHERS	COMMANDER (page 28 (GB))	Selects the control device. <b>[WIRELESS]</b> : Enables the control of the Remote Commander. <b>CONTROL S</b> : Enables the control of the Remote Control Unit (DSRM-20, not supplied) connected to the CONTROL S IN jack. (The Remote Commander is disabled.) <b>Note</b> The unit accepts signals from any Sony Remote Commander whose command mode is set to VTR4, not only the supplied one. If you want to disable the control from any Remote Commander, set this item to CONTROL S.
	AC ON MODE	Switches the state into which the unit goes when the unit is connected to an AC outlet. <b>[STBY]</b> : Makes the unit go into the standby mode. <b>POWER ON</b> : Turns the unit on.
	AUTO STBY	Selects whether the unit goes into the standby mode or not, if the unit has been in the stop mode and no key operations have been attempted for more than one hour. <b>[DISABLE]</b> : Leaves the unit in the stop mode. <b>ENABLE</b> : Makes the unit go into the standby mode.
	BEEP	Selects whether or not the unit beeps. <b>ON</b> : Enables the beep. <b>OFF</b> : Disables the beep.
	LCD BRIGHT	Adjusts the LCD monitor brightness. Press the $\uparrow/\downarrow$ buttons and the EXEC button to adjust and set the brightness. You can also adjust the brightness by pressing the $\uparrow/\downarrow$ buttons on the Data screen. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)
	LCD COLOR (for the DSR-45) / LCD COLOUR (for the DSR-45P)	Adjusts the depth of color of the LCD monitor. Press the $\uparrow/\downarrow$ buttons and the EXEC button to adjust and set the depth of color. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)
	CLOCK SET	Sets the internal clock of the unit. Pressing the $\uparrow/\downarrow$ buttons and the EXEC button, set the time (year, month, day, hour and minute). (When you set the minute, the second count will start from 00.) <b>Notes</b> • Regardless of the DATE DISP setting, the date is displayed in the Y/M/D format while you are setting CLOCK SET. • The internal backup battery will be fully charged in about 8 hours when power is provided to the unit. A fully charged internal backup battery can run the internal clock for about two weeks without the power provided through the AC power cord. • If the unit starts recording while you are setting this item, the value at that time is set in the internal clock.
	HRS METER (page 100 (GB))	Displays the accumulated time counts (by the digital hours meter) in units of 10 hours or 10 counts. <b>OPERATION</b> : Power supplied duration <b>DRUM RUN</b> : Drum rotation duration <b>TAPE RUN</b> : Tape run duration <b>THREADING</b> : Tape unthreading count




# Chapter 7

## Maintenance

### Troubleshooting

Please check the following before contacting your Sony dealer.

Symptom	Cause/Remedy
The power cannot be turned on.	<ul style="list-style-type: none"> <li>The AC power cord is disconnected. → Connect the AC power cord.</li> <li>The REMOTE/LOCAL switch is set to REMOTE. → Set the switch to LOCAL.</li> </ul>
The unit will not operate even if the power has been turned on.	<ul style="list-style-type: none"> <li>The REMOTE/LOCAL switch is set to REMOTE. → Set the switch to LOCAL.</li> <li>Moisture condensation has occurred. → Turn off the power, disconnect the AC power cord. Reconnect the AC power cord after about one minute and turn on the power. Then if there is a cassette in the unit, remove the cassette and leave it for more than one hour.</li> <li>The cassette is not inserted straight. → Eject and reinsert it straight.</li> </ul>
The cassette cannot be inserted.	<ul style="list-style-type: none"> <li>There is moisture condensation on the head drum. → With the unit powered on, wait more than one hour.</li> <li>The cassette is not inserted straight. → Eject and reinsert it straight.</li> <li>Another cassette has been loaded already. → Remove the cassette and insert the one you want to load.</li> <li>The cassette compartment is closed. → Press the EJECT button to open the compartment.</li> </ul>
It takes time to eject the cassette.	This is not a malfunction. → This unit ejects the cassette slowly to protect the tape. While the cassette is being ejected, the  (cassette) indicator flashes.
No picture.	The video heads are dirty. → Clean the video heads using the supplied cleaning cassette.
Noise appears on the screen.	<ul style="list-style-type: none"> <li>A damaged tape is loaded. → Remove the cassette and insert another one.</li> <li>The video heads are dirty. → Clean the video heads using the supplied cleaning cassette.</li> <li>You have tried to make the unit play back a tape recorded in the LP mode of the DV format. → This unit can play back only tapes recorded in the DVCAM format or in the SP mode of the DV format. A tape recorded in the LP mode of the DV format cannot be played back on this unit.</li> </ul>
No picture via the DV jack.	<ul style="list-style-type: none"> <li>Reconnect the L LINK cable (DV cable) (not supplied).</li> <li>The INPUT SELECT selector is set to a position other than DV. → Set the selector to DV.</li> </ul>

(Continued)

Chapter 7 Maintenance

### Troubleshooting

Symptom	Cause/Remedy
EE pictures and EE sound are not output.	<ul style="list-style-type: none"> <li>EE/PB SEL on the DISPLAY SET menu is set to PB. → Set EE/PB SEL to EE.</li> <li>The setting of the INPUT SELECT selector does not match the signal input. → Set the selector according to the signal input.</li> </ul>
The audio is noisy.	<ul style="list-style-type: none"> <li>A damaged tape is loaded. → Remove the cassette and insert another one.</li> <li>The video heads are dirty. → Clean the video heads using the supplied cleaning cassette.</li> </ul>
Duplication does not function.	Check the STOP/CAUTION No. and the warning messages displayed on the LCD monitor. Take the appropriate action (See page 72 (GB)).
Audio dubbing cannot be done. Audio dubbing is interrupted.	<p>You are trying to dub the sound onto a DV-formatted tape. → Sounds can be dubbed only onto a DVCAM-formatted tape (recorded) in the 32 kHz audio mode (4-channel).</p> <p>If the unit detects the following, audio dubbing will automatically abort, an alarm message will be superimposed on the LCD monitor and on an external monitor.</p> <ul style="list-style-type: none"> <li>A blank portion</li> <li>A section recorded in other than 32 kHz audio mode (4-channel)</li> <li>A portion recorded in other than DVCAM format</li> </ul>
A menu item is not available.	<ul style="list-style-type: none"> <li>The REMOTE/LOCAL switch is set to REMOTE. → First, set the switch to LOCAL, then adjust the menu.</li> <li>If you have set REC MODE on the VTR SET menu to DV SP, some menu items will be disabled. → Set REC MODE on the VTR SET menu to DVCAM (See page 90 (GB)).</li> <li>Some menu items are only available in the EE mode or playback mode. → Set the unit to the EE mode or playback mode.</li> <li>Some items on the TC/UB SET menu are available only if you have set TC MAKE TO PRESET. → Set TC MAKE TO PRESET (See page 61 (GB)).</li> <li>Some items on the VIDEO SET menu are available only if EXT SYNC is set to ON and the reference video signals are being input. → For details, see page 80 (GB).</li> <li>Some menu items are not available when the REC/SAVE switch on the cassette inside the unit has been set to SAVE. → Set the switch to REC.</li> </ul>
Some menu item settings change accidentally.	You have pulled out the plug of the power cord from an AC outlet or the unit while adjusting the menu or the brightness of the LCD monitor. → Adjust the menu again. To prevent this incident recurring, do not pull out the plug while adjusting the menu or the brightness of the LCD monitor.
The unit operates by itself.	COMMANDER on the OTHERS menu is set to WIRELESS and a Sony Remote Commander whose command mode is set to VTR4 is operated near the unit. → Set COMMANDER to CONTROL S.
The Remote Commander or the Remote Control Unit does not function.	The setting of COMMANDER on the OTHERS menu is not appropriate. → Change the setting of COMMANDER according to the device used.
Even though the settings on this unit are correct, you cannot make the unit record using the Remote Control Unit (DSRM-20, not supplied).	On the Remote Control Unit, press the PLAY button while holding the REC button down.
Even though DV IN TC on the TC/UB SET menu is set to EXTERNAL, the time code of the input DV signal is not recorded.	<ul style="list-style-type: none"> <li>REC MODE on the VTR SET menu is set to DV SP. → Set REC MODE to DVCAM.</li> <li>The DV signal output from the digital non-linear editing controller does not include a time code. → Confirm that the editing software you are using is capable of outputting of a time code.</li> <li>The INPUT SELECT selector is not set to DV. → Set it to DV.</li> </ul>
The edit timing is not accurate.	You have not adjusted the edit timing yet. → Adjust the edit timing (See page 56 (GB)).

### Troubleshooting

Symptom	Cause/Remedy
When you set the INPUT LEVEL selector:	<ul style="list-style-type: none"> <li>You do not know how to adjust the input level.</li> <li>The recorded level is too low.</li> <li>The recorded sound is distorted.</li> </ul>
	<p>Confirm the level of the sound output from the player by referring to the player's instruction manual. According to that output level, set the INPUT LEVEL selector on the rear panel of this unit so as to obtain an optimum level. If you are not clear about the player's output level, try the following procedure.</p> <ol style="list-style-type: none"> <li>Specify the output level by types of audio output connectors available on the player. <ul style="list-style-type: none"> <li>If the player is equipped with phono jacks: Set the INPUT LEVEL selector to -10.</li> <li>If the player is equipped with XLR connectors: Set the INPUT LEVEL selector to +4 or -2.</li> </ul> </li> <li>Set the AUDIO INPUT switch on the front panel to MANU and adjust the AUDIO REC LEVEL control knobs to a median value. Then, play back the tape which you intend to use for playback. When the playback audio level is at its maximum, if the audio levels meters exceed 0 dB, set the INPUT LEVEL selector to the lower stop (+4 or -2) or turn the AUDIO REC LEVEL control knobs to adjust the recording level. The recorded sound at the portion where the meters exceed 0 dB will be distorted.</li> </ol>
The unit does not function as part of a digital non-linear editing system.	<ul style="list-style-type: none"> <li>The INPUT SELECT selector is set to a setting other than DV. → Set it to DV.</li> <li>The editing controller or the editing software is not compatible with this unit. → Refer to the instruction manuals of the controller or the software and consult their manufacturers.</li> </ul>
An editing point cannot be located using an editing controller connected to the RS-422A connector.	<ul style="list-style-type: none"> <li>Set FF/REW SPD on the VTR SET menu to SHUTTLEMAX. If this item has been set to FF/REW, some editing controllers that are not compatible with the rewinding / fast-forwarding speeds of this unit may not be able to locate an editing point.</li> <li>If the tape has a portion where the time code is not continuous or is not recorded, an editing point may not be located.</li> <li>This unit only can edit using the time code. If you choose to edit using the CTL signal, it may not be possible to locate an editing point.</li> <li>If you use a PAL formatted tape in the DSR-45 (or use an NTSC formatted tape in the DSR-45P) or a tape with both NTSC and PAL color system recordings, it may not be possible to locate an editing point accurately.</li> </ul>
The unit cannot be operated using a device connected to one of the connectors in the remote control section.	The setting of the remote selector is not appropriate. → Set the remote selector according to the connector you are using. If the unit cannot be operated even though the remote selector is set appropriately, press the RESET button located on the bottom of the unit. However, if you do this, the time set in the internal clock and the time code of the FREE RUN setting will be initialized.
No picture on the LCD monitor.	The CHARACTER DISPLAY (LCD) selector has been set to ON (BLACK BACK). → Set it to ON.

Chapter 7 Maintenance

Symptom	Cause/Remedy
The edit timing with the DV connection is not accurate.	Editing accuracy with the DV connection is not guaranteed.
After playing at 1/10 of normal speed in forward or reverse for more than one minute, normal playback forward starts.	To protect a tape, the unit is set to start normal playback after playing at 1/10 of normal speed in forward or reverse for more than one minute. Play back the tape at 1/3 of normal speed.
Playback pause mode is released and the unit goes into the stop mode.	To protect the tape, the unit is set to go into the stop mode after the playback pause mode continues for a certain period. → Set FROM STILL on the VTR SET menu to STEP FWD. If you do so, the tape will forward by one frame for each time interval set in STILL TIME.
Playback pause mode is released and the tape forwards by one frame for each preset time interval.	To protect the tape, the unit is set to forward the tape by one frame after the playback pause mode continues for a certain period. → Set FROM STILL on the VTR SET menu to STOP. If you do so, the unit will go into the stop mode after the playback pause mode continues for the interval set in STILL TIME.
After the unit has been left in the stop mode and no key operations have been attempted for more than one hour, the unit goes into the standby mode (the unit's power turns off).	AUTO STBY on the OTHERS menu is set to ENABLE. → Set AUTO STBY to DISABLE.
The pause mode of recording, audio dubbing, or duplicating is released automatically.	To protect the tape and the video heads, the unit goes into the stop mode after the pause mode of recording, audio dubbing, or duplicating continues for more than five minutes.
When the tape is rewound to its beginning, the playback automatically starts.	<ul style="list-style-type: none"> <li>The TIMER selector is set to REPEAT. → Set the TIMER selector to OFF.</li> <li>You pressed the PLAY button while holding the REW button down. → If you do this, the unit rewinds the tape to its beginning and begins playback (See page 16 (GB)).</li> </ul>
During playback, the unit starts rewinding suddenly.	The TIMER selector is set to REPEAT. → When the TIMER selector is set to REPEAT, the unit starts rewinding at the moment when a signal for index search or a blank portion is detected. Set the TIMER selector to OFF.
When the tape reaches its end, rewinding starts automatically.	The TIMER selector is set to REPEAT. → When the TIMER selector is set to REPEAT, the unit starts rewinding at the moment when the end of the tape is detected. Set the TIMER selector to OFF.
Whenever you connect the unit to an AC outlet, the unit automatically starts recording.	The TIMER selector is set to REC. → When the TIMER selector is set to REC, the unit starts recording whenever the power is connected. Set the TIMER selector to OFF.
Even though the REMOTE/LOCAL switch is set to REMOTE, the unit starts recording/playback by itself.	<ul style="list-style-type: none"> <li>The TIMER selector is set to REPEAT or REC. → The TIMER selector setting has a higher priority than the REMOTE/LOCAL switch setting. Set the TIMER selector to OFF.</li> <li>When LOCAL ENBL on the REMOTE menu is set to other than NO KEY and COMMANDER on the OTHERS menu is set to WIRELESS, the unit responds to signals from the Remote Commander even though the REMOTE/LOCAL switch is set to REMOTE. → Change the setting of LOCAL ENBL or COMMANDER.</li> </ul>
The unit automatically goes into the playback pause mode when the tape reaches its beginning or its end.	When the remote selector is set to RS-422A and the REMOTE/LOCAL switch is set to REMOTE, the unit automatically goes into the playback pause mode when the tape reaches its beginning or its end. (This action is required when you control the unit using a device connected to the RS-422A connector.) If you do not intend to control the unit from an external device (i.e., do not intend to use the unit in an editing system), set the remote selector to other than RS-422A.
Whenever you connect the unit to an AC outlet, the unit turns on automatically.	<ul style="list-style-type: none"> <li>AC ON MODE on the OTHERS menu is set to POWER ON. → Set AC ON MODE to STBY.</li> <li>There is a cassette inside the unit and the TIMER selector is set to REPEAT or REC. → Set the TIMER selector to OFF.</li> </ul>

(Continued)

## Alarm Messages

If an error occurs, a warning appears on the LCD monitor and the MONITOR VIDEO output (if the CHARACTER DISPLAY (MONITOR OUT) switch is set to ON). Check them with the following list.

LCD monitor	Beep	Display window	Description/Recovery
	Beep	Err	Moisture condensation → Remove the cassette, then wait more than one hour with the unit powered on.
	Beep	Err	You tried to record without a cassette. → Insert a cassette.
	No beep	—	The tape is reaching the end during recording. → Provide a new cassette.
	Beep	Err	The tape reached the end and still tried to record. → Rewind the tape or replace the cassette with a new one.
	Beep	Err	The cassette is write-protected. (The REC/SAVE switch is set to SAVE.) → Set the REC/SAVE switch to REC or use another cassette (See page 30 (GB)).
	Beep	Err	You tried to dub the sound onto a tape that is not DVCAM-formatted. → Use a DVCAM-formatted tape on which the sound has been recorded in the 32 kHz audio mode (4-channel/12 bits).
	Beep	Err	You tried to dub the sound onto a blank tape or onto a tape on which the sound was not recorded in the 32 kHz audio mode (4-channel/12 bits). → Use a DVCAM-formatted tape on which the sound has been recorded in the 32 kHz audio mode (4-channel/12 bits).
	Beep	Err	You tried to dub the sound when the INPUT SELECT selector has been set to DV. → You cannot dub the sound in the DV input mode. Select another input mode.
	No beep	—	You did not set the clock when you turned on the unit. → Set the clock using the menu (See page 92 (GB)).
	Beep	Err	You tried to record a copyright protected source. → You cannot record a copyright protected source (See page 32 (GB)).
	No beep	Err	The video heads are clogged. → Clean the video heads with the supplied cleaning cassette. (The unit can detect if the video heads are clean only before recording. If the video heads get clogged during recording, the unit cannot detect it.)
	Beep	— a)	The unit is running the self-diagnostics (See page 100 (GB)).

a) A self-diagnostics code number (see page 100 (GB)) is displayed on the display window.

## Notes on Use

### Notes on the Videocassette Recorder

**Do not use the unit in a place subject to direct sunlight or heat sources**  
If you do, its cabinet, mechanical parts, etc., may be damaged.

**Do not use the unit in an extremely hot place**  
If the unit is left in a car parked with the windows closed (especially in summer), its cabinet, mechanical parts, etc., may be damaged or it may not work correctly.

**If the unit is brought directly from a cold to a warm location**  
Moisture may condense inside the unit and cause damage to the video heads and tape. If you use the unit in a place subject to direct cold currents from an air conditioner, moisture may also condense inside the unit.

**Do not place a heavy object on the unit**  
The cabinet, mechanical parts, etc., may be damaged, or the unit may not work correctly.

**Do not handle the unit roughly**  
Avoid rough handling or mechanical shock to the unit.

**To avoid damaging the cabinet's finish**  
Plastic is often used for the surface finishing of the unit. Do not spray a volatile solvent such as an insecticide toward the cabinet or place rubber or vinyl products on the cabinet for a long time. If you do, the finish of the cabinet may be damaged or the coating may come off.

**Do not clean the cabinet with thinner or benzine**  
The cabinet may be damaged or its coating may come off. When you use a chemical-impregnated cloth, use it according to its directions.

**Clean the cabinet with a soft dry cloth**  
When the cabinet is very dirty, clean it with a soft dry cloth lightly moistened with a mild detergent solution and finish it with a dry cloth.

**Do not put magnetic objects close to the unit**  
Magnetic fields may damage the recording.

**To prevent electromagnetic interference caused by radio communication equipment such as cellular phones, transceivers, etc.**  
The use of the radio communication equipment such as cellular phones or transceivers near the unit may cause a malfunction and can affect the audio/video signals. Cellular phones or transceivers near the unit should be switched off.

**Do not use the unit in an area exposed to radiation**  
A malfunction may occur.

**Checking the video heads every 1 000 hours**  
A VCR is a high-precision piece of equipment that records and plays back the picture recorded on a magnetic tape. In particular, the video heads and other mechanical parts may become dirty or worn. To maintain a clean picture, we recommend maintenance every 1 000 hours, even though the conditions of use may differ depending on temperature, humidity, dust, etc.

**When you transport the unit**  
Be sure to transport the unit carefully. Do not use the supplied carton and packing materials repeatedly. They are made from corrugated cardboard, and are designed to protect the unit only one time, when the unit is purchased and delivered to you.

### Cleaning of the Video Heads

With clogged video heads, the unit cannot record properly. Clean the video heads to prevent noise on the recorded picture or audio. For cleaning, use the supplied cleaning cassette.

**Before recording an important event**  
The unit cannot record properly with the clogged video heads. To ensure normal recording and clear pictures and sound, clean the video heads before recording an important event.

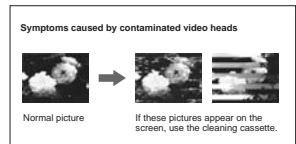
**Every 50 hours**  
If you repeat the tape transport operation, the video heads will become dirty and coated with fine dirt or dust. Clean the heads every 50 hours.

**After using a tape prone to clog the heads**  
After using such a tape causes the symptoms illustrated below, clean the heads.

**When the symptoms caused by clogged video heads appear**

Even if you clean the heads periodically, clogging of the heads may occur anyway. Clean the heads when:

- mosaic-pattern noise appears on the playback picture.
- a part of the playback picture does not move.
- playback pictures do not appear.
- playback audio is interrupted.



### To use the cleaning cassette

Refer to your cleaning cassette's instruction manual.

Cleaning cassettes are replaceable. The number of times you can use the cassette is specified in the cassette's instruction manual. After using the cassette that number of times, buy an optional DVCAM cleaning cassette or a Sony Digital Video Cleaning Cassette.

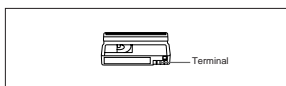
After prolonged use, the video heads may become worn out. If optimum picture quality is not restored even after you have cleaned the video heads with the cleaning cassette, the video heads may have worn out. In that case, you have to replace the video heads with new ones. Please consult your Sony dealer.

### Notes on the Video Cassettes

**If the cassette memory function does not work**  
Reinsert the cassette a few times. The terminal portion of the cassette may be dusty or dirty.

### Cleaning the terminal

If the terminal of the cassette gets dirty, or dust sticks to the terminal, the unit may not work correctly. Clean the terminal with a swab once every ten times you eject a cassette.



### When affixing a label to the cassette

Be sure to affix a label only on the correct location so as not to cause malfunction of the unit.

### After using a cassette

After use, please be sure to rewind the tape completely (to prevent picture and sound distortion). Return it to its case and store it in an upright position.

### Notes on the LCD Screen

The LCD screen is manufactured using high-precision technology. The ratio of effective pixels is 99.99% or more. However, there may be some tiny black points and/or bright points (red, blue, green or white) that constantly appear on the LCD screen. These points do not affect the recorded picture in any way.

Do not place this unit with the LCD screen pointing toward the sun. Otherwise, the unit may be damaged. The backlight used in the built-in LCD monitor deteriorates with prolonged use. If the brightness of the LCD monitor cannot be adjusted, consult your Sony dealer.

### To clean the LCD screen

To remove dirt or to clean fingerprints from the LCD screen, use an LCD cleaning kit (not supplied).

### About Moisture Condensation

If the unit or cassette is brought directly from a cold to a warm location, moisture may condense inside or outside the unit or tape. If you use the tape or video heads in this condition, the tape may adhere to the head drum, and the video heads or the tape may be damaged, or a malfunction may occur.

## Notes on Use

Moisture condensation is likely to occur under the following conditions:

- The unit or cassette is brought from the cold outdoors to a warm indoor location.
- The unit or cassette is brought from the air-conditioned indoors to the hot outdoors.
- The unit is used in a place subject to cold currents from an air conditioner.

When bringing the unit or cassette from a cold place to a warm place or vice versa, put it in a plastic bag and seal the bag tightly. After bringing it into the new place, leave the bag on for more than one hour, and remove the bag when the air temperature inside it has reached the temperature surrounding it.

### If moisture condensation occurred

You cannot operate the unit except to press EJECT, and a cassette cannot be inserted. If this occurs, with the unit powered on, remove the cassette, then wait more than one hour for the moisture to evaporate.

### Digital Hours Meter

The digital hours meter keeps cumulative counts of the total operation time, the head drum rotation time, the tape running time and the number of unthreading operations. These counts can be displayed on the menu. Use them as guidelines for scheduling maintenance.

In general, consult your Sony dealer about necessary periodic maintenance checks.

The digital hours meter has the following four display modes and you can check them in HRS METER of the OTHERS menu (See page 92 (GB)).

#### • OPERATION mode

The cumulative total hours of operating time is displayed in 10-hour increments.

#### • DRUM RUN mode

The cumulative total hours of drum rotation with tape threaded is displayed in 10-hour increments.

#### • TAPE RUN mode

The cumulative total hours of tape running time is displayed in 10-hour increments.

#### • THREADING mode

The cumulative number of tape unthreading operations is displayed in 10-operation increments.

### Self-diagnostics Function

The unit has a self-diagnostics display function. This function displays the current condition of the unit as a five-digit code (a combination of a letter and numbers), on the LCD monitor, display window, and MONITOR VIDEO output. If a five-digit code is displayed, check the following code chart. The last two digits (indicated by □□) will differ depending on the state of your unit.

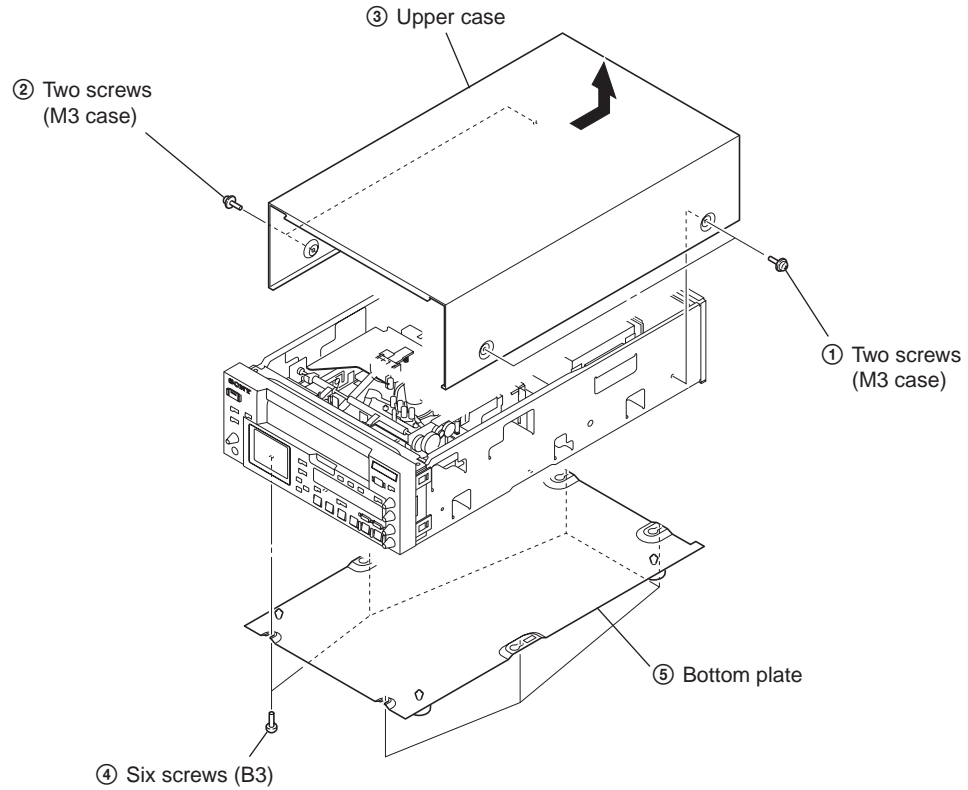
Code	Symptom	Remedy
C:21:□□	Moisture condensation has occurred.	Remove the cassette, then wait more than one hour with the power on.
C:22:□□	The video heads are dirty.	Clean the heads using the cleaning cassette (supplied).
C:31:□□	To prevent the unit from malfunctioning, the self-diagnostics function has taken over.	<ul style="list-style-type: none"> <li>• Remove the cassette, or change the unit to the standby mode once and then turn the unit on again.</li> <li>• Disconnect the AC power cord. After reconnecting it, operate the unit.</li> </ul>
C:32:□□	To prevent the unit from malfunctioning, the self-diagnostics function has taken over.	<ul style="list-style-type: none"> <li>• Change the unit to the standby mode once and then turn the unit on again.</li> <li>• Disconnect the AC power cord. After reconnecting it, operate the unit.</li> </ul>

If you are unable to resolve the problem, or a code other than those in the above chart appears, contact your Sony dealer or local authorized Sony service facility and inform them of the number.

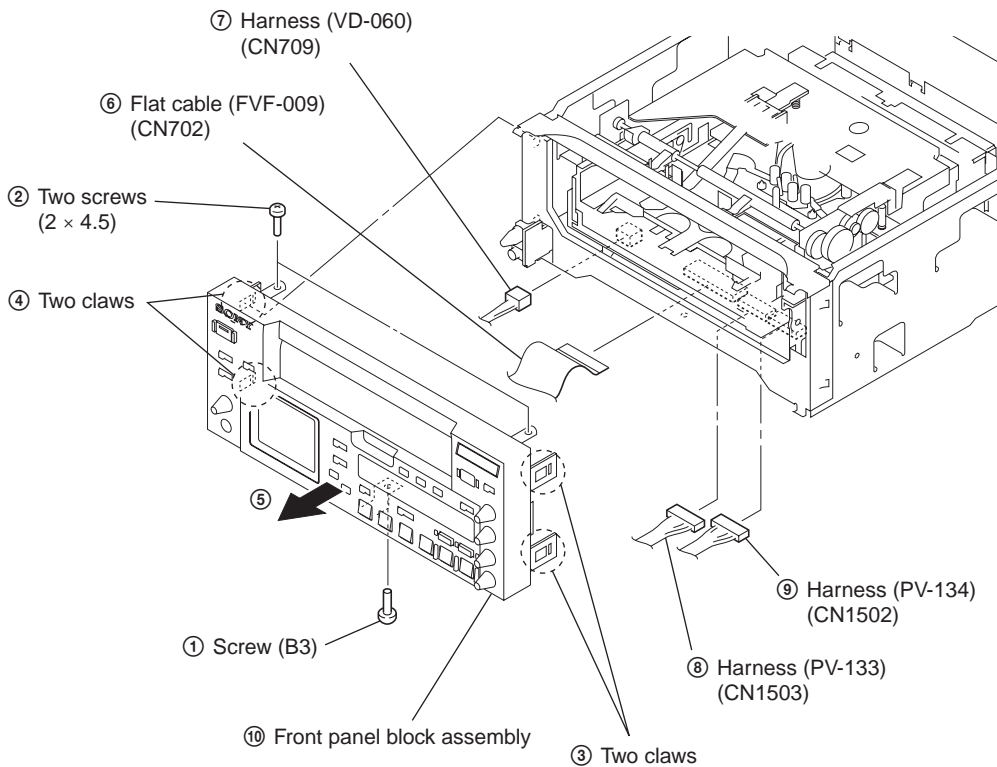
## SECTION 2 DISASSEMBLY

**Note:** Follow the disassembly procedure in the numerical order given.

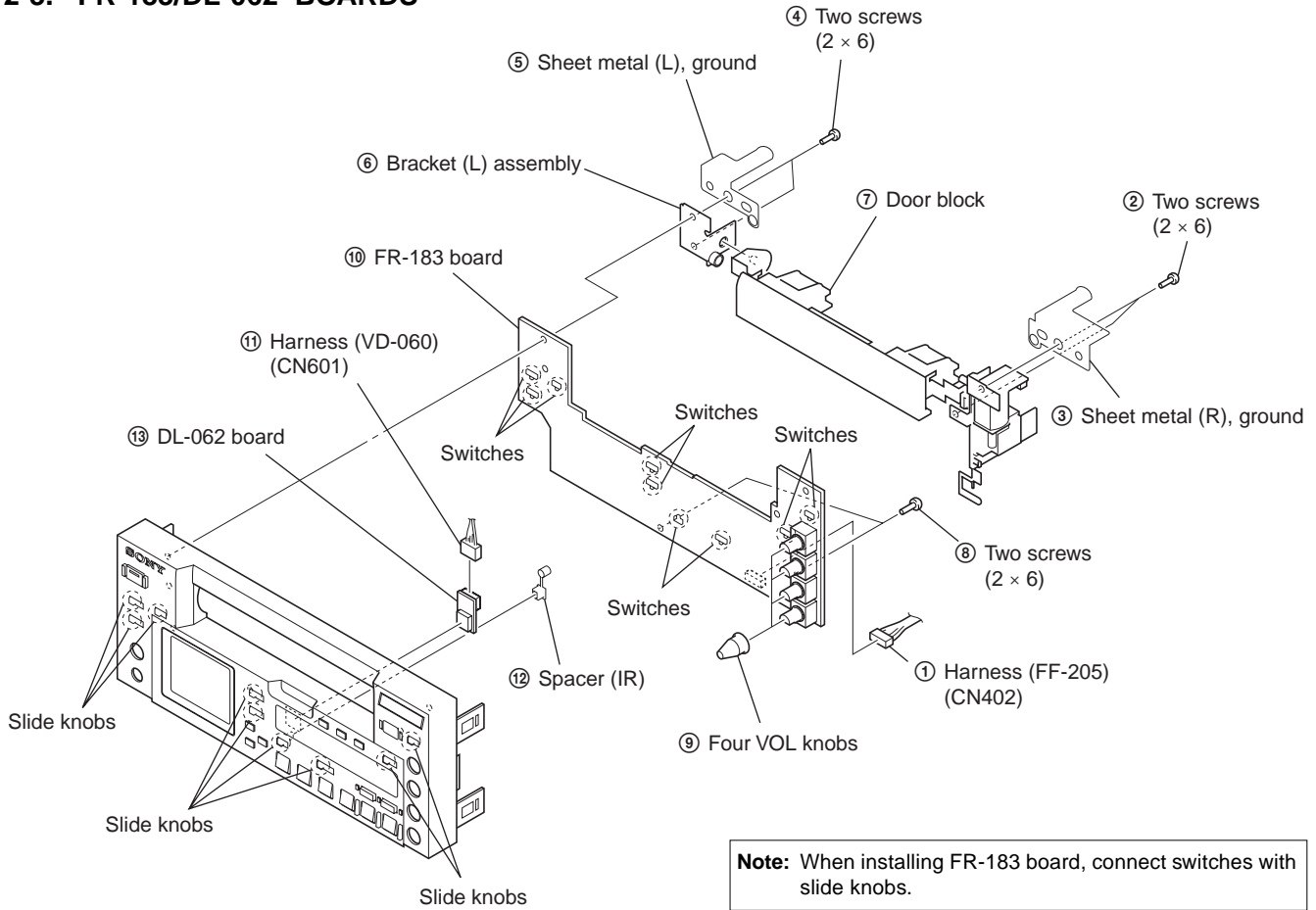
### 2-1. UPPER CASE, BOTTOM PLATE



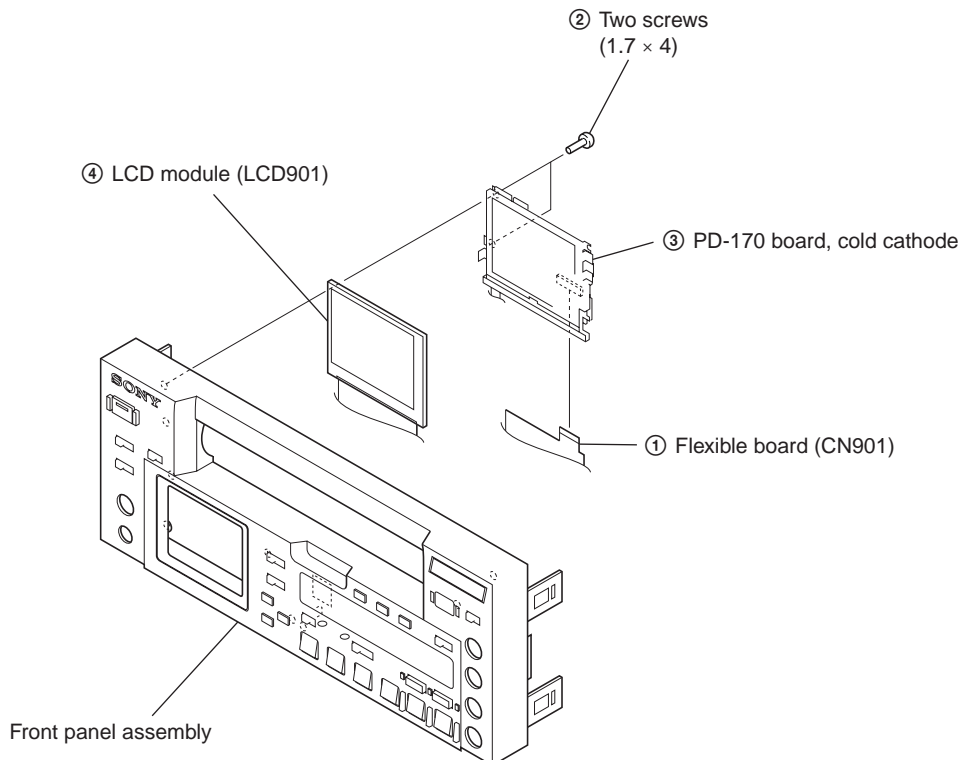
### 2-2. FRONT PANEL BLOCK ASSEMBLY



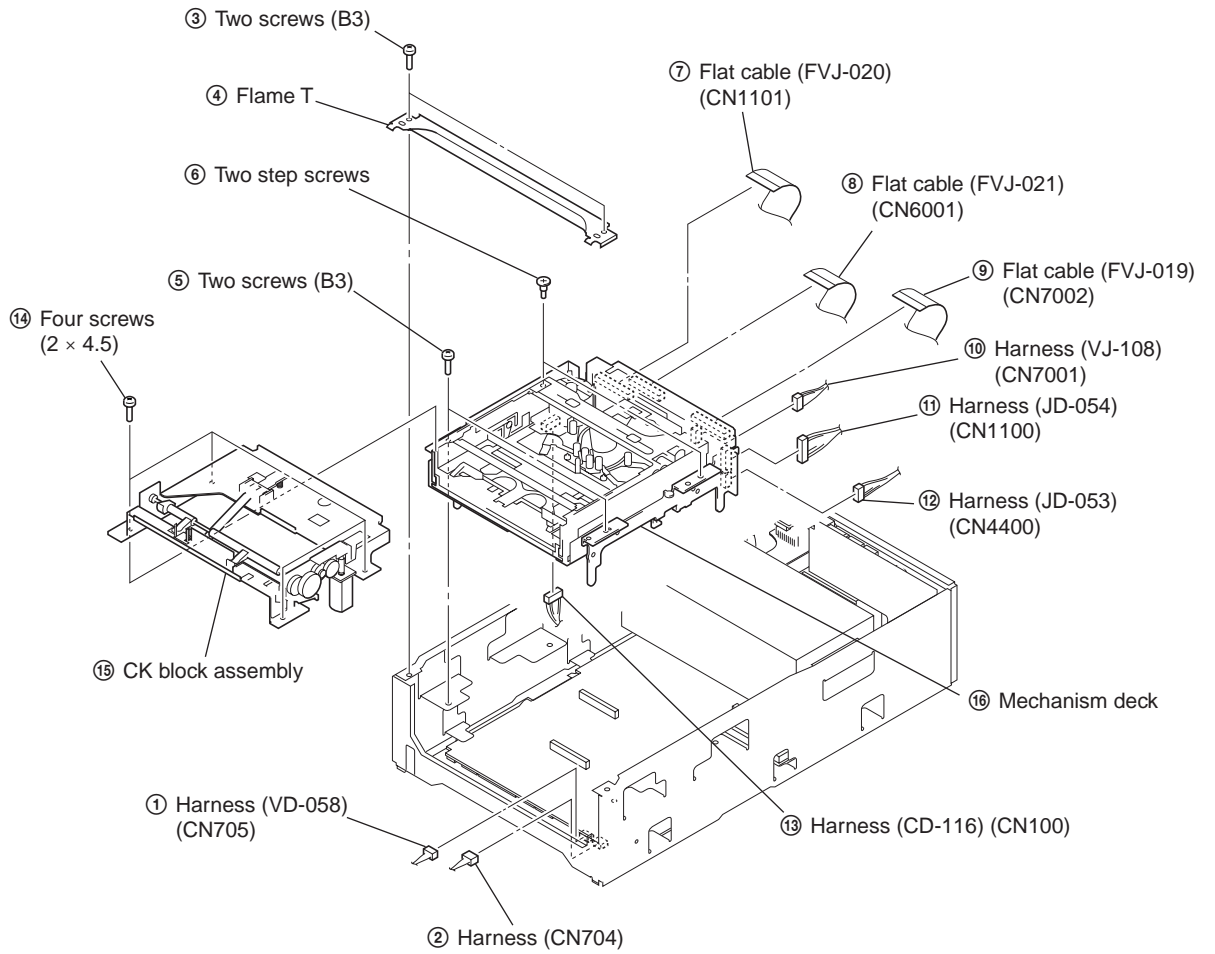
2-3. FR-183/DL-062 BOARDS



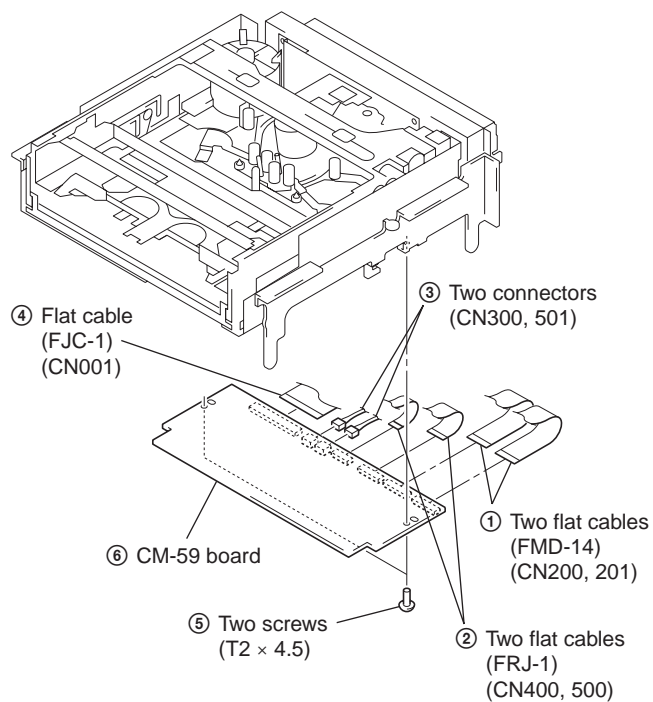
2-4. LCD MODULE (LCD901)



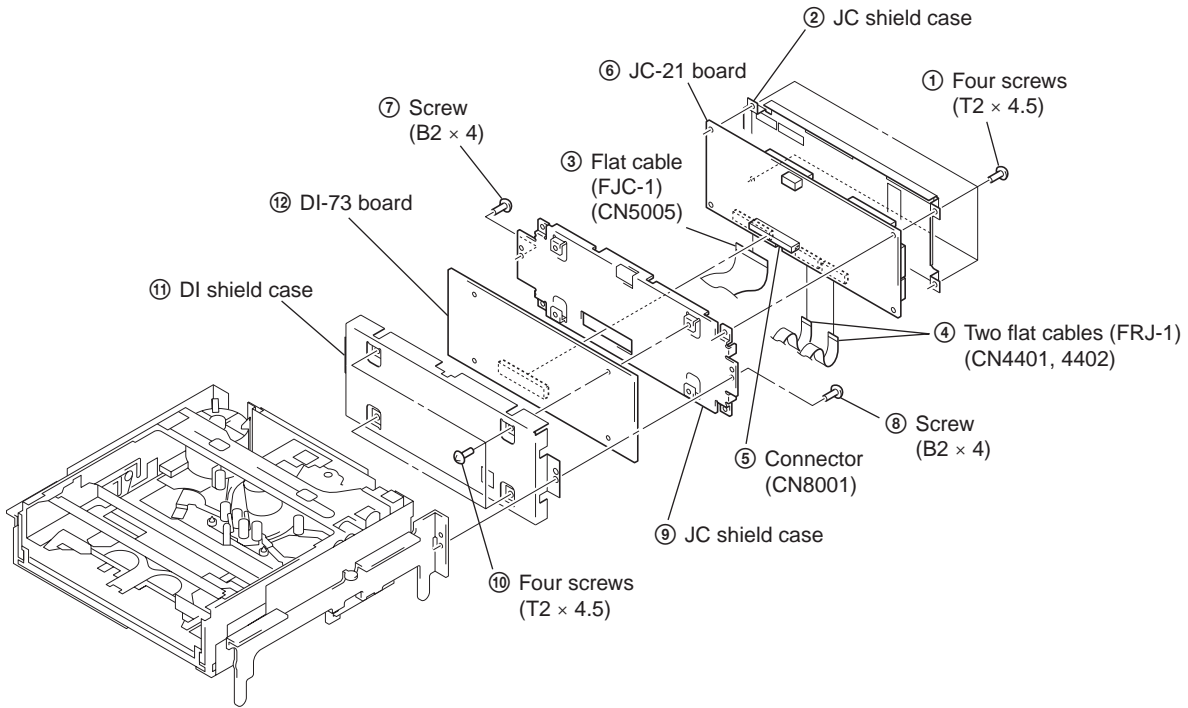
**2-5. MECHANISM DECK**



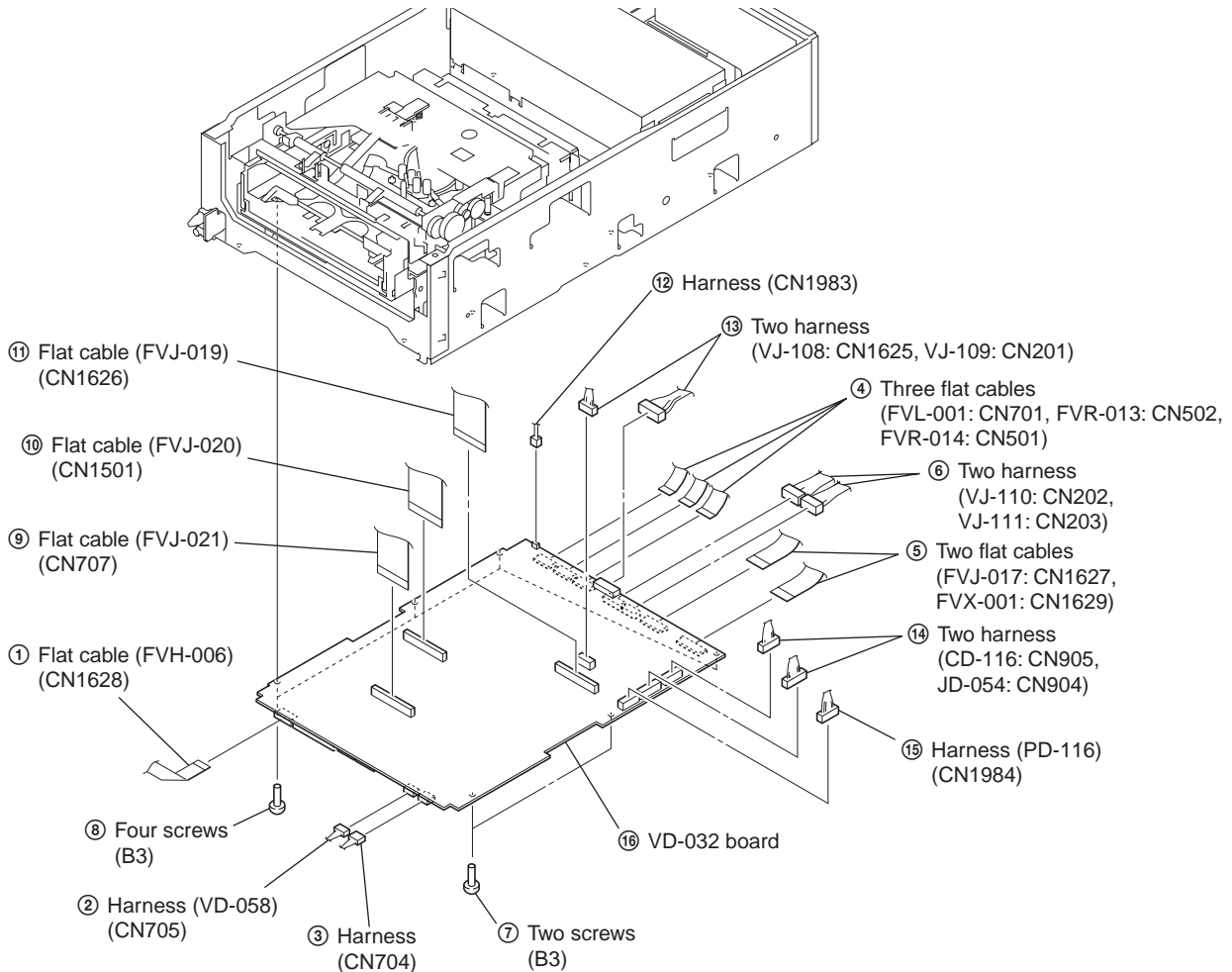
**2-6. CM-59 BOARD**



2-7. JC-21/DI-73 BOARDS

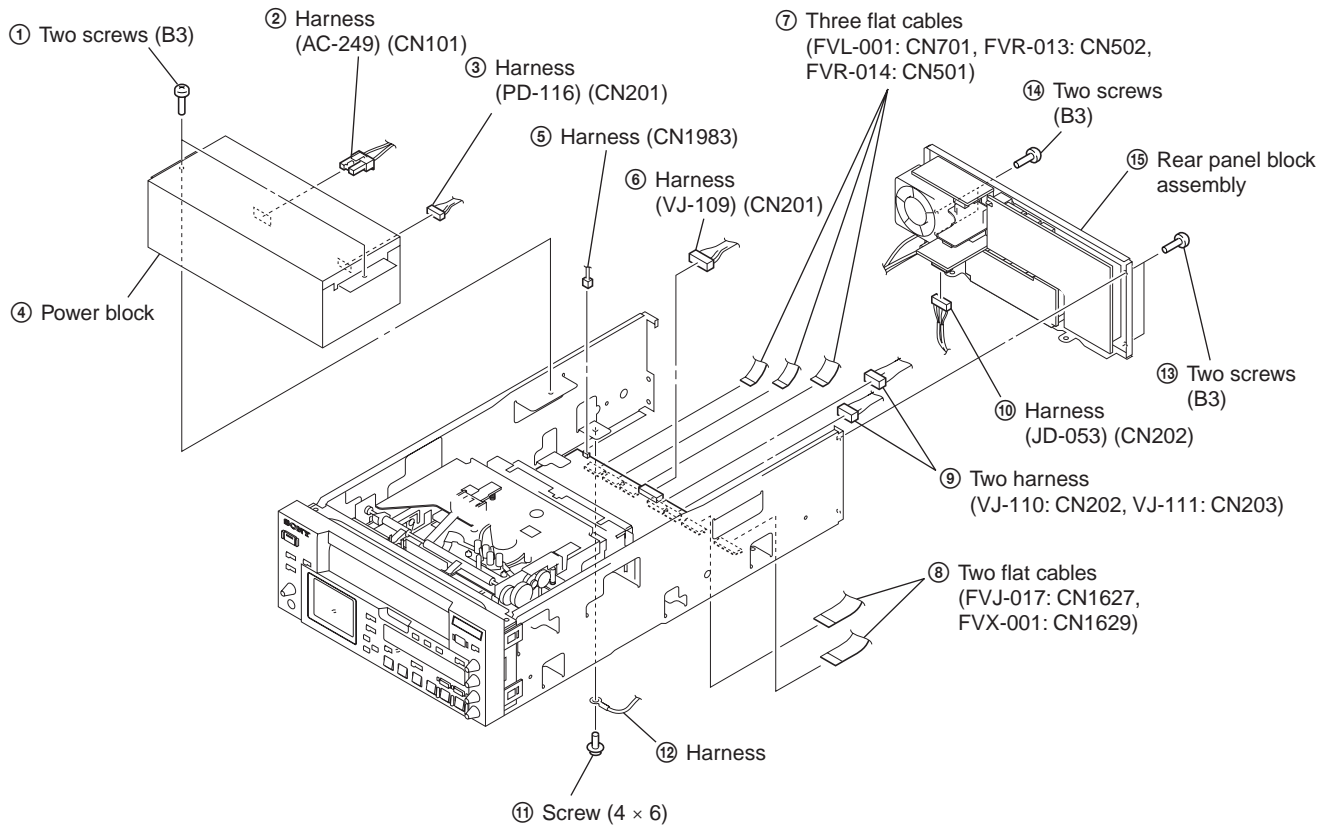


2-8. VD-032 BOARD

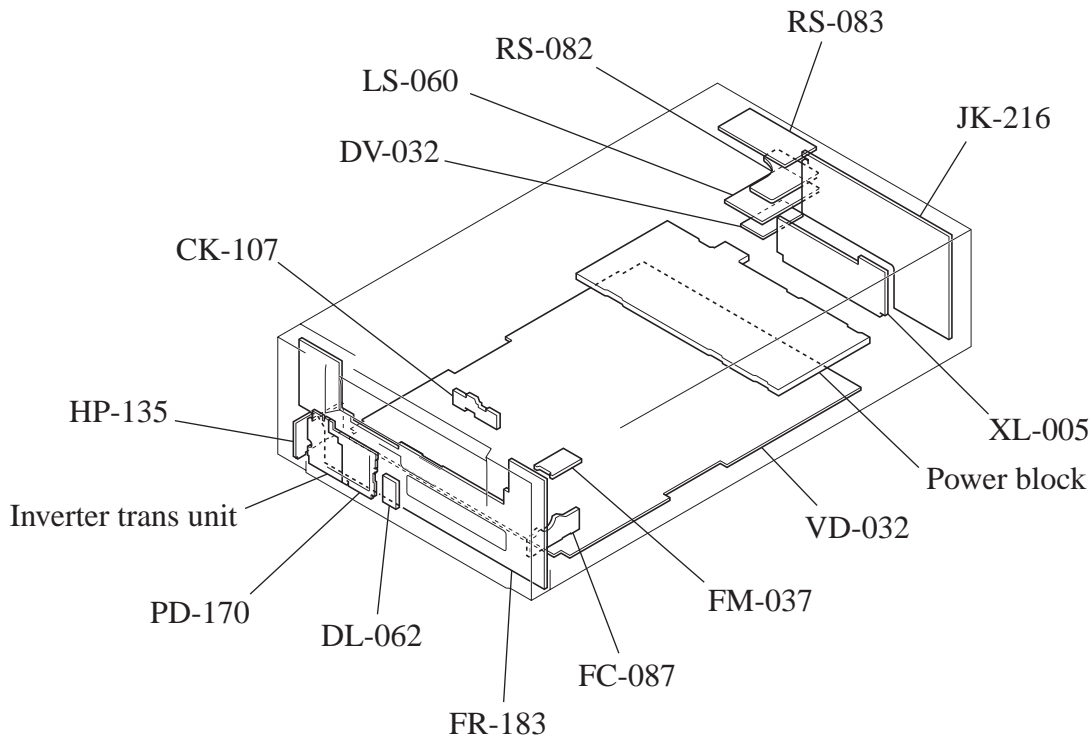




2-9. REAR PANEL BLOCK ASSEMBLY



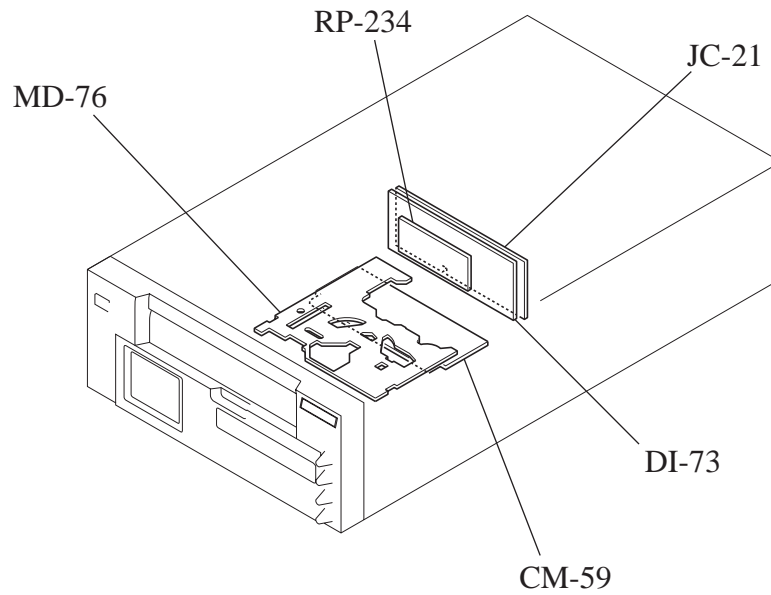
2-10. CIRCUIT BOARDS LOCATION-1  
(OVER ALL)



Board Name	Function
DV-032	DV CONNECTOR
VD-032	SYNC GENERATOR, VIDEO IN, UVIC, VIDEO OUT, AUDIO, HI CONTROL, RS232C/422 CONTROL, DC IN, DC/DC CONVERTER, DV CONNECTOR
CK-107	EJECTION DETECT SWITCH
DL-062	REMOTE CONTROL RECEIVER
FC-087	FRONT DOOR DETECT SWITCH
FM-037	FRONT DOOR MOTOR
FR-183	USER CONTROL
HP-135	HEAD PHONE
PD-170	RGB DRIVER, TIMING GENERATOR
JK-216	VIDEO/AUDIO IN/OUT
XL-005	AUDIO OUT
RS-082	RS-422 DRIVER
RS-083	RS-232C DRIVER
LS-060	CONTROL JACK



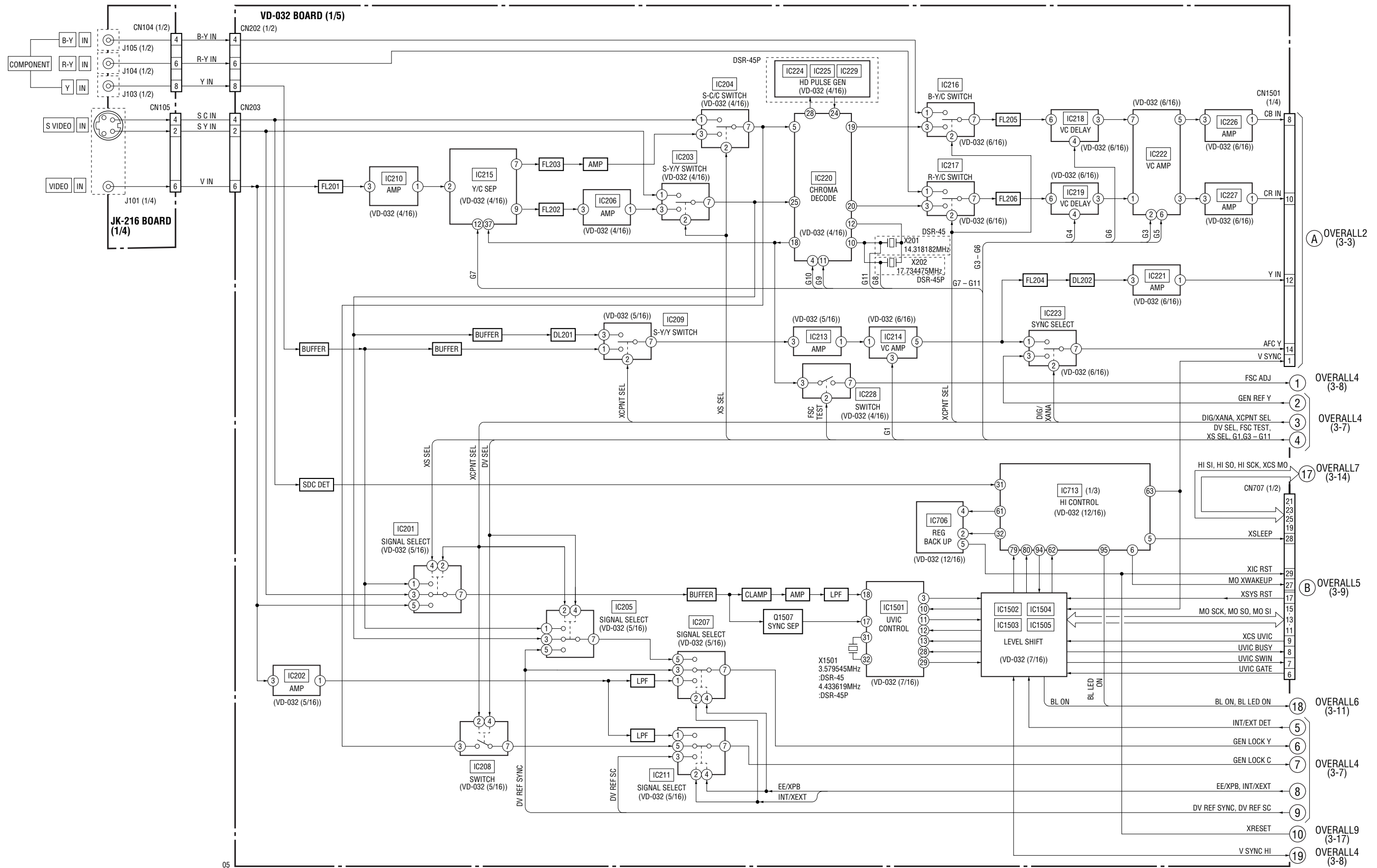
## 2-11. CIRCUIT BOARDS LOCATION-2 (MECHANISM DECK)



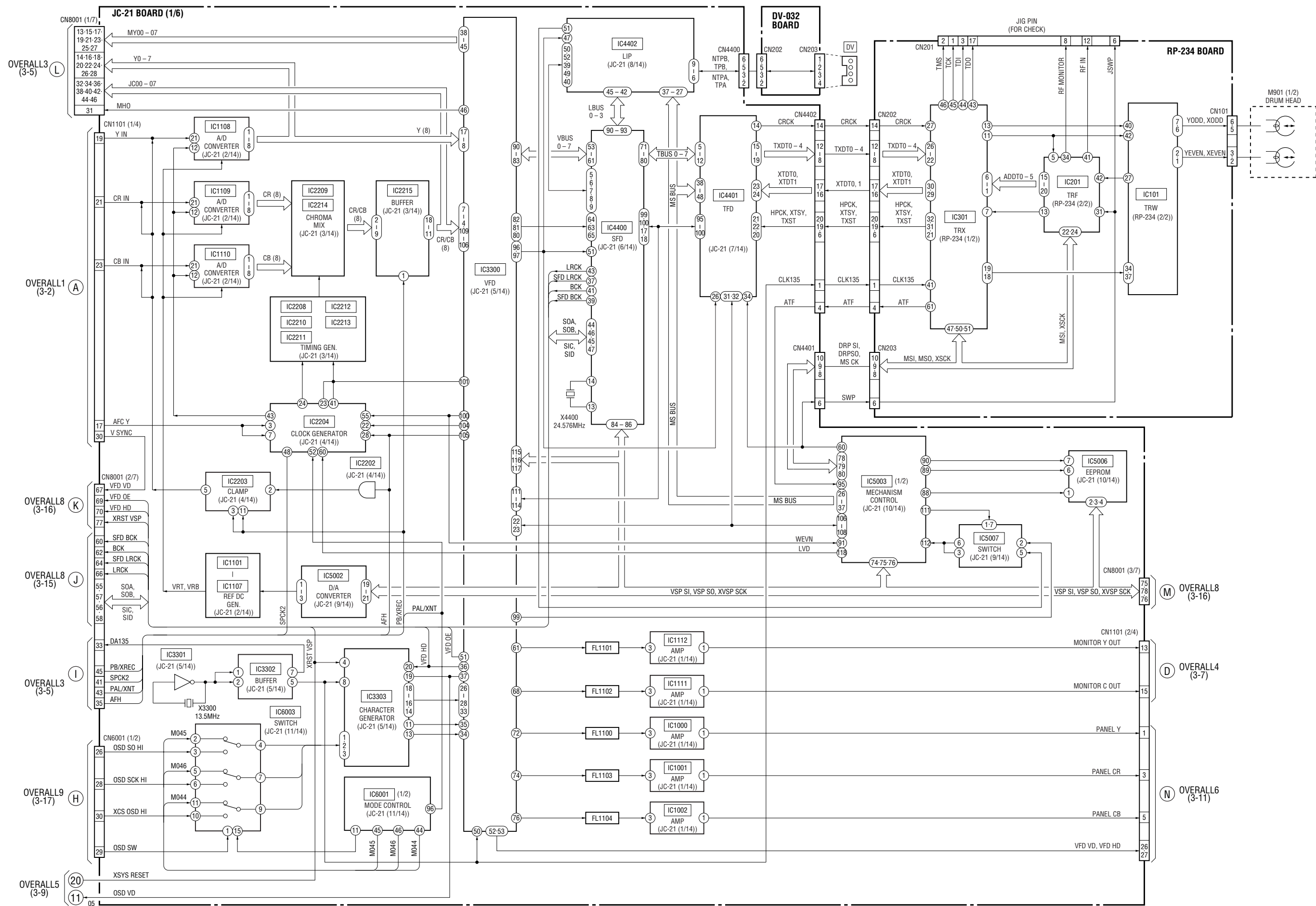
Board Name	Function
MD-76	TAPE SENSOR
RP-234	REC/PB AMP
JC-21	VIDEO PB AMP, VIDEO A/D CONVERTER, CHROMA MIX, AFC, VFD, SFD, TFD, DV INTERFACE, MECHANISM CONTROL, AUDIO, POWER SUPPLY
DI-73	VIDEO D/A CONVERTER, SYNC SHIFTER, AUDIO A/D, D/A CONVERTER, AUDIO DSP, TIME CODE IN/OUT
CM-59	DC/DC CONVERTER, MOTOR DRIVE

**SECTION 3  
BLOCK DIAGRAMS**

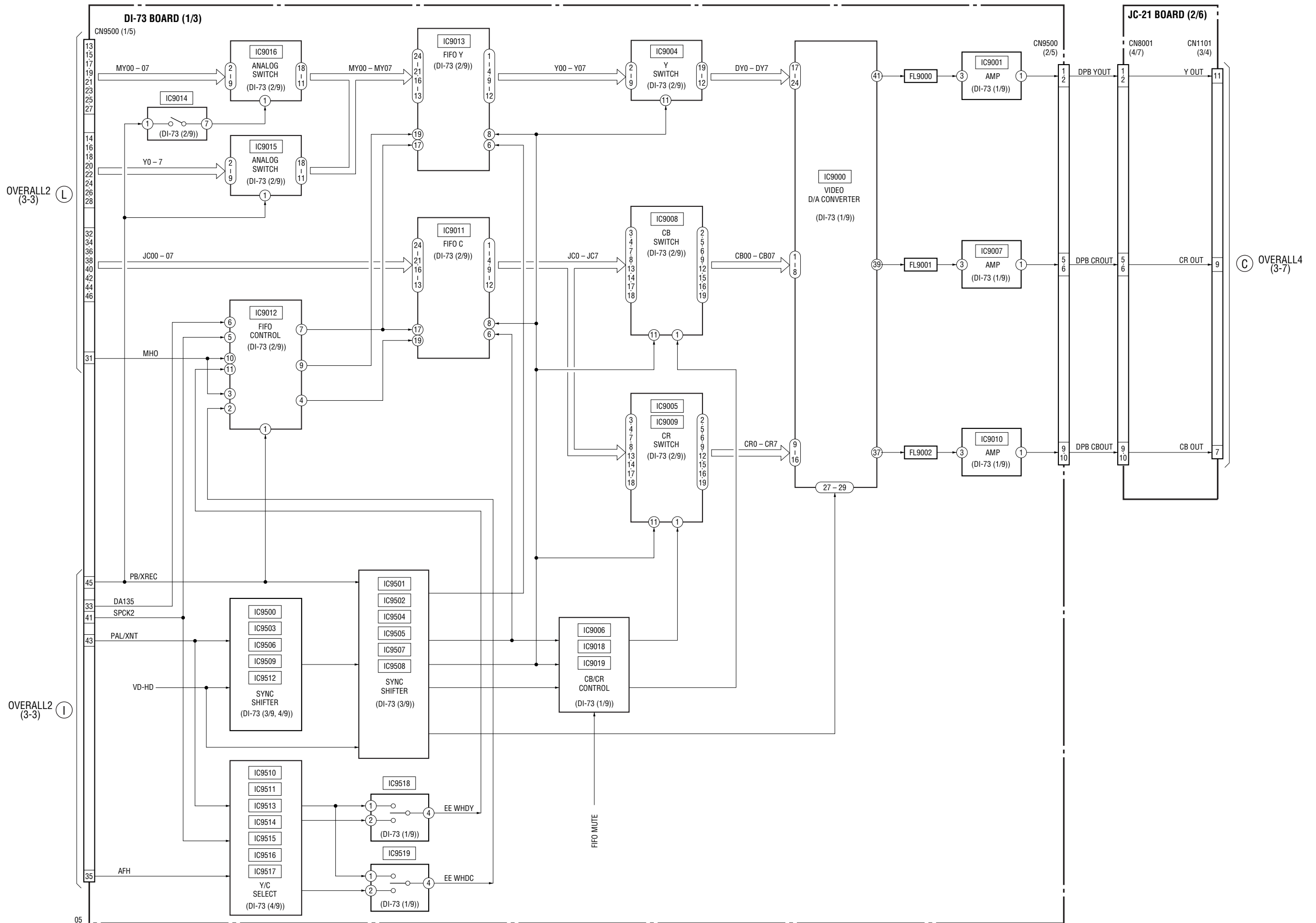
**3-1. OVERALL BLOCK DIAGRAM 1** ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



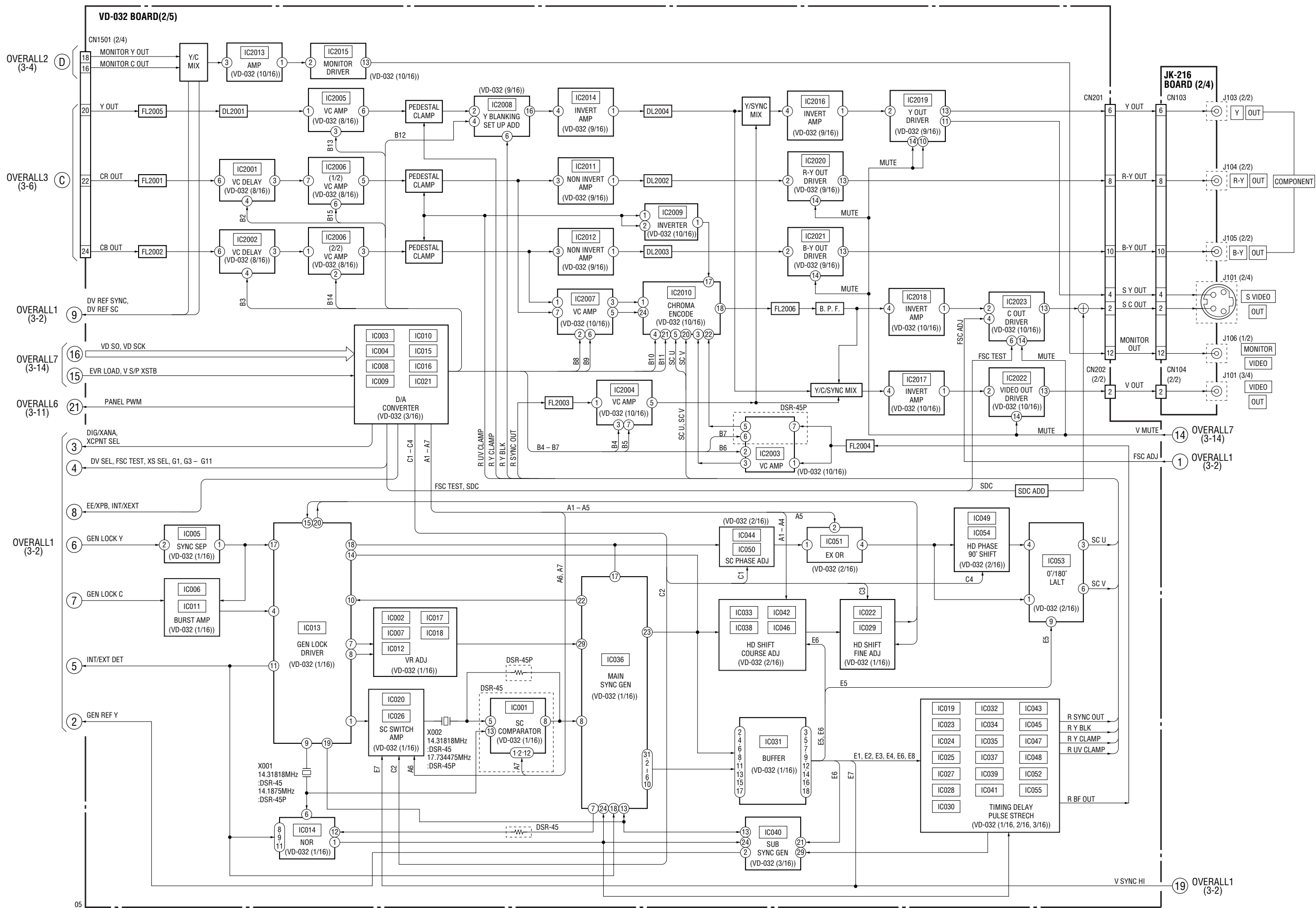
3-2. OVERALL BLOCK DIAGRAM 2 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



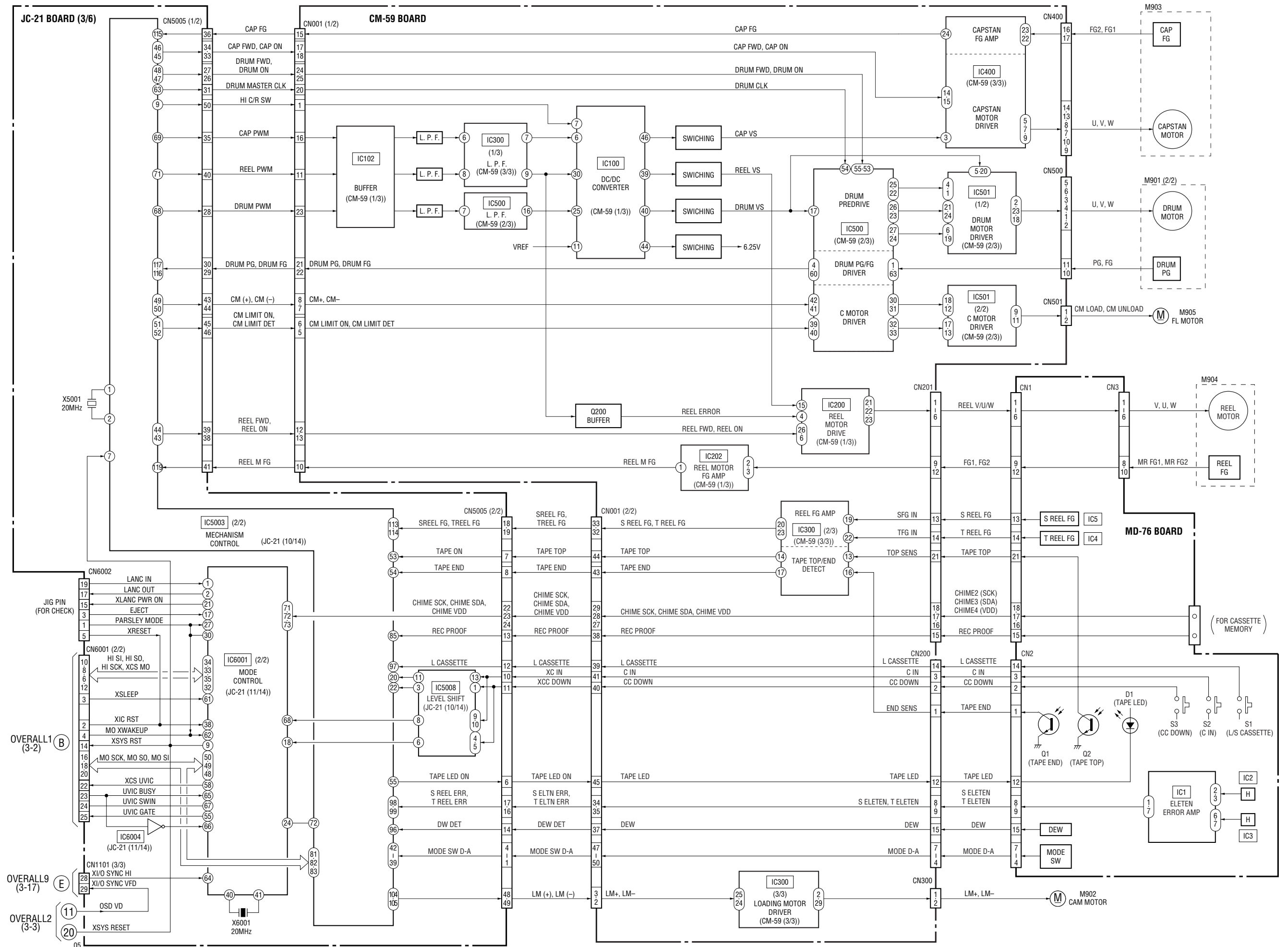
3-3. OVERALL BLOCK DIAGRAM 3 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-4. OVERALL BLOCK DIAGRAM 4 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

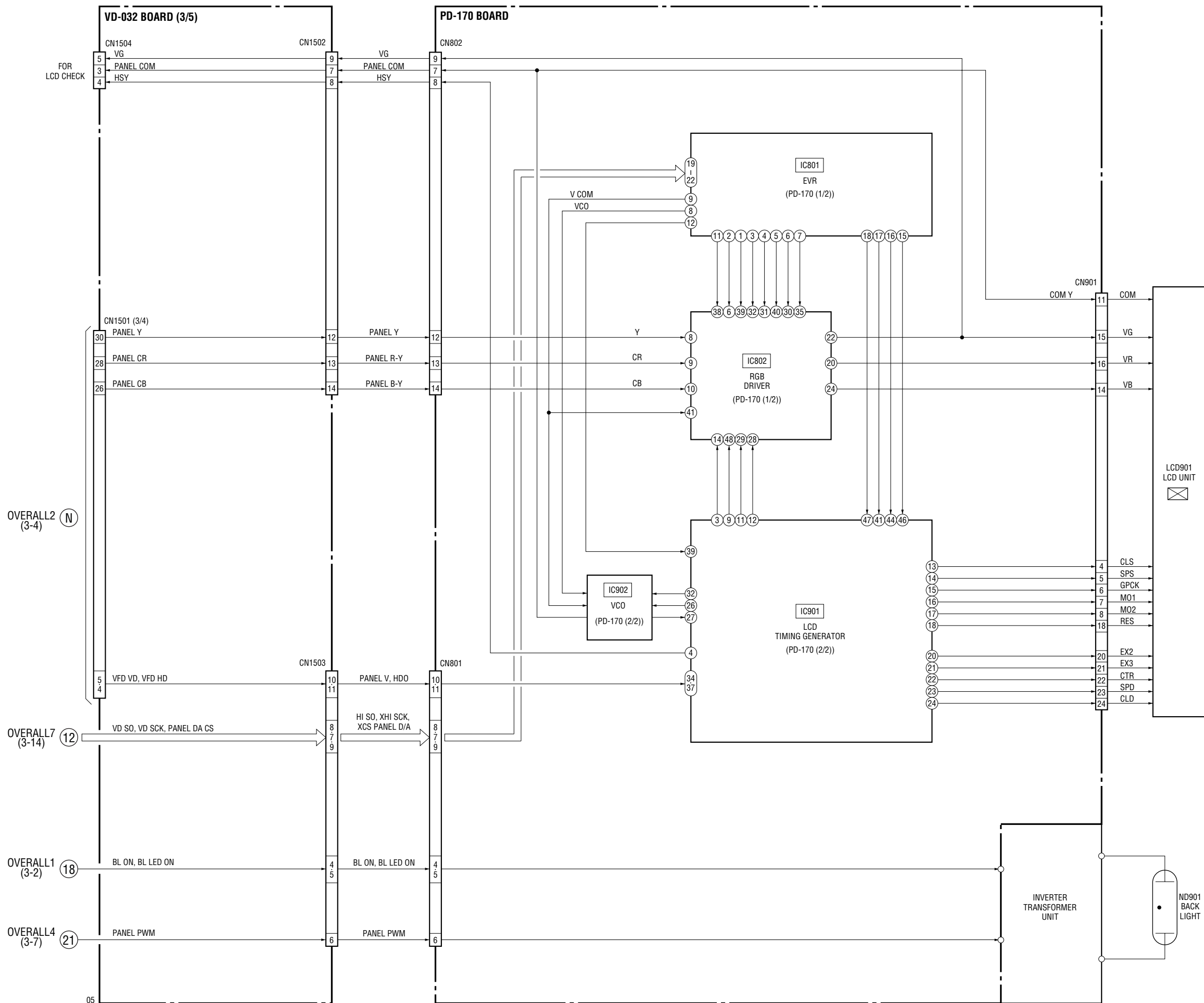


3-5. OVERALL BLOCK DIAGRAM 5 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

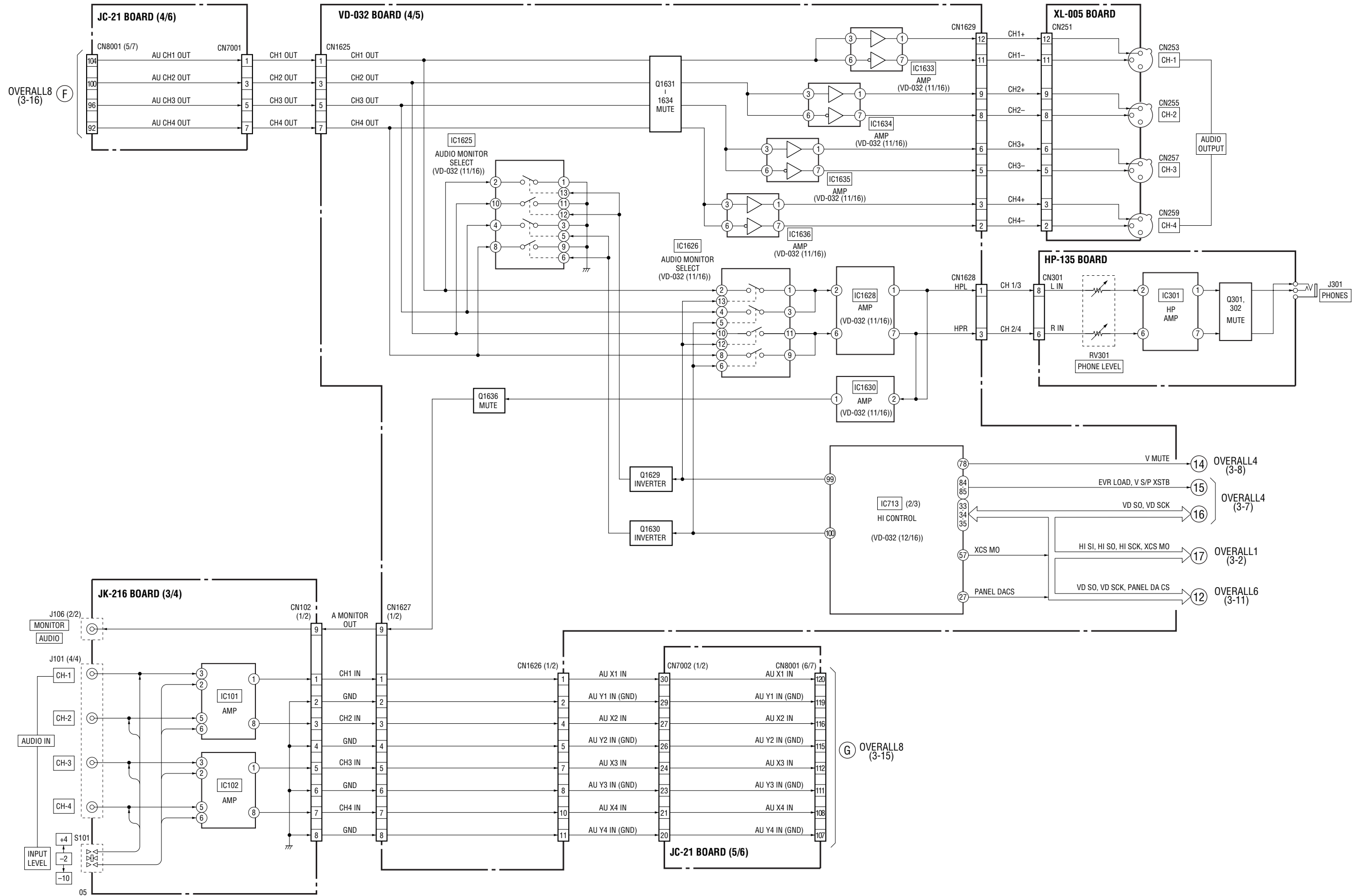




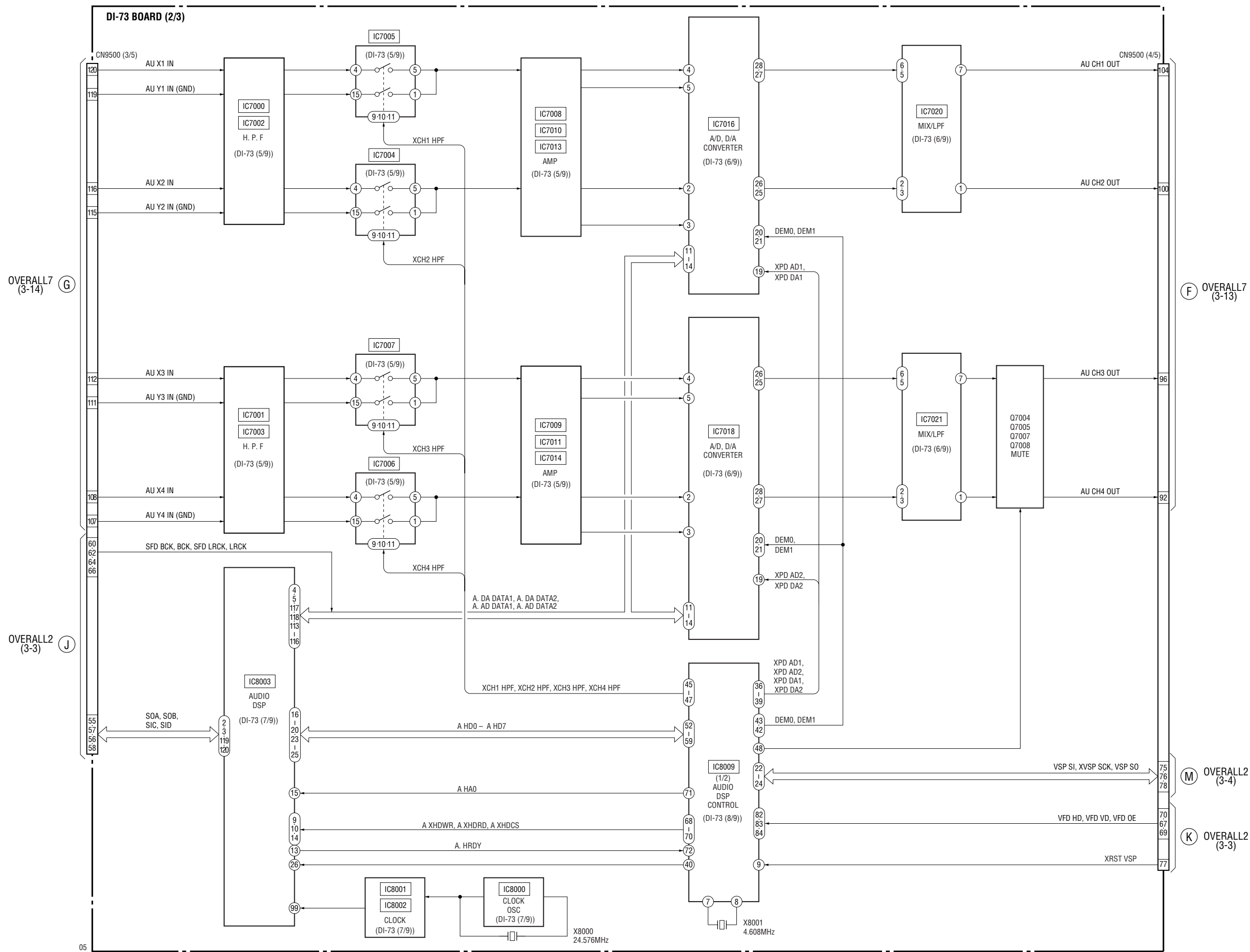
3-6. OVERALL BLOCK DIAGRAM 6 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



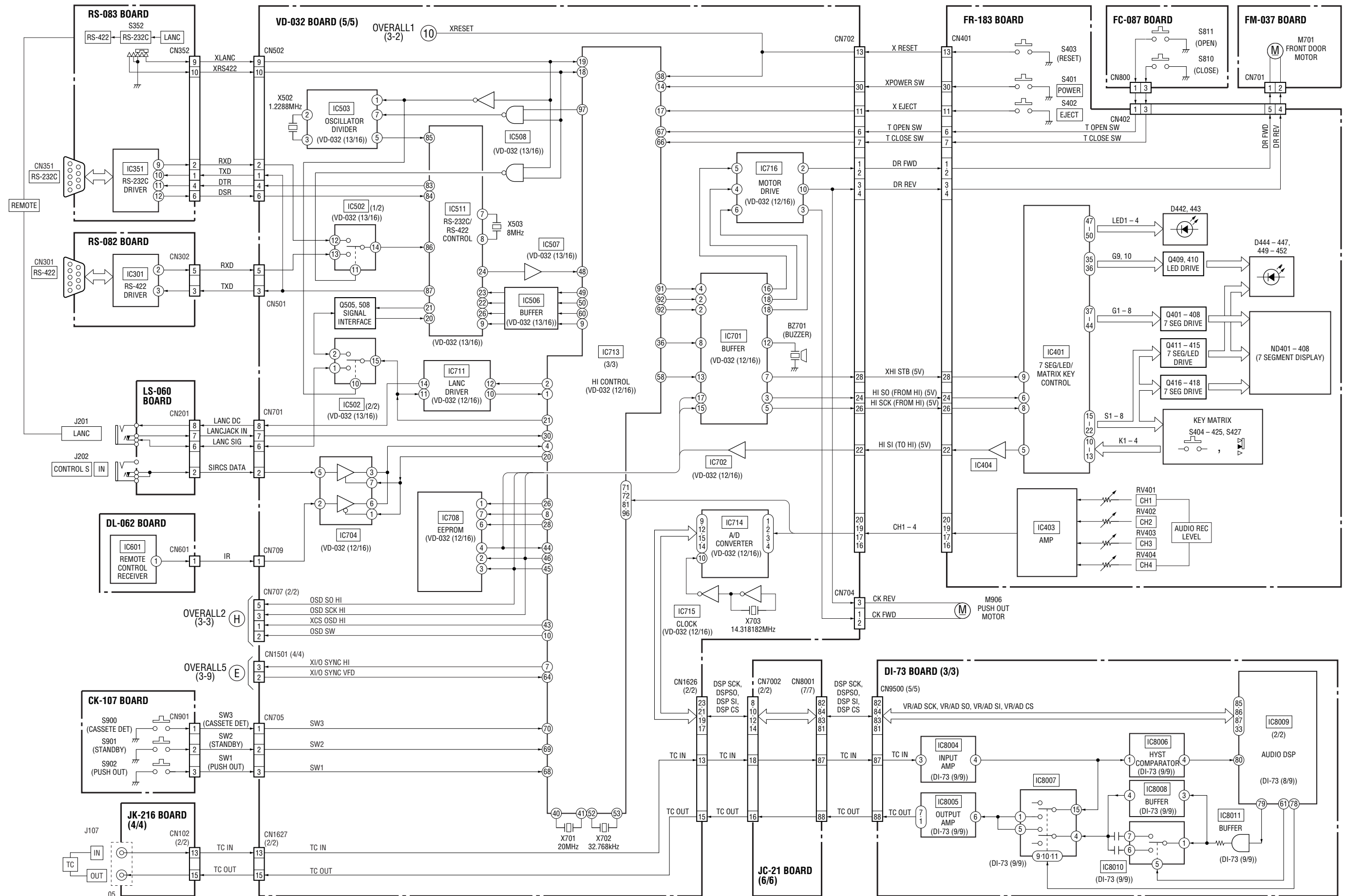
3-7. OVERALL BLOCK DIAGRAM 7 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



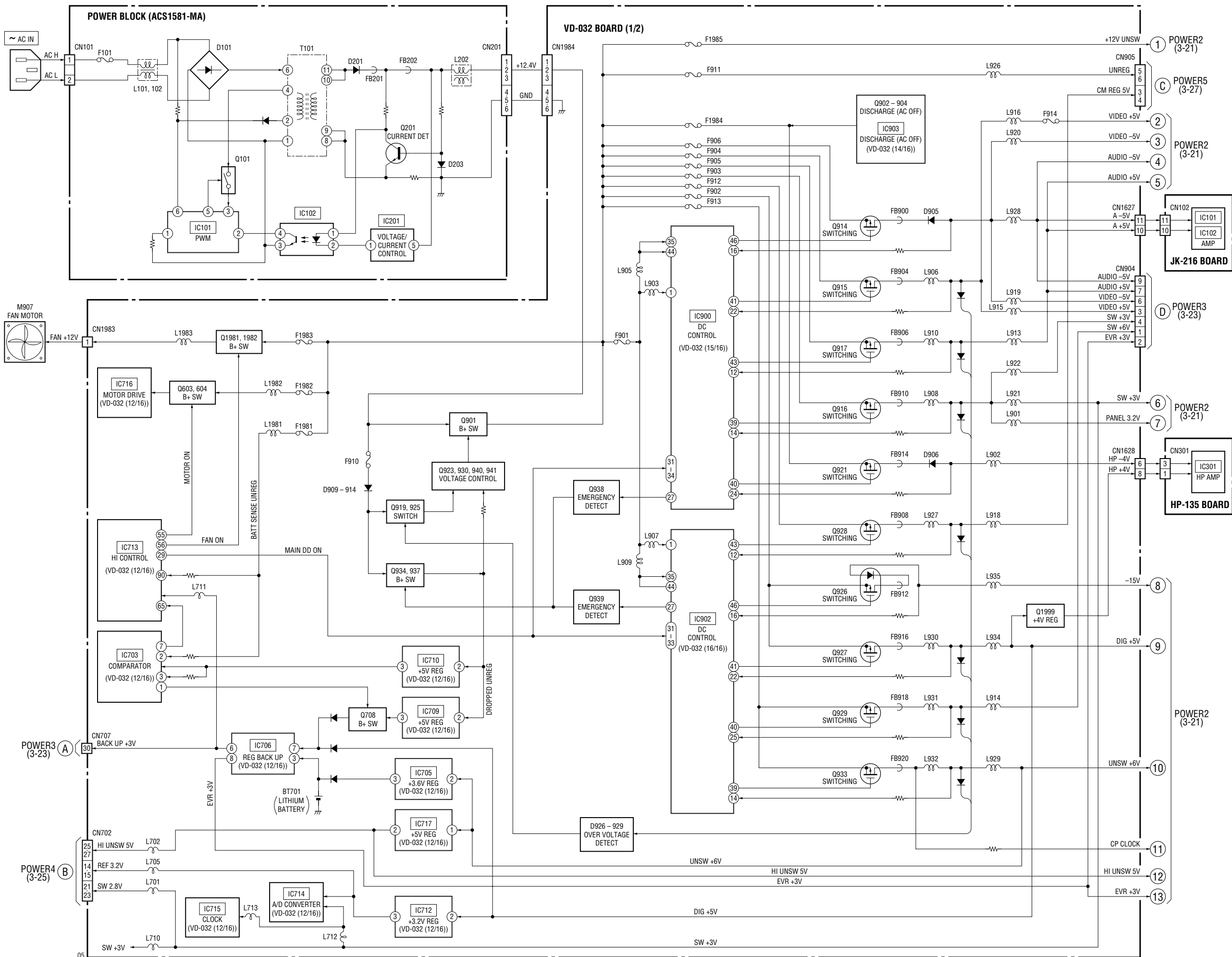
3-8. OVERALL BLOCK DIAGRAM 8 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



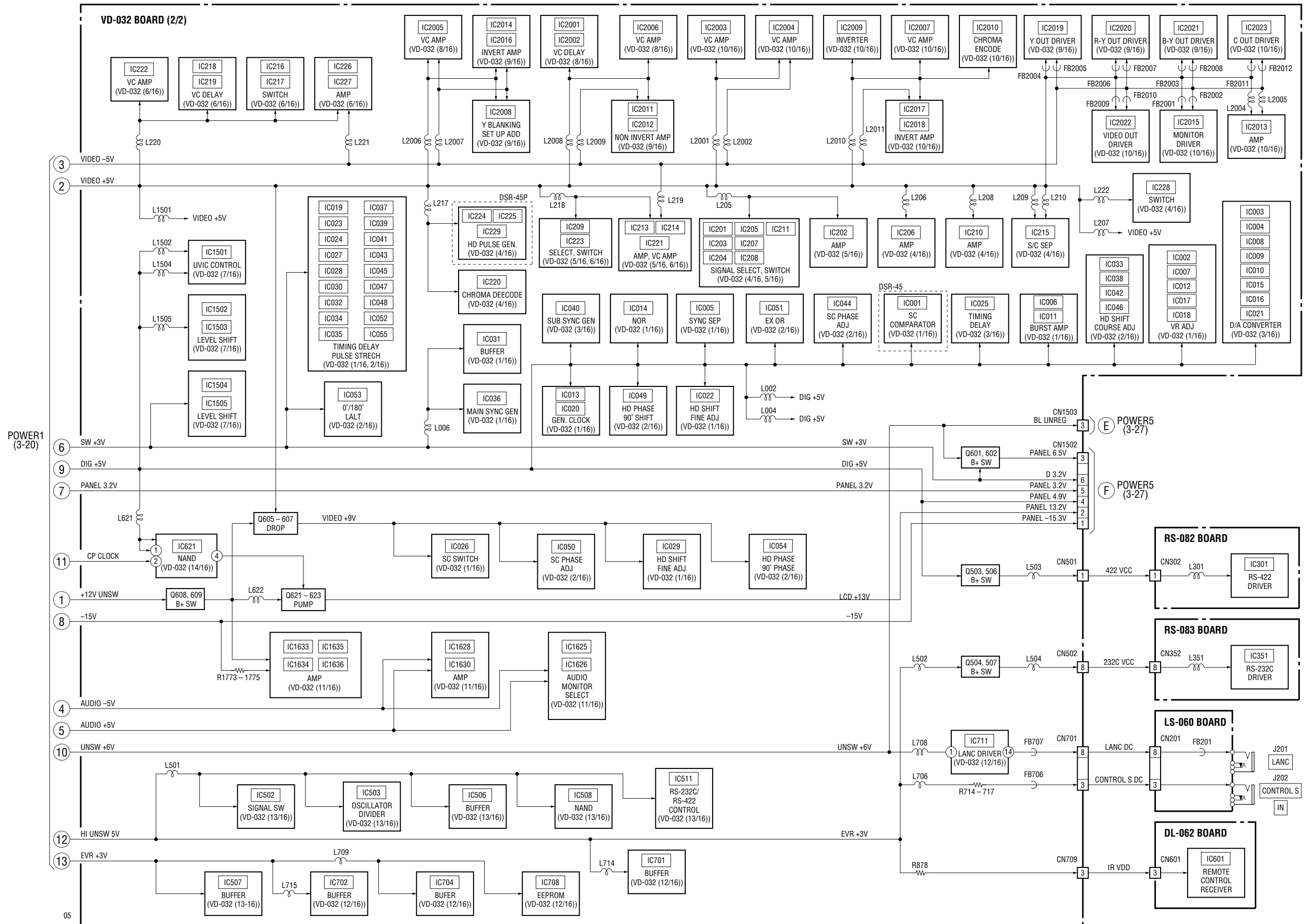
3-9. OVERALL BLOCK DIAGRAM 9 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-10. POWER BLOCK DIAGRAM 1 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

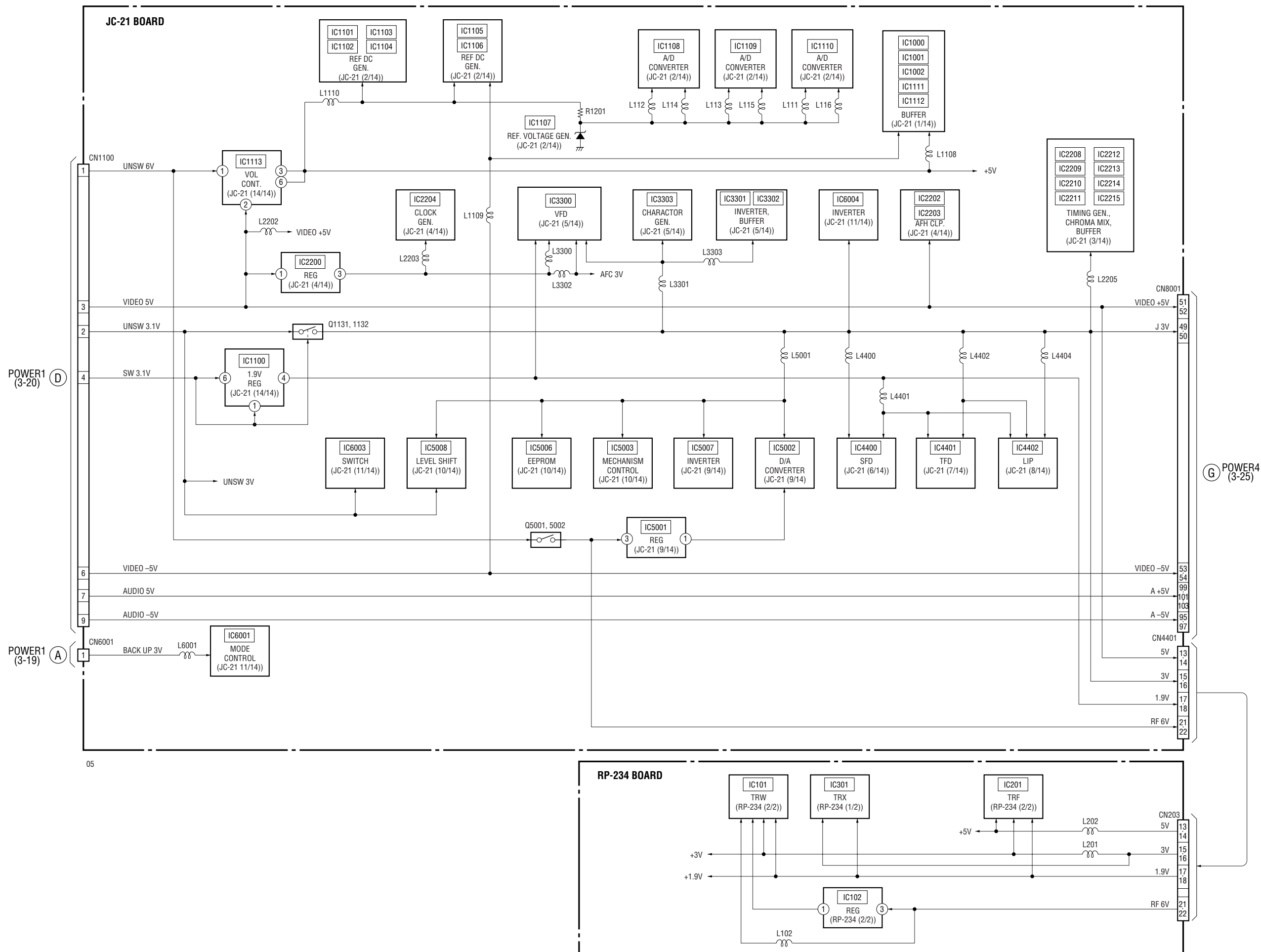


3-11. POWER BLOCK DIAGRAM 2 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

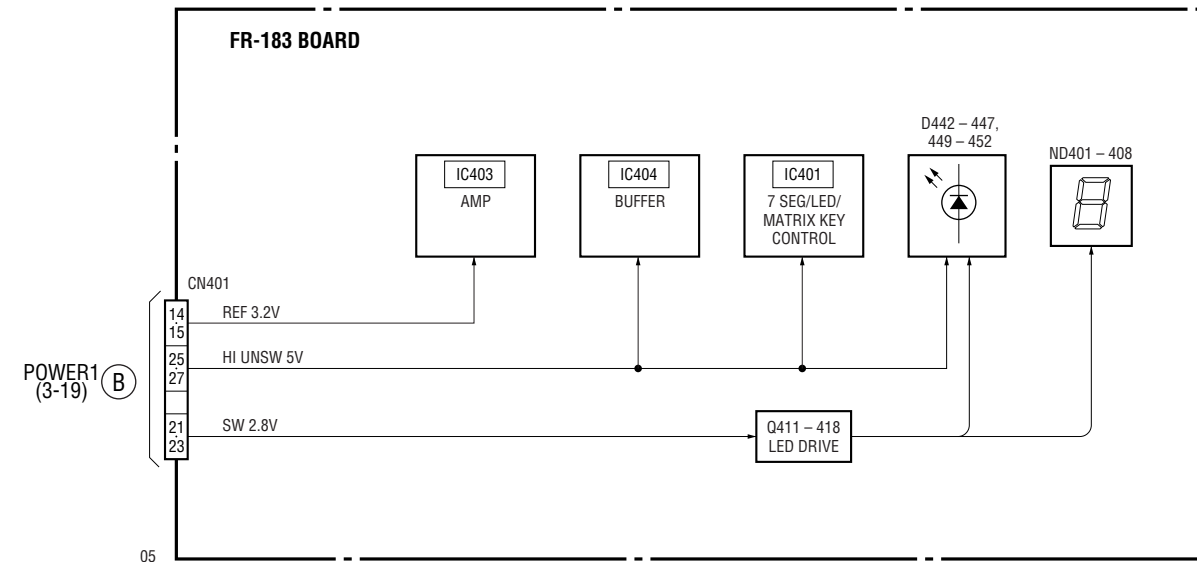
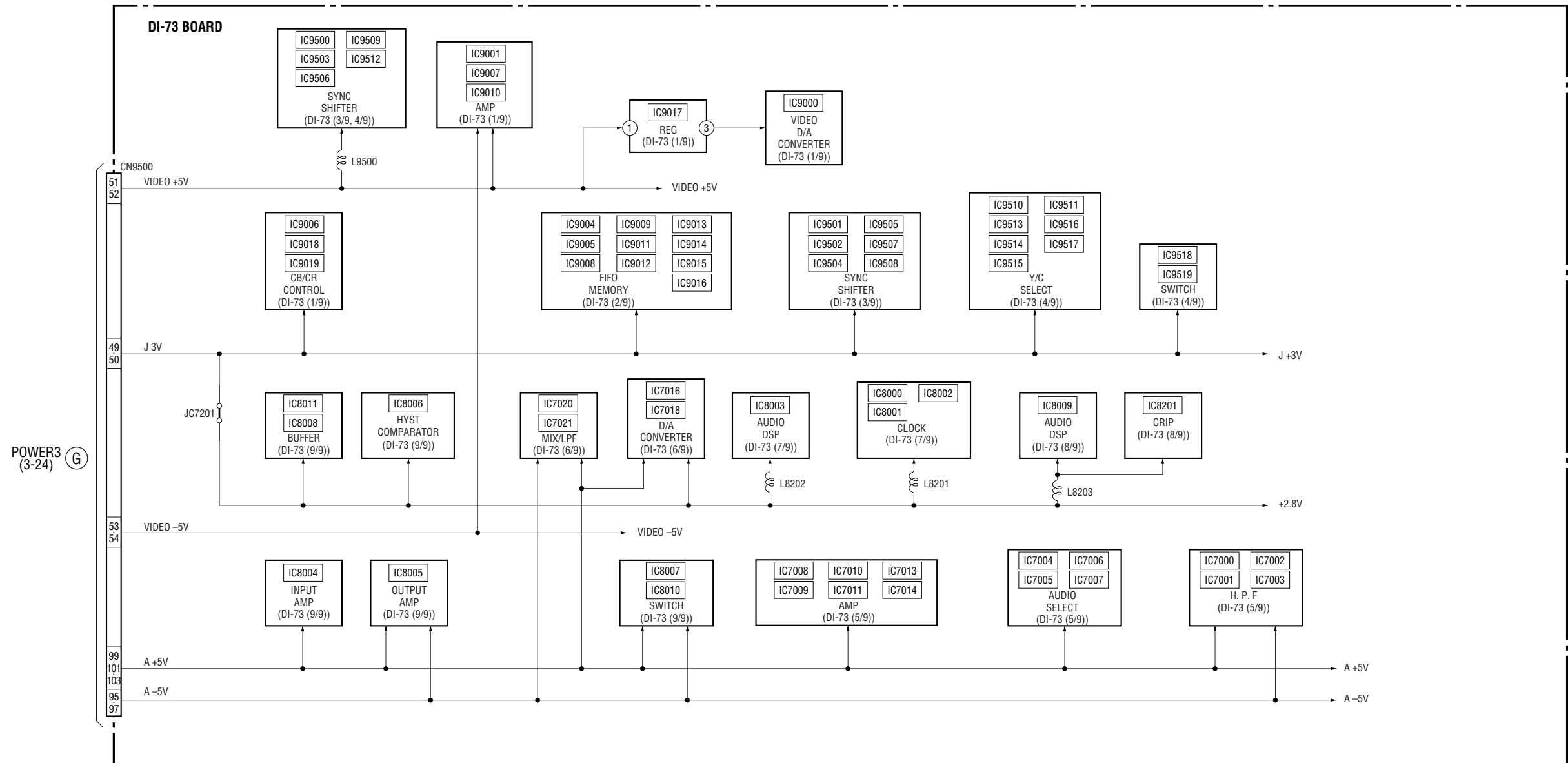




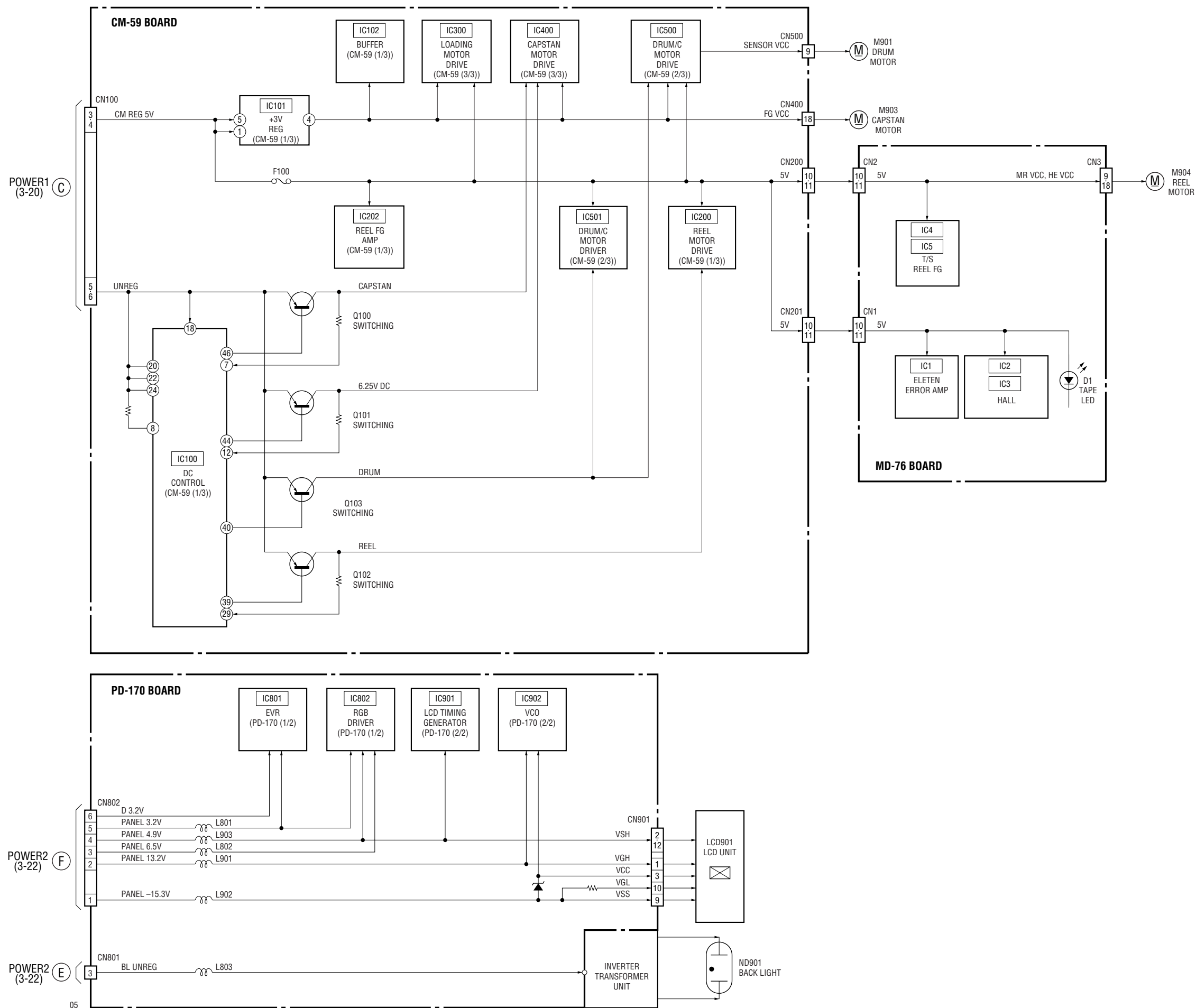
3-12. POWER BLOCK DIAGRAM 3 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-13. POWER BLOCK DIAGRAM 4 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.





3-14. POWER BLOCK DIAGRAM 5 ( ): Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

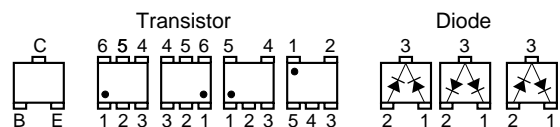


## SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

**THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.**  
(In addition to this, the necessary note is printed in each block)

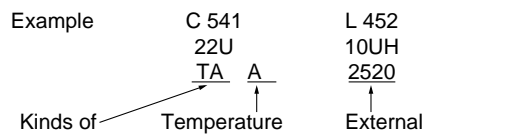
**For printed wiring boards:**








-  : Uses unleaded solder.
-  : Pattern from the side which enables seeing. (The other layers' pattern are not indicated)
- Circled numbers refer to waveforms.
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.



**For schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\mu\text{F}$   
50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are  $1/10\text{ W}$  unless otherwise noted.  
k $\Omega$  : 1000 $\Omega$ , M $\Omega$  : 1000k $\Omega$ .
- Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- Some chip part will be indicated as follows.



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name  
XEDIT → EDIT    PB/XREC → PB/REC
-  : nonflammable resistor.
-  : fusible resistor.
-  : panel designation.
-  : B+ Line.\*
-  : B- Line.\*
-  : IN/OUT direction of B line (+, -).\*
-  : adjustment for repair.\*
- Circled numbers refer to waveforms.\*

**Measuring conditions voltage and waveform:**

- Voltages and waveforms are measured between the measurement points and ground when color bar signal input. They are reference values and reference waveforms.\* (VOM of DC 10 M $\Omega$  input impedance is used)
- Voltage values change depending upon input impedance of VOM used.
- \* Indicated by the color red.

**Note:**

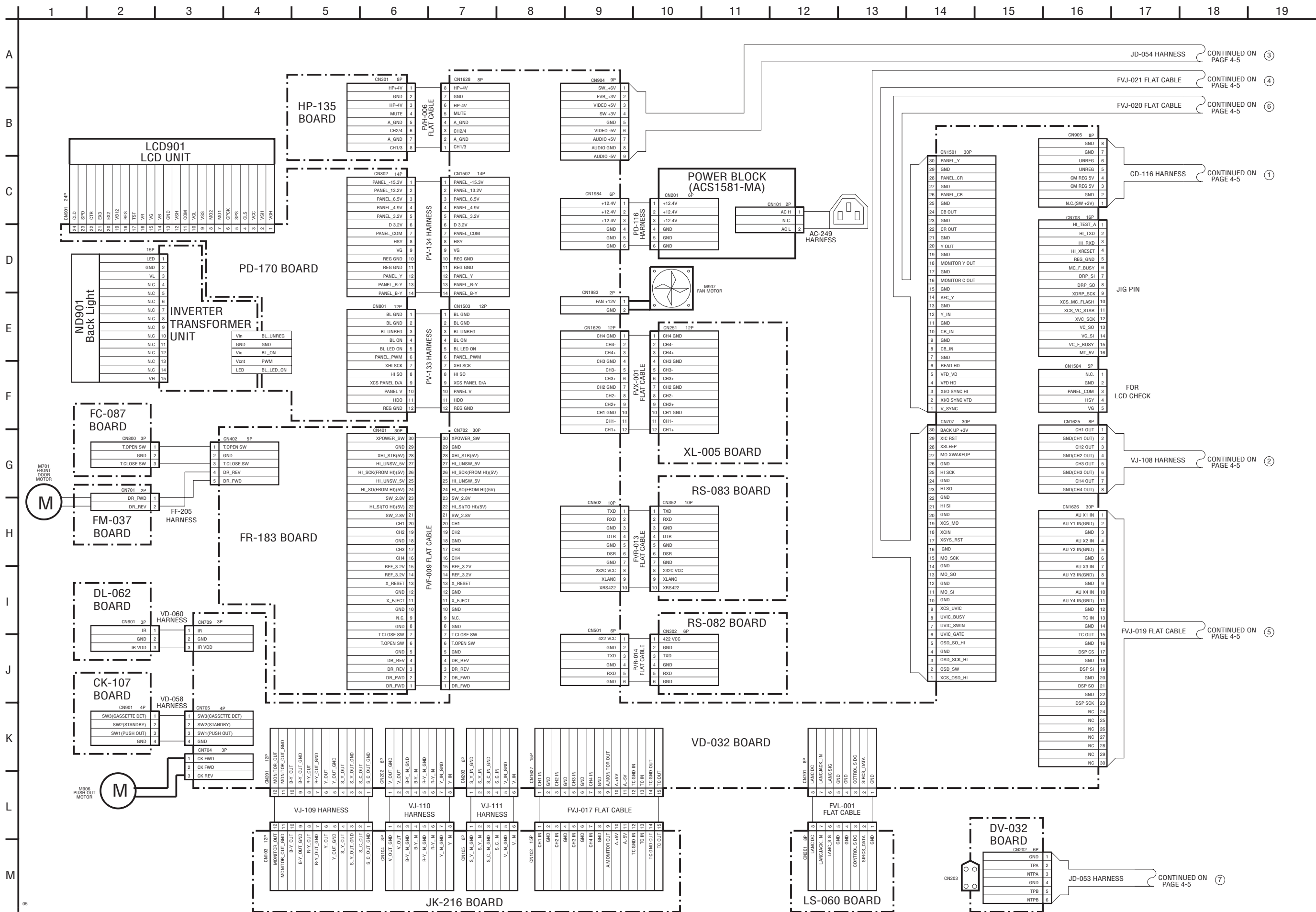
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:**

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

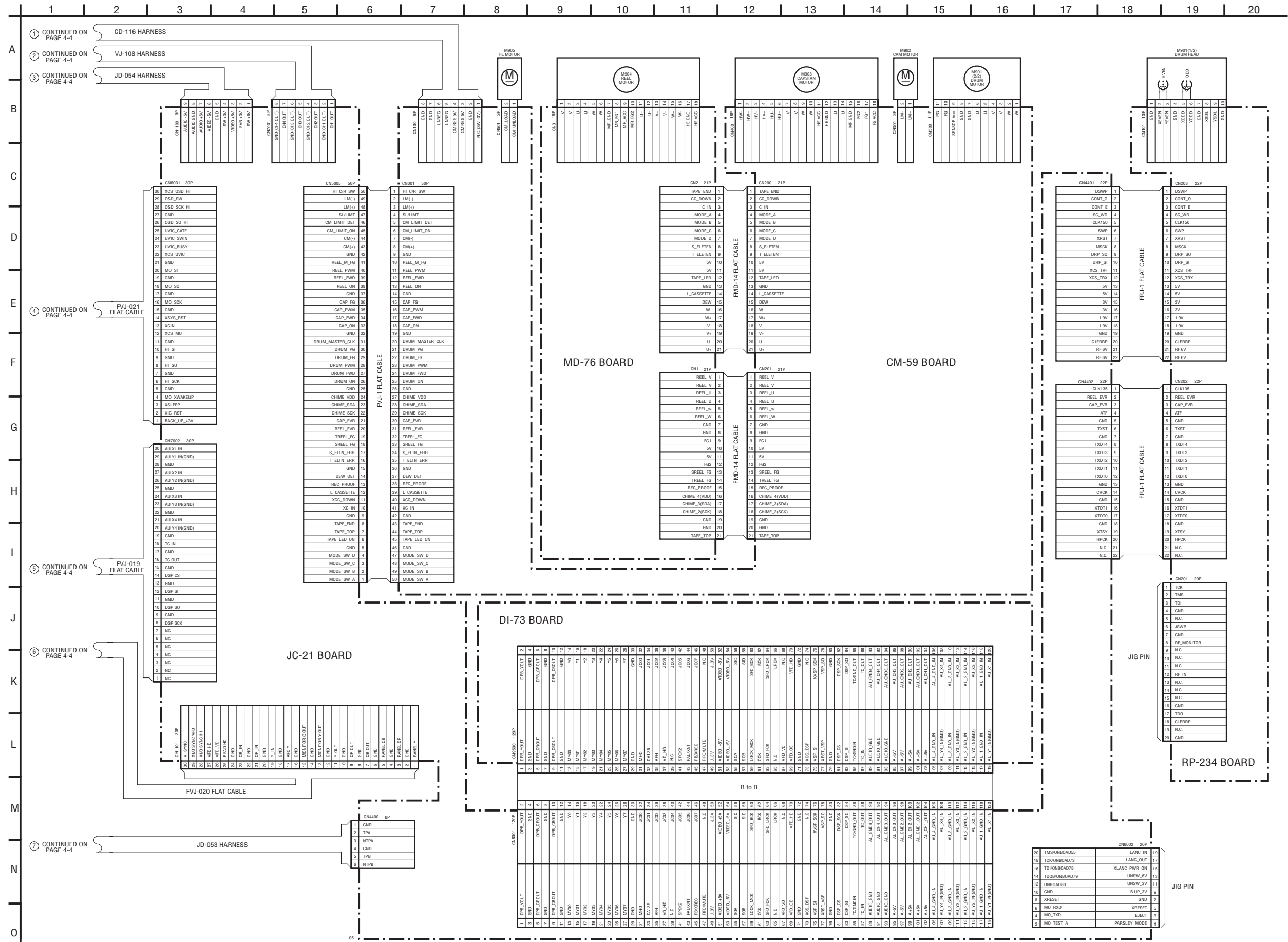
When indicating parts by reference number, please include the board name.

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



- CONTINUED ON PAGE 4-5 ③
- CONTINUED ON PAGE 4-5 ④
- CONTINUED ON PAGE 4-5 ⑥
- CONTINUED ON PAGE 4-5 ①
- CONTINUED ON PAGE 4-5 ②
- CONTINUED ON PAGE 4-5 ⑤
- CONTINUED ON PAGE 4-5 ⑦

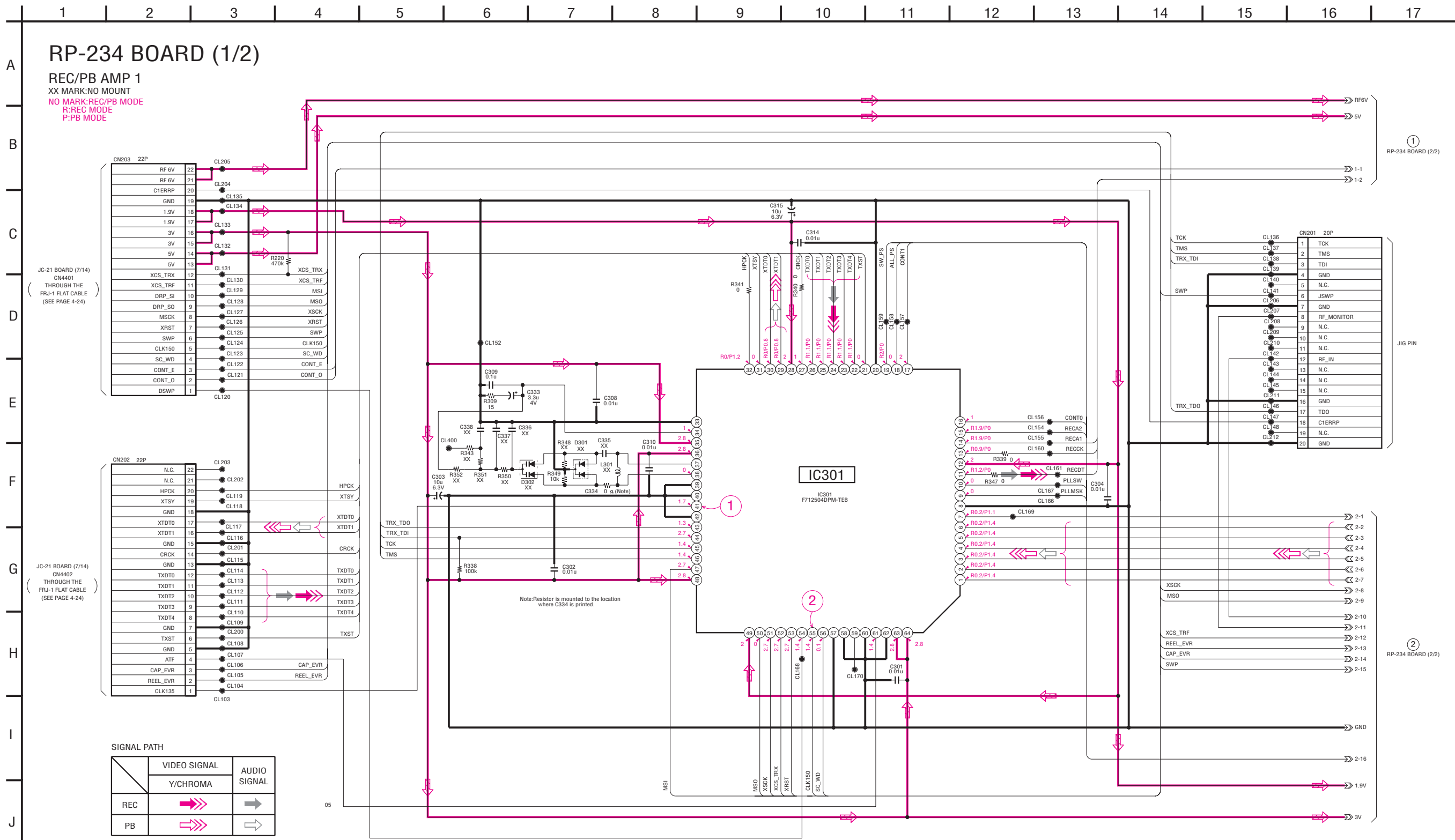
FRAME SCHEMATIC DIAGRAM (2/2)



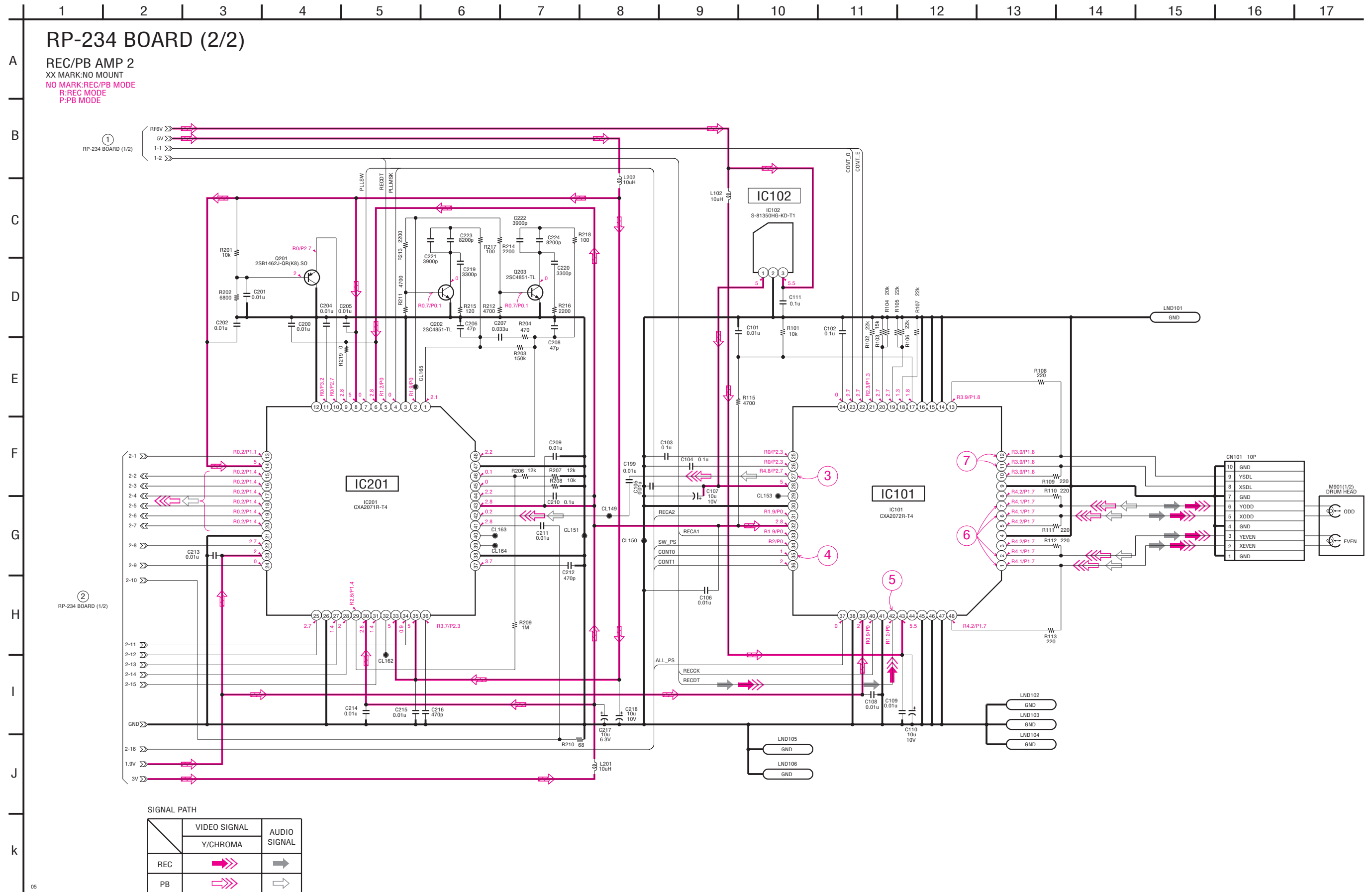


4-2. SCHEMATIC DIAGRAMS

RP-234 (1/2) (REC/PB AMP 1) • See page 4-115 for RP-234 printed wiring board. • See page 4-161 for waveforms.



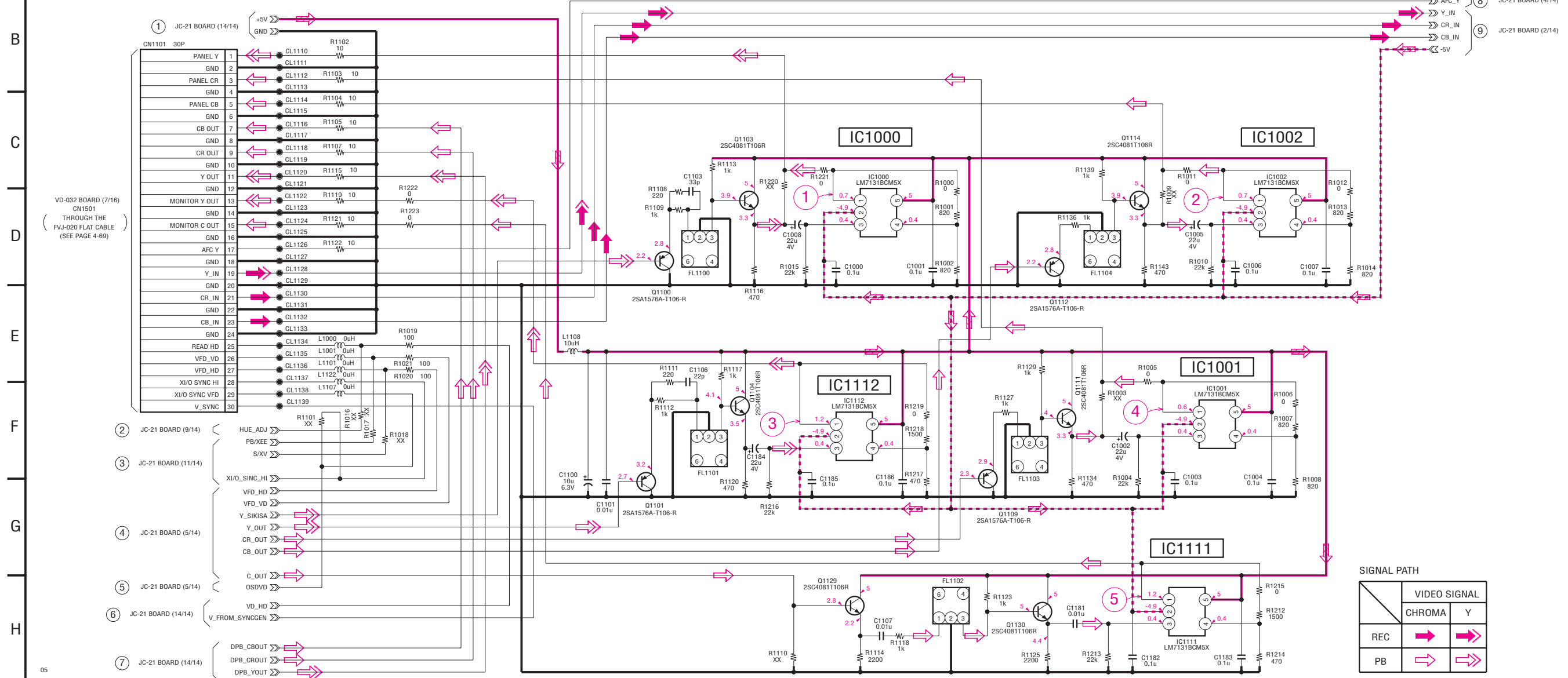
RP-234 (2/2) (REC/PB AMP 2) • See page 4-115 for RP-234 printed wiring board. • See page 4-161 for waveforms.



JC-21 (1/14) (VIDEO PB AMP) • See page 4-119 for JC-21 printed wiring board. • See page 4-162 for waveforms.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

**JC-21 BOARD (1/14)**  
**VIDEO PB AMP**  
 XX MARK:NO MOUNT  
 NO MARK:REC/PB MODE

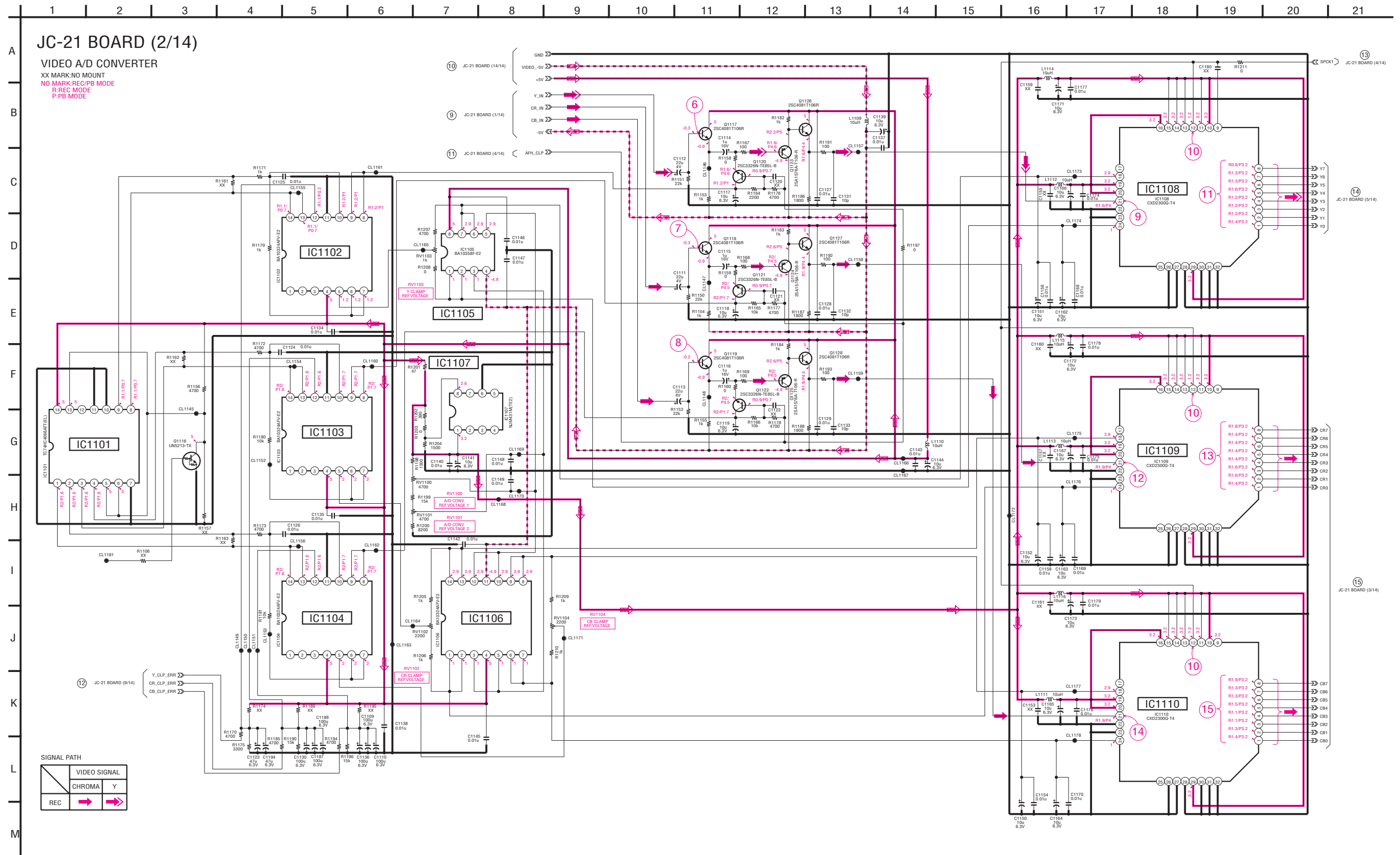


SIGNAL PATH

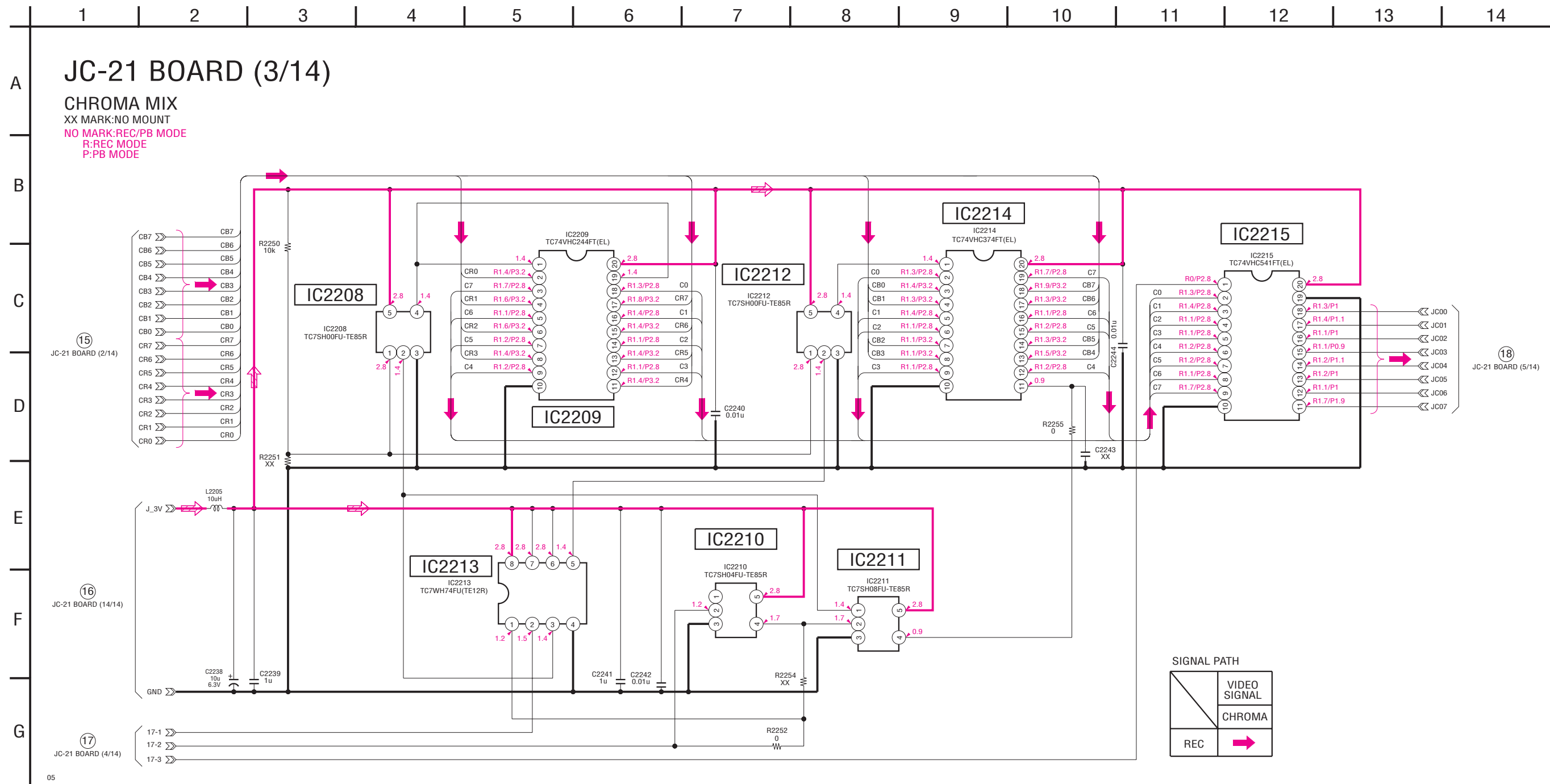
	VIDEO SIGNAL	
	CHROMA	Y
REC	→	→
PB	→	→

05

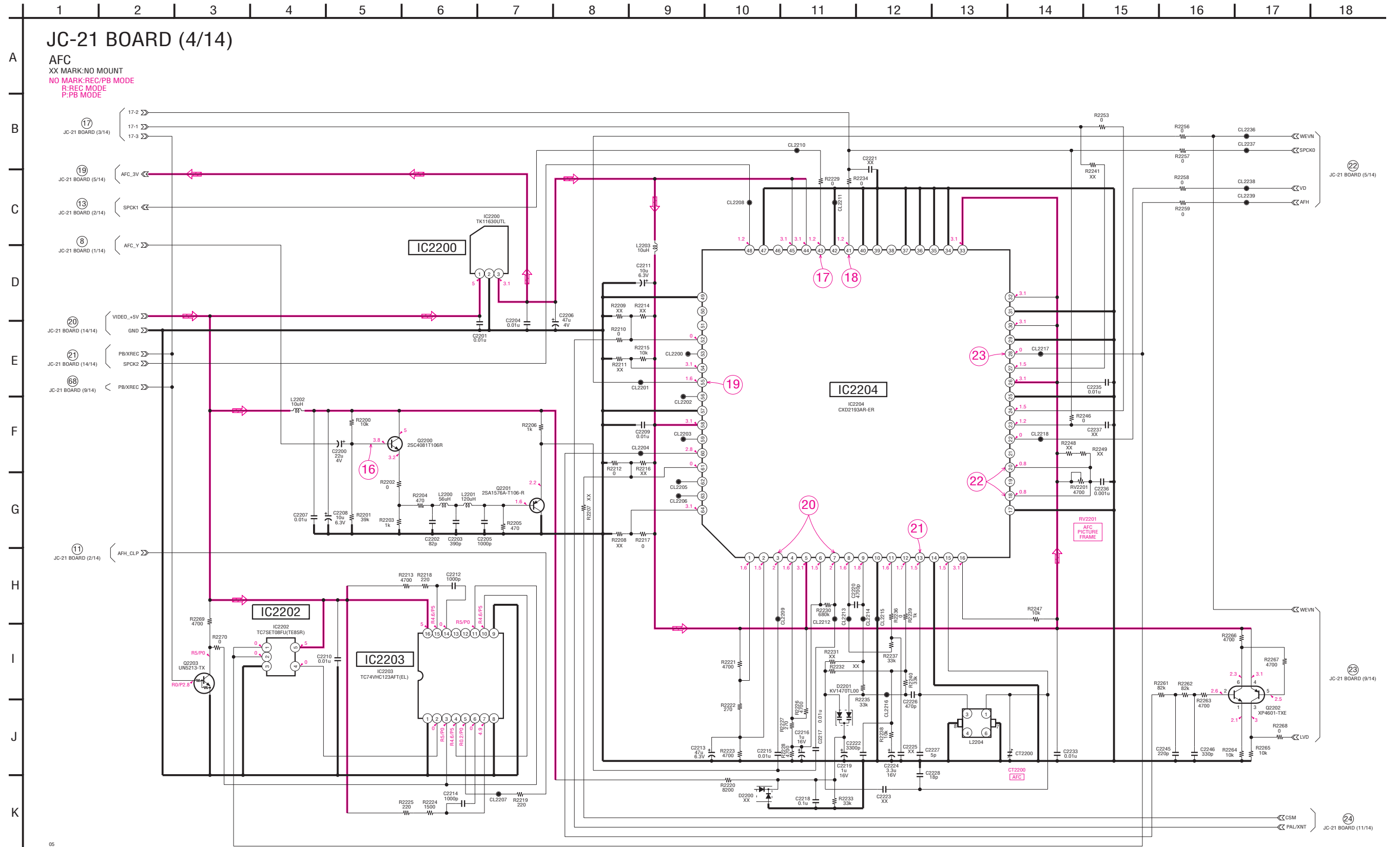
JC-21 (2/14) (VIDEO A/D CONVERTER) • See page 4-119 for JC-21 printed wiring board. • See page 4-162, 163 for waveforms.



JC-21 (3/14) (CHROMA MIX) • See page 4-119 for JC-21 printed wiring board.

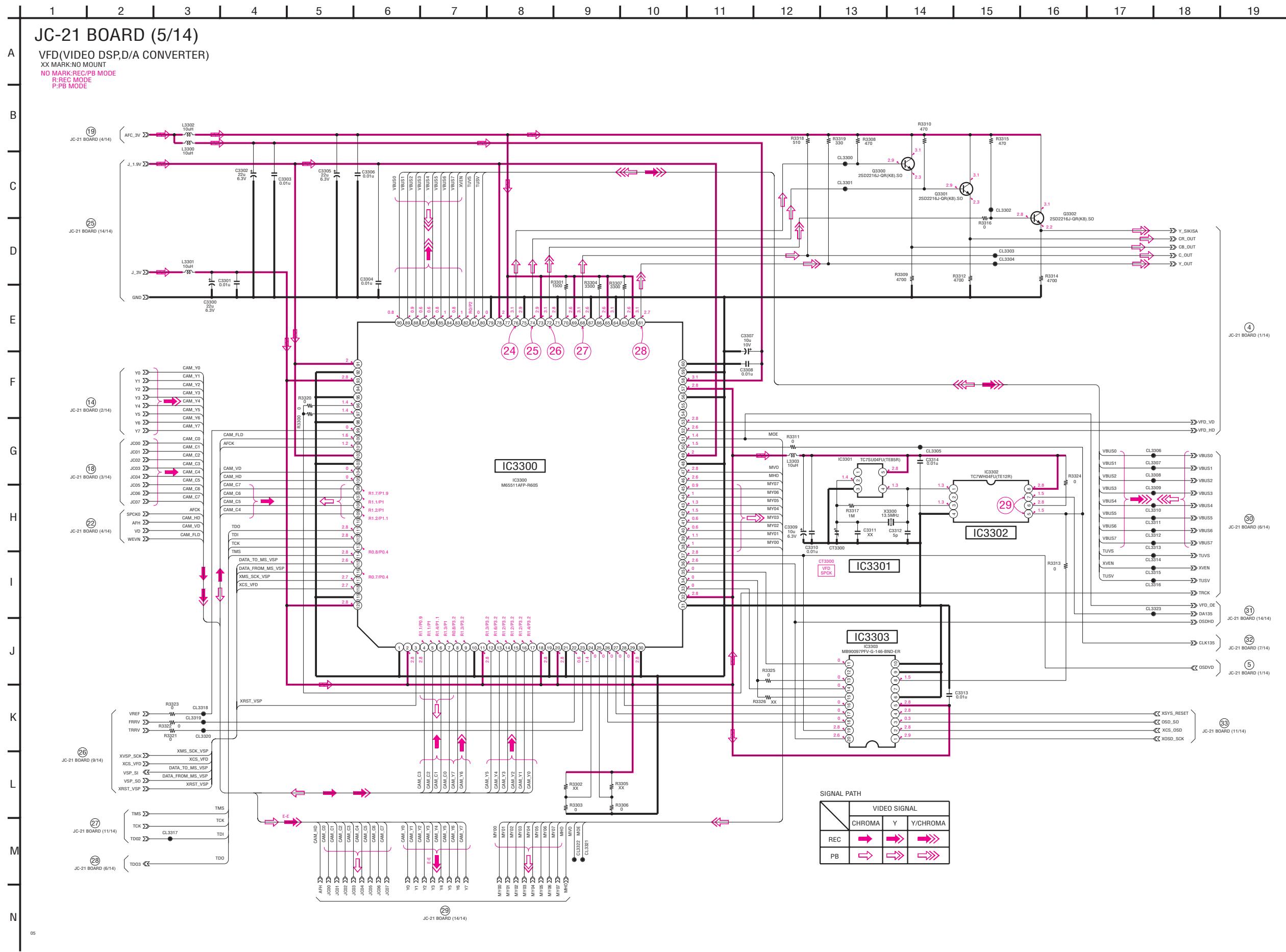


JC-21 (4/14) (AFC) • See page 4-119 for JC-21 printed wiring board. • See page 4-163, 164 for waveforms.

