DSR-50/50P

SERVICE MANUAL

Self Diagnosis Supported model

Ver 1.5 2006.03

US Model
Canadian Model
DSR-50
AEP Model
UK Model
E Model
Australian Model
New Zealand Model
DSR-50P

R MECHANISM

SPECIFICATIONS

System

Recording format: DVCAM/DV (SP) format, rotating 2-head helical scan, digital component recording

Video signal
- DSR-50: EIA STANDARD, NTSC color system
- DSR-50P: CCIR STANDARD, PAL colour system

Video

Quantification: 8-bit

Standardization frequency
- DSR-50: 13.5 MHz (4:1:1 Component)
- DSR-50P: 13.5 MHz (4:2:0 Component)

Audio

Quantification: 12-bit (non-linear) or 16-bit (linear)

Standardization frequency: 32 kHz (12-bit recording) or 48 kHz (16-bit recording)

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 the DVCAM cassettes.)

Clock

Quartz locked

Power back-up: Back-up duration: up to one month (after a 10-hour charge)

Inputs

VIDEO/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-50)
0.3 Vp-p (DSR-50P)
(75 ohms unbalanced)

DV IN/OUT: 6-pin IEEE-1394 standard jack (i.LINK)

AUDIO INPUT (CH-1 to CH-4)
XLR 3-pin, female, +4/–20/–60 dBu, Impedance more than 3 kohms, balanced (48 V phantom power supply)
Maximum input level
–60: –19 dBu (about 90 mVrms)
–20: +8 dBu (about 2 Vrms)
+4: +30 dBu (about 25 Vrms)

CAMERA: 26-pin
Composite: 1 Vp-p (75 ohms, unbalanced)
Component:
Y: 1 Vp-p (75 ohms, unbalanced)
B-Y: 0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
R-Y: 0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
Audio: –20/–60 dBu, Impedance more than 3 kohms, balanced

TC IN: BNC type
0.5 to 18 Vp-p (time code input)
0.5 to 4 Vp-p (through output)

Outputs

VIDEO OUT1: BNC type, 1 Vp-p (75 ohms, unbalanced) (superimpose)

VIDEO OUT2: BNC type, 1 Vp-p (75 ohms, unbalanced)

COMPONENT OUTPUT
Y: BNC type
1 Vp-p (75 ohms, unbalanced)
R-Y: BNC type
0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
B-Y: BNC type
0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)

S VIDEO OUT: Mini DIN 4-pin
Luminance signal: 1 Vp-p (75 ohms, unbalanced)
Chrominance signal:
0.286 Vp-p (DSR-50)
0.3 Vp-p (DSR-50P)
(75 ohms, unbalanced)

AUDIO OUTPUT (CH-1 to CH-4)
Phono jack, –10 dBu, 47 kohms, Output impedance: less than 1 kohms
(DSR-50: –20 dB from full bit / DSR-50P: –18 dB from full bit)

AUDIO MONITOR OUT
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)

– Continued on next page –

DVCAM™ PORTABLE DIGITAL VIDEO CASSETTE RECORDER

SONY®

PHONES	Stereo phone jack –∞ to –19 dBu, adjustable
DC IN 12V	XLR 4-pin, male, 12 V

Control

CONTROL	Stereo mini-minijack
REMOTE	Stereo minijack (Edge High, Edge Low, Level High, Level Low) (Tally)
CONTROL S	Stereo minijack

General

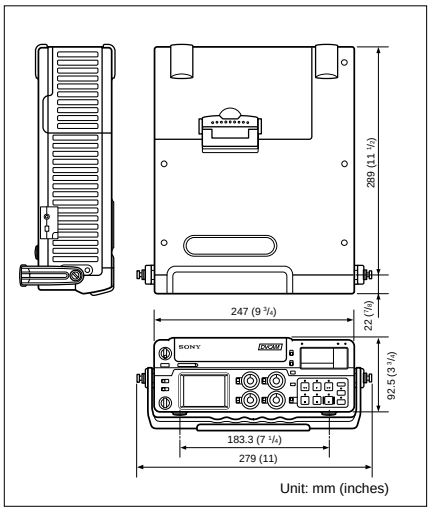
Power requirements
DC12 to 17 V, more than 2.0 A
(4.0 A at the peak)

Power consumption
15 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. 279 × 99 × 315 mm
(11 × 4 × 12 1/2 inches)
(w/h/d, including projecting parts and controls)



Mass Approx. 3.9 kg (8 lb 10 oz)

Supplied accessories
LCD protection board (1)
(installed at the factory)
Cleaning cassette (1)
Operating instructions (1)

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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 ⚠ 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

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 B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270 ˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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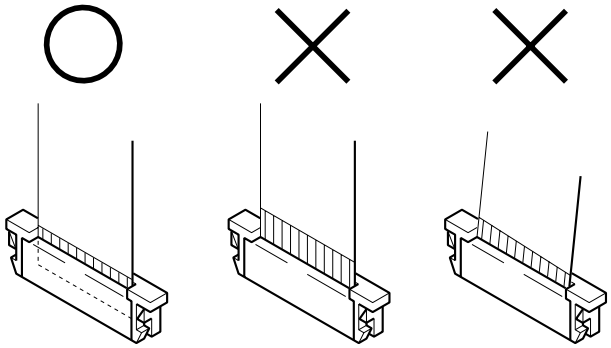
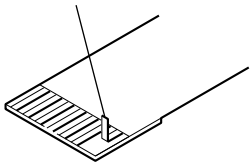
SERVICE NOTE

1. NOTE FOR REPAIR

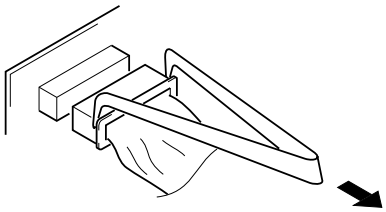
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



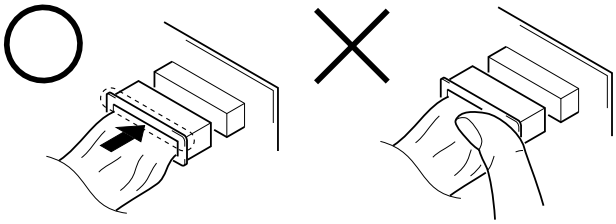
Cut and remove the part of gilt which comes off at the point. (Be careful or some pieces of gilt may be left inside)



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.



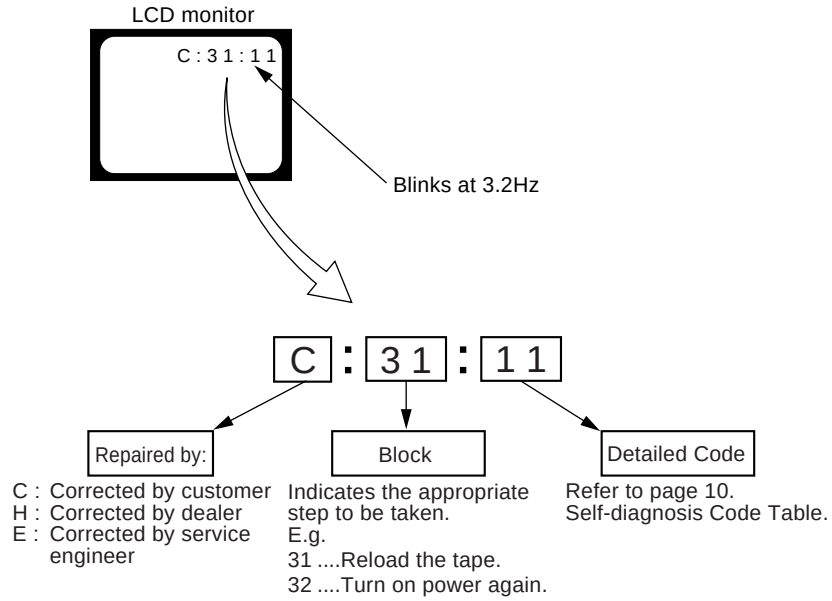
SELF-DIAGNOSIS FUNCTION

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.

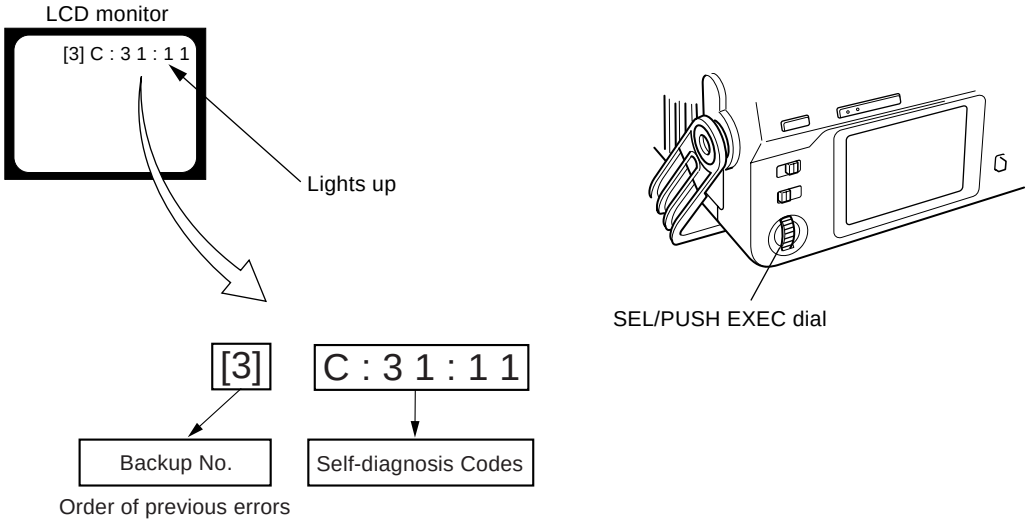


3. Service Mode Display

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

3-1. Display Method

While pressing the “STOP” key, set the switch from OFF to “ON”, 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 rotating the SEL/PUSH EXEC dial, 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
[2] : Occurred second time
[3] : Occurred third time
[4] : Occurred fourth time
[5] : Occurred fifth 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 (VL-26 board BT801). 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.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	1 1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 0	FG fault when starting drum.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 2	FG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

SECTION 1
GENERAL

This section is extracted from DSR-50/50P instruction manual.

Features

The DSR-50/50P is a digital videocassette recorder using 1/4-inch tape. Offering the DVCAM digital recording format, the DSR-50/50P produces stable, superior picture quality by digitally processing and separating image signals into color difference signals and luminance signal (component video). Featuring a color LCD monitor, the compact and lightweight DSR-50/50P is portable and gives you the freedom to check images on the spot.

The main features of the DSR-50/50P are described below.

DVCAM Format

DVCAM is based on the consumer DV format, which uses the 4:1:1 component digital format (DSR-50) or the 4:2:0 format (DSR-50P), and provides a 1/4-inch digital recording format for professional use.

High picture quality, high stability

Video signals are separated into color difference signals and 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 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 10 µm track pitch. Thanks to this feature, the DVCAM format sufficiently 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 bits linear code), which offers sound quality equivalent to the DAT (Digital Audio Tape) format, or 4-channel mode (32 kHz sampling and 12 bits nonlinear code), which provide four channel simultaneous recording/playback.

DV format compatibility

A DV cassette recorded on a DV-format VCR can be played back on this unit (SP mode only). You can also record an image on a 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 cassettes.
According to cassette size, it automatically changes the position of the reel drive plate.
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 a CONTROL-S system remote control unit, the DSRM-20 (not supplied).

Chapter 1 Overview

Features

High-speed search function

If you use the optional remote control unit (DSRM-20), the unit has a picture search function that allows you to view color picture at playback speeds up to 14 times normal speed (DSR-50) or up to 17 times normal speed (DSR-50P) in forward and reverse directions. When remote-controlling this unit in shuttle mode from an editing controller or a remote controller, you can search at a variable speed in the range 0 (still) to about 14 times normal (DSR-50) or about 17 times normal (DSR-50P) in both directions. You can also search frame-by-frame in jog mode.
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-50) or EBU format (DSR-50P). This unit can output the time code read from tape as an analog (LTC) signal, and receive externally generated time code (LTC).

Digital slow playback

The unit has a frame memory function that allows slow playback without noise. This is available only at +1/3-time speed and –1/3-time speed. (This function is available only when the DSRM-20 is used.)

TBC (Time Base Corrector)

The unit has a digital TBC that provides jitter-free video output for analog signals. The video output level, chrominance signal output level, setup level (DSR-50 only), sync and subcarrier level can all be adjusted.

Jog audio function

If you use the optional remote control unit DSRM-20, audio can be monitored at various playback speeds when in jog mode.

Various interface

The unit provides many types of interface connectors.
Analog video: component video, composite video, S-video (IN/OUT)
Analog audio: XLR (3-pin) input connectors provide four channel simultaneous recording, phono jack type output connectors.
i.LINK (DV) 1) : i.LINK-compliant DV IN/OUT connector (6-pin) allows input or output of digital video/audio signals in DVCAM/DV format.
Camera: Camera interface (26-pin) supplies power to the camera from this unit.
TC (Time code): BNC type input/output connectors allow input/output of the time code between this unit and an external device.

Other Features

Built-in color LCD monitor

The unit has a 2.5-type color LCD (liquid crystal display) monitor that lets you verify images on the spot. You can see the setup menus and system statuses. Menus and data can be superimposed over the picture being displayed.

Duplicate, including cassette memory data

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

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.

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 selection and operation setting using the SEL/PUSH EXEC dial

The SEL/PUSH EXEC dial is a Roller-push menu dial that allows you to easily operate the menu when you want to set functions and operation conditions tailored to your particular needs.

Superimposition function

Time code, warnings, and other text data can be output as analog composite video signals and can be superimposed on the image output to 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 as analog composite video signals.
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 is output to the LCD monitor and output as analog composite video signals.

AC adaptor/Battery power

BP-L40 (A)/L60A/L90A can be used.

Compact and lightweight

With its VCR and LCD monitor, the compact and lightweight (about 3.9 kg (8 lb 10 oz)) DSR-50/50P is easy to transport. The body is made partially of magnesium alloy for sturdy construction.

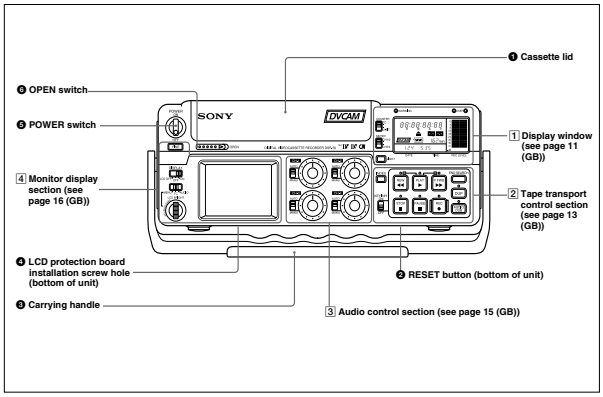
DVCAM, DV, MiniDV and are trademarks of Sony Corporation.

Chapter 1 Overview

Chapter 1 Overview

Location and Function of Parts

Front Panel



1 Cassette lid
To open the cassette lid, slide the OPEN switch 6 to OPEN. The lid will click open. Raise the lid and insert a cassette.
For details of usable cassettes, see "Notes on Video Cassettes" on page 40 (GB).

2 RESET button
Press this button (bottom of unit) to initialize the internal clock, all menu items and the time code of the FREE RUN setting. Press this button with the tip of a ball-point pen or similar tool.

3 Carrying handle
Use the handle to carry the unit.

4 LCD protection board installation screw hole
Use this hole to install the LCD protection board (supplied).

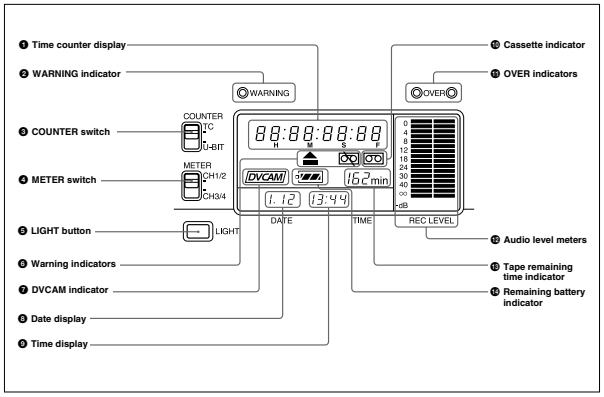
5 POWER switch
Push up this switch to ON to turn on the power.

Note

Power to the camera cable is not interrupted even if this switch has been turned off. If you are not going to use the camera, turn off the power of the camera, disconnect the camera cable and the DSR-50/50P AC adaptor, or remove the battery pack.

6 OPEN switch
Slide this switch to the right (OPEN) to open the cassette lid 1.

1 Display window



1 Time counter display
Displays the following:
Time data: Time code, user bits
Self-diagnostics *(see page 98 (GB))*

Note
The time code is displayed with colons (:) between digits regardless of the frame mode (drop frame/non-drop frame).

2 WARNING indicator
Lights or flashes when the battery is exhausted or an error occurs.
For details, see ÒAlarm MessagesÓon page 94 (GB).

3 COUNTER switch
Selects the time code or user bits to display in the time counter display, LCD monitor and VIDEO OUT1 output.
TC: Time code
U-BIT: User bits

4 METER switch
Selects the audio channels to display audio levels in the audio level meters 12.
CH1/2: Displays the audio level of audio channels 1 and 2.
CH3/4: Displays the audio level of audio channels 3 and 4.

5 LIGHT button
Turns on the backlight in the display window. The backlight will automatically turn off in 10 seconds after you release this button.

6 Warning indicators
Displays warnings.
For details on warnings, see ÒAlarm MessagesÓon page 94 (GB).

7 DVCAM indicator
This indicator appears as follows:
EE: When the DVCAM/DV select switch is set to DVCAM.
Play: When a DVCAM formatted tape is being played.

8 Date display
Displays the date on the internal clock.

9 Time display
Displays the time on the internal clock.

Note
When the battery pack is installed or the AC adaptor is connected, the date and time are displayed even if the power is turned off. With battery backup, the clock can run for about one month without being charged by the unit battery pack or by AC power.

10 Cassette indicator
Lights when a digital video cassette is in the unit and that cassette is compatible with the unit.

11 OVER indicators
Lights when the audio level exceeds 0 dB in the EE mode (except when inputting signals from the DV IN/OUT connector).

Notes
These indictors do not light if the AUDIO SELECT switch has been set to AUTO.
These indicators do not light while the unit is playing a tape or is in the EE mode when inputting signals from the DV IN/OUT connector.

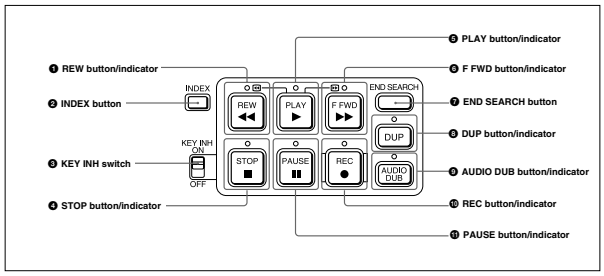
12 Audio level meters
Displays the recording level in the recording or in the EE mode; displays the playing level while playing a tape.

13 Tape remaining time indicator
Displays the tape remaining. If the power has been turned off, this shows the tape remaining when the power was turned off. If the tape remaining is more than 300 minutes (five hours), the number of hours will be shown. If the tape remaining is less than 300 minutes, this number of minutes will be shown.

Note
If the tape has been rewound to the beginning, this indicator will not show the tape remaining when the tape is inserted into the unit. The tape remaining time is displayed after the tape runs for a while.

14 Remaining battery indicator
Displays the remaining charge in the battery.
For details on the remaining battery, see page 18 (GB).

2 Tape transport control section



1 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 (except EE pictures[1]). If you keep pressing this button during playback, rewind or in playback pause mode, the contents of the tape will be shown in reverse on the monitor while it is rewound (picture search). When operation has stopped, if you press the PLAY button while holding this button down, the tape is rewound to the beginning and automatically played.
You can change the tape transport mode in FF/REW SPD on the VTR SET menu.
For details on VTR SET menu, see ÒVTR SET menuÓon page 90 (GB).

Notes
If you set the FF/REW SPD on the VTR SET menu to SHUTTLEMAX, you can display the picture while rewinding the tape.
If you set PB in EE/PB SET on the DISPLAY SET menu, the EE pictures are not output while rewinding the tape.

2 INDEX button
Press to mark an index while recording. An index is useful when you search for the scene later.
For details on index, see ÒOther Recording FunctionsÓon page 52 (GB).

3 KEY INH (key inhibit) switch
Turning on this switch disables the tape transport control buttons to prevent invalid button operations.

4 STOP button/indicator
Press to stop the tape. If there is a tape in the unit and the tape has been stopped, the indicator lights.

5 PLAY button/indicator
Press to play back the tape. When the tape is being played, the indicator lights.

Notes
When the unit is playing the part of the tape where the format has been changed between the DVCAM format and the DV format, the picture and sound may be distorted.
The unit cannot play back a cassette recorded in LP mode of the consumer DV format.

1) EE pictures
ÒEEÓstands for ÒElectric to ElectricÓ In this EE mode, the video and audio signals that are input to the VCRÕs 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.

6 F FWD (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 (except EE pictures). If you keep pressing this button during playback, fast-forward or in playback pause mode, you can locate a scene monitoring the picture (picture search).
You can change the tape transport mode in FF/REW SPD on the VTR SET menu.
For details on the VTR SET menu, see ÒVTR SET menuÓon page 90 (GB).

Notes
If you set the FF/REW SPD on the VTR SET menu to SHUTTLEMAX, you can display the picture while fast-forwarding the tape.
If you set PB in EE/PB SET on the DISPLAY SET menu, the EE pictures are not output while fast-forwarding the tape.

7 END SEARCH button
Searches for the last part of the recorded image and plays that part for five seconds. This function is used when you record another image at the end of the current image or check the last part of the recorded image.
If you use a cassette without cassette memory and remove the tape from the unit, the end search function does not work. If you use a cassette with cassette memory, the end search function continues to work. However, if there is a blank portion at the beginning or between the recorded portions, the end search function may not work correctly.

8 DUP (duplicate) button/indicator
Used to duplicate a tape, including the time code. During duplication, the indicator flashes.
For details on duplicate function, see ÒDuplication (generating a work tape with the same time code)Óon page 70 (GB).
When the INPUT SELECT selector is set to DV and a DV signal is input, if you press only this button when the unit is in the stop mode, the DUP indicator lights and you can check the EE signals for image, sound and time code. After checking them, press the STOP button.
For details, see ÒDISPLAY SET menuÓon page 84 (GB).
For details on the time code, see ÒDSR-50/50P time codesÓ on page 62 (GB).

9 AUDIO DUB (audio dubbing) button/indicator
Use this button to dub the sound. The indicator flashes while the sound is being dubbed.
For details on audio dubbing, see ÒAudio DubbingÓon page 74 (GB).
When the INPUT SELECT selector is set to other than DV, if you press only this button when the unit is in the stop mode, the AUDIO DUB indicator lights and you can check the EE sound signals. After checking them, press the STOP button.
For details, see ÒDISPLAY SET menuÓon page 84 (GB).

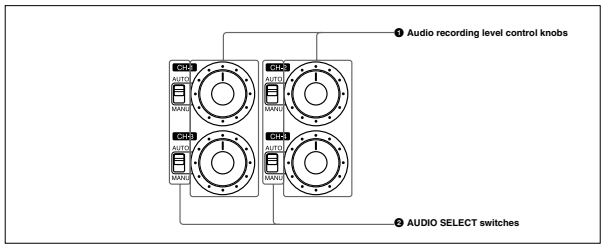
10 REC (record) button/indicator
When you start recording an image from an external camera, press the PLAY button while holding this button down. The unit is set to recording pause mode. Then press the PAUSE button on the unit or the VTR button on the camera to start recording. When you start recording an image from a source other than an external camera, press the PLAY button while holding this button down. The indicator flashes and recording starts. If you press only this button when the unit is in the stop mode, the REC indicator lights and you can check the EE signals for image, sound and time code. After checking them, press the STOP button.
For details, see ÒDISPLAY SET menuÓon page 84 (GB).
For details on time code, see ÒDSR-50/50P time codesÓon page 62 (GB).

Notes
The unit cannot record images unless video signals are input.
If the video signals are interrupted during recording, the unit is set to recording pause mode. When the video signals are input again, recording is resumed. That position of the tape where the recording resumes may be distorted when the tape is played back.
This unit cannot record in the LP mode of the consumer DV format.

11 PAUSE button/indicator
Press this button to set the unit to pause mode while recording, playing or audio dubbing. Pressing this button again resumes the operation. The indicator flashes when the unit is in pause mode.

Note
If you have started recording using an external camera by pressing the VTR button on the camera, pressing the PAUSE button while recording does not pause the recording.
For details on how to record an image using an external camera, see ÒRecording Using an External CameraÓon page 45 (GB).

3 Audio control section



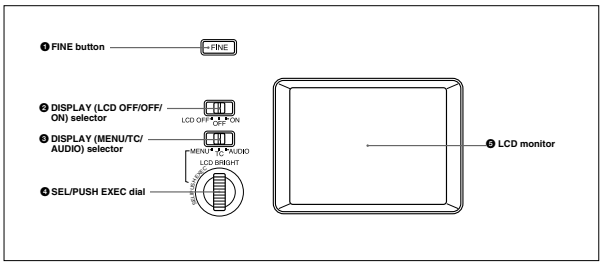
❶ Audio recording level control knobs (CH-1 to CH-4)
By turning these knobs, you can adjust the analog audio input signal levels. You can adjust the audio signal level only if the AUDIO SELECT switches ❷ have been set to MANU.
If you press the FINE button in the monitor display section when the DISPLAY (MENU/TC/AUDIO) selector has been set to AUDIO, detailed audio levels centered around the audio level that you set through the menu are displayed.
For details on the AUDIO screen, see ÒAUDIO screenÓon page 20 (GB).

Note
You cannot adjust the audio signal level of the DV signal.

❷ AUDIO SELECT switches (CH-1 to CH-4)
Switches the recording level adjustment mode.
AUTO: Disables the audio recording level control knob and automatically adjusts the recording level.
MANU: Enables the audio recording level control knob to manually adjust the recording level.

Notes
When inputting signals from the DV IN/OUT connector, these settings are invalid.
If the sound is louder than the amplifierÕs dynamic range, the AUTO setting is ineffective.
Even if AUTO has been set, unless the audio input level control selectors in the right panel are appropriate, there may be clipping and noise.
The audio level is automatically equalized 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 the LIMITER on the AUDIO SET menu has been set to ON, and if the audio input is too loud while you are manually adjusting the audio level, you can still record the sound without clipping. The LIMITER setting is available only when this switch is set to MANU.

4 Monitor display section



❶ FINE button
If you press this button when the DISPLAY (MENU/TC/AUDIO) selector ❸ has been set to AUDIO, the LCD monitor displays detailed audio level meters centered around the audio level that you set through the menu as well as various settings in text.
For details on the FINE screen, see ÒFINE screenÓon page 20 (GB).

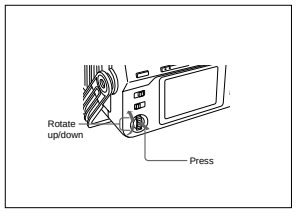
❷ DISPLAY (LCD OFF/OFF/ON) selector
Switches the LCD monitor mode.
LCD OFF: Turns off the LCD monitor power.
OFF: Displays the LCD monitor. Text data is not superimposed. The tape label, title and data codes (camera data, and date/time recorded by the camera) are displayed.
ON: Displays the LCD monitor. Text data is superimposed.

Notes
You can set the unit to display/hide a tape label, title and data codes only from the menus.
To change a menu setting, turn ON the DISPLAY (LCD OFF/OFF/ON) selector or turn ON the SUPERIMPOSE switch on the right panel. If the LCD monitor or external monitor does not display a superimposed screen, you cannot set a menu.

❸ DISPLAY (MENU/TC/AUDIO) selector
Switches the superimposed text data for display on the LCD monitor.
MENU: Displays the menu screen.
TC: Displays the time codes, remaining battery, tape remaining time, selected input signal, audio mode, presence or absence of cassette memory, tape label, title, etc.
AUDIO: Displays the audio levels.

Notes
You can use the DSRM-20 (not supplied) to search for the scene using the index signal on the tape. In this case you can search for the scene regardless of this selector setting. But you can display Ò-/+Ónly while this selector is set to TC.
If you change the setting of this switch during a cassette memory search, the cassette memory search is stopped.

❹ SEL/PUSH EXEC dial
If the DISPLAY (MENU/TC/AUDIO) selector ❸ has been set to MENU, rotating this dial changes the menu items being displayed and pressing this dial selects a particular menu item.
If the DISPLAY (MENU/TC/AUDIO) selector ❸ has been set to TC, rotating this dial adjusts the LCD monitor brightness.



For details on the menu, see ÒOperating the MenusÓon page 76 (GB).

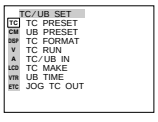
❺ LCD (Liquid Crystal Display) monitor
Displays the playback or EE pictures as well as superimposed time data, status information, menu, etc.

Note
The superimposed data output to the LCD monitor and the VIDEO OUT1 are the same. You cannot display a different superimposed data.

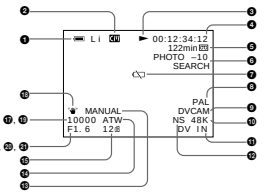
Text data superimposed on the LCD monitor

If you set the DISPLAY (LCD OFF/OFF/ON) selector to ON, you can superimpose the text data on the LCD monitor. By setting the DISPLAY (MENU/TC/AUDIO) selector to a particular setting, you can select superimposed text data for display on the LCD monitor.

MENU screen
By setting the DISPLAY (MENU/TC/AUDIO) selector to MENU, you can set various data in the menus.
For details on the menu, see Chapter 6, ÒAdjusting and Setting Through MenusÓon page 76 (GB).



TC screen
This screen shows the time data, tape remaining time, remaining battery, data codes, etc. These data items are important for normal recording/playback operation. To display the TC screen, set the DISPLAY (MENU/TC/AUDIO) selector to TC.



❶ Remaining battery indicator
Displays the remaining battery and the battery type. You can select the battery type in REMAIN on the DISPLAY SET menu.
Li: Lithium-ion battery
Ni: Ni-Cd (nickel-cadmium) battery

Note
The remaining battery is displayed even if you use the unit with AC power by connecting the AC adaptor to the DC IN 12V connector.

Ni-Cd battery voltage	Lithium-ion battery voltage	LCD monitor/ VIDEO OUT1 display[a]	Display window[a]	Camera's battery indicator[a]
12.5 V or more	15.0 V or more			
12.0 – 12.5 V	14.0 – 15.0 V			
11.75 – 12.0 V	13.0 – 14.0 V			
11.5 – 11.75 V	12.0 – 13.0 V			
11.3 – 11.5 V	11.3 – 12.0 V			
11.25 – 11.3 V	11.25 – 11.3 V			
11.0 – 11.25 V	11.0 – 11.25 V	Slow flashing	Slow flashing	Slow flashing
11.0 V or less	11.0 V or less	Battery-end warning	Rapid flashing	Light

a) The indicator flashes 3.2 times per second in the rapid flashing mode and flashes 0.8 time per second in the slow flashing mode.

❷ Cassette memory indicator
This is shown when a cassette with cassette memory has been loaded. This indicator flashes when you remove the cassette while the system is writing data in the cassette memory.

❸ Tape transport mode indicator
Displays the tape transport mode.

❹ Time code indicator
Displays the time code or user bits. Change the display (time code or user bits) by changing the COUNTER switch on the front panel. In the drop frame mode, a period is displayed between the minute and second. (Example: 00:12.58:00)
If the self-diagnostic function is enabled, a diagnostics code numbers are displayed.

❺ Tape remaining time indicator
If REMAIN on the DISPLAY SET menu has been set to ON, the tape remaining time is displayed.

Note
If the tape has been rewound to the beginning, this indicator will not show the tape remaining time when the tape is inserted into the unit. The tape remaining time is displayed after the tape runs for a while.

❻ Search/Index indicator
Displays the search mode. If an index has been marked, this displays INDEX MARK. If you use the end search function, this displays END SEARCH.

❼ Warning indicators
Displays a warning.
For details on warnings, see "Alarm Messages" on page 94 (GB).

❽ PAL (DSR-50)/NTSC (DSR-50P) indicator
DSR-50: Appears for five seconds when you play back a PAL formatted tape.
DSR-50P: Appears for five seconds when you play back a NTSC formatted tape.

❾ DVCAM/DV indicator
In the EE, recording, and duplicate modes, displays the DVCAM/DV select switch setting. During playback, displays the format recorded on the tape.

❿ Audio mode indicator
In the EE and recording modes, displays the selected audio mode in AUDIO MODE on the AUDIO SET menu. During playback and audio dubbing, displays the audio mode recorded on the tape. When inputting signals from the DV IN/OUT connector, displays the audio mode input from the DV IN/OUT connector.

⓫ Input signal indicator
Displays the INPUT SELECT selector setting.

⓬ NS (Non Standard) audio mode indicator
Lights when you play back a tape in the unlock audio mode or when the unlock mode signal has been input from the DV IN/OUT connector. Always lights if the DVCAM/DV select switch has been set to DV and the unit is in the EE mode.
For details on the unlock mode, see "Compatibility of DVCAM and DV Format" on page 99 (GB).

⓭ Program AE indicator

⓮ White balance indicator

⓯ Gain indicator

⓰ Iris indicator

⓱ Shutter speed indicator

⓲ SteadyShot indicator

Notes
Data items ⓭ through ⓲ show the settings (camera data) of the tape recorded by the camera (DSR-200/200P, 200A/200AP, PD100/PD100P, PD100A/PD100AP, PD150/PD150P, etc.). This unit cannot record camera data.
Data items ⓭ through ⓲ are displayed only when DATA CODE on the DISPLAY SET menu has been set to CAMERA.
For details on DATA CODE, see "DISPLAY SET menu" on page 84 (GB).

⓳ Date indicator
Displays the date when the tape was recorded.

⓴ Time indicator
Displays the time when the tape was recorded.

Note
Data items ⓳ and ⓴ are displayed only when DATA CODE on the DISPLAY SET menu has been set to DATE.

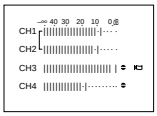
㉑ LCD monitor brightness
This is displayed when you adjust the LCD monitor brightness by rotating the SEL/PUSH EXEC dial. This display disappears in one second after you adjust the brightness. You can adjust the LCD monitor brightness when you have set the DISPLAY (MENU/TC/AUDIO) selector to TC and the DISPLAY (LCD OFF/OFF/ON) selector to OFF or ON.

AUDIO screen
You can check and adjust the audio levels and check the audio input signal settings on this screen. To display this screen, set the DISPLAY (MENU/TC/AUDIO) selector to AUDIO. While this screen is displayed, you can press the FINE button to display the FINE screen. The FINE screen is only displayed when you keep pressing the FINE button.

While a tape is being played back, this screen displays the audio mode recorded on the tape. When recording a picture, this screen displays the audio mode selected in AUDIO MODE on the AUDIO SET menu. When inputting signals from the DV IN/OUT connector, this screen displays the input audio mode. If the audio mode has been set to 32 kHz, this screen displays four channels; if the audio mode has been set to 48 kHz, this screen displays two channels.

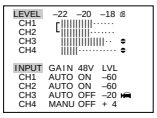
Note
You cannot change the audio mode while inputting signals from the DV IN/OUT connector.

Normal screen



This screen displays the audio levels. By adjusting the audio recording level control knobs in the front panel, you can adjust the recording level. In the EE, recording, or audio dubbing (only the audio dubbing channel) modes, the level display runs all the way to the right (0 dB) and turns red if the input level exceeds 0 dB. During playback, when inputting signals from the DV IN/OUT connector, or if you have set the AUDIO SELECT switch to AUTO, the level display does not run all the way to the right (0 dB).

FINE screen



When the normal screen is being displayed, pressing the FINE button displays the FINE screen. The FINE screen is displayed only while you are pressing the FINE button. The FINE screen displays narrower audio levels around the audio levels (–12/–18/–20 dB) selected in the REF LEVEL on the AUDIO SET menu and displays the audio input signal settings. You can finely adjust recording levels by adjusting the audio recording level control knobs on the front panel.
The audio input signals are displayed as follows:
GAIN: Displays the AUTO/MANU setting of the AUDIO SELECT switch.
48V: If the audio input level control selector has been set to –60 and the audio input selector has been set to +48V ON, this column shows ON, otherwise this column shows OFF.
LVL: Displays the setting (–60/–20/+4) of the audio input level control selector.

Notes
Changing the REF LEVEL on the AUDIO SET menu does not change the audio gain of the unit. Adjust the audio gain by setting the audio input level control selectors and adjusting the audio recording level control knobs.
The standard output level of the AUDIO OUTPUT jack of the unit is –10 dBu. This is equivalent to –20 dB level for the full-bit maximum audio level (–18 dB level for DSR-50P). This value is fixed and is not affected by the REF LEVEL setting on the AUDIO SET menu.
When inputting signals from the DV IN/OUT connector, the INPUT field shows DV IN.
When inputting signals from other than DV IN/OUT connector, the INPUT shows the available audio channels.

The audio screen shows the following symbols depending on the menu settings, etc.

: Audio dubbing symbol
This symbol appears with a channel on which you can dub sound. You can select a channel to dub the sound in the AUDIO DUB on the AUDIO SET menu.
This symbol appears during playback of a tape recorded in 32 kHz of the DVCAM format.
This symbol also appears during audio dubbing on a tape recorded in 32 kHz of the DVCAM format.
This symbol does not appear when the INPUT SELECT selector is set to DV.

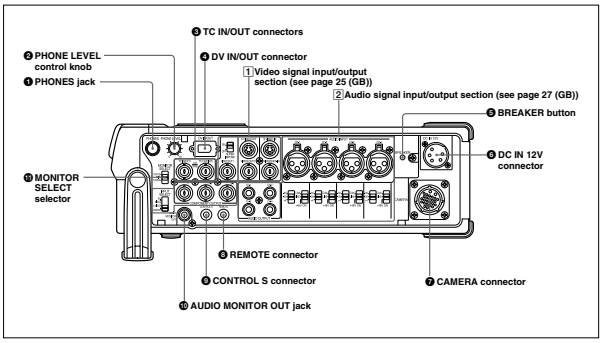
: Wind noise reduction symbol
This symbol appears with a channel in which the WIND on the AUDIO SET menu has been set to ON.

: Link symbol
If the AGC (Auto Gain Control) of a pair of channels is linked, this symbol is placed between the channels.
If AGC CH1, 2 on the AUDIO SET menu have been set to LINKED and channels 1 and 2 in the AUDIO SELECT switch have been 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.
If AGC CH3, 4 on the AUDIO SET menu have been set to LINKED and channels 3 and 4 in the AUDIO SELECT switch have been 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
This symbol does not appear when inputting signals from the DV IN/OUT connector.

: Camera symbol
This symbol appears at the right side of the LVL display when the INPUT SELECT selector is set to other than DV and the audio input selector is set to CAM.

Right Panel



❶ PHONES (headphones) jack (stereo phone jack)
Connects to the headphones. You can monitor the audio signals being recorded or played through the headphones. Select the audio signal you want to monitor by selecting the channels with the MONITOR SELECT selector ⓫.

Notes
A warning tone is output on the headphone sound and return sound to the camera. A warning tone is not mixed on the signals output from the AUDIO MONITOR OUT and AUDIO OUTPUT jacks.
By setting the BEEP on the OTHERS menu to MELODY, the selected melody beep sound is mixed on the headphone sound and the return sound to the camera when you operate the menu.

❷ PHONE LEVEL control knob
Adjusts the volume of the headphones that are connected to the PHONES jack ❶ and the audio level of the return sound to the camera.

❸ TC (time code) IN/OUT connectors (BNC-type)
Used to input or output the time code through these connectors.
TC IN connector: Connects to the time code output connector on the external devices such as a time code generator or a VCR. This connector is used 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 connector: Connects to the time code input connector on the external devices such as a time code reader or a VCR.
The unit outputs the following time codes depending on the operating state:
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 signals from the external device are output.
For details, see "DSR-50/50P time codes" on page 62 (GB).

Note

If the 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 a continuous one.

❹ DV IN/OUT connector (6-pin)
Used to input/output the digital signal with a locking mechanism that complies with the i.LINK standard (Recommended cable: CCFD-3L, CCF-3L). If you have an external device that has a DV connector, you can connect that device to this connector to record or duplicate a tape or capture pictures. The digital signals for the sound or pictures captured through this connector have almost no degradation. For details, refer to the instruction manual of the external device.

Notes

The DV/IN OUT connector of this unit is a 6-pin connector but does not provide power to any connected external device. You can also use a 6-pin connector without a locking mechanism.
If video signals have been input to the DV IN/OUT connector and you output these video signals to the VIDEO OUT1, VIDEO OUT2, or S VIDEO OUT connectors, the sync and burst of the EE pictures are not synchronized.
i.LINK and the i.LINK logo "i" are trademarks and indicate that this product is in agreement with IEEE 1394-1995 specifications and their revisions.

❺ BREAKER button
If excessive current flows inside the unit, the breaker is activated, and the power to the unit is shut down. If this button is activated and pushed out, check the unit and the camera connected to the CAMERA connector to make sure they are not malfunctioning. If they appear to be functioning properly, press this button. If there are no problems, power will be supplied again.

❻ DC IN 12V connector (XLR 4-pin/Male)
Used to supply the unit with DC power.
If you have installed a battery pack in the battery compartment, whichever power source is providing the higher voltage provides the power to the unit.

Notes

The DC power source must be 12 V to 17 V/2.0 A (peak: 4.0 A) or higher.
If you have connected an AC adaptor to this connector and the battery voltage is higher than the AC power, the battery power is used first.
For details on the DC IN 12V connector, see "Power Preparations" on page 31 (GB).

❼ CAMERA connector (26-pin)
Connects to a camera (not supplied). The unit can supply power to the external camera with this connector.

Note

If you have installed a small capacity battery pack such as a BP-L40(A) and supplied power to an external camera connected from the CAMERA connector, the operation time with the battery pack might be significantly reduced when the camera power consumption is too high. Use a large capacity battery pack or obtain power for the camera from a separate power source.
For details on how to record images using the CAMERA connector, see "Recording" on page 45 (GB).

❽ REMOTE connector
Connects to a foot switch.
For details on how to set the foot switch, see "VTR SET menu" on page 90 (GB).

❾ CONTROL S connector (minijack)
Connects to a remote control unit (DSRM-20, not supplied) for controlling this unit.

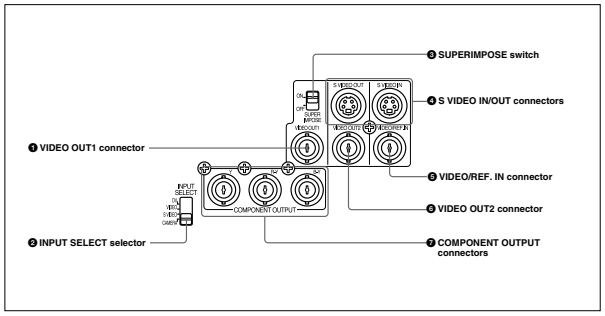
❿ AUDIO MONITOR OUT jack (phono jack)
Outputs the audio signals for monitoring. Select the audio signals with the MONITOR SELECT selector ⓫.

⓫ MONITOR SELECT selector
Selects audio channels to output to the PHONES jack ❶, AUDIO MONITOR OUT jack ❿ and return sound to the camera.
CH1/2: Channels 1 and 2
MIX: Channels 1 to 4
CH3/4: Channels 3 and 4

1 Video signal input/output section

Note

You only can input standard video signals to the unit. If you input the types of video signals shown below, the EE picture output to the VIDEO OUT2 connector, S VIDEO OUT connector and COMPONENT OUTPUT 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 the TBC



❶ VIDEO OUT1 connector (BNC-type)
Outputs composite video signals. Connect to the input connector of an external monitor. If the SUPERIMPOSE switch ❸ has been set to ON, text data (time data, menus and alarm messages) is superimposed.
For details on the superimposed data, see "Text data superimposed on the LCD monitor" on page 17 (GB).

Notes

When a video sync signal of the EE pictures are output to the VIDEO OUT1 connector, 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 OUTPUT, S VIDEO OUT, VIDEO OUT2). When the unit is in the EE mode, the output pictures are delayed by several lines. When played, the picture is not externally synchronized Ñ only vertically synchronized. You cannot adjust the sync and subcarrier phases.
If DV input has been selected, color and luminance may be distorted in the EE mode, depending on the monitor type.

The superimposed data output to the LCD monitor and the VIDEO OUT1 are the same. You cannot display a different superimposed data.
The adjustment of VIDEO LVL on the VIDEO SET menu does not affect the VIDEO OUT1 output and return signal to the camera.
If the unit is externally synchronized, jitters may appear in the VIDEO OUT1 connector output and the LCD monitor image because the sync signal frequency and the burst signals are not synchronized.
If the unit is externally synchronized, use the VIDEO OUT2 connector. If you use the VIDEO OUT1 connector, set EXT SYNC on the VIDEO SET menu to OFF.

❷ INPUT SELECT selector
You can select DV, VIDEO, S VIDEO or CAMERA to input the signals. The selected input is displayed on the TC screen of the LCD monitor.

Notes

When inputting signals from the DV IN/OUT connector, the following settings are disabled:
—Video input level
—Audio input selectors (CAM/LINE/+48V ON)
—Audio input level control selectors (–60/–20/+4)
—Audio recording level
—Audio recording mode (AUTO/MANU)
—Audio mode (32 kHz/48 kHz)
—Audio AGC (Auto Gain Control)
—Wind noise reduction
—Audio limiter
—You cannot display the color bars.
If you change this selector, the screen may momentarily become bright or noise may appear. This noise will be recorded.

❸ SUPERIMPOSE switch
Turn on this switch to superimpose text data onto the output from the VIDEO OUT1 connector.

Note

The return signal to the camera is the same as the output from the VIDEO OUT1 connector.

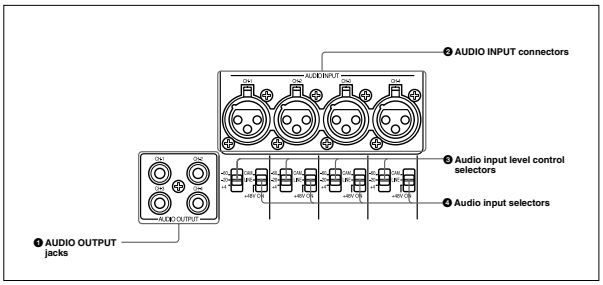
❹ S VIDEO IN/OUT connectors (4-pin)
Inputs/Outputs the S-video signal with separated Y (luminance) and the C (chroma: 3.58 MHz for DSR-50 and 4.43 MHz for DSR-50P).

❺ VIDEO/REF.IN (reference input) connector (BNC-type)
Inputs composite video signals to this unit. When performing a playback synchronized with the external sync signal, this connector inputs reference video (black burst) signal.

❻ VIDEO OUT2 connector (BNC-type)
Outputs composite video signals. The text data is not superimposed.

❼ COMPONENT OUTPUT Y, R-Y, B-Y connectors (BNC-type)
Outputs component video (Y, R-Y, B-Y) signals.

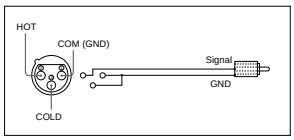
2 Audio signal input/output section



❶ AUDIO OUTPUT CH-1 to CH-4 jacks (phono jack)
Outputs audio signals (CH-1 to CH-4).

❷ AUDIO INPUT CH-1 to CH-4 connectors (XLR 3-pin, female)
Inputs audio signals (CH-1 to CH-4).

Note
The unit employs electronically balanced AUDIO INPUT connectors. To input unbalanced audio signals (a phono jack of a consumer VCR, etc.), use a conversion cable as shown below. (This conversion cable shorts the COLD and the common terminal (GND)).



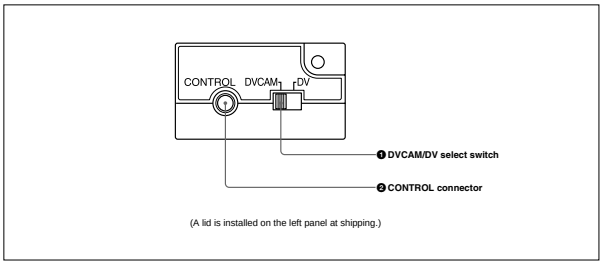
❸ Audio input level (60/ 20/+4) control selectors
When the INPUT SELECT selector is set to other than DV, select an audio input signal level (–60/–20/+4) for the CAMERA connector or AUDIO INPUT connectors.

Notes
If this switch setting is not appropriate, clipping distortion or noise may occur even if the AUDIO SELECT switch has been set to AUTO.
The unit is not compatible with a camera that outputs +4 dB. If you set the audio input selectors to CAM, select –60 dB or –20 dB depending on the output level of the camera.
If you can select the output level (–60 dB or –20 dB) on the camera, select –20 dB on the camera and the unit. When the unit and the camera are connected with a long camera cable, noise may be minimized.

❹ Audio input (CAM/LINE/+48V ON) selectors
Select audio signals input to channels 1 to 4 when the INPUT SELECT selector is set to other than DV.
CAM: Audio signals from the CAMERA connector
LINE: Audio signals from the AUDIO INPUT connectors
+48V ON: Supplies power to the 48 V microphone.

Notes
If you have selected +48V ON, do not insert a metal object into the AUDIO INPUT connectors. It may cause electric shock.
If you have selected +48V ON, use a microphone that is compatible with 48 V. Using a microphone that is incompatible may damage the microphone, generate smoke or cause a fire.
The +48V ON setting is in effect only when you use the AUDIO INPUT connectors and the audio input level control selectors ❸ are set to –60 dB.

Left Panel



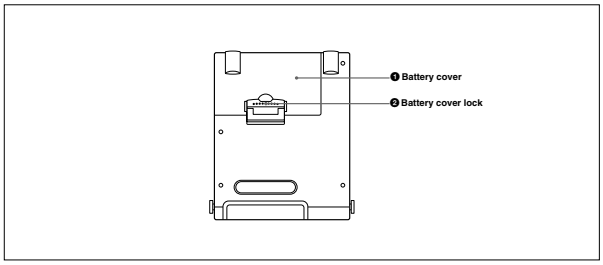
❶ DVCAM/DV select switch
Switches the recording mode between DVCAM and DV (SP mode only). When you play back a tape, the DVCAM/DV setting will be automatically switched; you do not need to use this switch.

Notes
The unit is not compatible with playing or recording in consumer DV format (LP mode).
If you switch the DVCAM/DV select switch setting while recording, the unit automatically pauses the recording and then resumes recording several seconds later. Nothing is recorded during that interval. You cannot change the mode smoothly 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 sound will be recorded unsynchronized. (unlock mode)
—The time code is fixed to the drop frame mode. (only for DSR-50)
—You cannot change the TC PRESET, UB PRESET, TC FORMAT, TC RUN, TC/UB IN, TC MAKE, UB TIME settings on the TC/UB SET menu. The setting and status set at the time of the DVCAM recording will be canceled.
—The time code automatically progresses so that the recorded tracks are continued.
—If you start recording from a blank portion, the time code starts from 00:00:00:00.
—The user bits are not recorded. When you play back the tape, the user bits display will be Ò– – – – – – – –Ó
—Even if you input an external time code into the TC IN connector, the time code used will be the one provided by the internal time code generator.
If you dub a consumer DV tape from the DV IN/OUT connector, keep the following in mind:
—Set the DVCAM/DV select switch to DV. If the DVCAM/DV select switch has been set to DVCAM, a tape with an invalid format (the recording speed: DVCAM, sound: unsynchronized, unlock mode) will be made. (The unit cannot convert unlock mode sound to lock mode sound.)
—When you edit a tape with an invalid format in the DSR-70/70P, DSR-80/80P, DSR-85/85P, DSR-2000/2000P, etc., there may be some restrictions.
For details on the DVCAM/DV format compatibility, see ÒCompatibility of DVCAM and DV FormatÓon page 99 (GB).

❷ CONTROL connector
You can connect most of the LANC[1)] devices to this connector. On a regular LANC connector, you can only switch to the recording mode from the stop mode. This unit has an extended function that allows you to switch to the recording mode directly from the playback, fast-forward, rewind, slow-play, still, cue and review modes.

Notes
You cannot control the power on/off of the unit from a LANC device connected to the CONTROL connector.
The CONTROL connector of this unit has only LANC-S functions. This unit has no LANC-M functions.

Top Panel



❶ Battery cover
You can open the cover when you attach/remove the battery into/from the battery compartment.

❷ Battery cover lock
Unlock when you open the battery cover.
For details on how to install a battery pack, see ÒUsing the BP-L40(A)/L60A/L90A Battery PackÓon page 32 (GB).

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

Power Preparations

This unit can be powered by batteries or AC power.

Note

If you attach or remove batteries incorrectly, you may drop the battery, causing bodily injury or damage to the battery. Attach or remove the battery according to the procedure described below.

Usable Batteries

Use the following batteries: BP-L40, L40A, L60A, L90A. You will need either the BC-L100 or the BC-L50 battery charger.

Notes about battery usage

Before using batteries, be sure to charge the battery with a charger specified for that particular type of battery. Refer to the operating instructions of your battery charger for more information about how to charge the batteries.

Batteries may not be completely charged if you charge them immediately after use when they are still warm. You should wait until the batteries cool before charging them.

This unit cannot charge the battery.

Using the BP-L40(A)/L60A/L90A Battery Pack

To charge the battery pack

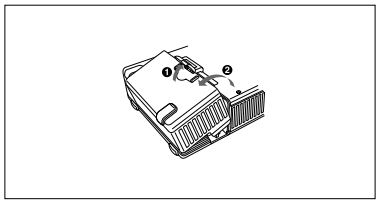
Before use, charge the battery pack with the BC-L100 or BC-L50 battery charger.

For more information about how to charge the battery pack, refer to the instruction manual of the battery charger.

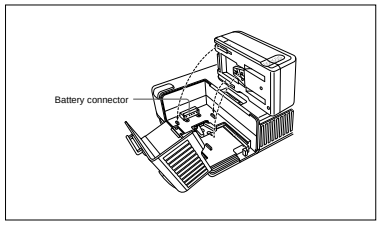
To attach the battery pack in the battery compartment

The battery compartment is on the top panel. Attach the battery pack (BP-L40(A)/L60A/L90A) in the battery compartment as shown below.

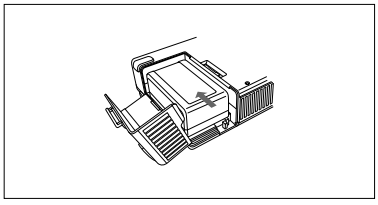
1 Lift up the battery cover lock and open the battery cover.



2 Align the three grooves on the bottom of the BP-L40(A)/L60A/L90A with the three guides on the unit.

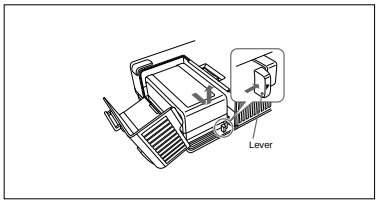


3 Slide the BP-L40(A)/L60A/L90A so that the battery connector connects to the battery connector of the unit. Continue to slide the BP-L40(A)/L60A/L90A in until it clicks firmly into place.



To remove the battery pack

With the lever pushed in, slide the BP-L40(A)/L60A/L90A in the direction of the arrow (see figure).



Notes on Using the DC IN 12V Connector

When you attach a battery pack in the battery compartment and connect a battery adaptor or AC adaptor to the DC IN 12V connector, keep the following in mind.

Noise may appear momentarily on the image or sound in the following cases:
—The power source has been switched between one from the battery compartment and the other from the DC IN 12V connector.
—The power source is connected to the battery compartment (or to the DC IN 12V connector) when the other power source has been connected to the DC IN 12V connector (or to the battery compartment).
—One of the two power sources is disconnected from the battery compartment or from the DC IN 12V connector.

The remaining charge of the battery is displayed even if you use only the AC adaptor for the power source.

When you have connected both a battery pack and an AC adaptor, the unit will use the battery pack power if the battery pack power is higher.

If you attach a battery pack both in the battery compartment and to the DC IN 12V connector, every time the voltage difference between the battery pack and the DC IN 12V power becomes over 1V, the unit switches to the higher voltage power source. If you use a small capacity battery pack such as BP-L40(A), the power source will change frequently. To avoid this, do the following:
—If you use a small capacity battery pack, do not attach battery packs both in the battery compartment and in DC IN 12V connector at the same time.
—Use a large capacity battery (e.g., BP-L60A, BP-L90A, etc.).
—Use an AC adaptor.

If you have attached a small capacity battery pack such as a BP-L40(A) and the unit has supplied power to an external camera connected to the CAMERA connector, the operation time of the unit with the battery pack will be significantly reduced in the case where the camera power consumption is too high. Use a large capacity battery pack, connect an AC adaptor, or obtain power for the camera from a separate power source.

When the unit has supplied power to an external camera, make sure that the total power consumption of the unit and the camera does not exceed either the allowable battery pack power or allowable AC adaptor power.

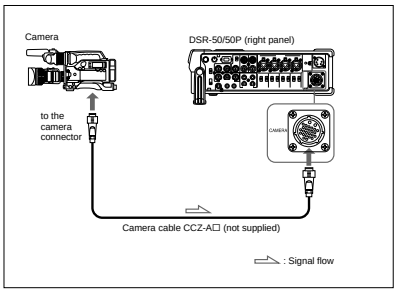
Connections

This section describes basic connections for recording or playback on the unit.

Connections for Recording

To an external camera

The unit can provide an external camera with power.
To provide power to the camera from the unit, see "Notes on Using the DC IN 12V Connector" on the previous page.
Some cameras cannot accept power from the CAMERA connector.
For details, refer to the instruction manual of the camera.

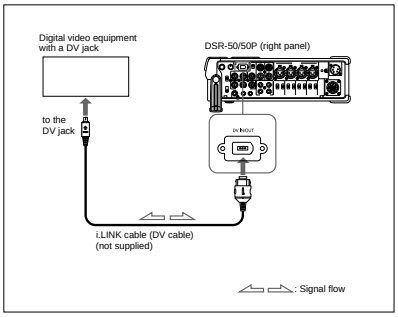


Note

Use the CCZ-A□ for the camera cable to meet the FCC Rules and EN55103-1. (The last numbers indicated by □ are different depending on the cable length.)

To digital video equipment with the 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 need not make separate connections for input and output.

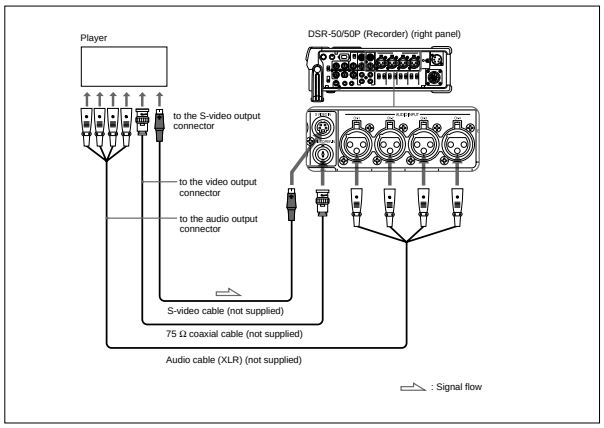


Notes

The DV IN/OUT connector in the unit is a 6-pin type but does not provide power to external equipment.
With the DV connection, the data codes (recording date/time, camera data) recorded on the tape in the player will be transmitted to the unit. To display the same data code recorded on the source tape, set the DATA CODE on the DISPLAY SET menu to DATE or CAMERA, or press the DATA CODE button on the DSRM-20 remote control unit (not supplied) when you play back the recorded tape. 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.
For details on duplicate function, see "Duplication (generating a work tape with the same time code)" on page 70 (GB).
When no picture appears via the DV jack, disconnect, then reconnect the i.LINK cable (DV cable).

To video equipment without a DV jack (when using the DSR-50/50P as a recorder)

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



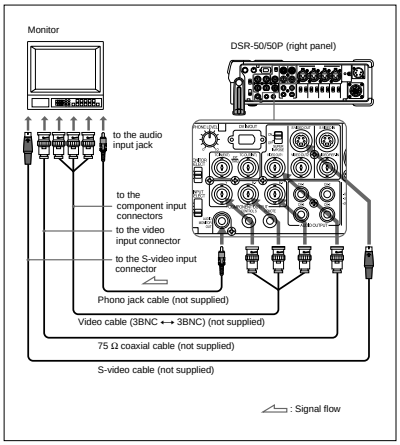
Connect one of the followings as a video cable; S-video cable or 75 Ω coaxial cable.

Notes

When recording analog input signals, this unit can digitally output signals from the DV IN/OUT connector for backup. Set the DV EE OUT on the VTR SET menu to ON.
If you connect the output connectors of this VCR to the input connectors of the player, a humming noise may be generated or the image may be distorted.
Distorted signals (e.g., when played back at a speed other than normal) will not be recorded properly.

Connections for Playback

To an external monitor



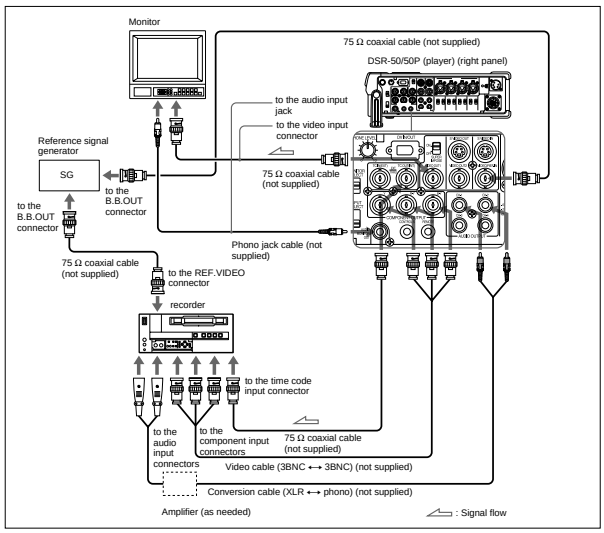
Connect one of the followings as a video cable; video cable (3BNC ↔ 3BNC), 75 Ω coaxial cable, or S-video cable.

Notes

If you connect the input connectors of this VCR to the output connectors of the monitor, a humming noise may be generated or the image may be distorted.
Text data (time code, warnings, menus, etc.) are superimposed only on the signal sent to the VIDEO OUT1 output.

To video equipment without a DV jack (when using the DSR-50/50P as a player)

You can connect this unit to video equipment without a DV jack. Use this unit as a player as follows.
The following shows an example configuration of dubbing a tape with its time code in the externally-synchronized playback mode. In this configuration, the recorder is a VCR equipped with component input connectors.



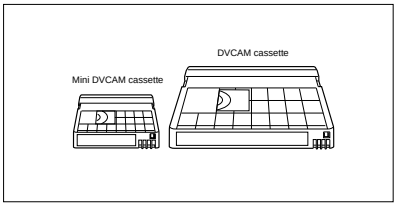
Notes

If you connect the input connectors of this VCR to the output connectors of the monitor or recorder, a humming noise may be generated or the image may be distorted.
Text data (time code, warnings, menus, etc.) are superimposed only on the signal sent to the VIDEO OUT1 output.
To play back synchronized with the reference video (black burst) signal, set the EXT SYNC on the VIDEO SET menu to ON.

Notes on Video Cassettes

Usable cassettes

Use Standard-DVCAM cassettes or Mini-DVCAM cassettes with this unit. PDV-184 can record programs for 184 minutes and PDVM-40 can record for 40 minutes (DVCAM format).
You can get the highest quality pictures with this digital videocassette recorder using DVCAM cassettes. You may not be able to get as good quality with other cassettes. We recommend using DVCAM cassettes so that you can record your one-time events in the highest quality.

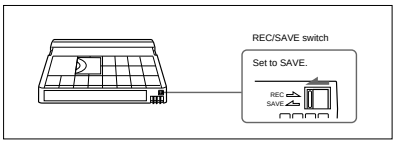


Cassette memory

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. 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.

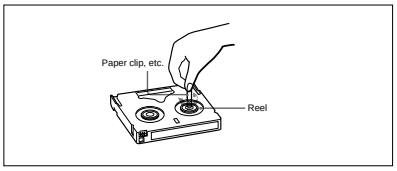
To save a recording

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.



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.



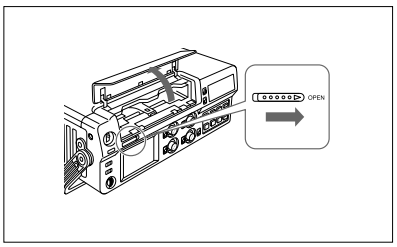
Inserting/Ejecting Cassettes

To insert a cassette

Notes

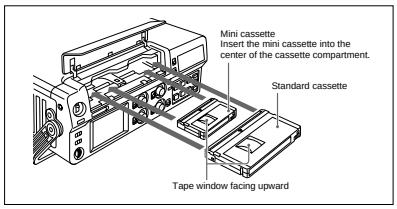
Do not insert the cassette forcibly. The unit may be damaged.
Do not eject/load the cassette in a place subject to light. Make sure to close the cassette lid when using the unit. The internal sensor of the unit may operate incorrectly if too much light falls on the unit.

1 With the unit powered on, slide the OPEN switch to the right and unlock the cassette lid. Open the cassette lid.



Notes on Video Cassettes

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

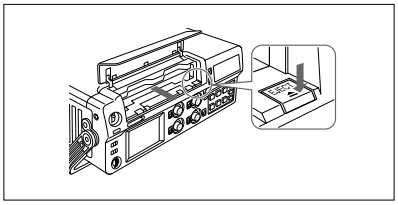


The cassette is automatically loaded into the unit.

3 Close the cassette lid.

To eject the cassette

1 With the unit powered on, open the cassette lid. Press the EJECT button located at the right side of the cassette compartment.



The cassette is unloaded and ejected.

2 Remove the cassette from the unit. Close the cassette lid.

Note

If the battery power falls to below about 11 V, the unit cannot eject the cassette with the EJECT button. Exchange the battery with a fully charged one or use an AC adaptor to obtain sufficient power.
For details on confirming the remaining battery power, see "TC screen" on page 18 (GB).

Notes on Recording/Playback

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.

On playback

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

Limitations caused by the difference 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 the difference in format, you may not be able to record 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 99 (GB).

Simple playback function for a tape recorded in PAL system (for DSR-50) or in NTSC system (for DSR-50P)

The DSR-50 can play a PAL tape (DSR-50P can play a 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, VIDEO OUT1 output, and return signal to the camera.
The output video signals are in the format recorded in the tape. You cannot convert the signals into the other format. If you want to display the VIDEO OUT1 output, you will need a video monitor able to handle the format recorded in the tape. If you want to display the return video signals to the camera on the viewfinder, you will need a video camera able to handle the format recorded in the tape.
The VIDEO OUT1 output and the return video signals to the camera are optimized and adjusted for one format (DSR-50: NTSC format; DSR-50P: PAL format). If you play back a tape recorded in the other format, the levels and phases of the video signal may not be correct.

Notes on Video Cassettes

The outputs from the VIDEO OUT2, S VIDEO OUT and COMPONENT OUTPUT connectors are muted.
When the unit plays a tape recorded in the other color system, the image, sound and time code may be distorted for a while at the beginning of playback.
The TC OUT connector outputs incorrect time code. Do not use this time code.
The unit cannot play back synchronized with the external sync signal.
Noise reduction results for the luminance and chrominance signals may differ between PAL formatted tape and NTSC formatted tapes.

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 format.
Inputting the other format video signals does not output the EE pictures correctly. The video output may be muted and any signal 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 exist when you play the tape with this unit:

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

Recording

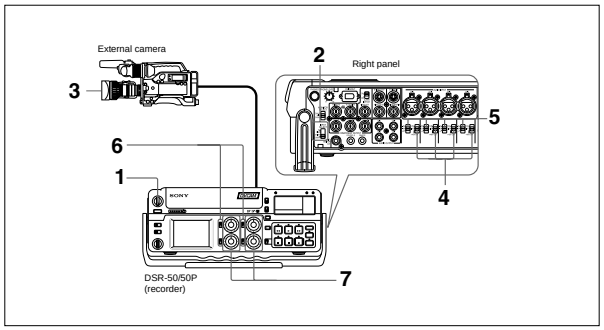
This section describes the settings and operations to record on this unit.
For details on connection, see "Connections" on page 35 (GB).

Notes

Before starting a recording session, set the clock on the unit so that the recording time can be written into the index signal. You can set the clock by setting the CLOCK SET on the OTHERS menu.
If you use a source that is copyright protected, recording and operation may be restricted.
During a recording, the tape transport control buttons (except STOP and PAUSE) are disabled to prevent the tape running mode from being changed by an incorrect operation. To disable the STOP and PAUSE buttons, set the KEY INH switch to ON after the unit starts recording. In this case, set the KEY INH switch to OFF first, then stop or pause the recording.

Recording Using an External Camera

Settings for recording



(Continued)

Recording

1 Turn on the POWER switch.

2 Set the INPUT SELECT selector to CAMERA.

3 Set up the camera for shooting.
For details, refer to the instruction manual of the camera.

4 Set the audio input selectors to CAM.

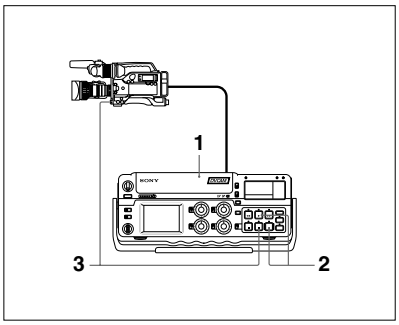
5 Set the audio input level control selectors properly according to the audio level of the camera.

6 Select the audio input level adjustment mode in the AUDIO SELECT switches.

7 If necessary, adjust the audio input level by turning the audio recording level control knobs.

You can adjust the recording level with the audio recording level control knobs if you have selected MANU in step **6**. While looking at the audio level meters on the LCD monitor or the display window, turn the audio recording 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 OVER indicators light.

Recording procedure



1 After checking that the REC/SAVE switch of the cassette is set to the write enabled position and checking the tape for slack, 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 stop.
For details of the REC/SAVE switch and checking the tape for slack, see "Notes on Video Cassettes" on page 40 (GB).

2 Press the PLAY button while pressing the REC button.

The unit turns to the recording pause mode. The REC and PLAY indicators light. The PAUSE indicator flashes.

3 Press the VTR button on the camera, or press the PAUSE button on the unit.

The unit starts recording and the index is marked.

To stop recording
Press the STOP button on the unit.

Recording

To pause recording
If you have pressed the VTR button on the camera to start shooting, press the VTR button on the camera. Pressing the PAUSE button on the unit does not pause the recording.
If you have pressed the PAUSE button on the unit to start shooting, press the PAUSE button on the unit. To pause recording with the VTR button on the camera, press the VTR button twice.

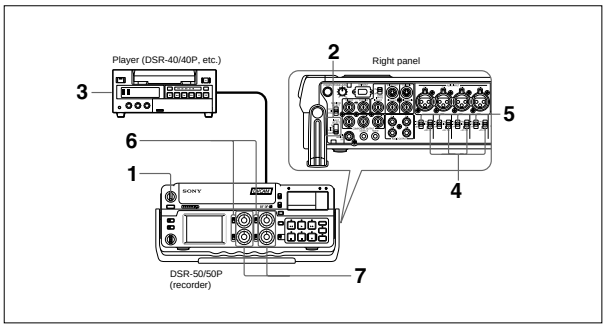
To start recording using the DSRM-20 Remote Control Unit (not supplied)
Press the PLAY button while pressing the REC button. The unit changes to the recording pause mode. Pressing the PAUSE button on the DSRM-20 starts the recording.

When the battery pack is almost exhausted
The unit has a battery compartment and a DC IN 12V connector. When the battery pack in the battery compartment is almost exhausted, you can temporarily connect an AC adaptor to the DC IN 12V connector then exchange the battery pack to continue the recording and this can be done without interrupting the recording. In this case, however, some noise may be recorded.

Notes
The unit does not record any pictures unless the video signals are input (except when inputting signals from the DV IN/OUT connector). If there are no video signals or signals are interrupted during recording, the unit pauses; if signals resume, the unit resumes recording.
If the camera outputs both component and composite signals, the unit uses the component signals.
If you press the VTR button on the camera to start recording, the tape transport control buttons, except the STOP button on the unit, are disabled.
The return video signals to the camera are the same as those for the VIDEO OUT1 output. If you have turned off the SUPERIMPOSE switch, the superimposed data on the return video signal to the camera will not be displayed.
The unit changes to the stop mode after the recording has been paused for more than five minutes to protect the tape if you have set FROM REC P on the VTR SET menu to STOP. Repeat the procedure from step **2** to start recording again.

Recording Using the Player

Settings for recording



1 Turn on the POWER switch.

2 Select an input signal by switching the INPUT SELECT selector.

DV: to record input signals from the DV IN/OUT connector
VIDEO: to record input signals from the VIDEO/REF.IN connector
S VIDEO: to record input signals from the S VIDEO IN connector

3 Set up the player to play back a tape.

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

4 Set the audio input selectors to LINE.

Note
You do not need to set these selectors if you record signals input from the DV IN/OUT connector.

5 Set the audio input level control selectors properly according to the audio level of the player.

(Continued)

Recording

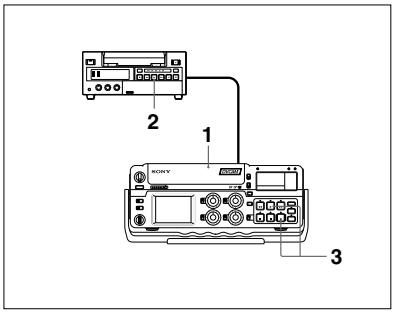
6 Select the audio input level adjustment mode in the AUDIO SELECT switches.

Note
You cannot adjust the recording level if you record signals input from the DV IN/OUT connector.

7 If necessary, adjust the audio input level by turning the audio recording level control knobs.

You can adjust the recording level with the audio recording level control knobs if you have selected MANU in step **6**. While looking at the audio level meters on the LCD monitor or the display window, turn the audio recording 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 OVER indicators light.

Recording Procedure



1 After checking that the REC/SAVE switch of the cassette is set to the write enabled position and checking the tape for slack, 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 stop.
For details of the REC/SAVE switch and checking the tape for slack, see "Notes on Video Cassettes" on page 40 (GB).

2 Press the playback button on the player.

The player starts playback.

3 Press the PLAY button while pressing the REC button.

The unit starts recording and the index is marked.

To stop recording
Press the STOP button on the unit.

To pause recording
Press the PAUSE button on the unit.

To start recording using the DSRM-20 Remote Control Unit (not supplied)
Press the PLAY button while pressing the REC button.

To record without inputting any video signals
Set the INPUT SELECT selector to other than DV, then set the COLOR BAR (for DSR-50)/COLOUR BAR (for DSR-50P) on the DISPLAY SET menu to ON. The color bars are recorded on the tape. The sound is recorded according to the setting of the audio input selectors.

Note
The unit does not record any pictures unless the video signals are input (except when inputting signals from the DV IN/OUT connector). If there are no video signals or signals are interrupted during recording, the unit pauses; if signals resume, the unit resumes recording.

Other Recording Functions

Marking an index

By pressing the INDEX button during a recording, you can mark an index signal at any place in the tape. The index signal is marked for five seconds. If you mark an index at the scene you want to search for, you can easily search for the scene later.
When you start recording in the stop mode, the index signal is marked automatically.
If you press the INDEX button while recording, the "INDEX MARK" indicator appears for seven seconds on the LCD monitor and the VIDEO OUT1 output (if you have turned on the SUPERIMPOSE switch) and the index is marked.
If you use a cassette with cassette memory, the index will also be marked in the cassette memory.

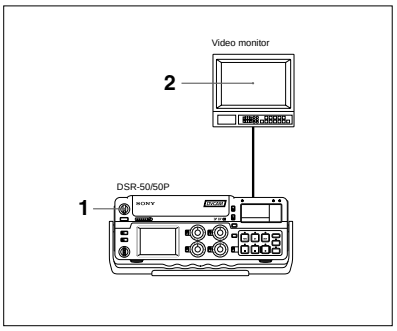
Notes
You cannot mark a new index while the "INDEX MARK" indicator is showing.
If you record on a location in the tape where an index has been marked, the index will be erased. You cannot delete just an index while keeping the image or sound.
You cannot mark an index during playback, duplicate or audio dubbing operations. The INDEX button is disabled in these operations.
The cassette memory space available limits the number of the indexes that you can mark by pressing the INDEX button. When you use a previously recorded tape for repeated recording, 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 DSRM-20 remote control unit (not supplied).
For details on the playback function using the DSRM-20, see "Other Playback Functions" on page 55 (GB).

Playback

This section describes the required settings and operations to perform playback on this unit.
For details on connection, see "Connections" on page 35 (GB).

Settings for Playback

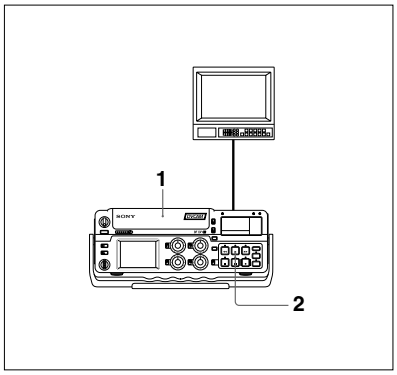


1 Turn on the POWER switch.

2 Turn on the power to the video monitor and set the switches of the monitor as shown below.

Switch	Setting
75 Ω	ON (or attach a 75 Ω terminator)
Input switch	Set according to the type of input signal from this unit.

Playback Procedure



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

For details on checking the tape for slack, see "Notes on Video Cassettes" on page 40 (GB).

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

2 Press the PLAY button.

This starts the playback operation.

To stop playback
Press the STOP button.

To pause playback
Press the PAUSE button.

Note
When the unit is playing the part of the tape where the format has been changed between the DVCAM format and the DV format, the picture and sound may be distorted.

Other Playback Functions

You can enjoy various playback functions using the DSRM-20 optional remote control unit.
For details, refer to the operating instructions supplied with DSRM-20.

Playing at various speeds (JOG)
You can play at various speeds, or play frame by frame.

Searching (SHUTTLE)
You can easily locate the desired scene.

Searching using the index function
Four kinds of search are available:
—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

Note
You cannot make a title, record the date for search, or record in the photo mode with this unit.

Displaying the tape information
Data codes (shutter speed, iris, white balance, program AE mode, gain, etc.) are recorded in tapes recorded on a Sony Digital Camcorder (DSR-200/200P, 200A/200AP, PD100/PD100P, PD100A/PD100AP, PD150/PD150P, etc.). You can display and check these data codes during playback by setting the DATA CODE on the DISPLAY SET menu to DATE or CAMERA in this unit, or by pressing the DATA CODE button on the DSRM-20.

Setting the Time Code and User Bits

This unit can set, display, record and play back the SMPTE/EBU 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.

Displaying Text Data Such as Time Data

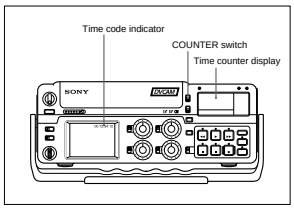
The LCD monitor on the unit can display superimposed menus, warnings, audio levels, the operation statuses and time data.

For details on the menus, see Chapter 6 "Adjusting and Setting Through Menus" on page 76 (GB).

To display text data

To display the operation statuses, time data, etc., on the LCD monitor, set the DISPLAY (LCD OFF/OFF/ON) selector to ON, and the DISPLAY (MENU/TC/AUDIO) selector to TC. If you turn the SUPERIMPOSE switch on, the text data is superimposed on the output from the VIDEO OUT1 connector.

To display the desired time data in the time counter display



Use the COUNTER switch to select the type of time data to be displayed.
TC: Time code
U-BIT: User bits

Note
If the recording on the tape includes discontinuities, the counter may operate incorrectly during playback at the corresponding points.

Using the Internal Time Code Generator

You can set the initial time code value before recording the time code generated by the internal time code generator onto a tape. In addition, you can set the user bits to record user bit 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

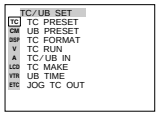
This section describes how to set the time code's initial value.

Notes
The time code can be set only in a DVCAM format recording. It cannot be set in a DV format recording. Make sure you set the DVCAM/DV select switch to DVCAM.
Before setting the initial time code value, set TC/UB IN on the TC/UB SET menu to INTERNAL and TC MAKE to PRESET.
For details on TC/UB IN and TC MAKE, see "TC/UB SET menu" on page 78 (GB).

Setting the Time Code and User Bits

1 Set the DISPLAY (LCD OFF/OFF/ON) selector to ON, and the DISPLAY (MENU/TC/AUDIO) selector to MENU.

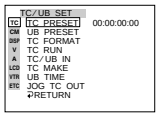
The LCD monitor displays the menu. If you turn the SUPERIMPOSE switch on, the menu is also displayed on the VIDEO OUT1 output.



(The TC FORMAT submenu is only for DSR-50.)

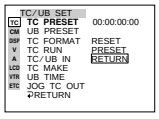
2 Rotate the SEL/PUSH EXEC dial to select TC/UB SET, then press the dial.

The following menu appears.



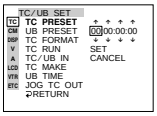
3 Rotate the SEL/PUSH EXEC dial to select TC PRESET, then press the dial.

The following menu appears.



4 Rotate the SEL/PUSH EXEC dial to select PRESET, then press the dial.

The following menu appears.



5 Set the first two digits. Rotate the SEL/PUSH EXEC dial to select the number, then press the dial.

6 Repeat step **5** to set the other digits.

7 Rotate the SEL/PUSH EXEC dial to select SET, then press the dial.

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

8 Rotate the SEL/PUSH EXEC dial to select RETURN, then press the dial.

The menu display returns to step **1**.

To cancel the time code setting
Select CANCEL in step **7**, then press the SEL/PUSH EXEC dial.

To reset the time code
Select RESET in step **4**, then press the SEL/PUSH EXEC dial.

To set the value of the user bits

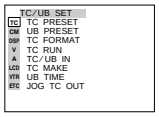
You can set the user bits as eight-digit hexadecimal values (base 16) to have the date, time, scene number, and other information inserted into the time code track.

Notes
The user bits can be set only in a DVCAM format recording. It cannot be set in a DV format recording. Before setting the user bits, set the TC/UB IN on the TC/UB SET menu to INTERNAL and UB TIME to OFF.
For details on TC/UB IN and UB TIME, see "TC/UB SET menu" on page 78 (GB).

Setting the Time Code and User Bits

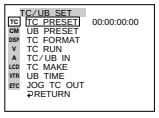
1 Set the DISPLAY (LCD OFF/OFF/ON) selector to ON, and the DISPLAY (MENU/TC/AUDIO) selector to MENU.

The LCD monitor displays the menu. If you turn the SUPERIMPOSE switch on, the menu is also displayed on the VIDEO OUT1 output.



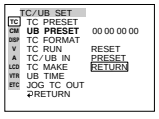
2 Rotate the SEL/PUSH EXEC dial to select TC/UB SET, then press the dial.

The following menu appears.



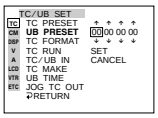
3 Rotate the SEL/PUSH EXEC dial to select UB PRESET, then press the dial.

The following menu appears.



4 Rotate the SEL/PUSH EXEC dial to select PRESET, then press the dial.

The following menu appears.



5 Set the first two digits. Rotate the SEL/PUSH EXEC dial to select the number, then press the dial.

6 Repeat step **5** to set the other digits.

7 Rotate the SEL/PUSH EXEC dial to select SET, then press the dial.

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

8 Rotate the SEL/PUSH EXEC dial to select RETURN, then press the dial.

The menu display returns to step **1**.

To cancel the user bits setting
Select CANCEL in step **7**, then press the SEL/PUSH EXEC dial.

To reset the user bits
Select RESET in step **4**, then press the SEL/PUSH EXEC dial.

To set the frame mode (DSR-50 only)

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

AUTO: Automatically sets the mode in accordance with the inserted cassette.
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 in 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 turn the power on/off or remove the tape, 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 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 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 time code.

Notes

If you set the advancement mode to FREE RUN, the time code will be updated by the internal clock during the unit 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 10 hours. A fully charged internal battery can run for about one month.

To set the time code when the recording starts

Set TC MAKE on the TC/UB SET menu to select the time code when you start recording.

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 value is set to the time code from the value set in PRESET in TC PRESET on the TC/UB SET menu.

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

The 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.

To set the current time in the user bits

You can set the current time in the user bits by setting the UB TIME on the TC/UB SET menu.

OFF: The value set in PRESET in UB PRESET on the TC/UB SET menu is set to the user bits.

ON: The value set in CLOCK SET on the OTHERS menu is set to the user bits.

Note

This function is available only when TC/UB IN on the TC/UB SET menu is set to INTERNAL or TC EXT.

To select the time code/user bits to record on the tape

You can set the time code and user bits to record 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

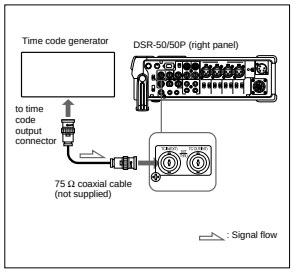
This unit has a DV IN/OUT connector. The time code input or output is different when you connect the unit to an external device via this DV IN/OUT connector or via another input/output connector.
For details, see ÒDSR-50/50P time codesÓon page 62 (GB).

The time code output from this unit has some restrictions.
For details, see ÒNotes on the Time CodesÓon page 63 (GB).

Synchronizing the Time Codes

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

Connecting to the Time Code Generator



To synchronize the internal time code to an external time code

1 Set the INPUT SELECT selector to other than DV.

2 Input an external time code (LTC) signal to the TC IN connector of the unit.

3 Set TC/UB IN on the TC/UB SET menu to TC&UB EXT or TC EXT.

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 from the external device.

Notes

This unit has a DV IN/OUT connector. The time code input or output is different when you connect the unit to an external device via this DV IN/OUT connector or via another input/output connector.
For details, see ÒDSR-50/50P time codesÓon page 62 (GB).

The time code output from this unit has some restrictions.
For details, see ÒNotes on the Time CodesÓon page 63 (GB).

To confirm external synchronization

Before you start recording, check that the internal time code is synchronized to the external time code.

Press the STOP button to put the unit into 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-50/50P time codes

This unit has a DV IN/OUT connector. 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.

	TC/UB IN menu	INPUT SELECT selector	Mode	TC IN (EXT)	The time code output from the TC OUT (INT) connector and the time code/ user bits recorded on the tape
Playback			Playback Audio dubbing		Time code on the tape
			Playback at various speeds [a] DUB1 [b]		JOG TC OUT: ON – Time code on the tape; JOG TC OUT: OFF – Mute (No output)
EE	INTERNAL	DV	Duplicate DUP1 [b]		Time code of another device connected to the DV IN/OUT connector [c]
			Recording Recording Pause REC1 [b]		Time code internally generated [c]
		VIDEO S VIDEO CAMERA (Except DV)	Recording Recording Pause REC1 [b]		Time code internally generated [c]
	UB EXT	DV	Duplicate DUP1 [b]		Time code of another device connected to the DV IN/OUT connector [c]
			Recording Recording Pause REC1 [b]		Time code internally generated [c]
		VIDEO S VIDEO CAMERA (Except DV)	Recording Recording Pause REC1 [b]	Yes	Time code connected to TC IN (EXT) is through-output.
				No	No output from the TC OUT (INT) connector *(For details, see next page.)* : the time code and user bits generated internally are recorded on the tape.
	TC&UB EXT TC EXT	DV	Duplicate DUP1 [b]		Time code of another device connected to the DV IN/OUT connector [c]
			Recording Recording Pause REC1 [b]		Time code: Time code of another device connected to the DV IN/OUT connector User bits: User bits internally generated [d]
		VIDEO S VIDEO CAMERA (Except DV)	Recording Recording Pause REC1 [b]	Yes	Time code connected to TC IN (EXT) is through-output.
				No	No output from the TC OUT (INT) connector *(For details, see next page.)* : the time code and user bits generated internally are recorded on the tape.

a) This includes stop, fast-forward or rewind. If the unit cannot read the time code on the tape correctly, the counter displays Ò–:–:–:–Óand the time code is not output from the TC OUT connector.
b) ÒDUB1ÓÒDUP1Óand ÒREC1Órepresent 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 Ò–:–:–:–Ó 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 the DVCAM/DV select switch is set to DV, the time code generated internally is output.

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 outputs 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.

1 Match the settings (used when TC/UB IN is set to INTERNAL) of the unit with the external device time code format. (See the setting example below.)

2 After setting TC/UB IN to other than INTERNAL, input the time code from the external device connected to the TC IN connector.

3 Set TC/UB IN on the TC/UB SET menu to INTERNAL.

4 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 menu	Setting
TC RUN	FREE RUN
TC FORMAT	DF
UB PRESET	12 34 56 78

(The TC FORMAT submenu is only for DSR-50.)

Synchronizing the Time Codes

The internal time code is output with the phase synchronized to the line-outs (COMPONENT OUTPUT, S VIDEO OUT, VIDEO OUT2) 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 the component video (CAMERA) or S-video is input, and delayed for two lines from the input video signal when the composite video (CAMERA, VIDEO/REF.IN) is input.)

When inputting signals from the DV IN/OUT connector, if you set TC/UB IN to INTERNAL or UB EXT, 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 IN/OUT connector, set TC/UB IN to TC EXT or TC&UB EXT, or use the duplicate function.

When the DVCAM/DV select switch is set to DVCAM, if you set TC/UB IN to TC EXT or TC&UB EXT, this unit records the time code input from the DV IN/OUT connector 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 OUTPUT, S VIDEO OUT, VIDEO OUT2) during the duplicate operation.

For details on the duplicate function, see ÒDuplication (generating a work tape with the same time code)Óon page 70 (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 ÒAudio DubbingÓon 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 switch 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.

To display the current time that is set in CLOCK SET on the OTHERS menu as the user bits, press the REC button when all the conditions below are met.

—The unit is in the stop mode.
—The COUNTER switch is set to U-BIT.
—UB TIME on the TC/UB SET menu is set to ON.

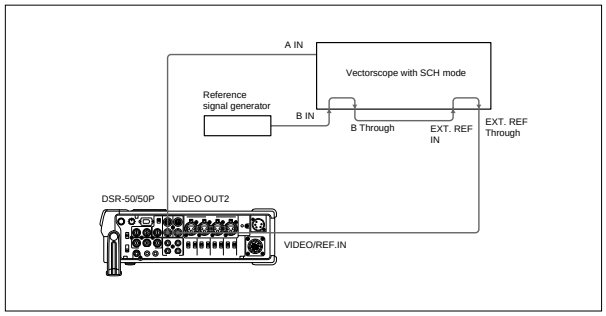
(If UB TIME is set to OFF, the value set in UB PRESET will be displayed.)

If you press the STOP button, the user bits display returns to the last 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 the 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 switches to ÒSCHÓmode.

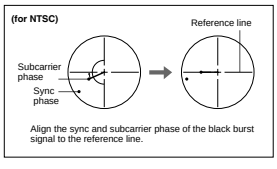
2 Press the B channel button on the vectorscope.

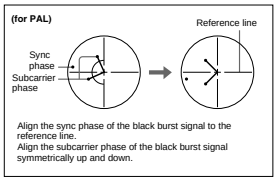
This selects the black burst signal from the reference signal generator.

3 Press the EXT button on the vectorscope.

This switches the vectorscope to 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.





(Continued)

Adjusting the Sync and Subcarrier Phases of the Video Signals

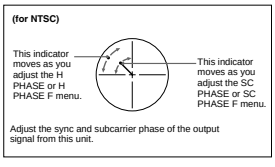
5 Play back a tape from this unit after setting EXT SYNC on the VIDEO SET menu to ON.

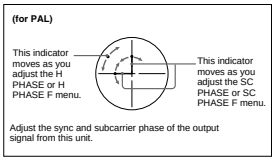
6 Press the A channel button on the vectorscope.

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.

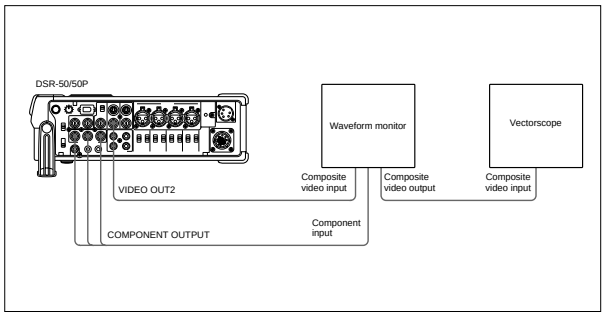
Adjusting the Signals

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

If you adjust the component signal level, be sure to adjust the chrominance signal gain level of composite signals.
Adjust the output level while playing the tape. Adjust the input level in the EE mode.
You cannot adjust the signals input to the DV IN/OUT connector. You cannot adjust the signals output from the DV IN/OUT connector during playback.

Adjusting the Output Level



Adjusting the component signal level

1 Play back a tape and output the signals from the Y, R-Y and B-Y connectors of the COMPONENT OUTPUT connectors.

The waveform monitor displays the picture.

2 Adjust the Y, R-Y, and B-Y signal levels in PB OUTPUT in VIDEO LVL on the VIDEO SET menu.
Y LVL: Adjusts the Y signal level.
R-Y LVL: Adjusts the R-Y signal level.
B-Y LVL: Adjusts the B-Y signal level.
For details on "PB OUTPUT", see "VIDEO SET menu" on page 85 (GB).

Adjusting the composite signal level

1 Set the INPUT SELECT selector to S VIDEO or VIDEO in accordance with the signal to be adjusted.

2 Stop the unit and set it to the EE mode.

The waveform monitor displays the picture you selected in step **1**.

3 Adjust the luminance level, chrominance level and hue in INPUT in VIDEO LVL on the VIDEO SET menu.
LUMINANCE: Adjusts the luminance level.
CHROMA: Adjusts the chrominance level.
HUE: Adjusts the hue. (for DSR-50 only)
For details on "INPUT", see "VIDEO SET menu" on page 85 (GB).

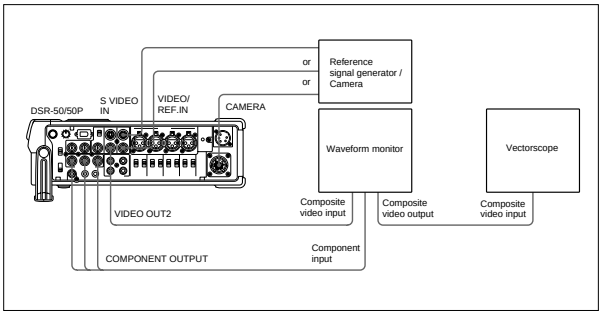
Adjusting the chrominance signal gain level of the composite signal

1 Play back a tape to output the signals from the VIDEO OUT2 connector.

The vectorscope displays the picture.

2 Adjust the chrominance signal gain level in PB OUTPUT in VIDEO LVL on the VIDEO SET menu.
For details on "PB OUTPUT", see "VIDEO SET menu" on page 85 (GB).

Adjusting the Input Level



Adjusting the camera component signal level

1 Set the INPUT SELECT selector to CAMERA.

2 Stop the unit and set it to the EE mode.

The waveform monitor displays the picture.

3 Adjust the Y, R-Y, and B-Y signal levels in INPUT in VIDEO LVL on the VIDEO SET menu.
Y LVL: Adjusts the Y signal level.
R-Y LVL: Adjusts the R-Y signal level.
B-Y LVL: Adjusts the B-Y signal level.
For details on "INPUT", see "VIDEO SET menu" on page 85 (GB).

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 making DV connections.
This unit functions as a recorder. The duplicate function on this unit works only when you duplicate a tape in the DVCAM format. Make sure to change the DVCAM/DV select switch to DVCAM before duplicating a tape.

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 (AUTO TAPE COPY WITH CM COPY):** The player and the recorder automatically rewind the tape to the beginning to start duplicating. The cassette memory is also duplicated.
- **AUTO (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 (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 (MENU/TC/AUDIO) selector setting, but the duplication screen will be displayed only when the DISPLAY (MENU/TC/AUDIO) selector has been set to TC.

AUTO or AUTO duplicate mode

1 Connect this unit and the player with an i.LINK cable (DV cable, not supplied). After turning on power of this unit and player, set the INPUT SELECT selector on this unit to DV.

2 Press the STOP button on this unit to stop the tape transport operation.

3 While pressing the DUP button, 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 indicator on this unit flashes and the duplication starts.

If you press the PAUSE and PLAY buttons while pressing the DUP button 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.

Notes

You cannot pause during a duplicate process.
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.
Set still timer to the longest time possible to ensure enough time for rewinding the tape to the beginning when the player has a still timer function.
If you have selected AUTO 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 VIDEO OUT1 output. Duplicating the cassette memory takes up to a few minutes depending on the amount of data. Duplication of the cassette memory will be cancelled and the duplicate operation will be completed without duplicating the cassette memory in the following cases:
—You press the STOP button while duplicating.
—You turn off the power to this unit or player.
—You remove the tape.
—You disconnect the DV cable.
If the duplication of the cassette memory stops for some reason, the cassette memory of this unit will be completely erased.
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 **2**.

The player and recorder rewind the tape automatically after duplication. However, depending on the specifications, some players do not automatically rewind the tape after duplication. Before you start duplication, make sure that the player finished loading the cassette.

MANUAL duplicate mode

1 Connect this unit and the player with an i.LINK cable (DV cable, not supplied). After turning on power of this unit and player, set the INPUT SELECT selector on this unit to DV.

2 Locate the points where you want to start playback and recording.

3 Press the STOP button on this unit to stop the tape transport operation.

4 While pressing the DUP button, press the PLAY button on this unit.

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

To adjust the point where duplication starts

In step **4**, while pressing the DUP button, press the PAUSE button and 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 by operating the player, then press the PAUSE button on this unit to start duplication.

To stop duplication

Press the STOP button.

Notes

You cannot pause during a duplicate process.
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. Play back the source tape from the preceding point.
Set auto repeat to OFF when the player has an auto repeat function.
You may not be able to duplicate the first part of the source tape. Locate the recorded portion on the source tape, then start duplicating.
If there is a blank portion on the tape, the first part of the recorded portion that follows may be dropped on the copied tape.
If you start duplication at some midpoint in the tape, the search function may not work correctly on the copied tape or problems may occur when editing. It is recommended that you select AUTO/ or AUTO for the duplicate mode.
Before start duplication, make sure that the player finished loading the cassette.

Detecting a blank portion during duplication

If the unit detects a blank portion in the tape in the player during duplication, the skip function will automatically skip the blank portion, reducing the recorded part of the tape. (This function is available only when the duplicate mode is AUTO/ or AUTO.)
The operations of the player and recorder (this unit) when a blank portion is detected are as follows:

Player detection status	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 does the above operations automatically, reducing the blank portion for 10 or more seconds in duplicating a tape.

Notes

If the duplicate mode has been set to MANUAL, 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 may be dropped on the copied tape.
A recorded portion of less than one minute between two blank portions may not be duplicated.

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 VIDEO OUT1 output screen.

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 and the cassette in the player 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 cassette in the player is not recorded in the DVCAM format. → You can duplicate only a DVCAM recorded tape.
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/ or AUTO.
18	PLAYER: TAPE INFO. UNKNOWN	The cassette information in the player cannot be read. → If the cassette information is correct, clean the terminal of the cassette and insert the cassette again *(see page 97 (GB))* .
19a)	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	The DVCAM/DV select switch of the recorder (this unit) is set to DV. → Switch 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 gold-plated terminals on the cassette *(see page 97 (GB))*.
40	RECORDER: STOP	The recorder (this unit) stopped while duplicating.

STOP/ CAUTION No.	Warning Message	Cause/Remedy
41	⏏	The recorder (this unit) detected self-diagnostics. → *For details on self-diagnostics, see page 98 (GB).*
42	⏏	Moisture condensation has occurred in the recorder (this unit). → If the cassette is in the unit, remove the cassette and keep the cassette lid open 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 96 (GB))*.
44	PLAYER: COPY INHIBIT	The cassette in the player is a copyright-protected cassette. The duplication is cancelled. → You cannot copy a copyright-protected cassette.
50	RECORDER: SMALLER CM SIZE	The cassette memory in the recorder (this unit) is smaller than the cassette memory in the player. → Use a cassette that has larger cassette memory than the one in the player. (This error is displayed only when the duplicate mode has been set to AUTO/.)
51b) c)	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.
60b) c)	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 starting duplication.)

a) 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.
b) This unit detects tape length from the cassette memory data. 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. In this case, 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.
c) If the cassette in the player does not have the cassette memory, this warning is not displayed.

Note

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

Audio Dubbing

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

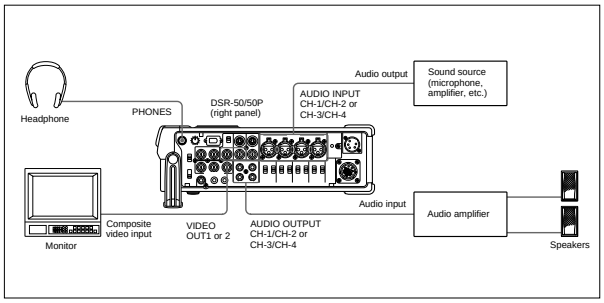
Note

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 a basic connection example 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 the 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

1 Connect the unit and the sound source (microphone, amplifier, etc.) with the XLR (3-pin) cable (not supplied).

2 Select the audio input selectors to select the sound source.

CAM: Inputs audio signals from the CAMERA connector.
LINE: Inputs audio signals from the AUDIO INPUT connectors.
+48V ON: Supplies power to the 48 V microphone.

Notes

If you have selected +48V ON, do not insert a metal object into the AUDIO INPUT connectors. It may cause electric shock.

If you have selected +48V ON, use a microphone that is compatible with 48 V. Using a microphone that is incompatible may damage the microphone, generate smoke or cause a fire.

3 Switch the audio input level control selectors to select the audio input signal level (–60, –20 or +4).

Note

If you have set the audio input selectors to +48V ON, set the audio input level control selectors to –60.

4 Set the AUDIO SELECT switch to AUTO or MANU.

5 Adjust the recording level by turning the audio recording level control knobs.

You can adjust the recording level with the audio recording level control knobs if you have selected MANU in step **4**. While looking at the audio level meters on the LCD monitor or the display window, turn the audio recording 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 OVER indicators light.

6 Set the tape in the unit (and the sound source, if any) for dubbing.

7 While pressing the PAUSE button, press the PLAY button to enter the playback pause mode.

8 While pressing the AUDIO DUB button, press the PLAY button to enter the audio dubbing pause mode.

9 Press the PAUSE button.

The AUDIO DUB indicator flashes 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 being dubbed

Set the MONITOR SELECT selector as follows:

CH1/2: You can listen to sound on channels 1/2 on the tape or sound to be dubbed.

CH3/4: You can listen to sound on channels 3/4 on the tape or sound to be dubbed.

MIX: You can listen to the sound on the tape and the dubbed sound.

Note

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.

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.

Note

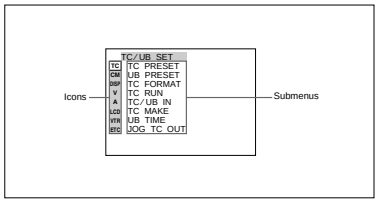
If the internal backup battery is exhausted, the menu settings will be initialized. The internal backup battery is fully charged if you connect the power to the unit for about 10 hours. The menu settings will be kept for about one month.

Displaying the menu

1 Set the DISPLAY (LCD OFF/OFF/ON) selector to ON.

2 Set the DISPLAY (MENU/TC/AUDIO) selector to MENU.

The menu is superimposed on the LCD monitor.



Changing the menu settings

1 Rotating the SEL/PUSH EXEC dial, select the menu icon you want to change, then press the dial.

2 Rotating the SEL/PUSH EXEC dial, select the submenu you want to change, then press the dial.

3 Rotating the SEL/PUSH EXEC dial, change the setting.

4 Press the SEL/PUSH EXEC dial to return to the submenu.

5 Repeat steps **1** to **4**, as needed.

To return to step 1

Rotating the SEL/PUSH EXEC dial, select ⮐RETURN, then press the dial.

Menu Organization

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

Menu	Submenu (page)
TC/UB SET	TC PRESET *(page 78 (GB))*
	UB PRESET *(page 78 (GB))*
	TC FORMAT *(page 78 (GB))* a)
	TC RUN *(page 78 (GB))*
	TC/UB IN *(page 79 (GB))*
	TC MAKE *(page 79 (GB))*
	UB TIME *(page 79 (GB))*
	JOG TC OUT *(page 79 (GB))*
CM SET	CM SEARCH *(page 80 (GB))*
	TITLE DISP *(page 80 (GB))*
	LABEL DISP *(page 80 (GB))*
	TAPE LABEL *(page 81 (GB))*
	ITEM ERASE *(page 82 (GB))*
	ERASE ALL *(page 83 (GB))*
DISPLAY SET	EE/PB SET *(page 84 (GB))*
	⊡REMAIN *(page 84 (GB))*
	DATA CODE *(page 84 (GB))*
	LTR SIZE *(page 84 (GB))*
	COLOR BAR *(page 85 (GB))* b)
	▬REMAIN *(page 85 (GB))*
	DATE DISP *(page 85 (GB))*
	TIME DISP *(page 85 (GB))*
VIDEO SET	PB YNR *(page 85 (GB))*
	PB CNR *(page 85 (GB))*
	VIDEO LVL *(page 86 (GB))*
	EXT SYNC *(page 87 (GB))*
	H PHASE *(page 87 (GB))*
	H PHASE F *(page 87 (GB))*
	SC PHASE *(page 87 (GB))*
	SC PHASE F *(page 87 (GB))*
AUDIO SET	AUDIO MODE *(page 88 (GB))*
	AUDIO DUB *(page 88 (GB))*
	JOG AUDIO *(page 88 (GB))*
	REF LEVEL *(page 88 (GB))*
	AGC CH1,2 *(page 88 (GB))*
	AGC CH3,4 *(page 88 (GB))*
	LIMITER *(page 89 (GB))*
	WIND *(page 89 (GB))*
LCD SET	LCD BRIGHT *(page 89 (GB))*
	LCD COLOR *(page 89 (GB))* c)

Menu	Submenu (page)
VTR SET	FF/REW SPD *(page 90 (GB))*
	STILL TIME *(page 90 (GB))*
	FROM STILL *(page 90 (GB))*
	FROM REC P *(page 90 (GB))*
	DUPLICATE *(page 90 (GB))*
	FOOT SW *(page 91 (GB))*
	DV EE OUT *(page 91 (GB))*
	STILL PICT *(page 91 (GB))*
OTHERS	BEEP *(page 92 (GB))*
	A BACK COL *(page 92 (GB))*
	CLOCK SET *(page 92 (GB))*
	HRS METER *(page 92 (GB))*

a) DSR-50 only
b) COLOUR BAR for DSR-50P
c) LCD COLOUR for DSR-50P

Menu Contents

Initial settings are indicated with rectangles.

TC/UB SET menu

Note

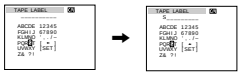
All items other than JOG TC OUT can be set only when you record in DVCAM-format.

Icon/Menu	Submenu (page)	Setting
TC/UB SET	TC PRESET *(page 56 (GB))*	Resets/Sets the time code value. **RESET:** Resets the time code value to 00:00:00:00. **PRESET:** Sets the time code value. **RETURN :** Returns to the TC/UB SET menu without changing the time code value. **Note** Before setting the initial time code value, set TC MAKE to PRESET. If TC MAKE has been set to REGEN, you cannot change the time code with this submenu.
	UB PRESET *(page 57 (GB))*	Resets/Sets the user bits value. **RESET:** Resets the user bits value to 00 00 00 00. **PRESET:** 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.) **RETURN :** Returns to the TC/UB SET menu without changing the user bits value.
	TC FORMAT *(page 59 (GB))*	Selects the frame mode. **AUTO :** Automatically sets the frame mode in accordance with the inserted cassette. (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 in the tape, the unit will use the frame mode that was set in the last position it was able to read correctly on the tape. If you turn the power on/off or remove the tape, 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.) **DF:** Selects the drop frame mode. **NDF:** Selects the non-drop frame mode. **Notes** • This menu is displayed only for DSR-50. • Regardless of this setting, the frame mode is set to drop frame when you record in DV format.
	TC RUN *(page 59 (GB))*	Selects the advancement mode (counting up). **REC RUN :** Time code value advances only while recording. **FREE RUN:** Time code value 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 time code.) **Notes** • If you set the advancement mode to FREE RUN, the time code will be updated by the internal clock when the power is off. Therefore, when you turn on the unit again, the time code may have been delayed or advanced somewhat. • If the internal backup battery is exhausted, the time code of the FREE RUN setting is initialized.

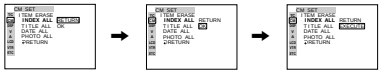
Icon/Menu	Submenu (page)	Setting
TC/UB SET	TC/UB IN *(page 60 (GB))*	Selects the time code and user bits to record in the tape. **INTERNAL :** Uses the internal time code/user bits. **TC&UB EXT:** Uses the external time code/user bits. **TC EXT:** Uses the external time code and internal user bits. **UB EXT:** Uses the internal time code and external user bits. **Notes** • The time code output from this unit has some restrictions. *For details, see pages 63 (GB), 64 (GB).* • Press the SEL/PUSH EXEC dial to execute this submenu. This will also be executed the moment you switch the position of the DISPLAY (MENU/TC/AUDIO) selector to TC or AUDIO.
	TC MAKE *(page 59 (GB))*	Selects the time code when you start recording. **REGEN :** The time code value is set to the continuous time code from the time code already recorded on the tape. If no time code is recorded on the tape, the time code starts from 00:00:00:00. **PRESET:** The time code value is set to the time code from the value set in PRESET in the TC PRESET on the TC/UB SET menu.
	UB TIME *(page 59 (GB))*	Selects whether to set the user bits to any particular value or to the real time clock. **OFF :** The value set in PRESET in UB PRESET on the TC/UB SET menu is set in the user bits. **ON:** The value set in CLOCK SET on the OTHERS menu (the real time clock) is set in the user bits. **Note** This item is available only if TC/UB IN is set to INTERNAL or TC EXT.
	JOG TC OUT *(page 59 (GB))*	Controls the time code output from the TC OUT connector when the tape is played at a speed other than normal. **OFF :** Does not output the time code. **ON:** Outputs the time code. **Note** The 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.

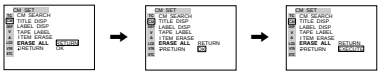
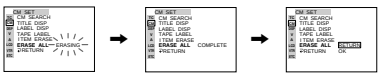
CM SET menu

Icon/Menu	Submenu (page)	Setting
CM SET	CM SEARCH	Selects the mode which searches recordings. **ON :** Searches recordings using the cassette memory. (If the tape does not have cassette memory, the beginning of recording is searched for using the index signals on the tape.) **OFF:** Always searches recordings using the index signals on the tape.
	TITLE DISP	Selects whether or not to display the title. **ON :** Displays the title. **OFF:** Hides the title. **Notes** • The title input with the camera or external device is displayed. You cannot enter a title in this unit. • The unit cannot display a font that the unit does not have. • The title is displayed only on the LCD monitor, VIDEO OUT1 output or return video to the camera. • The title is only displayed if you have set the DISPLAY (MENU/TC/AUDIO) selector to TC.
	LABEL DISP	Selects whether or not to display the tape label. **ON :** Displays the tape label. **OFF:** Hides the tape label. **Notes** • The tape label is displayed only on the LCD monitor, VIDEO OUT1 output or return video to the camera. • The tape label is only displayed if you have set the DISPLAY (MENU/TC/AUDIO) selector to TC. • If the tape label has been made with an other VCR or camcorder, this unit cannot display a tape label that includes a font that the unit does not have.

Icon/Menu	Submenu (page)	Setting
CM SET	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. **C/I:** Tape with cassette memory **C/I:** Tape without cassette memory You can make a tape label as follows: **1** On the TAPE LABEL screen, select a line that has the alphabet character you want by rotating and pushing the SEL/PUSH EXEC dial. (The cursor moves to the first character of the line.) **2** Select a character by rotating and pushing the SEL/PUSH EXEC dial. (The selected character is entered. To erase a character, select [←]; the last character is erased.)  **3** Repeat steps **1** and **2**. After entering all characters for the tape label, select [SET]. **Note** The unit cannot display the TAPE LABEL screen in the following cases: • The unit does not have a tape inserted or the tape is being unloaded. • The tape does not have cassette memory. • The cassette memory is full of data other than the tape label data. • The tape is write-protected. • The tape is being recorded. • The tape is being duplicated. • The cassette memory is being used.

(Continued)

Icon/Menu	Submenu (page)	Setting
CM SET	ITEM ERASE	Erase a cassette memory item. If you select this item, one of the following symbols appears. If no cassette is loaded, nothing is displayed. **C/I:** Tape with cassette memory **C/I:** Tape without cassette memory The available items are as follows: **INDEX ALL:** Erases the index data. **TITLE ALL:** Erases the title data. **DATE ALL:** Erases the date data. **PHOTO ALL:** Erases the photo data. You can erase an item as follows: **1** Select an item to erase by rotating and pushing the SEL/PUSH EXEC dial. **2** 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.)  **3** 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 SEL/PUSH EXEC dial. After the item has been erased, the COMPLETE message appears. Press or rotate the SEL/PUSH EXEC dial to erase the COMPLETE message.) **Notes** • You cannot make the 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 tape inserted or the tape is being unloaded. – The tape does not have cassette memory. – The tape is write-protected. – The tape is being recorded. – The tape is being duplicated.

Icon/Menu	Submenu (page)	Setting
CM SET	ERASE ALL	Erases all items in the cassette memory. If you select this item, one of the following symbols appears. If no cassette is loaded, nothing is displayed. **C!/:** Tape with cassette memory **C!:** Tape without cassette memory Erase all items in the cassette memory as follows: **1** 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.)  **2** 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 SEL/PUSH EXEC dial. After all items have been erased, the COMPLETE message appears. Press or rotate the SEL/PUSH EXEC dial to erase the COMPLETE message.)  **Note** You cannot erase all items in the cassette memory in the following cases: • The unit does not have a tape inserted or the tape is being unloaded. • The tape does not have cassette memory. • The tape is write-protected. • The tape is being recorded. • The tape is being duplicated.

DISPLAY SET menu

Icon/Menu	Submenu (page)	Setting
DISPLAY SET	EE/PB SET *(page 14 (GB))*	Sets the stop, fast-forward and rewind modes. **EE :** Outputs the EE pictures (sound, time code). **PB:** Mutes the image and sound. **Notes** • Even if EXT SYNC is set to ON, the line-outs (VIDEO OUT2, COMPONENT OUT, S VIDEO OUT) in the EE mode are delayed from those of the input signals as follows: – delayed for two lines when the camera composite or VIDEO/REF. IN is input. – delayed for one line when S VIDEO or camera component is input. • 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. Image / Sound / Time code REC button: EE picture of the input image / EE sound of the input sound DUP button: Image input to the DV IN/OUT connector / Sound input to the DV IN/OUT connector AUDIO DUB button: Mute screen (black) / EE sound of the input sound No button is pressed: Mute screen (black) / Mute (no sound) Time code: *(See page 62 (GB))*
	REMAIN *(page 19 (GB))*	Selects whether or not to display the tape remaining time in the LCD monitor and VIDEO OUT1 output. **ON :** Displays the tape remaining time. **OFF:** Does not display the tape remaining time. **Note** The display window of the unit always displays the tape remaining time.
	DATA CODE *(page 19 (GB))*	Selects whether or not to display the data codes on the LCD monitor and the VIDEO OUT1 output. **OFF :** Does not display the data codes. **DATE:** Displays the date when recorded. **CAMERA:** Displays the camera data.
	LTR SIZE	Changes the font size of the menu line at the cursor. **NORMAL :** Normal size **×2:** Double height size

Icon/Menu	Submenu (page)	Setting
DISPLAY SET	COLOR BAR (for DSR-50) / COLOUR BAR (for DSR-50P) *(page 51 (GB))*	Displays/hides the color bars. **OFF :** Hides the color bars. **ON:** Displays the color bars. **Notes** • 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, VIDEO OUT1 output, or return video to the camera. • If you record when the color bars are displayed, the color bars will also be recorded on the tape. • You cannot adjust the VIDEO OUT1 output. Do not use the color bars output from the VIDEO OUT1 connector 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 tape transport control that display the pictures recorded on the tape.
	REMAIN *(page 18 (GB))*	Switches the battery type. **LI-ION :** Uses a lithium ion battery. **NI-CD:** Uses a nickel cadmium battery.
	DATE DISP	Switches the date display in the display window or in the search screen for index search 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). **Note** The default is M/D/Y for DSR-50; D/M/Y for DSR-50P.
	TIME DISP	Switches the time display in the display window, LCD monitor and VIDEO OUT1 output. **24H :** Displays 24-hour time. **12H:** Displays 12-hour time.

VIDEO SET menu

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 **Note** When you use noise reduction, there may be an afterimage depending on the condition of the picture.
	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 **Note** When you use noise reduction, there may be an afterimage depending on the condition of the picture.

(Continued)

Icon/Menu	Submenu (page)	Setting
VIDEO SET	VIDEO LVL *(page 67 (GB))*	Adjusts the video signal levels. **INPUT:** Adjusts the input video signals. (This is available only when the EE pictures are output and the mode is stop, record, recording pause, fast-forward or rewind. This is disabled for DV input.) **PB OUTPUT:** Adjusts the output video signals. (This is available only when the mode is playback, playback pause, slow playback, cue, or review.) **RETURN:** Exits the menu without adjusting video signal levels. **Adjusting the input video signals** **LUMINANCE:** Adjusts the luminance level of the composite signals. **CHROMA:** Adjusts the chrominance level of the composite signals. **HUE:** Adjusts the hue of the composite signals. (only for DSR-50) **Y LVL:** Adjusting the Y signal level of the camera component signals. **R-Y LVL:** Adjusting the R-Y signal level of the camera component signals. **B-Y LVL:** Adjusting the B-Y signal level of the camera component signals. **Notes** • This item is disabled for DV input. (You cannot adjust the DV input signals.) • Adjust the signal levels by looking at the bars. (The triangles under the bars are displayed in green when the settings are set to the factory preset values.) • All factory preset values are their center value. • LUMINANCE, CHROMA and HUE can be adjusted only for VIDEO/REF. IN, camera composite or S VIDEO input while in the EE mode. • Y LVL, R-Y LVL and B-Y LVL can be adjusted only for camera component signal input while in the EE mode. **Adjusting the output video signals** **SETUP:** Switches the luminance signal setup level (0% or 7.5%). (This item is only for DSR-50. The setup level for DSR-50P is fixed to 0%.) **Y LVL:** 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 LVL:** 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 LVL:** 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. **Notes** • 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 OUT2, 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%.)

Icon/Menu	Submenu (page)	Setting
VIDEO SET	EXT SYNC	Switches the externally synchronized playback setting. **OFF :** No external synchronization **ON:** External synchronization **Notes** • It may take three or more seconds until a stable image is output in the externally-synchronized playback mode. • If external synchronization is applied, jitters may appear on the image output from VIDEO OUT1 output or on the LCD monitor image. Use the VIDEO OUT2 connector to output an externally-synchronized image. Set this item to OFF when you use the VIDEO OUT1 connector.
	H PHASE *(page 65 (GB))*	Roughly adjusts the sync phase in the externally-synchronized playback mode. Rotate the SEL/PUSH EXEC dial to move the bar and push the dial to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.) **Notes** • You can adjust the H PHASE 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 65 (GB))*	Finely adjusts the sync phase in the externally-synchronized playback mode. Rotate the SEL/PUSH EXEC dial to move the bar and push the dial to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.) **Notes** • You can adjust the H PHASE F only in the externally-synchronized playback mode. • If you change the H PHASE value, this item is set to the factory preset value.
	SC PHASE *(page 65 (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. **Note** You can adjust the SC PHASE only in the externally-synchronized playback mode.
	SC PHASE F *(page 65 (GB))*	Finely adjusts the subcarrier phase in the externally-synchronized playback mode. Rotate the SEL/PUSH EXEC dial to move the bar and push the dial to select. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.) **Note** You can adjust the SC PHASE F 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.) **Notes** • This item is disabled when inputting signals from the DV IN/OUT connector. • You cannot display the selection screen while in the recording mode. • Noise may occur at the moment 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. **Note** You cannot display the selection screen 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. **Note** Even if you have set this item to ON, the sound may not be output or interrupted depending on the tape format or tape conditions.
	REF LEVEL *(page 20 (GB))*	Switches the center levels of the audio level meters displayed on the FINE screen. **–12dB:** Sets the level to –12 dB **–18dB:** Sets the level to –18 dB **–20dB:** Sets the level to –20 dB **Notes** • The default is –20 dB for DSR-50; –18 dB for DSR-50P. • The standard output level of the AUDIO OUTPUT jacks is –10 dBu. This is equivalent to –20 dB for DSR-50, or –18 dB for DSR-50P from full bit (maximum audio level). This level is fixed and does not change even if you change the REF LEVEL setting. • Changing this level does not change the audio gain of this unit. Turn the audio recording level control knobs to adjust the recording level accordingly.
	AGC CH1,2 *(page 21 (GB))*	Links/separates the AGC (Auto Gain Control) in channels 1 and 2. **SEPARATE :** AGC is not linked. (Channels 1 and 2 sound gains are separated.) **LINKED:** AGC is linked. (Channels 1 and 2 sound gains are linked as a pair.) **Notes** • This setting is disabled when inputting signals from the DV IN/OUT connector. • The LINKED setting is enabled after you set the AUDIO SELECT switches on the front panel to AUTO for both channels 1 and 2.
	AGC CH3, 4 *(page 21 (GB))*	Links/separates the AGC (Auto Gain Control) in channels 3 and 4. **SEPARATE :** AGC is not linked. (Channels 3 and 4 sound gains are separated.) **LINKED:** AGC is linked. (Channels 3 and 4 sound gains are linked as a pair.) **Notes** • This setting is disabled when inputting signals from the DV IN/OUT connector. • The LINKED setting is enabled after you set the AUDIO SELECT switches on the front panel to AUTO for both channels 3 and 4.