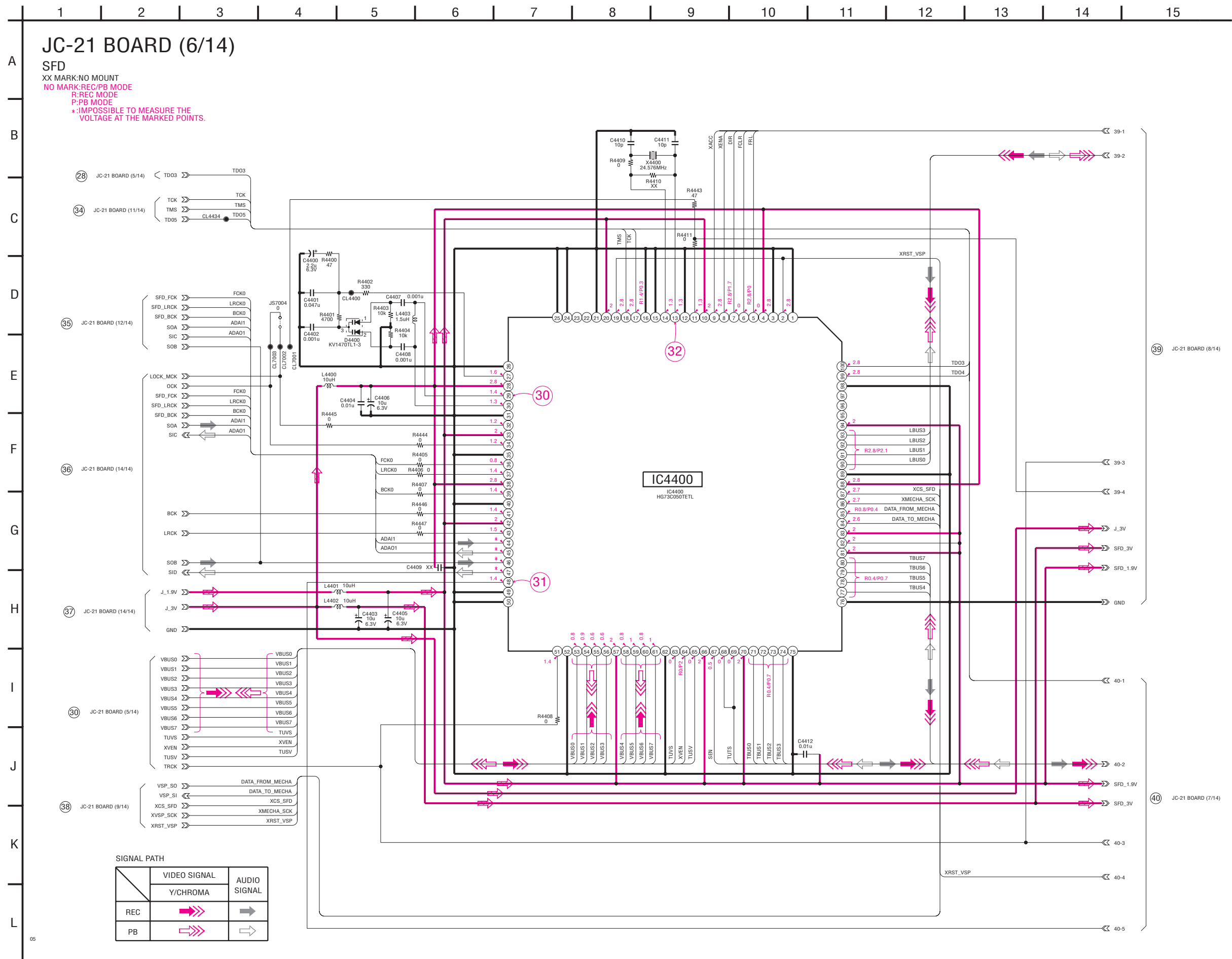




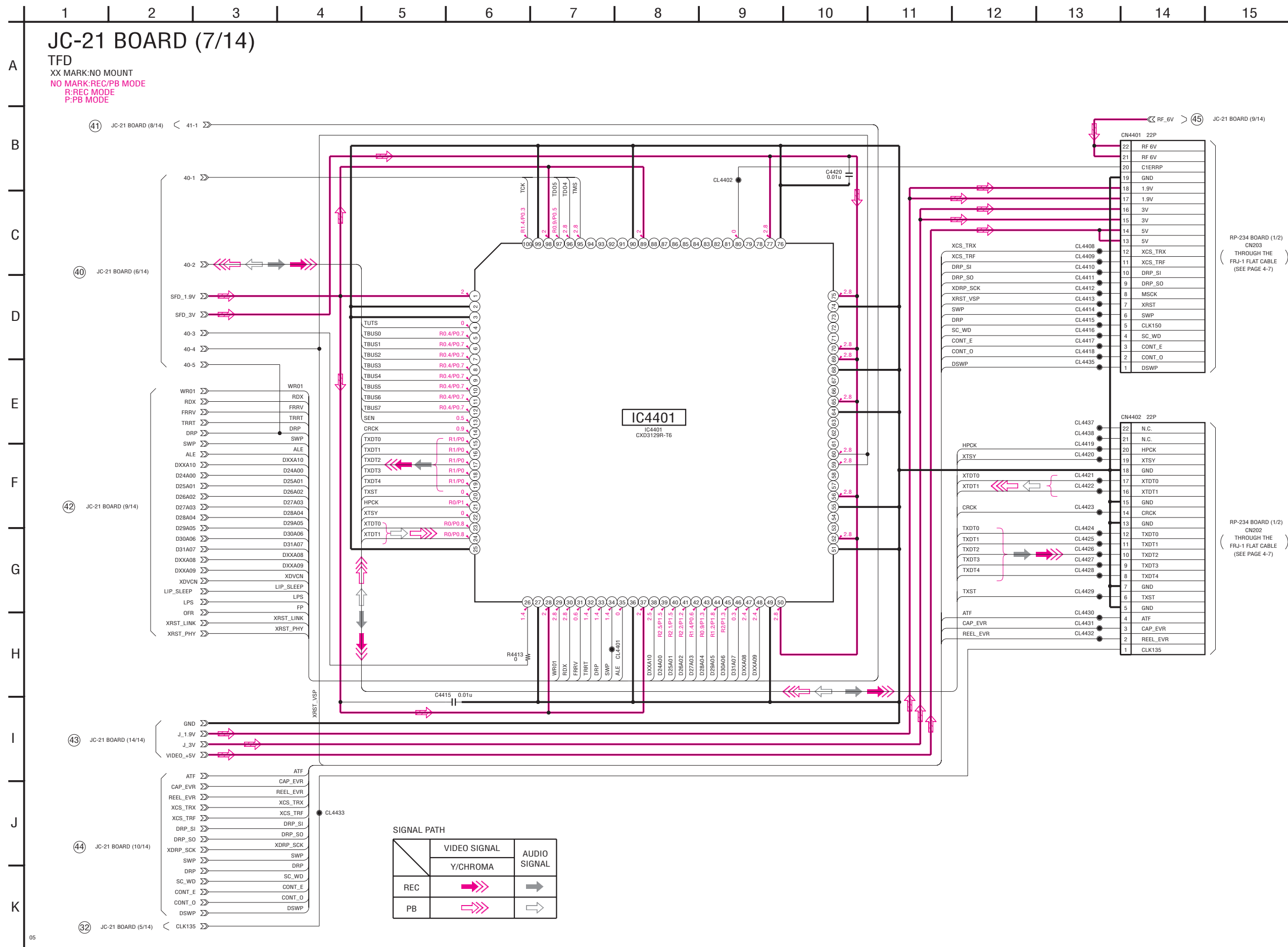
JC-21 (5/14) (VFD (VIDEO DSP, D/A CONVERTER)) • See page 4-119 for JC-21 printed wiring board. • See page 4-164, 165 for waveforms.



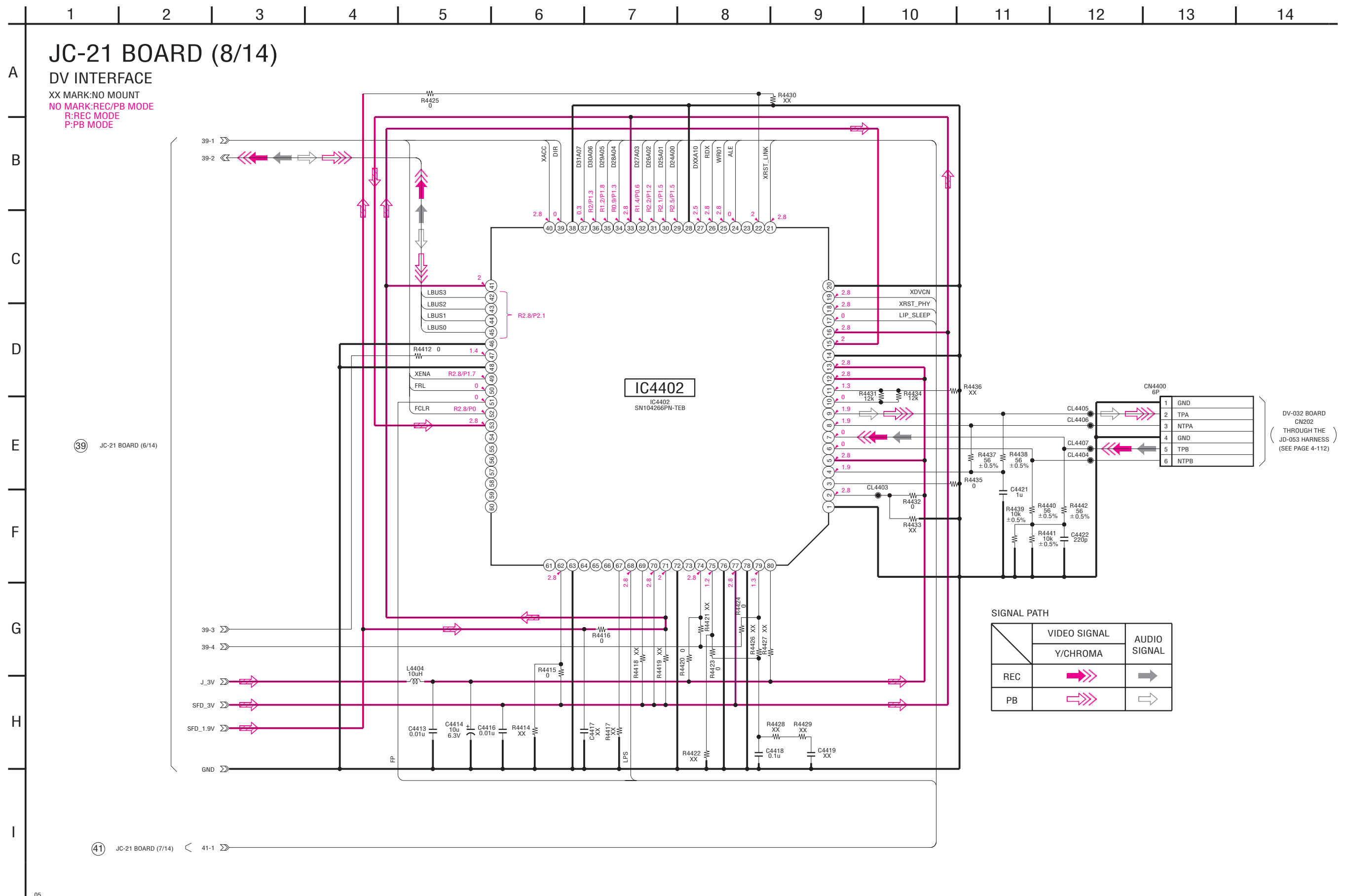
JC-21 (6/14) (SFD) • See page 4-119 for JC-21 printed wiring board. • See page 4-165 for waveforms.



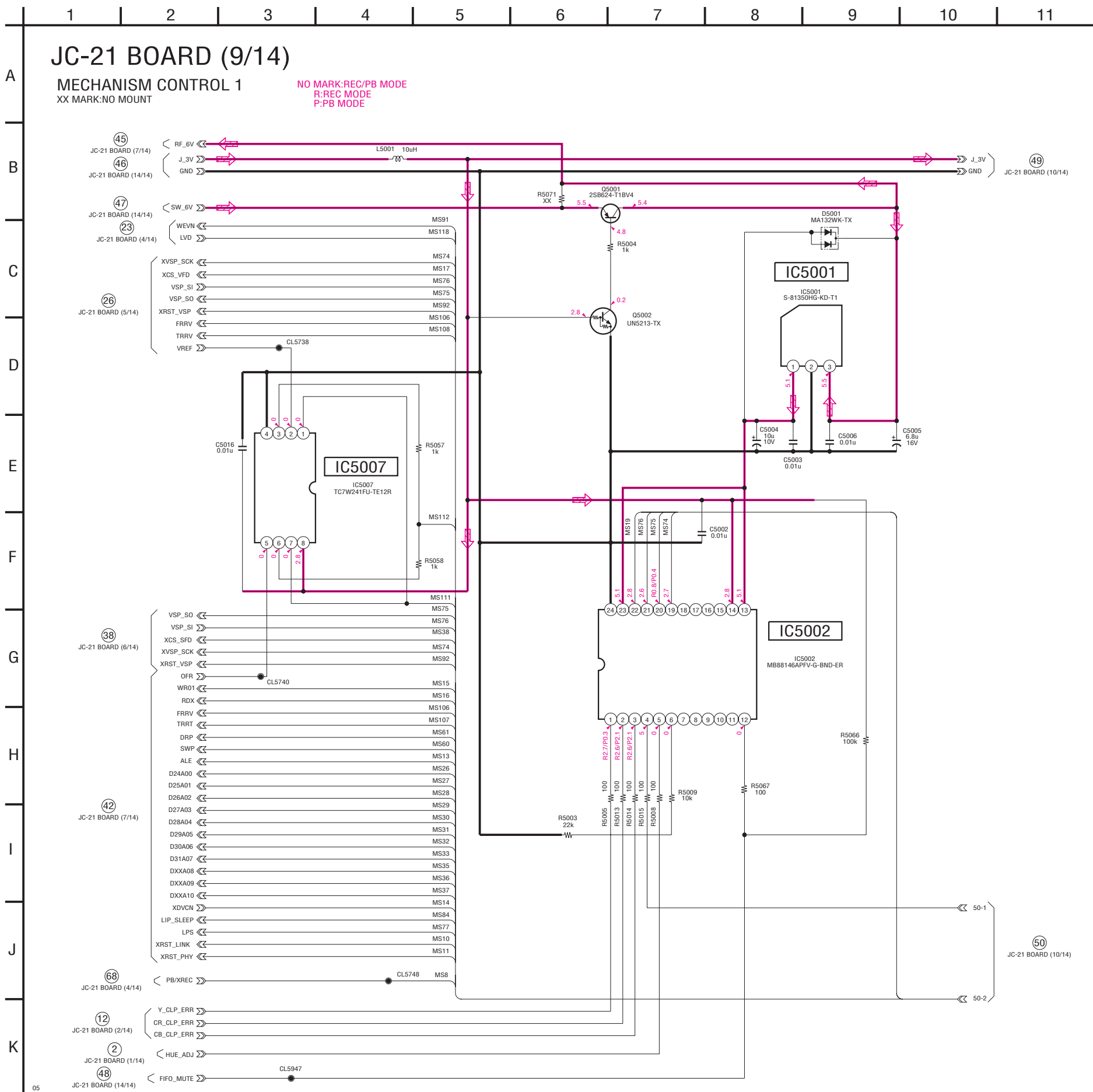
JC-21 (7/14) (TFD) • See page 4-119 for JC-21 printed wiring board.



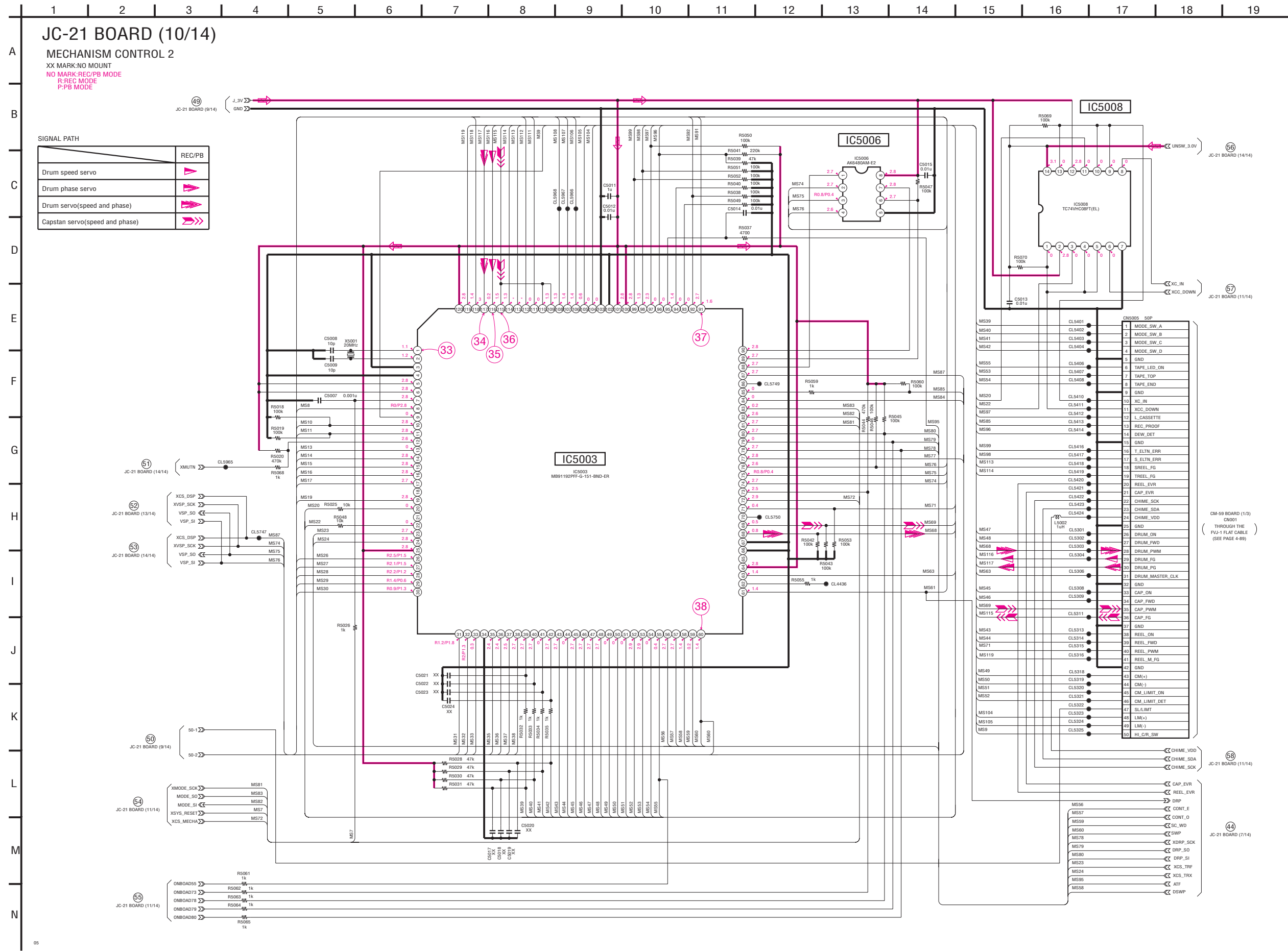
JC-21 (8/14) (DV INTERFACE) • See page 4-119 for JC-21 printed wiring board.



JC-21 (9/14) (MECHANISM CONTROL 1) • See page 4-119 for JC-21 printed wiring board.

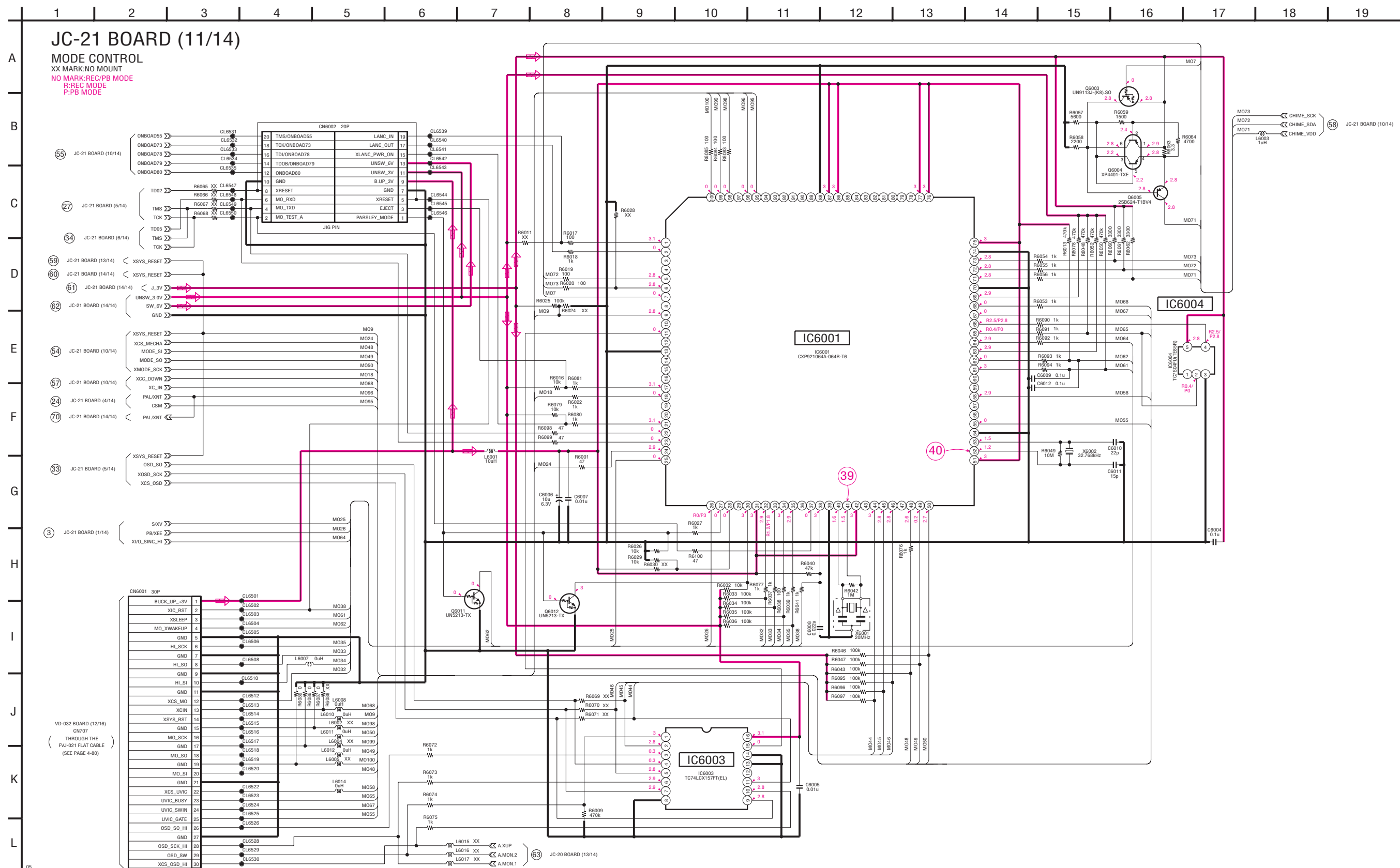


JC-21 (10/14) (MECHANISM CONTROL 2) • See page 4-119 for JC-21 printed wiring board. • See page 4-165 for waveforms.

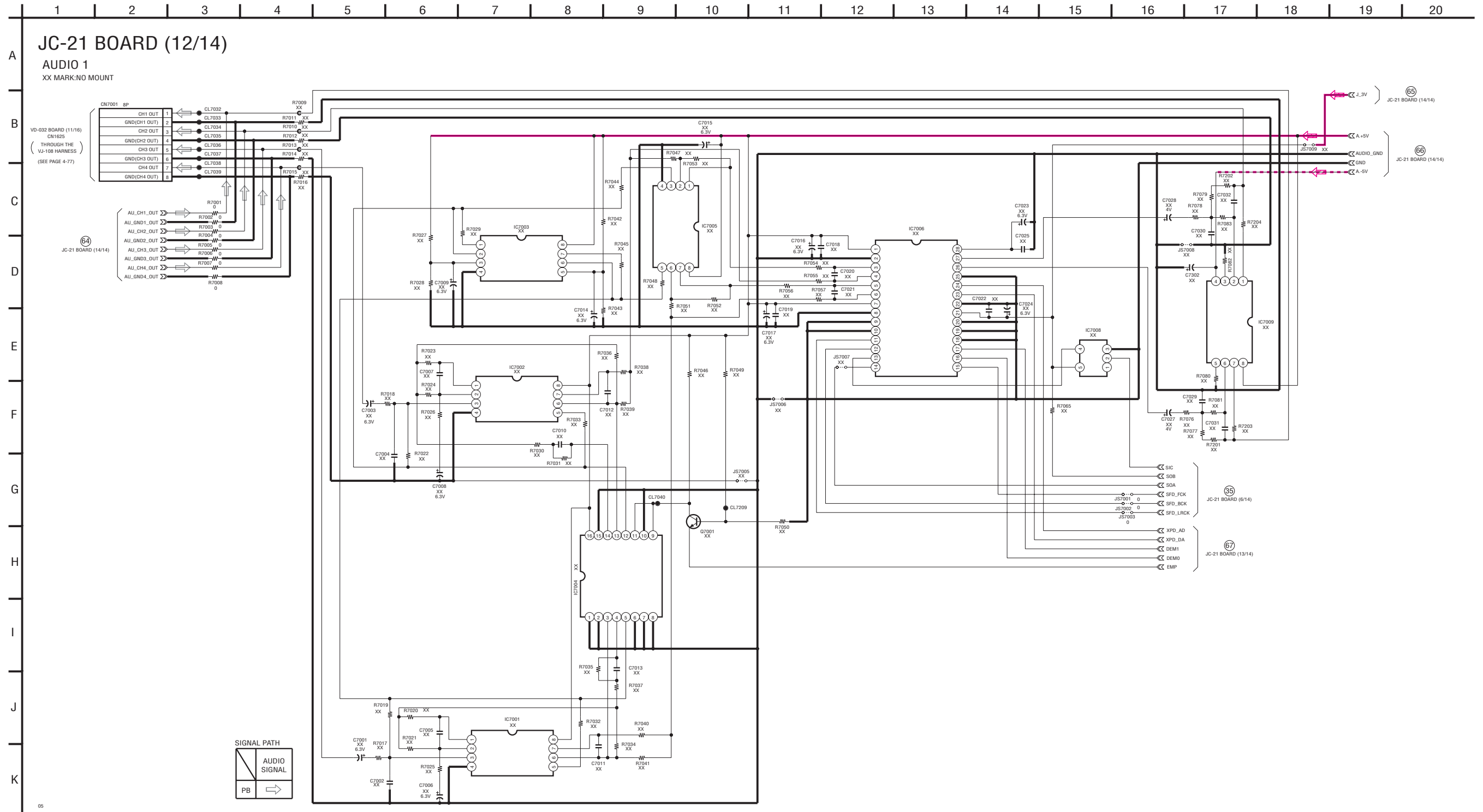




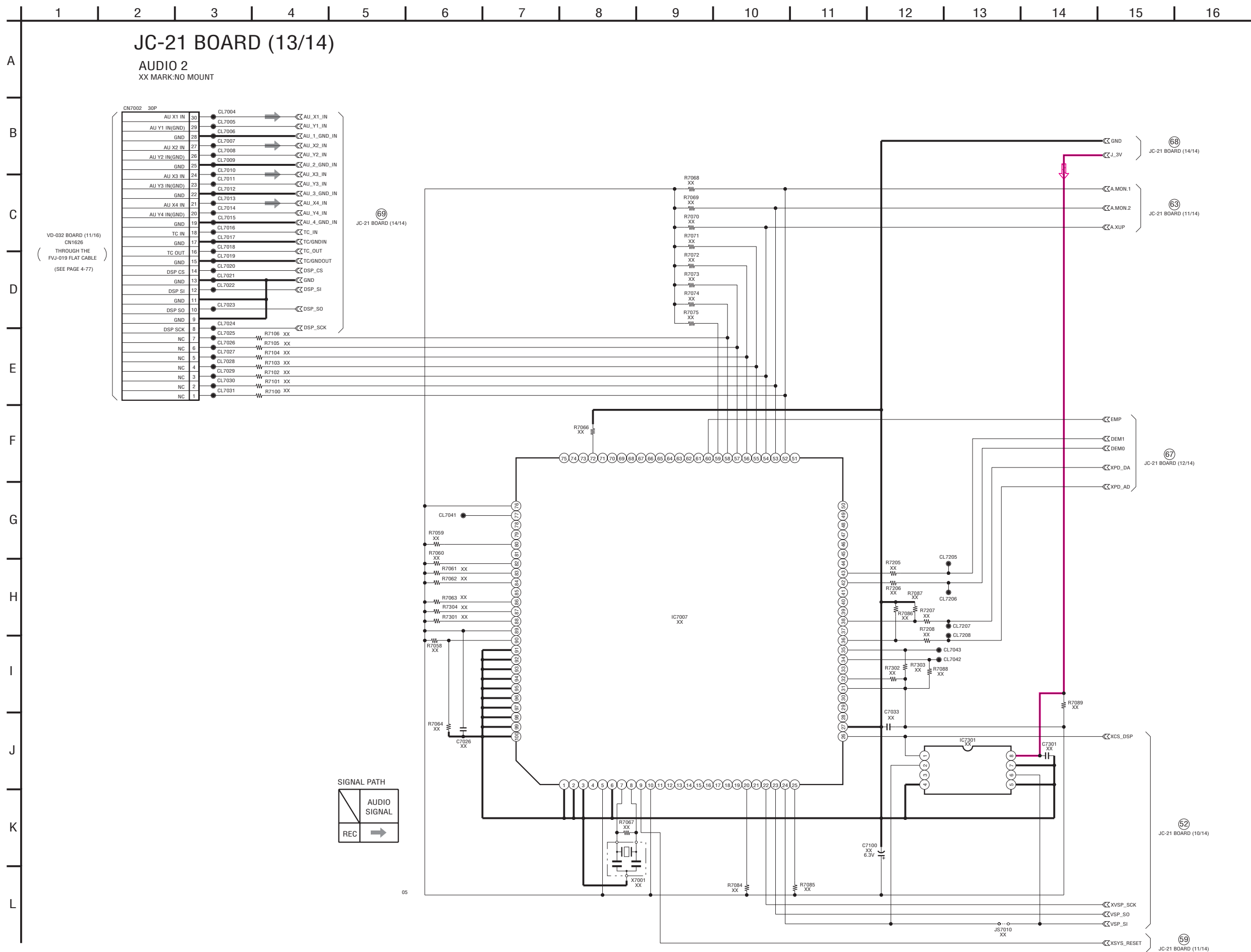
JC-21 (11/14) (MODE CONTROL) • See page 4-119 for JC-21 printed wiring board. • See page 4-166 for waveforms.



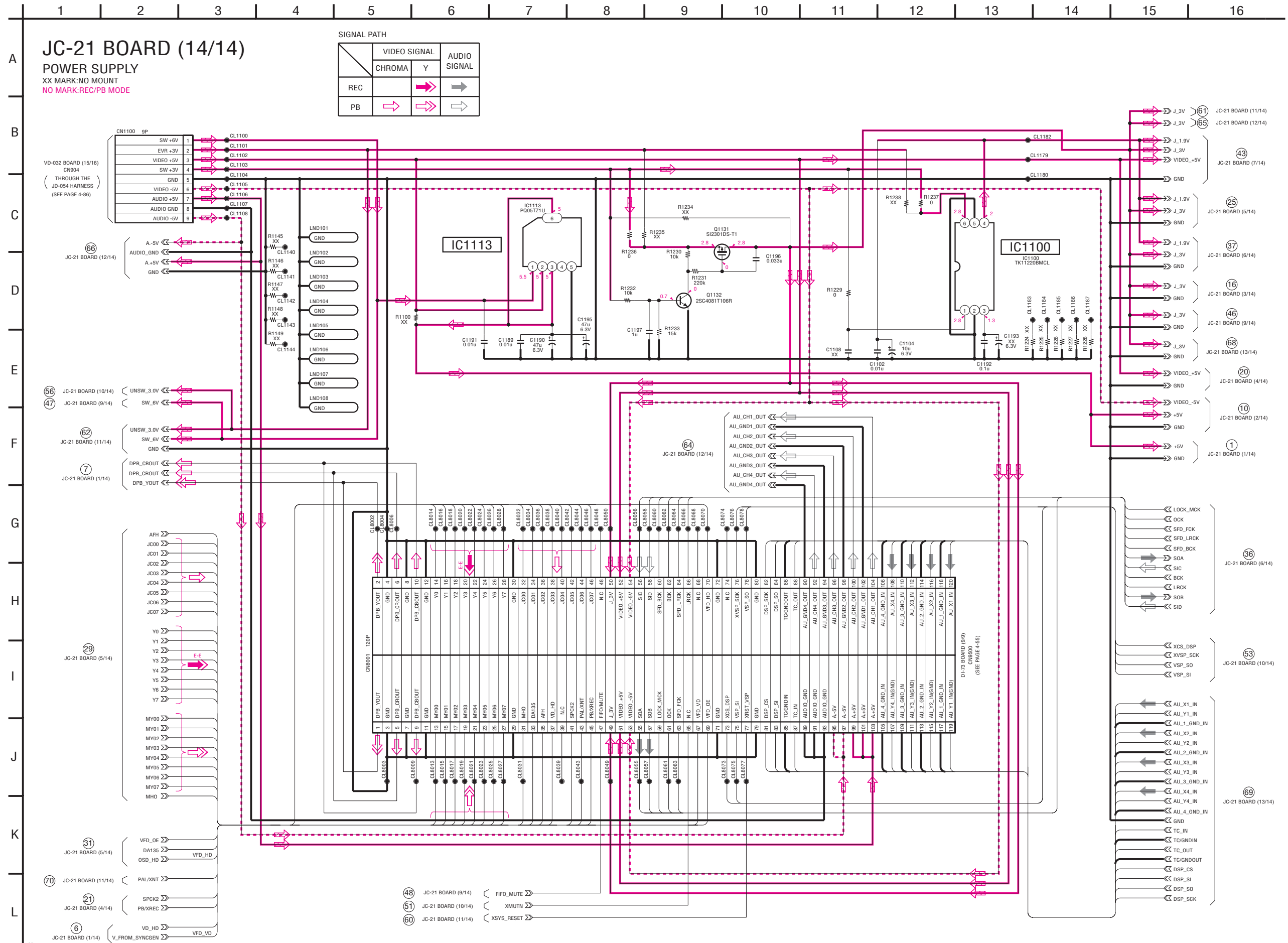
JC-21 (12/14) (AUDIO 1) • See page 4-119 for JC-21 printed wiring board.



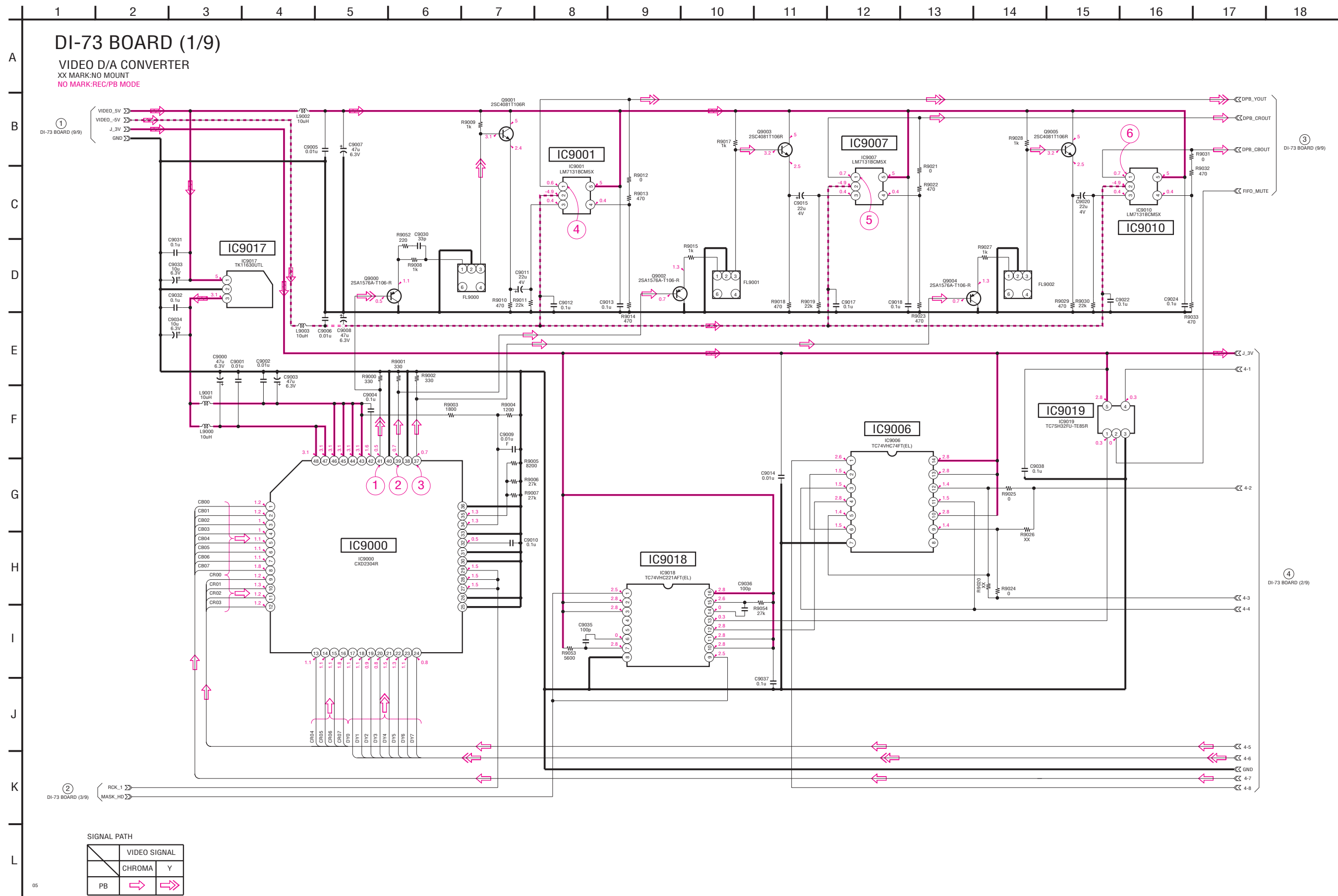
JC-21 (13/14) (AUDIO 2) • See page 4-119 for JC-21 printed wiring board.



JC-21 (14/14) (POWER SUPPLY) • See page 4-119 for JC-21 printed wiring board.



DI-73 (1/9) (VIDEO D/A CONVERTER) • See page 4-123 for DI-73 printed wiring board. • See page 4-167 for waveforms.

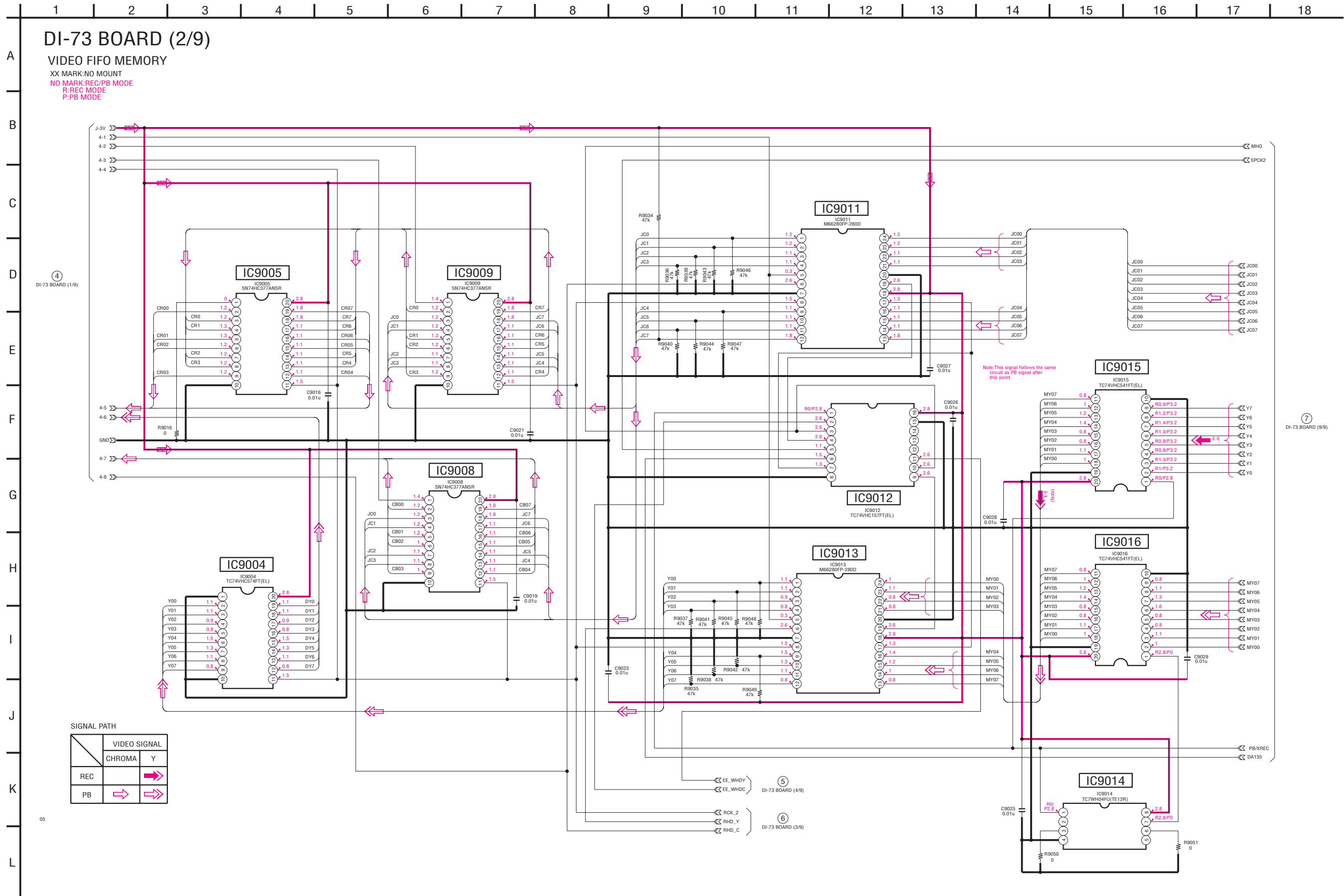


DI-73 (2/9) (VIDEO FIFO MEMORY) • See page 4-123 for DI-73 printed wiring board.

### DI-73 BOARD (2/9)

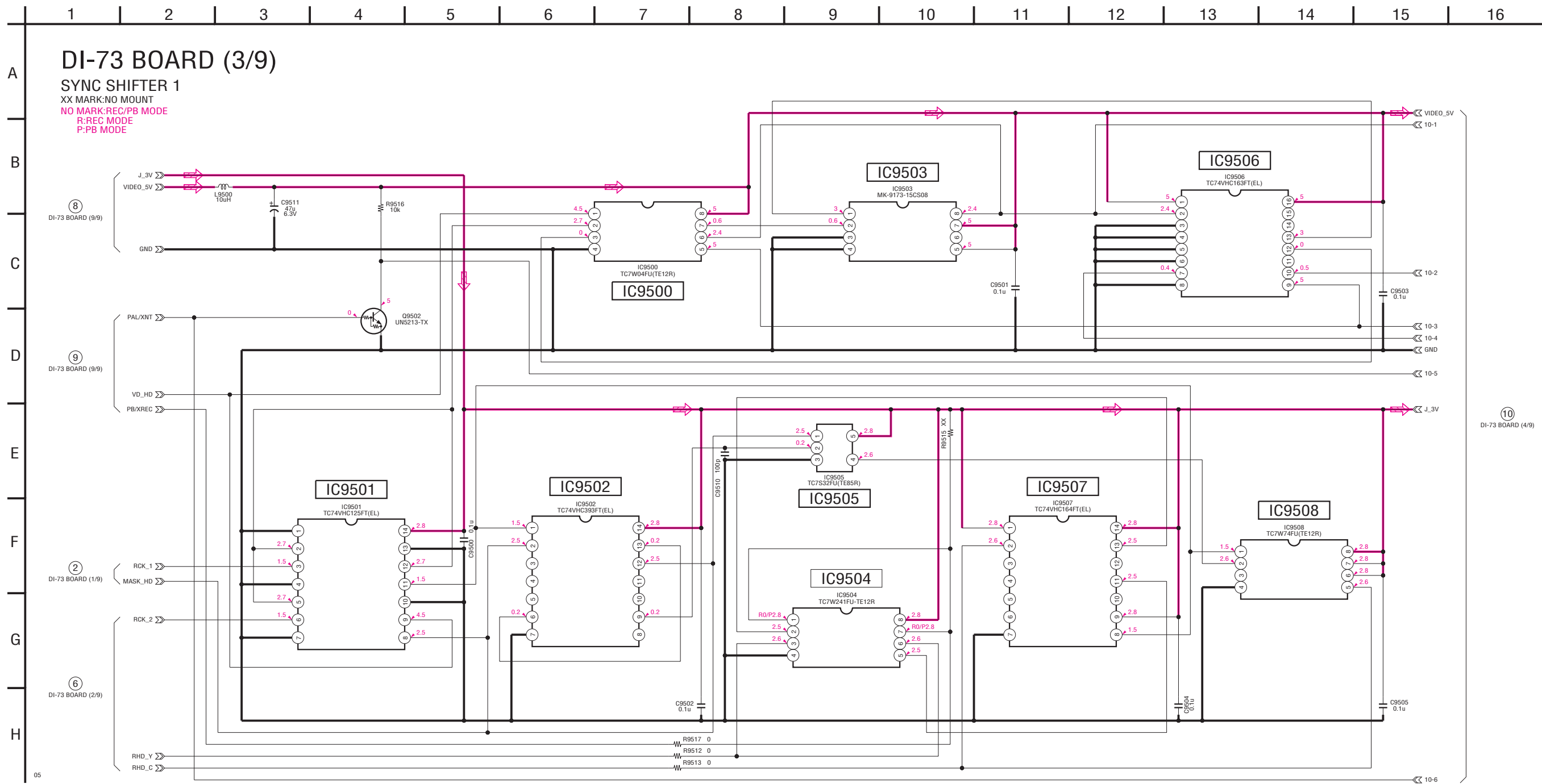
VIDEO FIFO MEMORY

XX MARK:NO MOUNT  
NO MARK:REC/PB MODE  
R:REC MODE  
P:PB MODE

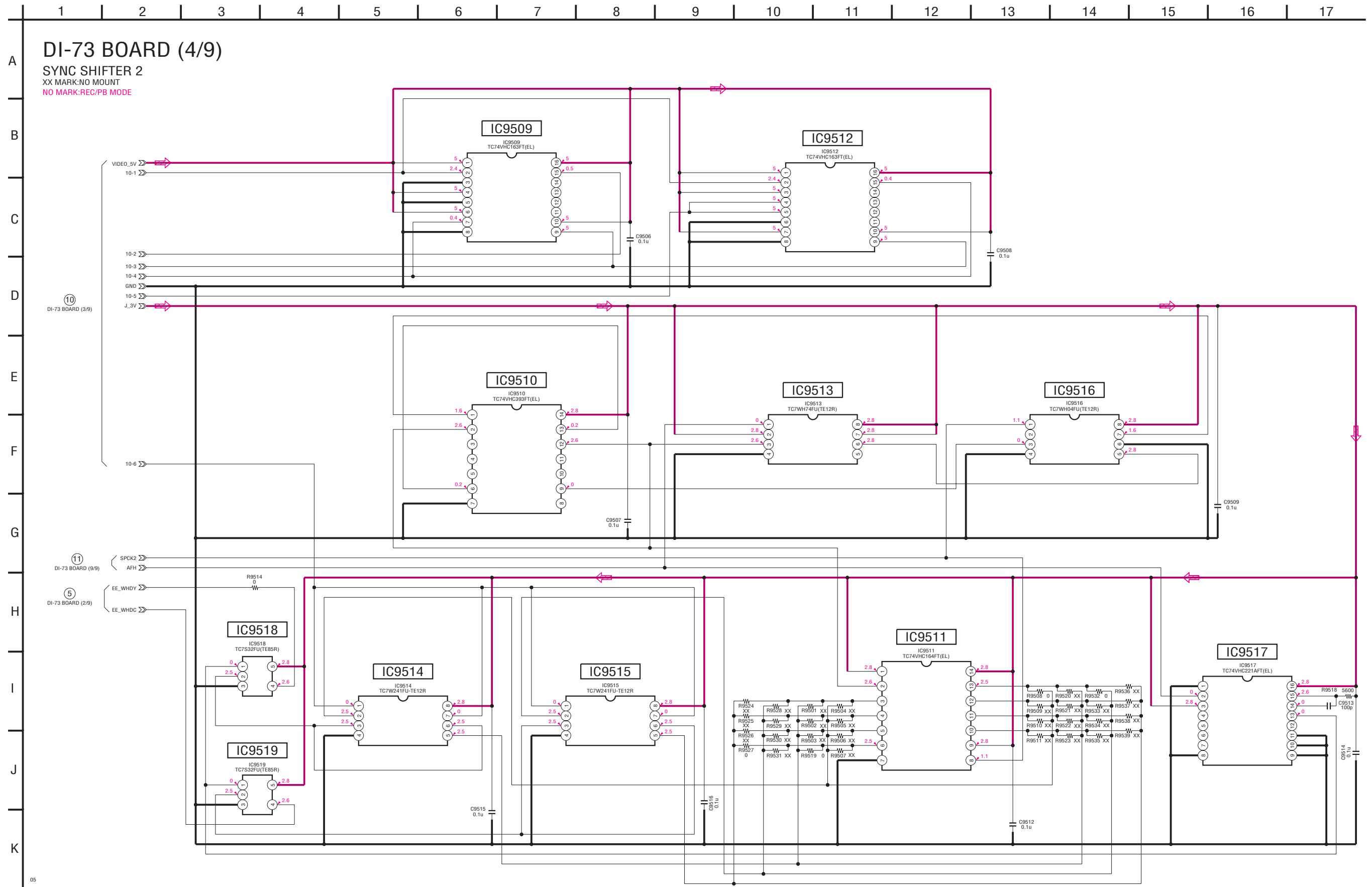




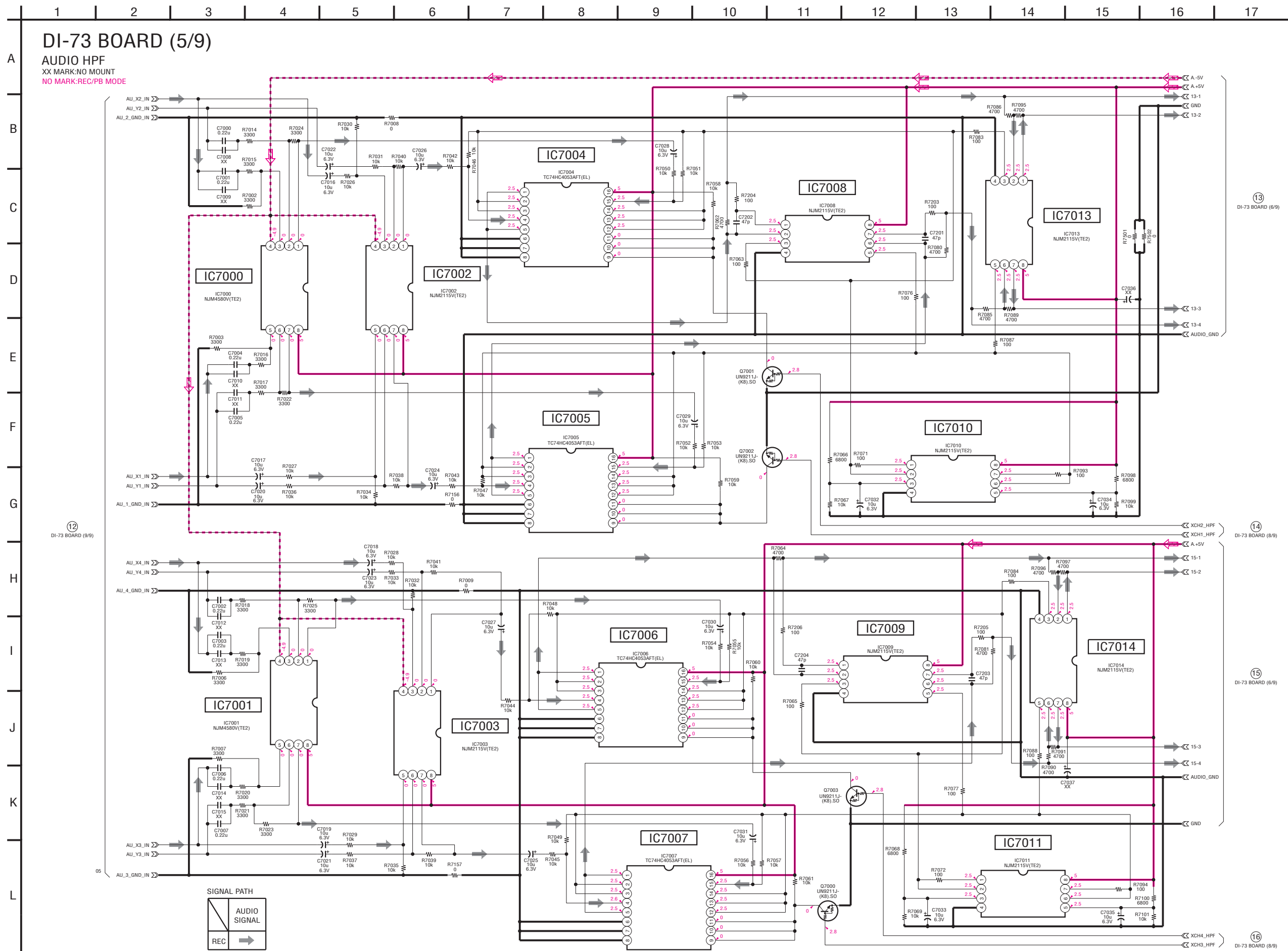
DI-73 (3/9) (SYNC SHIFTER 1) • See page 4-123 for DI-73 printed wiring board.



DI-73 (4/9) (SYNC SHIFTER 2) • See page 4-123 for DI-73 printed wiring board.



DI-73 (5/9) (AUDIO HPF) • See page 4-123 for DI-73 printed wiring board.





DI-73 (7/9) (AUDIO DSP) • See page 4-123 for DI-73 printed wiring board. • See page 4-167 for waveforms.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

# DI-73 BOARD (7/9)

## AUDIO DSP

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

\*:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.

A

B

B

C

D

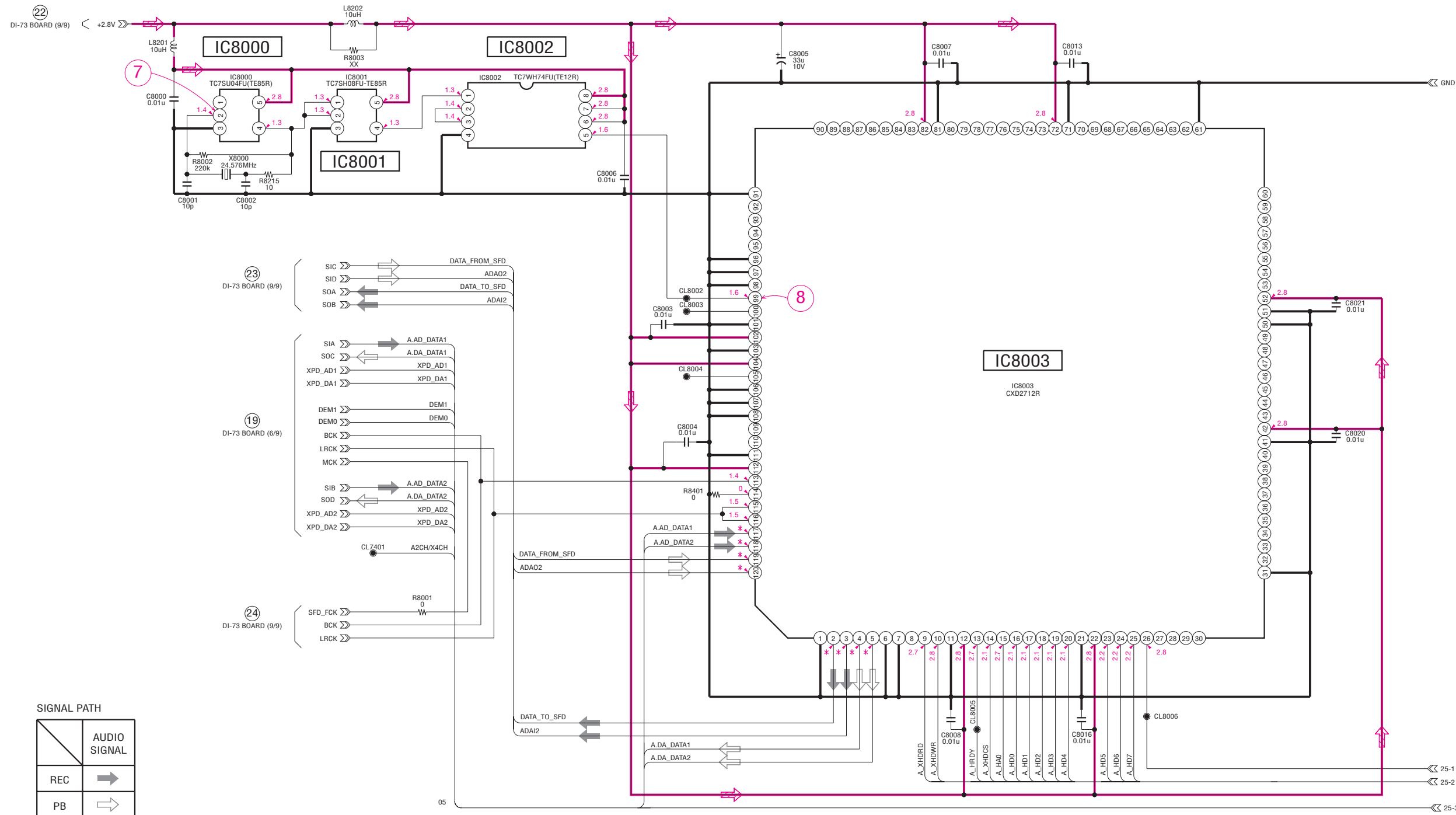
E

F

G

H

I

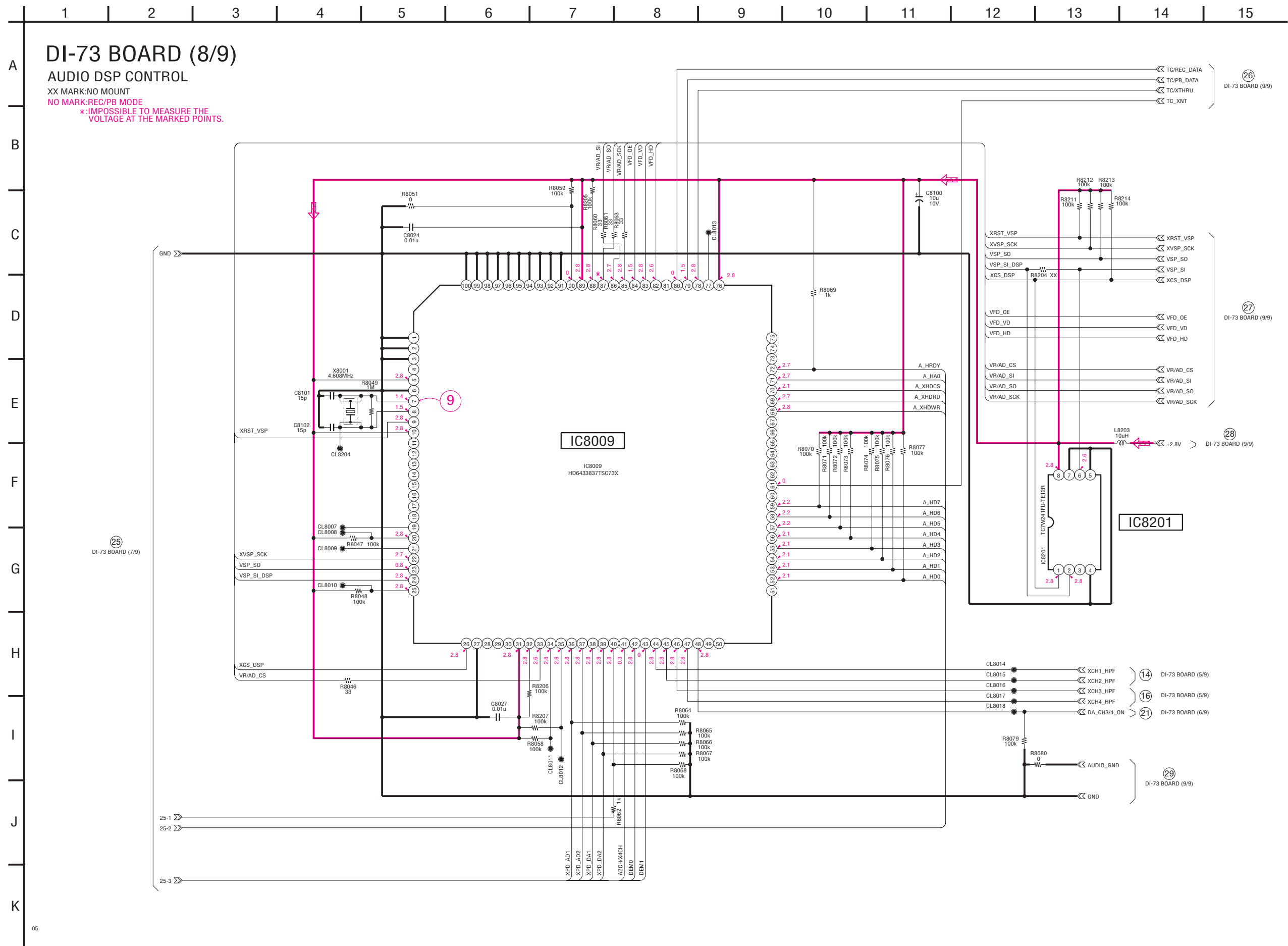


SIGNAL PATH

	AUDIO SIGNAL
REC	→
PB	→

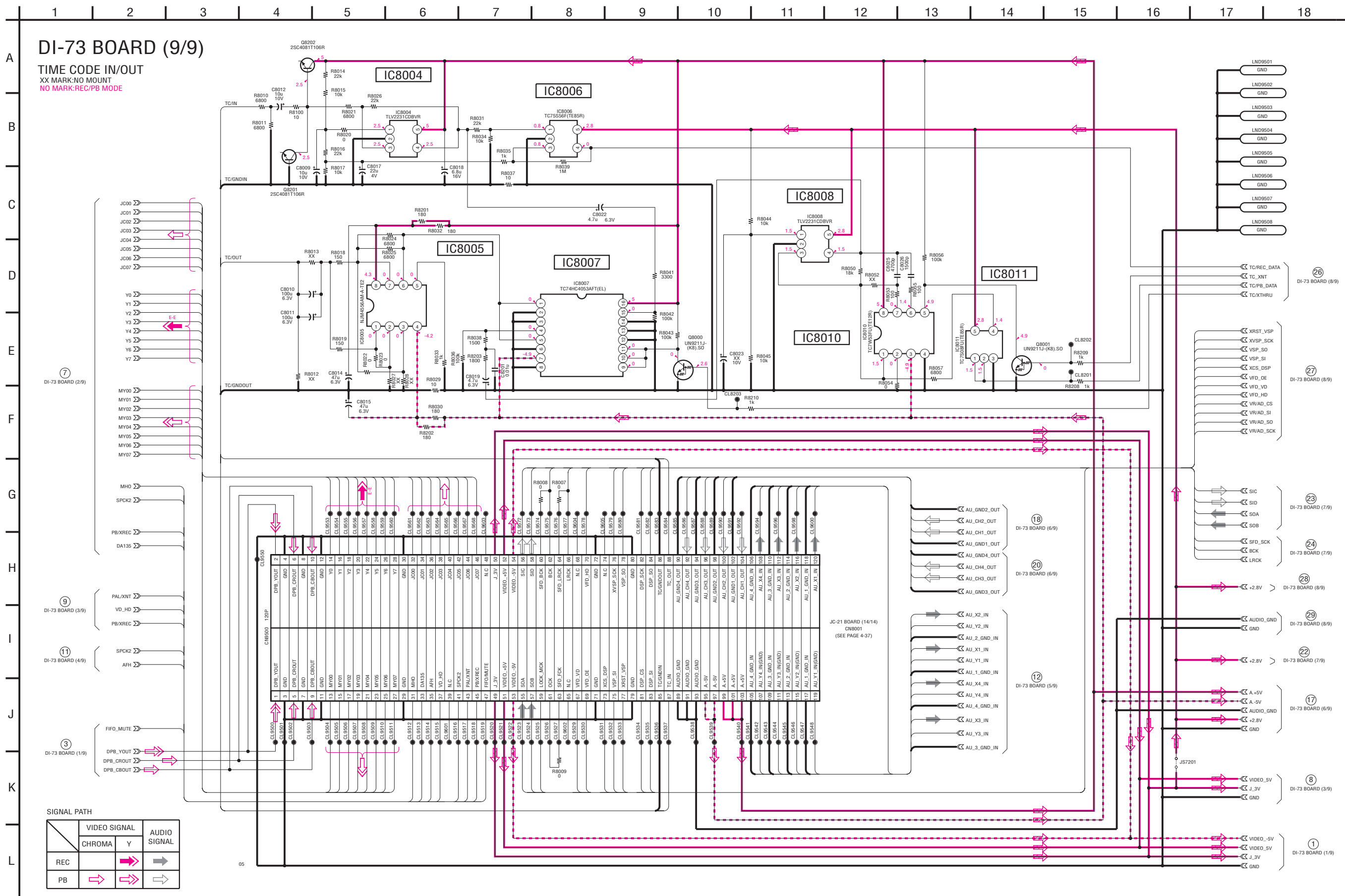
25 DI-73 BOARD (8/9)

DI-73 (8/9) (AUDIO DSP CONTROL) • See page 4-123 for DI-73 printed wiring board. • See page 4-167 for waveform.

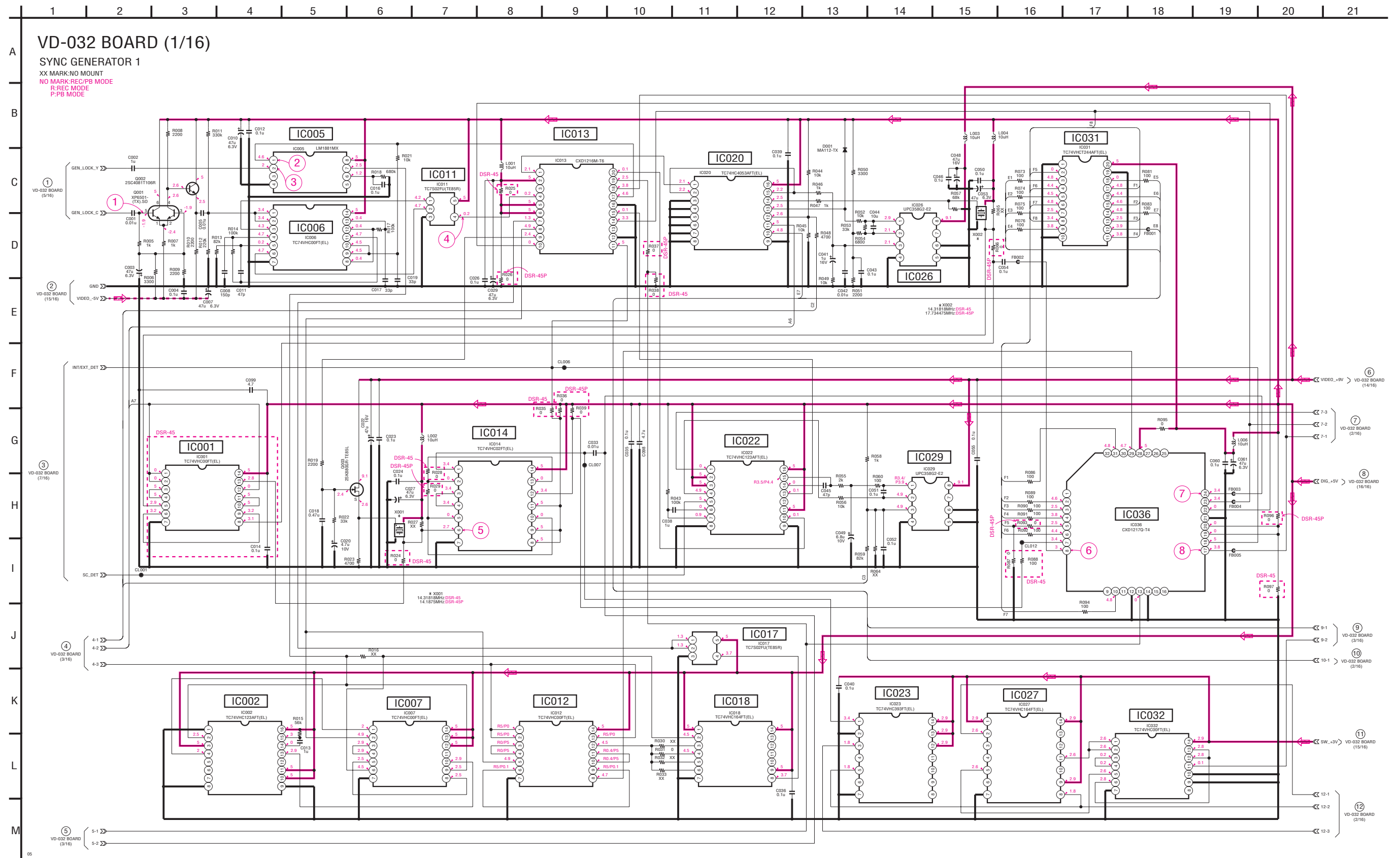




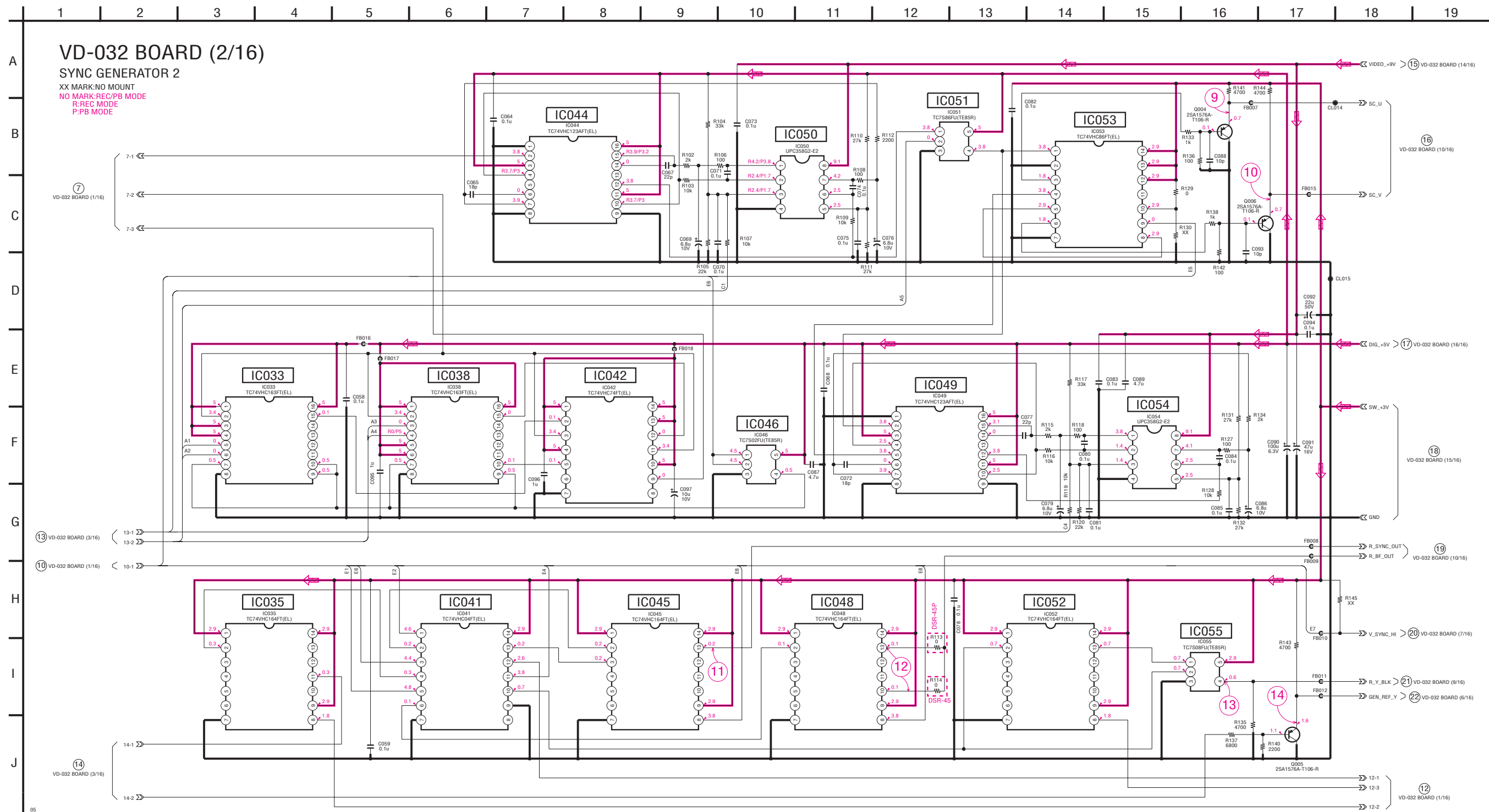
DI-73 (9/9) (TIME CODE IN/OUT) • See page 4-123 for DI-73 printed wiring board.



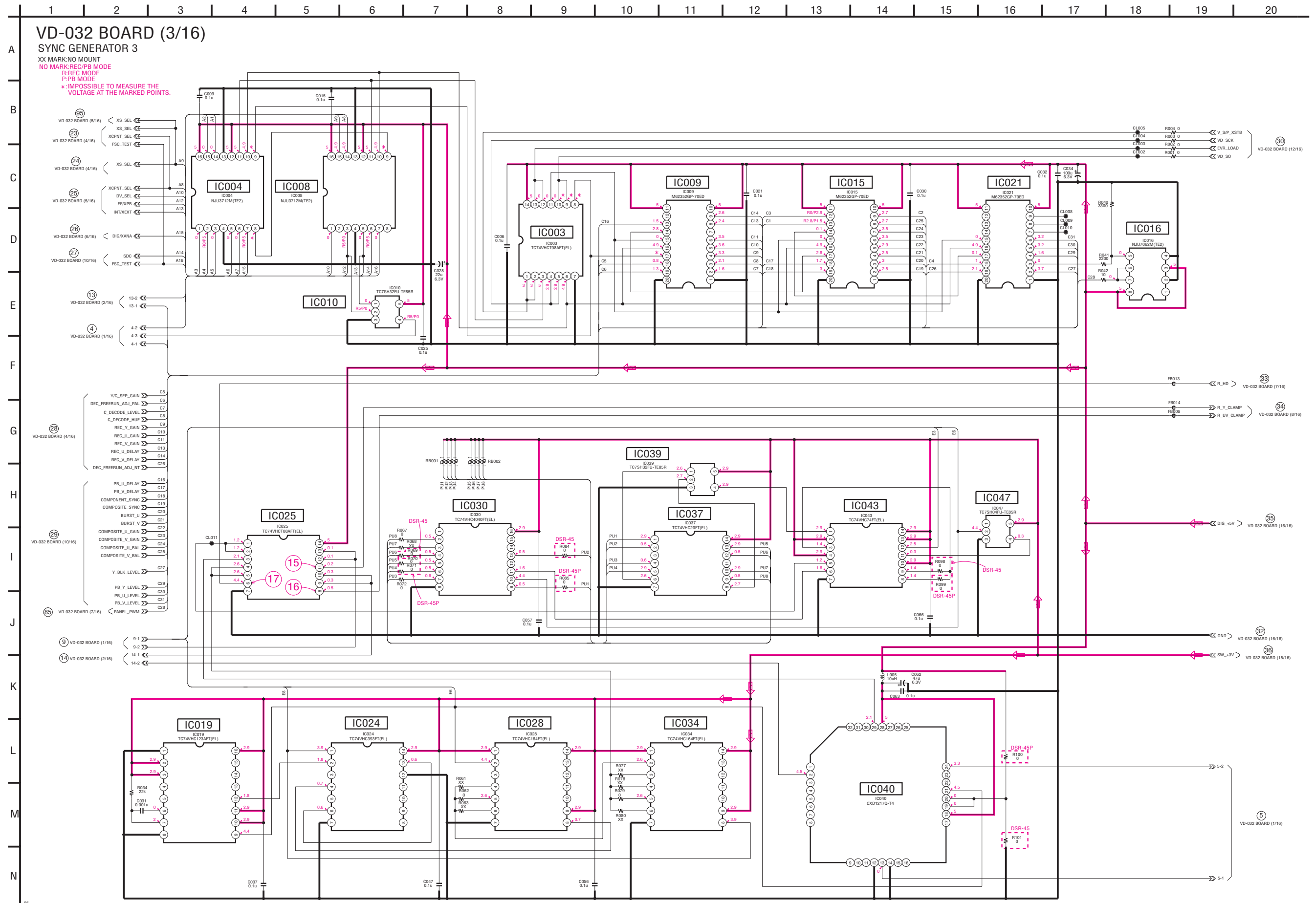
VD-032 (1/16) (SYNC GENERATOR 1) • See page 4-127 for VD-032 printed wiring board. • See page 4-168 for waveforms.



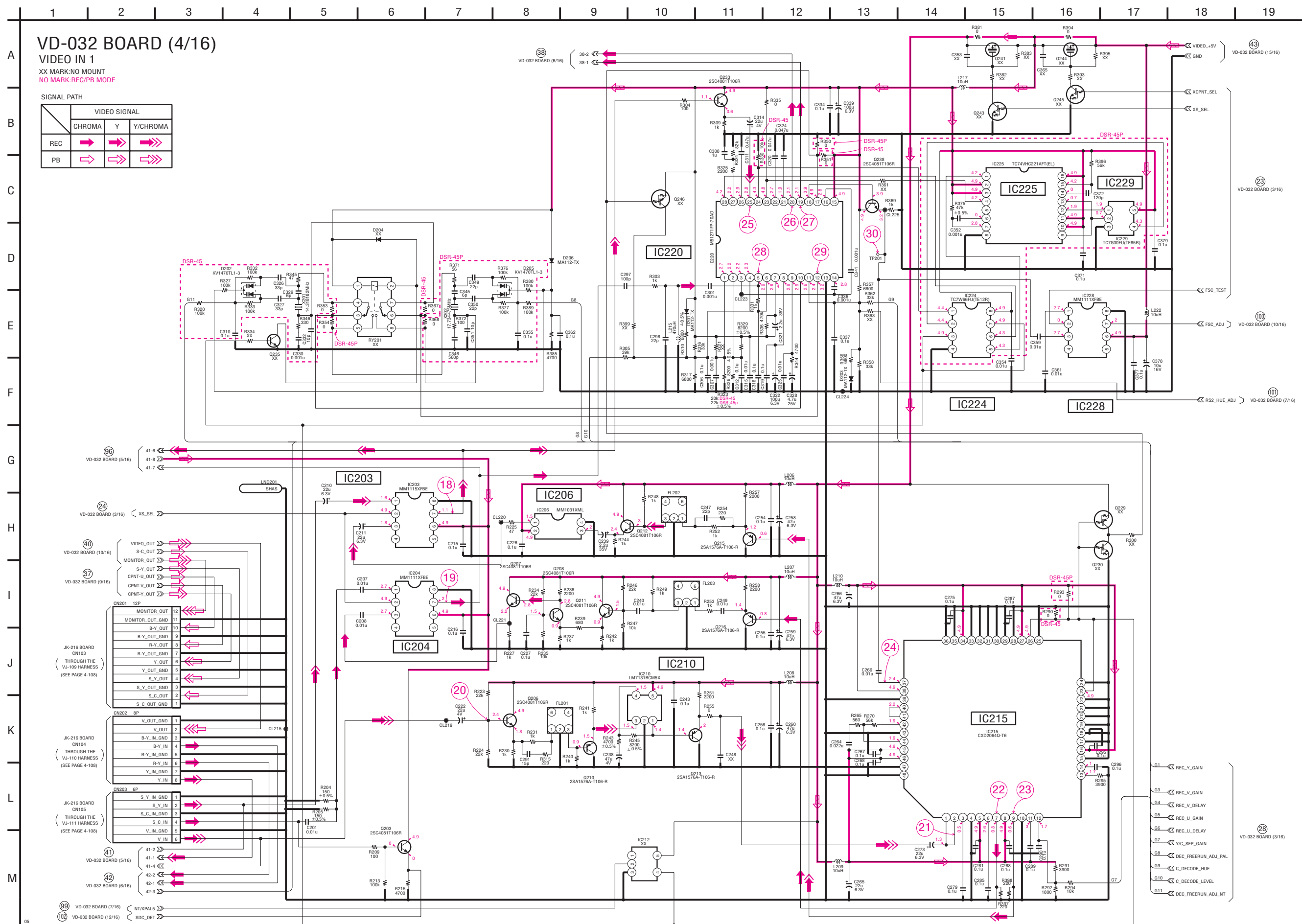
VD-032 (2/16) (SYNC GENERATOR 2) • See page 4-127 for VD-032 printed wiring board. • See page 4-168, 169 for waveforms.



VD-032 (3/16) (SYNC GENERATOR 3) • See page 4-127 for VD-032 printed wiring board. • See page 4-169 for waveforms.

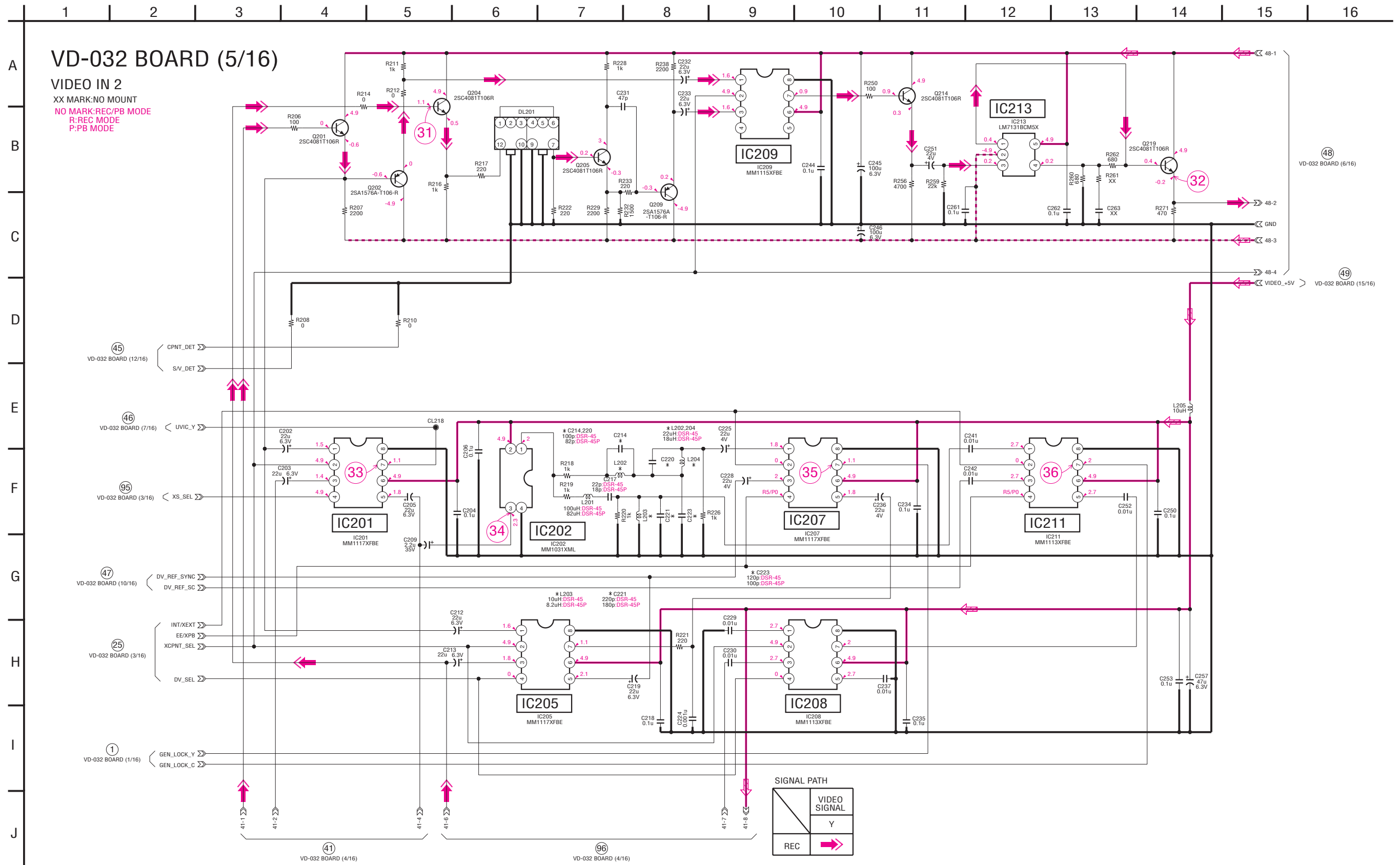


VD-032 (4/16) (VIDEO IN 1) • See page 4-127 for VD-032 printed wiring board. • See page 4-169, 170 for waveforms.



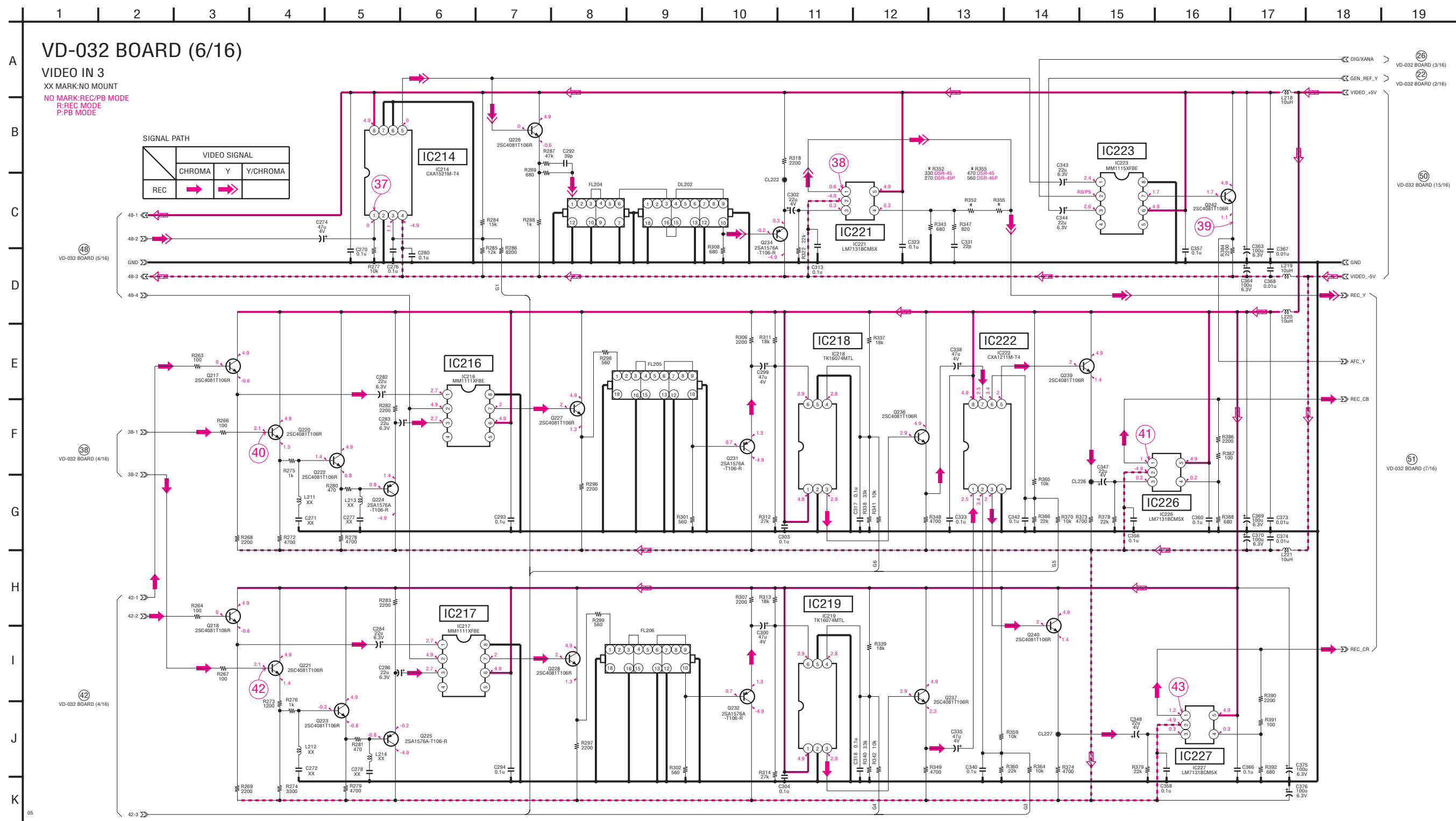


VD-032 (5/16) (VIDEO IN 2) • See page 4-127 for VD-032 printed wiring board. • See page 4-171 for waveforms.

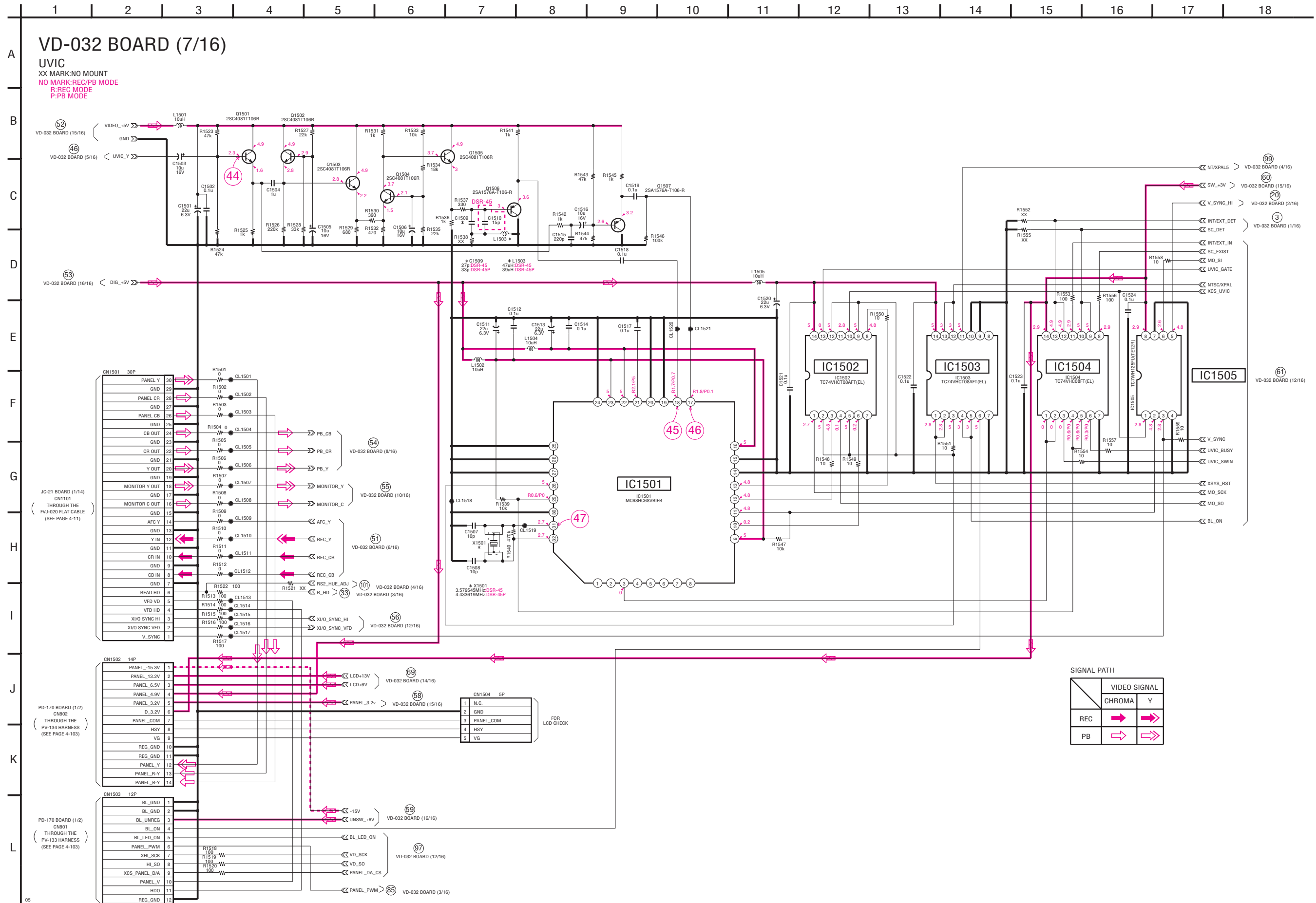




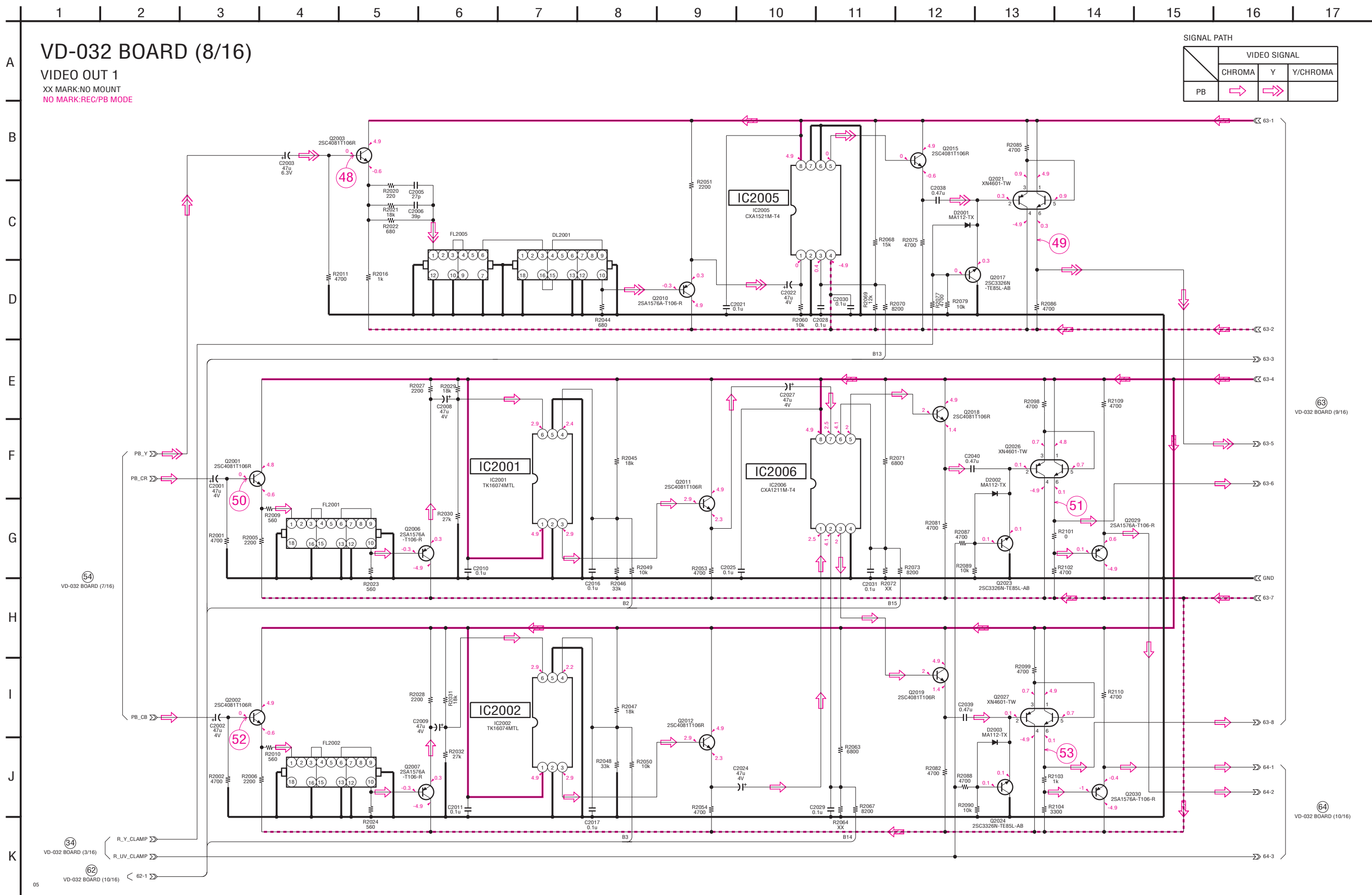
VD-032 (6/16) (VIDEO IN 3) • See page 4-127 for VD-032 printed wiring board. • See page 4-171, 172 for waveforms.



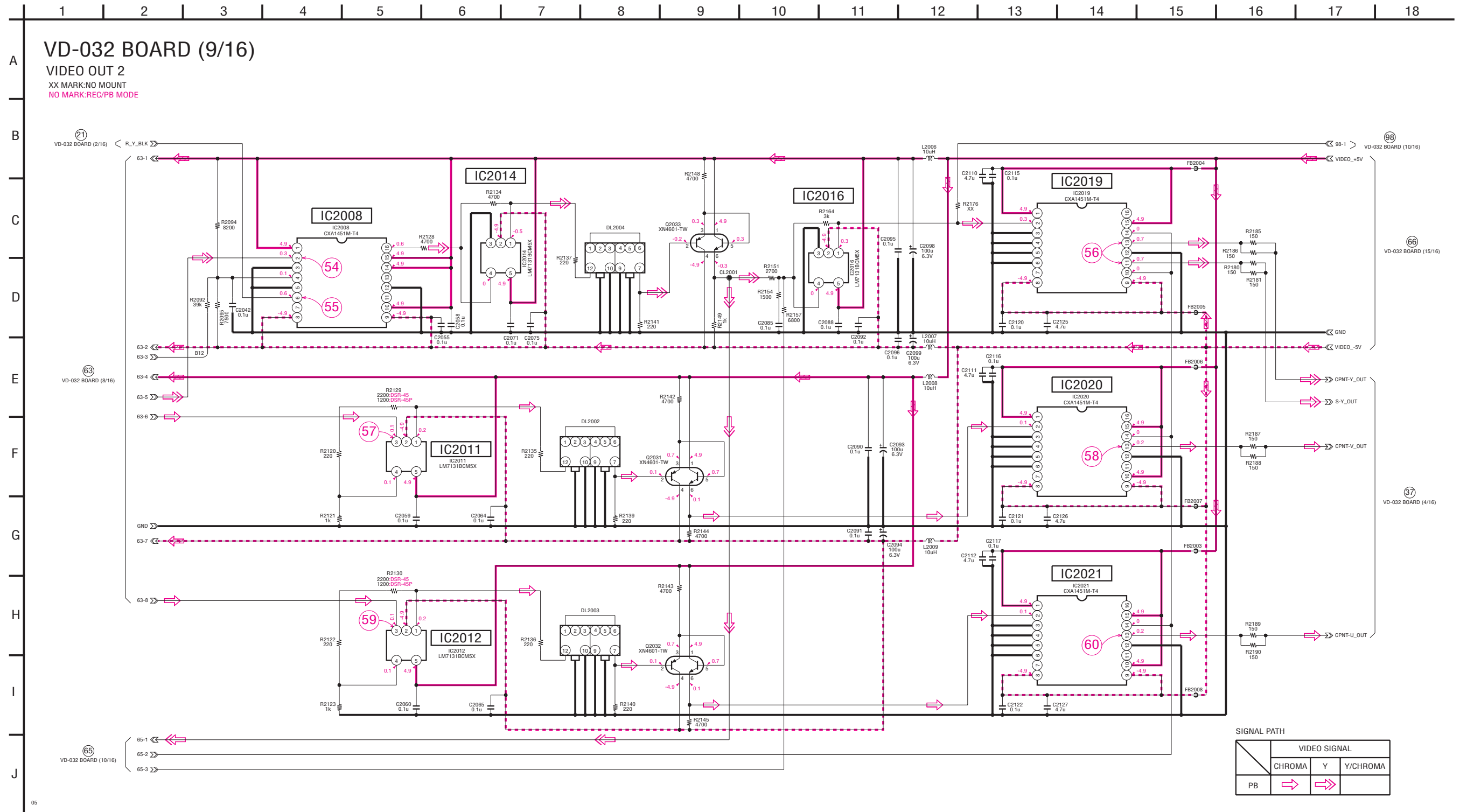
VD-032 (7/16) (UVIC) • See page 4-127 for VD-032 printed wiring board. • See page 4-172 for waveforms.



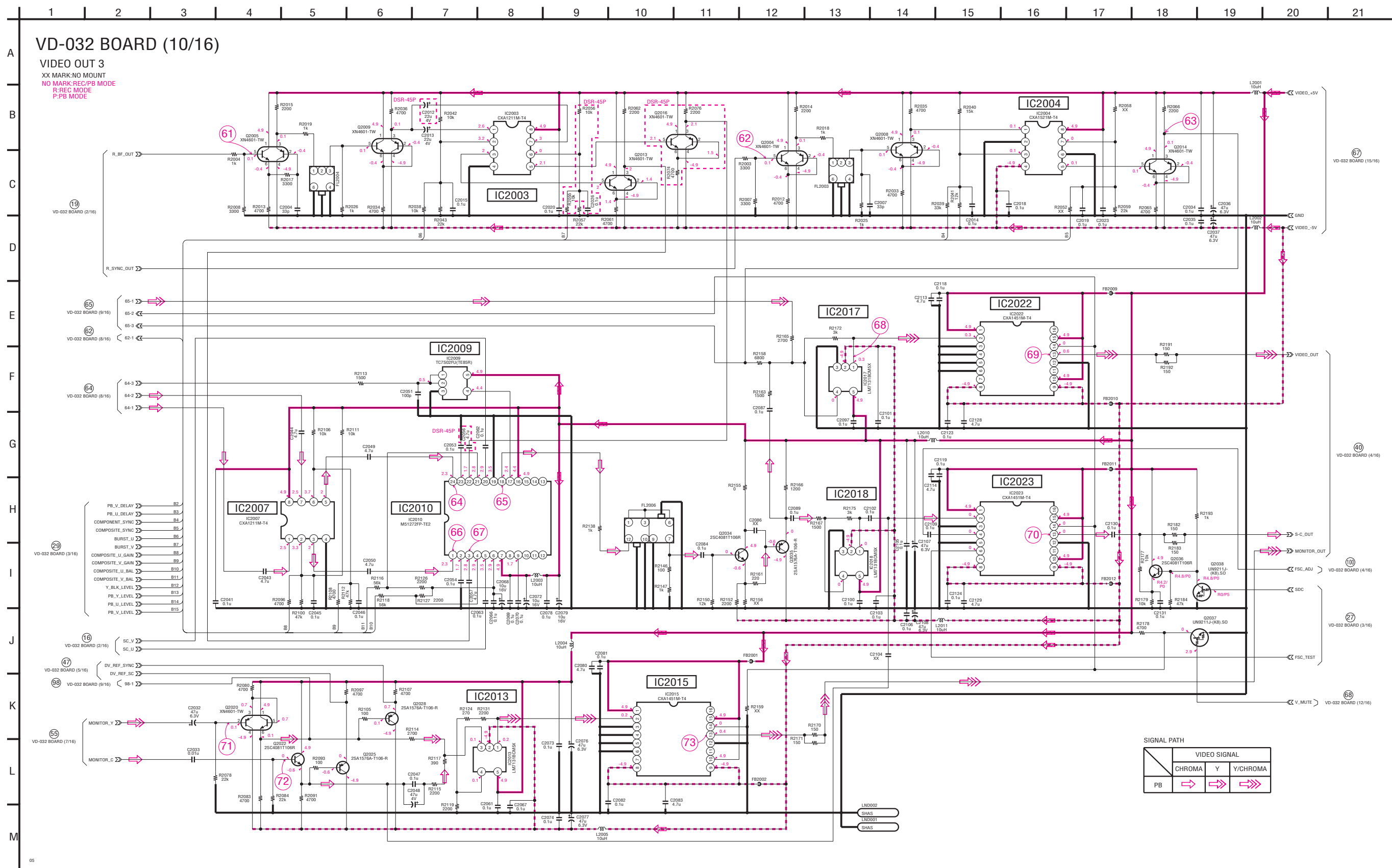
VD-032 (8/16) (VIDEO OUT 1) • See page 4-127 for VD-032 printed wiring board. • See page 4-172, 173 for waveforms.



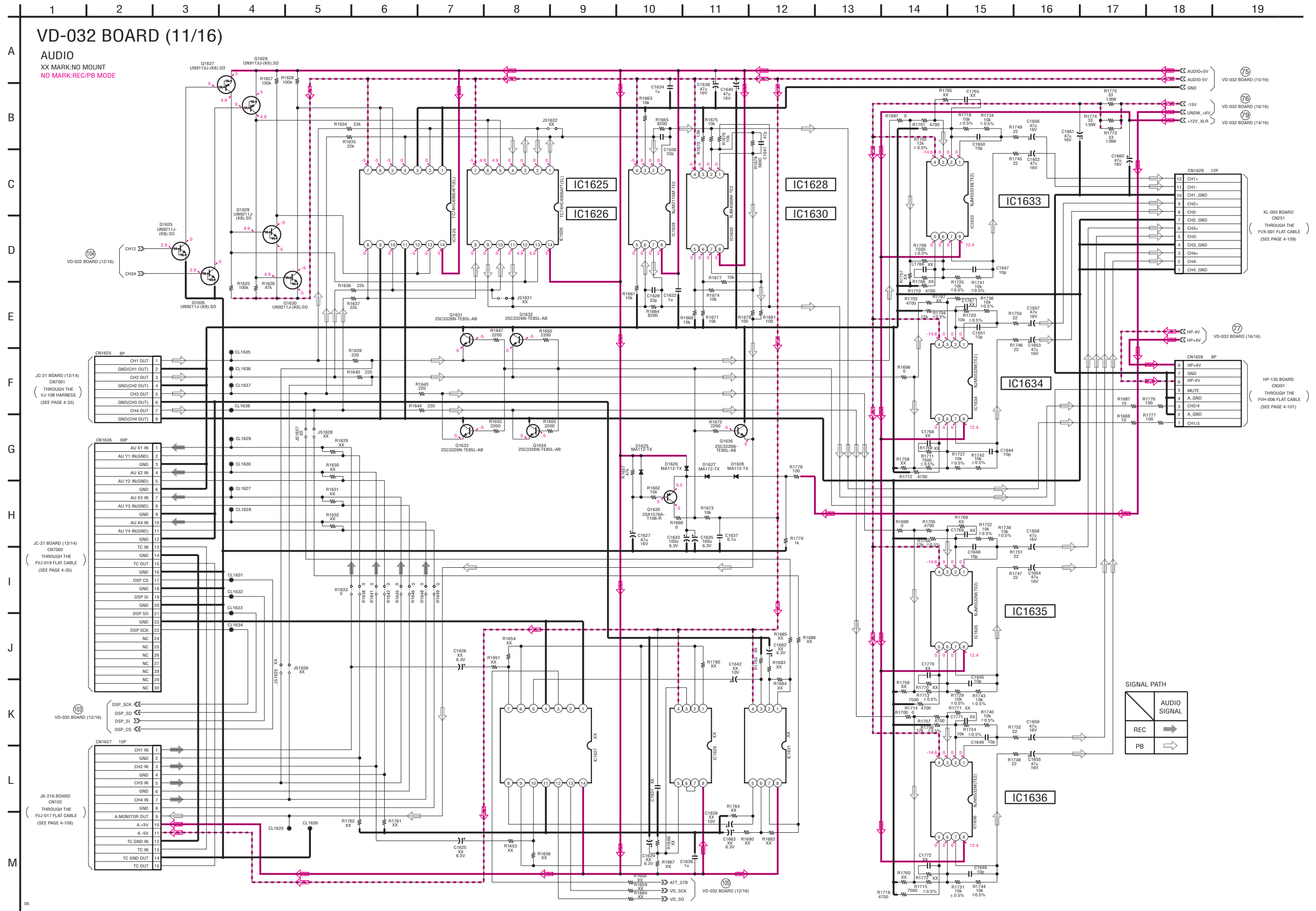
VD-032 (9/16) (VIDEO OUT 2) • See page 4-127 for VD-032 printed wiring board. • See page 4-173, 174 for waveforms.



VD-032 (10/16) (VIDEO OUT 3) • See page 4-127 for VD-032 printed wiring board. • See page 4-174, 175 for waveforms.

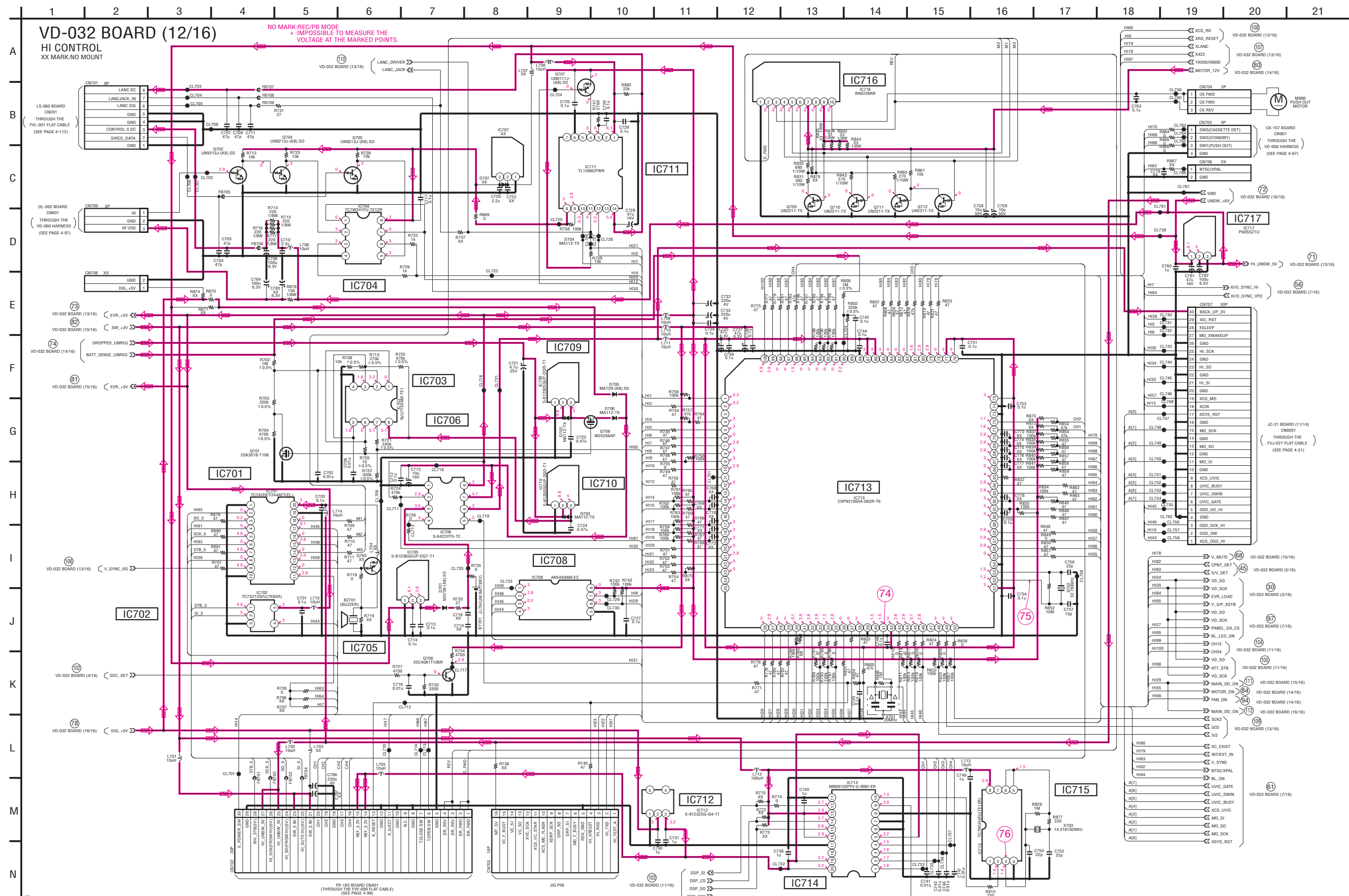


VD-032 (11/16) (AUDIO) • See page 4-127 for VD-032 printed wiring board.

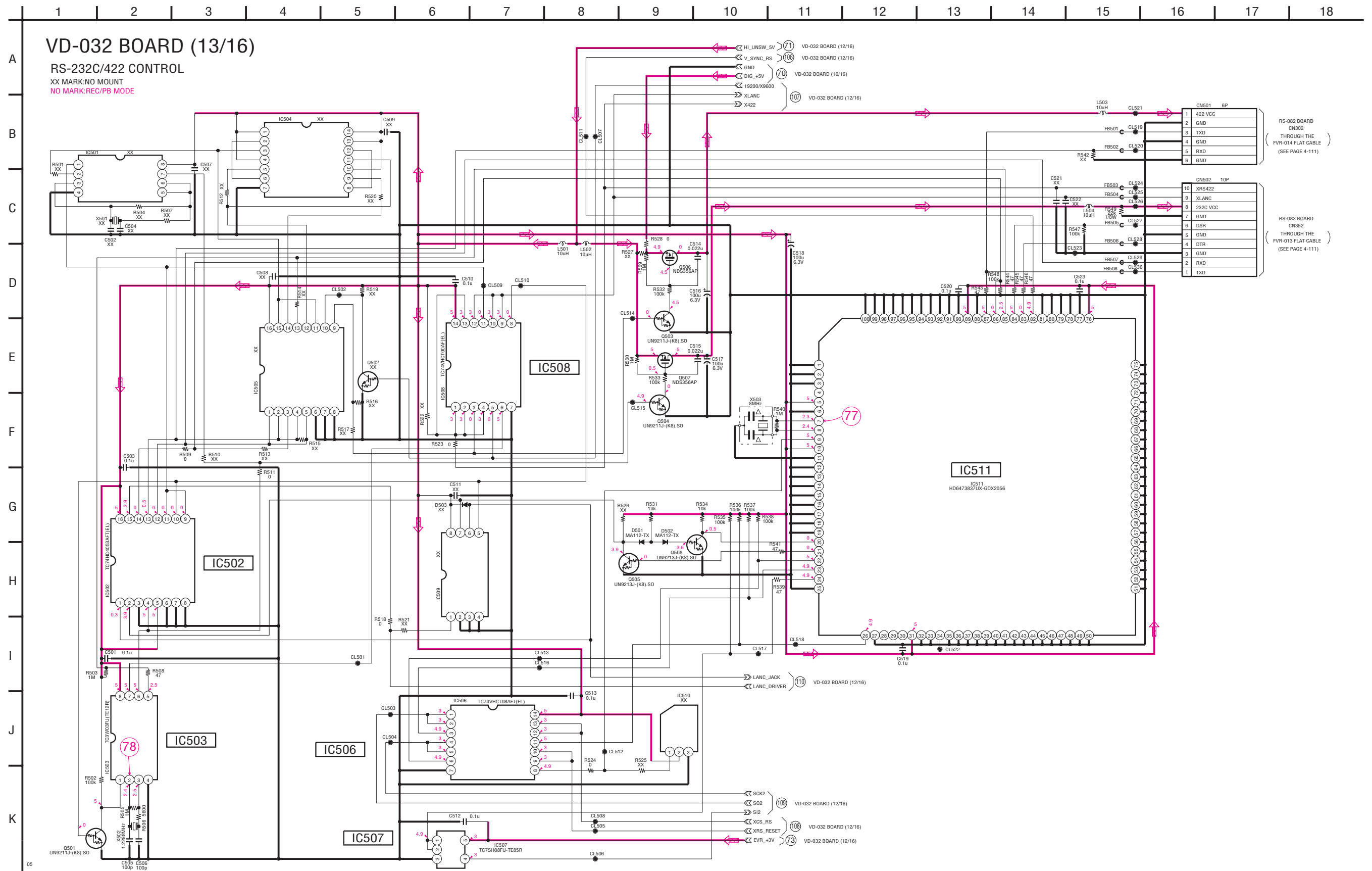




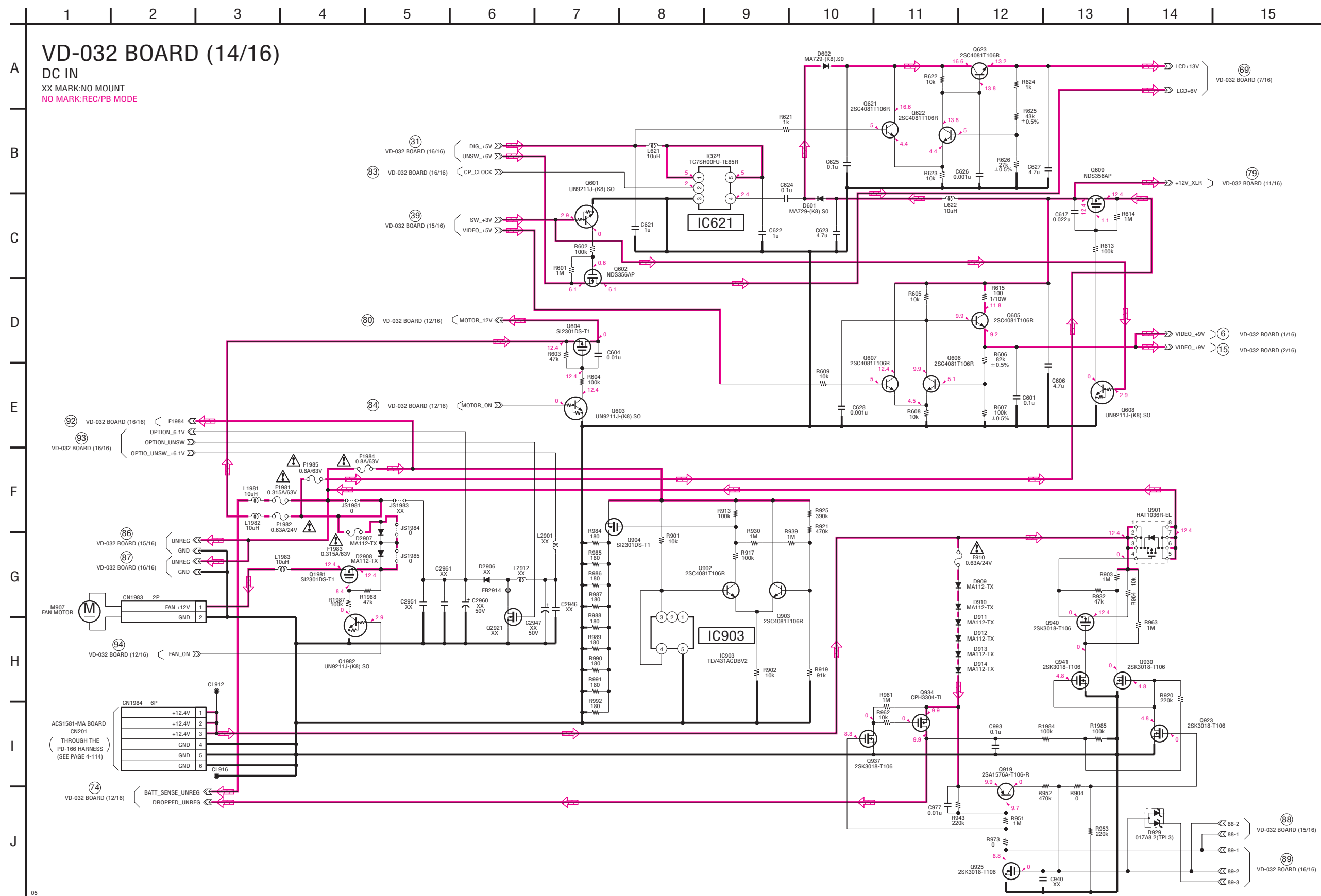
VD-032 (12/16) (HI CONTROL) • See page 4-127 for VD-032 printed wiring board. • See page 4-175 for waveforms.



VD-032 (13/16) (RS-232C/422 CONTROL) • See page 4-127 for VD-032 printed wiring board. • See page 4-175 for waveforms.



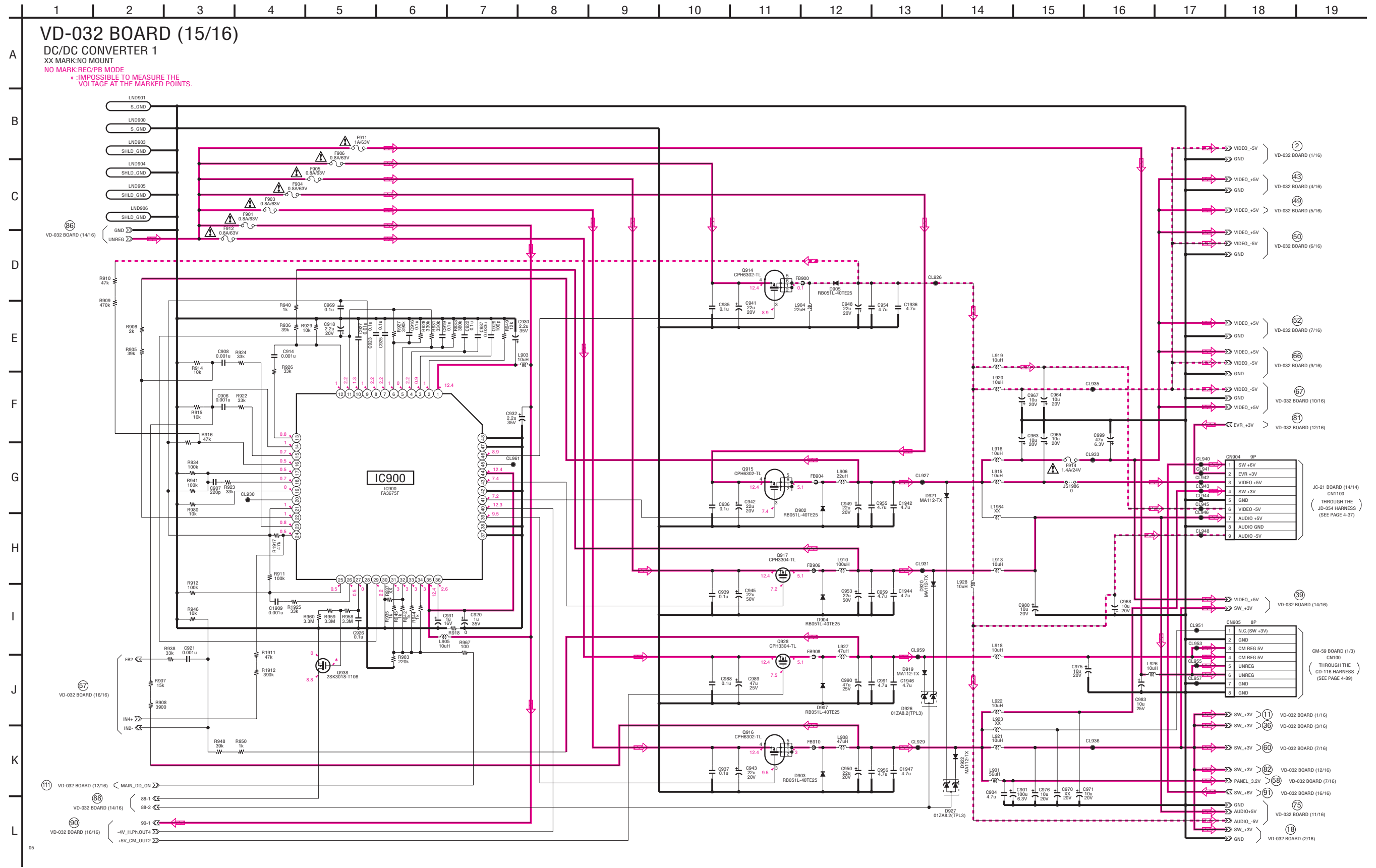
VD-032 (14/16) (DC IN) • See page 4-127 for VD-032 printed wiring board.



The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

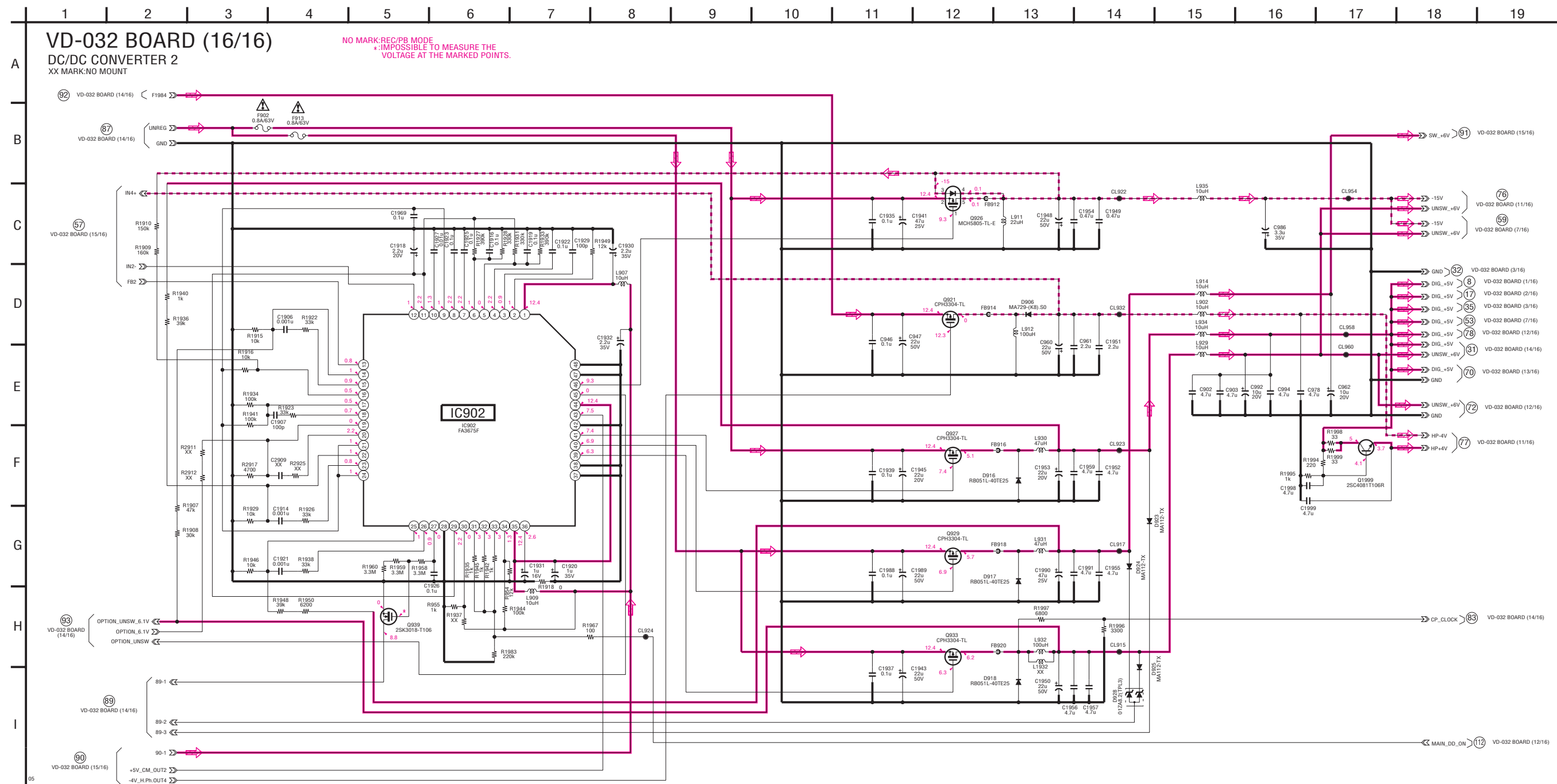
VD-032 (15/16) (DC/DC CONVERTER 1) • See page 4-127 for VD-032 printed wiring board.



The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VD-032 (16/16) (DC/DC CONVERTER 2) • See page 4-127 for VD-032 printed wiring board.



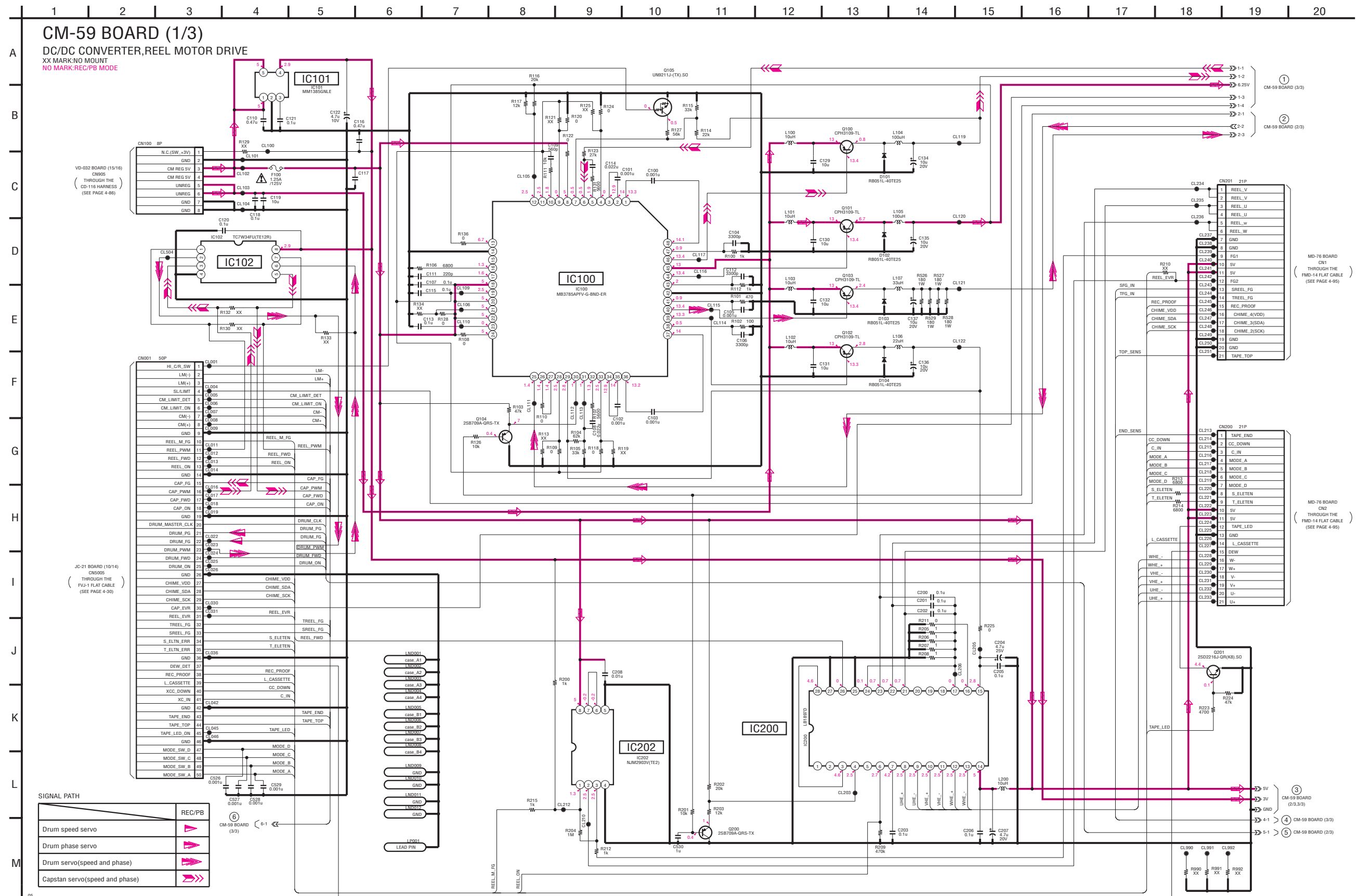
NO MARK:REC/PB MODE  
\*:IMPOSSIBLE TO MEASURE THE  
VOLTAGE AT THE MARKED POINTS.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



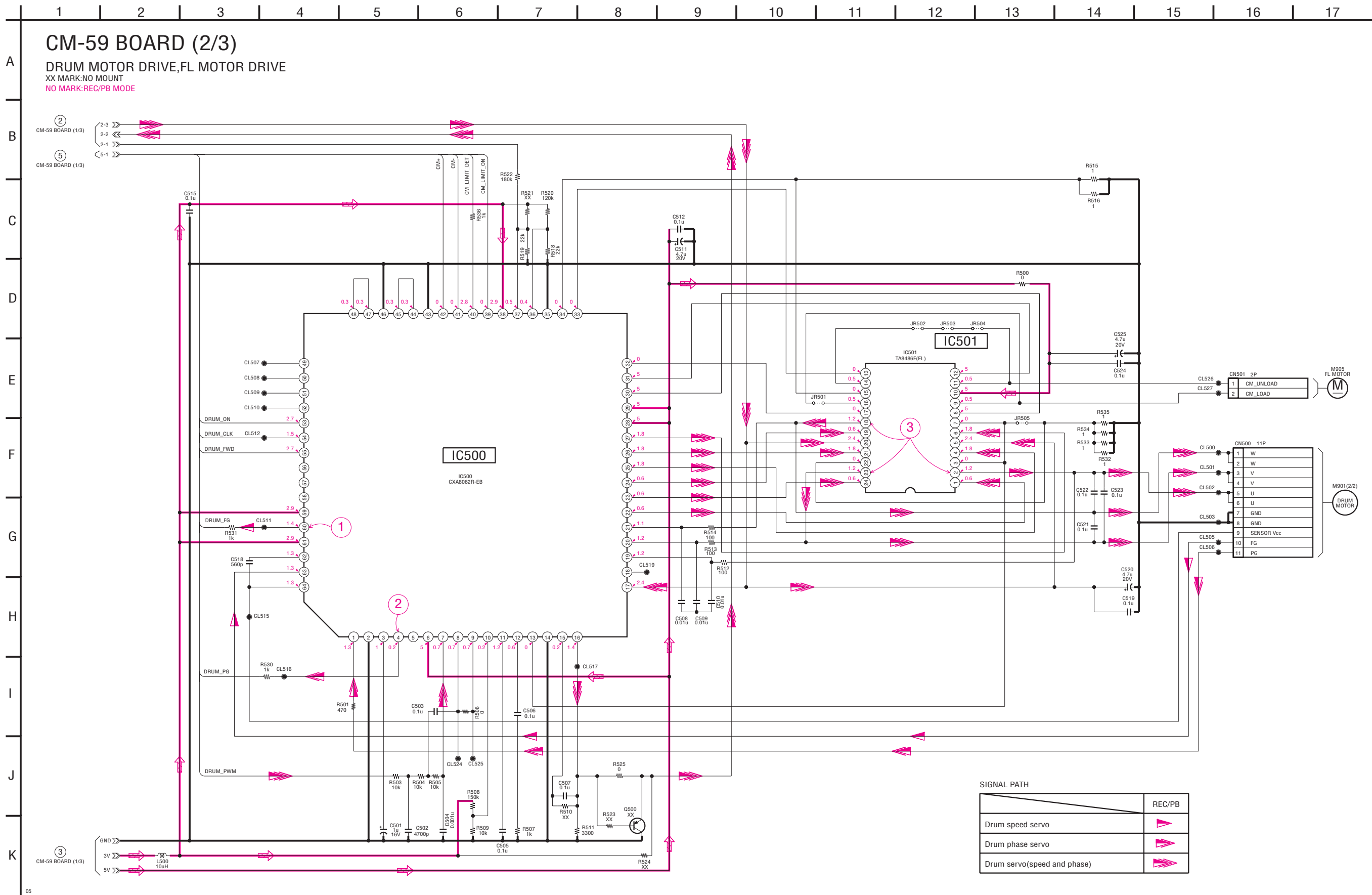
CM-59 (1/3) (DC/DC CONVERTER, REEL MOTOR DRIVE) • See page 4-131 for CM-59 printed wiring board.



The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

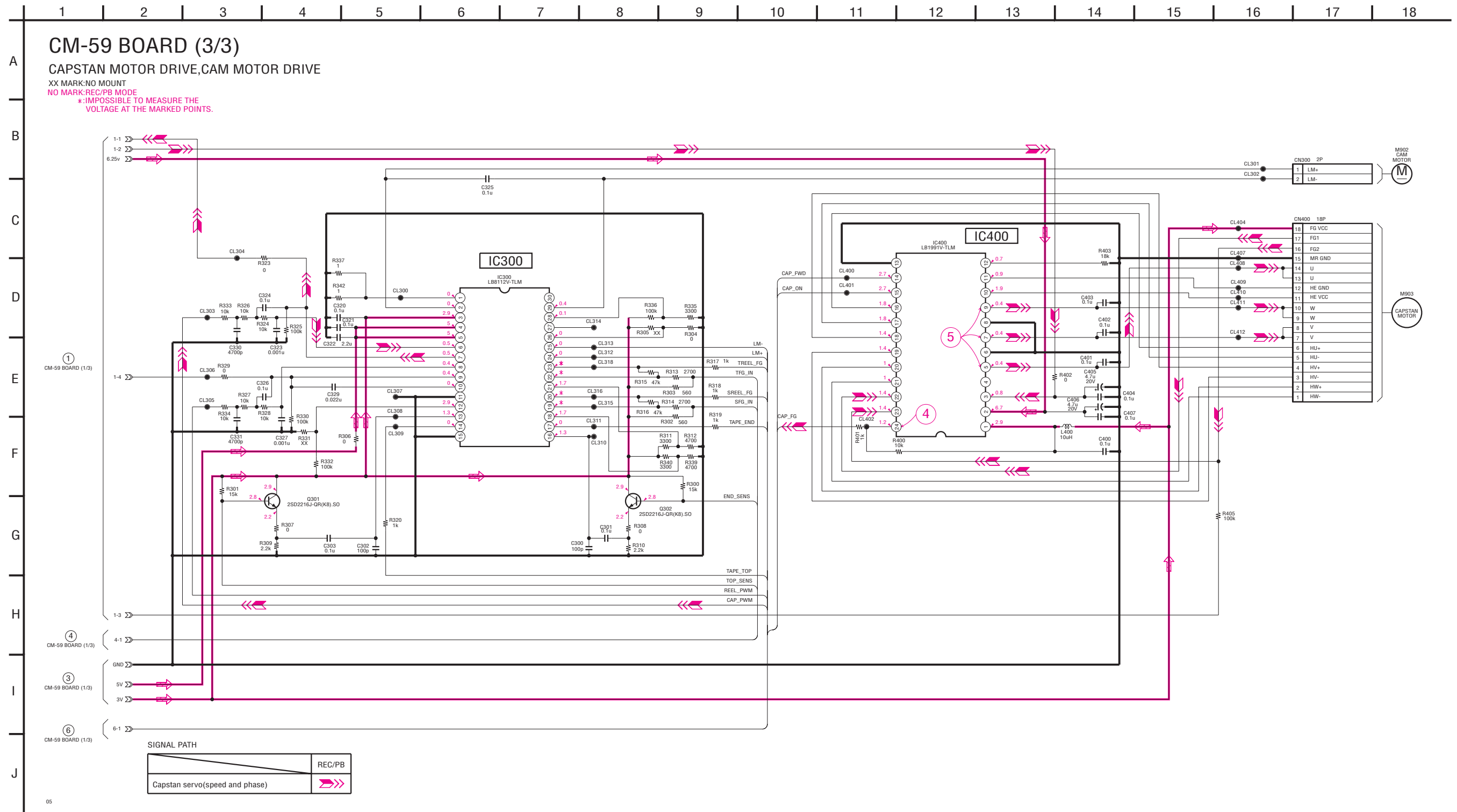
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

CM-59 (2/3) (DRUM MOTOR DRIVE, FL MOTOR DRIVE) • See page 4-131 for CM-59 printed wiring board. • See page 4-176 for waveforms.

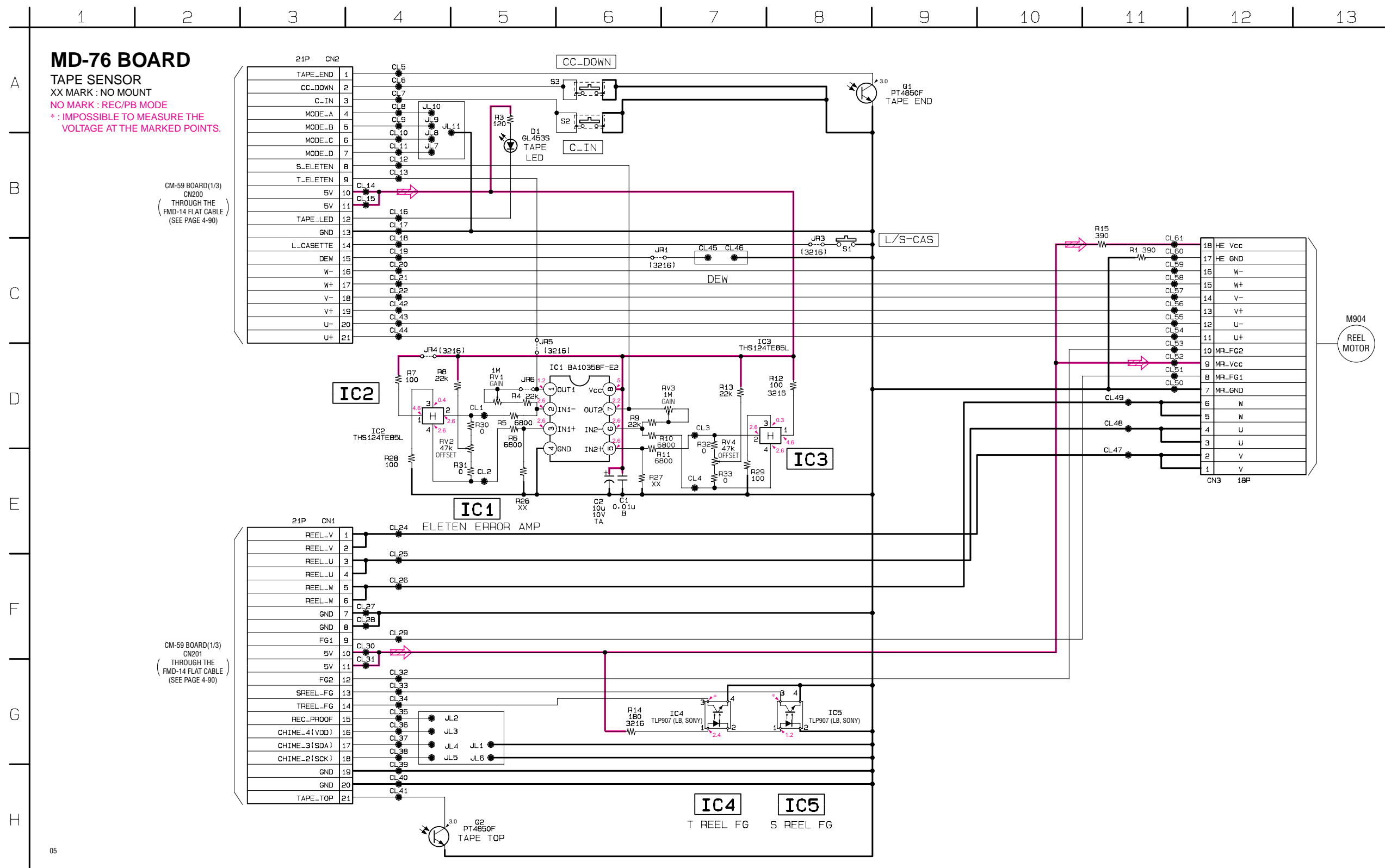




CM-59 (3/3) (CAPSTAN MOTOR DRIVE, CAM MOTOR DRIVE) • See page 4-131 for CM-59 printed wiring board. • See page 4-176 for waveforms.

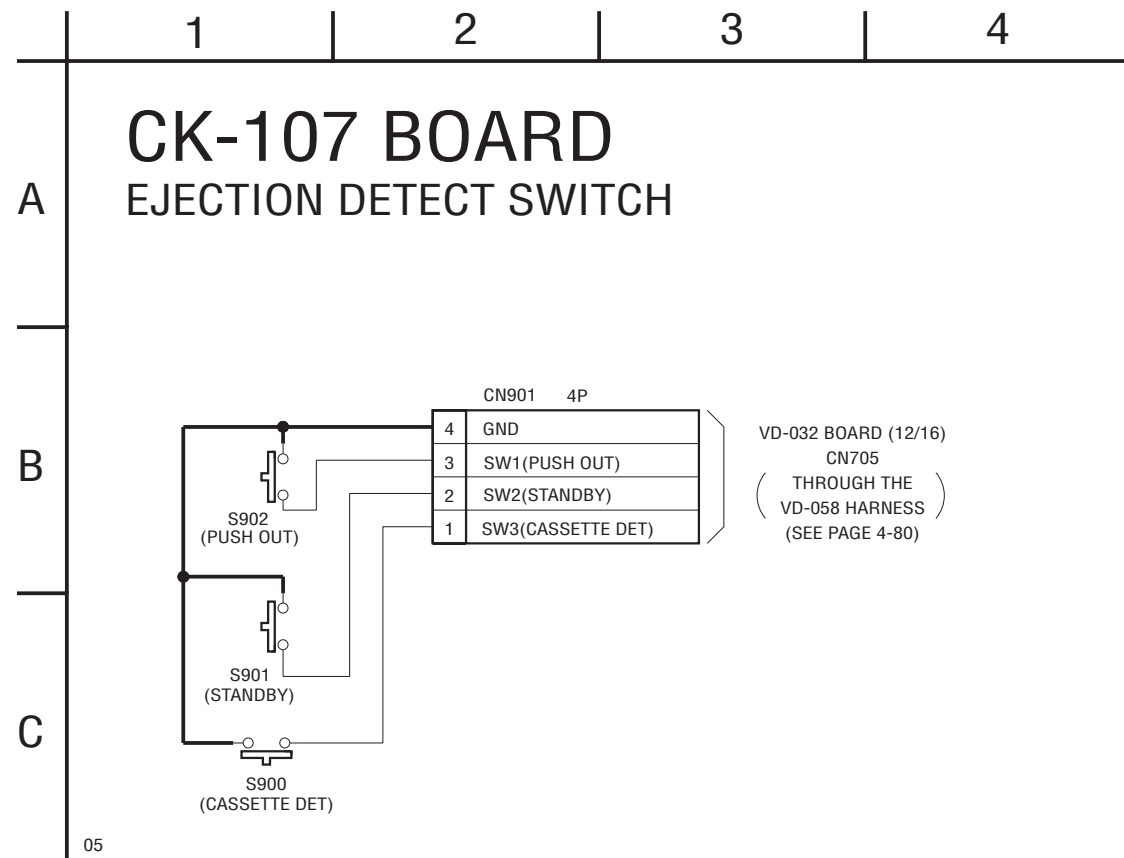


MD-76 (TAPE SENSOR) • See page 4-135 for MD-76 printed wiring board.