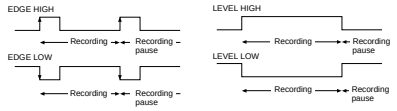
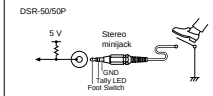
Icon/Menu	Submenu (page)	Setting
AUDIO SET	LIMITER	Turns the limiter on/off. **OFF :** No limiter **ON:** Uses the limiter. **Notes** • This setting is disabled when inputting signals from the DV IN/OUT connector. • This setting is available only when you have set the AUDIO SELECT switches on the front panel to MANU. • Make sure to set the audio input level control selectors on the right 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.
	WIND *(page 21 (GB))*	Enables/disables the wind noise reduction function for microphones. You can set the wind noise reduction for audio channels 1 to 4 separately. If you select this item, the channel to which the noise reduction is currently applied is displayed. (Example: If noise reduction is applied to channels 1 and 3, "CH1,3" is displayed. If all channels are set to OFF, "OFF" is displayed.) **OFF :** No wind noise reduction **ON:** Wind noise reduction If you press the SEL/PUSH EXEC dial, the channel names are displayed. Select the channel to be changed, change the setting, then press the SEL/PUSH EXEC dial. **Note** This setting is disabled when inputting signals from the DV IN/OUT connector.

LCD SET menu

Icon/Menu	Submenu (page)	Setting
LCD SET	LCD BRIGHT	Adjusts the LCD monitor brightness. Rotate and press the SEL/PUSH EXEC dial to adjust and set the brightness. You can also adjust the brightness by rotating the SEL/PUSH EXEC dial on the TC screen. (The triangle under the bar is displayed in green when the setting is set to the factory preset value.)
	LCD COLOR (for DSR-50) / LCD COLOUR (for DSR-50P)	Adjusts the depth of color of the LCD monitor. Rotate and press the SEL/PUSH EXEC dial 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.)

VTR SET menu

Icon/Menu	Submenu (page)	Setting
VTR SET	FF/REW SPD	Selects the tape transport mode in fast-forward and rewind. **FF/REW :** Fast-forwards or rewinds the tape at maximum speed without displaying the picture. **SHUTTLEMAX:** Fast-forwards or rewinds the tape at maximum speed (about 14 times normal speed for the DSR-50; about 17 times normal speed for the DSR-50P) while displaying the picture.
	STILL TIME	Selects the time to switch to the tape protection mode from the still mode. **30 SEC:** 30 seconds **1 MIN :** 1 minute **2 MIN:** 2 minutes **3 MIN:** 3 minutes **5 MIN:** 5 minutes **Notes** • 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. • When the setting is changed, 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 change the mode from the still mode. **STEP FWD :** Forwards one frame. **STOP:** Stops the tape.
	FROM REC P	Switches the tape protection mode that the system changes to after the recording has been paused for more than five minutes. **STOP :** Stops the tape. **REC PAUSE:** Maintains the recording pause mode. **Notes** • The unit changes to the stop mode after the recording has been paused for more than five minutes when you select STOP. In this case you cannot start recording with the VTR button on the camera. Repeat the procedure from step 2 on page 47 (GB) to start recording again. • When the recording pause mode continues for a long time after you select REC PAUSE, the tape may be damaged or the video heads may be damaged or clogged. If there is no other reason to do this, select STOP. Particularly when you use a Mini-DV cassette that is longer than 60 minutes, select STOP.
	DUPLICATE *(page 70 (GB))*	Switches the duplicate mode. **AUTO CH1:** Starts duplication after rewinding the tape to the beginning in the player and recorder. (The cassette memory is also duplicated.) **AUTO:** Starts duplication after rewinding the tape to the beginning in the player and recorder. (The cassette memory is not duplicated.) **MANUAL :** Duplicates the tape from any point. (The cassette memory is not duplicated.) **Note** You cannot display the setting selection screen during duplication.

Icon/Menu	Submenu (page)	Setting
VTR SET	FOOT SW	Selects a foot switch mode. **OFF :** Disables the foot switch. **EDGE HIGH:** Switches between recording and recording pause mode each time you release the foot switch. **EDGE LOW:** Switches between recording and recording pause mode each time you press the foot switch. (This is the most popular use for foot switch.) **LEVEL HIGH:** Records only while the foot switch is released. **LEVEL LOW:** Records only while the foot switch is pressed. The following shows the trigger statuses.  The following shows the foot switch circuit.  **Note** You cannot operate audio dubbing or duplication from the foot switch.
	DV EE OUT *(page 37 (GB))*	Selects the output from the DV IN/OUT connector in the EE mode. **OFF :** Outputs only the playback video and audio signals from the DV IN/OUT connector. **ON:** Outputs the selected analog input signals from the DV IN/OUT connector. **Note** When you connect a computer to the DV IN/OUT connector, 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 PICT	Switches the image displayed in the still mode. **AUTO :** Displays an optimized image according to the movement in the image. **FRAME:** Displays a frame image. **FIELD:** Displays a field image. **Note** If you select FIELD, the image of field 2 is displayed.

Chapter 6 Adjusting and Setting Through Menus

OTHERS menu

Icon/Menu	Submenu (page)	Setting
OTHERS	BEEP	Selects the beep. **BEEP :** Normal beep **MELODY:** Melody beep (The melody beep is also mixed during a menu operation.) **OFF:** Disables the beep. **Note** The beep sound is mixed only on the headphone sound and return sound to the camera.
	A BACK COL	Changes the background color of the AUDIO screen when you have set the DISPLAY (MENU/TC/AUDIO) selector on the front panel to AUDIO. **HALFTONE :** Halftone **BLACK:** Black
	CLOCK SET	Sets the internal clock of the unit. Rotating and pressing the SEL/PUSH EXEC dial, sets the time (year, month, day, hour and minute). (When you set the minute, the second count will start from 00.) **Notes** • 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 10 hours when power is provided to the unit. A fully charged internal backup battery can run the internal clock for about one month without the battery pack or power provided through the AC adaptor.
	HRS METER *(page 97 (GB))*	Displays the accumulated time counts (by the digital hours meter) in units of 10 hours or 10 counts. **OPERATION:** Power on duration **DRUM RUN:** Drum rotation duration **TAPE RUN:** Tape run duration **THREADING:** Tape unthreading count

Troubleshooting

Please check the following before contacting your Sony dealer.

Symptom	Cause/Remedy
The power cannot be turned on.	• Battery pack charge is low. → Replace the battery pack. • The AC adaptor is disconnected. → Connect the AC adaptor.
The unit will not operate even if the power has been turned on.	• Moisture condensation has occurred. → Turn off the power, remove the battery pack and disconnect the AC adaptor. Reinstall the battery pack or connect the AC adaptor after about one minute and turn on the power. Then if there is a cassette in the unit, remove the cassette and keep the cassette lid open, power on the unit and leave it on for more than one hour. • The cassette is not inserted straight. → Insert it straight.
The cassette cannot be inserted.	• There is moisture condensation on the head drum. → Keep the cassette lid open and turn the power on. Then, wait more than one hour. • The cassette is not inserted straight. → Insert it straight.
It takes time to eject the cassette.	This is not a malfunction. → This unit ejects the cassette slowly to protect the tape.
No picture.	The video heads are dirty. → Clean the video heads using the supplied cleaning cassette.
Noise appears on the screen.	• A damaged cassette is inserted. → Insert an other cassette. • The video heads are dirty. → Clean the video heads using the supplied cleaning cassette.
No picture via the DV jack.	Reconnect the i.LINK cable (DV cable) (not supplied).
The audio is noisy.	A damaged cassette is inserted. → Insert an other cassette.
Pause is released automatically.	Pause mode is automatically released to protect the tape.
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 does not function.	You are trying to dub the sound on a DV-formatted tape. → You can dub the sound only on a DVCAM-formatted tape. Use a DVCAM-formatted tape *(See page 74 (GB))*.
A menu is not available.	• If you have set the DVCAM/DV select switch to DV, some menus will be disabled. → Set the DVCAM/DV select switch to DVCAM *(See page 29 (GB))*. • Some menus are only available in the EE mode or playback mode. → Set the unit to the EE mode or playback mode. • Some TC/UB SET menu items are available only if you have set TC MAKE to PRESET. → Set TC MAKE to PRESET.

Chapter 7 Maintenance

Alarm Messages

If an error occurs, a warning appears on the LCD monitor and the VIDEO OUT1 output (if the SUPERIMPOSE switch is set to ON). If you have set the DISPLAY (LCD OFF/OFF/ON) selector to LCD OFF, you still can recognize a warning by means of the display window, the warning indicator or warning tone. Check them with the following list.

Note

A warning tone is only output to the headphones or return sound to the camera. The warning tone is not output to the AUDIO MONITOR OUT jack or the AUDIO OUT jacks.

LCD monitor	Display window	Indicator lamp (flash/on) a)			Beep	Description/Recovery
		Unit	Camera			
		WARNING	REC/Tally	BATT		
		Rapid flashing	Rapid flashing		Beep	Moisture condensation (without a tape) → Keep the cassette lid open and turn the power on, then wait more than one hour.
		Rapid flashing	Rapid flashing		Beep	Moisture condensation (with a tape) → Remove the cassette and keep the cassette lid open and turn the power on, then wait more than one hour.
NO TAPE		Slow flashing			Beep	You tried to record without a cassette. → Insert a cassette.
		Slow flashing	Slow flashing		No beep	The tape is reaching the end. → Provide a new cassette.
TAPE END		ON	Rapid flashing		Beep	The tape reached the end and still tried to record. → Rewind the tape or replace the tape with a new one.
		Slow flashing			Beep	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 40 (GB))*.
REC MODE		Slow flashing			Beep	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).
TAPE		Slow flashing			Beep	You tried to dub the sound onto a blank tape or onto a tape on which the sound has been 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).
DV IN		Slow flashing			Beep	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.
CLOCK SET					No beep	You have not set the clock when you turned on the unit. → Set the clock with the menu *(See page 92 (GB))*.
COPY INHIBIT		Slow flashing			Beep	You tried to record a copyright-protected source. → You cannot record a copyright-protected source *(See page 43 (GB))*.
Displayed alternately CLEANING CASSETTE		Rapid flashing	Rapid flashing		No beep	The video heads are clogged. → Clean the video heads with the supplied cleaning cassette. (The unit detects if the video heads are clean only before recording. If the video heads get clogged during recording, the unit cannot detect it.)
		Slow flashing	Slow flashing	Slow flashing	No beep	The power voltage is low. → If you are using a battery pack, replace the battery pack. If you are using an AC adaptor, select NI-CD in REMAIN. If the warning is still displayed, use an AC adaptor that meets the specifications of the unit.

LCD monitor	Display window	Indicator lamp (flash/on) a)			Beep	Description/Recovery
		Unit	Camera			
		WARNING	REC/Tally	BATT		
⇦	▭	ON	Rapid flashing	ON	No beep	The power voltage is very low. → If you are using a battery pack, replace the battery pack because there is no battery charge. If you are using an AC adaptor, select NI-CD in REMAIN. If the warning is still displayed, use an AC adaptor that meets the specifications of the unit.
⏏	⏏	Rapid flashing	Rapid flashing		Beep	The unit is running the self-diagnostics *(See page 98 (GB))*. This warning display is erased when you turn on/off the power of the unit.

a) The indicator flashes 3.2 times per second in the rapid flashing mode and flashes 0.8 time per second in the slow flashing mode.

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 its 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 avoid damaging the cabinet's finish
Plastic is partially 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. The cellular phones or transceivers near the unit should be switched off.

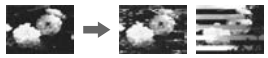
Do not use the unit in an area exposed to radiation
A malfunction may occur.

Checking the video heads every 1000 hours
A VCR is a high-precision piece of equipment that records and plays back the picture 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 1000 hours, even though the conditions of use may differ depending on temperature, humidity, dust, etc.

Cleaning of the video heads

If the video heads are contaminated, the pictures cannot be recorded properly or the playback pictures become noisy. If the following phenomena occur, use the cleaning cassette (supplied) to clean the heads.
Square-shaped noise appears on the playback picture.
A part of the playback picture does not move.
The playback picture does not appear on the screen.

Symptoms caused by contaminated video heads



Normal picture

If these pictures appear on the screen, use the cleaning cassette.

To use the cleaning cassette
Refer to your cleaning cassette's operating instructions.

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 the swab once every ten times you eject a cassette.

When affixing a label to the cassette
Be sure to affix a label on only 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.

About moisture condensation

If the unit or tape 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 malfunction may occur.

Moisture condensation is likely to occur under the following conditions:
The unit or tape is brought from the cold outdoors to a warm indoor location.
The unit or tape 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 tape 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 the cassette cannot be inserted. If this occurs, turn on the power to remove the cassette, then keep opening the cassette lid, and finally 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 monitor screen. 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 ROTATION 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-diagnosis 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 display window, the LCD monitor and VIDEO OUT1 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.

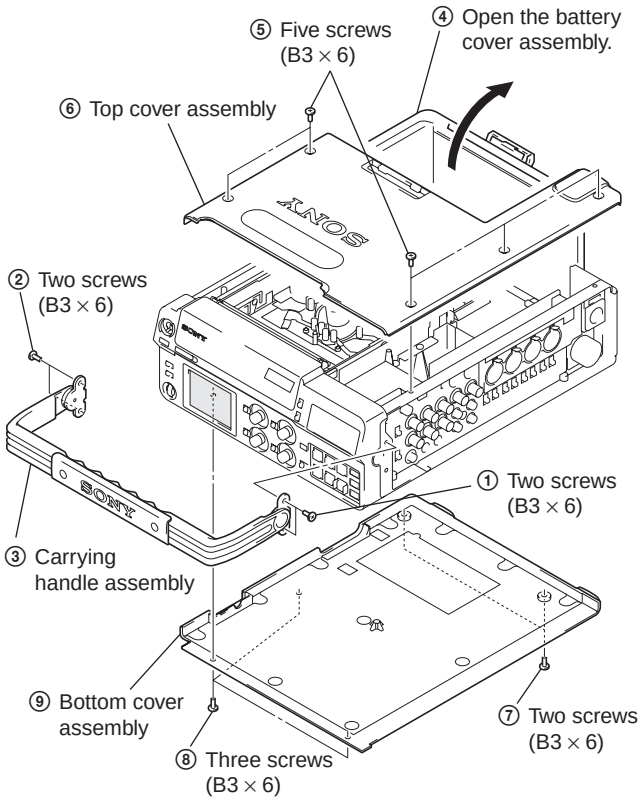
Code	Symptom	Remedy
C:21:□□	Moisture condensation has occurred.	Remove the cassette and keep the cassette lid open and turn the power on, then wait more than one hour.
C:22:□□	The video heads are dirty.	Clean the heads using the cleaning cassette (supplied).
C:31:□□	To prevent the unit from malfunctioning, the self-diagnosis function has taken over.	• Remove the cassette, or turn on/off the unit. • Disconnect the battery and AC adaptor. After reconnecting them, operate the unit.
C:32:□□	To prevent the unit from malfunctioning, the self-diagnosis function has taken over.	• Turn on/off the unit. • Disconnect the battery and AC adaptor. After reconnecting them, operate the unit.

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.

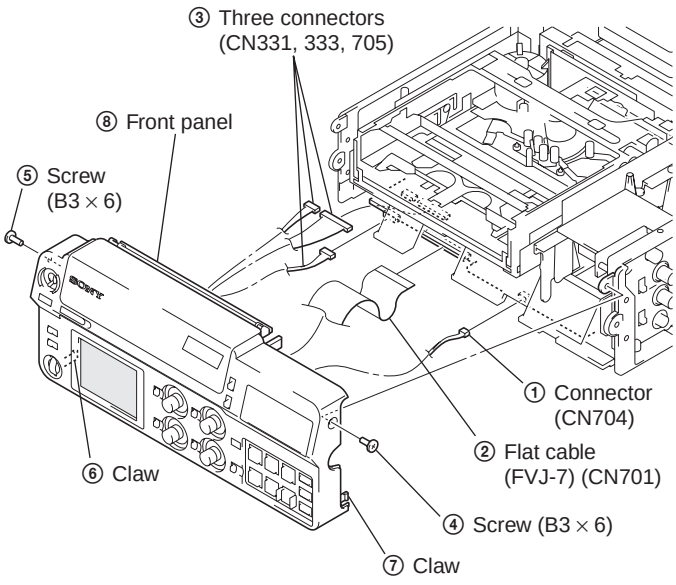
SECTION 2
DISASSEMBLY

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

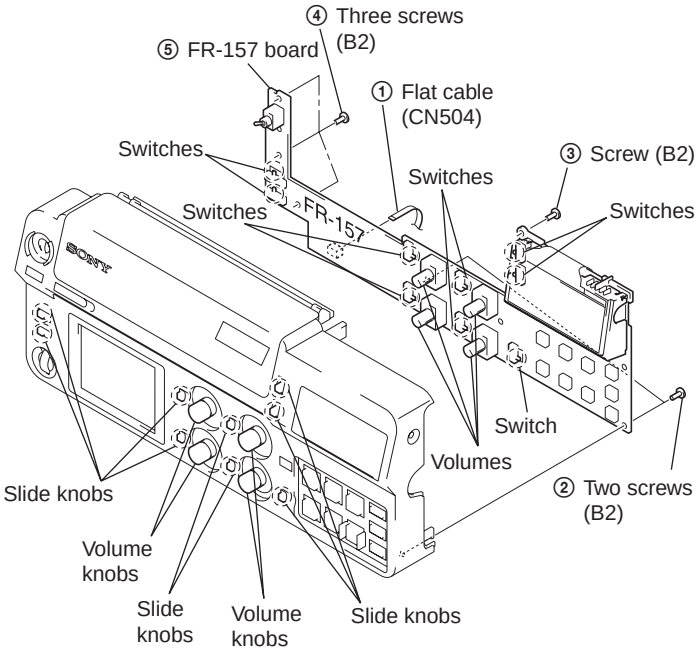
2-1. TOP/BOTTOM COVER ASSEMBLIES



2-2. FRONT PANEL

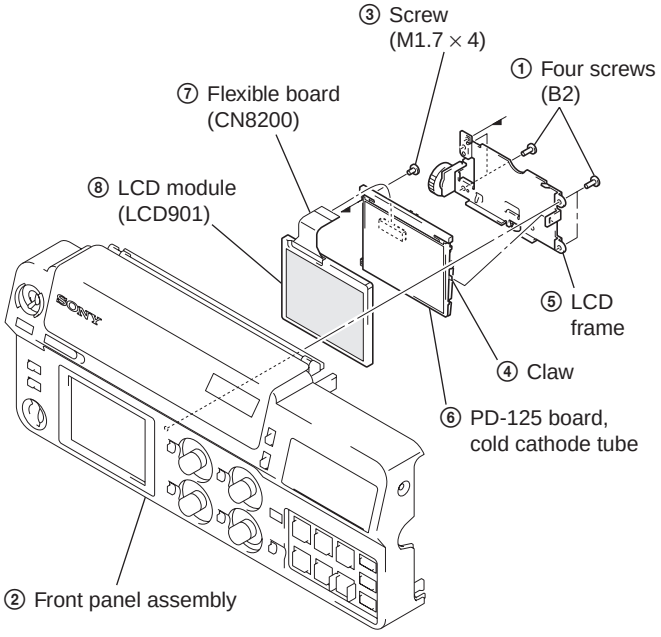


2-3. FR-157 BOARD

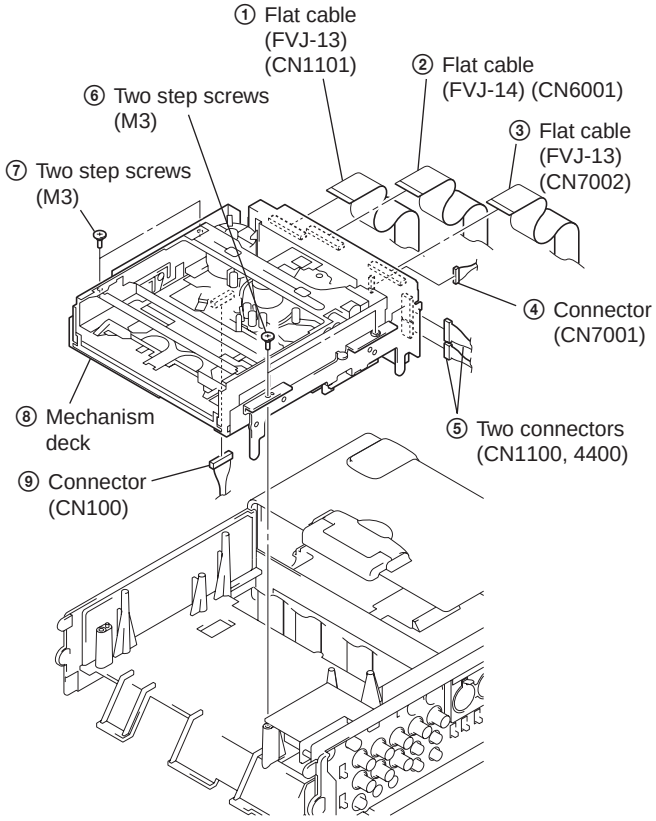


Note: When installing FR-157 board, connect volumes with volume knobs and switches with slide knobs.

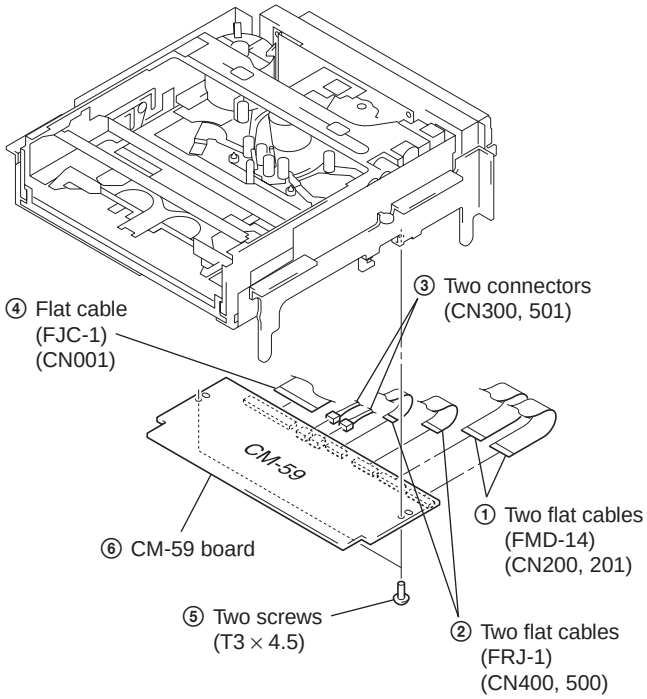
2-4. LCD MODULE (LCD901)