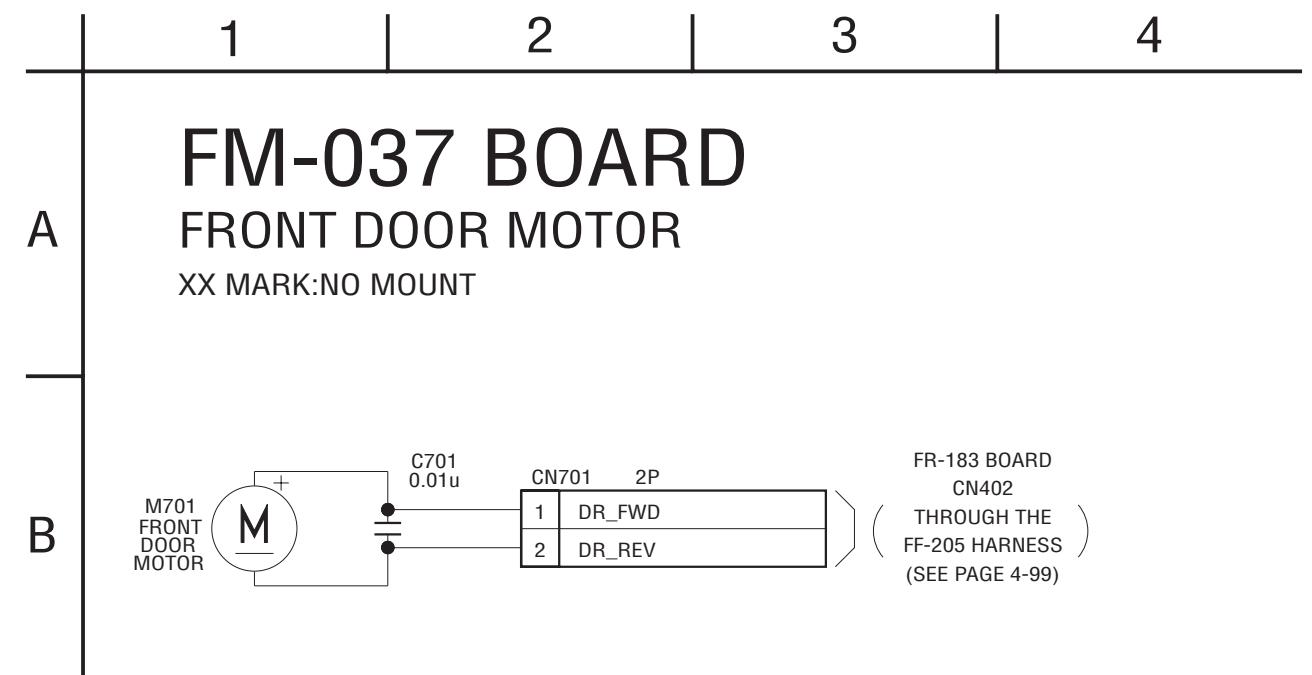
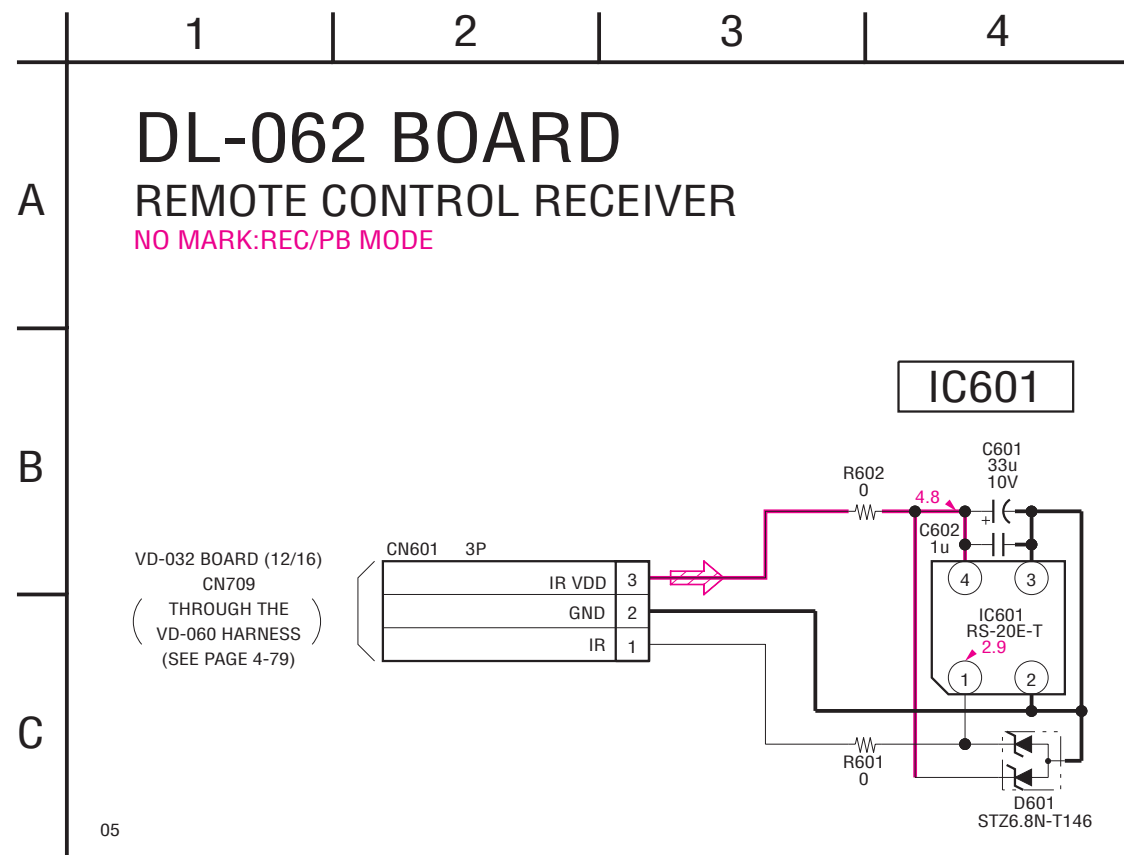
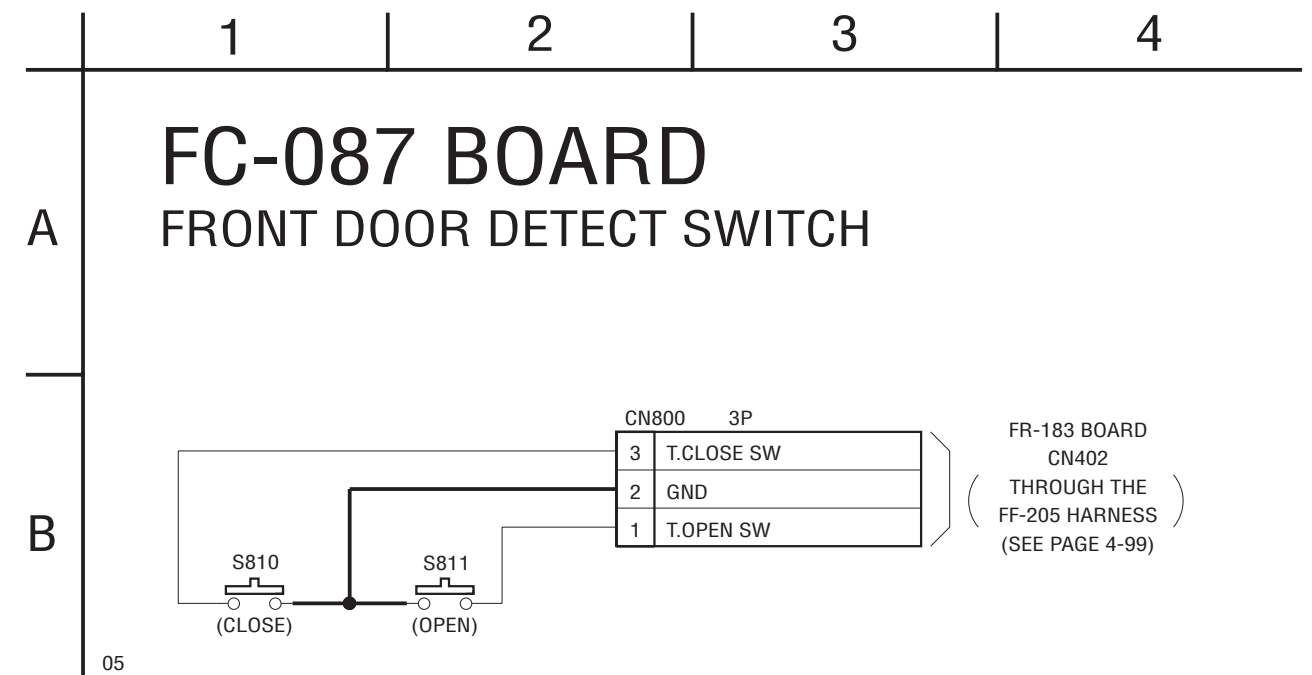


05

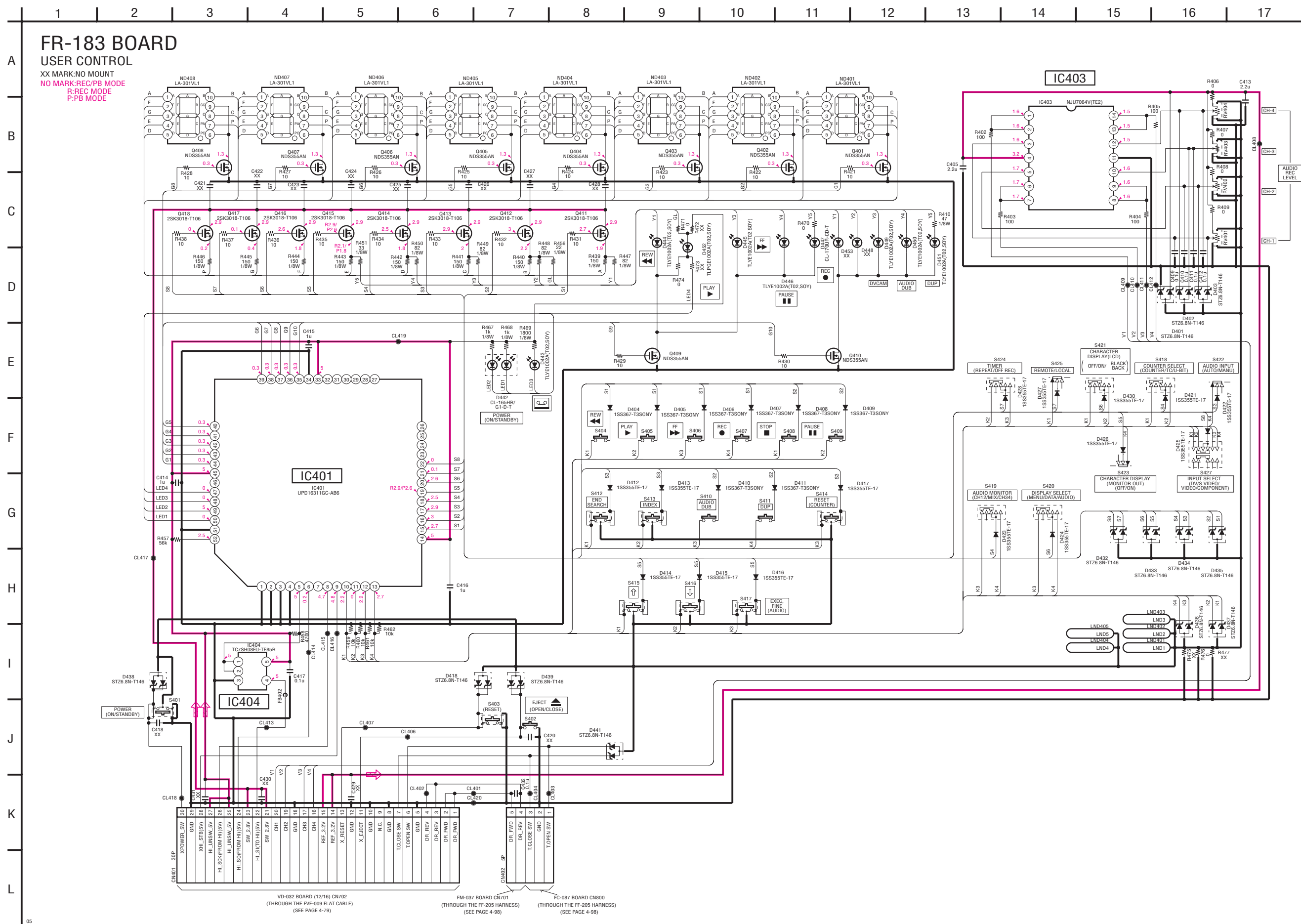
CK-107 (EJECTION DETECT SWITCH)/DL-062 (REMOTE CONTROL RECEIVER)  
 • See page 4-137 for CK-107, DL-062 printed wiring board.



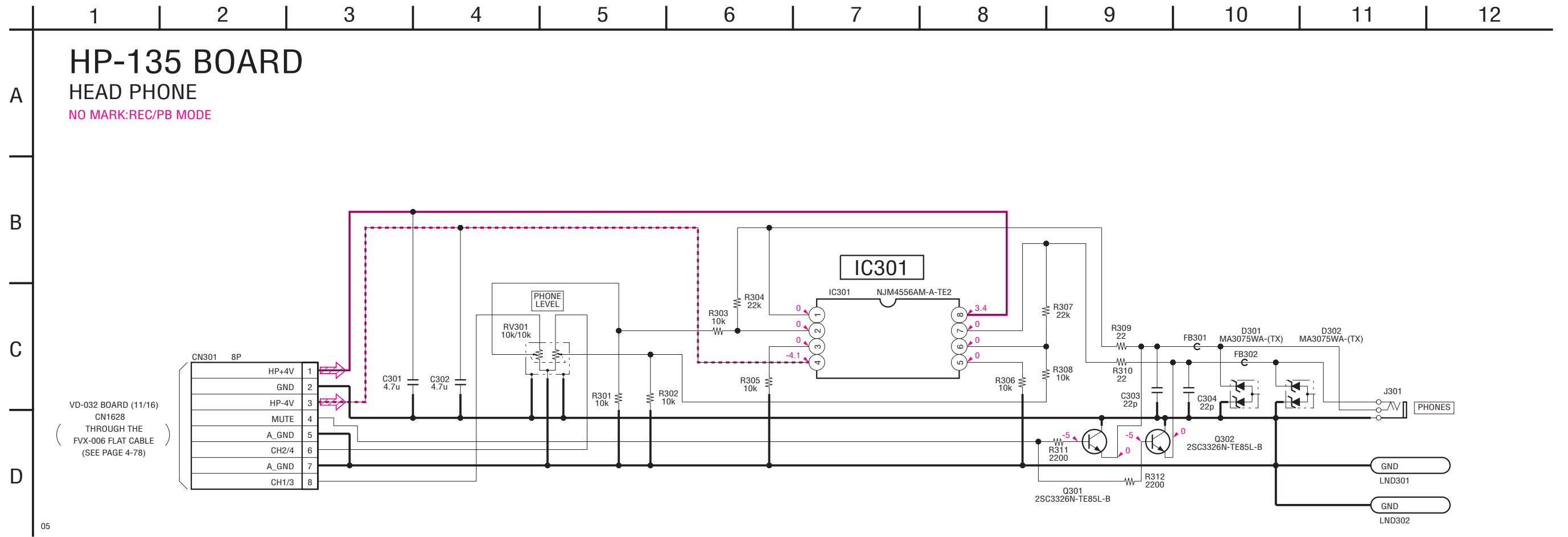
FC-087 (FRONT DOOR DETECT SWITCH)/FM-037 (FRONT DOOR MOTOR)  
 • See page 4-138 for FC-087, FM-037 printed wiring board.



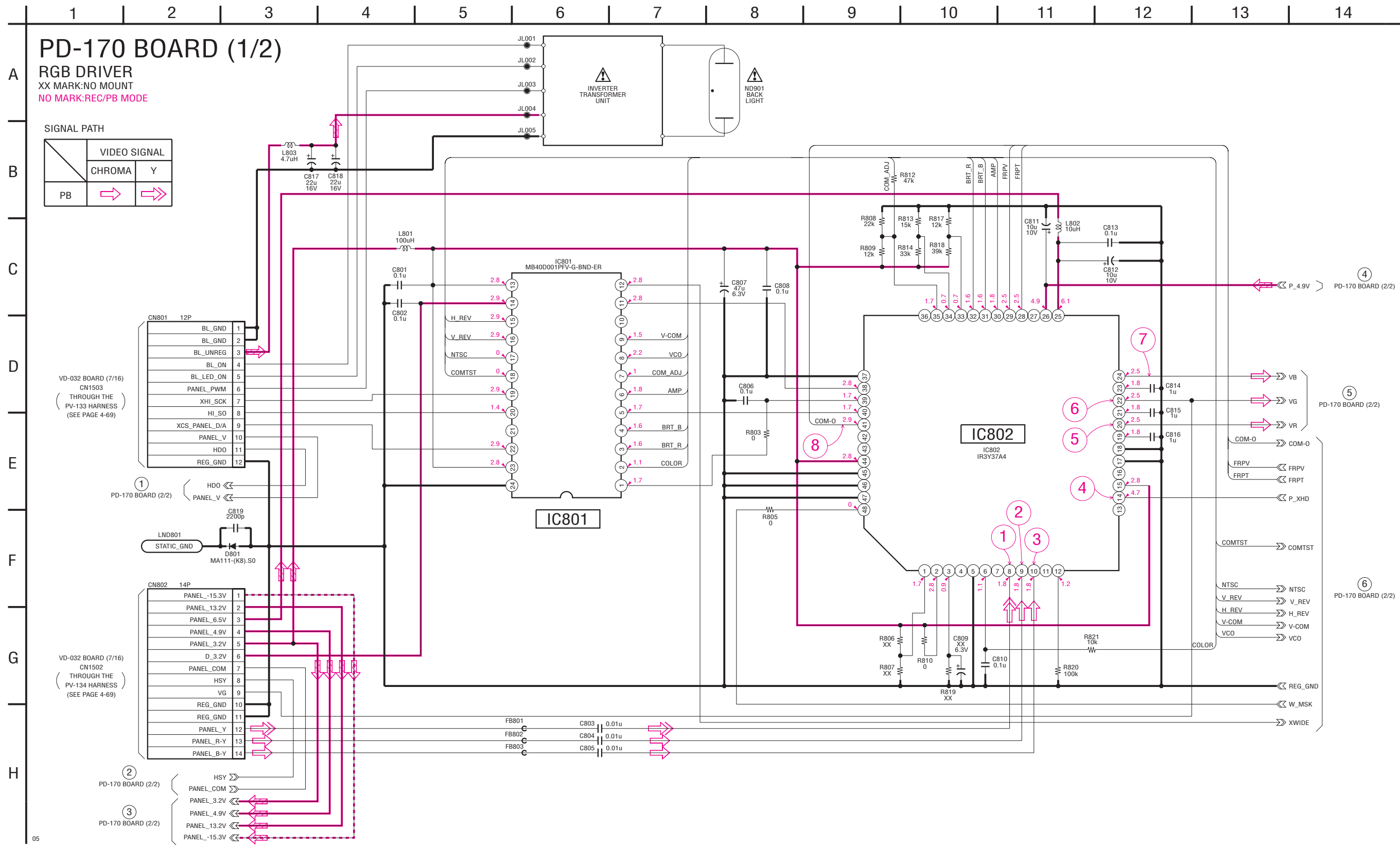
FR-183 (USER CONTROL) • See page 4-139 for FR-183 printed wiring board.



HP-135 (HEAD PHONE) • See page 4-143 for HP-135 printed wiring board.



PD-170 (1/2) (RGB DRIVER) • See page 4-145 for PD-170 printed wiring board. • See page 4-177 for waveforms.



The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

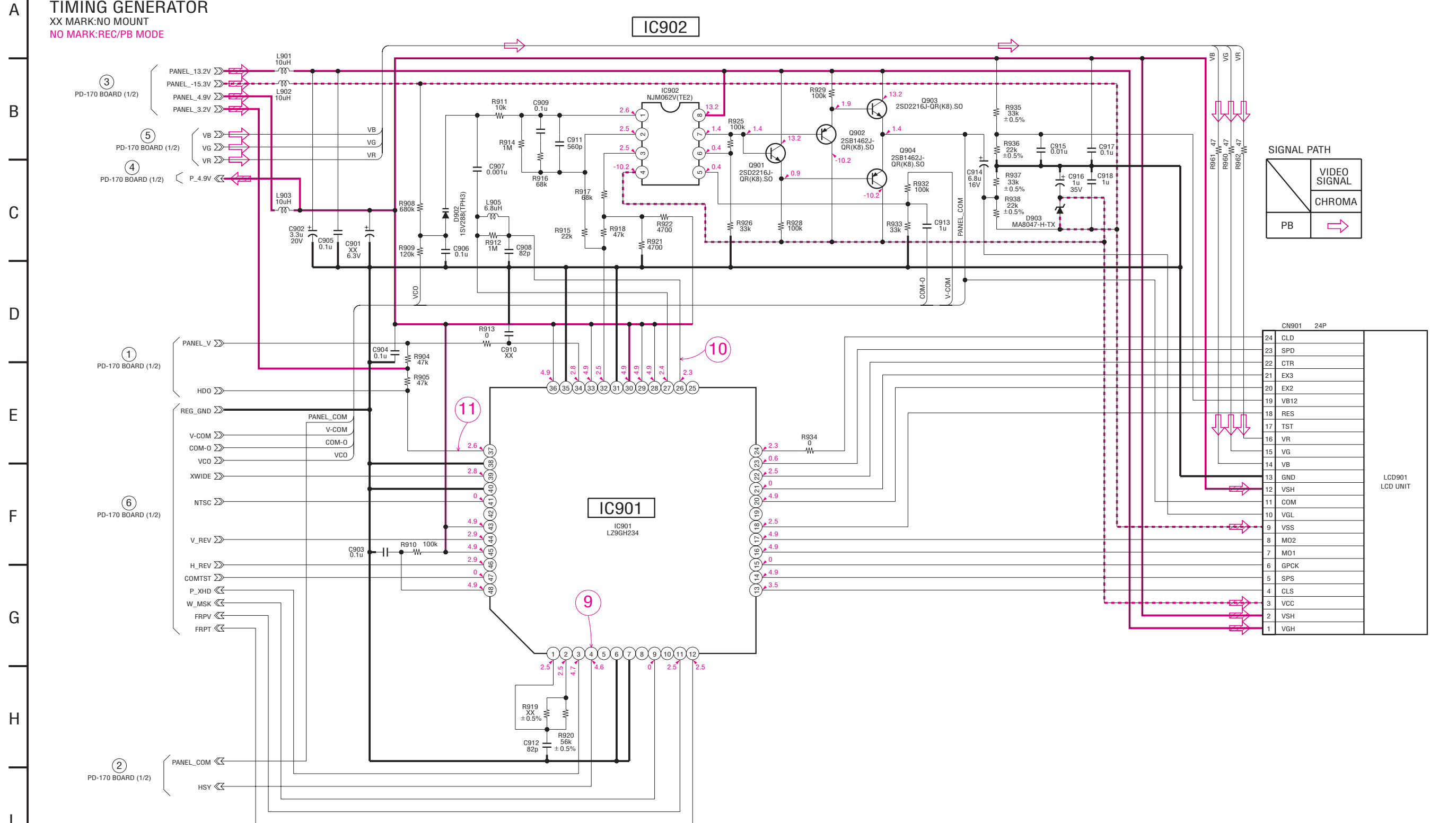
PD-170 (2/2) (TIMING GENERATOR) • See page 4-145 for PD-170 printed wiring board. • See page 4-177, 178 for waveforms.



# PD-170 BOARD (2/2)

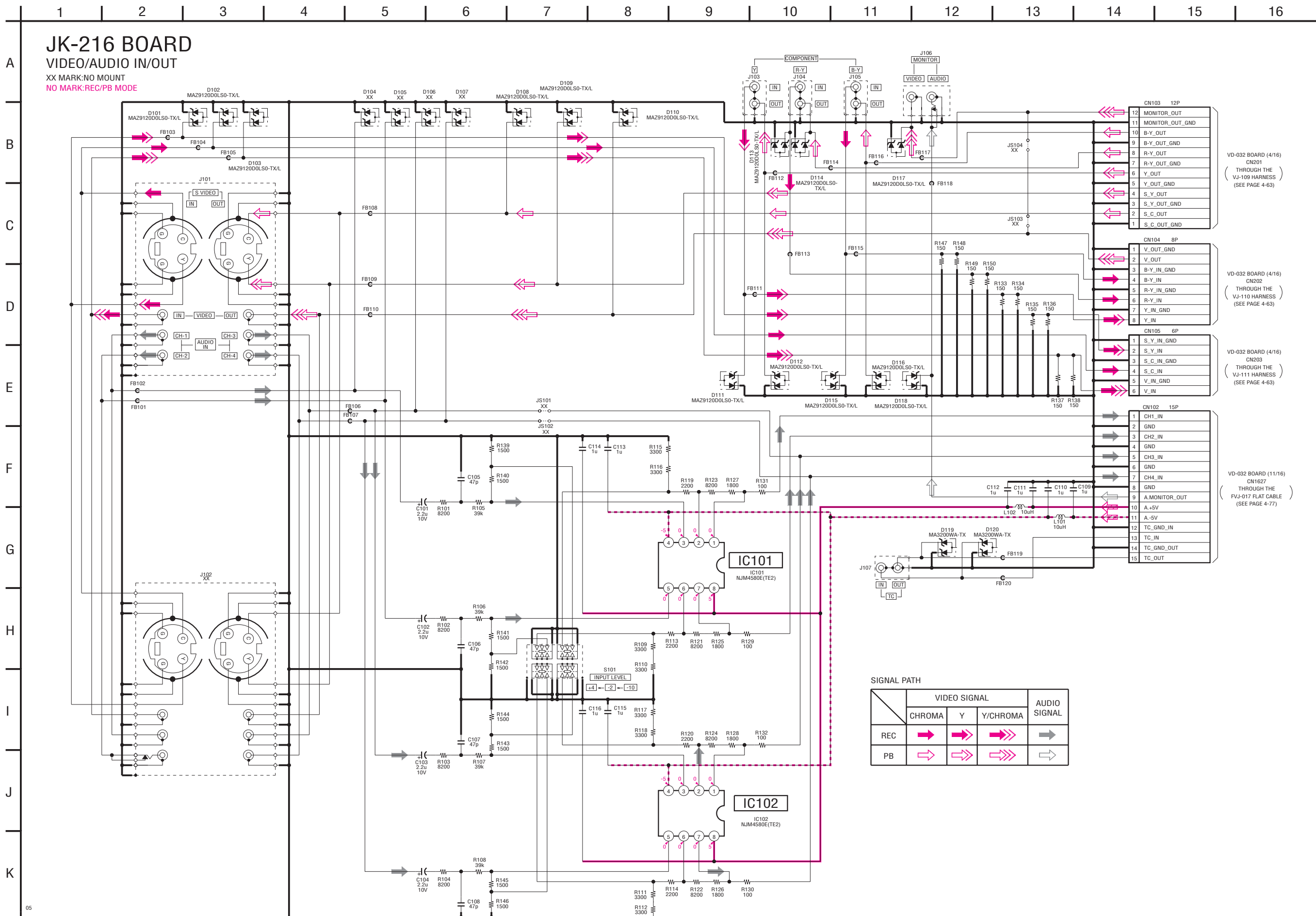
## TIMING GENERATOR

XX MARK:NO MOUNT  
NO MARK:REC/PB MODE

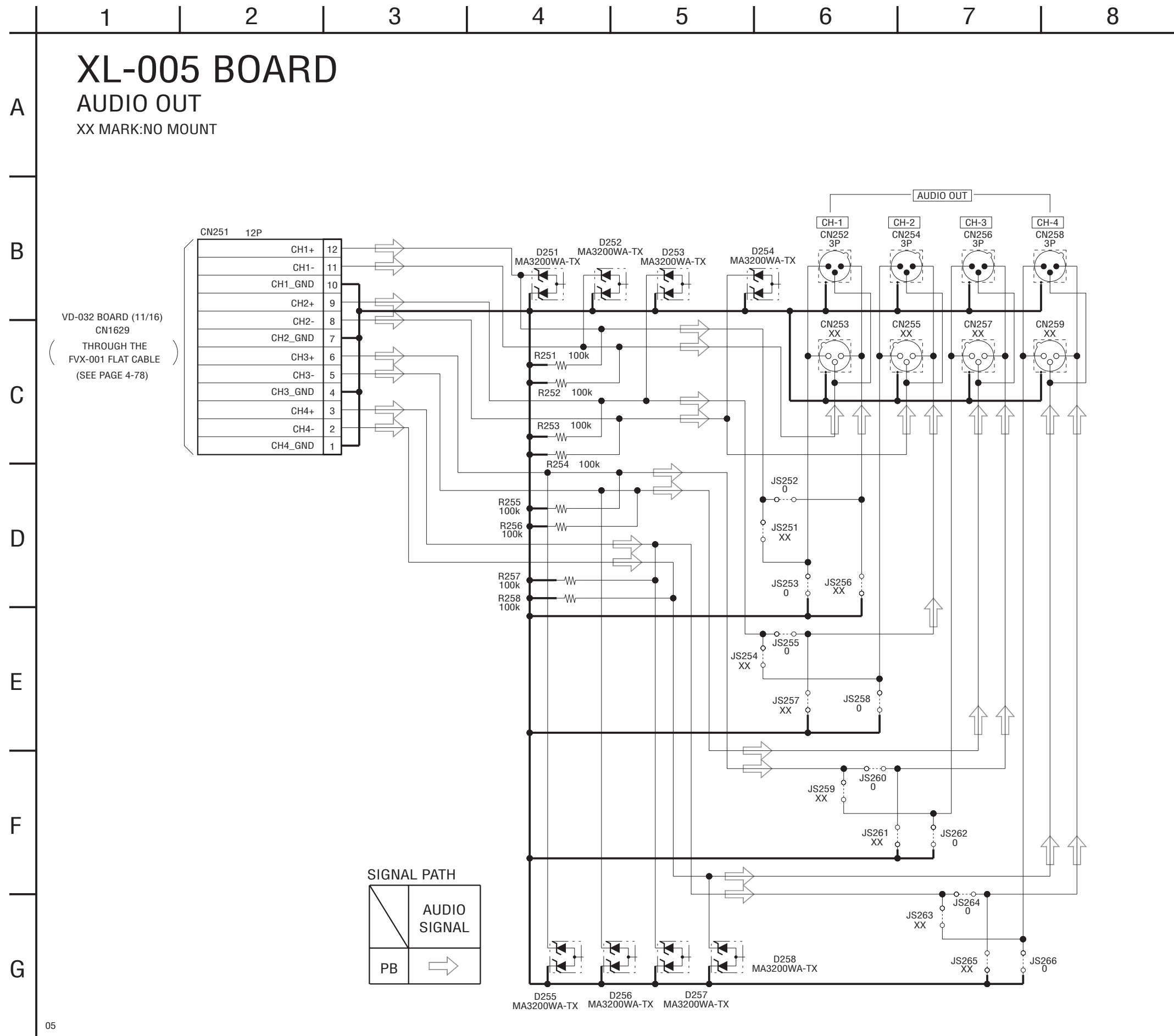




JK-216 (VIDEO/AUDIO IN/OUT) • See page 4-147 for JK-216 printed wiring board.

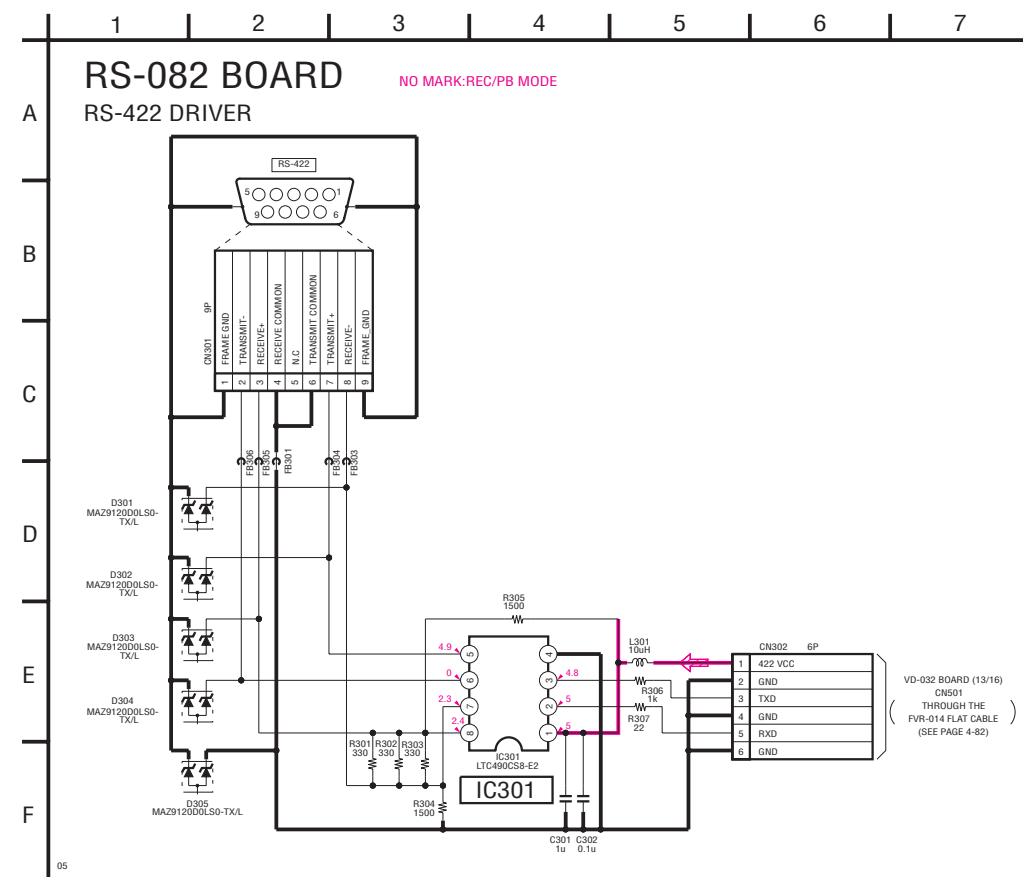


XL-005 (AUDIO OUT) • See page 4-151 for XL-005 printed wiring board.

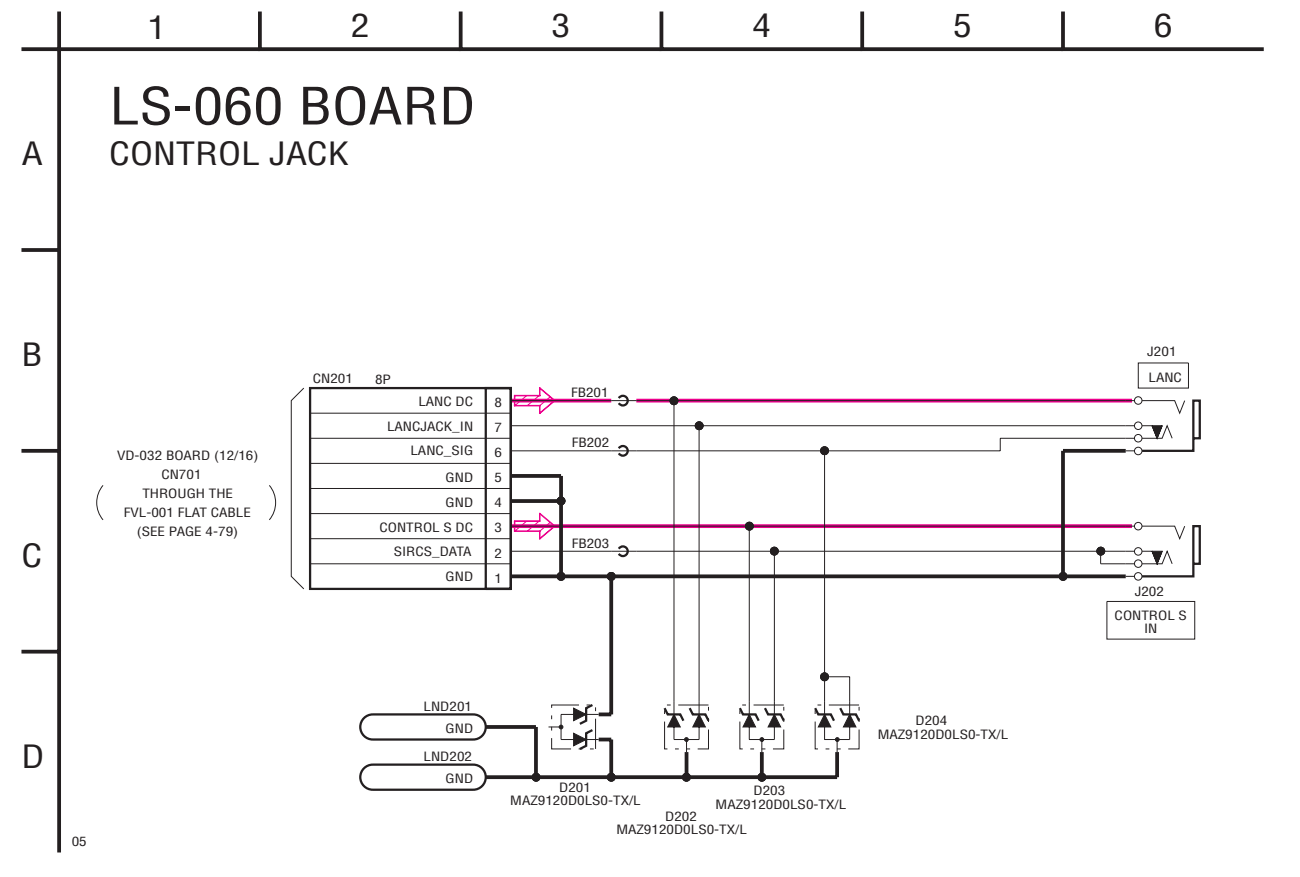
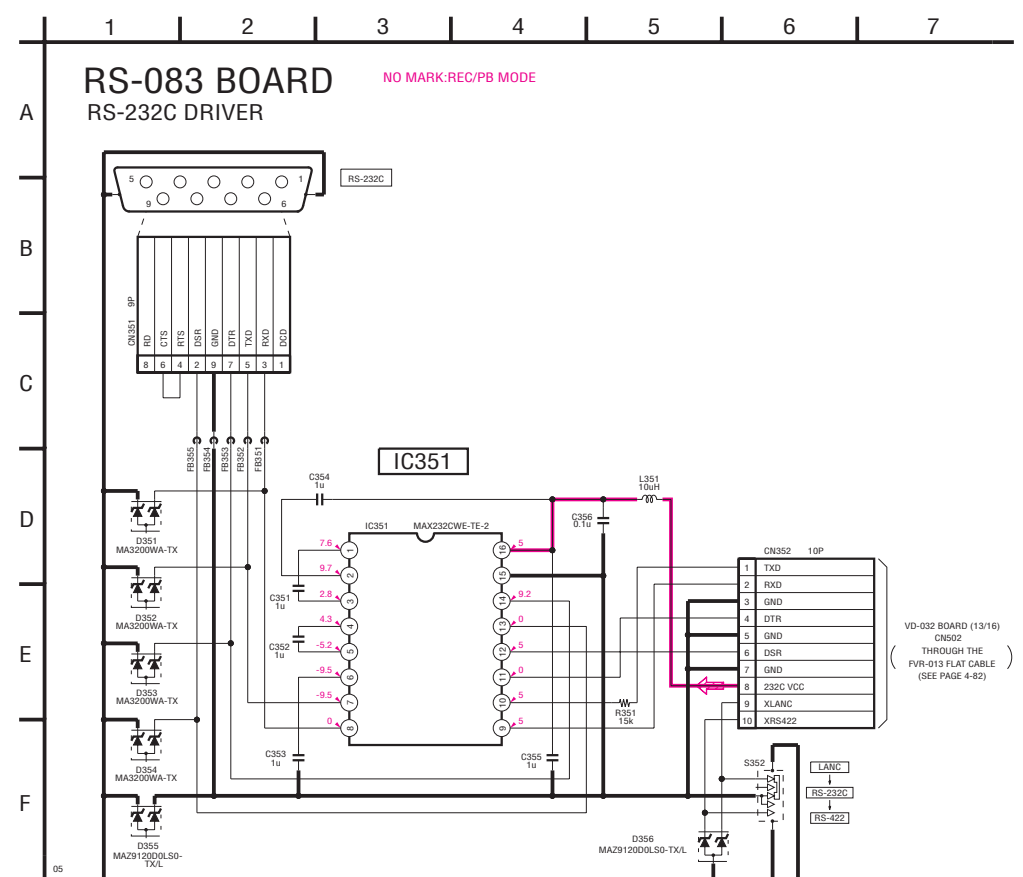
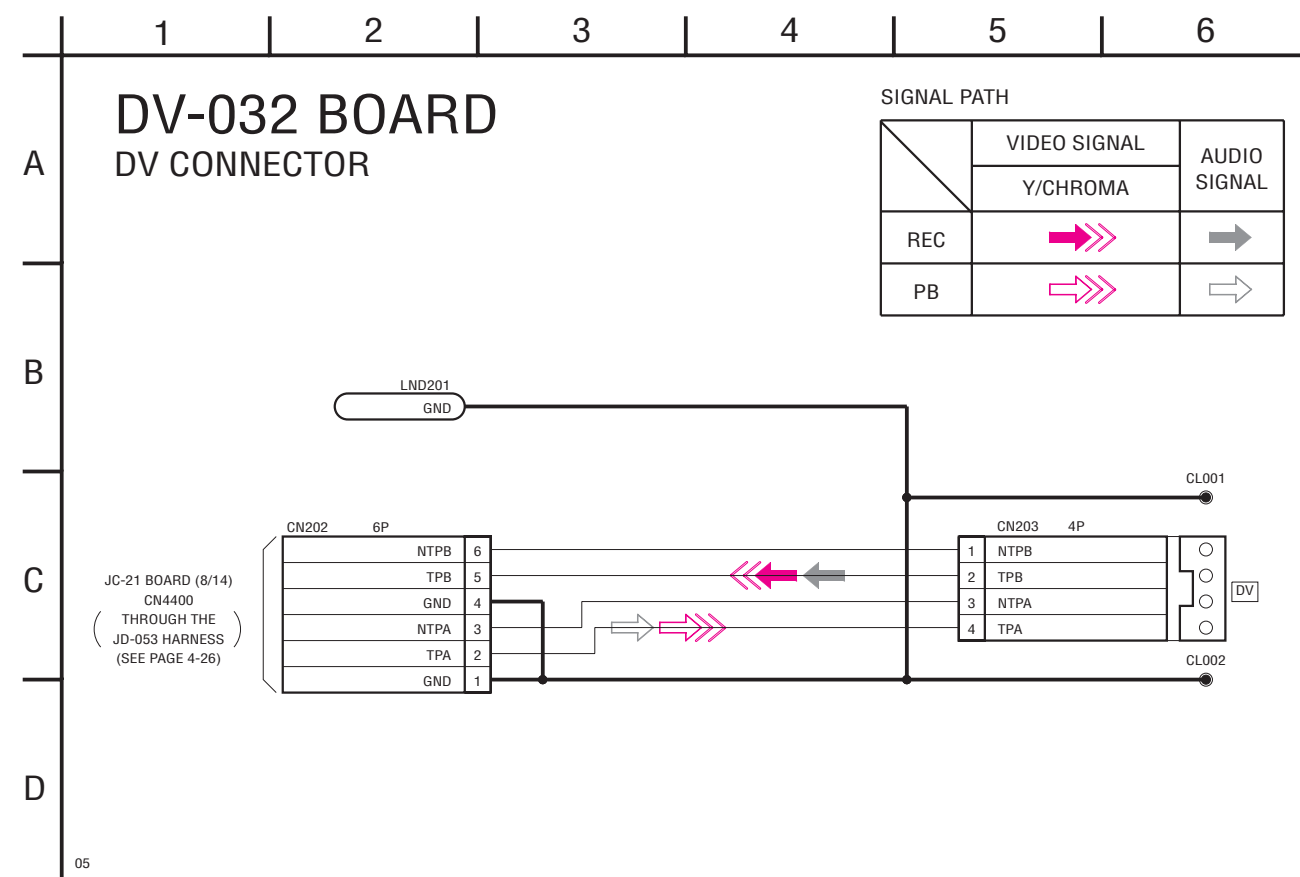


05

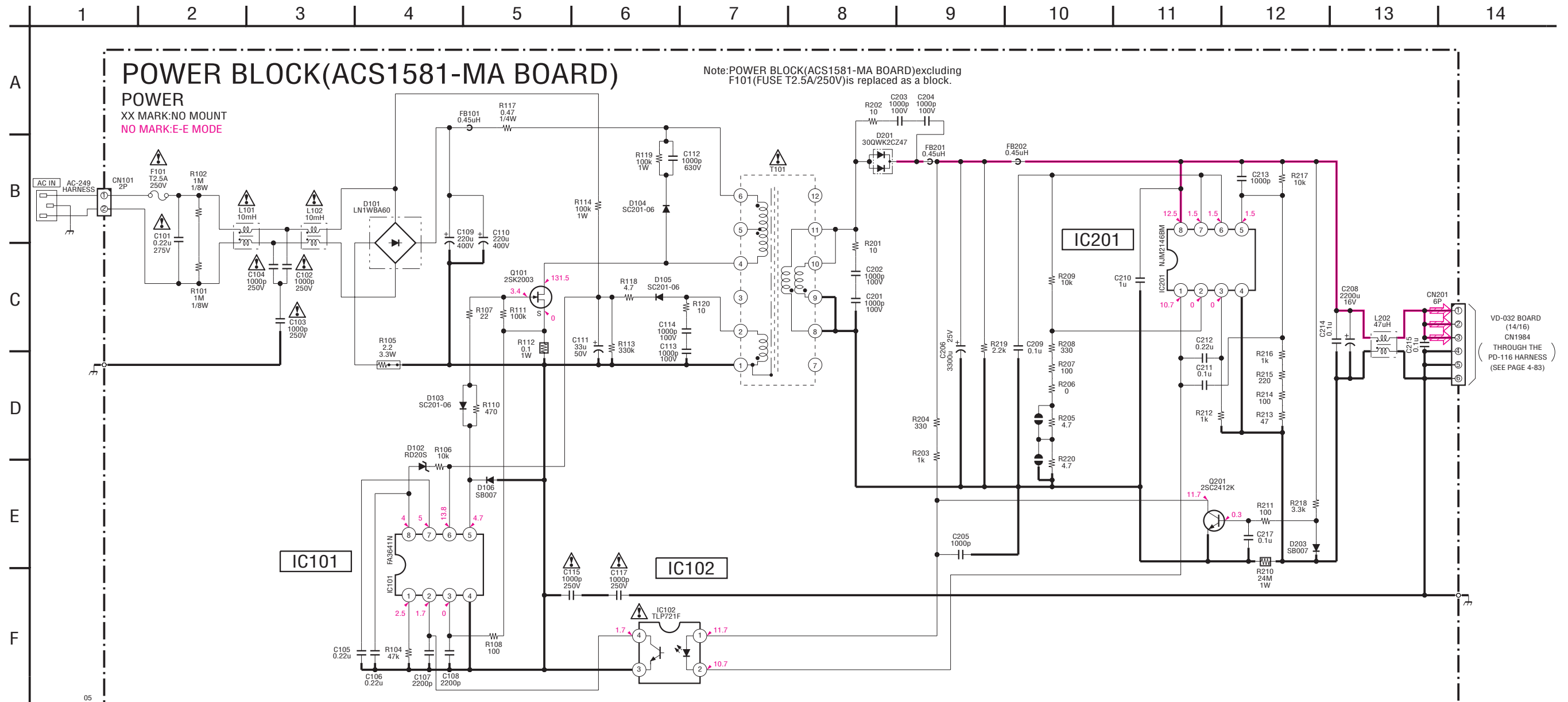
**RS-082 (RS-422 DRIVER)/RS-083 (RS-232C DRIVER)**  
 • See page 4-153 for RS-082/RS-083 printed wiring board.



**DV-032 (DV CONNECTOR)/LS-060 (CONTROL JACK)**  
 • See page 4-155, 156 for DV-032/LS-060 printed wiring board.



ACS1581-MA (POWER) • See page 4-157 for ACS1581-MA printed wiring board.

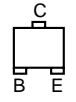


<p>The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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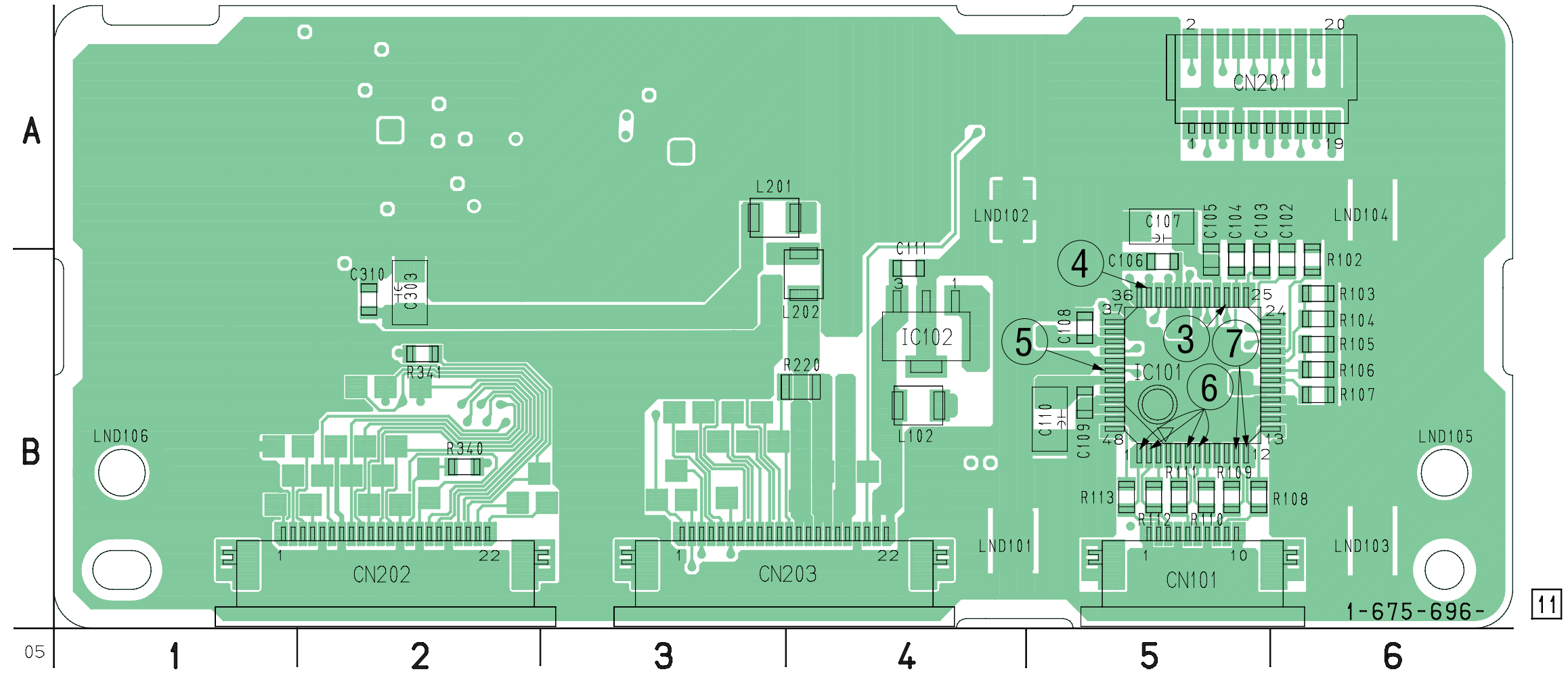
4-3. PRINTED WIRING BOARDS

RP-234 (REC/PB AMP)

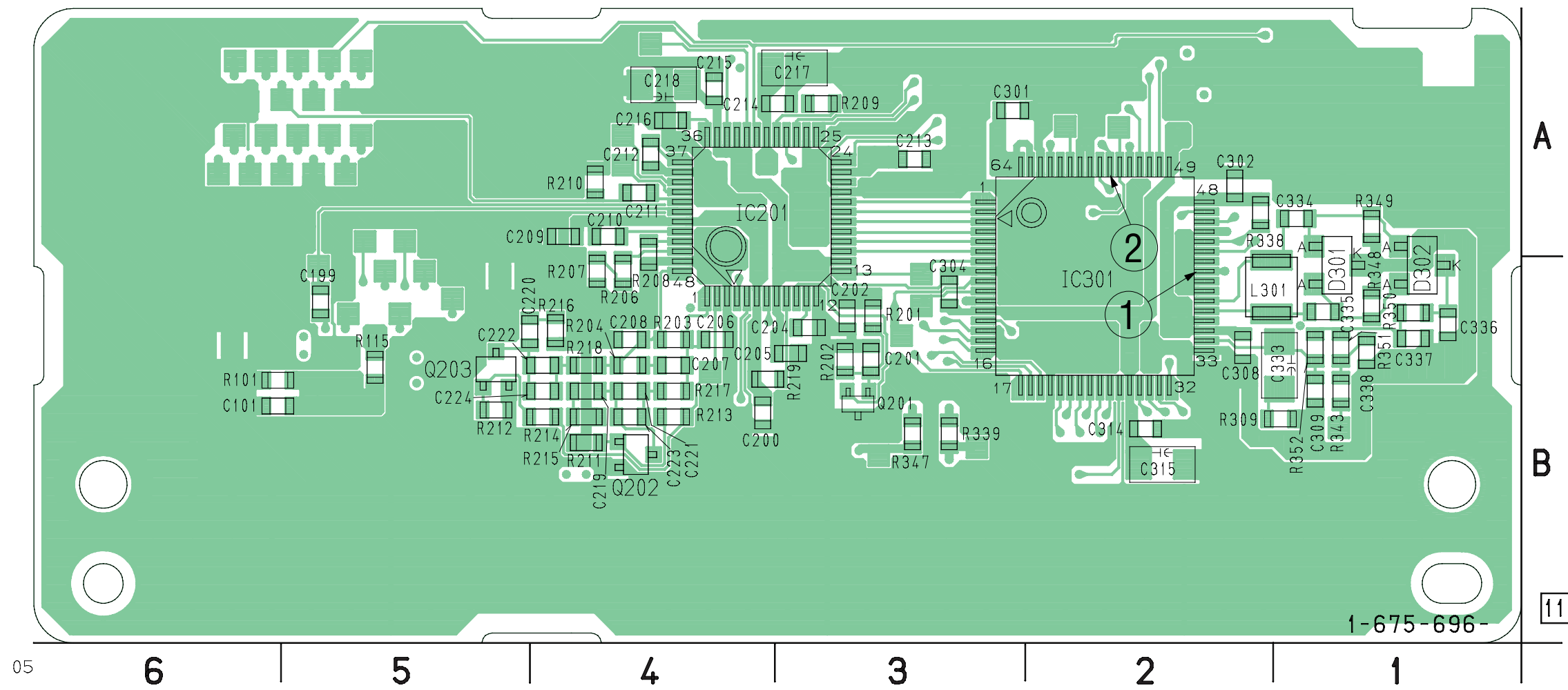
- For Printed Wiring Board.
- RP-234 board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-179 for printed parts location.
- Chip transistor



RP-234 BOARD (SIDE A)



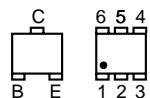
# RP-234 BOARD (SIDE B)



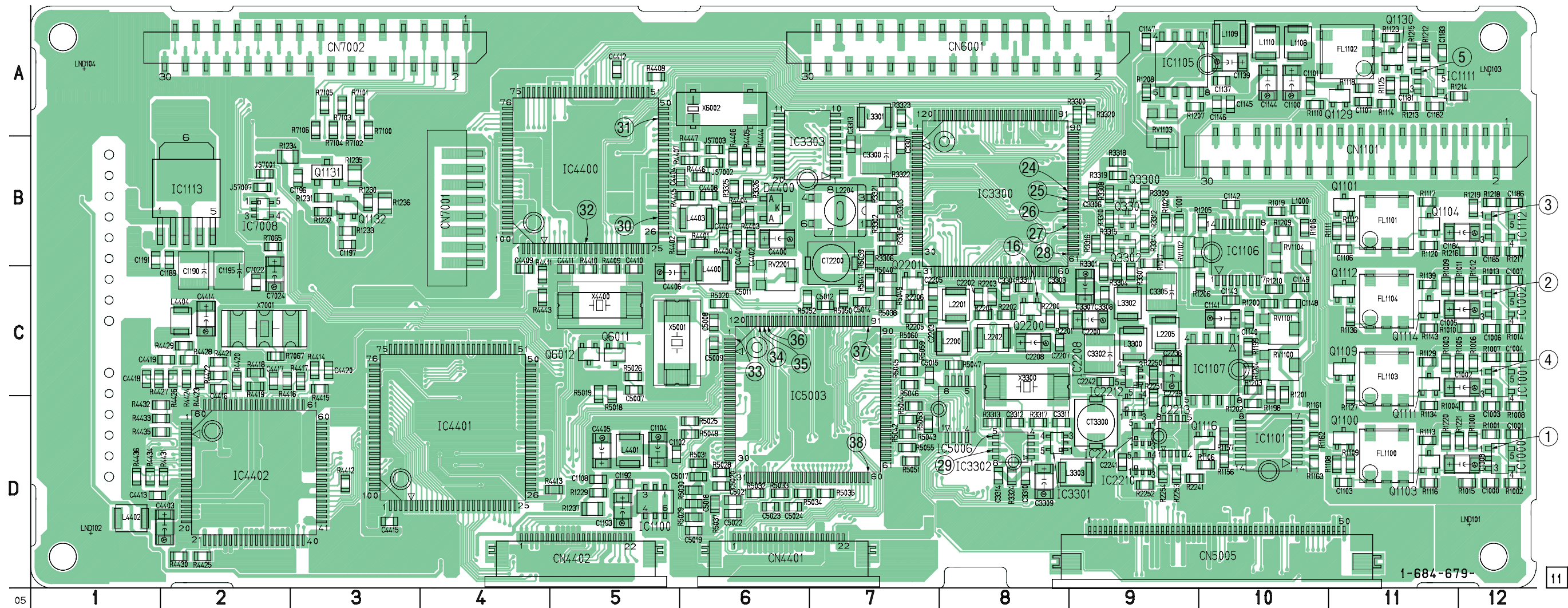


JC-21 (VIDEO PB AMP, VIDEO A/D CONVERTER, CHROMA MIX, AFC, VFD, SFD, TFD, DV INTERFACE, MECHANISM CONTROL, AUDIO, POWER SUPPLY)

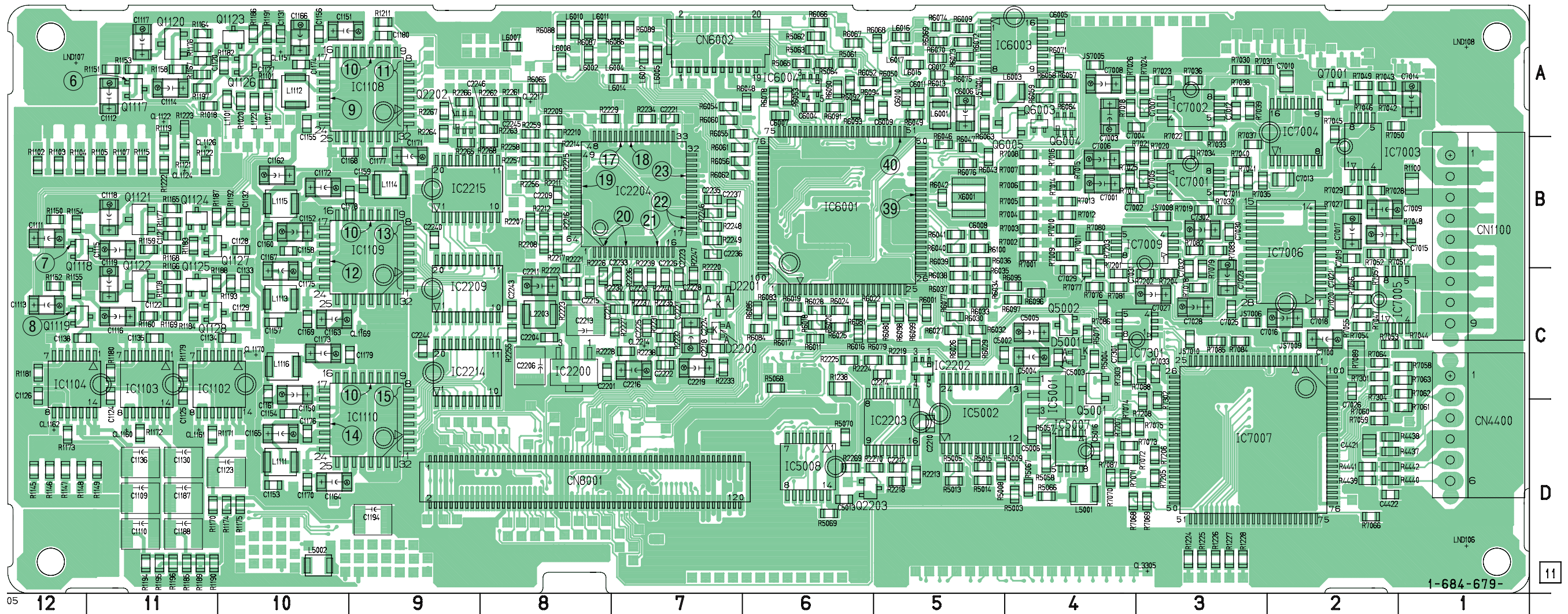
- For Printed Wiring Board.
- JC-21 board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-179 for printed parts location.
- Chip transistor



JC-21 BOARD (SIDE A)



### JC-21 BOARD(SIDE B)





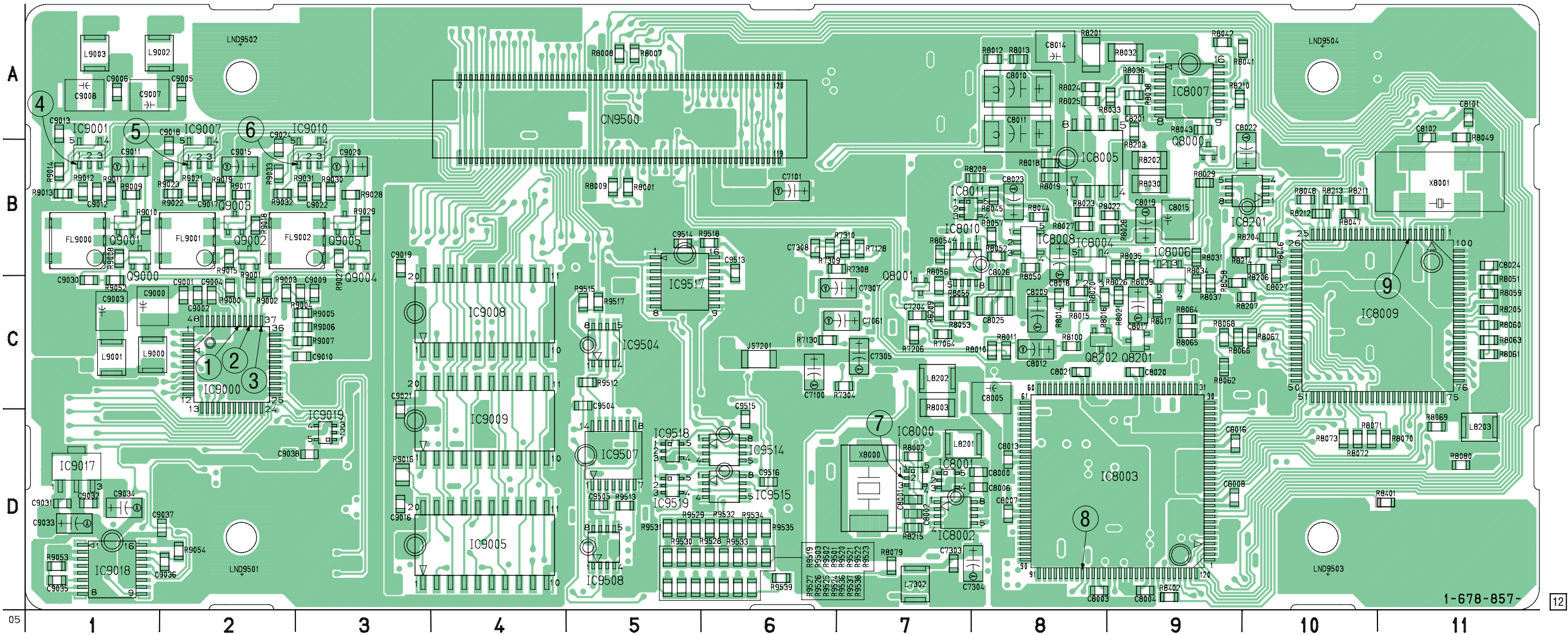
DSR-45/45P

DI-73 (VIDEO D/A CONVERTER, SYNC SHIFTER, AUDIO A/D, D/A CONVERTER, AUDIO DSP, TIME CODE IN/OUT)

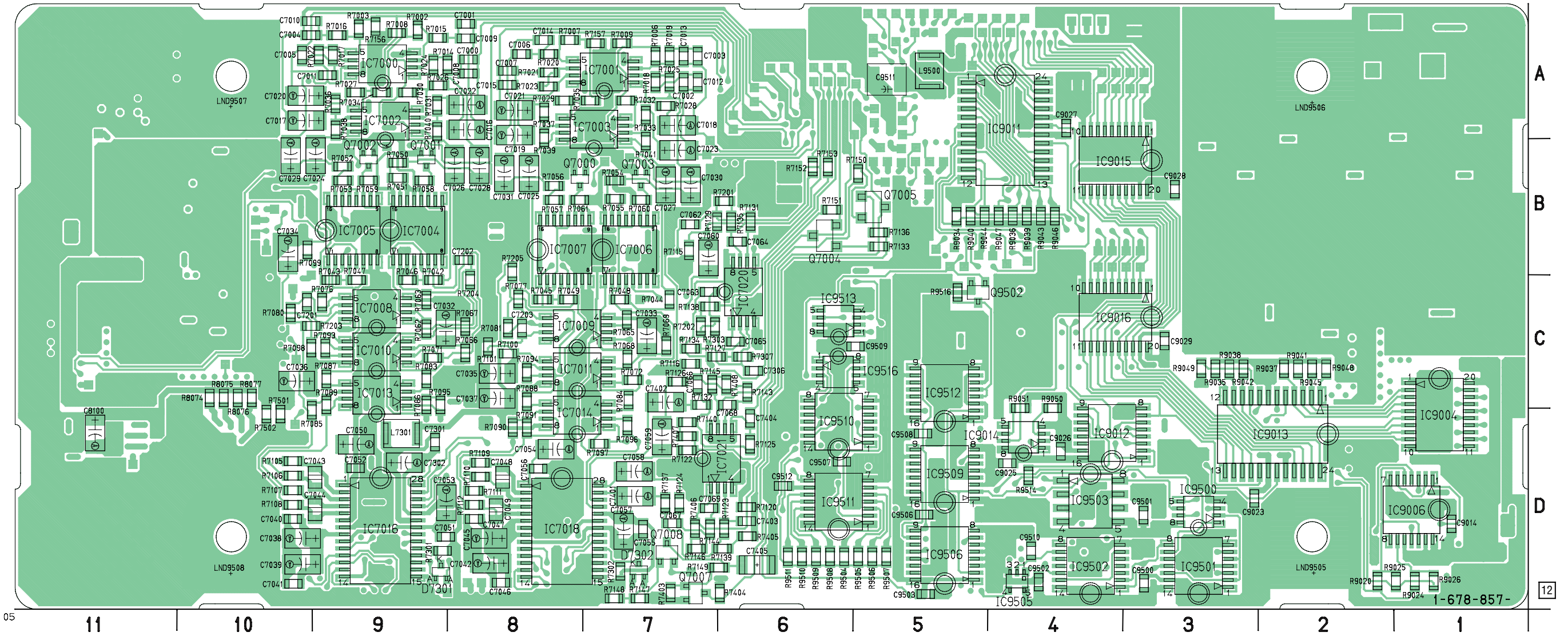
- For Printed Wiring Board.
- DI-73 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-179 for printed parts location.
- Chip transistor



DI-73 BOARD (SIDE A)




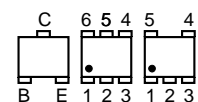
DI-73 BOARD(SIDE B)



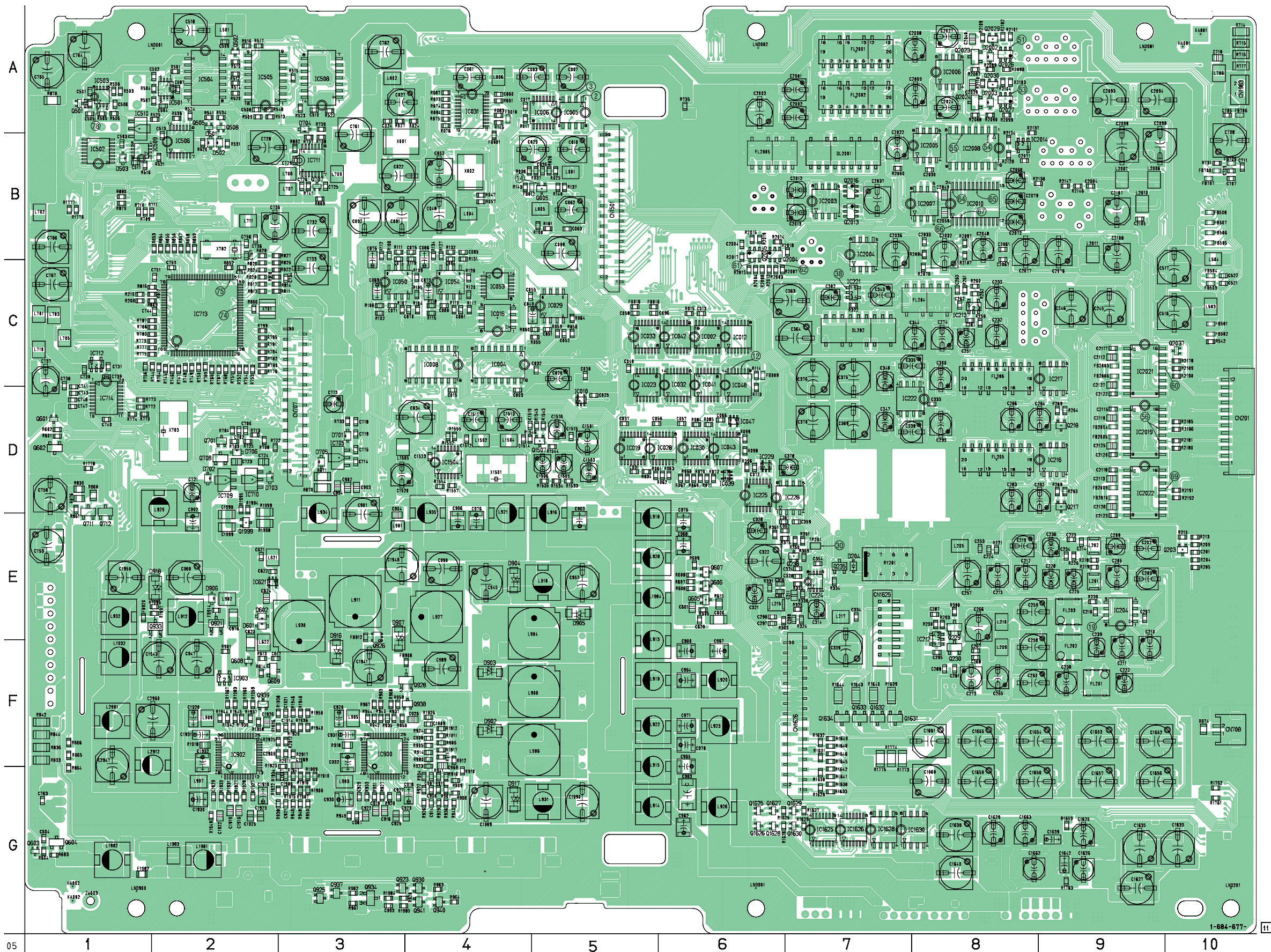


VD-032 (SYNC GENERATOR, VIDEO IN, UVIC, VIDEO OUT, AUDIO, HI CONTROL, RS232C/422 CONTROL, DC IN, DC/DC CONVERTER)

- For Printed Wiring Board.
- : Uses unleaded solder.
- VD-032 board is six-layer print board. However, the patterns of layers 2 to 5 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-180 for printed parts location.
- Chip transistor



VD-032 BOARD (SIDE A)

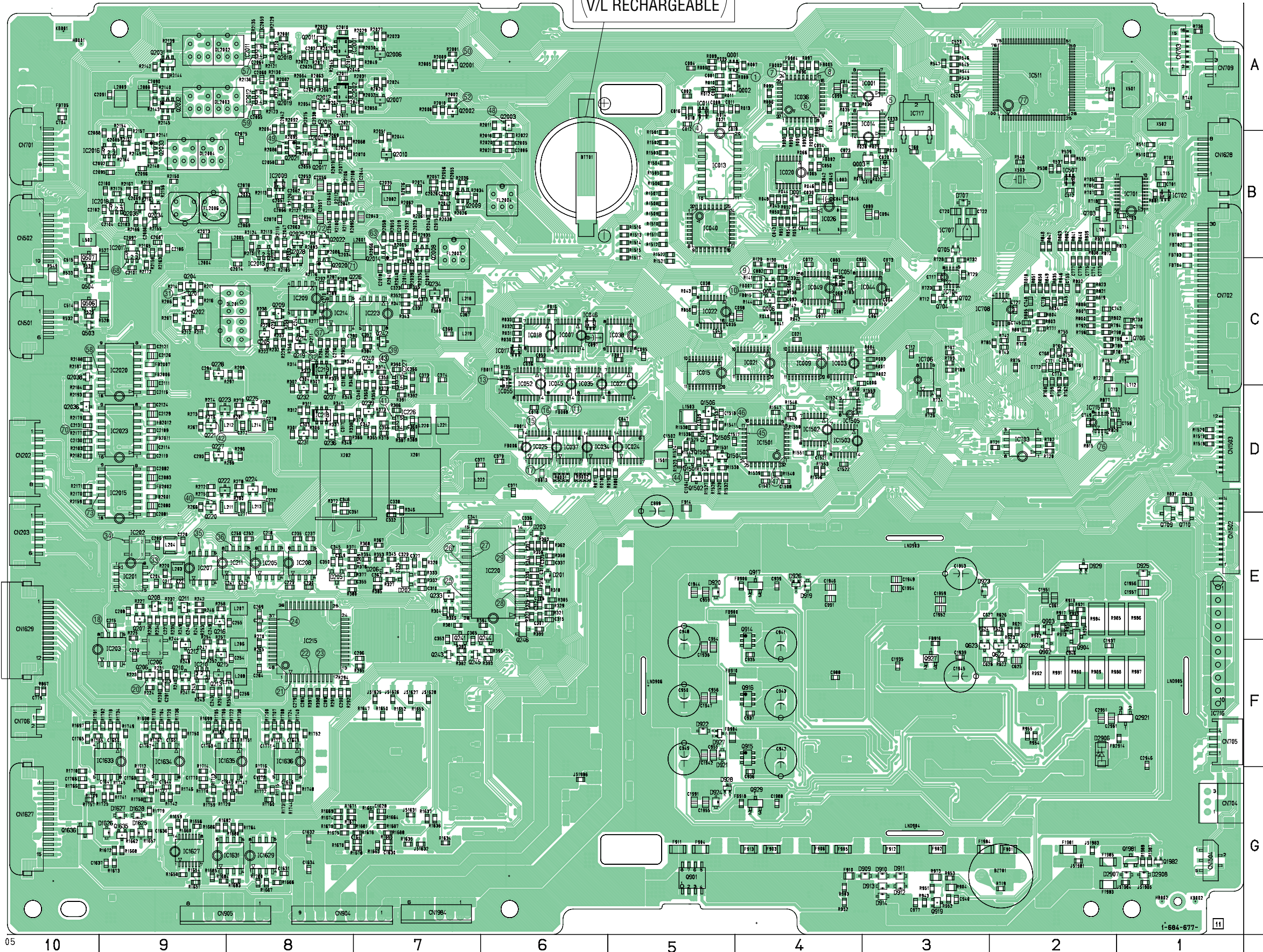




CAUTION  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

VD-032 BOARD (SIDE B)

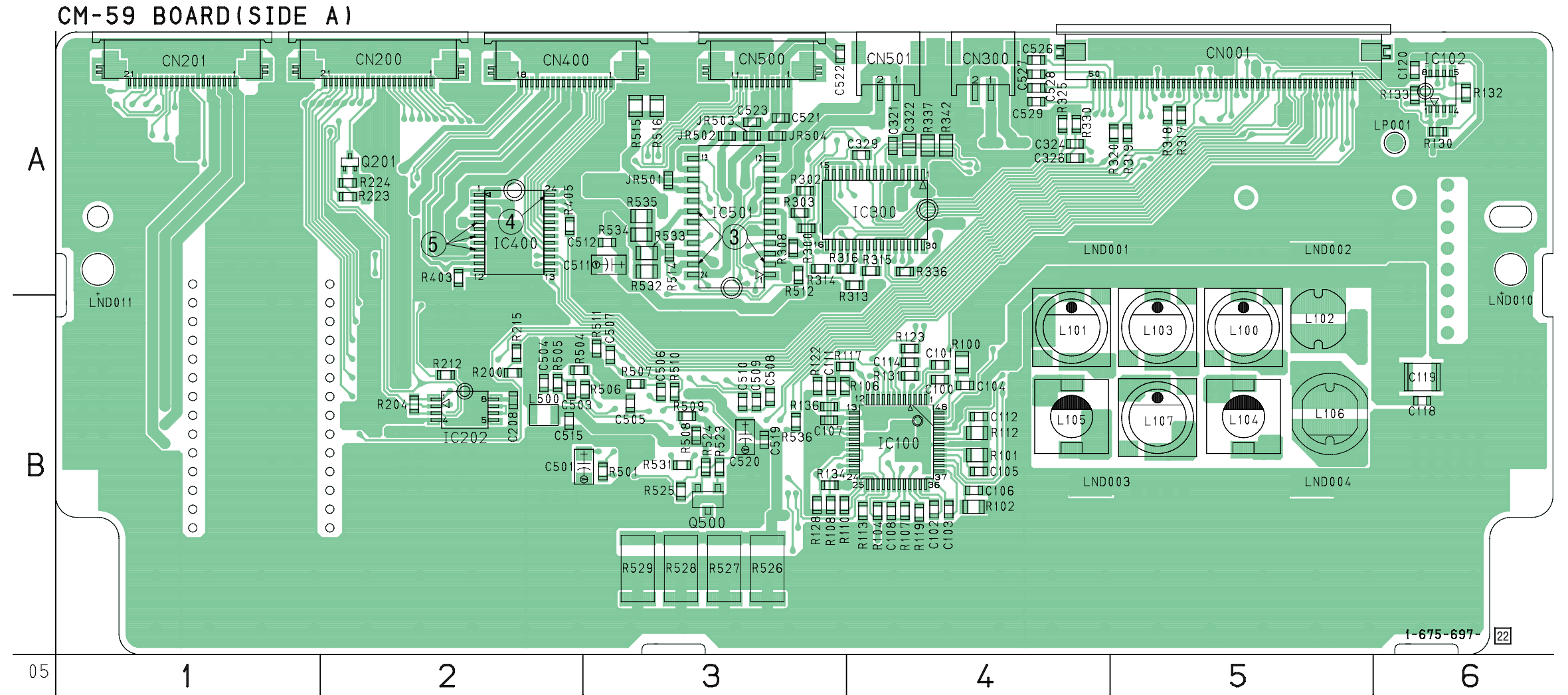
BT701  
BATTERY,  
V/L RECHARGEABLE



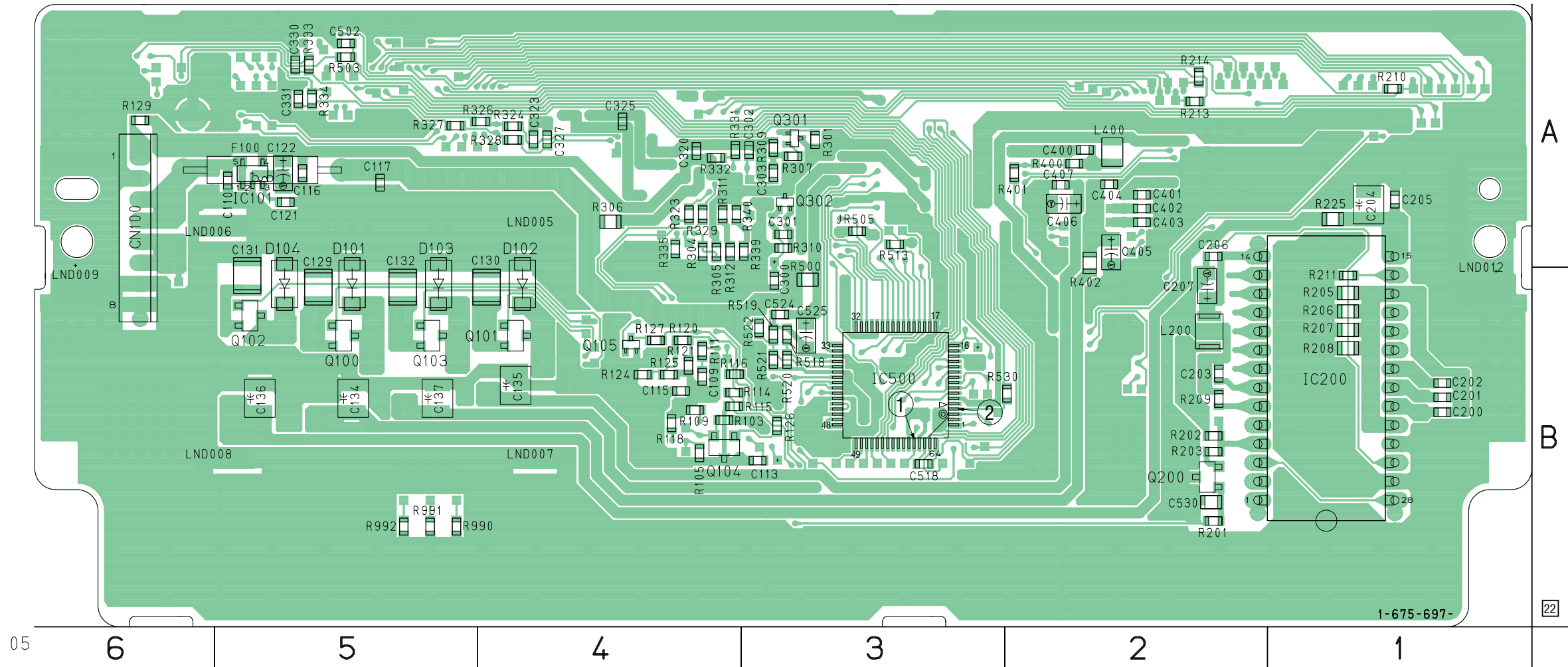


CM-59 (DC/DC CONVERTER, MOTOR DRIVE)

- For Printed Wiring Board.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-180 for printed parts location.
- Chip transistor

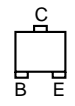


CM-59 BOARD(SIDE B)

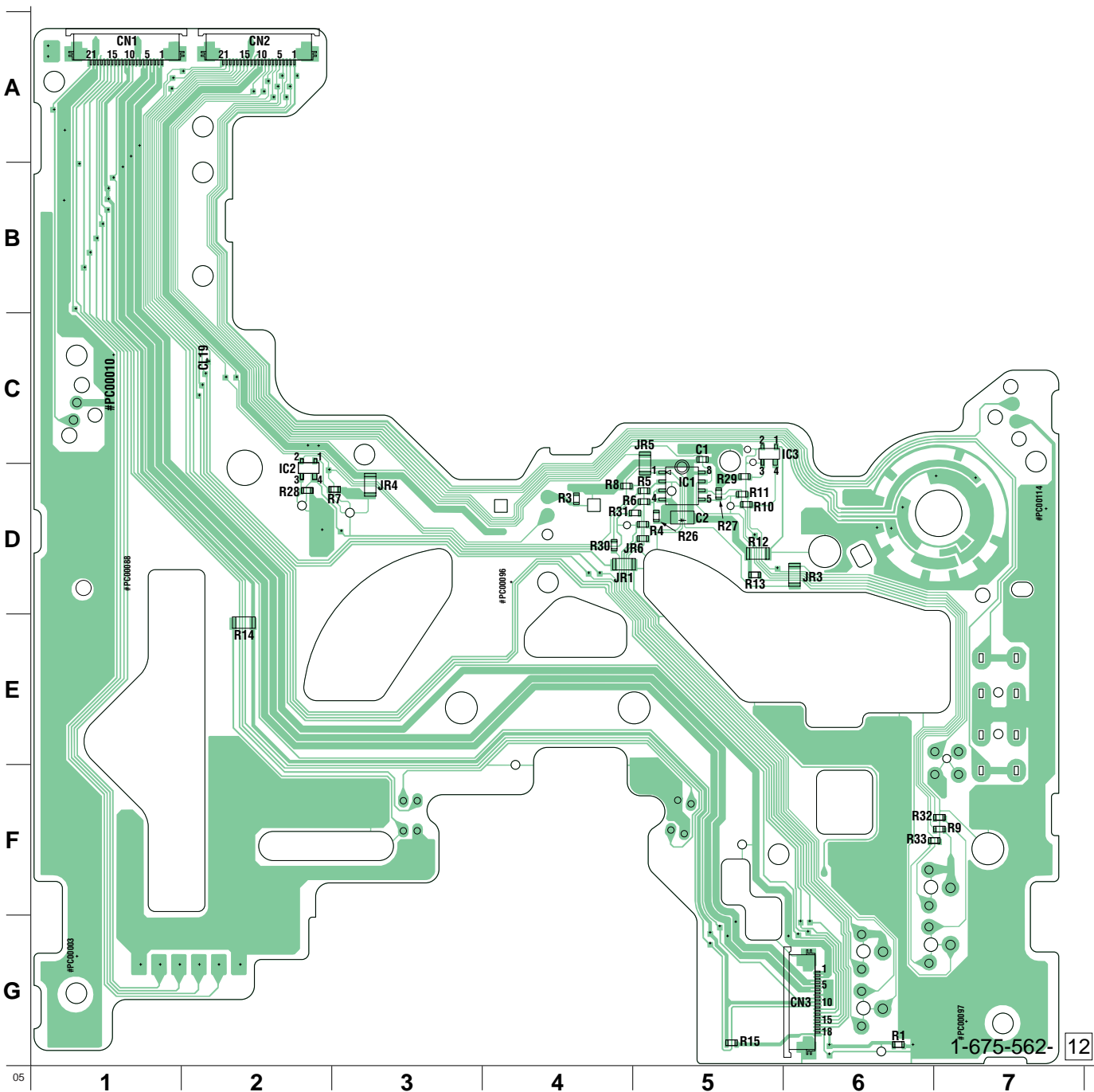


MD-76 (TAPE SENSOR)

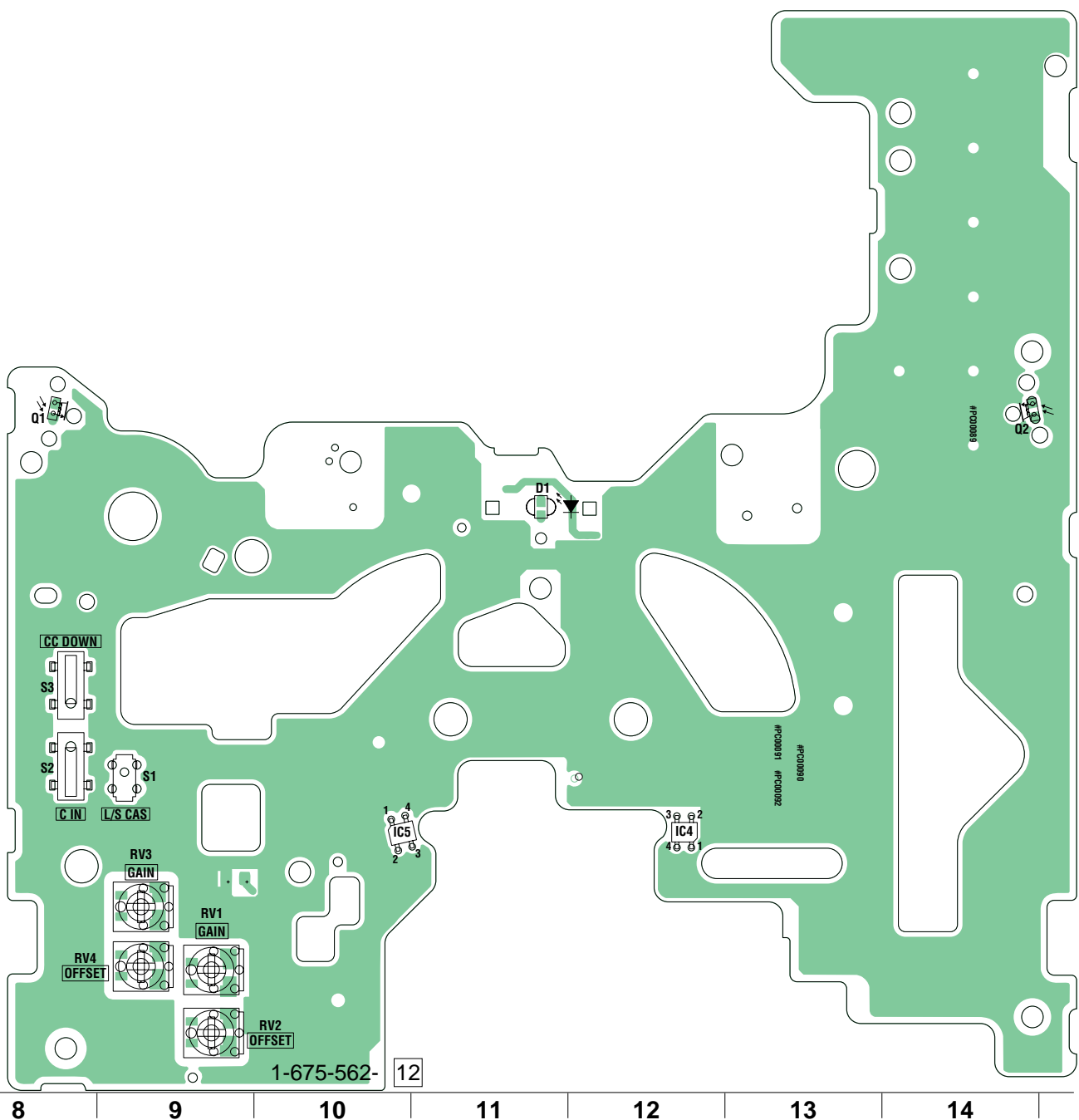
- For Printed Wiring Board.
- MD-76 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.
- Chip transistor



MD-76 BOARD (SIDE A)




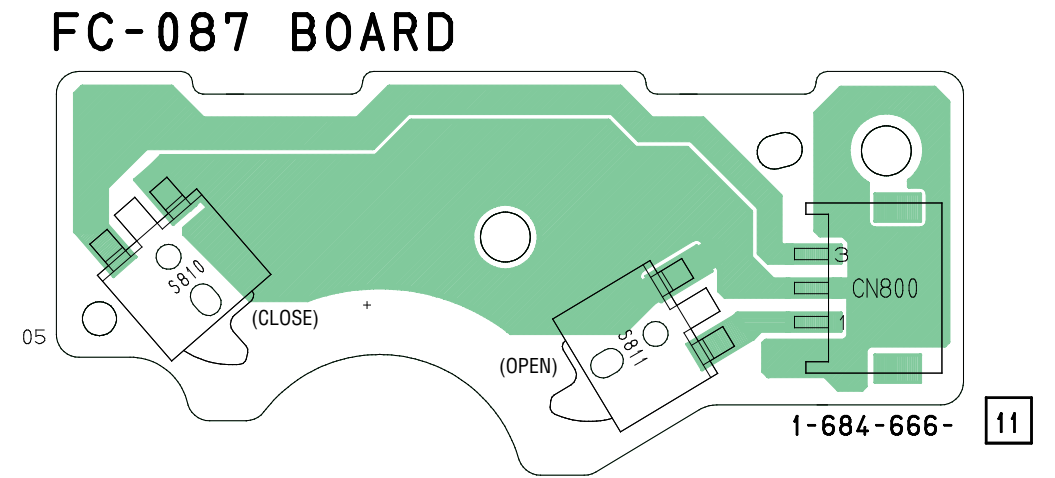
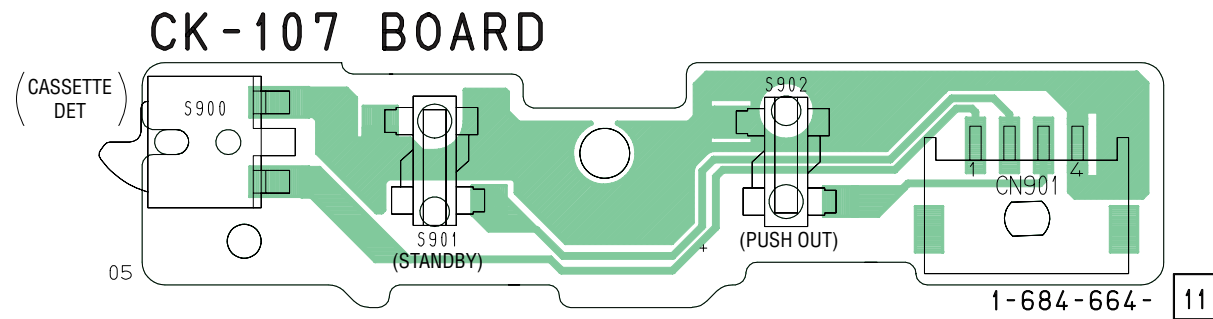
MD-76 BOARD (SIDE B)



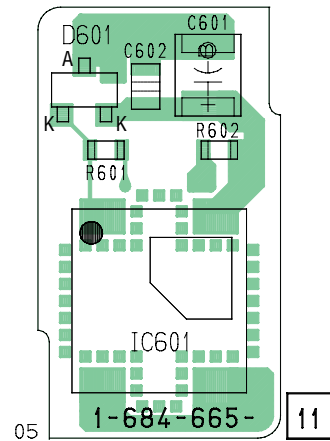
CK-107 (EJECTION DETECT SWITCH)/DL-062 (REMOTE CONTROL RECEIVER)

FC-087 (FRONT DOOR DETECT SWITCH)/FM-037 (FRONT DOOR MOTOR)

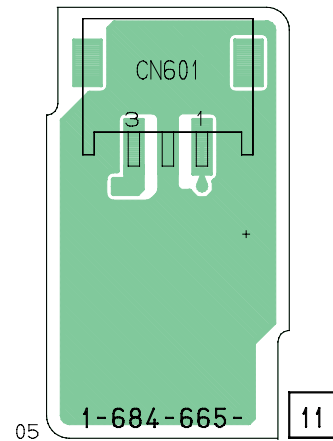
- For Printed Wiring Board.
-  : Uses unleaded solder.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.



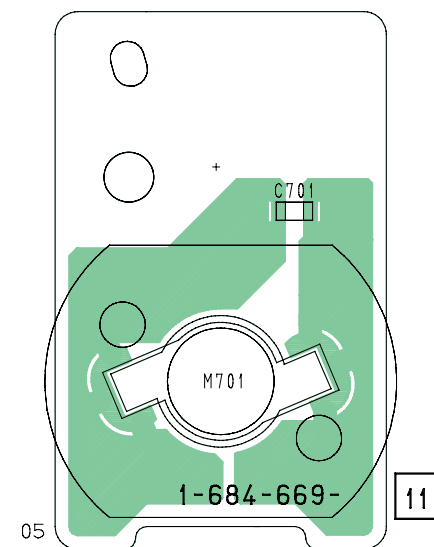
### DL-062 BOARD (SIDE A)



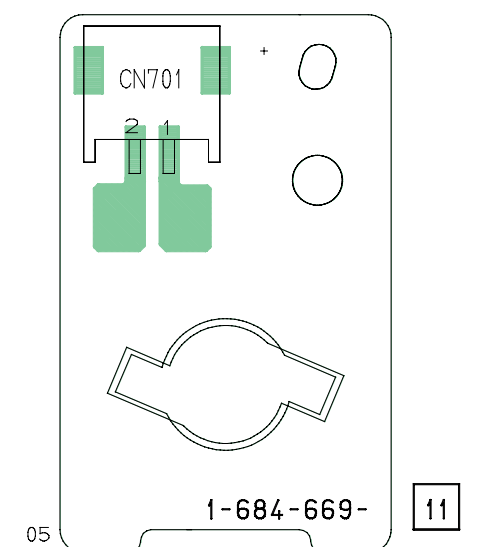
### DL-062 BOARD (SIDE B)




### FM-037 BOARD (SIDE A)



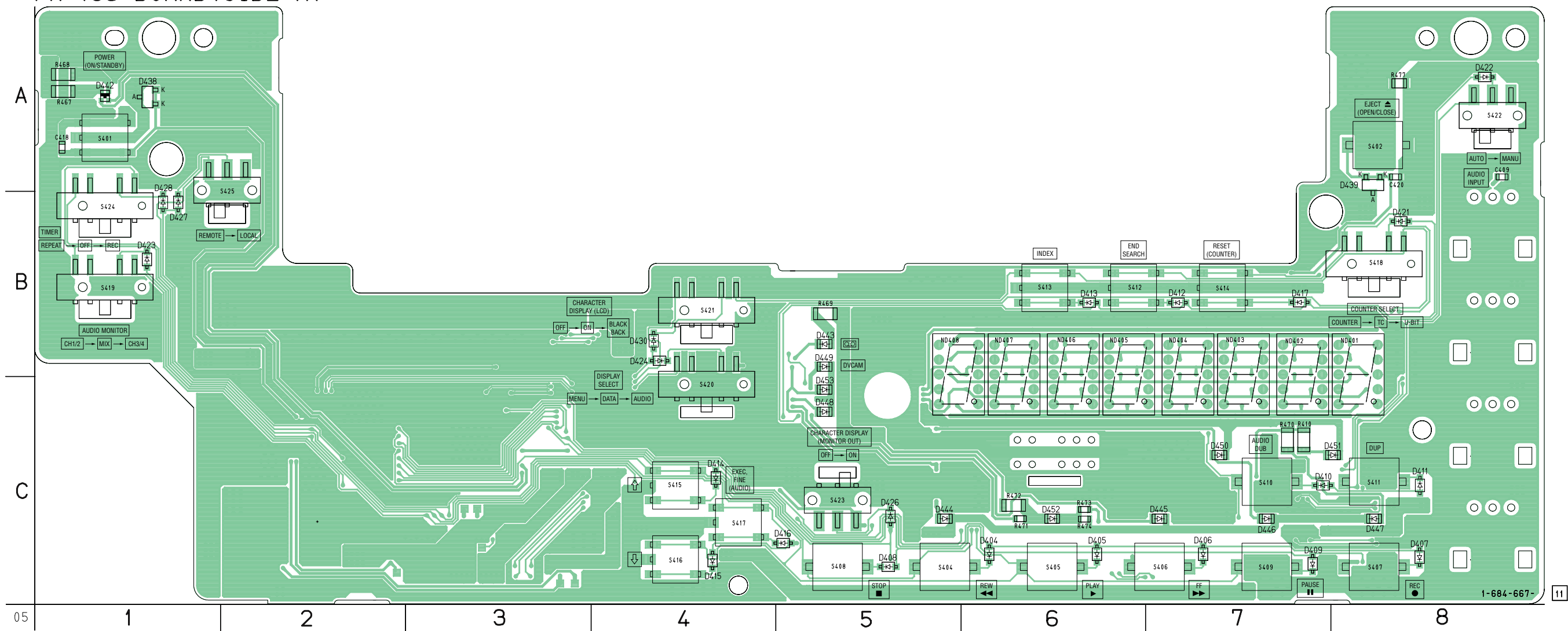
### FM-037 BOARD (SIDE B)



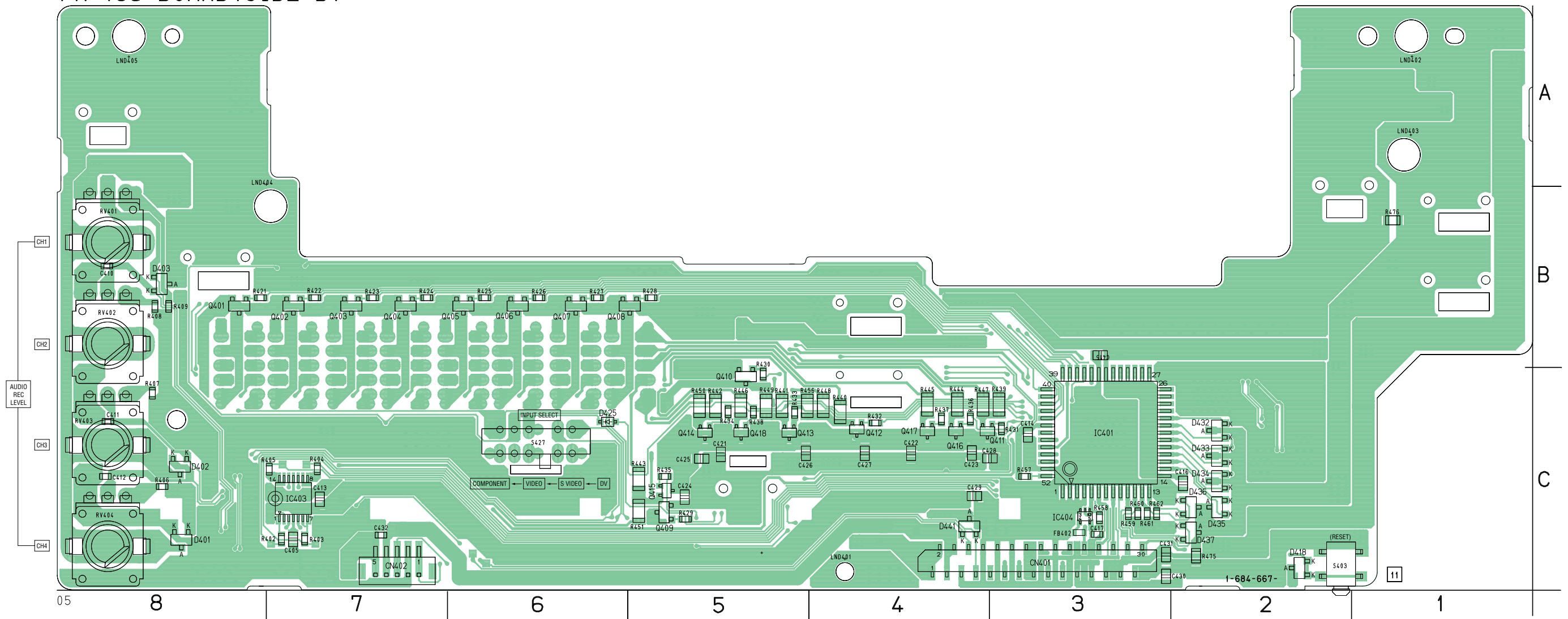
- For Printed Wiring Board.
-  : Uses unleaded solder.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.
- Chip transistor



FR-183 BOARD (SIDE A)




FR-183 BOARD (SIDE B)



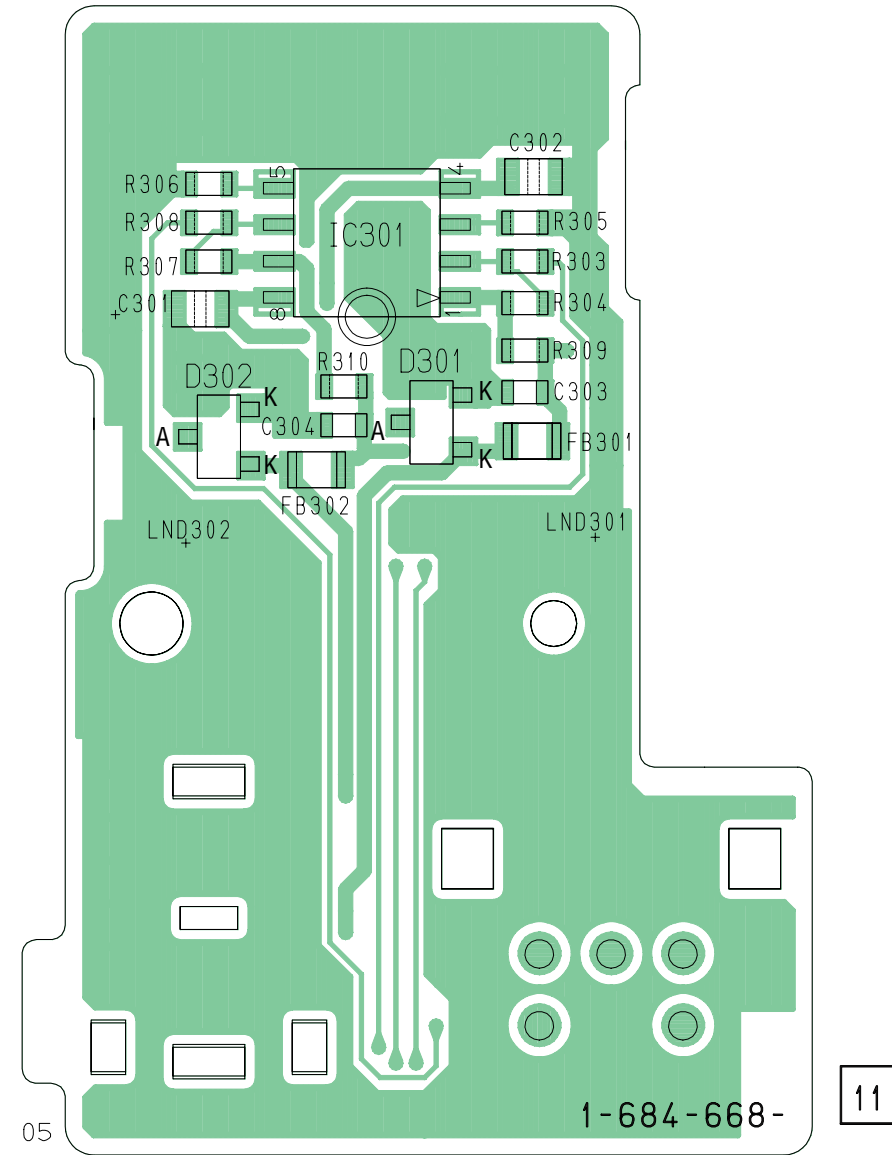


HP-135 (HEAD PHONE)

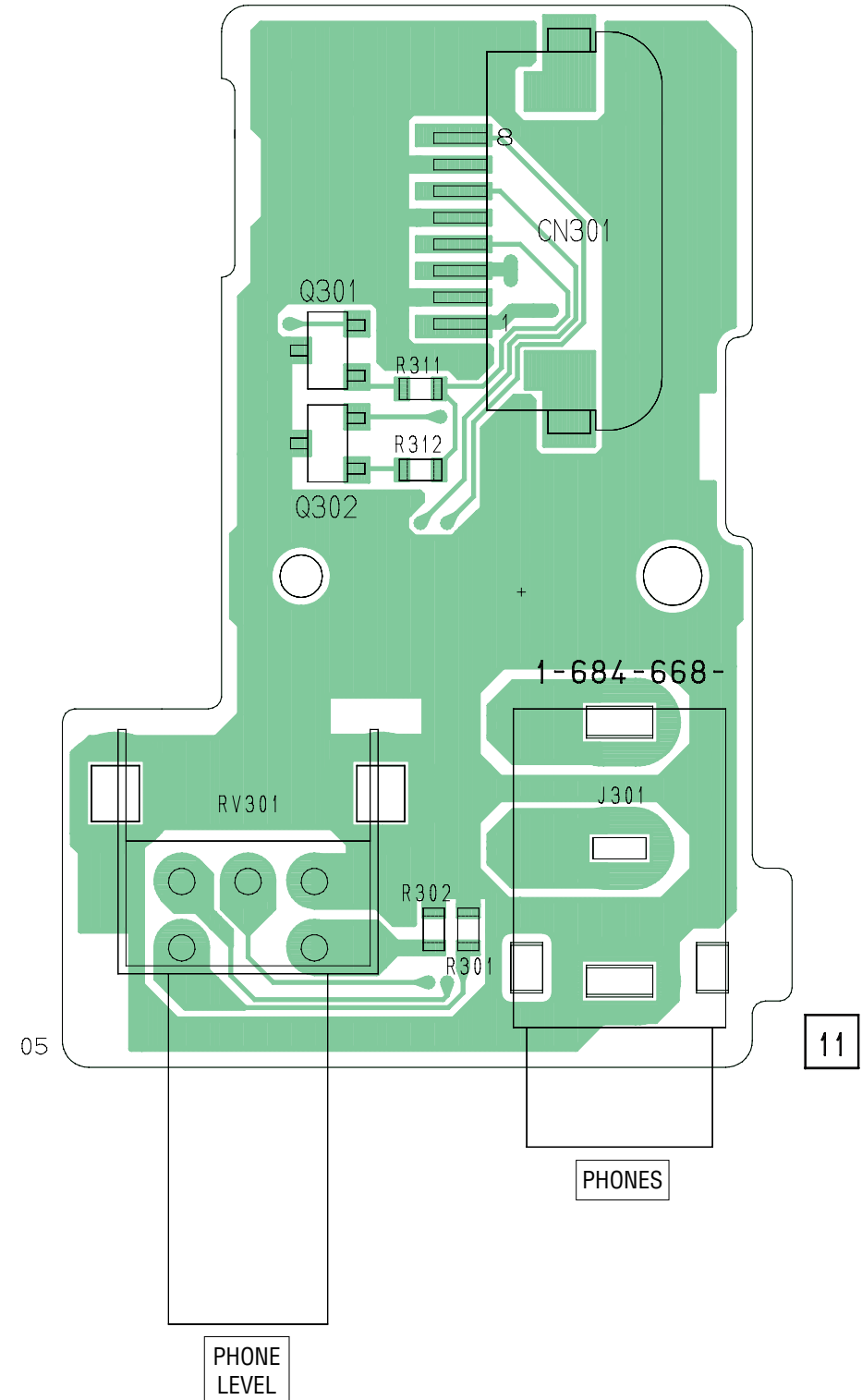
- For Printed Wiring Board.
-  : Uses unleaded solder.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- Chip transistor



HP - 135 BOARD (SIDE A)



HP - 135 BOARD (SIDE B)



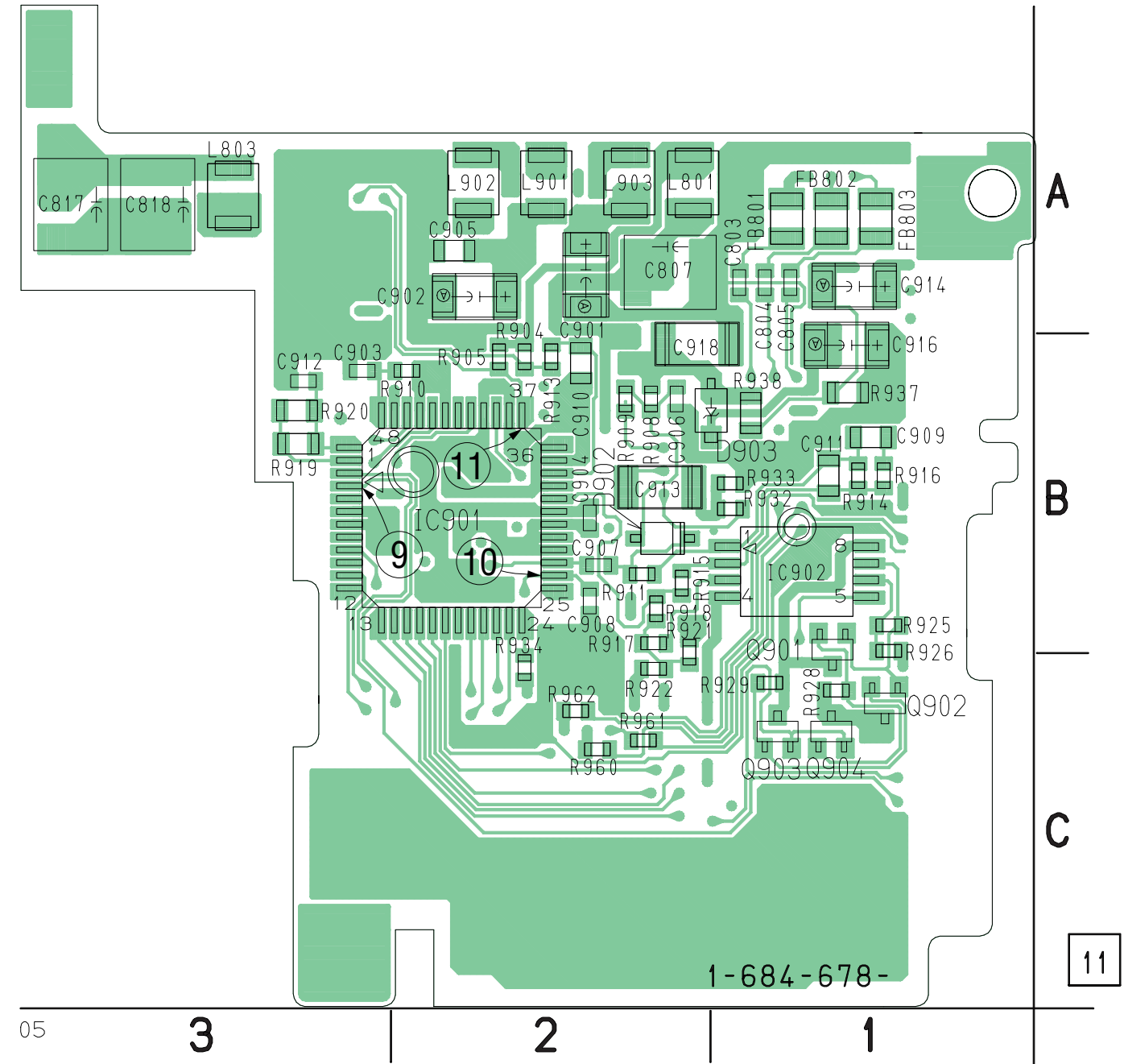
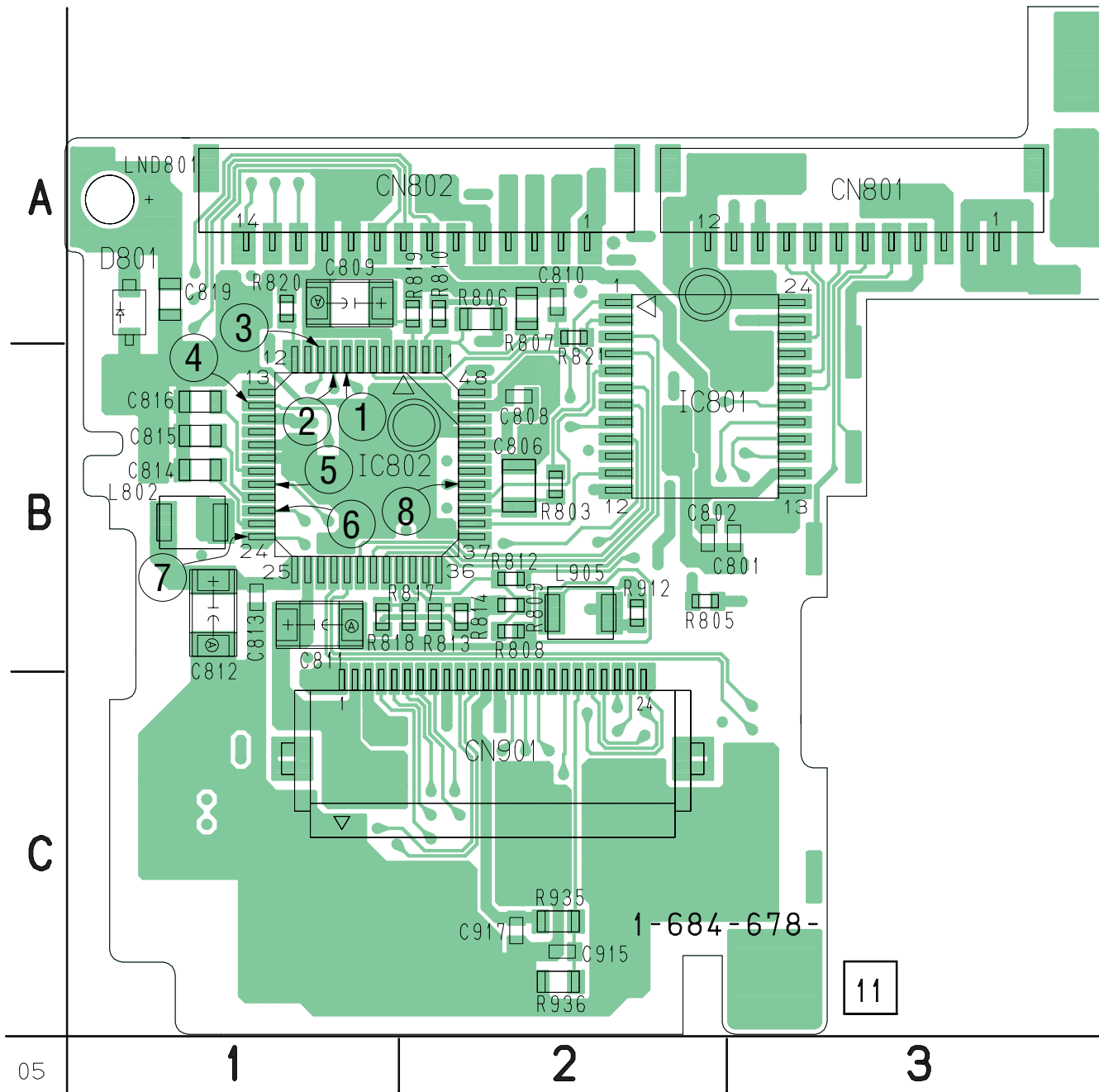
PD-170 (RGB DRIVER, TIMING GENERATOR)

- For Printed Wiring Board.
- PD-170 board is five-layer print board. However, the patterns of layers 2 to 4 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.
- Chip transistor

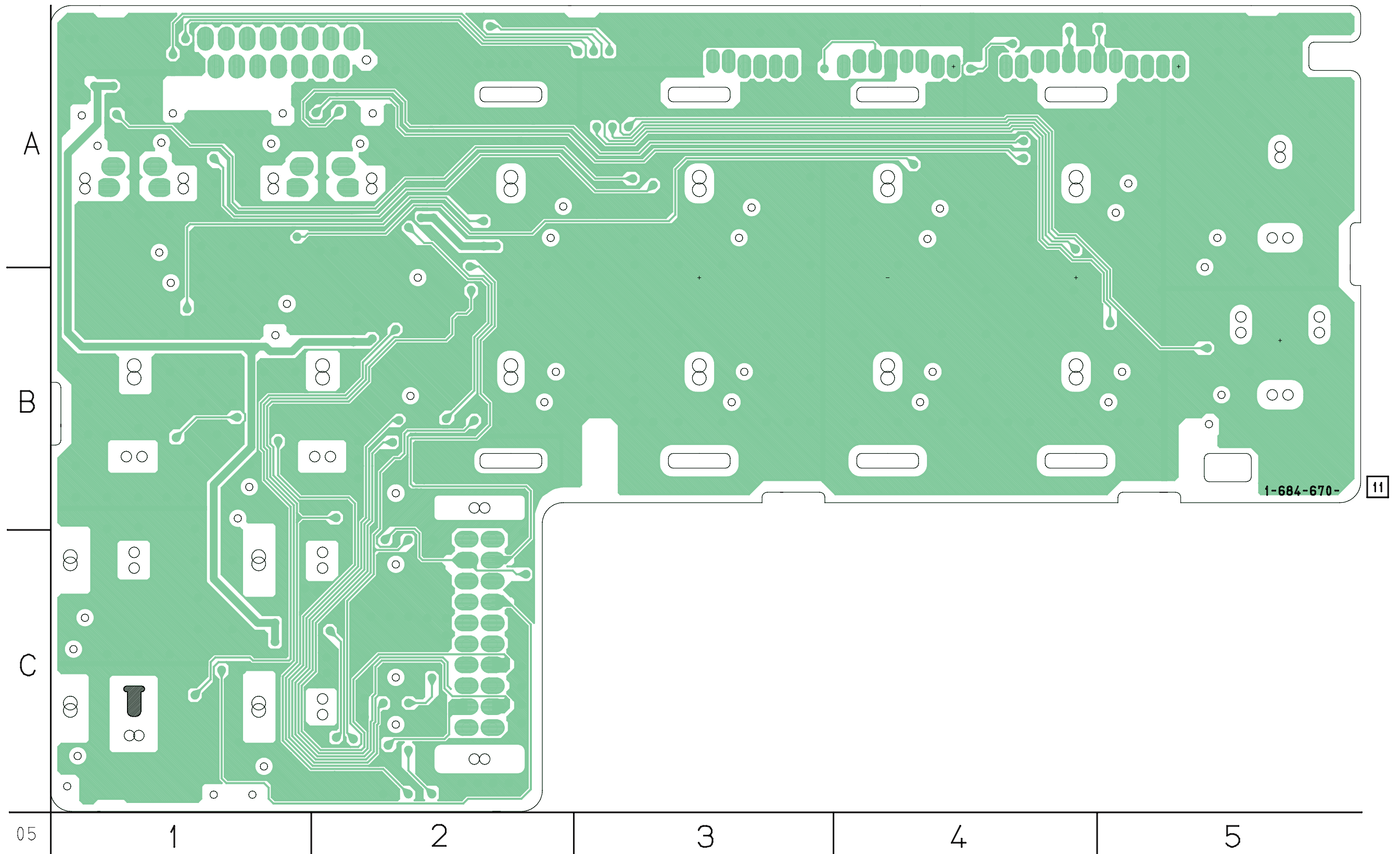



PD-170 BOARD (SIDE A)

PD-170 BOARD (SIDE B)

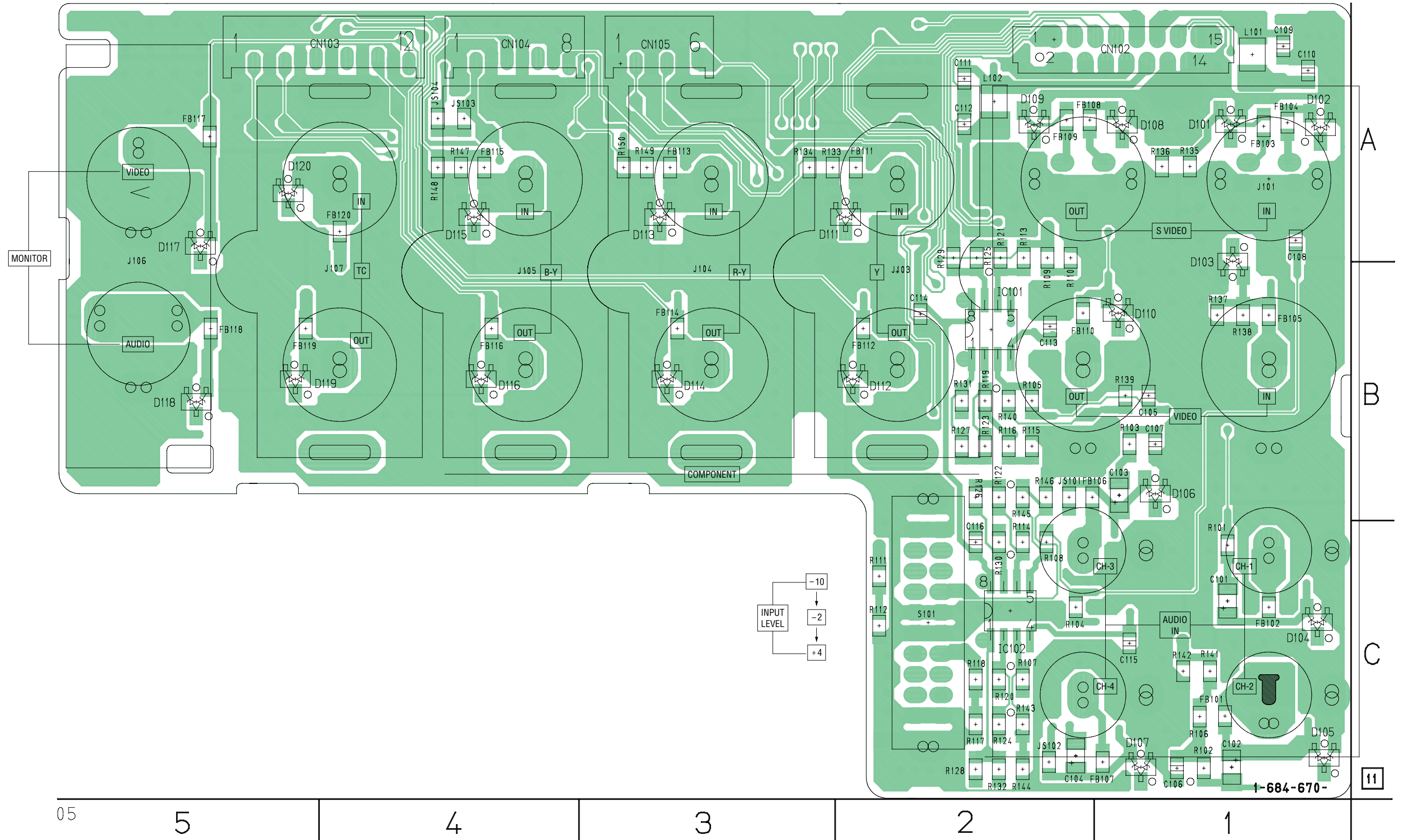


### JK-216 BOARD (SIDE A)



- For Printed Wiring Board.
-  : Uses unleaded solder.
- JK-216 board is three-layer print board. However, the patterns of layer 2 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.

# JK-216 BOARD (SIDE B)



05

5

4


3

2

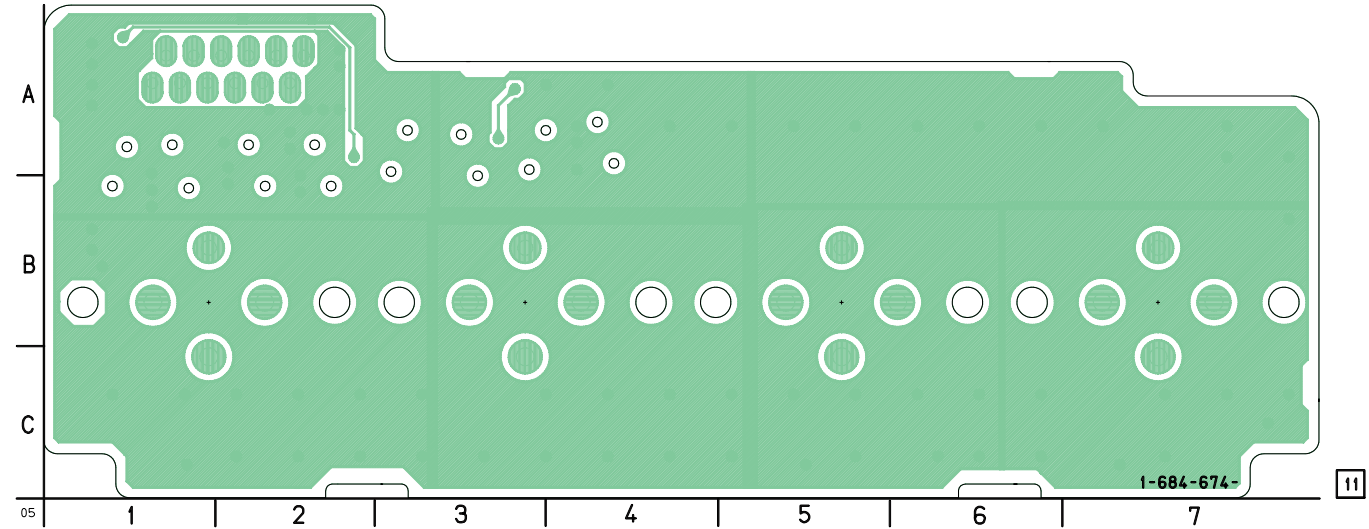
1



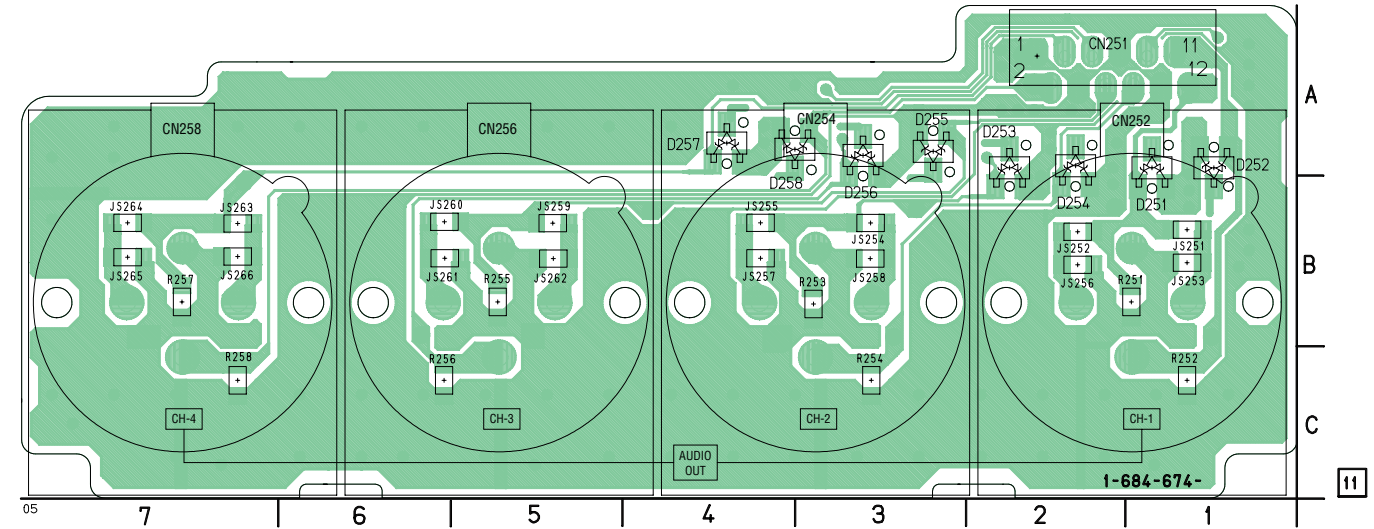
XL-005 (AUDIO OUT)

- For Printed Wiring Board.
-  : Uses unleaded solder.
- XL-005 board is three-layer print board. However, the patterns of layer 2 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.

XL-005 BOARD (SIDE A)

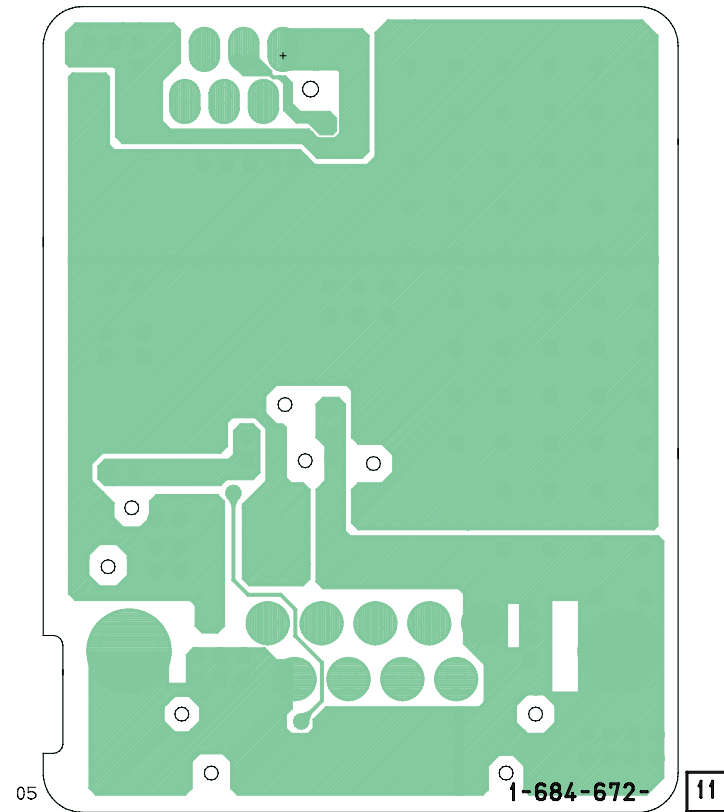


XL-005 BOARD (SIDE B)

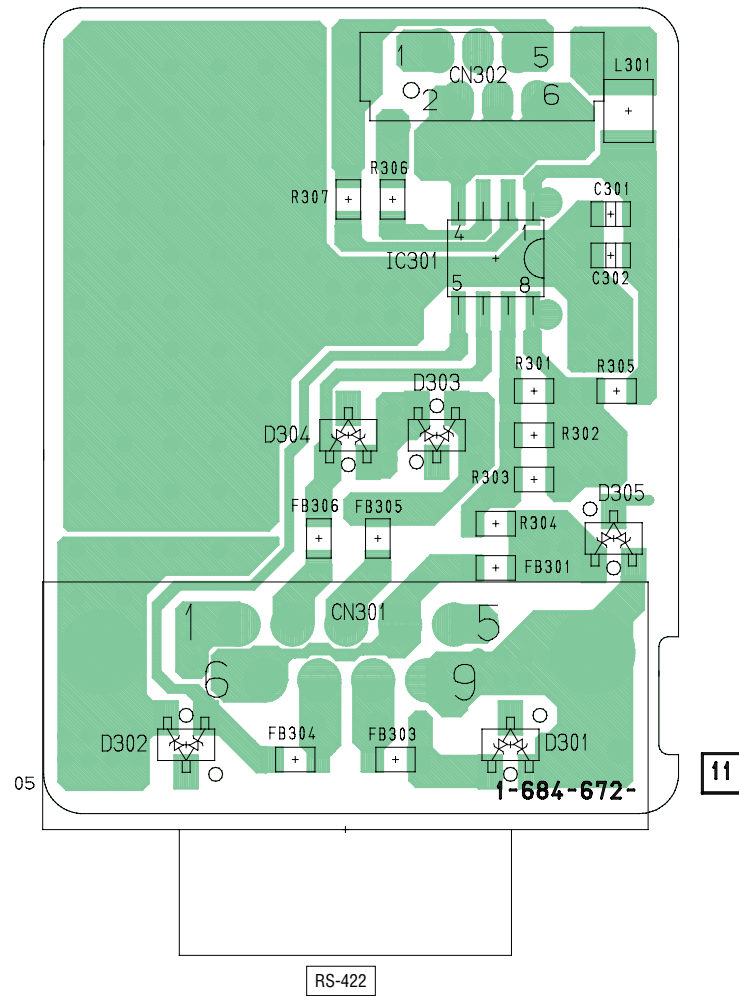


RS-082 (RS-422 DRIVER)/RS-083 (RS-232C DRIVER)

RS-082 BOARD (SIDE A)



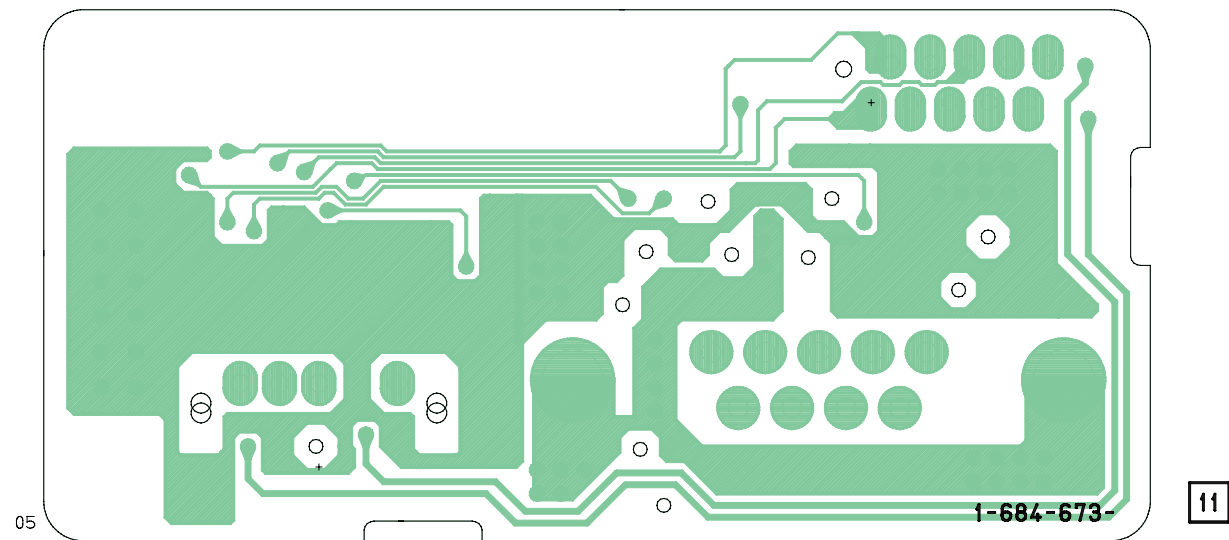
RS-082 BOARD (SIDE B)



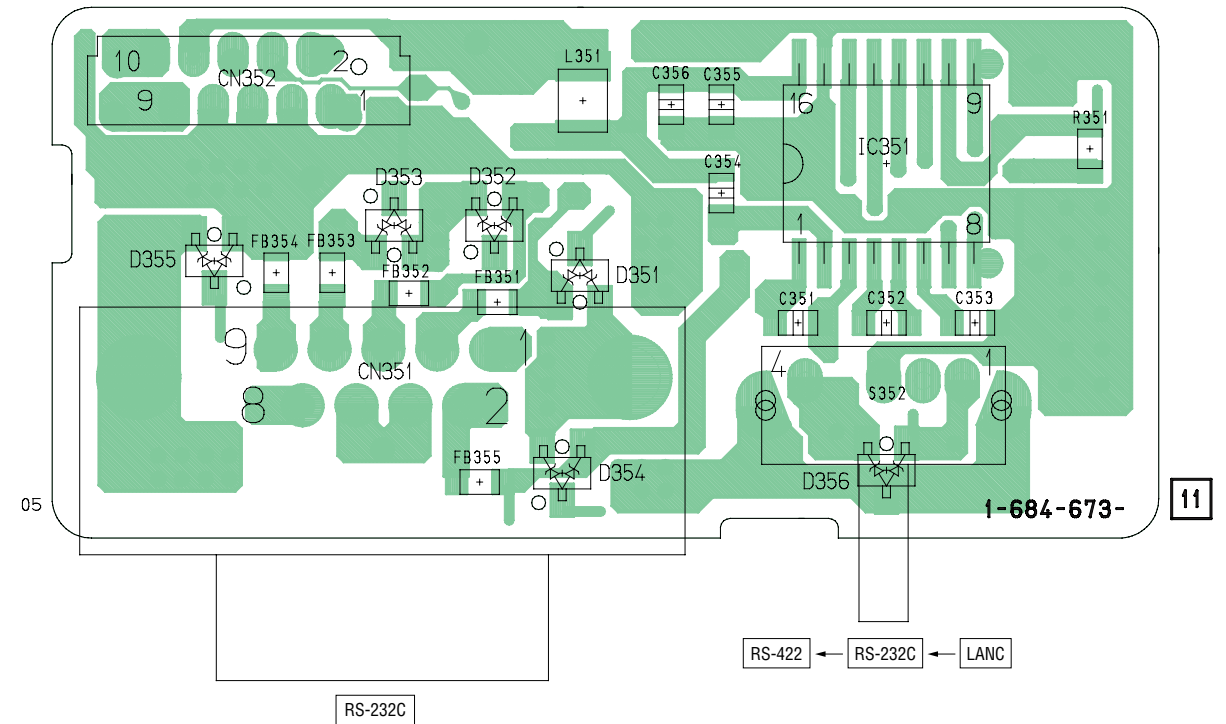
• For Printed Wiring Board.

- : Uses unleaded solder.
- RS-082 and RS-083 boards are three-layer print board. However, the patterns of layer 2 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.

RS-083 BOARD (SIDE A)




RS-083 BOARD (SIDE B)



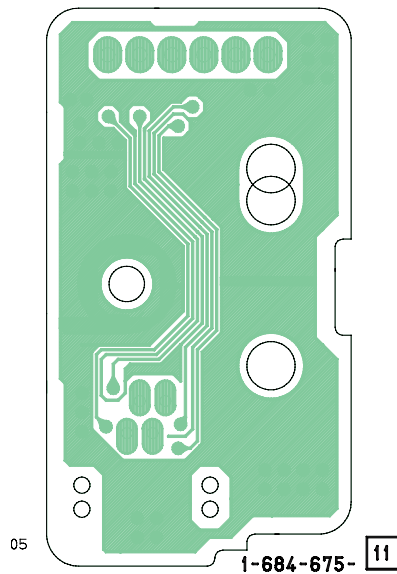


DV-032 (DV CONNECTOR)

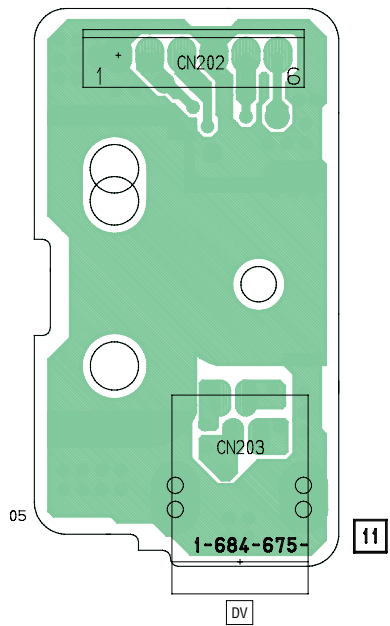
LS-060 (CONTROL JACK)

- For Printed Wiring Board.
-  : Uses unleaded solder.
- DV-032 and LS-060 boards are three-layer print board. However, the patterns of layer 2 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.

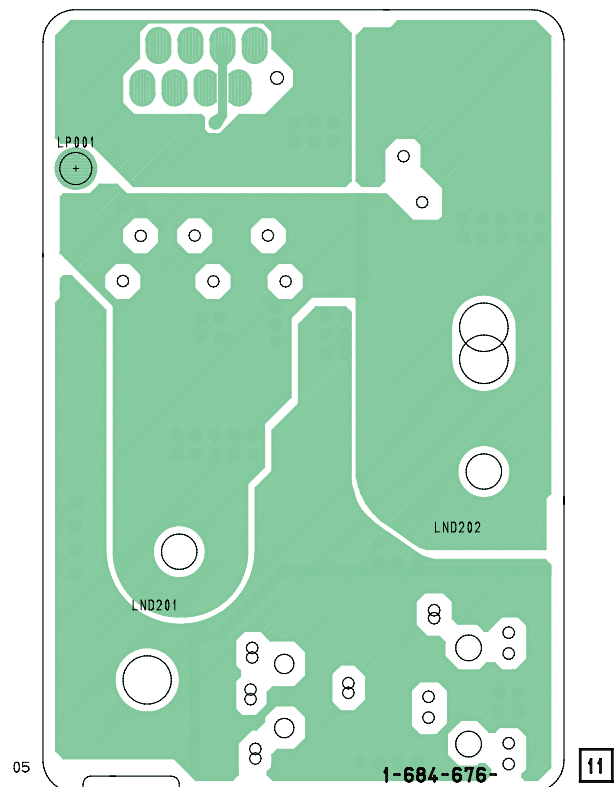
DV-032 BOARD (SIDE A)



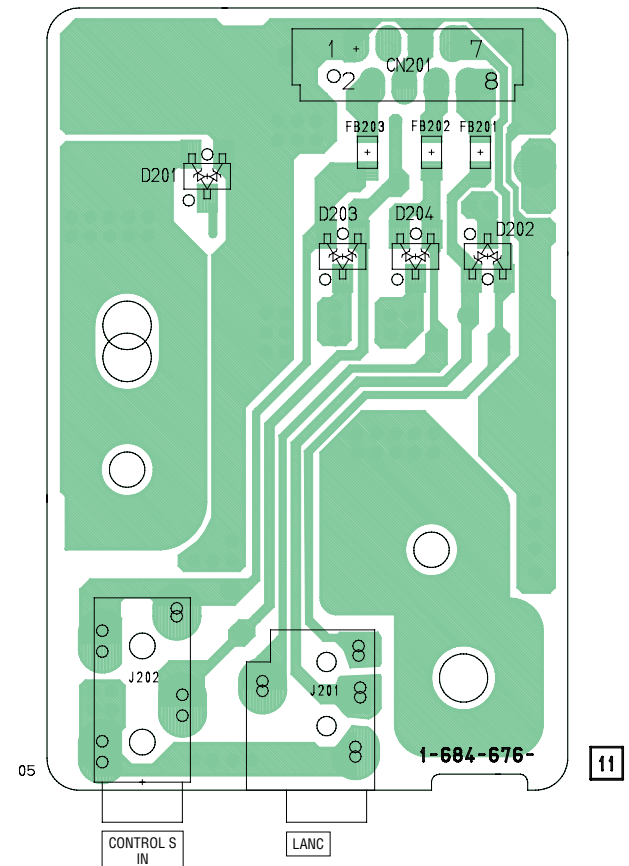
DV-032 BOARD (SIDE B)



LS-060 BOARD (SIDE A)

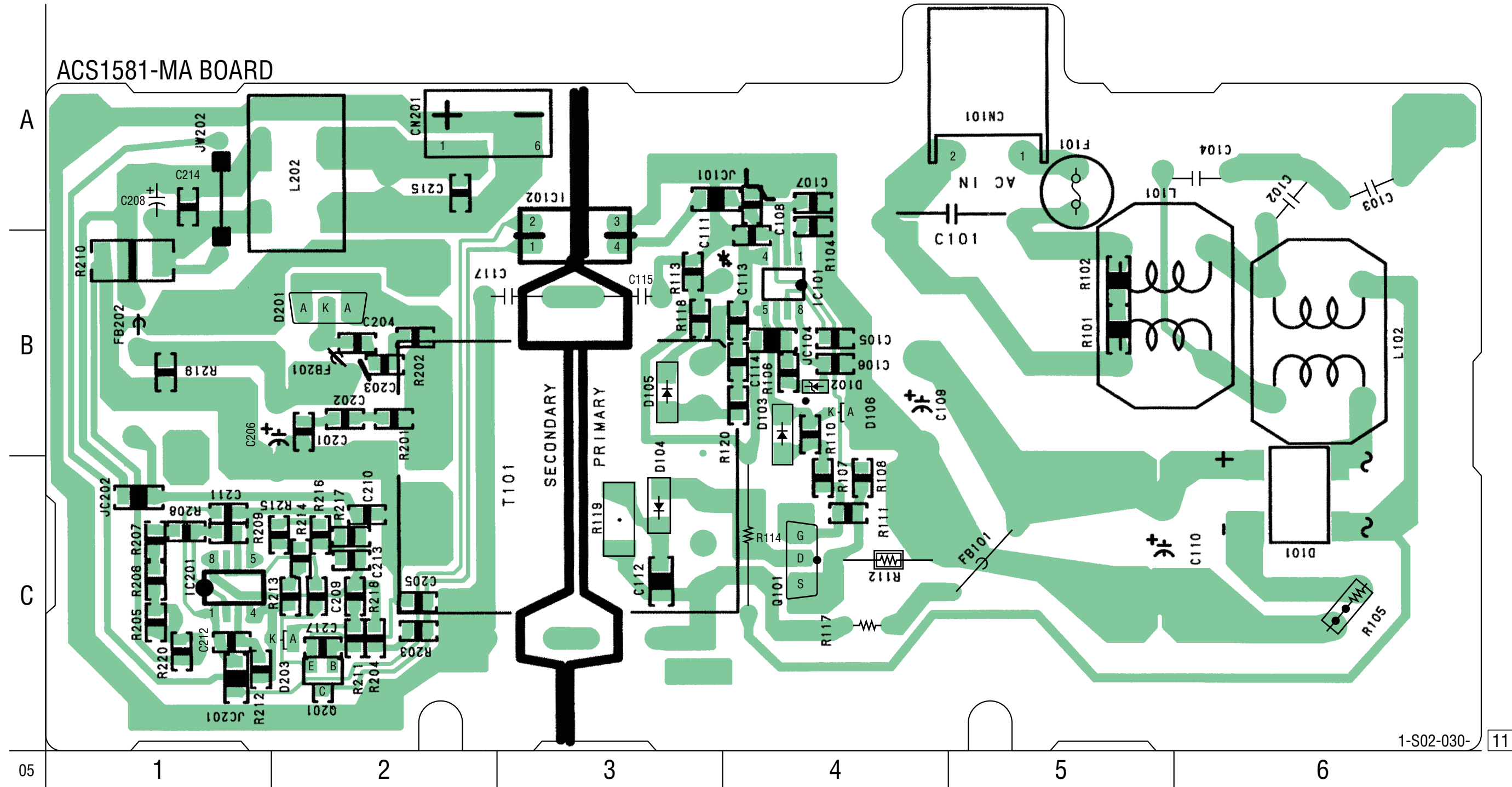


LS-060 BOARD (SIDE B)



ACS1581-MA (POWER)

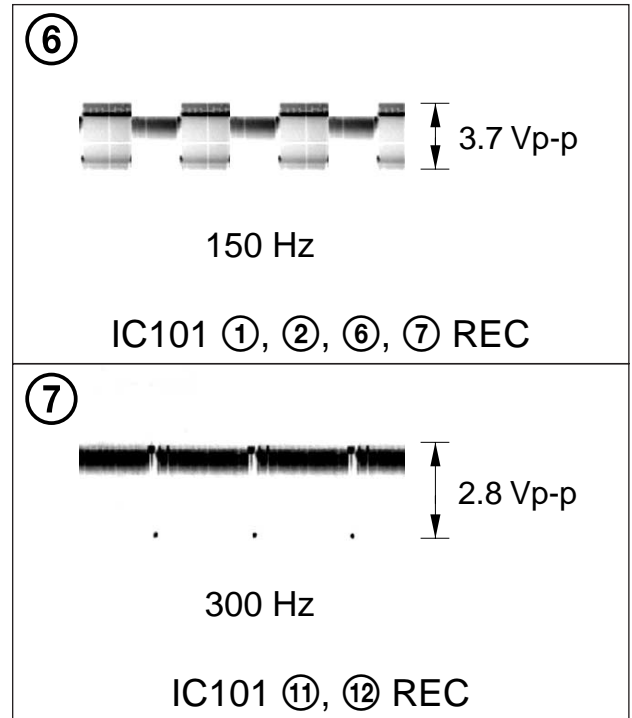
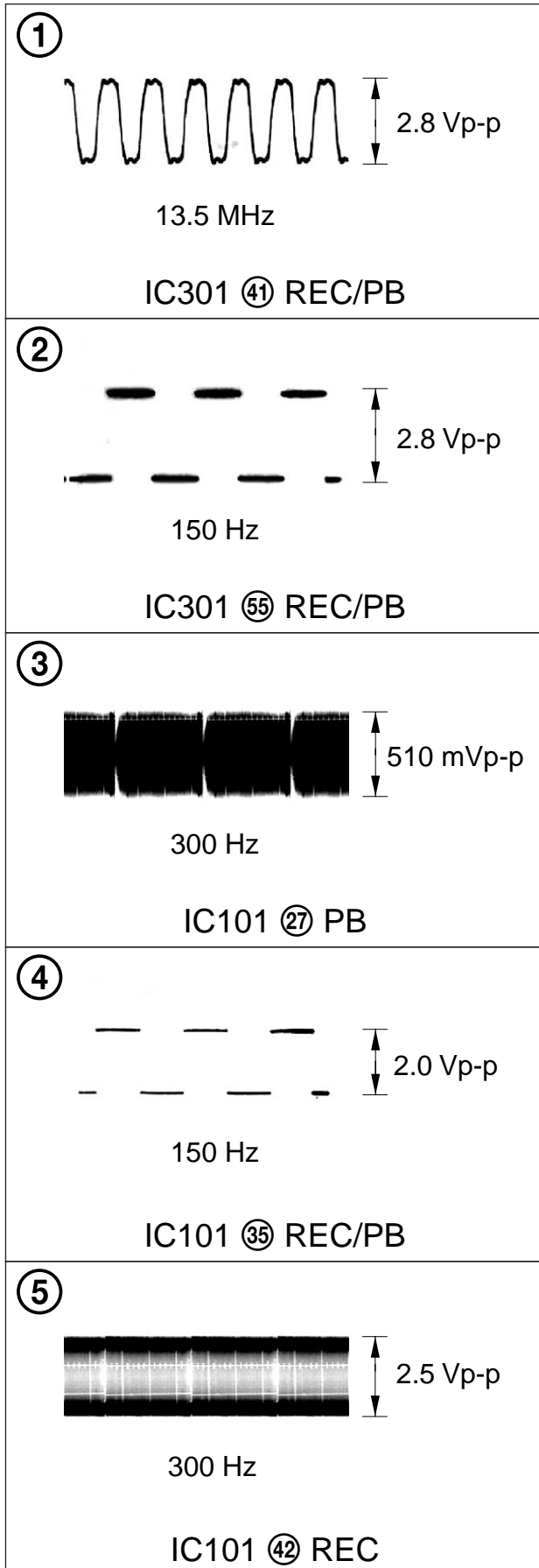
- For Printed Wiring Board.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-181 for printed parts location.



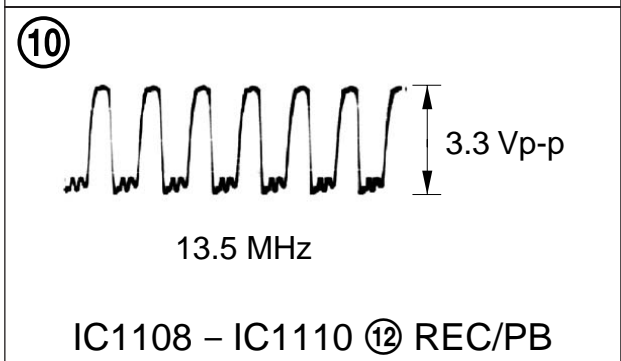
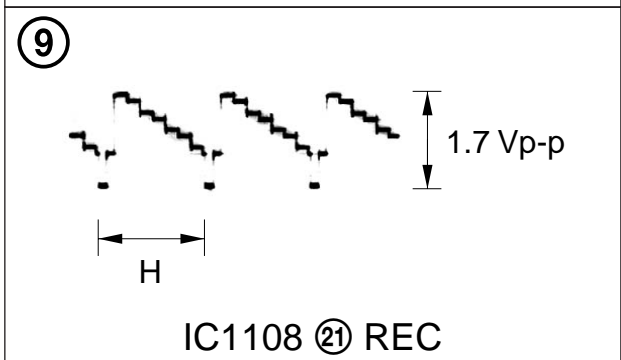
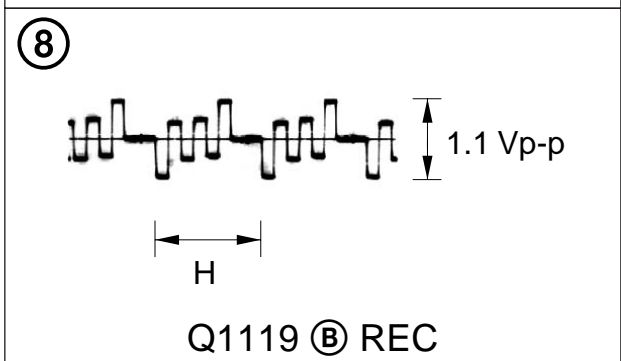
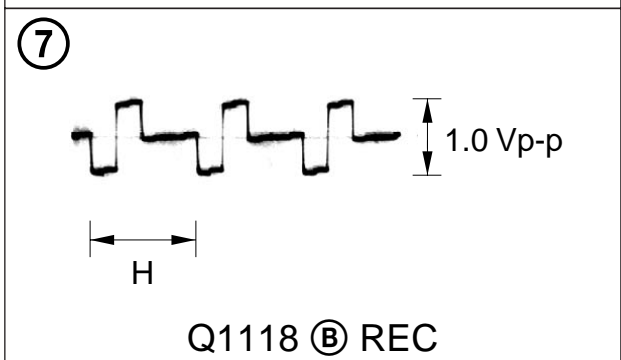
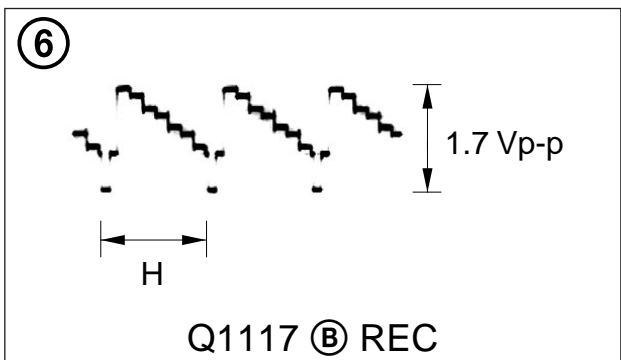
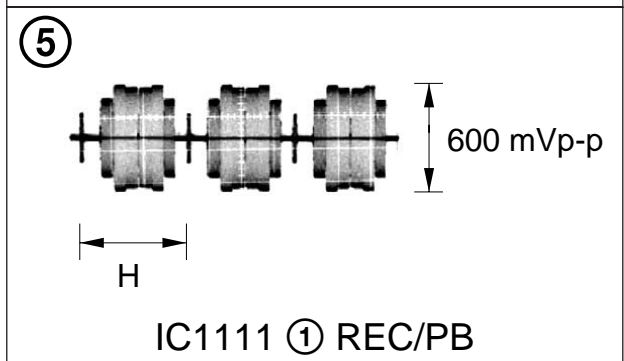
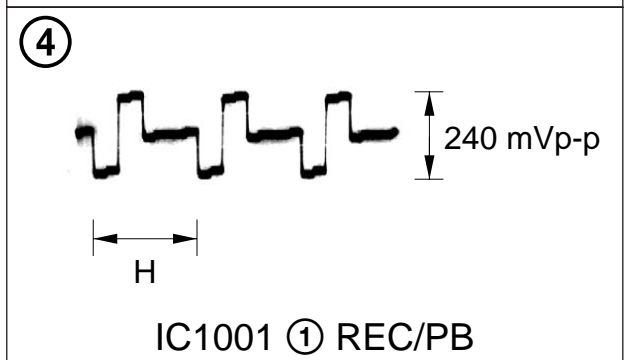
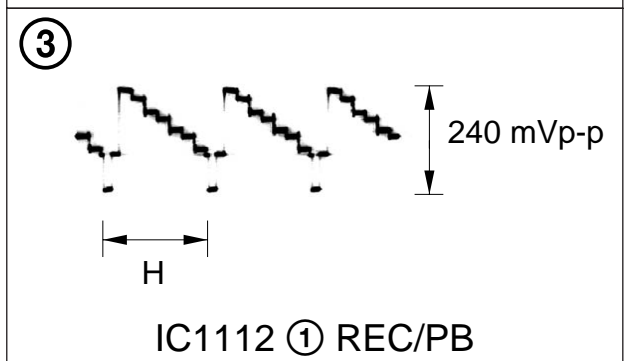
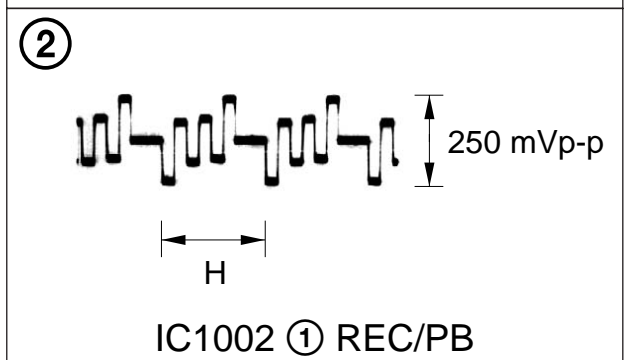
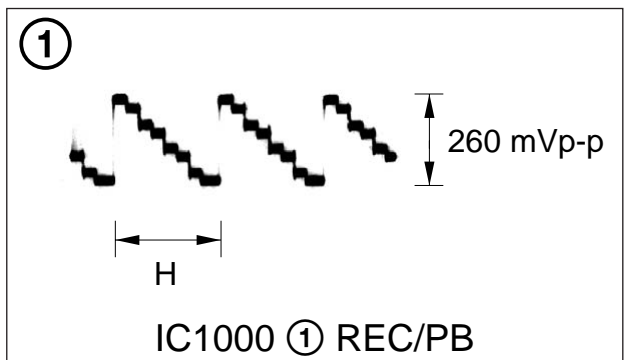
1-S02-030- 11

4-4. WAVEFORMS

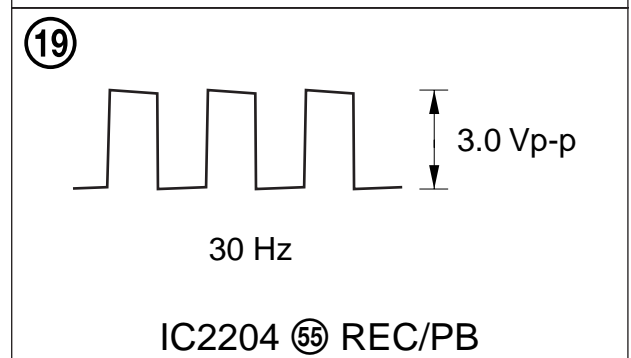
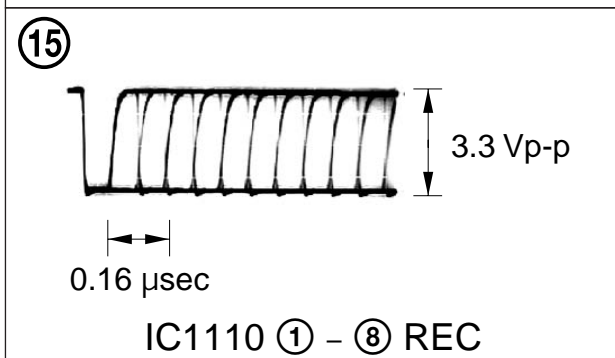
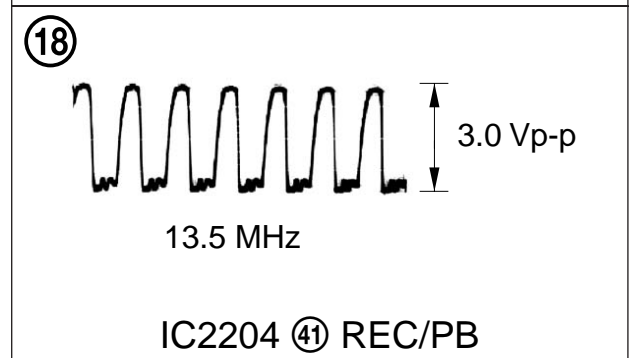
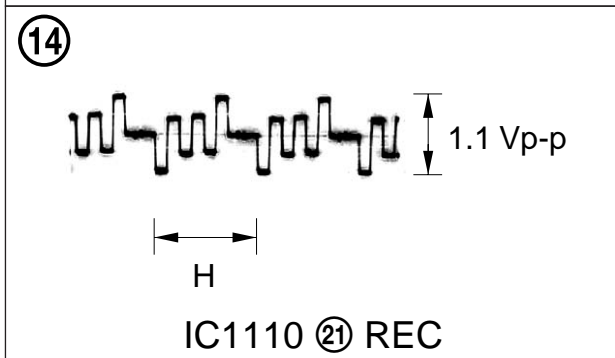
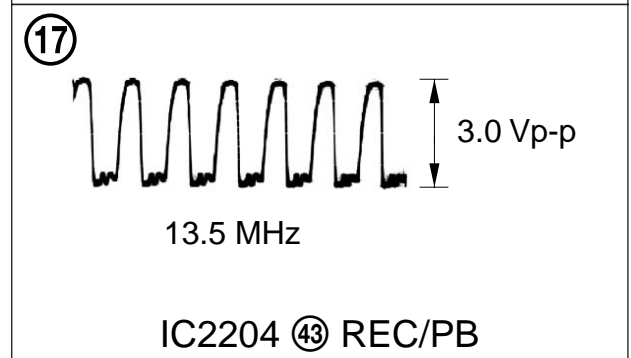
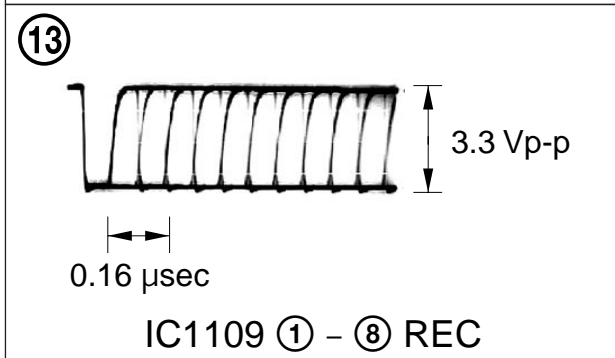
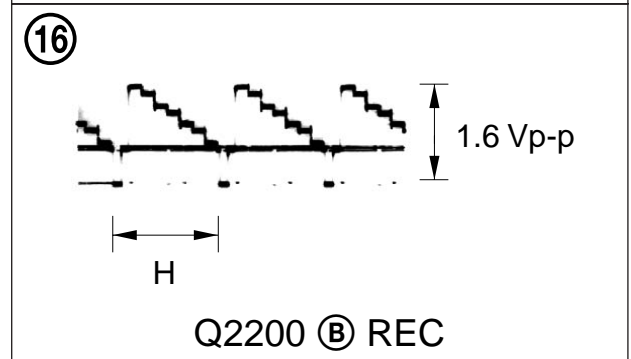
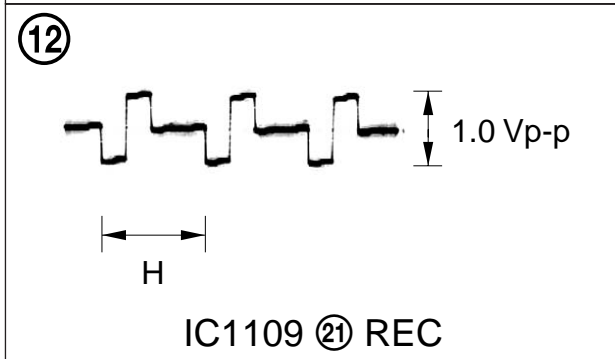
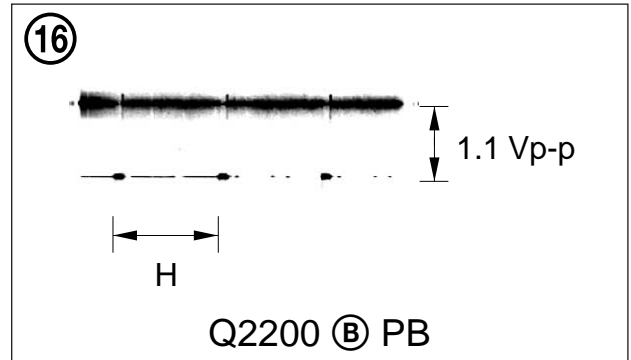
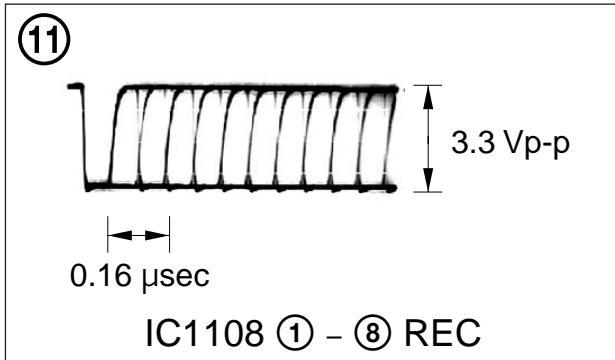
RP-234 BOARD



JC-21 BOARD (1/5)

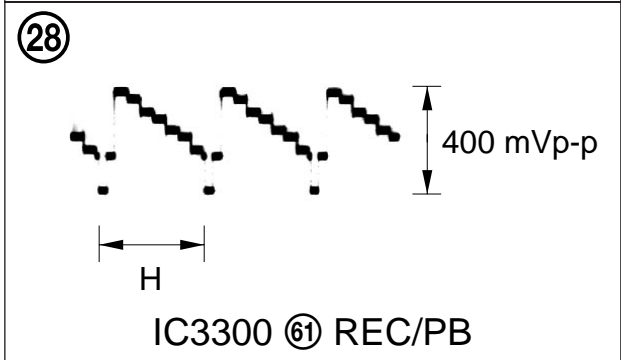
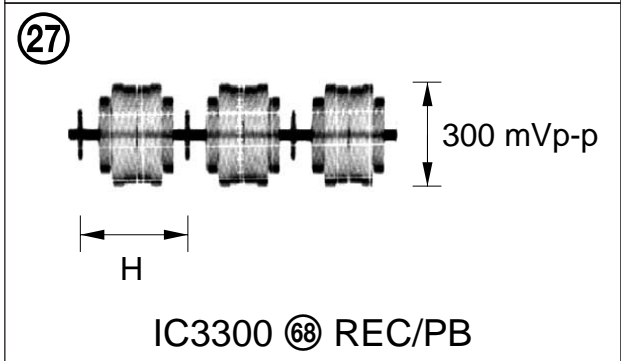
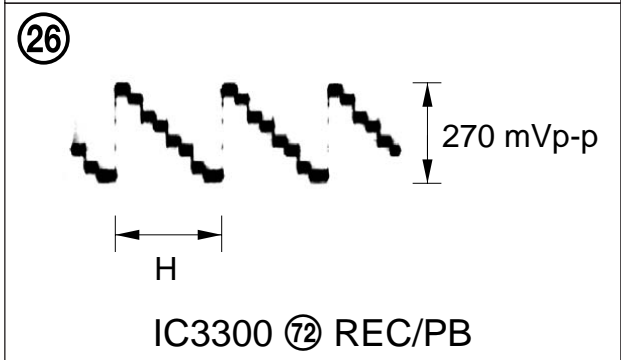
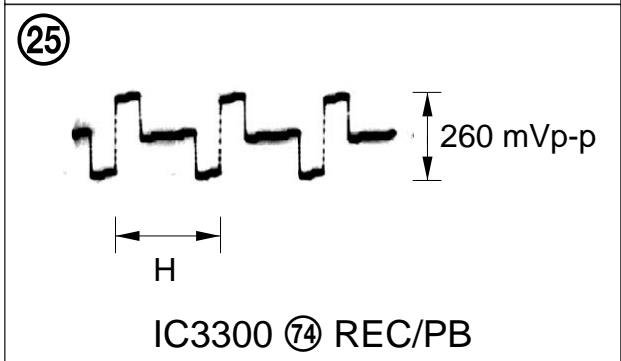
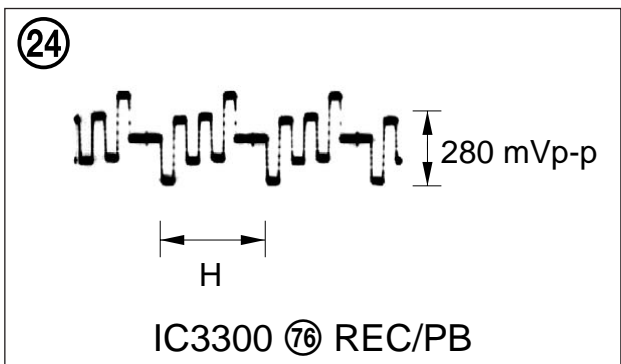
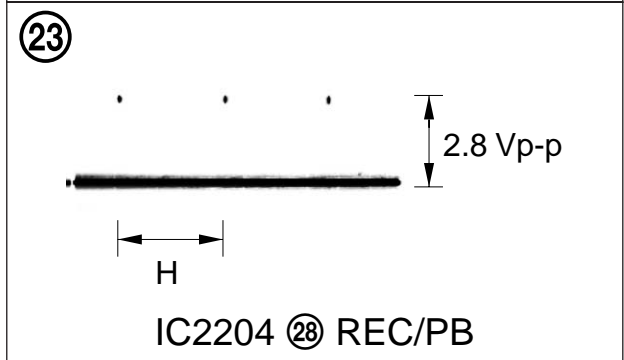
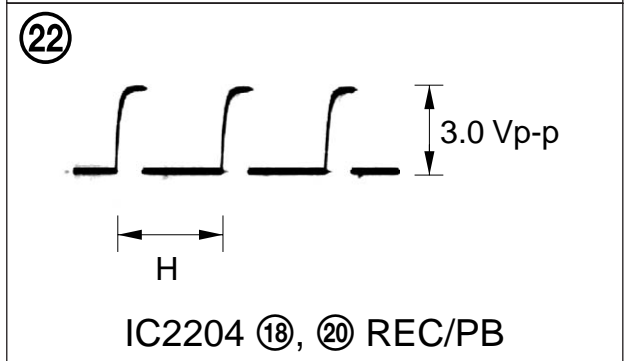
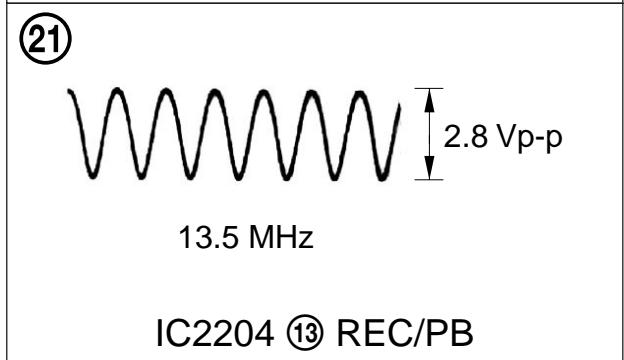
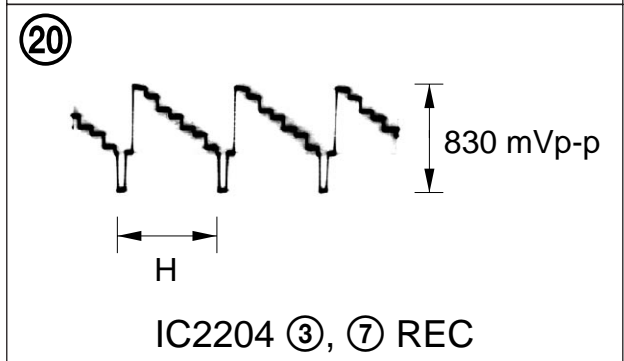
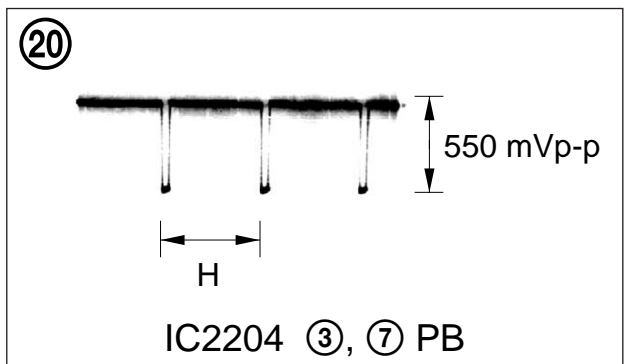


JC-21 BOARD (2/5)

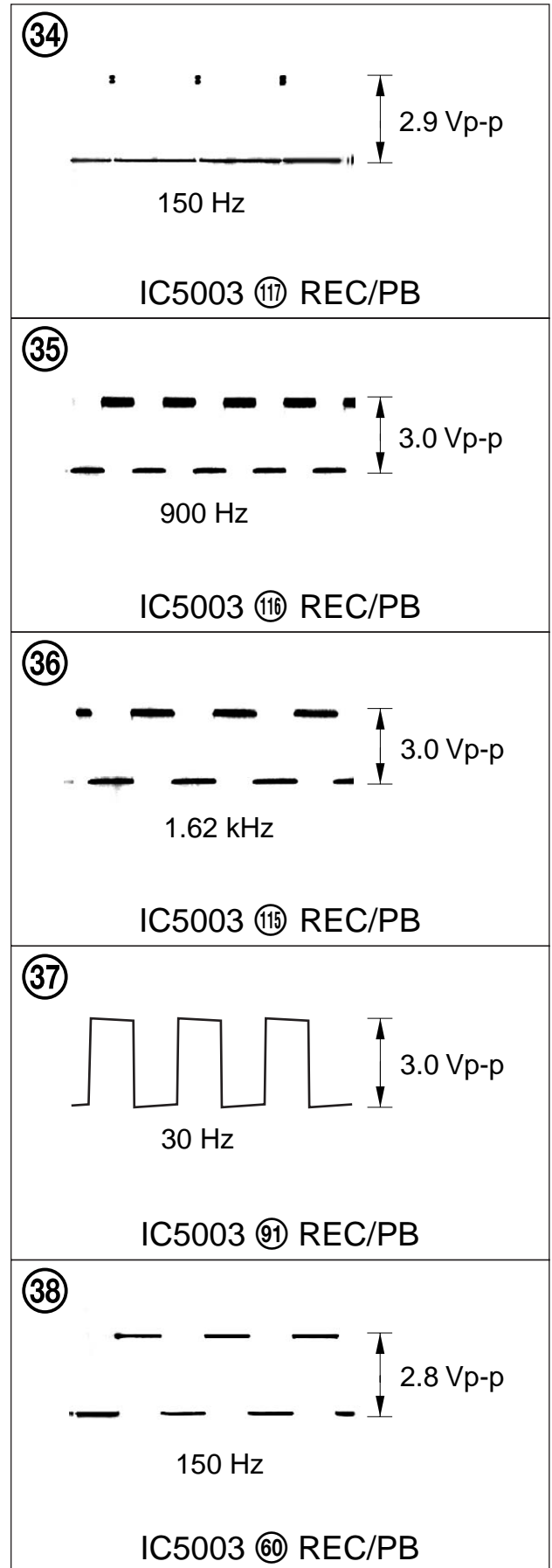
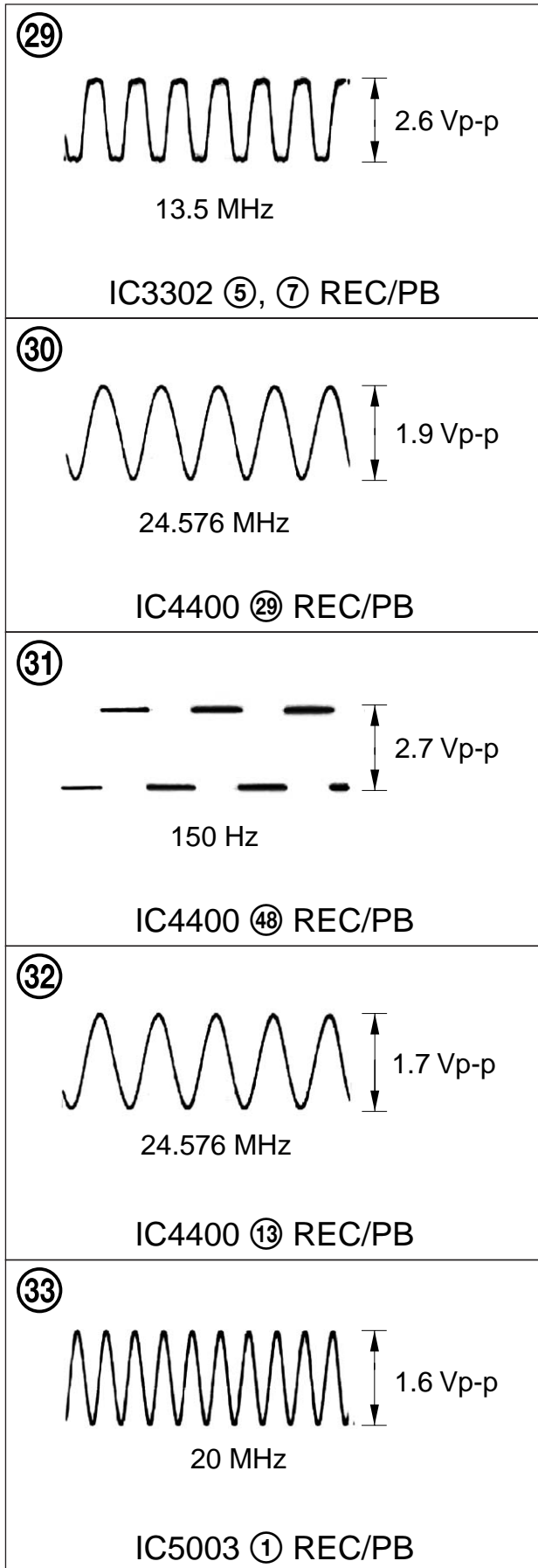




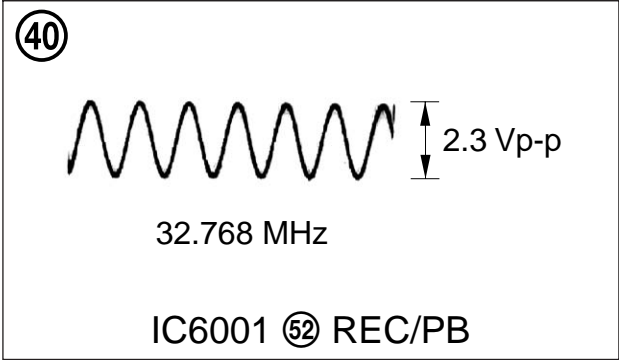
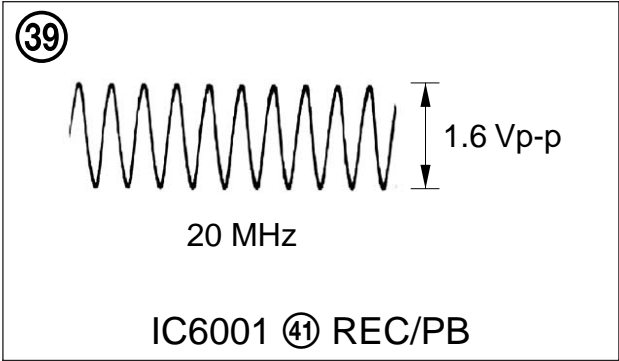
JC-21 BOARD (3/5)



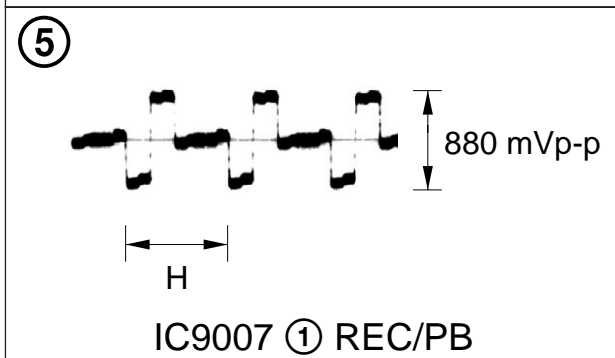
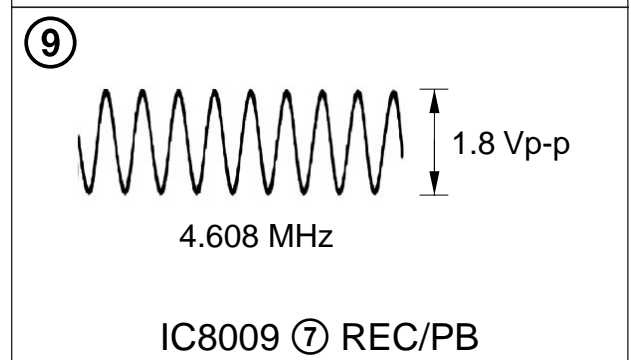
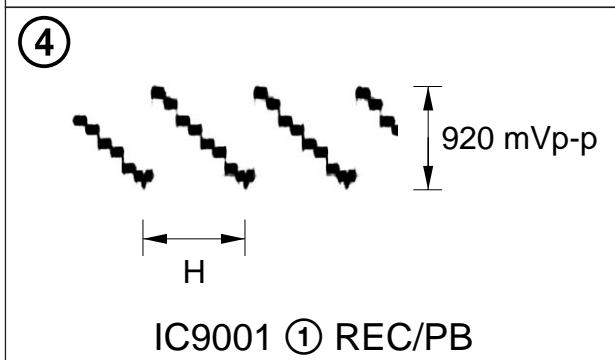
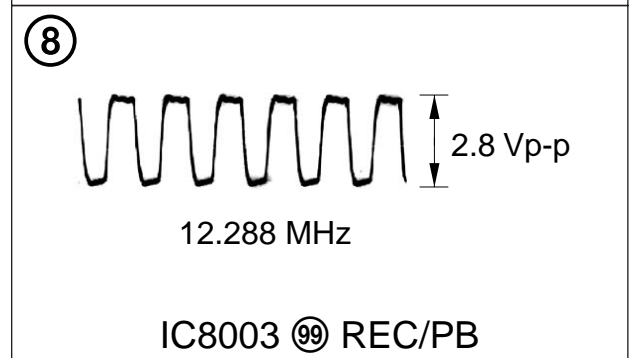
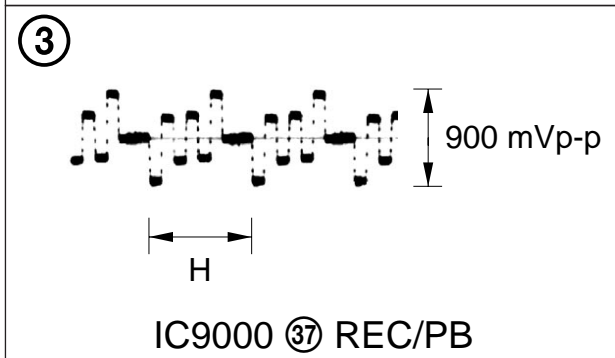
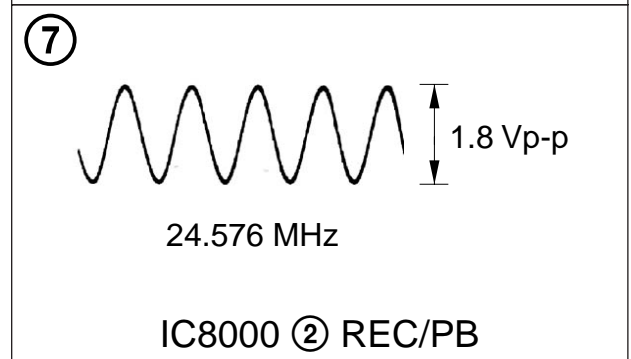
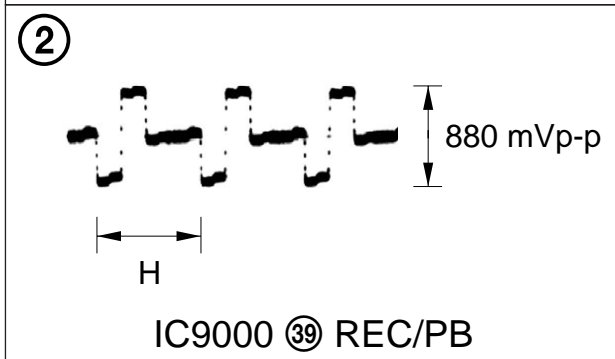
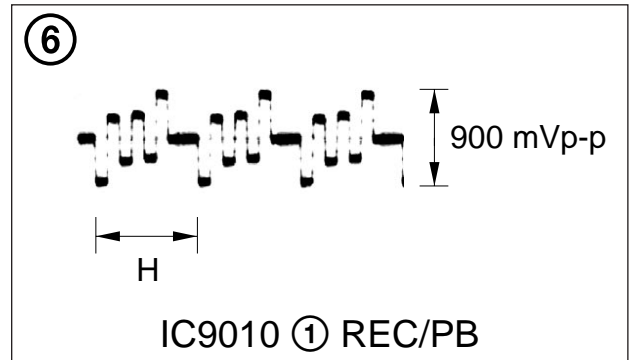
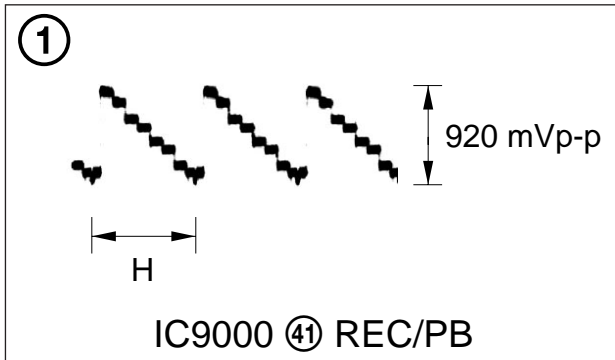
JC-21 BOARD (4/5)



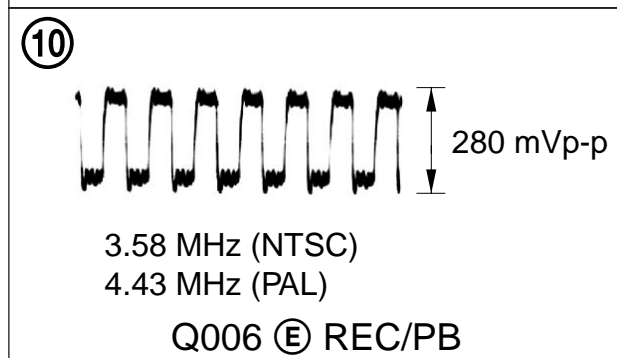
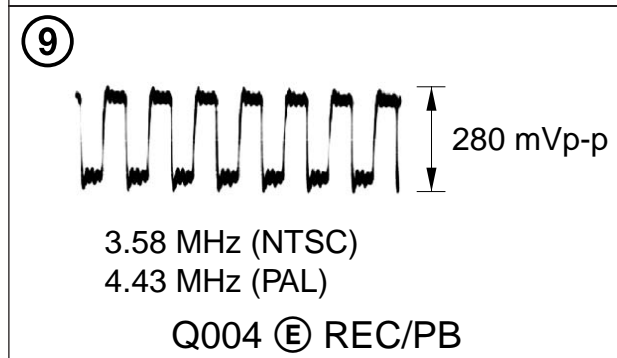
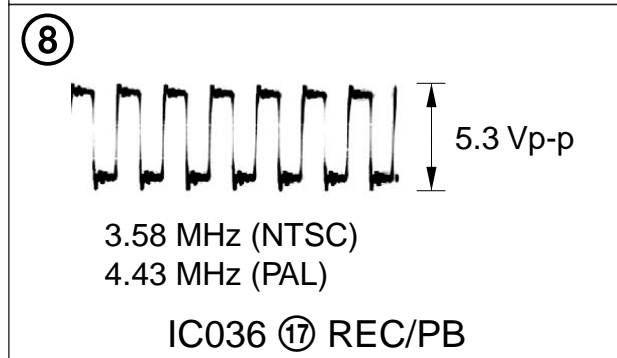
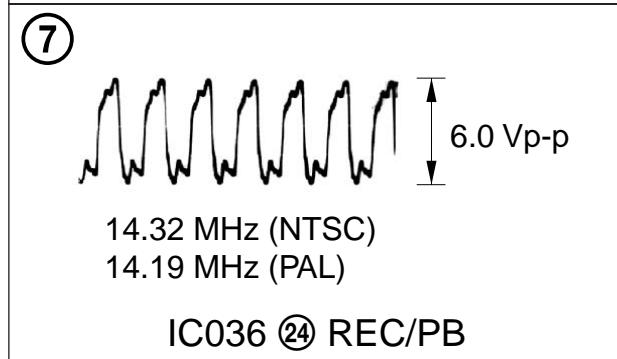
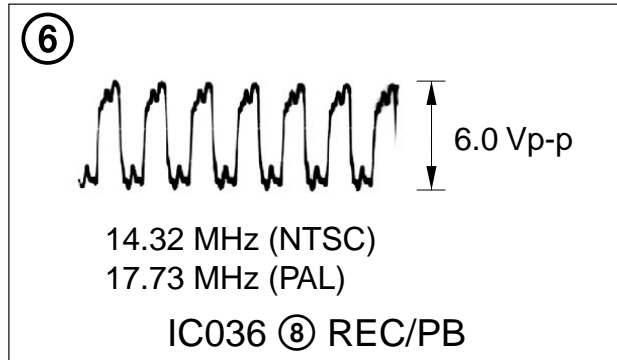
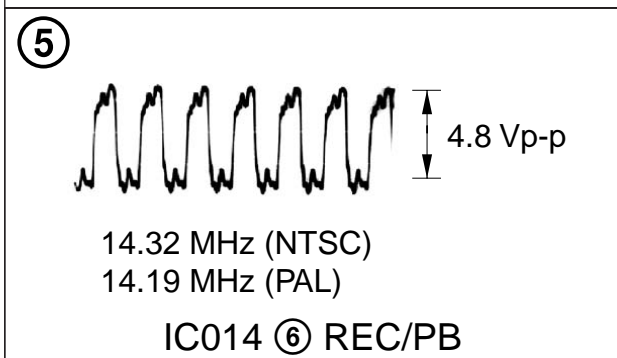
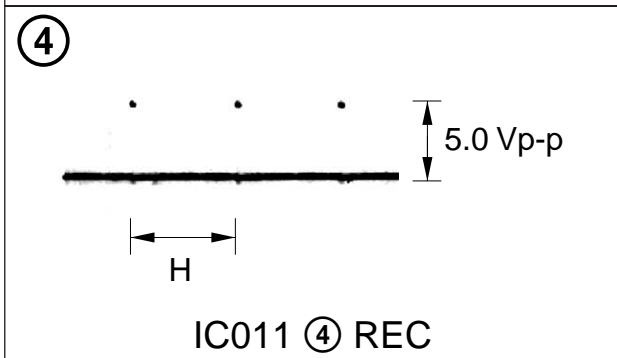
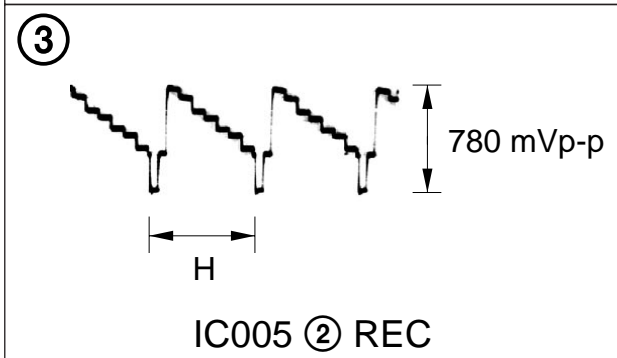
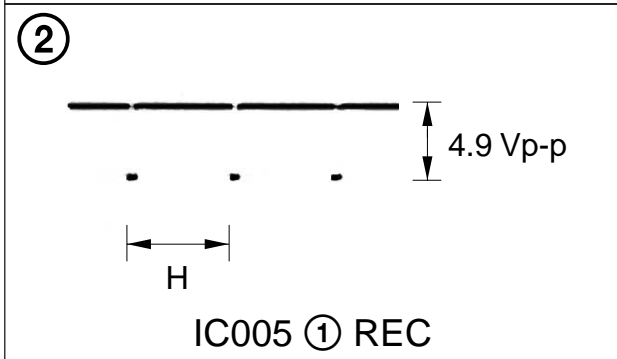
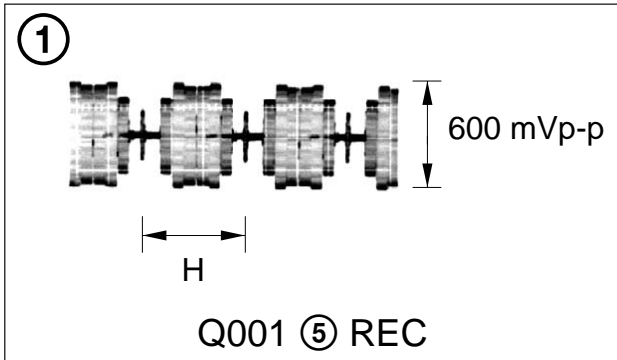
JC-21 BOARD (5/5)



DI-73 BOARD

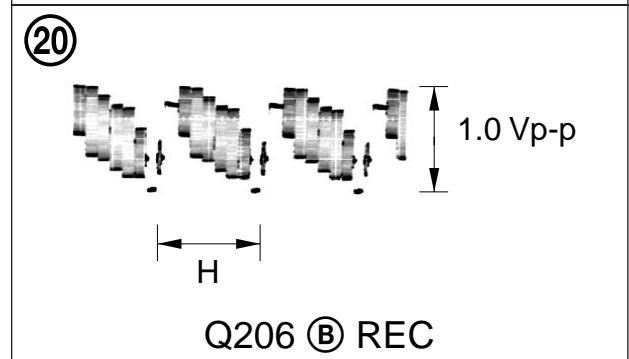
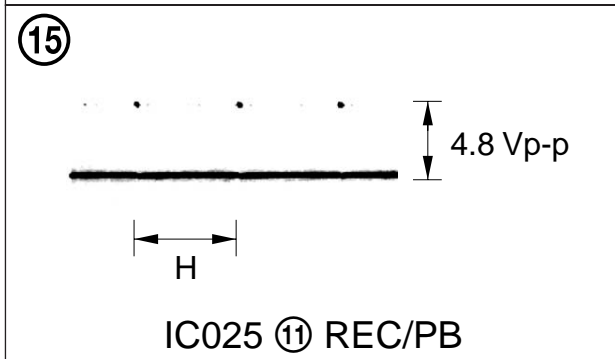
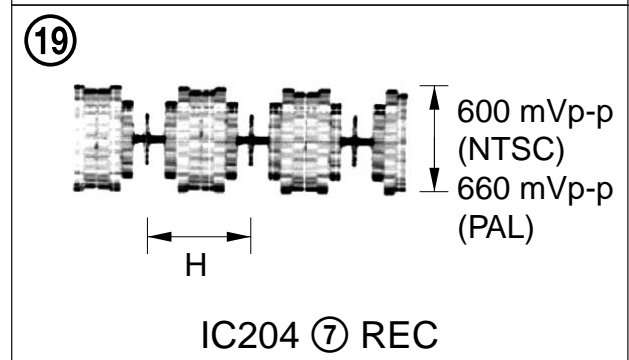
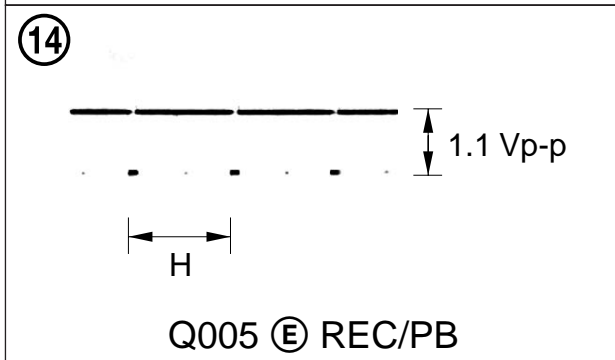
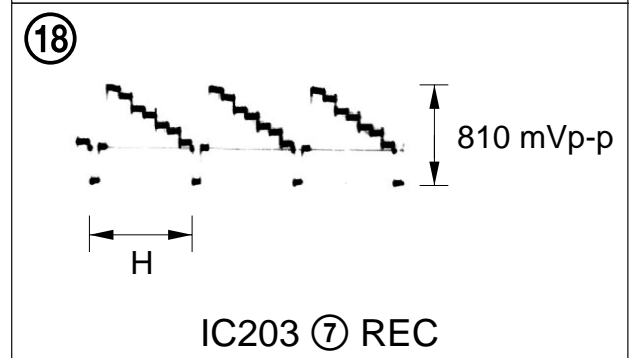
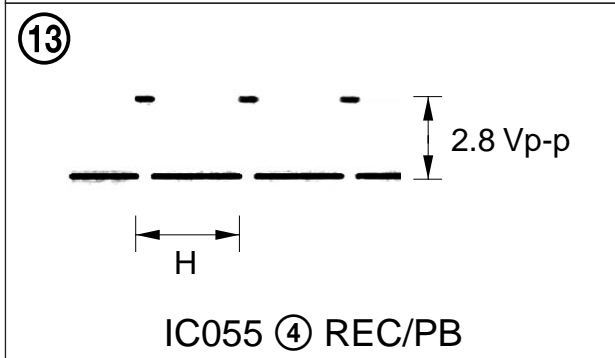
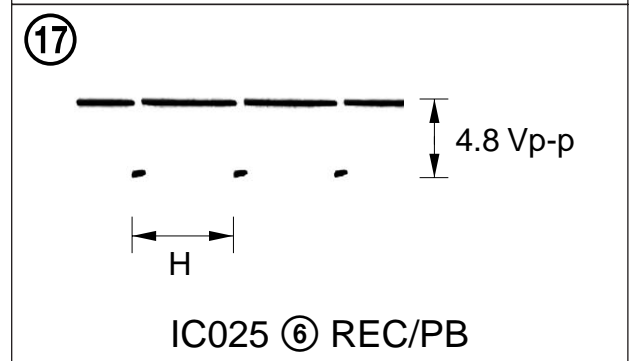
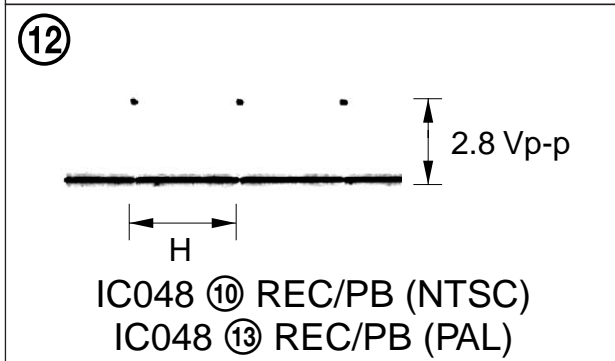
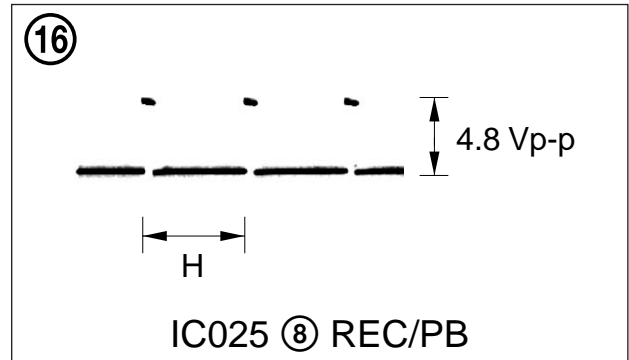
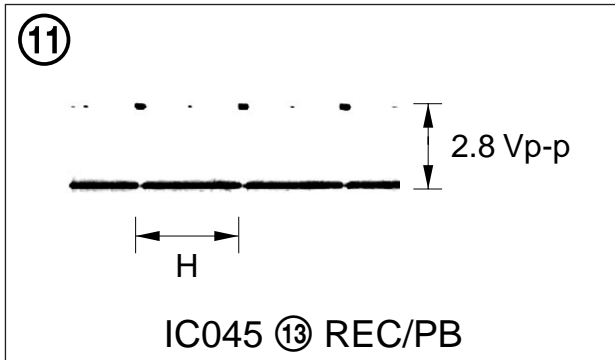


VD-032 BOARD (1/8)

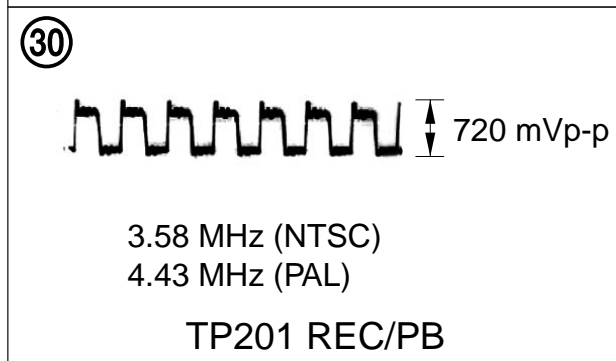
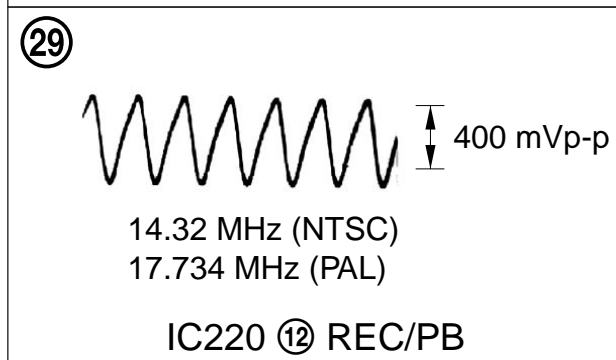
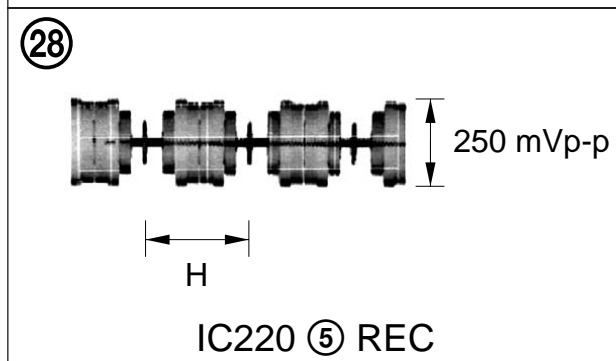
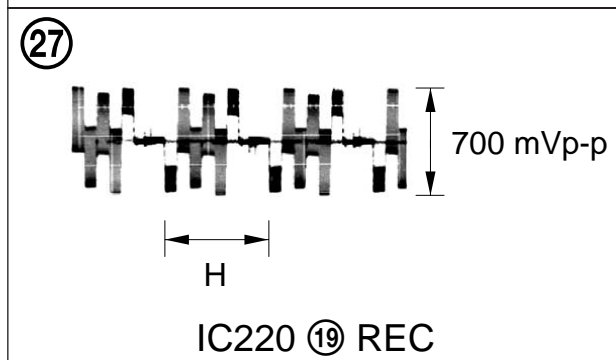
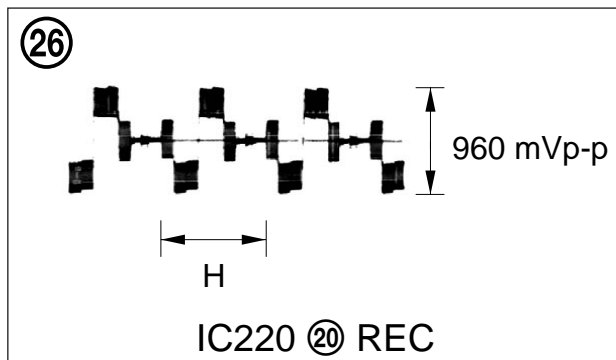
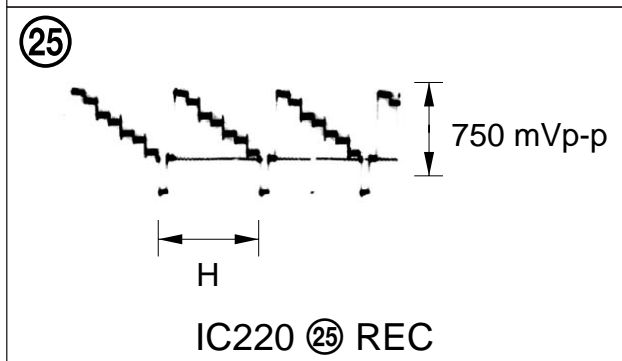
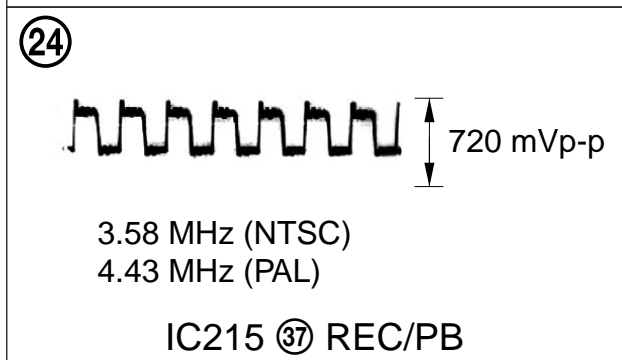
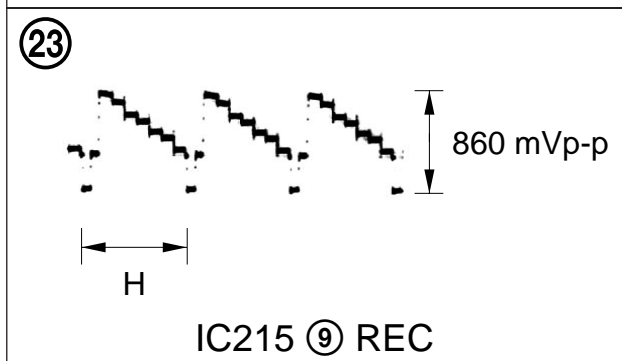
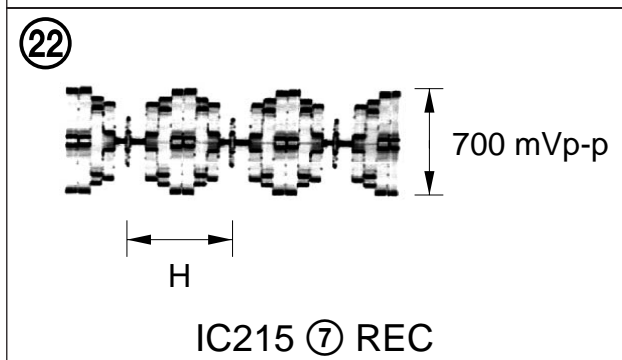
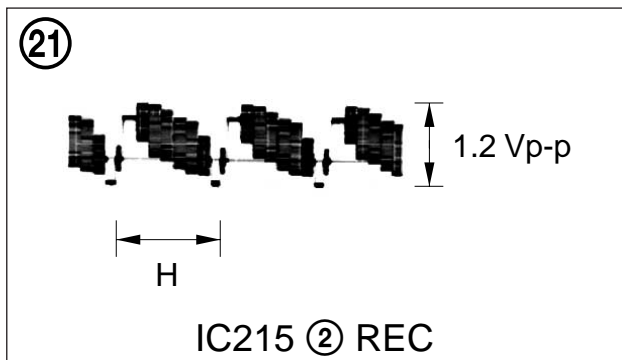




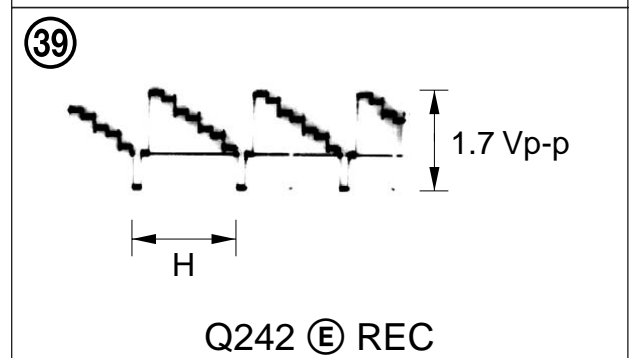
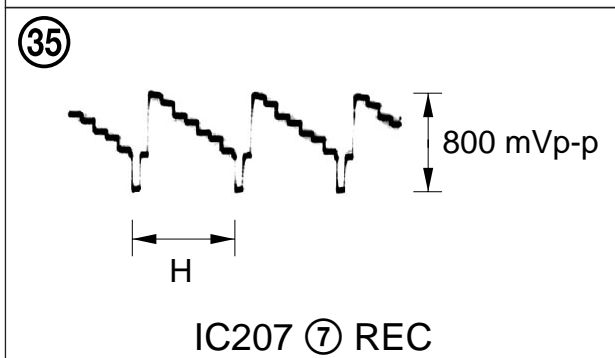
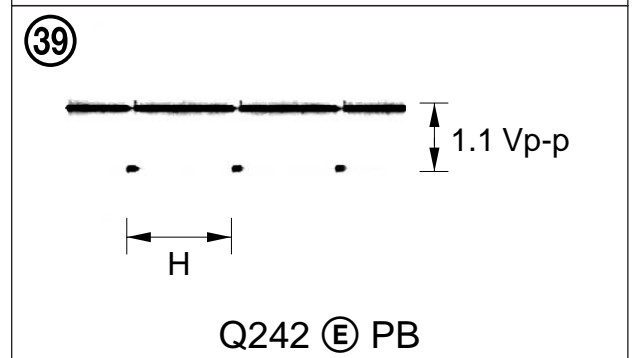
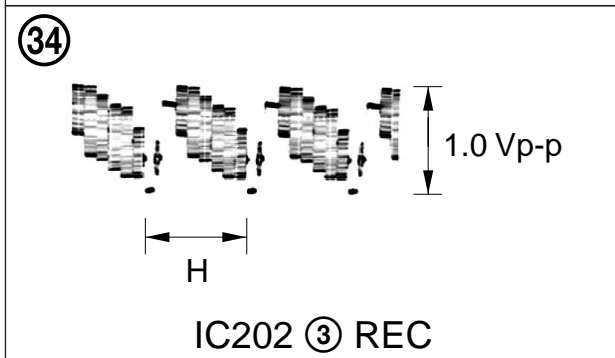
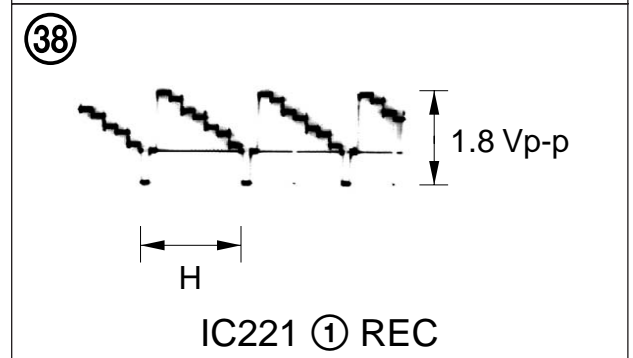
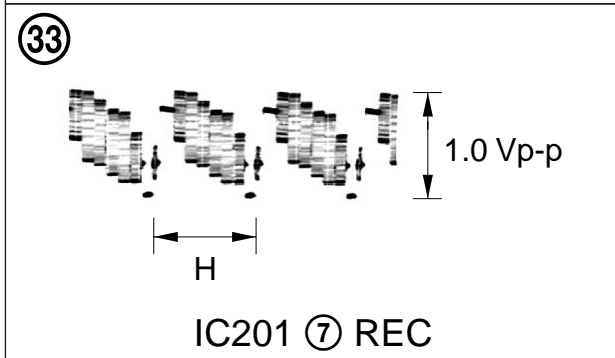
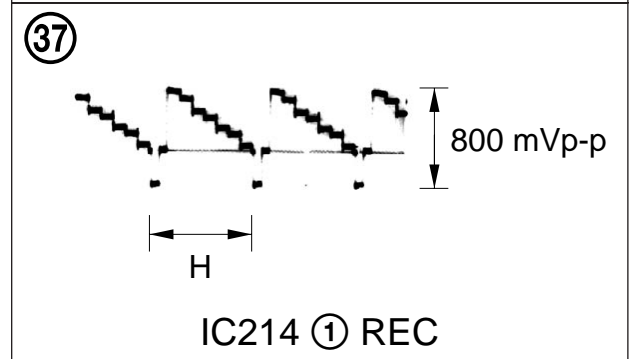
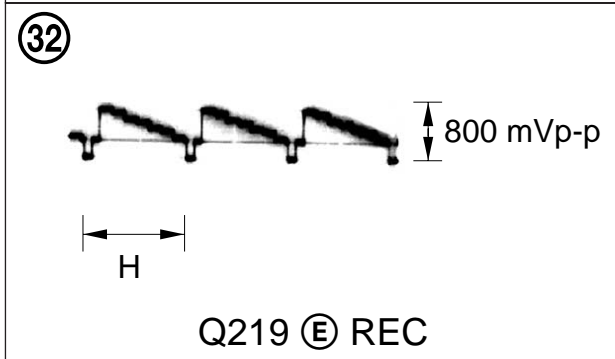
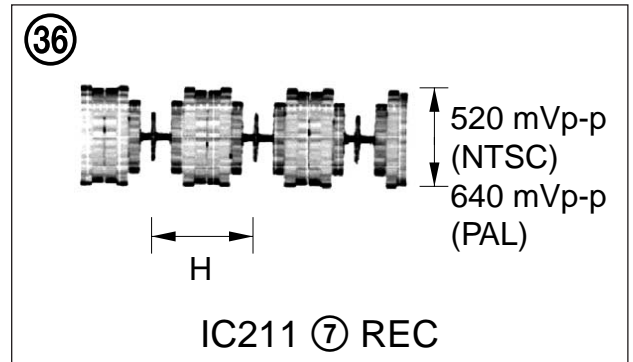
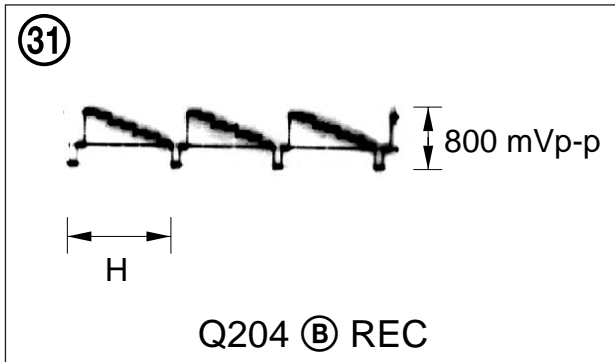
VD-032 BOARD (2/8)



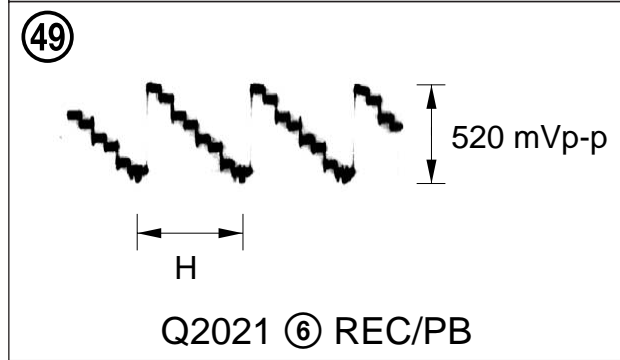
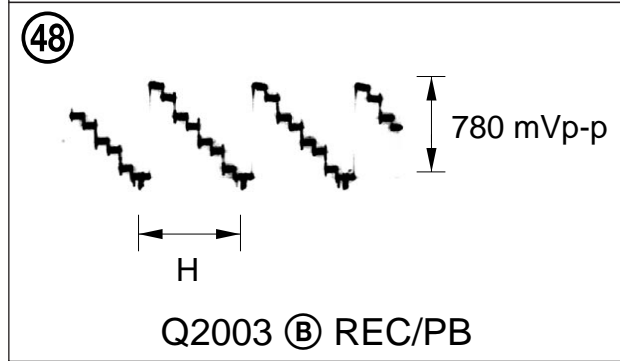
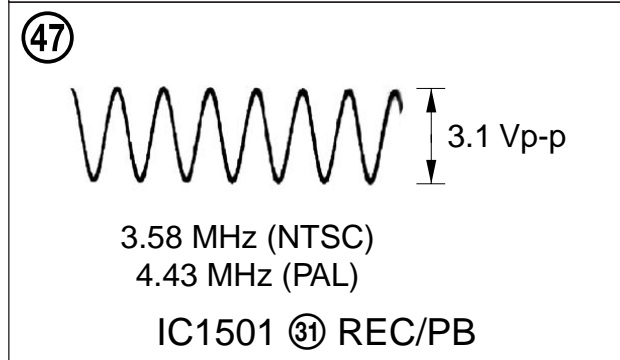
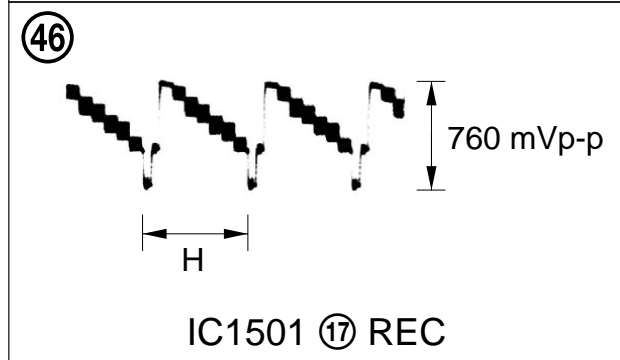
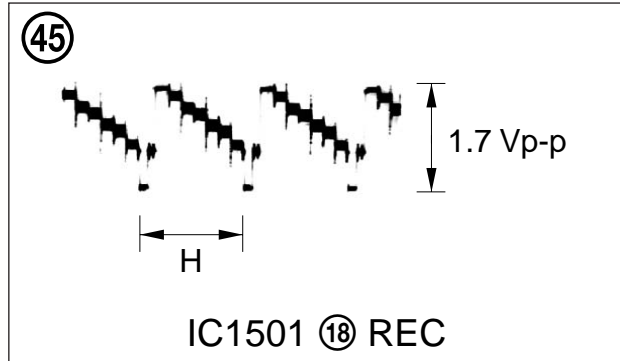
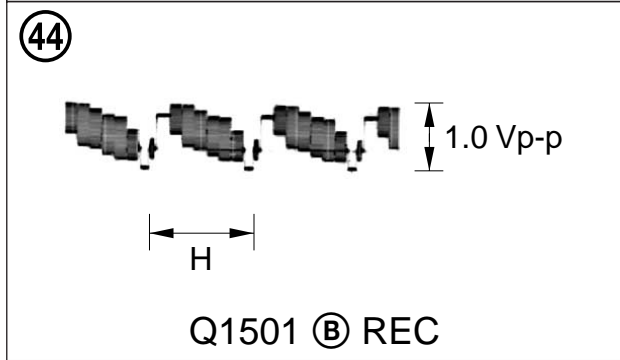
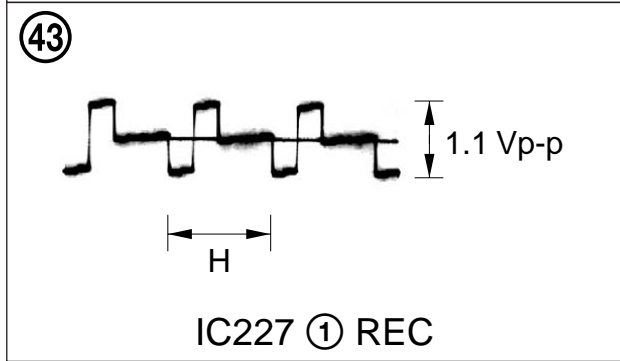
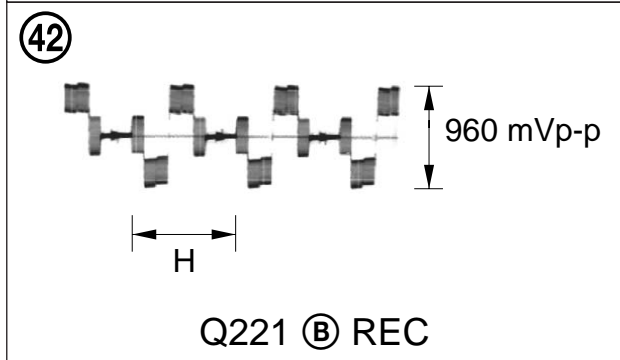
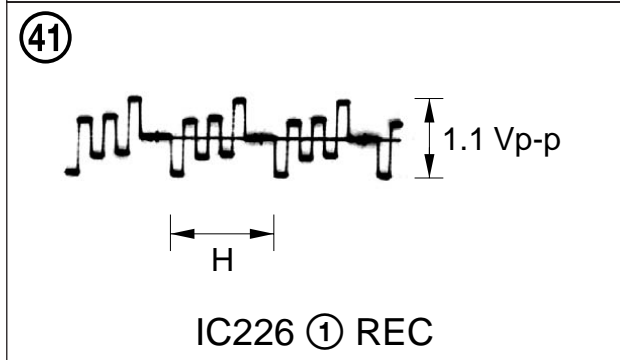
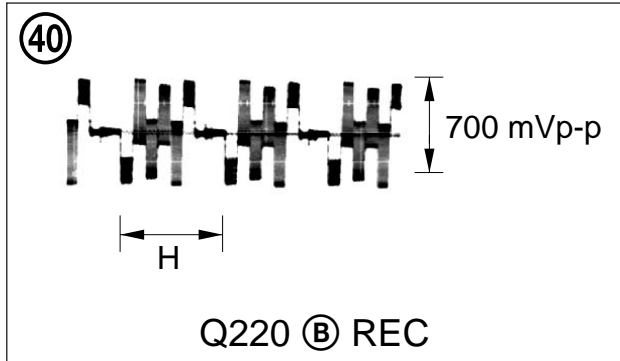
VD-032 BOARD (3/8)



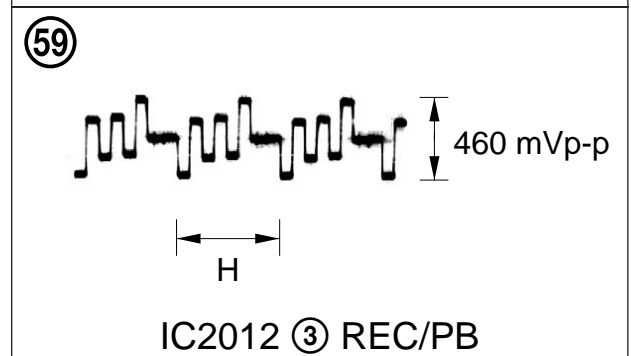
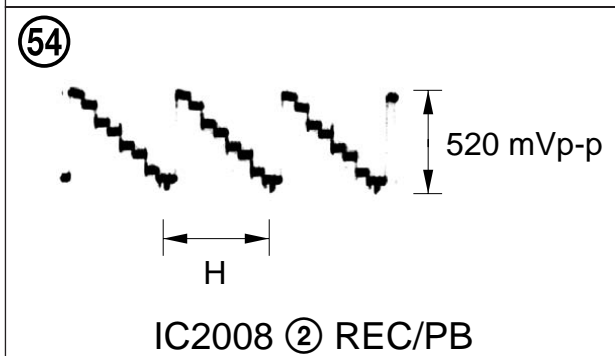
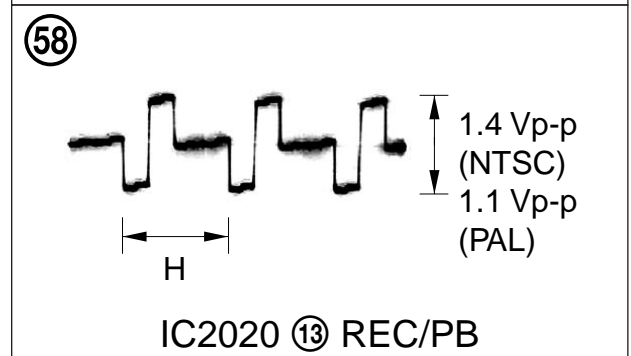
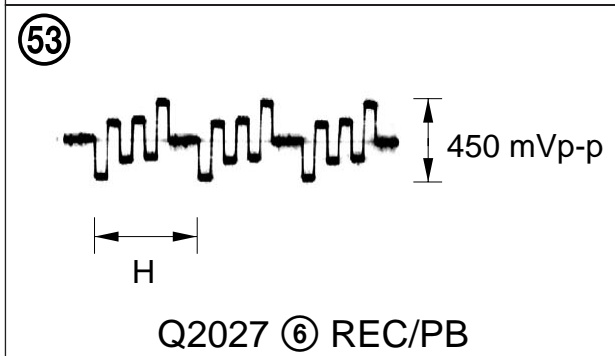
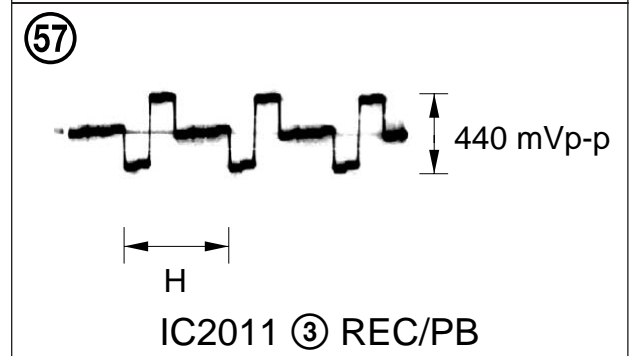
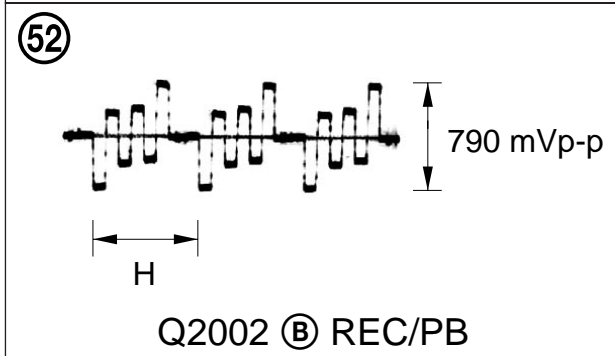
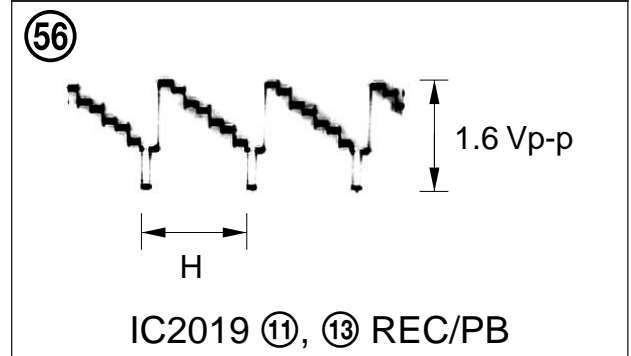
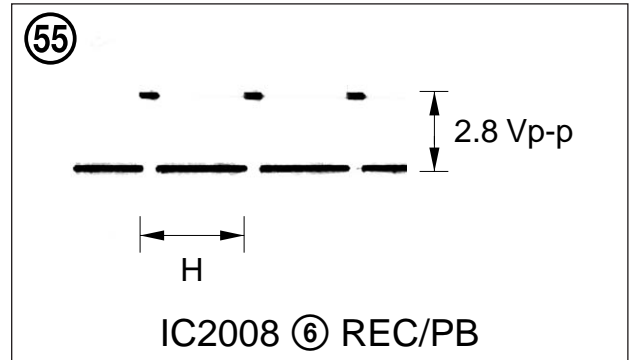
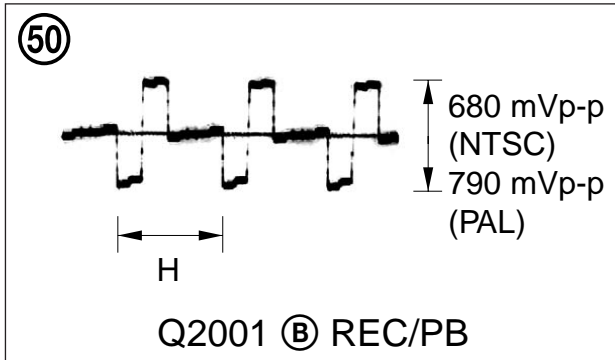
VD-032 BOARD (4/8)



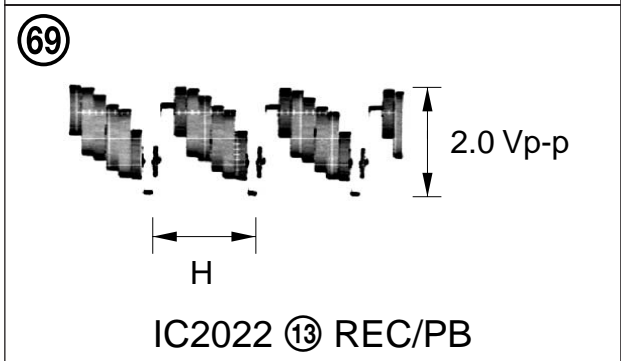
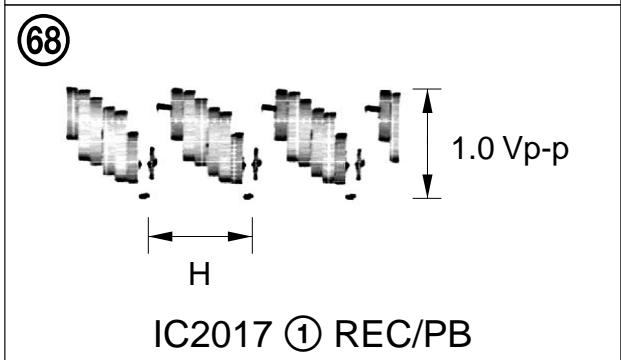
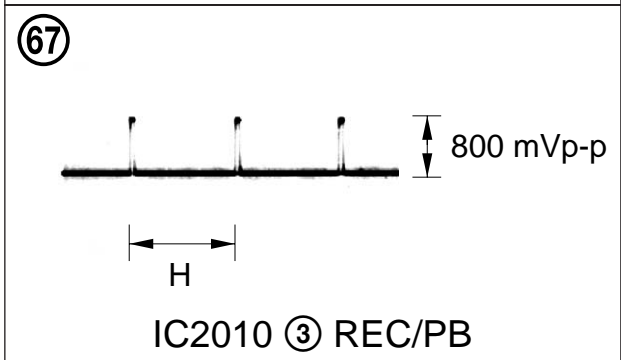
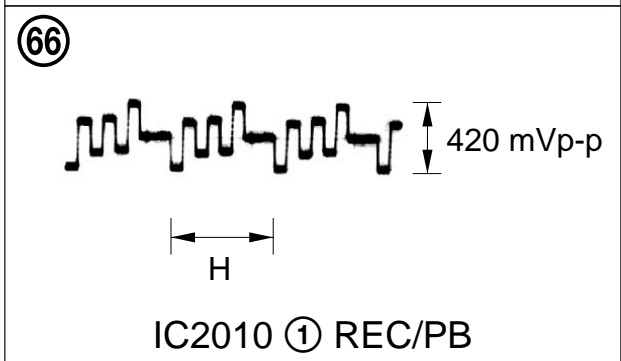
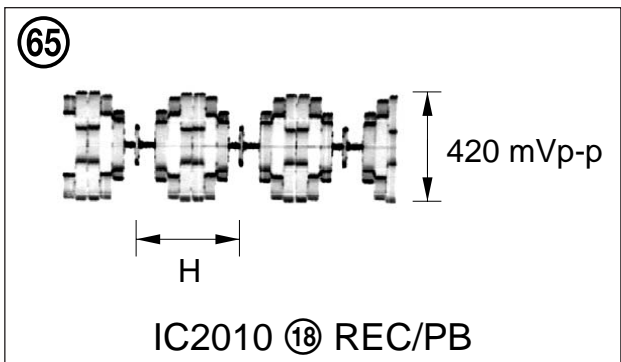
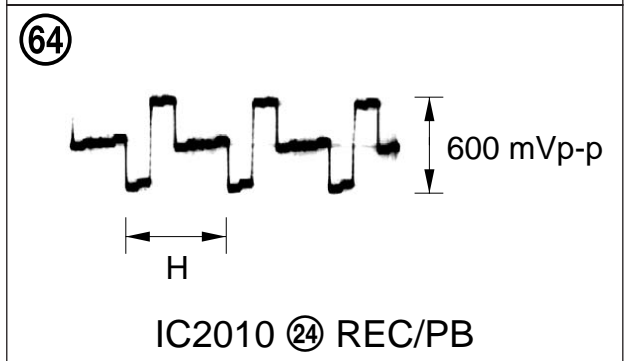
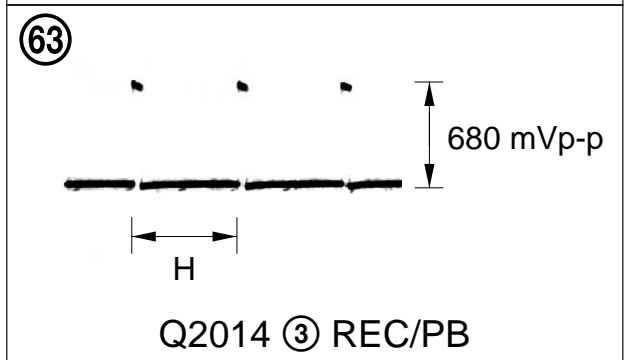
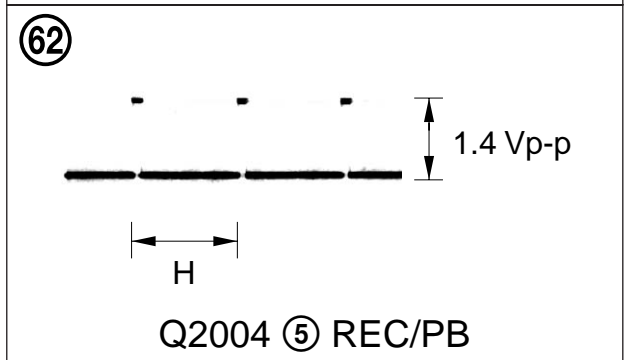
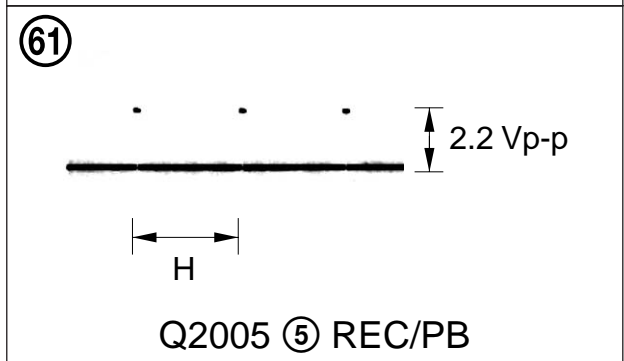
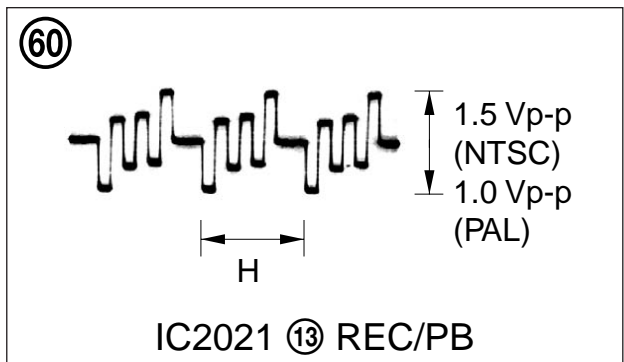
VD-032 BOARD (5/8)



VD-032 BOARD (6/8)

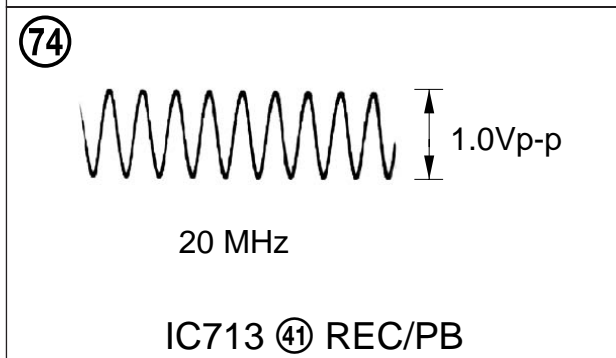
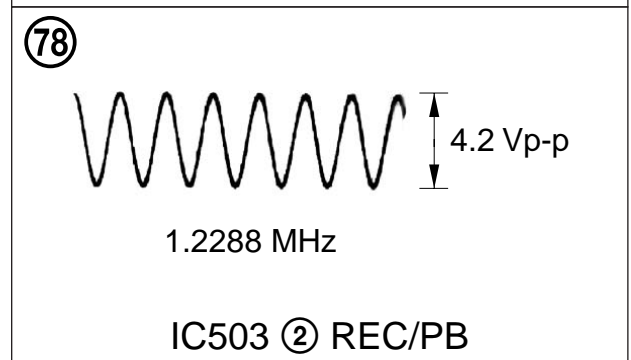
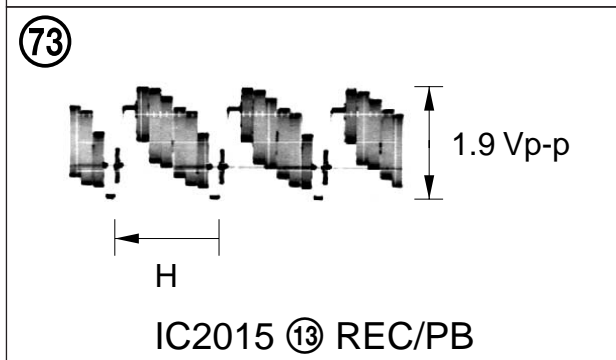
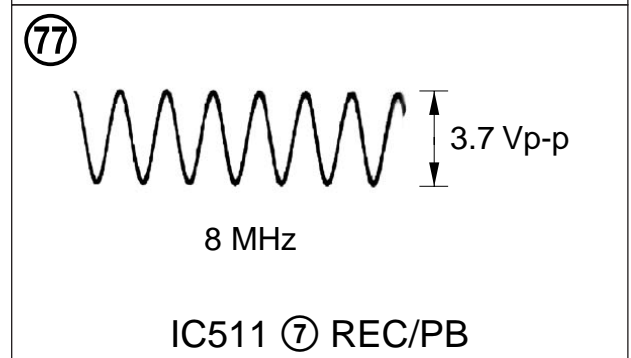
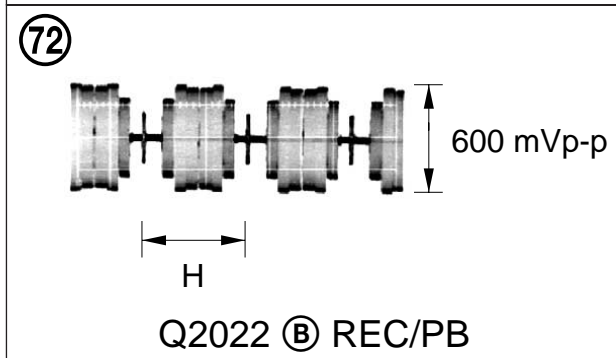
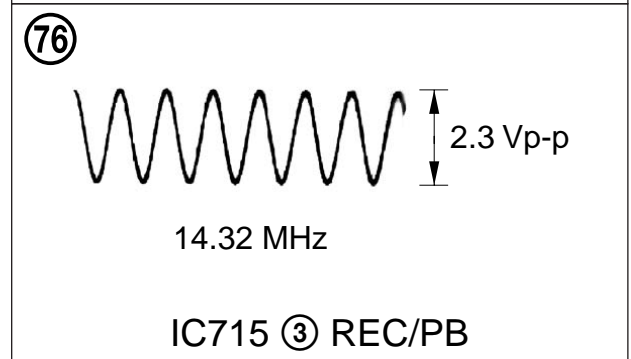
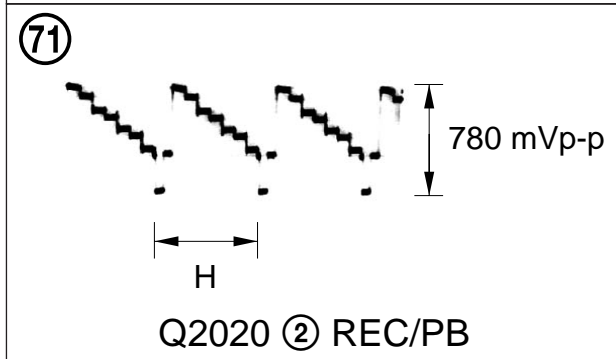
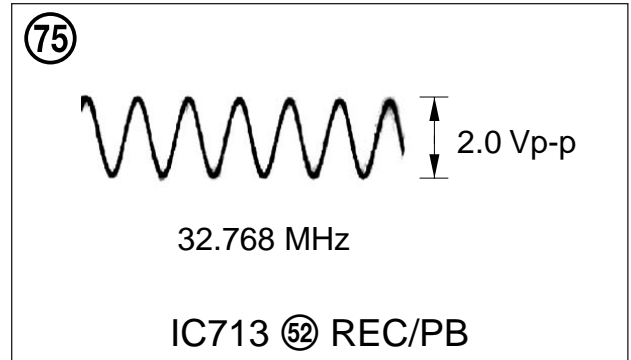
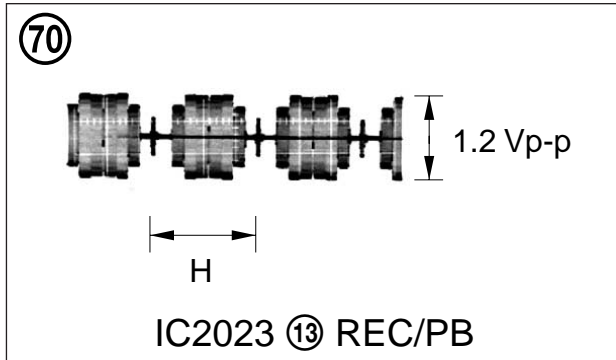


VD-032 BOARD (7/8)

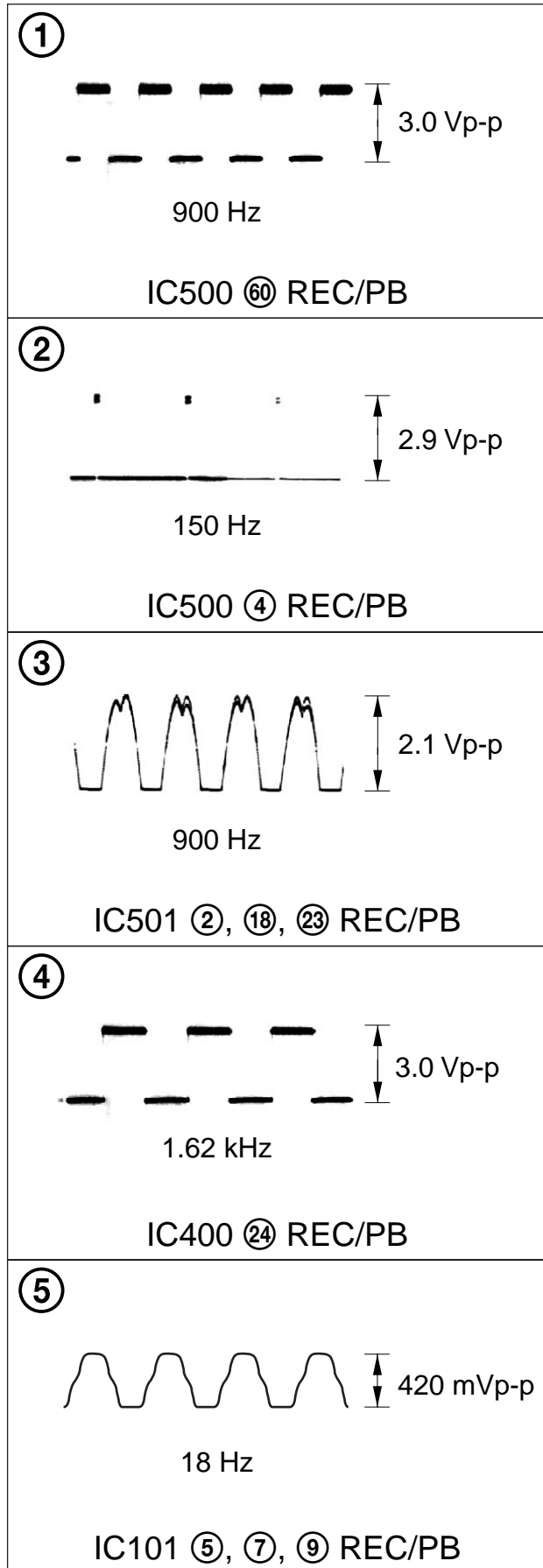




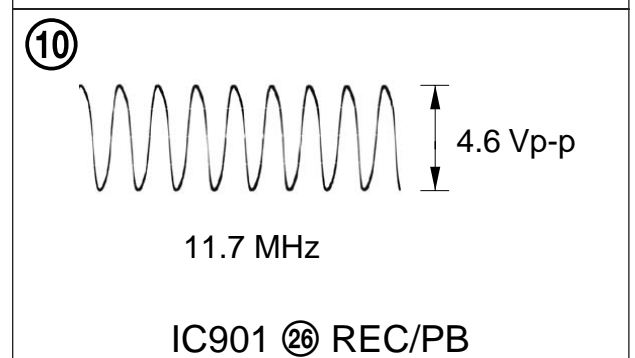
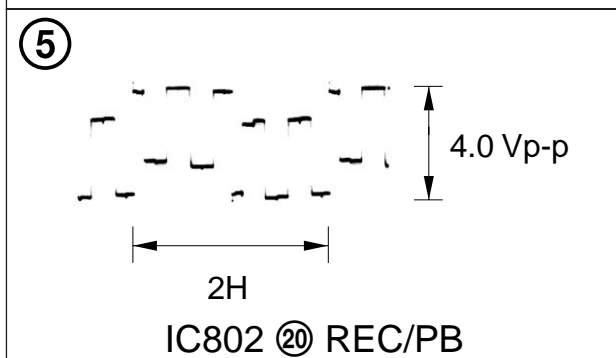
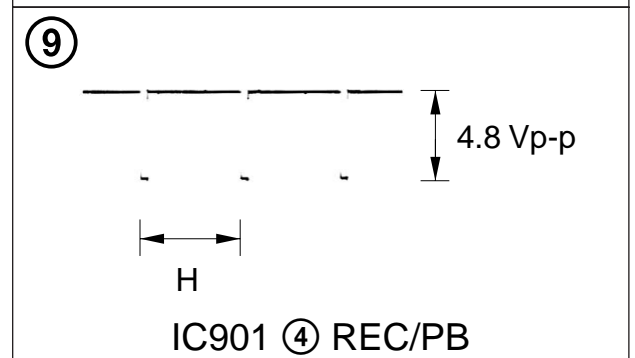
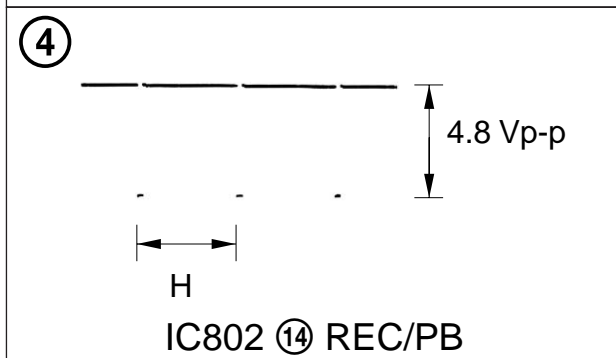
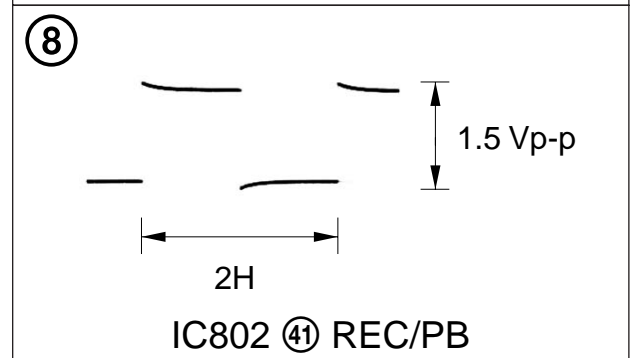
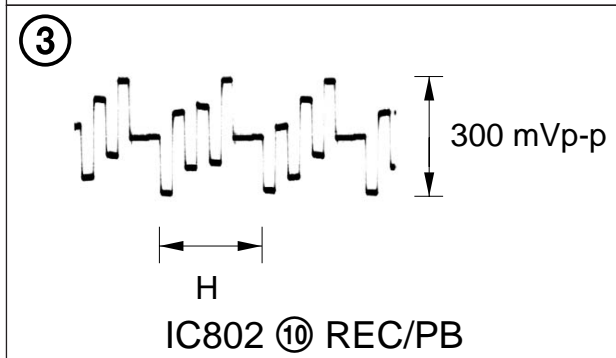
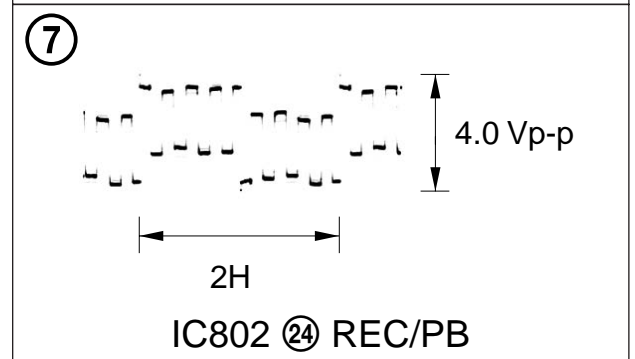
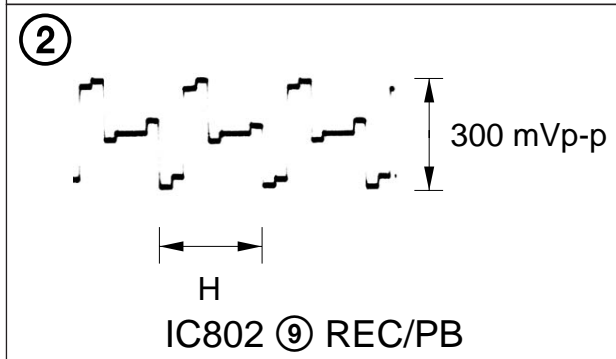
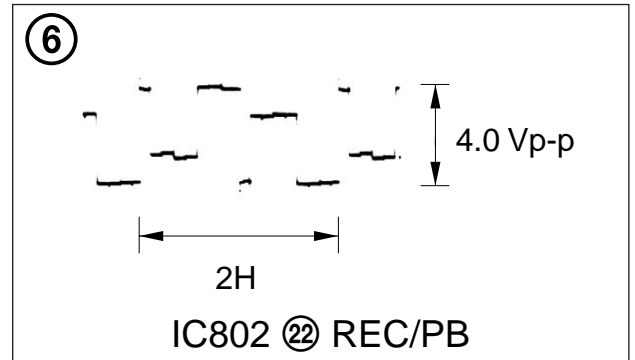
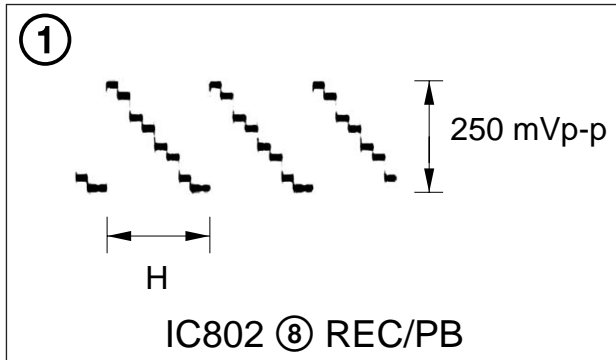
VD-032 BOARD (8/8)



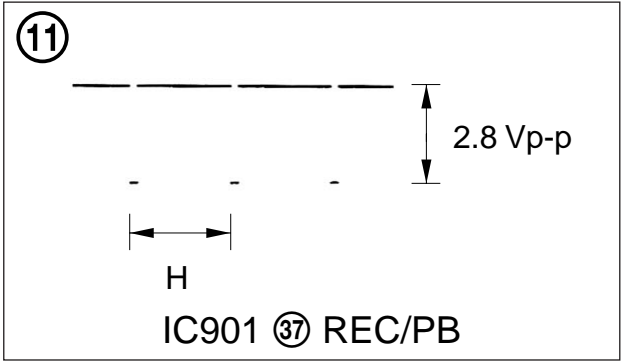
CM-59 BOARD



PD-170 BOARD (1/2)



PD-170 BOARD (2/2)



## 4-5. PARTS LOCATION

no mark : SIDE A

\* mark : SIDE B

RP-234 BOARD		JC-21 BOARD		DI-73 BOARD					
CN101	B-5	* CN1100	B-1	* Q1121	B-11	CN9500	A-5	* Q7000	B-8
CN201	A-5	CN1101	B-11	* Q1122	B-11			* Q7001	B-9
CN202	B-2	* CN4400	D-1	* Q1123	A-10	* D7301	D-9	* Q7002	B-9
CN203	B-4	CN4401	D-6	* Q1124	B-11	* D7302	D-7	* Q7003	B-7
		CN4402	D-5	* Q1125	C-11			* Q7004	B-6
IC101	B-5	CN5005	D-10	* Q1126	A-10	* IC7000	A-9	* Q7005	B-5
IC102	B-4	CN6001	A-8	* Q1127	B-11	* IC7001	A-7	* Q7007	D-7
* IC201	A-4	* CN6002	A-7	* Q1128	C-11	* IC7002	A-9	* Q7008	D-7
* IC301	B-2	CN7001	B-4	Q1129	A-11	* IC7003	A-7	Q8000	B-9
		CN7002	A-3	Q1130	A-11	* IC7004	B-9	Q8001	C-7
* Q201	B-3	* CN8001	D-8	Q1131	B-3	* IC7005	B-9	Q8201	C-9
* Q202	B-4			Q1132	B-3	* IC7006	B-7	Q8202	C-8
* Q203	B-5	* D2201	C-7	Q2200	C-8	* IC7007	B-8	Q9000	B-1
		D4400	B-6	Q2201	C-7	* IC7008	C-9	Q9001	B-1
		* D5001	C-4	* Q2202	A-9	* IC7009	C-8	Q9002	B-2
				* Q2203	D-6	* IC7010	C-9	Q9003	B-2
		IC1000	D-12	Q3300	B-9	* IC7011	C-8	Q9004	B-3
		IC1001	C-12	Q3301	B-9	* IC7013	C-9	Q9005	B-3
		IC1002	C-12	Q3302	B-9	* IC7014	D-8	* Q9502	C-5
		IC1100	D-5	* Q5001	C-4	* IC7016	D-9		
		IC1101	D-10	* Q5002	C-4	* IC7018	D-8		
		* IC1102	C-10	* Q6003	A-4	* IC7020	C-6		
		* IC1103	C-11	* Q6004	A-4	* IC7021	D-6		
		* IC1104	C-12	* Q6005	A-4	IC8000	D-7		
		IC1105	A-9	Q6011	C-5	IC8001	D-7		
		IC1106	B-10	Q6012	C-5	IC8002	D-7		
		IC1107	C-10			IC8003	D-9		
		* IC1108	A-9			IC8004	B-8		
		* IC1109	B-9			IC8005	B-8		
		* IC1110	D-9			IC8006	B-9		
		IC1111	A-11			IC8007	A-9		
		IC1112	B-12			IC8008	B-8		
		IC1113	B-2			IC8009	C-11		
		* IC2200	C-8			IC8010	B-7		
		* IC2202	C-5			IC8011	B-7		
		* IC2203	D-5			IC8201	B-10		
		* IC2204	B-7			IC9000	C-2		
		IC2208	C-9			IC9001	B-1		
		* IC2209	C-9			* IC9004	D-1		
		IC2210	D-9			IC9005	D-4		
		IC2211	D-9			* IC9006	D-1		
		IC2212	D-9			IC9007	B-2		
		IC2213	D-9			IC9008	C-4		
		* IC2214	C-9			IC9009	D-4		
		* IC2215	B-9			IC9010	B-3		
		IC3300	B-8			* IC9011	A-4		
		IC3301	D-8			* IC9012	D-4		
		IC3302	D-8			* IC9013	D-2		
		IC3303	B-6			* IC9014	D-4		
		IC4400	B-5			* IC9015	B-4		
		IC4401	D-4			* IC9016	C-4		
		IC4402	D-2			IC9017	D-1		
		* IC5001	C-4			IC9018	D-1		
		* IC5002	D-5			IC9019	D-3		
		IC5003	D-6			* IC9500	D-3		
		IC5006	D-8			* IC9501	D-3		
		* IC5007	D-4			* IC9502	D-4		
		* IC5008	D-6			* IC9503	D-4		
		* IC6001	B-6			IC9504	C-5		
		* IC6003	A-4			* IC9505	D-4		
		* IC6004	A-6			* IC9506	D-5		
						IC9507	D-5		
		Q1100	D-11			IC9508	D-5		
		Q1101	B-11			* IC9509	D-5		
		Q1103	D-11			* IC9510	D-6		
		Q1104	B-11			* IC9511	D-6		
		Q1109	C-11			* IC9512	C-5		
		Q1111	C-11			* IC9513	C-6		
		Q1112	C-11			IC9514	D-6		
		Q1114	C-11			IC9515	D-6		
		Q1116	D-10			* IC9516	C-6		
		* Q1117	A-11			IC9517	C-5		
		* Q1118	B-12			IC9518	D-5		
		* Q1119	C-12			IC9519	D-5		
		* Q1120	A-11						

VD-032 BOARD

CM-59 BOARD

CN201	D-10	*	D2907	G-1	*	IC219	C-8	*	Q002	A-4	*	Q903	E-2	*	Q2032	A-9	CN001	A-5
* CN202	D-10	*	D2908	G-1	*	IC220	E-6	*	Q003	B-3	*	Q904	E-2	*	Q2033	B-9	* CN100	A-6
* CN203	E-10					IC221	C-7	*	Q004	C-4	*	Q914	F-4	*	Q2034	B-9	CN200	A-2
* CN501	C-10	*	IC001	A-3		IC222	D-7	*	Q005	B-5	*	Q915	F-4	*	Q2035	B-9	CN201	A-1
* CN502	B-10		IC002	C-6	*	IC223	C-7	*	Q006	C-4	*	Q916	F-4	*	Q2036	D-10	CN300	A-4
* CN701	B-10	*	IC003	C-4		IC224	E-7	*	Q201	C-9	*	Q917	E-4		Q2037	C-10	CN400	A-2
* CN702	C-1		IC004	C-4		IC225	D-6	*	Q202	C-9	*	Q919	G-3	*	Q2038	C-10	CN500	A-3
* CN703	A-1		IC005	A-5	*	IC226	D-7		Q203	E-10		Q921	E-2				CN501	A-4
* CN704	G-1		IC006	A-5	*	IC227	C-7	*	Q204	C-9		Q923	G-3					
* CN705	F-1	*	IC007	C-6		IC228	D-7	*	Q205	C-8		Q925	G-3				* D101	B-5
CN707	D-3		IC008	C-4		IC229	D-6	*	Q206	F-9	*	Q926	E-3				* D102	B-4
* CN709	A-1	*	IC009	C-4		IC502	B-1	*	Q207	E-9	*	Q927	F-3				* D103	B-5
* CN904	G-8		IC010	D-5		IC503	A-1	*	Q208	E-9		Q928	F-4				* D104	B-5
* CN905	G-8	*	IC011	A-5		IC506	B-2	*	Q209	C-8	*	Q929	G-4					
CN1501	B-5		IC012	C-6	*	IC507	B-2	*	Q210	F-9		Q930	G-4				IC100	B-4
* CN1502	E-1	*	IC013	B-5		IC508	A-3	*	Q211	E-9		Q933	E-2				* IC101	A-5
* CN1503	D-1	*	IC014	A-3	*	IC511	A-2	*	Q212	F-9		Q934	G-3				IC102	A-6
* CN1504	G-1	*	IC015	C-5		IC621	E-2	*	Q213	F-9		Q937	G-3				* IC200	B-1
CN1625	E-7		IC016	C-4	*	IC701	B-1	*	Q214	C-8		Q938	F-4				IC202	B-2
CN1626	F-7	*	IC017	C-6	*	IC702	B-1	*	Q215	F-9		Q939	F-2				IC300	A-4
* CN1627	G-10	*	IC018	C-6	*	IC703	D-2	*	Q216	E-9		Q940	G-4				IC400	A-2
* CN1628	B-1		IC019	D-5	*	IC704	C-3		Q217	D-9		Q941	G-4				* IC500	B-3
* CN1629	E-10	*	IC020	B-4		IC705	D-3		Q218	D-9	*	Q1501	D-5				IC501	A-3
CN1983	A-10	*	IC021	C-4	*	IC706	C-3	*	Q219	C-8	*	Q1502	D-5					
* CN1984	G-7	*	IC022	C-5	*	IC708	C-2	*	Q220	D-9	*	Q1503	D-5				* Q100	B-5
			IC023	C-5		IC709	D-2	*	Q221	D-9	*	Q1504	D-5				* Q101	B-4
* D001	B-4	*	IC024	D-5		IC710	D-2	*	Q222	D-9	*	Q1505	D-5				* Q102	B-5
* D201	E-6	*	IC025	D-6		IC711	B-3	*	Q223	D-9	*	Q1506	D-5				* Q103	B-5
* D202	E-7	*	IC026	B-4		IC712	C-1	*	Q224	D-8		Q1507	D-5				* Q104	B-4
* D203	E-6	*	IC027	C-5		IC713	C-2	*	Q225	D-8		Q1625	G-6				* Q105	B-4
* D205	E-8		IC028	D-6		IC714	D-1	*	Q226	C-7		Q1626	G-6				* Q200	B-2
* D206	E-7		IC029	C-5	*	IC715	D-2	*	Q227	D-9		Q1627	G-6				Q201	A-2
D501	B-2		IC030	D-6	*	IC716	F-1	*	Q228	C-9		Q1628	G-6				* Q301	A-3
D502	B-2		IC031	A-4	*	IC717	A-3	*	Q231	D-8		Q1629	G-7				* Q302	A-3
D601	E-2		IC032	C-6		IC900	F-3	*	Q232	D-8		Q1630	G-7					
D602	E-2		IC033	C-5		IC902	F-2	*	Q233	E-7		Q1631	F-7					
D701	D-3	*	IC034	D-6		IC903	F-2	*	Q234	C-7		Q1632	F-7					
D702	D-2	*	IC035	C-6	*	IC1501	D-4	*	Q236	D-8		Q1633	F-7					
D703	D-2	*	IC036	A-4	*	IC1502	D-4	*	Q237	D-8		Q1634	F-7					
D704	A-3	*	IC037	D-6	*	IC1503	D-4		Q238	E-7	*	Q1635	G-9					
D705	D-3	*	IC038	C-5		IC1504	D-4	*	Q239	D-7	*	Q1636	G-10					
D706	D-2		IC039	D-6	*	IC1505	D-4	*	Q240	C-7	*	Q1981	G-1					
D902	F-4	*	IC040	B-5		IC1625	G-7	*	Q242	C-7	*	Q1982	G-1					
D903	F-4		IC041	C-6		IC1626	G-7		Q501	A-1		Q1999	E-2					
D904	E-4		IC042	C-6		IC1628	G-7	*	Q503	C-10	*	Q2001	A-7					
D905	E-5		IC043	D-6		IC1630	G-8	*	Q504	C-10	*	Q2002	A-7					
D906	E-2	*	IC044	C-3	*	IC1633	F-9		Q505	A-2	*	Q2003	A-6					
D907	E-3	*	IC045	C-6	*	IC1634	F-9	*	Q506	C-10		Q2004	B-6					
* D909	G-3	*	IC046	C-6	*	IC1635	F-8	*	Q507	B-10		Q2005	B-6					
* D910	G-3		IC047	D-6	*	IC1636	F-8		Q508	A-2	*	Q2006	A-7					
* D911	G-3		IC048	C-6	*	IC2001	A-8		Q601	D-1	*	Q2007	A-7					
* D912	G-3	*	IC049	C-4	*	IC2002	A-8		Q602	D-1	*	Q2008	B-7					
* D913	G-3		IC050	C-3		IC2003	B-7		Q603	G-1	*	Q2009	B-7					
* D914	G-3	*	IC051	C-4		IC2004	B-7		Q604	G-1	*	Q2010	B-7					
D916	F-3	*	IC052	C-6		IC2005	B-8		Q605	E-6	*	Q2011	A-8					
D917	G-4		IC053	C-4		IC2006	A-8		Q606	E-6	*	Q2012	A-8					
D918	E-2		IC054	C-4		IC2007	B-8		Q607	E-6		Q2013	B-7					
* D919	E-4	*	IC055	C-6		IC2008	B-8		Q608	F-2	*	Q2014	B-7					
* D920	E-5	*	IC201	E-9	*	IC2009	B-8		Q609	F-2	*	Q2015	A-8					
* D921	F-5	*	IC202	E-9		IC2010	B-8	*	Q621	F-2		Q2016	B-7					
* D922	F-5	*	IC203	F-9	*	IC2011	A-8	*	Q622	F-2	*	Q2017	B-8					
* D923	E-3		IC204	E-9	*	IC2012	A-8	*	Q623	F-3	*	Q2018	A-8					
* D924	G-5	*	IC205	E-8	*	IC2013	B-8		Q701	D-2	*	Q2019	A-8					
* D925	E-1	*	IC206	F-9		IC2014	B-8	*	Q702	C-3	*	Q2020	C-8					
* D926	E-4	*	IC207	E-9	*	IC2015	D-9	*	Q704	C-3	*	Q2021	B-8					
* D927	F-5	*	IC208	E-8	*	IC2016	B-9	*	Q705	B-3	*	Q2022	B-8					
* D928	G-5	*	IC209	C-8	*	IC2017	B-9	*	Q706	C-1		Q2023	A-8					
* D929	E-2	*	IC210	F-9	*	IC2018	B-9		Q707	B-3		Q2024	A-8					
* D1625	G-9	*	IC211	E-8		IC2019	D-9		Q708	D-2	*	Q2025	B-8					
* D1626	G-9		IC213	C-8	*	IC2020	C-9	*	Q709	E-1		Q2026	A-8					
* D1627	G-9	*	IC214	C-8		IC2021	C-9	*	Q710	E-1		Q2027	A-8					
* D1628	G-9	*	IC215	F-8		IC2022	D-9		Q711	D-1	*	Q2028	C-8					
* D2001	B-8		IC216	D-9	*	IC2023	D-9		Q712	D-1		Q2029	A-8					
D2002	A-8		IC217	C-9				*	Q901	G-5		Q2030	A-8					
D2003	A-8	*	IC218	D-8	*	Q001	A-5	*	Q902	F-2	*	Q2031	A-9					



MD-76 BOARD		FR-183 BOARD		PD-170 BOARD		JK-216 BOARD		XL-005 BOARD		ACS1581-MA BOARD	
CN001	A-1	* CN401	C-3	CN801	A-3	* CN102	A-1	* CN251	A-2	CN101	A-5
CN002	A-2	* CN402	C-7	CN802	A-2	* CN103	A-4	* CN253	B-1	CN201	A-2
CN003	G-6			CN901	C-2	* CN104	A-4	* CN255	B-3		
* D001	D-11	* D401	C-8			* CN105	A-3	* CN257	B-5	D101	C-6
		* D402	C-8	D801	A-1			* CN259	B-7	D102	B-4
		* D403	B-8	* D902	B-2	* D101	A-1			D103	B-4
IC001	D-5	D404	C-6	* D903	B-1	* D102	A-1	* D251	A-1	D104	C-3
IC002	D-2	D405	C-6			* D103	A-1	* D252	A-1	D105	B-3
IC003	C-5	D406	C-7	IC801	B-2	* D108	A-1	* D253	A-2	D106	B-4
* IC004	F-12	D407	C-8	IC802	B-1	* D109	A-2	* D254	A-2	D201	B-2
* IC005	F-10	D408	C-5	* IC901	B-2	* D110	B-1	* D255	A-3	D203	C-2
		D409	C-7	* IC902	B-1	* D111	A-2	* D256	A-3		
* Q001	C-8	D410	C-7			* D112	B-2	* D257	A-4	IC101	B-4
* Q002	C-14	D411	C-8	* Q901	B-1	* D113	A-3	* D258	A-4	IC102	A-3
		D412	B-7	* Q902	C-1	* D114	B-3			IC201	C-1
		D413	B-6	* Q903	C-1	* D115	A-4				
		D414	C-4	* Q904	C-1	* D116	B-4			Q101	C-4
		D415	C-4			* D117	A-5			Q201	C-2
		D416	C-5			* D118	B-5				
		D417	B-7			* D119	B-5				
		* D418	C-2			* D120	A-5				
		D421	B-8								
		D422	A-8			* IC101	B-2				
		D423	B-1			* IC102	C-2				
		D424	B-4								
		* D425	C-6								
		D426	C-5								
		D427	B-1								
		D428	B-1								
		D430	B-4								
		* D432	C-2								
		* D433	C-2								
		* D434	C-2								
		* D435	C-2								
		* D436	C-2								
		* D437	C-2								
		D438	A-1								
		D439	A-8								
		* D441	C-4								
		D442	A-1								
		D443	B-5								
		D444	C-5								
		D445	C-7								
		D446	C-7								
		D447	C-8								
		D449	B-5								
		D450	C-7								
		D451	C-8								
		D452	C-6								
		* IC401	C-3								
		* IC403	C-7								
		* IC404	C-3								
		* Q401	B-8								
		* Q402	B-7								
		* Q403	B-7								
		* Q404	B-7								
		* Q405	B-6								
		* Q406	B-6								
		* Q407	B-6								
		* Q408	B-5								
		* Q409	C-5								
		* Q410	C-5								
		* Q411	C-4								
		* Q412	C-4								
		* Q413	C-5								
		* Q414	C-5								
		* Q415	C-5								
		* Q416	C-4								
		* Q417	C-4								
		* Q418	C-5								

## SECTION 5 ADJUSTMENTS

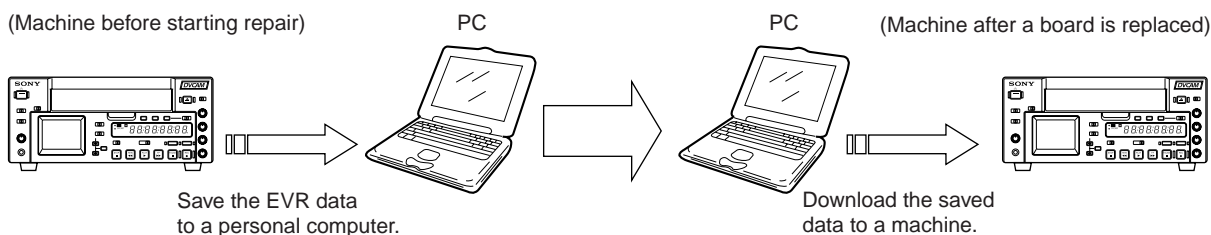
### 1. Before starting adjustment

#### EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.  
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

#### Procedure 1

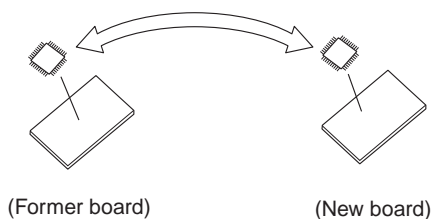
Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



#### Procedure 2

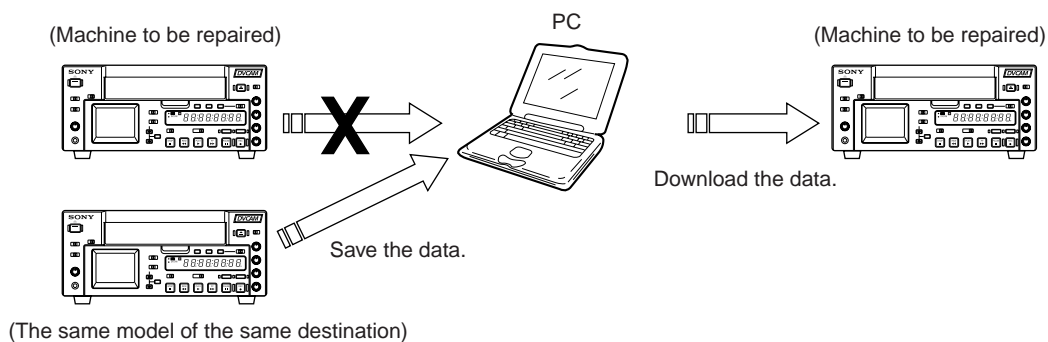
Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.

Remove the EEPROM and install it.



#### Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.  
(Refer to page 5-3 for the items to be checked)

1-1. Adjusting items when replacing main parts and boards

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced part																							
		Block replacement				Mounted part replacement																			
		Mechanism deck	Mechanism deck M901 (Drum assembly)	Mechanism deck M903 (Capstan motor)	LCD blockLCD901 (LCD panel)	LCD blockND901 (Fluorescent tube)	PR-234 board IC101 (TRW)	RP-234 board IC201 (TRF)	JC-21 board IC1108-1110 (A/D CONV.)	JC-21 board IC2204 (CLOCK GEN.)	JC-21 board IC3300 (VFD)	DI-73 board IC9000 (D/A CONV.)	VD-032 board IC214, 222 (VC AMP)	VD-032 board IC215 (Y/C SEP.)	VD-032 board IC220 (C DECODE)	VD-032 board IC2201, 2202 (VC DELAY)	VD-032 board IC2203 (VC AMP)	VD-032 board IC2004 (VC AMP)	VD-032 board IC2008 (Y BLANKING, SETUP ADD)	VD-032 board IC2007 (VC AMP)	VD-032 board IC2010 (C ENCODE)	VD-032 board IC2005, 2006 (VC AMP)	PD-170 board IC802 (RGB DRIVER)	PD-170 board IC901 (TIMING GEN.)	
System control	Initialization of C, D, E page data																								
	Node unique ID No. input																								
Servo, RF	CAPSTAN FG adj.	●																							
	Switching position adj.	●	●																						
	RF-AGC adj.	●	●				●	●																	
	CLK DELAY and AEQ adj.	●	●				●	●																	
	PLL f <sub>0</sub> adj.	●	●				●	●																	
Video	VFD SPCK adj.									●															
	A/D converter reference voltage adj.							●																	
	Y/CR/CB clamp reference voltage adj.							●																	
	AFC picture frame adj.								●																
	AFC adj.									●															
	Playback Y/C level adj.										●														
	Playback SYNC level adj.																	●							
	Playback blanking level adj. with 0% setup																		●						
	Playback Y/CR/CB signal level adj. with 0% setup										●							●					●		
	Playback CR/CB signal delay adj.																	●					●		
	Encoder free run adj.																		●						
	Carrier balance adj.																		●				●		
	Burst level adj.																		●				●		
	Color level adj. with 0% setup																		●				●		
	SC_V phase adj.																						●		
	Playback blanking level adj. with 7.5% setup (*1)																			●					
	Playback Y/CR/CB signal level adj. with 7.5% setup (*1)																			●				●	
	Color level adj. with 7.5% setup (*1)																			●			●		
	Monitor terminal output level adj.										●														
	E-E blanking level adj.																			●					
	Component E-E Y/CR/CB signal level adj.											●								●				●	
	Component E-E CR/CB signal delay adj.																			●					
	E-E color level adj.													●							●		●		
	Decoder free run adj.																			●					
	Decoder HUE adj.																								
	S video E-E Y/CR/CB signal level adj.													●	●										
	S video E-E CR/CB signal delay adj.													●	●										
	Composite E-E Y/CR/CB signal level adj.													●											
	H phase adj.																								
	E-E SC phase adj.																								
	Playback SC phase adj. (EXT SYNC OFF/ON)																								
	LCD	VCO adj.																						●	●
D range adj.																							●	●	
Bright adj.																							●	●	
Contrast adj.																							●	●	
Color adj.																							●	●	
V-COM level adj.																							●	●	
V-COM adj.																							●	●	
White balance adj.																						●	●		
Audio	Audio PAL data input (*2)																								
Mechanism	Tape path adj.	●	●	●																					

Table 5-1-1 (1)

• Adjusting items when replacing a board or EEPROM

When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced part							
		Board replacement							
		CM-59 board (COMPLETE)	RP-234 board (COMPLETE)	JC-21 board (COMPLETE)	DI-73 board (COMPLETE)	VD-032 board (COMPLETE)	PD-170 board (COMPLETE)	JC-21 board IC5006 (EEP ROM)	VD-032 board IC708 (EEP ROM)
System control	Initialization of C, D, E page data		●						
	Node unique ID No. input		●						
Servo, RF	CAPSTAN FG adj.	●		●				●	●
	Switching position adj.			●				●	●
	RF-AGC adj.		●	●				●	●
	CLK DELAY and AEQ adj.		●	●				●	●
	PLL f <sub>0</sub> adj.		●	●				●	●
Video	VFD SPCK adj.			●				●	
	A/D converter reference voltage adj.			●				●	
	Y/CR/CB clamp reference voltage adj.			●				●	
	AFC picture frame adj.			●				●	
	AFC adj.			●				●	
	Playback Y/C level adj.			●				●	
	Playback SYNC level adj.					●			●
	Playback blanking level adj. with 0% setup					●			●
	Playback Y/CR/CB signal level adj. with 0% setup				●				●
	Playback CR/CB signal delay adj.					●			●
	Encoder free run adj.					●			●
	Carrier balance adj.					●			●
	Burst level adj.					●			●
	Color level adj. with 0% setup					●			●
	SC_V phase adj.					●			●
	Playback blanking level adj. with 7.5% setup (*1)					●			●
	Playback Y/CR/CB signal level adj. with 7.5% setup (*1)					●			●
	Color level adj. with 7.5% setup (*1)					●			●
	Monitor terminal output level adj.			●				●	
	E-E blanking level adj.					●			●
	Component E-E Y/CR/CB signal level adj.					●			●
	Component E-E CR/CB signal delay adj.					●			●
	E-E color level adj.					●			●
	Decoder free run adj.					●			●
	Decoder HUE adj.					●			●
	S video E-E Y/CR/CB signal level adj.					●			●
	S video E-E CR/CB signal delay adj.					●			●
	Composite E-E Y/CR/CB signal level adj.					●			●
H phase adj.					●			●	
E-E SC phase adj.					●			●	
Playback SC phase adj. (EXT SYNC OFF/ON)					●			●	
LCD	VCO adj.							●	●
	D range adj.							●	●
	Bright adj.							●	●
	Contrast adj.							●	●
	Color adj.							●	●
	V-COM level adj.							●	●
	V-COM adj.							●	●
White balance adj.							●	●	
Audio	Audio PAL data input (*2)		●					●	
Mechanism	Tape path adj.								

**Note:**

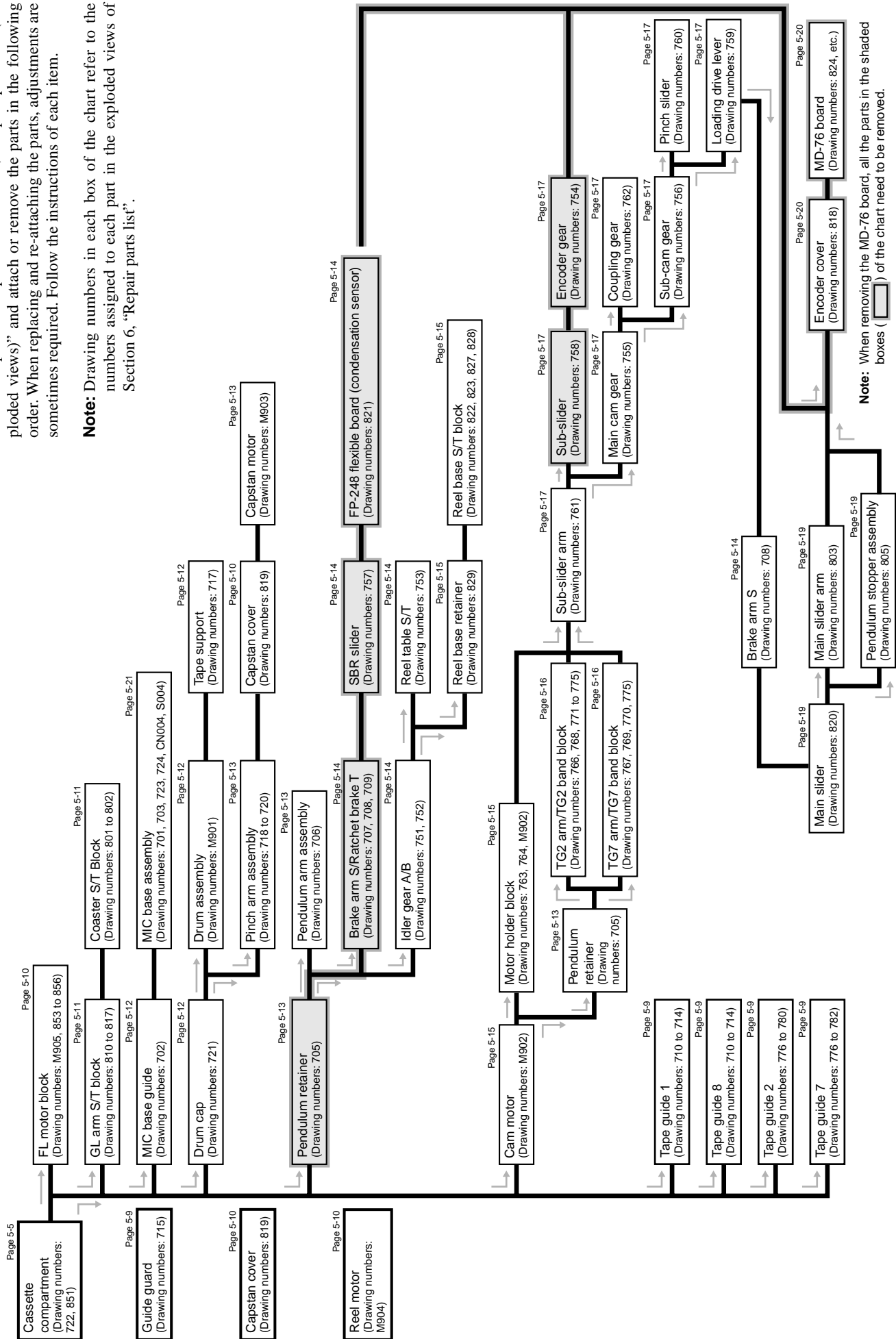
- \*1: DSR-45 only
- \*2: DSR-45P only

Table 5-1-1 (2)

1-2. Information (Mechanical Section)

Find the replacement parts in Section 6, "Repair parts list (exploded views)" and attach or remove the parts in the following order. When replacing and re-attaching the parts, adjustments are sometimes required. Follow the instructions of each item.

**Note:** Drawing numbers in each box of the chart refer to the numbers assigned to each part in the exploded views of Section 6, "Repair parts list".



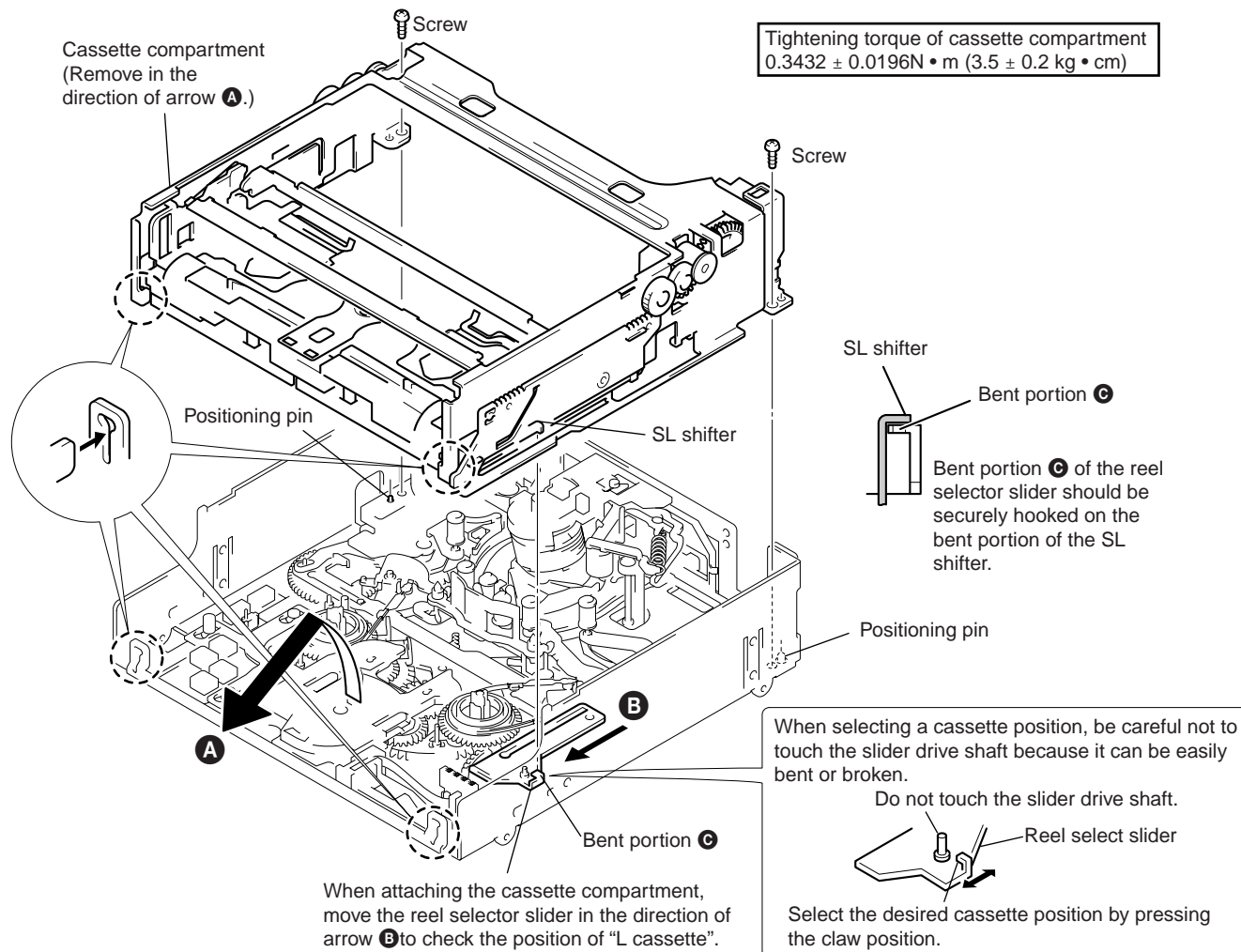
## 5-1. MECHANICAL SECTION ADJUSTMENTS

### 5-1-1. PARTS REPLACEMENT AND PREPARATION FOR ADJUSTMENT

#### 1-1. ASSEMBLY/DISASSEMBLY OF CASSETTE COMPARTMENT

For details on disassembling the mechanism deck (R mechanism), refer to the Service Manual of the main unit in which the R mechanism is mounted.

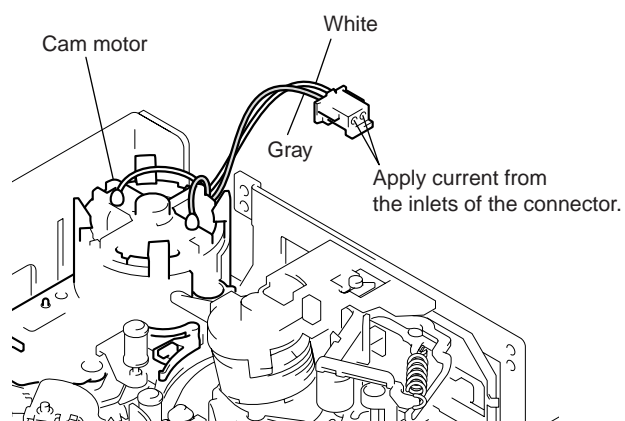
Before attaching or removing the cassette compartment, check the position of "L cassette".



#### 1-2. HOW TO LOAD/UNLOAD

##### [Using the regulated power supply]

**Note:** Make sure to remove the connector of the cam motor from the board of the main unit and apply +5V current.

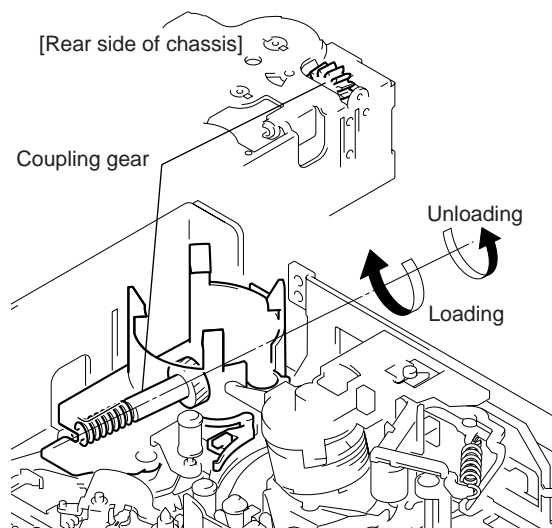


Loading : Apply positive polarity (+) of power supply to the gray wire and negative polarity (-) of power supply to the white wire.  
 Unloading : Apply negative polarity (-) of power supply to the gray wire and positive polarity (+) of power supply to the white wire.

##### [Manual: No cam motor]


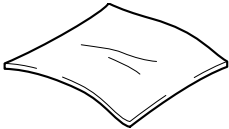
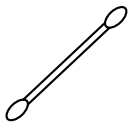
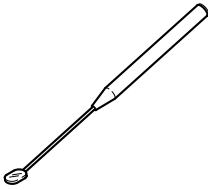
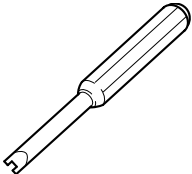
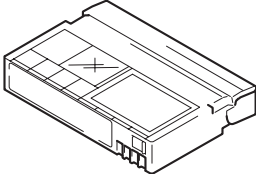
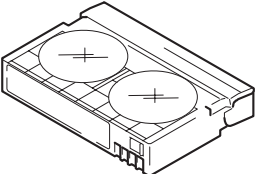

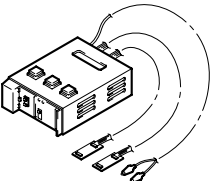
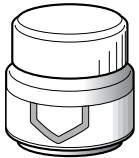
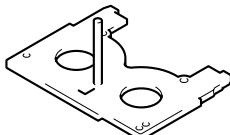

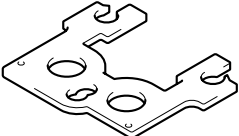
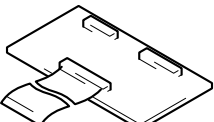
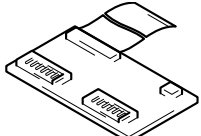
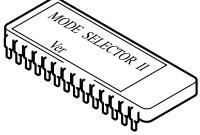
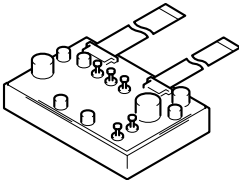
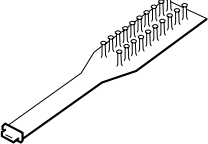
**Note:** Remove the cam motor from the motor holder while referring to "Information" on page 5-4.

Rotate the coupling gear by hand to load or unload.





## 1-3. LIST OF SERVICE TOOLS

<p>J-1. Cleaning fluid (9-919-573-01)</p> 	<p>J-2. Wiping cloth (7-741-900-53)</p> 	<p>J-3. Super fine applicator (Made by NIPPON APPLICATOR (P752D)) (J-2501-023-A)</p> 	<p>J-4. Mirror (Small oval type) (J-6080-840-A)</p> 
<p>J-5. Screwdriver for tape path (J-6082-026-A)</p> 	<p>J-6. Tracking tape (XH2-1A1) (8-967-999-03)</p> 	<p>J-7. Mini DV torque cassette (J-6082-360-A)</p> 	<p>J-8. Adjusting remote commander (RM-95) (remodeled partly) Note 1 (J-6082-053-B)</p> 
<p>J-9. Mode selector II (J-6082-282-B)</p> 	<p>J-10. Foil Grease (SG-941) (7-662-001-39)</p> 	<p>J-11. Cassette reference plate (J-6082-330-A)</p> 	<p>J-12. Reel reference plate (J-6082-331-A)</p> 
<p>J-13. TG 2/7 preset plate (J-6082-459-A)</p> 	<p>J-14. Relay board for tension regulator adjustment (J-6082-461-A)</p> 	<p>J-15. Mode selector conversion board (J-6082-460-A)</p> 	<p>J-16. ROM for Mode Selector (Cope with R mechanism: Note 2) (J-6082-314-E)</p> 
<p>J-17. Board for tension regulator adjustment (J-6082-359-A)</p> 	<p>J-18. CPC-8 jig (J-6082-388-A)</p> 		

**Note 1:** If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

**Note 2:** The ROM makes mode selector II's version up to use it with R mechanism.

1-4. About Mode Selector II

• About Mode Selector II

4-1. OUTLINE

This unit is a mechanism drive tool which supplements the maintenance of each mechanism deck. Its functions are described below.

1. Manual test

A mode which drives the motor only while the switch is ON. It enables the operator to control the motor as desired.

2. Step test

A mode which drives the motor until the current condition detected by the sensor changes to another condition. It enables the movements made by the motor in each operation to be controlled while being detected.

3. Auto test

A mode that checks if the mechanism operates normally according to the condition shift table recorded in the unit for each mechanism deck. All the conditions of the decks are checked through a series of operations.

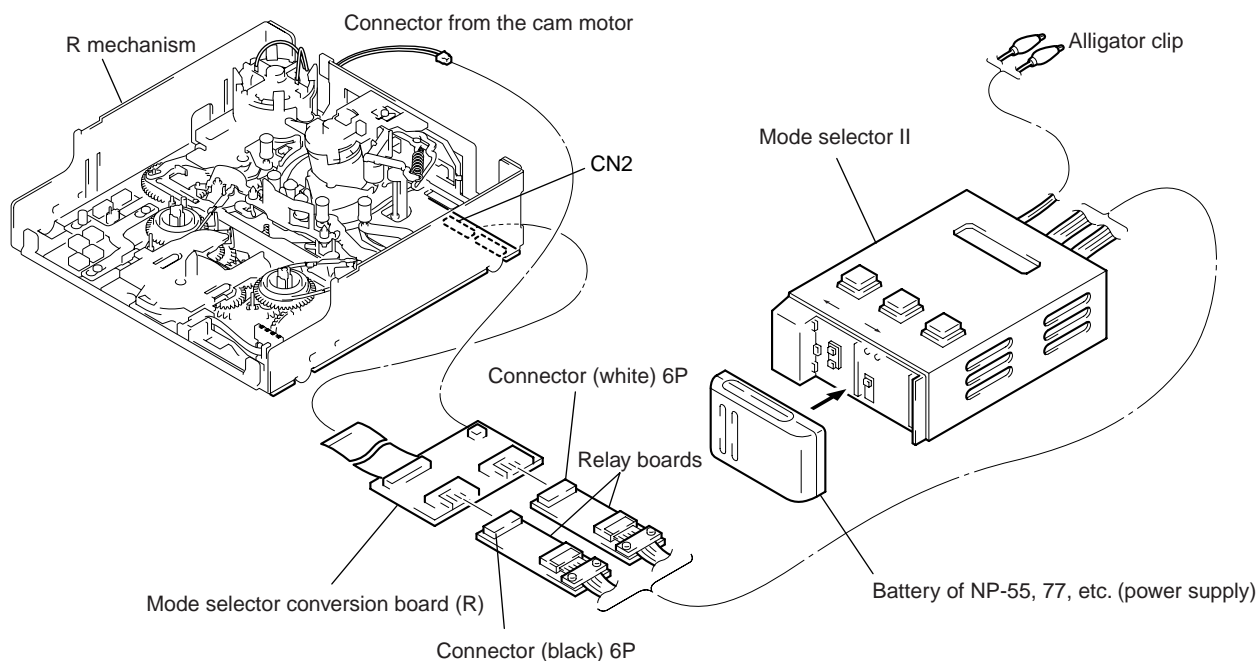
An error message is displayed and operations are stopped if incorrect shifts and conditions are detected.

4-2. MECHANISM CONDITION (POSITION) SHIFTING ORDER LIST

After selecting the mechanism deck, select one of the two test modes other than the auto test, and press the RVS or FF button to specify the mechanism state (position).

Code		MD name				R mechanism
		A	B	C	D	
0	1	1	1	1	1	ULE
0	0	1	1	1	2	DEW
1	0	1	1	1	3	LE
1	0	0	1	1	4	REW
1	0	1	0	1	5	FF
1	1	1	0	1	6	STOP
1	1	0	1	1	7	FWD / RVS

4-3. MODE SELECTOR II CONNECTION



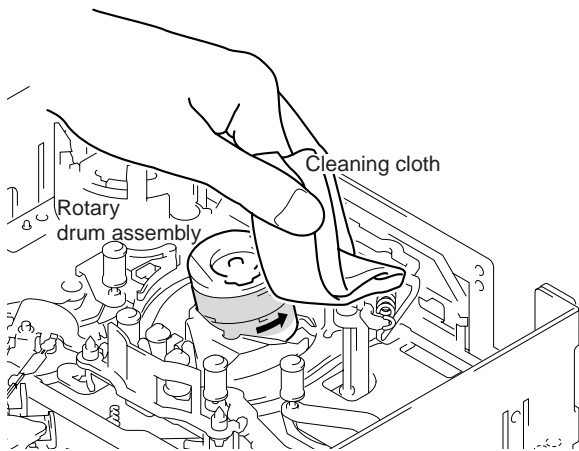
5-1-2. PERIODIC CHECK

- Carry out the following maintenance and periodic checks not only to fully display the functions and performance of the set, but also for the equipment and tape. After replacing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1. Press a wiping cloth (J-2) moistened with cleaning fluid (J-1) against the rotary drum assembly gently, and clean it while rotating the rotary drum assembly slowly with your finger in the counterclockwise direction.

**Note:** Do not rotate the motor on power or rotate the rotary drum assembly in the clockwise direction with your finger. The head tip will also be damaged if the wiping cloth is moved perpendicularly against it. Therefore, be sure to follow the above instructions when cleaning the rotary drum assembly.

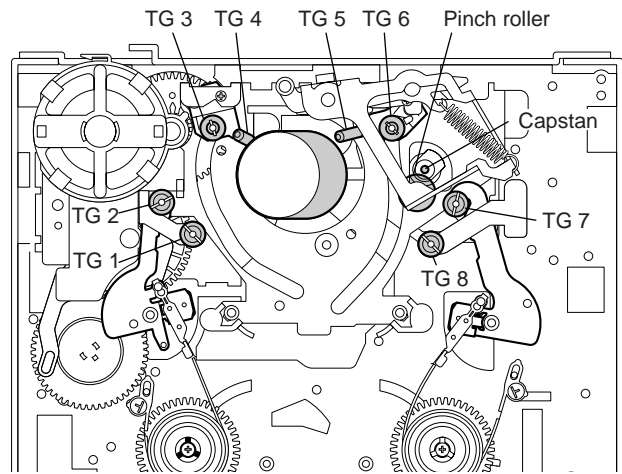


2-2. CLEANING OF TAPE PATH SYSTEM

1. Clean the tape path systems (TG1 to TG8 and capstan) and the lower drum using a super fine applicator (J-3) moistened with cleaning fluid.

**Note:** Make sure that no oil or grease of the link mechanisms sticks to the super file applicator (J-3).

**Note:** Do not use a applicator moistened with alcohol to the other guide cleaning. But clean the pinch roller using alcohol.



2-3. PERIODIC CHECKS

Location of Maintenance and Check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of the oil.
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of the oil.
	Driving System											
Driving System	Capstan (Bearing)	—	◎	—	◎	—	◎	—	◎	—	◎	Make sure that no oil gets on the tape path surface.
	Gear	—	◎	—	◎	—	◎	—	◎	—	◎	
	Cam motor (worm block)	—	◎	—	◎	—	◎	—	◎	—	◎	X-3946-702-1 (M902)
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Applying grease ☆ : Confirmation

**Note:** When overhauling, refer to the checks above and replace parts.

**Note:** Greasing

Always use the specified grease. If the viscosity differs, various problems may occur.

(Use SG-941 for all parts of the R mechanism.)

Check the quantity of grease when installing the parts which is needed to apply the grease. When replacing these parts, make sure to apply the specified amount of grease.

- FOIL (SG-941): Part No. 7-662-601-39

**5-1-3. PARTS REPLACEMENT**

**• Precaution**

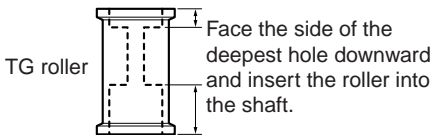
For details on disassembling the cabinets, boards and other parts, refer to “Section 2, Disassembly”. For details on replacing parts (disassembly, assembly) of the mechanism deck, refer to “Information” on page 5-4.

**3-1. TAPE GUIDE 1/8 AND GUIDE GUARD**

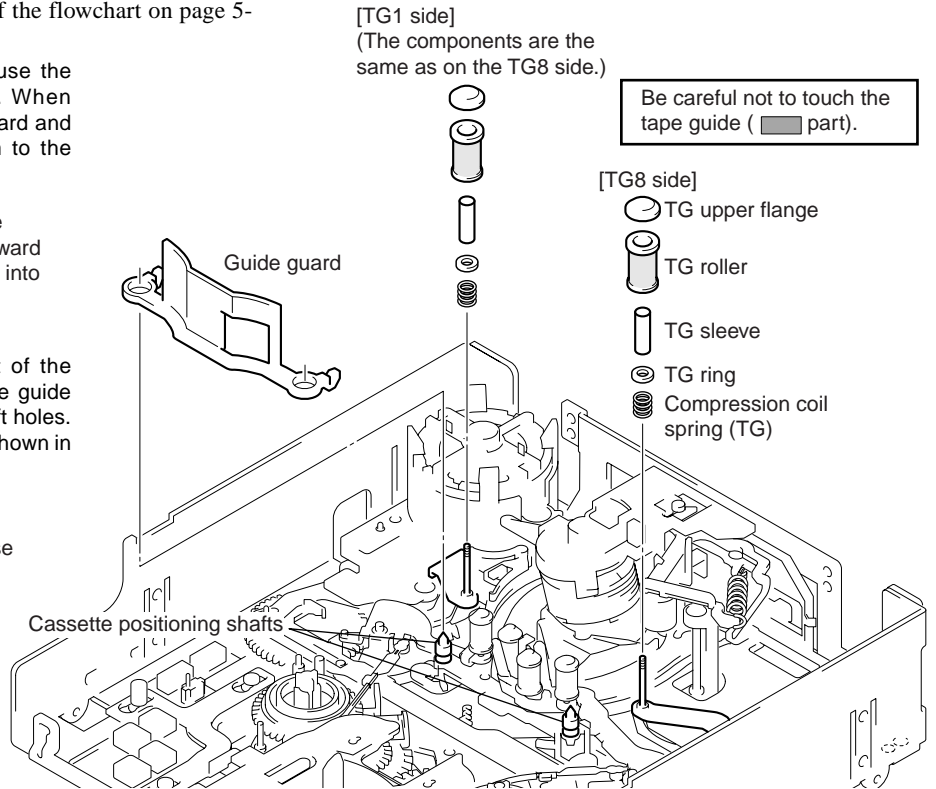
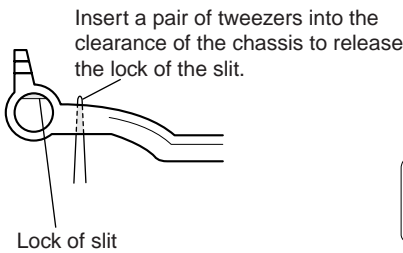
**Disassembly/Assembly**

When the tape guide 1/8 is replaced or attached, perform each adjustment from Adjustment Start -2 of the flowchart on page 5-23.