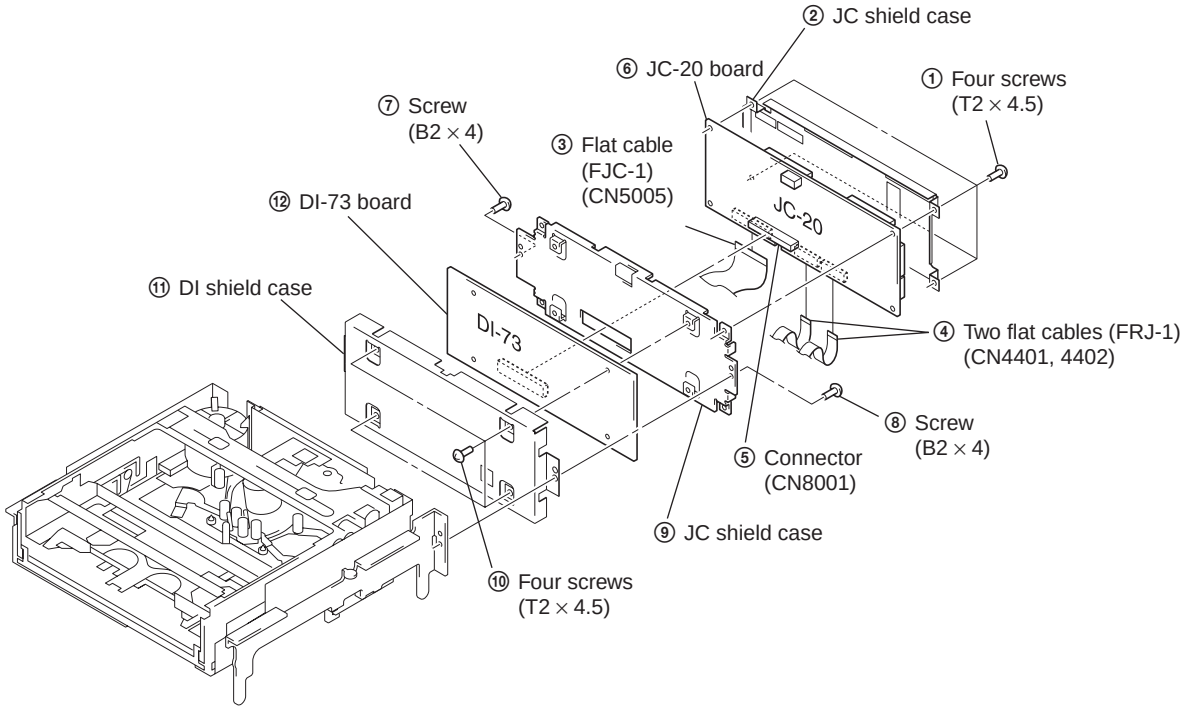
2-5. MECHANISM DECK



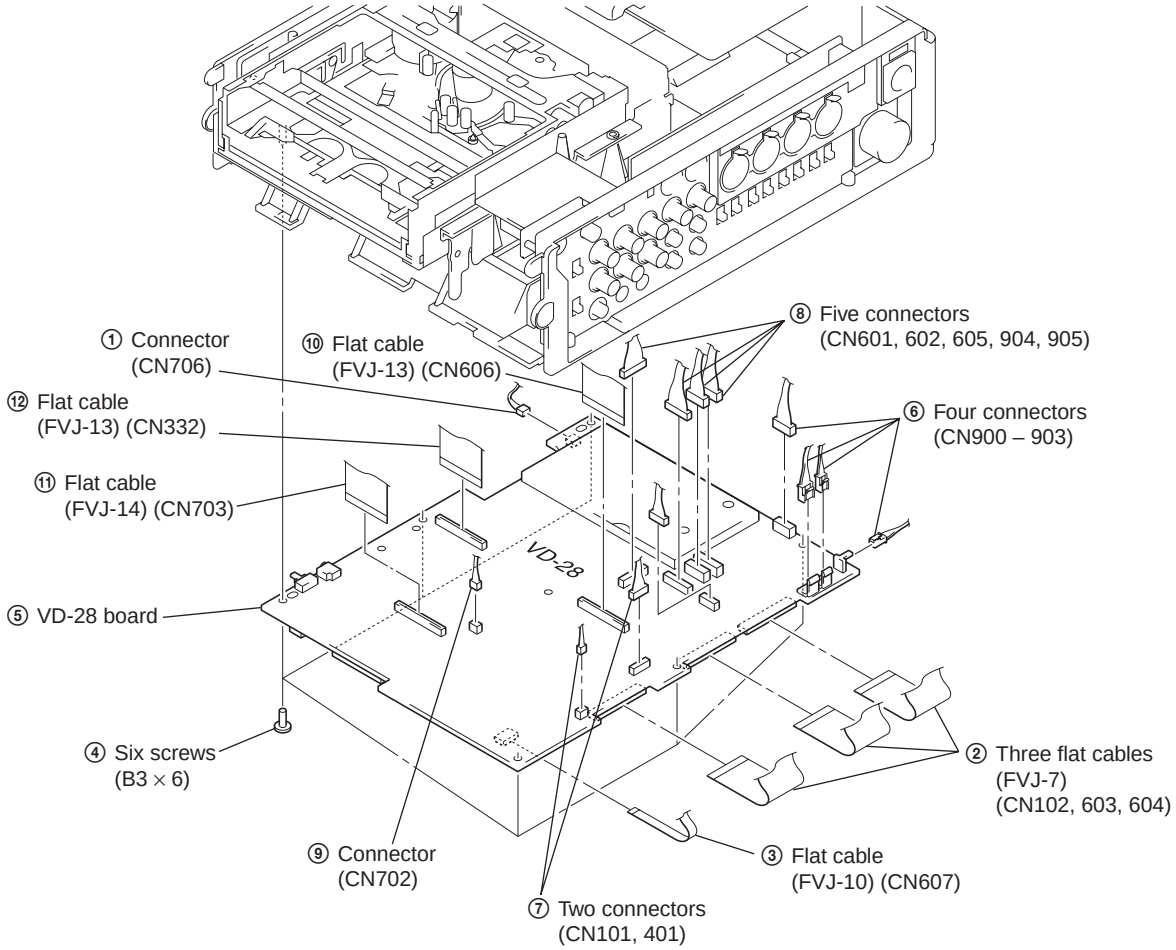
2-6. CM-59 BOARD



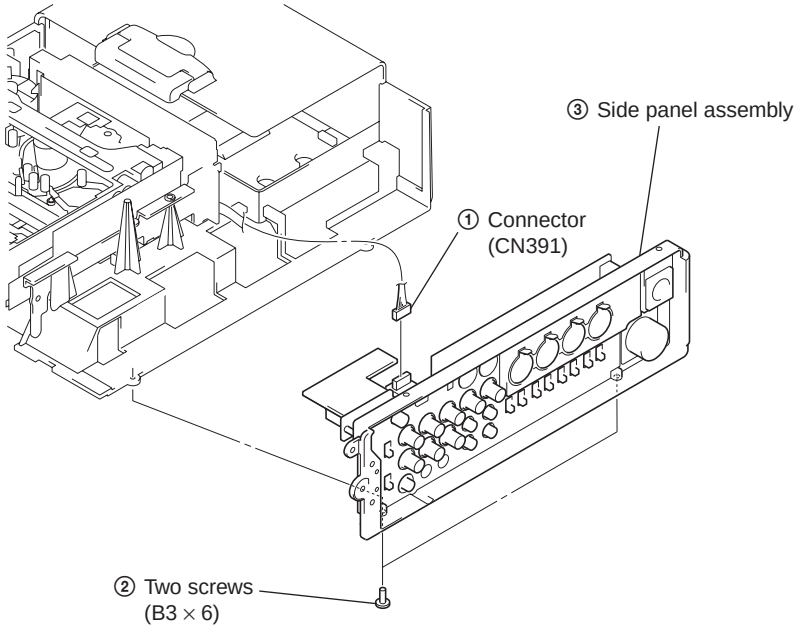
2-7. JC-20/DI-73 BOARDS



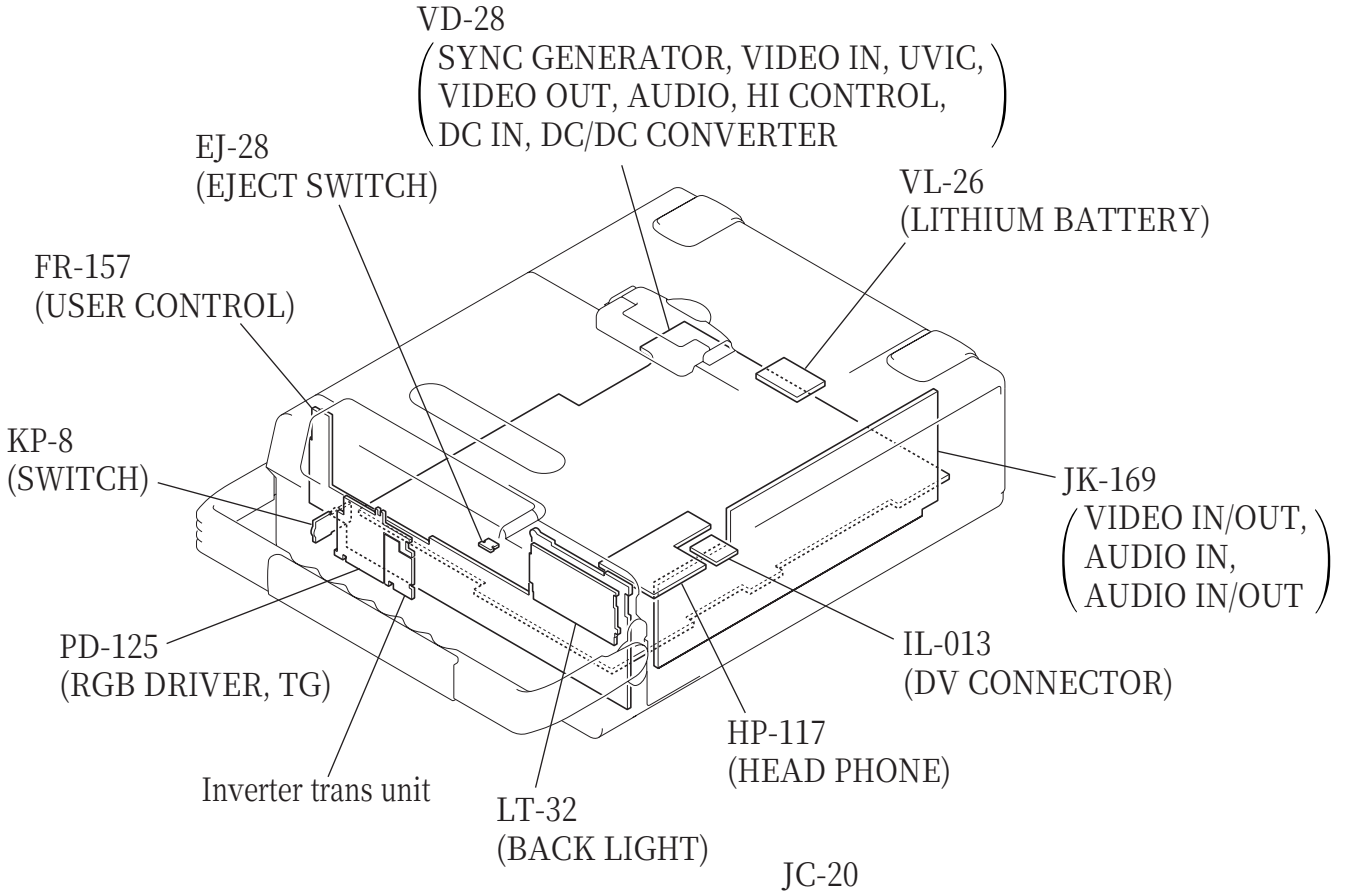
2-8. VD-28 BOARD

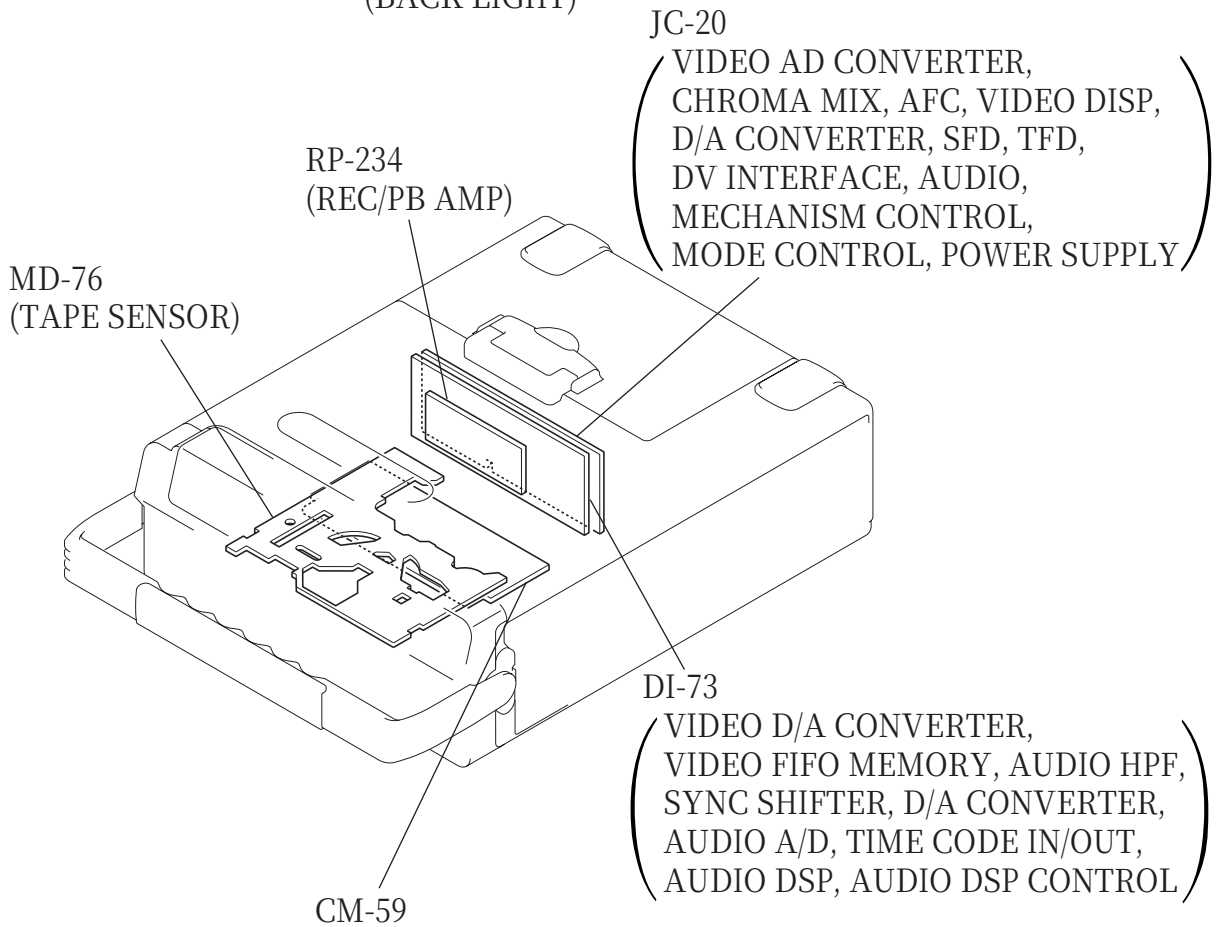


2-9. SIDE PANEL ASSEMBLY



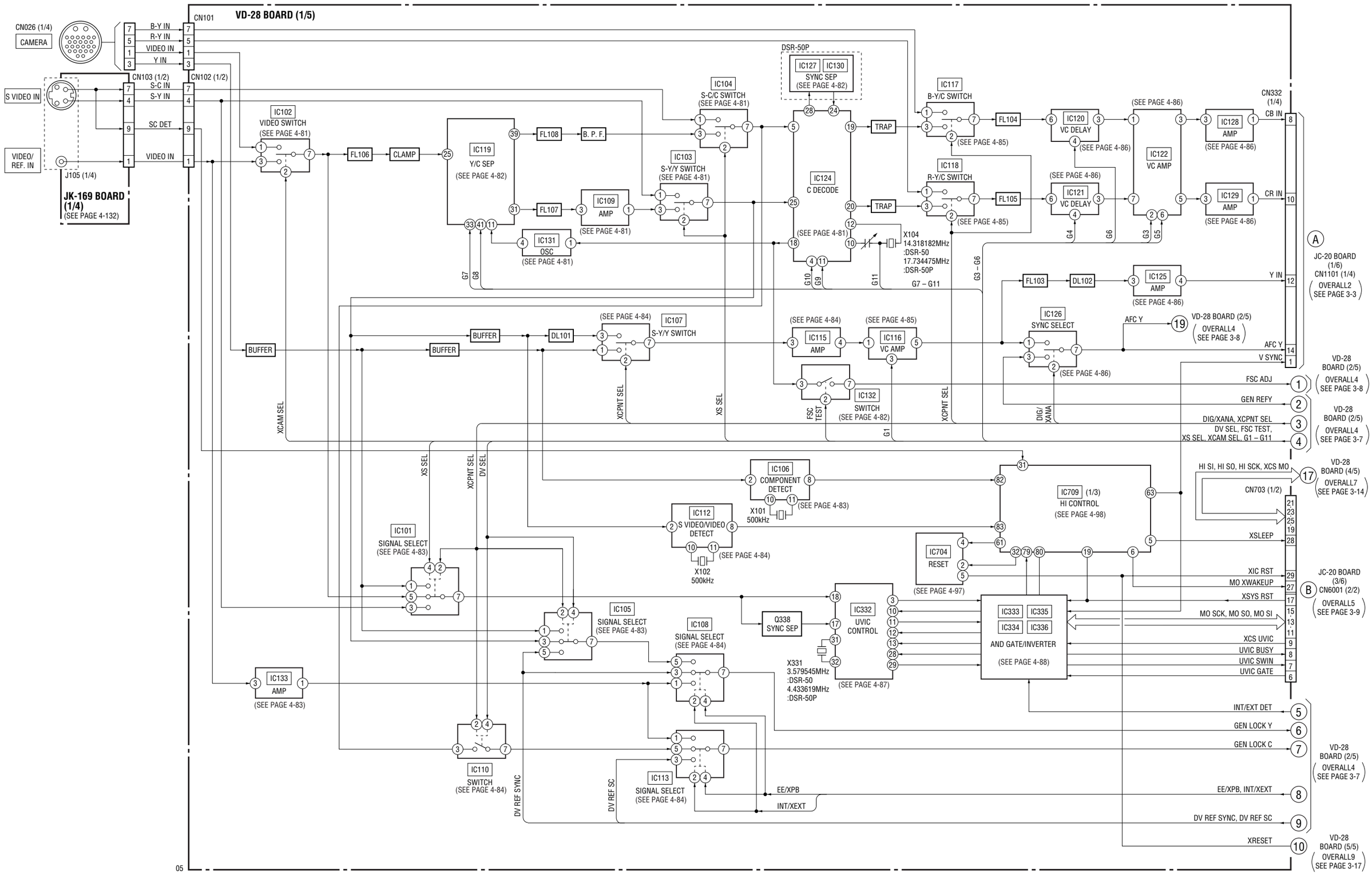
2-10. CIRCUIT BOARDS LOCATION



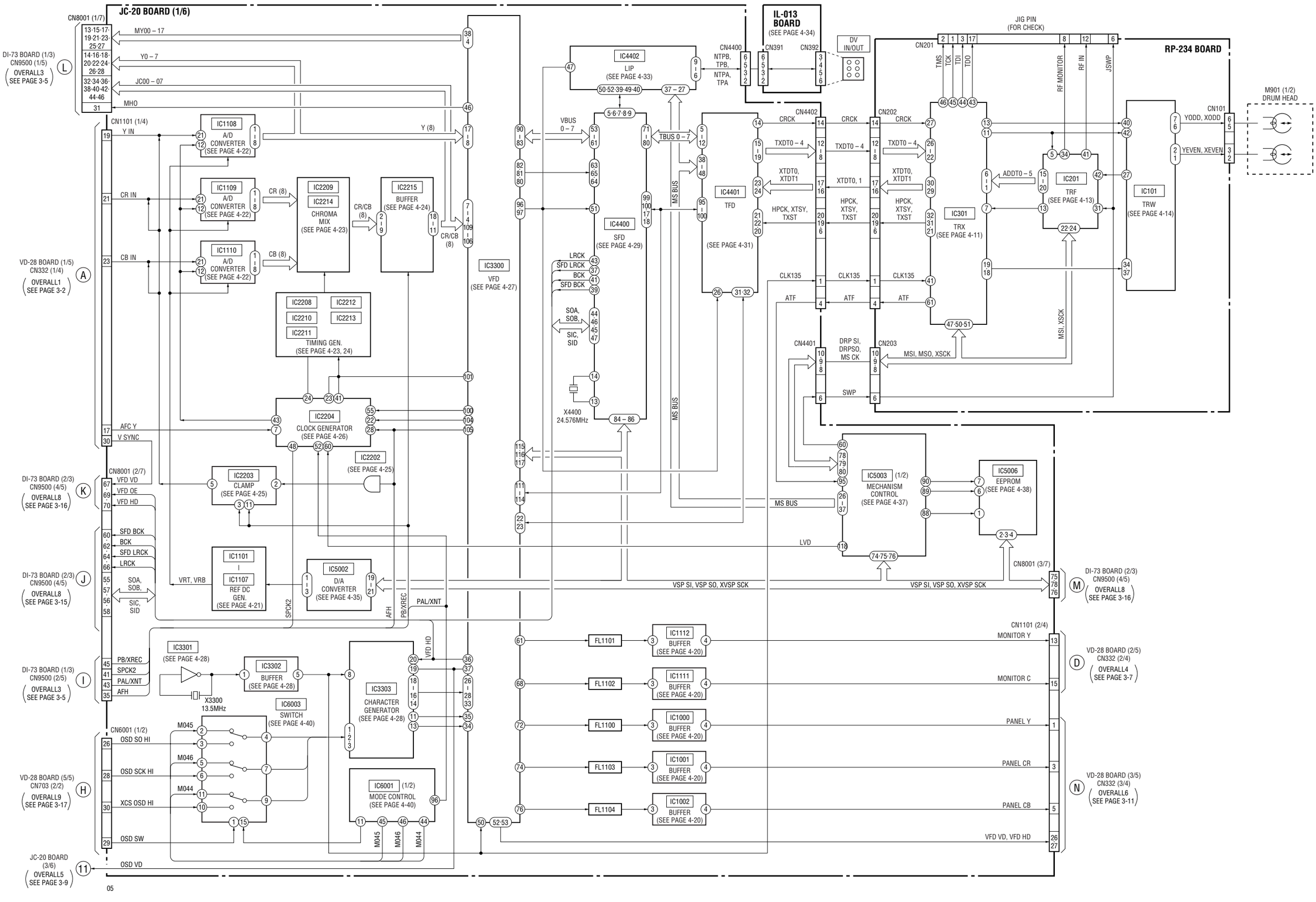


SECTION 3
BLOCK DIAGRAMS

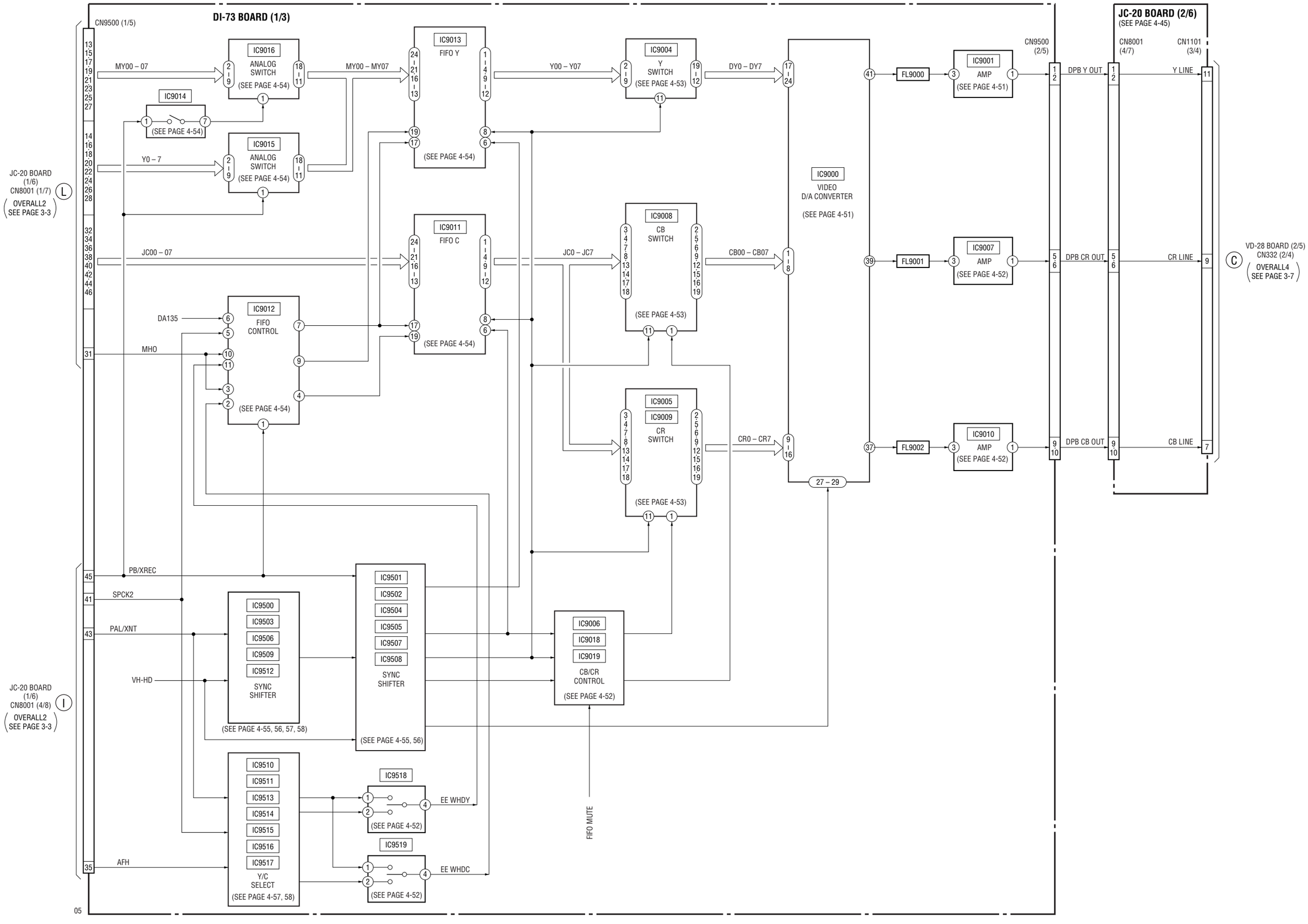
3-1. OVERALL BLOCK DIAGRAM 1



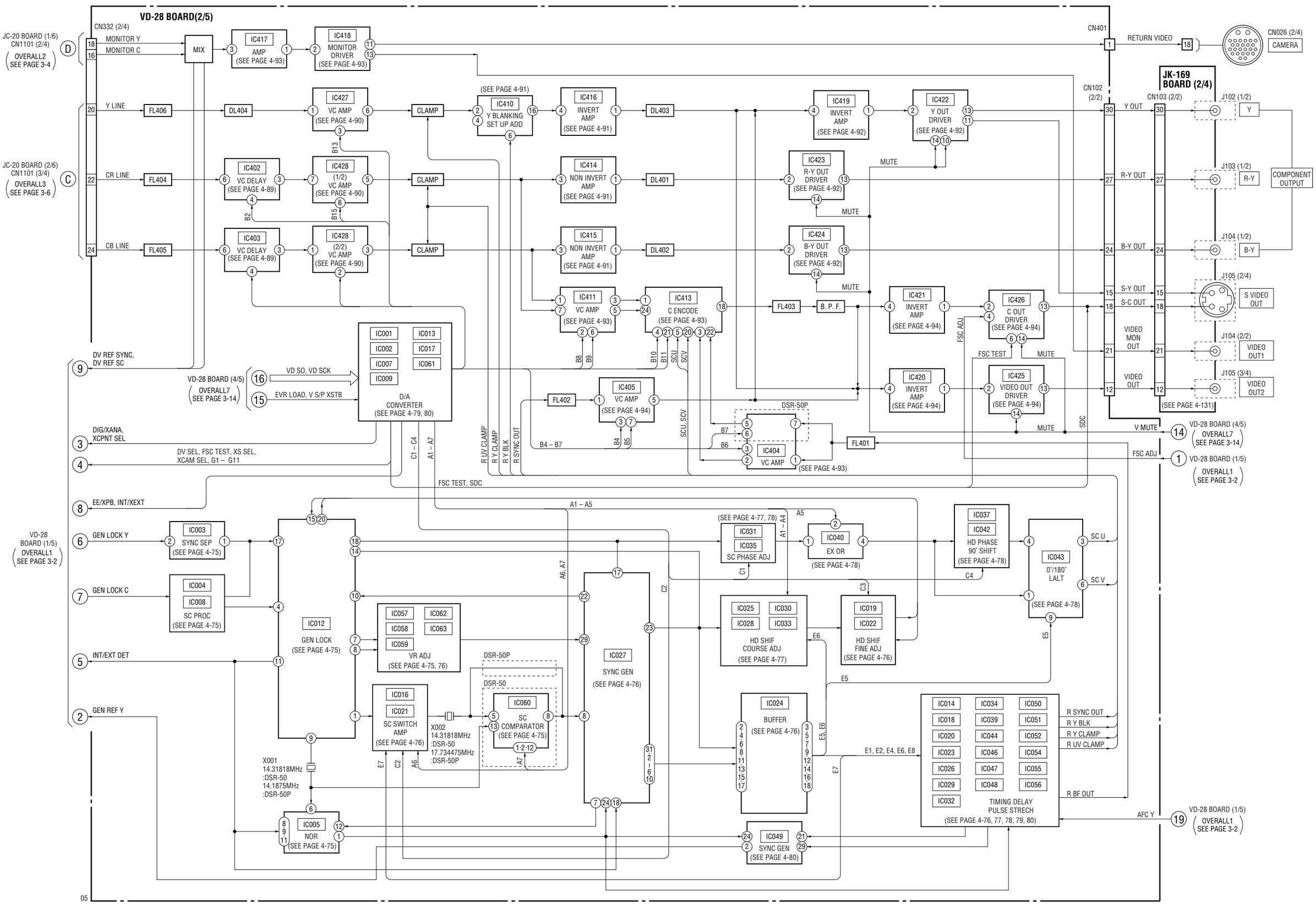
3-2. OVERALL BLOCK DIAGRAM 2



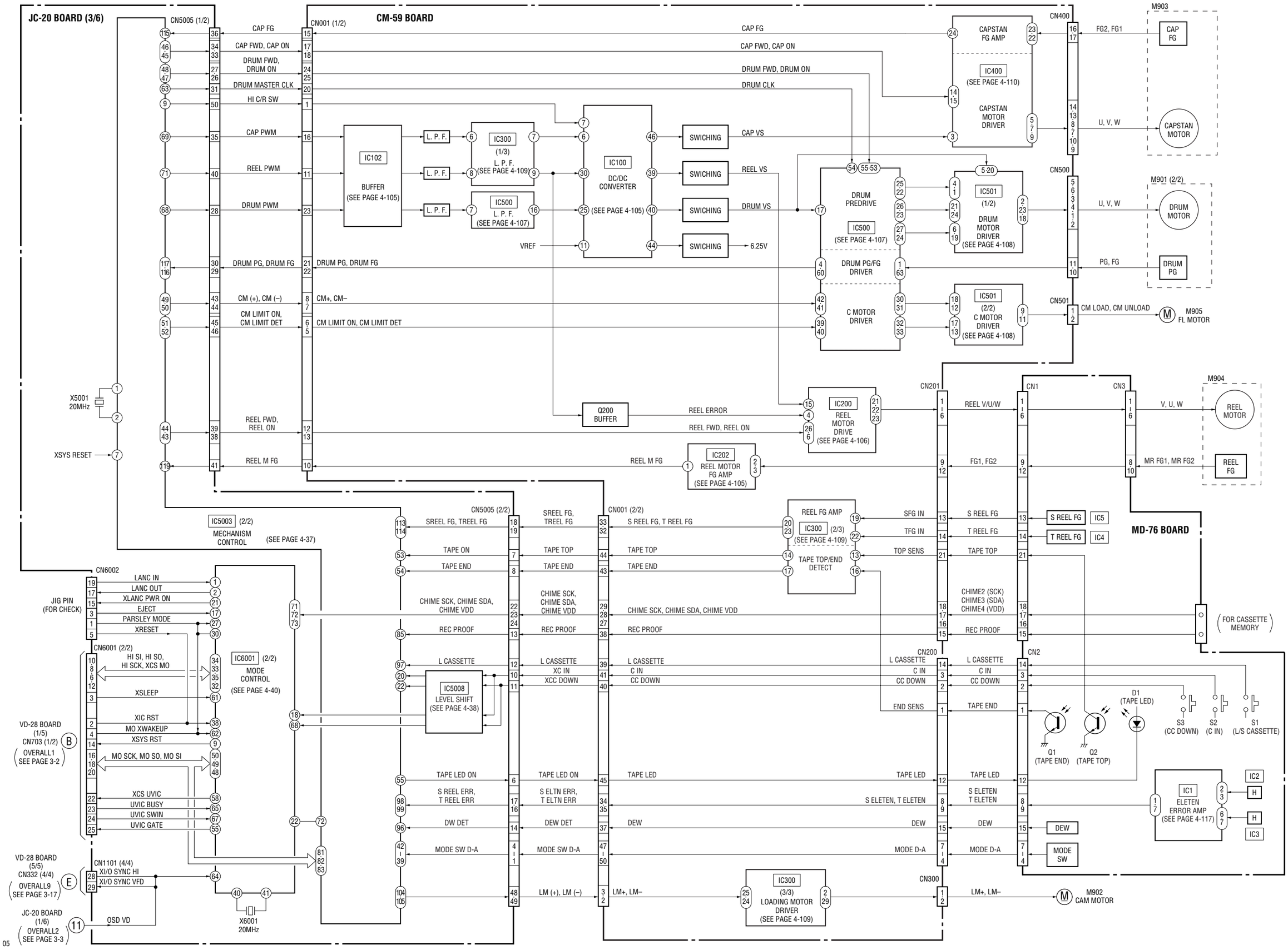
3-3. OVERALL BLOCK DIAGRAM 3



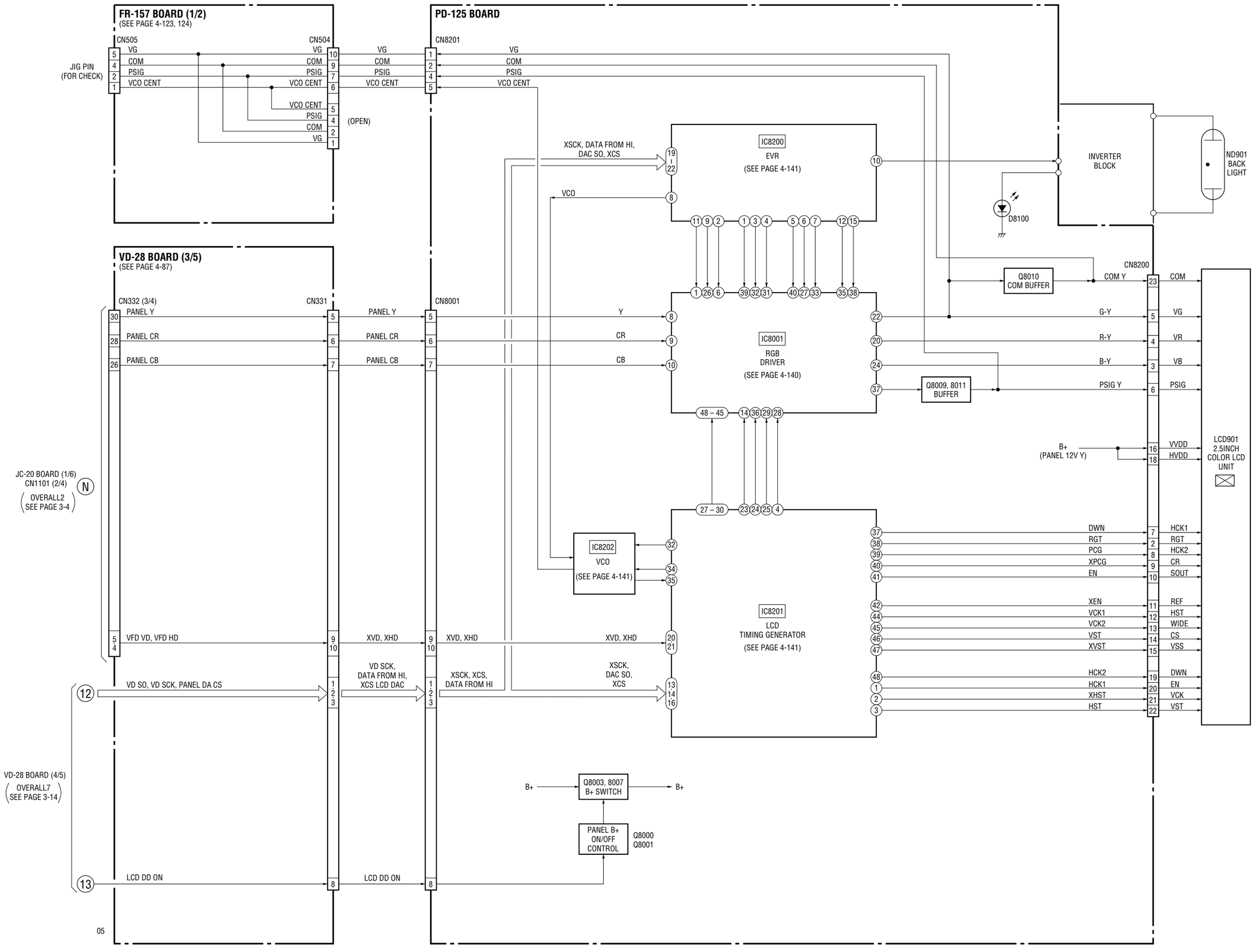
3-4. OVERALL BLOCK DIAGRAM 4



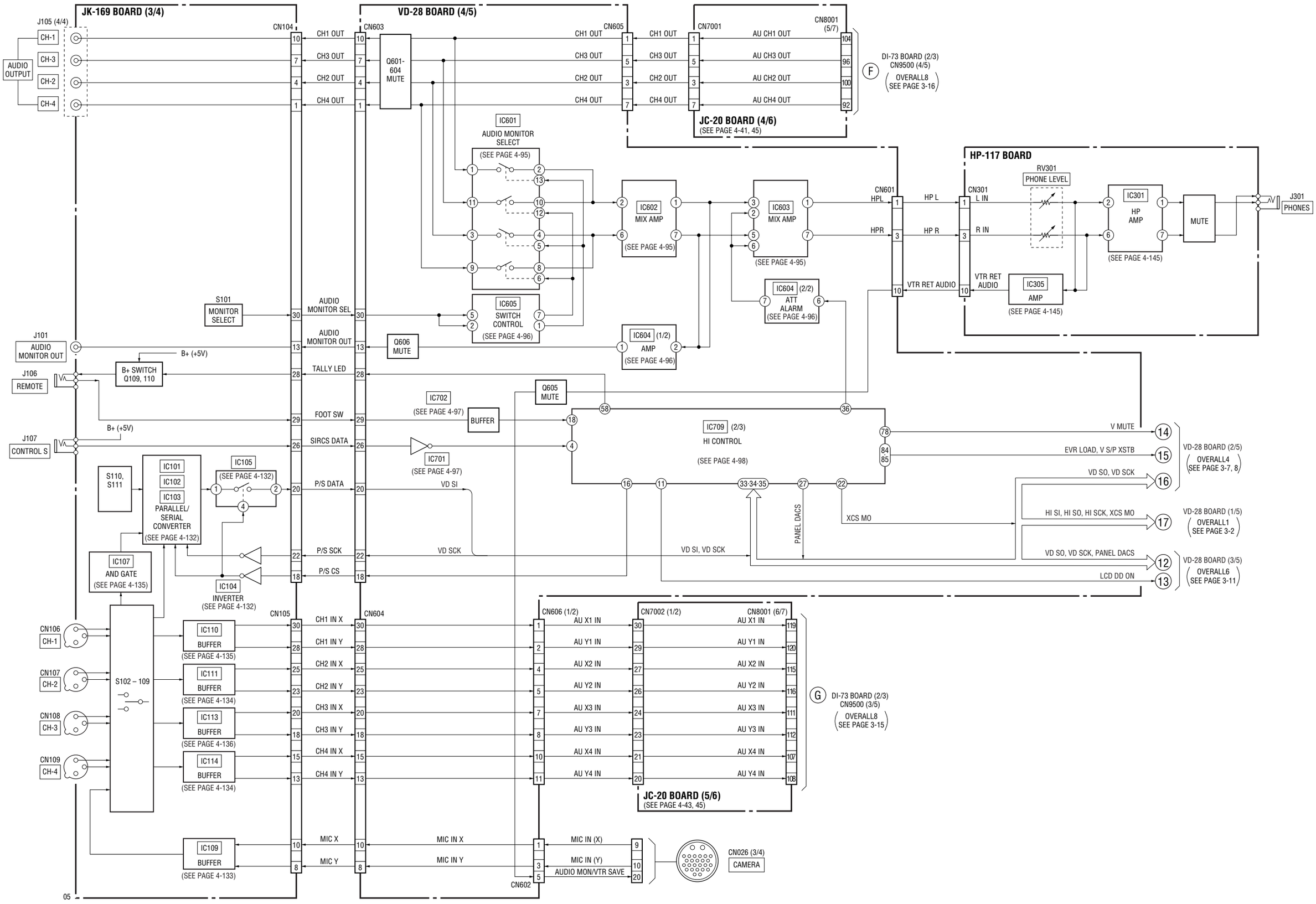
3-5. OVERALL BLOCK DIAGRAM 5



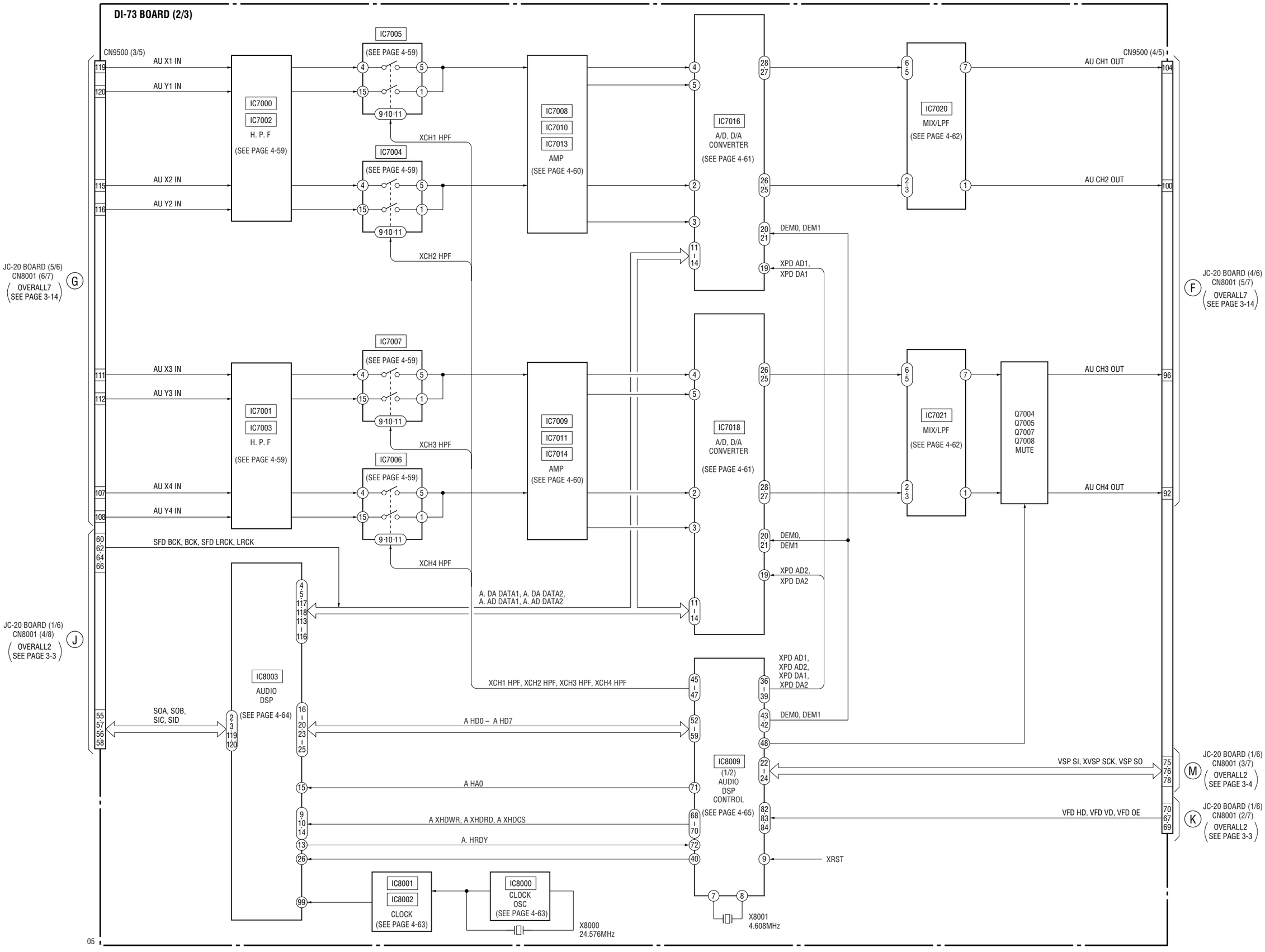
3-6. OVERALL BLOCK DIAGRAM 6



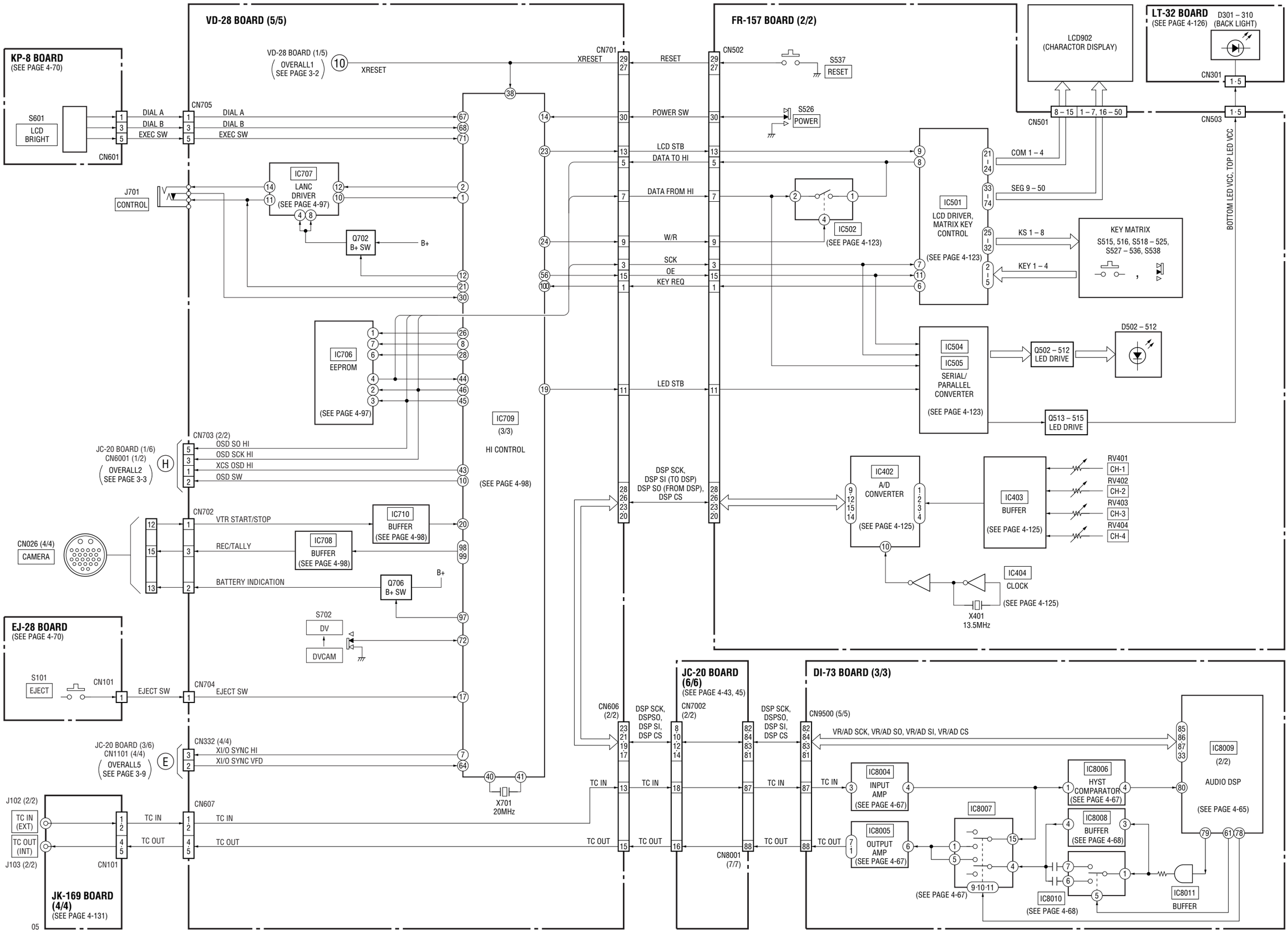
3-7. OVERALL BLOCK DIAGRAM 7



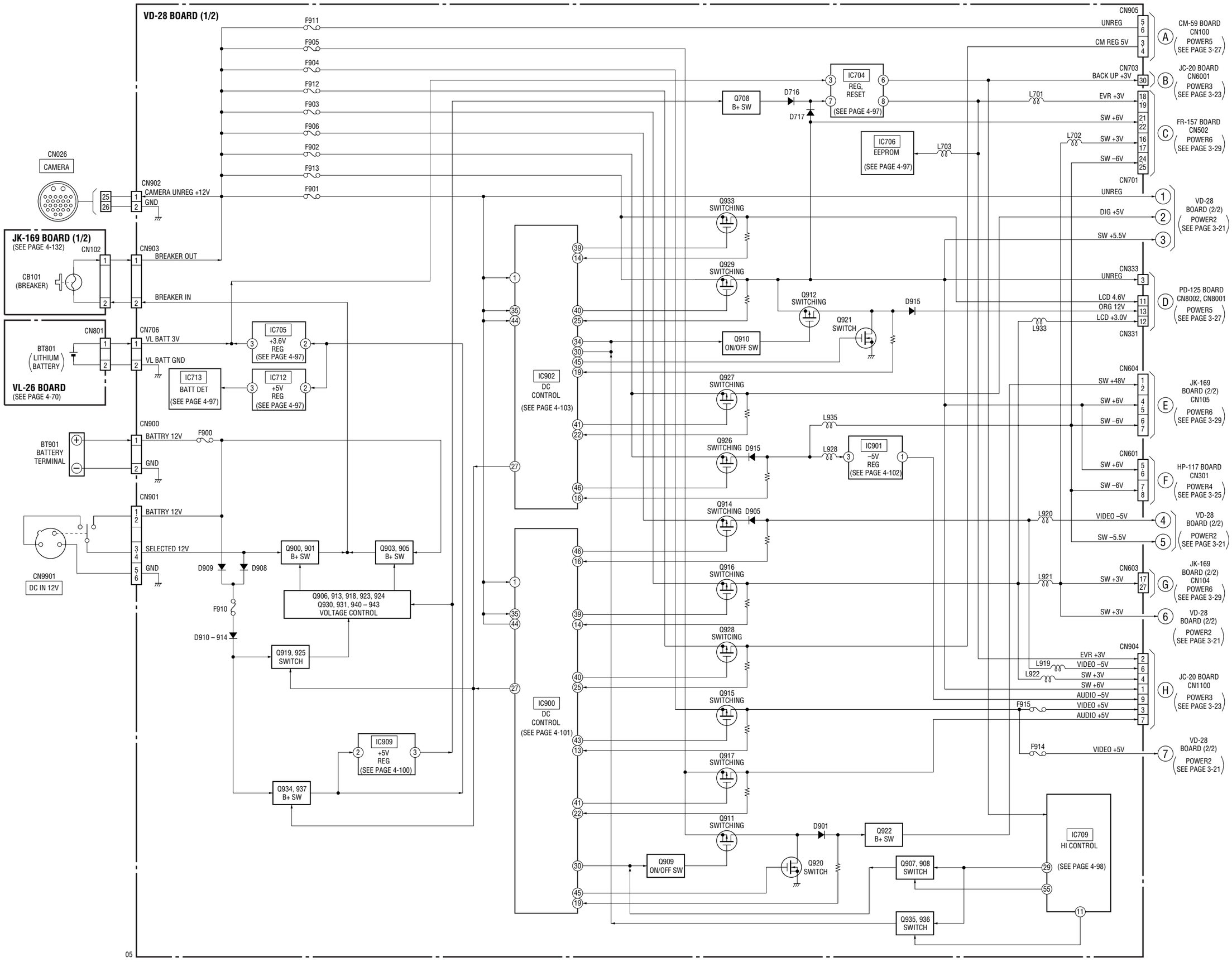
3-8. OVERALL BLOCK DIAGRAM 8



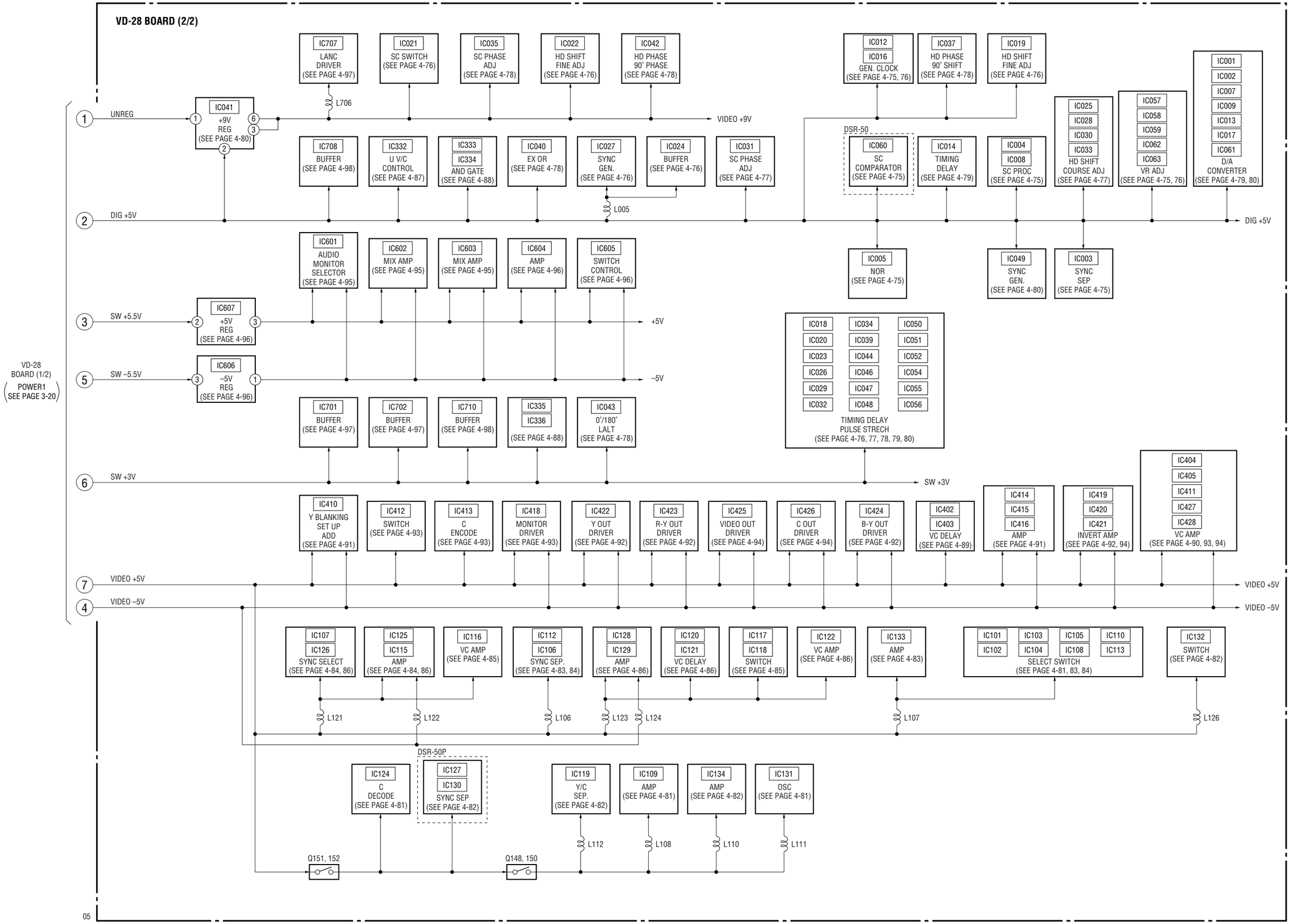
3-9. OVERALL BLOCK DIAGRAM 9



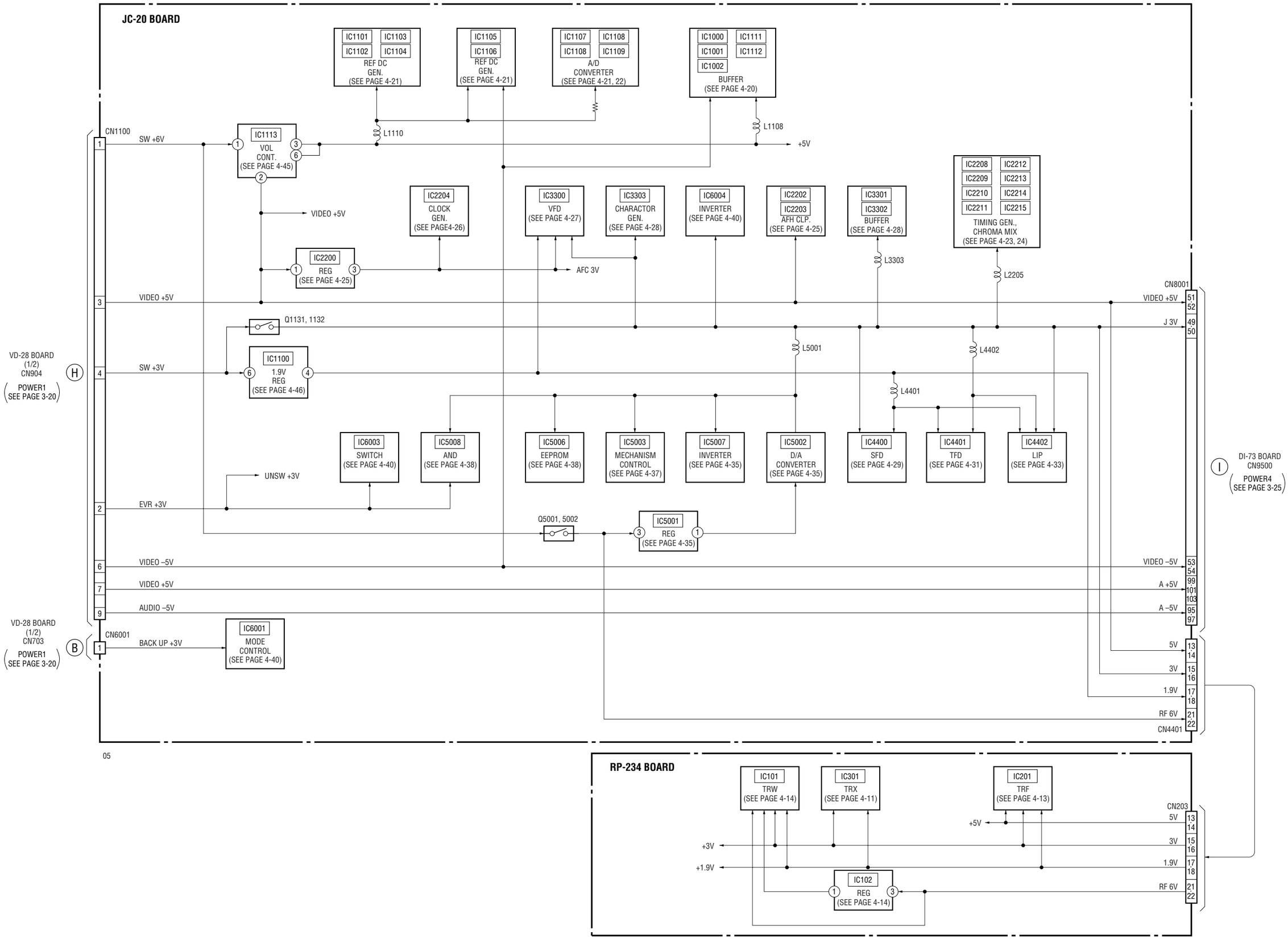
3-10. POWER BLOCK DIAGRAM 1



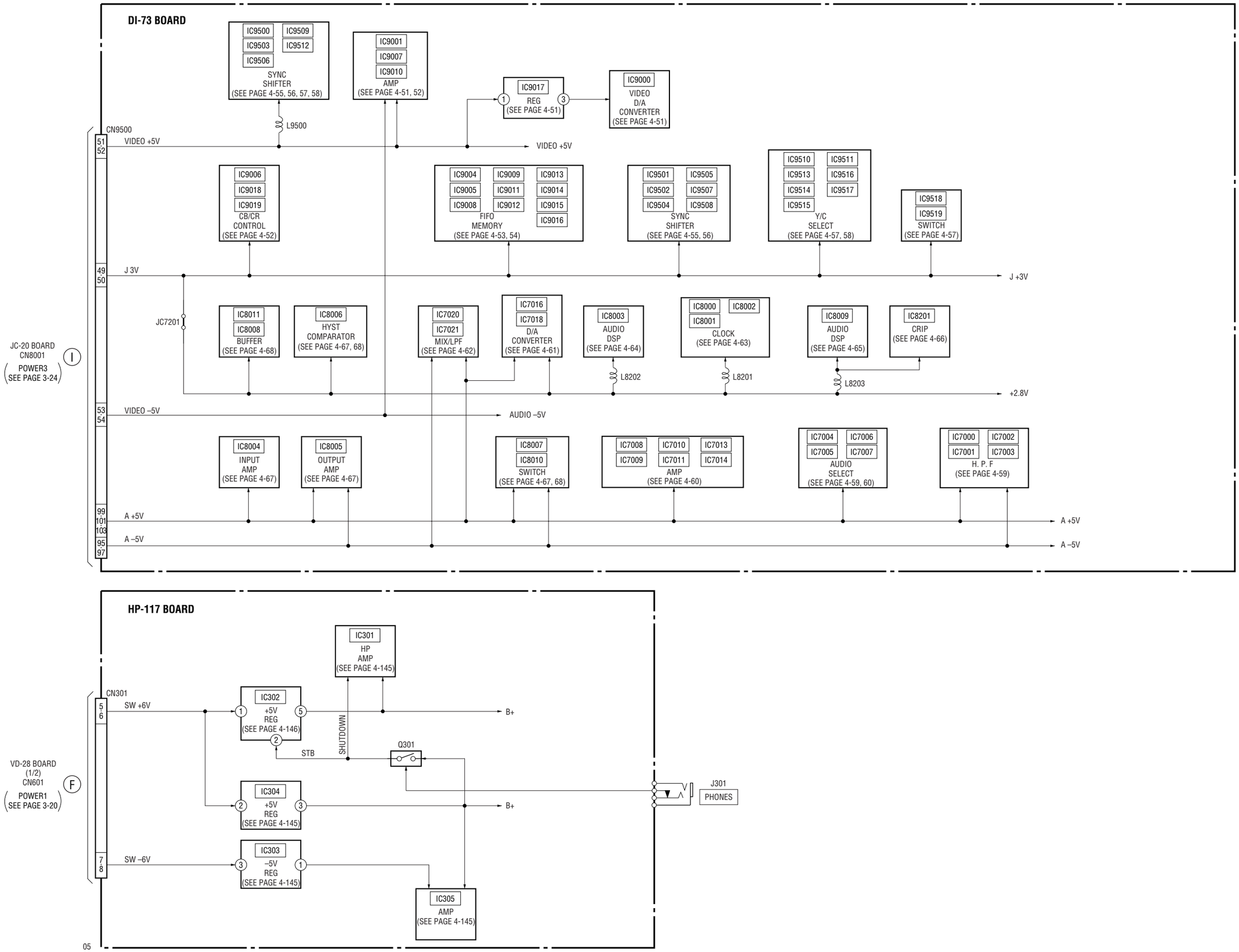
3-11. POWER BLOCK DIAGRAM 2



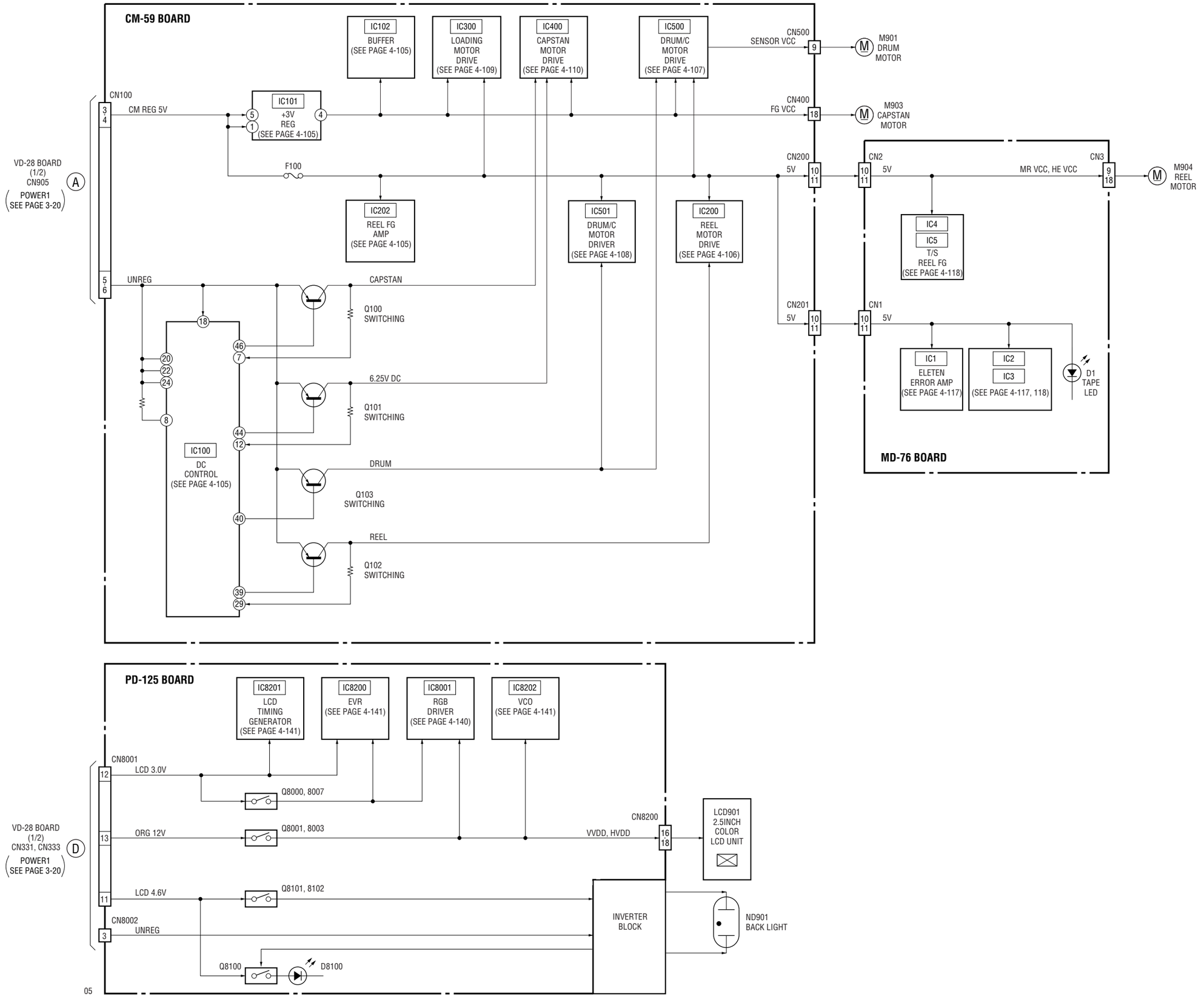
3-12. POWER BLOCK DIAGRAM 3



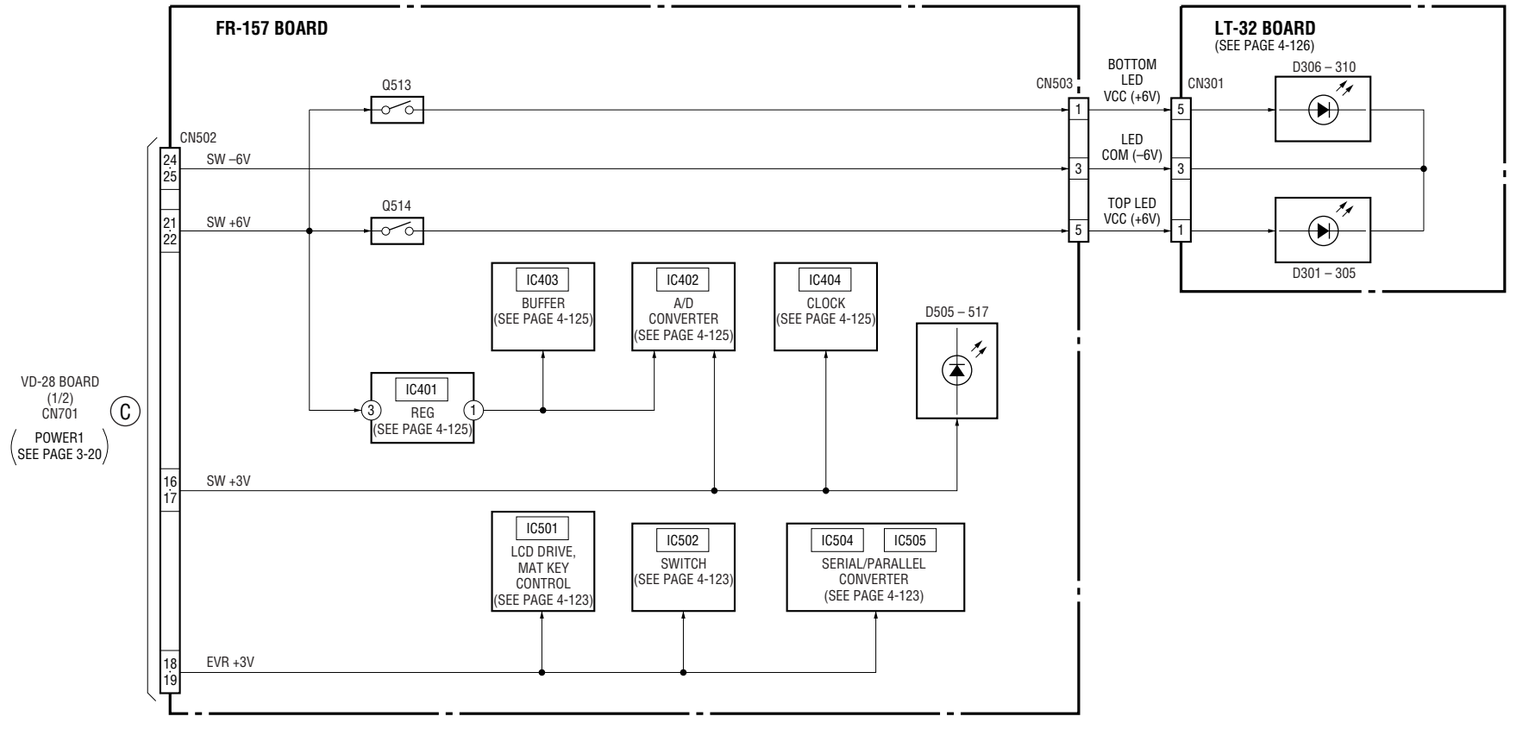
3-13. POWER BLOCK DIAGRAM 4



3-14. POWER BLOCK DIAGRAM 5



3-15. POWER BLOCK DIAGRAM 6

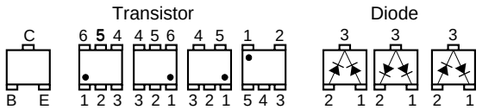


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

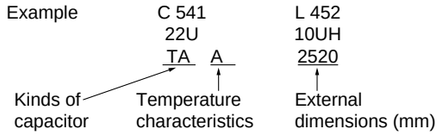
For printed wiring boards:

- ▒▒▒ : 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 µF unless otherwise noted. pF : µµF 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ.
- 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, capasitors, 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 → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : 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 voltege and waveform:

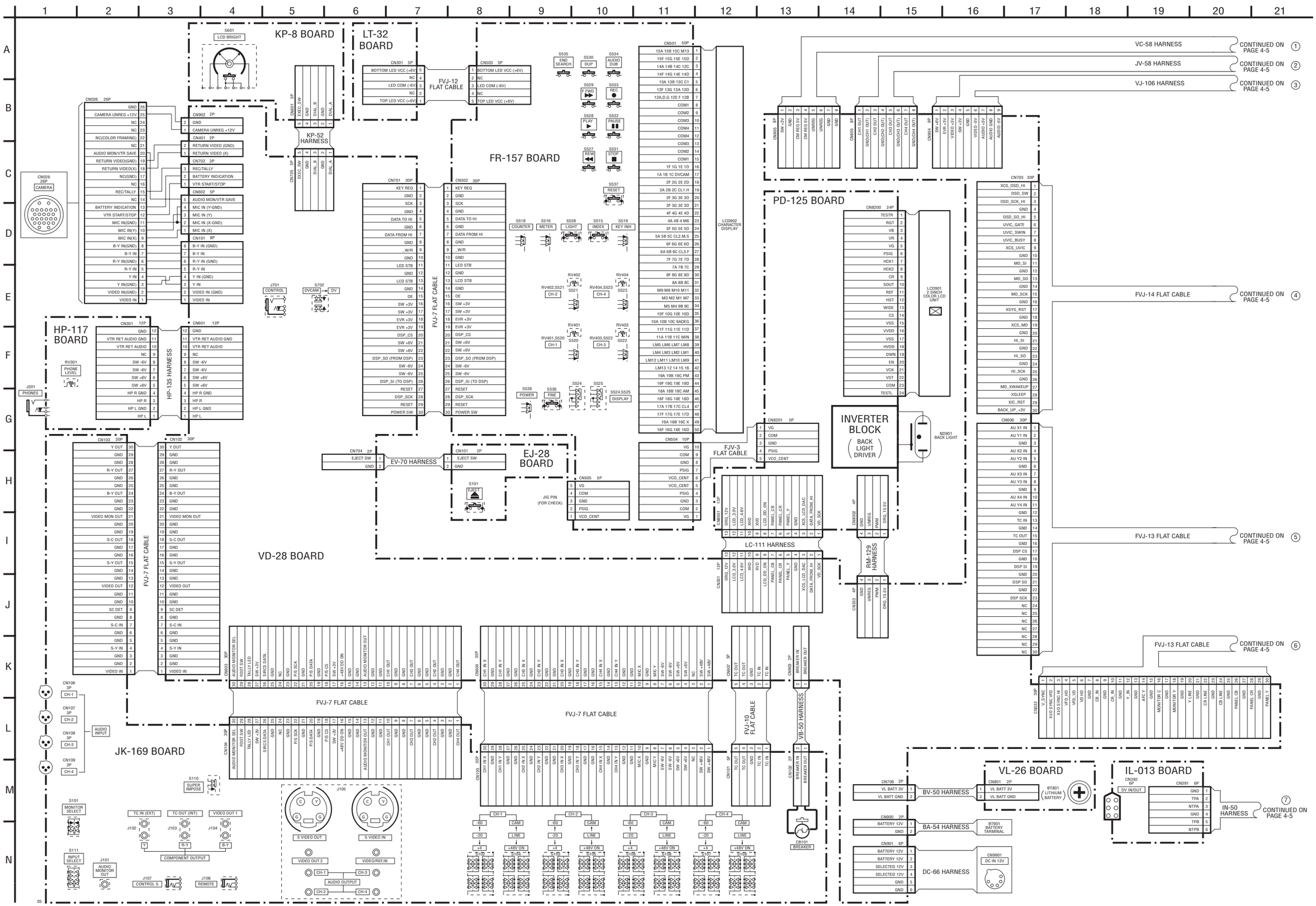
- Voltages and waveforms are measured between the measurement points and graound when color bar signal input.They are reference values and reference waveforms.* (VOM of DC 10 M Ω input impedance is used)
- Voltage values change depending upon input impedance of VOM used.

* Indicated by the color red.

Note:	**Note:**
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 piéce portant le numéro spécifié.

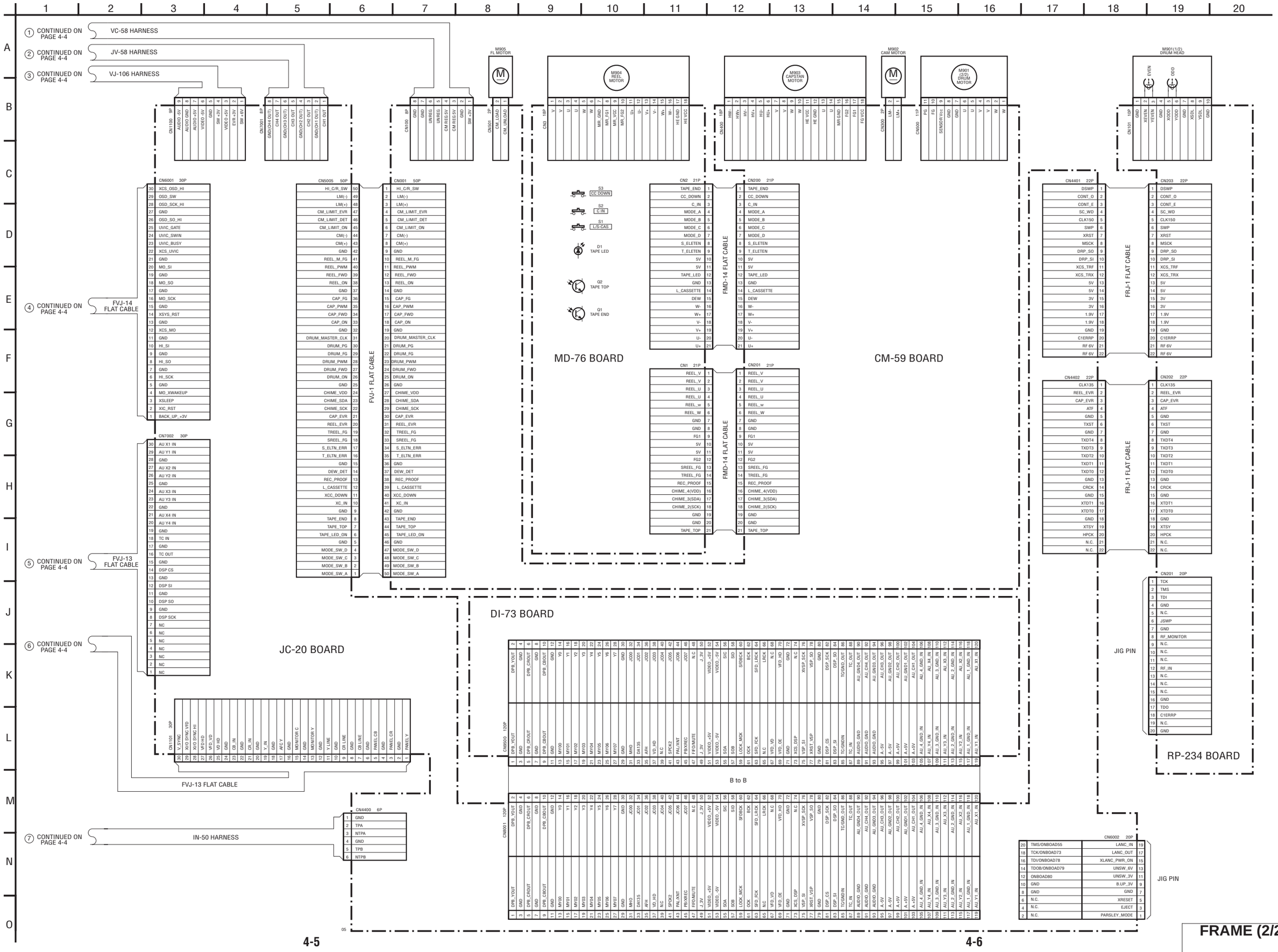
When indicating parts by reference number, please include the board name.

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



FRAME (1/2)

FRAME SCHEMATIC DIAGRAM (2/2)



CN6001 30P	
30	XCS_OSD_HI
29	OSD_SW
28	OSD_SCK_HI
27	GND
26	OSD_SO_HI
25	UVIC_GATE
24	UVIC_SWIN
23	UVIC_BUSY
22	XCS_UVIC
21	GND
20	MO_SI
19	GND
18	MO_SO
17	GND
16	MO_SCK
15	GND
14	XSYS_RST
13	GND
12	XCS_MO
11	GND
10	HI_SI
9	GND
8	HI_SO
7	GND
6	HI_SCK
5	GND
4	MO_XWAKEUP
3	XSLEEP
2	XIC_RST
1	BACK_UP_+3V

CN7002 30P	
30	AU X1 IN
29	AU Y1 IN
28	GND
27	AU X2 IN
26	AU Y2 IN
25	GND
24	AU X3 IN
23	AU Y3 IN
22	GND
21	AU X4 IN
20	AU Y4 IN
19	GND
18	TC IN
17	GND
16	TC OUT
15	GND
14	DSP CS
13	GND
12	DSP SI
11	GND
10	DSP SO
9	GND
8	DSP SCK
7	NC
6	NC
5	NC
4	NC
3	NC
2	NC
1	NC

CN5005 50P		CN001 50P
HI_C/R_SW	50	1 HI_C/R_SW
LM(-)	49	2 LM(-)
LM(+)	48	3 LM(+)
CM_LIMIT_EVR	47	4 CM_LIMIT_EVR
CM_LIMIT_DET	46	5 CM_LIMIT_DET
CM_LIMIT_ON	45	6 CM_LIMIT_ON
CM(-)	44	7 CM(-)
CM(+)	43	8 CM(+)
GND	42	9 GND
REEL_M_FG	41	10 REEL_M_FG
REEL_PWM	40	11 REEL_PWM
REEL_FWD	39	12 REEL_FWD
REEL_ON	38	13 REEL_ON
GND	37	14 GND
CAP_FG	36	15 CAP_FG
CAP_PWM	35	16 CAP_PWM
CAP_FWD	34	17 CAP_FWD
CAP_ON	33	18 CAP_ON
GND	32	19 GND
DRUM_MASTER_CLK	31	20 DRUM_MASTER_CLK
DRUM_PG	30	21 DRUM_PG
DRUM_FG	29	22 DRUM_FG
DRUM_PWM	28	23 DRUM_PWM
DRUM_FWD	27	24 DRUM_FWD
DRUM_ON	26	25 DRUM_ON
GND	25	26 GND
CHIME_VDD	24	27 CHIME_VDD
CHIME_SDA	23	28 CHIME_SDA
CHIME_SCK	22	29 CHIME_SCK
CAP_EVR	21	30 CAP_EVR
REEL_EVR	20	31 REEL_EVR
TREEL_FG	19	32 TREEL_FG
SREEL_FG	18	33 SREEL_FG
S_ELTN_ERR	17	34 S_ELTN_ERR
T_ELTN_ERR	16	35 T_ELTN_ERR
GND	15	36 GND
DEW_DET	14	37 DEW_DET
REC_PROOF	13	38 REC_PROOF
L_CASSETTE	12	39 L_CASSETTE
XCC_DOWN	11	40 XCC_DOWN
XC_IN	10	41 XC_IN
GND	9	42 GND
TAPE_END	8	43 TAPE_END
TAPE_TOP	7	44 TAPE_TOP
TAPE_LED_ON	6	45 TAPE_LED_ON
GND	5	46 GND
MODE_SW_D	4	47 MODE_SW_D
MODE_SW_C	3	48 MODE_SW_C
MODE_SW_B	2	49 MODE_SW_B
MODE_SW_A	1	50 MODE_SW_A

CN1101 30P	
30	V_SYNC
29	XVI/O SYNC VFD
28	XVI/O SYNC HI
27	VFD HD
26	VFD_VD
25	VD_HD
24	GND
23	CR_IN
22	GND
21	CR_IN
20	GND
19	Y_IN
18	GND
17	AFC-Y
16	GND
15	MONITOR C
14	GND
13	MONITOR Y
12	GND
11	Y LINE
10	GND
9	CR LINE
8	GND
7	CB LINE
6	GND
5	PANEL CB
4	GND
3	PANEL CR
2	GND
1	PANEL Y

CN4400 6P	
1	GND
2	TPA
3	NTPA
4	GND
5	TPB
6	NTPB

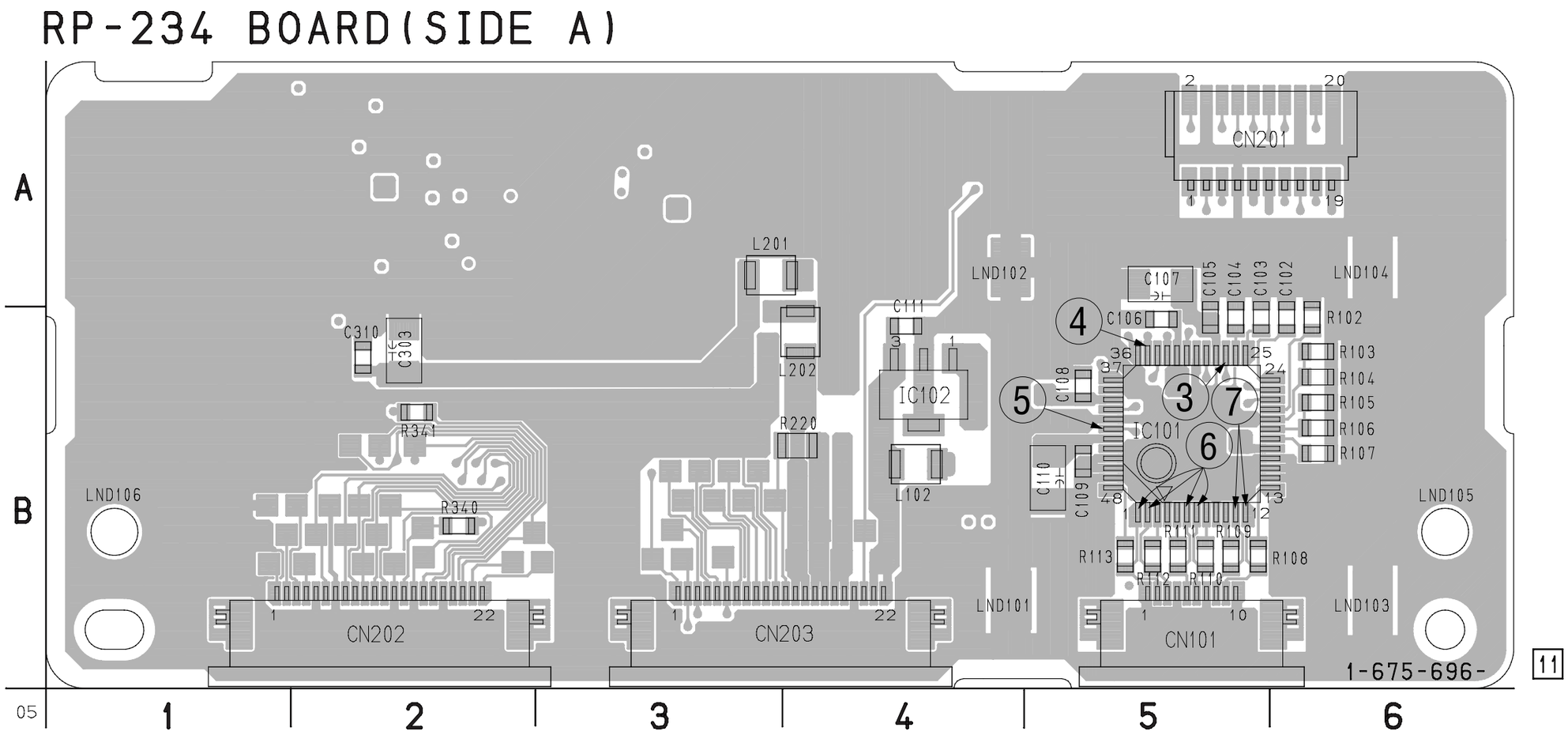
CN6002 20P		
20	TMS/ONBOAD55	LANC_IN 19
18	TCK/ONBOAD73	LANC_OUT 17
16	TDI/ONBOAD78	XLANC_PWR_ON 15
14	TDOB/ONBOAD79	UNSW_6V 13
12	ONBOAD80	UNSW_3V 11
10	GND	B.UP_3V 9
8	GND	GND 7
6	N.C.	XRESET 5
4	N.C.	EJECT 3
2	N.C.	PARSLEY_MODE 1

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

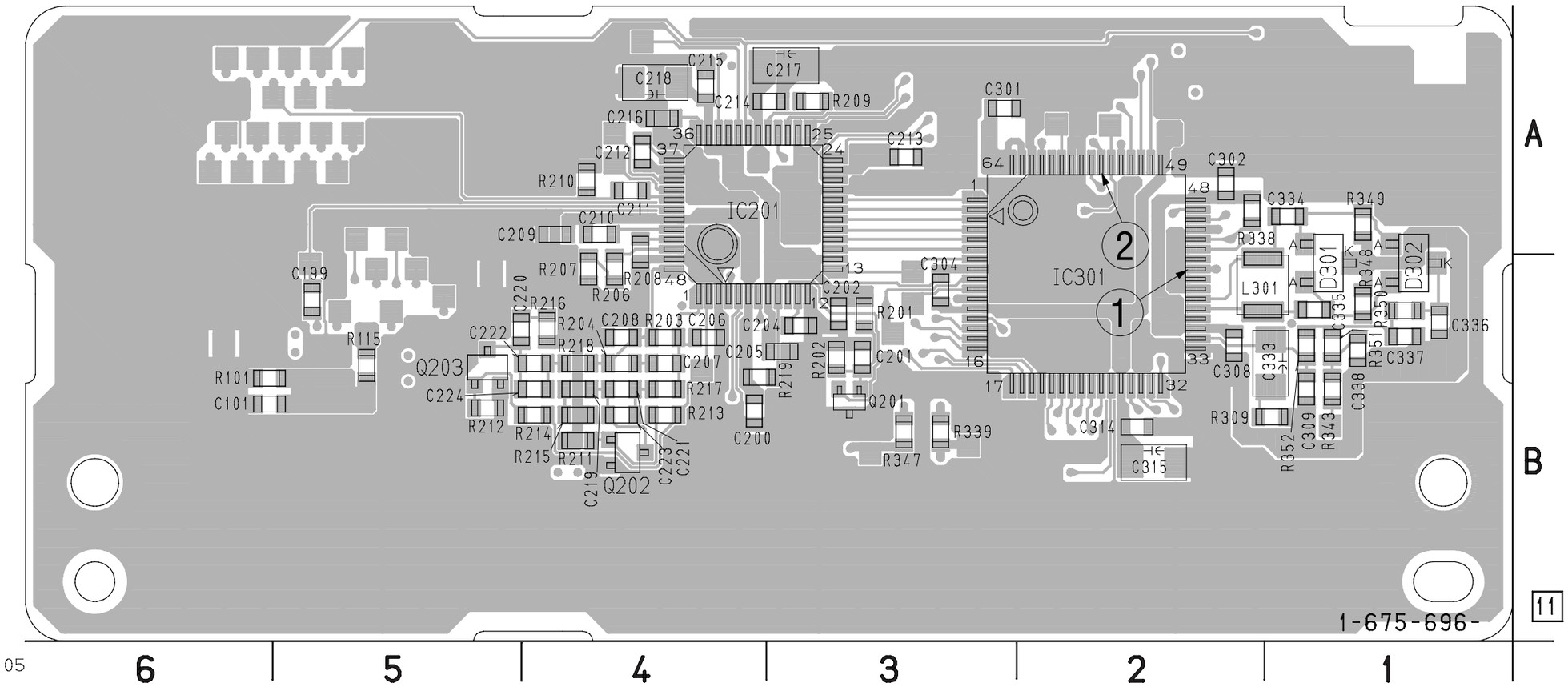
RP-234 (REC/PB AMP) PRINTED WIRING BOARD

– Ref. No.: RP-234 board; 30,000 series –

- **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 4-153 for printed parts location.
- Chip transistor



RP-234 BOARD(SIDE B)



05

6 5 4 3 2 1

RP-234 (REC/PB AMP 1) SCHEMATIC DIAGRAM • See page 4-7 for RP-234 printed wiring board. • See page 4-147 for waveforms.

RP-234 BOARD (1/2)

REC/PB AMP 1

-REF.NO.:30,000 SERIES-
XX MARK:NO MOUNT

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

JC-20 BOARD (7/14) CN4401 THROUGH THE FRJ-1 FLAT CABLE (SEE PAGE 4-32)

JC-20 BOARD (7/14) CN4402 THROUGH THE FRJ-1 FLAT CABLE (SEE PAGE 4-32)

IC301
IC301
F712504DPM-TEB

Note:Resistor is mounted to the location where C334 is printed.

RP-234 BOARD (2/2)

JIG PIN

SIGNAL PATH

	VIDEO SIGNAL Y/CHROMA	AUDIO SIGNAL
REC	➡	➡
PB	⇨	⇨

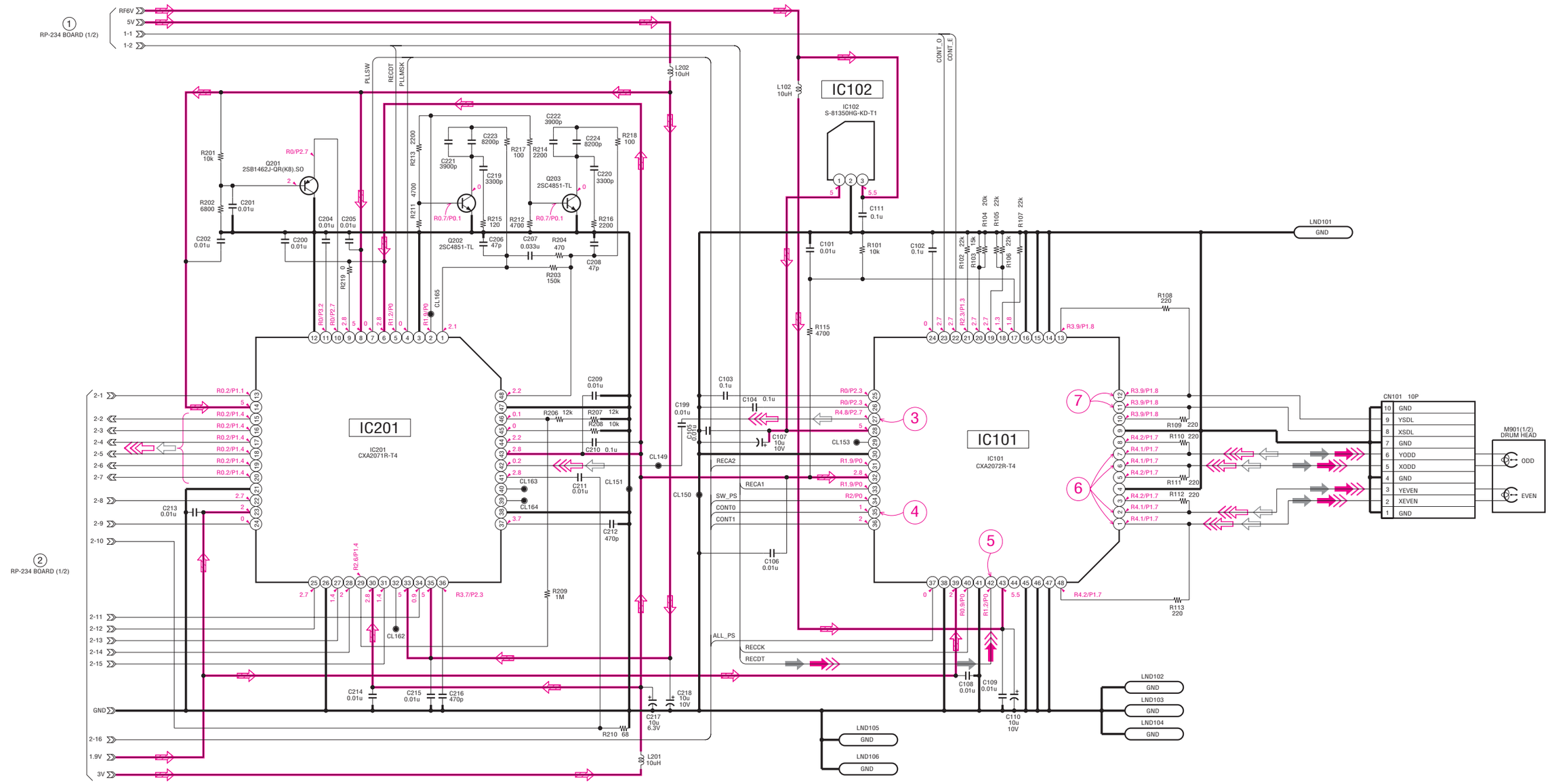
RP-234 (REC/PB AMP 2) SCHEMATIC DIAGRAM • See page 4-7 for RP-234 printed wiring board. • See page 4-147 for waveforms.

RP-234 BOARD (2/2)

REC/PB AMP 2

-REF.NO.:30,000 SERIES-
XX MARK:NO MOUNT

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



SIGNAL PATH

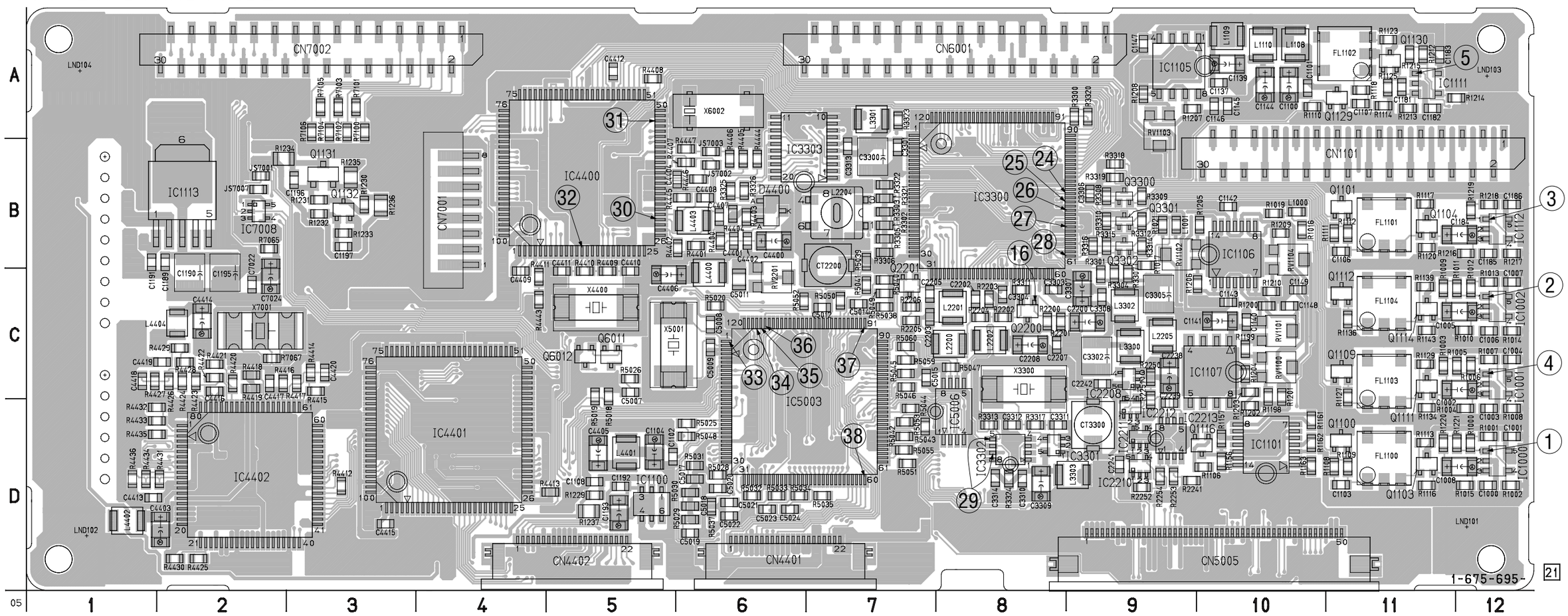
	VIDEO SIGNAL Y/CHROMA	AUDIO SIGNAL
REC	⇒	→
PB	⇨	⇨

JC-20 (VIDEO PB AMP, VIDEO A/D CONVERTER, CHROMA MIX, AFC, VFD, SFD, TFD, DV INTERFACE, MECHANISM CONTROL, AUDIO, POWER SUPPLY) PRINTED WIRING BOARD

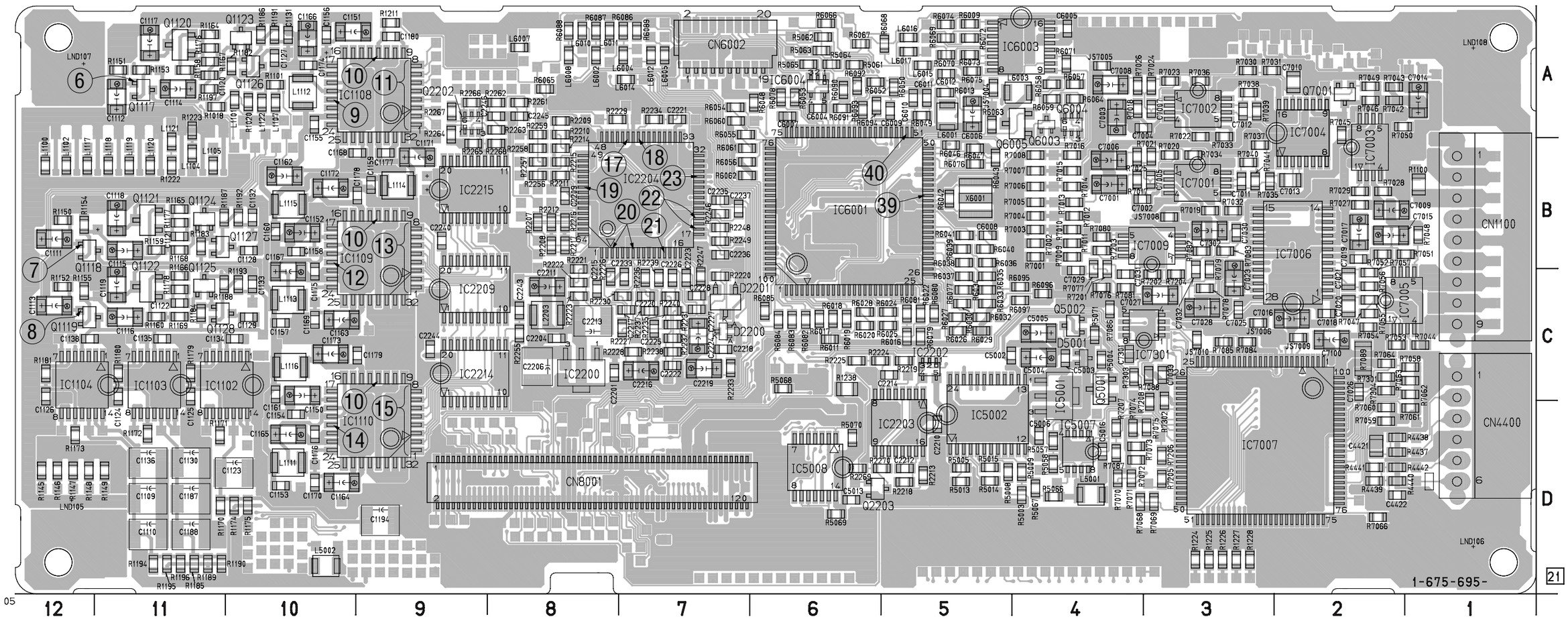
– Ref. No.: JC-20 board; 20,000 series –

- **For Printed Wiring Board.**
- JC-20 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 4-153 for printed parts location.
- Chip transistor

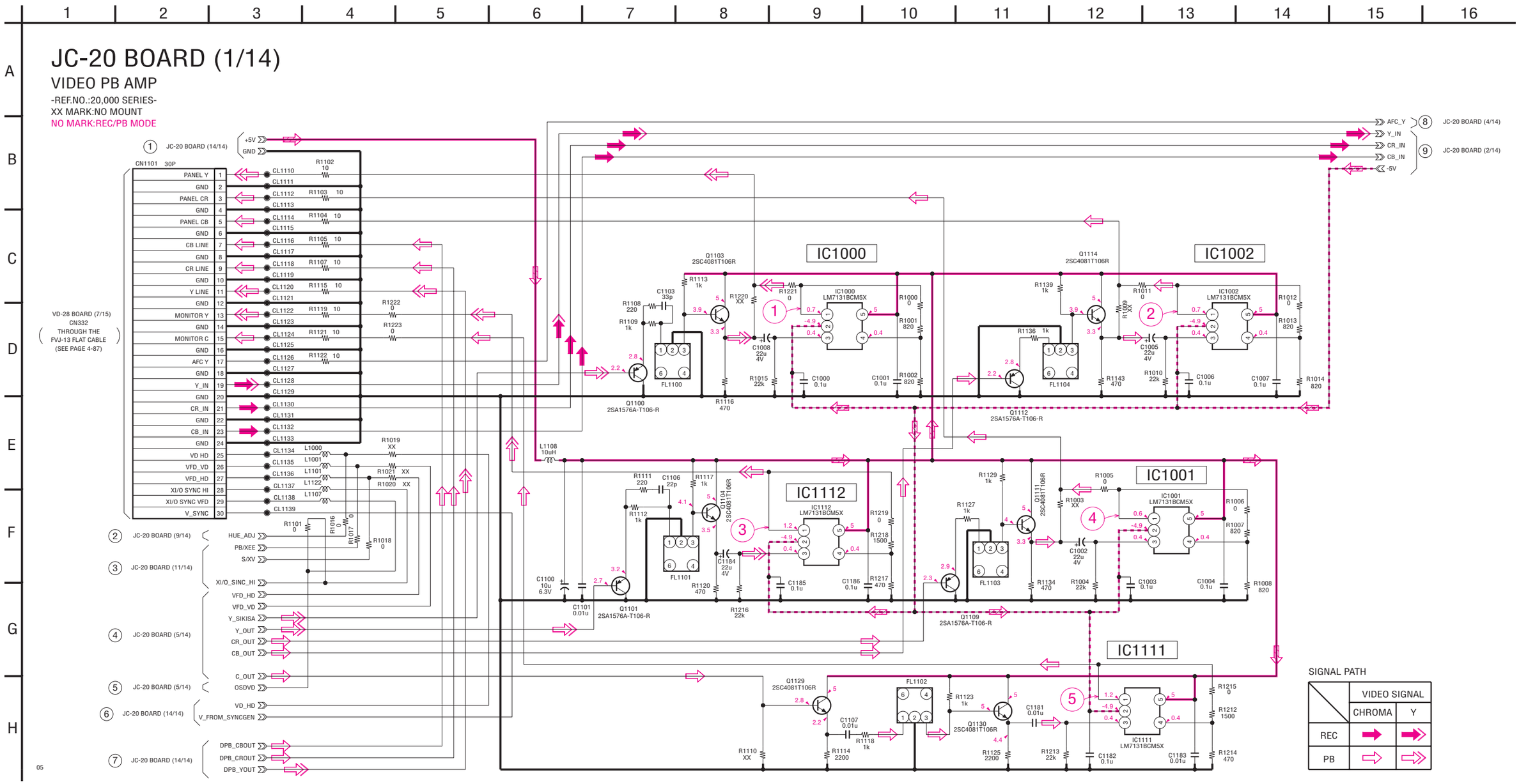
JC-20 BOARD(SIDE A)



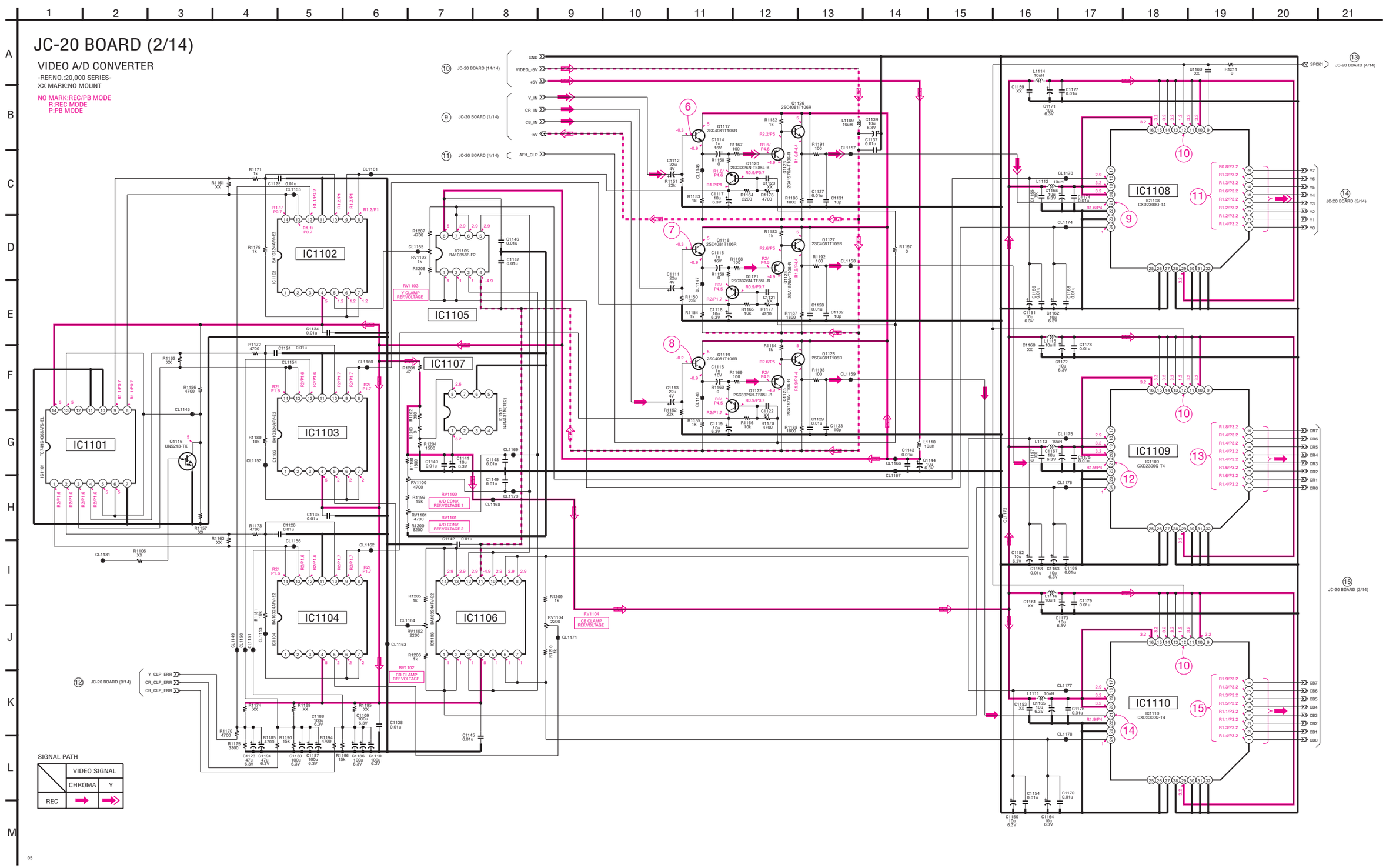
JC-20 BOARD(SIDE B)



JC-20 (VIDEO PB AMP) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-147 for waveforms.



JC-20 (VIDEO A/D CONVERTER) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-147 for waveforms.



VIDEO A/D CONVERTER
JC-20 (2/14)

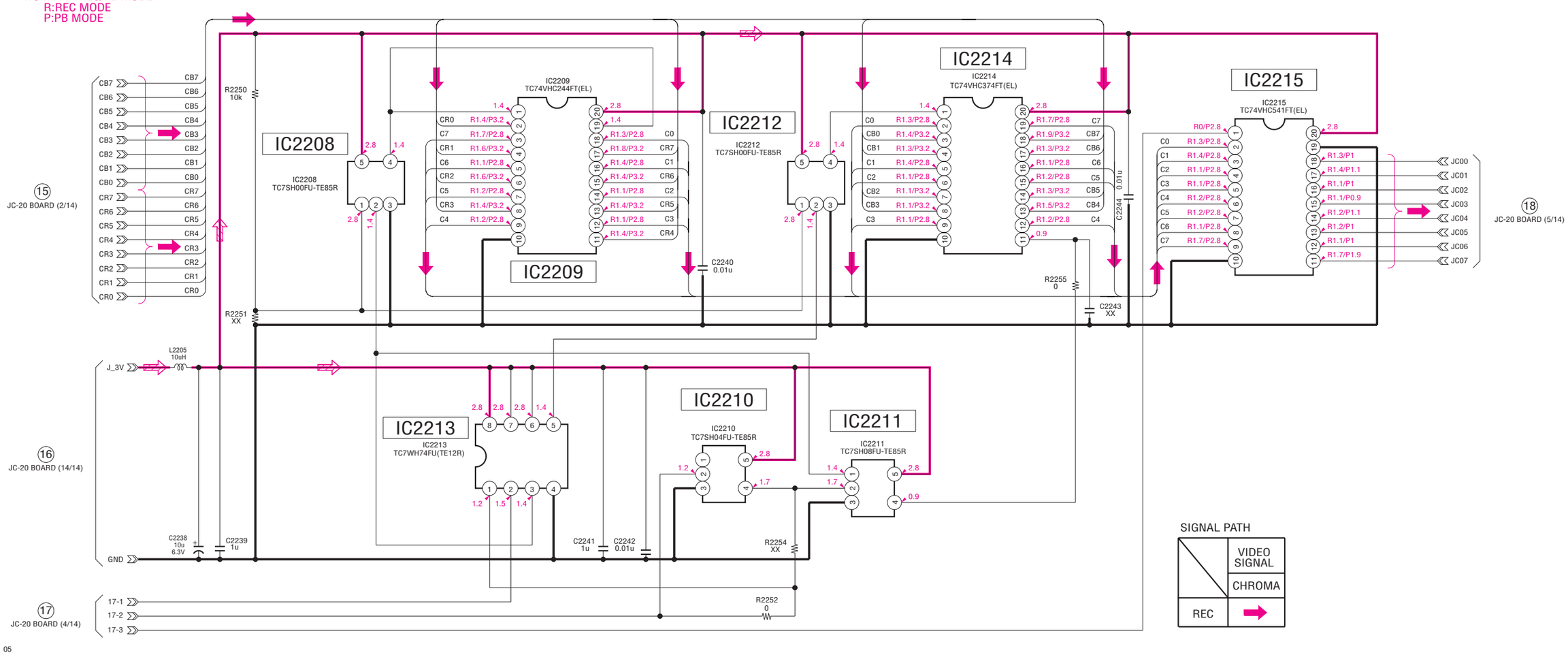
JC-20 (CHROMA MIX) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.

JC-20 BOARD (3/14)

CHROMA MIX

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

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

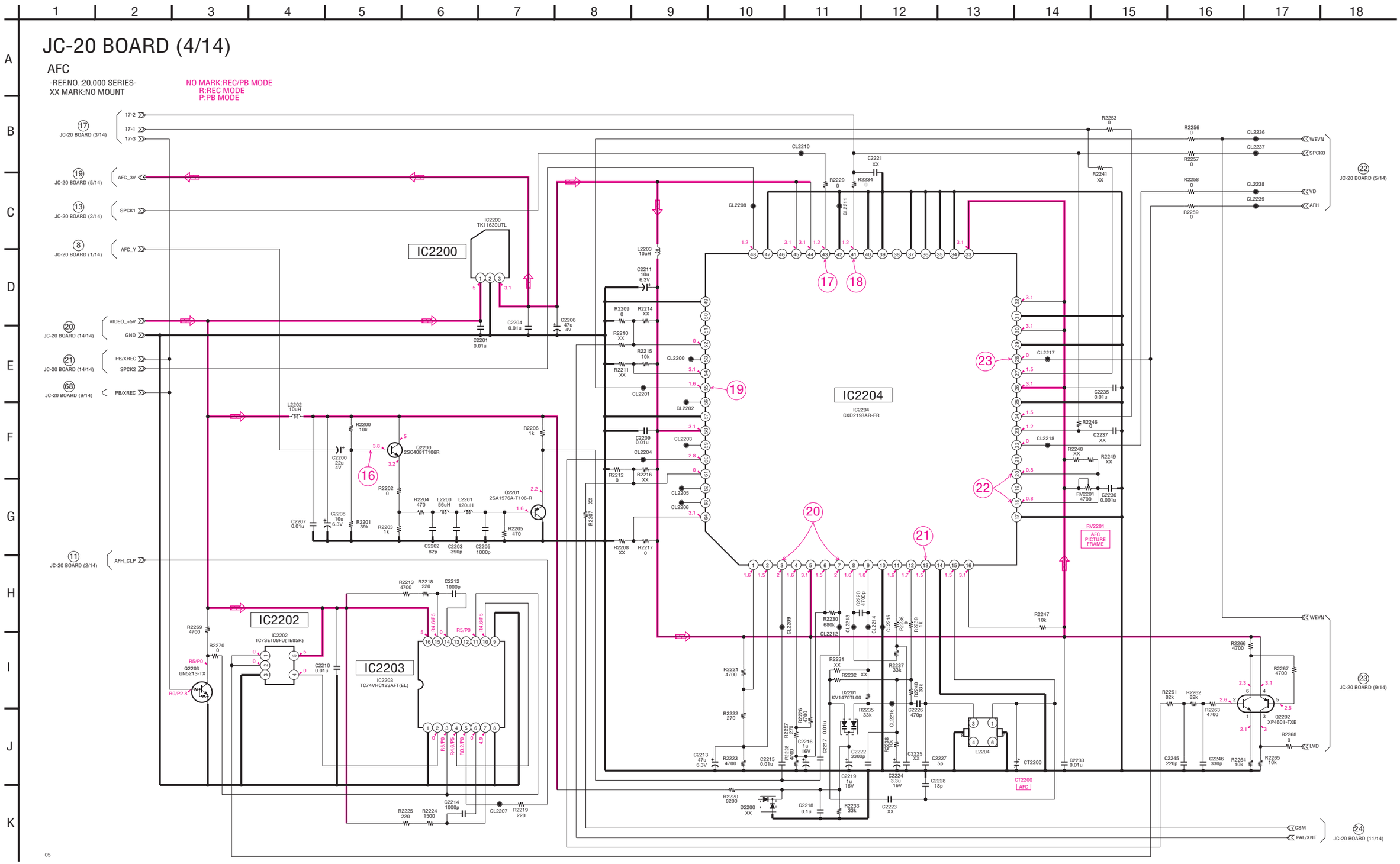


05

SIGNAL PATH

	VIDEO SIGNAL
	CHROMA
REC	➡

JC-20 (AFC) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-147, 148 for waveforms.



JC-20 (VFD (VIDEO DSP, D/A CONVERTER)) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-148 for waveforms.

JC-20 BOARD (5/14)

VFD(VIDEO DSP,D/A CONVERTER)

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

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

IC3300
IC3300
M65511FP-R60S

IC3301
TC7SU04FU(TE85R)

IC3302
TC7WH04FU(TE12R)

IC3303
IC3303
MB90097PFV-G-120-BND

CT3300
VFD
3PCK

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

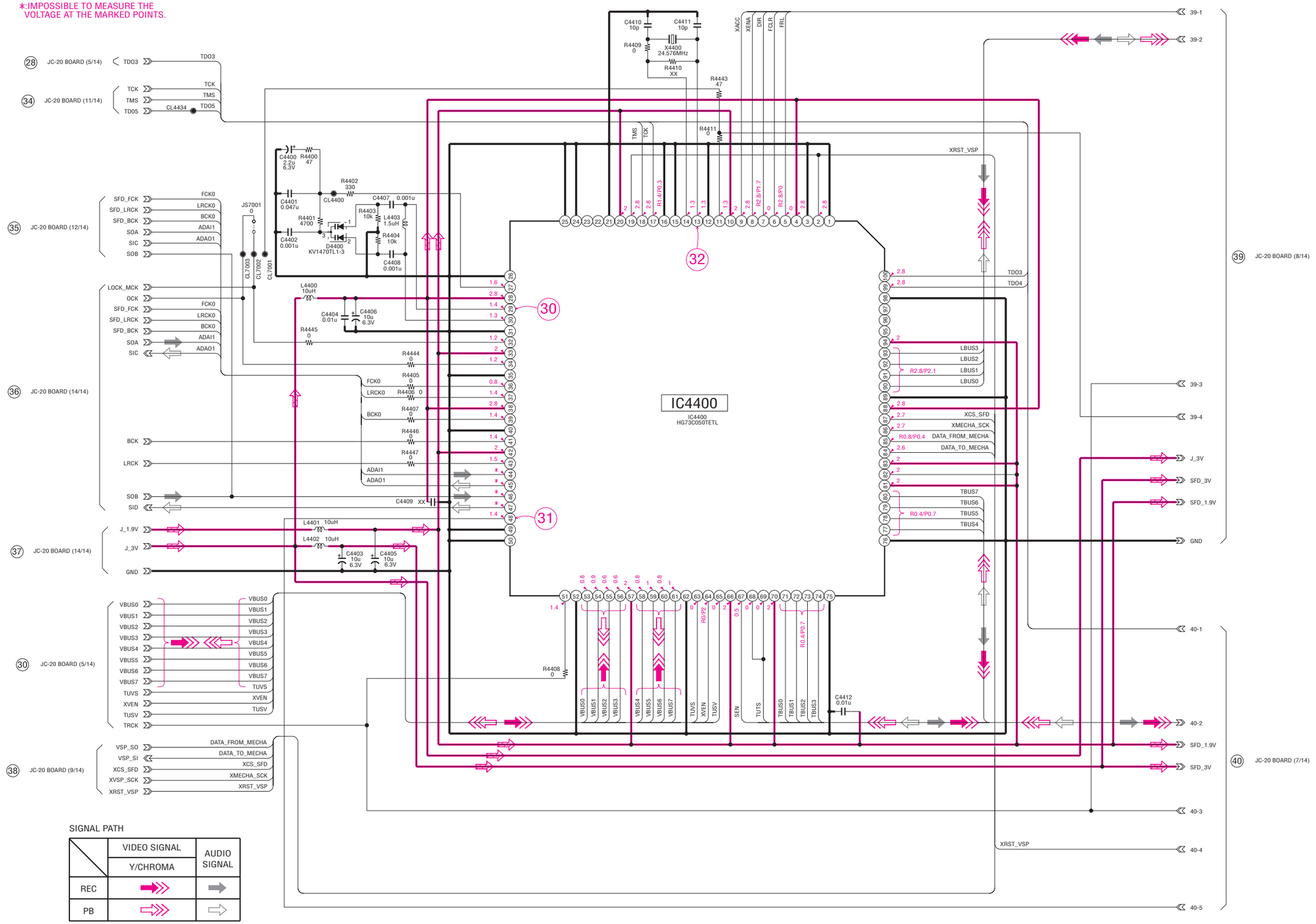
JC-20 (SFD) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-148 for waveforms.

JC-20 BOARD (6/14)

SFD

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE
∗:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.



SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC	➡	➡
PB	⇨	⇨

05

JC-20 (TFD) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.

JC-20 BOARD (7/14)

TFD

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

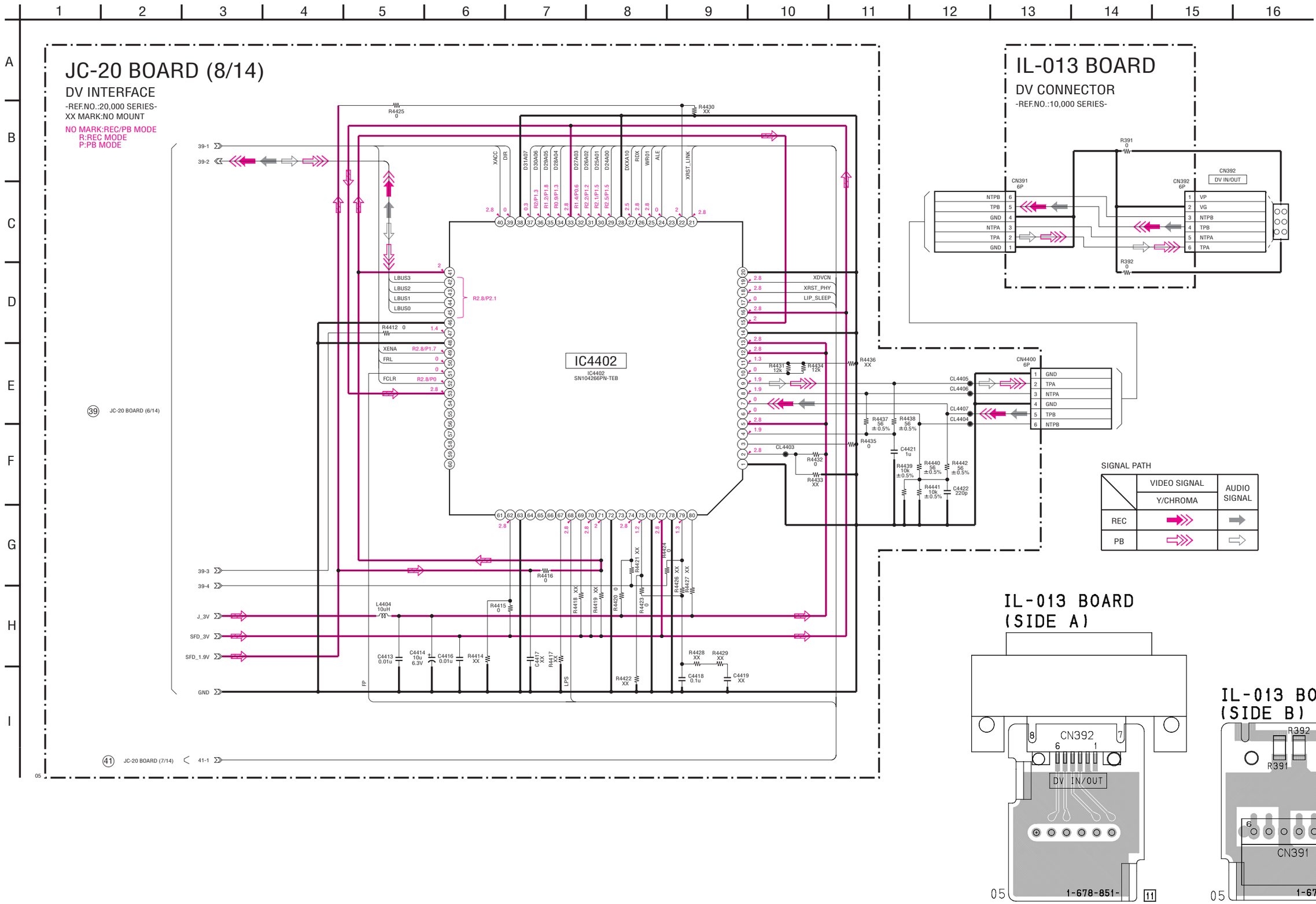
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

IC4401
IC4401
CXD3129R-T6

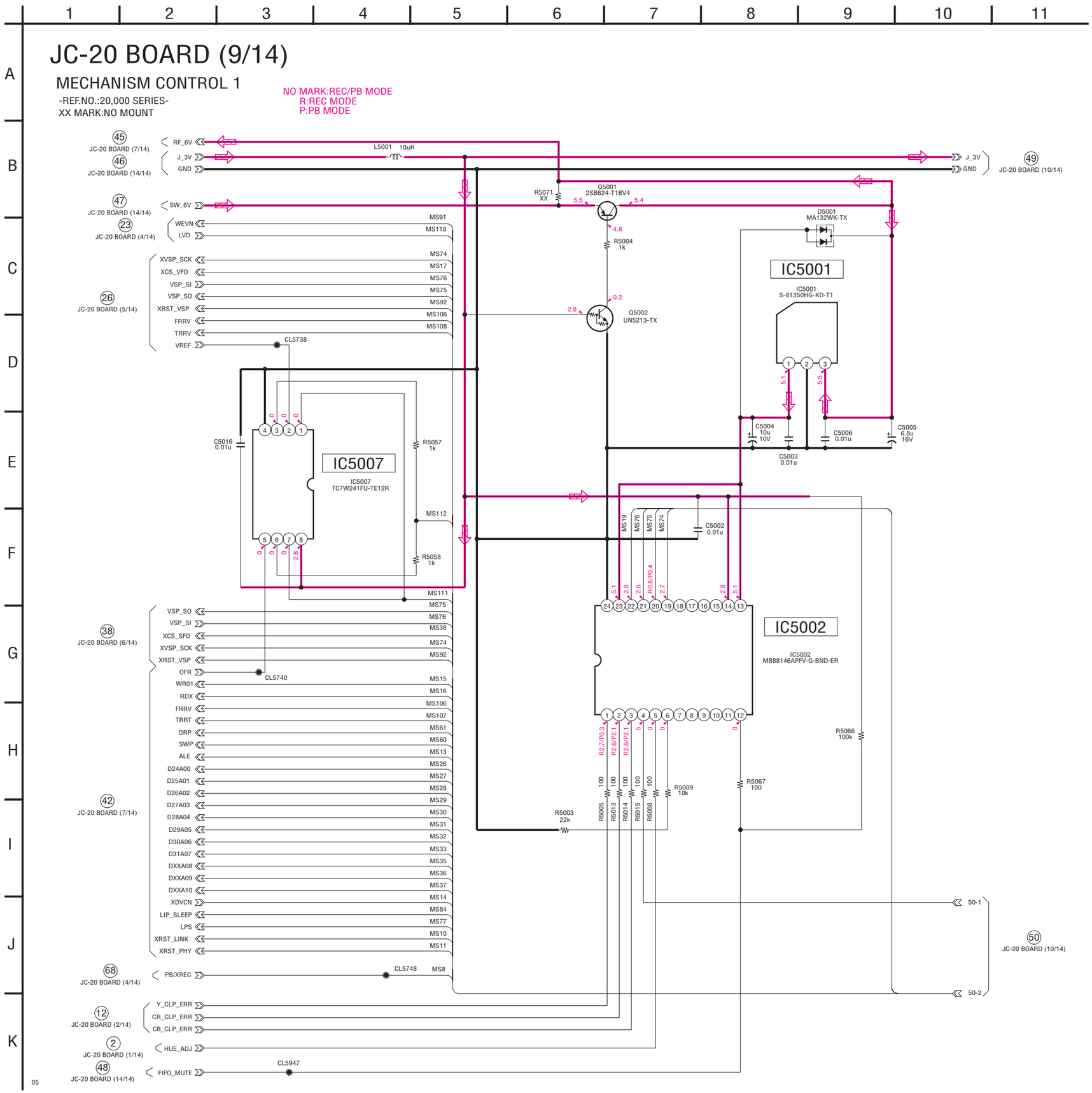
SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC	➡	➡
PB	⇨	⇨

JC-20 (DV INTERFACE) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.
IL-013 (DV CONNECTOR) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM
– Ref. No.: IL-013 board; 10,000 series –



JC-20 (MECHANISM CONTROL 1) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.



MECHANISM CONTROL 1
JC-20 (9/14)

JC-20 (MECHANISM CONTROL 2) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-148 for waveforms.

JC-20 BOARD (10/14)

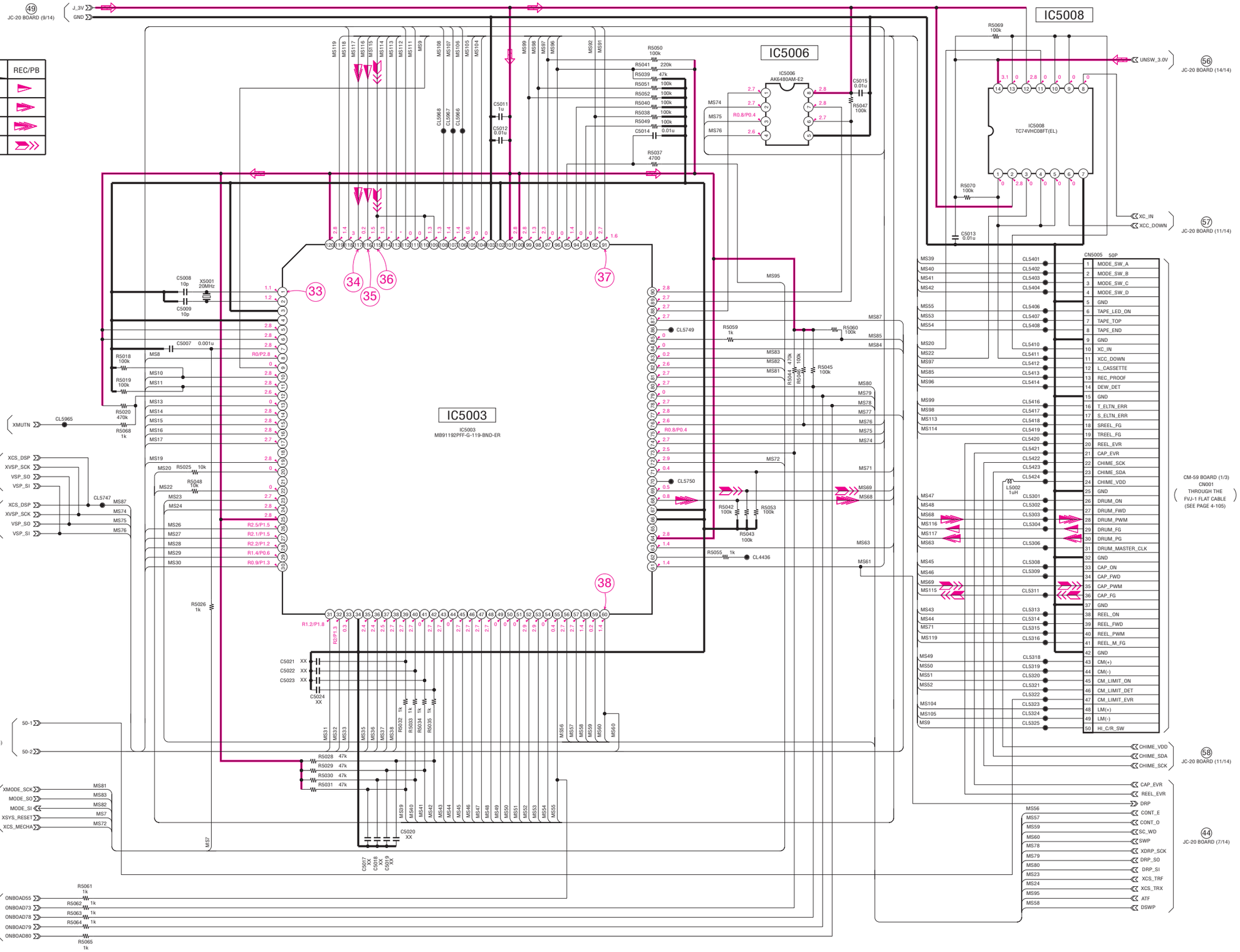
MECHANISM CONTROL 2

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

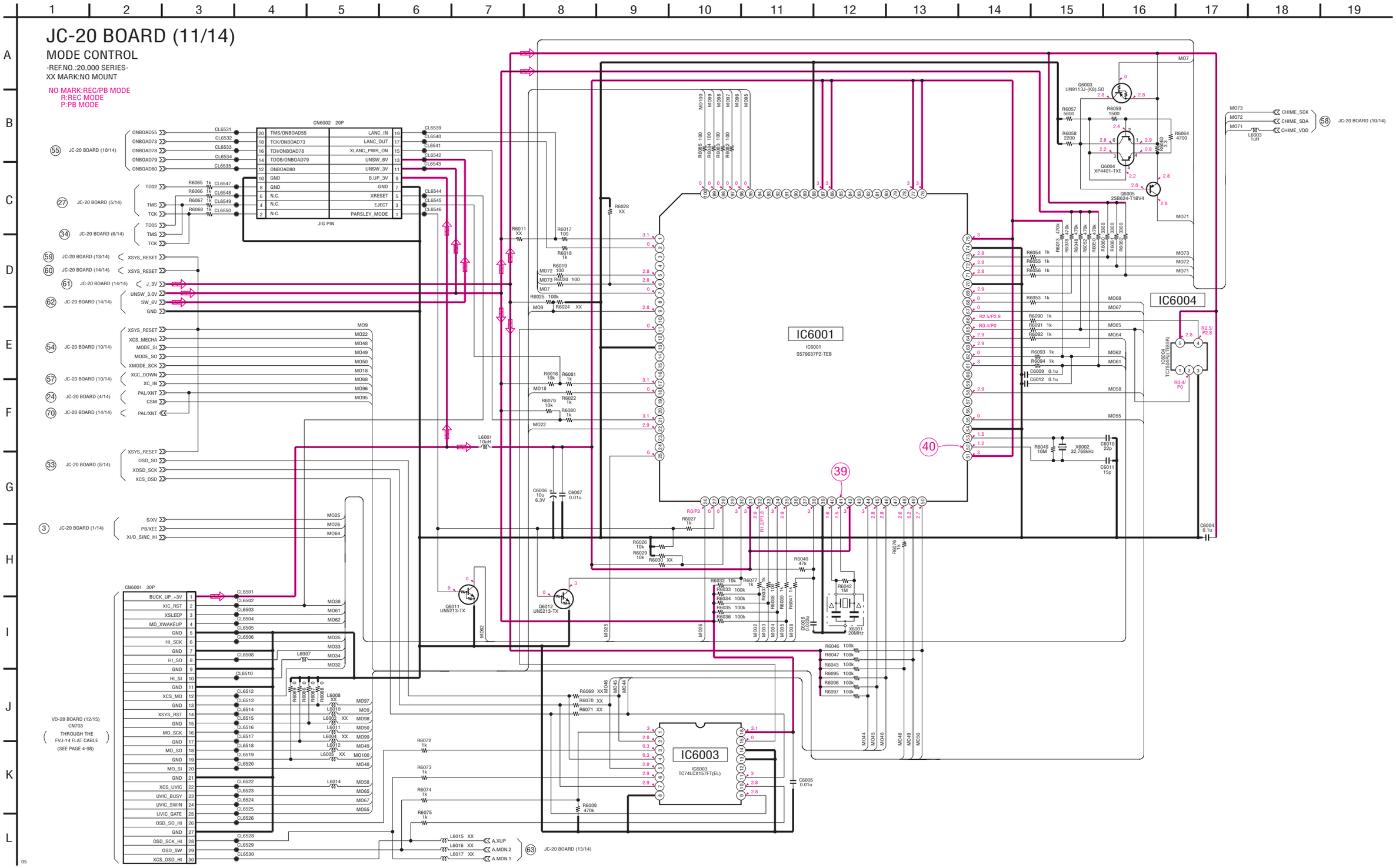
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

SIGNAL PATH

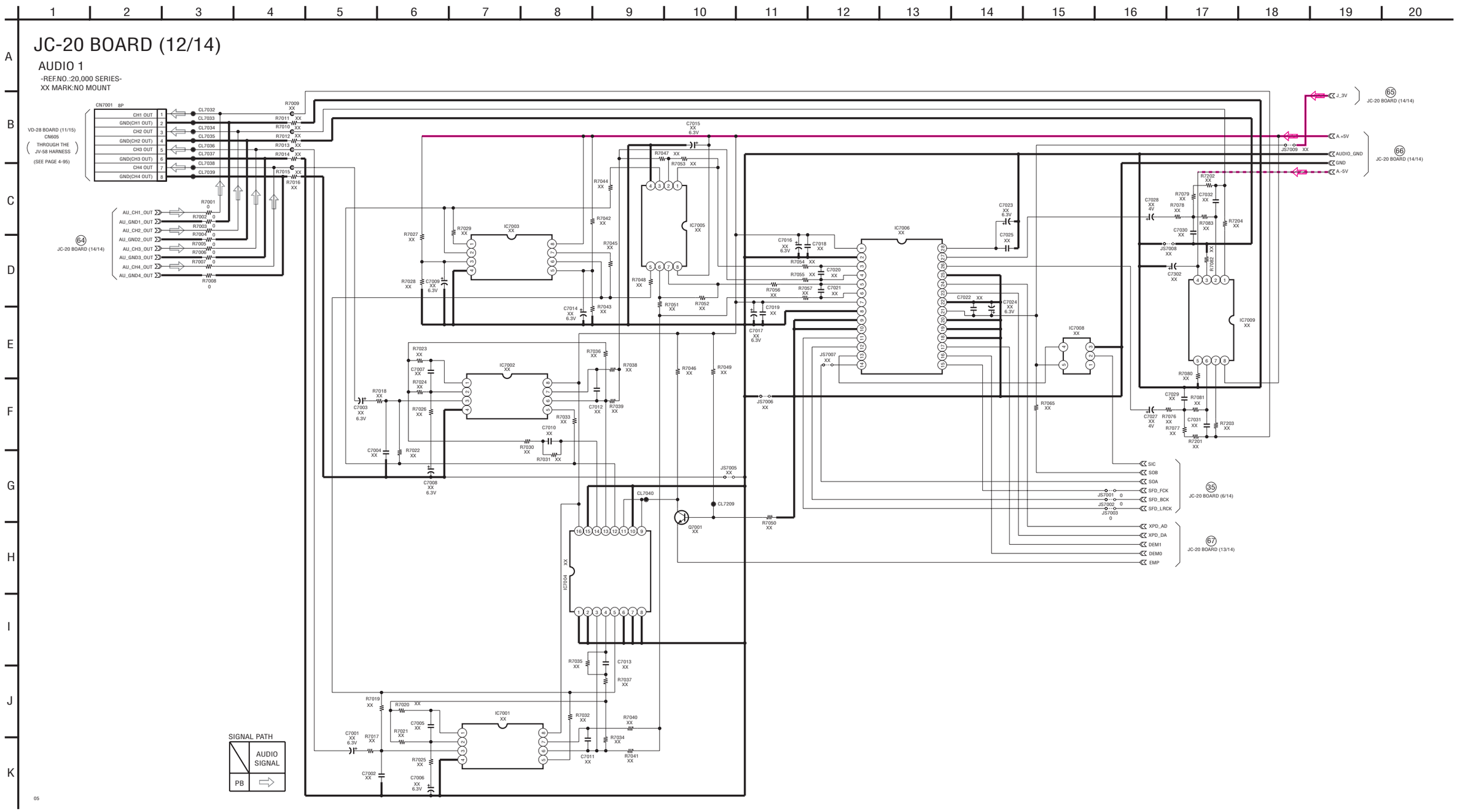
	REC/PB
Drum speed servo	
Drum phase servo	
Drum servo(speed and phase)	
Capstan servo(speed and phase)	



JC-20 (MODE CONTROL) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board. • See page 4-148 for waveforms.



JC-20 (AUDIO 1) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.



JC-20 (AUDIO 2) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.

JC-20 BOARD (13/14)

AUDIO 2

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT

CN7002 30P

VD-28 BOARD (11/15)
CN606
THROUGH THE
FVJ-13 FLAT CABLE
(SEE PAGE 4-95)

AU X1 IN	30	CL7004	AU_X1_IN
AU Y1 IN	29	CL7005	AU_Y1_IN
GND	28	CL7006	AU_1_GND_IN
AU X2 IN	27	CL7007	AU_X2_IN
AU Y2 IN	26	CL7008	AU_Y2_IN
GND	25	CL7009	AU_2_GND_IN
AU X3 IN	24	CL7010	AU_X3_IN
AU Y3 IN	23	CL7011	AU_Y3_IN
GND	22	CL7012	AU_3_GND_IN
AU X4 IN	21	CL7013	AU_X4_IN
AU Y4 IN	20	CL7014	AU_Y4_IN
GND	19	CL7015	AU_4_GND_IN
TC IN	18	CL7016	TC_IN
GND	17	CL7017	TC/GNDIN
TC OUT	16	CL7018	TC_OUT
GND	15	CL7019	TC/GNDOUT
DSP CS	14	CL7020	DSP_CS
GND	13	CL7021	GND
DSP SI	12	CL7022	DSP_SI
GND	11		
DSP SO	10	CL7023	DSP_SO
GND	9		
DSP SCK	8	CL7024	DSP_SCK
NC	7	CL7025	R7106 XX
NC	6	CL7026	R7105 XX
NC	5	CL7027	R7104 XX
NC	4	CL7028	R7103 XX
NC	3	CL7029	R7102 XX
NC	2	CL7030	R7101 XX
NC	1	CL7031	R7100 XX

(69) JC-20 BOARD (14/14)

R7068 XX
R7069 XX
R7070 XX
R7071 XX
R7072 XX
R7073 XX
R7074 XX
R7075 XX

GND
J_3V
(68) JC-20 BOARD (14/14)

A.MON.1
A.MON.2
A.XUP
(63) JC-20 BOARD (11/14)

R7066 XX

75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51

76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26

CL7041
R7059 XX
R7060 XX
R7061 XX
R7062 XX
R7063 XX
R7304 XX
R7301 XX
R7058 XX
R7064 XX
C7026 XX

IC7007
XX

EMP
DEM1
DEM0
XPD_DA
XPD_AD
(67) JC-20 BOARD (12/14)

R7205 XX
R7206 XX
R7087 XX
CL7205
CL7206
R7086 XX
R7207 XX
R7208 XX
CL7207
CL7208
CL7043
CL7042
R7302 XX
R7303 XX
R7088 XX
R7089 XX
C7033 XX

XCS_DSP

IC7301
XX
C7301 XX

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

R7067 XX
X7001 XX
C7100 XX 6.3V
R7084 XX
R7085 XX

XVSP_SCK
VSP_SO
VSP_SI
JS7010 XX
(52) JC-20 BOARD (10/14)

XSYS_RESET
(59) JC-20 BOARD (11/14)

SIGNAL PATH

	AUDIO SIGNAL
REC	

05

JC-20 (POWER SUPPLY) SCHEMATIC DIAGRAM • See page 4-15 for JC-20 printed wiring board.

JC-20 BOARD (14/14)

POWER SUPPLY

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

SIGNAL PATH

	VIDEO SIGNAL		AUDIO SIGNAL
	CHROMA	Y	
REC		⇒	→
PB	⇨	⇨	⇨

CN1100 9P
SW +6V 1
EVR +3V 2
VIDEO +5V 3
SW +3V 4
GND 5
VIDEO -5V 6
AUDIO +5V 7
AUDIO GND 8
AUDIO -5V 9

VD-28 BOARD (14/15) CN904 THROUGH THE VJ-106 HARNESS (SEE PAGE 4-102)

CL1100 CL1101 CL1102 CL1103 CL1104 CL1105 CL1106 CL1107 CL1108

66 JC-20 BOARD (12/14): A.-5V, AUDIO_GND, A.+5V, GND

R1145 XX CL1140, R1146 XX CL1141, R1147 XX CL1142, R1148 XX CL1143, R1149 XX CL1144

LND101 GND, LND102 GND, LND103 GND, LND104 GND, LND105 GND, LND106 GND, LND107 GND, LND108 GND

IC1113

IC1113 PQ05TZ1U

R1100 XX

C1191 0.01u, C1189 0.01u, C1190 47u 6.3V, C1195 47u 6.3V

R1234 XX, R1235 XX, R1236 0, R1230 10k, Q1131 SI2301DS-T1, C1196 0.033u, R1231 220k, R1232 10k, Q1132 2SC4081T106R, C1197 1u, R1233 15k

R1229 0, C1108 XX, C1102 0.01u, C1104 10u 6.3V

R1238 XX, R1237 0

IC1100

IC1100 TK11220BMCL

C1192 0.1u, C1193 XX 6.3V

CL1183 CL1184 CL1185 CL1186 CL1187

R1224 XX, R1225 XX, R1226 XX, R1227 XX, R1228 XX

CL1182, CL1179, CL1180

J_3V 61 JC-20 BOARD (11/14), J_3V 65 JC-20 BOARD (12/14)

43 JC-20 BOARD (7/14): J_1.9V, J_3V, VIDEO_+5V, GND

25 JC-20 BOARD (5/14): J_1.9V, J_3V, GND

37 JC-20 BOARD (6/14): J_1.9V, J_3V, GND

16 JC-20 BOARD (3/14): J_3V, GND

46 JC-20 BOARD (9/14): J_3V, GND

68 JC-20 BOARD (13/14): J_3V, GND

20 JC-20 BOARD (4/14): VIDEO_+5V, GND

10 JC-20 BOARD (2/14): VIDEO_-5V, +5V, GND

1 JC-20 BOARD (1/14): +5V, GND

56 JC-20 BOARD (10/14): UNSW_3.0V
47 JC-20 BOARD (9/14): SW_6V

62 JC-20 BOARD (11/14): UNSW_3.0V, SW_6V, GND

7 JC-20 BOARD (1/14): DPB_CBOUT, DPB_CROUT, DPB_YOUT

64 JC-20 BOARD (12/14): AU_CH1_OUT, AU_GND1_OUT, AU_CH2_OUT, AU_GND2_OUT, AU_CH3_OUT, AU_GND3_OUT, AU_CH4_OUT, AU_GND4_OUT

CN8001 120P

DPB_YOUT 1, GND 3, DPB_CROUT 5, GND 7, DPB_CBOUT 9, GND 11, MY00 13, MY01 15, MY02 17, MY03 19, MY04 21, MY05 23, MY06 25, MY07 27, GND 29, MHO 31, DA135 33, AFH 35, VD_HD 37, N.C 39, SPCK2 41, PAL/XNT 43, PB/XREC 45, FIFO/MUTE 47, J_3V 49, VIDEO_+5V 51, VIDEO_-5V 53, SDA 55, SCB 57, LOCK_MCK 59, OCK 61, SFD_FCK 63, N.C 65, VFD_VD 67, VFD_OE 69, GND 71, XCS_DSP 73, VSP_SI 75, XRST_VSP 77, GND 79, DSP_CS 81, DSP_SI 83, TC/GNDIN 85, TC_IN 87, AUDIO_GND 89, AUDIO_GND 91, A-5V 95, A-5V 97, A+5V 99, A+5V 101, A+5V 103, AU_4_GND_IN 105, AU_Y4_IN 107, AU_3_GND_IN 109, AU_Y3_IN 111, AU_2_GND_IN 113, AU_Y2_IN 115, AU_1_GND_IN 117, AU_Y1_IN 119, GND 2, DPB_YOUT 4, DPB_CROUT 6, GND 8, DPB_CBOUT 10, GND 12, Y0 14, Y1 16, Y2 18, Y3 20, Y4 22, Y5 24, Y6 26, Y7 28, GND 30, JD00 32, JD01 34, JD02 36, JD03 38, JD04 40, JD05 42, JD06 44, JD07 46, N.C 48, J_3V 50, VIDEO_+5V 52, VIDEO_-5V 54, SIC 56, SID 58, SFDBCK 60, BCK 62, SFD_LRCK 64, LRCK 66, N.C 68, VFD_HD 70, GND 72, N.C 74, XVSP_SCK 76, VSP_SO 78, GND 80, DSP_SCK 82, DSP_SO 84, TC/GNDOUT 86, TC_OUT 88, AU_GND4_OUT 90, AU_CH4_OUT 92, AU_GND3_OUT 94, AU_CH3_OUT 96, AU_GND2_OUT 98, AU_CH2_OUT 100, AU_GND1_OUT 102, AU_CH1_OUT 104, AU_4_GND_IN 106, AU_X4_IN 108, AU_3_GND_IN 110, AU_X3_IN 112, AU_2_GND_IN 114, AU_X2_IN 116, AU_1_GND_IN 118, AU_X1_IN 120

CL8001 CL8002 CL8004 CL8006 CL8014 CL8016 CL8018 CL8020 CL8022 CL8024 CL8026 CL8028 CL8032 CL8034 CL8036 CL8038 CL8040 CL8042 CL8044 CL8046 CL8048 CL8050 CL8056 CL8058 CL8060 CL8062 CL8064 CL8066 CL8068 CL8070 CL8074 CL8076 CL8078

CL8003 CL8009 CL8013 CL8015 CL8017 CL8019 CL8021 CL8023 CL8025 CL8027 CL8031 CL8039 CL8043 CL8049 CL8055 CL8057 CL8061 CL8063 CL8073 CL8075 CL8077

Di-73 BOARD (3/9) CN9500 (SEE PAGE 4-67)

29 JC-20 BOARD (5/14): AFH, JC00, JC01, JC02, JC03, JC04, JC05, JC06, JC07, Y0, Y1, Y2, Y3, Y4, Y5, Y6, Y7, MY00, MY01, MY02, MY03, MY04, MY05, MY06, MY07, MHO

E-E

31 JC-20 BOARD (5/14): VFD_OE, DA135, OSD_HD, VFD_HD

70 JC-20 BOARD (11/14): PAL/XNT

21 JC-20 BOARD (4/14): SPCK2, PB/XREC

6 JC-20 BOARD (1/14): VD_HD, V_FROM_SYNCGEN

48 JC-20 BOARD (9/14): FIFO_MUTE
51 JC-20 BOARD (10/14): XMUTN
60 JC-20 BOARD (11/14): XSYS_RESET

36 JC-20 BOARD (6/14): LOCK_MCK, OCK, SFD_FCK, SFD_LRCK, SFD_BCK, SOA, SIC, BCK, LRCK, SOB, SID

53 JC-20 BOARD (10/14): XCS_DSP, XVSP_SCK, VSP_SO, VSP_SI

69 JC-20 BOARD (13/14): AU_X1_IN, AU_Y1_IN, AU_1_GND_IN, AU_X2_IN, AU_Y2_IN, AU_2_GND_IN, AU_X3_IN, AU_Y3_IN, AU_3_GND_IN, AU_X4_IN, AU_Y4_IN, AU_4_GND_IN, GND, TC_IN, TC/GNDIN, TC_OUT, TC/GNDOUT, DSP_CS, DSP_SI, DSP_SO, DSP_SCK

05

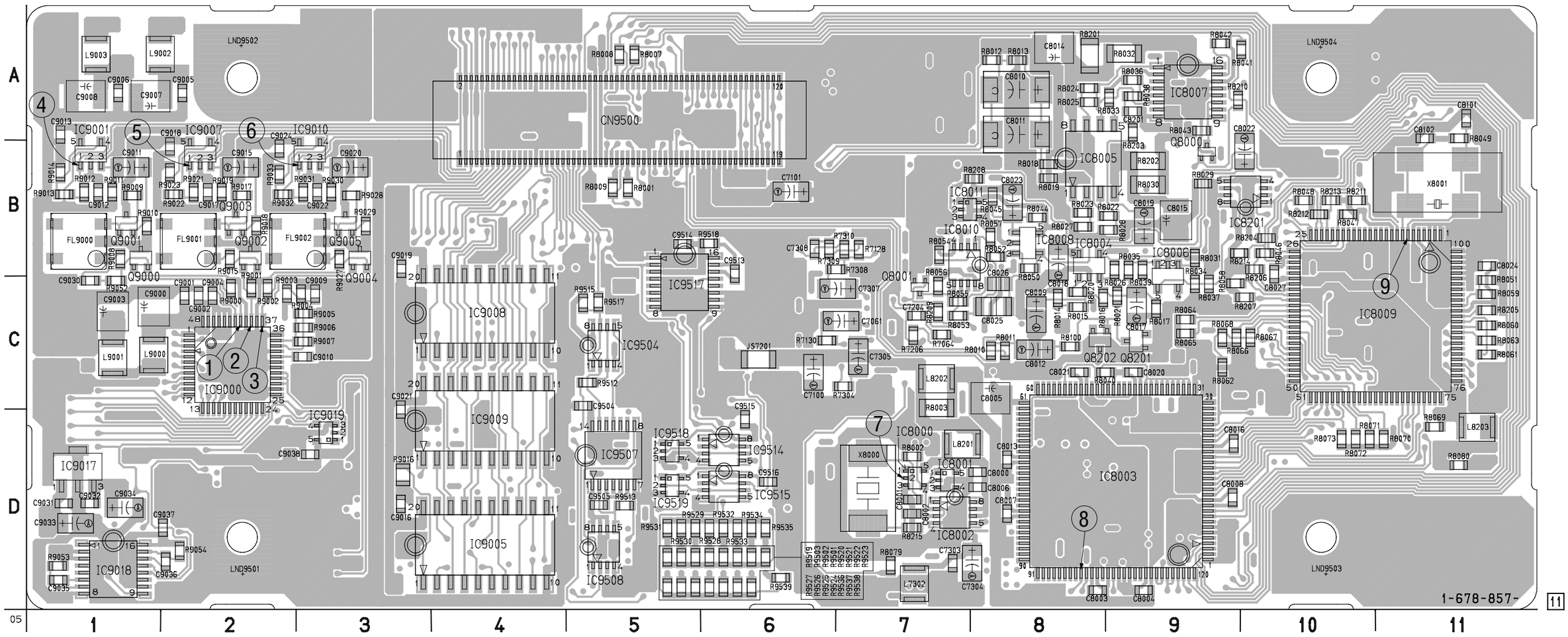
POWER SUPPLY
JC-20 (14/14)

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

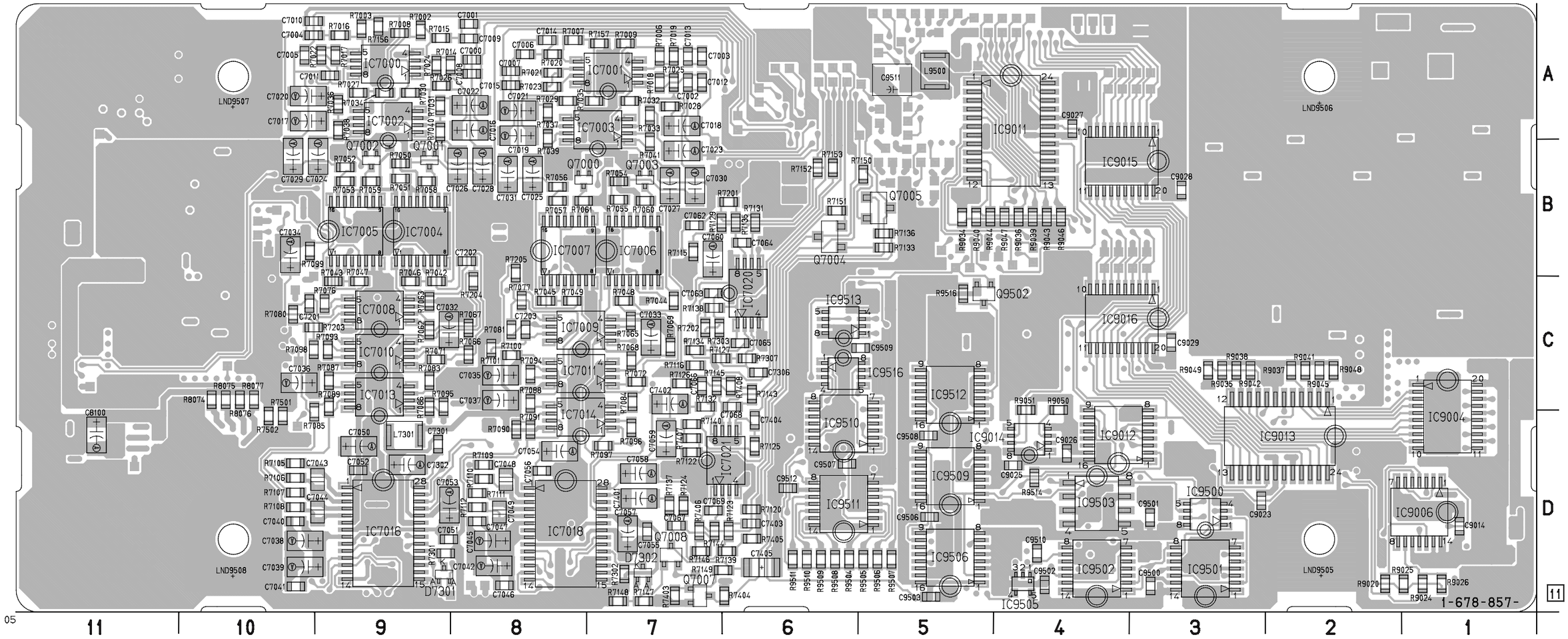
– Ref. No.: DI-73 board; 10,000 series –

- **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 4-153 for printed parts location.
- Chip transistor

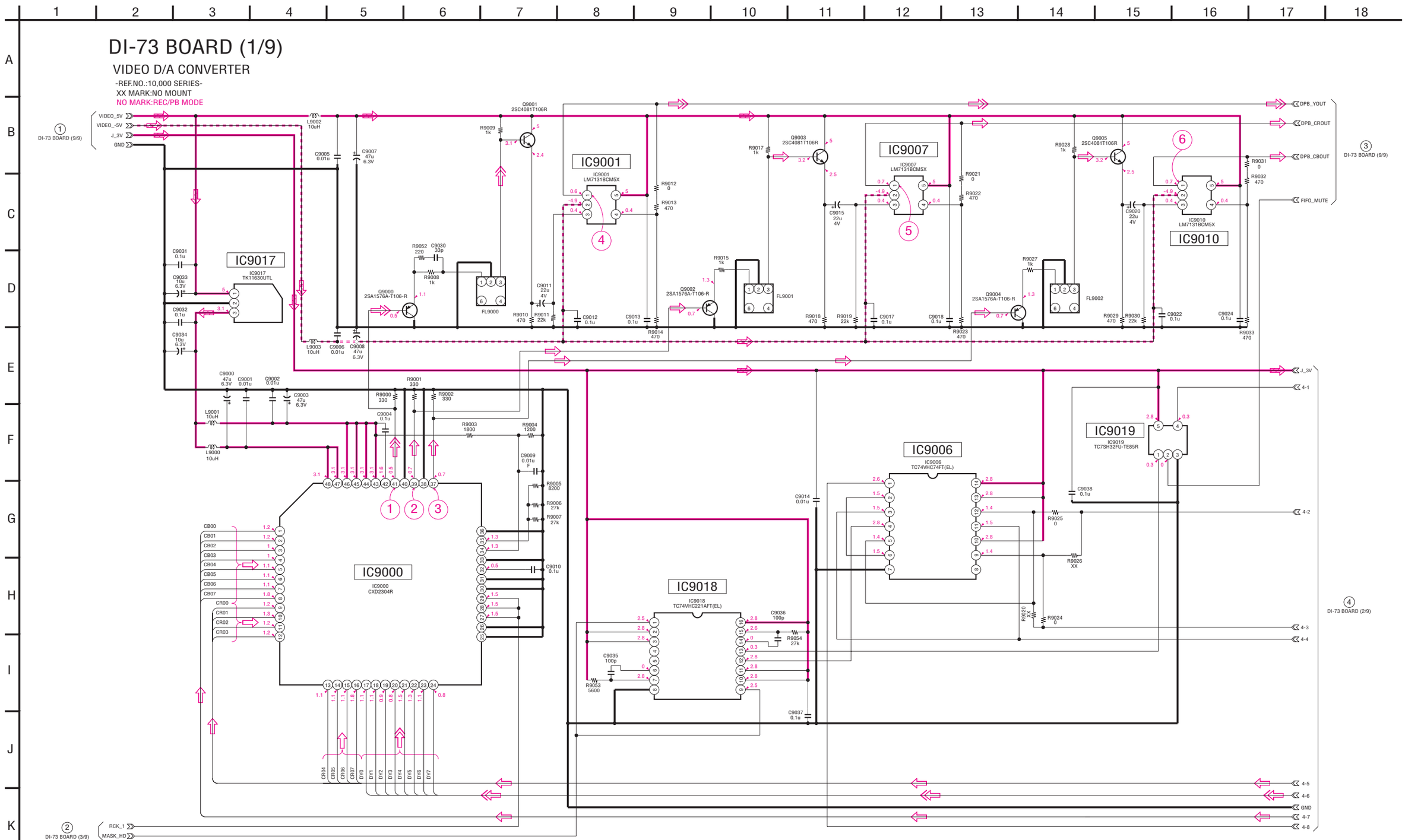
DI-73 BOARD(SIDE A)



DI-73 BOARD(SIDE B)



DI-73 (VIDEO D/A CONVERTER) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board. • See page 4-149 for waveforms.