To attach or remove the tape guide, use the screwdriver for the tape path (J-5). When attaching the TG rollers, check the upward and downward directions and attach them to the chassis shaft.



The guide guard is fixed at each slit of the cassette positioning shaft. To attach the guide guard, only insert it into the right and left holes. To remove it, use a pair of tweezers as shown in the figure below.

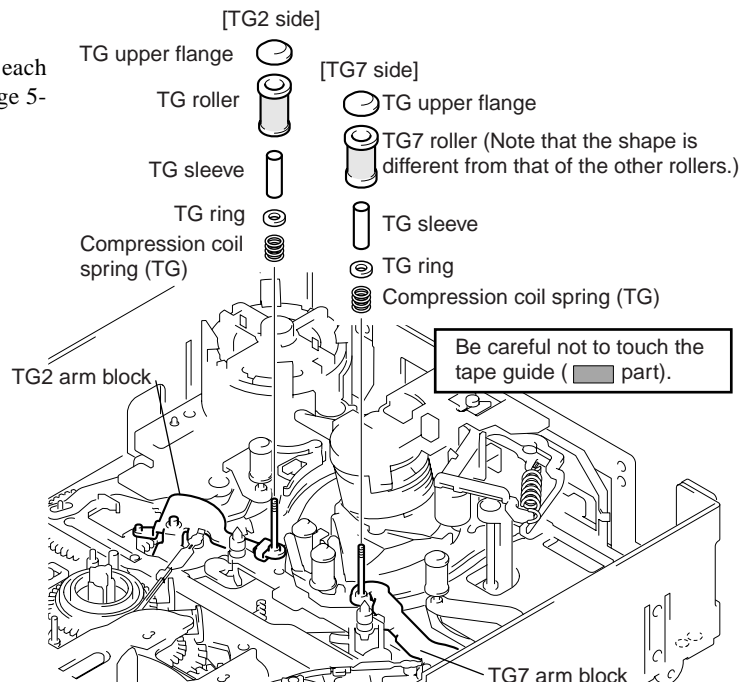
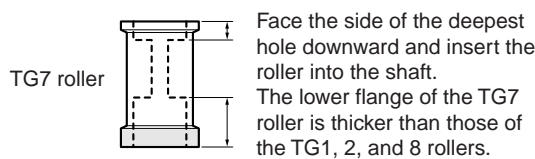


**3-2. TAPE GUIDE 2/7**

**Disassembly/Assembly**

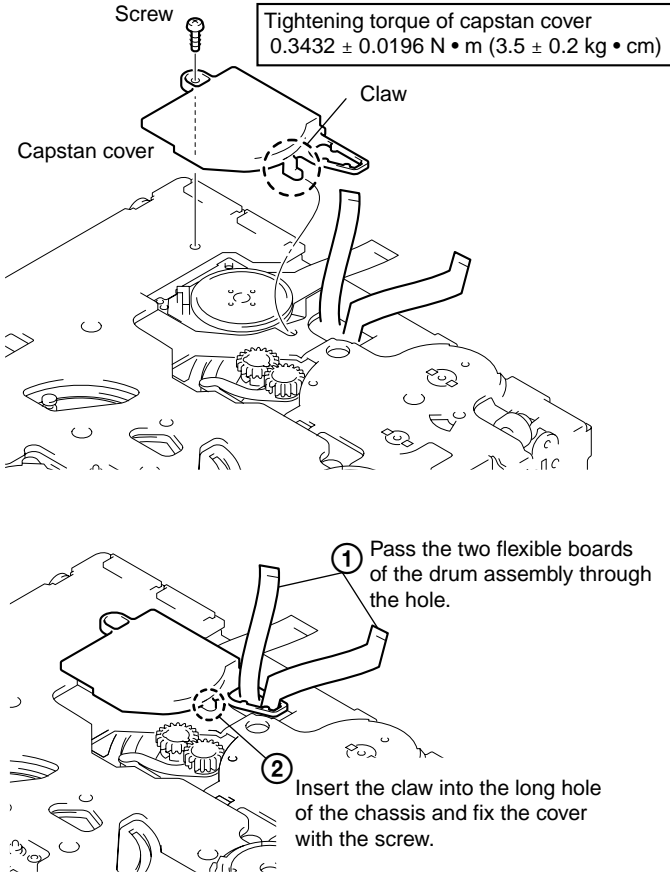
When the tape guide 2/7 is replaced or attached, perform each adjustment from Adjustment Start -3 of the flowchart on page 5-23.

To attach or remove the tape guide, use the screwdriver for the tape path (J-5). When attaching the TG rollers, check the upward and downward directions and that the TG roller to be attached to the TG7 side is exclusively for the TG7 side. Then attach the TG rollers to the chassis shaft.



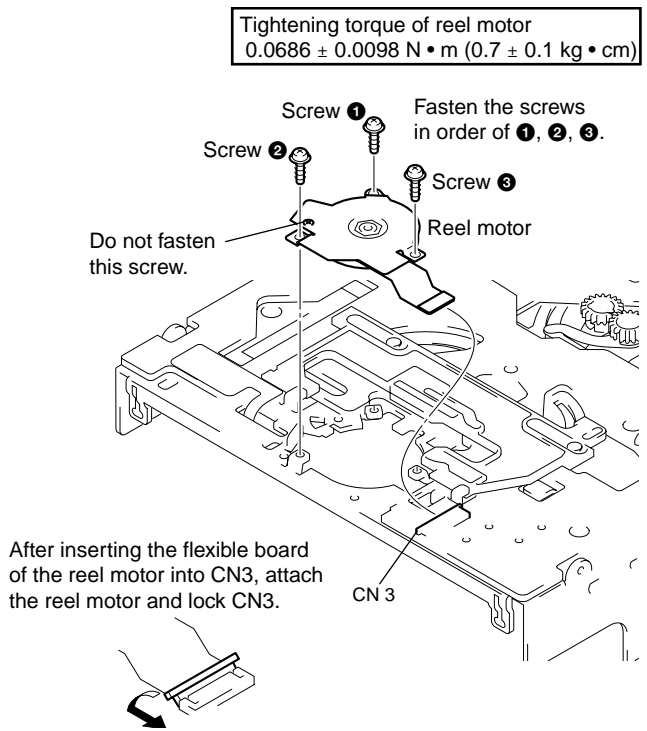
3-3. CAPSTAN COVER

Disassembly/Assembly



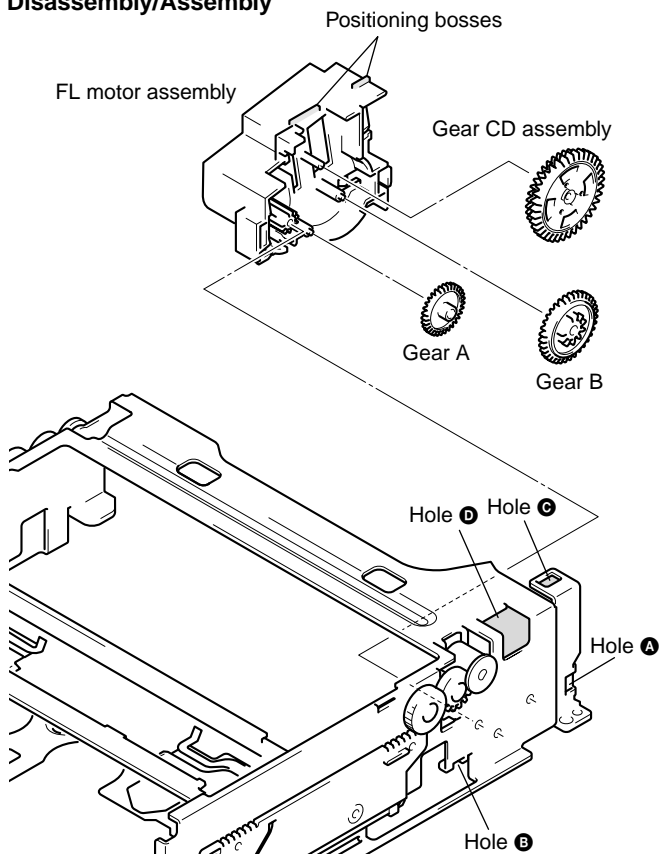
3-4. REEL MOTOR

Disassembly/Assembly



3-5. FL MOTOR ASSEMBLY, GEAR A, GEAR B AND GEAR CD ASSEMBLY

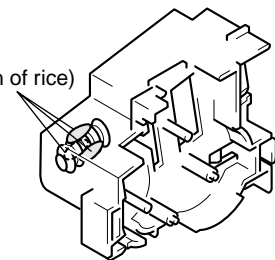
Disassembly/Assembly



Remove the claws of the FL motor assembly from hole A and hole B and remove the FL motor assembly. Then, remove each gear, etc.  
 To attach them, after attaching the gears, etc. to the FL motor assembly and hook the positioning bosses of the FL motor block on holes C and D then fit the two claws in each hole A and B.

The worm gears are attached inside the FL motor assembly. When attaching the FL motor assembly, apply grease there.

Apply grease.  
 (half size of one grain of rice)

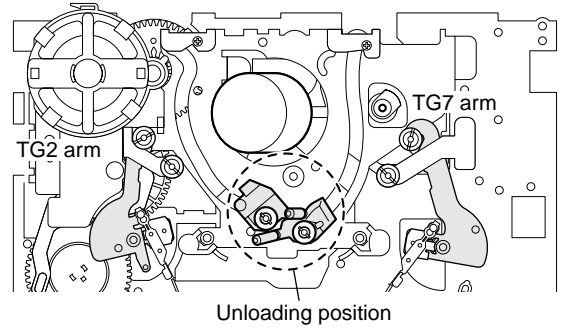
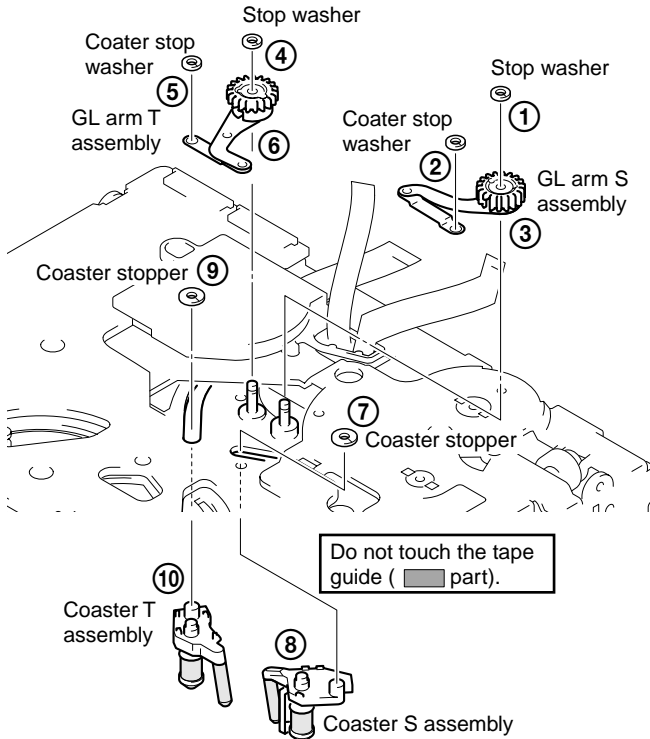


**3-6. GL ARM S ASSEMBLY, GL ARM T ASSEMBLY, COASTER S ASSEMBLY AND COASTER T ASSEMBLY**

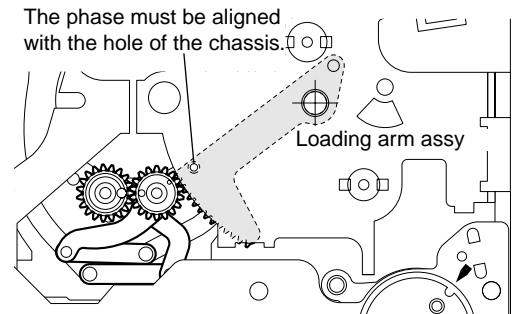
**Disassembly:** Remove the parts in order of ①→②→③→④→⑤→⑥→⑦→⑧→⑨→⑩

For the disassembling and assembling procedures of the GL gear, GL helical torsion spring, etc., refer to page 5-21.

Move the TG2/7 arms to the loading position with the regulated power supply or by hand while referring to page 5-5. Each coaster assembly must be in the unloading position.

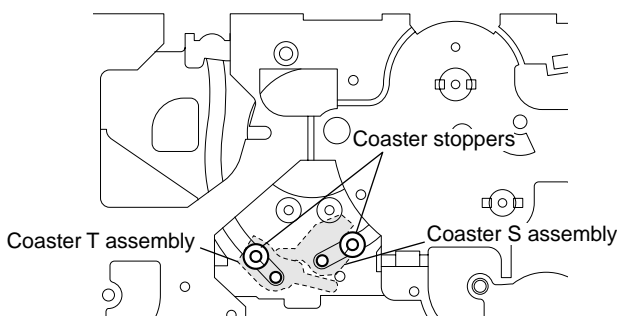


With consideration for future assembly, check from the rear of the chassis that the phase of the loading arm assy is aligned.

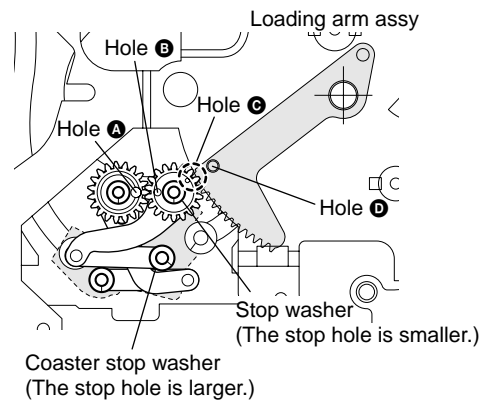


**Assembly**

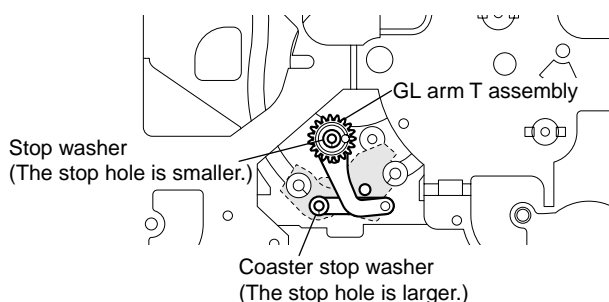
① Attach the coaster S/T assembly to the chassis with a new coaster stopper while being careful not to touch the tape guide. Do the work while holding the drum side of each coaster.



③ Attach the GL arm S assembly while checking the phase of each part. Fix the stop washers at the correct position, using new stop washers.



② Attach the GL arm T assembly. Fix the stop washers in the correct position, using new stop washers.



Check each phase adjustment while referring to the above figure.

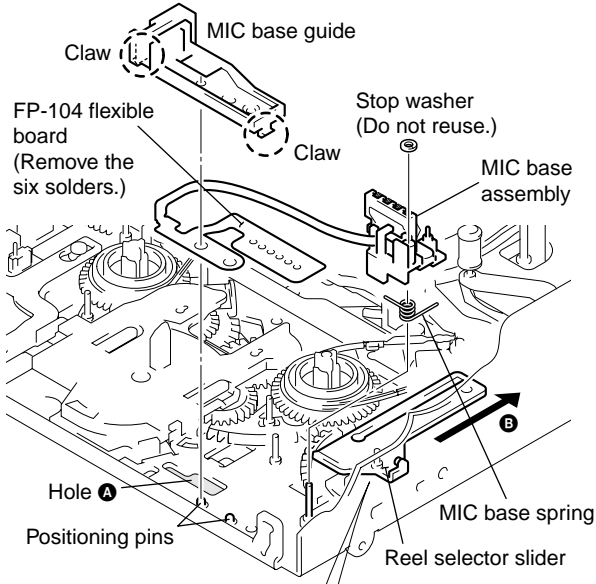
Hole A of the GL gear T and hole B of the GL gear S must face each other. Hole D of the loading arm assy must be aligned with the hole of the chassis, and the endmost gear tooth of the loading arm assy must face toward hole C of the GL gear S.



**3-7. MIC BASE GUIDE, MIC BASE ASSEMBLY AND MIC BASE SPRING**

**Disassembly/Assembly**

For the disassembling and assembling procedures of the components of the MIC base assembly, refer to page 5-21.



When selecting a cassette position, be careful not to touch the slider drive shaft because it can be easily bent or broken.

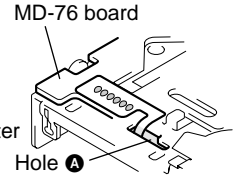
Do not touch the slider drive shaft.

Reel select slider

Select the desired cassette position by pressing the claw position.

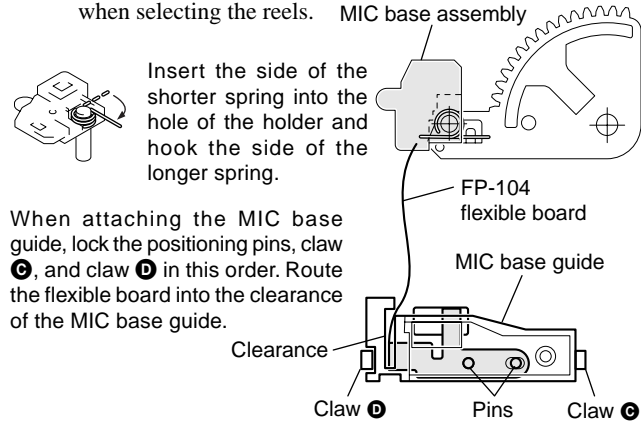
Remove the six solders on the FP-104 flexible board from the rear of the chassis. Pass the flexible board through hole **A** and pull it out of the front side of the chassis while being careful not to damage it. To attach the flexible board, perform the steps of disassembly in reverse order.

Six solders  
 Temperature of tip of soldering iron :  $350 \pm 20 \text{ }^\circ\text{C}$   
 Hold time : one second or shorter



Move the reel selector slider in the direction of arrow **B** and attach the MIC base assembly at the position of "S cassette". For the assembly of the MIC base spring, refer to the figure.

**Note:** Do not hold the shaft when selecting the reels.



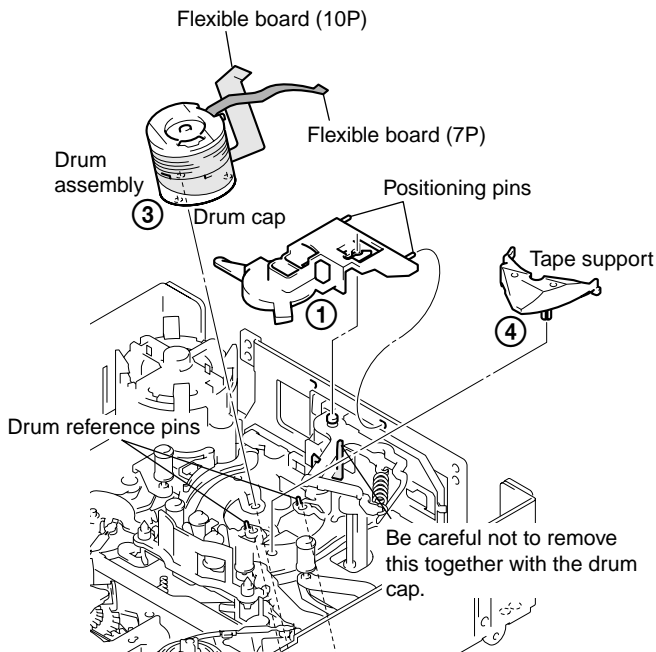
Insert the side of the shorter spring into the hole of the holder and hook the side of the longer spring.

When attaching the MIC base guide, lock the positioning pins, claw **C**, and claw **B** in this order. Route the flexible board into the clearance of the MIC base guide.

**3-8. DRUM CAP, DRUM ASSEMBLY AND TAPE SUPPORT**

**Disassembly:** Remove them in order of ①→②→③

For the disassembly and assembly procedures of the components of the drum assembly, refer to page 5-22.




Drum fixing screw assembly (Fasten the screws in order ①, ②, ③.)

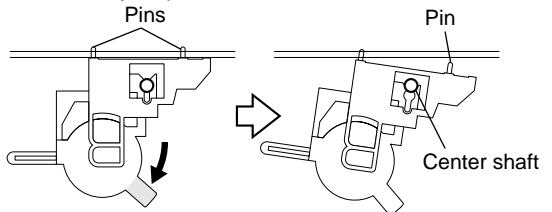
Tightening torque of drum assembly  $0.02941 \pm 0.0049 \text{ N} \cdot \text{m}$  ( $0.3 \pm 0.05 \text{ kg} \cdot \text{cm}$ )

**Assembly:** Attach the parts while referring to the disassembly procedure and the figure below.


(After assembling, adjust the tape path while referring to page 5-23 and thereafter.)

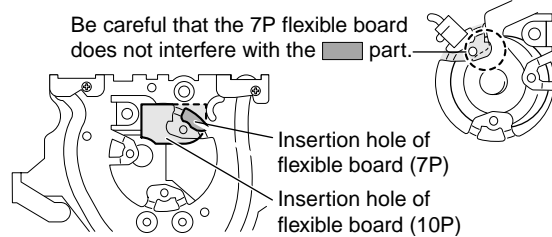
Assembly and disassembly of the drum assembly

When pulling the  part in the direction of the arrow, the claw is removed from the center shaft, then the right pin and the drum cap are removed as shown in the figure on the right. To attach the drum assembly, perform the disassembly steps in reverse order.

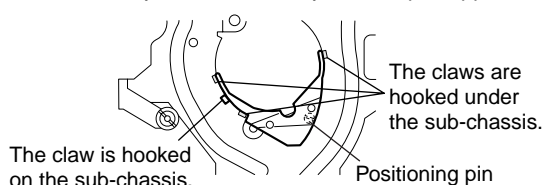


Assembly and disassembly of the drum assembly

Be careful that the 7P flexible board does not interfere with the  part.



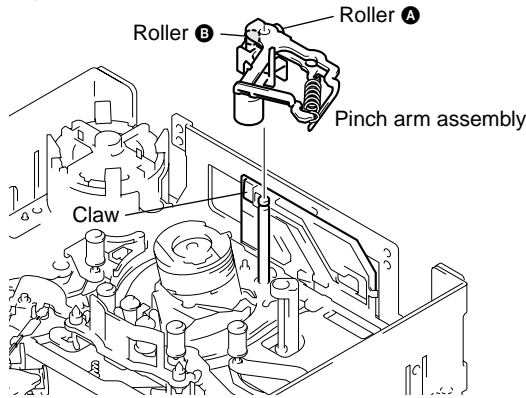
Assembly and disassembly of the tape support



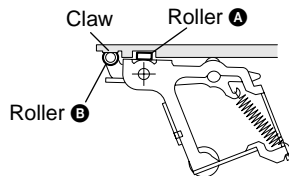
**3-9. PINCH ARM ASSEMBLY**

**Disassembly/Assembly**

For the disassembling and assembling procedures of the tape retainer and compression coil spring (tape retainer), refer to page 5-22.



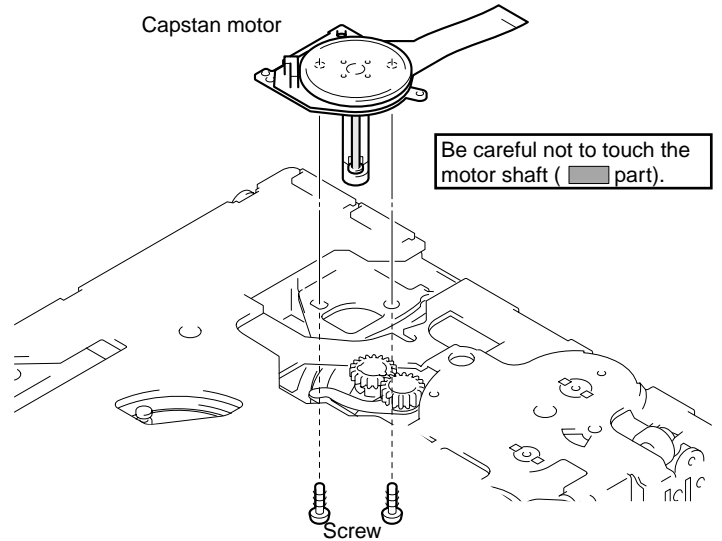
Push roller **A** into the groove as shown in the figure. Insert roller **B** into the claw. To remove the pinch arm assembly, pull out the pinch arm upward while pushing the claw.



**3-10. CAPSTAN MOTOR**

**Disassembly/Assembly**

(After assembling, adjust the tape path from page 5-23.)

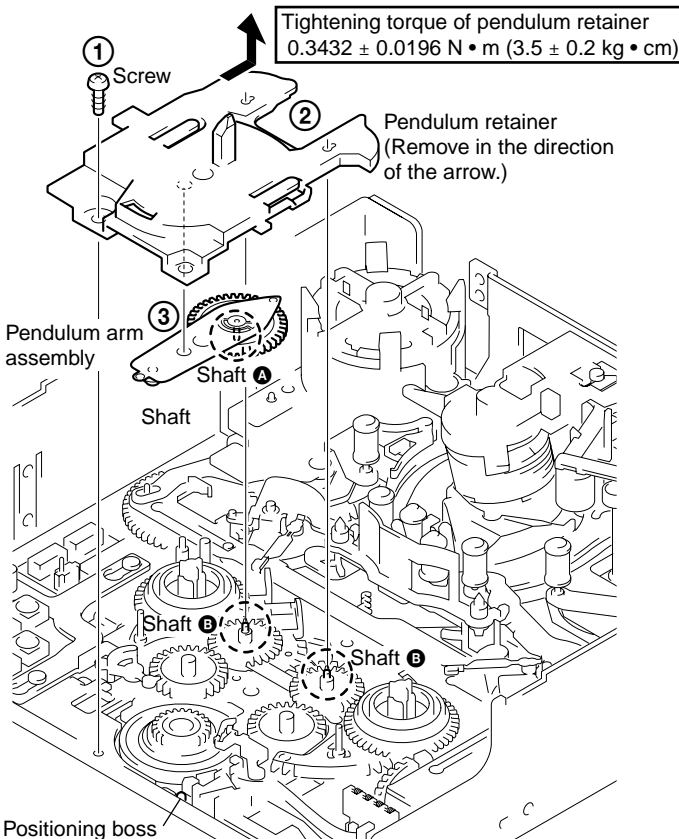


Tightening torque of capstan motor  
 $0.1961 \pm 0.0196 \text{ N} \cdot \text{m}$  ( $2.0 \pm 0.2 \text{ kg} \cdot \text{cm}$ )

**3-11. PENDULUM RETAINER AND PENDULUM ARM ASSEMBLY**

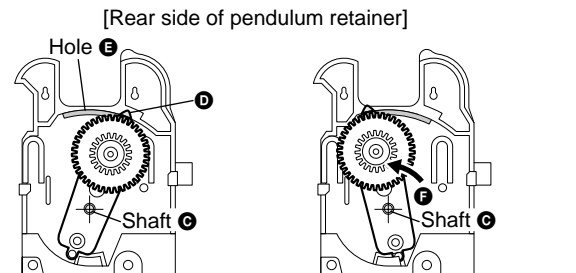
**Disassembly: Remove them in order of ①→②→③**

(To attach them, perform the disassembly steps in reverse order.)



**Notes during assembly**

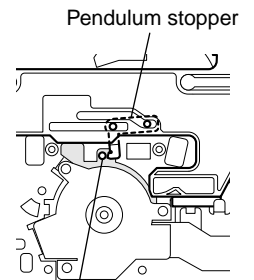
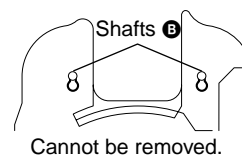
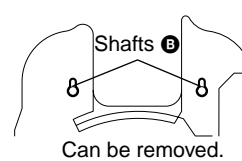
When assembling or disassembling the pendulum arm assembly, be careful of the following.



Insert tip **D** of the pendulum arm into hole **E** of the pendulum retainer and insert the pendulum into shaft **C**.

Slide the pendulum arm in the direction of arrow **F** and attach it to the chassis.

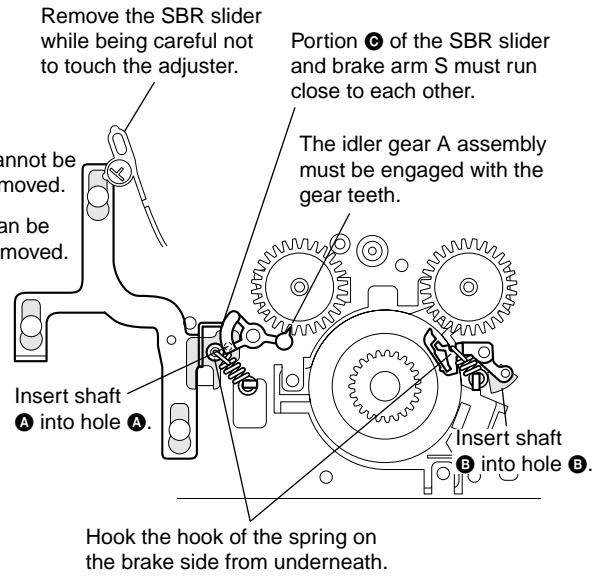
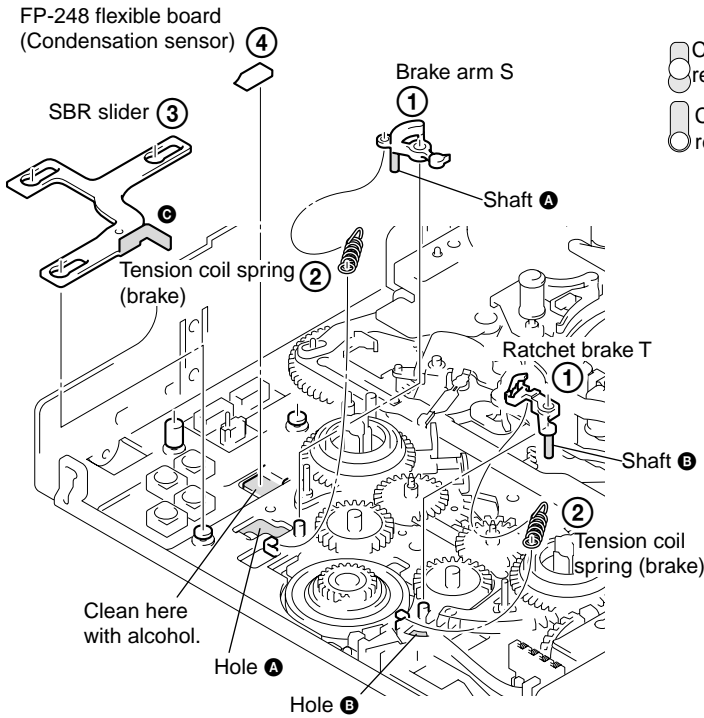
Attach the pendulum retainer to shaft **B**. Be careful of the positions of the pendulum stopper at the rear of the chassis and shaft **A** of the pendulum arm.



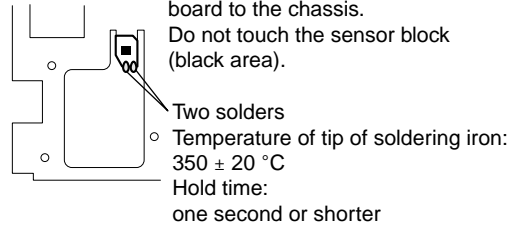
Shaft **A** of the pendulum must be in this position.

**3-12. BRAKE ARM S, RATCHET BRAKE T, TENSION COIL SPRING (BRAKE), SBR SLIDER AND FP-248 FLEXIBLE BOARD (CONDENSATION SENSOR)**

**Disassembly:** Remove them in order of ①→②→③→④  
(To attach them, perform the disassembly steps in reverse order.)



When attaching the FP-248 flexible board, scrape the contact surface with a swab to stick the flexible board to the chassis. Do not touch the sensor block (black area).



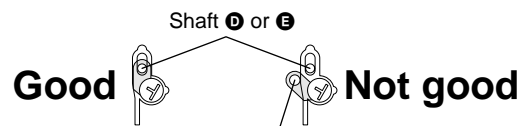
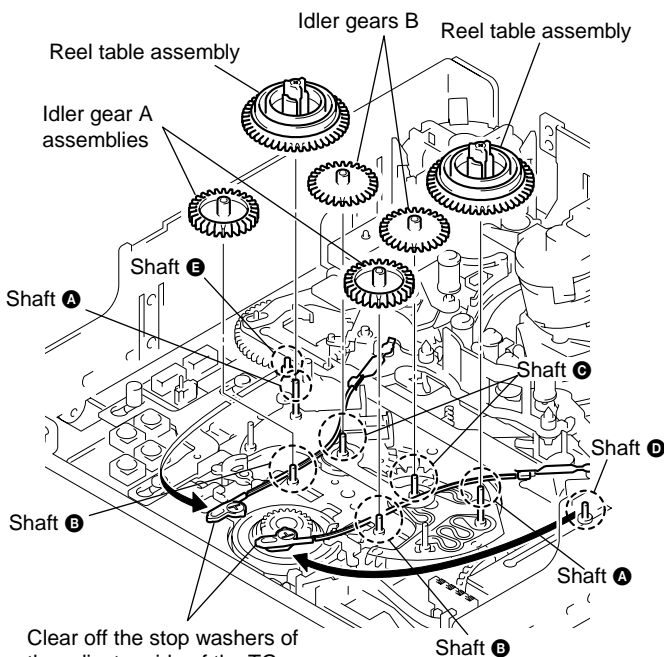
**3-13. REEL TABLE ASSEMBLY, IDLER GEAR A ASSEMBLY AND IDLER GEAR B**

**Disassembly/Assembly**  
**(Do not touch the TG band block.)**

When the reel table assembly is replaced or attached, perform each adjustment from Adjustment Start -1 of the flowchart on page 5-23.

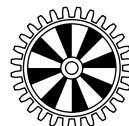
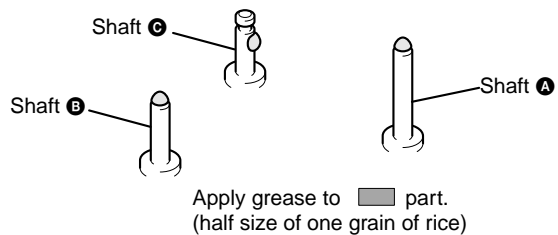
**Checks before work**

The TG band winds around the slit of the reel table assembly. Before removing the reel table assembly, clear off the TG band while referring to the left figure. When attaching the TG band, be sure to use new stop washers.



When attaching the TG band, the part also must be inserted into shaft D or E.

When attaching each gear, apply grease to each fixing shaft. Apply grease of half the size of one rice grain to the top side of shaft C. When attaching the idler gear A assembly, be careful not to apply grease to the reflection panel.

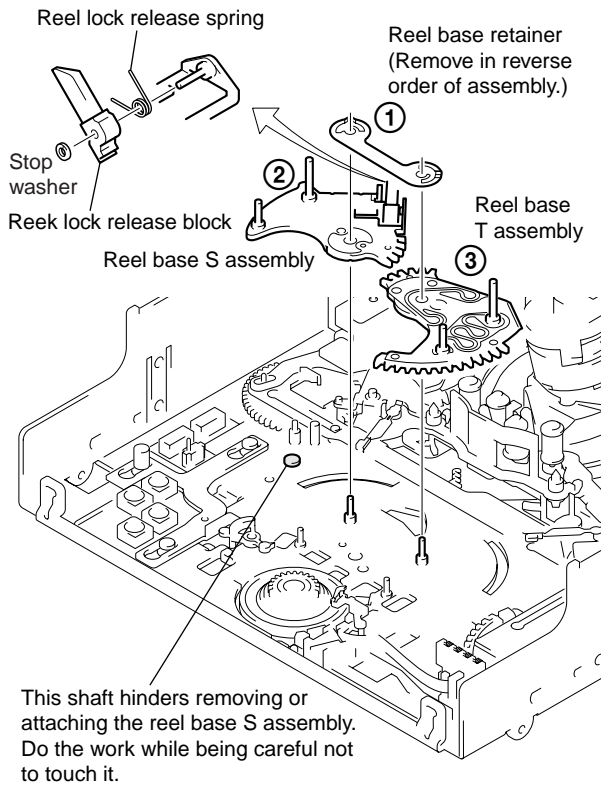


When attaching the idler gear A assembly, be careful not to apply grease to the reflection panel.

Clear off the stop washers of the adjuster side of the TG band in advance as shown in the figure.

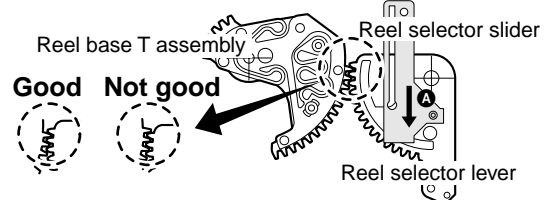
**3-14. REEL BASE RETAINER, REEL BASE T ASSEMBLY AND REEL BASE S ASSEMBLY (REEL LOCK RELEASE BLOCK AND REEL LOCK RELEASE SPRING)**

**Disassembly:** Remove them in order of ①→②→③  
(Refer to Assembly, too.)

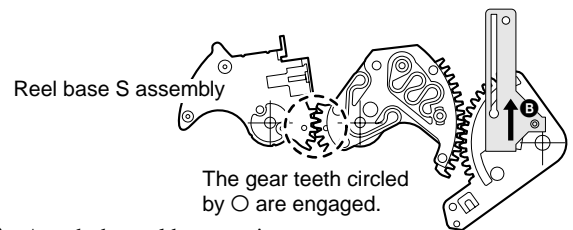


**Assembly:** Attach them in order of ①→②→③

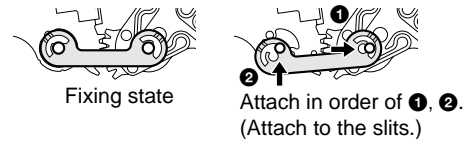
① Move the reel selector slider in the direction of arrow **A** to check that the reel selector lever is "L cassette". At this position, attach the reel base T assembly. The gear teeth must be engaged as shown in the figure.



② Move the reel selector slider in the direction of arrow **B** and switch the reel selector lever to "S cassette". At this position, attach the reel base S assembly. The gear teeth (circled by ○) must be engaged as shown in the figure.



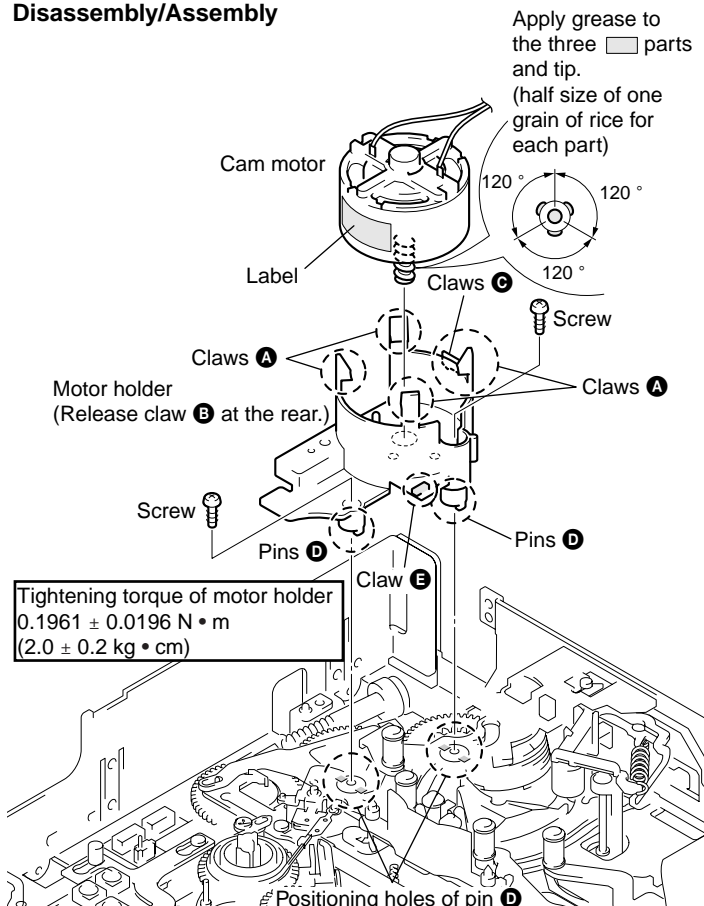
③ Attach the reel base retainer.



**Note:** Do not hold the shaft when selecting the reels.

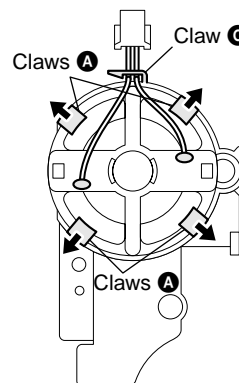
**3-15. CAM MOTOR, MOTOR HOLDER**

**Disassembly/Assembly**



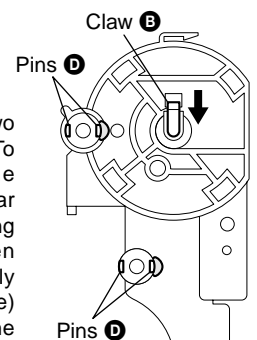
Checks before disassembly and assembly

The cam motor is fixed on the motor holder by the four claws. Releasing the four claws enables the cam motor to be removed without removing the motor holder from the chassis. When attaching the cam motor, be careful of the assembling direction (the label must face toward the front). If the phase of the gear, etc. moves when removing the motor holder, refer to page 5-11.



[Front side of motor holder]  
While spreading claws **A** in the direction of the arrow, pull out the cam motor upward. To attach it, push the cam motor into the motor holder and route the two wires of the cam motor into claw **C**.

When attaching the TG2 control arm, claw **E** must be inserted into the hole of the TG2 control arm.



[Rear side of motor holder]  
The motor holder is fixed by the two screws and claw **B** at the rear. To remove it, push claw **B** in the direction of the arrow from the rear of the chassis. Note that positioning pins **D** are easy to break when attaching the motor holder. Apply grease (half size of one grain of rice) to the two  parts shown in the right figure.

3-16. TG2/7 ARM BLOCK, TG2/7 BAND BLOCK AND TENSION COIL SPRING (TG2)/(TG7)

**Disassembly:** Remove them in order of ①→②→③→④

For the disassembling and assembling procedures of the assembly components of the TG2/TG7 arm, refer to page 5-22.

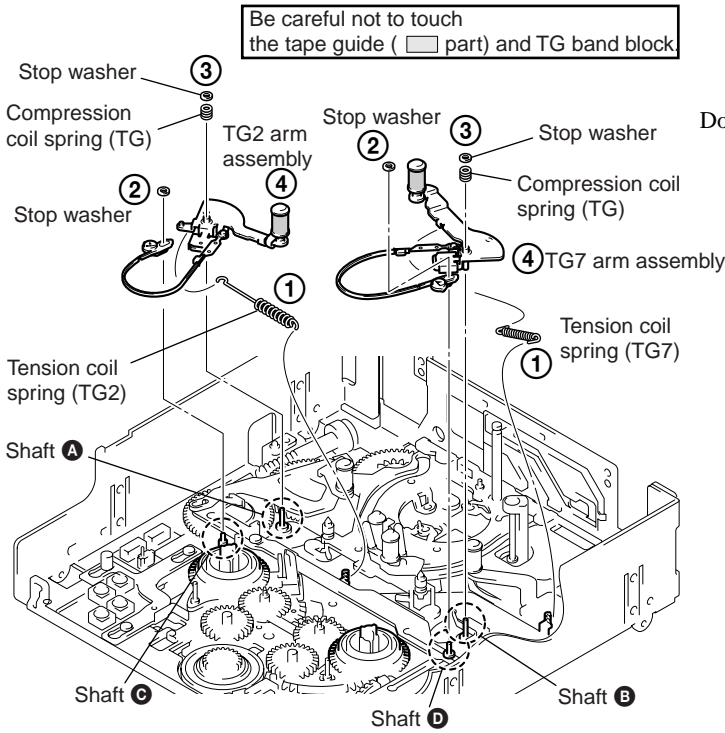


Fig. 1

**Assembly:** Attach them while referring to figure above or below and the descriptions.

When these parts are replaced or attached, perform each adjustment from Adjustment Start -3 of the flowchart on page 5-23.

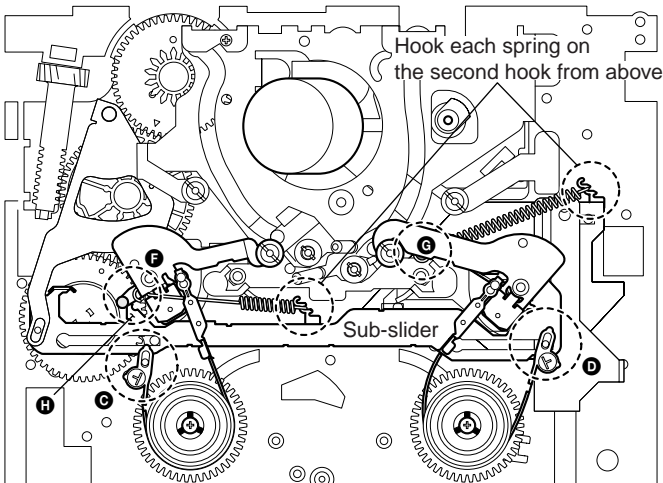


Fig. 3

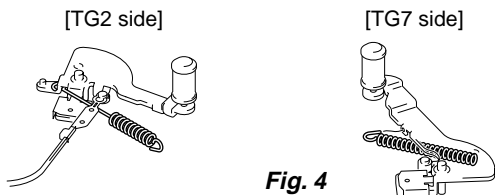


Fig. 4

Hook the spring from the inside and put it under the TG band.

Hook the spring from the outside and put it under the arm.

**Notes during work**

Be careful when handling the TG arm and the peripheral parts.

- Twisting and bending of the band block and tension coil spring
- Dirt and scratches of the tape guide
- Loss of the compression coil spring (TG)

Do not reuse removed stop washers.

Disassembly of the band TG2/TG7 assembly

When pulling portion **E** of the TG2 or TG7 band in the direction of the arrow, a click sound is heard as the band is removed. To attach the bands, pull out the opposite side to portion **E** to lock.

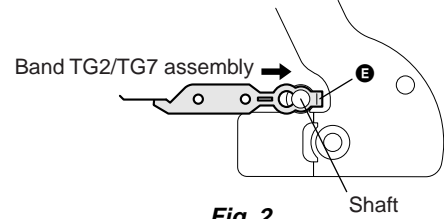
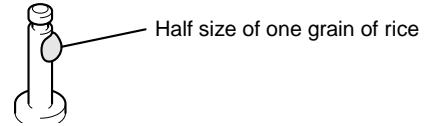
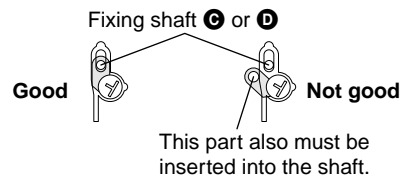


Fig. 2

- ① Apply grease to the top side of the fixing shaft (A or B) of the TG arm. (Fig. 1)



- ② Attach the TG band assembly to the TG arm assembly. (Fig. 2) Be sure that the felt sides of the TG band face toward the reel tables so that they surround the respective reel tables.
- ③ Attach the tension coil spring to the TG arm assembly. (Fig. 3, 4)
  - Hook the spring of the tension coil spring (TG2) from the inside and put it under the TG band. (Fig. 3-F, 4)
  - Hook the spring of the tension coil spring (TG7) from the outside and put it under the TG7 band. (Fig. 3-G, 4)
- ④ Attach the TG arm block to the shaft (A or B) and attach the tension coil spring to the second hook. When attaching the TG2 arm, the □ part must be at the left of portion H of the slider. (Fig. 3)
- ⑤ Attach the adjuster of the TG band to shafts C and D.



- ⑥ Fix the TG band and TG arm with new stop washers. When attaching the TG arm, do not forget to attach the compression coil spring (TG). (Fig. 1)



**3-17. SUB-SLIDER ARM, SUB-SLIDER, ENCODER GEAR, MAIN CAM GEAR, COUPLING GEAR, SUB-CAM GEAR, PINCH SLIDER AND LOADING ARM ASSY**

**Disassembly:** Remove them in order of ①→②→③→④→⑤→⑥→⑦→⑧

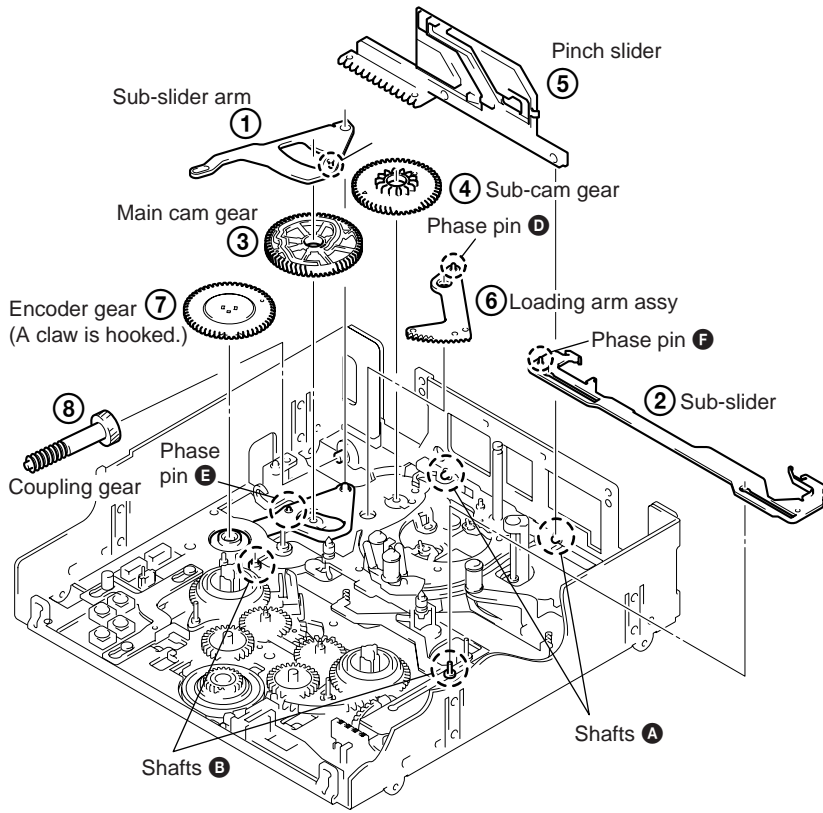
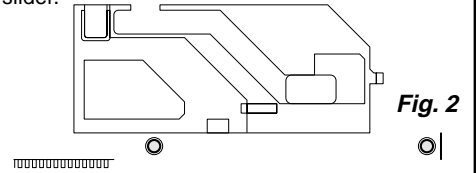


Fig. 1

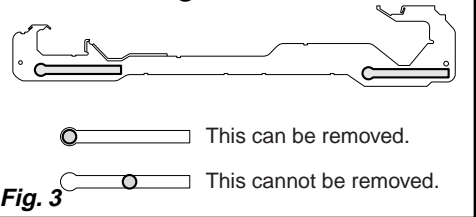
**Disassembly of the pinch slider**

Move the pinch slider to the leftmost end, and slide it upward and remove it when two shafts **A** are superimposed on the holes of the pinch slider.

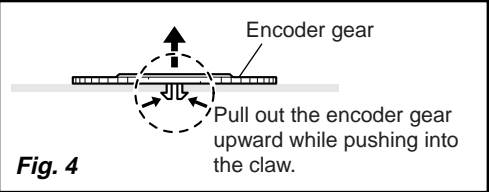


**Disassembly of the sub-slider**

Move the sub-slider to the rightmost and remove it from two shafts **B**.



**Disassembly of the encoder gear**



**Assembly:** Attach them while referring to the figure above or below and the descriptions.

**Check before work**

When attaching the parts described in this section, various phase adjustments are required. Before work, refer to page 5-19 and check the reference phases.

[Rear side of chassis]

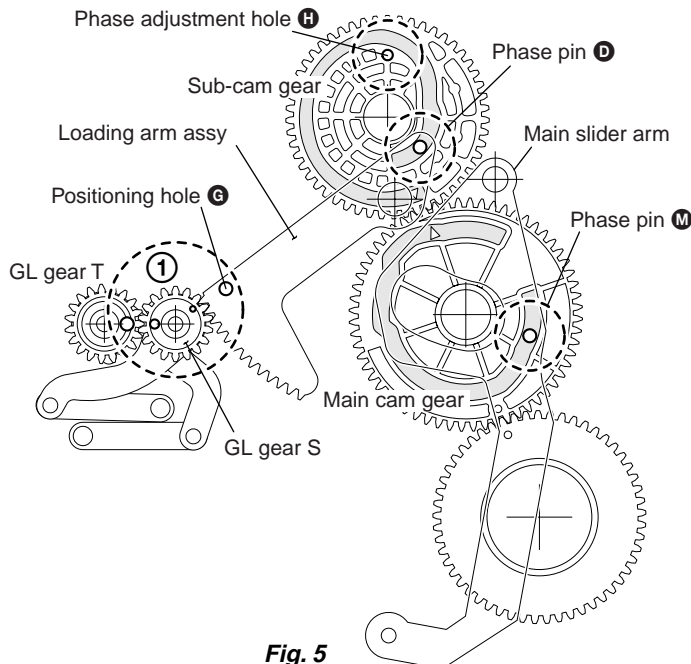


Fig. 5

- ① Attach the loading arm assy. (Refer to the figure above.) The phases of the GL gear S and GL gear T must match and the positioning hole **G** of the loading arm assy must be superimposed on the hole of the chassis. (Fig. 5)

- ② Attach the pinch slider. (Fig. 1, 2)

- ③ Apply grease to the groove at the rear of the sub-cam gear. (Fig. 6) After applying, adjust the phase of the sub-cam gear to that of the pinch slider. (Fig. 7) Phase pin **D** of the loading arm assy must be inserted into the groove at the rear of the sub-cam gear. (Fig. 5, 7)

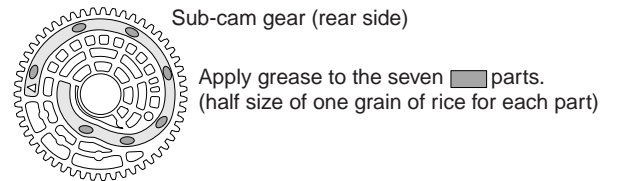


Fig. 6

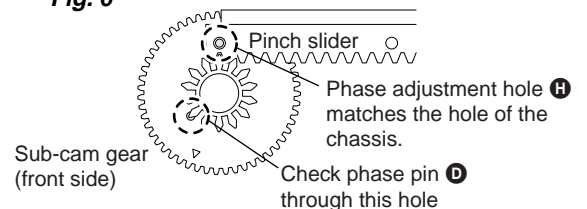


Fig. 7



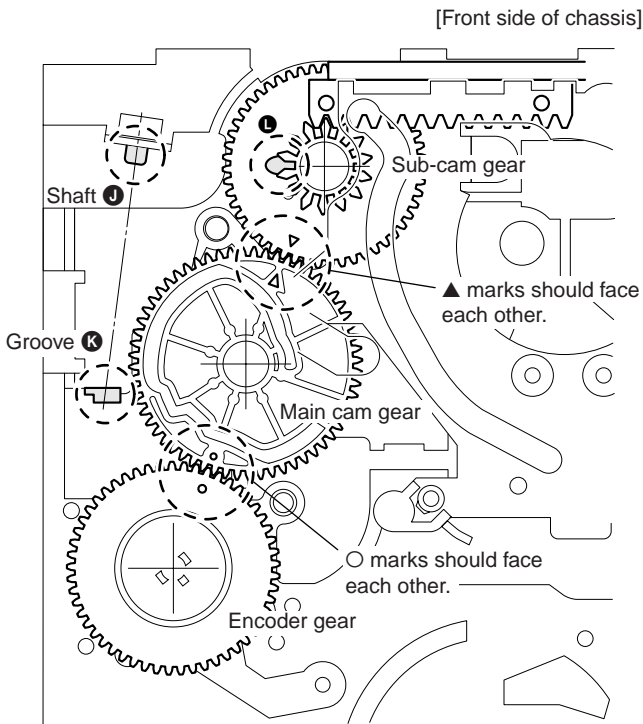


Fig. 8

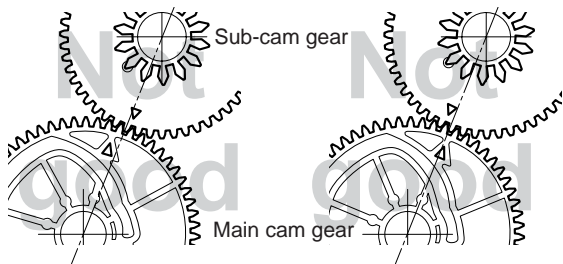


Fig. 11

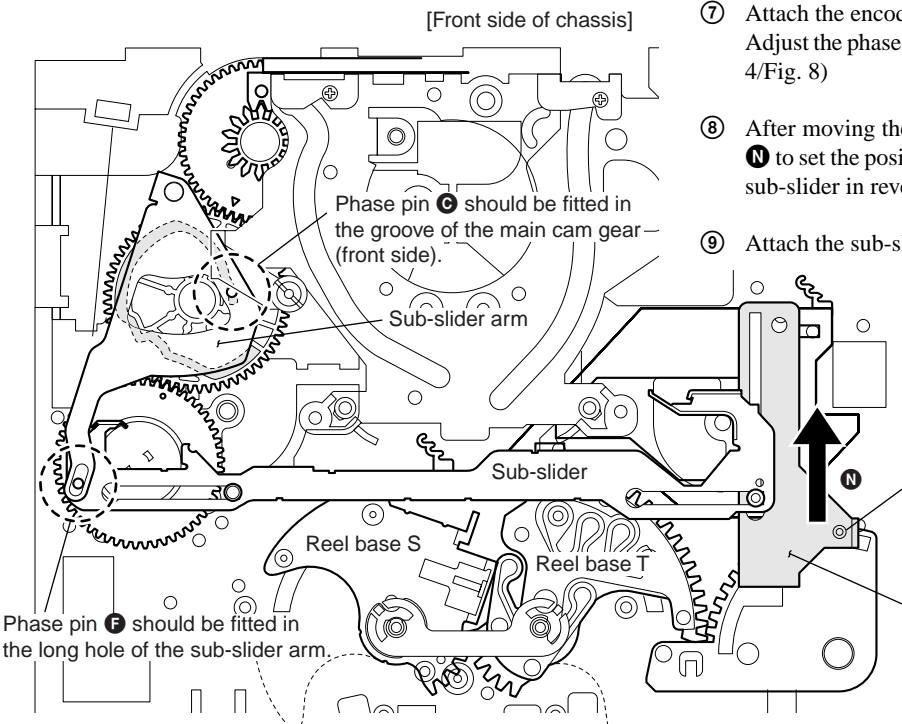


Fig. 13

④ Apply grease to the fixing block (shaft **J** and U-shaped groove **K**) of the coupling gear and portion **L** of the sub-cam gear (half size of one grain of rice for each part). (Fig. 8)

⑤ Attach the coupling gear. After attaching, apply grease while rotating the coupling gear by 120° each time. (Fig. 9, 10)

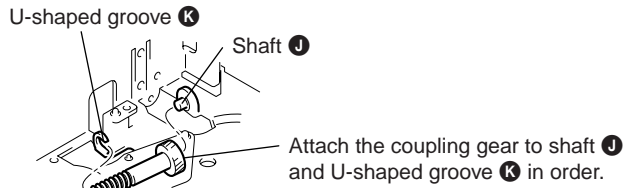



Fig. 9

Apply grease to the three  parts (half size of one grain of rice for each part).

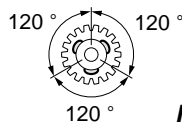
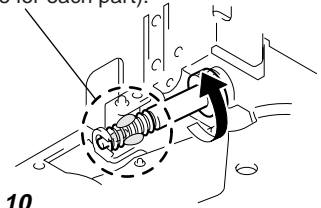


Fig. 10



⑥ Attach the main cam gear while being careful of the directions of the front and rear sides. Also, take care of the phase adjustment to the sub-cam gear. (Fig. 8, 11, 12)

Phase pin **M** of the main slider arm should be fitted in the groove of the main cam gear (rear side). (Fig. 5)

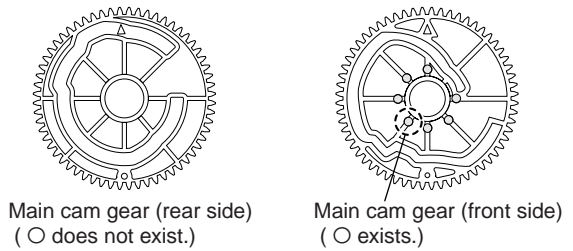


Fig. 12

⑦ Attach the encoder gear. (Fig. 3)  
Adjust the phases (marked) to those of the main cam gear. (Fig. 4/Fig. 8)

⑧ After moving the reel selector slider in the direction of arrow **N** to set the position of the reel base to "L cassette", attach the sub-slider in reverse order while referring to Fig. 3. (Fig. 13)

⑨ Attach the sub-slider arm. (Fig. 1/Fig. 13)

Do not hold the shaft when selecting the reels.

Reel selector slider  
(After attaching the sub-slider arm, return the reel base to the original position (L cassette).)

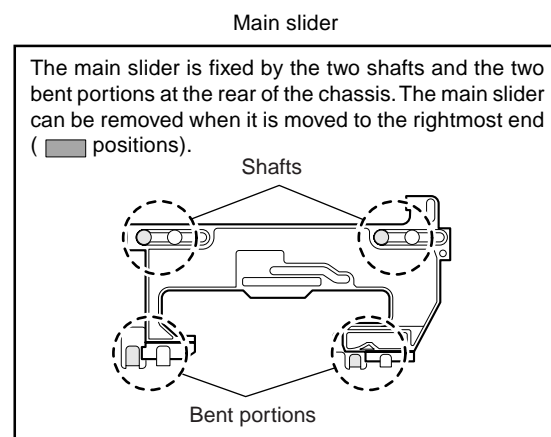
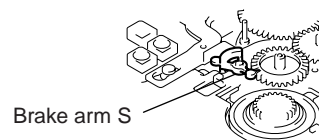
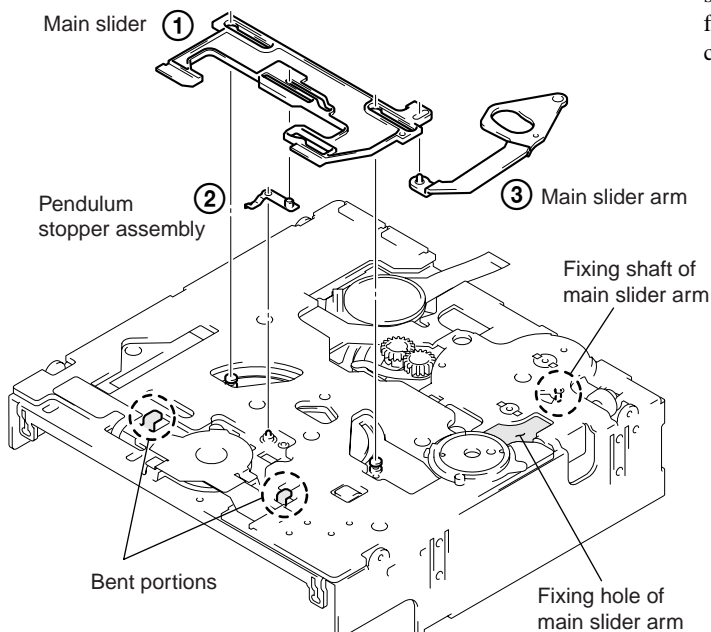
(Position when L cassette is set)

**3-18. MAIN SLIDER, MAIN SLIDER ARM AND PENDULUM STOPPER ASSEMBLY**

**Disassembly:** Remove them in order of ①→②→③

**Disassembly of each part**

The main slider controls several parts. Before removing the main slider, remove "Brake arm S" at the front of the chassis while referring to "Information" on page 5-4. Otherwise, the main slider cannot be removed.

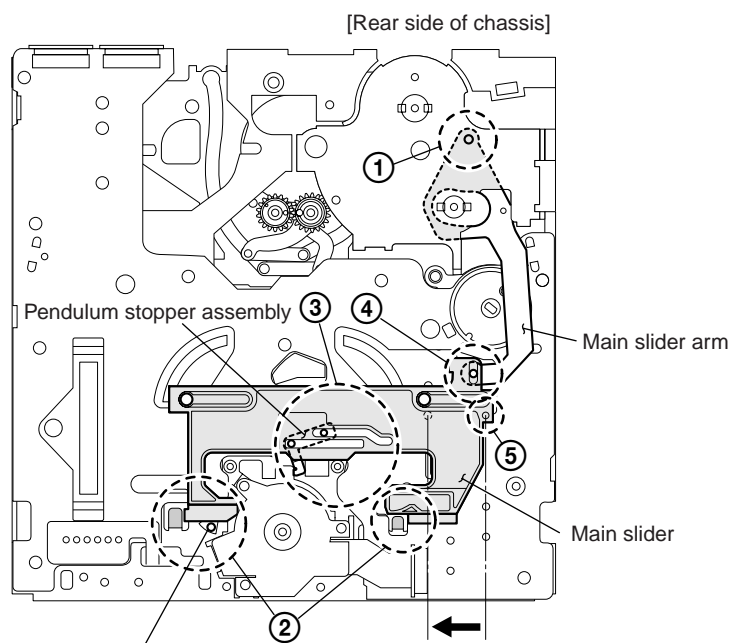


**Assembly:** Attach them while referring to the figure above or below and the descriptions.

**Assembly of each part**

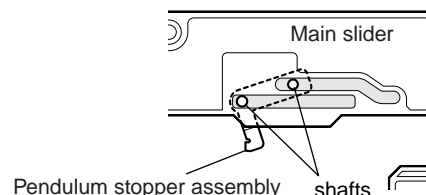
Attach each part while referring to the figure above or below. When attaching the parts, adjust the positions carefully while referring to the instructions in the figure below. Because these positioning will be used as a reference when assembling in future, make sure to adjust the positions and phases correctly.

- ① Insert the main slider arm into the fixing hole and attach it to the fixing shaft at the front of the chassis while referring to the figure above. (To facilitate assembly, stick adhesive tape so that the main slider arm does not drop.)
- ② Perform assembly so that the main slider can pass under the bent portion of the chassis. If "Ratchet brake T" remains, move down the "Ratchet brake T" as shown in the left figure and attach the main slider.
- ③ Carefully attach the pendulum stopper assembly so that the two shafts fit in the two long holes of the main slider.



The shaft of the ratchet brake T should be at the position where it can be viewed from the outside as shown in the figure.

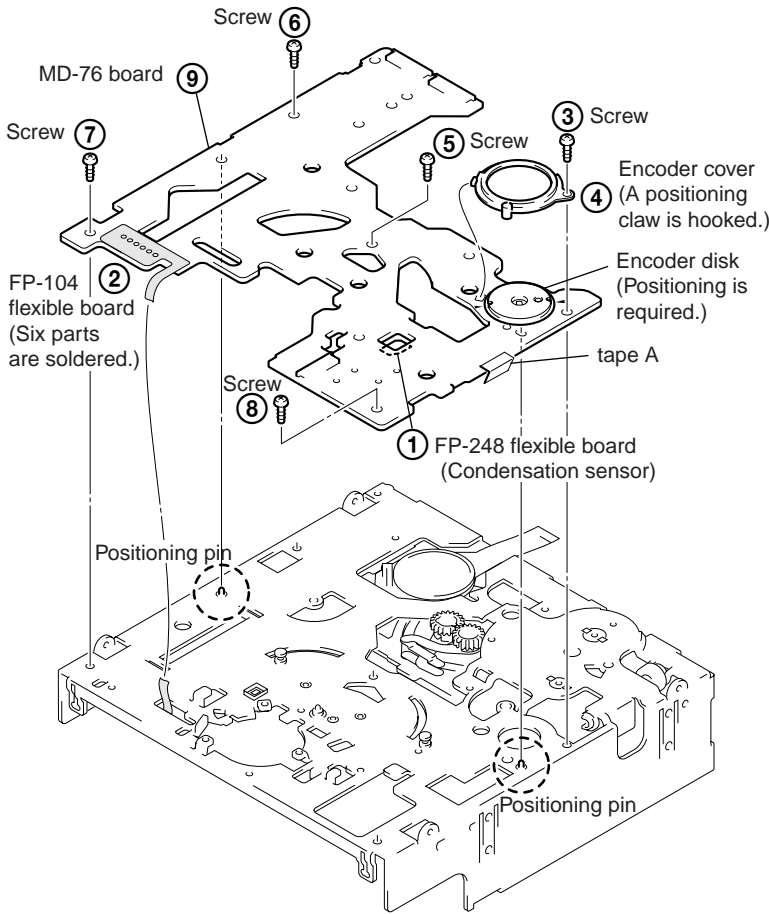
Move the main slider so that the positioning holes are superimposed.



- ④ Attach the shaft of the main slider arm to the long hole of the main slider.
- ⑤ Move the main slider to the leftmost end so that the small positioning hole of the main slider is superimposed on the small positioning hole of the chassis, and fix the main slider. The position where the main slider is fixed will be used as a reference during assembling and phase adjustment in future. (To avoid affecting the main unit, fix the reel motor and main slider with adhesive tape, etc.)

3-19. MD-76 BOARD AND ENCODER RETAINER

Disassembly: Remove them in order of ①→②→③→④→⑤→⑥→⑦→⑧→⑨

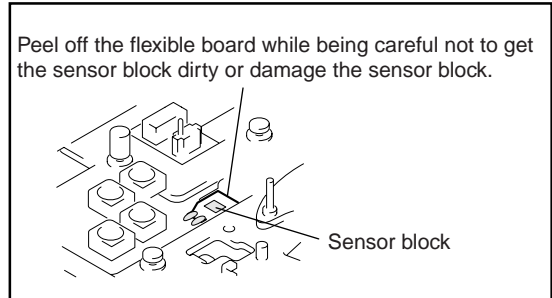


Disassembly of MD-76 board

Peel off the FP-248 flexible board at the front of the chassis (refer to page 5-14). Remove the six solders on the FP-104 flexible board from the rear of the chassis. Remove the screws in order of ③ to ⑧ shown in the figure. When removing the MD-76 board from the chassis, be careful not to let the sensors touch the chassis.

**Note:** When the tape A is removed, use the new tape A for replacement. (See the illustration below.)

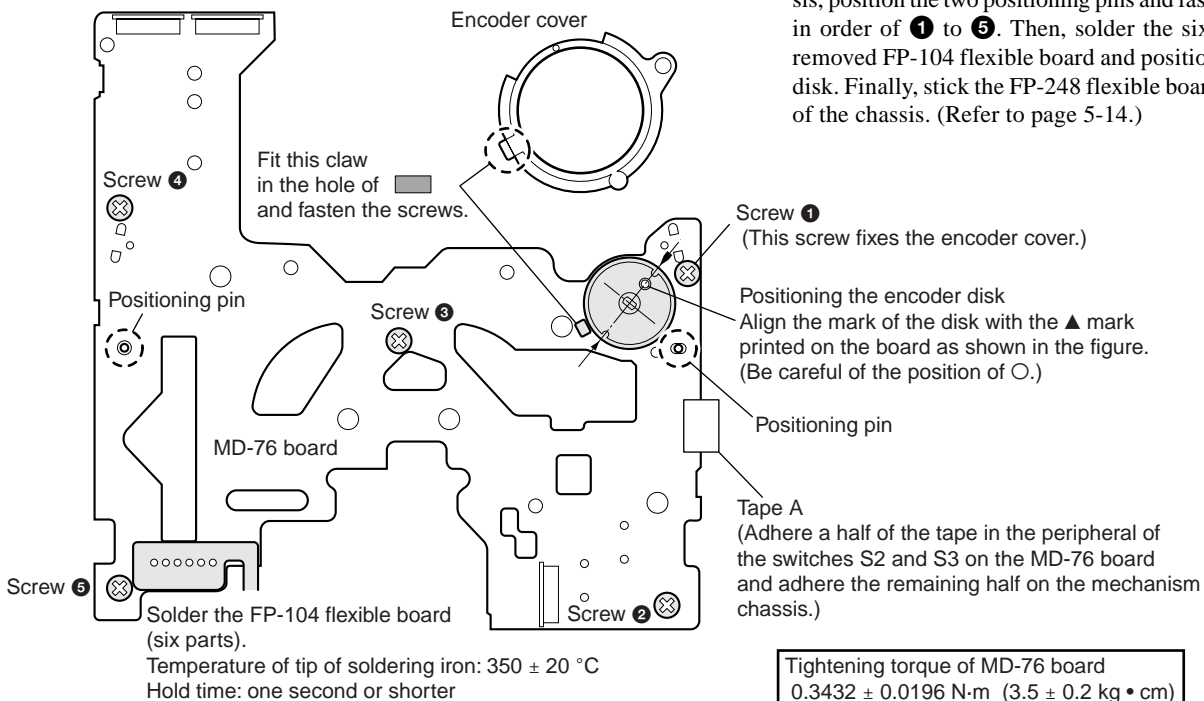
FP-248 flexible board



Assembly: Attach them in order of ⑨→④→③→⑤→⑥→⑦→⑧→①→②  
(Refer to the figure above or below.)

Assembly of MD-76 board

While being careful not to let the sensors touch the chassis, position the two positioning pins and fasten the screws in order of ① to ⑤. Then, solder the six parts on the removed FP-104 flexible board and position the encoder disk. Finally, stick the FP-248 flexible board on the front of the chassis. (Refer to page 5-14.)

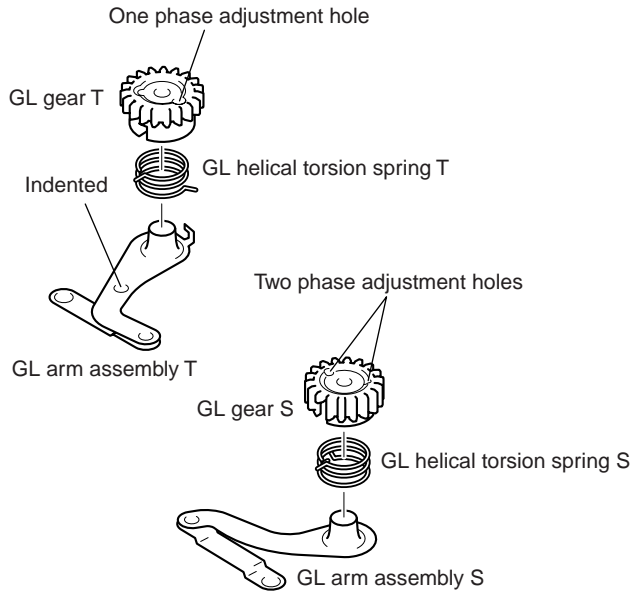


Tightening torque of MD-76 board  
0.3432 ± 0.0196 N·m (3.5 ± 0.2 kg·cm)

Solder the FP-104 flexible board (six parts).  
Temperature of tip of soldering iron: 350 ± 20 °C  
Hold time: one second or shorter

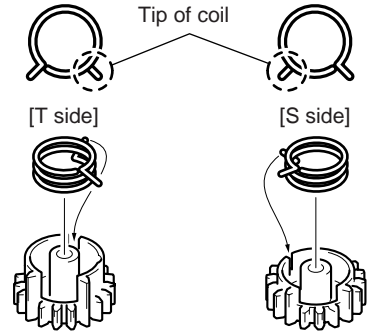
**3-20. COMPONENTS OF GL ARM S/T ASSEMBLY  
(GL ARM ASSEMBLY, GL HELICAL TORSION SPRING, GL GEAR)**

**Disassembly and distinguishing the S side from the T side**



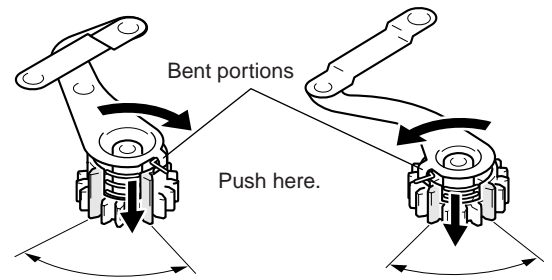
**Assembly**

- ① Attach each GL helical torsion spring to the GL gear. To distinguish the S side from the T side when the opening of the spring tip is facing toward the front, note that the coil tip of the S side is located on the left and that of the T side is located on the right.



Fit the tip of the spring into the small cut-out of the GL gear.

- ② Hook the tip of the spring on the bent portion of the GL arm assembly and push the bent portion of the GL arm into the large cut-out of the GL gear while rotating the GL gear in the direction of the arrow.

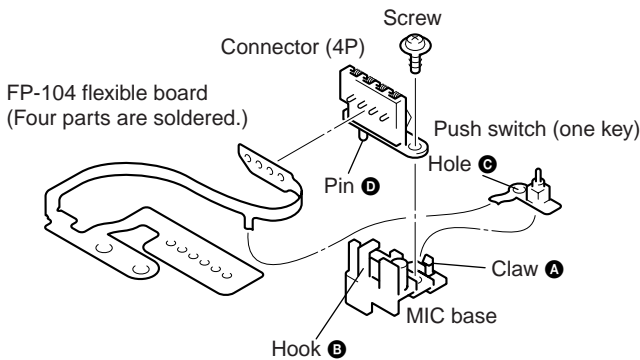


When the bent portion of the GL arm comes inside this range, push the bent portion into the gear.

**3-21. COMPONENTS OF MIC BASE ASSEMBLY  
(FP-104 FLEXIBLE BOARD, MIC BASE)**

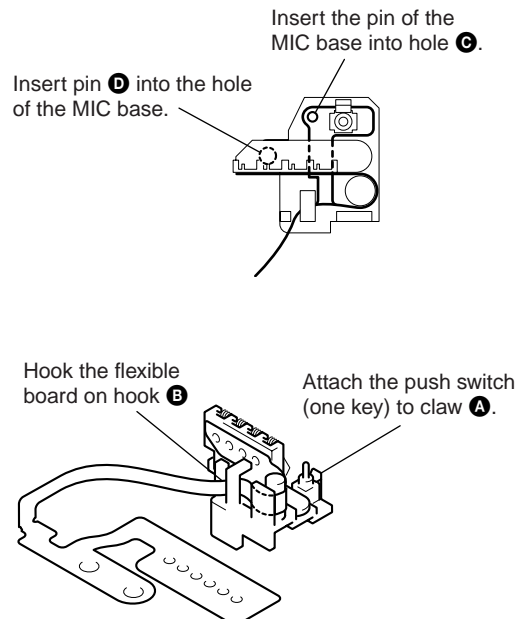
**Disassembly**

Remove the push switch from claw **A** of the MIC base. Remove the screw and connector (4P). Then, remove the flexible board while being careful not to touch hook **B**.



Tightening torque of connector (4P)  
0.0392 ± 0.0098N • m (0.4 ± 0.1 kg • cm)

**Assembly**



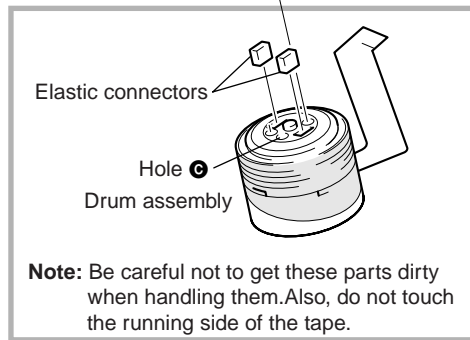
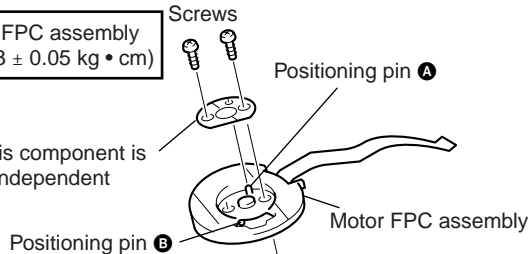
**3-22. COMPONENTS OF DRUM ASSEMBLY  
(MOTOR FPC ASSEMBLY, ELASTIC CONNECTOR)**

**Disassembly/Assembly**

Connect the elastic connector to the drum assembly and attach the motor FPC assembly while aligning pin **B** with hole **C** of the drum assembly. Fix the supporter plate with the screws while being careful of pin **A** of the motor FPC assembly.

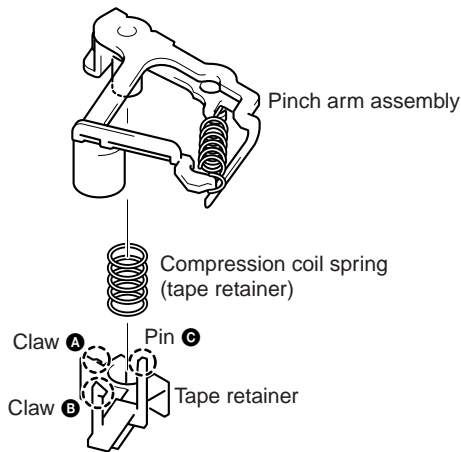
Tightening torque of motor FPC assembly  
 $0.0294 \pm 0.0049\text{N} \cdot \text{m}$  ( $0.3 \pm 0.05 \text{ kg} \cdot \text{cm}$ )

Supporter plate (This component is not supplied as an independent repair part.)

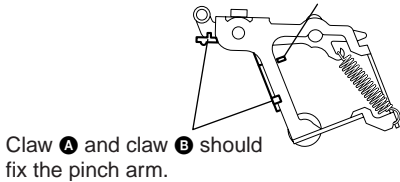


**3-23. COMPONENTS OF PINCH ARM ASSEMBLY  
(TAPE RETAINER, COMPRESSION COIL SPRING)**

**Disassembly/Assembly**

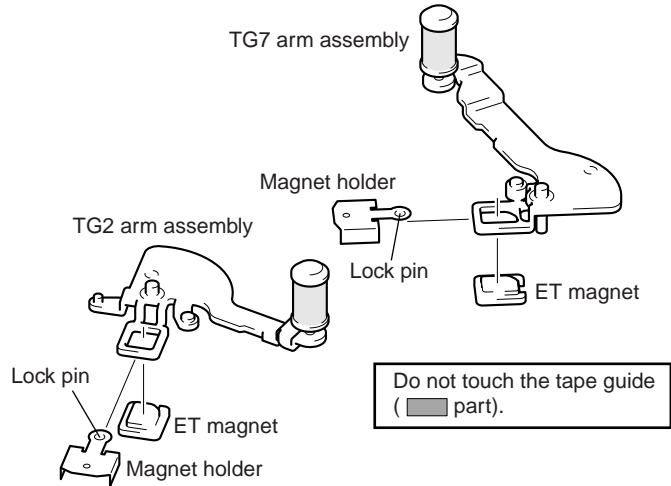


Push pin **C** into this position.

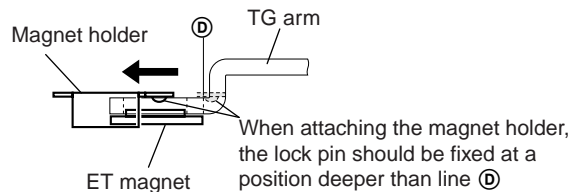


**3-24. COMPONENTS OF TG2/7 ARM ASSEMBLY  
(ET MAGNET, MAGNET HOLDER)**

**Disassembly/Assembly**



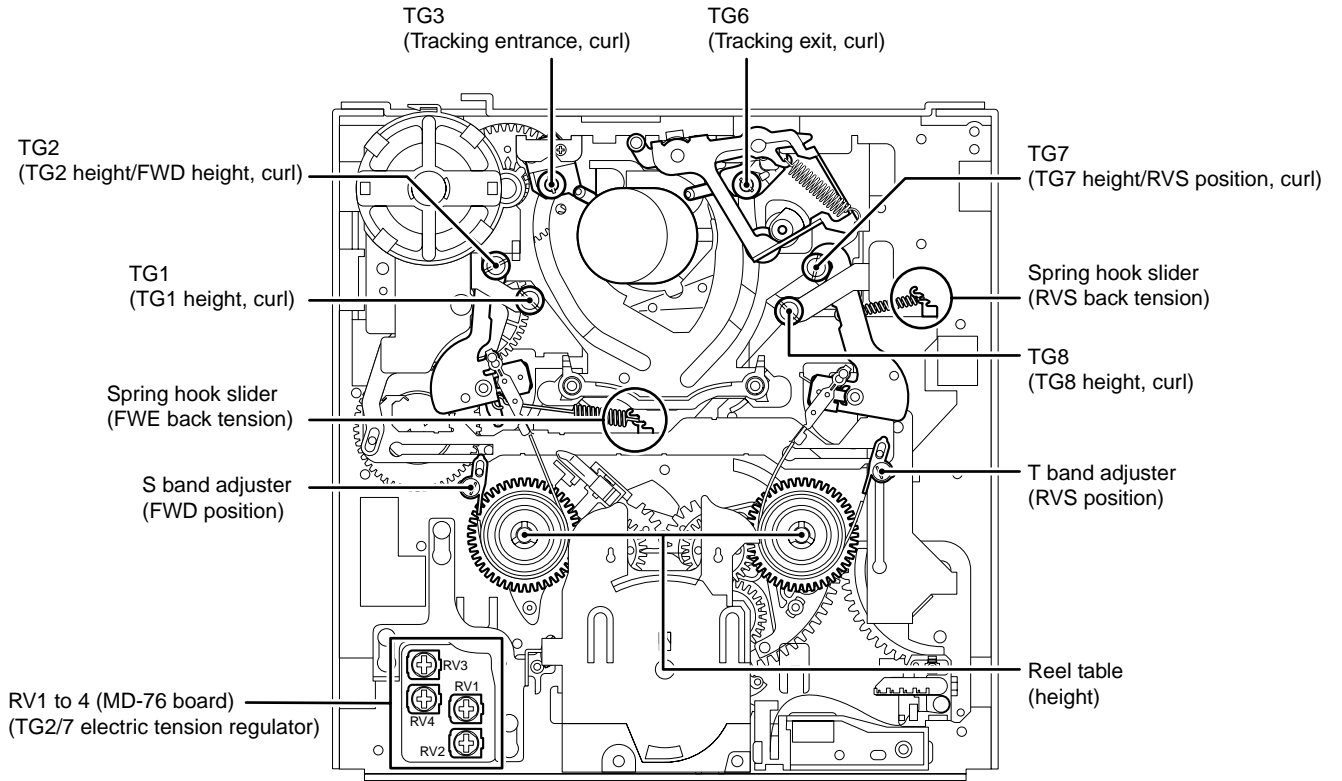
Remove the TG2 arm assembly and the TG7 arm assembly in the direction of the arrow while pushing the lock pin of the magnet holder from the rear of each TG arm. To attach them, insert the TG2 or TG7 arm assembly in the direction opposite to the arrow while holding the ET magnet with the magnet holder, then hook the lock pin.



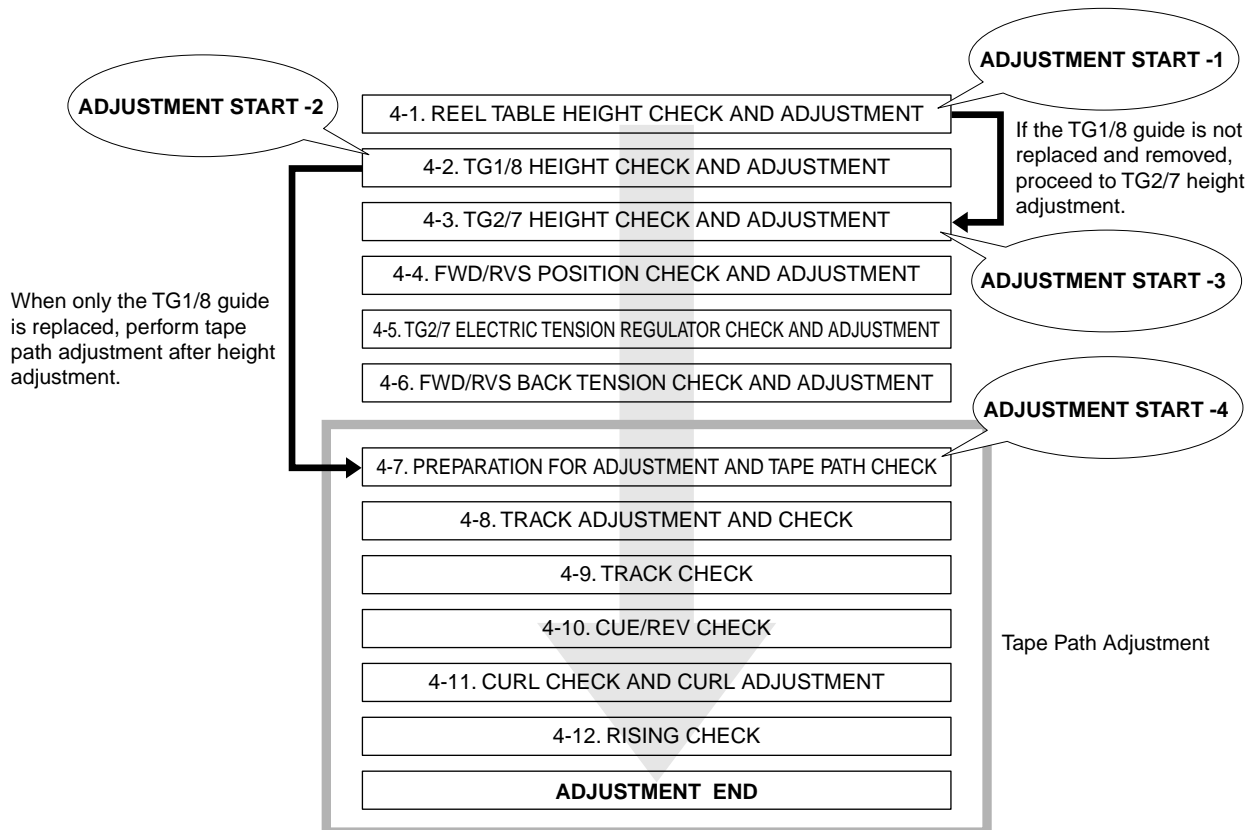
**5-1-4. CHECK AND ADJUSTMENT**

- When the parts of the tape path (tape guide, reel table, etc.) have been removed or parts have been replaced, adjust the following parts according to the flowchart below.

**• ADJUSTMENT POSITION**



**• ADJUSTMENT ORDER (FLOWCHART)**



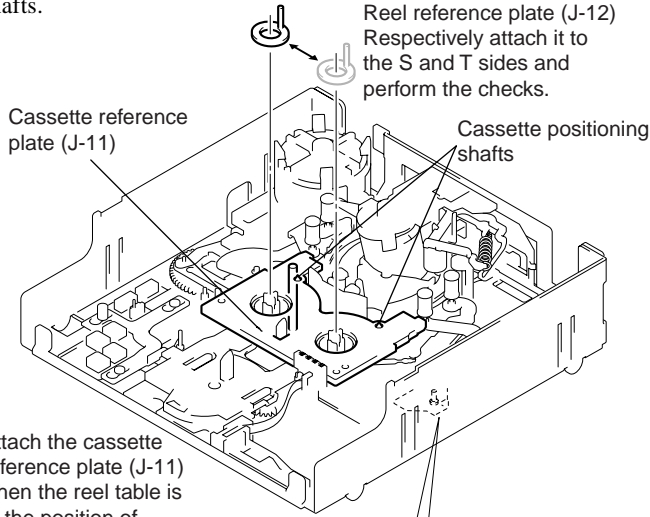


**4-1. REEL TABLE HEIGHT CHECK AND ADJUSTMENT**

**1. Preparation before check**

Check that the cassette compartment has already been removed. (Refer to page 5-5.)

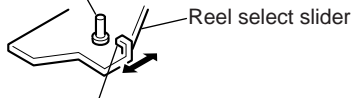
Fit the cassette reference plate (J-11) in the cassette positioning shafts.



Attach the cassette reference plate (J-11) when the reel table is at the position of "S cassette".

When selecting a cassette position, be careful not to touch the slider drive shaft because it can be easily bent or broken.

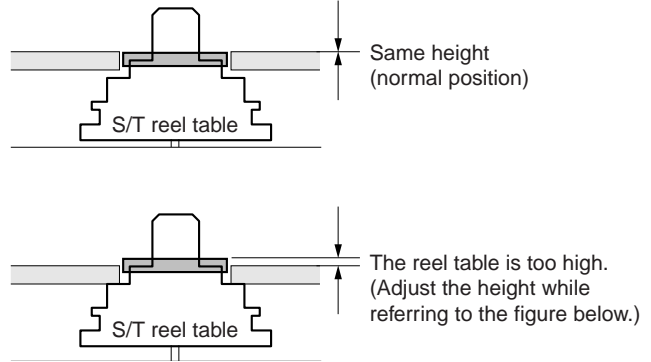
Do not touch the slider drive shaft.



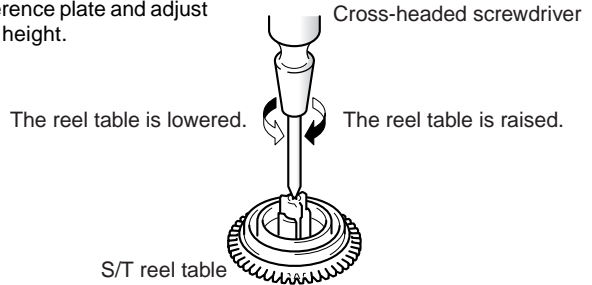
Select the desired cassette position by pressing the claw position.

**2. Check and adjustment**

Put the reel reference plate (J-12) on each reel table. Rotate the screw block of the reel table so that the height of the cassette reference plate is the same as that of the reel reference plate.



Put the reel and cassette reference plate and adjust the height.

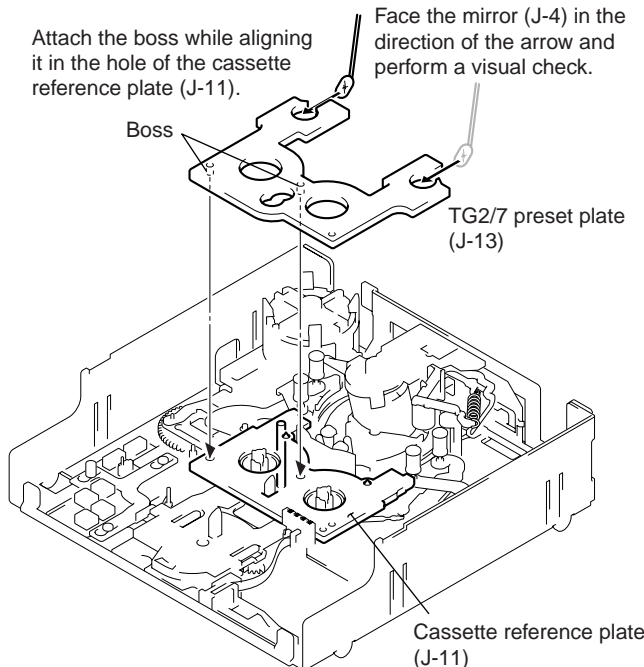


**4-2. TG1/8 HEIGHT CHECK AND ADJUSTMENT**

**1. Preparation before check**

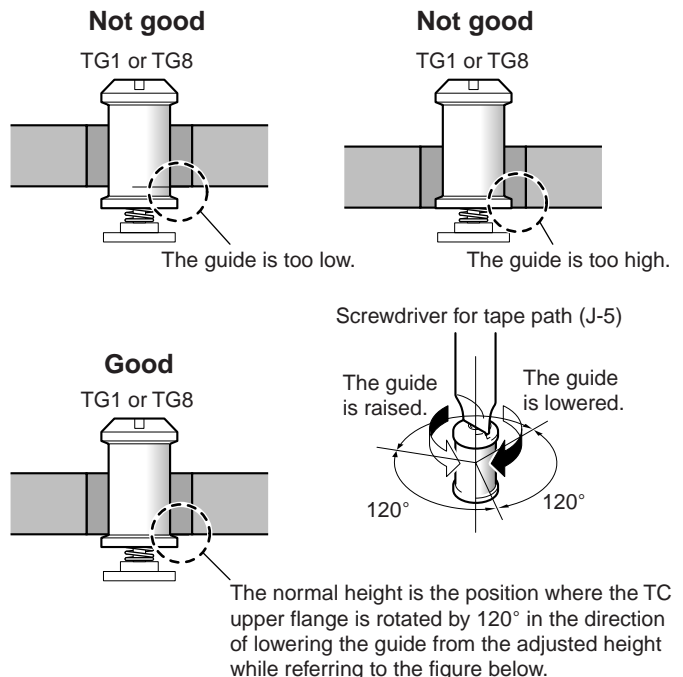
- 1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
- 2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the "LE position" using the mode selector II. (Refer to page 5-5.)
- 3) Place the TG2/7 preset plate (J-13).

Attach the boss while aligning it in the hole of the cassette reference plate (J-11). Face the mirror (J-4) in the direction of the arrow and perform a visual check.



**2. Check and adjustment**

Rotate the TG upper flange until the heights of the TG2/7 preset plate (J-13) and TG1 or TG8 roller block are the same. Alternatively, rotate the TG upper flange by 120° in the direction of lowering the guide from the reference height where the preset plate and roller have the same height.



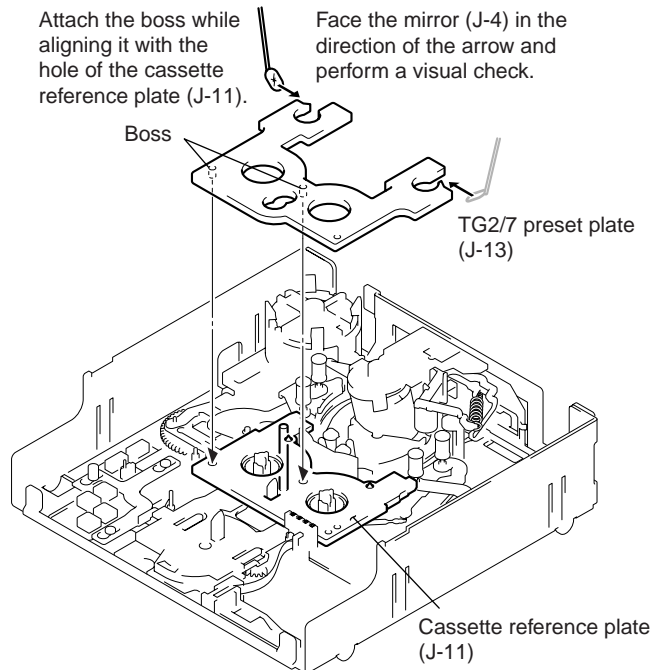
**4-3. TG2/7 HEIGHT CHECK AND ADJUSTMENT**

**1. Preparation before check**

- 1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
- 2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the "LE position" using the mode selector II. (Refer to page 5-5.)
- 3) Place the TG2/7 preset plate (J-13).

Attach the boss while aligning it with the hole of the cassette reference plate (J-11).

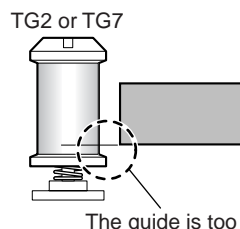
Face the mirror (J-4) in the direction of the arrow and perform a visual check.



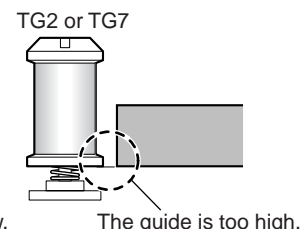
**2. Check and adjustment**

Rotate the TG upper flange until the height of the TG2/7 preset plate (J-13) and TG2 or TG7 roller block is the same. Alternatively, rotate the TG upper flange of only TG2 by 60° in the direction of raising the guide from the adjusted height while referring to the figure below.

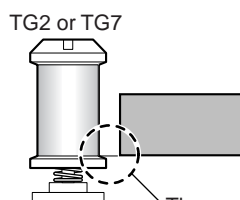
**Not good**



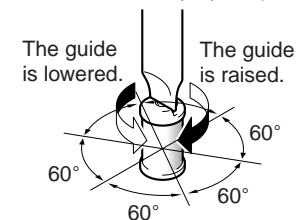
**Not good**



**Good**



Screwdriver for tape path (J-15)



The normal height of TG2 is the position where the TC upper flange is rotated by 60° in the direction of raising the guide from the adjusted height while referring to the figure below. The normal height of TG7 is the current one.

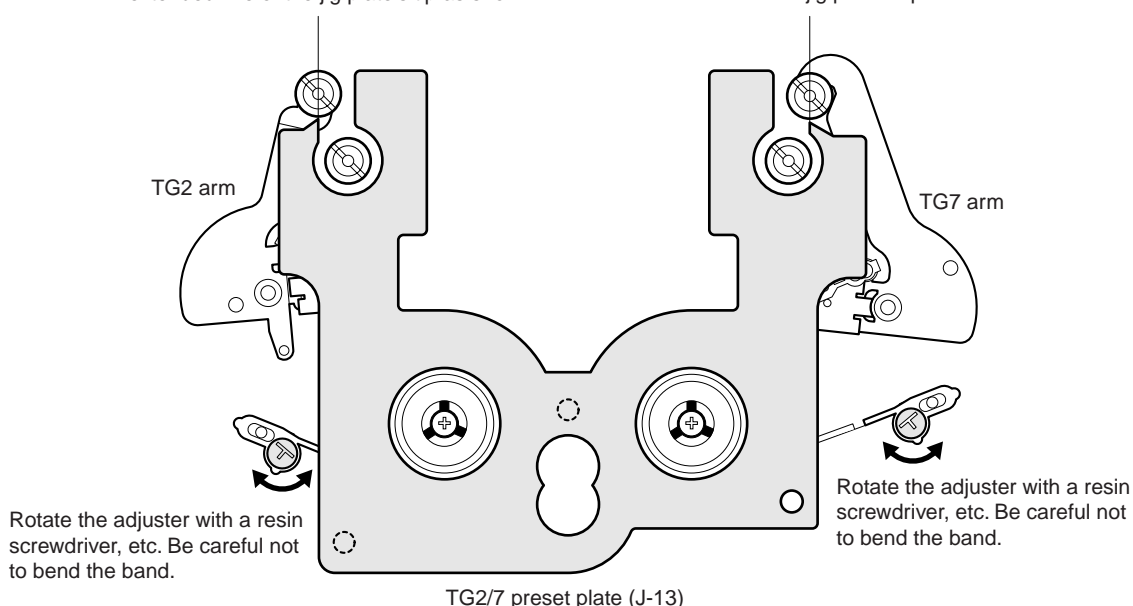
**4-4. FWD/RVS POSITION CHECK AND ADJUSTMENT**

**1. Preparation before check**

- 1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
- 2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the "LE position" using the mode selector II. (Refer to page 5-5.)
- 3) Place the TG2/7 preset plate (J-13).

Align the center of TG2 with the vertically extended line of the jig plate's tip as shown.

Align the center of TG7 with the vertically extended line of the jig plate's tip as shown.

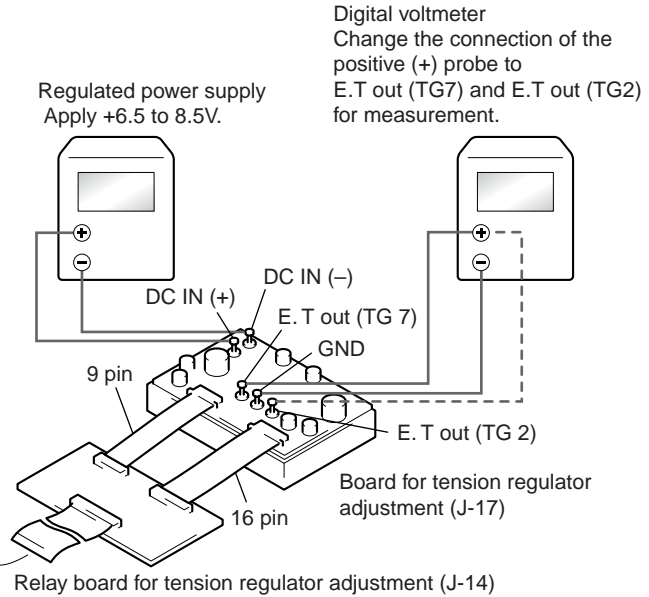
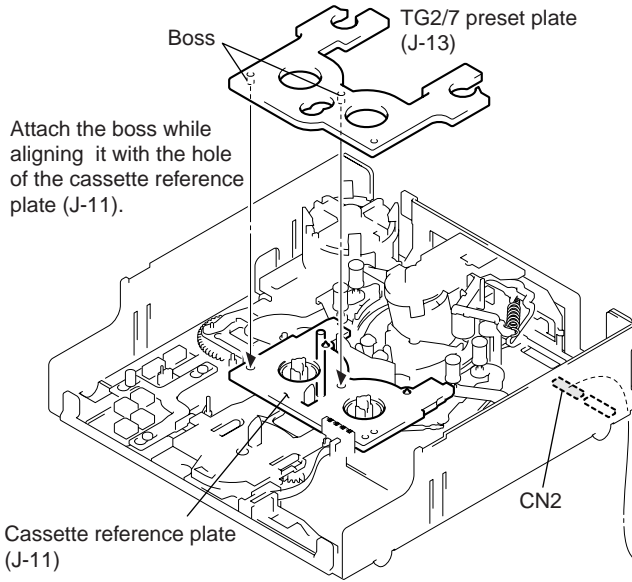


4-5. ELECTRIC TENSION REGULATOR CHECK AND ADJUSTMENT OF TG2/7 ARM

1. Preparation before check

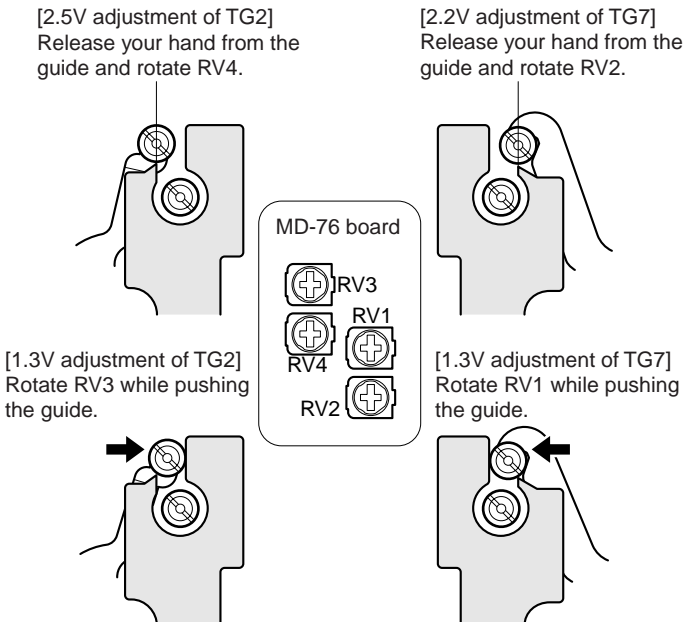
- 1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
- 2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the "LE position" using the mode selector II (J-9). (Refer to page 5-5.)

- 3) Attach the cassette reference plate (J-11) and TG2/7 preset plate (J-13). (Refer to page 5-25.)
- 4) Connect the relay board for tension regulator adjustment (J-14) and other equipment as shown in the figure below.

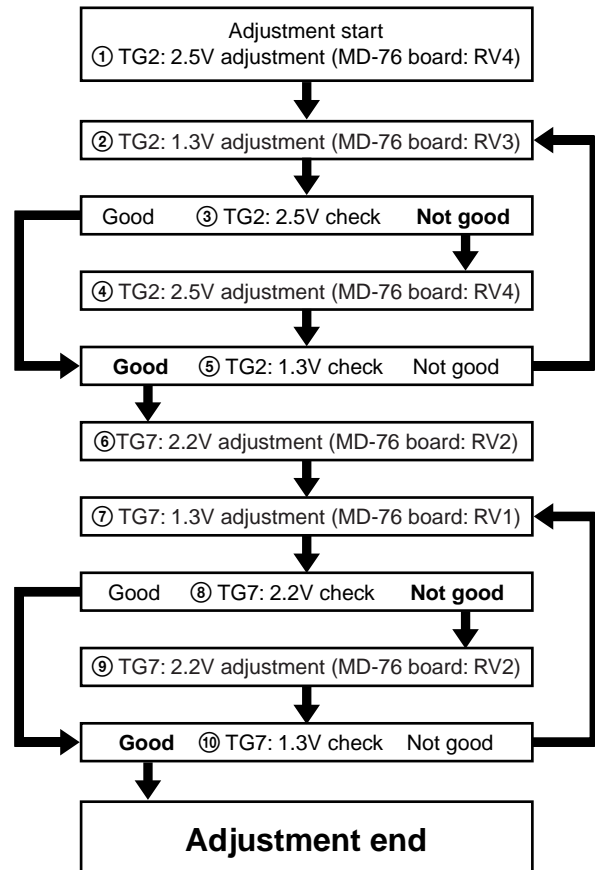


2. Check and adjustment

Connect the positive (+) probe of a digital voltmeter to E.T out (TG2: for measurement of TG2 data) or to E.T out (TG7: for measurement of TG7 data). First, press the guide to the TG2/7 preset plate (J-13), then release your hand from the guide and read the voltmeter value. Adjust RV4 (TG2 side) or RV2 (TG7 side) until the voltmeter measurement is  $2.5 \pm 0.1$  V (TG2 side) or  $2.2 \pm 0.1$  V (TG7 side) when releasing your hand. Then press the guide to the TG2/7 preset plate (J-13). Adjust RV3 (TG2 side) or RV1 (TG7 side) until the voltmeter measurement is  $1.3 \pm 0.1$  V.



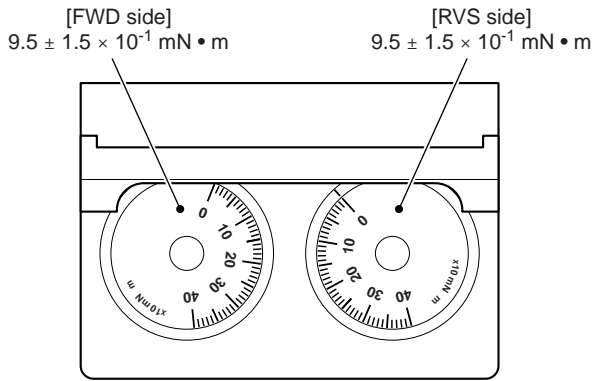
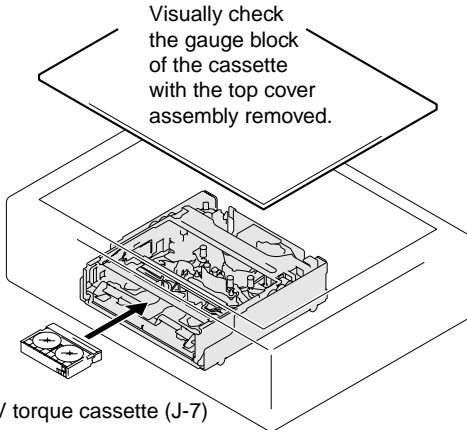
[Adjustment order]



4-6. FWD/RVS BACK TENSION CHECK AND ADJUSTMENT

1. Preparation before check

Mount the mechanism deck in the main unit, connect all the connectors, then insert the mini DV torque cassette (J-7) into the mechanism block.

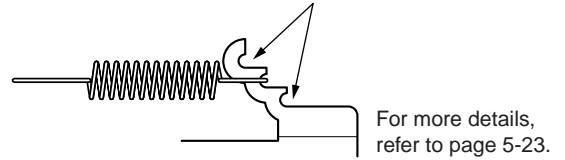


2. Check and adjustment

• FWD (TG2) side

The torque value should satisfy  $9.5 \pm 1.5 \times 10^{-1} \text{ mN} \cdot \text{m}$  while the mini DV torque cassette runs in the FWD mode. If it does not satisfy this, take the following measure.

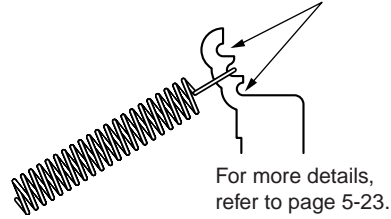
Re-attach the spring to the upper hook if the measurement value is beyond the specifications or re-attach the spring to the lower hook if the measurement value is below the specifications. Then, repeat the measurement.



• RVS (TG7) side

The torque value should satisfy  $9.5 \pm 1.5 \times 10^{-1} \text{ mN} \cdot \text{m}$  while the mini DV torque cassette runs in the RVS mode. If it does not satisfy this, take the following measure.

Re-attach the spring to the upper hook if the measurement value is beyond the specifications or re-attach the spring to the lower hook if the measurement value is below the specifications. Then, repeat the measurement. Be careful that these spring blocks may hinder the FL motor.



## 4-7. PREPARATION FOR ADJUSTMENT AND TAPE PATH CHECK

### Preparation before adjustment (connection and setting)

1. Mount the mechanism deck in the main unit.  
(Connect all the connectors.)
2. Clean the tape running side.  
(Refer to "5-1-2. Periodic check".)
3. Connect an oscilloscope to RP-234 board CN201 via the CPC-13 jig (J-6082-388-A)(J-18).  
Channel 1: RP-234 board, CN201 Pin ⑧ (Note)  
External trigger: RP-234 board, CN007 Pin ⑥

**Note:** Connect a 75 Ω resistor between pins ⑧ of CN007 and ⑦ (GND).  
75 Ω resistor (Parts code: 1-247-804-11)

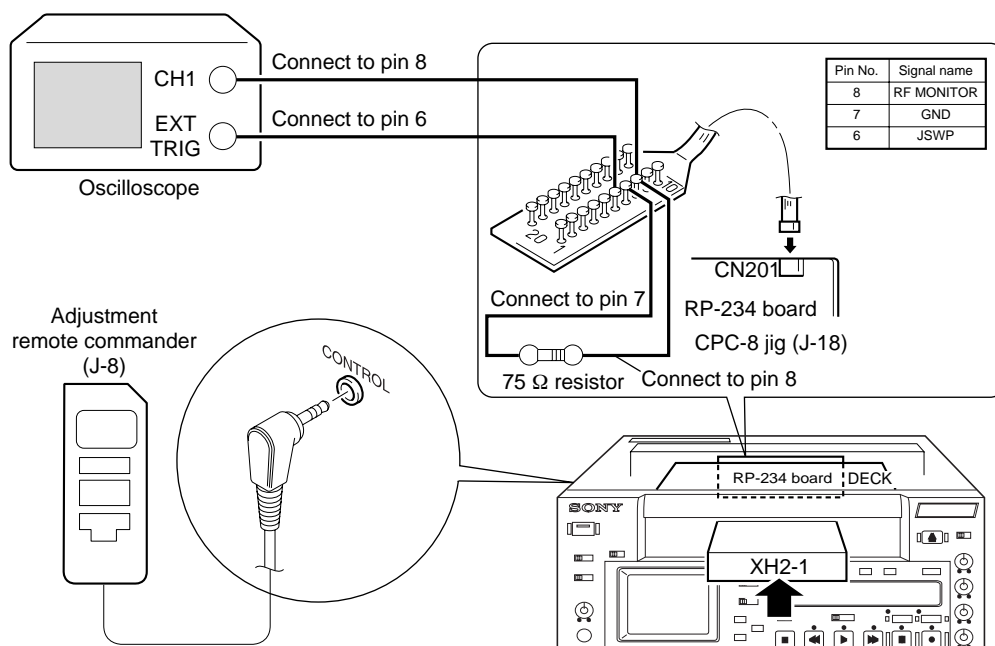
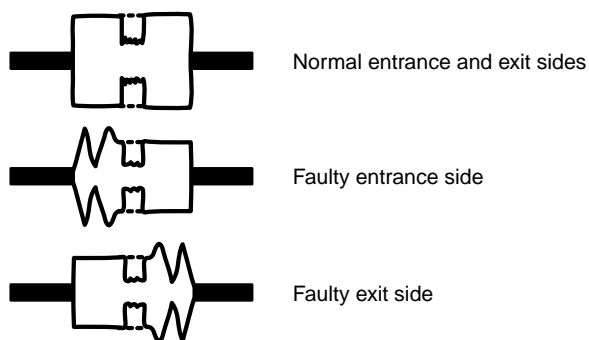
4. Connect the adjustment remote commander (J-8) to the CONTROL jack (LANC jack).
5. Turn the HOLD switch of the adjustment remote commander to the ON position.
6. Select page: 3, address: 33, set data: 08 and press the PAUSE button.
7. Select page: 3, address: 26, set data: 31 and press the PAUSE button.

### Procedure after operations

1. Connect the adjustment remote commander to the CONTROL jack (LANC jack).
2. Turn the HOLD switch of the adjustment remote commander to the ON position.
3. Select page: 3, address: 33, set data: 00 and press the PAUSE button.
4. Select page: 3, address: 26, set data: 00 and press the PAUSE button.

### Tape path check (checking the RF waveform)

Play back the tracking tape (J-6) and check the states at the entrance and exit of the RF waveform. If it is not flat at either side, perform the adjustments from Adjustment Start-4 in the flowchart on page 5-23.



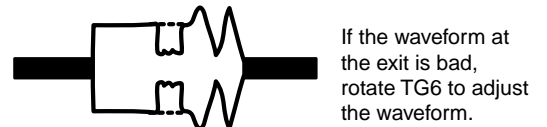
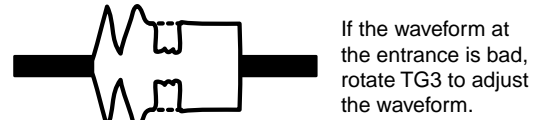
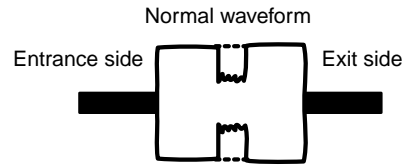
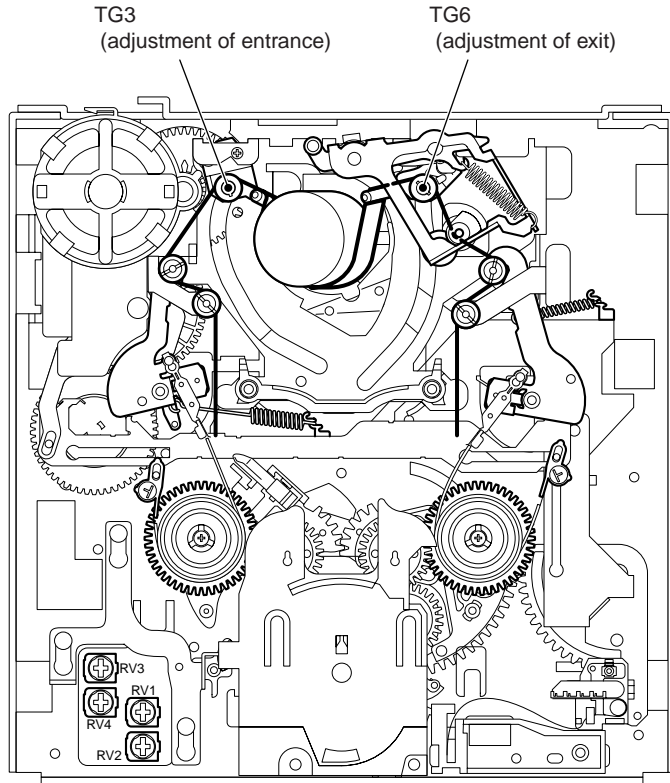
**4-8. TRACK ADJUSTMENT AND CHECK  
(Checking the RF Waveform)**

**• Checking the RF waveform**

Check that the RF waveforms at both the entrance and exit are flat while the tracking tape (J-6) runs in the PLAY mode.

**• If not flat**

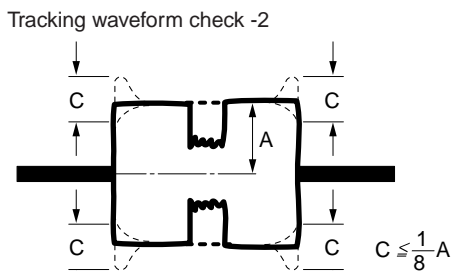
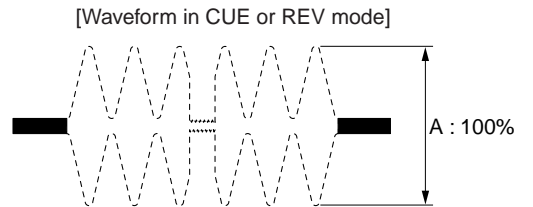
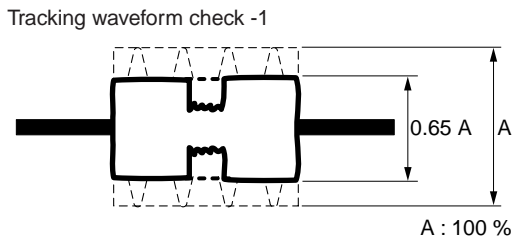
If the waveform at the entrance is bad, rotate TG3. If the waveform at the exit is bad, rotate TG6 to flatten the waveform.



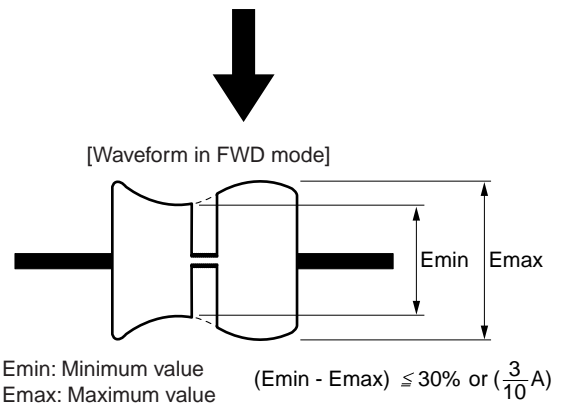
**4-9. TRACK CHECK**

**• Check**

The difference between the maximum value and minimum value of the waveform amplitude during playback of the tracking tape (J-6) in the FWD mode should be 30% or less of the waveform amplitude during the CUE (or REV) mode (which is taken as 100% as shown). At the same time, there must not exist too much fluctuation of waveform amplitude.



The waveform should not change sharply.

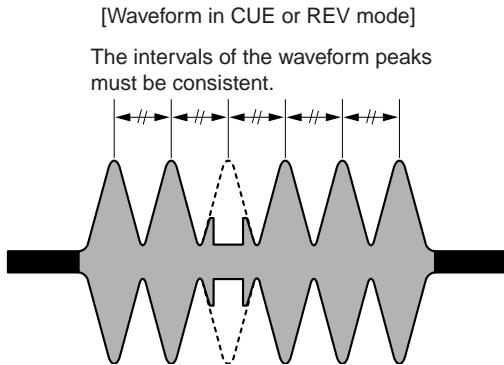




4-10. CUE/REV CHECK

• Check

Check that the intervals of the waveform peaks are consistent while the tracking tape (J-6) runs in the CUE mode or REV mode.



• If not even

If the waveform peaks are not even, perform Section 4-8, “Tacking adjustment”.

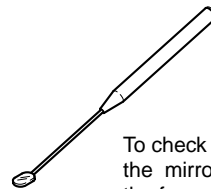
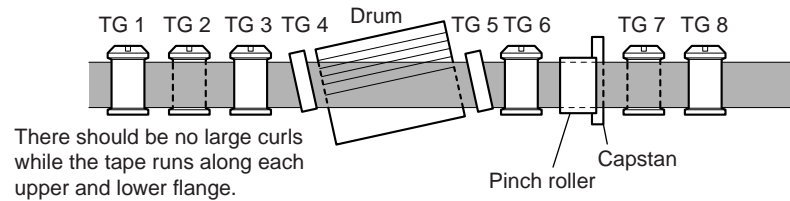
4-11. CURL CHECK AND ADJUSTMENT

• Check

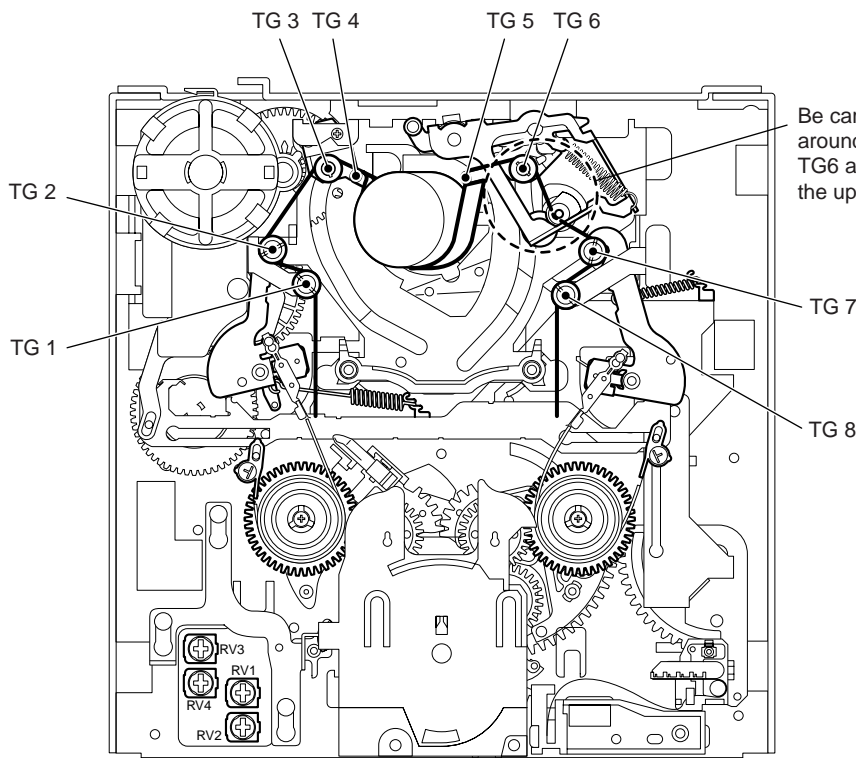
Check that the tape runs along each upper and lower flange while the tracking tape (J-6) runs in the CUE or REV mode. Also check that there are no large curls on each tape guide and pinch roller.

• If the curl is large

Perform the adjustment from Adjustment Start -3 (TG7 side) of the flowchart on page 5-23 again.



To check the tape path visually, use the mirror (J-4) to facilitate check as the frame of the cassette compartment hinders operations.

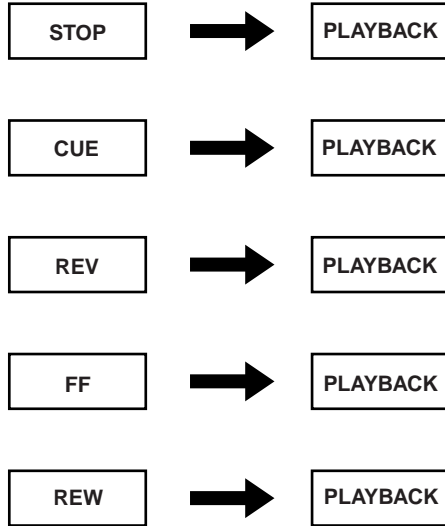


4-12. RISING CHECK

• **Check**

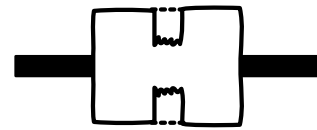
Check that when the tracking tape (J-6) is switched from the STOP, CUE, REV, FF, REW modes to the PLAYBACK mode, the waveform rises horizontally within 2 seconds. (Perform this 2 or 3 times.)

• **Check after checking rising**



- Check that the tape loads and unloads smoothly.
- Play a self-recorded or already recorded tape, and check that the sound and images are normal.

When switching the modes, the waveform should rise horizontally within 2 seconds.



## 5-2. SERVICE MODE

### 5-2-1. ADJUSTING REMOTE COMMANDER

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

#### 1. Used Adjustment Remote Commander

- 1) With the unit set in STANDBY mode, connect the adjusting remote commander to the remote (LANC) terminal.
- 2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).
- 3) Turn on the power with the ON/STANDBY switch of the unit. If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 5-2-1.

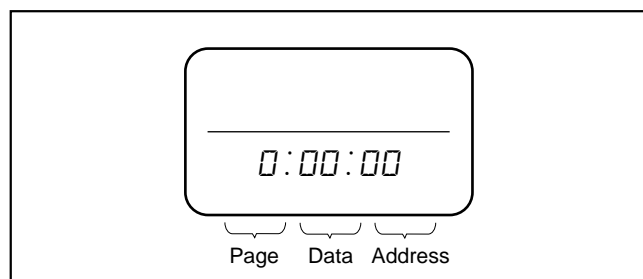


Fig. 5-2-1

- 4) Operate the adjusting remote commander as follows.
  - Changing the page  
The page increases when the EDIT SEARCH + button is pressed, and decreases when the EDIT SEARCH - button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table 5-2-1

- Changing the address  
The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
- Changing the data (Data setting)  
The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
- Writing the adjustment data  
The PAUSE button must be pressed to write the adjustment data (C page, D page and E page) in the nonvolatile memory. (The new adjustment data will not be recorded in the non-volatile memory if this step is not performed.)

#### 2. Precautions Upon Using the Adjusting Remote Commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

5-2-2. DATA PROCESSING

The calculation of the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 5-2-2 indicates the hexadecimal notation- the decimal notation, calculation table.

Hexadecimal notation-Decimal notation																
The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	F	
											(H)	(b)	(c)	(d)	(F)	
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (H)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① → B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

**Note :** ( ) indicate the adjusting remote control unit display.

**(Example)** In the case that the adjusting remote control unit display are BD (bd).  
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection “189” of the ① and ② in the above table is the decimal notation to be calculated.

Table 5-2-2

**5-2-3. SERVICE MODE**

**1. Emergency Memory Address**

Page C	Address 38 to 43
--------	------------------

Address	Contents
38	EMG code when first error occurs
3A	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
3B	Lower: MSW code to be moved when first error occurs
3C	EMG code when second error occurs
3E	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
3F	Lower: MSW code to be moved when second error occurs
40	EMG code when last error occurs
42	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
43	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data "00" is written in the above addresses (38 to 43). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (38 to 3B). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (3C to 3F).

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (40 to 43).

**Note:** After completing adjustments, be sure to initialize the data of addresses 38 to 43 to "00".

**Initializing method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: C, address: 38, set data: 00, and press the PAUSE button.
- 3) Select address: 39 to 43 and set data "00" into them in the same way as in address: 38.
- 4) Select page: 0, address: 01, and set data: 00.

**2. EMG Code (Emergency Code)**

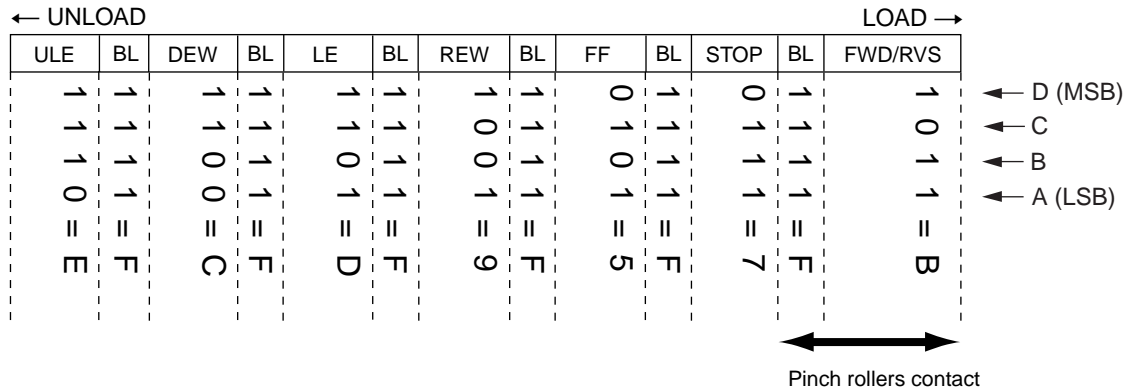
Codes corresponding to the errors which occur are written in addresses 38, 3C, 3E. The type of error indicated by the code are shown in the following table.

Code	Error Type
00	No error (Initial state)
10	Loading motor time-out during LOAD
11	Loading motor time-out during UNLOAD
20	Error during tape take up
22	T reel error
23	S reel error
25	Reel motor error
30	Error during normal capstan rotation
40	FG error during drum start-up
42	FG error during normal drum rotation
50	DEW detection
52	Wet DEW detection
70	Cassette compartment LOAD error
71	Cassette compartment UNLOAD error
72	Retry error because something is caught

**3. MSW Code**

MSW when an alarm occurred: MSW (Mode Switch) information when an alarm occurred.  
 MSW when a transition starts: MSW information when the mechanism position starts to move (if L motor runs).  
 MSW of target destination: MSW information of target position if the mechanism position moves.

**Mechanism position**



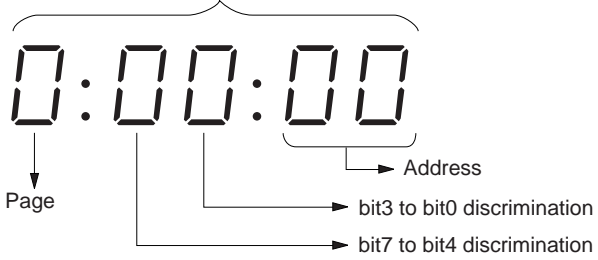
Mechanism position	MSW code	Description
ULE	E	Unload end position. The mechanism stops at this position when it ejects a cassette. It waits for cassette insertion. The guide starts to expand as it advances to the load position.
BL	F	Blank code. It is provided between code and code. The mechanism does not stop at this code (excluding Load/Unload).
DEW	C	Code during loading.
LE	D	Load end position of tape guide.
REW	9	Position of REW operation. The pinch rollers are released.
FF	5	Position of FF operation. The pinch rollers are released.
STOP	7	Stop position. The pinch rollers are released, the tension regulator returns, and the brake is applied to both reels.
FWD/RVS	B	PB, REC, CUE, REVIEW, and PAUSE positions. The mechanism operates at this position in the mode where normal screen appears with the pinch rollers in contact state and the tension regulator turned on.
NULL	0	Code not existing in MD. Default value.



**4. Bit Value Discrimination**

Bit values must be discriminated using the display data of the adjustment remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".

Display on the adjustment remote commander



(Example) If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column ①, and those from bit 3 to bit 0 from column ②.

Display on the adjustment remote commander	Bit values			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
① 8	1	0	0	0
9	1	0	0	1
A (A)	1	0	1	0
B (B)	1	0	1	1
C (C)	1	1	0	0
D (D)	1	1	0	1
② E (E)	1	1	1	0
F (F)	1	1	1	1

## 5. Record of Use Check

Page E	Address D0 to E3
--------	------------------

Address	Function		Remark
D0	OPRATION 1	Lower two digits	The cumulative total hours of operating time is displayed.
D1		Higher two digits	
D2	DRUM RUN 1	Lower two digits	The cumulative total hours of drum rotation with tape threaded is displayed.
D3		Higher two digits	
D4	TAPE RUN 1	Lower two digits	The cumulative total hours of tape running time is displayed.
D5		Higher two digits	
D6	THREADING 1	Lower two digits	The cumulative number of tape unthreading operations is displayed.
D7		Higher two digits	
D8	CHECK SUM 1	Lower two digits	
D9		Higher two digits	
DA	OPRATION 2	Lower two digits	The cumulative total hours of operating time is displayed.
DB		Higher two digits	
DC	DRUM RUN 2	Lower two digits	The cumulative total hours of drum rotation with tape threaded is displayed.
DD		Higher two digits	
DE	TAPE RUN 2	Lower two digits	The cumulative total hours of tape running time is displayed.
DF		Higher two digits	
E0	THREADING 2	Lower two digits	The cumulative number of tape unthreading operations is displayed.
E1		Higher two digits	
E2	CHECK SUM 2	Lower two digits	
E3		Higher two digits	

**Using method:**

1) The record of use data is displayed at page: E, addresses: D0 to E3.

**Note:** When the drum was replaced, initialize the drum rotation counted time.

**Initializing method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: D0, set data: 00, and press the PAUSE button.
- 3) Select address: D1 to E3 and set data "00" into them in the same way as in address: D0.
- 4) Select page: 0, address: 01, and set data: 00.

**6. LED Check**

**(1) All lit check**

Page 9	Address 05, 4E
--------	----------------

**Using method:**

- 1) Select page: 9, address: 05, and set data: 20.
- 2) Select page: 9, address: 4E, and set data: FF.
- 3) Check that all LEDs light up in the following colors respectively.

LED	Color
POWER, PLAY	Green
REC, 7 Segment LED	Red
Others	Amber

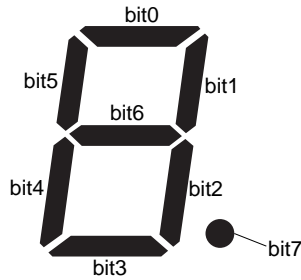
- 4) Select page: 9, address: 4E, and set data: 00.
- 5) Select page: 9, address: 05, and set data: 00.

**(2) 7 Segment LED Check**

Page 9	Address 05, 4E
--------	----------------

**Using method:**

- 1) Select page: 9, address: 05, and set data: 20.
- 2) Select page: 9, address: 4E, and set each bit to "1", and then check that the segments associated with respective bits light up.



- 3) Select page: 9, address: 4E, and set data: 00.
- 4) Select page: 9, address: 05, and set data: 00.

**7. SWITCH CHECK (1)**

Page 9	Address E0
--------	------------

Bit	Function	When bit value = 0	When bit value = 1
0	STOP (FR-183 board S408)	OFF	ON
1	REW (FR-183 board S404)	OFF	ON
2	PLAY (FR-183 board S405)	OFF	ON
3	REC (FR-183 board S407)	OFF	ON
4	PAUSE (FR-183 board S409)	OFF	ON
5	FF (FR-183 board S406)	OFF	ON
6	END SERCH (FR-183 board S412)	OFF	ON
7	RESET (COUNTER) (FR-183 board S414)	OFF	ON

**Using method:**

- 1) Select page: 9, address: E0.
- 2) By discriminating the bit value of display data, the pressed key can be discriminated.

**8. SWITCH CHECK (2)**

Page 9	Address E1
--------	------------

Bit	Function	When bit value = 0	When bit value = 1
0	AUDIO DUB (FR-183 board S410)	OFF	ON
1	INDEX (FR-183 board S413)	OFF	ON
2	DUP (FR-183 board S411)	OFF	ON
3	FINE (FR-183 board S417)	OFF	ON
4	UP (FR-183 board S415)	OFF	ON
5	DOWN (FR-183 board S416)	OFF	ON
6			
7			

**Using method:**

- 1) Select page: 9, address: E1.
- 2) By discriminating the bit value of display data, the pressed key can be discriminated.

**9. SWITCH CHECK (3)**

Page 9	Address E2
--------	------------

Bit	Function	Bit value		
		When bit value = 0	When bit value = 1	
0	AUDIO INPUT (FR-183 board S422)	When bit value = 0 MANU	When bit value = 1 AUTO	
1, 2	COUNTER SELECT (FR-183 board S418)	When bit value = 0, 0 TC	When bit value = 1, 0 COUNTER	When bit value = 0, 1 U-BIT
3, 4	AUDIO MONITOR (FR-183 board S419)	When bit value = 0, 0 MIX	When bit value = 1, 0 CH1/2	When bit value = 0, 1 CH3/4
5	CHARACTER DISPLAY (MONITOR OUT) (FR-183 board S423)	When bit value = 0 OFF	When bit value = 1 ON	
6, 7	CHARACTER DISPLAY (LCD) (FR-183 board S421)	When bit value = 0, 0 ON	When bit value = 1, 0 OFF	When bit value = 0, 1 BLACK BACK

**Using method:**

- 1) Select page: 9, address: E2.
- 2) By discriminating the bit value of display data, the state of the switches can be discriminated.

**10. SWITCH CHECK (4)**

Page 9	Address E3
--------	------------

Bit	Function	Bit value		
		When bit value = 0, 0	When bit value = 1, 0	When bit value = 0, 1
0, 1	DISPLAY SELECT (FR-183 board S420)	DATA	MENU	AUDIO
2	REMOTE/LOCAL (FR-183 board S425)	LOCAL	REMOTE	
3, 4	TIMER (FR-183 board S424)	OFF	REPEAT	REC
5	EXEC (FR-183 board S417)	OFF	ON	
6				
7				

**Using method:**

- 1) Select page: 9, address: E3.
- 2) By discriminating the bit value of display data, the state of the switches can be discriminated.

**11. SWITCH CHECK (5)**

Page 9	Address E4
--------	------------

Bit	Function	When bit value = 0	When bit value = 1
0	INPUT SELECT (FR-183 board S427)		DV
1			VIDEO
2			S VIDEO
3			COMPONENT

**Using method:**

- 1) Select page: 9, address: E4.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

### 5-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts on page 5-99.

#### 3-1. PREPARATIONS BEFORE ADJUSTMENT

##### 3-1-1. Equipment Used

- 1) TV monitor
- 2) Oscilloscope with 2-phenomenon, 30 MHz band, and delay mode (Unless specified otherwise, use a 10 : 1 probe)
- 3) Frequency counter
- 4) Digital voltmeter
- 5) Audio level meter
- 6) Audio noise meter
- 7) Audio attenuator
- 8) Audio distortion meter
- 9) Pattern generator (with VIDEO OUTPUT terminal and external sync function)
- 10) Pattern generator (with COMPONENT OUTPUT terminal)
- 11) Vectorscope (with SCH function)  
(NTSC: with SETUP function)
- 12) Alignment tape
  - SW/OL reference (XH2-3)  
Parts code: 8-967-997-11
  - Audio operation check for NTSC (XH5-3)  
Parts code: 8-967-997-51
  - System operation check for NTSC (XH5-5)  
Parts code: 8-967-997-61
  - Audio operation check for PAL (XH5-3P)  
Parts code: 8-967-997-55
  - System operation check for PAL (XH5-5P)  
Parts code: 8-967-997-66
- 13) Adjusting remote control unit (J-6082-053-B)
- 14) Extension board
  - For extension between CN8001 of the JC-21 board and CN9500 of the DI-73 board. (120P, 0.5 mm) (J-6082-511-A)
- 15) Time code generator (NTSC: BVG-1600/  
PAL : BVG-1600P etc.)
- 16) Time code reader (BVG-1500 etc.)

NTSC: DSR-45  
PAL : DSR-45P



**3-1-2. Connection of Equipment**

According to the specification for the input terminal (COMPONENT input, S VIDEO input, VIDEO input, or DV input), connect measuring equipment as shown in Fig. 5-3-1, and make adjustment.

The input terminal is specified in ( ) of the signal column.

Any input terminal can be used unless otherwise specified.

To switch between COMPONENT input, S VIDEO input, VIDEO input and DV input, use the INPUT SELECT switch.

**Note 1:** In adjustments specifying for the S VIDEO input to be used, using the VIDEO input would disable the product specifications of this unit from being satisfied. Always use the input signal specified.

**Note 2:** If adjustments are used with the VTR with the S video output terminal as the signal source, the performance of this unit may be affected by the VTR. Use a pattern generator with a Y/C separator terminal as much as possible.

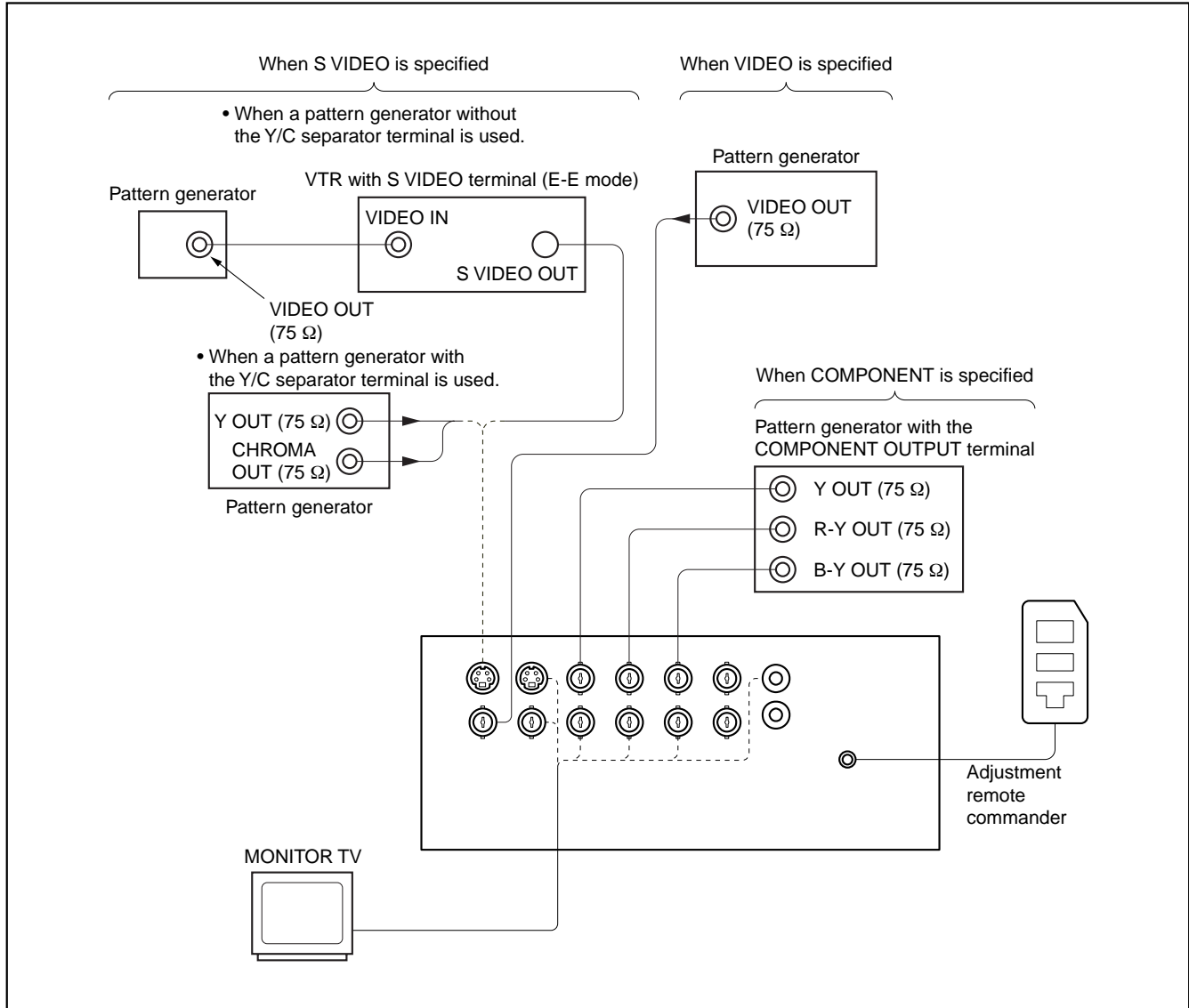


Fig. 5-3-1

### 3-1-3. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjustments, the video output signal must satisfy the given specifications.

#### 1. S VIDEO Input

Connect the oscilloscope to the Y signal terminal of the S VIDEO IN terminal, and check that the sync signal of the Y signal is approximately  $\langle 0.286 \rangle [0.30]$  V and that the amplitude of the video section is approximately  $\langle 0.714 \rangle [0.70]$  V. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained)

Connect the oscilloscope to the chroma signal terminal of the S VIDEO IN terminal, and check that the burst signal amplitude of the chroma signal is approximately  $\langle 0.286 \rangle [0.30]$  V and flat, and that the red signal amplitude of the chroma signal is approximately  $\langle 0.67 \rangle [0.66]$  V. The Y and chroma signals used in the adjustment are shown in Fig. 5-3-2.

$\langle \ \ \rangle$ : NTSC model

[    ]: PAL model

NTSC: DSR-45

PAL : DSR-45P

#### 2. VIDEO Input

Connect the oscilloscope to the VIDEO IN terminal, and check that the sync signal amplitude of the video signal is approximately  $\langle 0.286 \rangle [0.30]$  V, the amplitude of the video section is approximately  $\langle 0.714 \rangle [0.70]$  V, the amplitude of the burst signal is approximately  $\langle 0.286 \rangle [0.30]$  V and flat, and that the red signal amplitude of the chroma signal is approximately  $\langle 0.67 \rangle [0.66]$  V. The video signal (color bar) used for adjustments is shown in Fig. 5-3-3.