DI-73 (VIDEO FIFO MEMORY) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (2/9)

VIDEO FIFO MEMORY

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT

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

IC9005 IC9005 SN74HC377ANSR

IC9009 IC9009 SN74HC377ANSR

IC9008 IC9008 SN74HC377ANSR

IC9004 IC9004 TC74VHC574FT(EL)

IC9011 IC9011 M66280FP-280D

IC9012 IC9012 TC74VHC157FT(EL)

IC9013 IC9013 M66280FP-280D

IC9015 IC9015 TC74VHC541FT(EL)

IC9016 IC9016 TC74VHC541FT(EL)

IC9014 IC9014 TC7WH04FU(TE12R)

Note:This signal follows the same circuit as PB signal after this point.

SIGNAL PATH

	VIDEO SIGNAL	
	CHROMA	Y
REC		➡
PB	⇨	⇨

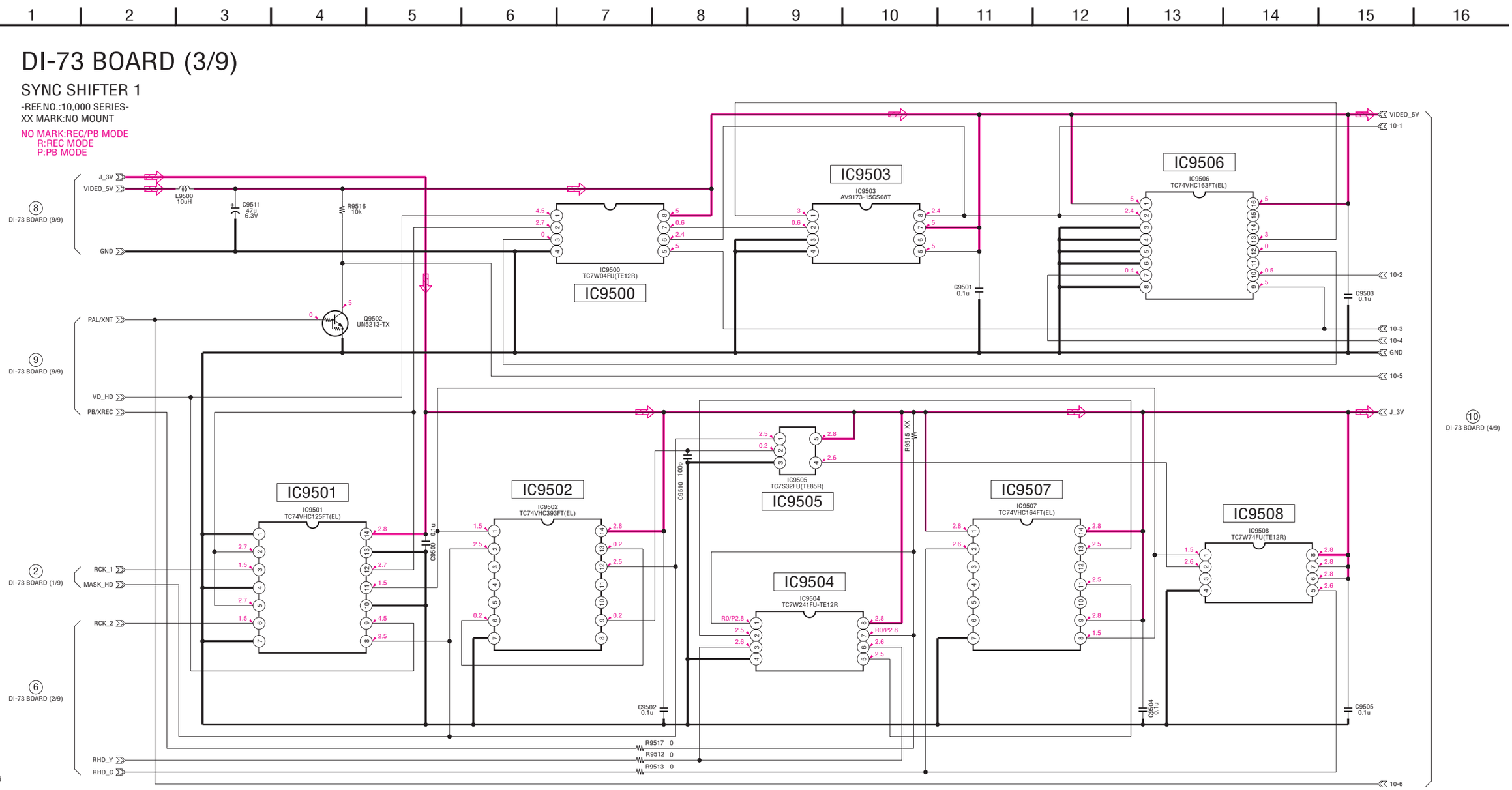
DI-73 (SYNC SHIFTER 1) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (3/9)

SYNC SHIFTER 1

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT

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

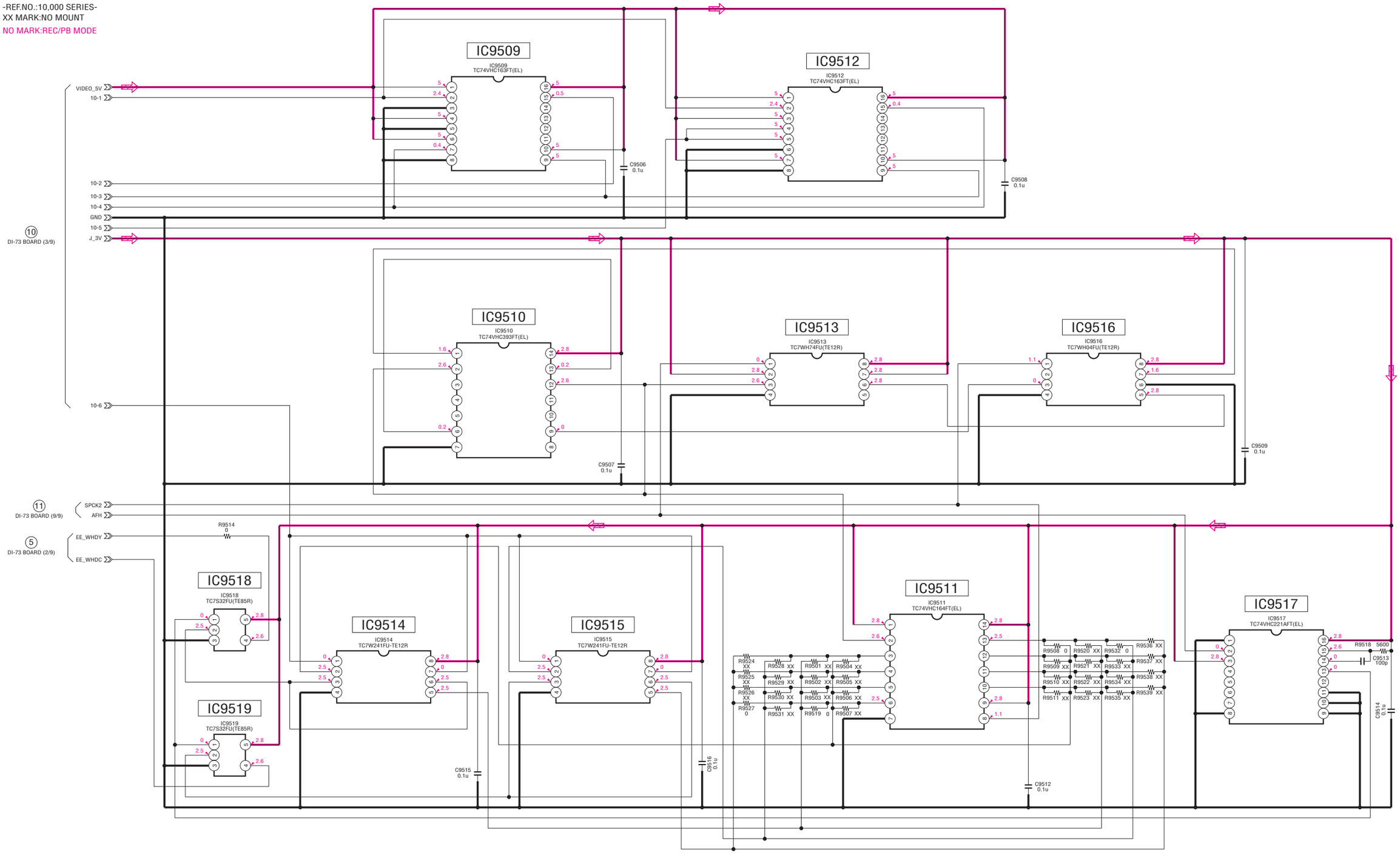


DI-73 (SYNC SHIFTER 2) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (4/9)

SYNC SHIFTER 2

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE



DI-73 (AUDIO HPF) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (5/9)

AUDIO HPF

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

IC7000 NJM4580V(TE2)
IC7001 NJM4580V(TE2)
IC7002 NJM2115V(TE2)
IC7003 NJM2115V(TE2)
IC7004 TC74HC4053AFT(EL)
IC7005 TC74HC4053AFT(EL)
IC7006 TC74HC4053AFT(EL)
IC7007 TC74HC4053AFT(EL)
IC7008 NJM2115V(TE2)
IC7009 NJM2115V(TE2)
IC7010 NJM2115V(TE2)
IC7011 NJM2115V(TE2)
IC7013 NJM2115V(TE2)
IC7014 NJM2115V(TE2)

SIGNAL PATH

	AUDIO SIGNAL
REC	→

DI-73 (AUDIO A/D, D/A CONVERTER) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (6/9)

AUDIO A/D,D/A CONVERTER

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT

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

IC7016
IC7016
AK4528VF-E2

IC7020
IC7020
NJM3414AV(TE2)

IC7018
IC7018
AK4528VF-E2

IC7021
IC7021
NJM3414AV(TE2)

D7301
MA132WK-TX

D7302
MA132WK-TX

Q7007
2SA1576A
-T106-R

Q7005
2SC3326N
-TE85L-B

Q7008
2SC4081T106R

Q7004
2SC3326N
-TE85L-B

SIGNAL PATH

	AUDIO SIGNAL
REC	⇒
PB	⇨

AUDIO A/D, D/A CONVERTER
DI-73 (6/9)

DI-73 (AUDIO DSP) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board. • See page 4-149 for waveforms.

DI-73 BOARD (7/9)

AUDIO DSP

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
*:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.

IC8000
IC8001
IC8002
IC8003
IC8003 CXD2712R

SIGNAL PATH

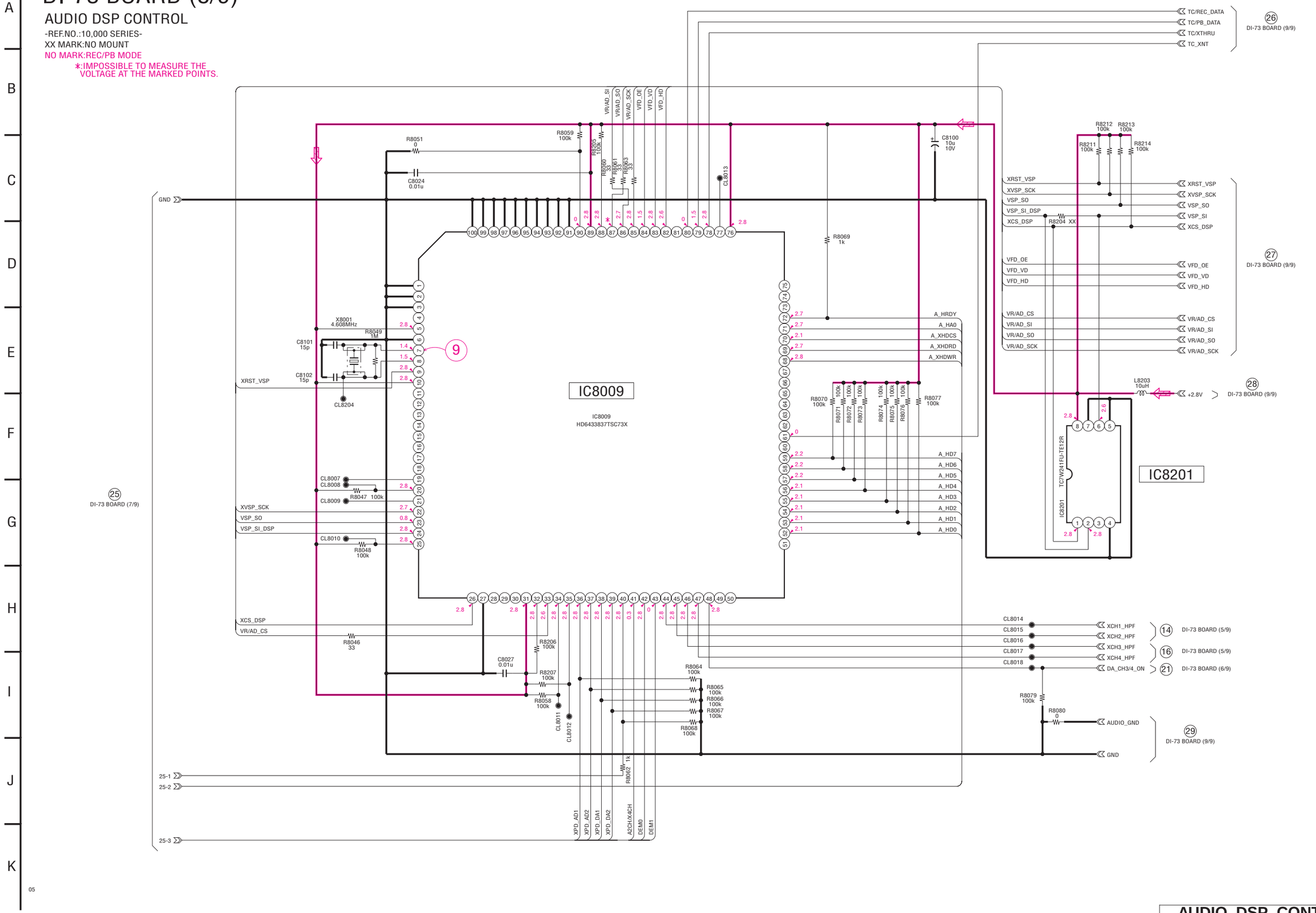
	AUDIO SIGNAL
REC	⇒
PB	⇨

DI-73 (AUDIO DSP CONTROL) SCHEMATIC DIAGRAM • See page 4-47 for DI-73 printed wiring board. • See page 4-149 for waveform.

DI-73 BOARD (8/9)

AUDIO DSP CONTROL

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
∗:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.



05

DI-73 (TIME CODE IN/OUT) SCHEMATIC DIAGRAM

• See page 4-47 for DI-73 printed wiring board.

DI-73 BOARD (9/9)

TIME CODE IN/OUT

-REF.NO.:10,000 SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

IC8004

IC8006

IC8005

IC8007

IC8008

IC8011

IC8010

JC-20 BOARD (14/14) CN8001 (SEE PAGE 4-45)

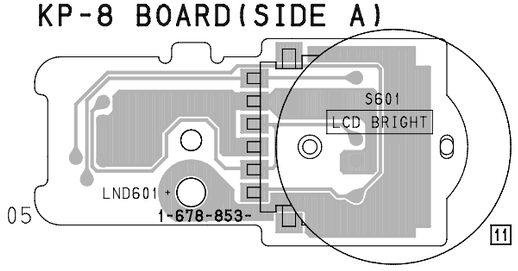
SIGNAL PATH

	VIDEO SIGNAL		AUDIO SIGNAL
	CHROMA	Y	
REC		➡	➡
PB	⇨	⇨	⇨

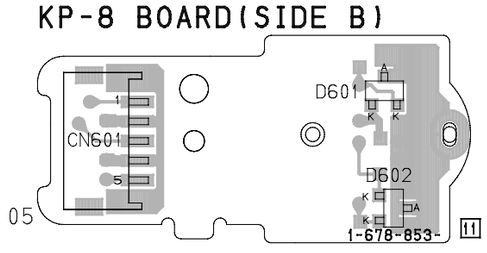
KP-8 (SWITCH), EJ-28 (EJECT SWITCH), VL-26 (LITHIUM BATTERY) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

– Ref. No.: KP-8 board; 20,000 series, EJ-28 board; 50,000 series, VL-26 board; 20,000 series –

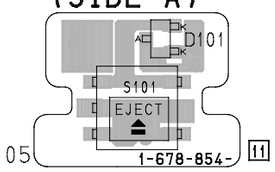
KP-8 BOARD (SIDE A)



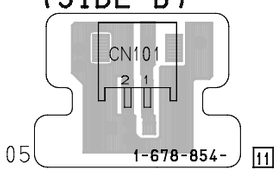
KP-8 BOARD (SIDE B)



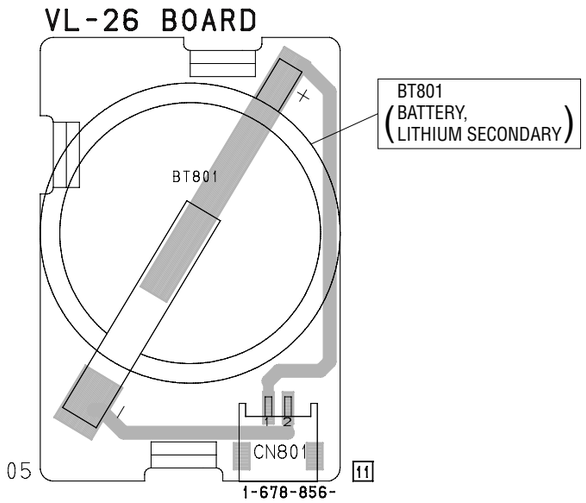
EJ-28 BOARD (SIDE A)

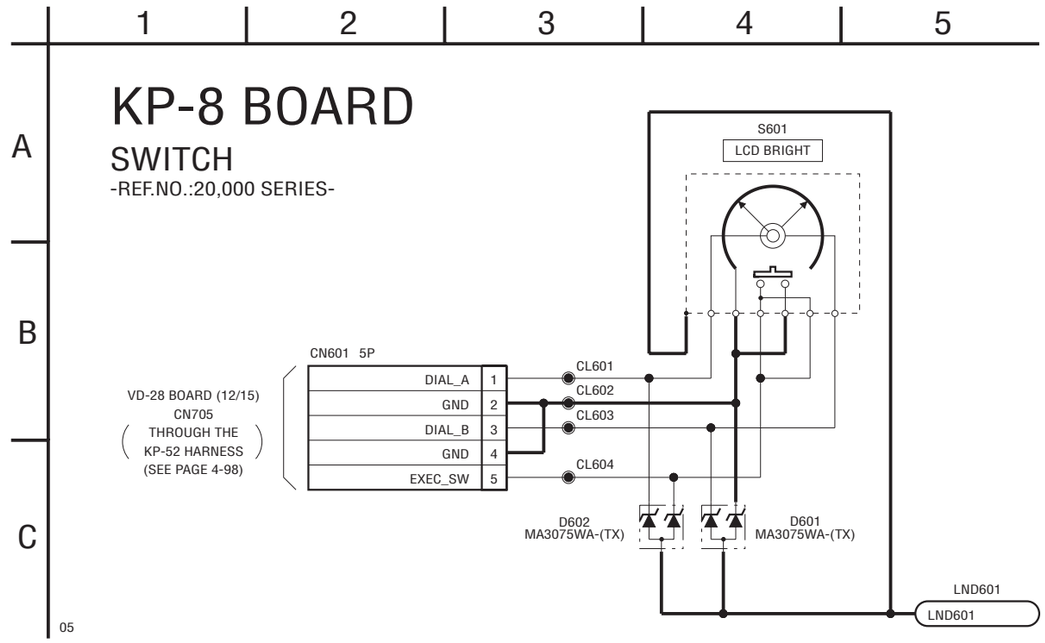


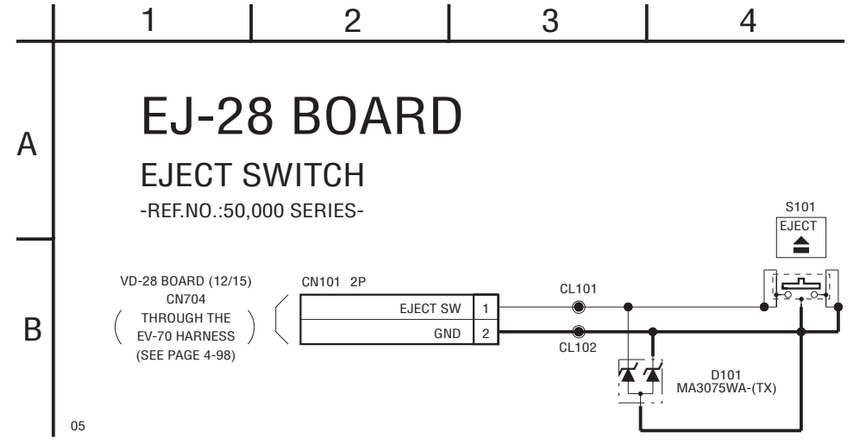
EJ-28 BOARD (SIDE B)

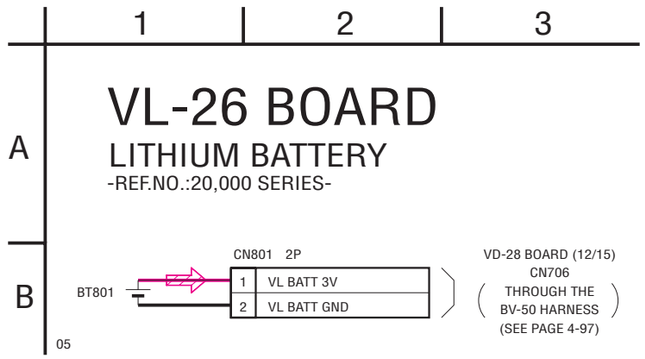


VL-26 BOARD







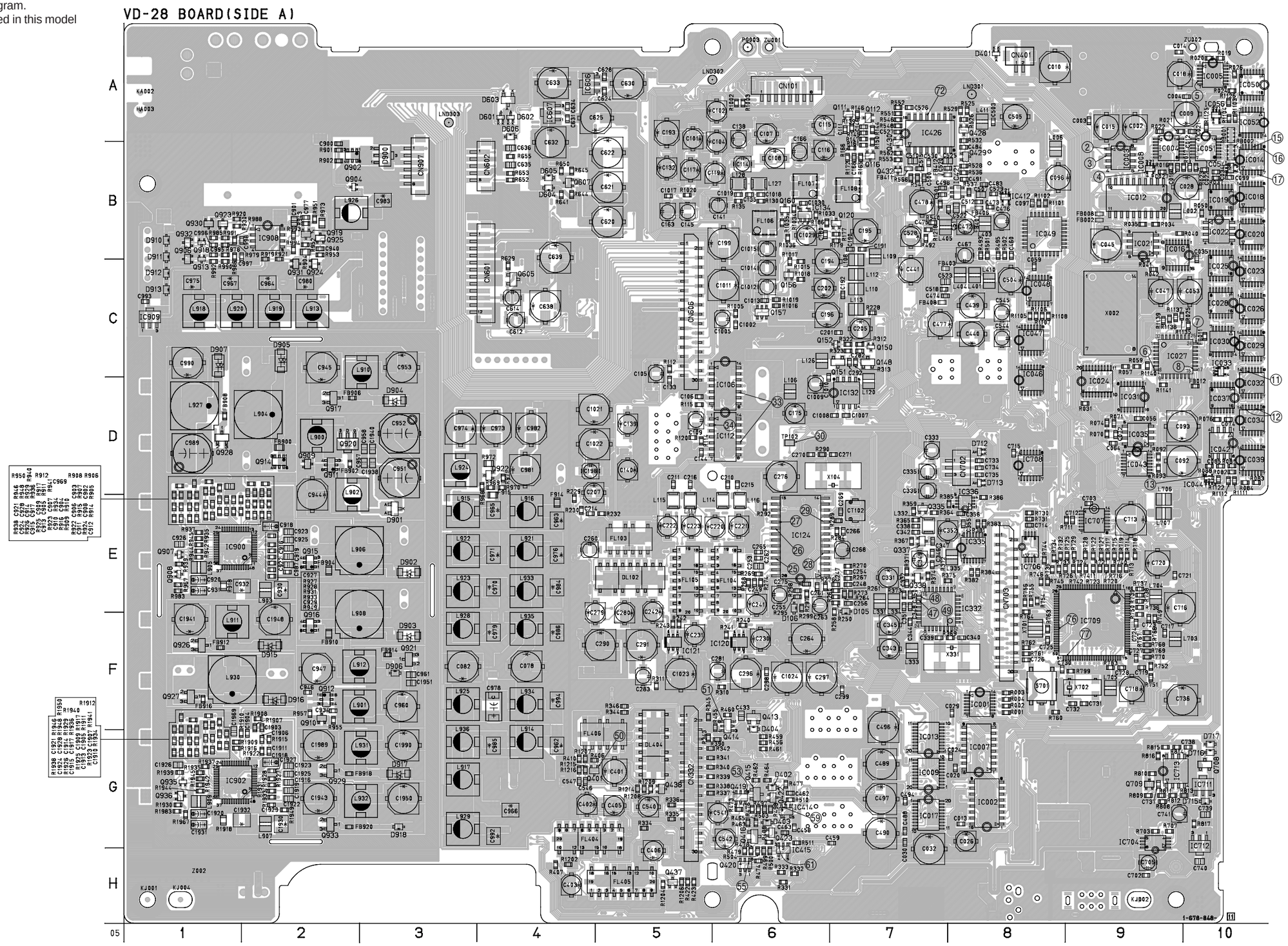


VD-28 (SYNC GENERATOR, VIDEO IN, UVIC, VIDEO OUT, AUDIO, HI CONTROL, DC IN, DC/DC CONVERTER) PRINTED WIRING BOARD

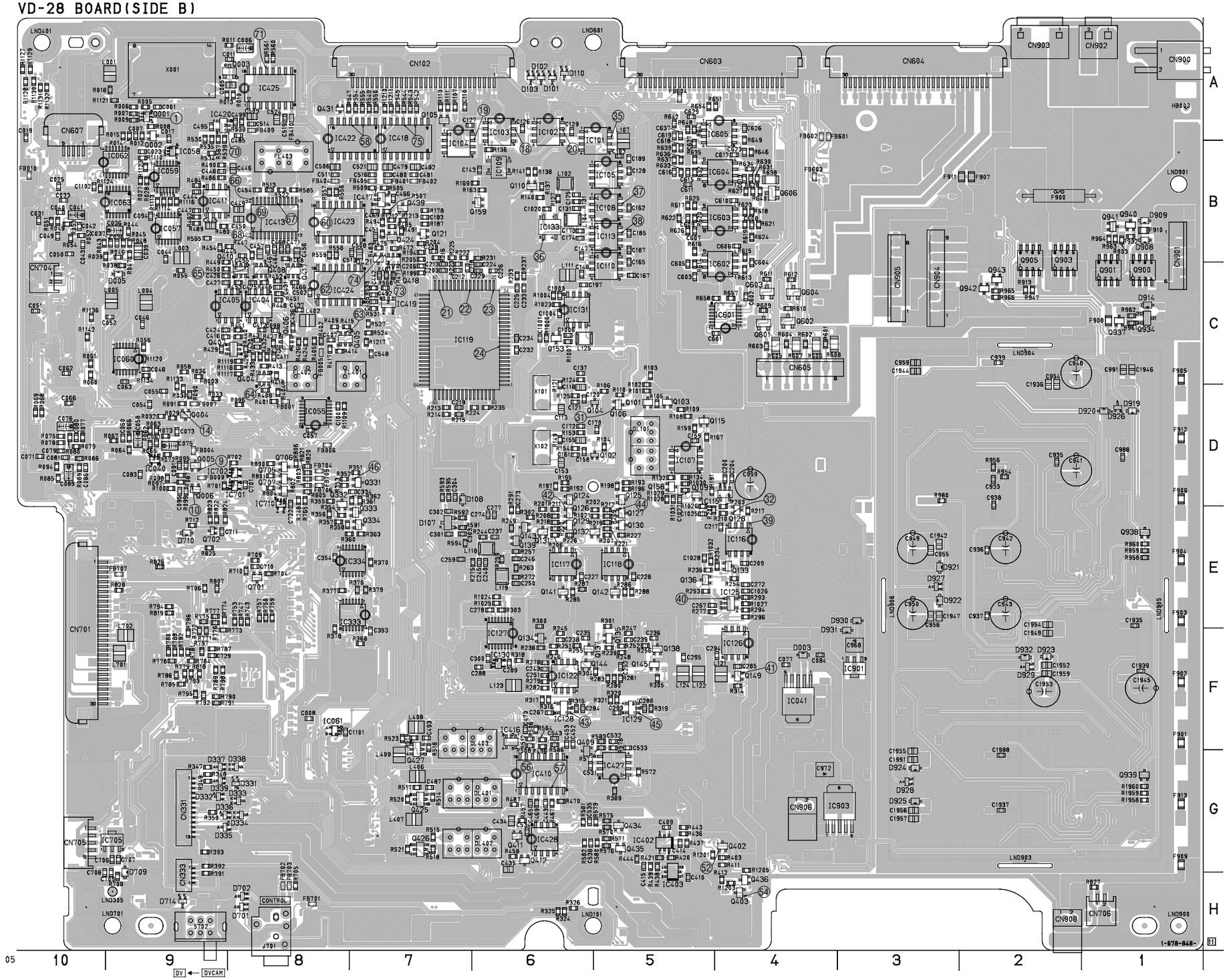
– Ref. No.: VD-28 board; 10,000 series –

- **For Printed Wiring Board.**
- VD-28 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 4-154 for printed parts location.
- Chip transistor

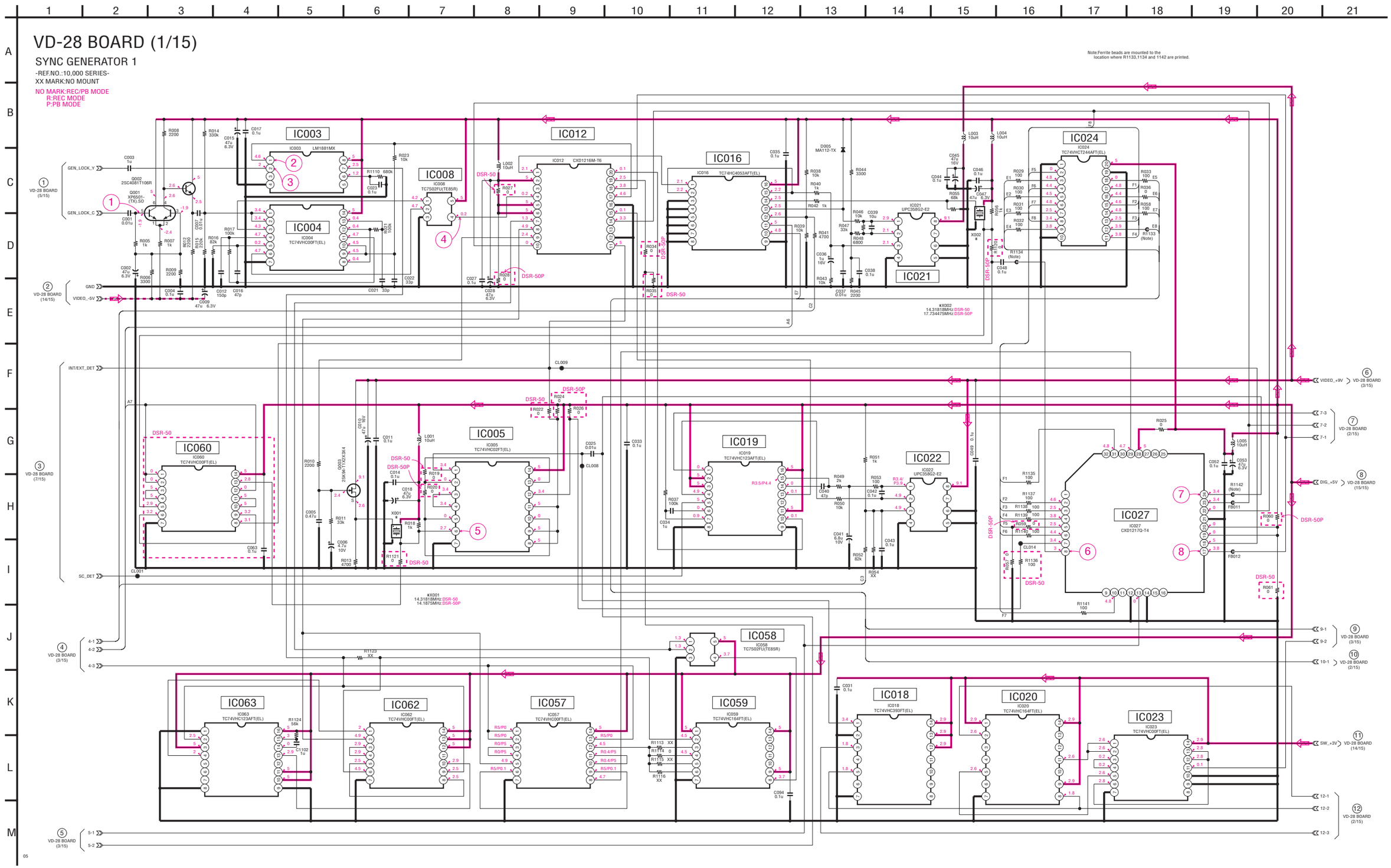
VD-28 BOARD(SIDE A)



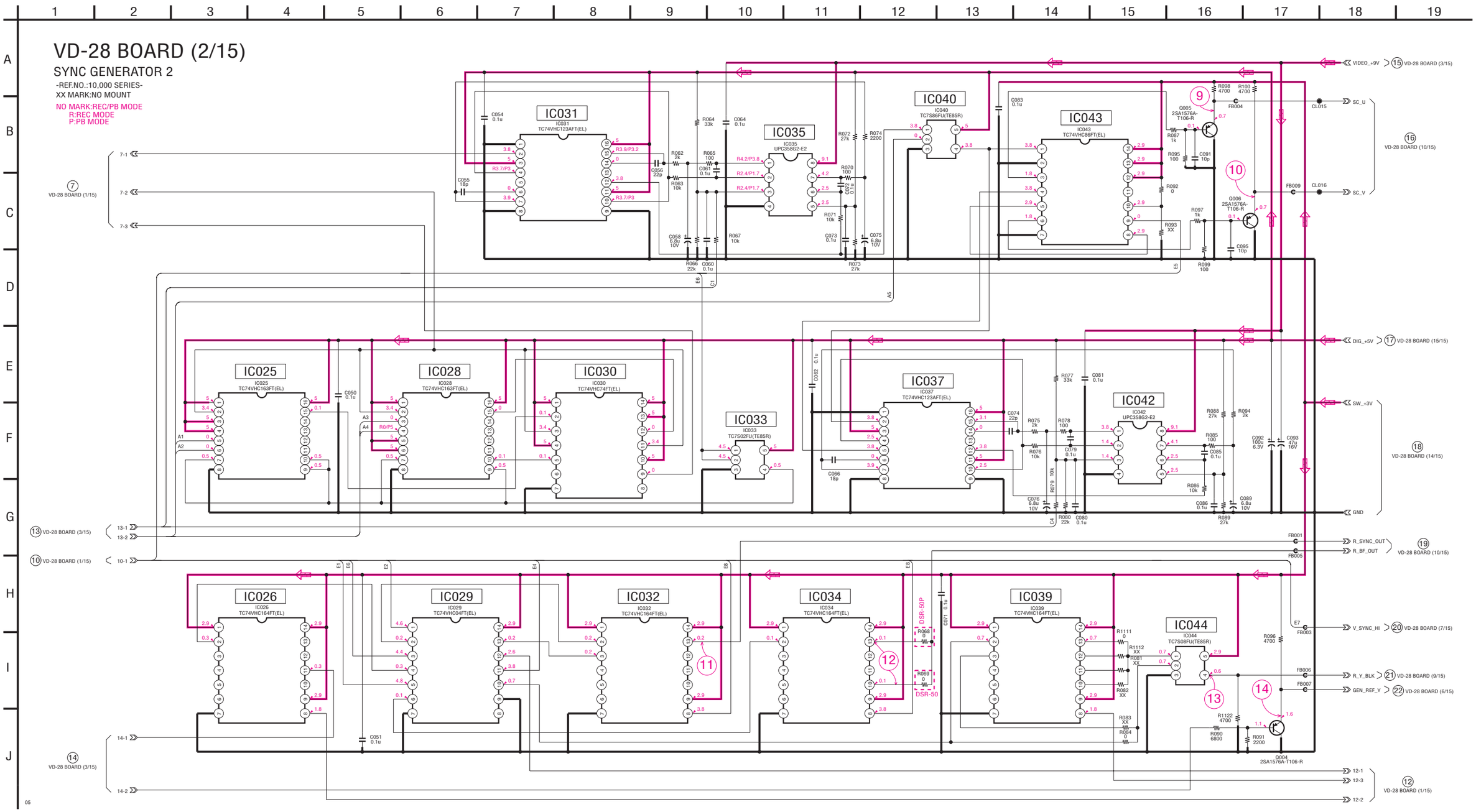
VD-28 BOARD(SIDE B)



VD-28 (SYNC GENERATOR 1) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-149 for waveforms.



VD-28 (SYNC GENERATOR 2) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-149 for waveforms.



VD-28 (SYNC GENERATOR 3) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-149 for waveforms.

VD-28 BOARD (3/15)

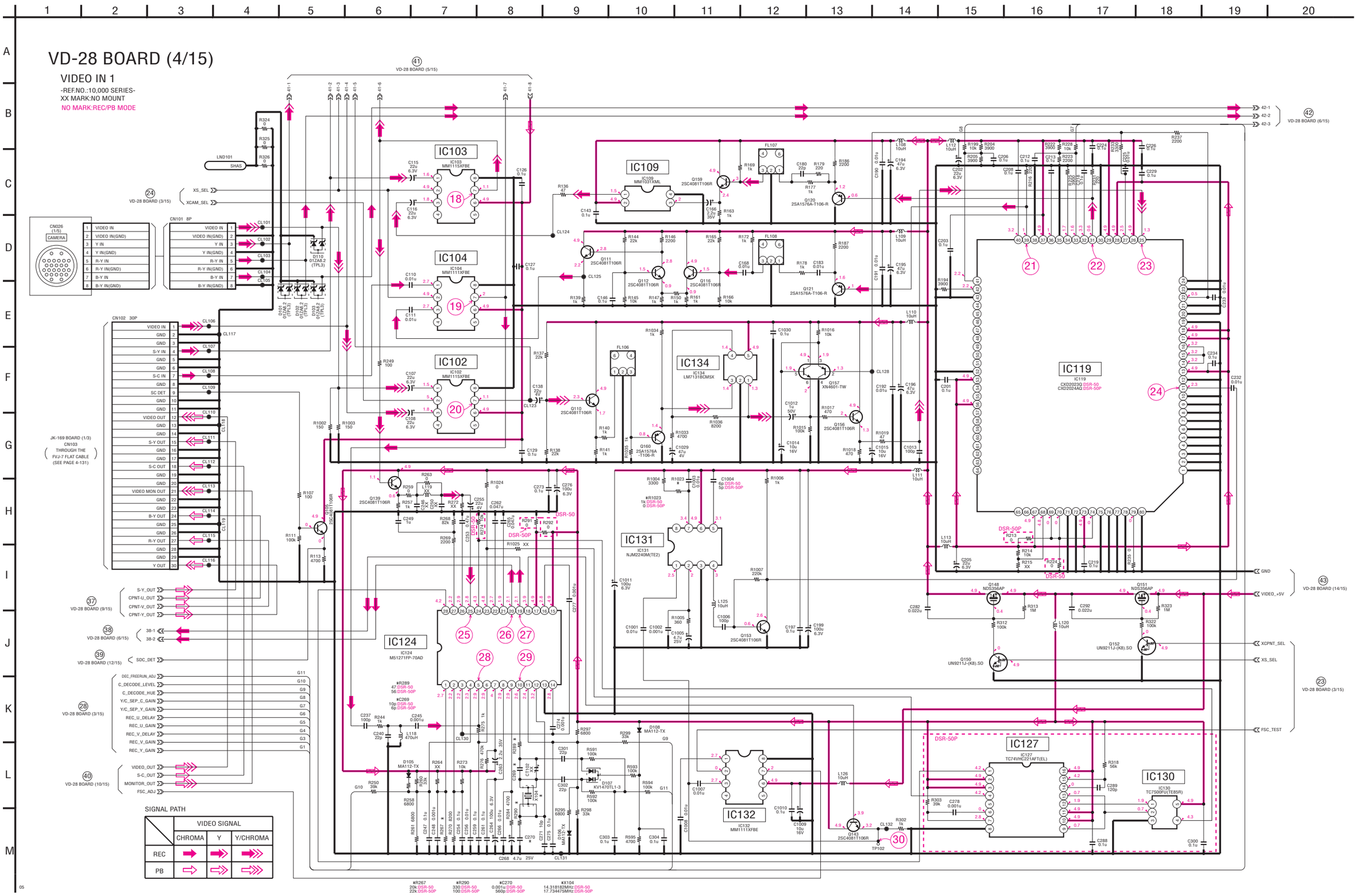
SYNC GENERATOR 3

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT

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

IC002 NJU3712M(TE2)
IC007 NJU3712M(TE2)
IC061 TC7SH32FU-TE85R
IC001 TC74VHCT08AFT(EL)
IC009 M62352GP-70ED
IC013 M62352GP-70ED
IC017 M62352GP-70ED
IC041 PQ09TZ5U
IC014 TC74VHCT08AFT(EL)
IC050 TC74VHC4040FT(EL)
IC054 TC7SH32FU-TE85R
IC051 TC74VHC20FT(EL)
IC052 TC74VHC74FT(EL)
IC056 TC7SH04FU-TE85R
IC055 TC74VHC123AFT(EL)
IC046 TC74VHC393FT(EL)
IC047 TC74VHC164FT(EL)
IC048 TC74VHC164FT(EL)
IC049 CXD1217Q-T4

VD-28 (VIDEO IN 1) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-149, 150 for waveforms.

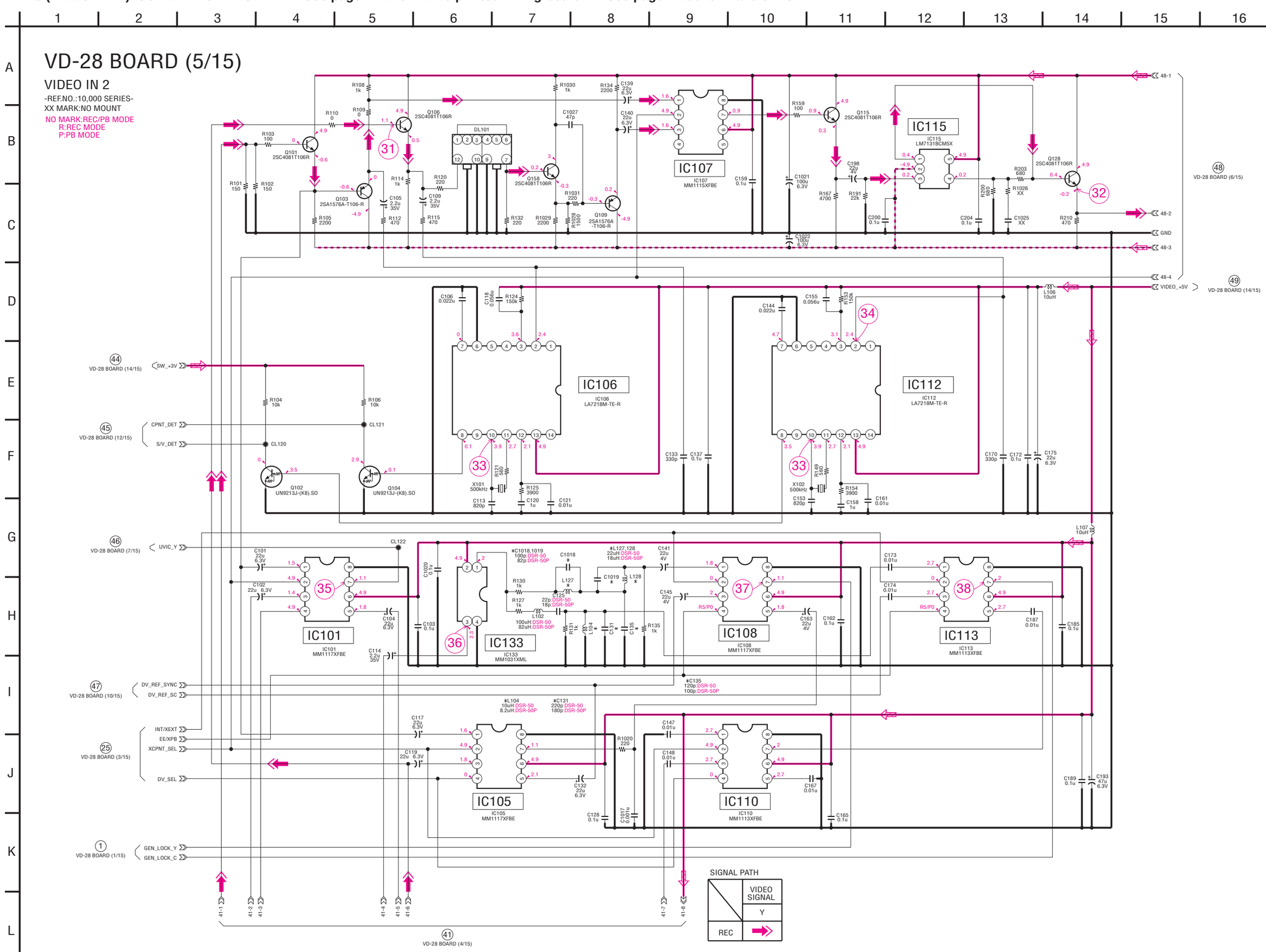


VD-28 (VIDEO IN 2) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-150 for waveforms.

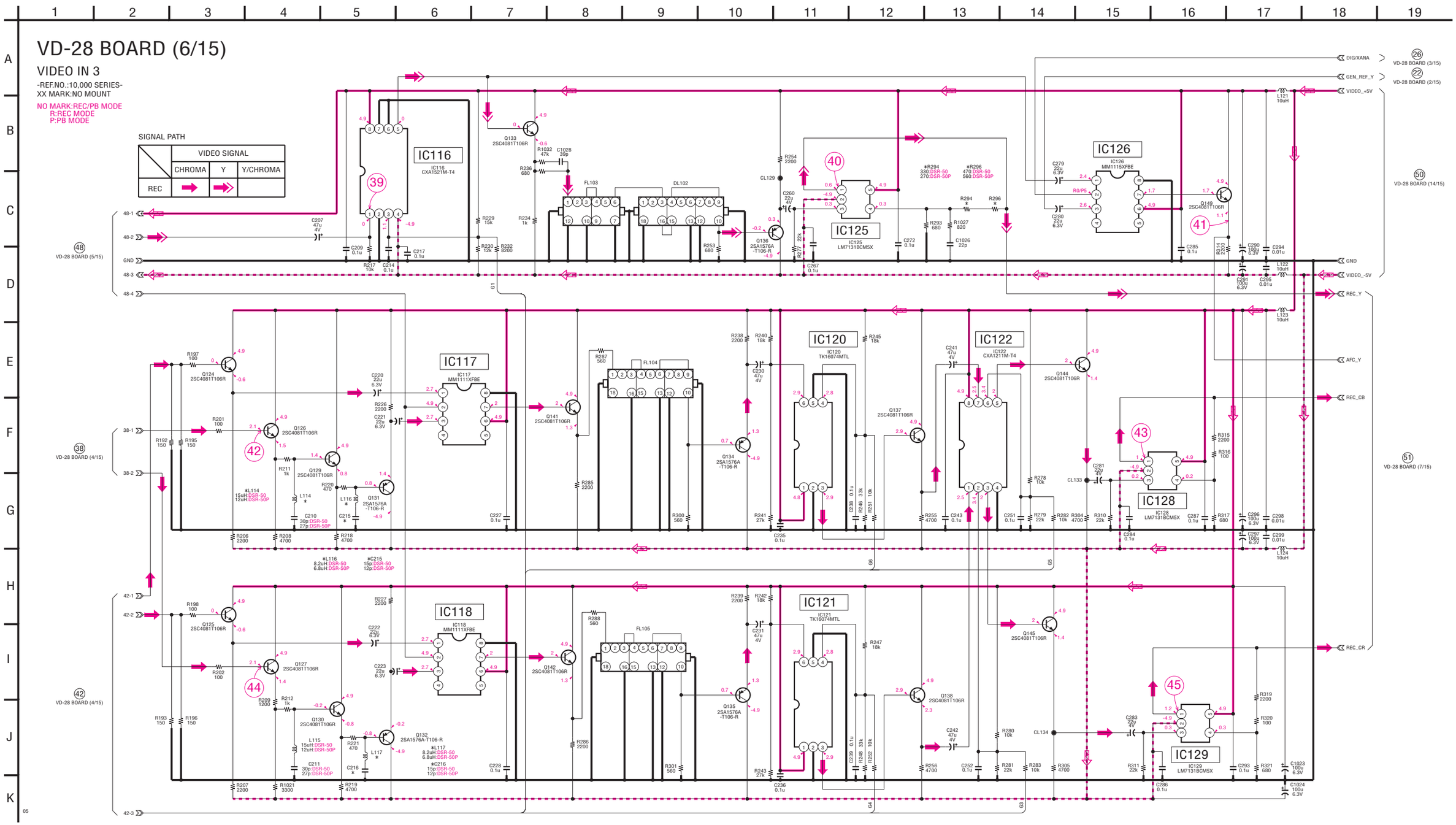
VD-28 BOARD (5/15)

VIDEO IN 2

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE



VD-28 (VIDEO IN 3) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-150, 151 for waveforms.



VD-28 (UVIC) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-151 for waveforms.

VD-28 BOARD (7/15)

UVIC

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT

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

IC333 TC74VHCT08AFT(EL)
IC334 TC74VHCT08AFT(EL)
IC335 TC74VHC08FT(EL)
IC336 TC7WH125FU(TE12R)
IC332 MC68HC68VBIFB

SIGNAL PATH

	VIDEO SIGNAL	
	CHROMA	Y
REC	➡	➡
PB	⇨	⇨

VD-28 (VIDEO OUT 1) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-151 for waveforms.