$\langle \ \ \rangle$ : NTSC model

[    ]: PAL model

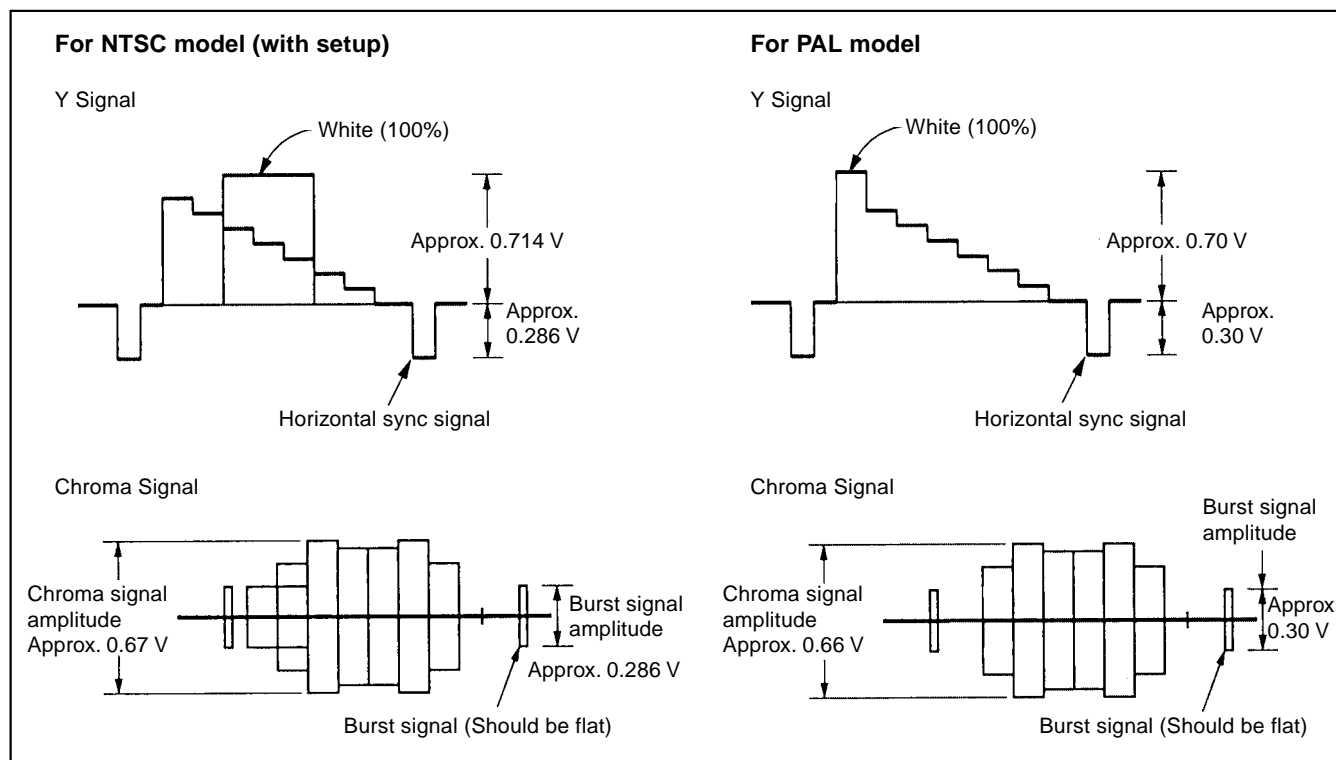


Fig. 5-3-2 Color Bar Signal of Pattern Generator

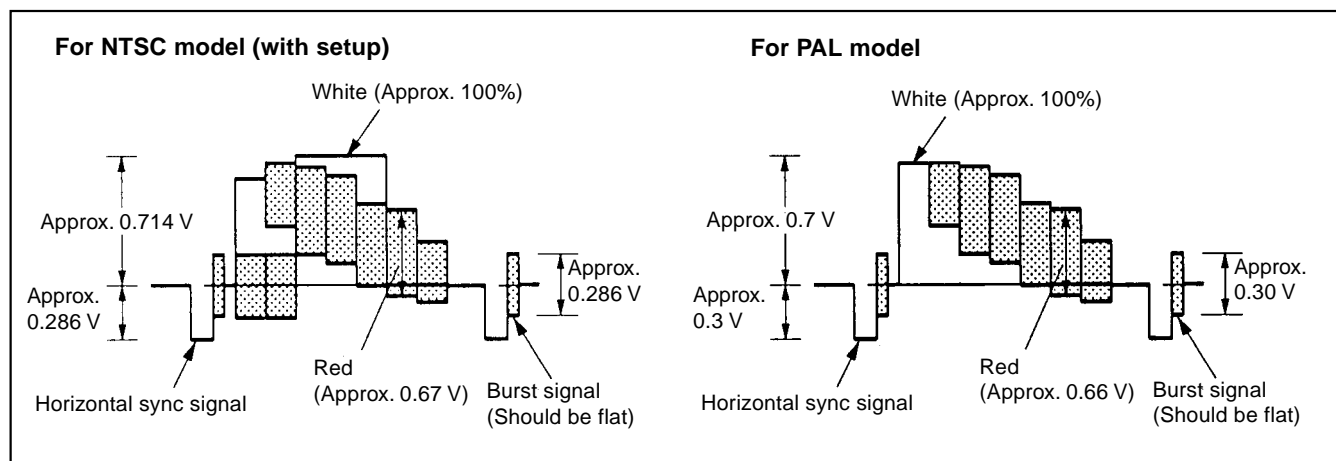


Fig. 5-3-3 Color Bar Signal of Pattern Generator

**3. COMPONENT Input**

Connect the oscilloscope to the Y signal terminal of the COMPONENT IN terminal, and check that the sync signal of the Y signal is approximately <0.286> [0.30] V and that the amplitude of the video section is approximately <0.714> [0.70] V. Connect the oscilloscope to the R-Y signal terminal of the COMPONENT IN terminal, and check that the R-Y signal amplitude is approximately <0.700> [0.525] V. Connect the oscilloscope to the B-Y signal terminal of the COMPONENT IN terminal, and check that the B-Y signal amplitude is approximately <0.700> [0.525] V. The Y, R-Y and B-Y signals used in the adjustment are shown in Fig. 5-3-4.

< >: NTSC model  
 [ ]: PAL model

NTSC: DSR-45  
 PAL : DSR-45P

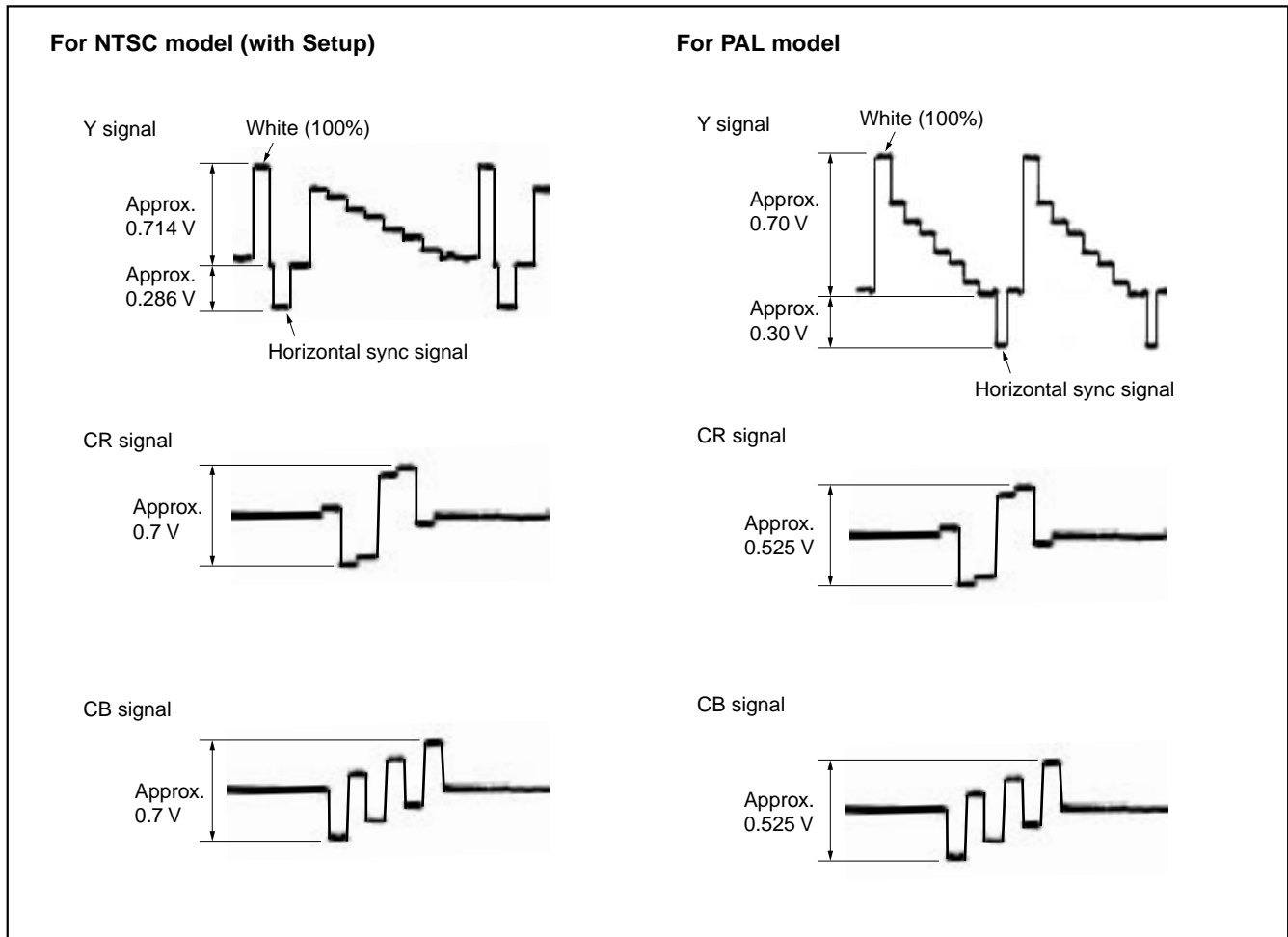


Fig. 5-3-4

**3-1-4. Adjustment Tapes**

Use the alignment tapes shown in the following table.  
Use tapes specified in the signal column of each adjustment.

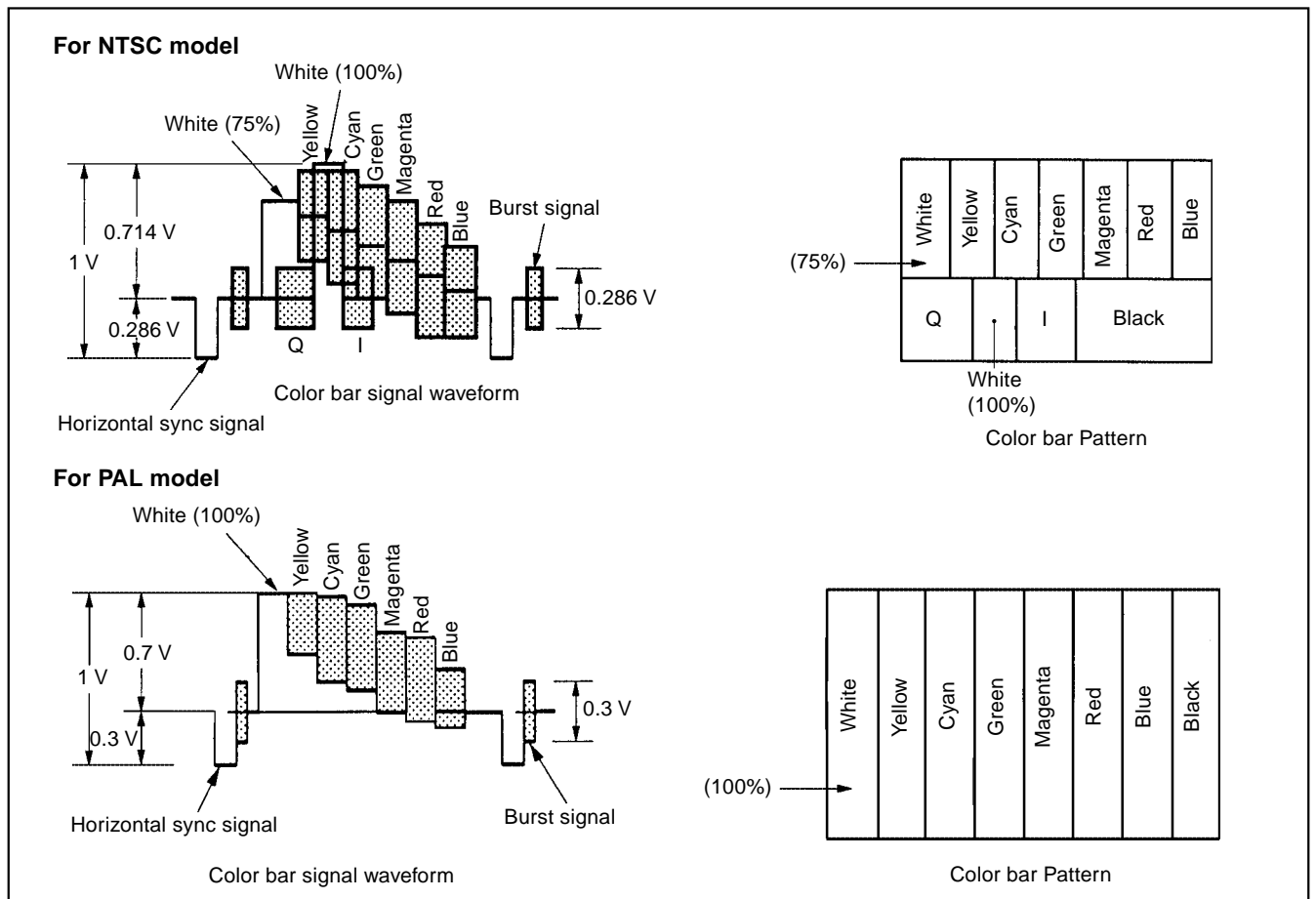
Name	Use
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check

**Table 5-3-1**

Fig. 5-3-5 shows the color bar signals recorded on the alignment tape for Audio Operation Check.

**Note:** Measure with video terminal (Terminated at 75 Ω)

NTSC : DSR-45  
PAL : DSR-45P



**Fig. 5-3-5** Color Bar Signal of Alignment Tapes

**3-1-5. Input/output Level and Impedance**

**Inputs**

VIDEO IN REF.IN  
 BNC type  
 1 Vp-p (75 ohms, unbalanced)

S VIDEO IN  
 Mini DIN 4-pin  
 Luminance signal: 1 Vp-p  
 (75 ohms, unbalanced)  
 Chrominance signal:  
 0.286 Vp-p (DSR-45)  
 0.3 Vp-p (DSR-45P)  
 (75 ohms unbalanced)

COMPONENT IN  
 Y: BNC type  
 1.0 Vp-p (75 ohms, unbalanced)  
 R-Y: BNC type  
 0.7 Vp-p (75 ohms, unbalanced)  
 (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)  
 B-Y: BNC type  
 0.7 Vp-p (75 ohms, unbalanced)  
 (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)

DV IN/OUT  
 4-pin jack (i.LINK)

AUDIO IN (CH-1 to CH-4)  
 Phono jack, -10/-2/+4 dBu,  
 Impedance more than 47 kohms,  
 unbalanced  
 Maximum input level:  
 DSR-45:  
 -10 : +18 dBu (about 6 Vrms)  
 -2 : +24 dBu (about 12.5 Vrms)  
 +4 : +30 dBu (about 25 Vrms)  
 DSR-45P:  
 -10 : +16 dBu (about 5 Vrms)  
 -2 : +22 dBu (about 10 Vrms)  
 +4 : +28 dBu (about 20 Vrms)

TC IN  
 BNC type  
 0.5 to 18 Vp-p (time code input)  
 0.5 to 4 Vp-p (through output)

**Outputs**

MONITOR VIDEO  
 Phono jack, 1 Vp-p (75 ohms,  
 unbalanced) (superimpose)

VIDEO OUT  
 BNC type, 1 Vp-p (75 ohms,  
 unbalanced)

COMPONENT OUT  
 Y: BNC type  
 1.0 Vp-p (75 ohms, unbalanced)  
 R-Y: BNC type  
 0.7 Vp-p (75 ohms, unbalanced)  
 (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)  
 B-Y: BNC type  
 0.7 Vp-p (75 ohms, unbalanced)  
 (DSR-45: 75%, color bars / DSR-45P: 100%, colour bars)

S VIDEO OUT  
 Mini DIN 4-pin  
 Luminance signal: 1.0 Vp-p  
 (75 ohms, unbalanced)  
 Chrominance signal:  
 0.286 Vp-p (DSR-45)  
 0.3 Vp-p (DSR-45P)  
 (75 ohms, unbalanced)

AUDIO OUT (CH-1 to CH-4)  
 XLR 3-pin, male, +4 dBu, 600  
 ohms loading, balanced

MONITOR AUDIO  
 Phono jack

TC OUT  
 BNC type, 2.2 Vp-p, 600 ohms /  
 1.2 Vp-p, 75 ohms  
 0.5 to 4 Vp-p (through output,  
 600 ohms)

PHONES  
 Stereo minijack, 8  $\Omega$

## 3-2. SYSTEM CONTROL SYSTEM ADJUSTMENTS

### 1. Initializing the C, D, E Page Data

**Note 1:** If “Initializing the C, D, E Page Data” is performed, all data of the C page, D page and E page will be initialized.

**Note 2:** If the C, D, E page data has been initialized, “Modification of C, D, E page Data” and all adjustments need to be performed again.

Mode	E-E
Signal	Arbitrary
Adjustment Page	C
Adjustment Address	00 to DF
Adjustment Page	D
Adjustment Address	10 to 3F
Adjustment Page	E
Adjustment Address	10 to ED

### 2. Input of C Page Initial Data

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 80, set data: 0C, and press the PAUSE button on the adjustment remote commander.
- 3) Select page: 3, address: 80, and check that the data change to “1C”.
- 4) Press the RESET switch at the bottom of the set using a thin and long pin.
- 5) Modify the C page data. (Refer to C page table)

### 3. Input of D Page Initial Data

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 80, set data: 0D, and press the PAUSE button on the adjustment remote commander.
- 3) Select page: 3, address: 80, and check that the data change to “1D”.
- 4) Press the RESET switch at the bottom of the set using a thin and long pin.
- 5) Modify the D page data. (Refer to D page table)

### 4. Input of E Page Initial Data

**Note 1:** Perform the operation after setting the DISPLAY SELECT switch on the front panel to any mode other than “MENU”.

**Note 2:** When EEPROM (IC708 on VD-032 board) is replaced with a brand-new one, apply power with the following method before operation.

- 1) Connect the adjustment remote commander without connecting the cable to AC connector.
- 2) Set the HOLD switch on the adjustment (adjusting) remote commander to “HOLD” (service position).
- 3) Connect the cable to AC connector.

#### Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 9, address: 00, set data: 2D, and press the PAUSE button on the adjustment remote commander.
- 3) Select page: 9, address: 01, set data: 2D, and press the PAUSE button.
- 4) Select page: 9, address: 02, and check that the data change to “01”.
- 5) Press the RESET switch at the bottom of the set using a thin and long pin.
- 6) Disconnect the adjustment remote commander, and turn the POWER switch OFF.
- 7) Disconnect the cable connected to AC connector once, then connect them again.
- 8) Turn the POWER switch ON.
- 9) Modify the E page data. (Refer to E page table)

### 5. Modification of C, D, E, Page Data

If the C, D, E page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

#### Modifying Method:

- 1) Before changing the data, select page: 0, address: 01, and set data: 01.
- 2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

**Note :** If copy the data built in the different model, this set may not operate.

- 3) When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.
- 4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.
- 5) After completing “Modification of C, D, E Page Data”, select page: 0, address: 01, and set data: 00. Also perform all adjustments.



6. C Page Table

**Note:** Fixed data-1: Initialized data. (Refer to “Input of C page Initial Data”)  
 Fixed data-2: Modified data. (Refer to “Modified of C, D, E Page Data”)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			Fixed data-1 (Initialized data)
10	EE	EE	Switching position adj.
11	00	00	
12	EE	EE	
13	00	00	
14, 15			Fixed data-1 (Initialized data)
16	E0	E0	Capstan FG adj.
17			Fixed data-1 (Initialized data)
18	2A	2A	CLK DELAY and AEQ adj.
19	2A	2A	
1A			Fixed data-1 (Initialized data)
1B	33	33	CLK DELAY and AEQ adj.
1C	33	33	
1D			Fixed data-1 (Initialized data)
1E	25	25	RF-AGC adj.
1F	3E	3E	PLL f <sub>0</sub> adj.
20	3E	3E	
21	DC	DC	CLK DELAY and AEQ adj.
22	99	99	PLL f <sub>0</sub> adj.
23, 24			Fixed data-1 (Initialized data)
25	88	88	Playback Y level adj./ Monitor terminal output Y level adj.
26	E3	E3	Playback C level adj./ Monitor terminal output C level adj.
27	A1	A1	Playback C level adj./ Monitor terminal output C level adj.
28 to 2B			Fixed data-1 (Initialized data)
2C	08	08	Node unique ID No. input
2D	00	00	
2E	46	46	
2F	01	01	
30	02	02	
31	00	00	
32	00	00	
33	00	00	
34			Fixed data-2
35			
36			
37			
38	00	00	Emergency memory
39	00	00	
3A	00	00	
3B	00	00	
3C	00	00	
3D	00	00	
3E	00	00	
3F	00	00	
40	00	00	
41	00	00	
42	00	00	
43	00	00	

Address	Initial value		Remark
	NTSC	PAL	
44 to 46			Fixed data-1 (Initialized data)
47	20	20	PLL f <sub>0</sub> adj.
48 to 63			Fixed data-1 (Initialized data)
64			Fixed data-2
65 to 72			Fixed data-1 (Initialized data)
73	03	03	CLK DELAY and AEQ adj.
74 to 8F			Fixed data-1 (Initialized data)
90			Fixed data-2
91 to A2			Fixed data-1 (Initialized data)
A3			Fixed data-2
A4 to A9			Fixed data-1 (Initialized data)
AA			Fixed data-2
AB to BD			Fixed data-1 (Initialized data)
BE			Fixed data-2
BF to C1			Fixed data-1 (Initialized data)
C2			Fixed data-2
C3 to DF			Fixed data-1 (Initialized data)

**7. D Page Table**

**Note:** Fixed data-1: Initialized data. (Refer to “Input of D page Initial Data”)  
Fixed data-2: Modified data. (Refer to “Modified of C, D, E Page Data”)

Address	Initial value		Remark
	NTSC	PAL	
10 to 12			Fixed data-1 (Initialized data)
13			Fixed data-2
14 to 36			Fixed data-1 (Initialized data)
37			Fixed data-2
38 to 3E			Fixed data-1 (Initialized data)
3F			Fixed data-2

**8. E Page Table**

**Note:** Fixed data-1: Initialized data. (Refer to “Input of E page Initial Data”)  
Fixed data-2: Modified data. (Refer to “Modified of C, D, E Page Data”)

Address	Initial value		Remark
	NTSC	PAL	
10 to 12			Fixed data-1 (Initialized data)
13			Fixed data-2
14 to 28			Fixed data-1 (Initialized data)
29			Fixed data-2
2A	08	08	H phase adj.
2B to 31			Fixed data-1 (Initialized data)
32			Fixed data-2
33			Fixed data-1 (Initialized data)
34			Fixed data-2
35 to 6D			Fixed data-1 (Initialized data)
6E			Fixed data-2
6F			
70 to 7F			Fixed data-1 (Initialized data)
80	9C	9C	Bright adj.
81	65	65	Color adj.
82	95	95	White barance adj.
83	5F	5F	
84	97	97	Contrast adj.
85	B7	B7	D range adj.
86	65	65	V-COM level adj.
87	9F	–	VCO adj. (NTSC) / Fixed data-1 (PAL)
88	7A	7A	V-COM adj.
89 to 8B			Fixed data-1
8C	–	9F	Fixed data-1 (NTSC) / VCO adj. (PAL)
8D to 8F			Fixed data-1 (Initialized data)
90	9F	9F	Composite E-E Y signal level adj.
91	–	AA	Fixed data-1 (Initialized data) (NTSC)/ Decoder free run adj. (PAL)
92			Fixed data-1 (Initialized data)
93	5B	5B	Decoder HUE adj.
94	35	35	Component E-E Y signal level adj.
95	3B	3B	Component E-E CB signal level adj.
96	35	35	Component E-E CR signal level adj.
97			Fixed data-1 (Initialized data)
98	5D	5D	Component E-E CB signal delay adj.
99	70	70	Component E-E CR signal delay adj.
9A			Fixed data-1 (Initialized data)
9B	25	25	Playback CB signal delay adj.
9C	25	25	Playback CR signal delay adj.
9D	A9	A9	Playback sync level adj.
9E			Fixed data-1 (Initialized data)
9F	B4	B4	Burst level adj.
A0	–	62	Fixed data-1 (NTSC) / Burst level adj. (PAL)
A1	97	97	Color level adj. with 0% setup
A2	B2	B2	
A3	B2	B2	Carrier balance adj.
A4	8D	8D	
A5	99	99	Encoder free run adj.
A6			Fixed data-1 (Initialized data)

Address	Initial value		Remark
	NTSC	PAL	
A7	70	70	Playback SC phase adj. (EXT SYNC ON)
A8	32	32	SC_V phase adj.
A9	88	-	Decoder free run adj. (NTSC)/ Fixed data-1 (Initialized data) (PAL)
AA	BE	BE	Playback blanking level adj. with 0% Setup
AB			Fixed data-1 (Initialized data)
AC	5A	5A	Playback Y signal level adj. with 0% Setup
AD	8E	8E	Playback CB signal level adj. with 0% Setup
AE	A1	A1	Playback CR signal level adj. with 0% Setup
AF to B4			Fixed data-1 (Initialized data)
B5	30	30	S Video E-E CB signal delay adj.
B6	30	30	S Video E-E CR signal delay adj.
B7 to BC			Fixed data-1 (Initialized data)
BD	AD	AD	S video E-E Y signal level adj.
BE	C0	C0	S video E-E CB signal level adj.
BF	BA	BA	S video E-E CR signal level adj.
C0	93	-	Color level adj. with 7.5% setup (NTSC)/
C1	AF	-	Fixed data-1 (Initialized data) (PAL)
C2	4D	-	Playback Y signal level adj. with 7.5% setup (NTSC)/ Fixed data-1 (Initialized data) (PAL)
C3	6E	-	Playback CB signal level adj. with 7.5% setup (NTSC)/ Fixed data-1 (Initialized data) (PAL)
C4	82	-	Playback CR signal level adj. with 7.5% setup (NTSC)/ Fixed data-1 (Initialized data) (PAL)
C5 to C7			Fixed data-1 (Initialized data)
C8	9C	-	Playback blanking level adj. with 7.5% Setup (NTSC)/ Fixed data-1 (Initialized data) (PAL)
C9	8D	8D	H phase adj.
CA	8F	8F	E-E color level adj.
CB	B4	B4	
CC	BD	BD	E-E blanking level adj.
CD			Fixed data-1 (Initialized data)
CE	61	61	E-E SC phase adj.
CF	42	42	Playback SC phase adj. (EXT SYNC OFF)
D0	00	00	Record of use
D1	00	00	
D2	00	00	
D3	00	00	
D4	00	00	
D5	00	00	
D6	00	00	
D7	00	00	
D8	00	00	
D9	00	00	
DA	00	00	
DB	00	00	

Address	Initial value		Remark
	NTSC	PAL	
DC	00	00	Record of use
DD	00	00	
DE	00	00	
DF	00	00	
E0	00	00	
E1	00	00	
E2	00	00	
E3	00	00	
E4			Fixed data-1 (Initialized data)
E5			Fixed data-2
E6			
E7 to EB			Fixed data-1 (Initialized data)
EC			Fixed data-2
ED			Fixed data-1 (Initialized data)

**9. Node Unique ID No. Input**

**Note 1:** Perform “9-2. Input of Serial No.” if the data on page C has been cleared and the node unique ID No. is not found.

**9-1. Input of Company ID etc.**

Write the company ID to the EEPROM (nonvolatile memory).

Page	C
Address	2C, 2D, 2E, 2F, 30, 31

**Input method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: C, and enter the following data.

**Note 2:** Each time the data is set, press the PAUSE button on the adjusting remote commander.

Address	Data
2C	08
2D	00
2E	46
2F	01
30	02
31	5D
32	Refer to “Input of Serial No.”
33	

- 3) Select page: 0, address: 01, and set data: 00.

**9-2. Input of Serial No.**

Write the serial No. to the EEPROM (nonvolatile memory). In writing the serial No., a decimal number should be converted into a hexadecimal number.

Page	C
Address	32, 33

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Read the serial No. from the model name label, and it is assumed to be D<sub>1</sub>.  
Example: If serial No. is “77881”,  
 $D_1 = 77881$
- 3) From Table 5-3-2, obtain D<sub>2</sub> that correspond to D<sub>1</sub>.  
Example: If D<sub>1</sub> = 77881,  
 $D_2 = D_1 - 65536 = 12345$

D <sub>1</sub> (decimal)	D <sub>2</sub> (decimal)
00001 to 65535	D <sub>1</sub>
65536 to 131071	D <sub>1</sub> - 65536
131072 to 196607	D <sub>1</sub> - 131072

**Table 5-3-2**

- 4) From Table 5-3-3, obtain the maximum decimal number less than D<sub>2</sub>, and it is assumed to be D<sub>3</sub>.  
Example: If D<sub>2</sub> = 12345.  
 $D_3 = 12288$
- 5) From Table 5-3-3, obtain a hexadecimal number that corresponds to D<sub>3</sub>, and it is assumed to be H<sub>3</sub>.  
Example: If D<sub>3</sub> = 12288,  
 $H_3 = 3000$
- 6) Calculate D<sub>4</sub> using following equations (decimal calculation). ( $0 \leq D_4 \leq 225$ )  
 $D_4 = D_2 - D_3$   
Example: If D<sub>2</sub> = 12345 and D<sub>3</sub> = 12288,  
 $D_4 = 12345 - 12288 = 57$
- 7) Convert D<sub>4</sub> into a hexadecimal number to obtain H<sub>4</sub>. (See Table 5-2-2 “Hexadecimal - decimal conversion table” in 5-2. Service Mode)  
Example: If D<sub>4</sub> = 57,  
 $H_4 = 39$
- 8) Enter higher two digits of H<sub>3</sub> to address: 32 on page: C.  
Example: If H<sub>3</sub> = 3000,  
select page: C, address: 32, and set data: 30, then press the PAUSE button.
- 9) Enter H<sub>4</sub> to address: 33 on page: C.  
Example: If H<sub>4</sub> = 39,  
select page: C, address: 33, and set data: 39, then press the PAUSE button.
- 10) Select page: 0, address: 01, and set data: 00.

D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>	D <sub>3</sub>	H <sub>3</sub>
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

**Note:** D<sub>3</sub>: Decimal  
H<sub>3</sub>: Hexadecimal

**Table 5-3-3**

### 3-3. SERVO AND RF SYSTEM ADJUSTMENTS

#### 1. Capstan FG Adjustment (CM-59 Board)

Mode	E-E
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	“ 00 ”

##### Adjusting method:

- 1) Close the cassette compartment without tape.
  - 2) Select page: 0, address: 01, and set data: 01.
  - 3) Select page: 3, address: 01, set data: 1B, and press the PAUSE button of adjustment remote commander.
  - 4) Select page: 3, address: 02, and check that the data change to “ 1B ” → “ 2B ” → “ 00 ”.
  - 5) Select page: 3, address: 03, and check data: “ 00 ”.
- Note:** If page: 3, address: 03 is “ 01 ”, there are errors.
- 6) Set page: 0, address: 01, and set data: 00.

#### 2. PLL f<sub>0</sub> Pre-adjustment (RP-234 Board)

Mode	E-E
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	“ 00 ”

##### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 02, and check that the data changes to “ 00 ”.
- 4) Select page: 3, address: 03, and check that the data is “ 00 ”.
- 5) Select page: 0, address: 01, and set data: 00.

#### 3. Switching Position Adjustment (RP-234 Board)



Mode	Playback
Signal	Alignment tape: SW/OL standard (XH2-3)
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	“ 00 ”

##### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 02, and check that the data changes to “ 00 ”.
- 4) Select page: 3, address: 03, and check that the data is “ 00 ”.
- 5) Select page: 0, address: 01, and set data: 00.

#### 4. RF-AGC Adjustment (RP-234 Board)

Mode	Recording and playback
Signal	Color bar
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1E
Specified Value	“ 00 ”

##### Adjusting method:

- 1) Record the color bar signal in the optional tape about 2 minutes.
- 2) Select page: 0, address: 01, and set data: 01.
- 3) Select page: C, address: 54, set data: CC, and press the PAUSE button of the adjustment remote commander.
- 4) Select page: 3, address: 1D, set data: 21, and press the PAUSE button.
- 5) Play back the recorded section.
- 6) Select page: 3, address: 01, set data: 23, and press the PAUSE button.
- 7) Select page: 3, address: 02, and check that the data changes to “ 00 ”.
- 8) Select page: 3, address: 03, and check that the data is “ 00 ”.
- 9) Select page: 3, address: 1D, set data: 20, and press the PAUSE button.
- 10) Select page: C, address: 54, set data: 00, and press the PAUSE button.
- 11) Select page: 0, address: 01, and set data: 00.



## 5. CLK DELAY and AEQ Adjustment (RP-234 Board)



Mode	Recording and playback
Signal	Color bar
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 73
Specified Value	“ 00 ”

### Adjusting method:

- Record the color bar signal in the optional tape about 2 minutes.
- Select page: 0, address: 01, and set data: 01.
- Select page: C, address: 54, set data: CC, and press the PAUSE button of the adjustment remote commander.
- Select page: 3, address: 1D, set data: 21, and press the PAUSE button.
- Play back the recorded section.
- Select page: 3, address: 01, set data: 07, and press the PAUSE button.
- Select page: 3, address: 02, and check that the data changes to “ 00 ”.
- Select page: 3, address: 03, and check that the data is “ 00 ”.
- Select page: 3, address: 1D, set data: 20, and press the PAUSE button.
- Select page: C, address: 54, set data: 00, and press the PAUSE button.
- Select page: 0, address: 01, and set data: 00.

## 6. PLL f<sub>0</sub> Final Adjustment (RP-234 Board)

Mode	E-E
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	“ 00 ”

### Adjusting method:

- Select page: 0, address: 01, and set data: 01.
- Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
- Select page: 3, address: 02, and check that the data changes to “ 00 ”.
- Select page: 3, address: 03, and check that the data is “ 00 ”.
- Select page: 0, address: 01, and set data: 00.

## 3-4. VIDEO SYSTEM ADJUSTMENTS

### 3-4-1. JC-21 Board Adjustment

#### 1. VFD SPCK Adjustment (JC-21 Board)

Mode	E-E
Signal	No signal
Measuring Point	Pin ⑤ of IC3302 (CL3305)
Measuring Instrument	Frequency counter
Adjustment Element	CT3300
Specified value	f = 13500000 ± 20 Hz

### Adjusting method:

- Set the VFD SPCK frequency (f) to the specified value using CT3300.

#### 2. A/D Converter Reference Voltage Adjustment (1) (JC-21 Board)

Mode	E-E
Signal	Arbitrary
Measuring Point	Pin ⑤ of IC1105 (CL1170)
Measuring Instrument	Digital voltmeter
Adjustment Element	RV1100
Specified value	A = 2.83 ± 0.01 Vdc

### Adjusting method:

- Set the VRT voltage (A) to the specified value using RV1100.

#### 3. A/D Converter Reference Voltage Adjustment (2) (JC-21 Board)

Mode	E-E
Signal	Arbitrary
Measuring Point	Pin ③ of IC1105 (CL1169)
Measuring Instrument	Digital voltmeter
Adjustment Element	RV1101
Specified value	A = 0.96 ± 0.01 Vdc

### Adjusting method:

- Set the VBT voltage (A) to the specified value using RV1101.

**4. Y Signal Clamp Reference Voltage Adjustment (JC-21 Board)**

Mode	E-E
Signal	Color bar
Measuring Point	Pin ⑧ of IC1102 (CL1161)
Measuring Instrument	Digital voltmeter
Adjustment Element	RV1103
Specified value	A = 1.150 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC1101 (CL1145 or Q1116 collector) and GND.

**Adjusting method:**

- 1) Set the Y signal clamp reference voltage (A) to the specified value using RV1103.

**5. CR Signal Clamp Reference Voltage Adjustment (JC-21 Board)**

Mode	E-E
Signal	Color bar
Measuring Point	Pin ⑧ of IC1103 (CL1160)
Measuring Instrument	Digital voltmeter
Adjustment Element	RV1102
Specified value	A = 1.915 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC1101 (CL1145 or Q1116 collector) and GND.

**Adjusting method:**

- 1) Set the CR signal clamp reference voltage (A) to the specified value using RV1102.

**6. CB Signal Clamp Reference Voltage Adjustment (JC-21 Board)**

Mode	E-E
Signal	Color bar
Measuring Point	Pin ⑧ of IC1104 (CL1162)
Measuring Instrument	Digital voltmeter
Adjustment Element	RV1104
Specified value	A = 1.915 ± 0.005 Vdc

Connection: Connect a jumper wire between Pin 6 of IC1101 (CL1145 or Q1116 collector) and GND.

**Adjusting method:**

- 1) Set the CB signal clamp reference voltage (A) to the specified value using RV1104.

**7. AFC Preliminary Adjustment (JC-21 Board)**

Mode	Recording
Signal	Color bar
Measuring Point	Pin ⑨ of IC2204 (CL2214)
Measuring Instrument	Digital voltmeter
Adjustment Element	CT2200
Specified value	A = 1.9 ± 0.5 Vdc

**Adjusting method:**

- 1) Set the DC voltage (A) to the specified value using CT2200.

**8. AFC Picture Frame Adjustment (JC-21 Board)**

Mode	Recording
Signal	Color bar
Measuring Point	CH1: Pin ⑳ of IC1108 (CL1157) CH2: Pin ㉔ of IC2204 (CL2217)
Measuring Instrument	Oscilloscope
Adjustment Element	RV2201
Specified value	T = 110 ± 10 nsec

**Adjusting method:**

- 1) Set the time difference (T) between the center of COMP SYNC falling and AFH rising to the specified value using RV2201.

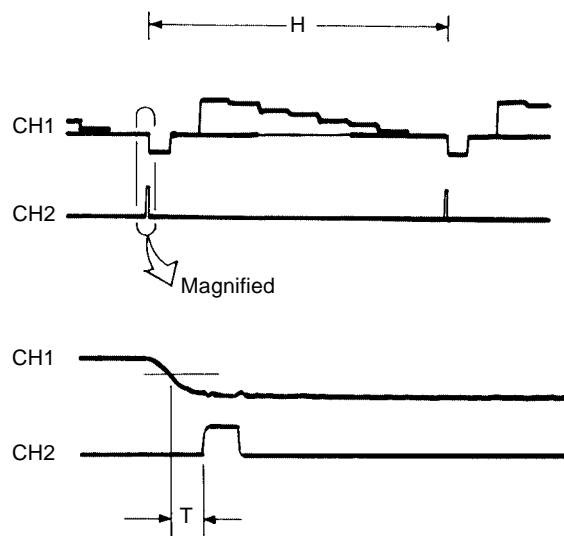


Fig. 5-3-6

**9. AFC Adjustment (JC-21 Board)**

Mode	Recording
Signal	Color bar
Measuring Point	Pin ⑨ of IC2204 (CL2214)
Measuring Instrument	Digital voltmeter
Adjustment Element	CT2200
Specified value	A = 1.90 ± 0.05 Vdc

**Adjusting method:**

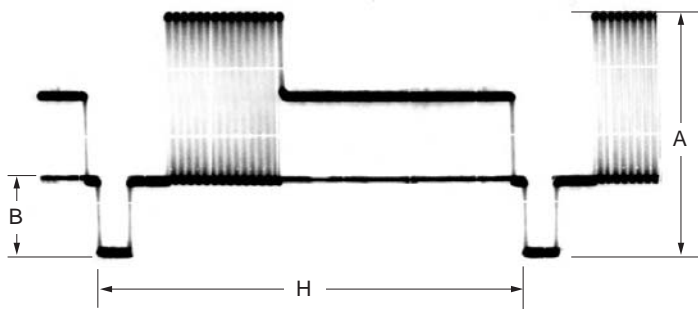
- 1) Set the DC voltage (A) to the specified value using CT2200.

**10. Playback Y level Adjustment (JC-21 Board)**

Mode	E-E
Signal	No signal
Measuring Point	Pin ⑬ of CN1101 (CL1122)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified value	Y level: A = 1.00 ± 0.01 Vp-p SYNC level: B = 0.286 ± 0.01 Vp-p

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: C, address: 25, change the data and adjust the Y signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Check that the SYNC signal level (B) is specified value.
- 6) Select page: 3, address: 0C, and set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.



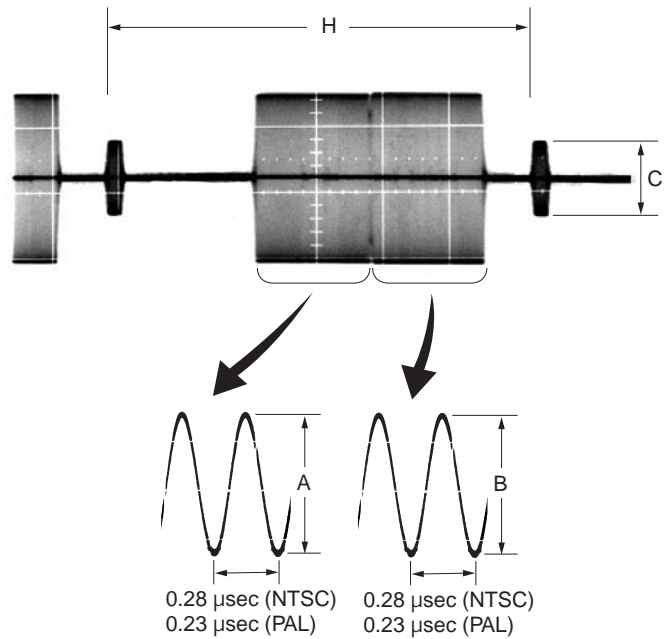
**Fig. 5-3-7**

**11. Playback C level Adjustment (JC-21 Board)**

Mode	E-E
Signal	No signal
Measuring Point	Pin ⑮ of CN1101 (CL1124)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified value	CR level: A = 0.714 ± 0.01 Vp-p CB level: B = 0.714 ± 0.01 Vp-p

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: C, address: 26, change the data and adjust the CR signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: C, address: 27, change the data and adjust the CB signal level (B) to the specified value.
- 6) Press the PAUSE button of the adjustment remote commander.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-8**

3-4-2. General Adjustment

1. Playback Sync Level Adjustment (VD-032 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated) VIDEO OUT terminal (75 Ω terminated) S VIDEO OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	9D
Specified Value	Adjustment : A = 286 ± 5 mVp-p (NTSC) A = 300 ± 5 mVp-p (PAL) Check : A = 286 ± 7 mVp-p (NTSC) A = 300 ± 7 mVp-p (PAL)

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: 9D, change the data and adjust the SYNC level (A) of the component Y signal output to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Check the composite output and the SYNC level (A) of the S Video Y signal output to the specified value.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.

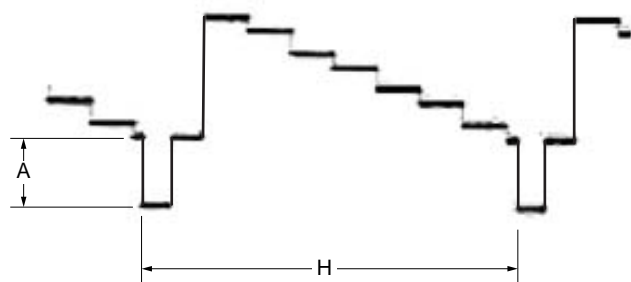


Fig. 5-3-9

2. Playback Blanking Level Adjustment with 0% Setup (VD-032 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	AA
Specified Value	A = 0 ± 3 mV

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: AA, change the data and adjust the blanking level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.

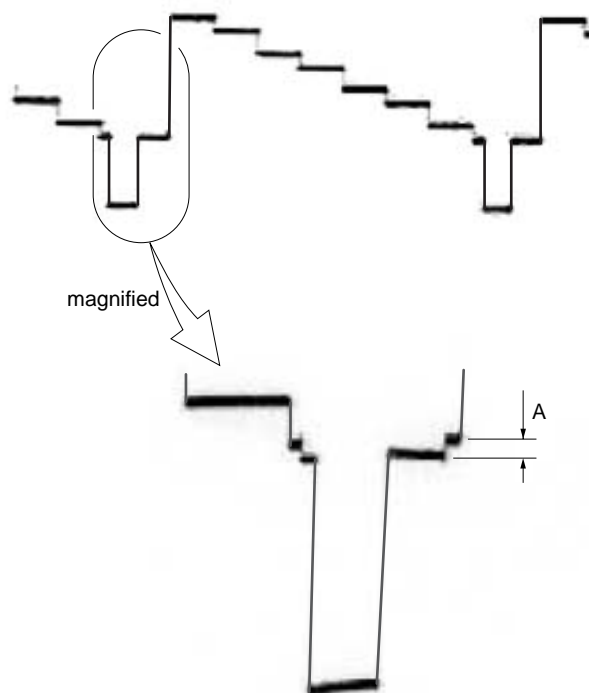


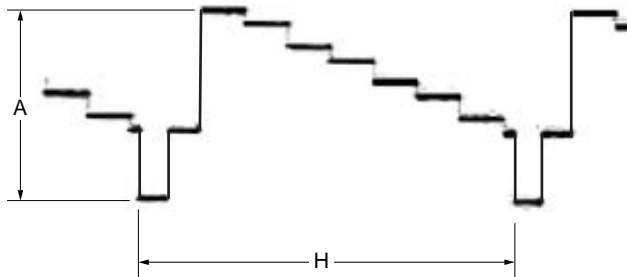
Fig. 5-3-10

**3. Playback Y Signal Level Adjustment with 0% Setup (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	AC
Specified Value	A = 822 ± 10 mVp-p (NTSC) A = 825 ± 10 mVp-p (PAL)

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: AC, change the data and adjust the component Y signal level (A) to the specified value. Read the this adjustment data, and this data is named D<sub>AC</sub>.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: E, address: BA, set data: D<sub>AC</sub>, and press the PAUSE button.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.



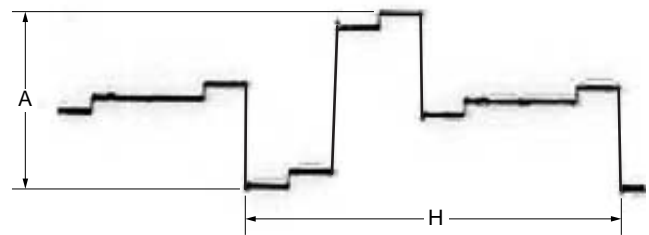
**Fig. 5-3-11**

**4. Playback CR Signal Level Adjustment with 0% Setup (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	AE
Specified Value	A = 757 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: AE, change the data and adjust the component CR signal level (A) to the specified value. Read the this adjustment data, and this data is named D<sub>AE</sub>.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: E, address: BC, set data: D<sub>AE</sub>, and press the PAUSE button.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.



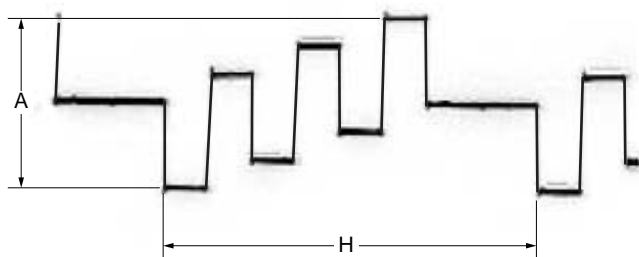
**Fig. 5-3-12**

**5. Playback CB Signal Level Adjustment with 0% Setup (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	AD
Specified Value	A = 757 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: AD, change the data and adjust the component CB signal level (A) to the specified value. Read the this adjustment data, and this data is named D<sub>AD</sub>.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: E, address: BB, set data: D<sub>AD</sub>, and press the PAUSE button.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-13**

**6. Playback CR Signal Delay Adjustment (VD-032 Board)**

Mode	Playback
Signal	A tape that the color bar signal is recorded (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	9C
Specified Value	t = 0 ± 20 nsec

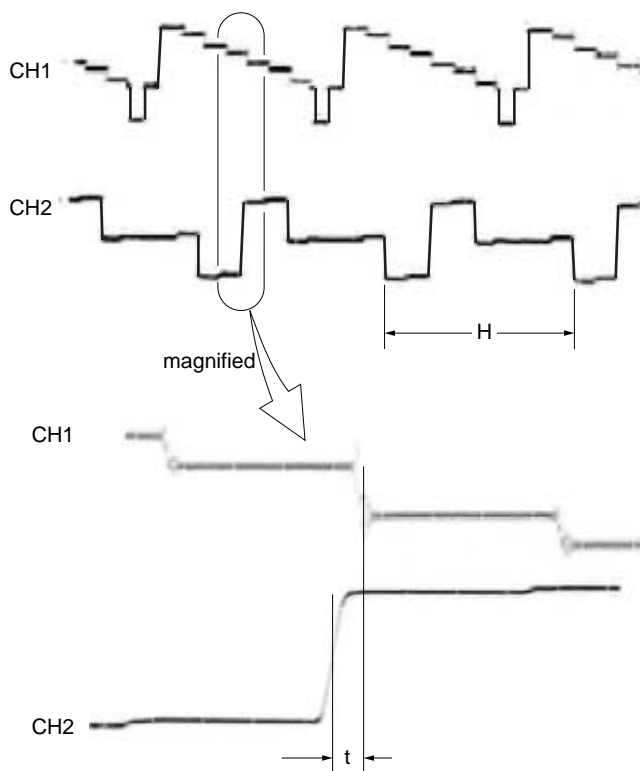
**Note1:** A tape recorded with the status that “COLOR BAR” of “DISPLAY SET” on the menu setting is ON.

**Note2:** After this adjustment, check that the specified value of “Playback CR Signal Level Adjustment with 0% Setup” is satisfied.

If not satisfied, perform “Playback CR Signal Level Adjustment with 0% Setup”.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 9C, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CR signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



Align the center of Y signal falling with the center of CR signal rising.

**Fig. 5-3-14**



**7. Playback CB Signal Delay Adjustment (VD-032 Board)**

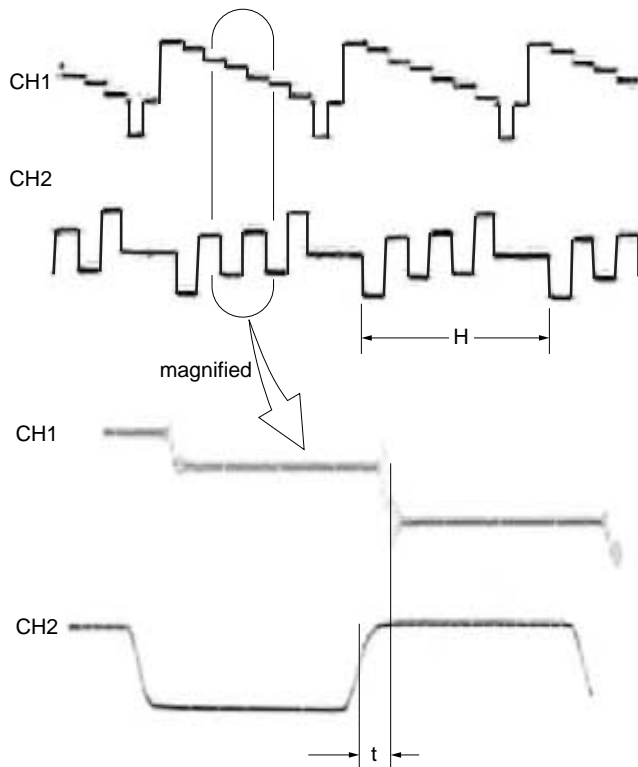
Mode	Playback
Signal	A tape that the color bar signal is recorded (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	9B
Specified Value	$t = 0 \pm 20$ nsec

**Note1:** A tape recorded with the status that “COLOR BAR” of “DISPLAY SET” on the menu setting is ON.

**Note2:** After this adjustment, check that the specified value of “Playback CB Signal Level Adjustment with 0% Setup” is satisfied.  
If not satisfied, perform “Playback CB Signal Level Adjustment with 0% Setup”

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 9B, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CB signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



Align the center of Y signal falling with the center of CB signal rising.

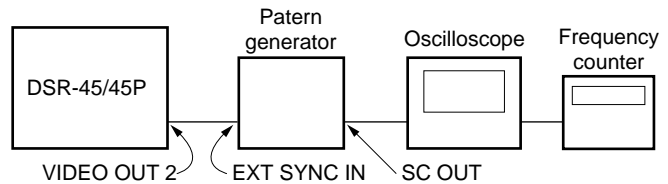
**Fig. 5-3-15**

**8. Encoder Free Run Adjustment (VD-032 Board)**

Mode	E-E
Signal	No signal (DV input) (Note1)
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Pattern generator (External synchronization mode) Oscilloscope Frequency counter (Note2)
Adjustment Page	E
Adjustment Address	A5
Specified Value	$f = 3579545 \pm 10$ Hz (NTSC) $f = 4433618 \pm 10$ Hz (PAL)

**Note1:** Set “DV” mode with the INPUT SELECT switch.

**Note2:** Connection of equipment



**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: A5, change the data and adjust the encoder free run frequency (f) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

**9. Carrier Balance Adjustment (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode)
Adjustment Page	E
Adjustment Address	A3, A4
Specified Value	White luminance point settles within the circle (Ø 2 mm) on center of the vectorscope

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Set the vectorscope gain to x10.
- 4) Change the data on page: E, address: A3, A4 and adjust so that a white luminance point positions in the center of vectorscope.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.

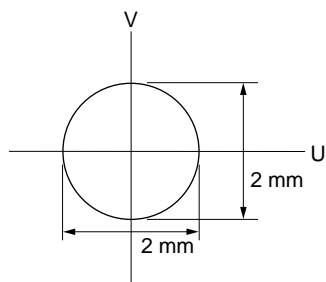


Fig. 5-3-16

**10. Burst Level Adjustment (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode) Oscilloscope
Adjustment Page	E
Adjustment Address	9F (NTSC) 9F, A0 (PAL) (Note)
Specified Value	A = 286 ± 5 mVp-p (NTSC) A = 300 ± 5 mVp-p (PAL)

**Note:** PAL model is the tracking adjustment in relation to address: 9F and A0.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Adjust the phase synchronization control on the vectorscope so that the burst luminance point is close to the U-axis (NTSC model) or axis of ±135° (PAL model).
- 4) Select page: E, address: 9F (NTSC model) or 9F, A0 (PAL model), change the data and adjust the the burst luminance point to the 75% cursor position of the vectorscope.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Confirm with the oscilloscope that the burst level (A) satisfied the specified value.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.

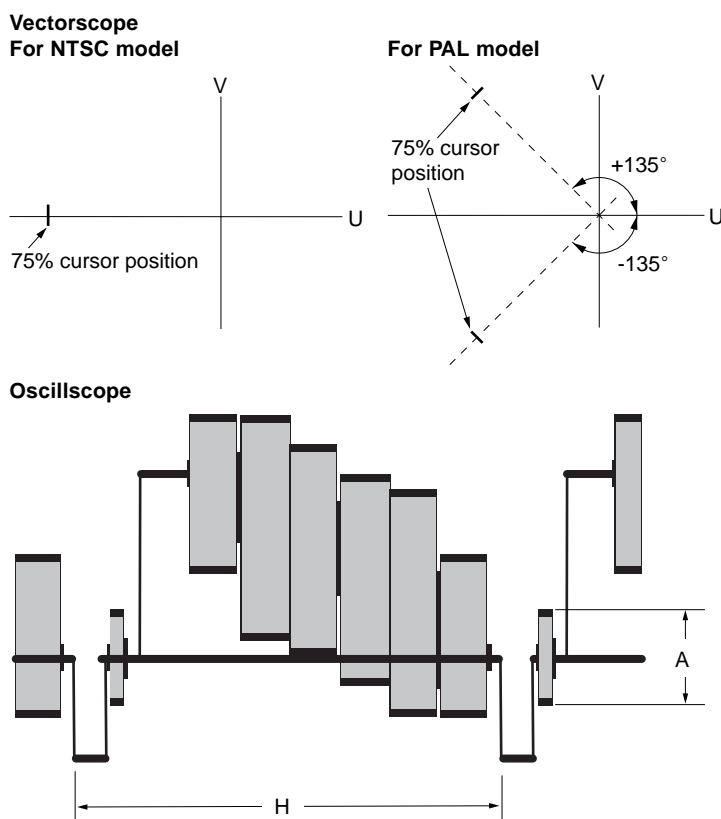


Fig. 5-3-17

**11. Color Level Adjustment with 0% Setup (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode)
Adjustment Page	E
Adjustment Address	A1, A2
Specified Value	From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

**Note:** This is the tracking adjustment in relation to “SC\_V Phase Adjustment”.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Only for NTSC model, set the vectorscope to the 7.5% setup mode.
- 4) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 5) Only for NTSC model, set the vectorscope to the 0% setup mode.
- 6) Change the data on page: E, addresses: A1, A2 and adjust so that each luminance point positions at the 田 mark on the vectorscope.
- 7) Press the PAUSE button of the adjustment remote commander.
- 8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 9) Select page: 0, address: 01, and set data: 00.

**12. SC\_V Phase Adjustment (VD-032 Board)**

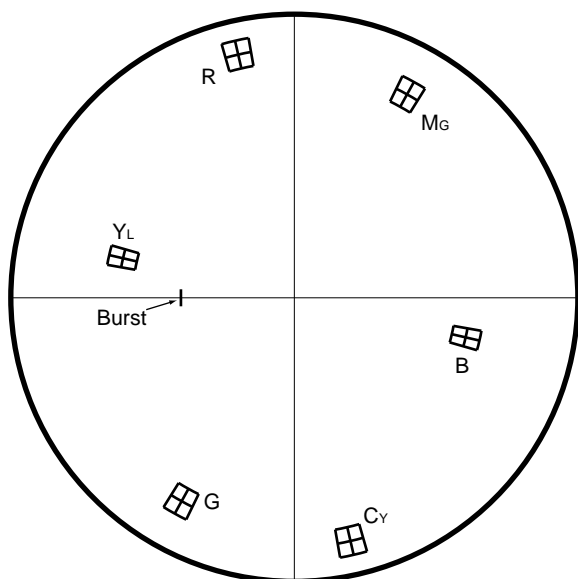
Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode)
Adjustment Page	E
Adjustment Address	A8
Specified Value	From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

**Note:** This is the tracking adjustment in relation to “Color Level Adjustment with 0% Setup”.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Only for NTSC model, set the vectorscope to the 7.5% setup mode.
- 4) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 5) Only for NTSC model, set the vectorscope to the 0% setup mode.
- 6) Change the data on page: E, address: A8 and adjust so that each luminance point positions at the 田 mark on the vectorscope.
- 7) Press the PAUSE button of the adjustment remote commander.
- 8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 9) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

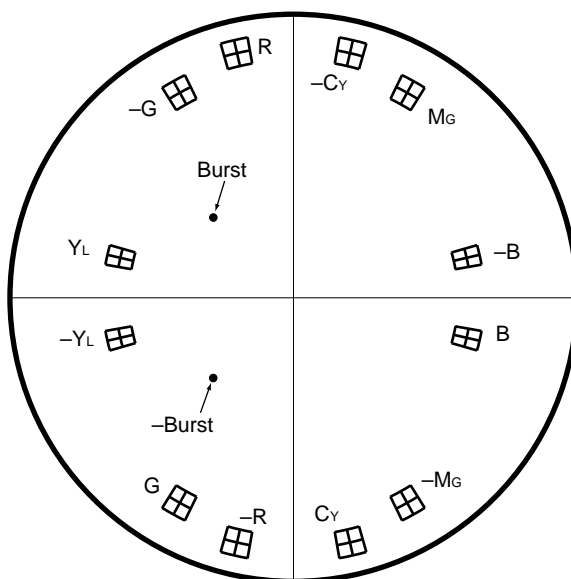


Fig. 5-3-18

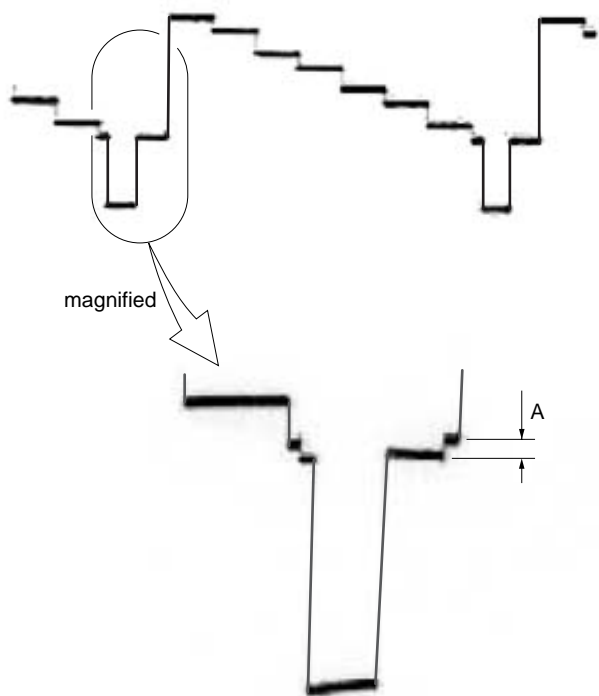
**13. Playback Blanking Level Adjustment with 7.5% Setup (VD-032 Board) (DSR-45)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C8
Specified Value	A = 53.6 ± 3 mV (7.5 IRE)

**Note:** Perform this adjustment after inserting and playing a tape into the set and setting “SETUP” for “VIDEO LVL” of the “VIDEO SET” menu to 7.5%. After the adjustment finished, return “SETUP” to 0%.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: C8, change the data and adjust the blanking level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-19**

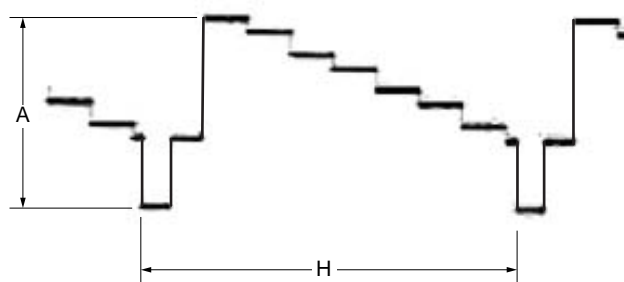
**14. Playback Y Signal Level Adjustment with 7.5% Setup (VD-032 Board) (DSR-45)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C2
Specified Value	A = 835 ± 10 mVp-p

**Note:** Perform this adjustment after inserting and playing a tape into the set and setting “SETUP” for “VIDEO LVL” of the “VIDEO SET” menu to 7.5%. After the adjustment finished, return “SETUP” to 0%.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: C2, change the data and adjust the component Y signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-20**

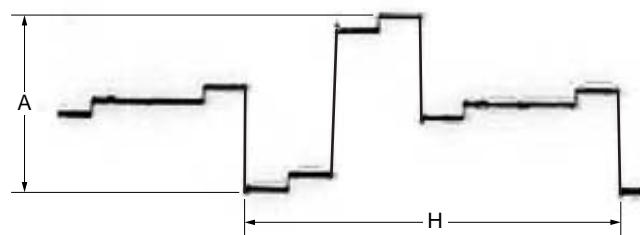
**15. Playback CR Signal Level Adjustment with 7.5% Setup (VD-032 Board) (DSR-45)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C4
Specified Value	A = 700 ± 10 mVp-p

**Note:** Perform this adjustment after inserting and playing a tape into the set and setting “SETUP” for “VIDEO LVL” of the “VIDEO SET” menu to 7.5%.  
After the adjustment finished, return “SETUP” to 0%.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: C4, change the data and adjust the component CR signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-21**

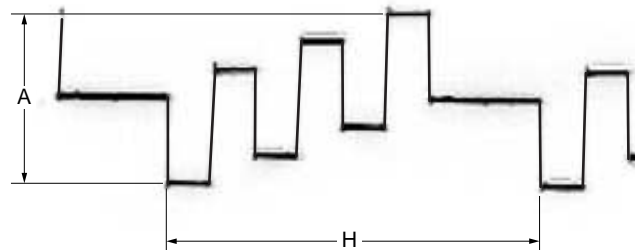
**16. Playback CB Signal Level Adjustment with 7.5% Setup (VD-032 Board) (DSR-45)**

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C3
Specified Value	A = 700 ± 10 mVp-p

**Note:** Perform this adjustment after inserting and playing a tape into the set and setting “SETUP” for “VIDEO LVL” of the “VIDEO SET” menu to 7.5%.  
After the adjustment finished, return “SETUP” to 0%.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: C3, change the data and adjust the component CB signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-22**

**17. Color Level Adjustment with 7.5% Setup (VD-032 Board) (DSR-45)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (7.5% setup mode)
Adjustment Page	E
Adjustment Address	C0, C1
Specified Value	From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

**Note:** Perform this adjustment after inserting and playing a tape into the set and setting “SETUP” for “VIDEO LVL” of the “VIDEO SET” menu to 7.5%. After the adjustment finished, return “SETUP” to 0%.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 4) Change the data on page: E, addresses: C0, C1 and adjust so that each luminance point positions at the 田 mark on the vectorscope.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 7) Select page: 0, address: 01, and set data: 00.

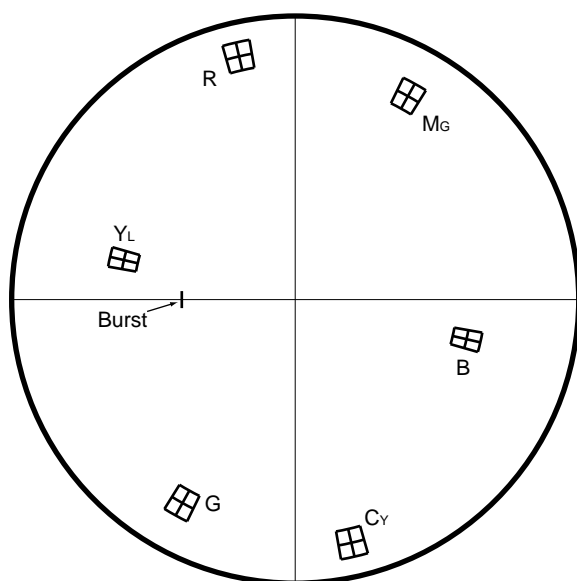


Fig. 5-3-23

**18. Video Output Level Check (VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	A = 822 ± 20 mVp-p (NTSC) A = 825 ± 20 mVp-p (PAL)

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Check that the Y level of video signal (A) is satisfied the specified value.
- 4) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 5) Select page: 0, address: 01, and set data: 00.

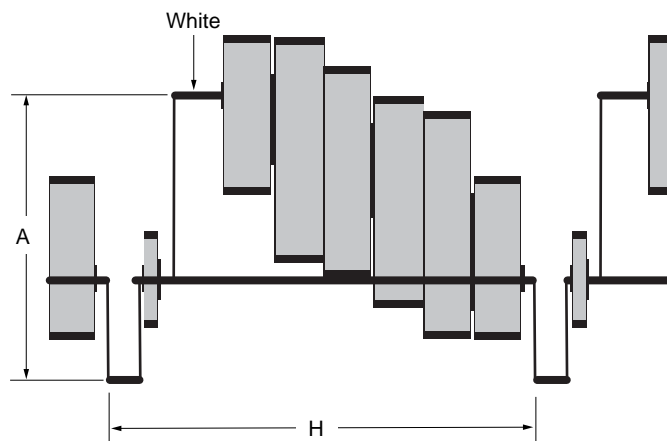


Fig. 5-3-24

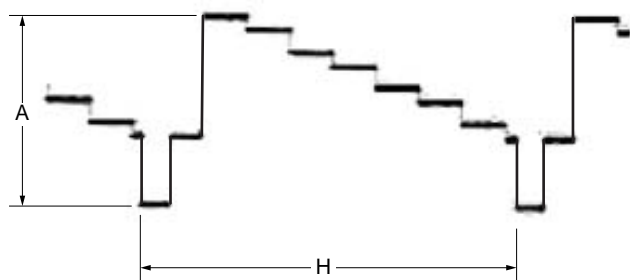
19. S-Video Output Level Check (VD-032 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	S VIDEO OUT Y terminal (75 Ω terminated) S VIDEO OUT C terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode) Oscilloscope
Specified Value	Y signal: A = 822 ± 20 mVp-p (NTSC) A = 825 ± 20 mVp-p (PAL) C signal: From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

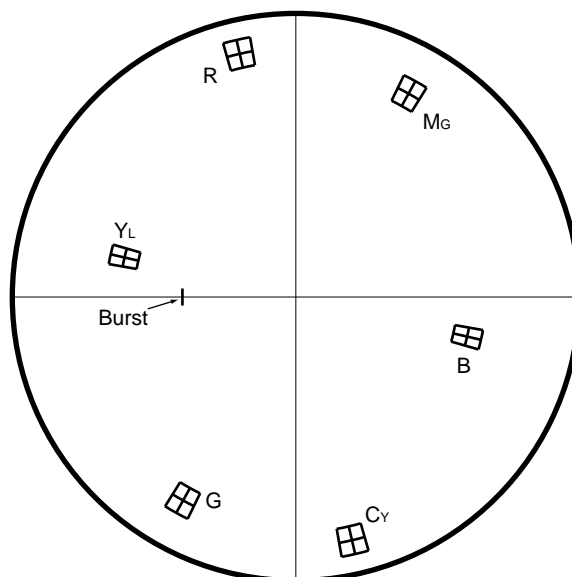
Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Confirm that the Y signal level (A) satisfied the specified value.
- 4) Only for NTSC model, set the vectorscope to the 7.5% setup mode.
- 5) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 6) Only for NTSC model, set the vectorscope to the 0% setup mode.
- 7) Make sure that each luminance point of C signal positions at the 田 mark on the vectorscope.
- 8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 9) Select page: 0, address: 01, and set data: 00.

Y signal



C signal  
For NTSC model



For PAL model

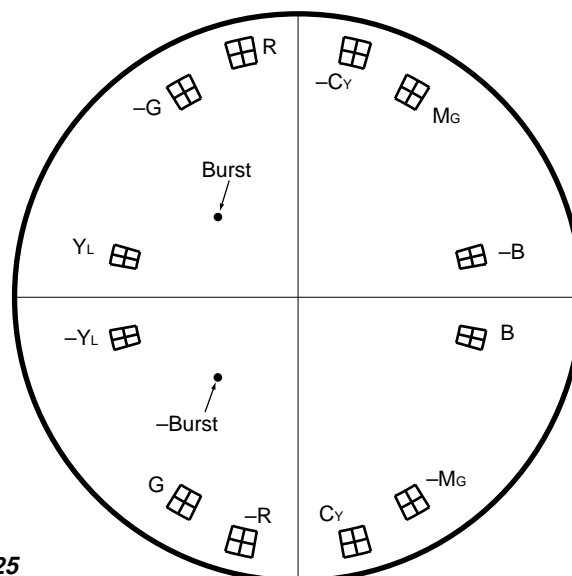


Fig. 5-3-25



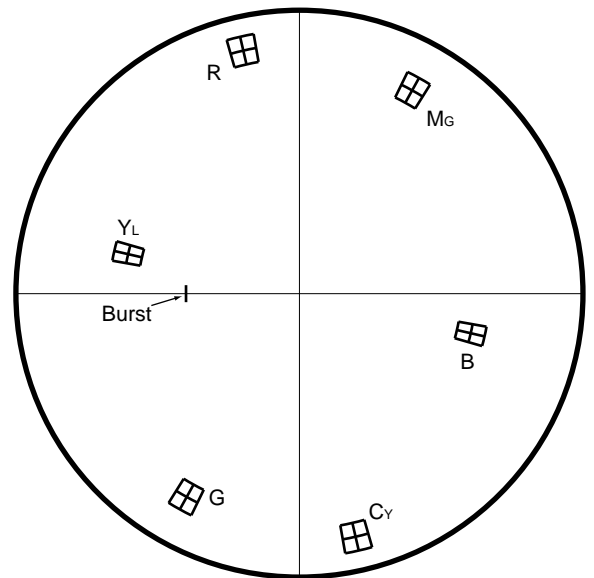
**20. Monitor Terminal Output Level Adjustment  
(JC-21 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	MONITOR VIDEO terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode) Oscilloscope
Adjustment Page	C
Adjustment Address	25 (Y level) 26, 27 (C level)
Specified Value	Y level: A = 822 ± 20 mVp-p (NTSC) A = 825 ± 20 mVp-p (PAL) C level: From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

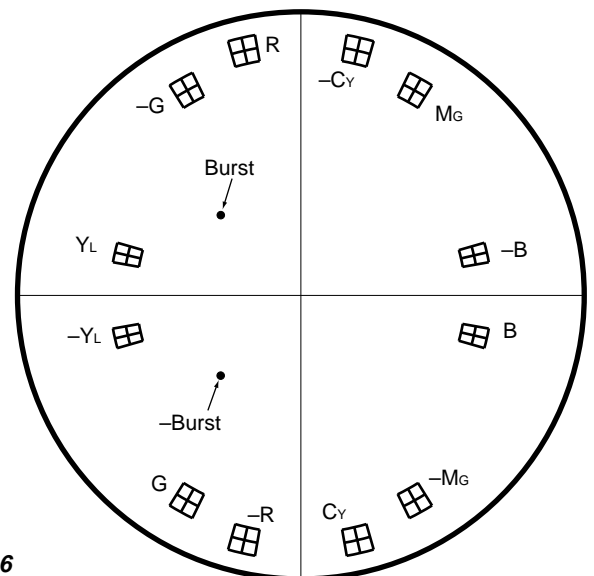
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: C, address: 25, change the data and adjust the Y level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Only for NTSC model, set the vectorscope to the 7.5% setup mode.
- 6) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 7) Only for NTSC model, set the vectorscope to the 0% setup mode.
- 8) Change the data on page: C, addresses: 26, 27 and adjust so that each luminance point positions at the 田 mark on the vectorscope.
- 9) Press the PAUSE button of the adjustment remote commander.
- 10) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 11) Select page: 0, address: 01, and set data: 00.

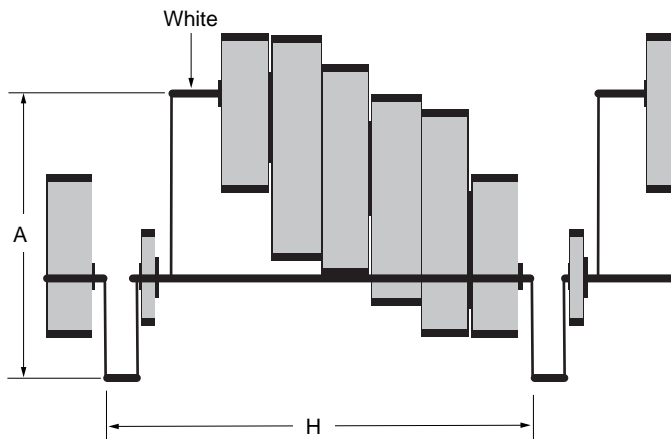
**C level  
For NTSC model**



**For PAL model**



**Y level**



**Fig. 5-3-26**

21. E-E Blanking Level Adjustment (VD-032 Board)

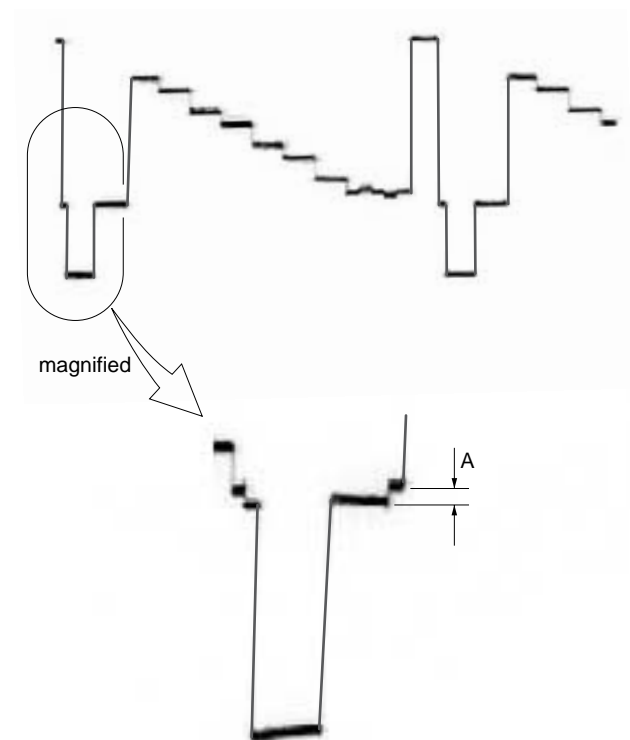
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (COMPONENT input) (Note)
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	CC
Specified Value	$A = 0 \pm 3 \text{ mV}$

**Note:** Set “COMPONENT” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: CC, change the data and adjust the blanking level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

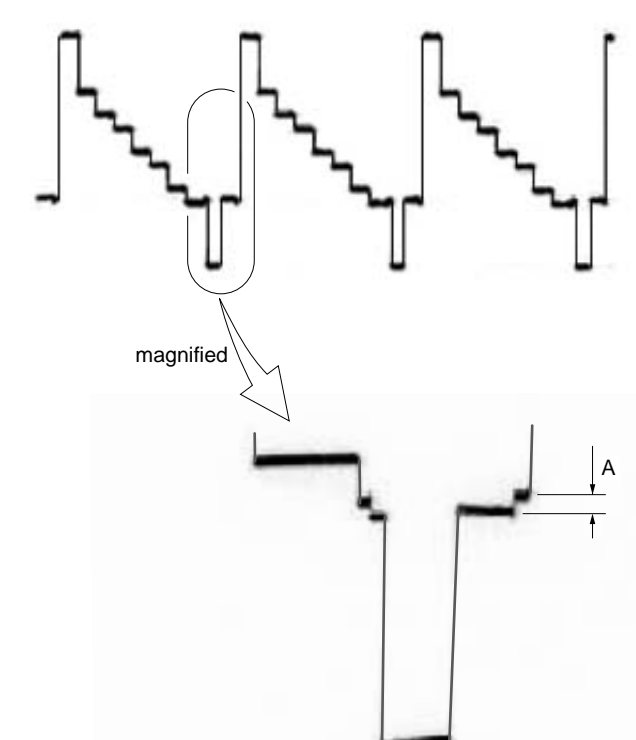


Fig. 5-3-27

**22. Component E-E Y Signal Level Adjustment (VD-032 Board)**

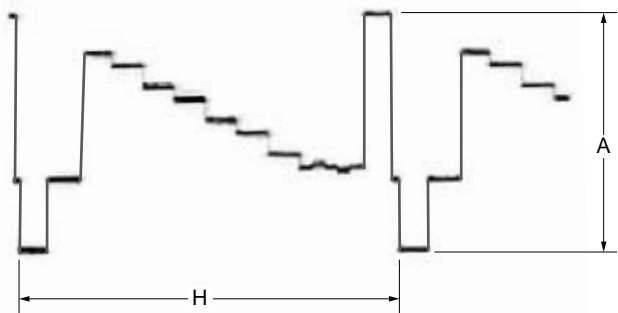
Mode	E-E
Signal	Color bar (COMPONENT input) (Note)
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	94
Specified Value	A = 1000 ± 10 mVp-p

**Note:** Set “COMPONENT” mode with INPUT SELECT switch

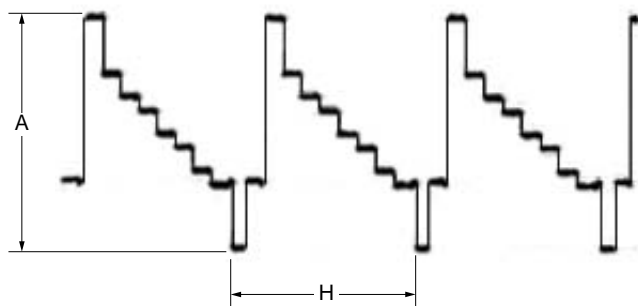
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 94, change the data and adjust the component Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model



**Fig. 5-3-28**

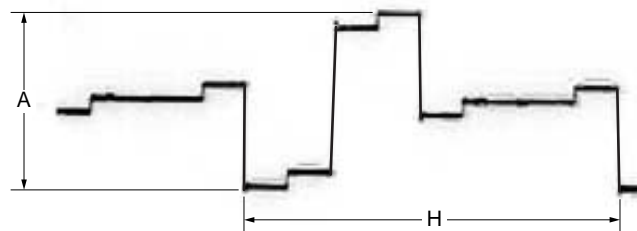
**23. Component E-E CR Signal Level Adjustment (VD-032 Board)**

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (COMPONENT input) (Note)
Measurement Point	COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	96
Specified Value	A = 700 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Note:** Set “COMPONENT” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 96, change the data and adjust the component CR signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-29**

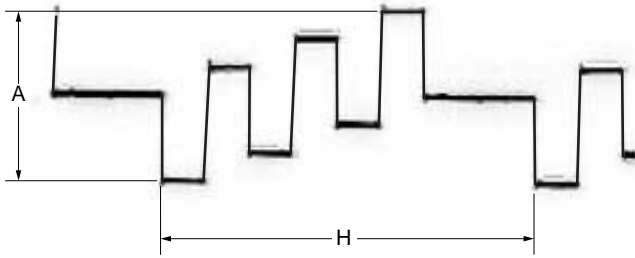
**24. Component E-E CB Signal Level Adjustment  
(VD-032 Board)**

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (COMPONENT input) (Note)
Measurement Point	COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	95
Specified Value	A = 700 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Note:** Set “COMPONENT” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 95, change the data and adjust the component CB signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-30**

**25. Component E-E CR Signal Delay Adjustment (VD-032 Board)**

Mode	E-E
Signal	Color bar (COMPONENT input) (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	99
Specified Value	$t = 0 \pm 20 \text{ nsec}$

**Note1:** Set “COMPONENT” mode with INPUT SELECT switch

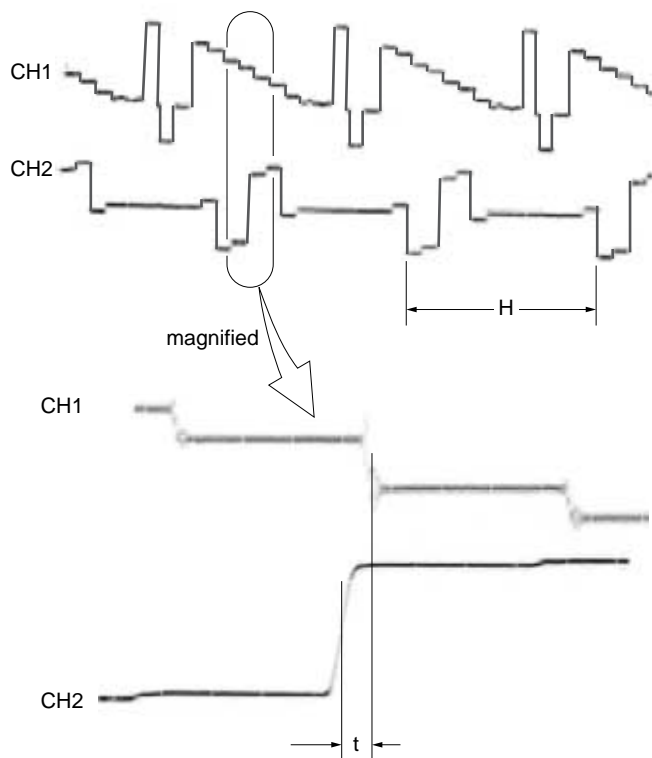
**Note2:** After this adjustment, check that the specified value of “Component E-E CR Signal Level Adjustment” is satisfied.

If not satisfied, perform “Component E-E CR Signal Level Adjustment”.

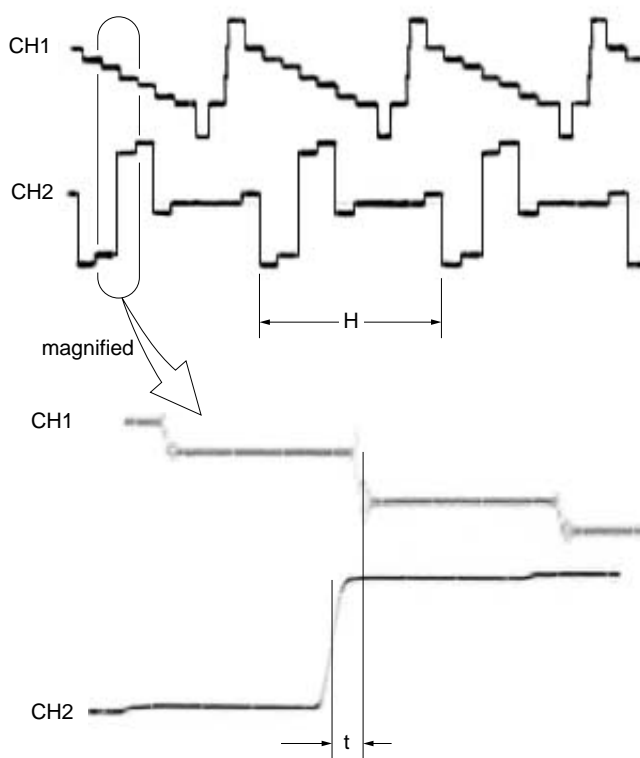
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 99, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CR signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

**For NTSC model**



**For PAL model**



Align the center of Y signal falling with the center of CR signal rising.

**Fig. 5-3-31**

**26. Component E-E CB Signal Delay Adjustment  
(VD-032 Board)**

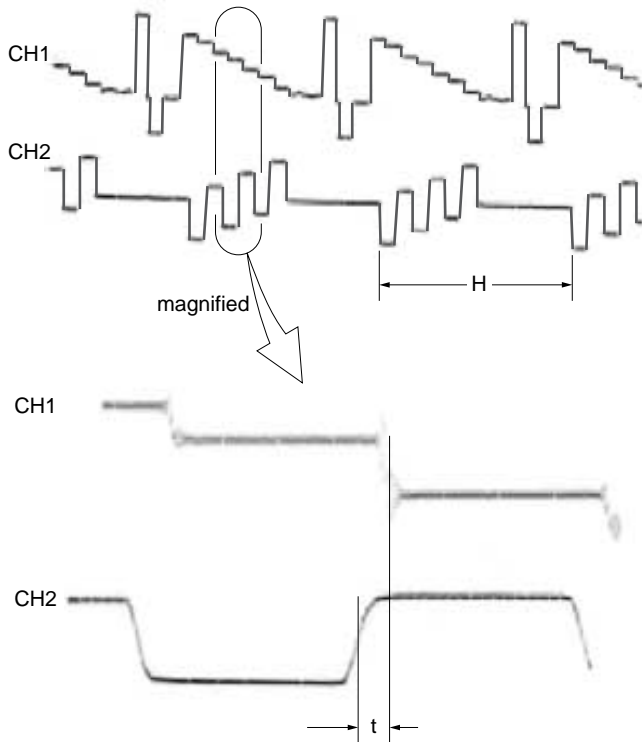
Mode	E-E
Signal	Color bar (COMPONENT input) (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	98
Specified Value	$t = 0 \pm 20$ nsec

**Note1:** Set “COMPONENT” mode with INPUT SELECT switch  
**Note2:** After this adjustment, check that the specified value of “Component E-E CB Signal Level Adjustment” is satisfied.  
 If not satisfied, perform “Component E-E CB Signal Level Adjustment”.

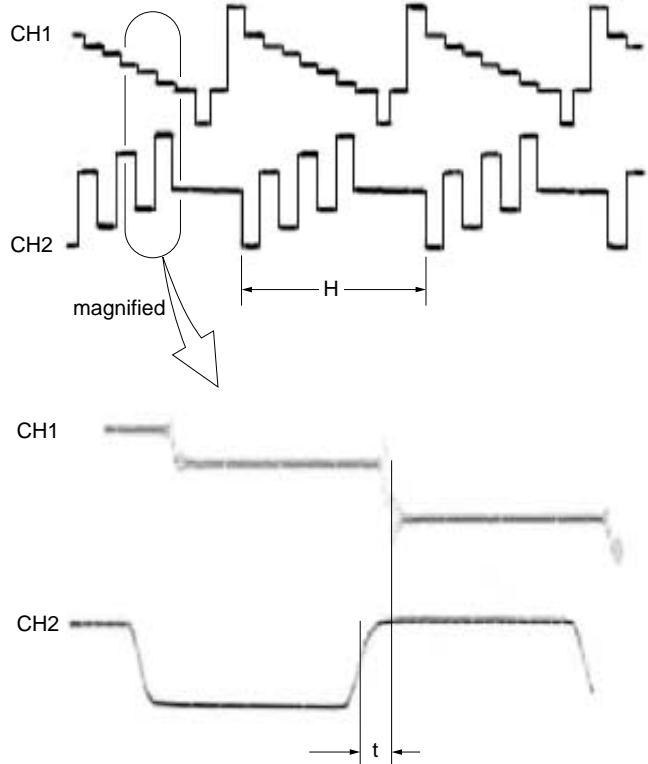
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 98, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CB signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

**For NTSC model**



**For PAL model**



Align the center of Y signal falling with the center of CB signal rising.

**Fig. 5-3-32**

27. E-E Color Level Adjustment (VD-032 Board)

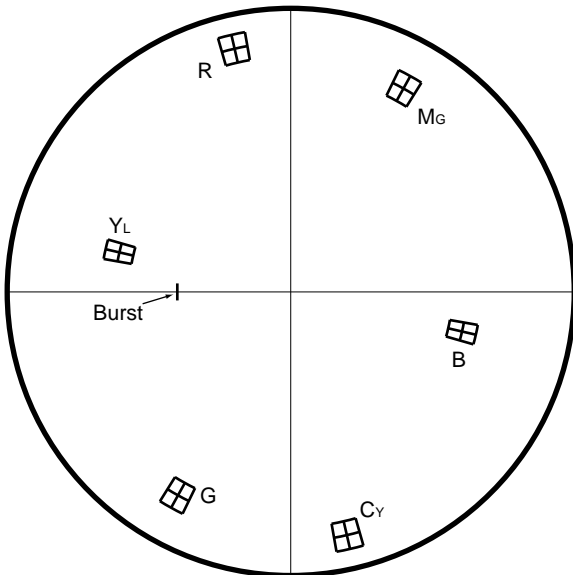
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (COMPONENT input) (Note)
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode)
Adjustment Page	E
Adjustment Address	CA, CB
Specified Value	From the center of 田 mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3°

**Note:** Set “COMPONENT” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 3) Change the data on page: E, addresses: CA, CB and adjust so that each luminance point positions at the 田 mark on the vectorscope.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

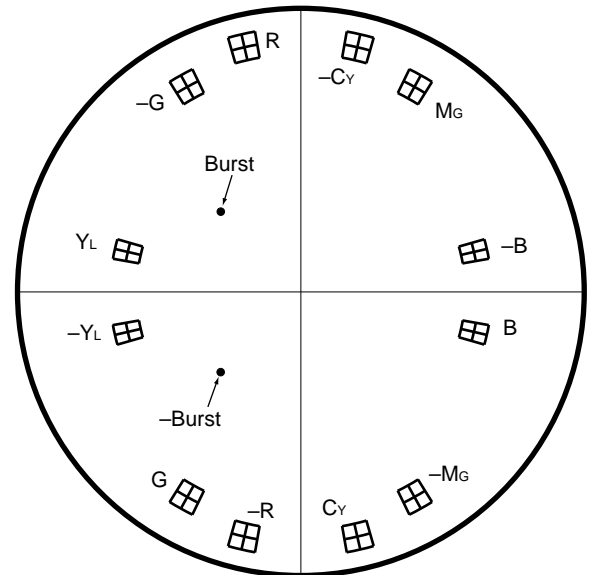


Fig. 5-3-33

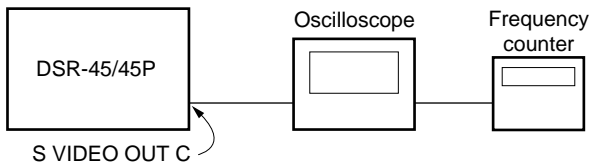


## 28. Decoder Free Run Adjustment (VD-032 Board)

Mode	E-E
Signal	Color bar (burst signal and chroma signal OFF) (S VIDEO input) (Note1)
Measurement Point	S VIDEO OUT C terminal
Measuring Instrument	Oscilloscope Frequency counter (Note2)
Adjustment Page	E
Adjustment Address	A9 (NTSC) 91 (PAL)
Specified Value	$f = 3579545 \pm 20 \text{ Hz}$ (NTSC) $f = 4433618 \pm 20 \text{ Hz}$ (PAL)

**Note1:** Set "S VIDEO" mode with INPUT SELECT switch

**Note2:** Connection of equipment



### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 9, address: 06, set data: 20, and press the PAUSE button.
- 3) Select page: E, address: A9 (NTSC model) or 91 (PAL model), change the data and adjust the decoder free run frequency (f) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 9, address: 06, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.

## 29. Decoder HUE Adjustment (VD-032 Board)

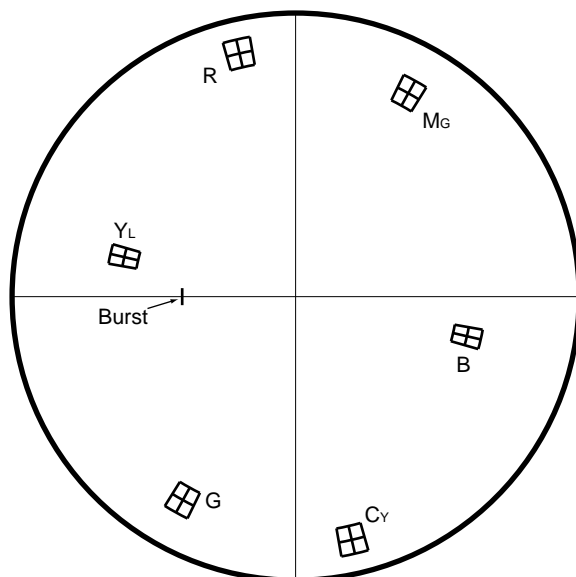
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	VIDEO OUT terminal (75 $\Omega$ terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode)
Adjustment Page	E
Adjustment Address	93
Specified Value	From the center of $\boxplus$ mark on the vectorscope, each luminance point must satisfy the following: Level: $\pm 5\%$ Phase: $\pm 3^\circ$

**Note:** Set "S VIDEO" mode with INPUT SELECT switch

### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Adjust the burst luminance point to the specified position using the PHASE and GAIN knobs of vectorscope.
- 3) Change the data on page: E, address: 93 and adjust so that a blue luminance point positions at the  $\boxplus$  mark on the vectorscope. At this time, make sure that each luminance point satisfies the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

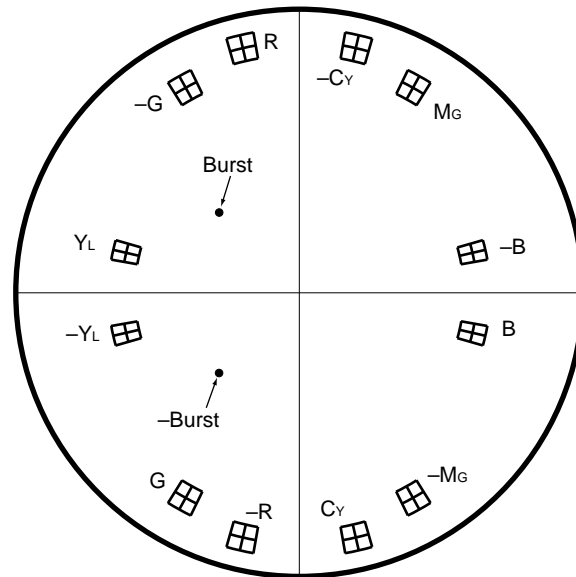


Fig. 5-3-34

**30. S Video E-E Y Signal Level Adjustment (VD-032 Board)**

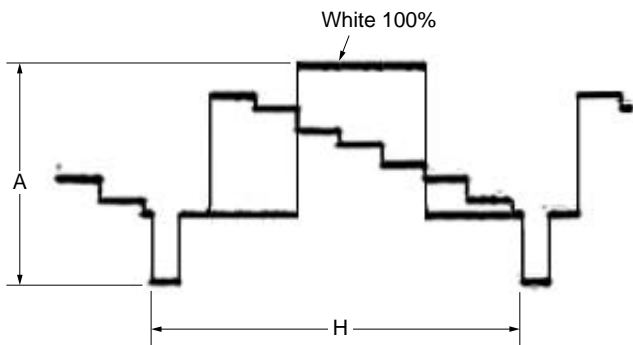
Mode	E-E
Signal	Color bar (S VIDEO input) (Note)
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	BD
Specified Value	A = 1000 ± 10 mVp-p

**Note:** Set “S VIDEO” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: BD, change the data and adjust the component Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

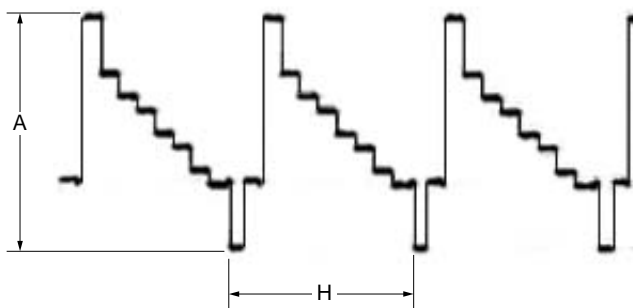


Fig. 5-3-35

**31. S Video E-E CR Signal Level Adjustment (VD-032 Board)**

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	BF
Specified Value	A = 700 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Note:** Set “S VIDEO” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: BF, change the data and adjust the component CR signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

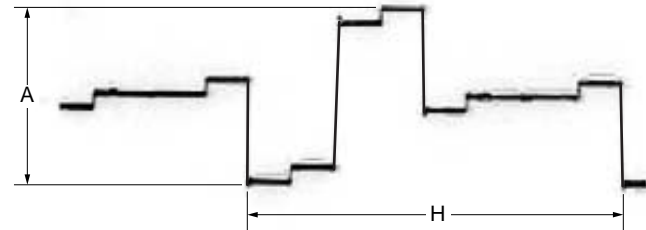


Fig. 5-3-36

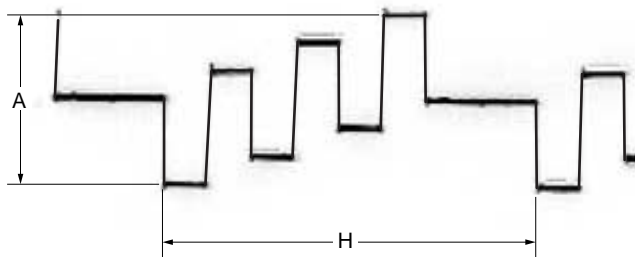
### 32. S Video E-E CB Signal Level Adjustment (VD-032 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	COMPONENT OUT B-Y terminal (75 $\Omega$ terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	BE
Specified Value	A = 700 $\pm$ 10 mVp-p (NTSC) A = 525 $\pm$ 10 mVp-p (PAL)

**Note:** Set "S VIDEO" mode with INPUT SELECT switch

#### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: BE, change the data and adjust the component CB signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-37**

**33. S Video E-E CR Signal Delay Adjustment  
(VD-032 Board)**

Mode	E-E
Signal	Color bar (S VIDEO input) (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B6
Specified Value	$t = 0 \pm 20$ nsec

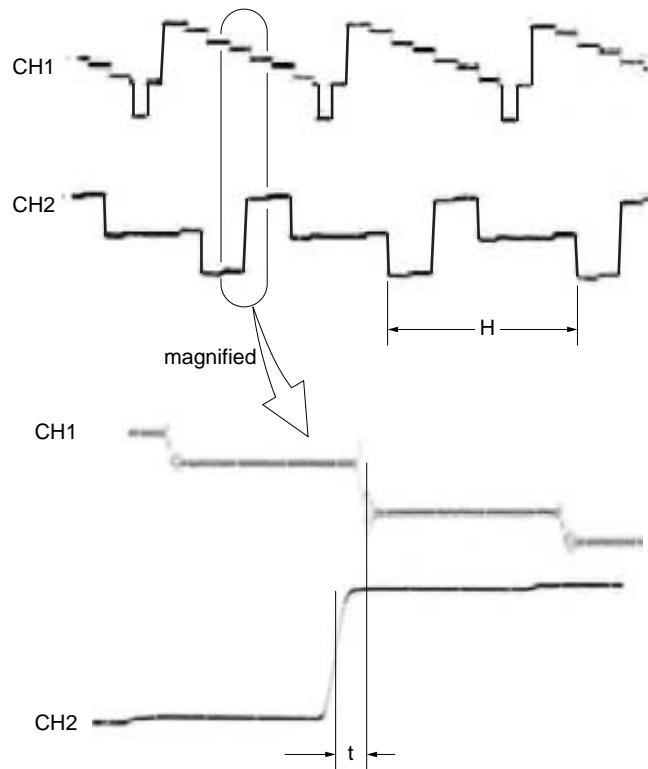
**Note1:** Set "S VIDEO" mode with INPUT SELECT switch

**Note2:** After this adjustment, check that the specified value of "S Video E-E CR Signal Level Adjustment" is satisfied. If not satisfied, perform "S Video E-E CR Signal Level Adjustment".

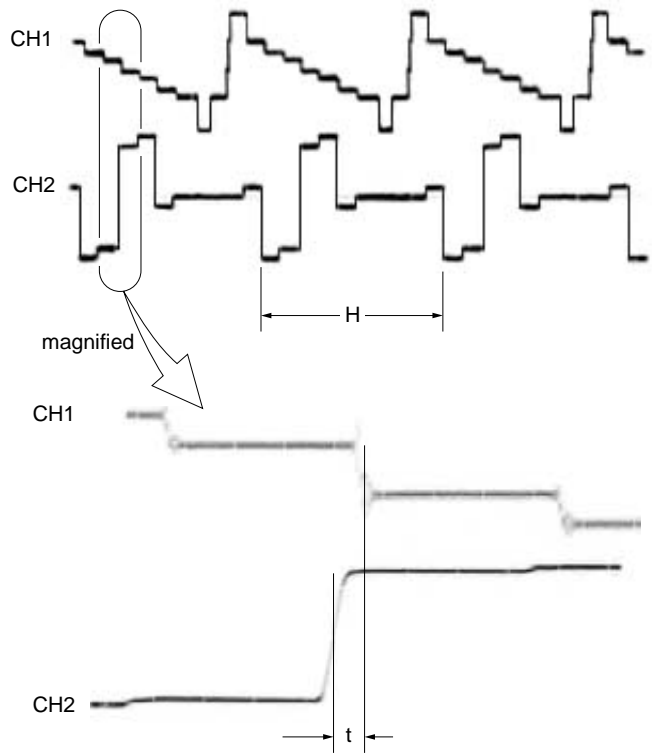
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: B6, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CR signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

**For NTSC model**



**For PAL model**



Align the center of Y signal falling with the center of CR signal rising.

**Fig. 5-3-38**

**34. S Video E-E CB Signal Delay Adjustment  
(VD-032 Board)**

Mode	E-E
Signal	Color bar (S VIDEO input) (Note1)
Measurement Point	CH1: COMPONENT OUT Y terminal (75 Ω terminated) CH2: COMPONENT OUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B5
Specified Value	$t = 0 \pm 20 \text{ nsec}$

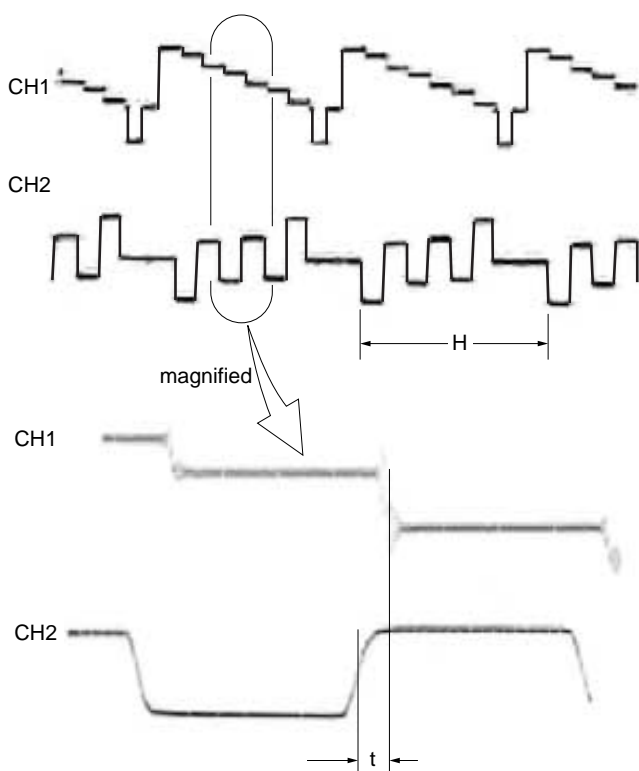
**Note1:** Set “S VIDEO” mode with INPUT SELECT switch

**Note2:** After this adjustment, check that the specified value of “S Video E-E CB Signal Level Adjustment” is satisfied. If not satisfied, perform “S Video E-E CB Signal Level Adjustment”.

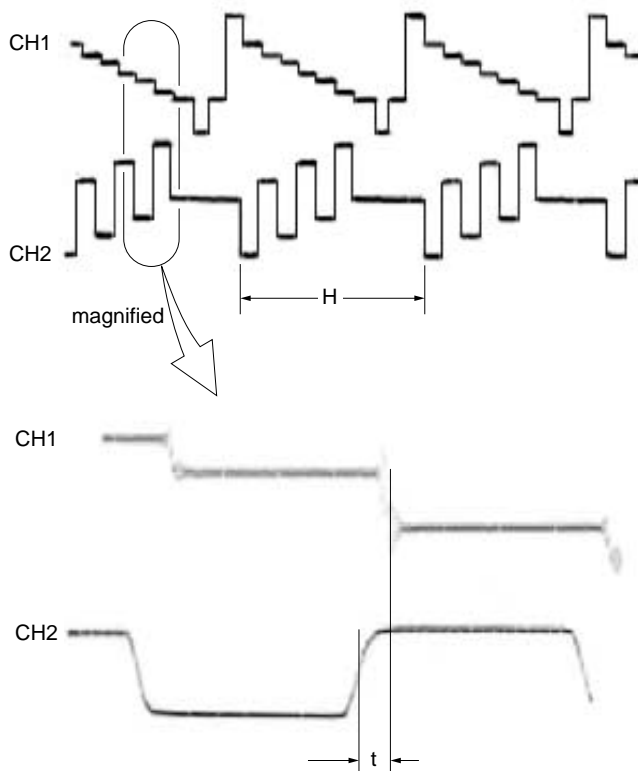
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: B5, change the data and adjust the time difference (t) between the boundary of green and magenta on Y signal and CB signal, that to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

**For NTSC model**



**For PAL model**



Align the center of Y signal falling with the center of CB signal rising.

**Fig. 5-3-39**

**35. Composite E-E Y Signal Level Adjustment  
(VD-032 Board)**

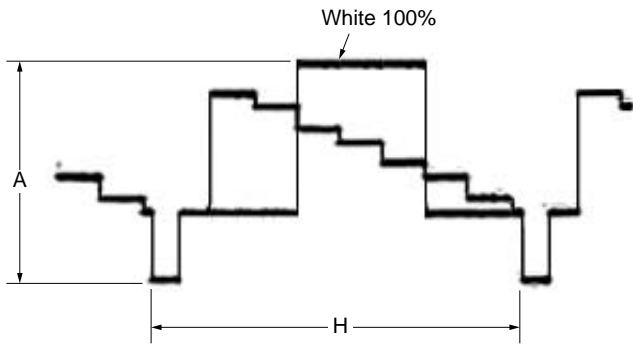
Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	90
Specified Value	A = 1000 ± 10 mVp-p

**Note:** Set “VIDEO” mode with INPUT SELECT switch

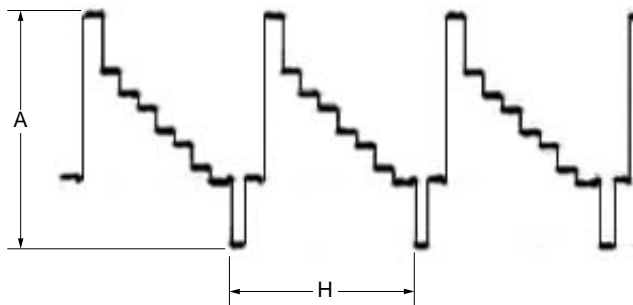
**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: E, address: 90, change the data and adjust the component Y signal level (A) to the specified value.
- 3) Press the PAUSE button of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model



**Fig. 5-3-40**

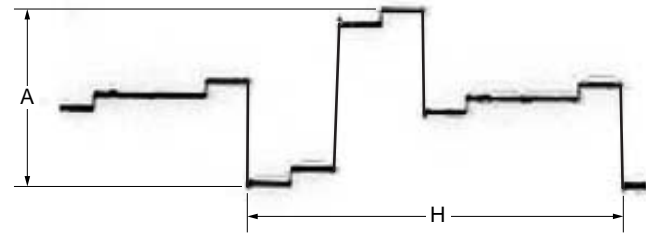
**36. Composite E-E CR Signal Level Check  
(VD-032 Board)**

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (VIDEO input) (Note)
Measurement Point	COMPONENT OUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	A = 700 ± 10 mVp-p (NTSC) A = 525 ± 10 mVp-p (PAL)

**Note:** Set “VIDEO” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Check the component CR signal level (A) to the specified value.



**Fig. 5-3-41**



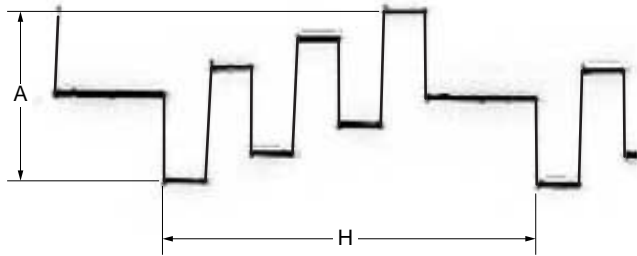
### 37. Composite E-E CB Signal Level Check (VD-032 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (VIDEO input) (Note)
Measurement Point	COMPONENT OUT B-Y terminal (75 $\Omega$ terminated)
Measuring Instrument	Oscilloscope
Specified Value	A = $700 \pm 10$ mVp-p (NTSC) A = $525 \pm 10$ mVp-p (PAL)

**Note:** Set "VIDEO" mode with INPUT SELECT switch

#### Adjusting method:

- 1) Check the component CB signal level (A) to the specified value.



**Fig. 5-3-42**

38. H Phase Adjustment (VD-032 Board)

Mode	Playback (EXT SYNC ON) (Note)
Signal	Arbitrary tape Color bar (VIDEO input)
Measurement Point	CH1: Color bar (The same signal that VIDEO input) CH2: COMPONENT OUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	2A (Coarse), C9 (Fine)
Specified Value	$t = 0 \pm 20$ nsec

**Note:** “EXT SYNC” of “VIDEO SET” on the menu setting is ON.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Change the data on page: E, address: C9 and adjust so that the difference in SYNC falling time (t) between CH1 and CH2 satisfies the specified value, and then press the PAUSE button. At this time, check that the data at address: C9 is “40” to “C0”.
- 3) If the data at address: C9 is other than “40” to “C0”, change the lower 1 digit (lower 4 bits) of the data on page: E, address: 2A, and press the PAUSE button, then repeat from step 2). (Initial value of data on page: E, address: 2A is 08)
- 4) Select page: 0, address: 01, and set data: 00.

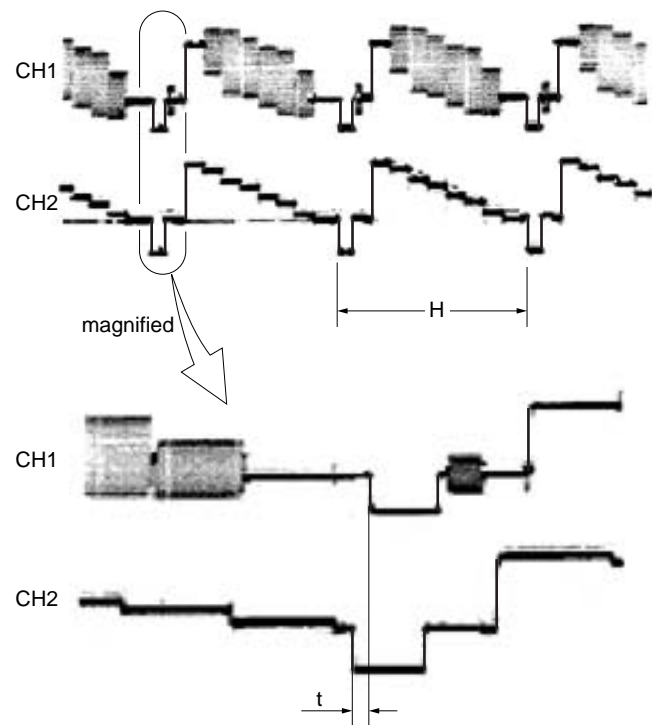


Fig. 5-3-43

39. E-E SC Phase Adjustment (VD-032 Board)

Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	CE
Specified Value	$\emptyset = 0 \pm 5^\circ$

**Note:** Set “VIDEO” mode with INPUT SELECT switch

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Adjust the phase synchronization control on the vectorscope so that the burst luminance point is close to the U-axis.
- 3) Select page: E, address: CE, change the data and adjust the phase difference ( $\emptyset$ ) between the burst and H phase to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 0, address: 01, and set data: 00.

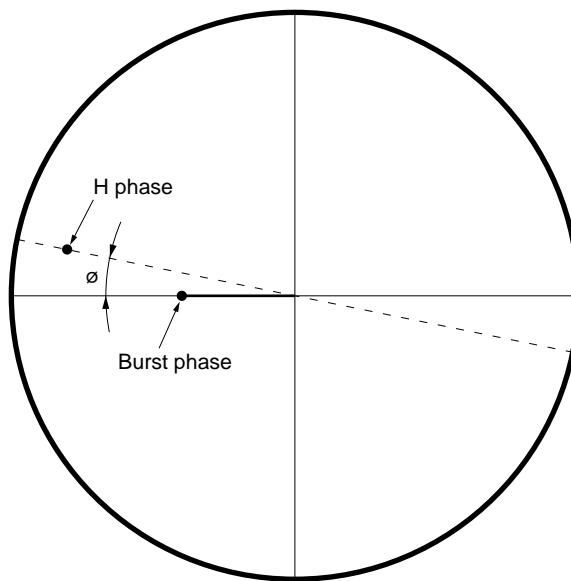


Fig. 5-3-44

**40. Playback SC Phase Adjustment (EXT SYNC OFF)  
(VD-032 Board)**

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	CF
Specified Value	$\varnothing = 0 \pm 5^\circ$

**Note:** “EXT SYNC” of “VIDEO SET” on the menu setting is OFF.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Adjust the phase synchronization control on the vectorscope so that the burst luminance point is close to the U-axis.
- 3) Select page: E, address: CF, change the data and adjust the phase difference ( $\varnothing$ ) between the burst and H phase to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 0, address: 01, and set data: 00.

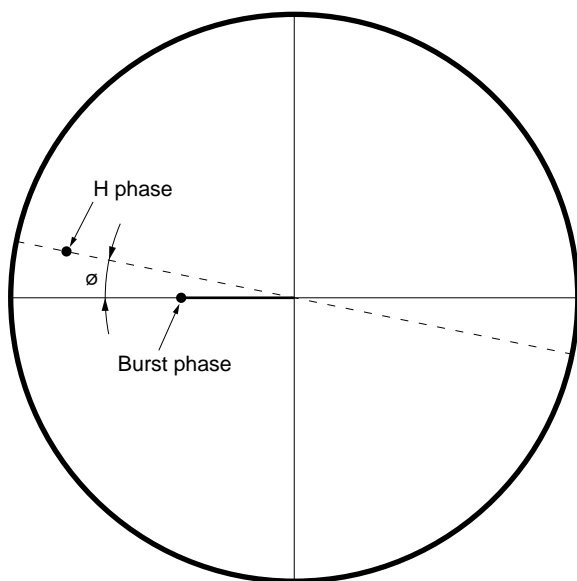
**41. Playback SC Phase Adjustment (EXT SYNC ON)  
(VD-032 Board)**

Mode	Playback
Signal	Arbitrary Color bar (VIDEO input (REF. IN))
Measurement Point	VIDEO OUT terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	A7
Specified Value	$\varnothing = 0 \pm 5^\circ$

**Note:** “EXT SYNC” of “VIDEO SET” on the menu setting is ON.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Adjust the phase synchronization control on the vectorscope so that the burst luminance point is close to the U-axis.
- 3) Select page: E, address: A7, change the data and adjust the phase difference ( $\varnothing$ ) between the burst and H phase to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-45**

### 3-5. LCD SYSTEM ADJUSTMENTS

**Note 1:** The back light (fluorescent tube) is driven by high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

**Note 2:** When replacing the LCD unit, be careful to prevent damages caused by static electricity.

**Note 3:** Adjust the LCD BRIGHT and LCD COLOR to the center on menu display.

[Adjusting connector]

Most of the measuring points for adjusting the LCD are concentrated in the CN1504 of VD-032 board.

The following table shows the Pin No. and signal name of the CN1504.

Pin No.	Signal Name
1	N. C.
2	GND
3	PANEL_COM
4	HSY
5	VG

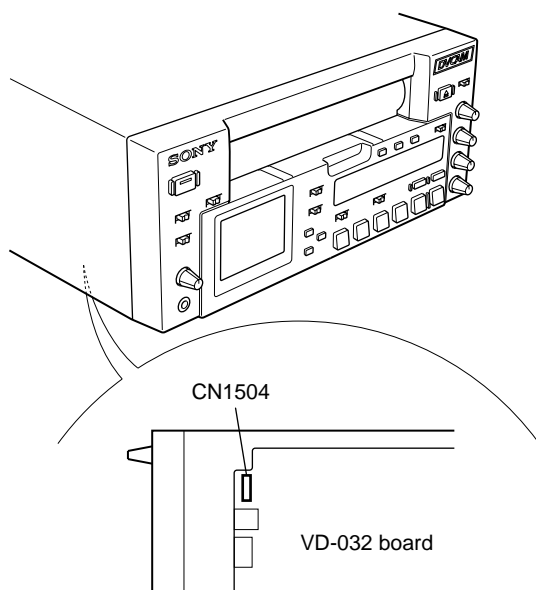


Fig. 5-3-46

### 1. VCO Adjustment (PD-170 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ④ of CN1504 on VD-032 board (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	E
Adjustment Address	87 (NTSC) 8C (PAL)
Specified Value	f = 15734 ± 30 Hz (NTSC) f = 15745 ± 30 Hz (PAL)

#### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 03, and press the PAUSE button.
- 4) Select page: E, address: 87 (NTSC) or 8C (PAL), change the data and adjust the VCO frequency (f) to the specified value.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.

## 2. D Range Adjustment (PD-170 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN1504 on VD-032 board (VG) External trigger: Pin ③ of CN1504 on VD-032 board (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	85
Specified Value	$A = 3.62 \pm 0.05$ Vp-p

### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
- 4) Select page: E, address: 85, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.

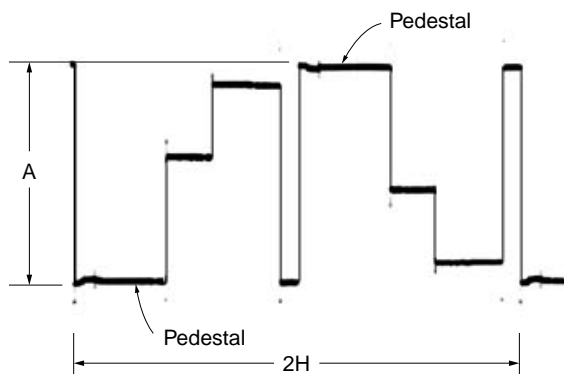


Fig. 5-3-47

## 3. Bright Adjustment (PD-170 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN1504 on VD-032 board (VG) External trigger: Pin ③ of CN1504 on VD-032 board (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	80
Specified Value	$A = 2.17 \pm 0.08$ Vp-p

### Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
- 4) Select page: 9, address: 0E, and set data: 40.
- 5) Select page: E, address: 80, change the data and set the voltage (A) between the pedestal and Gamma 1 limiter level to the specified value.
- 6) Press the PAUSE button of the adjustment remote commander.
- 7) Select page: 9, address: 0E, and set data: 00.
- 8) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 10) Select page: 0, address: 01, and set data: 00.

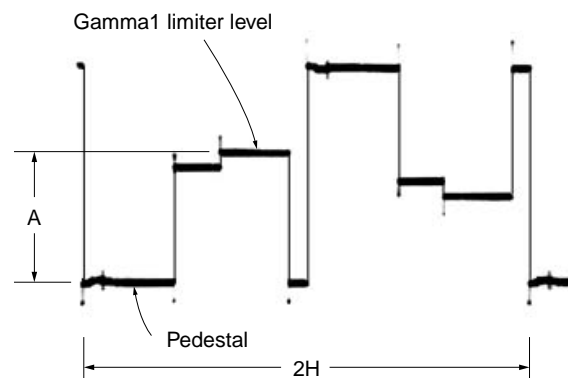


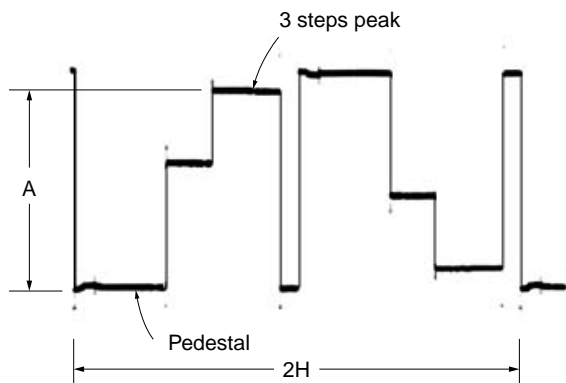
Fig. 5-3-48

**4. Contrast Adjustment (PD-170 Board)**

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN1504 on VD-032 board (VG) External trigger: Pin ③ of CN1504 on VD-032 board (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	84
Specified Value	$A = 3.31 \pm 0.07 \text{ Vp-p}$

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 02, and press the PAUSE button.
- 4) Select page: E, address: 84, change the data and set the voltage (A) between the pedestal and 3 steps peak to the specified value.
- 5) Press the PAUSE button of the adjustment remote commander.
- 6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.



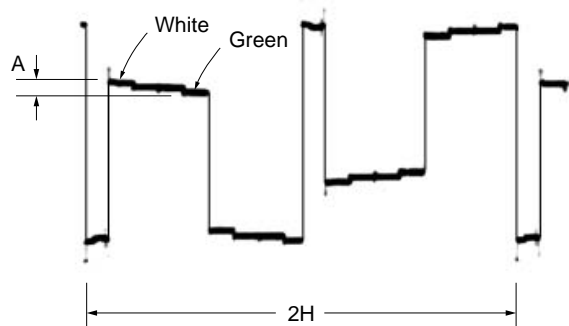
**Fig. 5-3-49**

**5. Color Adjustment (PD-170 Board)**

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN1504 on VD-032 board (VG) External trigger: Pin ③ of CN1504 on VD-032 board (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	81
Specified Value	$A = 200 \pm 50 \text{ mVp-p}$

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: 81, change the data and set the voltage (A) between the white and green to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



Adjust so that the green level is lower than the white level.

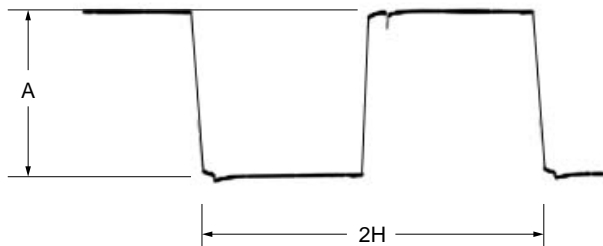
**Fig. 5-3-50**

**6. V-COM Level Adjustment (PD-170 Board)**

Mode	E-E
Signal	Arbitray
Measurement Point	Pin ③ of CN1504 on VD-032 board (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	86
Specified Value	$A = 6.50 \pm 0.05$ Vp-p

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: E, address: 86, change the data and set the V-COM signal level (A) to the specified value.
- 4) Press the PAUSE button of the adjustment remote commander.
- 5) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 6) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-51**

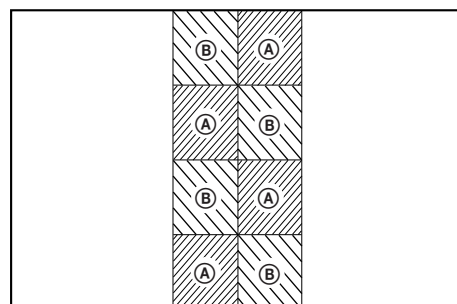
**7. V-COM Adjustment (PD-170 Board)**

Mode	E-E
Signal	Arbitrary
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	E
Adjustment Address	88
Specified Value	The brightness difference between the section-A and section-B is minimum

**Note:** Perform “Bright Adjustment” and “Contrast Adjustment” before this adjustment.

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 0F, and press the PAUSE button.
- 4) Select page: 9, address: 0E, and set data: 27.
- 5) Select page: E, address: 88, change the data so that brightness of the section A and section B is equal.
- 6) Press the PAUSE button of the adjustment remote commander.
- 7) Select page: 9, address: 0E, and set data: 00.
- 8) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 10) Select page: 0, address: 01, and set data: 00.



**Fig. 5-3-52**



**8. White Balance Adjustment (PD-170 Board)**

Mode	E-E
Signal	Arbitrary
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	E
Adjustment Address	82, 83
Specified Value	LCD screen must not be colored

**Note:** Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel
2. Light induction plate
3. IC802

**Adjusting method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 3, address: 0C, set data: 60, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button.
- 4) Select page: E, address: 82 and 83, set data to the initial value.

**Note:** To write in the non-volatile memory (EEP ROM), press the PAUSE button of the adjustment remote commander each time to set data.

Address	Data
82	95
83	5F

- 5) Check that the LCD screen is not colored. If colored, select page: E, address: 82 and 83, then change data so that the LCD screen is not colored.

**Note:** To write in the non-volatile memory (EEP ROM), press the PAUSE button of the adjustment remote commander each time to set data.

- 6) Select page: 3, address: 22, set data: 00, and press the PAUSE button.
- 7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button.
- 8) Select page: 0, address: 01, and set data: 00.

### 3-6. AUDIO SYSTEM ADJUSTMENTS

Set the switches and menu to the following positions unless otherwise specified.

#### Switch setting

AUDIO INPUT mode select switch (Front panel) .....	MANU
AUDIO REC LEVEL control knob (Front panel) (CH-1 to CH-4) .....	CENTER
INPUT LEVEL select switch (Rear panel) .....	-10
AUDIO MONITOR select switch (Front panel) .....	CH1/2
CHARACTER DISPLAY (LCD) switch (Front panel) .....	ON
DISPLAY SELECT switch (Front panel) .....	AUDIO
INPUT SELECT switch (Front panel) .....	VIDEO (except DV)

#### Menu setting (AUDIO SET menu)

AUDIO MODE .....	FS32K
AUDIO DUB .....	CH3, 4
JOG AUDIO .....	ON
REF LEVEL .....	-20 dB
AGC CH1, 2 .....	SEPARATE
AGC CH3, 4 .....	SEPARATE
LIMITER .....	OFF

#### Connection of equipment

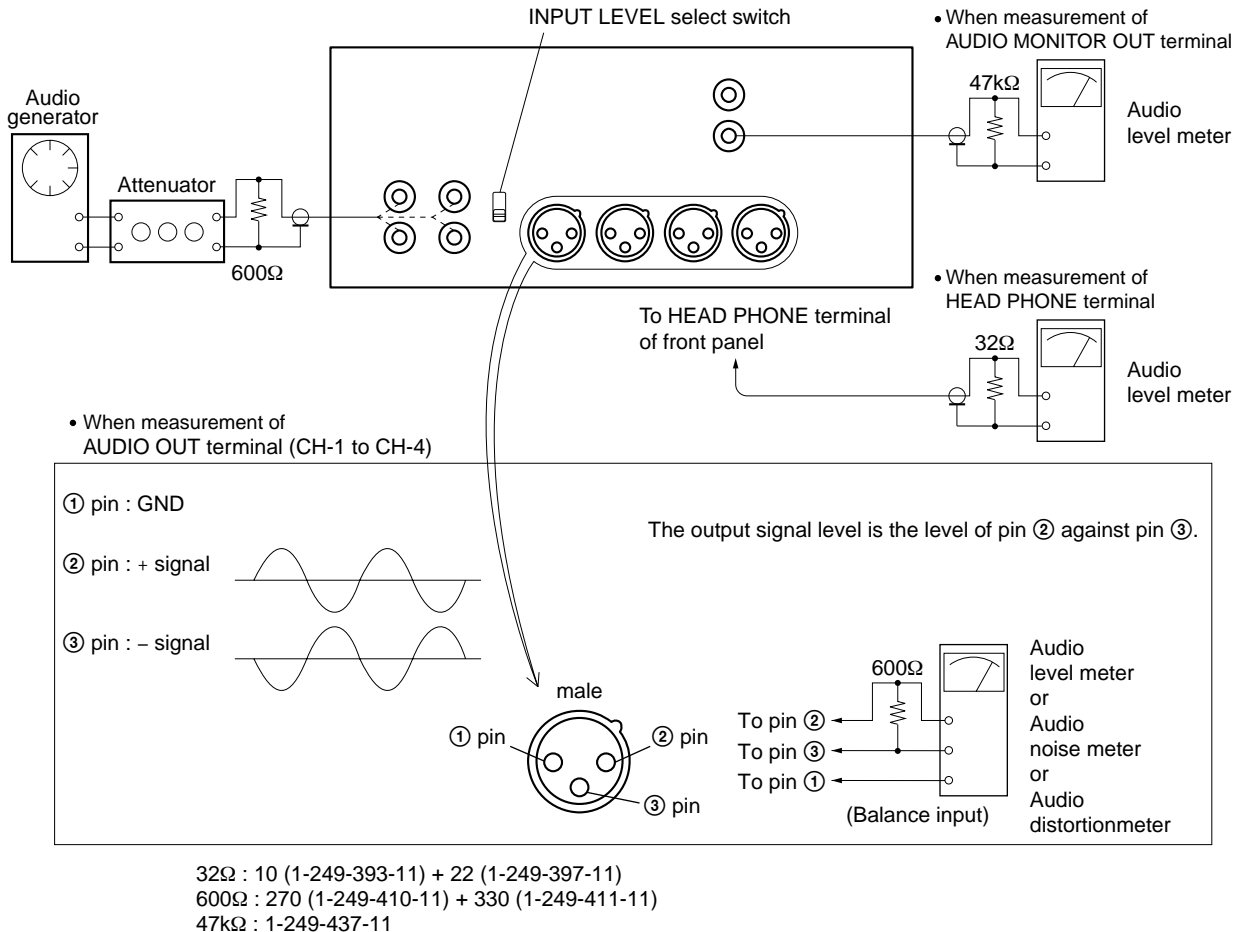


Fig. 5-3-53

**1. Audio PAL Data Input (DSR-45P)**

**(1) Data input in normal case**

If the JC-21 board or IC5006 on the JC-21 board was replaced, perform the following data input.

Mode	STOP
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	40 to 4F

**Input method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: D, and input data in the following table.  
**Note:** To write in the non-volatile memory (EEP ROM), press the PAUSE button of the adjustment remote commander each time to set data.
- 3) Select page: 0, address: 01, and set data: 00.
- 4) Press the RESET switch at bottom of the set using a thin and long pin.

Address	Data
40	00
41	18
42	AC
43	65
44	00
45	1A
46	AC
47	65
48	00
49	14
4A	92
4B	50
4C	00
4D	16
4E	92
4F	50

**(2) Data setting at audio check**

In making an audio check, perform the following data setting. After the audio check finished, perform “data input in normal case” to restore the data.

Mode	STOP
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	40 to 4F

**Input method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: D, and input data in the following table.  
**Note:** To write in the non-volatile memory (EEP ROM), press the PAUSE button of the adjustment remote commander each time to set data.
- 3) Select page: 0, address: 01, and set data: 00.
- 4) Press the RESET switch at bottom of the set using a thin and long pin.

Address	Data
40	00
41	18
42	FF
43	7F
44	00
45	1A
46	FF
47	7F
48	00
49	14
4A	00
4B	40
4C	00
4D	16
4E	00
4F	40

**2. Playing Level Check**

Mode	PLAY
Signal	Alignment tape: For audio check (NTSC: XH5-3/PAL: XH5-3P)
Measurement Point	AUDIO OUT terminal (CH-1, 2)
Measuring instrument	Audio level meter Oscilloscope
Specified Value	32 kHz mode section: 1 kHz signal must be outputted. 48 kHz mode section: 1 kHz signal level is +22 to +26 dBu. 44.1 kHz mode EMP ON section: 7.35 kHz signal level is +16 to +20 dBu. 44.1 kHz mode EMP OFF section: 7.35 kHz signal level is +22 to +26 dBu.

**Note:** 0 dBu = 0.775 Vrms/balance

**Checking method:**

- 1) Check that the play signal level satisfies the specified value.
- 2) Check with the oscilloscope that no clip is found in the output waveform.

**3. E-E Level Check**

**(1) -10dB Check**

Mode	STOP
Signal	Audio: 1 kHz, -10 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
	AUDIO MONITOR OUT terminal
Measuring instrument	Audio level meter
Specified Value	At max. REC LEVEL: +13 to +19 dBu At min. REC LEVEL: No signal is present. At -20 dB displayed on FINE screen with rotating the AUDIO REC LEVEL control knob: Control knob position ±30 deg. of center AUDIO OUT terminal +2 to +6 dBu AUDIO MONITOR OUT terminal -25 to -19 dBs

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Check that the output of AUDIO OUT terminal (CH-1) satisfies the specified value, when the AUDIO REC LEVEL control knob (CH-1) on the front panel is in the maximum position.
- 3) Check that the output of AUDIO OUT terminal (CH-1) satisfies the specified value, when the AUDIO REC LEVEL control knob (CH-1) is in the minimum position.
- 4) Press the "FINE" button on the front panel to display the audio level of LCD monitor on the FINE screen.
- 5) Adjust the AUDIO REC LEVEL control knob (CH-1) so that the FINE screen on CH-1 displays "-20".

**Note 3:** Unless otherwise specified, do not rotate the AUDIO REC LEVEL control knob, as other checking items use this setting (rotation angle) of the AUDIO REC LEVEL control knob.

- 6) Check at this time that the control knob position, AUDIO OUT terminal (CH-1) output, and AUDIO MONITOR OUT terminal output satisfy the specified values. (Audio signal is input only to CH-1)
- 7) For the CH-2 to 4, make a checking in the same manner. When CH-3 or CH-4 is checked, set the AUDIO MONITOR select switch to "CH3/4".

**(2) -2dB Check**

Mode	STOP
Signal	Audio: 1 kHz, -2 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified Value	+2 to +6 dBu

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -2

AUDIO REC LEVEL control knob (CH-1 to 4)  
..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, -2 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Check at this time that the output of AUDIO OUT terminal (CH-1) satisfies the specified value.
- 3) For the CH-2 to 4, make a checking in the same manner.

**(3) +4dB Check**

Mode	STOP
Signal	Audio: 1 kHz, +4 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified Value	+2 to +6 dBu

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... +4

AUDIO REC LEVEL control knob (CH-1 to 4)  
..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, +4 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Check at this time that the output of AUDIO OUT terminal (CH-1) satisfies the specified value.
- 3) For the CH-2 to 4, make a checking in the same manner.

**4. Frequency Characteristic Check**

**(1) 4CH mode Check**

Mode	STOP
Signal	Audio: 1 kHz, -10 dBs signal 10 Hz, -10 dBs signal 14 kHz, -10 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified Value	Difference in output level: A = -2.5 to +1.5 dB B = -1.5 to +1.5 dB

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

AUDIO REC LEVEL control knob (CH-1 to 4)  
..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Measure the output of AUDIO OUT terminal (CH-1) at this time, and assume it to be "a" (dBu).
- 3) Enter 10 Hz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 4) Measure the output of AUDIO OUT terminal (CH-1) at this time, and assume it to be "b" (dBu).
- 5) Enter 14 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 6) Measure the output of AUDIO OUT terminal (CH-1) at this time, and assume it to be "c" (dBu).
- 7) Calculate the difference A (dB) between output levels "b" (dBu) and "a" (dBu) to check that it satisfies the specified value.  
A (dB) = b (dBu) - a (dBu)
- 8) Calculate the difference B (dB) between output levels "c" (dBu) and "a" (dBu) to check that it satisfies the specified value.  
B (dB) = c (dBu) - a (dBu)
- 9) For the CH-2 to 4, make a checking in the same manner.

**(2) 2CH mode Check**

Mode	STOP
Signal	Audio: 1 kHz, -10 dBs signal 20 kHz, -10 dBs signal AUDIO IN terminal (CH-1, 2)
Measurement Point	AUDIO OUT terminal (CH-1, 2)
Measuring instrument	Audio level meter
Specified Value	Difference in output level: A = -1.5 to +1.5 dB

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

AUDIO REC LEVEL control knob (CH-1, 2)  
..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS48K

**Checking method:**

- 1) Enter 1 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Measure the output of AUDIO OUT terminal (CH-1) at this time, and assume it to be "a" (dBu).
- 3) Enter 20 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 4) Measure the output of AUDIO OUT terminal (CH-1) at this time, and assume it to be "b" (dBu).
- 5) Calculate the difference A (dB) between output levels "b" (dBu) and "a" (dBu) to check that it satisfies the specified value.  
A (dB) = b (dBu) - a (dBu)
- 6) For the CH-2, make a checking in the same manner.

**5. Distortion Check**

Mode	STOP
Signal	Audio: 1 kHz, +6 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio distortion meter
Specified Value	0.025% (-72 dB) or less

**Note:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

AUDIO REC LEVEL control knob (CH-1 to 4)  
..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, +6 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Measure the distortion of the AUDIO OUT terminal (CH-1) at this time to check that it satisfies the specified value.
- 3) For the CH-2 to 4, make a checking in the same manner.

**6. HEAD PHONE Check**

Mode	STOP
Signal	Audio: 1 kHz, -10 dBs signal AUDIO IN terminal (CH-1, 2)
Measurement Point	HEAD PHONE terminal (L, R)
Measuring instrument	Audio level meter
Specified Value	-21 to -15 dBV

**Note 1:** 0 dBs = 0.775 Vrms

**Note 2:** 0 dBV = 1 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10  
 AUDIO REC LEVEL control knob (CH-1 to 4)  
 ..... The position at -10 dB Check of E-E Level Check

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Set the HEADPHONE LEVEL control knob to the maximum.
- 3) Measure the output of HEADPHONE terminal (L) at this time to check that it satisfies the specified value.
- 4) Connect a headphone to the HEADPHONE terminal, and rotate the HEADPHONE LEVEL control knob from maximum to minimum.
- 5) Check at this time that the sound on L channel varies smoothly.
- 6) For the R channel, make a checking in the same manner.

**7. E-E Maximum Input Check**

**(1) -10dB Check**

Mode	STOP
Signal	Audio: 1 kHz, +18 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	Pin ② and ③ of AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Oscilloscope
Specified Value	No clip is found in the output waveform.

**Note:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, +18 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Measure the output waveform at ② pin and ③ pin of the AUDIO OUT terminal (CH-1), when the AUDIO REC LEVEL control knob on the front panel is rotated toward rather throttle side.
- 3) Check at this time that no clip is found in the output waveform.
- 4) For the CH-2 to 4, make a checking in the same manner.

**(2) +4dB Check**

Mode	STOP
Signal	Audio: 1 kHz, +30 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	Pin ② and ③ of AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Oscilloscope
Specified Value	No clip is found in the output waveform.

**Note:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... +4

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, +30 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Measure the output waveform at ② pin and ③ pin of the AUDIO OUT terminal (CH-1), when the AUDIO REC LEVEL control knob on the front panel is rotated toward rather throttle side.
- 3) Check at this time that no clip is found in the output waveform.
- 4) For the CH-2 to 4, make a checking in the same manner.



**8. E-E AUTO Check**

Mode	STOP
Signal	Audio: 1 kHz, -10 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified Value	+1 to +7 dBu

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10  
AUDIO INPUT mode select switch ..... AUTO

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, -10 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Check that the output of AUDIO OUT terminal (CH-1) satisfies the specified value, when the AUDIO REC LEVEL control knob on the front panel is in minimum position.
- 3) For the CH-2 to 4, make a checking in the same manner.

**9. E-E Noise Level Check**

**(1) 4CH mode Check**

Mode	STOP
Signal	Audio: No signal Nothing is connected to the AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio noise meter
Specified Value	-65 dBu or less

**Note:** 0 dBu = 0.775 Vrms/balance

**Switch setting**

INPUT LEVEL select switch ..... -10  
AUDIO INPUT mode select switch ..... AUTO

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Connect the audio noise meter to the AUDIO OUT terminal (CH-1).
- 2) Measure the noise level at this time to check that it satisfies the specified value.
- 3) For the CH-2 to 4, make a checking in the same manner.

**(2) 2CH mode Check**

Mode	STOP
Signal	Audio: No signal Nothing is connected to the AUDIO IN terminal (CH-1, 2)
Measurement Point	AUDIO OUT terminal (CH-1, 2)
Measuring instrument	Audio noise meter (A-weight filter ON)
Specified Value	-65 dBu or less

**Note:** 0 dBu = 0.775 Vrms/balance

**Switch setting**

INPUT LEVEL select switch ..... -10  
AUDIO INPUT mode select switch ..... AUTO

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS48K

**Checking method:**

- 1) Connect the audio noise meter to the AUDIO OUT terminal (CH-1), and turn on the A-weight filter.
- 2) Measure the noise level at this time to check that it satisfies the specified value.
- 3) For the CH-2, make a checking in the same manner.

**10. E-E AUTO Maximum Input Check**

Mode	STOP
Signal	Audio: 1 kHz, +18 dBs signal AUDIO IN terminal (CH-1 to 4)
Measurement Point	AUDIO OUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter Oscilloscope
Specified Value	+18 to +22 dBu

**Note 1:** 0 dBu = 0.775 Vrms/balance

**Note 2:** 0 dBs = 0.775 Vrms

**Switch setting**

INPUT LEVEL select switch ..... -10

**Menu setting (AUDIO SET menu)**

AUDIO MODE ..... FS32K

**Checking method:**

- 1) Enter 1 kHz, +18 dBs signal to the AUDIO IN terminal (CH-1).
- 2) Check that the output of AUDIO OUT terminal (CH-1) satisfies the specified value.
- 3) Using an oscilloscope, measure the output waveform at the ② pin and ③ pin of the AUDIO OUT terminal (CH-1).
- 4) Check at this time that no clip is found in the output waveform.
- 5) For the CH-2 to 4, make a checking in the same manner.

### 3-7. TIME CODE SYSTEM ADJUSTMENTS

Set the switches to the following positions unless otherwise specified.

INPUT SELECT switch ..... VIDEO (except DV)  
 Cassette tape ..... None

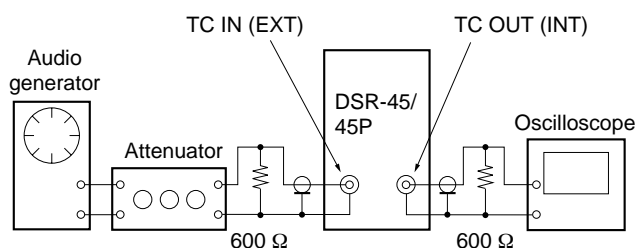
#### 1. Analog Through (E-E) Level Check

Mode	STOP (no cassette tape) Press the REC button.
Signal	TC IN (EXT) terminal: 6 kHz sine wave 3.0 Vp-p
Measurement point	TC OUT (INT) terminal (600 Ω load)
Measuring instrument	Oscilloscope
Specified value	2.0 to 4.0 Vp-p

#### Menu setting (TC/UB SET menu)

TC/UB IN ..... TC & UB EXT

#### Connection of equipment



600 Ω: 270 (1-249-410-11) +330 (1-249-411-11)

#### Checking method:

- 1) Check that the TC output signal level satisfies the specified value.
- 2) Check with the oscilloscope that no clip is found in the output waveform.

#### 2. Time Code Reading Check

Mode	STOP (no cassette tape) Press the REC button.
Signal	TC IN (EXT) terminal: 0.25 Vp-p time code signal
Measurement point	Time counter on the front panel
Measuring instrument	Counter value on the display
Specified value	The value indicated on the time code generator must be same as the counter value on the front panel.

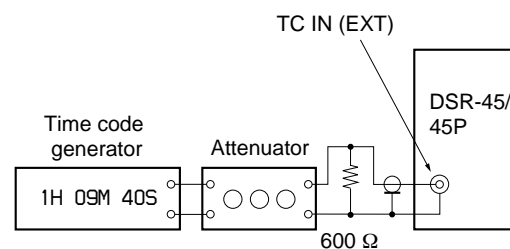
#### Switch setting

Set the counter switch on the front panel to "TC".

#### Menu setting (TC/UB SET menu)

TC/UB IN ..... TC & UB EXT

#### Connection of equipment



600 Ω: 270 (1-249-410-11) +330 (1-249-411-11)

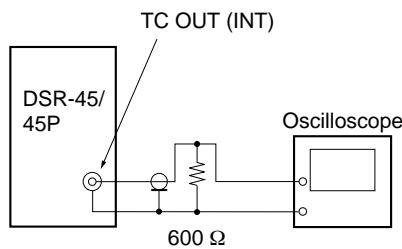
#### Checking method:

- 1) Enter 0.25 Vp-p time code signal obtained by attenuating the output of time code generator (such as NTSC: BVG-1600/PAL: BVG-1600P) to the TC IN (EXT) terminal.
- 2) Check that the value indicated on the time code generator is same as the counter value on the front panel.

**3. Internal Time Code Output Waveform Check**

Mode	PLAY
Signal	Time code recorded tape
Measurement point	TC OUT (INT) terminal (600 Ω load)
Measuring instrument	Oscilloscope
Specified value	A = 2.0 to 3.0 Vp-p (NTSC/PAL) T1 = 20 to 30 μsec (NTSC) T1 = 40 to 65 μsec (PAL) T2 = 20 to 30 μsec (NTSC) T2 = 40 to 65 μsec (PAL)

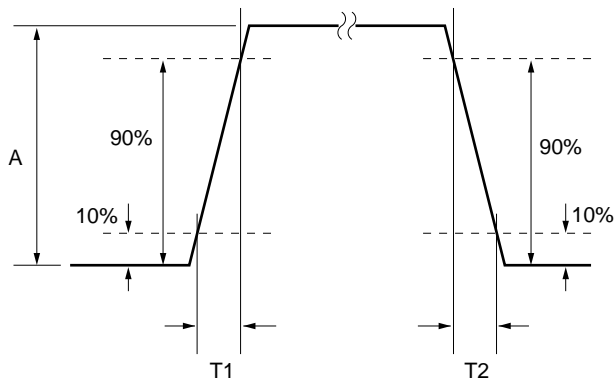
**Connection of equipment**



600 Ω: 270 (1-249-410-11) +330 (1-249-411-11)

**Checking method:**

- 1) Check that the TC output signal level (A) satisfies the specified value.
- 2) Check that the TC output signal rising time (T1) satisfies the specified value.
- 3) Check that the TC output signal falling time (T2) satisfies the specified value.



**Fig. 5-3-55**

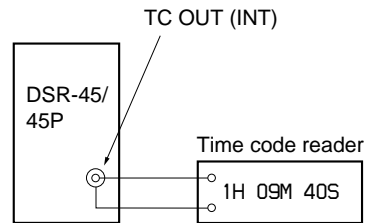
**4. Internal Time Code Output Check**

Mode	PLAY
Signal	Time code recorded tape
Measurement point	Counter value of timer code reader
Measuring instrument	
Specified value	The counter value on the front panel must be same as the value indicated on the time code reader.

**Switch setting**

Set the counter switch on the front panel to "TC".

**Connection of equipment**

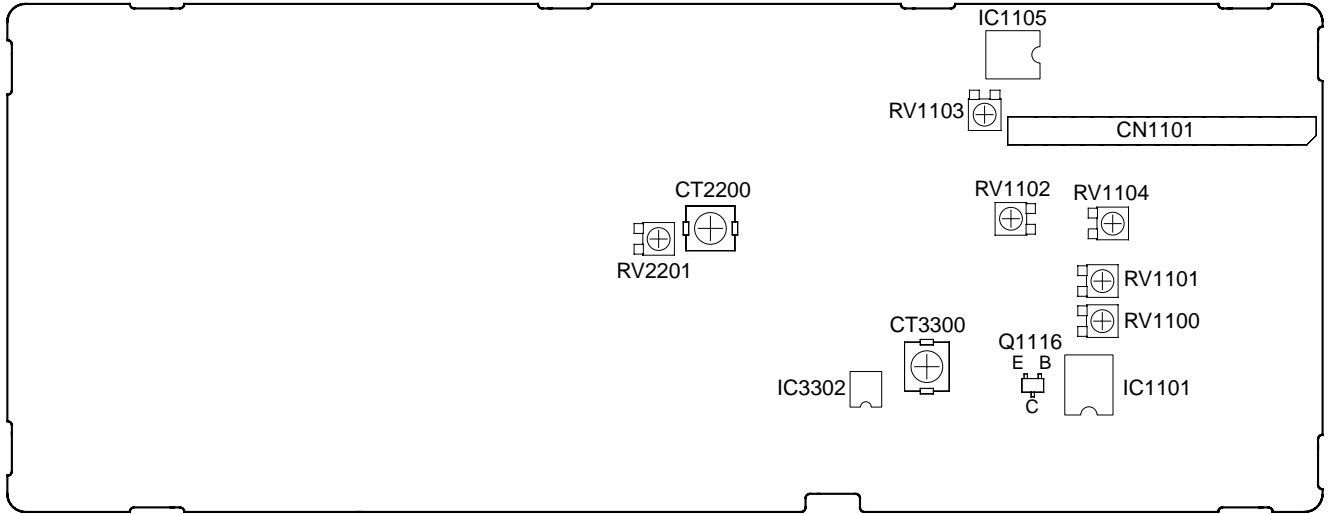


**Checking method:**

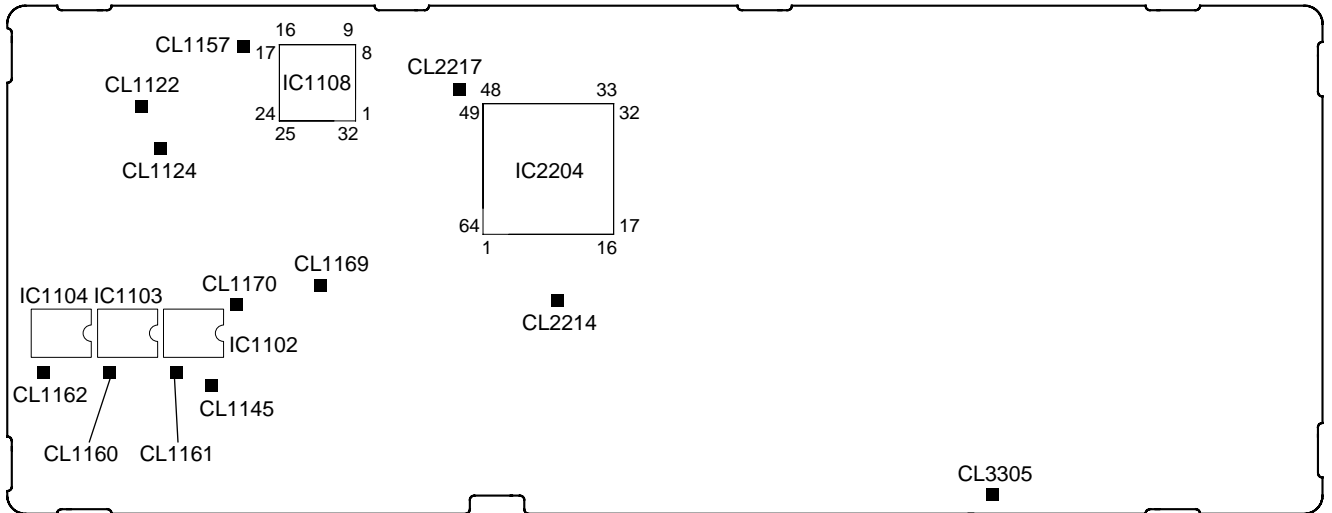
- 1) Connect the time code reader (such as BVG-1500) to the TC OUT (INT) terminal.
- 2) Check that the counter value on the front panel is same as the value indicated on the time code reader.