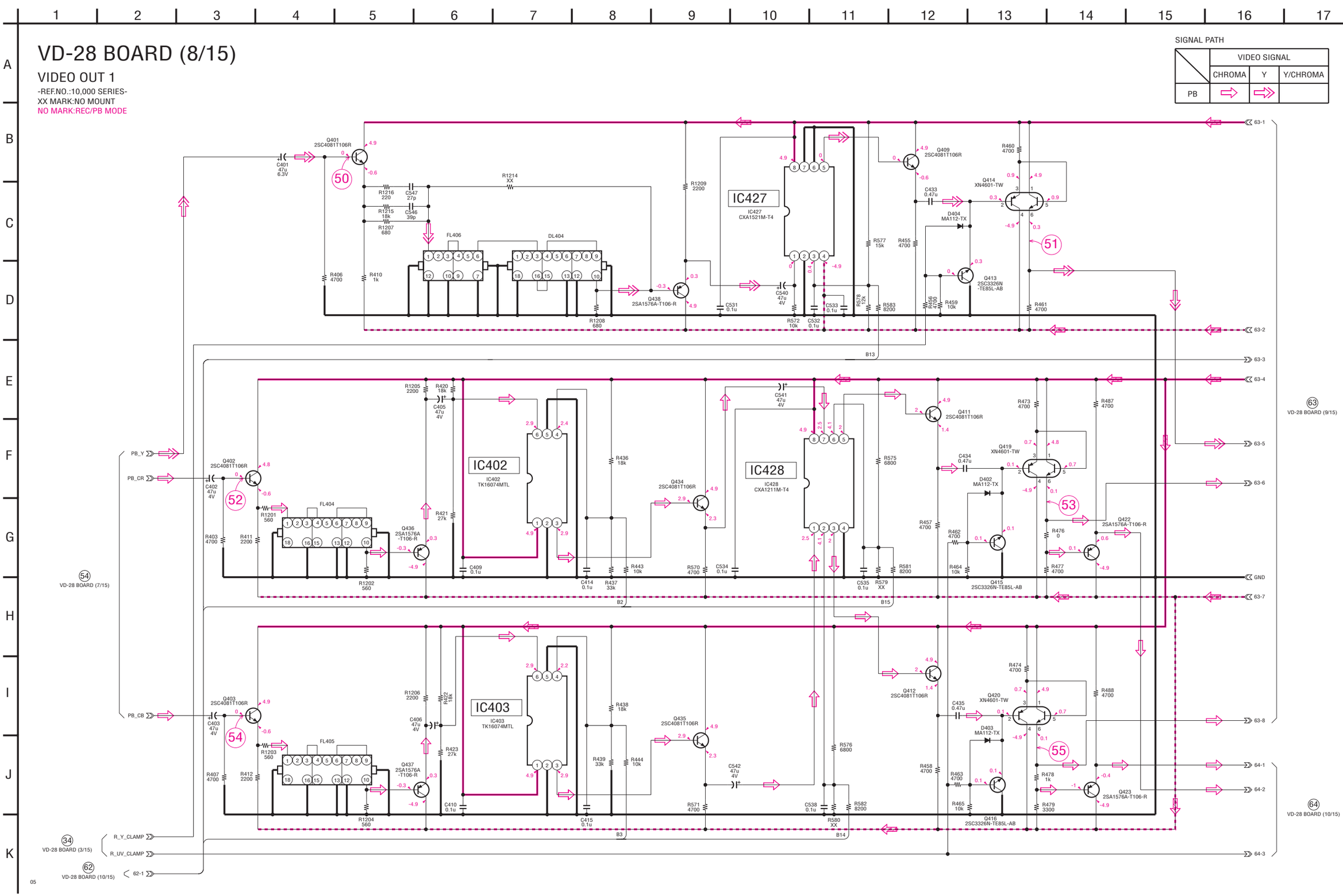
VD-28 BOARD (8/15)

VIDEO OUT 1

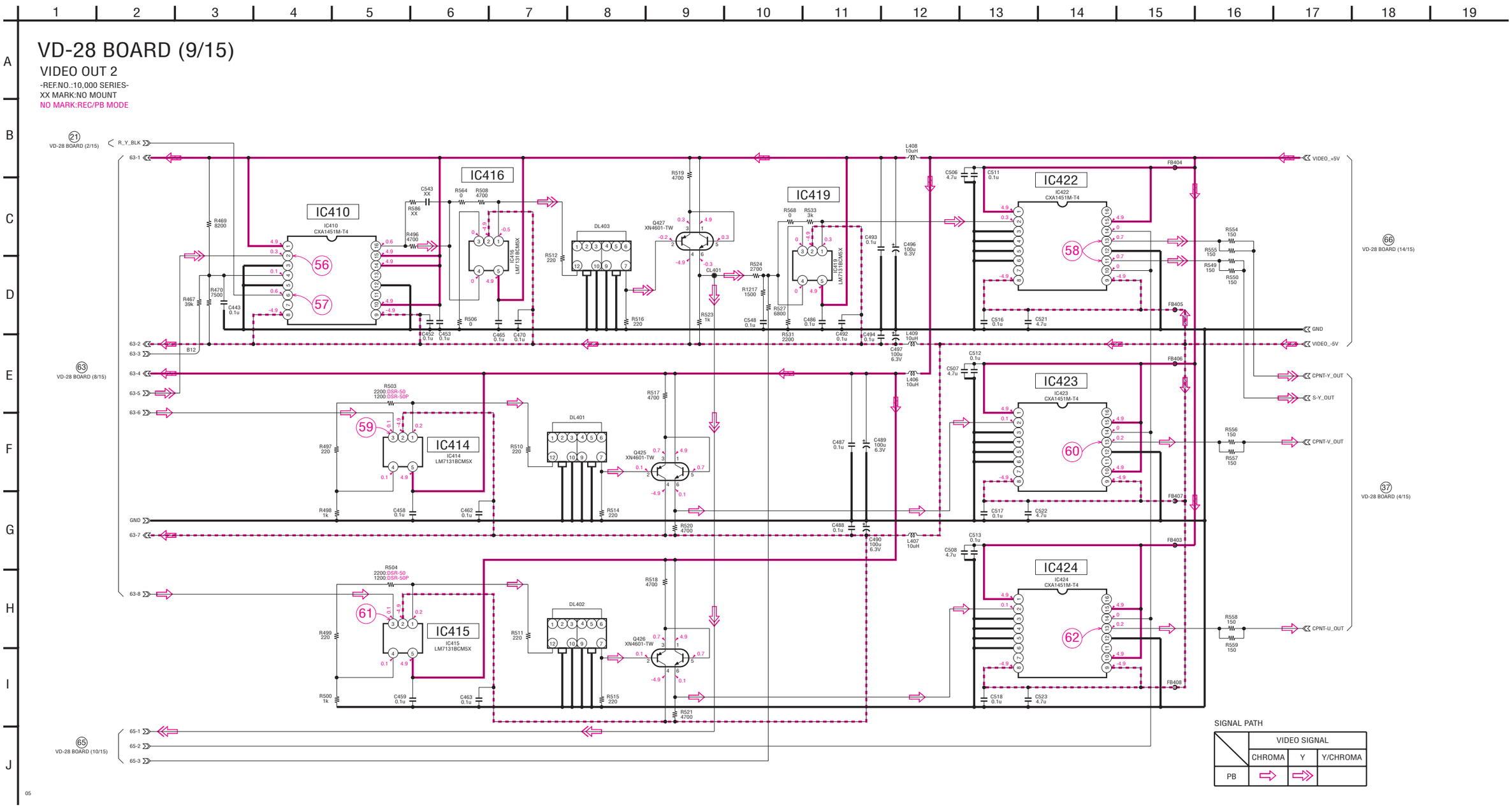
-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

SIGNAL PATH

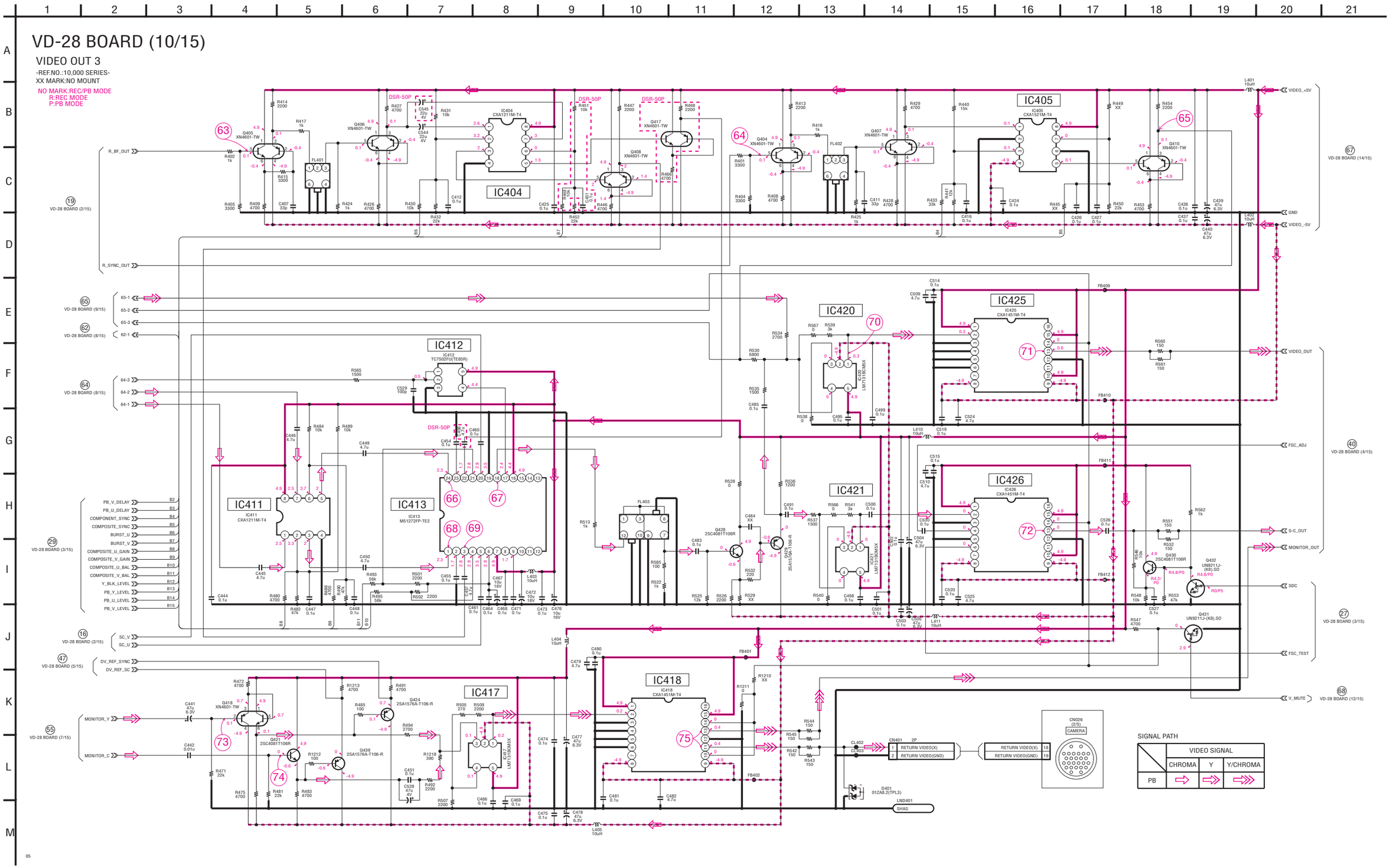
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	



VD-28 (VIDEO OUT 2) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-151 for waveforms.



VD-28 (VIDEO OUT 3) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-151, 152 for waveforms.



VD-28 (AUDIO) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board.

VD-28 BOARD (11/15)

AUDIO

-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

IC601 TC74HC4066AFT(EL)
IC602 NJM2115M-TE2
IC603 NJM2115M-TE2
IC604 NJM2115M-TE2
IC605 NJU7102AM-TE1
IC606 NJU7211U50-TE1
IC607 NJU7201U50-TE1

CN605 8P: GND (CH4 OUT) 8, CH4 OUT 7, GND (CH3 OUT) 6, CH3 OUT 5, GND (CH2 OUT) 4, CH2 OUT 3, GND (CH1 OUT) 2, CH1 OUT 1 — JC-20 BOARD (12/14) CN7001 THROUGH THE JV-58 HARNESS (SEE PAGE 4-41)

CN606 30P: AU X1 IN 1, AU Y1 IN 2, GND 3, AU X2 IN 4, AU Y2 IN 5, GND 6, AU X3 IN 7, AU Y3 IN 8, GND 9, AU X4 IN 10, AU Y4 IN 11, GND 12, TC IN 13, GND 14, TC OUT 15, GND 16, DSP CS 17, GND 18, DSP SI 19, GND 20, DSP SO 21, GND 22, DSP SCK 23, NC 24, NC 25, NC 26, NC 27, NC 28, NC 29, NC 30 — JC-20 BOARD (13/14) CN7002 THROUGH THE FVJ-13 FLAT CABLE (SEE PAGE 4-43)

CN607 5P: TC IN 1, TC IN 2, GND 3, TC OUT 4, TC OUT 5 — JK-169 BOARD (1/3) CN101 THROUGH THE FVJ-10 FLAT CABLE (SEE PAGE 4-131)

CN603 30P: 30 AUDIO MONITOR SEL, 29 FOOT SW, 28 TALLY LED, 27 SW +3V, 26 SIRCS DATA, 25 GND, 24 NC, 23 GND, 22 P/S SCK, 21 GND, 20 P/S DATA, 19 GND, 18 P/S CS, 17 SW +3V, 16 +48V DD ON, 15 GND, 14 GND, 13 AUDIO MONITOR OUT, 12 GND, 11 GND, 10 CH1 OUT, 9 GND, 8 GND, 7 CH3 OUT, 6 GND, 5 GND, 4 CH2 OUT, 3 GND, 2 GND, 1 CH4 OUT — JK-169 BOARD (1/3) CN104 THROUGH THE FVJ-7 FLAT CABLE (SEE PAGE 4-131)

CN604 30P: 30 CH1 IN X, 29 GND, 28 CH1 IN Y, 27 GND, 26 GND, 25 CH2 IN X, 24 GND, 23 CH2 IN Y, 22 GND, 21 GND, 20 CH3 IN X, 19 GND, 18 CH3 IN Y, 17 GND, 16 GND, 15 CH4 IN X, 14 GND, 13 CH4 IN Y, 12 GND, 11 GND, 10 MIC X, 9 GND, 8 MIC Y, 7 SW -6V, 6 SW -6V, 5 SW +6V, 4 SW +6V, 3 NC, 2 SW +48V, 1 SW +48V — JK-169 BOARD (2/3) CN105 THROUGH THE FVJ-7 FLAT CABLE (SEE PAGE 4-133)

CN602 5P: AUDIO MON/VTR SAVE, MIC IN(Y-GND), MIC IN(Y), MIC IN(X-GND), MIC IN(X)

CN601 12P: GND, VTR RET AUDIO GND, VTR RET AUDIO, NC, SW -6V, SW -6V, SW +6V, SW +6V, HP R GND, HP R, HP L GND, HP L — HP-117 BOARD CN301 (THROUGH THE HP-135 HARNESS (SEE PAGE 4-145))

CN026 (3/5) CAMERA: 9 MIC IN (X), 10 MIC IN (Y), 11 GND (MIC IN), 20 AUDIO MON/VTR SAVE

SIGNAL PATH

	AUDIO SIGNAL
REC	⇒
PB	⇨

Connections: P/S_CS, VD_SI, VD_SCK — (72) VD-28 BOARD (12/15); SIRCS_DATA, TALLY_LED, FOOT_SW, ATT_ALARM — (73) VD-28 BOARD (12/15); VTR_SAVE; +48V_DD_ON — (69) VD-28 BOARD (14/15); HI_48V_DD_ON — (70) VD-28 BOARD (12/15); DSP_SCK, DSP_SO, DSP_SI, DSP_CS — (71) VD-28 BOARD (12/15); GND, SW_+48V — (74) VD-28 BOARD (14/15); SW_+3V — (75) VD-28 BOARD (14/15); SW_+5.5V, SW_-5.5V — (76) VD-28 BOARD (15/15)

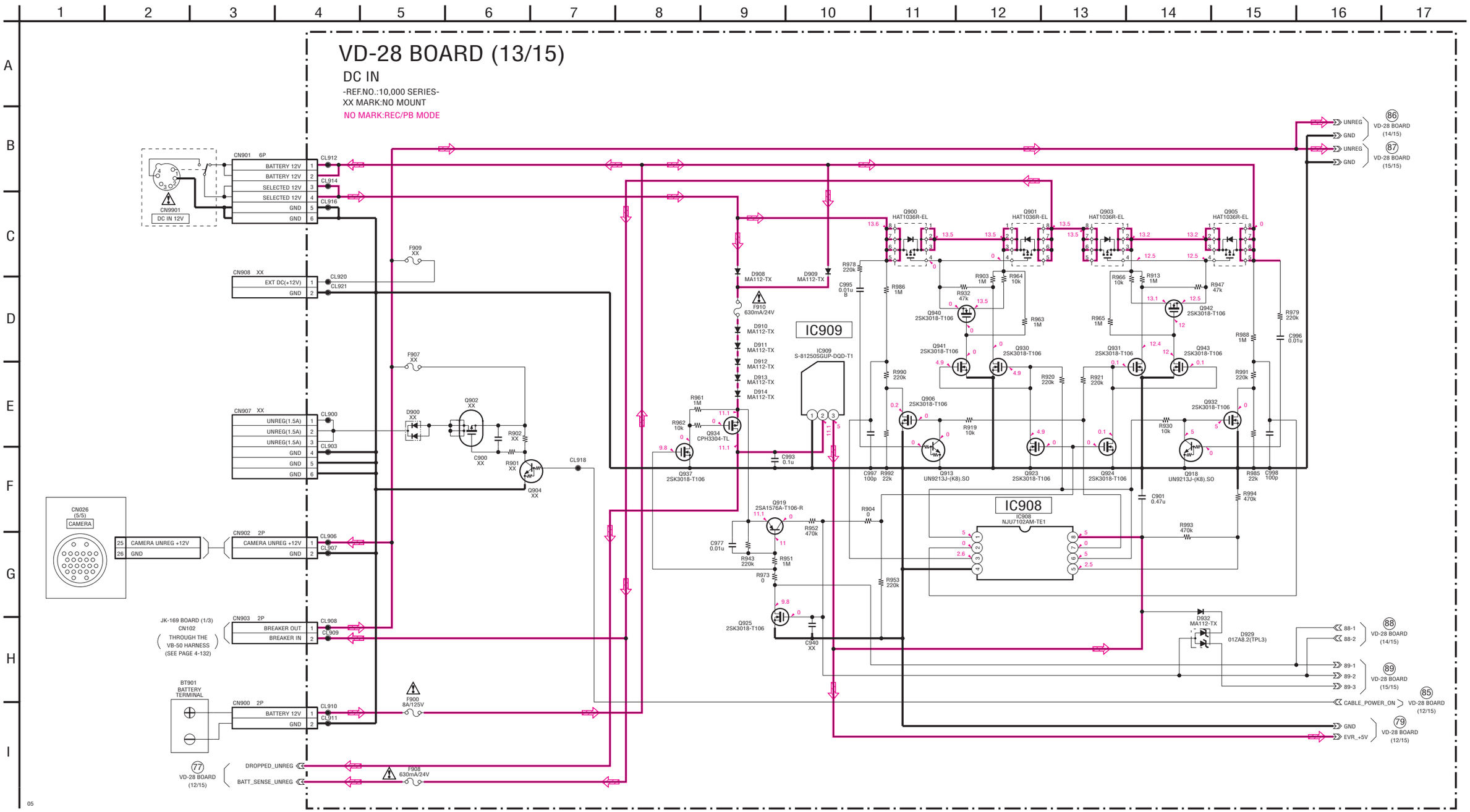
VD-28 (HI CONTROL) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board. • See page 4-152 for waveforms.

VD-28 BOARD (12/15)

HI CONTROL
-REF.NO.:10,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE
∗:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.

IC701 TC7SH04FU-TE85R
IC702 TC7SH32FU-TE85R
IC704 S-8423YFS-T2
IC705 S-81236SGUP-DQ7-T1
IC706 AK6440AM-E2
IC707 TL1596CPWR
IC708 TC74VHCT08AFT(EL)
IC709 SS79642PZ-TEB
IC710 TC7SH32FU-TE85R
IC711 XX
IC712 S-81250SGUP-DQD-T1
IC713 NJU7102AM-TE1

VD-28 (DC IN) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 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 piéce portant le numéro spécifié.

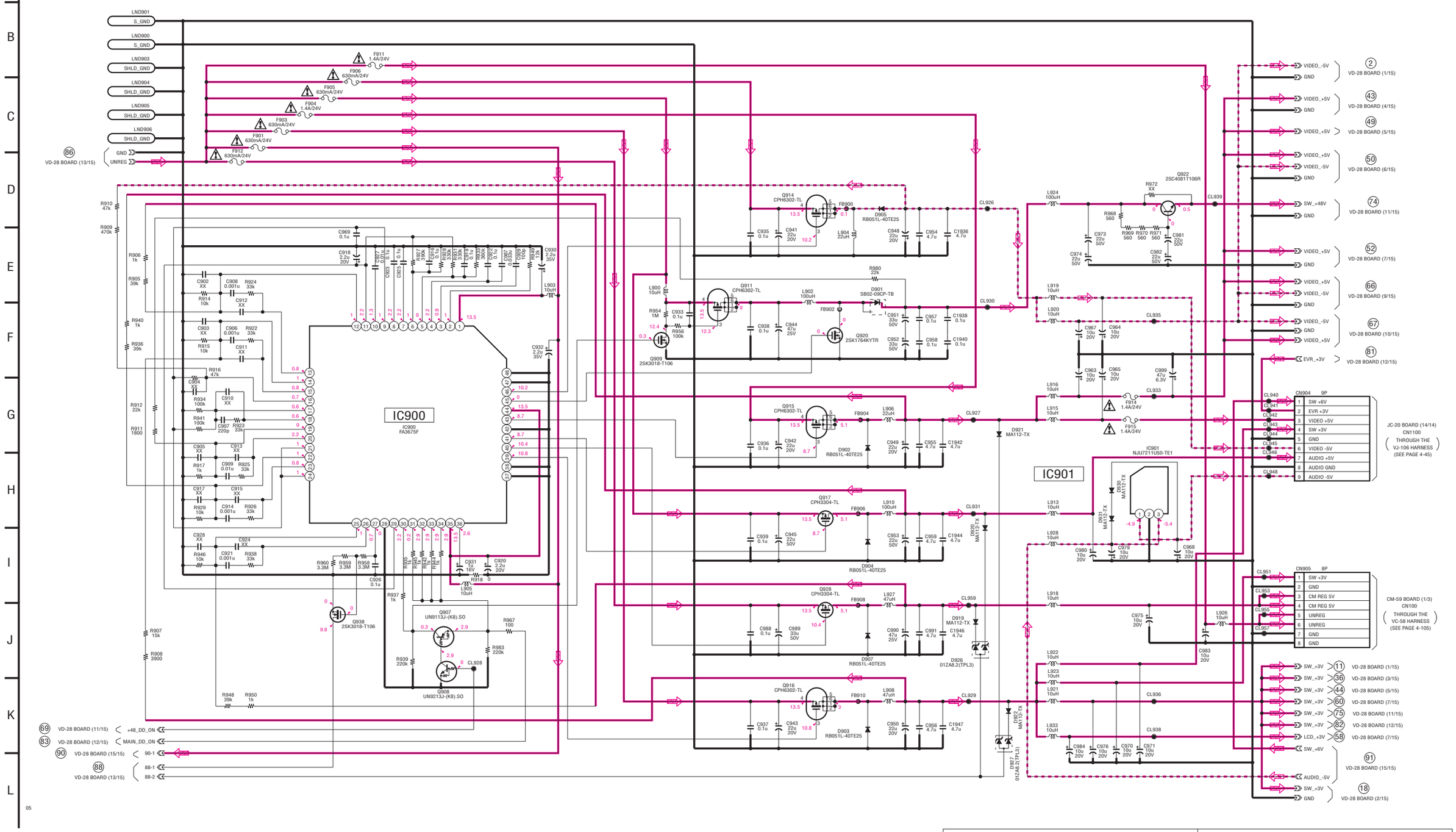
VD-28 (DC/DC CONVERTER 1) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board.

VD-28 BOARD (14/15)

DC/DC CONVERTER 1

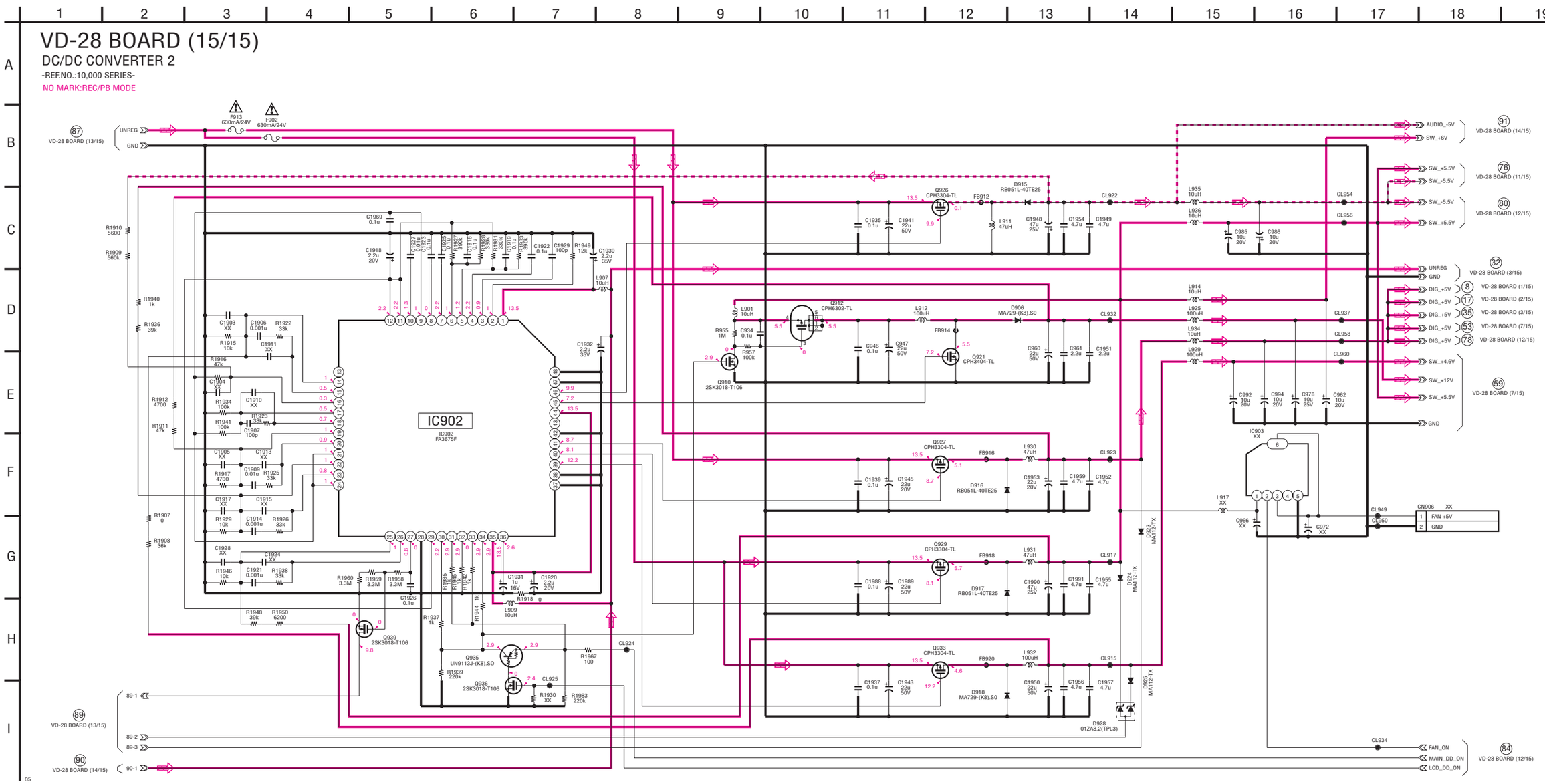
-REF.NO.:10,000 SERIES-

NO MARK:REC/PB MODE



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 piéce portant le numéro spécifié.

VD-28 (DC/DC CONVERTER 2) SCHEMATIC DIAGRAM • See page 4-71 for VD-28 printed wiring board.



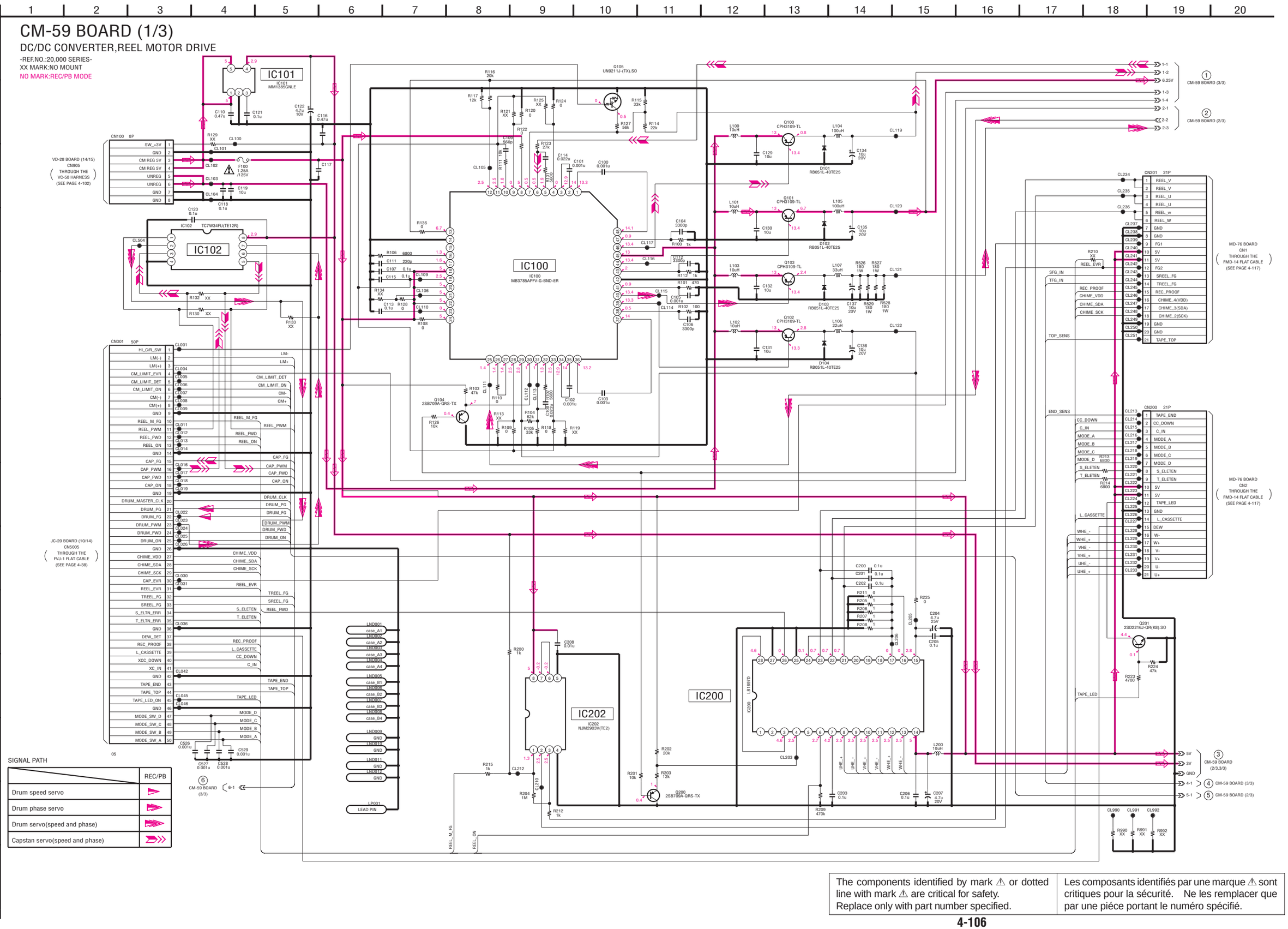
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

CM-59 (DC/DC CONVERTER, REEL MOTOR DRIVE) SCHEMATIC DIAGRAM • See page 4-111 for CM-59 printed wiring board.

CM-59 BOARD (1/3)

DC/DC CONVERTER,REEL MOTOR DRIVE

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE



SIGNAL PATH

	REC/PB
Drum speed servo	
Drum phase servo	
Drum servo(speed and phase)	
Capstan servo(speed and phase)	

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 piéce portant le numéro spécifié.

CM-59 (DRUM MOTOR DRIVE, FL MOTOR DRIVE) SCHEMATIC DIAGRAM

• See page 4-111 for CM-59 printed wiring board. • See page 4-152 for waveforms.

CM-59 BOARD (2/3)

DRUM MOTOR DRIVE,FL MOTOR DRIVE

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

IC500
IC500
CXA8062R-EB

IC501
IC501
TA8486F(EL)

SIGNAL PATH

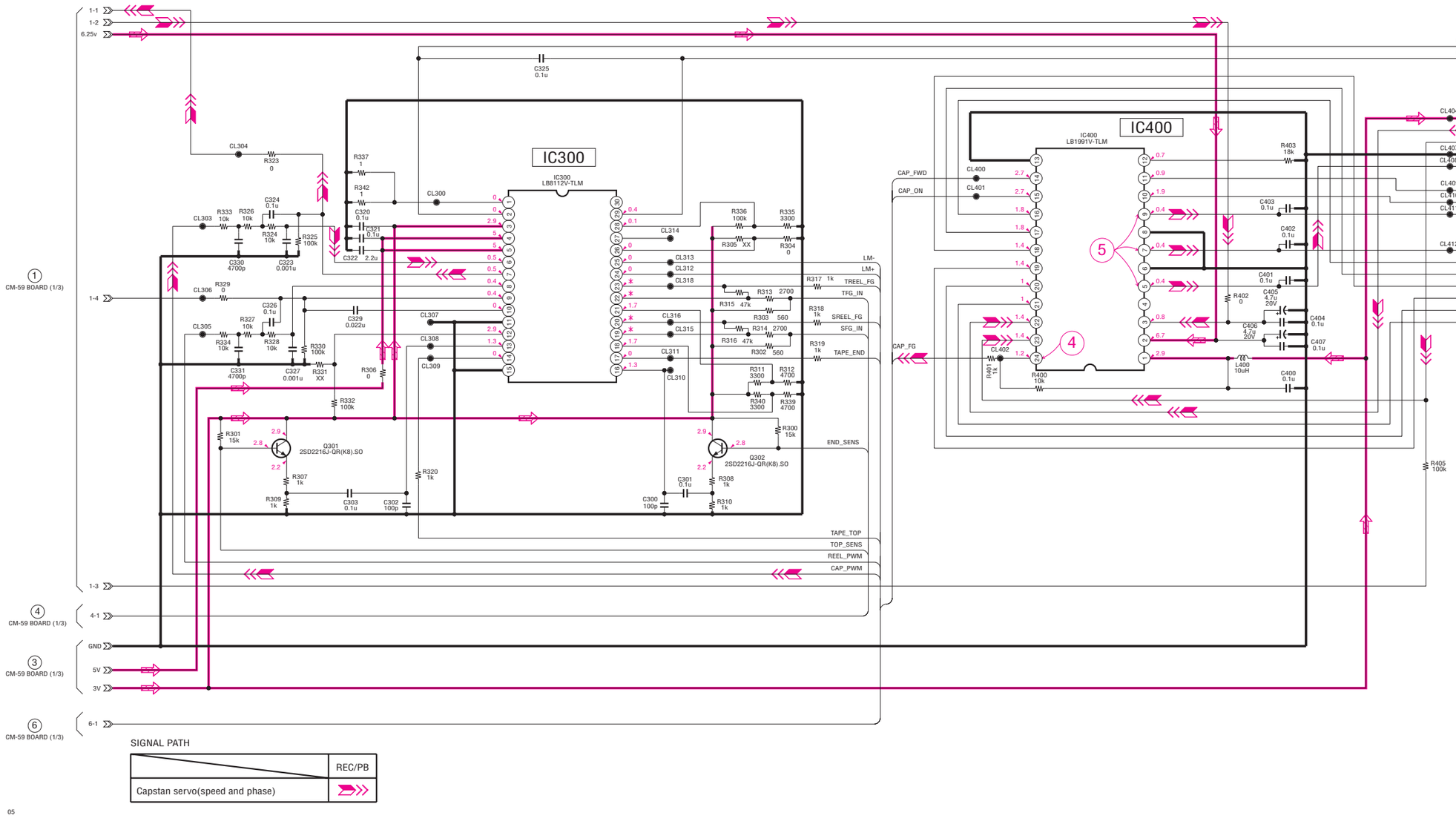
	REC/PB
Drum speed servo	▷
Drum phase servo	▷
Drum servo(speed and phase)	▷

CM-59 (CAPSTAN MOTOR DRIVE, CAM MOTOR DRIVE) SCHEMATIC DIAGRAM • See page 4-111 for CM-59 printed wiring board. • See page 4-152 for waveforms.

CM-59 BOARD (3/3)

CAPSTAN MOTOR DRIVE,CAM MOTOR DRIVE

-REF.NO.:20,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
∗:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.



SIGNAL PATH

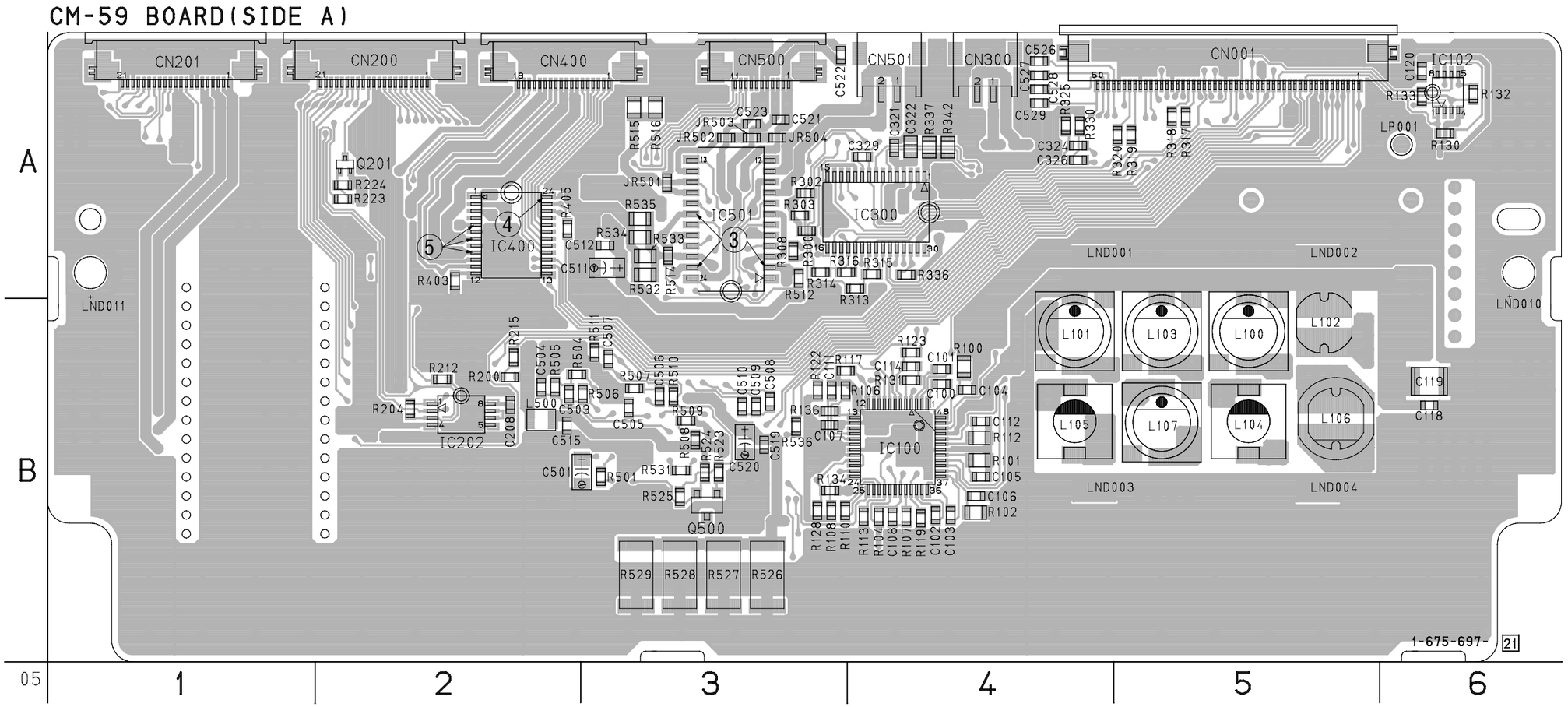
	REC/PB
Capstan servo(speed and phase)	⋙

05

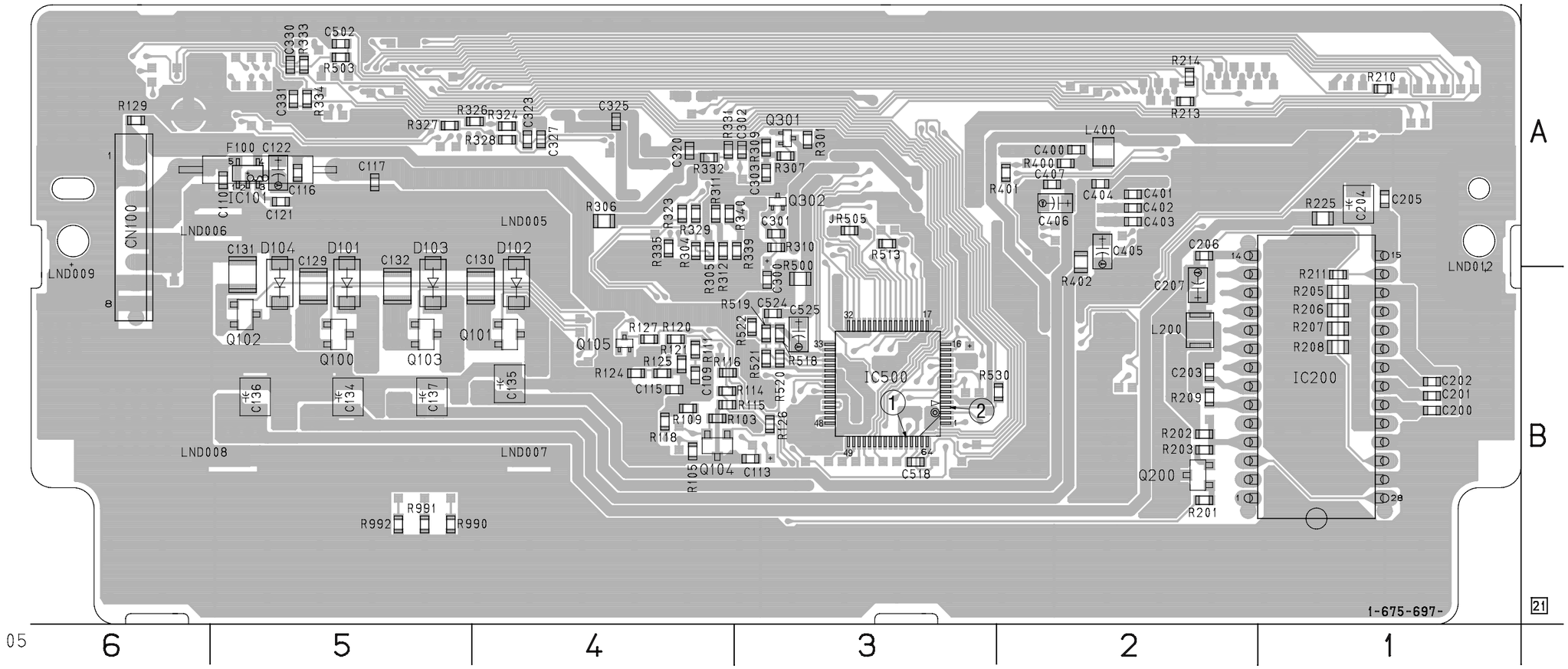
CM-59 (DC/DC CONVERTER, MOTOR DRIVE) PRINTED WIRING BOARD

– Ref. No.: CM-59 board; 20,000 series –

- **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 4-154 for printed parts location.
- Chip transistor



CM-59 BOARD(SIDE B)

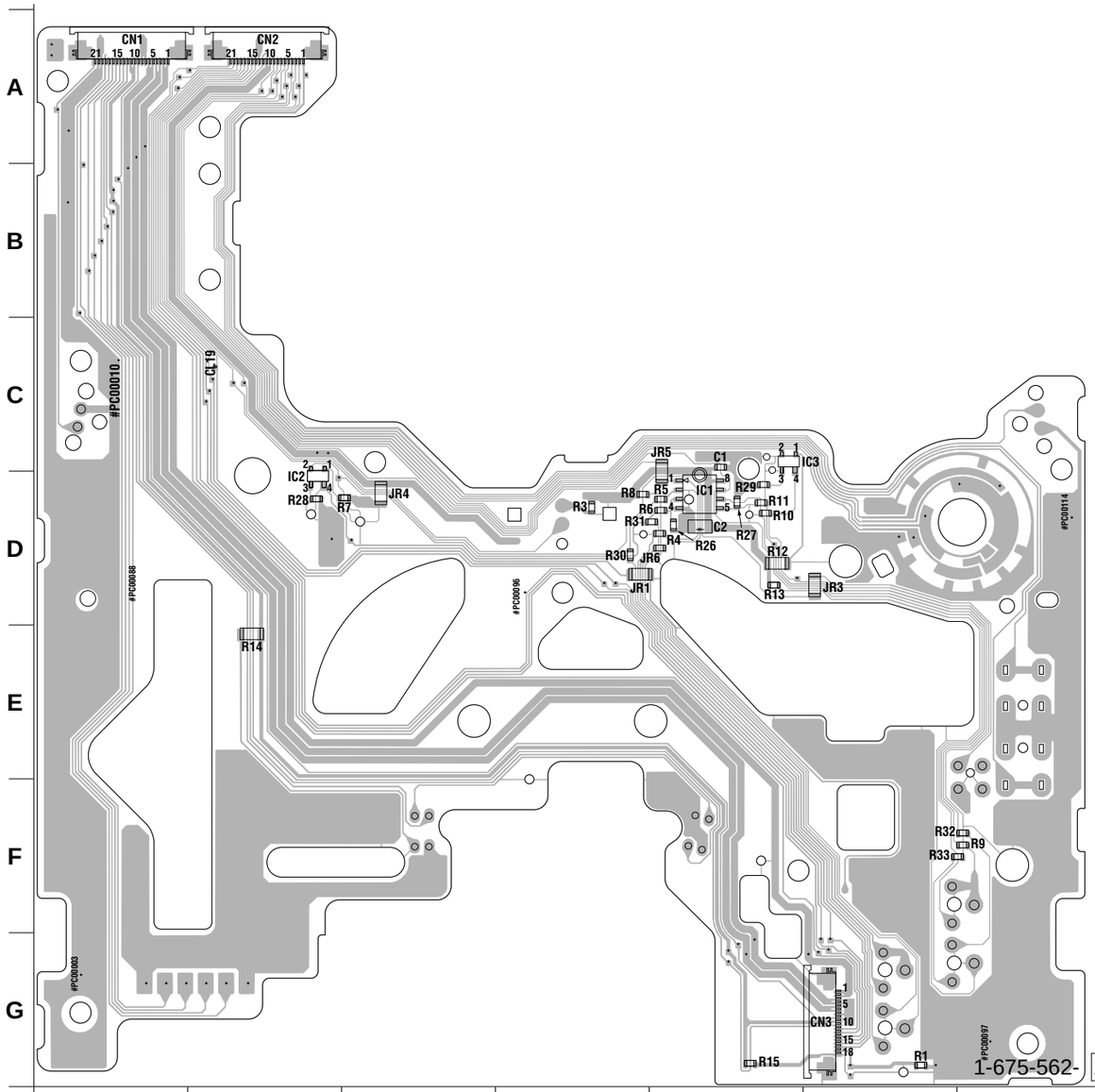


MD-76 (TAPE SENSOR) PRINTED WIRING BOARD

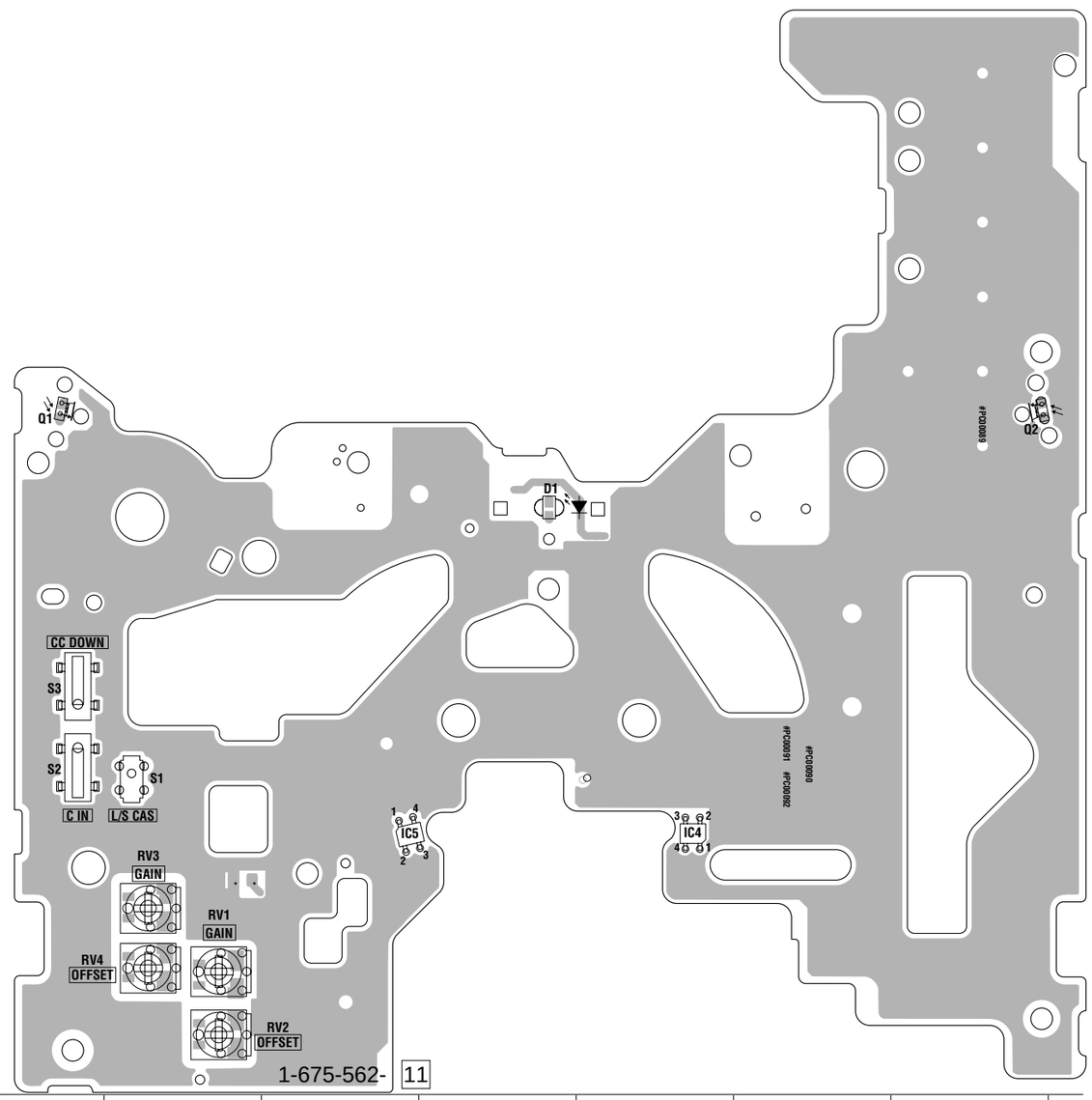
– Ref. No.: MD-76 board; 30,000 series –

- **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 4-155 for printed parts location.
- Chip transistor

MD-76 BOARD (SIDE A)

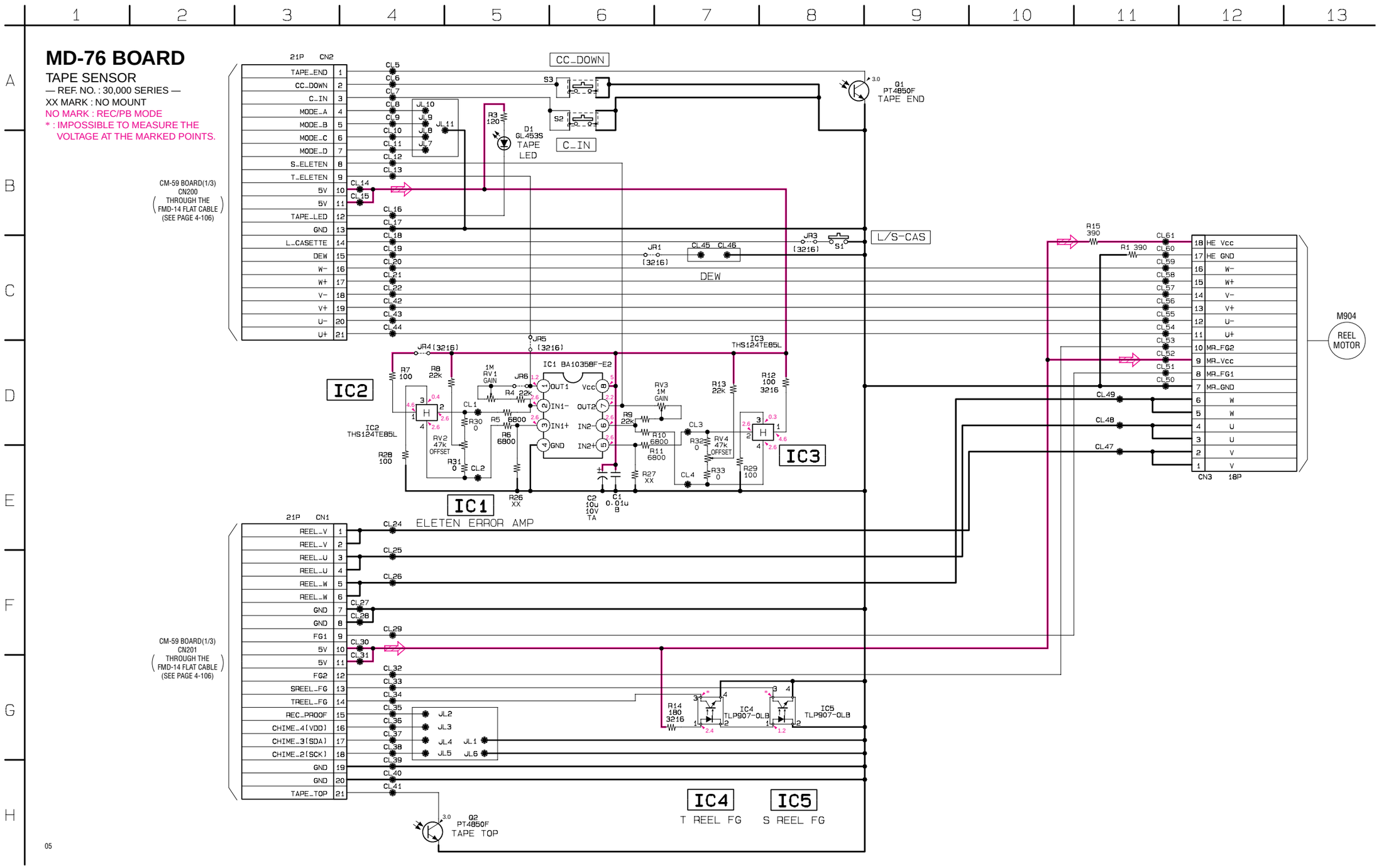


MD-76 BOARD (SIDE B)



05 1 2 3 4 5 6 7 8 9 10 11 12 13 14

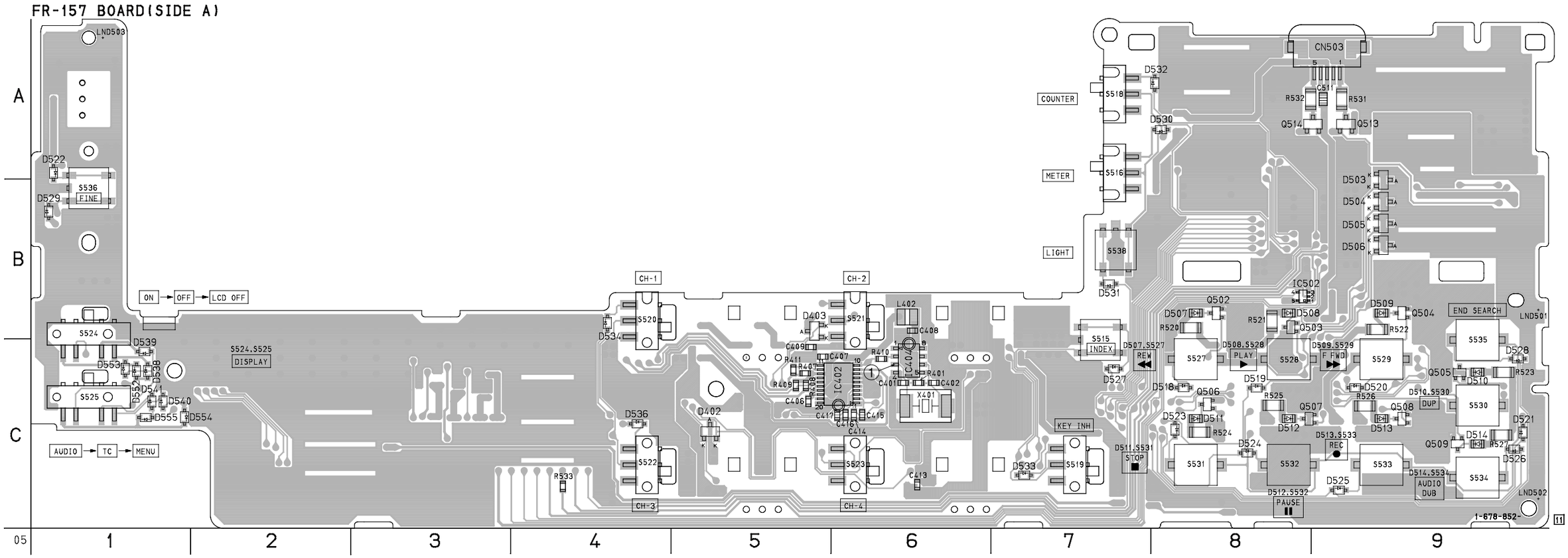
MD-76 (TAPE SENSOR) SCHEMATIC DIAGRAM



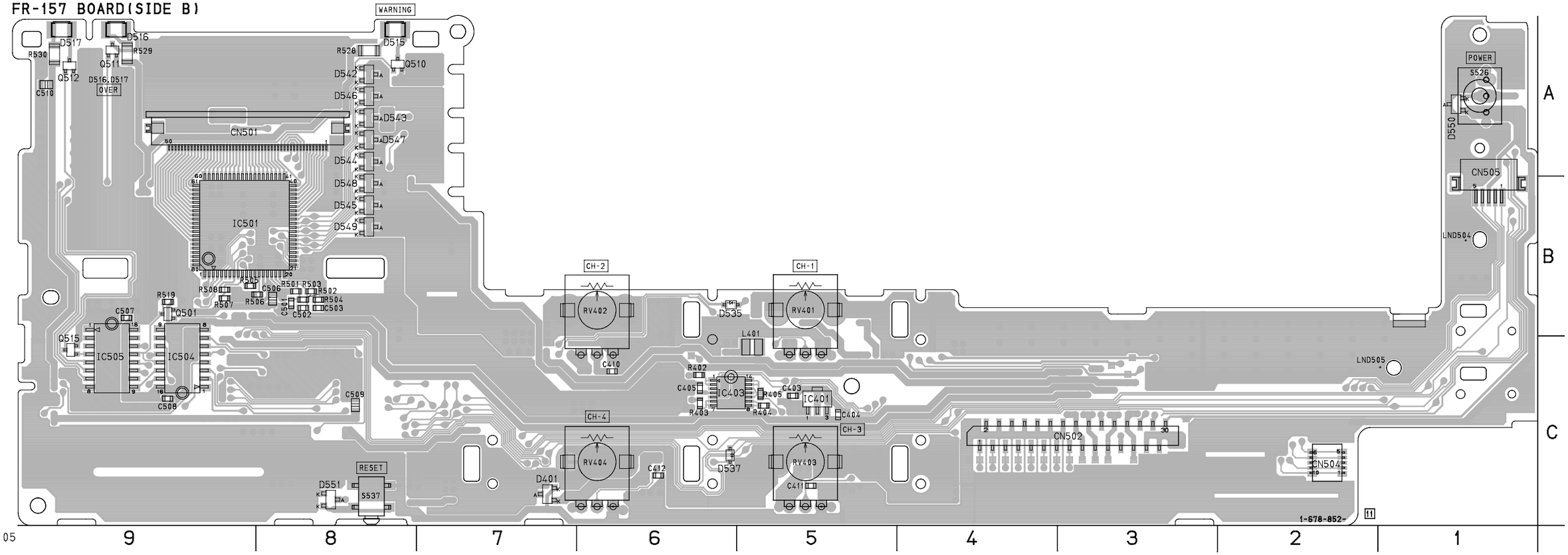
FR-157 (USER CONTROL) PRINTED WIRING BOARD

– Ref. No.: FR-157 board; 30,000 series –

- **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 4-155 for printed parts location.
- Chip transistor



FR-157 BOARD(SIDE B)



FR-157 (USER CONTROL 1) SCHEMATIC DIAGRAM • See page 4-119 for FR-157 printed wiring board.

FR-157 BOARD (1/2)

USER CONTROL 1

-REF.NO.:30,000 SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE
✳:IMPOSSIBLE TO MEASURE THE VOLTAGE AT THE MARKED POINTS.