3-8. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

JC-21 BOARD (SIDE A)



JC-21 BOARD (SIDE B)



## SECTION 6 REPAIR PARTS LIST

### 6-1. EXPLODED VIEWS

**NOTE:**

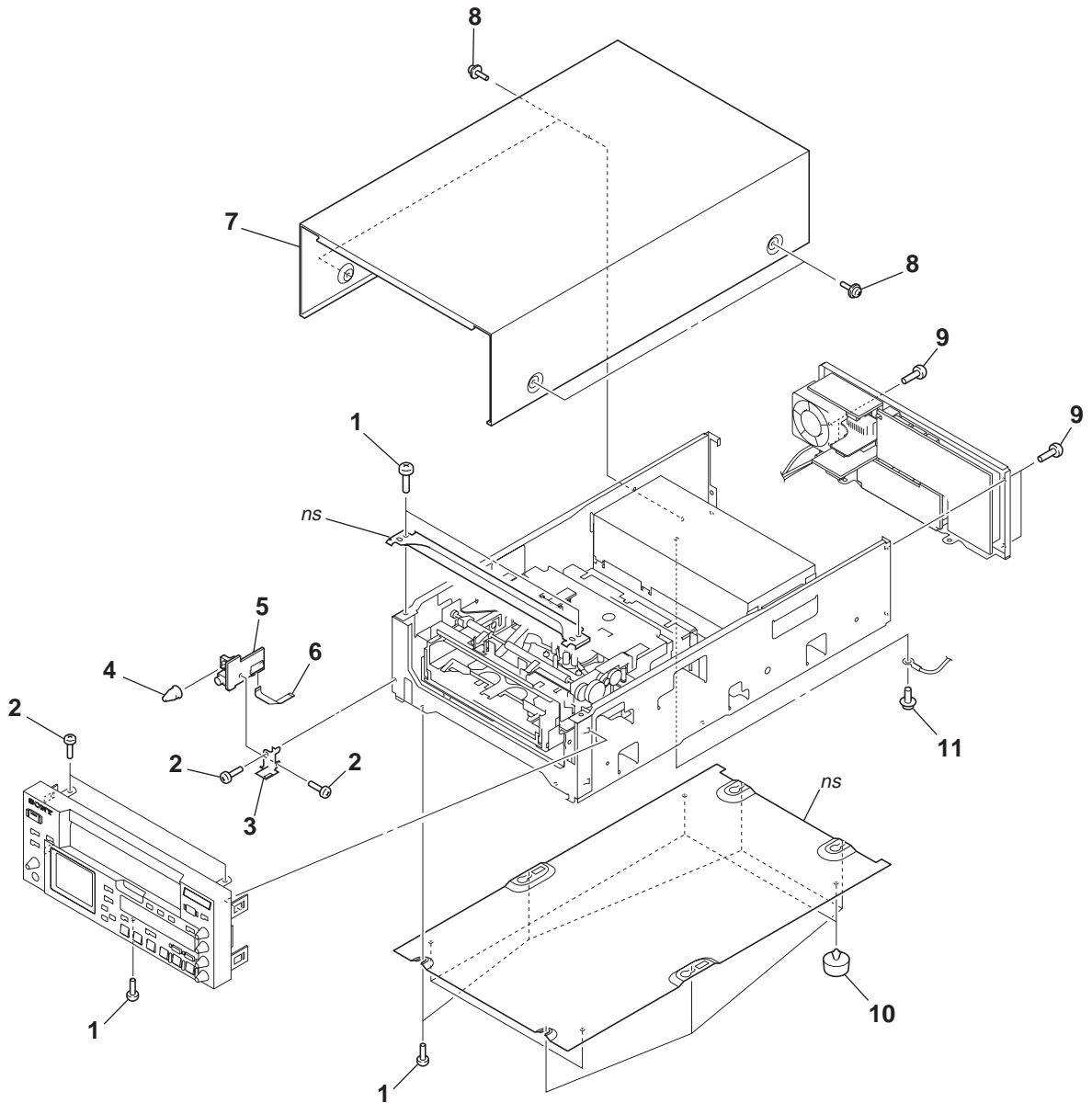
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories are given in the last of the electrical parts list.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### 6-1-1. OVERALL ASSEMBLY

ns: not supplied

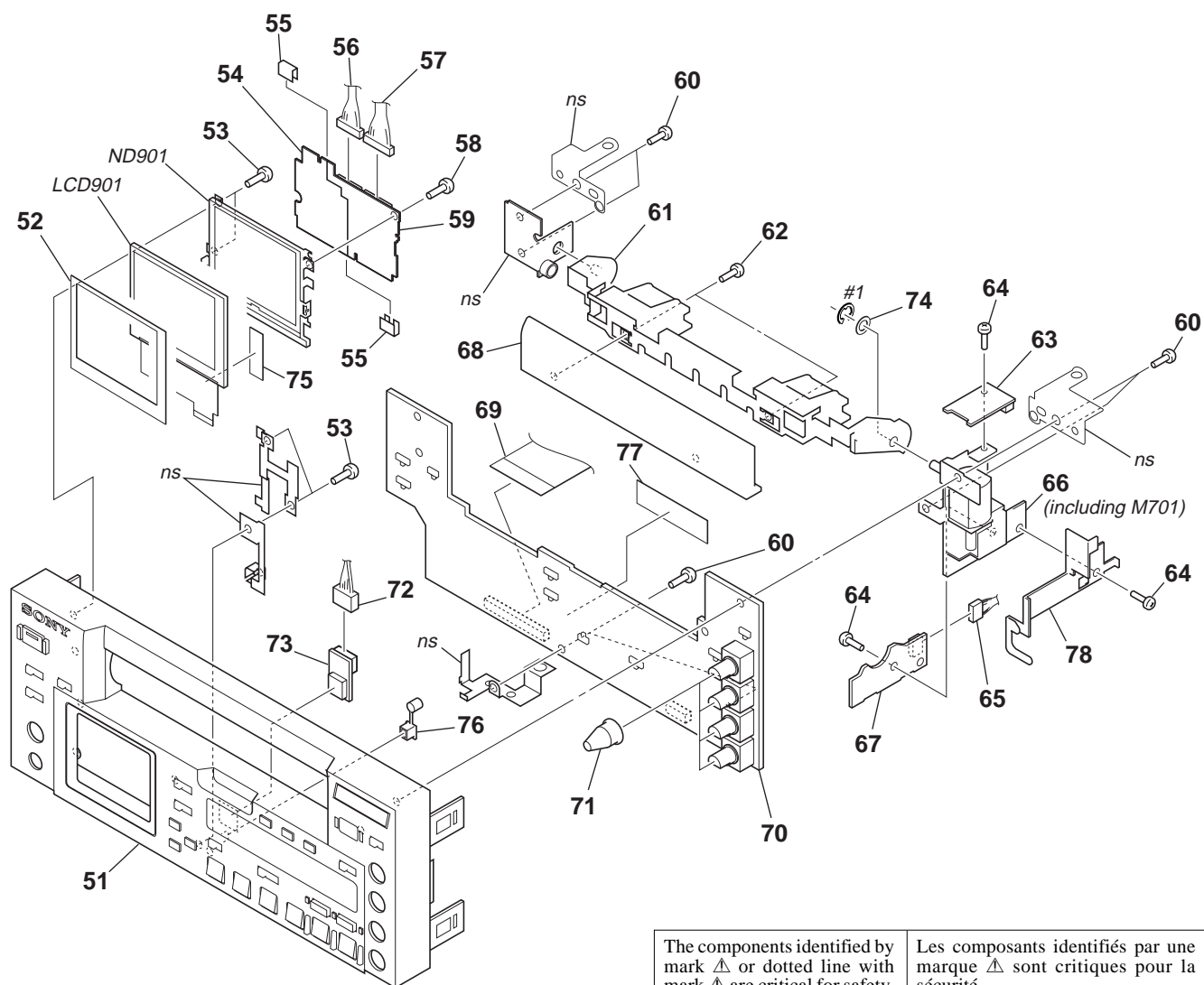


Ref. No.	Part No.	Description
1	3-970-608-01	SUMITITE (B3), +BV
2	3-732-817-01	SCREW (2X4.5), TAPPING
3	3-072-975-01	HP BRACKET
4	3-072-964-01	KNOB, HP
5	A-7078-200-A	HP-135 BOARD, COMPLETE
6	1-823-914-11	CABLE, FLEXIBLE FLAT (FVH-006)

Ref. No.	Part No.	Description
* 7	3-987-158-01	CASE, UPPER
8	4-886-821-01	SCREW, M3 CASE
9	3-970-608-41	SUMITITE (B3), +BV
10	3-987-171-01	FOOT (FF-004)
11	3-975-291-01	SCREW (4X6)

6-1-2. FRONT PANEL ASSEMBLY

ns: not supplied



<p>The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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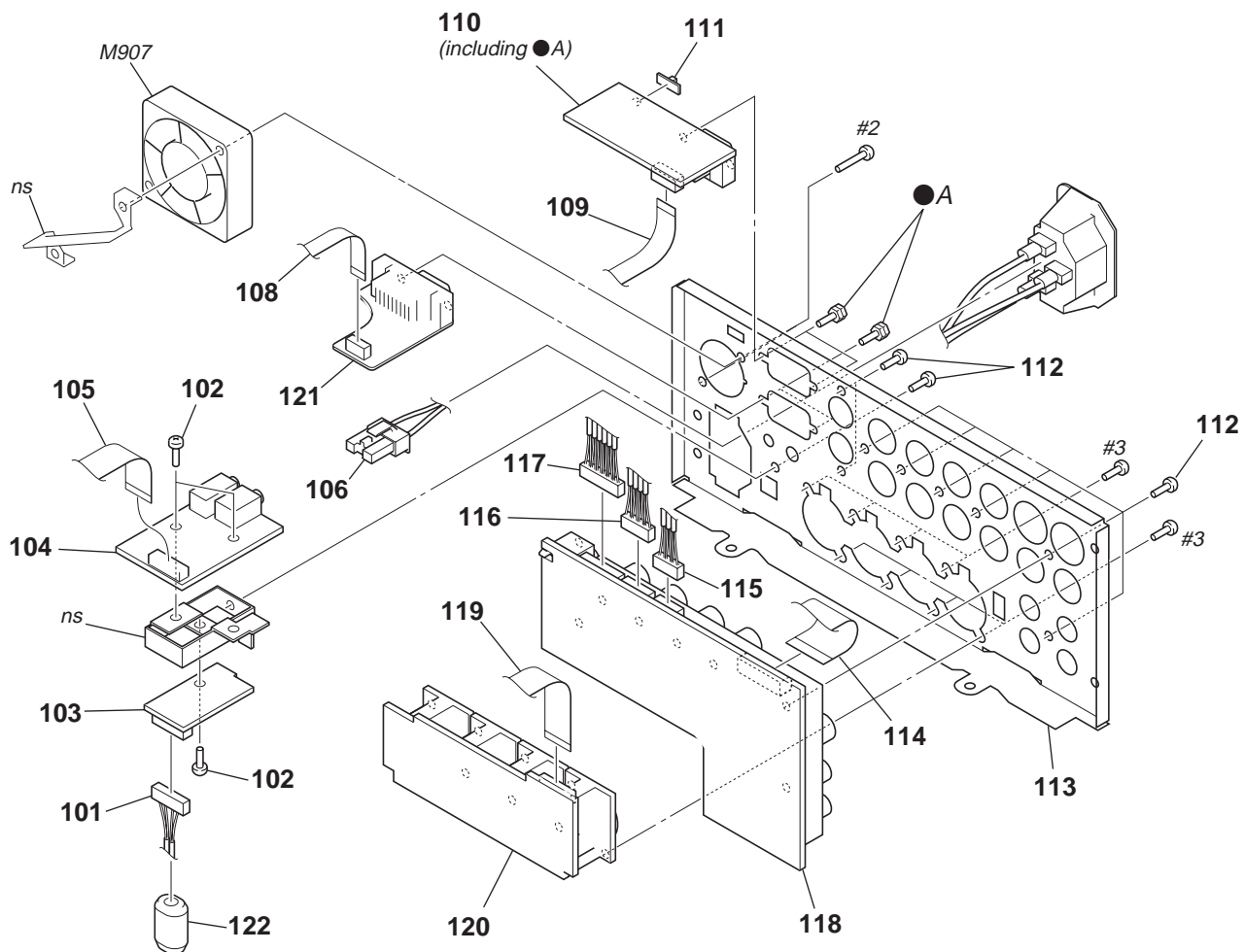
Ref. No.	Part No.	Description
51	X-3952-199-1	PANEL ASSY, FRONT (DSR-45)
51	X-3952-206-1	FRONT PANEL ASSY (DSR-45P)
52	3-075-337-01	CUSHION (LIGHT INTERCEPTION)
53	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION
$\triangle$ 54	1-418-879-21	TRANSFORMER UNIT, INVERTER
* 55	3-051-232-01	CLIP, PCB
56	1-961-665-11	HARNESS (PV-133)
57	1-961-666-11	HARNESS (PV-134)
58	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
59	A-7078-205-A	PD-170 BOARD, COMPLETE
60	3-945-884-11	SCREW (2X6)
61	X-3952-203-1	DOOR ASSY, PLATE
62	3-948-339-21	SCREW, TAPPING
63	A-7078-207-A	FM-037 BOARD, COMPLETE
64	3-732-817-01	SCREW (2X4.5), TAPPING
65	1-961-673-11	HARNESS (FF-205)

Ref. No.	Part No.	Description
66	A-7095-057-A	DOOR BLOCK ASSY, ROTARY (including M701)
67	A-7078-226-A	FC-087 BOARD, COMPLETE
68	3-072-989-01	DOOR
69	1-823-913-12	CABLE, FLEXIBLE FLAT (FVF-009)
70	A-7078-201-A	FR-183 BOARD, COMPLETE
71	3-072-963-01	KNOB, VOL
72	1-961-684-11	HARNESS (VD-060)
73	A-7078-206-A	DL-062 BOARD, COMPLETE
74	3-071-440-21	WASHER 3.5
75	3-060-295-01	SHEET (BL)
76	3-072-940-01	SPACER (IR)
77	3-075-338-11	TAPE (FP)
78	3-074-980-01	CLAMP (FC), HARNESS
LCD901	1-803-857-21	INDICATOR MODULE LIQUID CRYST
$\triangle$ ND901	1-517-878-31	TUBE, FLUORESCENT, COLD CATHODE



6-1-3. REAR PANEL ASSEMBLY

ns: not supplied



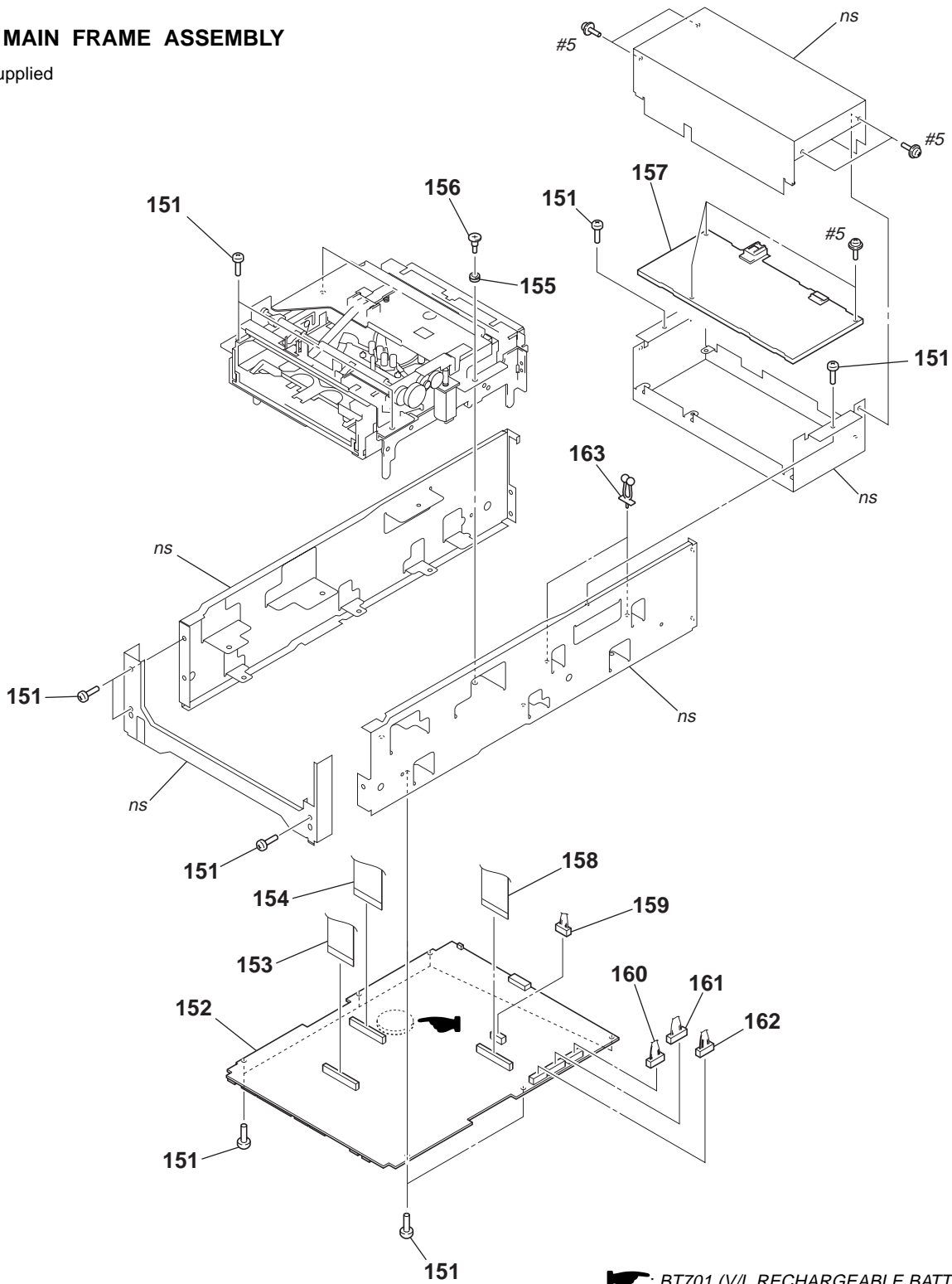
<p>The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description
101	1-961-667-11	HARNESS (JD-053)
102	3-732-817-01	SCREW (2X4.5), TAPPING
103	A-7078-221-A	DV-032 BOARD, COMPLETE
104	A-7078-222-A	LS-060 BOARD, COMPLETE
105	1-823-908-11	CABLE, FLEXIBLE FLAT (FVL-001)
$\triangle$ 106	1-961-664-11	HARNESS (AC-249)
108	1-823-907-11	CABLE, FLEXIBLE FLAT (FVR-014)
109	1-823-906-11	CABLE, FLEXIBLE FLAT (FVR-013)
110	A-7078-225-A	RS-083 BOARD, COMPLETE
* 111	3-063-337-01	SWITCH, SLIDE
112	3-970-608-41	SUMITITE (B3), +BV

Ref. No.	Part No.	Description
113	3-072-983-01	PANEL, REAR
114	1-823-909-11	CABLE, FLEXIBLE FLAT (FVJ-017)
115	1-961-676-11	HARNESS (VJ-111)
116	1-961-675-11	HARNESS (VJ-110)
117	1-961-674-11	HARNESS (VJ-109)
118	A-7078-220-A	JK-216 BOARD, COMPLETE
119	1-823-905-11	CABLE, FLEXIBLE FLAT (FVX-001)
120	A-7078-208-A	XL-005 BOARD, COMPLETE
121	A-7078-224-A	RS-082 BOARD, COMPLETE
122	1-543-793-11	FILTER, CLAMP (FERRITE CORE)
M907	1-763-831-11	MOTOR, FAN

6-1-4. MAIN FRAME ASSEMBLY

ns: not supplied



<p>The components identified by mark <math>\Delta</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\Delta</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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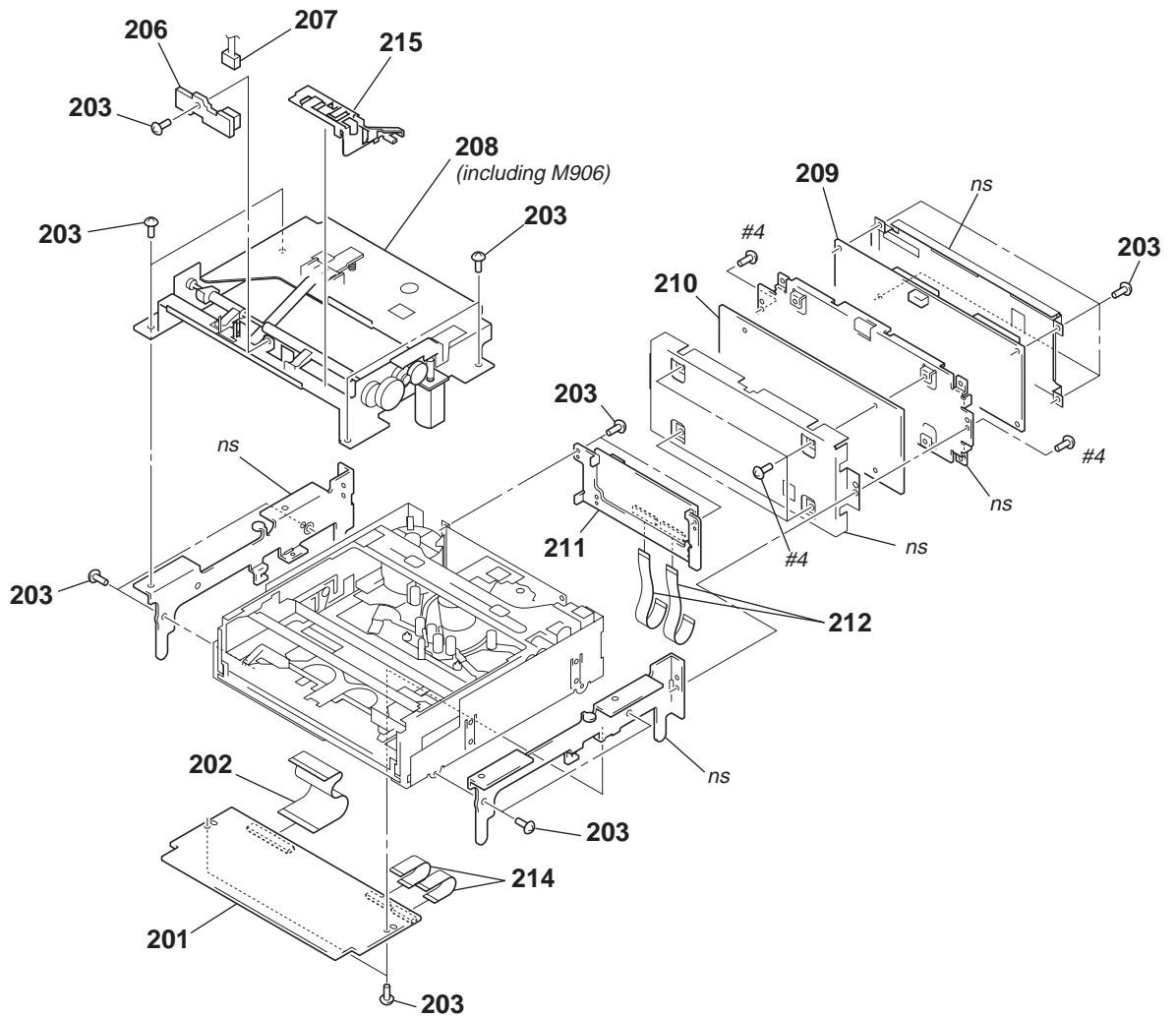
: BT701 (V/L RECHARGEABLE BATTERY)  
Board on the mount position. (See page 4-130.)

**CAUTION**  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
151	3-970-608-01	SUMITITE (B3), +BV	$\Delta$ 157	1-468-666-11	POWER BLOCK
152	A-7095-082-A	VD-032 COMPL (DSR-45)	158	1-823-910-11	CABLE, FLEXIBLE FLAT (FVJ-019)
152	A-7095-084-A	VD-032 COMPL (DSR-45P)	159	1-961-672-11	HARNESS (VJ-108)
153	1-823-912-11	CABLE, FLEXIBLE FLAT (FVJ-021)	160	1-961-669-11	HARNESS (CD-116)
154	1-823-911-11	CABLE, FLEXIBLE FLAT (FVJ-020)	161	1-961-670-11	HARNESS (JD-054)
155	3-974-011-01	RUBBER, VIBRATION PROOF	162	1-961-668-11	HARNESS (PD-116)
156	3-974-010-01	SCREW (M3), STEP	163	4-035-160-01	PURSE LOCK (S) (DIA. 12)

6-1-5. CMX BLOCK ASSEMBLY

ns: not supplied

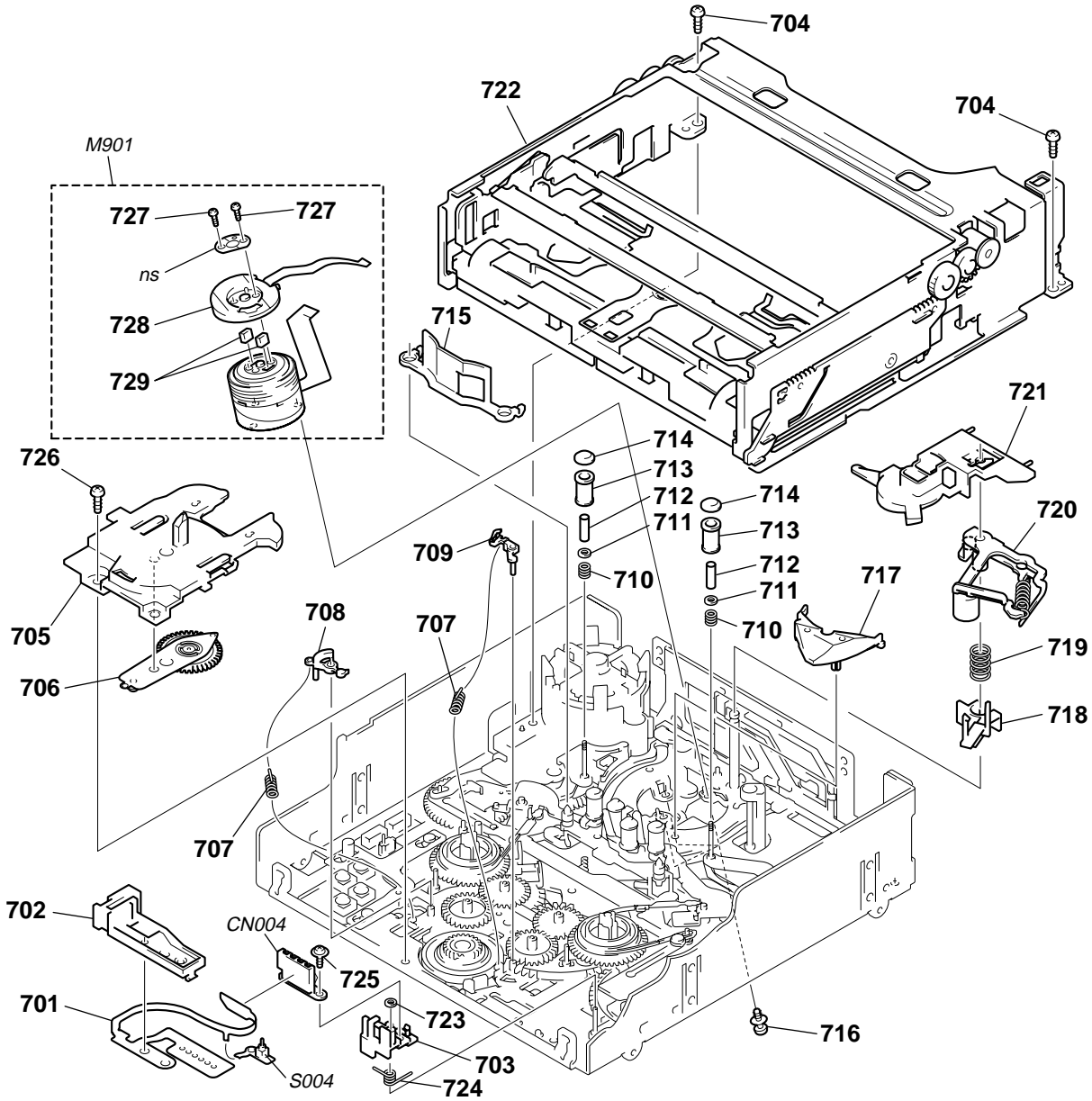


Ref. No.	Part No.	Description
201	A-7067-274-A	CM-59 BOARD, COMPLETE
202	1-791-660-11	CABLE, FLEXIBLE FLAT (FJC-1)
203	3-732-817-01	SCREW (2X4.5), TAPPING
206	A-7078-227-A	CK-107 BOARD, COMPLETE
207	1-961-671-11	HARNESS (VD-058)
208	A-7094-618-A	CK BLOCK ASSY (including M906)

Ref. No.	Part No.	Description
209	A-7095-083-A	JC-21 BOARD, COMPLETE
210	A-7067-272-A	DI-73 BOARD, COMPLETE
211	A-7067-275-A	RP-234 BOARD, COMPLETE
212	1-791-661-11	CABLE, FLEXIBLE FLAT (FRJ-1)
214	1-791-662-11	CABLE, FLEXIBLE FLAT (FMD-14)
215	3-057-667-01	HOLDER, HARNESS

6-1-6. MECHANISM DECK ASSEMBLY  
(DRUM ASSEMBLY)

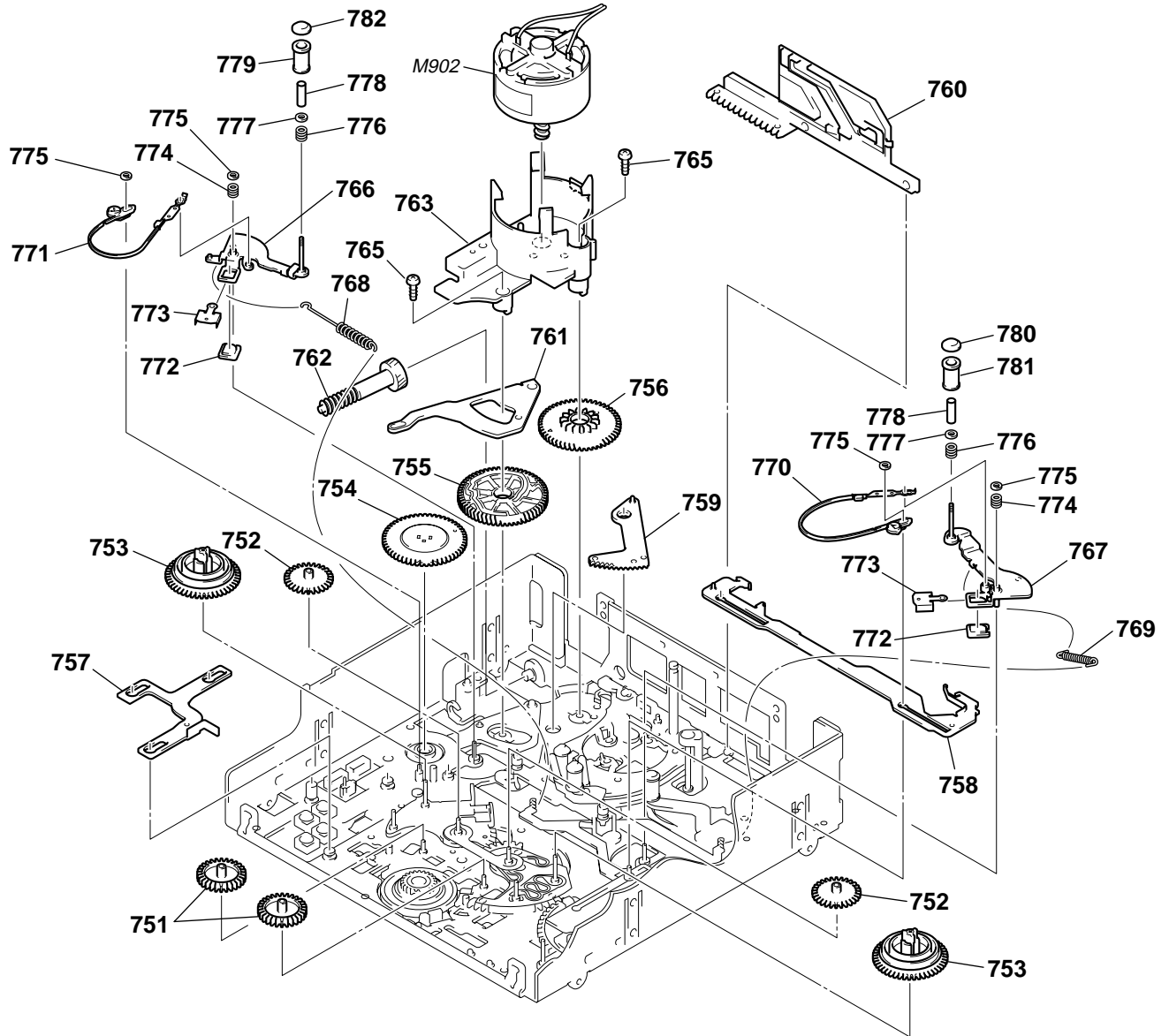
ns: not supplied



Ref. No.	Part No.	Description
701	1-675-561-11	FP-104 FLEXIBLE BOARD
* 702	3-057-351-01	GUIDE, MIC BASE
703	3-057-350-02	BASE, MIC
704	3-732-817-01	SCREW (2X4.5), TAPPING
705	3-057-319-01	RETAINER, PENDULUM
706	X-3949-922-1	ARM ASSY, PENDULUM
707	3-057-286-01	SPRING, EXTENSION (BRAKE)
708	3-057-280-01	ARM (S), BRAKE
709	3-057-279-01	BRAKE (T), RATCHET
710	3-057-232-01	SPRING, COMPRESSION (TG)
711	3-057-238-01	RING, TG
712	3-057-237-01	SLEEVE, TG
713	3-057-235-01	ROLLER, TG
714	3-057-234-01	FLANGE, TG UPPER
715	3-057-379-01	GUARD, GUIDE
716	A-7094-608-B	SCREW ASSY, DRUM FITTING

Ref. No.	Part No.	Description
717	3-973-171-01	SUPPORT, TAPE
718	3-057-227-01	RETAINER, TAPE
719	3-973-818-01	SPRING, COMPRESSION (TAPE RETAINER)
720	X-3949-915-1	ARM ASSY, PINCH
721	3-057-228-01	CAP, DRUM
722	A-7094-602-B	COMPARTMENT BLOCK ASSY
723	3-726-829-01	WASHER, STOPPER
724	3-057-353-01	SPRING, MIC BASE
725	3-318-201-11	SCREW (B) (1.4X3), TAPPING
726	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD
727	3-703-816-74	SCREW (M1.4X4.5)
728	X-3944-897-1	FPC ASSY, MOTOR
729	1-770-363-11	CONNECTOR, ELASTIC
CN004	1-770-312-21	CONNECTOR 4P
M901	A-7048-947-A	DRUM ASSY (DEH-21A-R)
S004	1-762-351-21	SWITCH, PUSH (1 KEY) (REC PROOF)

6-1-7. MECHANISM DECK ASSEMBLY  
(GEAR, ARM)

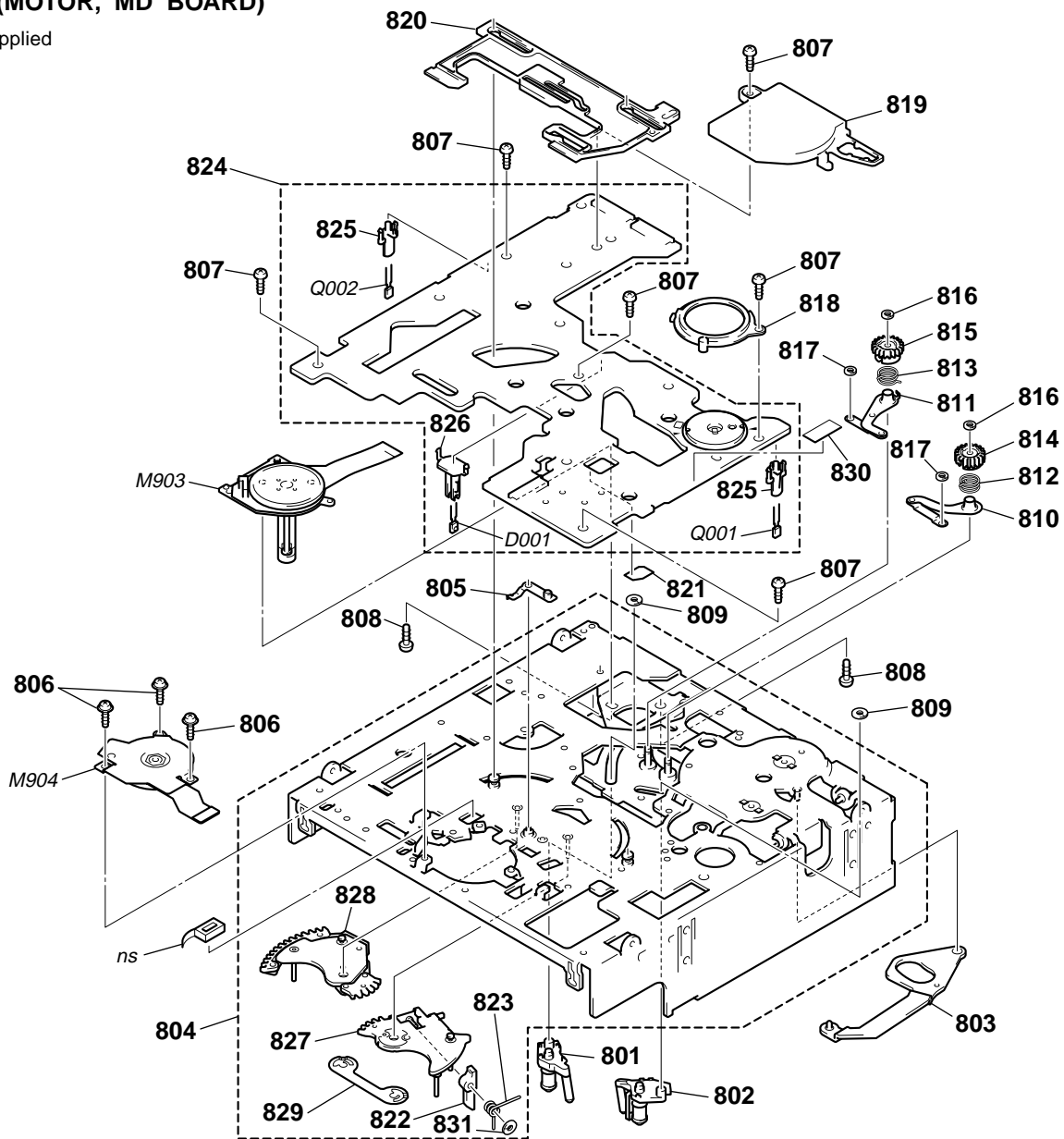


Ref. No.	Part No.	Description
751	A-7096-800-A	GEAR (A) ASSY, IDLER
752	3-057-311-01	GEAR (B), IDLER
753	A-7094-599-A	REEL (LARGE) BLOCK ASSY
754	3-057-267-01	GEAR, ENCODER
755	3-057-294-01	GEAR, MAIN CAM
756	3-973-140-01	GEAR, SUB CAM
* 757	3-057-302-01	SLIDER, SBR
* 758	3-057-314-01	SLIDER, SUB
759	X-3950-816-1	ARM ASSY, LOADING
760	3-057-221-01	SLIDER, PINCH
* 761	3-057-252-01	ARM, SUB SLIDER
762	3-973-159-01	GEAR, JOINT
763	3-057-222-02	HOLDER, MOTOR
765	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD
766	X-3949-918-1	ARM ASSY, TG2
767	X-3949-919-1	ARM ASSY, TG7

Ref. No.	Part No.	Description
768	3-057-295-01	SPRING, EXTENSION (TG2)
769	3-057-296-02	SPRING, EXTENSION (TG7)
770	X-3949-921-1	BAND (TG7) ASSY
771	X-3949-920-1	BAND (TG2) ASSY
772	3-057-281-01	MAGNET, ET
773	3-057-336-01	HOLDER, MAGNET
774	3-057-344-01	SPRING, COMPRESSION (TG ARM)
775	3-726-829-01	WASHER, STOPPER
776	3-057-232-01	SPRING, COMPRESSION (TG)
777	3-057-238-01	RING, TG
778	3-057-237-01	SLEEVE, TG
779	3-057-235-01	ROLLER, TG
780	3-057-234-01	FLANGE, TG UPPER
781	3-057-337-01	ROLLER, TG7
782	3-063-887-01	FLANGE (2), TG UPPER
M902	X-3946-702-1	MOTOR ASSY, CAM

6-1-8. MECHANISM DECK ASSEMBLY  
(MOTOR, MD BOARD)

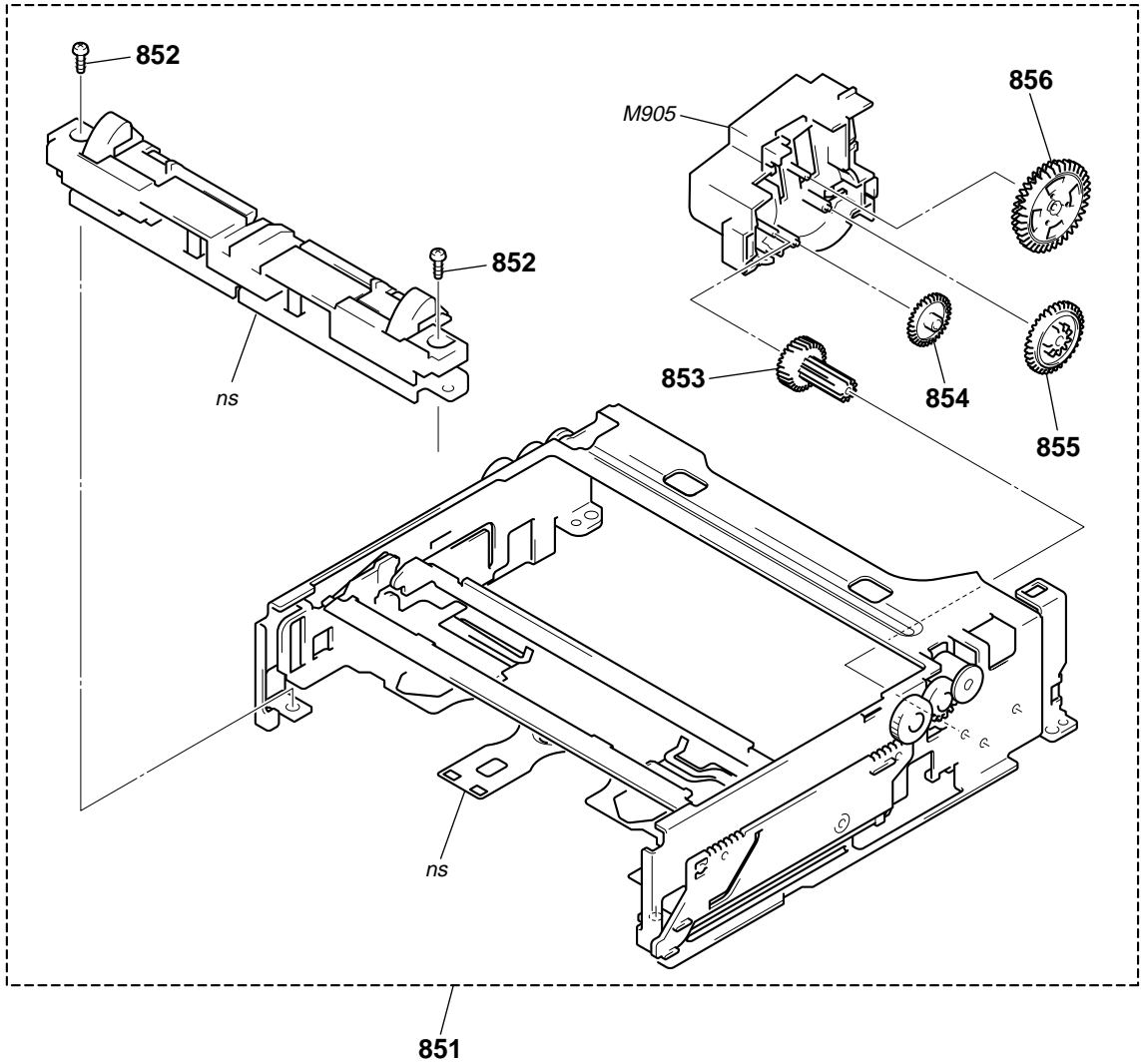
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Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
801	A-7025-007-A	COASTER (T) BLOCK ASSY	819	3-057-340-01	COVER, CAPSTAN
802	A-7096-267-A	COASTER (S) BLOCK ASSY (R)	820	3-057-282-01	SLIDER, MAIN
* 803	3-057-283-01	ARM, MAIN SLIDER	821	1-657-785-11	FP-248 FLEXIBLE BOARD (DEW SENSOR)
804	X-3949-916-9	CHASSIS ASSY, MECHANICAL	822	3-057-320-01	BLOCK, REEL LOCK RELEASE
805	X-3949-924-1	STOPPER ASSY, PENDULUM	823	3-057-354-01	SPRING, REEL LOCK RELEASE
806	3-947-503-01	SCREW (M1.4)	824	A-7067-229-A	MD-76 BOARD, COMPLETE
807	3-732-817-01	SCREW (2X4.5), TAPPING	* 825	3-066-170-01	HOLDER, SENSOR (A)
808	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD	* 826	3-057-555-01	HOLDER, LED
809	3-973-142-01	STOPPER, COASTER PUNCHING	827	X-3950-199-1	BASE (S) ASSY, REEL
810	X-3946-690-1	ARM (S) ASSY, GL	828	X-3950-200-1	BASE (T) ASSY, REEL
811	X-3946-689-1	ARM (T) ASSY, GL	829	3-057-265-01	RETAINER, REEL BASE
812	3-973-146-02	SPRING (S), GL TORSION	830	3-941-343-21	TAPE (A)
813	3-973-156-02	SPRING (T), GL TORSION	831	3-726-829-01	WASHER, STOPPER
814	3-973-264-01	GEAR (S), GL	D001	8-719-988-42	DIODE GL453S
815	3-973-138-01	GEAR (T), GL	M903	8-835-648-01	MOTOR, DC SCD17A/J-N (CAPSTAN)
816	3-727-176-01	WASHER, STOPPER	M904	X-3949-928-1	MOTOR ASSY, REEL
817	3-973-143-01	WASHER, COASTER STOPPER	Q001	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE END)
818	3-057-339-01	COVER, ENCODER	Q002	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE TOP)

**6-1-9. MECHANISM DECK ASSEMBLY  
(CASSETTE COMPARTMENT)**

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Ref. No.	Part No.	Description
851	A-7094-602-B	COMPARTMENT BLOCK ASSY
852	3-732-817-01	SCREW (2X4.5), TAPPING
853	3-057-253-01	GEAR, WHEEL
854	3-057-254-01	GEAR (A)

Ref. No.	Part No.	Description
855	3-057-255-01	GEAR (B)
856	A-7094-689-A	CD BLOCK ASSY, GEAR
M905	X-3949-925-1	MOTOR ASSY, FL



6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable
- Not all of the parts for POWER BLOCK (ACS1581-MA) are listed.

- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA. . :  $\mu$ A. . uPA. . :  $\mu$ PA. .  
uPB. . :  $\mu$ PB. . uPC. . :  $\mu$ PC. .  
uPD. . :  $\mu$ PD. .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description
	A-7078-227-A	CK-107 BOARD, COMPLETE *****
		< CONNECTOR >
* CN901	1-580-057-11	PIN, CONNECTOR (SMD) 4P  < SWITCH >
S900	1-762-947-12	SWITCH, PUSH (1 KEY) (CASSETTE DET)
S901	1-771-813-11	SWITCH, PUSH (1 KEY) (STANDBY)
S902	1-771-813-11	SWITCH, PUSH (1 KEY) (PUSH OUT)
	A-7067-274-A	CM-59 BOARD, COMPLETE *****
		< CAPACITOR >
C100	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C101	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C102	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C103	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C104	1-162-967-11	CERAMIC CHIP 0.0033uF 10% 50V
C105	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C106	1-162-967-11	CERAMIC CHIP 0.0033uF 10% 50V
C107	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C108	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V
C109	1-164-739-11	CERAMIC CHIP 560PF 5% 50V
C110	1-117-863-11	CERAMIC CHIP 0.47uF 10% 6.3V
C111	1-164-230-11	CERAMIC CHIP 220PF 5% 50V
C112	1-162-967-11	CERAMIC CHIP 0.0033uF 10% 50V
C113	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C114	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V
C115	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C116	1-117-863-11	CERAMIC CHIP 0.47uF 10% 6.3V
C117	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C118	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C119	1-119-869-91	CERAMIC CHIP 10uF 35V
C120	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C121	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C122	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V
C129	1-119-869-91	CERAMIC CHIP 10uF 35V
C130	1-119-869-91	CERAMIC CHIP 10uF 35V
C131	1-119-869-91	CERAMIC CHIP 10uF 35V
C132	1-119-869-91	CERAMIC CHIP 10uF 35V

Ref. No.	Part No.	Description
C134	1-113-985-11	TANTAL. CHIP 10uF 20% 20V
C135	1-113-985-11	TANTAL. CHIP 10uF 20% 20V
C136	1-113-985-11	TANTAL. CHIP 10uF 20% 20V
C137	1-113-985-11	TANTAL. CHIP 10uF 20% 20V
C200	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C201	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C202	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C203	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C204	1-113-987-11	TANTAL. CHIP 4.7uF 20% 25V
C205	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C206	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C207	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V
C208	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C300	1-162-927-11	CERAMIC CHIP 100PF 5% 50V
C301	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C302	1-162-927-11	CERAMIC CHIP 100PF 5% 50V
C303	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C320	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C321	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C322	1-164-505-11	CERAMIC CHIP 2.2uF 16V
C323	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C324	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C325	1-164-360-11	CERAMIC CHIP 0.1uF 16V
C326	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C327	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C329	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V
C330	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V
C331	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V
C400	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C401	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C402	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C403	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C404	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C405	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V
C406	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V
C407	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C501	1-135-177-21	TANTALUM CHIP 1uF 20% 20V
C502	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V
C503	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C504	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C505	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C506	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C507	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C508	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V			
C509	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V			
C510	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V			
C511	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V			
C512	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C515	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C518	1-164-739-11	CERAMIC CHIP 560PF 5% 50V			
C519	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C520	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V			
C521	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C522	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C523	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C524	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V			
C525	1-131-861-91	TANTAL. CHIP 4.7uF 20% 20V			
C526	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V			
C527	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V			
C528	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V			
C529	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V			
C530	1-109-982-11	CERAMIC CHIP 1uF 10% 10V			
< CONNECTOR >					
CN001	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P			
CN100	1-506-473-11	PIN, CONNECTOR 8P			
CN200	1-691-385-21	CONNECTOR, FFC/FPC 21P			
CN201	1-691-385-21	CONNECTOR, FFC/FPC 21P			
* CN300	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
CN400	1-750-341-11	CONNECTOR, FFC/EPC (ZIF) 18P			
CN500	1-573-351-11	CONNECTOR, FFC/FPC (ZIF) 11P			
* CN501	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
< DIODE >					
D101	8-719-066-98	DIODE RB051L-40TE25			
D102	8-719-066-98	DIODE RB051L-40TE25			
D103	8-719-066-98	DIODE RB051L-40TE25			
D104	8-719-066-98	DIODE RB051L-40TE25			
< FUSE >					
△F100	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)			
< IC >					
IC100	8-759-060-94	IC MB3785APFV-G-BND-ER			
IC101	8-759-689-44	IC MM1385GNLE			
IC102	8-759-648-48	IC TC7W34FU (TE12R)			
IC200	8-759-339-61	IC LB1897D			
IC202	8-759-338-95	IC NJM2903V (TE2)			
IC300	8-759-327-61	IC LB8112V-TLM			
IC400	8-759-431-41	IC LB1991V-TLM			
IC500	8-759-431-30	IC CXA8062R-EB			
IC501	8-759-434-46	IC TA8486F (EL)			
< SHORT >					
JR501	1-216-864-11	METAL CHIP 0 5% 1/16W			
JR502	1-216-864-11	METAL CHIP 0 5% 1/16W			
JR503	1-216-864-11	METAL CHIP 0 5% 1/16W			
JR504	1-216-864-11	METAL CHIP 0 5% 1/16W			
JR505	1-216-864-11	METAL CHIP 0 5% 1/16W			
< COIL >					
L100	1-406-823-11	INDUCTOR 10uH			
L101	1-406-823-11	INDUCTOR 10uH			
L102	1-424-522-21	INDUCTOR 10uH			
L103	1-406-823-11	INDUCTOR 10uH			
L104	1-409-535-41	INDUCTOR 100uH			
L105	1-409-535-41	INDUCTOR 100uH			
L106	1-424-523-21	INDUCTOR 22uH			
L107	1-406-825-11	INDUCTOR 33uH			
L200	1-414-398-11	INDUCTOR 10uH			
L400	1-414-754-11	INDUCTOR 10uH			
L500	1-414-754-11	INDUCTOR 10uH			
< TRANSISTOR >					
Q100	8-729-048-75	TRANSISTOR CPH3109-TL-E			
Q101	8-729-048-75	TRANSISTOR CPH3109-TL-E			
Q102	8-729-048-75	TRANSISTOR CPH3109-TL-E			
Q103	8-729-048-75	TRANSISTOR CPH3109-TL-E			
Q104	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
Q105	8-729-037-72	TRANSISTOR UN9211J- (TX).SO			
Q200	8-729-424-02	TRANSISTOR 2SB709A-QRS-TX			
Q201	8-729-037-52	TRANSISTOR 2SD2216J-QR (K8).SO			
Q301	8-729-037-52	TRANSISTOR 2SD2216J-QR (K8).SO			
Q302	8-729-037-52	TRANSISTOR 2SD2216J-QR (K8).SO			
< RESISTOR >					
R100	1-216-049-11	RES-CHIP 1K 5% 1/10W			
R101	1-216-041-00	METAL CHIP 470 5% 1/10W			
R102	1-216-025-11	RES-CHIP 100 5% 1/10W			
R103	1-216-841-11	METAL CHIP 47K 5% 1/16W			
R104	1-218-890-11	METAL CHIP 62K 0.5% 1/10W			
R105	1-218-883-11	METAL CHIP 33K 0.5% 1/10W			
R106	1-218-867-11	RES-CHIP 6.8K 5% 1/10W			
R107	1-218-865-11	METAL CHIP 5.6K 0.5% 1/10W			
R108	1-216-864-11	METAL CHIP 0 5% 1/16W			
R109	1-216-864-11	METAL CHIP 0 5% 1/16W			
R110	1-216-864-11	METAL CHIP 0 5% 1/16W			
R111	1-216-833-11	METAL CHIP 10K 5% 1/16W			
R112	1-216-049-11	RES-CHIP 1K 5% 1/10W			
R114	1-216-837-11	METAL CHIP 22K 5% 1/16W			
R115	1-216-839-11	METAL CHIP 33K 5% 1/16W			
R116	1-218-878-11	METAL CHIP 20K 0.5% 1/10W			
R117	1-216-834-11	METAL CHIP 12K 5% 1/16W			
R118	1-216-864-11	METAL CHIP 0 5% 1/16W			
R120	1-216-864-11	METAL CHIP 0 5% 1/16W			
R122	1-216-864-11	METAL CHIP 0 5% 1/16W			
R123	1-216-838-11	METAL CHIP 27K 5% 1/16W			
R124	1-216-864-11	METAL CHIP 0 5% 1/16W			
R126	1-216-833-11	METAL CHIP 10K 5% 1/16W			
R127	1-216-842-11	METAL CHIP 56K 5% 1/16W			
R128	1-216-864-11	METAL CHIP 0 5% 1/16W			
R131	1-218-865-11	METAL CHIP 5.6K 0.5% 1/10W			
R136	1-216-864-11	METAL CHIP 0 5% 1/16W			
R200	1-216-821-11	METAL CHIP 1K 5% 1/16W			
R201	1-216-833-11	METAL CHIP 10K 5% 1/16W			
R202	1-218-878-11	METAL CHIP 20K 0.5% 1/10W			
R203	1-218-873-11	METAL CHIP 12K 0.5% 1/10W			

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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DI-73

Ref. No.	Part No.	Description			
R204	1-216-857-11	METAL CHIP	1M	5%	1/16W
R205	1-217-671-11	METAL CHIP	1	5%	1/10W
R206	1-217-671-11	METAL CHIP	1	5%	1/10W
R207	1-217-671-11	METAL CHIP	1	5%	1/10W
R208	1-217-671-11	METAL CHIP	1	5%	1/10W
R209	1-216-853-11	METAL CHIP	470K	5%	1/16W
R211	1-216-864-11	METAL CHIP	0	5%	1/16W
R212	1-216-821-11	METAL CHIP	1K	5%	1/16W
R213	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R214	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R215	1-216-821-11	METAL CHIP	1K	5%	1/16W
R223	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R224	1-216-841-11	METAL CHIP	47K	5%	1/16W
R225	1-216-295-91	SHORT	0		
R300	1-216-835-11	METAL CHIP	15K	5%	1/16W
R301	1-216-835-11	METAL CHIP	15K	5%	1/16W
R302	1-216-818-11	METAL CHIP	560	5%	1/16W
R303	1-216-818-11	METAL CHIP	560	5%	1/16W
R304	1-216-864-11	METAL CHIP	0	5%	1/16W
R306	1-216-295-91	SHORT	0		
R307	1-216-864-11	METAL CHIP	0	5%	1/16W
R308	1-216-864-11	METAL CHIP	0	5%	1/16W
R309	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R310	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R311	1-218-859-11	METAL CHIP	3.3K	0.5%	1/10W
R312	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R313	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R314	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R315	1-216-841-11	METAL CHIP	47K	5%	1/16W
R316	1-216-841-11	METAL CHIP	47K	5%	1/16W
R317	1-216-821-11	METAL CHIP	1K	5%	1/16W
R318	1-216-821-11	METAL CHIP	1K	5%	1/16W
R319	1-216-821-11	METAL CHIP	1K	5%	1/16W
R320	1-216-821-11	METAL CHIP	1K	5%	1/16W
R323	1-216-864-11	METAL CHIP	0	5%	1/16W
R324	1-216-833-11	METAL CHIP	10K	5%	1/16W
R325	1-216-845-11	METAL CHIP	100K	5%	1/16W
R326	1-216-833-11	METAL CHIP	10K	5%	1/16W
R327	1-216-833-11	METAL CHIP	10K	5%	1/16W
R328	1-216-833-11	METAL CHIP	10K	5%	1/16W
R329	1-216-864-11	METAL CHIP	0	5%	1/16W
R330	1-216-845-11	METAL CHIP	100K	5%	1/16W
R332	1-216-845-11	METAL CHIP	100K	5%	1/16W
R333	1-216-833-11	METAL CHIP	10K	5%	1/16W
R334	1-216-833-11	METAL CHIP	10K	5%	1/16W
R335	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R336	1-216-845-11	METAL CHIP	100K	5%	1/16W
R337	1-217-671-11	METAL CHIP	1	5%	1/10W
R339	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R340	1-218-859-11	METAL CHIP	3.3K	0.5%	1/10W
R342	1-217-671-11	METAL CHIP	1	5%	1/10W
R400	1-216-833-11	METAL CHIP	10K	5%	1/16W
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R402	1-216-295-91	SHORT	0		
R403	1-216-836-11	METAL CHIP	18K	5%	1/16W
R405	1-216-845-11	METAL CHIP	100K	5%	1/16W
R500	1-216-295-91	SHORT	0		
R501	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R503	1-216-833-11	METAL CHIP	10K	5%	1/16W
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			
R505	1-216-833-11	METAL CHIP	10K	5%	1/16W
R506	1-216-864-11	METAL CHIP	0	5%	1/16W
R507	1-216-821-11	METAL CHIP	1K	5%	1/16W
R508	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R509	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R511	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R512	1-216-809-11	METAL CHIP	100	5%	1/16W
R513	1-216-809-11	METAL CHIP	100	5%	1/16W
R514	1-216-809-11	METAL CHIP	100	5%	1/16W
R515	1-217-671-11	METAL CHIP	1	5%	1/10W
R516	1-217-671-11	METAL CHIP	1	5%	1/10W
R518	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R519	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R520	1-218-897-11	METAL CHIP	120K	0.5%	1/10W
R522	1-218-901-11	METAL CHIP	180K	0.5%	1/10W
R525	1-216-864-11	METAL CHIP	0	5%	1/16W
R526	1-218-629-91	METAL CHIP	180	5%	1W
R527	1-218-629-91	METAL CHIP	180	5%	1W
R528	1-218-629-91	METAL CHIP	180	5%	1W
R529	1-218-629-91	METAL CHIP	180	5%	1W
R530	1-216-821-11	METAL CHIP	1K	5%	1/16W
R531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R532	1-217-671-11	METAL CHIP	1	5%	1/10W
R533	1-217-671-11	METAL CHIP	1	5%	1/10W
R534	1-217-671-11	METAL CHIP	1	5%	1/10W
R535	1-217-671-11	METAL CHIP	1	5%	1/10W
R536	1-216-821-11	METAL CHIP	1K	5%	1/16W

A-7067-272-A DI-73 BOARD, COMPLETE

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< CAPACITOR >

C7000	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7001	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7002	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7003	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7004	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7005	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7006	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7007	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7016	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7017	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7018	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7019	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7020	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7021	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7022	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7023	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7024	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7025	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7026	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7027	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7028	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7029	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7030	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7031	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7032	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7033	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7034	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C7035	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

Ref. No.	Part No.	Description					Ref. No.	Part No.	Description			
C7038	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V		C8009	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7039	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V		C8010	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C7040	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8011	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C7041	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8012	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7042	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V		C8013	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7043	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V		C8014	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7044	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V		C8015	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7045	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V		C8016	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7046	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8017	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7047	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8018	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7048	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V		C8019	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C7049	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V		C8020	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7050	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V		C8021	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7051	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8022	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C7052	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8024	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7053	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		C8025	1-162-625-11	CERAMIC CHIP	0.0047uF	5%	50V
C7054	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V		C8026	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C7055	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8027	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7056	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C8100	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7057	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		C8101	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C7058	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C8102	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C7059	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C8201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C7060	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9000	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7061	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9001	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7062	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C9002	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7063	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C9003	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7064	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9004	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7065	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9005	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7066	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C9006	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7067	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C9007	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7068	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9008	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C7069	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9009	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7100	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		C9010	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7101	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V		C9011	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7201	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		C9012	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7202	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		C9013	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7203	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		C9014	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7204	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		C9015	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7301	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C9016	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7302	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		C9017	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7303	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C9018	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7304	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		C9019	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7305	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9020	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7306	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9021	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7307	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9022	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7308	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9023	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7401	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9024	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C7402	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C9025	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7403	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9026	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7404	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		C9027	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C7405	1-164-337-11	CERAMIC CHIP	2.2uF		16V		C9028	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8000	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9029	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8001	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		C9030	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C8002	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V		C9031	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C8003	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9032	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C8004	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9033	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C8005	1-113-682-11	TANTAL. CHIP	33uF	20%	10V		C9034	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C8006	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9035	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C8007	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9036	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C8008	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C9037	1-164-156-11	CERAMIC CHIP	0.1uF		25V

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Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
C9038	1-164-156-11	CERAMIC CHIP	0.1uF		25V	IC8009	8-759-696-00	IC	HD6433837TSC73X		
C9500	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC8010	8-759-564-49	IC	TC7W53FU (TE12R)		
C9501	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC8011	8-759-058-62	IC	TC7S08FU (TE85R)		
C9502	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC8201	8-759-443-08	IC	TC7W241FU-TE12R		
C9503	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9000	8-752-371-65	IC	CXD2304R-T4		
C9504	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9001	8-759-449-58	IC	LM7131BCM5X		
C9505	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9004	8-759-524-52	IC	TC74VHC574FT (EL)		
C9506	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9005	8-759-270-56	IC	SN74HC377ANSR		
C9507	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9006	8-759-523-95	IC	TC74VHC74FT (EL)		
C9508	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9007	8-759-449-58	IC	LM7131BCM5X		
C9509	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9008	8-759-270-56	IC	SN74HC377ANSR		
C9510	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	IC9009	8-759-270-56	IC	SN74HC377ANSR		
C9511	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	IC9010	8-759-449-58	IC	LM7131BCM5X		
C9512	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9011	8-759-582-71	IC	M66280FP-280D		
C9513	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	IC9012	8-759-524-10	IC	TC74VHC157FT (EL)		
C9514	1-164-156-11	CERAMIC CHIP	0.1uF		25V	IC9013	8-759-582-71	IC	M66280FP-280D		
C9515	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9014	8-759-531-92	IC	TC7WH04FU (TE12R)		
C9516	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC9015	8-759-524-50	IC	TC74VHC541FT (EL)		
		< CONNECTOR >				IC9016	8-759-524-50	IC	TC74VHC541FT (EL)		
CN9500	1-794-773-11	CONNECTOR BOAD TO BOAD 120P				IC9017	8-759-368-81	IC	TK11630UTL		
		< DIODE >				IC9018	8-759-528-99	IC	TC74VHC221AFT (EL)		
D7301	8-719-421-67	DIODE MA132WK-TX				IC9019	8-759-196-97	IC	TC7SH32FU-TE85R		
D7302	8-719-421-67	DIODE MA132WK-TX				IC9500	8-759-082-57	IC	TC7W04FU (TE12R)		
		< FILTER >				IC9501	8-759-524-04	IC	TC74VHC125FT (EL)		
FL9000	1-233-345-21	FILTER, LOW PASS (5.5MHz)				IC9502	8-759-524-48	IC	TC74VHC393FT (EL)		
FL9001	1-233-345-21	FILTER, LOW PASS (5.5MHz)				IC9503	6-700-430-01	IC	MK9173-15CS08		
FL9002	1-233-345-21	FILTER, LOW PASS (5.5MHz)				IC9504	8-759-443-08	IC	TC7W241FU-TE12R		
		< IC >				IC9505	8-759-058-64	IC	TC7S32FU (TE85R)		
IC7000	8-759-422-21	IC NJM4580V (TE2)				IC9506	8-759-524-18	IC	TC74VHC163FT (EL)		
IC7001	8-759-422-21	IC NJM4580V (TE2)				IC9507	8-759-524-19	IC	TC74VHC164FT (EL)		
IC7002	8-759-358-47	IC NJM2115V (TE2)				IC9508	8-759-083-94	IC	TC7W74FU (TE12R)		
IC7003	8-759-358-47	IC NJM2115V (TE2)				IC9509	8-759-524-18	IC	TC74VHC163FT (EL)		
IC7004	8-759-523-02	IC TC74HC4053AFT (EL)				IC9510	8-759-524-48	IC	TC74VHC393FT (EL)		
IC7005	8-759-523-02	IC TC74HC4053AFT (EL)				IC9511	8-759-524-19	IC	TC74VHC164FT (EL)		
IC7006	8-759-523-02	IC TC74HC4053AFT (EL)				IC9512	8-759-524-18	IC	TC74VHC163FT (EL)		
IC7007	8-759-523-02	IC TC74HC4053AFT (EL)				IC9513	8-759-447-77	IC	TC7WH74FU (TE12R)		
IC7008	8-759-358-47	IC NJM2115V (TE2)				IC9514	8-759-443-08	IC	TC7W241FU-TE12R		
IC7009	8-759-358-47	IC NJM2115V (TE2)				IC9515	8-759-443-08	IC	TC7W241FU-TE12R		
IC7010	8-759-358-47	IC NJM2115V (TE2)				IC9516	8-759-531-92	IC	TC7WH04FU (TE12R)		
IC7011	8-759-358-47	IC NJM2115V (TE2)				IC9517	8-759-528-99	IC	TC74VHC221AFT (EL)		
IC7013	8-759-358-47	IC NJM2115V (TE2)				IC9518	8-759-058-64	IC	TC7S32FU (TE85R)		
IC7014	8-759-358-47	IC NJM2115V (TE2)				IC9519	8-759-058-64	IC	TC7S32FU (TE85R)		
IC7016	8-759-679-92	IC AK4528VF-E2						< SHORT >			
IC7018	8-759-679-92	IC AK4528VF-E2				JS7201	1-216-296-11	SHORT	0		
IC7020	8-759-359-49	IC NJM3414AV (TE2)						< COIL >			
IC7021	8-759-359-49	IC NJM3414AV (TE2)				L7301	1-414-398-11	INDUCTOR	10uH		
IC8000	8-759-058-60	IC TC7SU04FU (TE85R)				L7302	1-414-398-11	INDUCTOR	10uH		
IC8001	8-759-196-96	IC TC7SH08FU-TE85R				L8201	1-414-398-11	INDUCTOR	10uH		
IC8002	8-759-447-77	IC TC7WH74FU (TE12R)				L8202	1-414-398-11	INDUCTOR	10uH		
IC8003	8-752-391-87	IC CXD2712R				L8203	1-414-398-11	INDUCTOR	10uH		
IC8004	8-759-678-15	IC TLV2231CDBVR				L9000	1-414-398-11	INDUCTOR	10uH		
IC8005	8-759-369-73	IC NJM4556AM-A-TE2				L9001	1-414-398-11	INDUCTOR	10uH		
IC8006	8-759-494-88	IC TC75S56F (TE85R)				L9002	1-414-398-11	INDUCTOR	10uH		
IC8007	8-759-523-02	IC TC74HC4053AFT (EL)				L9003	1-414-398-11	INDUCTOR	10uH		
IC8008	8-759-678-15	IC TLV2231CDBVR				L9500	1-414-398-11	INDUCTOR	10uH		
		< TRANSISTOR >				Q7000	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Value	Tolerance	Temp. Coef.
Q7001	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R7048	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7002	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R7049	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7003	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R7050	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7004	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B	R7051	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7005	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B	R7052	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7007	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R7053	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q7008	8-729-905-35	TRANSISTOR	2SC4081T106R	R7054	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q8000	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R7055	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q8001	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R7056	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q8201	8-729-905-35	TRANSISTOR	2SC4081T106R	R7057	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q8202	8-729-905-35	TRANSISTOR	2SC4081T106R	R7058	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q9000	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R7059	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q9001	8-729-905-35	TRANSISTOR	2SC4081T106R	R7060	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q9002	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R7061	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q9003	8-729-905-35	TRANSISTOR	2SC4081T106R	R7062	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		
Q9004	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R7063	1-216-809-11	METAL CHIP	100	5%	1/16W		
Q9005	8-729-905-35	TRANSISTOR	2SC4081T106R	R7064	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		
Q9502	8-729-402-42	TRANSISTOR	UN5213-TX	R7065	1-216-809-11	METAL CHIP	100	5%	1/16W		
< RESISTOR >											
R7002	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7066	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7003	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7067	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7006	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7068	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7007	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7069	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7008	1-216-864-11	METAL CHIP	0	5%	1/16W	R7070	1-216-809-11	METAL CHIP	100	5%	1/16W
R7009	1-216-864-11	METAL CHIP	0	5%	1/16W	R7071	1-216-809-11	METAL CHIP	100	5%	1/16W
R7014	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7072	1-216-809-11	METAL CHIP	100	5%	1/16W
R7015	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7076	1-216-809-11	METAL CHIP	100	5%	1/16W
R7016	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7077	1-216-809-11	METAL CHIP	100	5%	1/16W
R7017	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7080	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7018	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7081	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7019	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7083	1-216-809-11	METAL CHIP	100	5%	1/16W
R7020	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7084	1-216-809-11	METAL CHIP	100	5%	1/16W
R7021	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7085	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7022	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7086	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7023	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7087	1-216-809-11	METAL CHIP	100	5%	1/16W
R7024	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7088	1-216-809-11	METAL CHIP	100	5%	1/16W
R7025	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R7089	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7026	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7090	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7027	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7091	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7028	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7093	1-216-809-11	METAL CHIP	100	5%	1/16W
R7029	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7094	1-216-809-11	METAL CHIP	100	5%	1/16W
R7030	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7095	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7031	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7096	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7032	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7033	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7098	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7034	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7099	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7035	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7100	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7036	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7101	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7037	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7105	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7038	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7106	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7039	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7107	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7040	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7108	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7041	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7109	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7042	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7110	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7043	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7111	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7044	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7112	1-218-839-11	METAL CHIP	470	0.5%	1/10W
R7045	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7115	1-216-864-11	METAL CHIP	0	5%	1/16W
R7046	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7116	1-216-864-11	METAL CHIP	0	5%	1/16W
R7047	1-216-833-11	METAL CHIP	10K	5%	1/16W	R7120	1-216-864-11	METAL CHIP	0	5%	1/16W
						R7122	1-216-864-11	METAL CHIP	0	5%	1/16W
						R7123	1-216-813-11	METAL CHIP	220	5%	1/16W
						R7124	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R7125	1-216-813-11	METAL CHIP	220	5%	1/16W	R8016	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R7126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8017	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R7127	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8018	1-216-811-11	METAL CHIP	150	5%	1/16W
R7128	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8019	1-216-811-11	METAL CHIP	150	5%	1/16W
R7129	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8020	1-216-864-11	METAL CHIP	0	5%	1/16W
R7130	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8021	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7131	1-216-813-11	METAL CHIP	220	5%	1/16W	R8022	1-216-864-11	METAL CHIP	0	5%	1/16W
R7132	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8023	1-216-864-11	METAL CHIP	0	5%	1/16W
R7133	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8024	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7134	1-216-813-11	METAL CHIP	220	5%	1/16W	R8025	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7135	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8026	1-216-837-11	METAL CHIP	22K	5%	1/16W
R7136	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8029	1-216-797-11	METAL CHIP	10	5%	1/16W
R7137	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8030	1-216-180-00	RES-CHIP	180	5%	1/8W
R7138	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8031	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R7139	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8032	1-216-180-00	RES-CHIP	180	5%	1/8W
R7140	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8033	1-216-821-11	METAL CHIP	1K	5%	1/16W
R7143	1-216-813-11	METAL CHIP	220	5%	1/16W	R8034	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R7144	1-216-813-11	METAL CHIP	220	5%	1/16W	R8035	1-216-821-11	METAL CHIP	1K	5%	1/16W
R7145	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7146	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8037	1-216-797-11	METAL CHIP	10	5%	1/16W
R7147	1-216-845-11	METAL CHIP	100K	5%	1/16W	R8038	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7148	1-216-845-11	METAL CHIP	100K	5%	1/16W	R8039	1-216-857-11	METAL CHIP	1M	5%	1/16W
R7149	1-216-841-11	METAL CHIP	47K	5%	1/16W	R8041	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7150	1-216-809-11	METAL CHIP	100	5%	1/16W	R8042	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7151	1-216-809-11	METAL CHIP	100	5%	1/16W	R8043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7152	1-216-809-11	METAL CHIP	100	5%	1/16W	R8044	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7153	1-216-809-11	METAL CHIP	100	5%	1/16W	R8045	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7156	1-216-864-11	METAL CHIP	0	5%	1/16W	R8046	1-216-803-11	METAL CHIP	33	5%	1/16W
R7157	1-216-864-11	METAL CHIP	0	5%	1/16W	R8047	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8048	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7202	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8049	1-216-857-11	METAL CHIP	1M	5%	1/16W
R7203	1-216-809-11	METAL CHIP	100	5%	1/16W	R8050	1-216-836-11	METAL CHIP	18K	5%	1/16W
R7204	1-216-809-11	METAL CHIP	100	5%	1/16W	R8051	1-216-864-11	METAL CHIP	0	5%	1/16W
R7205	1-216-809-11	METAL CHIP	100	5%	1/16W	R8053	1-216-809-11	METAL CHIP	100	5%	1/16W
R7206	1-216-809-11	METAL CHIP	100	5%	1/16W	R8054	1-216-864-11	METAL CHIP	0	5%	1/16W
R7301	1-216-833-11	METAL CHIP	10K	5%	1/16W	R8055	1-216-809-11	METAL CHIP	100	5%	1/16W
R7302	1-216-833-11	METAL CHIP	10K	5%	1/16W	R8056	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7303	1-216-813-11	METAL CHIP	220	5%	1/16W	R8057	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R7304	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8058	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7307	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8059	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7308	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8060	1-216-803-11	METAL CHIP	33	5%	1/16W
R7309	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8061	1-216-803-11	METAL CHIP	33	5%	1/16W
R7310	1-216-813-11	METAL CHIP	220	5%	1/16W	R8062	1-216-821-11	METAL CHIP	1K	5%	1/16W
R7403	1-216-841-11	METAL CHIP	47K	5%	1/16W	R8063	1-216-803-11	METAL CHIP	33	5%	1/16W
R7404	1-216-845-11	METAL CHIP	100K	5%	1/16W	R8064	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7405	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8065	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7406	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8066	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7407	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R8067	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7408	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R8068	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7501	1-216-864-11	METAL CHIP	0	5%	1/16W	R8069	1-216-821-11	METAL CHIP	1K	5%	1/16W
R7502	1-216-864-11	METAL CHIP	0	5%	1/16W	R8070	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8001	1-216-864-11	METAL CHIP	0	5%	1/16W	R8071	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8002	1-216-849-11	METAL CHIP	220K	5%	1/16W	R8072	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8007	1-216-864-11	METAL CHIP	0	5%	1/16W	R8073	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8008	1-216-864-11	METAL CHIP	0	5%	1/16W	R8074	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8009	1-216-864-11	METAL CHIP	0	5%	1/16W	R8075	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8010	1-218-867-11	RES-CHIP	6.8K	5%	1/10W	R8076	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8011	1-218-867-11	RES-CHIP	6.8K	5%	1/10W	R8077	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8014	1-218-879-11	METAL CHIP	22K	0.5%	1/10W	R8079	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8015	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R8080	1-216-864-11	METAL CHIP	0	5%	1/16W



DI-73	DL-062	DV-032	FC-087
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Ref. No.	Part No.	Description			
R8100	1-216-797-11	METAL CHIP	10	5%	1/16W
R8201	1-216-180-00	RES-CHIP	180	5%	1/8W
R8202	1-216-180-00	RES-CHIP	180	5%	1/8W
R8203	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R8205	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8206	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8207	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8208	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8209	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8210	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8211	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8212	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8213	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8214	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8215	1-216-797-11	METAL CHIP	10	5%	1/16W
R8401	1-216-864-11	METAL CHIP	0	5%	1/16W
R9000	1-216-815-11	METAL CHIP	330	5%	1/16W
R9001	1-216-815-11	METAL CHIP	330	5%	1/16W
R9002	1-216-815-11	METAL CHIP	330	5%	1/16W
R9003	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R9004	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R9005	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R9006	1-216-838-11	METAL CHIP	27K	5%	1/16W
R9007	1-216-838-11	METAL CHIP	27K	5%	1/16W
R9008	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9009	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9010	1-216-817-11	METAL CHIP	470	5%	1/16W
R9011	1-216-837-11	METAL CHIP	22K	5%	1/16W
R9012	1-216-864-11	METAL CHIP	0	5%	1/16W
R9013	1-216-817-11	METAL CHIP	470	5%	1/16W
R9014	1-216-817-11	METAL CHIP	470	5%	1/16W
R9015	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9016	1-216-295-91	SHORT	0		
R9017	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9018	1-216-817-11	METAL CHIP	470	5%	1/16W
R9019	1-216-837-11	METAL CHIP	22K	5%	1/16W
R9021	1-216-864-11	METAL CHIP	0	5%	1/16W
R9022	1-216-817-11	METAL CHIP	470	5%	1/16W
R9023	1-216-817-11	METAL CHIP	470	5%	1/16W
R9024	1-216-864-11	METAL CHIP	0	5%	1/16W
R9025	1-216-864-11	METAL CHIP	0	5%	1/16W
R9027	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9028	1-216-821-11	METAL CHIP	1K	5%	1/16W
R9029	1-216-817-11	METAL CHIP	470	5%	1/16W
R9030	1-216-837-11	METAL CHIP	22K	5%	1/16W
R9031	1-216-864-11	METAL CHIP	0	5%	1/16W
R9032	1-216-817-11	METAL CHIP	470	5%	1/16W
R9033	1-216-817-11	METAL CHIP	470	5%	1/16W
R9034	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9035	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9036	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9037	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9038	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9039	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9040	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9041	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9042	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9043	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9044	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9045	1-216-841-11	METAL CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			
R9046	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9047	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9048	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9049	1-216-841-11	METAL CHIP	47K	5%	1/16W
R9050	1-216-864-11	METAL CHIP	0	5%	1/16W
R9051	1-216-864-11	METAL CHIP	0	5%	1/16W
R9052	1-216-813-11	METAL CHIP	220	5%	1/16W
R9053	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R9054	1-216-838-11	METAL CHIP	27K	5%	1/16W
R9058	1-216-864-11	METAL CHIP	0	5%	1/16W
R9512	1-216-864-11	METAL CHIP	0	5%	1/16W
R9513	1-216-864-11	METAL CHIP	0	5%	1/16W
R9514	1-216-864-11	METAL CHIP	0	5%	1/16W
R9516	1-216-833-11	METAL CHIP	10K	5%	1/16W
R9517	1-216-864-11	METAL CHIP	0	5%	1/16W
R9518	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R9519	1-216-864-11	METAL CHIP	0	5%	1/16W
R9527	1-216-864-11	METAL CHIP	0	5%	1/16W
R9532	1-216-864-11	METAL CHIP	0	5%	1/16W
< VIBRATOR >					
X8000	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)			
X8001	1-579-128-11	VIBRATOR, CRYSTAL (4.608MHz)			
A-7078-206-A DL-062 BOARD, COMPLETE *****					
< CAPACITOR >					
C601	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C602	1-164-346-11	CERAMIC CHIP	1uF		16V
< CONNECTOR >					
* CN601	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
< DIODE >					
D601	8-719-067-40	DIODE STZ6.8N-T146			
< IC >					
IC601	8-749-923-29	IC RS-20E-T			
< RESISTOR >					
R601	1-216-864-11	METAL CHIP	0	5%	1/16W
R602	1-216-864-11	METAL CHIP	0	5%	1/16W
A-7078-221-A DV-032 BOARD, COMPLETE *****					
< CONNECTOR >					
* CN202	1-564-005-11	PIN, CONNECTOR 6P			
CN203	1-779-369-11	CONNECTOR, SQUARE TYPE (INDI) 4P (DV)			
A-7078-226-A FC-087 BOARD, COMPLETE *****					
* CN800	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
< SWITCH >					
S810	1-762-946-12	SWITCH, PUSH (1 KEY) (CLOSE)			

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Ref. No.	Part No.	Description		
S811	1-762-947-12	SWITCH, PUSH (1 KEY) (OPEN)		
A-7078-207-A FM-037 BOARD, COMPLETE *****				
< CAPACITOR >				
C701	1-162-974-11	CERAMIC CHIP 0.01uF	50V	
< CONNECTOR >				
* CN701	1-580-055-21	PIN, CONNECTOR (SMD) 2P		
A-7078-201-A FR-183 BOARD, COMPLETE *****				
< CAPACITOR >				
C405	1-164-505-11	CERAMIC CHIP 2.2uF	16V	
C409	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C410	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C411	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C412	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C413	1-164-505-11	CERAMIC CHIP 2.2uF	16V	
C414	1-164-346-11	CERAMIC CHIP 1uF	16V	
C415	1-164-346-11	CERAMIC CHIP 1uF	16V	
C416	1-164-346-11	CERAMIC CHIP 1uF	16V	
C417	1-164-360-11	CERAMIC CHIP 0.1uF	16V	
C432	1-164-156-11	CERAMIC CHIP 0.1uF	25V	
< CONNECTOR >				
CN401	1-774-770-11	CONNECTOR, FFC/FPC 30P		
* CN402	1-573-768-21	PIN, CONNECTOR (1.5mm) (SMD) 5P		
< DIODE >				
D401	8-719-067-40	DIODE STZ6.8N-T146		
D402	8-719-067-40	DIODE STZ6.8N-T146		
D403	8-719-067-40	DIODE STZ6.8N-T146		
D404	8-719-049-09	DIODE 1SS367-T3SONY		
D405	8-719-049-09	DIODE 1SS367-T3SONY		
D406	8-719-049-09	DIODE 1SS367-T3SONY		
D407	8-719-049-09	DIODE 1SS367-T3SONY		
D408	8-719-049-09	DIODE 1SS367-T3SONY		
D409	8-719-049-09	DIODE 1SS367-T3SONY		
D410	8-719-049-09	DIODE 1SS367-T3SONY		
D411	8-719-049-09	DIODE 1SS367-T3SONY		
D412	8-719-988-61	DIODE 1SS355TE-17		
D413	8-719-988-61	DIODE 1SS355TE-17		
D414	8-719-988-61	DIODE 1SS355TE-17		
D415	8-719-988-61	DIODE 1SS355TE-17		
D416	8-719-988-61	DIODE 1SS355TE-17		
D417	8-719-988-61	DIODE 1SS355TE-17		
D418	8-719-067-40	DIODE STZ6.8N-T146		
D421	8-719-988-61	DIODE 1SS355TE-17		
D422	8-719-988-61	DIODE 1SS355TE-17		
D423	8-719-988-61	DIODE 1SS355TE-17		
D424	8-719-988-61	DIODE 1SS355TE-17		
D425	8-719-988-61	DIODE 1SS355TE-17		
D426	8-719-988-61	DIODE 1SS355TE-17		
D427	8-719-988-61	DIODE 1SS355TE-17		
D428	8-719-988-61	DIODE 1SS355TE-17		

Ref. No.	Part No.	Description		
D430	8-719-988-61	DIODE 1SS355TE-17		
D432	8-719-067-40	DIODE STZ6.8N-T146		
D433	8-719-067-40	DIODE STZ6.8N-T146		
D434	8-719-067-40	DIODE STZ6.8N-T146		
D435	8-719-067-40	DIODE STZ6.8N-T146		
D436	8-719-067-40	DIODE STZ6.8N-T146		
D437	8-719-067-40	DIODE STZ6.8N-T146		
D438	8-719-067-40	DIODE STZ6.8N-T146		
D439	8-719-067-40	DIODE STZ6.8N-T146		
D441	8-719-067-40	DIODE STZ6.8N-T146		
D442	8-719-078-90	DIODE CL-165HR/G1-D-T (POWER (ON/STANDBY))		
D443	8-719-082-46	DIODE TLYE1002A (T02, SOY) (☐)		
D444	8-719-082-46	DIODE TLYE1002A (T02, SOY) (REW ◀◀)		
D445	8-719-082-46	DIODE TLYE1002A (T02, SOY) (FF ▶▶)		
D446	8-719-082-46	DIODE TLYE1002A (T02, SOY) (PAUSE ■■)		
D447	8-719-026-34	DIODE CL-170UR-CD-T (REC ●)		
D449	8-719-082-46	DIODE TLYE1002A (T02, SOY) (DVCAM)		
D450	8-719-082-46	DIODE TLYE1002A (T02, SOY) (AUDIO DUB)		
D451	8-719-082-46	DIODE TLYE1002A (T02, SOY) (DUP)		
D452	8-719-082-48	DIODE TLPGE1002A (T02, SOY) (PLAY ▶▶)		
< FERRITE BEAD >				
FB402	1-414-445-11	FERRITE 0uH		
< IC >				
IC401	8-759-438-82	IC uPD16311GC-AB6		
IC403	8-759-388-63	IC NJU7064V (TE2)		
IC404	8-759-196-96	IC TC7SH08FU-TE85R		
< DIODE >				
ND401	6-500-117-01	DIODE LA-301VL1		
ND402	6-500-117-01	DIODE LA-301VL1		
ND403	6-500-117-01	DIODE LA-301VL1		
ND404	6-500-117-01	DIODE LA-301VL1		
ND405	6-500-117-01	DIODE LA-301VL1		
ND406	6-500-117-01	DIODE LA-301VL1		
ND407	6-500-117-01	DIODE LA-301VL1		
ND408	6-500-117-01	DIODE LA-301VL1		
< TRANSISTOR >				
Q401	8-729-041-24	TRANSISTOR NDS355AN		
Q402	8-729-041-24	TRANSISTOR NDS355AN		
Q403	8-729-041-24	TRANSISTOR NDS355AN		
Q404	8-729-041-24	TRANSISTOR NDS355AN		
Q405	8-729-041-24	TRANSISTOR NDS355AN		
Q406	8-729-041-24	TRANSISTOR NDS355AN		
Q407	8-729-041-24	TRANSISTOR NDS355AN		
Q408	8-729-041-24	TRANSISTOR NDS355AN		
Q409	8-729-041-24	TRANSISTOR NDS355AN		
Q410	8-729-041-24	TRANSISTOR NDS355AN		
Q411	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q412	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q413	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q414	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q415	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q416	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q417	8-729-048-50	TRANSISTOR 2SK3018-T106		
Q418	8-729-048-50	TRANSISTOR 2SK3018-T106		

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Ref. No.	Part No.	Description			
		< RESISTOR >			
R402	1-216-809-11	METAL CHIP	100	5%	1/16W
R403	1-216-809-11	METAL CHIP	100	5%	1/16W
R404	1-216-809-11	METAL CHIP	100	5%	1/16W
R405	1-216-809-11	METAL CHIP	100	5%	1/16W
R406	1-216-864-11	METAL CHIP	0	5%	1/16W
R407	1-216-864-11	METAL CHIP	0	5%	1/16W
R408	1-216-864-11	METAL CHIP	0	5%	1/16W
R409	1-216-864-11	METAL CHIP	0	5%	1/16W
R410	1-216-166-00	RES-CHIP	47	5%	1/8W
R421	1-216-797-11	METAL CHIP	10	5%	1/16W
R422	1-216-797-11	METAL CHIP	10	5%	1/16W
R423	1-216-797-11	METAL CHIP	10	5%	1/16W
R424	1-216-797-11	METAL CHIP	10	5%	1/16W
R425	1-216-797-11	METAL CHIP	10	5%	1/16W
R426	1-216-797-11	METAL CHIP	10	5%	1/16W
R427	1-216-797-11	METAL CHIP	10	5%	1/16W
R428	1-216-797-11	METAL CHIP	10	5%	1/16W
R429	1-216-797-11	METAL CHIP	10	5%	1/16W
R430	1-216-797-11	METAL CHIP	10	5%	1/16W
R431	1-216-797-11	METAL CHIP	10	5%	1/16W
R432	1-216-797-11	METAL CHIP	10	5%	1/16W
R433	1-216-797-11	METAL CHIP	10	5%	1/16W
R434	1-216-797-11	METAL CHIP	10	5%	1/16W
R435	1-216-797-11	METAL CHIP	10	5%	1/16W
R436	1-216-797-11	METAL CHIP	10	5%	1/16W
R437	1-216-797-11	METAL CHIP	10	5%	1/16W
R438	1-216-797-11	METAL CHIP	10	5%	1/16W
R439	1-216-178-00	RES-CHIP	150	5%	1/8W
R440	1-216-178-00	RES-CHIP	150	5%	1/8W
R441	1-216-178-00	RES-CHIP	150	5%	1/8W
R442	1-216-178-00	RES-CHIP	150	5%	1/8W
R443	1-216-178-00	RES-CHIP	150	5%	1/8W
R444	1-216-178-00	RES-CHIP	150	5%	1/8W
R445	1-216-178-00	RES-CHIP	150	5%	1/8W
R446	1-216-178-00	RES-CHIP	150	5%	1/8W
R447	1-216-172-00	METAL CHIP	82	5%	1/8W
R448	1-216-172-00	METAL CHIP	82	5%	1/8W
R449	1-216-172-00	METAL CHIP	82	5%	1/8W
R450	1-216-172-00	METAL CHIP	82	5%	1/8W
R451	1-216-162-00	RES-CHIP	33	5%	1/8W
R456	1-216-158-00	RES-CHIP	22	5%	1/8W
R457	1-216-842-11	METAL CHIP	56K	5%	1/16W
R458	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R459	1-216-833-11	METAL CHIP	10K	5%	1/16W
R460	1-216-833-11	METAL CHIP	10K	5%	1/16W
R461	1-216-833-11	METAL CHIP	10K	5%	1/16W
R462	1-216-833-11	METAL CHIP	10K	5%	1/16W
R467	1-216-198-91	RES-CHIP	1K	5%	1/8W
R468	1-216-198-91	RES-CHIP	1K	5%	1/8W
R469	1-216-204-00	RES-CHIP	1.8K	5%	1/8W
R470	1-216-296-11	SHORT	0		
R471	1-216-864-11	METAL CHIP	0	5%	1/16W
R474	1-216-864-11	METAL CHIP	0	5%	1/16W
R476	1-216-295-91	SHORT	0		
		< VARIABLE RESISTOR >			
RV401	1-223-649-11	RES, VAR, CARBON 20K (AUDIO REC LEVEL (CH-1))			

Ref. No.	Part No.	Description			
RV402	1-223-649-11	RES, VAR, CARBON 20K (AUDIO REC LEVEL (CH-2))			
RV403	1-223-649-11	RES, VAR, CARBON 20K (AUDIO REC LEVEL (CH-3))			
RV404	1-223-649-11	RES, VAR, CARBON 20K (AUDIO REC LEVEL (CH-4))			
		< SWITCH >			
S401	1-572-725-11	SWITCH, TACTILE (POWER (ON/STANDBY))			
S402	1-692-838-21	SWITCH, TACTILE (RUBBER) (EJECT ▲ (OPEN/CLOSE))			
S403	1-692-088-41	SWITCH, TACTILE (RESET)			
S404	1-692-838-21	SWITCH, TACTILE (RUBBER) (REW ◀◀)			
S405	1-692-838-21	SWITCH, TACTILE (RUBBER) (PLAY ▶▶)			
S406	1-692-838-21	SWITCH, TACTILE (RUBBER) (FF ▶▶)			
S407	1-692-838-21	SWITCH, TACTILE (RUBBER) (REC ●)			
S408	1-692-838-21	SWITCH, TACTILE (RUBBER) (STOP ■)			
S409	1-692-838-21	SWITCH, TACTILE (RUBBER) (PAUSE ■■)			
S410	1-692-838-21	SWITCH, TACTILE (RUBBER) (AUDIO DUB)			
S411	1-692-838-21	SWITCH, TACTILE (RUBBER) (DUP)			
S412	1-571-787-41	SWITCH, TACTILE (END SEARCH)			
S413	1-571-787-41	SWITCH, TACTILE (INDEX)			
S414	1-571-787-41	SWITCH, TACTILE (RESET (COUNTER))			
S415	1-572-725-11	SWITCH, TACTILE (◊)			
S416	1-572-725-11	SWITCH, TACTILE (◊)			
S417	1-572-725-11	SWITCH, TACTILE (EXEC, FINE (AUDIO))			
S418	1-572-342-11	SWITCH, SLIDE (COUNTER SELECT)			
S419	1-572-342-11	SWITCH, SLIDE (AUDIO MONITOR)			
S420	1-572-342-11	SWITCH, SLIDE (DISPLAY SELECT)			
S421	1-572-342-11	SWITCH, SLIDE (CHARACTER DISPLAY (LCD))			
S422	1-572-272-11	SWITCH, SLIDE (AUDIO INPUT)			
S423	1-572-272-11	SWITCH, SLIDE (CHARACTER DISPLAY (MONITOR OUT))			
S424	1-572-342-11	SWITCH, SLIDE (TIMER)			
S425	1-572-272-11	SWITCH, SLIDE (REMOTE/LOCAL)			
S427	1-572-011-11	SWITCH, SLIDE (INPUT SELECT)			
	A-7078-200-A	HP-135 BOARD, COMPLETE *****			
		< CAPACITOR >			
C301	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C302	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C303	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C304	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN301	1-566-524-21	CONNECTOR, FPC (ZIF) 8P			
		< DIODE >			
D301	8-719-421-59	DIODE MA3075WA- (TX)			
D302	8-719-421-59	DIODE MA3075WA- (TX)			
		< FERRITE BEAD >			
FB301	1-500-241-22	FERRITE	0uH		
FB302	1-500-241-22	FERRITE	0uH		
		< IC >			
IC301	8-759-369-73	IC NJM4556AM-A-TE2			

Ref. No.	Part No.	Description
		< JACK >
J301	1-566-822-31	JACK (PHONES)
		< TRANSISTOR >
Q301	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-B
Q302	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-B
		< RESISTOR >
R301	1-216-833-11	METAL CHIP 10K 5% 1/16W
R302	1-216-833-11	METAL CHIP 10K 5% 1/16W
R303	1-216-833-11	METAL CHIP 10K 5% 1/16W
R304	1-216-837-11	METAL CHIP 22K 5% 1/16W
R305	1-216-833-11	METAL CHIP 10K 5% 1/16W
R306	1-216-833-11	METAL CHIP 10K 5% 1/16W
R307	1-216-837-11	METAL CHIP 22K 5% 1/16W
R308	1-216-833-11	METAL CHIP 10K 5% 1/16W
R309	1-216-801-11	METAL CHIP 22 5% 1/16W
R310	1-216-801-11	METAL CHIP 22 5% 1/16W
R311	1-216-825-11	METAL CHIP 2.2K 5% 1/16W
R312	1-216-825-11	METAL CHIP 2.2K 5% 1/16W
		< VARIABLE RESISTOR >
RV301	1-223-525-11	RES, VAR, CARBON 10K/10K (PHONE LEVEL)
A-7095-083-A	JC-21 BOARD, COMPLETE	*****
		< CAPACITOR >
C1000	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1001	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1002	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1003	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1004	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1005	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1006	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1007	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1008	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1100	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1101	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1102	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1103	1-162-921-11	CERAMIC CHIP 33PF 5% 50V
C1104	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1106	1-162-919-11	CERAMIC CHIP 22PF 5% 50V
C1107	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C1109	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1110	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1111	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1112	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1113	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1114	1-135-177-21	TANTALUM CHIP 1uF 20% 20V
C1115	1-135-177-21	TANTALUM CHIP 1uF 20% 20V
C1116	1-135-177-21	TANTALUM CHIP 1uF 20% 20V
C1117	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1118	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1119	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1123	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V
C1124	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1125	1-162-974-11	CERAMIC CHIP 0.01uF 50V

Ref. No.	Part No.	Description
C1126	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1127	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1128	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1129	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1130	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1131	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V
C1132	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V
C1133	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V
C1134	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1135	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1136	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1137	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1138	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1139	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1140	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1141	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1142	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1143	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1144	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1145	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1146	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1147	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1148	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1149	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1150	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1151	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1152	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1154	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1156	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1158	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1162	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1163	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1164	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1165	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1166	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1167	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1168	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1169	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1170	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1171	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1172	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1173	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V
C1174	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1175	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1176	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1177	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1178	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1179	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1181	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C1182	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1183	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1184	1-104-847-11	TANTAL. CHIP 22uF 20% 4V
C1185	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1186	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C1187	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1188	1-128-964-91	TANTAL. CHIP 100uF 20% 6.3V
C1189	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1190	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V
C1191	1-162-974-11	CERAMIC CHIP 0.01uF 50V
C1192	1-164-360-11	CERAMIC CHIP 0.1uF 16V

Ref. No.	Part No.	Description					Ref. No.	Part No.	Description			
C1194	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C4405	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1195	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C4406	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1196	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V		C4407	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1197	1-115-156-11	CERAMIC CHIP	1uF		10V		C4408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2200	1-104-847-11	TANTAL. CHIP	22uF	20%	4V		C4410	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C2201	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C4411	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C2202	1-162-926-11	CERAMIC CHIP	82PF	5%	50V		C4412	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2203	1-164-392-11	CERAMIC CHIP	390PF	5%	50V		C4413	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2204	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C4414	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2205	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V		C4415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2206	1-110-569-21	TANTAL. CHIP	47uF	20%	4V		C4416	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2207	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C4418	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2208	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C4420	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2209	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C4421	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2210	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C4422	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C2211	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C5002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2212	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V		C5003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2213	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C5004	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2214	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V		C5005	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C2215	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C5006	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2216	1-135-177-21	TANTALUM CHIP	1uF	20%	20V		C5007	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2217	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C5008	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C2218	1-164-360-11	CERAMIC CHIP	0.1uF		16V		C5009	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C2219	1-135-177-21	TANTALUM CHIP	1uF	20%	20V		C5011	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2220	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V		C5012	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2222	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V		C5013	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2224	1-104-912-11	TANTAL. CHIP	3.3uF	20%	16V		C5014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2226	1-164-315-11	CERAMIC CHIP	470PF	5%	50V		C5015	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2227	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V		C5016	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2228	1-162-918-11	CERAMIC CHIP	18PF	5%	50V		C6004	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C2233	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C6005	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2235	1-162-974-11	CERAMIC CHIP	0.01uF		50V		C6006	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2236	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		C6007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2238	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C6008	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C2239	1-115-156-11	CERAMIC CHIP	1uF		10V		C6009	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2240	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C6010	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C2241	1-115-156-11	CERAMIC CHIP	1uF		10V		C6011	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C2242	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C6012	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2244	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V							
C2245	1-162-960-11	CERAMIC CHIP	220PF	10%	50V				< CONNECTOR >			
C2246	1-162-961-11	CERAMIC CHIP	330PF	10%	50V		CN1100	1-506-474-11	PIN, CONNECTOR 9P			
C3300	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V		CN1101	1-774-770-11	CONNECTOR, FFC/FPC 30P			
C3301	1-162-974-11	CERAMIC CHIP	0.01uF		50V		* CN4400	1-564-005-11	PIN, CONNECTOR 6P			
C3302	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V		CN4401	1-691-386-11	CONNECTOR, FFC/FPC 22P			
C3303	1-162-974-11	CERAMIC CHIP	0.01uF		50V		CN4402	1-691-386-11	CONNECTOR, FFC/FPC 22P			
C3304	1-162-974-11	CERAMIC CHIP	0.01uF		50V		CN5005	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P			
C3305	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V		CN6001	1-774-770-11	CONNECTOR, FFC/FPC 30P			
C3306	1-162-974-11	CERAMIC CHIP	0.01uF		50V		CN6002	1-750-303-41	CONNECTOR, BOARD TO BOARD 20P			
C3307	1-104-851-11	TANTAL. CHIP	10uF	20%	10V		* CN7001	1-691-591-11	PIN, CONNECTOR (1.5mm) (SMD) 8P			
C3308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		CN7002	1-774-770-11	CONNECTOR, FFC/FPC 30P			
C3309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		* CN8001	1-785-551-21	CONNECTOR, BOARD TO BOARD 120P			
C3310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V				< TRIMMER >			
C3312	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V							
C3313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		CT2200	1-141-423-61	CAP, ADJ 20PF (AFC)			
C3314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		CT3300	1-141-422-11	CAP, ADJ 10PF (VFD SPCK)			
C4400	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V				< DIODE >			
C4401	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		D2201	8-719-041-39	DIODE KV1470TL00			
C4402	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		D4400	8-719-055-86	DIODE KV1470TL1-3			
C4403	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		D5001	8-719-421-67	DIODE MA132WK-TX			
C4404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V							

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
< FILTER >			< COIL >		
FL1100	1-233-345-21	FILTER, LOW PASS (5.5MHz)	L1000	1-414-760-21	FERRITE 0uH
FL1101	1-233-345-21	FILTER, LOW PASS (5.5MHz)	L1001	1-414-760-21	FERRITE 0uH
FL1102	1-233-345-21	FILTER, LOW PASS (5.5MHz)	L1101	1-414-760-21	FERRITE 0uH
FL1103	1-233-345-21	FILTER, LOW PASS (5.5MHz)	L1107	1-414-760-21	FERRITE 0uH
FL1104	1-233-345-21	FILTER, LOW PASS (5.5MHz)	L1108	1-414-398-11	INDUCTOR 10uH
< IC >			L1109	1-414-398-11	INDUCTOR 10uH
IC1000	8-759-449-58	IC LM7131BCM5X	L1110	1-414-398-11	INDUCTOR 10uH
IC1001	8-759-449-58	IC LM7131BCM5X	L1111	1-414-398-11	INDUCTOR 10uH
IC1002	8-759-449-58	IC LM7131BCM5X	L1112	1-414-398-11	INDUCTOR 10uH
IC1100	8-759-477-81	IC TK11220BMCL	L1113	1-414-398-11	INDUCTOR 10uH
IC1101	8-759-523-03	IC TC74HC4066AFT (EL)	L1114	1-414-398-11	INDUCTOR 10uH
IC1102	8-759-338-78	IC BA10324AFV-E2	L1115	1-414-398-11	INDUCTOR 10uH
IC1103	8-759-338-78	IC BA10324AFV-E2	L1116	1-414-398-11	INDUCTOR 10uH
IC1104	8-759-338-78	IC BA10324AFV-E2	L1122	1-414-760-21	FERRITE 0uH
IC1105	8-759-510-71	IC BA10358F-E2	L2200	1-410-390-11	INDUCTOR CHIP 56uH
IC1106	8-759-338-78	IC BA10324AFV-E2	L2201	1-410-655-31	INDUCTOR CHIP 120uH
IC1107	8-759-359-51	IC NJM431M (TE2)	L2202	1-414-398-11	INDUCTOR 10uH
IC1108	8-752-352-09	IC CXD2300Q-T4	L2203	1-414-398-11	INDUCTOR 10uH
IC1109	8-752-352-09	IC CXD2300Q-T4	L2204	1-411-275-21	COIL, VARIABLE
IC1110	8-752-352-09	IC CXD2300Q-T4	L2205	1-414-398-11	INDUCTOR 10uH
IC1111	8-759-449-58	IC LM7131BCM5X	L3300	1-414-398-11	INDUCTOR 10uH
IC1112	8-759-449-58	IC LM7131BCM5X	L3301	1-414-398-11	INDUCTOR 10uH
IC1113	8-759-157-22	IC PQ05T21U	L3302	1-414-398-11	INDUCTOR 10uH
IC2200	8-759-368-81	IC TK11630UTL	L3303	1-414-398-11	INDUCTOR 10uH
IC2202	8-759-485-79	IC TC7SET08FU (TE85R)	L4400	1-414-398-11	INDUCTOR 10uH
IC2203	8-759-523-97	IC TC74VHC123AFT (EL)	L4401	1-414-398-11	INDUCTOR 10uH
IC2204	8-759-343-09	IC CXD2193AR-ER	L4402	1-414-398-11	INDUCTOR 10uH
IC2208	8-759-196-93	IC TC7SH00FU-TE85R	L4403	1-410-371-41	INDUCTOR 1.5uH
IC2209	8-759-524-27	IC TC74VHC244FT (EL)	L4404	1-414-754-11	INDUCTOR 10uH
IC2210	8-759-271-86	IC TC7SH04FU-TE85R	L5001	1-414-754-11	INDUCTOR 10uH
IC2211	8-759-196-96	IC TC7SH08FU-TE85R	L5002	1-414-751-11	INDUCTOR 1uH
IC2212	8-759-196-93	IC TC7SH00FU-TE85R	L6001	1-414-754-11	INDUCTOR 10uH
IC2213	8-759-447-77	IC TC7WH74FU (TE12R)	L6003	1-414-751-11	INDUCTOR 1uH
IC2214	8-759-524-41	IC TC74VHC374FT (EL)	L6007	1-414-760-21	FERRITE 0uH
IC2215	8-759-524-50	IC TC74VHC541FT (EL)	L6008	1-414-760-21	FERRITE 0uH
IC3300	8-759-570-60	IC M65511AFP-R60S	L6010	1-414-760-21	FERRITE 0uH
IC3301	8-759-058-60	IC TC7SU04FU (TE85R)	L6011	1-414-760-21	FERRITE 0uH
IC3302	8-759-531-92	IC TC7WH04FU (TE12R)	L6012	1-414-760-21	FERRITE 0uH
IC3303	6-801-126-01	IC MB90097PFV-G-146-BND-ER	L6014	1-414-760-21	FERRITE 0uH
IC4400	8-759-570-61	IC HG73C050TETL	< TRANSISTOR >		
IC4401	8-752-390-00	IC CXD3129R-T6	Q1100	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
IC4402	8-759-566-52	IC SN104266PN-TEB	Q1101	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
IC5001	8-759-512-69	IC S-81350HG-KD-T1	Q1103	8-729-905-35	TRANSISTOR 2SC4081T106R
IC5002	8-759-427-85	IC MB88146APFV-G-BND-ER	Q1104	8-729-905-35	TRANSISTOR 2SC4081T106R
IC5003	6-801-574-01	IC MB91192PFF-G-151-BND-ER	Q1109	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
IC5006	8-759-445-94	IC AK6480AM-E2	Q1111	8-729-905-35	TRANSISTOR 2SC4081T106R
IC5007	8-759-443-08	IC TC7W241FU-TE12R	Q1112	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
IC5008	8-759-523-81	IC TC74VHC08FT (EL)	Q1114	8-729-905-35	TRANSISTOR 2SC4081T106R
IC6001	8-752-930-80	IC CXP921064A-064R-T6	Q1116	8-729-402-42	TRANSISTOR UN5213-TX
IC6003	8-759-475-45	IC TC74LCX157FT (EL)	Q1117	8-729-905-35	TRANSISTOR 2SC4081T106R
IC6004	8-759-058-58	IC TC7S04FU (TE85R)	Q1118	8-729-905-35	TRANSISTOR 2SC4081T106R
< RESISTOR >			Q1119	8-729-905-35	TRANSISTOR 2SC4081T106R
JS7001	1-216-864-11	METAL CHIP 0 5% 1/16W	Q1120	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-B
JS7002	1-216-864-11	METAL CHIP 0 5% 1/16W	Q1121	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-B
JS7003	1-216-864-11	METAL CHIP 0 5% 1/16W	Q1122	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-B
JS7004	1-216-864-11	METAL CHIP 0 5% 1/16W	Q1123	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
			Q1124	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
			Q1125	8-729-026-52	TRANSISTOR 2SA1576A-T106-R

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q1126	8-729-905-35	TRANSISTOR	2SC4081T106R	R1125	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		
Q1127	8-729-905-35	TRANSISTOR	2SC4081T106R	R1127	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q1128	8-729-905-35	TRANSISTOR	2SC4081T106R	R1129	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q1129	8-729-905-35	TRANSISTOR	2SC4081T106R	R1134	1-216-817-11	METAL CHIP	470	5%	1/16W		
Q1130	8-729-905-35	TRANSISTOR	2SC4081T106R	R1136	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q1131	8-729-046-75	TRANSISTOR	SI2301DS-T1	R1139	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q1132	8-729-905-35	TRANSISTOR	2SC4081T106R	R1143	1-216-817-11	METAL CHIP	470	5%	1/16W		
Q2200	8-729-905-35	TRANSISTOR	2SC4081T106R	R1150	1-216-837-11	METAL CHIP	22K	5%	1/16W		
Q2201	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R1151	1-216-837-11	METAL CHIP	22K	5%	1/16W		
Q2202	8-729-427-74	TRANSISTOR	XP4601-TXE	R1152	1-216-837-11	METAL CHIP	22K	5%	1/16W		
Q2203	8-729-402-42	TRANSISTOR	UN5213-TX	R1153	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q3300	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO	R1154	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q3301	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO	R1155	1-216-821-11	METAL CHIP	1K	5%	1/16W		
Q3302	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO	R1156	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		
Q5001	8-729-141-48	TRANSISTOR	2SB624-T1BV4	R1158	1-216-864-11	METAL CHIP	0	5%	1/16W		
Q5002	8-729-402-42	TRANSISTOR	UN5213-TX	R1159	1-216-864-11	METAL CHIP	0	5%	1/16W		
Q6003	8-729-037-61	TRANSISTOR	UN9113J- (K8).SO	R1160	1-216-864-11	METAL CHIP	0	5%	1/16W		
Q6004	8-729-427-70	TRANSISTOR	XP4401-TXE	R1164	1-216-825-11	METAL CHIP	2.2K	5%	1/16W		
Q6005	8-729-141-48	TRANSISTOR	2SB624-T1BV4	R1165	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q6011	8-729-402-42	TRANSISTOR	UN5213-TX	R1166	1-216-833-11	METAL CHIP	10K	5%	1/16W		
Q6012	8-729-402-42	TRANSISTOR	UN5213-TX	R1167	1-216-809-11	METAL CHIP	100	5%	1/16W		
		< RESISTOR >		R1168	1-216-809-11	METAL CHIP	100	5%	1/16W		
				R1169	1-216-809-11	METAL CHIP	100	5%	1/16W		
R1000	1-216-864-11	METAL CHIP	0	5%	1/16W	R1170	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1001	1-216-820-11	METAL CHIP	820	5%	1/16W	R1171	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1002	1-216-820-11	METAL CHIP	820	5%	1/16W	R1172	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1004	1-216-837-11	METAL CHIP	22K	5%	1/16W	R1173	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1005	1-216-864-11	METAL CHIP	0	5%	1/16W	R1175	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1006	1-216-864-11	METAL CHIP	0	5%	1/16W	R1176	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1007	1-216-820-11	METAL CHIP	820	5%	1/16W	R1177	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1008	1-216-820-11	METAL CHIP	820	5%	1/16W	R1178	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1010	1-216-837-11	METAL CHIP	22K	5%	1/16W	R1179	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1011	1-216-864-11	METAL CHIP	0	5%	1/16W	R1180	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1012	1-216-864-11	METAL CHIP	0	5%	1/16W	R1181	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1013	1-216-820-11	METAL CHIP	820	5%	1/16W	R1182	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1014	1-216-820-11	METAL CHIP	820	5%	1/16W	R1183	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1015	1-216-837-11	METAL CHIP	22K	5%	1/16W	R1184	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1019	1-216-809-11	METAL CHIP	100	5%	1/16W	R1185	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1020	1-216-809-11	METAL CHIP	100	5%	1/16W	R1186	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1021	1-216-809-11	METAL CHIP	100	5%	1/16W	R1187	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1102	1-216-797-11	METAL CHIP	10	5%	1/16W	R1188	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1103	1-216-797-11	METAL CHIP	10	5%	1/16W	R1190	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1104	1-216-797-11	METAL CHIP	10	5%	1/16W	R1191	1-216-809-11	METAL CHIP	100	5%	1/16W
R1105	1-216-797-11	METAL CHIP	10	5%	1/16W	R1192	1-216-809-11	METAL CHIP	100	5%	1/16W
R1107	1-216-797-11	METAL CHIP	10	5%	1/16W	R1193	1-216-809-11	METAL CHIP	100	5%	1/16W
R1108	1-216-813-11	METAL CHIP	220	5%	1/16W	R1194	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1109	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1196	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1111	1-216-813-11	METAL CHIP	220	5%	1/16W	R1197	1-216-864-11	METAL CHIP	0	5%	1/16W
R1112	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1198	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1113	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1199	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1114	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R1200	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1115	1-216-797-11	METAL CHIP	10	5%	1/16W	R1201	1-216-805-11	METAL CHIP	47	5%	1/16W
R1116	1-216-817-11	METAL CHIP	470	5%	1/16W	R1202	1-216-816-11	METAL CHIP	390	5%	1/16W
R1117	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1203	1-216-864-11	METAL CHIP	0	5%	1/16W
R1118	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1204	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1119	1-216-797-11	METAL CHIP	10	5%	1/16W	R1205	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1120	1-216-817-11	METAL CHIP	470	5%	1/16W	R1206	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1121	1-216-797-11	METAL CHIP	10	5%	1/16W	R1207	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1122	1-216-797-11	METAL CHIP	10	5%	1/16W	R1208	1-216-864-11	METAL CHIP	0	5%	1/16W
R1123	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1209	1-216-821-11	METAL CHIP	1K	5%	1/16W



Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R1210	1-216-821-11	METAL CHIP	1K	5%	1/16W	R2257	1-216-864-11	METAL CHIP	0	5%	1/16W
R1211	1-216-864-11	METAL CHIP	0	5%	1/16W	R2258	1-216-864-11	METAL CHIP	0	5%	1/16W
R1212	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R2259	1-216-864-11	METAL CHIP	0	5%	1/16W
R1213	1-216-837-11	METAL CHIP	22K	5%	1/16W	R2261	1-216-844-11	METAL CHIP	82K	5%	1/16W
R1214	1-216-817-11	METAL CHIP	470	5%	1/16W	R2262	1-216-844-11	METAL CHIP	82K	5%	1/16W
R1215	1-216-864-11	METAL CHIP	0	5%	1/16W	R2263	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1216	1-216-837-11	METAL CHIP	22K	5%	1/16W	R2264	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1217	1-216-817-11	METAL CHIP	470	5%	1/16W	R2265	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1218	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R2266	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1219	1-216-864-11	METAL CHIP	0	5%	1/16W	R2267	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1221	1-216-864-11	METAL CHIP	0	5%	1/16W	R2268	1-216-864-11	METAL CHIP	0	5%	1/16W
R1222	1-216-864-11	METAL CHIP	0	5%	1/16W	R2269	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1223	1-216-864-11	METAL CHIP	0	5%	1/16W	R2270	1-216-864-11	METAL CHIP	0	5%	1/16W
R1229	1-216-864-11	METAL CHIP	0	5%	1/16W	R3300	1-216-864-11	METAL CHIP	0	5%	1/16W
R1230	1-216-833-11	METAL CHIP	10K	5%	1/16W	R3301	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1231	1-216-849-11	METAL CHIP	220K	5%	1/16W	R3303	1-216-864-11	METAL CHIP	0	5%	1/16W
R1232	1-216-833-11	METAL CHIP	10K	5%	1/16W	R3304	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1233	1-216-835-11	METAL CHIP	15K	5%	1/16W	R3306	1-216-864-11	METAL CHIP	0	5%	1/16W
R1236	1-216-295-91	SHORT	0			R3307	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1237	1-216-295-91	SHORT	0			R3308	1-216-817-11	METAL CHIP	470	5%	1/16W
R2200	1-216-833-11	METAL CHIP	10K	5%	1/16W	R3309	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2201	1-216-840-11	METAL CHIP	39K	5%	1/16W	R3310	1-216-817-11	METAL CHIP	470	5%	1/16W
R2202	1-216-864-11	METAL CHIP	0	5%	1/16W	R3311	1-216-864-11	METAL CHIP	0	5%	1/16W
R2203	1-216-821-11	METAL CHIP	1K	5%	1/16W	R3312	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2204	1-216-817-11	METAL CHIP	470	5%	1/16W	R3313	1-216-864-11	METAL CHIP	0	5%	1/16W
R2205	1-216-817-11	METAL CHIP	470	5%	1/16W	R3314	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2206	1-216-821-11	METAL CHIP	1K	5%	1/16W	R3315	1-216-817-11	METAL CHIP	470	5%	1/16W
R2210	1-216-864-11	METAL CHIP	0	5%	1/16W	R3316	1-216-864-11	METAL CHIP	0	5%	1/16W
R2212	1-216-864-11	METAL CHIP	0	5%	1/16W	R3317	1-216-857-11	METAL CHIP	1M	5%	1/16W
R2213	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	R3318	1-218-840-11	METAL CHIP	510	0.5%	1/10W
R2215	1-216-833-11	METAL CHIP	10K	5%	1/16W	R3319	1-216-815-11	METAL CHIP	330	5%	1/16W
R2217	1-216-864-11	METAL CHIP	0	5%	1/16W	R3320	1-216-864-11	METAL CHIP	0	5%	1/16W
R2218	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R3321	1-216-864-11	METAL CHIP	0	5%	1/16W
R2219	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R3322	1-216-864-11	METAL CHIP	0	5%	1/16W
R2220	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	R3323	1-216-864-11	METAL CHIP	0	5%	1/16W
R2221	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R3324	1-216-864-11	METAL CHIP	0	5%	1/16W
R2222	1-216-814-11	METAL CHIP	270	5%	1/16W	R3325	1-216-864-11	METAL CHIP	0	5%	1/16W
R2223	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R4400	1-216-805-11	METAL CHIP	47	5%	1/16W
R2224	1-218-851-11	METAL CHIP	1.5K	0.5%	1/10W	R4401	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2225	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R4402	1-216-815-11	METAL CHIP	330	5%	1/16W
R2226	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R4403	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2227	1-216-814-11	METAL CHIP	270	5%	1/16W	R4404	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2228	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R4405	1-216-864-11	METAL CHIP	0	5%	1/16W
R2229	1-216-864-11	METAL CHIP	0	5%	1/16W	R4406	1-216-864-11	METAL CHIP	0	5%	1/16W
R2230	1-216-855-11	METAL CHIP	680K	5%	1/16W	R4407	1-216-864-11	METAL CHIP	0	5%	1/16W
R2233	1-216-839-11	METAL CHIP	33K	5%	1/16W	R4408	1-216-864-11	METAL CHIP	0	5%	1/16W
R2234	1-216-864-11	METAL CHIP	0	5%	1/16W	R4409	1-216-864-11	METAL CHIP	0	5%	1/16W
R2235	1-216-839-11	METAL CHIP	33K	5%	1/16W	R4411	1-216-864-11	METAL CHIP	0	5%	1/16W
R2236	1-216-864-11	METAL CHIP	0	5%	1/16W	R4412	1-216-864-11	METAL CHIP	0	5%	1/16W
R2237	1-216-839-11	METAL CHIP	33K	5%	1/16W	R4413	1-216-864-11	METAL CHIP	0	5%	1/16W
R2238	1-216-833-11	METAL CHIP	10K	5%	1/16W	R4415	1-216-864-11	METAL CHIP	0	5%	1/16W
R2239	1-216-821-11	METAL CHIP	1K	5%	1/16W	R4416	1-216-864-11	METAL CHIP	0	5%	1/16W
R2240	1-216-839-11	METAL CHIP	33K	5%	1/16W	R4420	1-216-864-11	METAL CHIP	0	5%	1/16W
R2246	1-216-864-11	METAL CHIP	0	5%	1/16W	R4423	1-216-864-11	METAL CHIP	0	5%	1/16W
R2247	1-216-833-11	METAL CHIP	10K	5%	1/16W	R4424	1-216-864-11	METAL CHIP	0	5%	1/16W
R2250	1-216-833-11	METAL CHIP	10K	5%	1/16W	R4425	1-216-864-11	METAL CHIP	0	5%	1/16W
R2252	1-216-864-11	METAL CHIP	0	5%	1/16W	R4431	1-216-834-11	METAL CHIP	12K	5%	1/16W
R2253	1-216-864-11	METAL CHIP	0	5%	1/16W	R4432	1-216-864-11	METAL CHIP	0	5%	1/16W
R2255	1-216-864-11	METAL CHIP	0	5%	1/16W	R4434	1-216-834-11	METAL CHIP	12K	5%	1/16W
R2256	1-216-864-11	METAL CHIP	0	5%	1/16W	R4435	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R4437	1-211-987-11	METAL CHIP	56	0.5%	1/10W	R5067	1-216-809-11	METAL CHIP	100	5%	1/16W
R4438	1-211-987-11	METAL CHIP	56	0.5%	1/10W	R5068	1-216-821-11	METAL CHIP	1K	5%	1/16W
R4439	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R5069	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4440	1-211-987-11	METAL CHIP	56	0.5%	1/10W	R5070	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4441	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R6001	1-216-805-11	METAL CHIP	47	5%	1/16W
R4442	1-211-987-11	METAL CHIP	56	0.5%	1/10W	R6009	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4443	1-216-805-11	METAL CHIP	47	5%	1/16W	R6013	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4444	1-216-864-11	METAL CHIP	0	5%	1/16W	R6016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R4445	1-216-864-11	METAL CHIP	0	5%	1/16W	R6017	1-216-809-11	METAL CHIP	100	5%	1/16W
R4446	1-216-864-11	METAL CHIP	0	5%	1/16W	R6018	1-216-821-11	METAL CHIP	1K	5%	1/16W
R4447	1-216-864-11	METAL CHIP	0	5%	1/16W	R6019	1-216-809-11	METAL CHIP	100	5%	1/16W
R5003	1-216-837-11	METAL CHIP	22K	5%	1/16W	R6020	1-216-809-11	METAL CHIP	100	5%	1/16W
R5004	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6022	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5005	1-216-809-11	METAL CHIP	100	5%	1/16W	R6025	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5008	1-216-809-11	METAL CHIP	100	5%	1/16W	R6026	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5009	1-216-833-11	METAL CHIP	10K	5%	1/16W	R6027	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5013	1-216-809-11	METAL CHIP	100	5%	1/16W	R6029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5014	1-216-809-11	METAL CHIP	100	5%	1/16W	R6032	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5015	1-216-809-11	METAL CHIP	100	5%	1/16W	R6033	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5018	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6034	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5019	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6035	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5020	1-216-853-11	METAL CHIP	470K	5%	1/16W	R6036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5025	1-216-833-11	METAL CHIP	10K	5%	1/16W	R6037	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5026	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6038	1-216-809-11	METAL CHIP	100	5%	1/16W
R5028	1-216-841-11	METAL CHIP	47K	5%	1/16W	R6039	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5029	1-216-841-11	METAL CHIP	47K	5%	1/16W	R6040	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5030	1-216-841-11	METAL CHIP	47K	5%	1/16W	R6041	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5031	1-216-841-11	METAL CHIP	47K	5%	1/16W	R6042	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5032	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5033	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6046	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5034	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6047	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5035	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6048	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5037	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R6049	1-219-570-11	RES-CHIP	10M	5%	1/10W
R5038	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6050	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5039	1-218-887-11	METAL CHIP	47K	0.5%	1/10W	R6052	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5040	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6053	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5041	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R6054	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5042	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6055	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5043	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6056	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5044	1-216-853-11	METAL CHIP	470K	5%	1/16W	R6057	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R5045	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6058	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R5046	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6059	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R5047	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6060	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R5048	1-216-833-11	METAL CHIP	10K	5%	1/16W	R6061	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R5049	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6062	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R5050	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6063	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R5051	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6064	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R5052	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6072	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5053	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6073	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5055	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6074	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5057	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6075	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5058	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6076	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5059	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6077	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5060	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6078	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5061	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6079	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5062	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6080	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5063	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6081	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5064	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6083	1-216-809-11	METAL CHIP	100	5%	1/16W
R5065	1-216-821-11	METAL CHIP	1K	5%	1/16W	R6084	1-216-809-11	METAL CHIP	100	5%	1/16W
R5066	1-216-845-11	METAL CHIP	100K	5%	1/16W	R6085	1-216-809-11	METAL CHIP	100	5%	1/16W

# DSR-45/45P

JC-21

JK-216

Ref. No.	Part No.	Description			
R6086	1-216-864-11	METAL CHIP	0	5%	1/16W
R6087	1-216-864-11	METAL CHIP	0	5%	1/16W
R6089	1-216-864-11	METAL CHIP	0	5%	1/16W
R6090	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6091	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6092	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6093	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6094	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6095	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6096	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6097	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6098	1-216-805-11	METAL CHIP	47	5%	1/16W
R6099	1-216-805-11	METAL CHIP	47	5%	1/16W
R6100	1-216-805-11	METAL CHIP	47	5%	1/16W
R7001	1-216-864-11	METAL CHIP	0	5%	1/16W
R7002	1-216-864-11	METAL CHIP	0	5%	1/16W
R7003	1-216-864-11	METAL CHIP	0	5%	1/16W
R7004	1-216-864-11	METAL CHIP	0	5%	1/16W
R7005	1-216-864-11	METAL CHIP	0	5%	1/16W
R7006	1-216-864-11	METAL CHIP	0	5%	1/16W
R7007	1-216-864-11	METAL CHIP	0	5%	1/16W
R7008	1-216-864-11	METAL CHIP	0	5%	1/16W
< VARIABLE RESISTOR >					
RV1100	1-238-855-11	RES, ADJ, CERMET 4.7K			
		(A/D CONV. REF. VOLTAGE1)			
RV1101	1-238-855-11	RES, ADJ, CERMET 4.7K			
		(A/D CONV. REF. VOLTAGE2)			
RV1102	1-238-854-11	RES, ADJ, CERMET 2.2K			
		(CR CLAMP REF. VOLTAGE)			
RV1103	1-238-853-11	RES, ADJ, CERMET 1K			
		(Y CLAMP REF. VOLTAGE)			
RV1104	1-238-854-11	RES, ADJ, CERMET 2.2K			
		(CB CLAMP REF. VOLTAGE)			
RV2201	1-238-855-11	RES, ADJ, CERMET 4.7K			
		(AFC PICTURE FRAME)			
< VIBRATOR >					
X3300	1-760-654-21	VIBRATOR, CRYSTAL (13.5MHz)			
X4400	1-579-922-11	VIBRATOR, CRYSTAL (CHIP TYPE)			
		(24.576MHz)			
X5001	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)			
X6001	1-767-450-11	VIBRATOR, CERAMIC (20MHz)			
X6002	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)			
A-7078-220-A JK-216 BOARD, COMPLETE					
*****					
< CAPACITOR >					
C101	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C102	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C103	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C104	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C105	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C106	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C107	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C108	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C109	1-164-346-11	CERAMIC CHIP	1uF		16V
C110	1-164-346-11	CERAMIC CHIP	1uF		16V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-346-11	CERAMIC CHIP	1uF		16V

Ref. No.	Part No.	Description			
C113	1-164-346-11	CERAMIC CHIP	1uF		16V
C114	1-164-346-11	CERAMIC CHIP	1uF		16V
C115	1-164-346-11	CERAMIC CHIP	1uF		16V
C116	1-164-346-11	CERAMIC CHIP	1uF		16V
< CONNECTOR >					
CN102	1-764-129-11	CONNECTOR, FPC 15P			
* CN103	1-565-884-11	PIN, CONNECTOR (PC BOARD) 12P			
CN104	1-565-880-11	PIN, CONNECTOR (PC BOARD) 8P			
CN105	1-565-878-11	PIN, CONNECTOR (PC BOARD) 6P			
< DIODE >					
D101	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D102	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D103	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D108	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D109	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D110	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D111	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D112	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D113	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D114	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D115	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D116	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D117	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D118	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D119	8-719-062-19	DIODE MA3200WA-TX			
D120	8-719-062-19	DIODE MA3200WA-TX			
< FERRITE BEAD >					
FB101	1-469-130-11	FERRITE	0uH		
FB102	1-469-130-11	FERRITE	0uH		
FB103	1-469-130-11	FERRITE	0uH		
FB104	1-469-130-11	FERRITE	0uH		
FB105	1-469-130-11	FERRITE	0uH		
FB106	1-469-130-11	FERRITE	0uH		
FB107	1-469-130-11	FERRITE	0uH		
FB108	1-469-130-11	FERRITE	0uH		
FB109	1-469-130-11	FERRITE	0uH		
FB110	1-469-130-11	FERRITE	0uH		
FB111	1-469-130-11	FERRITE	0uH		
FB112	1-469-130-11	FERRITE	0uH		
FB113	1-469-130-11	FERRITE	0uH		
FB114	1-469-130-11	FERRITE	0uH		
FB115	1-469-130-11	FERRITE	0uH		
FB116	1-469-130-11	FERRITE	0uH		
FB117	1-469-130-11	FERRITE	0uH		
FB118	1-469-130-11	FERRITE	0uH		
FB119	1-469-130-11	FERRITE	0uH		
FB120	1-469-130-11	FERRITE	0uH		
< IC >					
IC101	8-759-385-17	IC NJM4580E (TE2)			
IC102	8-759-385-17	IC NJM4580E (TE2)			
< JACK >					
J101	1-694-727-11	TERMINAL BOARD (S VIDEO/VIDEO/AUDIO IN)			
* J103	1-764-066-11	CONNECTOR, BNC (COMPONENT Y)			
* J104	1-764-066-11	CONNECTOR, BNC (COMPONENT R-Y)			
* J105	1-764-066-11	CONNECTOR, BNC (COMPONENT B-Y)			

JK-216

LS-060

MD-76

Ref. No.	Part No.	Description			
J106	1-770-016-11	JACK BLOCK, PIN 2P (MONITOR)			
* J107	1-764-066-11	CONNECTOR, BNC (TC)			
		< COIL >			
L101	1-410-381-11	INDUCTOR CHIP	10uH		
L102	1-410-381-11	INDUCTOR CHIP	10uH		
		< RESISTOR >			
R101	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R102	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R103	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R104	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R105	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R106	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R107	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R108	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R109	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R110	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R111	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R112	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R113	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R114	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R115	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R116	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R117	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R118	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R119	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R120	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R121	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R122	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R123	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R124	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R125	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R126	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R127	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R128	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R129	1-216-025-11	RES-CHIP	100	5%	1/10W
R130	1-216-025-11	RES-CHIP	100	5%	1/10W
R131	1-216-025-11	RES-CHIP	100	5%	1/10W
R132	1-216-025-11	RES-CHIP	100	5%	1/10W
R133	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R134	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R135	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R136	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R137	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R138	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R139	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R140	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R141	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R142	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R143	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R144	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R145	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R146	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R147	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R148	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R149	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R150	1-216-631-11	METAL CHIP	150	0.5%	1/10W

Ref. No.	Part No.	Description			
		< SWITCH >			
S101	1-762-825-11	SWITCH, SLIDE (INPUT LEVEL)			
	A-7078-222-A	LS-060 BOARD, COMPLETE			*****
*	4-042-408-01	PIN, COATING LEAD			
		< CONNECTOR >			
* CN201	1-770-324-11	CONNECTOR, FPC (DIP TYPE) 8P			
		< DIODE >			
D201	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D202	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D203	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
D204	8-719-067-59	DIODE MAZ9120D0LS0-TX/L			
		< FERRITE BEAD >			
FB201	1-414-552-11	FERRITE	0uH		
FB202	1-414-552-11	FERRITE	0uH		
FB203	1-414-552-11	FERRITE	0uH		
		< JACK >			
J201	1-565-276-31	JACK, ULTRA SMALL 1P (LANC)			
J202	1-691-737-21	JACK (SMALL TYPE) (CONTROL S IN)			
	A-7067-229-A	MD-76 BOARD, COMPLETE			*****
*	3-057-555-01	HOLDER, LED			
*	3-066-170-01	HOLDER (A), SENSOR			
	3-973-185-01	ENCODER			
		< CAPACITOR >			
C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C002	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
		< CONNECTOR >			
CN001	1-691-359-21	CONNECTOR, FFC/FPC (ZIF) 21P			
CN002	1-691-359-21	CONNECTOR, FFC/FPC (ZIF) 21P			
CN003	1-691-356-21	CONNECTOR, FFC/FPC (ZIF) 18P			
		< DIODE >			
D001	8-719-988-42	DIODE GL453S			
		< IC >			
IC001	8-759-510-71	IC BA10358F-E2			
IC002	8-719-052-03	ELEMENT, HOLE THS124TE85L			
IC003	8-719-052-03	ELEMENT, HOLE THS124TE85L			
IC004	8-719-082-56	PHOTO COUPLER TLP907 (LB, SONY)			
IC005	8-719-082-56	PHOTO COUPLER TLP907 (LB, SONY)			
		< SHORT >			
JR001	1-216-296-11	SHORT	0		
JR003	1-216-296-11	SHORT	0		
JR004	1-216-296-11	SHORT	0		
JR005	1-216-296-11	SHORT	0		
JR006	1-216-864-11	METAL CHIP	0	5%	1/16W

MD-76

PD-170

Ref. No.	Part No.	Description
< TRANSISTOR >		
Q001	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE END)
Q002	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE TOP)
< RESISTOR >		
R001	1-216-816-11	METAL CHIP 390 5% 1/16W
R003	1-216-810-11	METAL CHIP 120 5% 1/16W
R004	1-216-837-11	METAL CHIP 22K 5% 1/16W
R005	1-218-867-11	RES-CHIP 6.8K 5% 1/10W
R006	1-218-867-11	RES-CHIP 6.8K 5% 1/10W
R007	1-216-809-11	METAL CHIP 100 5% 1/16W
R008	1-216-837-11	METAL CHIP 22K 5% 1/16W
R009	1-216-837-11	METAL CHIP 22K 5% 1/16W
R010	1-218-867-11	RES-CHIP 6.8K 5% 1/10W
R011	1-218-867-11	RES-CHIP 6.8K 5% 1/10W
R012	1-216-174-00	RES-CHIP 100 5% 1/8W
R013	1-216-837-11	METAL CHIP 22K 5% 1/16W
R014	1-216-180-00	RES-CHIP 180 5% 1/8W
R015	1-216-816-11	METAL CHIP 390 5% 1/16W
R028	1-216-809-11	METAL CHIP 100 5% 1/16W
R029	1-216-809-11	METAL CHIP 100 5% 1/16W
R030	1-216-864-11	METAL CHIP 0 5% 1/16W
R031	1-216-864-11	METAL CHIP 0 5% 1/16W
R032	1-216-864-11	METAL CHIP 0 5% 1/16W
R033	1-216-864-11	METAL CHIP 0 5% 1/16W
< VARIABLE RESISTOR >		
RV001	1-241-770-11	RES, ADJ, CARBON 1M (GAIN)
RV002	1-238-019-11	RES, ADJ, CARBON 47K (OFF SET)
RV003	1-241-770-11	RES, ADJ, CARBON 1M (GAIN)
RV004	1-238-019-11	RES, ADJ, CARBON 47K (OFF SET)
< SWITCH >		
S001	1-762-551-21	SWITCH, PUSH (L/S CAS)
S002	1-771-604-11	SWITCH, DETECTION (C IN)
S003	1-771-604-11	SWITCH, DETECTION (CC DOWN)
A-7078-205-A PD-170 BOARD, COMPLETE *****		
< CAPACITOR >		
C801	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C802	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C803	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C804	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C805	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C806	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V
C807	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V
C808	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C810	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C811	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
C812	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
C813	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C814	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V
C815	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V
C816	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V
C817	1-119-751-11	TANTAL. CHIP 22uF 20% 16V
C818	1-119-751-11	TANTAL. CHIP 22uF 20% 16V
C819	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V
C902	1-107-687-11	TANTAL. CHIP 3.3uF 20% 20V

Ref. No.	Part No.	Description
C903	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C904	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C905	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C906	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C907	1-164-937-11	CERAMIC CHIP 0.001uF 10% 50V
C908	1-164-872-11	CERAMIC CHIP 82PF 5% 50V
C909	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V
C911	1-164-739-11	CERAMIC CHIP 560PF 5% 50V
C912	1-164-872-11	CERAMIC CHIP 82PF 5% 50V
C913	1-107-682-11	CERAMIC CHIP 1uF 10% 16V
C914	1-113-994-11	TANTAL. CHIP 6.8uF 20% 16V
C915	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V
C916	1-107-689-21	TANTAL. CHIP 1uF 20% 35V
C917	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V
C918	1-107-682-11	CERAMIC CHIP 1uF 10% 16V
< CONNECTOR >		
CN801	1-779-064-11	PIN, CONNECTOR (PC BOARD) 12P
CN802	1-785-283-21	PIN, CONNECTOR (PC BOARD) 14P
* CN901	1-774-261-11	CONNECTOR, FFC (ZIF) 24P
< DIODE >		
D801	8-719-073-01	DIODE MA111- (K8).SO
D902	8-719-084-46	DIODE 1SV288 (TPH3)
D903	8-719-976-96	DIODE MA8047-H-TX
< FERRITE BEAD >		
FB801	1-414-234-22	FERRITE 0uH
FB802	1-414-234-22	FERRITE 0uH
FB803	1-414-234-22	FERRITE 0uH
< IC >		
IC801	8-759-364-05	IC MB40D001PFV-G-BND-ER
IC802	8-759-539-27	IC IR3Y37A4
IC901	8-759-587-61	IC LZ9GH234
IC902	8-759-327-01	IC NJM062V (TE2)
< COIL >		
L801	1-414-757-11	INDUCTOR 100uH
L802	1-414-078-11	INDUCTOR 10uH
L803	1-412-947-11	INDUCTOR 4.7uH
L901	1-414-754-11	INDUCTOR 10uH
L902	1-414-754-11	INDUCTOR 10uH
L903	1-412-951-11	INDUCTOR 10uH
L905	1-412-949-21	INDUCTOR 6.8uH
< TRANSISTOR >		
Q901	8-729-037-52	TRANSISTOR 2SD2216J-QR (K8).SO
Q902	8-729-042-26	TRANSISTOR 2SB1462J-QR (K8).SO
Q903	8-729-037-52	TRANSISTOR 2SD2216J-QR (K8).SO
Q904	8-729-042-26	TRANSISTOR 2SB1462J-QR (K8).SO
< RESISTOR >		
R803	1-218-990-11	SHORT 0
R805	1-218-990-11	SHORT 0
R808	1-218-969-11	RES-CHIP 22K 5% 1/16W
R809	1-218-966-11	RES-CHIP 12K 5% 1/16W
R810	1-218-990-11	SHORT 0
R812	1-218-973-11	RES-CHIP 47K 5% 1/16W
R813	1-218-967-11	RES-CHIP 15K 5% 1/16W

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POWER BLOCK (ACS1581-MA)

RP-234

Ref. No.	Part No.	Description			
R814	1-218-971-11	RES-CHIP	33K	5%	1/16W
R817	1-218-966-11	RES-CHIP	12K	5%	1/16W
R818	1-218-972-11	RES-CHIP	39K	5%	1/16W
R820	1-218-977-11	RES-CHIP	100K	5%	1/16W
R821	1-218-965-11	RES-CHIP	10K	5%	1/16W
R904	1-218-973-11	RES-CHIP	47K	5%	1/16W
R905	1-218-973-11	RES-CHIP	47K	5%	1/16W
R908	1-218-987-11	RES-CHIP	680K	5%	1/16W
R909	1-218-978-11	RES-CHIP	120K	5%	1/16W
R910	1-218-977-11	RES-CHIP	100K	5%	1/16W
R911	1-218-965-11	RES-CHIP	10K	5%	1/16W
R912	1-218-989-11	RES-CHIP	1M	5%	1/16W
R913	1-218-990-11	SHORT	0		
R914	1-218-989-11	RES-CHIP	1M	5%	1/16W
R915	1-218-969-11	RES-CHIP	22K	5%	1/16W
R916	1-218-975-11	RES-CHIP	68K	5%	1/16W
R917	1-218-975-11	RES-CHIP	68K	5%	1/16W
R918	1-218-973-11	RES-CHIP	47K	5%	1/16W
R920	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R921	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R922	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R925	1-218-977-11	RES-CHIP	100K	5%	1/16W
R926	1-218-971-11	RES-CHIP	33K	5%	1/16W
R928	1-218-977-11	RES-CHIP	100K	5%	1/16W
R929	1-218-977-11	RES-CHIP	100K	5%	1/16W
R932	1-218-977-11	RES-CHIP	100K	5%	1/16W
R933	1-218-971-11	RES-CHIP	33K	5%	1/16W
R934	1-218-990-11	SHORT	0		
R935	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R936	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R937	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R938	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R960	1-218-937-11	RES-CHIP	47	5%	1/16W
R961	1-218-937-11	RES-CHIP	47	5%	1/16W
R962	1-218-937-11	RES-CHIP	47	5%	1/16W

△ 1-468-666-11 POWER BLOCK (ACS1581-MA)  
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7-621-759-45 +PSW 2.6X6  
7-682-947-01 +PSW 3X6

< FUSE >

△ F101 9-885-020-11 FUSE (2.5A/250V)

A-7067-275-A RP-234 BOARD, COMPLETE  
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3-732-817-01 SCREW (2X4.5), TAPPING

< CAPACITOR >

C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C102	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C103	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			
C107	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C111	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C199	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C200	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C204	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C205	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C206	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C207	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C208	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C209	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C211	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C212	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C213	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C214	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C215	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C216	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C217	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C218	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C219	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C220	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C221	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C222	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C223	1-164-174-11	CERAMIC CHIP	0.0082uF	10%	25V
C224	1-164-174-11	CERAMIC CHIP	0.0082uF	10%	25V
C301	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C302	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C303	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C309	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

C333 1-104-912-11 TANTAL. CHIP 3.3uF 20% 4V  
C334 1-216-864-11 METAL CHIP 0 5% 1/16W  
(Note)

< CONNECTOR >

CN101	1-691-374-11	CONNECTOR, FFC/FPC 10P
CN201	1-750-303-41	CONNECTOR, BOARD TO BOARD 20P
* CN202	1-750-343-11	CONNECTOR, FFC/EPC (ZIF) 22P
* CN203	1-750-343-11	CONNECTOR, FFC/EPC (ZIF) 22P

< IC >

IC101	8-752-086-53	IC CXA2072R-T4
IC102	8-759-512-69	IC S-81350HG-KD-T1
IC201	8-752-086-52	IC CXA2071R-T4
IC301	8-759-584-35	IC F712504DPM-TEB

< COIL >

L102	1-414-754-11	INDUCTOR 10uH
L201	1-414-754-11	INDUCTOR 10uH

(Note) Resistor is mounted to the location where C334 is printed

RP-234

RS-082

RS-083

Ref. No.	Part No.	Description			
L202	1-414-754-11	INDUCTOR	10uH		
< TRANSISTOR >					
Q201	8-729-042-26	TRANSISTOR	2SB1462J-QR (K8).SO		
Q202	8-729-013-04	TRANSISTOR	2SC4851-TL		
Q203	8-729-013-04	TRANSISTOR	2SC4851-TL		
< RESISTOR >					
R101	1-216-833-11	METAL CHIP	10K	5%	1/16W
R102	1-216-837-11	METAL CHIP	22K	5%	1/16W
R103	1-216-835-11	METAL CHIP	15K	5%	1/16W
R104	1-218-878-11	METAL CHIP	20K	0.5%	1/10W
R105	1-216-837-11	METAL CHIP	22K	5%	1/16W
R106	1-216-837-11	METAL CHIP	22K	5%	1/16W
R107	1-216-837-11	METAL CHIP	22K	5%	1/16W
R108	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R109	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R110	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R111	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R112	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R113	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R115	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R201	1-216-833-11	METAL CHIP	10K	5%	1/16W
R202	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R203	1-216-847-11	METAL CHIP	150K	5%	1/16W
R204	1-216-817-11	METAL CHIP	470	5%	1/16W
R206	1-216-834-11	METAL CHIP	12K	5%	1/16W
R207	1-216-834-11	METAL CHIP	12K	5%	1/16W
R208	1-216-833-11	METAL CHIP	10K	5%	1/16W
R209	1-216-857-11	METAL CHIP	1M	5%	1/16W
R210	1-216-807-11	METAL CHIP	68	5%	1/16W
R211	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R212	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R213	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R214	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R215	1-216-810-11	METAL CHIP	120	5%	1/16W
R216	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R217	1-216-809-11	METAL CHIP	100	5%	1/16W
R218	1-216-809-11	METAL CHIP	100	5%	1/16W
R219	1-216-864-11	METAL CHIP	0	5%	1/16W
R220	1-216-113-00	METAL CHIP	470K	5%	1/10W
R309	1-216-799-11	METAL CHIP	15	5%	1/16W
R338	1-216-845-11	METAL CHIP	100K	5%	1/16W
R339	1-216-864-11	METAL CHIP	0	5%	1/16W
R340	1-216-864-11	METAL CHIP	0	5%	1/16W
R341	1-216-864-11	METAL CHIP	0	5%	1/16W
R347	1-216-864-11	METAL CHIP	0	5%	1/16W
R349	1-216-833-11	METAL CHIP	10K	5%	1/16W
A-7078-224-A RS-082 BOARD, COMPLETE *****					
< CAPACITOR >					
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-91	CERAMIC CHIP	0.1uF		25V
< CONNECTOR >					
CN301	1-573-005-21	CONNECTOR, D-SUB 9P (RS-422)			
CN302	1-691-395-11	CONNECTOR, FPC 6P			

Ref. No.	Part No.	Description			
< DIODE >					
D301	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
D302	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
D303	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
D304	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
D305	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
< FERRITE BEAD >					
FB301	1-414-552-11	FERRITE		0uH	
FB303	1-414-552-11	FERRITE		0uH	
FB304	1-414-552-11	FERRITE		0uH	
FB305	1-414-552-11	FERRITE		0uH	
FB306	1-414-552-11	FERRITE		0uH	
< IC >					
IC301	8-759-289-43	IC	LTC490CS8-E2		
< COIL >					
L301	1-410-381-11	INDUCTOR CHIP	10uH		
< RESISTOR >					
R301	1-216-037-00	METAL CHIP	330	5%	1/10W
R302	1-216-037-00	METAL CHIP	330	5%	1/10W
R303	1-216-037-00	METAL CHIP	330	5%	1/10W
R304	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R305	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R306	1-216-049-11	RES-CHIP	1K	5%	1/10W
R307	1-216-009-91	RES-CHIP	22	5%	1/10W
A-7078-225-A RS-083 BOARD, COMPLETE *****					
< CAPACITOR >					
C351	1-164-346-11	CERAMIC CHIP	1uF		16V
C352	1-164-346-11	CERAMIC CHIP	1uF		16V
C353	1-164-346-11	CERAMIC CHIP	1uF		16V
C354	1-164-346-11	CERAMIC CHIP	1uF		16V
C355	1-164-346-11	CERAMIC CHIP	1uF		16V
C356	1-163-038-91	CERAMIC CHIP	0.1uF		25V
< CONNECTOR >					
CN351	1-565-388-21	CONNECTOR, D-SUB 9P (RS-232C)			
* CN352	1-691-781-11	CONNECTOR, FPC 10P			
< DIODE >					
D351	8-719-062-19	DIODE	MA3200WA-TX		
D352	8-719-062-19	DIODE	MA3200WA-TX		
D353	8-719-062-19	DIODE	MA3200WA-TX		
D354	8-719-062-19	DIODE	MA3200WA-TX		
D355	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
D356	8-719-067-59	DIODE	MAZ9120D0LS0-TX/L		
< FERRITE BEAD >					
FB351	1-414-552-11	FERRITE		0uH	
FB352	1-414-552-11	FERRITE		0uH	
FB353	1-414-552-11	FERRITE		0uH	
FB354	1-414-552-11	FERRITE		0uH	
FB355	1-414-552-11	FERRITE		0uH	



RS-083

VD-032

Ref. No.	Part No.	Description
		< IC >
IC351	8-759-521-15	IC MAX232CWE-TE-2
		< COIL >
L351	1-410-381-11	INDUCTOR CHIP 10uH
		< RESISTOR >
R351	1-216-077-91	RES-CHIP 15K 5% 1/10W
		< SWITCH >
S352	1-692-989-11	SWITCH, SLIDE (RS-422/RS-232C/LANC)
A-7095-082-A VD-032 BOARD, COMPLETE (DSR-45) A-7095-084-A VD-032 BOARD, COMPLETE (DSR-45P) *****		
		< BATTERY >
BT701	1-528-724-21	BATTERY, V/L RECHARGEABLE
		< BUZZER >
BZ701	1-529-104-11	BUZZER, PIEZOELECTRIC
		< CAPACITOR >
C001	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C002	1-115-156-11	CERAMIC CHIP 1uF 10V
C003	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C004	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C005	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C006	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C007	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C008	1-164-217-11	CERAMIC CHIP 150PF 5% 50V
C009	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C010	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C011	1-162-923-11	CERAMIC CHIP 47PF 5% 50V
C012	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C013	1-115-156-11	CERAMIC CHIP 1uF 10V
C014	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C015	1-164-156-11	CERAMIC CHIP 0.1uF 25V (DSR-45)
C016	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C017	1-162-921-11	CERAMIC CHIP 33PF 5% 50V
C018	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V
C019	1-162-921-11	CERAMIC CHIP 33PF 5% 50V
C020	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V
C021	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C022	1-126-396-11	ELECT CHIP 47uF 20% 16V
C023	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C024	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C025	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C026	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C027	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C028	1-124-778-00	ELECT CHIP 22uF 20% 6.3V
C029	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C030	1-164-156-11	CERAMIC CHIP 0.1uF 25V

Ref. No.	Part No.	Description
C031	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
C032	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C033	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C034	1-126-392-11	ELECT CHIP 100uF 20% 6.3V
C035	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C036	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C037	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C038	1-115-156-11	CERAMIC CHIP 1uF 10V
C039	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C040	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C041	1-135-177-21	TANTALUM CHIP 1uF 20% 20V
C042	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V
C043	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C044	1-127-692-11	CERAMIC CHIP 10uF 10% 6.3V
C045	1-162-923-11	CERAMIC CHIP 47PF 5% 50V
C046	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C047	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C048	1-126-396-11	ELECT CHIP 47uF 20% 16V
C049	1-104-850-11	TANTAL. CHIP 6.8uF 20% 10V
C050	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C051	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C052	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C053	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C054	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C055	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C056	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C057	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C058	1-115-156-11	CERAMIC CHIP 1uF 10V
C059	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C060	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C061	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C062	1-126-391-11	ELECT CHIP 47uF 20% 6.3V
C063	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C064	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C065	1-162-918-11	CERAMIC CHIP 18PF 5% 50V
C066	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C067	1-162-919-11	CERAMIC CHIP 22PF 5% 50V
C068	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C069	1-104-850-11	TANTAL. CHIP 6.8uF 20% 10V
C070	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C071	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C072	1-162-918-11	CERAMIC CHIP 18PF 5% 50V
C073	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C074	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C075	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C076	1-104-850-11	TANTAL. CHIP 6.8uF 20% 10V
C077	1-162-919-11	CERAMIC CHIP 22PF 5% 50V
C078	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C079	1-104-850-11	TANTAL. CHIP 6.8uF 20% 10V
C080	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C081	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C082	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C083	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C084	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C085	1-164-156-11	CERAMIC CHIP 0.1uF 25V
C086	1-104-850-11	TANTAL. CHIP 6.8uF 20% 10V
C087	1-117-720-11	CERAMIC CHIP 4.7uF 10V
C088	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V

**CAUTION**  
 Danger of explosion if battery is incorrectly replaced.  
 Replace only with the same or equivalent type.

## VD-032

Ref. No.	Part No.	Description												
C089	1-117-720-11	CERAMIC CHIP	4.7uF			10V								
C090	1-126-392-11	ELECT CHIP	100uF	20%		6.3V								
C091	1-126-396-11	ELECT CHIP	47uF	20%		16V								
C092	1-128-405-11	ELECT CHIP	22uF	20%		50V								
C093	1-162-915-11	CERAMIC CHIP	10PF	0.5PF		50V								
C094	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C095	1-115-156-11	CERAMIC CHIP	1uF			10V								
C096	1-115-156-11	CERAMIC CHIP	1uF			10V								
C097	1-104-851-11	TANTAL. CHIP	10uF	20%		10V								
C098	1-117-720-11	CERAMIC CHIP	4.7uF			10V								
C099	1-117-720-11	CERAMIC CHIP	4.7uF			10V								
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C202	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C203	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C204	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C205	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C206	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C207	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C208	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C209	1-128-007-11	ELECT CHIP	2.2uF	20%		35V								
C210	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C211	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C212	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C213	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C214	1-162-926-11	CERAMIC CHIP	82PF	5%		50V								
C214	1-162-927-11	CERAMIC CHIP	100PF	5%		50V								
C215	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C216	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C217	1-162-918-11	CERAMIC CHIP	18PF	5%		50V								
C217	1-162-919-11	CERAMIC CHIP	22PF	5%		50V								
C218	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C219	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C220	1-162-926-11	CERAMIC CHIP	82PF	5%		50V								
C220	1-162-927-11	CERAMIC CHIP	100PF	5%		50V								
C221	1-164-218-11	CERAMIC CHIP	180PF	0.25PF		50V								
C221	1-164-230-11	CERAMIC CHIP	220PF	5%		50V								
C222	1-128-003-11	ELECT CHIP	22uF	20%		4V								
C223	1-162-927-11	CERAMIC CHIP	100PF	5%		50V								
C223	1-162-928-11	CERAMIC CHIP	120PF	5%		50V								
C224	1-162-964-11	CERAMIC CHIP	0.001uF	10%		50V								
C225	1-128-003-11	ELECT CHIP	22uF	20%		4V								
C226	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C227	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C228	1-128-003-11	ELECT CHIP	22uF	20%		4V								
C229	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C230	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C231	1-162-923-11	CERAMIC CHIP	47PF	5%		50V								
C232	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C233	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C234	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C235	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C236	1-128-003-11	ELECT CHIP	22uF	20%		4V								
C237	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C238	1-126-607-11	ELECT CHIP	47uF	20%		4V								
C239	1-128-007-11	ELECT CHIP	2.2uF	20%		35V								
C240	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C241	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C242	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C243	1-107-826-11	CERAMIC CHIP	0.1uF	10%		16V								
C244	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C245	1-126-392-11	ELECT CHIP	100uF	20%		6.3V								
C246	1-126-392-11	ELECT CHIP	100uF	20%		6.3V								
C247	1-162-919-11	CERAMIC CHIP	22PF	5%		50V								
C249	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C250	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C251	1-128-003-11	ELECT CHIP	22uF	20%		4V								
C252	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C253	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C254	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C255	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C256	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C257	1-126-391-11	ELECT CHIP	47uF	20%		6.3V								
C258	1-126-391-11	ELECT CHIP	47uF	20%		6.3V								
C259	1-126-391-11	ELECT CHIP	47uF	20%		6.3V								
C260	1-126-391-11	ELECT CHIP	47uF	20%		6.3V								
C261	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C262	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C264	1-164-227-11	CERAMIC CHIP	0.022uF	10%		25V								
C265	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C266	1-126-205-11	ELECT CHIP	47uF	20%		6.3V								
C267	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C268	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C269	1-162-970-11	CERAMIC CHIP	0.01uF	10%		25V								
C270	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C273	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C274	1-126-607-11	ELECT CHIP	47uF	20%		4V								
C275	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C276	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C279	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C280	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C281	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C282	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C283	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C284	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C285	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C286	1-124-778-00	ELECT CHIP	22uF	20%		6.3V								
C287	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C288	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C289	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C290	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C291	1-162-917-11	CERAMIC CHIP	15PF	5%		50V								
C292	1-162-922-11	CERAMIC CHIP	39PF	5%		50V								
C293	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C294	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C295	1-164-156-11	CERAMIC CHIP	0.1uF			25V								
C296	1-164-156-11	CERAMIC CHIP	0.1uF			25V								



Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
C708	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C907	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C709	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C908	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C710	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C914	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C711	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C916	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C712	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C918	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C713	1-128-004-11	ELECT CHIP	10uF	20%	16V	C919	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C714	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C920	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C715	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C921	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C716	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C922	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C717	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C923	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C720	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C925	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C721	1-128-006-11	ELECT CHIP	4.7uF	20%	25V	C926	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C723	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	C927	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C724	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	C929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C725	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C930	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C726	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C931	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C727	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C932	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C728	1-126-396-11	ELECT CHIP	47uF	20%	16V	C935	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C729	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C936	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C730	1-115-156-11	CERAMIC CHIP	1uF		10V	C937	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C731	1-115-156-11	CERAMIC CHIP	1uF		10V	C939	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C732	1-126-412-11	ELECT CHIP	220uF	20%	4V	C941	1-127-530-11	ELECT	22uF	20%	20V
C733	1-126-412-11	ELECT CHIP	220uF	20%	4V	C942	1-127-530-11	ELECT	22uF	20%	20V
C734	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C943	1-127-530-11	ELECT	22uF	20%	20V
C735	1-126-391-11	ELECT CHIP	47uF	20%	6.3V	C945	1-128-405-11	ELECT CHIP	22uF	20%	50V
C736	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C946	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C737	1-126-391-11	ELECT CHIP	47uF	20%	6.3V	C947	1-128-405-11	ELECT CHIP	22uF	20%	50V
C738	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C948	1-127-530-11	ELECT	22uF	20%	20V
C739	1-115-156-11	CERAMIC CHIP	1uF		10V	C949	1-127-530-11	ELECT	22uF	20%	20V
C740	1-115-156-11	CERAMIC CHIP	1uF		10V	C950	1-127-530-11	ELECT	22uF	20%	20V
C741	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C953	1-128-405-11	ELECT CHIP	22uF	20%	50V
C742	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C954	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C743	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C955	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C744	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C956	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C745	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C959	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C746	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C960	1-128-405-11	ELECT CHIP	22uF	20%	50V
C747	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C961	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C748	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C962	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C749	1-115-156-11	CERAMIC CHIP	1uF		10V	C963	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C750	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C964	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C751	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C965	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C752	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C967	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C753	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C968	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C754	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C969	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C755	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C971	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C756	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C975	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C757	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	C976	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C758	1-126-405-11	ELECT CHIP	10uF	20%	50V	C977	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C759	1-126-405-11	ELECT CHIP	10uF	20%	50V	C978	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C760	1-115-156-11	CERAMIC CHIP	1uF		10V	C980	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C761	1-126-396-11	ELECT CHIP	47uF	20%	16V	C983	1-104-919-11	TANTAL. CHIP	10uF	20%	25V
C762	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C986	1-113-992-11	TANTAL. CHIP	3.3uF	20%	35V
C763	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C987	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C764	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C988	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C766	1-126-412-11	ELECT CHIP	220uF	20%	4V	C989	1-128-400-11	ELECT CHIP	47uF	20%	25V
C901	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C990	1-128-400-11	ELECT CHIP	47uF	20%	25V
C902	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C991	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C903	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C992	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C904	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C993	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C994	1-117-720-11	CERAMIC CHIP	4.7uF		10V

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
C999	1-127-562-11	ELECT	47uF	20%	6.3V						
C1501	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C1909	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1502	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1914	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
						C1916	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1503	1-128-004-11	ELECT CHIP	10uF	20%	16V	C1918	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C1504	1-115-156-11	CERAMIC CHIP	1uF		10V	C1919	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1505	1-128-004-11	ELECT CHIP	10uF	20%	16V						
C1506	1-128-004-11	ELECT CHIP	10uF	20%	16V	C1920	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C1507	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1921	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
						C1922	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1508	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1923	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1509	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	C1925	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
					(DSR-45)						
C1509	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C1926	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
					(DSR-45P)	C1927	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1510	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	C1929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
					(DSR-45)	C1930	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C1511	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C1931	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C1512	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1932	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C1513	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C1935	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1514	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1936	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1515	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C1937	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1516	1-128-004-11	ELECT CHIP	10uF	20%	16V	C1939	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1517	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1941	1-128-400-11	ELECT CHIP	47uF	20%	25V
C1518	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1942	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1519	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1943	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1520	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C1944	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1521	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1945	1-127-530-11	ELECT	22uF	20%	20V
C1522	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1946	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1523	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1947	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1524	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1948	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1627	1-126-396-11	ELECT CHIP	47uF	20%	16V	C1949	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1628	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C1950	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1630	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C1951	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1632	1-115-156-11	CERAMIC CHIP	1uF		10V	C1952	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1633	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C1953	1-127-530-11	ELECT	22uF	20%	20V
C1634	1-115-156-11	CERAMIC CHIP	1uF		10V	C1954	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1635	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	C1955	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1636	1-115-156-11	CERAMIC CHIP	1uF		10V	C1956	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1637	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C1957	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1638	1-126-396-11	ELECT CHIP	47uF	20%	16V	C1959	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1640	1-126-396-11	ELECT CHIP	47uF	20%	16V	C1969	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1641	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	C1988	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1644	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1989	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1645	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1990	1-128-400-11	ELECT CHIP	47uF	20%	25V
C1646	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1991	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1647	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1998	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C1648	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C1999	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C1649	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C2001	1-126-607-11	ELECT CHIP	47uF	20%	4V
C1650	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C2002	1-126-607-11	ELECT CHIP	47uF	20%	4V
C1651	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	C2003	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C1652	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2004	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C1653	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2005	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C1654	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2006	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C1655	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2007	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C1656	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2008	1-126-607-11	ELECT CHIP	47uF	20%	4V
C1657	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2009	1-126-607-11	ELECT CHIP	47uF	20%	4V
C1658	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2010	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1659	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2011	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1660	1-126-204-11	ELECT CHIP	47uF	20%	16V	C2012	1-128-003-11	ELECT CHIP	22uF	20%	4V
C1661	1-126-204-11	ELECT CHIP	47uF	20%	16V						(DSR-45P)
C1906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C2013	1-128-003-11	ELECT CHIP	22uF	20%	4V
C1907	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C2014	1-164-156-11	CERAMIC CHIP	0.1uF		25V

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Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
C2015	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2074	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C2016	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2075	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C2017	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2076	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C2018	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2077	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C2019	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2078	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C2020	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2079	1-128-004-11	ELECT CHIP	10uF	20%	16V
C2021	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2080	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2022	1-126-607-11	ELECT CHIP	47uF	20%	4V	C2081	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2023	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2082	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2024	1-126-607-11	ELECT CHIP	47uF	20%	4V	C2083	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2025	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2084	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2026	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2085	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2027	1-126-607-11	ELECT CHIP	47uF	20%	4V	C2087	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2028	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2088	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2029	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2089	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2030	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2090	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2031	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2091	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2032	1-126-391-11	ELECT CHIP	47uF	20%	6.3V	C2092	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2033	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C2093	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C2034	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2094	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C2035	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2095	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2036	1-126-391-11	ELECT CHIP	47uF	20%	6.3V	C2096	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2037	1-126-391-11	ELECT CHIP	47uF	20%	6.3V	C2097	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2038	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	C2098	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C2039	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	C2099	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C2040	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	C2100	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2041	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2101	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2042	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2102	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2043	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2103	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2044	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2105	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2045	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2106	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2046	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2107	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C2047	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2108	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C2048	1-126-607-11	ELECT CHIP	47uF	20%	4V	C2109	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2049	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2110	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2050	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2111	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2051	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C2112	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2053	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2113	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2054	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2114	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2055	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2115	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2056	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2116	1-164-156-11	CERAMIC CHIP	0.1uF		25V
					(DSR-45P)	C2117	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2057	1-117-720-11	CERAMIC CHIP	4.7uF	10V		C2118	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2058	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2119	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2059	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2120	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2060	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2121	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2061	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2122	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2062	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2123	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2063	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2124	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2064	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2125	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2065	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2126	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2066	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2127	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2067	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2128	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2068	1-128-004-11	ELECT CHIP	10uF	20%	16V	C2129	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C2069	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2130	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2070	1-164-156-11	CERAMIC CHIP	0.1uF	25V		C2131	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C2071	1-164-156-11	CERAMIC CHIP	0.1uF	25V				< CONNECTOR >			
C2072	1-128-004-11	ELECT CHIP	10uF	20%	16V	* CN201	1-764-007-11	PIN, CONNECTOR (SMD) 12P			
C2073	1-164-156-11	CERAMIC CHIP	0.1uF	25V		* CN202	1-691-551-11	PIN, CONNECTOR (SMD) 8P			

Ref. No.	Part No.	Description
* CN203	1-580-789-21	PIN, CONNECTOR (SMD) 6P
CN501	1-566-522-11	CONNECTOR, FPC (ZIF) 6P
CN502	1-566-526-11	CONNECTOR, FPC (ZIF) 10P
CN701	1-566-524-21	CONNECTOR, FPC (ZIF) 8P
* CN702	1-569-035-11	CONNECTOR, FPC (ZIF) 30P
CN703	1-779-332-11	CONNECTOR, FFC/FPC 16P
* CN704	1-564-013-11	PIN, CONNECTOR 3P
* CN705	1-580-057-11	PIN, CONNECTOR (SMD) 4P
CN707	1-774-770-11	CONNECTOR, FFC/FPC 30P
* CN709	1-580-056-21	PIN, CONNECTOR (SMD) 3P
CN904	1-506-474-11	PIN, CONNECTOR 9P
CN905	1-506-473-11	PIN, CONNECTOR 8P
CN1501	1-774-770-11	CONNECTOR, FFC/FPC 30P
CN1502	1-785-283-21	PIN, CONNECTOR (PC BOARD) 14P
CN1503	1-779-064-11	PIN, CONNECTOR (PC BOARD) 12P
CN1504	1-779-353-21	CONNECTOR, FFC/FPC 5P
* CN1625	1-691-591-11	PIN, CONNECTOR (1.5mm) (SMD) 8P
CN1626	1-774-770-11	CONNECTOR, FFC/FPC 30P
CN1627	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN1628	1-566-524-21	CONNECTOR, FPC (ZIF) 8P
CN1629	1-566-528-11	CONNECTOR, FPC (ZIF) 12P
* CN1983	1-564-001-11	PIN, CONNECTOR 2P
* CN1984	1-564-005-11	PIN, CONNECTOR 6P
< DIODE >		
D001	8-719-067-56	DIODE MA112-TX
D201	8-719-067-56	DIODE MA112-TX
D202	8-719-055-86	DIODE KV1470TL1-3 (DSR-45)
D203	8-719-067-56	DIODE MA112-TX
D205	8-719-055-86	DIODE KV1470TL1-3 (DSR-45P)
D206	8-719-067-56	DIODE MA112-TX
D501	8-719-067-56	DIODE MA112-TX
D502	8-719-067-56	DIODE MA112-TX
D601	8-719-073-28	DIODE MA729- (K8).S0
D602	8-719-073-28	DIODE MA729- (K8).S0
D701	8-719-073-28	DIODE MA729- (K8).S0
D702	8-719-067-56	DIODE MA112-TX
D703	8-719-067-56	DIODE MA112-TX
D704	8-719-067-56	DIODE MA112-TX
D705	8-719-073-28	DIODE MA729- (K8).S0
D706	8-719-067-56	DIODE MA112-TX
D902	8-719-066-98	DIODE RB051L-40TE25
D903	8-719-066-98	DIODE RB051L-40TE25
D904	8-719-066-98	DIODE RB051L-40TE25
D905	8-719-066-98	DIODE RB051L-40TE25
D906	8-719-073-28	DIODE MA729- (K8).S0
D907	8-719-066-98	DIODE RB051L-40TE25
D909	8-719-067-56	DIODE MA112-TX
D910	8-719-067-56	DIODE MA112-TX
D911	8-719-067-56	DIODE MA112-TX
D912	8-719-067-56	DIODE MA112-TX
D913	8-719-067-56	DIODE MA112-TX
D914	8-719-067-56	DIODE MA112-TX
D916	8-719-066-98	DIODE RB051L-40TE25
D917	8-719-066-98	DIODE RB051L-40TE25
D918	8-719-066-98	DIODE RB051L-40TE25
D919	8-719-067-56	DIODE MA112-TX
D920	8-719-067-56	DIODE MA112-TX

Ref. No.	Part No.	Description
D921	8-719-067-56	DIODE MA112-TX
D922	8-719-067-56	DIODE MA112-TX
D923	8-719-067-56	DIODE MA112-TX
D924	8-719-067-56	DIODE MA112-TX
D925	8-719-067-56	DIODE MA112-TX
D926	8-719-062-16	DIODE 01ZA8.2 (TPL3)
D927	8-719-062-16	DIODE 01ZA8.2 (TPL3)
D928	8-719-062-16	DIODE 01ZA8.2 (TPL3)
D929	8-719-062-16	DIODE 01ZA8.2 (TPL3)
D1625	8-719-067-56	DIODE MA112-TX
D1626	8-719-067-56	DIODE MA112-TX
D1627	8-719-067-56	DIODE MA112-TX
D1628	8-719-067-56	DIODE MA112-TX
D2001	8-719-067-56	DIODE MA112-TX
D2002	8-719-067-56	DIODE MA112-TX
D2003	8-719-067-56	DIODE MA112-TX
D2907	8-719-067-56	DIODE MA112-TX
D2908	8-719-067-56	DIODE MA112-TX
< DELAY LINE >		
DL201	1-415-551-11	DELAY LINE 140ns
DL202	1-234-528-21	DELAY LINE
DL2001	1-234-528-21	DELAY LINE
DL2002	1-415-551-11	DELAY LINE 140ns
DL2003	1-415-551-11	DELAY LINE 140ns
DL2004	1-415-551-11	DELAY LINE 140ns
< FUSE >		
△F901	1-576-318-21	FUSE, CHIP (800mA/63V)
△F902	1-576-318-21	FUSE, CHIP (800mA/63V)
△F903	1-576-318-21	FUSE, CHIP (800mA/63V)
△F904	1-576-318-21	FUSE, CHIP (800mA/63V)
△F905	1-576-318-21	FUSE, CHIP (800mA/63V)
△F906	1-576-318-21	FUSE, CHIP (800mA/63V)
△F910	1-576-447-21	FUSE, MICRO (630mA/24V)
△F911	1-533-922-21	FUSE, CHIP (1A/63V)
△F912	1-576-318-21	FUSE, CHIP (800mA/63V)
△F913	1-576-318-21	FUSE, CHIP (800mA/63V)
△F914	1-576-286-21	FUSE, MICRO (1.4A/24V)
△F1981	1-576-430-21	FUSE, CHIP (315mA/63V)
△F1982	1-576-447-21	FUSE, MICRO (630mA/24V)
△F1983	1-576-430-21	FUSE, CHIP (315mA/63V)
△F1984	1-576-318-21	FUSE, CHIP (800mA/63V)
△F1985	1-576-318-21	FUSE, CHIP (800mA/63V)
< FERRITE BEAD >		
FB001	1-500-283-11	FERRITE 0uH
FB002	1-500-283-11	FERRITE 0uH
FB003	1-500-283-11	FERRITE 0uH
FB004	1-500-283-11	FERRITE 0uH
FB005	1-500-283-11	FERRITE 0uH
FB006	1-414-445-11	FERRITE 0uH
FB007	1-414-445-11	FERRITE 0uH
FB008	1-414-445-11	FERRITE 0uH
FB009	1-414-445-11	FERRITE 0uH
FB010	1-414-445-11	FERRITE 0uH

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



## VD-032

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
FB011	1-414-445-11	FERRITE	0uH	FL2005	1-233-500-11	FILTER, LOW PASS
FB012	1-414-445-11	FERRITE	0uH	FL2006	1-235-161-00	FILTER, BAND PASS (DSR-45)
FB013	1-414-445-11	FERRITE	0uH	FL2006	1-235-181-00	FILTER, BAND PASS (DSR-45P)
FB014	1-414-445-11	FERRITE	0uH			< IC >
FB015	1-414-445-11	FERRITE	0uH			
FB016	1-414-228-11	FERRITE	0uH	IC001	8-759-523-78	IC TC74VHC00FT (EL) (DSR-45)
FB017	1-414-228-11	FERRITE	0uH	IC002	8-759-523-97	IC TC74VHC123AFT (EL)
FB018	1-414-228-11	FERRITE	0uH	IC003	8-759-491-47	IC TC74VHCT08AFT (EL)
FB501	1-414-445-11	FERRITE	0uH	IC004	8-759-357-72	IC NJU3712M (TE2)
FB502	1-414-445-11	FERRITE	0uH	IC005	8-759-987-27	IC LM1881MX
FB503	1-414-445-11	FERRITE	0uH	IC006	8-759-523-78	IC TC74VHC00FT (EL)
FB504	1-414-445-11	FERRITE	0uH	IC007	8-759-523-78	IC TC74VHC00FT (EL)
FB505	1-414-445-11	FERRITE	0uH	IC008	8-759-357-72	IC NJU3712M (TE2)
FB506	1-414-445-11	FERRITE	0uH	IC009	8-759-635-27	IC M62352GP-70ED
FB507	1-414-445-11	FERRITE	0uH	IC010	8-759-196-97	IC TC7SH32FU-TE85R
FB508	1-414-445-11	FERRITE	0uH	IC011	8-759-058-56	IC TC7S02FU (TE85R)
FB701	1-414-445-11	FERRITE	0uH	IC012	8-759-523-78	IC TC74VHC00FT (EL)
FB702	1-414-445-11	FERRITE	0uH	IC013	8-752-335-47	IC CXD1216M-T6
FB703	1-414-445-11	FERRITE	0uH	IC014	8-759-523-79	IC TC74VHC02FT (EL)
FB704	1-414-445-11	FERRITE	0uH	IC015	8-759-635-27	IC M62352GP-70ED
FB705	1-414-445-11	FERRITE	0uH	IC016	8-759-388-62	IC NJU7062M (TE2)
FB706	1-414-445-11	FERRITE	0uH	IC017	8-759-058-56	IC TC7S02FU (TE85R)
FB707	1-414-445-11	FERRITE	0uH	IC018	8-759-524-19	IC TC74VHC164FT (EL)
FB708	1-414-445-11	FERRITE	0uH	IC019	8-759-523-97	IC TC74VHC123AFT (EL)
FB709	1-414-445-11	FERRITE	0uH	IC020	8-759-523-02	IC TC74HC4053AFT (EL)
FB900	1-414-772-11	FERRITE	0uH	IC021	8-759-635-27	IC M62352GP-70ED
FB904	1-414-772-11	FERRITE	0uH	IC022	8-759-523-97	IC TC74VHC123AFT (EL)
FB906	1-414-864-11	FERRITE	0uH	IC023	8-759-524-48	IC TC74VHC393FT (EL)
FB908	1-414-864-11	FERRITE	0uH	IC024	8-759-524-48	IC TC74VHC393FT (EL)
FB910	1-414-772-11	FERRITE	0uH	IC025	8-759-491-47	IC TC74VHCT08AFT (EL)
FB912	1-414-864-11	FERRITE	0uH	IC026	8-759-144-72	IC uPC358G2-E2
FB914	1-414-864-11	FERRITE	0uH	IC027	8-759-524-19	IC TC74VHC164FT (EL)
FB916	1-414-864-11	FERRITE	0uH	IC028	8-759-524-19	IC TC74VHC164FT (EL)
FB918	1-414-864-11	FERRITE	0uH	IC029	8-759-144-72	IC uPC358G2-E2
FB920	1-414-864-11	FERRITE	0uH	IC030	8-759-530-31	IC TC74VHC4040FT (EL)
FB2001	1-414-445-11	FERRITE	0uH	IC031	8-759-491-50	IC TC74VHCT244AFT (EL)
FB2002	1-414-445-11	FERRITE	0uH	IC032	8-759-523-78	IC TC74VHC00FT (EL)
FB2003	1-414-445-11	FERRITE	0uH	IC033	8-759-524-18	IC TC74VHC163FT (EL)
FB2004	1-414-445-11	FERRITE	0uH	IC034	8-759-524-19	IC TC74VHC164FT (EL)
FB2005	1-414-445-11	FERRITE	0uH	IC035	8-759-524-19	IC TC74VHC164FT (EL)
FB2006	1-414-445-11	FERRITE	0uH	IC036	8-752-341-58	IC CXD1217Q-T4
FB2007	1-414-445-11	FERRITE	0uH	IC037	8-759-523-91	IC TC74VHC20FT (EL)
FB2008	1-414-445-11	FERRITE	0uH	IC038	8-759-524-18	IC TC74VHC163FT (EL)
FB2009	1-414-445-11	FERRITE	0uH	IC039	8-759-196-97	IC TC7SH32FU-TE85R
FB2010	1-414-445-11	FERRITE	0uH	IC040	8-752-341-58	IC CXD1217Q-T4
FB2011	1-414-445-11	FERRITE	0uH	IC041	8-759-491-46	IC TC74VHC04FT (EL)
FB2012	1-414-445-11	FERRITE	0uH	IC042	8-759-523-95	IC TC74VHC74FT (EL)
		< FILTER >		IC043	8-759-523-95	IC TC74VHC74FT (EL)
FL201	1-233-345-21	FILTER, LOW PASS (5.5MHz)		IC044	8-759-523-97	IC TC74VHC123AFT (EL)
FL202	1-233-345-21	FILTER, LOW PASS (5.5MHz)		IC045	8-759-524-19	IC TC74VHC164FT (EL)
FL203	1-233-345-21	FILTER, LOW PASS (5.5MHz)		IC046	8-759-058-56	IC TC7S02FU (TE85R)
FL204	1-233-500-11	FILTER, LOW PASS		IC047	8-759-271-86	IC TC7SH04FU-TE85R
FL205	1-233-501-11	FILTER, LOW PASS		IC048	8-759-524-19	IC TC74VHC164FT (EL)
FL206	1-233-501-11	FILTER, LOW PASS		IC049	8-759-523-97	IC TC74VHC123AFT (EL)
FL2001	1-233-501-11	FILTER, LOW PASS		IC050	8-759-144-72	IC uPC358G2-E2
FL2002	1-233-501-11	FILTER, LOW PASS		IC051	8-759-195-81	IC TC7S86FU (TE85R)
FL2003	1-235-584-11	FILTER, LOW PASS (DSR-45P)		IC052	8-759-524-19	IC TC74VHC164FT (EL)
FL2003	1-235-786-11	FILTER, LOW PASS (3MHz) (DSR-45)		IC053	8-759-523-96	IC TC74VHC86FT (EL)
FL2004	1-235-584-11	FILTER, LOW PASS		IC054	8-759-144-72	IC uPC358G2-E2
				IC055	8-759-058-62	IC TC7S08FU (TE85R)

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
IC201	8-759-257-87	IC MM1117XFBE	IC1626	8-759-523-03	IC TC74HC4066AFT (EL)
IC202	8-759-433-44	IC MM1031XML	IC1628	8-759-357-68	IC NJM2115M-TE2
IC203	8-759-337-26	IC MM1115XFBE	IC1630	8-759-745-64	IC NJM4560M
IC204	8-759-432-78	IC MM1111XFBE	IC1633	8-759-700-94	IC NJM5532M (TE2)
IC205	8-759-257-87	IC MM1117XFBE	IC1634	8-759-700-94	IC NJM5532M (TE2)
IC206	8-759-433-44	IC MM1031XML	IC1635	8-759-700-94	IC NJM5532M (TE2)
IC207	8-759-257-87	IC MM1117XFBE	IC1636	8-759-700-94	IC NJM5532M (TE2)
IC208	8-759-446-66	IC MM1113XFBE	IC2001	8-759-498-27	IC TK16074MTL
IC209	8-759-337-26	IC MM1115XFBE	IC2002	8-759-498-27	IC TK16074MTL
IC210	8-759-449-58	IC LM7131BCM5X	IC2003	8-752-053-21	IC CXA1211M-T4
IC211	8-759-446-66	IC MM1113XFBE	IC2004	8-752-054-80	IC CXA1521M-T4
IC213	8-759-449-58	IC LM7131BCM5X	IC2005	8-752-054-80	IC CXA1521M-T4
IC214	8-752-054-80	IC CXA1521M-T4	IC2006	8-752-053-21	IC CXA1211M-T4
IC215	8-752-390-37	IC CXD2064Q-T6	IC2007	8-752-053-21	IC CXA1211M-T4
IC216	8-759-432-78	IC MM1111XFBE	IC2008	8-752-052-73	IC CXA1451M-T4
IC217	8-759-432-78	IC MM1111XFBE	IC2009	8-759-058-56	IC TC7S02FU (TE85R)
IC218	8-759-498-27	IC TK16074MTL	IC2010	8-759-603-56	IC M51272FP-TE2
IC219	8-759-498-27	IC TK16074MTL	IC2011	8-759-449-58	IC LM7131BCM5X
IC220	8-759-603-54	IC M51271FP-70AD	IC2012	8-759-449-58	IC LM7131BCM5X
IC221	8-759-449-58	IC LM7131BCM5X	IC2013	8-759-449-58	IC LM7131BCM5X
IC222	8-752-053-21	IC CXA1211M-T4	IC2014	8-759-449-58	IC LM7131BCM5X
IC223	8-759-337-26	IC MM1115XFBE	IC2015	8-752-052-73	IC CXA1451M-T4
IC224	8-759-488-29	IC TC7W66FU (TE12R) (DSR-45P)	IC2016	8-759-449-58	IC LM7131BCM5X
IC225	8-759-528-99	IC TC74VHC221AFT (EL) (DSR-45P)	IC2017	8-759-449-58	IC LM7131BCM5X
IC226	8-759-449-58	IC LM7131BCM5X	IC2018	8-759-449-58	IC LM7131BCM5X
IC227	8-759-449-58	IC LM7131BCM5X	IC2019	8-752-052-73	IC CXA1451M-T4
IC228	8-759-432-78	IC MM1111XFBE	IC2020	8-752-052-73	IC CXA1451M-T4
IC229	8-759-058-54	IC TC7S00FU (TE85R) (DSR-45P)	IC2021	8-752-052-73	IC CXA1451M-T4
IC502	8-759-523-02	IC TC74HC4053AFT (EL)	IC2022	8-752-052-73	IC CXA1451M-T4
IC503	1-803-219-11	IC TC3W03FU (TE12R)	IC2023	8-752-052-73	IC CXA1451M-T4
IC506	8-759-491-47	IC TC74VHCT08AFT (EL)			< RESISTOR >
IC507	8-759-196-96	IC TC7SH08FU-TE85R	JS1981	1-216-864-11	METAL CHIP 0 5% 1/16W
IC508	8-759-491-31	IC TC74VHCT00AF (EL)	JS1984	1-216-864-11	METAL CHIP 0 5% 1/16W
IC511	6-801-587-01	IC HD6473837UX-GDX2056	JS1985	1-216-864-11	METAL CHIP 0 5% 1/16W
IC621	8-759-196-93	IC TC7SH00FU-TE85R	JS1986	1-216-864-11	METAL CHIP 0 5% 1/16W
IC701	8-759-491-50	IC TC74VHCT244AFT (EL)			< COIL >
IC702	8-759-592-49	IC TC7SZ125FU (TE85R)	L001	1-412-029-11	INDUCTOR CHIP 10uH
IC703	8-759-391-99	IC NJU7102AM-TE1	L002	1-412-029-11	INDUCTOR CHIP 10uH
IC704	8-759-443-08	IC TC7W241FU-TE12R	L003	1-412-029-11	INDUCTOR CHIP 10uH
IC705	8-759-580-27	IC S-81236SGUP-DQ7-T1	L004	1-412-029-11	INDUCTOR CHIP 10uH
IC706	8-759-424-79	IC S-8423YFS-T2	L005	1-412-029-11	INDUCTOR CHIP 10uH
IC708	8-759-445-93	IC AK6440AM-E2	L006	1-412-029-11	INDUCTOR CHIP 10uH
IC709	8-759-486-99	IC S-81250SGUP-DQD-T1	L201	1-410-392-11	INDUCTOR CHIP 82uH (DSR-45P)
IC710	8-759-486-99	IC S-81250SGUP-DQD-T1	L201	1-410-393-11	INDUCTOR CHIP 100uH (DSR-45)
IC711	8-759-642-45	IC TL1596CPWR	L202	1-410-384-31	INDUCTOR CHIP 18uH (DSR-45P)
IC712	8-759-573-16	IC S-81232SG-Q4-T1	L202	1-410-385-11	INDUCTOR CHIP 22uH (DSR-45)
IC713	8-752-930-78	IC CXP921064A-063R-T6	L203	1-410-380-31	INDUCTOR CHIP 8.2uH (DSR-45P)
IC714	8-759-248-78	IC MB88102PFV-G-BND-ER	L203	1-410-381-11	INDUCTOR CHIP 10uH (DSR-45)
IC715	8-759-096-87	IC TC7WU04FU (TE12R)	L204	1-410-384-31	INDUCTOR CHIP 18uH (DSR-45P)
IC716	8-759-640-84	IC BA6238AN	L204	1-410-385-11	INDUCTOR CHIP 22uH (DSR-45)
IC717	8-759-157-17	IC PQ05SZ1U	L205	1-412-029-11	INDUCTOR CHIP 10uH
IC900	8-759-581-08	IC FA3675F	L206	1-412-029-11	INDUCTOR CHIP 10uH
IC902	8-759-581-08	IC FA3675F	L207	1-412-029-11	INDUCTOR CHIP 10uH
IC903	8-759-530-57	IC TLV431ACDBV2	L208	1-412-029-11	INDUCTOR CHIP 10uH
IC1501	8-759-349-01	IC MC68HC68VBIFB	L209	1-412-029-11	INDUCTOR CHIP 10uH
IC1502	8-759-491-47	IC TC74VHCT08AFT (EL)	L210	1-412-029-11	INDUCTOR CHIP 10uH
IC1503	8-759-491-47	IC TC74VHCT08AFT (EL)	L215	1-412-808-21	INDUCTOR 470uH
IC1504	8-759-523-81	IC TC74VHC08FT (EL)	L217	1-412-029-11	INDUCTOR CHIP 10uH
IC1505	8-759-497-44	IC TC7WH125FU (TE12R)	L218	1-412-029-11	INDUCTOR CHIP 10uH
IC1625	8-759-523-03	IC TC74HC4066AFT (EL)			

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Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
L219	1-412-029-11	INDUCTOR CHIP 10uH	L1983	1-412-029-11	INDUCTOR CHIP 10uH
L220	1-412-029-11	INDUCTOR CHIP 10uH	L2001	1-412-029-11	INDUCTOR CHIP 10uH
L221	1-412-029-11	INDUCTOR CHIP 10uH	L2002	1-412-029-11	INDUCTOR CHIP 10uH
L222	1-412-029-11	INDUCTOR CHIP 10uH	L2003	1-412-029-11	INDUCTOR CHIP 10uH
L501	1-412-029-11	INDUCTOR CHIP 10uH	L2004	1-412-029-11	INDUCTOR CHIP 10uH
L502	1-412-029-11	INDUCTOR CHIP 10uH	L2005	1-412-029-11	INDUCTOR CHIP 10uH
L503	1-412-029-11	INDUCTOR CHIP 10uH	L2006	1-412-029-11	INDUCTOR CHIP 10uH
L504	1-412-029-11	INDUCTOR CHIP 10uH	L2007	1-412-029-11	INDUCTOR CHIP 10uH
L621	1-412-029-11	INDUCTOR CHIP 10uH	L2008	1-412-029-11	INDUCTOR CHIP 10uH
L622	1-412-029-11	INDUCTOR CHIP 10uH	L2009	1-412-029-11	INDUCTOR CHIP 10uH
L701	1-412-029-11	INDUCTOR CHIP 10uH	L2010	1-412-029-11	INDUCTOR CHIP 10uH
L702	1-412-029-11	INDUCTOR CHIP 10uH	L2011	1-412-029-11	INDUCTOR CHIP 10uH
L705	1-412-029-11	INDUCTOR CHIP 10uH	< TRANSISTOR >		
L706	1-412-029-11	INDUCTOR CHIP 10uH	Q001	8-729-427-83	TRANSISTOR XP6501- (TX).SO
L708	1-412-029-11	INDUCTOR CHIP 10uH	Q002	8-729-905-35	TRANSISTOR 2SC4081T106R
L709	1-412-029-11	INDUCTOR CHIP 10uH	Q003	8-729-053-44	TRANSISTOR 2SK880GR-TE85L
L710	1-412-029-11	INDUCTOR CHIP 10uH	Q004	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L711	1-412-029-11	INDUCTOR CHIP 10uH	Q005	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L712	1-412-032-11	INDUCTOR CHIP 100uH	Q006	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L713	1-412-029-11	INDUCTOR CHIP 10uH	Q201	8-729-905-35	TRANSISTOR 2SC4081T106R
L714	1-412-029-11	INDUCTOR CHIP 10uH	Q202	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L715	1-412-029-11	INDUCTOR CHIP 10uH	Q203	8-729-905-35	TRANSISTOR 2SC4081T106R
L901	1-412-960-21	INDUCTOR 56uH	Q204	8-729-905-35	TRANSISTOR 2SC4081T106R
L902	1-412-029-11	INDUCTOR CHIP 10uH	Q205	8-729-905-35	TRANSISTOR 2SC4081T106R
L903	1-412-029-11	INDUCTOR CHIP 10uH	Q206	8-729-905-35	TRANSISTOR 2SC4081T106R
L904	1-416-758-21	INDUCTOR 22uH	Q207	8-729-905-35	TRANSISTOR 2SC4081T106R
L905	1-412-029-11	INDUCTOR CHIP 10uH	Q208	8-729-905-35	TRANSISTOR 2SC4081T106R
L906	1-416-758-21	INDUCTOR 22uH	Q209	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L907	1-412-029-11	INDUCTOR CHIP 10uH	Q210	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L908	1-416-606-11	INDUCTOR 47uH	Q211	8-729-905-35	TRANSISTOR 2SC4081T106R
L909	1-412-029-11	INDUCTOR CHIP 10uH	Q212	8-729-905-35	TRANSISTOR 2SC4081T106R
L910	1-409-535-41	INDUCTOR 100uH	Q213	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L911	1-416-758-21	INDUCTOR 22uH	Q214	8-729-905-35	TRANSISTOR 2SC4081T106R
L912	1-409-535-41	INDUCTOR 100uH	Q215	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L913	1-409-529-41	INDUCTOR 10uH	Q216	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L914	1-409-529-41	INDUCTOR 10uH	Q217	8-729-905-35	TRANSISTOR 2SC4081T106R
L915	1-409-529-41	INDUCTOR 10uH	Q218	8-729-905-35	TRANSISTOR 2SC4081T106R
L916	1-409-529-41	INDUCTOR 10uH	Q219	8-729-905-35	TRANSISTOR 2SC4081T106R
L918	1-409-529-41	INDUCTOR 10uH	Q220	8-729-905-35	TRANSISTOR 2SC4081T106R
L919	1-409-529-41	INDUCTOR 10uH	Q221	8-729-905-35	TRANSISTOR 2SC4081T106R
L920	1-409-529-41	INDUCTOR 10uH	Q222	8-729-905-35	TRANSISTOR 2SC4081T106R
L921	1-409-529-41	INDUCTOR 10uH	Q223	8-729-905-35	TRANSISTOR 2SC4081T106R
L922	1-409-529-41	INDUCTOR 10uH	Q224	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L926	1-409-529-41	INDUCTOR 10uH	Q225	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L927	1-416-606-11	INDUCTOR 47uH	Q226	8-729-905-35	TRANSISTOR 2SC4081T106R
L928	1-409-529-41	INDUCTOR 10uH	Q227	8-729-905-35	TRANSISTOR 2SC4081T106R
L929	1-409-529-41	INDUCTOR 10uH	Q228	8-729-905-35	TRANSISTOR 2SC4081T106R
L930	1-416-606-11	INDUCTOR 47uH	Q231	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L931	1-409-556-11	INDUCTOR 47uH	Q232	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L932	1-409-535-41	INDUCTOR 100uH	Q233	8-729-905-35	TRANSISTOR 2SC4081T106R
L934	1-409-529-41	INDUCTOR 10uH	Q234	8-729-026-52	TRANSISTOR 2SA1576A-T106-R
L935	1-409-529-41	INDUCTOR 10uH	Q236	8-729-905-35	TRANSISTOR 2SC4081T106R
L1501	1-412-029-11	INDUCTOR CHIP 10uH	Q237	8-729-905-35	TRANSISTOR 2SC4081T106R
L1502	1-412-029-11	INDUCTOR CHIP 10uH	Q238	8-729-905-35	TRANSISTOR 2SC4081T106R
L1503	1-410-388-31	INDUCTOR 39uH (DSR-45P)	Q239	8-729-905-35	TRANSISTOR 2SC4081T106R
L1503	1-410-389-31	INDUCTOR CHIP 47uH (DSR-45)	Q240	8-729-905-35	TRANSISTOR 2SC4081T106R
L1504	1-412-029-11	INDUCTOR CHIP 10uH	Q242	8-729-905-35	TRANSISTOR 2SC4081T106R
L1505	1-412-029-11	INDUCTOR CHIP 10uH	Q501	8-729-037-72	TRANSISTOR UN9211J- (K8).SO
L1981	1-409-529-41	INDUCTOR 10uH	Q503	8-729-037-72	TRANSISTOR UN9211J- (K8).SO
L1982	1-409-529-41	INDUCTOR 10uH			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
Q504	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	Q1626	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q505	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	Q1627	8-729-037-61 TRANSISTOR	UN9113J- (K8).SO
Q506	8-729-041-23	TRANSISTOR	NDS356AP	Q1628	8-729-037-61 TRANSISTOR	UN9113J- (K8).SO
Q507	8-729-041-23	TRANSISTOR	NDS356AP	Q1629	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q508	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	Q1630	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q601	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	Q1631	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q602	8-729-041-23	TRANSISTOR	NDS356AP	Q1632	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q603	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	Q1633	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q604	8-729-046-75	TRANSISTOR	SI2301DS-T1	Q1634	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q605	8-729-905-35	TRANSISTOR	2SC4081T106R	Q1635	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q606	8-729-905-35	TRANSISTOR	2SC4081T106R	Q1636	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q607	8-729-905-35	TRANSISTOR	2SC4081T106R	Q1981	8-729-046-75 TRANSISTOR	SI2301DS-T1
Q608	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	Q1982	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q609	8-729-041-23	TRANSISTOR	NDS356AP	Q1999	8-729-905-35 TRANSISTOR	2SC4081T106R
Q621	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2001	8-729-905-35 TRANSISTOR	2SC4081T106R
Q622	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2002	8-729-905-35 TRANSISTOR	2SC4081T106R
Q623	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2003	8-729-905-35 TRANSISTOR	2SC4081T106R
Q701	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2004	8-729-402-84 TRANSISTOR	XN4601-TW
Q702	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	Q2005	8-729-402-84 TRANSISTOR	XN4601-TW
Q704	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	Q2006	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q705	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	Q2007	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q706	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2008	8-729-402-84 TRANSISTOR	XN4601-TW
Q707	8-729-042-58	TRANSISTOR	UN9111J- (K8).SO	Q2009	8-729-402-84 TRANSISTOR	XN4601-TW
Q708	8-729-041-23	TRANSISTOR	NDS356AP	Q2010	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q709	8-729-421-22	TRANSISTOR	UN2211-TX	Q2011	8-729-905-35 TRANSISTOR	2SC4081T106R
Q710	8-729-421-22	TRANSISTOR	UN2211-TX	Q2012	8-729-905-35 TRANSISTOR	2SC4081T106R
Q711	8-729-421-22	TRANSISTOR	UN2211-TX	Q2013	8-729-402-84 TRANSISTOR	XN4601-TW
Q712	8-729-421-22	TRANSISTOR	UN2211-TX	Q2014	8-729-402-84 TRANSISTOR	XN4601-TW
Q901	8-729-045-32	TRANSISTOR	HAT1036R-EL	Q2015	8-729-905-35 TRANSISTOR	2SC4081T106R
Q902	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2016	8-729-402-84 TRANSISTOR	XN4601-TW (DSR-45P)
Q903	8-729-905-35	TRANSISTOR	2SC4081T106R	Q2017	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q904	8-729-046-75	TRANSISTOR	SI2301DS-T1	Q2018	8-729-905-35 TRANSISTOR	2SC4081T106R
Q914	8-729-048-12	TRANSISTOR	CPH6302-TL	Q2019	8-729-905-35 TRANSISTOR	2SC4081T106R
Q915	8-729-048-12	TRANSISTOR	CPH6302-TL	Q2020	8-729-402-84 TRANSISTOR	XN4601-TW
Q916	8-729-048-12	TRANSISTOR	CPH6302-TL	Q2021	8-729-402-84 TRANSISTOR	XN4601-TW
Q917	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2022	8-729-905-35 TRANSISTOR	2SC4081T106R
Q919	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	Q2023	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q921	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2024	8-729-202-38 TRANSISTOR	2SC3326N-TE85L-AB
Q923	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2025	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q925	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2026	8-729-402-84 TRANSISTOR	XN4601-TW
Q926	8-729-056-72	TRANSISTOR	MCH5805-TL-E	Q2027	8-729-402-84 TRANSISTOR	XN4601-TW
Q927	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2028	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q928	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2029	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q929	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2030	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q930	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2031	8-729-402-84 TRANSISTOR	XN4601-TW
Q933	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2032	8-729-402-84 TRANSISTOR	XN4601-TW
Q934	8-729-048-11	TRANSISTOR	CPH3304-TL	Q2033	8-729-402-84 TRANSISTOR	XN4601-TW
Q937	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2034	8-729-905-35 TRANSISTOR	2SC4081T106R
Q938	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2035	8-729-026-52 TRANSISTOR	2SA1576A-T106-R
Q939	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2036	8-729-905-35 TRANSISTOR	2SC4081T106R
Q940	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2037	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q941	8-729-048-50	TRANSISTOR	2SK3018-T106	Q2038	8-729-037-72 TRANSISTOR	UN9211J- (K8).SO
Q1501	8-729-905-35	TRANSISTOR	2SC4081T106R			
Q1502	8-729-905-35	TRANSISTOR	2SC4081T106R			< RESISTOR >
Q1503	8-729-905-35	TRANSISTOR	2SC4081T106R	R001	1-216-864-11 METAL CHIP	0 5% 1/16W
Q1504	8-729-905-35	TRANSISTOR	2SC4081T106R	R002	1-216-864-11 METAL CHIP	0 5% 1/16W
Q1505	8-729-905-35	TRANSISTOR	2SC4081T106R	R003	1-216-864-11 METAL CHIP	0 5% 1/16W
Q1506	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R004	1-216-864-11 METAL CHIP	0 5% 1/16W
Q1507	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	R005	1-216-821-11 METAL CHIP	1K 5% 1/16W
Q1625	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	R006	1-216-827-11 METAL CHIP	3.3K 5% 1/16W

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Ref. No.	Part No.	Description			
R007	1-216-821-11	METAL CHIP	1K	5%	1/16W
R008	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R009	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R010	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R011	1-216-851-11	METAL CHIP	330K	5%	1/16W
R012	1-216-849-11	METAL CHIP	220K	5%	1/16W
R013	1-216-844-11	METAL CHIP	82K	5%	1/16W
R014	1-216-845-11	METAL CHIP	100K	5%	1/16W
R015	1-216-842-11	METAL CHIP	56K	5%	1/16W
R017	1-216-845-11	METAL CHIP	100K	5%	1/16W
R018	1-216-855-11	METAL CHIP	680K	5%	1/16W
R019	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R021	1-216-833-11	METAL CHIP	10K	5%	1/16W
R022	1-216-839-11	METAL CHIP	33K	5%	1/16W
R023	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R024	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R025	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R026	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R028	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R029	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R031	1-216-864-11	METAL CHIP	0	5%	1/16W
R034	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R035	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R036	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R037	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R038	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R039	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R040	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R041	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R042	1-216-797-11	METAL CHIP	10	5%	1/16W
R043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R044	1-216-833-11	METAL CHIP	10K	5%	1/16W
R045	1-216-833-11	METAL CHIP	10K	5%	1/16W
R046	1-216-821-11	METAL CHIP	1K	5%	1/16W
R047	1-216-821-11	METAL CHIP	1K	5%	1/16W
R048	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R049	1-216-833-11	METAL CHIP	10K	5%	1/16W
R050	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R051	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R052	1-216-833-11	METAL CHIP	10K	5%	1/16W
R053	1-216-839-11	METAL CHIP	33K	5%	1/16W
R054	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R055	1-218-854-11	METAL CHIP	2K	0.5%	1/10W
R056	1-216-833-11	METAL CHIP	10K	5%	1/16W
R057	1-216-843-11	METAL CHIP	68K	5%	1/16W
R058	1-216-821-11	METAL CHIP	1K	5%	1/16W
R059	1-216-844-11	METAL CHIP	82K	5%	1/16W
R060	1-216-809-11	METAL CHIP	100	5%	1/16W
R062	1-216-864-11	METAL CHIP	0	5%	1/16W
R066	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R067	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			
R069	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R070	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R071	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R072	1-216-864-11	METAL CHIP	0	5%	1/16W
R073	1-216-809-11	METAL CHIP	100	5%	1/16W
R074	1-216-809-11	METAL CHIP	100	5%	1/16W
R075	1-216-809-11	METAL CHIP	100	5%	1/16W
R076	1-216-809-11	METAL CHIP	100	5%	1/16W
R079	1-216-864-11	METAL CHIP	0	5%	1/16W
R081	1-216-809-11	METAL CHIP	100	5%	1/16W
R083	1-216-809-11	METAL CHIP	100	5%	1/16W
R084	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R085	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R086	1-216-809-11	METAL CHIP	100	5%	1/16W
R087	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R088	1-216-809-11	METAL CHIP	100	5%	1/16W (DSR-45)
R089	1-216-809-11	METAL CHIP	100	5%	1/16W
R090	1-216-809-11	METAL CHIP	100	5%	1/16W
R091	1-216-809-11	METAL CHIP	100	5%	1/16W
R092	1-216-809-11	METAL CHIP	100	5%	1/16W
R093	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R094	1-216-809-11	METAL CHIP	100	5%	1/16W
R095	1-216-864-11	METAL CHIP	0	5%	1/16W
R096	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R097	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R098	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R099	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R100	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R101	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R102	1-218-854-11	METAL CHIP	2K	0.5%	1/10W
R103	1-216-833-11	METAL CHIP	10K	5%	1/16W
R104	1-216-839-11	METAL CHIP	33K	5%	1/16W
R105	1-216-837-11	METAL CHIP	22K	5%	1/16W
R106	1-216-809-11	METAL CHIP	100	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W
R108	1-216-809-11	METAL CHIP	100	5%	1/16W
R109	1-216-833-11	METAL CHIP	10K	5%	1/16W
R110	1-218-881-11	METAL CHIP	27K	0.5%	1/10W
R111	1-218-881-11	METAL CHIP	27K	0.5%	1/10W
R112	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R113	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R114	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R115	1-218-854-11	METAL CHIP	2K	0.5%	1/10W
R116	1-216-833-11	METAL CHIP	10K	5%	1/16W
R117	1-216-839-11	METAL CHIP	33K	5%	1/16W
R118	1-216-809-11	METAL CHIP	100	5%	1/16W
R119	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R120	1-216-837-11	METAL CHIP	22K	5%	1/16W	R247	1-216-833-11	METAL CHIP	10K	5%	1/16W
R127	1-216-809-11	METAL CHIP	100	5%	1/16W	R248	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R128	1-216-833-11	METAL CHIP	10K	5%	1/16W	R249	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R129	1-216-864-11	METAL CHIP	0	5%	1/16W	R250	1-216-809-11	METAL CHIP	100	5%	1/16W
R131	1-218-881-11	METAL CHIP	27K	0.5%	1/10W	R251	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R132	1-218-881-11	METAL CHIP	27K	0.5%	1/10W	R252	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R133	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R253	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R134	1-218-854-11	METAL CHIP	2K	0.5%	1/10W	R254	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R135	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R255	1-216-864-11	METAL CHIP	0	5%	1/16W
R136	1-218-823-11	METAL CHIP	100	0.5%	1/10W	R256	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R137	1-218-867-11	RES-CHIP	6.8K	5%	1/10W	R257	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R138	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R258	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R140	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R259	1-216-837-11	METAL CHIP	22K	5%	1/16W
R141	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R260	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R142	1-218-823-11	METAL CHIP	100	0.5%	1/10W	R262	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R143	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R263	1-216-809-11	METAL CHIP	100	5%	1/16W
R144	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R264	1-216-809-11	METAL CHIP	100	5%	1/16W
R204	1-218-827-11	METAL CHIP	150	0.5%	1/10W	R265	1-216-818-11	METAL CHIP	560	5%	1/16W
R205	1-218-827-11	METAL CHIP	150	0.5%	1/10W	R266	1-216-809-11	METAL CHIP	100	5%	1/16W
R206	1-216-809-11	METAL CHIP	100	5%	1/16W	R267	1-216-809-11	METAL CHIP	100	5%	1/16W
R207	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R268	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R208	1-216-864-11	METAL CHIP	0	5%	1/16W	R269	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R209	1-216-809-11	METAL CHIP	100	5%	1/16W	R270	1-216-842-11	METAL CHIP	56K	5%	1/16W
R210	1-216-864-11	METAL CHIP	0	5%	1/16W	R271	1-216-817-11	METAL CHIP	470	5%	1/16W
R211	1-216-821-11	METAL CHIP	1K	5%	1/16W	R272	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R212	1-216-864-11	METAL CHIP	0	5%	1/16W	R273	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R213	1-216-845-11	METAL CHIP	100K	5%	1/16W	R274	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R214	1-216-864-11	METAL CHIP	0	5%	1/16W	R275	1-216-821-11	METAL CHIP	1K	5%	1/16W
R215	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R276	1-216-821-11	METAL CHIP	1K	5%	1/16W
R216	1-216-821-11	METAL CHIP	1K	5%	1/16W	R277	1-216-833-11	METAL CHIP	10K	5%	1/16W
R217	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R278	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R218	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R279	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R219	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R280	1-216-817-11	METAL CHIP	470	5%	1/16W
R220	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R281	1-216-817-11	METAL CHIP	470	5%	1/16W
R221	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R282	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R222	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R283	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R223	1-216-837-11	METAL CHIP	22K	5%	1/16W	R284	1-216-835-11	METAL CHIP	15K	5%	1/16W
R224	1-216-837-11	METAL CHIP	22K	5%	1/16W	R285	1-216-834-11	METAL CHIP	12K	5%	1/16W
R225	1-211-985-11	METAL CHIP	47	0.5%	1/10W	R286	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R226	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R287	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R227	1-216-821-11	METAL CHIP	1K	5%	1/16W	R288	1-216-821-11	METAL CHIP	1K	5%	1/16W
R228	1-216-821-11	METAL CHIP	1K	5%	1/16W	R289	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R229	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R290	1-216-864-11	METAL CHIP	0	5%	1/16W
R230	1-218-847-11	METAL CHIP	1K	0.5%	1/10W						(DSR-45)
R231	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R291	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R232	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	R292	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R233	1-216-813-11	METAL CHIP	220	5%	1/16W	R293	1-216-864-11	METAL CHIP	0	5%	1/16W
R234	1-216-837-11	METAL CHIP	22K	5%	1/16W						(DSR-45P)
R235	1-216-833-11	METAL CHIP	10K	5%	1/16W	R294	1-216-833-11	METAL CHIP	10K	5%	1/16W
R236	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R295	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R237	1-216-821-11	METAL CHIP	1K	5%	1/16W	R296	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R238	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R297	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R239	1-216-819-11	METAL CHIP	680	5%	1/16W	R298	1-218-841-11	METAL CHIP	560	0.5%	1/10W
R240	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R299	1-218-841-11	METAL CHIP	560	0.5%	1/10W
R241	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R301	1-218-841-11	METAL CHIP	560	0.5%	1/10W
R242	1-216-821-11	METAL CHIP	1K	5%	1/16W	R302	1-218-841-11	METAL CHIP	560	0.5%	1/10W
R243	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	R303	1-216-821-11	METAL CHIP	1K	5%	1/16W
R244	1-216-821-11	METAL CHIP	1K	5%	1/16W	R304	1-218-823-11	METAL CHIP	100	0.5%	1/10W
R245	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W	R305	1-216-840-11	METAL CHIP	39K	5%	1/16W
R246	1-216-837-11	METAL CHIP	22K	5%	1/16W	R306	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

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Ref. No.	Part No.	Description			
R307	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R308	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R309	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R310	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R311	1-216-836-11	METAL CHIP	18K	5%	1/16W
R312	1-216-838-11	METAL CHIP	27K	5%	1/16W
R313	1-216-836-11	METAL CHIP	18K	5%	1/16W
R314	1-216-838-11	METAL CHIP	27K	5%	1/16W
R315	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R316	1-216-839-11	METAL CHIP	33K	5%	1/16W
R317	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R318	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R320	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45)
R322	1-216-837-11	METAL CHIP	22K	5%	1/16W
R323	1-218-878-11	METAL CHIP	20K	0.5%	1/10W (DSR-45)
R323	1-218-879-11	METAL CHIP	22K	0.5%	1/10W (DSR-45P)
R324	1-216-844-11	METAL CHIP	82K	5%	1/16W
R325	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R326	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W
R327	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45)
R329	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W
R330	1-216-833-11	METAL CHIP	10K	5%	1/16W (DSR-45)
R331	1-216-821-11	METAL CHIP	1K	5%	1/16W
R332	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45)
R333	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45)
R335	1-216-864-11	METAL CHIP	0	5%	1/16W
R336	1-216-853-11	METAL CHIP	470K	5%	1/16W
R337	1-216-836-11	METAL CHIP	18K	5%	1/16W
R338	1-216-839-11	METAL CHIP	33K	5%	1/16W
R339	1-216-836-11	METAL CHIP	18K	5%	1/16W
R340	1-216-839-11	METAL CHIP	33K	5%	1/16W
R341	1-216-833-11	METAL CHIP	10K	5%	1/16W
R342	1-216-833-11	METAL CHIP	10K	5%	1/16W
R343	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R344	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R345	1-216-805-11	METAL CHIP	47	5%	1/16W (DSR-45)
R346	1-216-815-11	METAL CHIP	330	5%	1/16W (DSR-45)
R347	1-218-845-11	METAL CHIP	820	0.5%	1/10W
R348	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R349	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R350	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R351	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R352	1-218-833-11	METAL CHIP	270	0.5%	1/10W (DSR-45P)
R352	1-218-835-11	METAL CHIP	330	0.5%	1/10W (DSR-45)
R353	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R354	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R355	1-218-839-11	METAL CHIP	470	0.5%	1/10W (DSR-45)

Ref. No.	Part No.	Description			
R355	1-218-841-11	METAL CHIP	560	0.5%	1/10W (DSR-45P)
R356	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R357	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R358	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R359	1-216-833-11	METAL CHIP	10K	5%	1/16W
R360	1-216-837-11	METAL CHIP	22K	5%	1/16W
R362	1-216-839-11	METAL CHIP	33K	5%	1/16W
R364	1-216-833-11	METAL CHIP	10K	5%	1/16W
R365	1-216-833-11	METAL CHIP	10K	5%	1/16W
R366	1-216-837-11	METAL CHIP	22K	5%	1/16W
R367	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45)
R368	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-45P)
R369	1-216-821-11	METAL CHIP	1K	5%	1/16W
R370	1-216-833-11	METAL CHIP	10K	5%	1/16W
R371	1-216-806-11	RES-CHIP	56	5%	1/10W (DSR-45P)
R372	1-216-809-11	METAL CHIP	100	5%	1/16W (DSR-45P)
R373	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R374	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R375	1-218-887-11	METAL CHIP	47K	0.5%	1/10W (DSR-45P)
R376	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45P)
R377	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45P)
R378	1-216-837-11	METAL CHIP	22K	5%	1/16W
R379	1-216-837-11	METAL CHIP	22K	5%	1/16W
R380	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45P)
R381	1-216-864-11	METAL CHIP	0	5%	1/16W
R384	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R385	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R386	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R387	1-218-823-11	METAL CHIP	100	0.5%	1/10W
R388	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R389	1-216-845-11	METAL CHIP	100K	5%	1/16W (DSR-45P)
R390	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R391	1-218-823-11	METAL CHIP	100	0.5%	1/10W
R392	1-218-843-11	METAL CHIP	680	0.5%	1/10W
R394	1-216-864-11	METAL CHIP	0	5%	1/16W
R396	1-216-842-11	METAL CHIP	56K	5%	1/16W (DSR-45P)
R397	1-216-813-11	METAL CHIP	220	5%	1/16W
R398	1-216-813-11	METAL CHIP	220	5%	1/16W
R502	1-216-845-11	METAL CHIP	100K	5%	1/16W
R503	1-216-857-11	METAL CHIP	1M	5%	1/16W
R505	1-216-857-11	METAL CHIP	1M	5%	1/16W
R506	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R508	1-216-805-11	METAL CHIP	47	5%	1/16W
R509	1-216-864-11	METAL CHIP	0	5%	1/16W
R511	1-216-864-11	METAL CHIP	0	5%	1/16W
R518	1-216-864-11	METAL CHIP	0	5%	1/16W
R523	1-216-864-11	METAL CHIP	0	5%	1/16W
R524	1-216-864-11	METAL CHIP	0	5%	1/16W
R528	1-216-296-11	SHORT	0		
R529	1-216-857-11	METAL CHIP	1M	5%	1/16W
R530	1-216-857-11	METAL CHIP	1M	5%	1/16W



Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R531	1-216-833-11	METAL CHIP	10K	5%	1/16W	R728	1-216-833-11	METAL CHIP	10K	5%	1/16W
R532	1-216-845-11	METAL CHIP	100K	5%	1/16W	R729	1-216-821-11	METAL CHIP	1K	5%	1/16W
R533	1-216-845-11	METAL CHIP	100K	5%	1/16W	R730	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R534	1-216-833-11	METAL CHIP	10K	5%	1/16W	R731	1-216-802-11	RES-CHIP	27	5%	1/10W
R535	1-216-845-11	METAL CHIP	100K	5%	1/16W	R732	1-216-821-11	METAL CHIP	1K	5%	1/16W
R536	1-216-845-11	METAL CHIP	100K	5%	1/16W	R733	1-216-802-11	RES-CHIP	27	5%	1/10W
R537	1-216-845-11	METAL CHIP	100K	5%	1/16W	R734	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R538	1-216-845-11	METAL CHIP	100K	5%	1/16W	R735	1-216-864-11	METAL CHIP	0	5%	1/16W
R539	1-216-805-11	METAL CHIP	47	5%	1/16W	R738	1-216-845-11	METAL CHIP	100K	5%	1/16W
R540	1-216-857-11	METAL CHIP	1M	5%	1/16W	R739	1-216-833-11	METAL CHIP	10K	5%	1/16W
R541	1-216-805-11	METAL CHIP	47	5%	1/16W	R740	1-216-805-11	METAL CHIP	47	5%	1/16W
R543	1-216-805-11	METAL CHIP	47	5%	1/16W	R741	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R544	1-216-805-11	METAL CHIP	47	5%	1/16W	R742	1-216-845-11	METAL CHIP	100K	5%	1/16W
R545	1-216-805-11	METAL CHIP	47	5%	1/16W	R743	1-216-845-11	METAL CHIP	100K	5%	1/16W
R546	1-216-805-11	METAL CHIP	47	5%	1/16W	R744	1-216-805-11	METAL CHIP	47	5%	1/16W
R547	1-216-845-11	METAL CHIP	100K	5%	1/16W	R745	1-216-805-11	METAL CHIP	47	5%	1/16W
R548	1-216-845-11	METAL CHIP	100K	5%	1/16W	R746	1-216-805-11	METAL CHIP	47	5%	1/16W
R549	1-216-230-00	RES-CHIP	22K	5%	1/8W	R747	1-216-805-11	METAL CHIP	47	5%	1/16W
R601	1-216-857-11	METAL CHIP	1M	5%	1/16W	R748	1-216-805-11	METAL CHIP	47	5%	1/16W
R602	1-216-845-11	METAL CHIP	100K	5%	1/16W	R749	1-216-805-11	METAL CHIP	47	5%	1/16W
R603	1-216-841-11	METAL CHIP	47K	5%	1/16W	R750	1-216-805-11	METAL CHIP	47	5%	1/16W
R604	1-216-845-11	METAL CHIP	100K	5%	1/16W	R751	1-216-805-11	METAL CHIP	47	5%	1/16W
R605	1-216-833-11	METAL CHIP	10K	5%	1/16W	R752	1-216-805-11	METAL CHIP	47	5%	1/16W
R606	1-218-893-11	METAL CHIP	82K	0.5%	1/10W	R753	1-216-805-11	METAL CHIP	47	5%	1/16W
R607	1-218-895-11	METAL CHIP	100K	0.5%	1/10W	R754	1-216-805-11	METAL CHIP	47	5%	1/16W
R608	1-216-833-11	METAL CHIP	10K	5%	1/16W	R755	1-216-864-11	METAL CHIP	0	5%	1/16W
R609	1-216-833-11	METAL CHIP	10K	5%	1/16W	R756	1-216-845-11	METAL CHIP	100K	5%	1/16W
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W	R757	1-216-841-11	METAL CHIP	47K	5%	1/16W
R614	1-216-857-11	METAL CHIP	1M	5%	1/16W	R758	1-216-845-11	METAL CHIP	100K	5%	1/16W
R615	1-216-025-11	RES-CHIP	100	5%	1/10W	R759	1-216-845-11	METAL CHIP	100K	5%	1/16W
R621	1-216-821-11	METAL CHIP	1K	5%	1/16W	R760	1-216-845-11	METAL CHIP	100K	5%	1/16W
R622	1-216-833-11	METAL CHIP	10K	5%	1/16W	R761	1-216-845-11	METAL CHIP	100K	5%	1/16W
R623	1-216-833-11	METAL CHIP	10K	5%	1/16W	R762	1-216-845-11	METAL CHIP	100K	5%	1/16W
R624	1-216-821-11	METAL CHIP	1K	5%	1/16W	R763	1-216-845-11	METAL CHIP	100K	5%	1/16W
R625	1-218-886-11	METAL CHIP	43K	0.5%	1/10W	R764	1-216-805-11	METAL CHIP	47	5%	1/16W
R626	1-218-881-11	METAL CHIP	27K	0.5%	1/10W	R765	1-216-805-11	METAL CHIP	47	5%	1/16W
R701	1-216-805-11	METAL CHIP	47	5%	1/16W	R766	1-216-805-11	METAL CHIP	47	5%	1/16W
R702	1-216-857-11	METAL CHIP	1M	5%	1/16W	R767	1-216-805-11	METAL CHIP	47	5%	1/16W
R703	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R768	1-216-805-11	METAL CHIP	47	5%	1/16W
R704	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	R769	1-216-805-11	METAL CHIP	47	5%	1/16W
R705	1-216-864-11	METAL CHIP	0	5%	1/16W	R771	1-216-805-11	METAL CHIP	47	5%	1/16W
R708	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R774	1-216-864-11	METAL CHIP	0	5%	1/16W
R709	1-216-805-11	METAL CHIP	47	5%	1/16W	R775	1-216-805-11	METAL CHIP	47	5%	1/16W
R710	1-216-805-11	METAL CHIP	47	5%	1/16W	R776	1-216-805-11	METAL CHIP	47	5%	1/16W
R711	1-216-805-11	METAL CHIP	47	5%	1/16W	R777	1-216-805-11	METAL CHIP	47	5%	1/16W
R712	1-216-833-11	METAL CHIP	10K	5%	1/16W	R778	1-216-805-11	METAL CHIP	47	5%	1/16W
R713	1-218-905-11	METAL CHIP	270K	0.5%	1/10W	R779	1-216-805-11	METAL CHIP	47	5%	1/16W
R714	1-216-182-00	RES-CHIP	220	5%	1/8W	R780	1-216-805-11	METAL CHIP	47	5%	1/16W
R715	1-216-182-00	RES-CHIP	220	5%	1/8W	R781	1-216-805-11	METAL CHIP	47	5%	1/16W
R716	1-216-182-00	RES-CHIP	220	5%	1/8W	R782	1-216-805-11	METAL CHIP	47	5%	1/16W
R717	1-216-182-00	RES-CHIP	220	5%	1/8W	R783	1-216-841-11	METAL CHIP	47K	5%	1/16W
R718	1-216-864-11	METAL CHIP	0	5%	1/16W	R784	1-216-845-11	METAL CHIP	100K	5%	1/16W
R720	1-211-969-11	METAL CHIP	10	0.5%	1/10W	R785	1-216-857-11	METAL CHIP	1M	5%	1/16W
R721	1-218-904-11	METAL CHIP	240K	0.5%	1/10W	R786	1-216-805-11	METAL CHIP	47	5%	1/16W
R722	1-218-907-11	METAL CHIP	330K	0.5%	1/10W	R787	1-216-805-11	METAL CHIP	47	5%	1/16W
R723	1-216-833-11	METAL CHIP	10K	5%	1/16W	R788	1-216-845-11	METAL CHIP	100K	5%	1/16W
R724	1-216-853-11	METAL CHIP	470K	5%	1/16W	R789	1-216-845-11	METAL CHIP	100K	5%	1/16W
R725	1-218-911-11	METAL CHIP	470K	0.5%	1/10W	R790	1-216-805-11	METAL CHIP	47	5%	1/16W
R726	1-216-864-11	METAL CHIP	0	5%	1/16W	R791	1-216-805-11	METAL CHIP	47	5%	1/16W
R727	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R792	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R793	1-216-845-11	METAL CHIP	100K	5%	1/16W	R853	1-216-841-11	METAL CHIP	47K	5%	1/16W
R794	1-216-805-11	METAL CHIP	47	5%	1/16W	R854	1-216-841-11	METAL CHIP	47K	5%	1/16W
R795	1-216-864-11	METAL CHIP	0	5%	1/16W	R855	1-216-805-11	METAL CHIP	47	5%	1/16W
R796	1-216-845-11	METAL CHIP	100K	5%	1/16W	R856	1-216-805-11	METAL CHIP	47	5%	1/16W
R797	1-216-845-11	METAL CHIP	100K	5%	1/16W	R857	1-216-805-11	METAL CHIP	47	5%	1/16W
R798	1-216-805-11	METAL CHIP	47	5%	1/16W	R858	1-216-805-11	METAL CHIP	47	5%	1/16W
R799	1-216-864-11	METAL CHIP	0	5%	1/16W	R859	1-216-805-11	METAL CHIP	47	5%	1/16W
R800	1-216-857-11	METAL CHIP	1M	5%	1/16W	R860	1-216-035-00	METAL CHIP	270	5%	1/10W
R801	1-216-805-11	METAL CHIP	47	5%	1/16W	R861	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R862	1-216-805-11	METAL CHIP	47	5%	1/16W
R803	1-216-805-11	METAL CHIP	47	5%	1/16W	R863	1-216-805-11	METAL CHIP	47	5%	1/16W
R804	1-216-805-11	METAL CHIP	47	5%	1/16W	R864	1-216-864-11	METAL CHIP	0	5%	1/16W
R805	1-216-841-11	METAL CHIP	47K	5%	1/16W	R865	1-216-864-11	METAL CHIP	0	5%	1/16W
R806	1-216-857-11	METAL CHIP	1M	5%	1/16W	R866	1-216-864-11	METAL CHIP	0	5%	1/16W
R807	1-216-805-11	METAL CHIP	47	5%	1/16W	R869	1-216-864-11	METAL CHIP	0	5%	1/16W
R808	1-216-805-11	METAL CHIP	47	5%	1/16W	R870	1-216-296-11	SHORT	0		
R809	1-216-805-11	METAL CHIP	47	5%	1/16W	R877	1-216-813-11	METAL CHIP	220	5%	1/16W
R810	1-216-864-11	METAL CHIP	0	5%	1/16W	R878	1-216-178-00	RES-CHIP	150	5%	1/8W
R811	1-216-845-11	METAL CHIP	100K	5%	1/16W	R879	1-216-805-11	METAL CHIP	47	5%	1/16W
R812	1-216-805-11	METAL CHIP	47	5%	1/16W	R880	1-216-805-11	METAL CHIP	47	5%	1/16W
R813	1-216-805-11	METAL CHIP	47	5%	1/16W	R881	1-216-805-11	METAL CHIP	47	5%	1/16W
R814	1-216-845-11	METAL CHIP	100K	5%	1/16W	R882	1-216-837-11	METAL CHIP	22K	5%	1/16W
R815	1-216-813-11	METAL CHIP	220	5%	1/16W	R901	1-216-833-11	METAL CHIP	10K	5%	1/16W
R816	1-216-841-11	METAL CHIP	47K	5%	1/16W	R902	1-216-833-11	METAL CHIP	10K	5%	1/16W
R817	1-216-864-11	METAL CHIP	0	5%	1/16W	R903	1-216-857-11	METAL CHIP	1M	5%	1/16W
R818	1-216-845-11	METAL CHIP	100K	5%	1/16W	R904	1-216-295-91	SHORT	0		
R819	1-216-805-11	METAL CHIP	47	5%	1/16W	R905	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R820	1-216-864-11	METAL CHIP	0	5%	1/16W	R906	1-218-854-11	METAL CHIP	2K	0.5%	1/10W
R821	1-216-805-11	METAL CHIP	47	5%	1/16W	R907	1-218-873-11	METAL CHIP	12K	0.5%	1/10W
R822	1-216-845-11	METAL CHIP	100K	5%	1/16W	R908	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W
R823	1-216-805-11	METAL CHIP	47	5%	1/16W	R909	1-218-911-11	METAL CHIP	470K	0.5%	1/10W
R824	1-216-805-11	METAL CHIP	47	5%	1/16W	R910	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R825	1-216-845-11	METAL CHIP	100K	5%	1/16W	R911	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R826	1-216-864-11	METAL CHIP	0	5%	1/16W	R912	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R827	1-216-845-11	METAL CHIP	100K	5%	1/16W	R913	1-216-845-11	METAL CHIP	100K	5%	1/16W
R828	1-216-864-11	METAL CHIP	0	5%	1/16W	R914	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R829	1-216-857-11	METAL CHIP	1M	5%	1/16W	R915	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R830	1-216-045-00	METAL CHIP	680	5%	1/10W	R916	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R831	1-216-039-00	METAL CHIP	390	5%	1/10W	R917	1-216-845-11	METAL CHIP	100K	5%	1/16W
R832	1-216-805-11	METAL CHIP	47	5%	1/16W	R918	1-216-295-91	SHORT	0		
R833	1-216-162-00	RES-CHIP	33	5%	1/8W	R919	1-218-894-11	METAL CHIP	91K	0.5%	1/10W
R834	1-216-845-11	METAL CHIP	100K	5%	1/16W	R920	1-218-903-11	METAL CHIP	220K	0.5%	1/10W
R835	1-216-845-11	METAL CHIP	100K	5%	1/16W	R921	1-218-911-11	METAL CHIP	470K	0.5%	1/10W
R836	1-216-162-00	RES-CHIP	33	5%	1/8W	R922	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R837	1-216-845-11	METAL CHIP	100K	5%	1/16W	R923	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R838	1-216-845-11	METAL CHIP	100K	5%	1/16W	R924	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R839	1-216-845-11	METAL CHIP	100K	5%	1/16W	R925	1-218-909-11	METAL CHIP	390K	0.5%	1/10W
R840	1-216-845-11	METAL CHIP	100K	5%	1/16W	R926	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R841	1-216-845-11	METAL CHIP	100K	5%	1/16W	R927	1-218-909-11	METAL CHIP	390K	0.5%	1/10W
R842	1-216-162-00	RES-CHIP	33	5%	1/8W	R928	1-218-907-11	METAL CHIP	330K	0.5%	1/10W
R843	1-216-035-00	METAL CHIP	270	5%	1/10W	R929	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R844	1-216-162-00	RES-CHIP	33	5%	1/8W	R930	1-216-857-11	METAL CHIP	1M	5%	1/16W
R845	1-216-805-11	METAL CHIP	47	5%	1/16W	R931	1-218-907-11	METAL CHIP	330K	0.5%	1/10W
R846	1-216-805-11	METAL CHIP	47	5%	1/16W	R932	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R847	1-216-805-11	METAL CHIP	47	5%	1/16W	R933	1-218-908-91	METAL CHIP	360K	0.5%	1/10W
R848	1-216-805-11	METAL CHIP	47	5%	1/16W	R934	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R849	1-216-864-11	METAL CHIP	0	5%	1/16W	R935	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R850	1-216-805-11	METAL CHIP	47	5%	1/16W	R936	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R851	1-216-805-11	METAL CHIP	47	5%	1/16W	R938	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R852	1-219-570-11	RES-CHIP	10M	5%	1/10W	R939	1-216-857-11	METAL CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R940	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R1527	1-216-837-11	METAL CHIP	22K	5%	1/16W
R941	1-218-895-11	METAL CHIP	100K	0.5%	1/10W	R1528	1-216-839-11	METAL CHIP	33K	5%	1/16W
R942	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R1529	1-216-819-11	METAL CHIP	680	5%	1/16W
R943	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R1530	1-216-816-11	METAL CHIP	390	5%	1/16W
R944	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R1531	1-216-821-11	METAL CHIP	1K	5%	1/16W
R945	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R1532	1-216-817-11	METAL CHIP	470	5%	1/16W
R946	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1533	1-216-833-11	METAL CHIP	10K	5%	1/16W
R948	1-218-885-11	METAL CHIP	39K	0.5%	1/10W	R1534	1-216-836-11	METAL CHIP	18K	5%	1/16W
R949	1-218-873-11	METAL CHIP	12K	0.5%	1/10W	R1535	1-216-837-11	METAL CHIP	22K	5%	1/16W
R950	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R1536	1-216-821-11	METAL CHIP	1K	5%	1/16W
R951	1-216-857-11	METAL CHIP	1M	5%	1/16W	R1537	1-216-815-11	METAL CHIP	330	5%	1/16W
R952	1-218-911-11	METAL CHIP	470K	0.5%	1/10W	R1539	1-216-833-11	METAL CHIP	10K	5%	1/16W
R953	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R1540	1-216-853-11	METAL CHIP	470K	5%	1/16W
R954	1-216-834-11	METAL CHIP	12K	5%	1/16W	R1541	1-216-821-11	METAL CHIP	1K	5%	1/16W
R955	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1542	1-216-821-11	METAL CHIP	1K	5%	1/16W
R958	1-216-863-11	RES-CHIP	3.3M	5%	1/10W	R1543	1-216-841-11	METAL CHIP	47K	5%	1/16W
R959	1-216-863-11	RES-CHIP	3.3M	5%	1/10W	R1544	1-216-841-11	METAL CHIP	47K	5%	1/16W
R960	1-216-863-11	RES-CHIP	3.3M	5%	1/10W	R1545	1-216-821-11	METAL CHIP	1K	5%	1/16W
R961	1-216-857-11	METAL CHIP	1M	5%	1/16W	R1546	1-216-845-11	METAL CHIP	100K	5%	1/16W
R962	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1547	1-216-833-11	METAL CHIP	10K	5%	1/16W
R963	1-216-857-11	METAL CHIP	1M	5%	1/16W	R1548	1-216-797-11	METAL CHIP	10	5%	1/16W
R964	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1549	1-216-797-11	METAL CHIP	10	5%	1/16W
R967	1-218-823-11	METAL CHIP	100	0.5%	1/10W	R1550	1-216-797-11	METAL CHIP	10	5%	1/16W
R973	1-216-295-91	SHORT	0			R1551	1-216-797-11	METAL CHIP	10	5%	1/16W
R980	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1553	1-216-809-11	METAL CHIP	100	5%	1/16W
R983	1-218-903-11	METAL CHIP	220K	0.5%	1/10W	R1554	1-216-797-11	METAL CHIP	10	5%	1/16W
R984	1-218-629-91	METAL CHIP	180	5%	1W	R1556	1-216-809-11	METAL CHIP	100	5%	1/16W
R985	1-218-629-91	METAL CHIP	180	5%	1W	R1557	1-216-797-11	METAL CHIP	10	5%	1/16W
R986	1-218-629-91	METAL CHIP	180	5%	1W	R1558	1-216-797-11	METAL CHIP	10	5%	1/16W
R987	1-218-629-91	METAL CHIP	180	5%	1W	R1559	1-216-797-11	METAL CHIP	10	5%	1/16W
R988	1-218-629-91	METAL CHIP	180	5%	1W	R1625	1-216-845-11	METAL CHIP	100K	5%	1/16W
R989	1-218-629-91	METAL CHIP	180	5%	1W	R1626	1-216-841-11	METAL CHIP	47K	5%	1/16W
R990	1-218-629-91	METAL CHIP	180	5%	1W	R1627	1-216-845-11	METAL CHIP	100K	5%	1/16W
R991	1-218-629-91	METAL CHIP	180	5%	1W	R1628	1-216-845-11	METAL CHIP	100K	5%	1/16W
R992	1-218-629-91	METAL CHIP	180	5%	1W	R1633	1-216-864-11	METAL CHIP	0	5%	1/16W
R1501	1-216-864-11	METAL CHIP	0	5%	1/16W	R1634	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1502	1-216-864-11	METAL CHIP	0	5%	1/16W	R1635	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1503	1-216-864-11	METAL CHIP	0	5%	1/16W	R1636	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1504	1-216-864-11	METAL CHIP	0	5%	1/16W	R1637	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1505	1-216-864-11	METAL CHIP	0	5%	1/16W	R1638	1-216-864-11	METAL CHIP	0	5%	1/16W
R1506	1-216-864-11	METAL CHIP	0	5%	1/16W	R1639	1-216-182-00	RES-CHIP	220	5%	1/8W
R1507	1-216-864-11	METAL CHIP	0	5%	1/16W	R1640	1-216-182-00	RES-CHIP	220	5%	1/8W
R1508	1-216-864-11	METAL CHIP	0	5%	1/16W	R1641	1-216-864-11	METAL CHIP	0	5%	1/16W
R1509	1-216-864-11	METAL CHIP	0	5%	1/16W	R1642	1-216-864-11	METAL CHIP	0	5%	1/16W
R1510	1-216-864-11	METAL CHIP	0	5%	1/16W	R1643	1-216-182-00	RES-CHIP	220	5%	1/8W
R1511	1-216-864-11	METAL CHIP	0	5%	1/16W	R1644	1-216-182-00	RES-CHIP	220	5%	1/8W
R1512	1-216-864-11	METAL CHIP	0	5%	1/16W	R1645	1-216-864-11	METAL CHIP	0	5%	1/16W
R1513	1-216-809-11	METAL CHIP	100	5%	1/16W	R1646	1-216-864-11	METAL CHIP	0	5%	1/16W
R1514	1-216-809-11	METAL CHIP	100	5%	1/16W	R1647	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1515	1-216-809-11	METAL CHIP	100	5%	1/16W	R1648	1-216-864-11	METAL CHIP	0	5%	1/16W
R1516	1-216-809-11	METAL CHIP	100	5%	1/16W	R1649	1-216-864-11	METAL CHIP	0	5%	1/16W
R1517	1-216-809-11	METAL CHIP	100	5%	1/16W	R1650	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1518	1-216-809-11	METAL CHIP	100	5%	1/16W	R1652	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1519	1-216-809-11	METAL CHIP	100	5%	1/16W	R1655	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1520	1-216-809-11	METAL CHIP	100	5%	1/16W	R1657	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1522	1-216-809-11	METAL CHIP	100	5%	1/16W	R1661	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1523	1-216-841-11	METAL CHIP	47K	5%	1/16W	R1662	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1524	1-216-841-11	METAL CHIP	47K	5%	1/16W	R1663	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1525	1-216-821-11	METAL CHIP	1K	5%	1/16W	R1664	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1526	1-216-849-11	METAL CHIP	220K	5%	1/16W	R1665	1-216-832-11	METAL CHIP	8.2K	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R1668	1-216-864-11	METAL CHIP	0	5%	1/16W	R1774	1-216-162-00	RES-CHIP	33	5%	1/8W
R1669	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1775	1-216-162-00	RES-CHIP	33	5%	1/8W
R1670	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1776	1-216-809-11	METAL CHIP	100	5%	1/16W
R1671	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1777	1-216-809-11	METAL CHIP	100	5%	1/16W
R1672	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R1778	1-216-809-11	METAL CHIP	100	5%	1/16W
R1673	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1779	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1674	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1907	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R1675	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1908	1-218-882-11	METAL CHIP	30K	0.5%	1/10W
R1676	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1909	1-218-900-11	METAL CHIP	160K	0.5%	1/10W
R1677	1-216-833-11	METAL CHIP	10K	5%	1/16W	R1910	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R1678	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	R1911	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R1679	1-216-809-11	METAL CHIP	100	5%	1/16W	R1912	1-218-909-11	METAL CHIP	390K	0.5%	1/10W
R1681	1-216-809-11	METAL CHIP	100	5%	1/16W	R1915	1-218-875-11	METAL CHIP	15K	0.5%	1/10W
R1687	1-216-797-11	METAL CHIP	10	5%	1/16W	R1916	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R1688	1-216-797-11	METAL CHIP	10	5%	1/16W	R1917	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R1697	1-216-864-11	METAL CHIP	0	5%	1/16W	R1918	1-216-295-91	SHORT	0		
R1698	1-216-864-11	METAL CHIP	0	5%	1/16W	R1922	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1699	1-216-864-11	METAL CHIP	0	5%	1/16W	R1923	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1700	1-216-864-11	METAL CHIP	0	5%	1/16W	R1925	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1701	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1926	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1702	1-218-873-11	METAL CHIP	12K	0.5%	1/10W	R1927	1-218-909-11	METAL CHIP	390K	0.5%	1/10W
R1703	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1928	1-218-907-11	METAL CHIP	330K	0.5%	1/10W
R1704	1-218-873-11	METAL CHIP	12K	0.5%	1/10W	R1929	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R1705	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1931	1-218-907-11	METAL CHIP	330K	0.5%	1/10W
R1706	1-218-873-11	METAL CHIP	12K	0.5%	1/10W	R1933	1-218-909-11	METAL CHIP	390K	0.5%	1/10W
R1707	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1934	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R1708	1-218-873-11	METAL CHIP	12K	0.5%	1/10W	R1935	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R1709	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W	R1936	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R1710	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1938	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R1711	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W	R1940	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R1712	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1941	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R1713	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W	R1942	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R1714	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1944	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1715	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W	R1945	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R1716	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R1946	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R1718	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1948	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R1720	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1949	1-218-873-11	METAL CHIP	12K	0.5%	1/10W
R1722	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1950	1-218-866-11	METAL CHIP	6.2K	0.5%	1/10W
R1724	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1958	1-216-863-11	RES-CHIP	3.3M	5%	1/10W
R1725	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1959	1-216-863-11	RES-CHIP	3.3M	5%	1/10W
R1727	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1960	1-216-863-11	RES-CHIP	3.3M	5%	1/10W
R1729	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1967	1-218-823-11	METAL CHIP	100	0.5%	1/10W
R1731	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1983	1-218-903-11	METAL CHIP	220K	0.5%	1/10W
R1734	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1984	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1736	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1985	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1738	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1987	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1740	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1988	1-216-841-11	METAL CHIP	47K	5%	1/16W
R1741	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1994	1-216-813-11	METAL CHIP	220	5%	1/16W
R1742	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1995	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1743	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1996	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1744	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R1997	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R1745	1-216-801-11	METAL CHIP	22	5%	1/16W	R1998	1-216-162-00	RES-CHIP	33	5%	1/8W
R1746	1-216-801-11	METAL CHIP	22	5%	1/16W	R1999	1-216-162-00	RES-CHIP	33	5%	1/8W
R1747	1-216-801-11	METAL CHIP	22	5%	1/16W	R2001	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1748	1-216-801-11	METAL CHIP	22	5%	1/16W	R2002	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1749	1-216-801-11	METAL CHIP	22	5%	1/16W	R2003	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1750	1-216-801-11	METAL CHIP	22	5%	1/16W	R2004	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1751	1-216-801-11	METAL CHIP	22	5%	1/16W	R2005	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1752	1-216-801-11	METAL CHIP	22	5%	1/16W	R2006	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1773	1-216-162-00	RES-CHIP	33	5%	1/8W	R2007	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
R2008	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R2070	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R2009	1-218-841-11	METAL CHIP	560	0.5%	1/10W	R2071	1-218-867-11	RES-CHIP	6.8K	5%	1/10W
R2010	1-218-841-11	METAL CHIP	560	0.5%	1/10W	R2073	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R2011	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2074	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2012	1-216-829-11	METAL CHIP	4.7K	5%	1/16W						(DSR-45P)
R2013	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2075	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2014	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2076	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R2015	1-216-825-11	METAL CHIP	2.2K	5%	1/16W						(DSR-45P)
R2016	1-216-821-11	METAL CHIP	1K	5%	1/16W	R2077	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2017	1-218-859-11	METAL CHIP	3.3K	0.5%	1/10W	R2078	1-216-837-11	METAL CHIP	22K	5%	1/16W
R2018	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R2079	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2019	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R2080	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2020	1-218-831-11	METAL CHIP	220	0.5%	1/10W	R2081	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2021	1-218-877-11	METAL CHIP	18K	0.5%	1/10W	R2082	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2022	1-218-843-11	METAL CHIP	680	0.5%	1/10W	R2083	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2023	1-218-841-11	METAL CHIP	560	0.5%	1/10W	R2084	1-216-837-11	METAL CHIP	22K	5%	1/16W
R2024	1-218-841-11	METAL CHIP	560	0.5%	1/10W	R2085	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2025	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R2086	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2026	1-218-847-11	METAL CHIP	1K	0.5%	1/10W	R2087	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2027	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2088	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2028	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2089	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2029	1-216-836-11	METAL CHIP	18K	5%	1/16W	R2090	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2030	1-216-838-11	METAL CHIP	27K	5%	1/16W	R2091	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2031	1-216-836-11	METAL CHIP	18K	5%	1/16W	R2092	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R2032	1-216-838-11	METAL CHIP	27K	5%	1/16W	R2093	1-216-809-11	METAL CHIP	100	5%	1/16W
R2033	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2094	1-218-869-11	METAL CHIP	8.2K	0.5%	1/10W
R2034	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2095	1-218-868-11	METAL CHIP	7.5K	0.5%	1/10W
R2035	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2096	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2036	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2038	1-216-833-11	METAL CHIP	10K	5%	1/16W	R2098	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2039	1-216-839-11	METAL CHIP	33K	5%	1/16W	R2099	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2040	1-216-835-11	METAL CHIP	15K	5%	1/16W	R2100	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2041	1-216-834-11	METAL CHIP	12K	5%	1/16W	R2101	1-216-864-11	METAL CHIP	0	5%	1/16W
R2042	1-216-833-11	METAL CHIP	10K	5%	1/16W	R2102	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2043	1-216-837-11	METAL CHIP	22K	5%	1/16W	R2103	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2044	1-218-843-11	METAL CHIP	680	0.5%	1/10W	R2104	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R2045	1-216-836-11	METAL CHIP	18K	5%	1/16W	R2105	1-216-809-11	METAL CHIP	100	5%	1/16W
R2046	1-216-839-11	METAL CHIP	33K	5%	1/16W	R2106	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2047	1-216-836-11	METAL CHIP	18K	5%	1/16W	R2107	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2048	1-216-839-11	METAL CHIP	33K	5%	1/16W	R2108	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2049	1-216-833-11	METAL CHIP	10K	5%	1/16W	R2109	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2050	1-216-833-11	METAL CHIP	10K	5%	1/16W	R2110	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2051	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2111	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2053	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2112	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2054	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2113	1-218-851-11	METAL CHIP	1.5K	0.5%	1/10W
R2055	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R2114	1-218-857-11	METAL CHIP	2.7K	0.5%	1/10W
R2056	1-218-871-11	METAL CHIP	10K	0.5%	1/10W	R2115	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
					(DSR-45P)	R2116	1-216-842-11	METAL CHIP	56K	5%	1/16W
					(DSR-45P)	R2117	1-218-837-11	METAL CHIP	390	0.5%	1/10W
R2057	1-216-837-11	METAL CHIP	22K	5%	1/16W	R2118	1-216-842-11	METAL CHIP	56K	5%	1/16W
R2059	1-216-837-11	METAL CHIP	22K	5%	1/16W	R2119	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R2060	1-216-833-11	METAL CHIP	10K	5%	1/16W	R2120	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2061	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2121	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R2062	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2122	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2063	1-218-867-11	RES-CHIP	6.8K	5%	1/10W	R2123	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R2065	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R2124	1-218-833-11	METAL CHIP	270	0.5%	1/10W
R2066	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R2126	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R2067	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	R2127	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R2068	1-216-835-11	METAL CHIP	15K	5%	1/16W	R2128	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R2069	1-216-834-11	METAL CHIP	12K	5%	1/16W						

VD-032

XL-005

Ref. No.	Part No.	Description			
R2129	1-218-849-11	METAL CHIP	1.2K	0.5%	1/10W (DSR-45P)
R2129	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W (DSR-45)
R2130	1-218-849-11	METAL CHIP	1.2K	0.5%	1/10W (DSR-45P)
R2130	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W (DSR-45)
R2131	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R2134	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R2135	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2136	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2137	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2138	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R2139	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2140	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2141	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R2142	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2143	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2144	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2145	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2146	1-218-823-11	METAL CHIP	100	0.5%	1/10W
R2147	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R2148	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2149	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2150	1-218-873-11	METAL CHIP	12K	0.5%	1/10W
R2151	1-218-857-11	METAL CHIP	2.7K	0.5%	1/10W
R2152	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R2154	1-218-851-11	METAL CHIP	1.5K	0.5%	1/10W
R2155	1-216-864-11	METAL CHIP	0	5%	1/16W
R2157	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R2158	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R2161	1-216-813-11	METAL CHIP	220	5%	1/16W
R2163	1-218-851-11	METAL CHIP	1.5K	0.5%	1/10W
R2164	1-218-858-11	METAL CHIP	3K	0.5%	1/10W
R2165	1-218-857-11	METAL CHIP	2.7K	0.5%	1/10W
R2166	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R2167	1-218-851-11	METAL CHIP	1.5K	0.5%	1/10W
R2170	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2171	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2172	1-218-858-11	METAL CHIP	3K	0.5%	1/10W
R2175	1-218-858-11	METAL CHIP	3K	0.5%	1/10W
R2177	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2178	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2179	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2180	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2181	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2182	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2183	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2184	1-216-841-11	METAL CHIP	47K	5%	1/16W
R2185	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2186	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2187	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2188	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2189	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2190	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2191	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2192	1-218-827-11	METAL CHIP	150	0.5%	1/10W
R2193	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R2917	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W

Ref. No.	Part No.	Description		
		< COMPOSITION CIRCUIT BLOCK >		
RB001	1-239-437-91	NETWORK RESISTOR (CHIP) 39K		
RB002	1-239-437-91	NETWORK RESISTOR (CHIP) 39K		
		< VIBRATOR >		
X001	1-767-617-11	OSCILLATOR, CRYSTAL (14.31818MHz) (DSR-45)		
X001	1-795-080-21	OSCILLATOR, CRYSTAL (14.1875MHz) (DSR-45P)		
X002	1-767-617-11	OSCILLATOR, CRYSTAL (14.31818MHz) (DSR-45)		
X002	1-767-619-11	OSCILLATOR, CRYSTAL (17.734475MHz) (DSR-45P)		
X201	1-795-085-21	VIBRATOR, CRYSTAL (14.318182MHz) (DSR-45)		
X202	1-567-344-31	VIBRATOR, CRYSTAL (VCO) (17.734475MHz) (DSR-45P)		
X502	1-767-879-11	VIBRATOR, CERAMIC (1.2288MHz)		
X503	1-781-472-11	VIBRATOR, CERAMIC (8MHz)		
X701	1-767-450-11	VIBRATOR, CERAMIC (20MHz)		
X702	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)		
X703	1-579-738-21	VIBRATOR, CRYSTAL (14.318182MHz)		
X1501	1-579-466-11	VIBRATOR, CRYSTAL (3.579545MHz) (DSR-45)		
X1501	1-579-661-21	OSCILLATOR, CRYSTAL (4.433619MHz) (DSR-45P)		
	A-7078-208-A	XL-005 BOARD, COMPLETE *****		
		< CONNECTOR >		
CN251	1-793-476-11	CONNECTOR, FFC/FPC 12P		
CN252	1-750-787-11	CONNECTOR (XLR TYPE) 3P (AUDIO OUT (CH-1))		
CN254	1-750-787-11	CONNECTOR (XLR TYPE) 3P (AUDIO OUT (CH-2))		
CN256	1-750-787-11	CONNECTOR (XLR TYPE) 3P (AUDIO OUT (CH-3))		
CN258	1-750-787-11	CONNECTOR (XLR TYPE) 3P (AUDIO OUT (CH-4))		
		< DIODE >		
D251	8-719-062-19	DIODE MA3200WA-TX		
D252	8-719-062-19	DIODE MA3200WA-TX		
D253	8-719-062-19	DIODE MA3200WA-TX		
D254	8-719-062-19	DIODE MA3200WA-TX		
D255	8-719-062-19	DIODE MA3200WA-TX		
D256	8-719-062-19	DIODE MA3200WA-TX		
D257	8-719-062-19	DIODE MA3200WA-TX		
D258	8-719-062-19	DIODE MA3200WA-TX		
		< SHORT >		
JS252	1-216-295-91	SHORT	0	
JS253	1-216-295-91	SHORT	0	
JS255	1-216-295-91	SHORT	0	
JS258	1-216-295-91	SHORT	0	
JS260	1-216-295-91	SHORT	0	
JS262	1-216-295-91	SHORT	0	
JS264	1-216-295-91	SHORT	0	
JS266	1-216-295-91	SHORT	0	

Ref. No.	Part No.	Description
< RESISTOR >		
R251	1-216-097-11	RES-CHIP 100K 5% 1/10W
R252	1-216-097-11	RES-CHIP 100K 5% 1/10W
R253	1-216-097-11	RES-CHIP 100K 5% 1/10W
R254	1-216-097-11	RES-CHIP 100K 5% 1/10W
R255	1-216-097-11	RES-CHIP 100K 5% 1/10W
R256	1-216-097-11	RES-CHIP 100K 5% 1/10W
R257	1-216-097-11	RES-CHIP 100K 5% 1/10W
R258	1-216-097-11	RES-CHIP 100K 5% 1/10W

\*\*\*\*\*  
 HARDWARE LIST  
 \*\*\*\*\*

#1	7-624-118-01	RING, RETAINING E-2.5
#2	7-621-772-80	SCREW +B 2X16
#3	7-682-547-04	SCREW +B 3X6
#4	7-621-772-10	SCREW +B 2X4
#5	7-682-947-01	+PSW 3X6

ACCESSORIES & PACKING MATERIALS

\*\*\*\*\*

	1-477-220-11	REMOTE COMMANDER (RMT-DS5)
△	1-551-812-11	CORD, POWER (DSR-45)
△	1-782-929-11	CORD, POWER SUPPLY (BS 3P) (DSR-45P)
	3-073-885-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)
	3-073-885-21	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (DSR-45P)
	3-075-336-11	MANUAL, PROGRAMMER INSTRUCTION (ENGLISH)
	3-076-233-01	BATTERY COVER (for RMT-DS5)
	8-883-121-64	TAPE, DV CASSETTE DVM-4CLD J (DSR-45)
	8-883-121-64	TAPE, DV CASSETTE DVM-4CLD J (DSR-45P)

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.





# DSR-45/45P

RMT-DS5

SONY®

## SERVICE MANUAL

Ver 1.2 2003.05

US Model  
Canadian Model

DSR-45

AEP Model

UK Model

E Model

Australian Model

New Zealand Model

DSR-45P

## SUPPLEMENT-1

File this supplement with the service manual.

(PV02-023)

- Change of a repair part

### SECTION 6 REPAIR PARTS LIST

#### 6-2. ELECTRICAL PARTS LIST

Page	FORMER			NEW		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
		A-7095-083-A	JC-21 BOARD, COMPLETE *****		A-7095-083-A	JC-21 BOARD, COMPLETE *****
6-22	IC5003	6-801-574-01	IC MB91192PFF-G-151-BND-ER	IC5003	6-802-635-01	IC MB91192PFF-G-160-BND-ER (Note)

**Note:** After IC5003 on JC-21 board is replaced, changing data of page:  
C, address: BF is needed.  
Be sure to perform the following data input.

**Input method:**

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: C, address: BF, set data: F6, and press the PAUSE button of the adjustment remote commander.
- 3) Select page: 0, address: 01, and set data: 00.

# DSR-45/45P

## RMT-DS5

SONY®

# SERVICE MANUAL

Ver 1.3 2006.03

US Model  
Canadian Model

DSR-45

AEP Model

UK Model

E Model

Australian Model

New Zealand Model

DSR-45P

## SUPPLEMENT-2

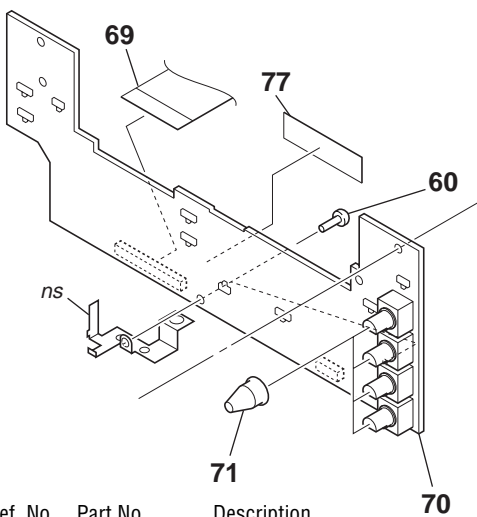
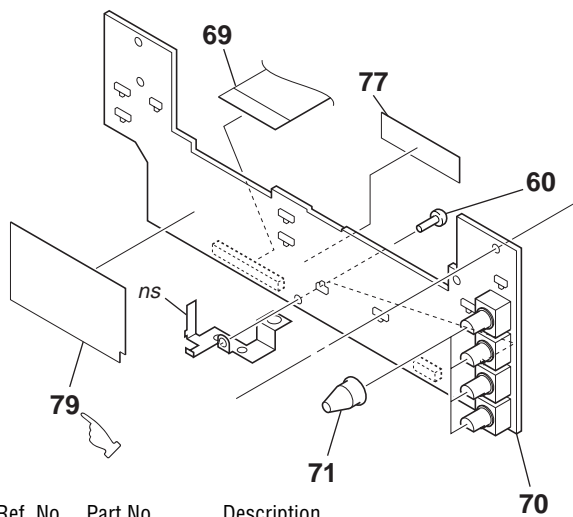

File this supplement with the service manual.  
(PV05-093)

- Change of repair parts

### SECTION 6 REPAIR PARTS LIST

-  : Points added portion.  
 : Points changed portion.

#### 6-1. EXPLODED VIEWS

Page	FORMER	NEW															
6-2	 <table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>△ 54</td> <td>1-418-879-21</td> <td>TRANSFORMER UNIT, INVERTER</td> </tr> </tbody> </table>	Ref. No.	Part No.	Description	△ 54	1-418-879-21	TRANSFORMER UNIT, INVERTER	 <table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>△ 54</td> <td>1-418-879-31</td> <td>TRANSFORMER UNIT, INVERTER</td> </tr> <tr> <td>79</td> <td>3-085-388-01</td> <td>SHEET, INSULATING, PANEL</td> </tr> </tbody> </table>	Ref. No.	Part No.	Description	△ 54	1-418-879-31	TRANSFORMER UNIT, INVERTER	79	3-085-388-01	SHEET, INSULATING, PANEL
Ref. No.	Part No.	Description															
△ 54	1-418-879-21	TRANSFORMER UNIT, INVERTER															
Ref. No.	Part No.	Description															
△ 54	1-418-879-31	TRANSFORMER UNIT, INVERTER															
79	3-085-388-01	SHEET, INSULATING, PANEL															
6-6	M901 A-7048-947-A DRUM ASSY (DEH-21A-R)	M901 A-1153-061-A DRUM ASSY (DEH-21B/J-RP) 															

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

# DSR-45/45P

RMT-DS5

**SONY**<sup>®</sup>

## SERVICE MANUAL

Ver 1.4 2006.06

*US Model*  
*Canadian Model*

*DSR-45*

*AEP Model*

*UK Model*

*E Model*

*Australian Model*

*New Zealand Model*

*DSR-45P*

## SUPPLEMENT-3

File this supplement with the service manual.

(DI06-003)

- Change of Board's Suffix No.
- Change of Service Tool
- Change of Repair Parts

• **Change of Board's Suffix No.**

Suffix No. of each board has been changed from Former into New.

Board	Former	New	Changes	
			Schematic Diagram	Printed Wiring Board
CK-107	11	12	–	–
CM-59	22	23, 24	–	Corresponds to Lead Free
DI-73	12	13, 14	–	Corresponds to Lead Free
DL-062	11	12	–	–
DV-032	11	12	Changes	Changes
FC-087	11	12	–	–
FM-037	11	12	–	–
FR-183	11	12	–	–
HP-135	11	12	–	Changes
JC-21	11	12, 13, 14	–	Corresponds to Lead Free
JK-216	11	12	–	–
LS-060	11	12	–	–
MD-76	12	13, 14	–	Corresponds to Lead Free
PD-170	11	12	–	Corresponds to Lead Free
RP-234	11	12	–	Corresponds to Lead Free
RS-082	11	12	–	–
RS-083	11	12	–	–
VD-032	11	12	–	–
XL-005	11	12	–	–

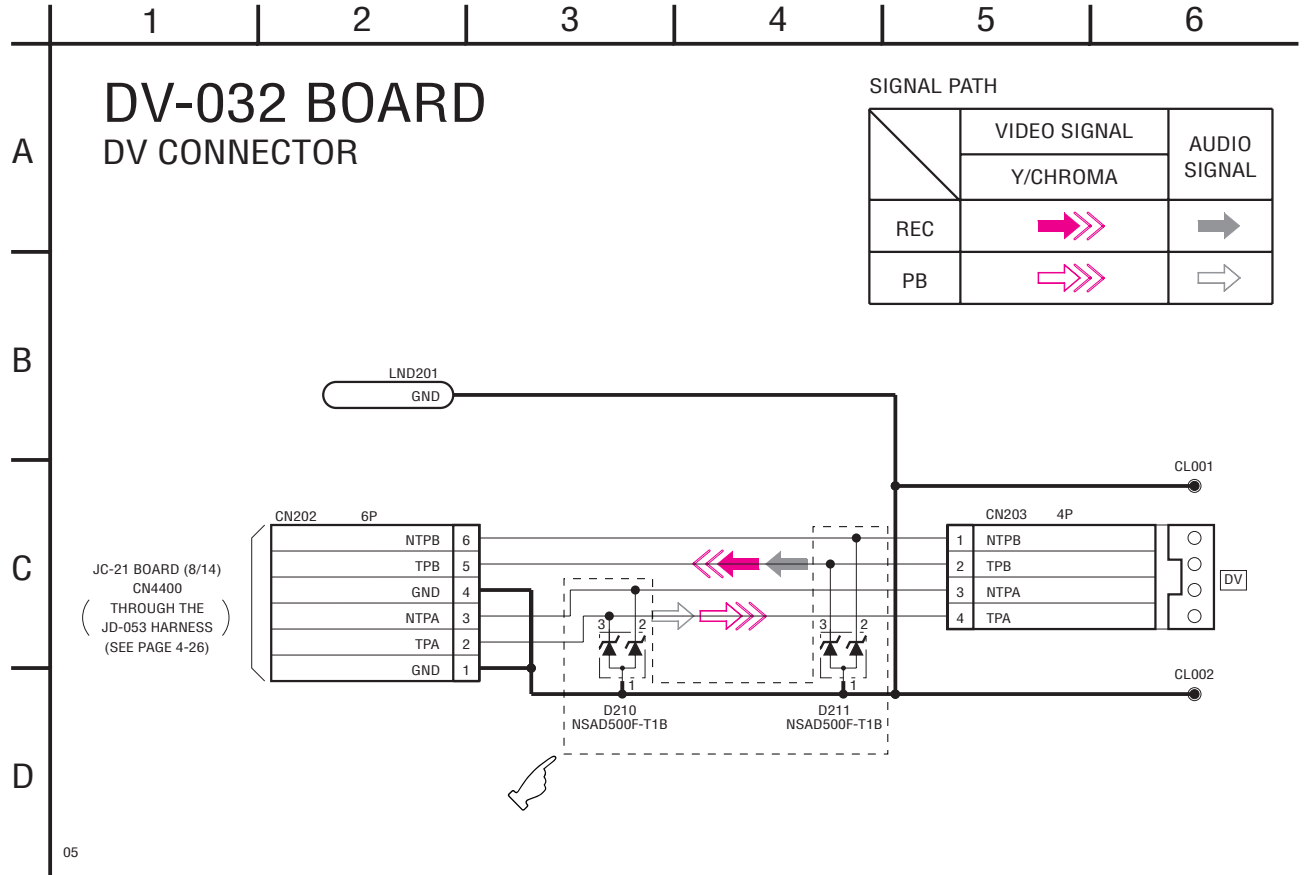
– : About suffix No. Former and New, there are no changes of schematic diagrams or printed wiring boards.

# SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

## 4-2. SCHEMATIC DIAGRAMS

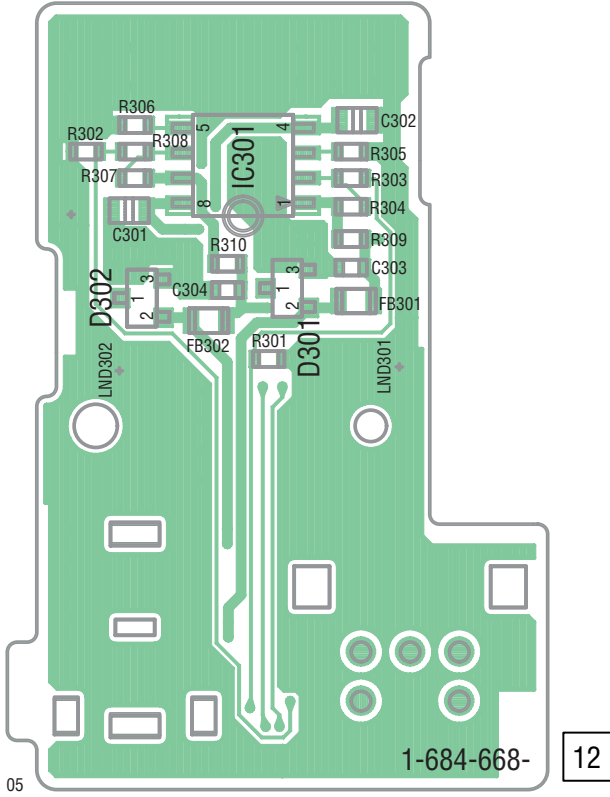
: Points added portion.

**DV-032 (DV CONNECTOR)**  
(Service manual page 4-112)

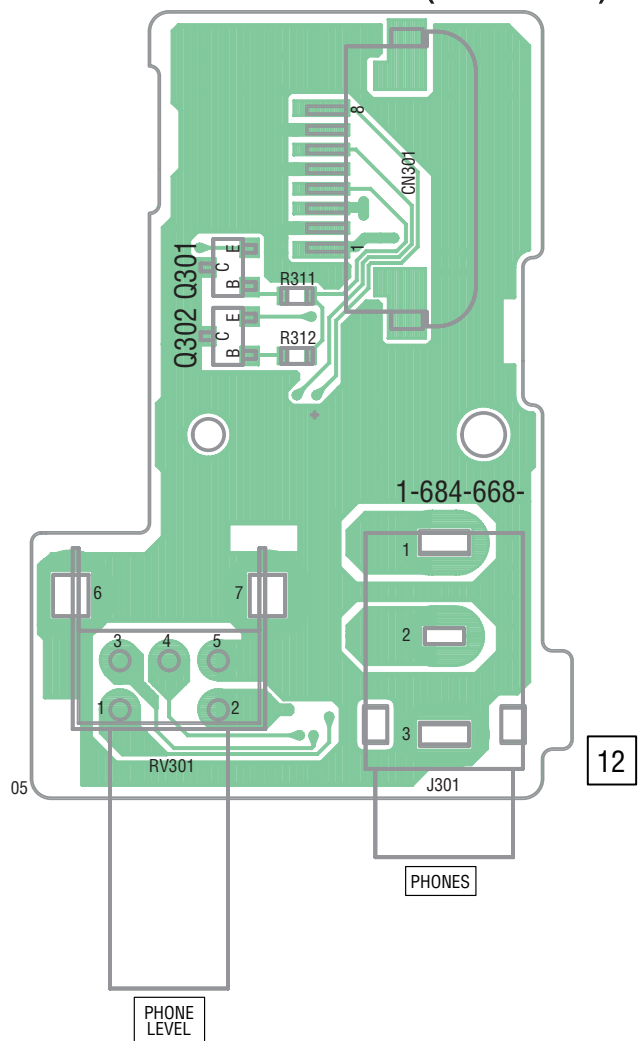


**4-3. PRINTED WIRING BOARD**  
**HP-135 (HEAD PHONE)**  
 (Service manual page 4-143)

**HP-135 BOARD (SIDE A)**

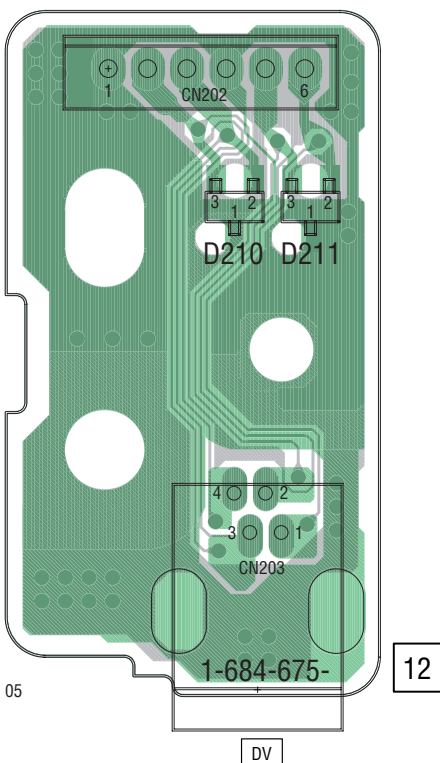


**HP-135 BOARD (SIDE B)**



**DV-032 (DV CONNECTOR)**  
 (Service manual page 4-155)

**DV-032 BOARD**



# SECTION 5 ADJUSTMENTS

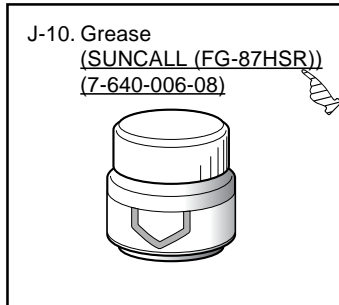
 : Points changed portion.

 : Points added portion.

 : Points deleted portion.

## 5-1. MECHANICAL SECTION ADJUSTMENTS

### 1-3. LIST OF SERVICE TOOLS (Service manual page 5-6)



### 2-3. PERIODIC CHECKS (Service manual page 5-8)

**Note:** Greasing

Always use the specified grease (SUNCALL FG-87HSR Part No. 7-640-006-08). If the viscosity differs, various problems may occur.

(Use SG-941 for all parts of the R mechanism.)

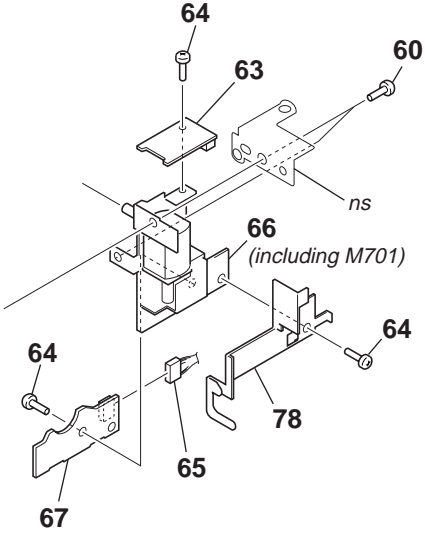
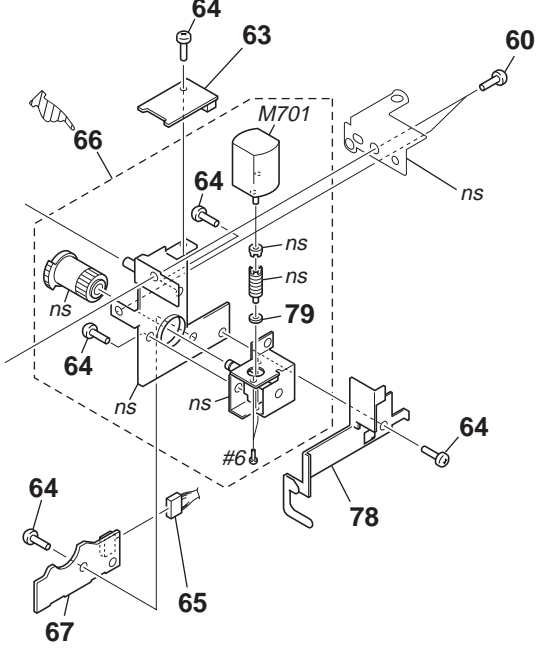
Check the quantity of grease when installing the parts which is needed to apply the grease. When replacing these parts, make sure to apply the specified amount of grease.

•FOIL (SG-941): Part No. 7-662-601-39

## SECTION 6 REPAIR PARTS LIST

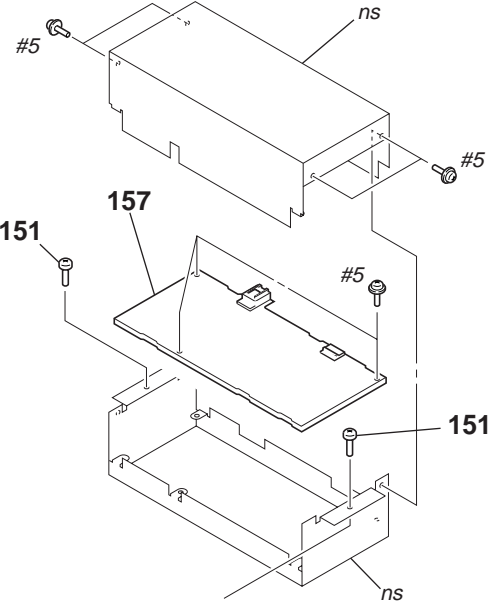
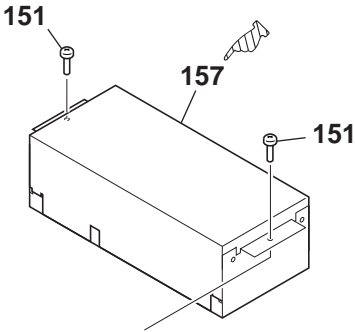
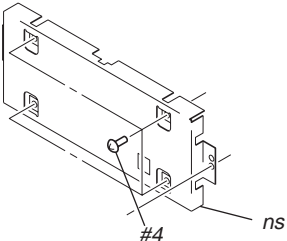
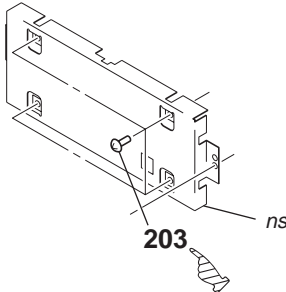
### 6-1. EXPLODED VIEWS

 : Points changed portion.

Page	Former			New		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
6-1	1	3-970-608-01	SUMITITE (B3), +BV	1	3-077-331-21	+BV3 (3-CR)
	2	3-732-817-01	SCREW (2X4.5), TAPPING	2	2-102-498-01	SCREW (2 (G TO)) (ECO)
	6	1-823-914-11	CABLE, FLEXIBLE FLAT (FVH-006)	6	1-823-914-12	CABLE, FLEXIBLE FLAT (FVH-006)
	8	4-886-821-01	SCREW, M3 CASE	8	2-059-756-01	SCREW, M3 CASE STOPPER
	9	3-970-608-41	SUMITITE (B3), +BV	9	3-077-331-41	+BV3 (3-CR)
	11	3-975-291-01	SCREW (4X6)	11	3-975-291-02	SCREW (4X6)
6-2						
	53	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	53	2-102-499-01	SCREW PH1.7 (ECO), PRECISION
	56	1-961-665-11	HARNESS (PV-133)	56	1-961-665-12	HARNESS (PV-133)
	57	1-961-666-11	HARNESS (PV-134)	57	1-961-666-12	HARNESS (PV-134)
	60	3-945-884-11	SCREW (2X6)	60	3-080-206-31	SCREW, TAPPING, P2
	62	3-948-339-21	SCREW, TAPPING	62	3-080-205-11	SCREW, TAPPING, P2
	64	3-732-817-01	SCREW (2X4.5), TAPPING	64	2-102-498-01	SCREW (2 (G TO)) (ECO)
				79	3-701-437-21	WASHER
				M701	1-698-003-12	MOTOR, DC
6-3	102	3-732-817-01	SCREW (2X4.5), TAPPING	102	2-102-498-01	SCREW (2 (G TO)) (ECO)
	112	3-970-608-41	SUMITITE (B3), +BV	112	3-077-331-41	+BV3 (3-CR)



 : Points changed portion.

Page	Former			New		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
6-4						
	151	3-970-608-01	SUMITITE (B3), +BV	151	3-077-331-21	+BV3 (3-CR)
	153	1-823-912-11	CABLE, FLEXIBLE FLAT (FVJ-021)	153	1-823-912-12	CABLE, FLEXIBLE FLAT (FVJ-021)
	154	1-823-911-11	CABLE, FLEXIBLE FLAT (FVJ-020)	154	1-823-911-12	CABLE, FLEXIBLE FLAT (FVJ-020)
	156	3-974-010-01	SCREW (M3), STEP	156	2-102-434-01	SCREW (M3 (ECO)), STEP
	$\Delta$ 157	1-468-666-11	POWER BLOCK	$\Delta$ 157	1-468-666-12	POWER BLOCK
	158	1-823-910-11	CABLE, FLEXIBLE FLAT (FVJ-019)	158	1-823-910-12	CABLE, FLEXIBLE FLAT (FVJ-019)
6-5						
	203	3-732-817-01	SCREW (2X4.5), TAPPING	203	2-102-498-01	SCREW (2 (G TO)) (ECO)
6-6	704	3-732-817-01	SCREW (2X4.5), TAPPING	704	3-732-817-11	SCREW (2X4.5), TAPPING
	705	3-057-319-01	RETAINER, PENDULUM	705	3-057-319-05	RETAINER, PENDULUM
	722	A-7094-602-B	COMPARTMENT BLOCK ASSY	722	A-7094-602-P	COMPARTMENT BLOCK ASSY
	725	3-318-201-11	SCREW (B) (1.4X3), TAPPING	725	3-318-201-91	SCREW (B) (1.4X3), TAPPING
	726	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD	726	3-973-266-11	SCREW (M2X2.2 (MEK)), HEAD
	728	X-3944-897-1	FPC ASSY, MOTOR	728	X-3944-897-2	MOTOR (FPC) ASSY
6-7	* 758	3-057-314-01	SLIDER, SUB	758	3-057-314-02	SLIDER, SUB
	765	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD	765	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD
6-8	804	X-3949-916-9	CHASSIS ASSY, MECHANICAL	804	X-2022-253-1	CHASSIS ASSY, MECHANICAL
	806	3-947-503-01	SCREW (M1.4)	806	3-947-503-21	SCREW (M1.4)
	807	3-732-817-01	SCREW (2X4.5), TAPPING	807	3-732-817-11	SCREW (2X4.5), TAPPING
	828	X-3950-200-1	BASE (T) ASSY, REEL	828	X-3950-200-2	BASE (T) ASSY, REEL
	D001	8-719-988-42	DIODE GL453S	D001	6-500-652-01	DIODE GL453SE0000F

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Page	Former			New		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
6-8	M903	8-835-648-01	MOTOR, DC SCD17A/J-N (CAPSTAN)	M903	8-835-648-12	MOTOR, DC SCD17A/C-NP (CAPSTAN)
	Q001	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE END)	Q001	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE END)
	Q002	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE TOP)	Q002	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE TOP)
6-9	851	A-7094-602-B	COMPARTMENT BLOCK ASSY	851	A-7094-602-P	COMPARTMENT BLOCK ASSY
	852	3-732-817-01	SCREW (2X4.5), TAPPING	852	3-732-817-11	SCREW (2X4.5), TAPPING

## 6-2. ELECTRICAL PARTS LIST

Page	Former			New		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
6-11		A-7067-274-A	CM-59 BOARD, COMPLETE *****		A-7067-274-A	CM-59 BOARD, COMPLETE *****
			< CONNECTOR >			< CONNECTOR >
	CN001	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P	CN001	1-778-637-51	CONNECTOR, FFC/FPC (ZIF) 50P
	CN200	1-691-385-21	CONNECTOR, FFC/FPC 21P	CN200	1-691-385-51	CONNECTOR, FFC/FPC 21P
	CN201	1-691-385-21	CONNECTOR, FFC/FPC 21P	CN201	1-691-385-51	CONNECTOR, FFC/FPC 21P
	CN400	1-750-341-11	CONNECTOR, FFC/EPC (ZIF) 18P	* CN400	1-750-341-51	CONNECTOR, FFC/FPC (ZIF) 18P
	CN500	1-573-351-11	CONNECTOR, FFC/FPC (ZIF) 11P	CN500	1-766-837-51	CONNECTOR, FFC/FPC (ZIF) 11P
			< FUSE >			< FUSE >
	△F100	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A/125V)	△F100	1-576-832-11	FUSE (1.25A/250V)
6-12		A-7067-272-A	DI-73 BOARD, COMPLETE *****		A-7067-272-A	DI-73 BOARD, COMPLETE *****
			< CAPACITOR >			< CAPACITOR >
	C7016	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7016	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7017	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7017	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7018	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7018	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7019	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7019	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7020	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7020	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7021	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7021	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7022	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7022	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7023	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7023	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7024	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7024	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7025	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7025	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7026	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7026	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7027	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7027	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7028	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7028	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7029	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7029	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7030	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7030	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7031	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7031	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7032	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7032	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7033	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7033	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7034	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7034	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
	C7035	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	C7035	1-104-851-11	TANTAL. CHIP 10uF 20% 10V
6-13	C8014	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	C8014	1-137-934-91	TANTAL. CHIP 47uF 20% 10V
	C8015	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	C8015	1-137-934-91	TANTAL. CHIP 47uF 20% 10V
	C9000	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	C9000	1-137-934-91	TANTAL. CHIP 47uF 20% 10V
	C9003	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	C9003	1-137-934-91	TANTAL. CHIP 47uF 20% 10V
	C9007	1-110-569-11	TANTAL. CHIP 47uF 20% 6.3V	C9007	1-137-934-91	TANTAL. CHIP 47uF 20% 10V

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Page	Former							New						
	Ref. No.	Part No.	Description					Ref. No.	Part No.	Description				
6-13	C9008	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C9008	1-137-934-91	TANTAL. CHIP	47uF	20%	10V	
	C9033	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C9033	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C9034	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C9034	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
6-14	C9511	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C9511	1-137-934-91	TANTAL. CHIP	47uF	20%	10V	
	< IC >							< IC >						
	IC9001	8-759-449-58	IC LM7131BCM5X					IC9001	6-702-231-01	IC LMH6642MFX/NOPB				
	IC9007	8-759-449-58	IC LM7131BCM5X					IC9007	6-702-231-01	IC LMH6642MFX/NOPB				
	IC9010	8-759-449-58	IC LM7131BCM5X					IC9010	6-702-231-01	IC LMH6642MFX/NOPB				
	IC9017	8-759-368-81	IC TK1163OUTL					IC9017	6-707-748-01	IC XC6201P302PR				
	< RESISTOR >							< RESISTOR >						
6-15	R7124	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7124	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
6-16	R7126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7126	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7127	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7127	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7128	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7128	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7129	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7129	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7130	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7130	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7132	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7132	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7137	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7137	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7139	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7139	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7140	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7140	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7146	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7146	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7201	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7202	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7202	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7304	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7304	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7308	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7308	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
	R7408	1-216-829-11	METAL CHIP	4.7K	5%	1/16W		R7408	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
6-17	A-7078-221-A DV-032 BOARD, COMPLETE *****  < DIODE >  _____							A-7078-221-A DV-032 BOARD, COMPLETE *****  < DIODE >  D210 6-500-462-01 DIODE NSAD500F-T1B D211 6-500-462-01 DIODE NSAD500F-T1B						
6-20	A-7095-083-A JC-21 BOARD, COMPLETE *****  < CAPACITOR >							A-7095-083-A JC-21 BOARD, COMPLETE *****  < CAPACITOR >						
	C1100	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1100	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1104	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1104	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1117	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1117	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1118	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1118	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1119	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1119	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1123	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V		C1123	1-137-934-91	TANTAL. CHIP	47uF	20%	10V	
	C1139	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1139	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1141	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1141	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1144	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1144	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1150	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1150	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1151	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1151	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1152	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1152	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1162	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1162	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1163	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1163	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	
	C1164	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		C1164	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	

Page	Former						New					
	Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
6-20	C1165	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1165	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C1166	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1166	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C1167	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1167	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C1171	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1171	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C1172	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1172	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
6-21	C1173	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C1173	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C1190	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C1190	1-137-934-91	TANTAL. CHIP	47uF	20%	10V
	C1194	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C1194	1-137-934-91	TANTAL. CHIP	47uF	20%	10V
	C1195	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C1195	1-137-934-91	TANTAL. CHIP	47uF	20%	10V
	C2208	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C2208	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C2211	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C2211	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C2213	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V	C2213	1-137-934-91	TANTAL. CHIP	47uF	20%	10V
	C2238	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C2238	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C3309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C3309	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C4403	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C4403	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C4405	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C4405	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C4406	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C4406	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C4414	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C4414	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
	C6006	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C6006	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
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	CN4401	1-691-386-11	CONNECTOR, FFC/FPC 22P				* CN4401	1-691-386-51	CONNECTOR, FFC/FPC 22P			
	CN4402	1-691-386-11	CONNECTOR, FFC/FPC 22P				* CN4402	1-691-386-51	CONNECTOR, FFC/FPC 22P			
	CN5005	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P				CN5005	1-778-637-51	CONNECTOR, FFC/FPC (ZIF) 50P			
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6-22	IC1000	8-759-449-58	IC	LM7131BCM5X			IC1000	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC1001	8-759-449-58	IC	LM7131BCM5X			IC1001	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC1002	8-759-449-58	IC	LM7131BCM5X			IC1002	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC1100	8-759-477-81	IC	TK11220BMCL			IC1100	6-707-675-01	IC	TK11220CMCL-G		
	IC1111	8-759-449-58	IC	LM7131BCM5X			IC1111	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC1112	8-759-449-58	IC	LM7131BCM5X			IC1112	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2200	8-759-368-81	IC	TK11630UTL			IC2200	6-707-748-01	IC	XC6201P302PR		
	IC5001	8-759-512-69	IC	S-81350HG-KD-T1			IC5001	6-701-109-01	IC	XC6202P502PR		
	IC6001	8-752-930-80	IC	CXP921064A-064R-T6			IC6001	8-752-932-21	IC	CXP921064A-078R		
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6-23	Q1131	8-729-046-75	TRANSISTOR	SI2301DS-T1			Q1131	6-550-832-01	TRANSISTOR	SI2301BDS-T1		
6-26	A-7078-220-A JK-216 BOARD, COMPLETE ***** < FERRITE BEAD >						A-7078-220-A JK-216 BOARD, COMPLETE ***** < FERRITE BEAD >					
	FB101	1-469-130-11	FERRITE	0uH			FB101	1-500-245-22	BEAD, FERRITE (CHIP) (2012)			
	FB102	1-469-130-11	FERRITE	0uH			FB102	1-500-245-22	BEAD, FERRITE (CHIP) (2012)			
	FB106	1-469-130-11	FERRITE	0uH			FB106	1-500-245-22	BEAD, FERRITE (CHIP) (2012)			
	FB107	1-469-130-11	FERRITE	0uH			FB107	1-500-245-22	BEAD, FERRITE (CHIP) (2012)			
	FB118	1-469-130-11	FERRITE	0uH			FB118	1-500-245-22	BEAD, FERRITE (CHIP) (2012)			
6-27	* A-7078-222-A LS-060 BOARD, COMPLETE *****						* A-7078-222-A LS-060 BOARD, COMPLETE *****					
	* 4-042-408-01	PIN, COATING LEAD					* 4-042-408-02	PIN (45), WIRE				

Page	Former						New					
	Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
6-27		A-7067-229-A	MD-76 BOARD, COMPLETE *****					A-7067-229-A	MD-76 BOARD, COMPLETE *****			
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6-28	CN001	1-691-359-21	CONNECTOR, FFC/FPC (ZIF) 21P				* CN001	1-691-359-61	CONNECTOR, FFC/FPC (ZIF) 21P			
	CN002	1-691-359-21	CONNECTOR, FFC/FPC (ZIF) 21P				* CN002	1-691-359-61	CONNECTOR, FFC/FPC (ZIF) 21P			
	CN003	1-691-356-21	CONNECTOR, FFC/FPC (ZIF) 18P				* CN003	1-691-356-61	CONNECTOR, FFC/FPC (ZIF) 18P			
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	D001	8-719-988-42	DIODE GL453S				D001	6-500-652-01	DIODE GL453SE0000F			
			< TRANSISTOR >						< TRANSISTOR >			
6-28	Q001	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE END)				Q001	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE END)			
	Q002	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE TOP)				Q002	6-550-402-01	TRANSISTOR PT4850FE000F (TAPE TOP)			
			< RESISTOR >						< RESISTOR >			
	R001	1-216-816-11	METAL CHIP	390	5%	1/16W	R001	1-216-814-11	METAL CHIP	270	5%	1/10W
	R014	1-216-180-00	RES-CHIP	180	5%	1/8W	R014	1-216-184-00	RES-CHIP	270	5%	1/8W
	R015	1-216-816-11	METAL CHIP	390	5%	1/16W	R015	1-216-814-11	METAL CHIP	270	5%	1/10W
6-29	△	1-468-666-11	POWER BLOCK (ACS1581-MA) *****				△	1-468-666-12	POWER BLOCK (ACS1581-MA) *****			
6-29		A-7067-275-A	RP-234 BOARD, COMPLETE *****					A-7067-275-A	RP-234 BOARD, COMPLETE *****			
		3-732-817-01	SCREW (2X4.5), TAPPING					2-102-498-01	SCREW (2 (G TO)) (ECO)			
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	CN101	1-691-374-11	CONNECTOR, FFC/FPC 10P				* CN101	1-691-374-51	CONNECTOR, FFC/FPC 10P			
	* CN202	1-750-343-11	CONNECTOR, FFC/EPC (ZIF) 22P				* CN202	1-750-343-51	CONNECTOR, FFC/FPC (ZIF) 22P			
	* CN203	1-750-343-11	CONNECTOR, FFC/EPC (ZIF) 22P				* CN203	1-750-343-51	CONNECTOR, FFC/FPC (ZIF) 22P			
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	IC101	8-752-086-53	IC CXA2072R-T4				IC101	8-752-082-21	IC CXA2072R			
	IC102	8-759-512-69	IC S-81350HG-KD-T1				IC102	6-701-109-01	IC XC6202P502PR			
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6-30	Q202	8-729-013-04	TRANSISTOR 2SC4851-TL				Q202	8-729-013-05	TRANSISTOR 2SC4851-TL-E			
	Q203	8-729-013-04	TRANSISTOR 2SC4851-TL				Q203	8-729-013-05	TRANSISTOR 2SC4851-TL-E			

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Page	Former					New						
	Ref. No.	Part No.	Description			Ref. No.	Part No.	Description				
		A-7095-082-A	VD-032 BOARD, COMPLETE (DSR-45)			A-7095-082-A	VD-032 BOARD, COMPLETE (DSR-45A)					
		A-7095-084-A	VD-032 BOARD, COMPLETE (DSR-45P)			A-7095-084-A	VD-032 BOARD, COMPLETE (DSR-45AP)					
		*****					*****					
6-31		_____					3-063-342-02	CASE (T), VD SHIELD				
		< CAPACITOR >					< CAPACITOR >					
6-33	C013	1-115-156-11	CERAMIC CHIP	1uF	10V	C013	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
	C307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C307	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
	C505	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C505	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
	C506	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C506	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
6-34	C929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C929	1-127-804-91	CERAMIC CHIP	100PF	10%	50V
6-35	C999	1-127-562-11	ELECT	47uF	20%	6.3V	C999	1-113-577-11	ELECT	47uF	20%	16V
	C1922	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V	C1922	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
	C1929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C1929	1-127-804-91	CERAMIC CHIP	100PF	10%	50V
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6-37	CN703	1-779-332-11	CONNECTOR, FFC/FPC 16P				_____					
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	D2907	8-719-067-56	DIODE	MA112-TX			_____					
	D2908	8-719-067-56	DIODE	MA112-TX			_____					
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	△ F901	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F901	1-576-864-21	FUSE (0.8A/72V)				
	△ F902	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F902	1-576-864-21	FUSE (0.8A/72V)				
	△ F903	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F903	1-576-864-21	FUSE (0.8A/72V)				
	△ F904	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F904	1-576-864-21	FUSE (0.8A/72V)				
	△ F905	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F905	1-576-864-21	FUSE (0.8A/72V)				
	△ F906	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F906	1-576-864-21	FUSE (0.8A/72V)				
	△ F911	1-533-922-21	FUSE, CHIP (1A/63V)			△ F911	1-576-604-21	FUSE (1A/72V)				
	△ F912	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F912	1-576-864-21	FUSE (0.8A/72V)				
	△ F913	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F913	1-576-864-21	FUSE (0.8A/72V)				
	△ F1981	1-576-430-21	FUSE, CHIP (315mA/63V)			△ F1981	1-576-787-21	FUSE (0.315A/72V)				
	△ F1983	1-576-430-21	FUSE, CHIP (315mA/63V)			△ F1983	1-576-787-21	FUSE (0.315A/72V)				
	△ F1984	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F1984	1-576-864-21	FUSE (0.8A/72V)				
	△ F1985	1-576-318-21	FUSE, CHIP (800mA/63V)			△ F1985	1-576-864-21	FUSE (0.8A/72V)				
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	FB004	1-500-283-11	FERRITE	0uH		FB004	1-216-813-11	METAL CHIP	220	5%	1/10W (Note)	
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6-38	FL2003	1-235-584-11	FILTER, LOW PASS (DSR-45P)			FL2003 (Not supplied)	FILTER, LOW PASS (DSR-45P)					
	FL2003	1-235-786-11	FILTER, LOW PASS (3MHz) (DSR-45)			FL2003 (Not supplied)	FILTER, LOW PASS (3MHz) (DSR-45)					
	FL2004	1-235-584-11	FILTER, LOW PASS			FL2004 (Not supplied)	FILTER, LOW PASS					
	FL2006	1-235-161-00	FILTER, BAND PASS (DSR-45)			FL2006 (Not supplied)	FILTER, BAND PASS (DSR-45)					
	FL2006	1-235-181-00	FILTER, BAND PASS (DSR-45P)			FL2006 (Not supplied)	FILTER, BAND PASS (DSR-45P)					
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6-39	IC005	8-759-987-27	IC	LM1881MX		IC005	6-704-406-01	IC	LM1881MX/NOPB			
	IC210	8-759-449-58	IC	LM7131BCM5X		IC210	6-702-231-01	IC	LMH6642MFX/NOPB			
	IC213	8-759-449-58	IC	LM7131BCM5X		IC213	6-702-231-01	IC	LMH6642MFX/NOPB			
	IC221	8-759-449-58	IC	LM7131BCM5X		IC221	6-702-231-01	IC	LMH6642MFX/NOPB			
	IC226	8-759-449-58	IC	LM7131BCM5X		IC226	6-702-231-01	IC	LMH6642MFX/NOPB			

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Note: Resistor is mounted to the location where FB004 is printed

Page	Former						New					
	Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
6-39	IC227	8-759-449-58	IC	LM7131BCM5X			IC227	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC511	6-801-587-01	IC	HD6473837UX-GDX2056			IC511	6-802-397-01	IC	HD6433837TD80X		
	IC705	8-759-580-27	IC	S-81236SGUP-DQ7-T1			IC705	6-707-674-01	IC	S-812C36AUA-C2QT2G		
	IC706	8-759-424-79	IC	S-8423YFS-T2			IC706	6-707-676-01	IC	S-8424AAPFT-TB-G		
	IC709	8-759-486-99	IC	S-81250SGUP-DQD-T1			IC709	6-704-240-01	IC	S-812C50AUA-C3ET2G		
	IC710	8-759-486-99	IC	S-81250SGUP-DQD-T1			IC710	6-704-240-01	IC	S-812C50AUA-C3ET2G		
	IC712	8-759-573-16	IC	S-81232SG-Q4-T1			IC712	6-707-673-01	IC	S-812C32AMC-C2MT2G		
	IC713	8-752-930-78	IC	CXP921064A-063R-T6			IC713	8-752-932-13	IC	CXP921064A-077R		
	IC2011	8-759-449-58	IC	LM7131BCM5X			IC2011	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2012	8-759-449-58	IC	LM7131BCM5X			IC2012	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2013	8-759-449-58	IC	LM7131BCM5X			IC2013	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2014	8-759-449-58	IC	LM7131BCM5X			IC2014	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2016	8-759-449-58	IC	LM7131BCM5X			IC2016	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2017	8-759-449-58	IC	LM7131BCM5X			IC2017	6-702-231-01	IC	LMH6642MFX/NOPB		
	IC2018	8-759-449-58	IC	LM7131BCM5X			IC2018	6-702-231-01	IC	LMH6642MFX/NOPB		
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6-41	Q604	8-729-046-75	TRANSISTOR	SI2301DS-T1			Q604	6-550-832-01	TRANSISTOR	SI2301BDS-T1		
	Q904	8-729-046-75	TRANSISTOR	SI2301DS-T1			Q904	6-550-832-01	TRANSISTOR	SI2301BDS-T1		
	Q929	8-729-048-11	TRANSISTOR	CPH3304-TL			Q929	6-551-265-01	TRANSISTOR	SI2307BDS-T1		
	Q934	8-729-048-11	TRANSISTOR	CPH3304-TL			Q934	6-551-265-01	TRANSISTOR	SI2307BDS-T1		
	Q1981	8-729-046-75	TRANSISTOR	SI2301DS-T1			Q1981	6-550-832-01	TRANSISTOR	SI2301BDS-T1		
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6-45	R740	1-216-805-11	METAL CHIP	47	5%	1/16W	_____					
	R753	1-216-805-11	METAL CHIP	47	5%	1/16W	_____					
	R754	1-216-805-11	METAL CHIP	47	5%	1/16W	_____					
6-46	R803	1-216-805-11	METAL CHIP	47	5%	1/16W	_____					
6-50	A-7078-208-A	XL-005 BOARD, COMPLETE *****				A-7078-208-A	XL-005 BOARD, COMPLETE *****					
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	JS252	1-216-295-91	SHORT	0			JS252	1-500-245-22	BEAD, FERRITE (CHIP) (2012) (Note)			
	JS255	1-216-295-91	SHORT	0			JS255	1-500-245-22	BEAD, FERRITE (CHIP) (2012) (Note)			
	JS260	1-216-295-91	SHORT	0			JS260	1-500-245-22	BEAD, FERRITE (CHIP) (2012) (Note)			
	JS264	1-216-295-91	SHORT	0			JS264	1-500-245-22	BEAD, FERRITE (CHIP) (2012) (Note)			
6-51	***** HARDWARE LIST *****						***** HARDWARE LIST *****					
	#5	7-682-947-01	+PSW 3X6 _____				#6	7-627-854-08	PRECISION SCREW +P 2X2.5 TYPE3 _____			
6-51	ACCESSORIES & PACKING MATERIALS *****						ACCESSORIES & PACKING MATERIALS *****					
	△	1-782-929-11	CORD, POWER SUPPLY (BS 3P) _____			(DSR-45P)	△	1-782-929-12	CORD, POWER SUPPLY (BS 3P) _____			(DSR-45P: AEP)
			_____				△	1-783-481-42	CORD, POWER (DSR-45P: CH) _____			
			_____					2-022-730-11	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (DSR-45P: CH)			
		3-075-336-11	MANUAL, PROGRAMMER INSTRUCTION (ENGLISH)					3-075-336-12	PROTOCOL MANUAL (ENGLISH)			

Note: Ferrite beads are mounted to the location where JS252, JS255, JS260 and JS264 are printed

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# DSR-45/45P

RMT-DS5

SONY®

## SERVICE MANUAL

Ver. 1.5 2007.09

US Model  
Canadian Model

DSR-45

AEP Model

UK Model

E Model

Australian Model

New Zealand Model

DSR-45P

### SUPPLEMENT-4

File this supplement with the service manual.

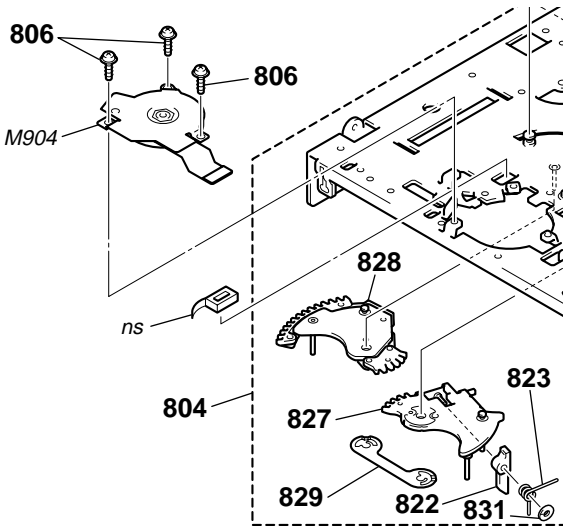
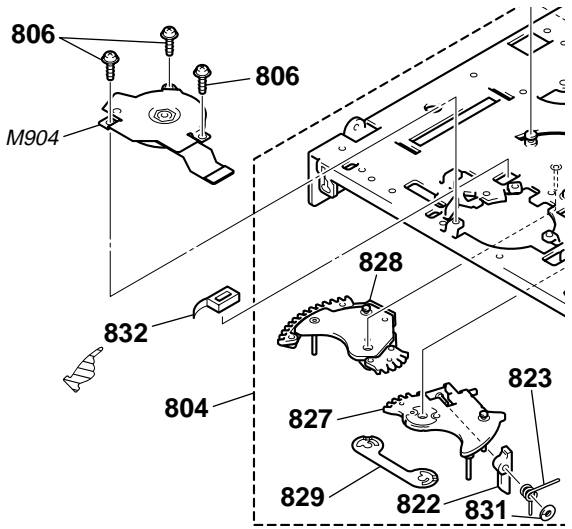
(DI07-086)

- Change of repair parts

#### SECTION 6 REPAIR PARTS LIST

 : Points changed portion.

##### 6-1. EXPLODED VIEWS

Page	FORMER	NEW												
6-8														
	<table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Ref. No.	Part No.	Description				<table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>832</td> <td>3-064-576-01</td> <td>ECLIPSER</td> </tr> </tbody> </table>	Ref. No.	Part No.	Description	832	3-064-576-01	ECLIPSER
Ref. No.	Part No.	Description												
Ref. No.	Part No.	Description												
832	3-064-576-01	ECLIPSER												



## Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2002.04	Official Release	—	—
1.1	2002.07	Correction-1 (C1)	<ul style="list-style-type: none"> <li>• Correction of ADJUSTMENT</li> </ul> S.M. correction : <a href="#">Page 5-6</a> , <a href="#">Page 5-51</a>	Yes
1.2	2003.05	<a href="#">Supplement-1</a> (S1 PV02-023)	<ul style="list-style-type: none"> <li>• Change of a repair part</li> </ul>	No
1.3	2006.03	<a href="#">Supplement-2</a> (S2 PV05-093)	<ul style="list-style-type: none"> <li>• Change of a repair part</li> </ul>	No
1.4	2006.06	<a href="#">Supplement-3</a> (S3 DI06-003)	<ul style="list-style-type: none"> <li>• Change of Board's Suffix No.</li> <li>• Change of Service Tool</li> <li>• Change of Repair Parts</li> </ul>	No
1.5	2007.09	<a href="#">Supplement-4</a> (S4 DI07-086)	<ul style="list-style-type: none"> <li>• Change of a repair part</li> </ul>	No