LCD902 CHARACTER DISPLAY

IC501 UPD16431AGC-7ET

IC502 TC7S66FU(TE85R)

IC504 TC74VHC595F(EL)

IC505 TC74VHC595F(EL)

REW PLAY FF DUP STOP PAUSE REC DUB WARNING OVER13 OVER24

CN503 5P
5 TOP LED VCC(+6V)
4 NC
3 LED COM(-6V)
2 NC
1 BOTTOM LED VCC(+6V)
LT-32 BOARD CN301 THROUGH THE FVJ-12 FLAT CABLE (SEE PAGE 4-126)

CN504 10P / CN505 5P
VG COM GND PSIG VCO_CENT VCO_CENT PSIG GND COM VG
PD-125 BOARD (2/2) CN8201 THROUGH THE FJV-3 FLAT CABLE (SEE PAGE 4-142)
JIG PIN

CN502 30P
KEY REQ GND SCK GND DATA TO H GND DATA FROM H GND _WR GND LED STB GND LCD STB GND OE +3V +3V +3V +3V +6V +6V DSP SO(FROM DSP) +6V +6V DSP SI(TO DSP) RESET DSP_SCK RESET POWER SW
VD-28 BOARD (12/15) CN701 THROUGH THE FVJ-7 FLAT CABLE (SEE PAGE 4-98)

FR-157 BOARD (2/2) ① : GND DSP_SCK DSP_SI DSP_SO SW_+6V SW_+3V DSP_CS S-GND

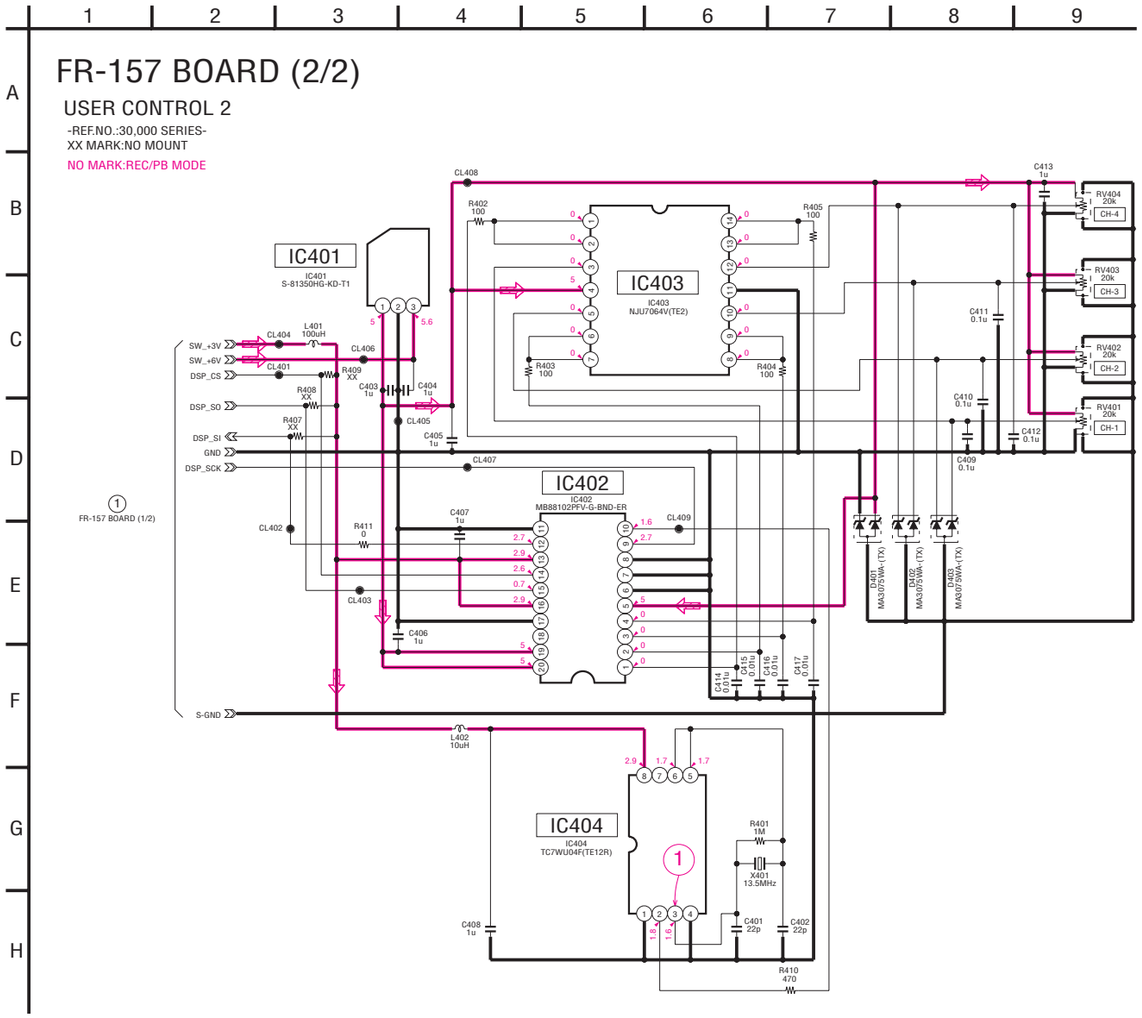
LND501 LND502 LND503 LND504 LND505

KEY1 KEY2 KEY3 KEY4

S527 REW · S528 PLAY · S529 F FWD · S530 DUP · S515 INDEX · S536 FINE
S531 STOP · S532 PAUSE · S533 REC · S534 AUDIO DUB · S535 END SEARCH
S524 DISPLAY ON/OFF LCD OFF
S525 DISPLAY AUDIO TC MENU
S516 METER CH1/2 CH3/4
S538 LIGHT
S518 COUNTER TC U-BIT
S519 KEY INH ON/OFF
S520 CH-1 AUTO MANU
S521 CH-2 AUTO MANU
S522 CH-3 AUTO MANU
S523 CH-4 AUTO MANU
S537 RESET · S515 · S526 POWER ON/OFF

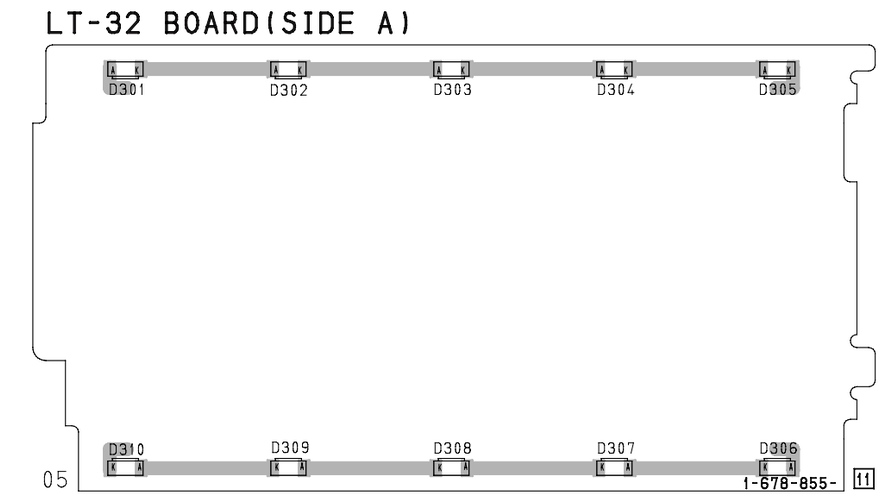
FR-157 (USER CONTROL 2) SCHEMATIC DIAGRAM

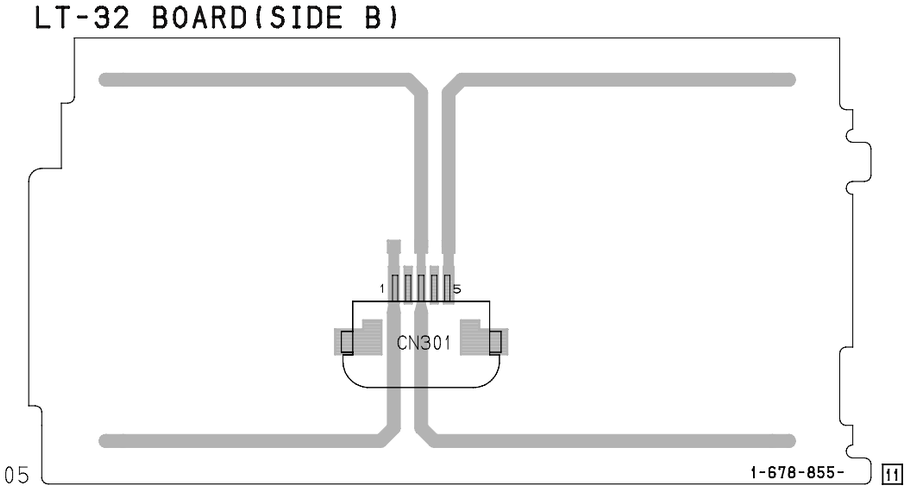
• See page 4-119 for FR-157 printed wiring board. • See page 4-152 for waveform.

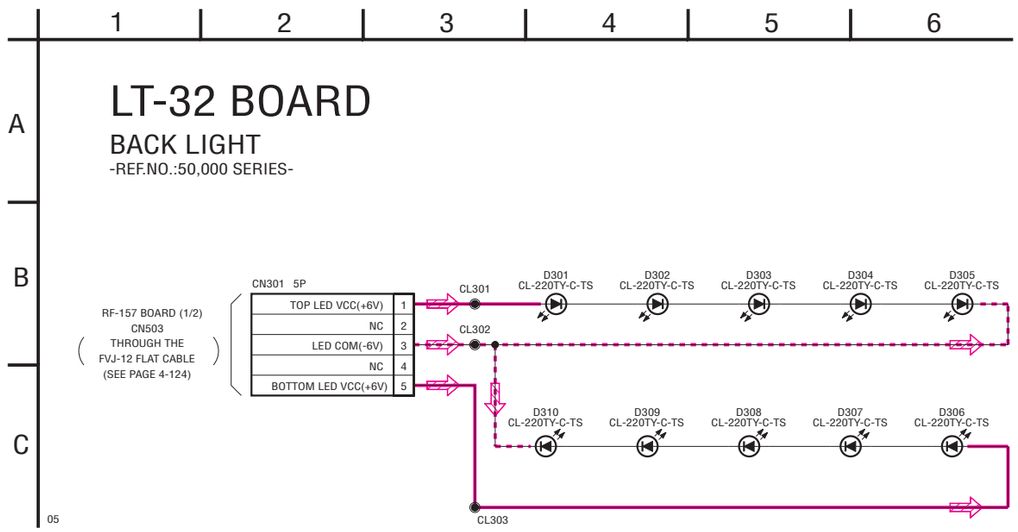


LT-32 (BACK LIGHT) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: LT-32 board; 50,000 series –



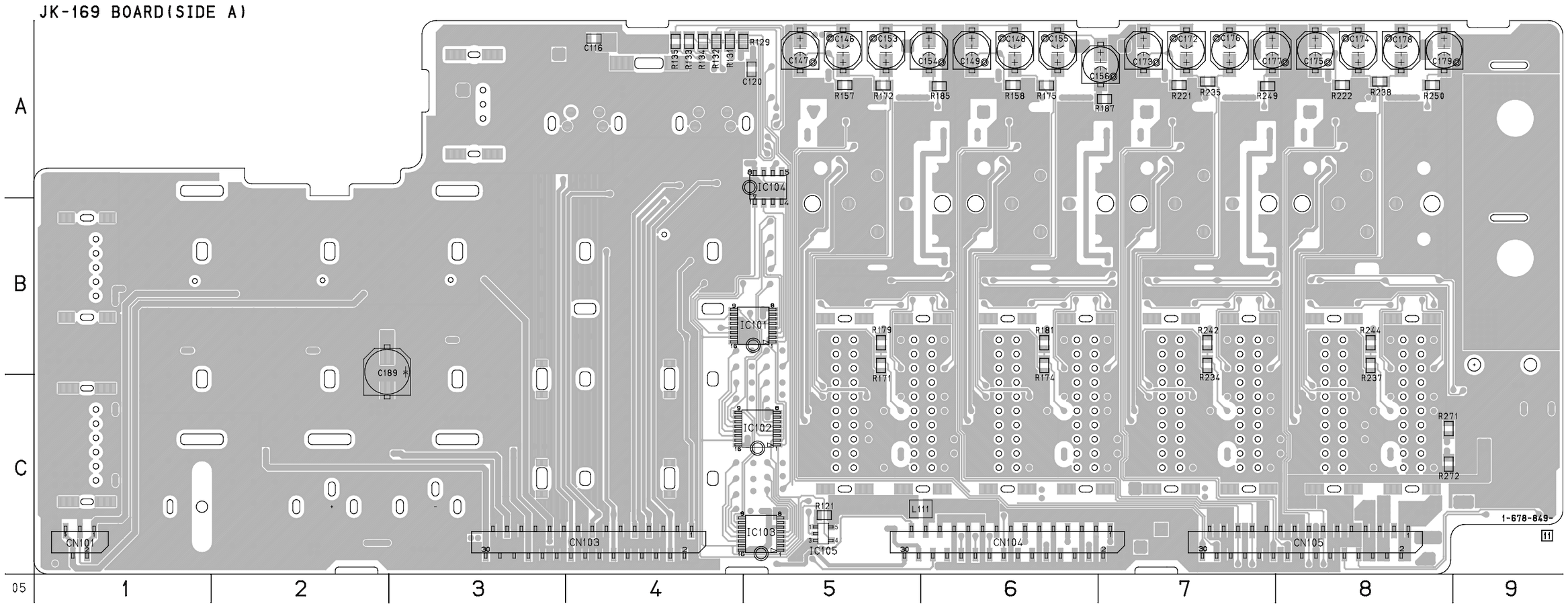




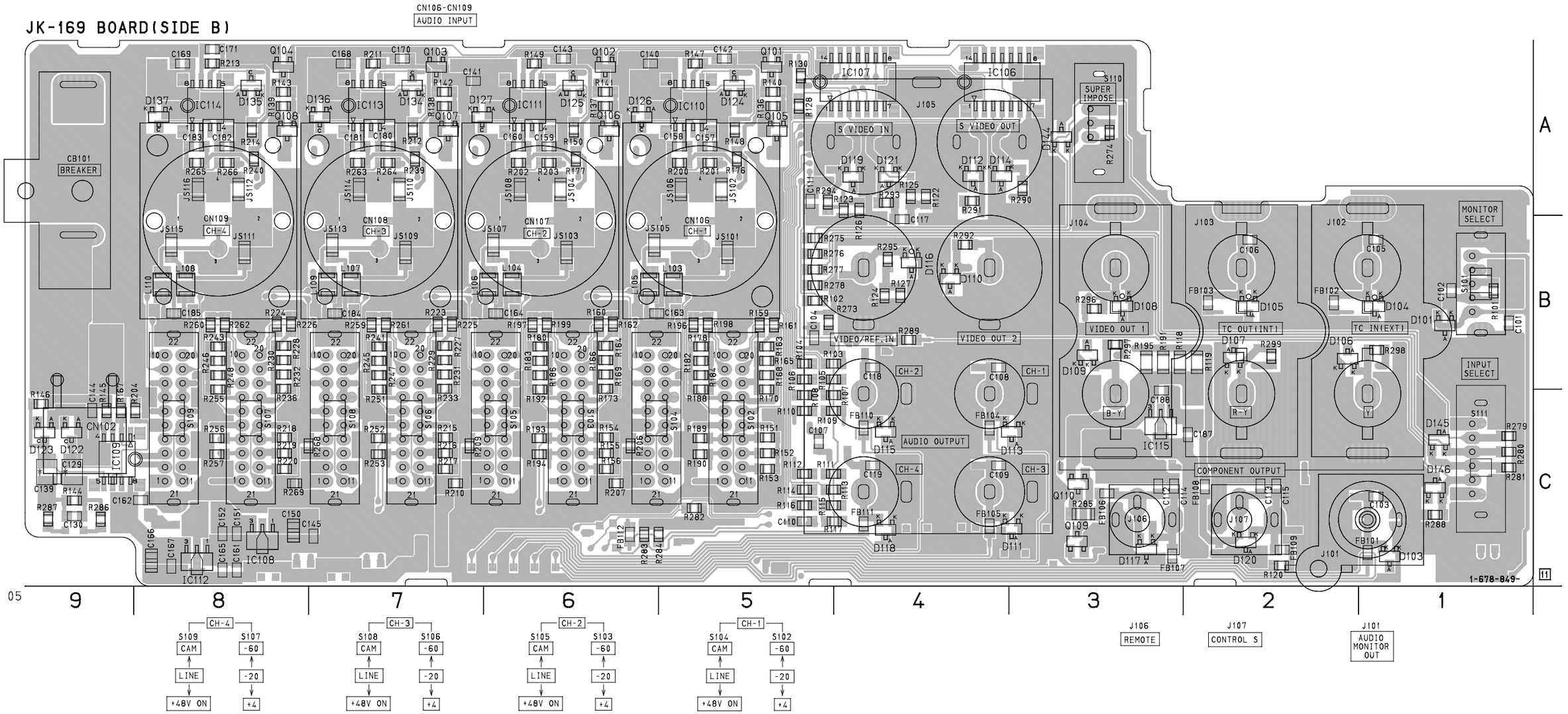
JK-169 (VIDEO/AUDIO IN/OUT) PRINTED WIRING BOARD

– Ref. No.: JK-169 board; 40,000 series –

- **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 4-155 for printed parts location.
- Chip transistor



JK-169 BOARD(SIDE B)



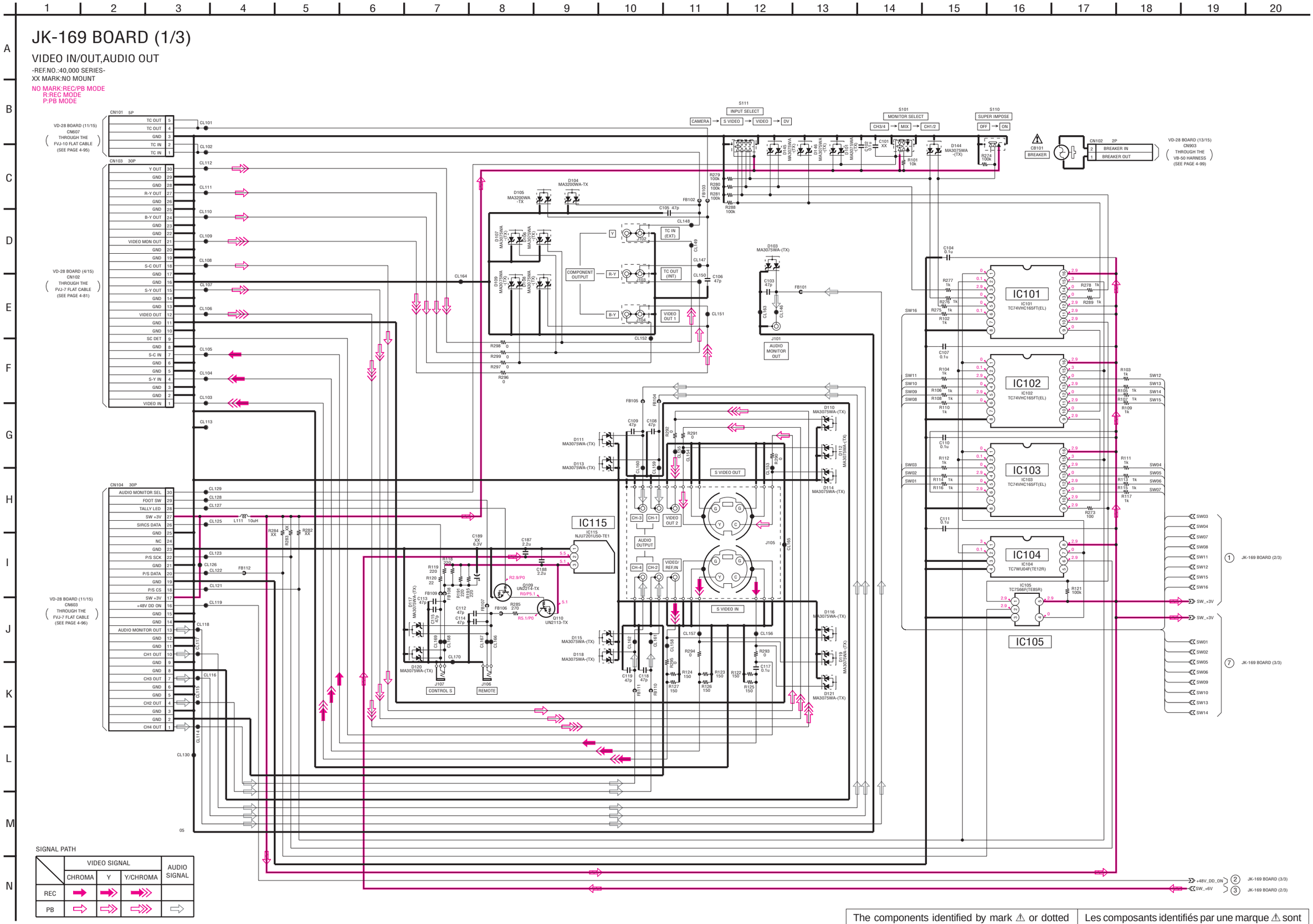
JK-169 (VIDEO IN/OUT, AUDIO OUT) SCHEMATIC DIAGRAM • See page 4-127 for JK-169 printed wiring board.

JK-169 BOARD (1/3)

VIDEO IN/OUT,AUDIO OUT

-REF.NO.:40,000 SERIES-
XX MARK:NO MOUNT

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



SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	
PB	⇨	⇨	⇨	⇨

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

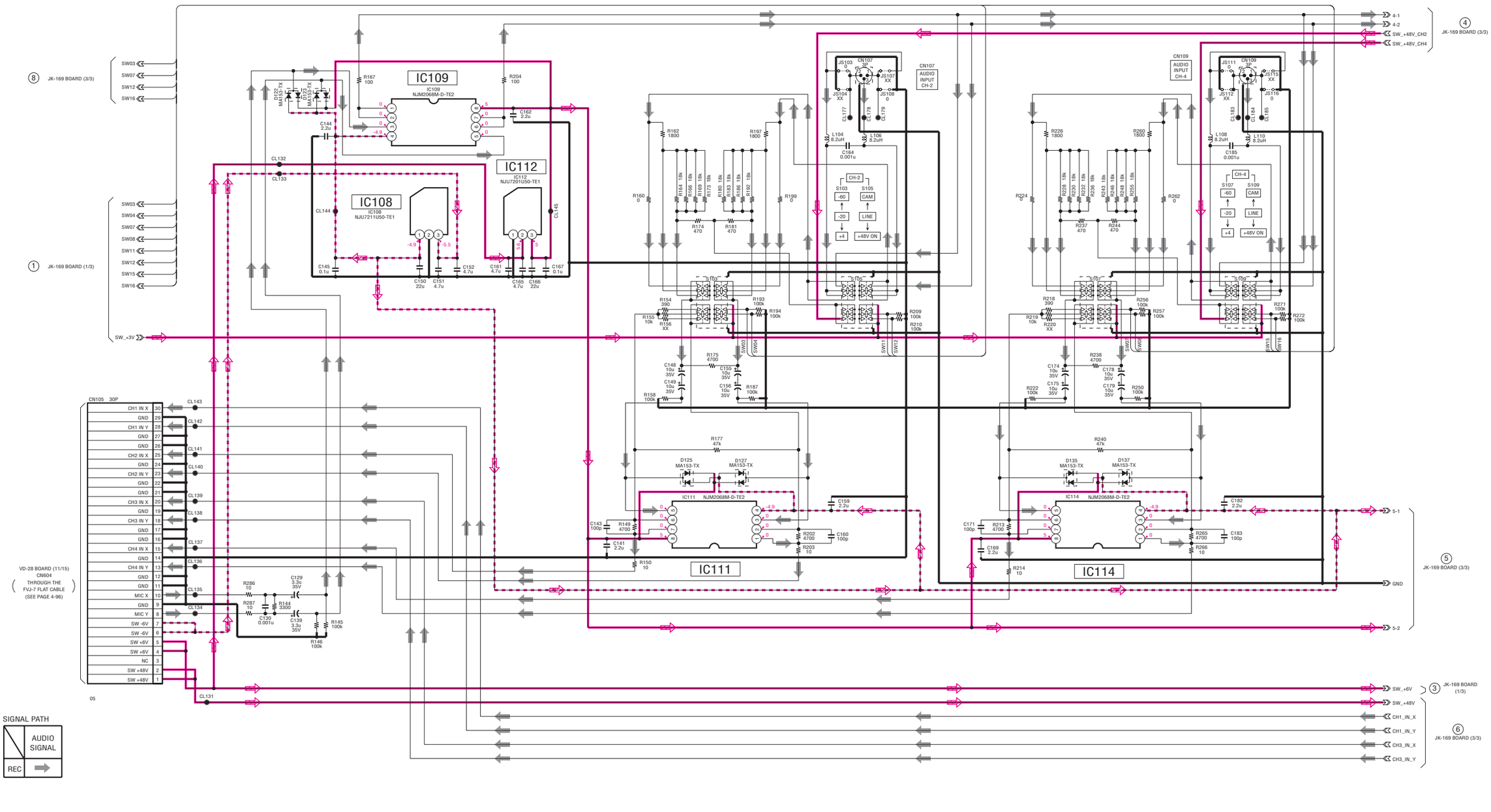
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

JK-169 (AUDIO IN 1) SCHEMATIC DIAGRAM • See page 4-127 for JK-169 printed wiring board.

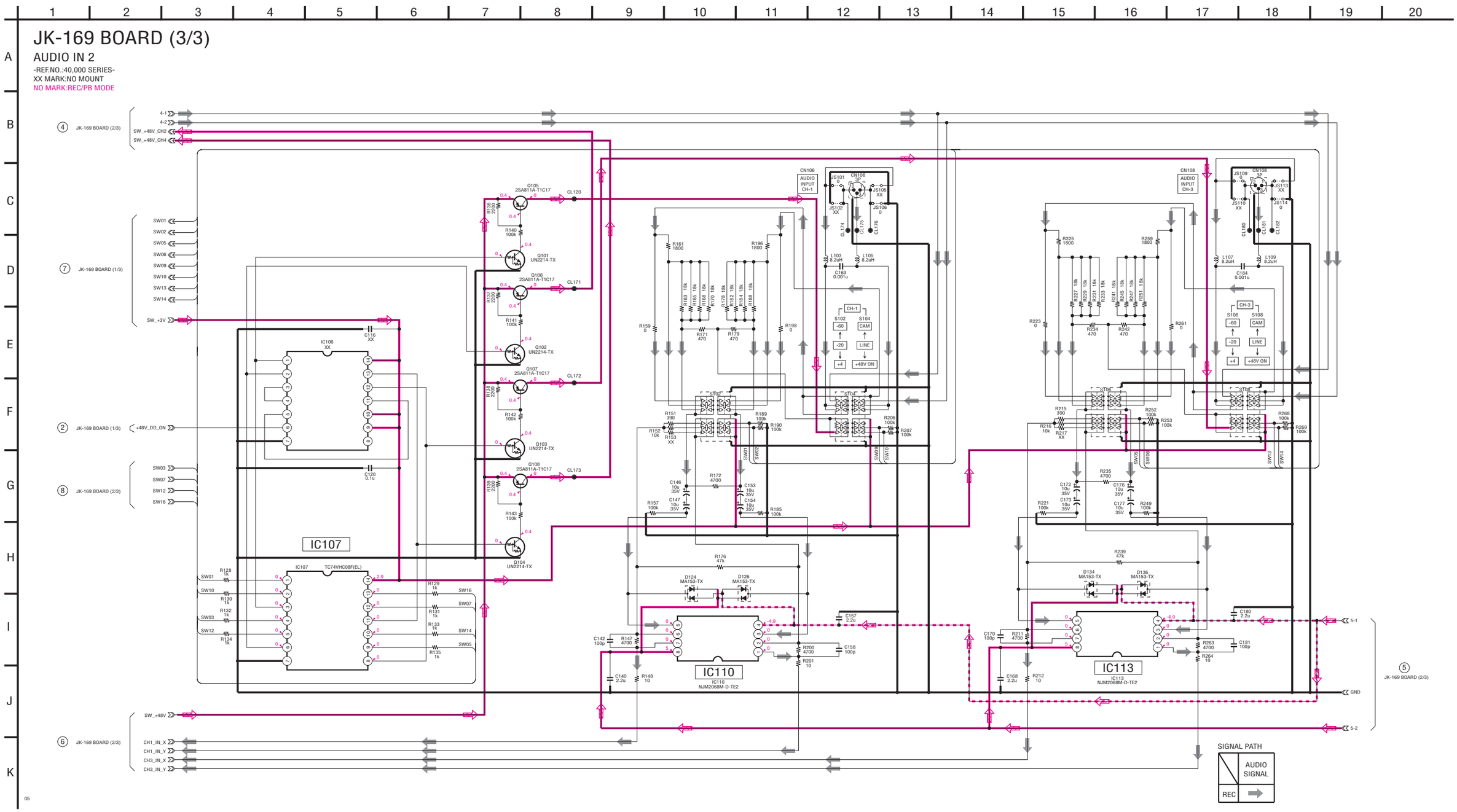
JK-169 BOARD (2/3)

AUDIO IN 1

-REF.NO.:40,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

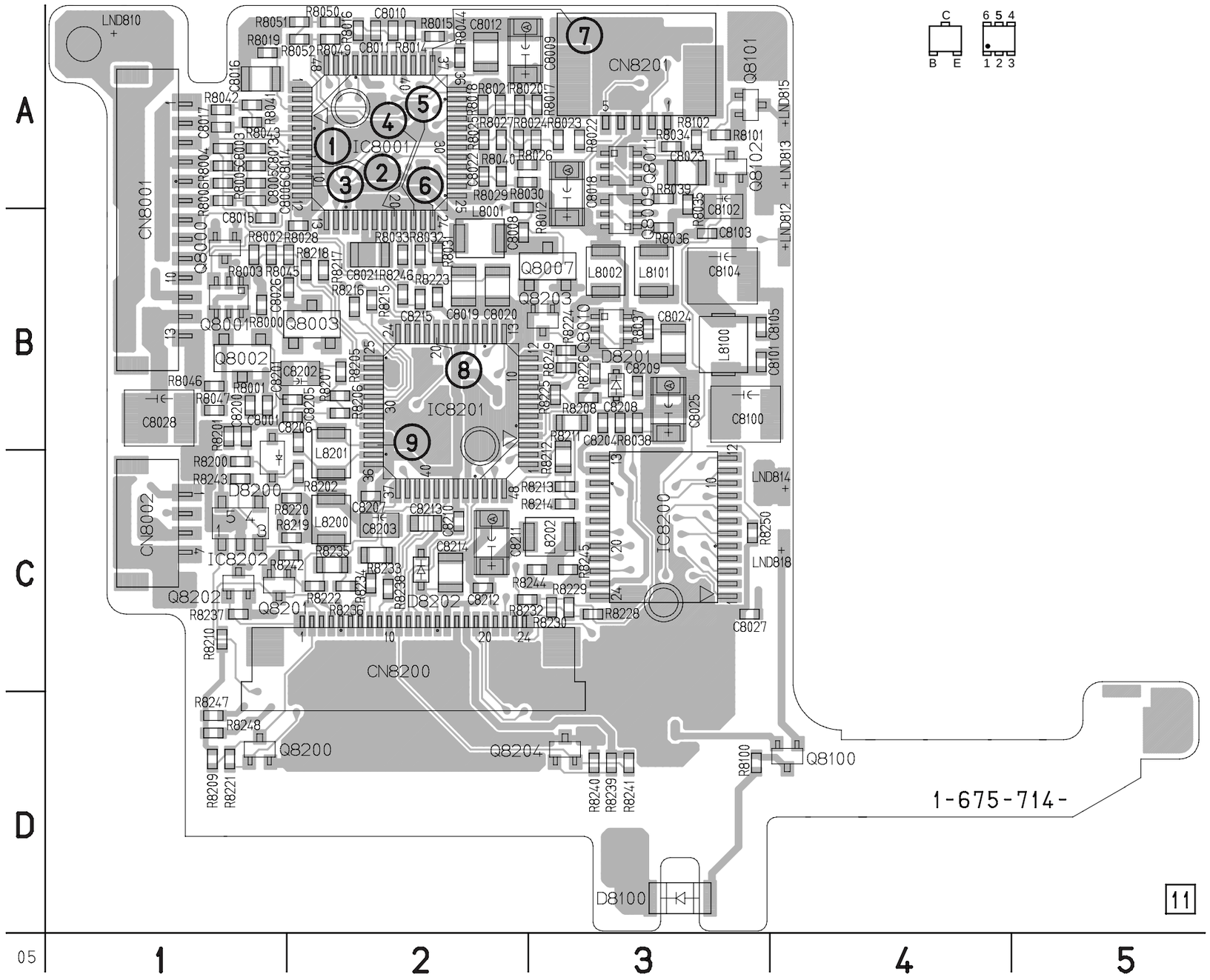


JK-169 (AUDIO IN 2) SCHEMATIC DIAGRAM • See page 4-127 for JK-169 printed wiring board.



PD-125 (RGB DRIVER, TG) PRINTED WIRING BOARD
– Ref. No.: PD-125 board; 30,000 series –

PD-125 BOARD



- **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 4-155 for printed parts location.
- Chip transistor

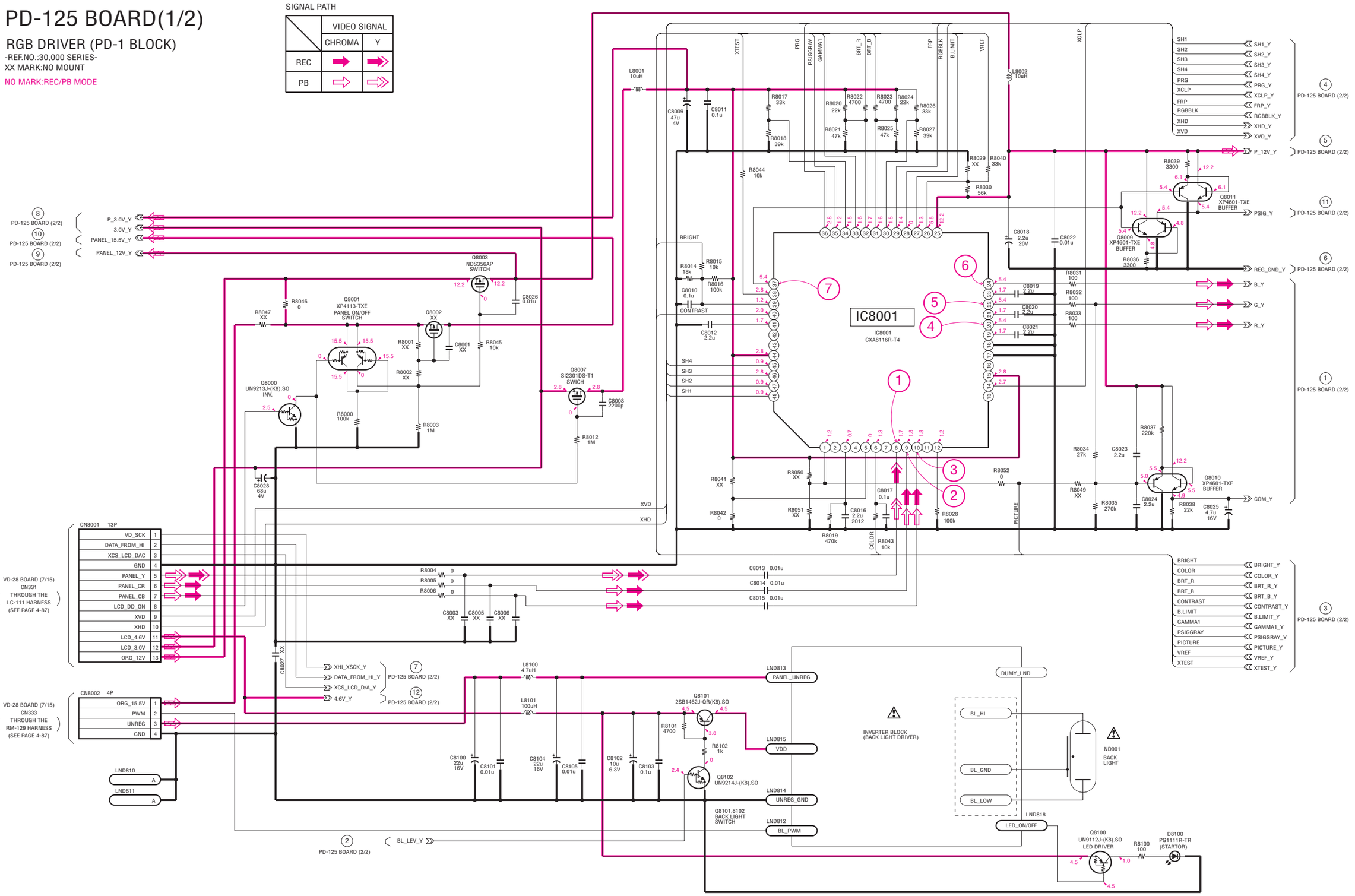
PD-125 (RGB DRIVER) SCHEMATIC DIAGRAM • See page 4-137 for PD-125 printed wiring board. • See page 4-152 for waveforms.

PD-125 BOARD(1/2)

RGB DRIVER (PD-1 BLOCK)
-REF.NO.:30,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

SIGNAL PATH

	VIDEO SIGNAL	
	CHROMA	Y
REC	➡	➡
PB	⇨	⇨



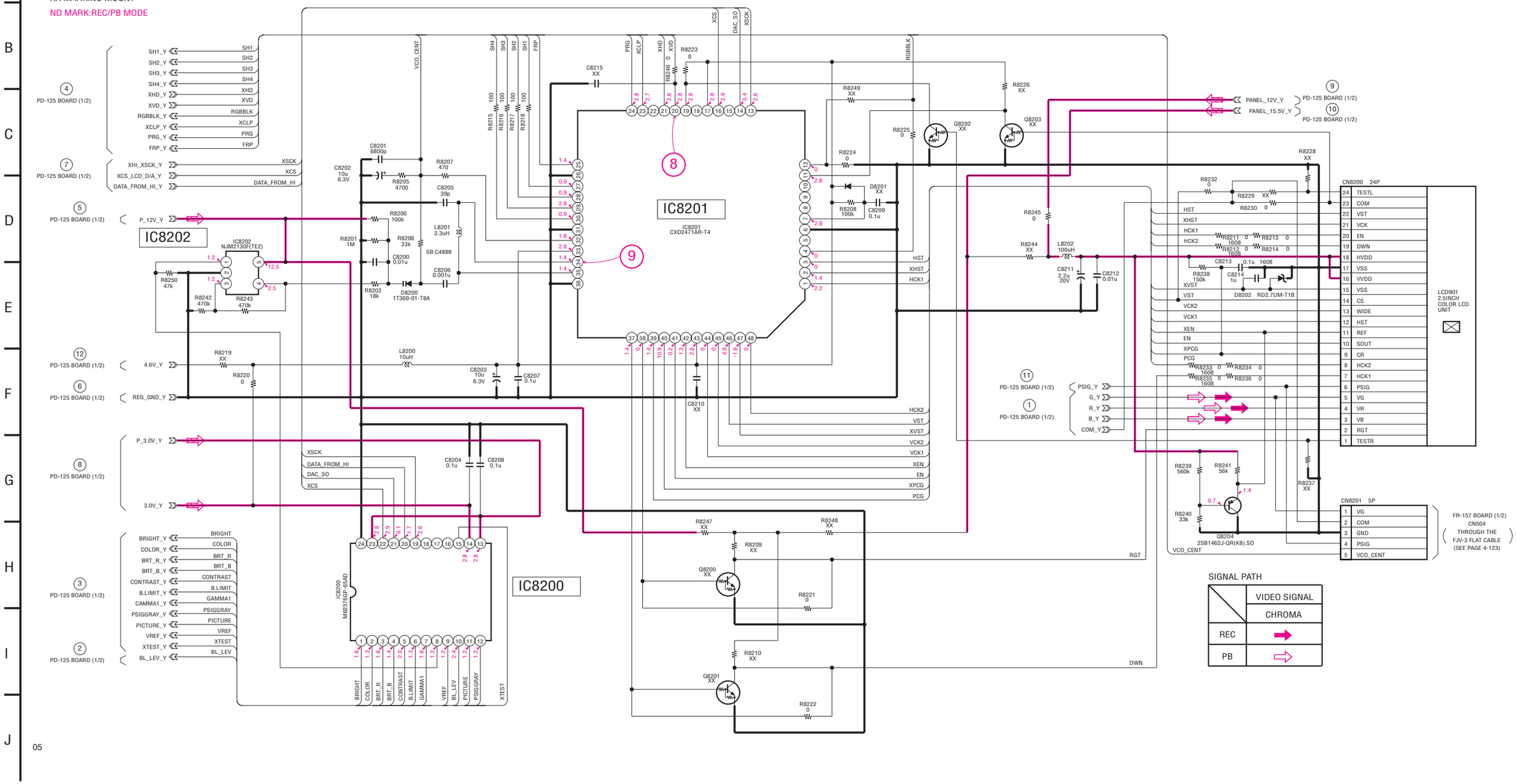
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

PD-125 (TG) SCHEMATIC DIAGRAM • See page 4-137 for PD-125 printed wiring board. • See page 4-152 for waveforms.

PD-125 BOARD(2/2)

TG (PD-2 BLOCK)

-REF.NO.:30,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE



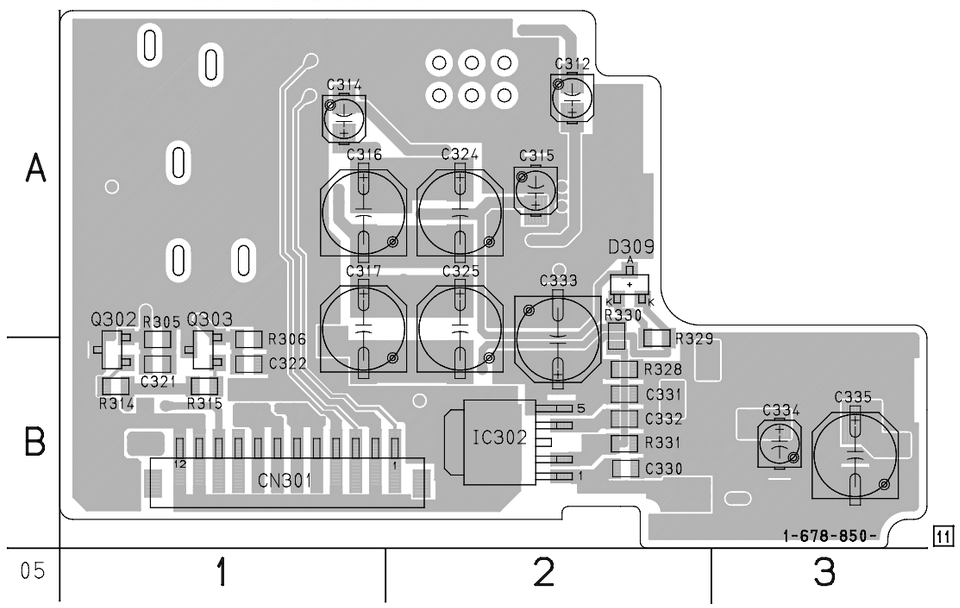
HP-117 (HEAD PHONE) PRINTED WIRING BOARD

– Ref. No.: HP-117 board; 40,000 series –

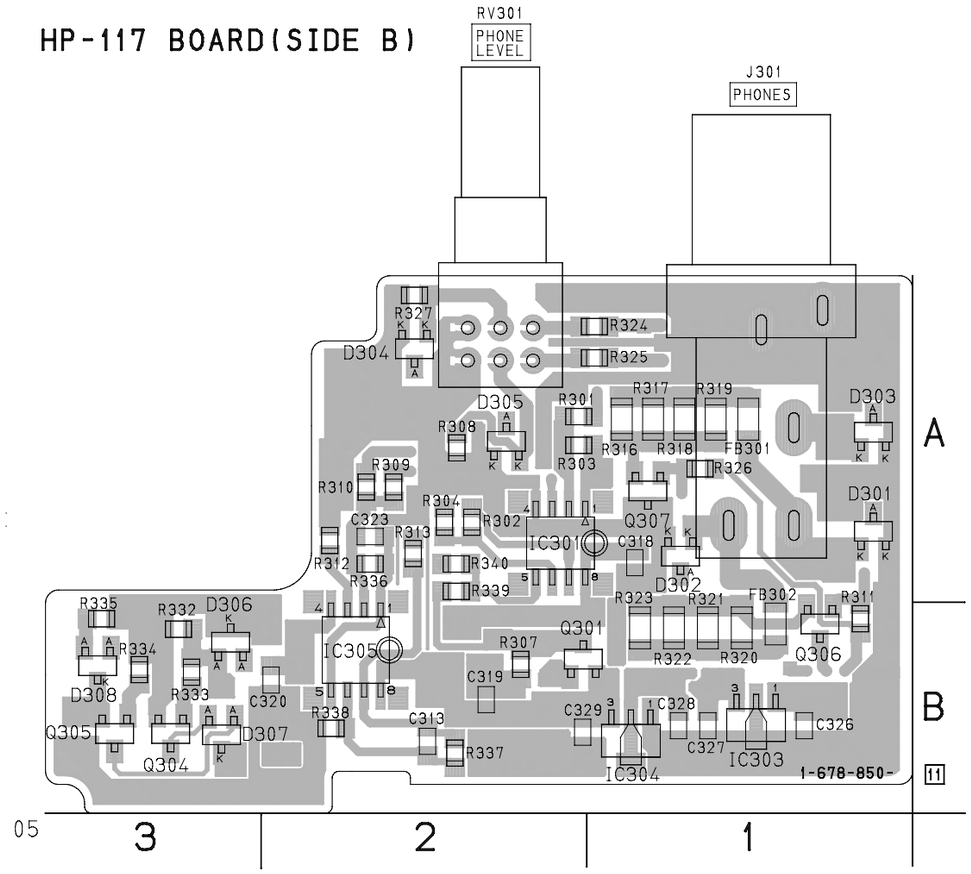
- **For Printed Wiring Board.**
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-156 for printed parts location.
- Chip transistor

C
B E

HP-117 BOARD(SIDE A)



HP-117 BOARD(SIDE B)

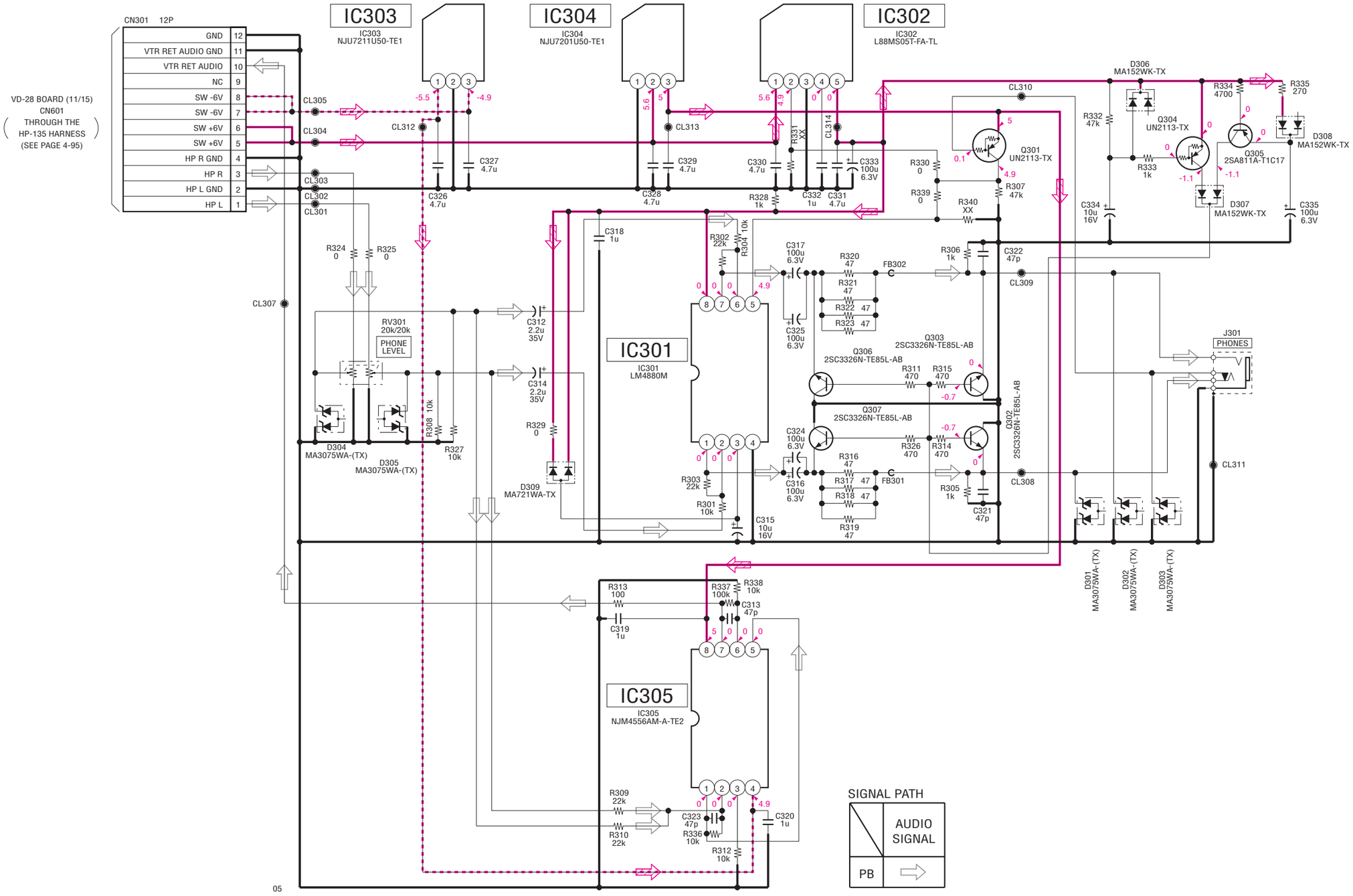


HP-117 (HEAD PHONE) SCHEMATIC DIAGRAM

HP-117 BOARD

HEAD PHONE

-REF.NO.:40,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE



4-3. WAVEFORMS

RP-234 BOARD

❶ 2.8 Vp-p, 13.5 MHz
IC301 ㊶ REC/PB

❷ 2.8 Vp-p, 150 Hz
IC301 ㊺ REC/PB

❸ 510 mVp-p, 300 Hz
IC101 ㉗ PB

❹ 2.0 Vp-p, 150 Hz
IC101 ㉟ REC/PB

❺ 2.5 Vp-p, 300 Hz
IC101 ㊷ REC

❻ 3.7 Vp-p, 150 Hz
IC101 ①, ②, ⑥, ⑦ REC

❼ 2.8 Vp-p, 300 Hz
IC101 ⑪, ⑫ REC

JC-20 BOARD

❶ 260 mVp-p, H
IC1000 ① REC/PB

❷ 250 mVp-p, H
IC1002 ① REC/PB

❸ 760 mVp-p, H
IC1112 ① REC/PB

❹ 240 mVp-p, H
IC1001 ① REC/PB

❺ 600 mVp-p, H
IC1111 ① REC/PB

❻ 1.7 Vp-p, H
Q1117 Ⓑ REC

❼ 1.0 Vp-p, H
Q1118 Ⓑ REC

❽ 1.1 Vp-p, H
Q1119 Ⓑ REC

❾ 1.7 mVp-p, H
IC1108 ㉑ REC

❿ 3.3 Vp-p, 13.5 MHz
IC1108 – IC1110 ⑫ REC/PB

⓫ 3.3 Vp-p, 0.6 µsec
IC1108 ① – ⑧ REC

⓬ 1.0 Vp-p, H
IC1109 ㉑ REC

⓭ 3.3 Vp-p, 0.16 µsec
IC1109 ① – ⑧ REC

⓮ 1.1 Vp-p, H
IC1110 ㉑ REC

⓯ 33 Vp-p, 0.16 µsec
IC1110 ① – ⑧ REC

⓰ 1.1 Vp-p, H
Q2200 Ⓑ PB

⓰ 1.6 Vp-p, H
Q2200 Ⓑ REC

⓱ 3.0 Vp-p, 13.5 MHz
IC2204 ㊸ REC/PB

⓲ 3.0 Vp-p, 13.5 MHz
IC2204 ㊶ REC/PB

⓳ 3.0 Vp-p, 30 Hz
IC2204 ㊺ REC/PB

⓴ 550 mVp-p, H
IC2204 ③, ⑦ PB

⓴ 830 mVp-p, H
IC2204 ③, ⑦ REC

㉑ 2.8 Vp-p, 13.5 MHz
IC2204 ⑬ REC/PB

㉒ 3.0 Vp-p, H
IC2204 ⑱, ⑳ REC/PB

㉓ 2.8 Vp-p, H
IC2204 ㉘ REC/PB

㉔ 280 mVp-p, H
IC3300 ㊻ REC/PB

㉕ 260 mVp-p, H
IC3300 ㊹ REC/PB

㉖ 270 mVp-p, H
IC3300 ㊷ REC/PB

㉗ 300 mVp-p, H
IC3300 ㊽ REC/PB

㉘ 400 mVp-p, H
IC3300 ㊶ REC/PB

㉙ 2.6 Vp-p, 13.5 MHz
IC3302 ⑤, ⑦ REC/PB

㉚ 1.9 Vp-p, 24.576 MHz
IC4400 ㉙ REC/PB

㉛ 2.7 Vp-p, 150 Hz
IC4400 ㊽ REC/PB

㉜ 1.7 Vp-p, 24.576 MHz
IC4400 ⑬ REC/PB

㉝ 1.6 Vp-p, 20 Hz
IC5003 ① REC/PB

㉞ 2.9 Vp-p, 150 Hz
IC5003 ⑰ REC/PB

㉟ 3.0 Vp-p, 900 Hz
IC5003 ⑯ REC/PB

㊱ 3.0 Vp-p, 1.62 kHz (DVCAM), 1.08 kHz (DV)
IC5003 ⑮ REC/PB

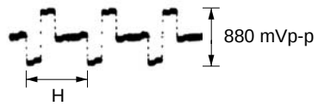
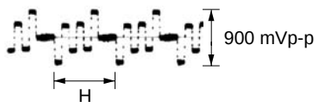
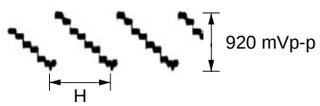
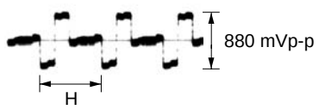
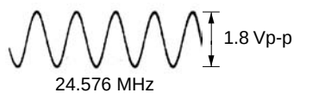
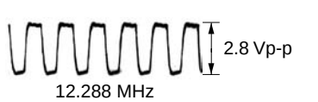
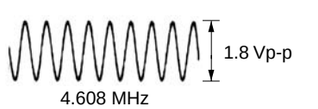
㊲ 3.0 Vp-p, 30 Hz
IC5003 ㉑ REC/PB

㊳ 2.8 Vp-p, 150 Hz
IC5003 ㊵ REC/PB

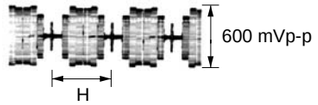
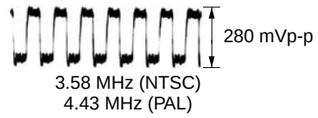
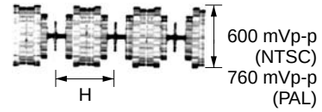
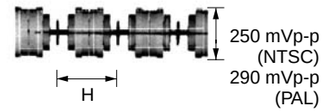
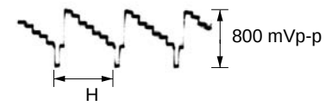
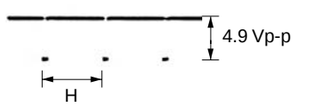
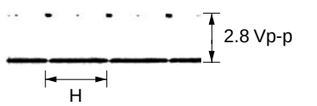
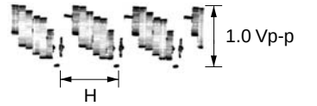
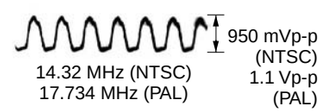
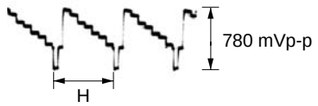
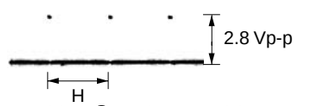
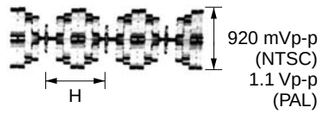
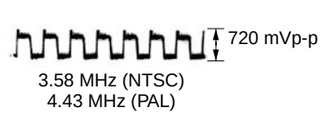
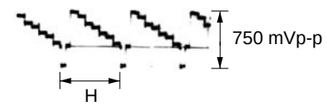
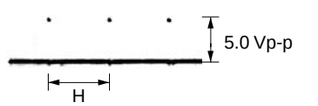
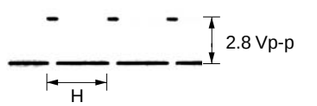
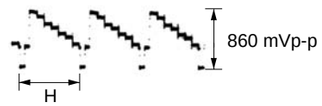
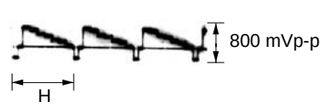
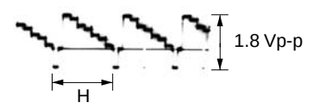
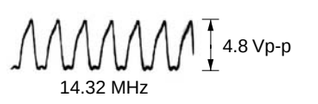
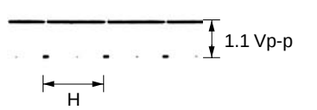
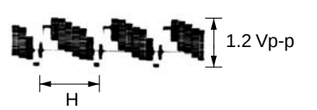
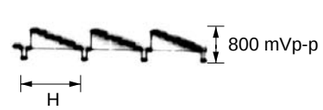
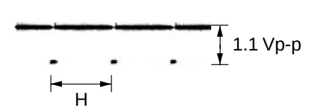
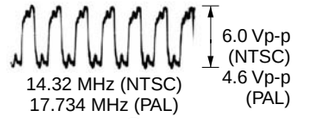
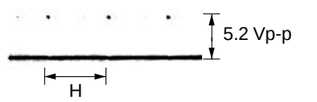
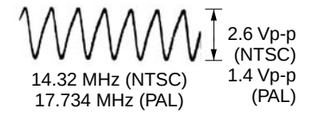
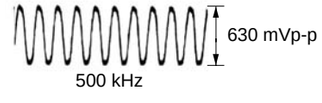
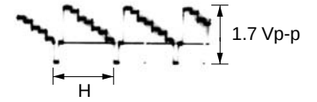
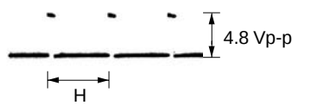
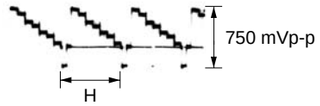
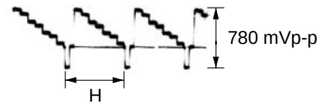
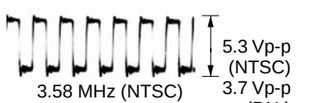
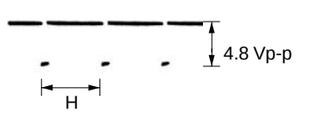
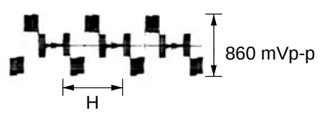
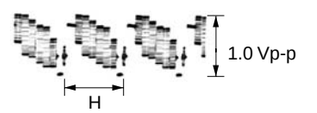
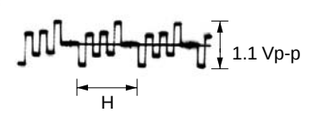
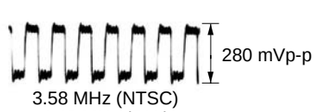
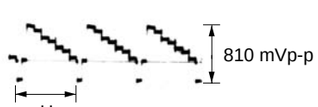
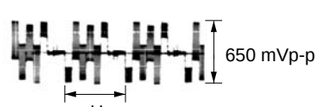
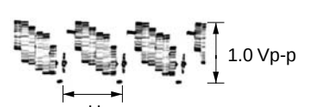
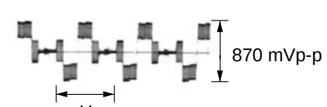
㊴ 1.6 Vp-p, 20 MHz
IC6001 ㊶ REC/PB

㊵ 2.3 Vp-p, 32.768 kHz
IC6001 ㊷ REC/PB

DI-73 BOARD

❶ IC9000 ㊶ REC/PB	
❷  IC9000 ㊴ REC/PB	
❸  IC9000 ㊲ REC/PB	
❹  IC9001 ① REC/PB	
❺  IC9007 ① REC/PB	
❻ IC9010 ① REC/PB	
❼  IC8003 ② REC/PB	
❽  IC8003 ㊾ REC/PB	
❾  IC8009 ⑦ REC/PB	

VD-28 BOARD (1/2)

❶  Q001 ⑤ REC	❿  Q006 Ⓔ REC/PB	⓳  IC104 ⑦ REC	㉘  IC124 ⑤ REC	㊲  IC108 ⑦ REC
❷  IC003 ② REC	⓫  IC032 ⑬ REC/PB	⓴  IC102 ⑦ REC	㉙  IC124 ⑩ REC/PB	㊳ IC113 ⑦ REC
❸  IC003 ② REC	⓬  IC034 ⑩ REC/PB (NTSC) IC034 ⑬ REC/PB (PAL)	㉑  IC119 ㊴ REC	㉚  TP102 REC/PB	㊴  IC116 ① REC
❹  IC008 ④ REC	⓭  IC044 ④ REC/PB	㉒  IC119 ㉛ REC	㉛  Q106 Ⓑ REC	㊵  IC125 ① REC
❺  IC005 ⑥ REC/PB	⓮  Q004 Ⓔ REC/PB	㉓  IC119 ㉕ REC	㉜  IC128 Ⓔ REC	㊶  Q149 Ⓔ PB
❻  IC027 ⑧ REC/PB	⓯  IC014 ⑪ REC/PB	㉔  IC119 ⑪ REC/PB	㉝  IC106, IC112 ⑩ REC/PB	㊶  Q149 Ⓔ REC
❼ IC027 ㉔ REC/PB	⓰  IC014 ⑧ REC/PB	㉕  IC124 ㉕ REC	㉞  IC112 ② REC	㊷ Q126 Ⓑ REC
❽  IC027 ⑰ REC/PB	⓱  IC014 ⑥ REC/PB	㉖  IC124 ⑳ REC	㉟  IC101 ⑦ REC	㊸  IC128 ① REC
❾  Q005 Ⓔ REC/PB	⓲  IC103 ⑦ REC	㉗  IC124 ⑲ REC	㊱  IC133 ③ REC	㊹  Q127 Ⓑ REC

VD-28 BOARD (2/2)

45 — 1.1 Vp-p, H
IC129 ① REC

46 — 1.0 Vp-p, H
Q331 Ⓑ REC

47 — 1.7 Vp-p, H
IC332 ⑱ REC

48 — 740 mVp-p, H
IC332 ⑰ REC

49 — 2.8 Vp-p
3.58 MHz (NTSC)
4.43 MHz (PAL)
IC332 ㉛ REC/PB

50 — 740 mVp-p, H
Q401 Ⓑ REC/PB

51 — 520 mVp-p, H
Q414 ⑥ REC/PB

52 — 680 mVp-p (NTSC)
790 mVp-p (PAL), H
Q402 Ⓑ REC/PB

53 — 420 mVp-p, H
Q419 ⑥ REC/PB

54 — 720 mVp-p, H
Q403 Ⓑ REC/PB

55 — 450 mVp-p, H
Q420 ⑥ REC/PB

56 — 500 mVp-p, H
IC410 ② REC/PB

57 — 2.8 Vp-p, H
IC410 ⑥ REC/PB

58 — 1.6 Vp-p, H
IC422 ⑪, ⑬ REC/PB

59 — 440 mVp-p, H
IC414 ③ REC/PB

60 — 1.4 Vp-p (NTSC)
1.1 Vp-p (PAL), H
IC423 ⑬ REC/PB

61 — 460 mVp-p, H
IC415 ③ REC/PB

62 — 1.5 Vp-p (NTSC)
1.0 Vp-p (PAL), H
IC424 ⑬ REC/PB

63 — 2.2 Vp-p, H
Q405 ⑤ REC/PB

64 — 1.4 Vp-p, H
Q404 ⑤ REC/PB

65 — 730 mVp-p, H
Q410 ③ REC/PB

66 — 540 mVp-p, H
IC413 ㉔ REC/PB

67 — 800 mVp-p, H
IC413 ⑱ REC/PB

68 — 400 mVp-p, H
IC413 ① REC/PB

69 — 1.0 Vp-p, H
IC413 ③ REC/PB

70 — 1.0 Vp-p, H
IC420 ① REC/PB

71 — 1.9 Vp-p, H
IC425 ⑬ REC/PB

72 — 1.2 Vp-p, H
IC426 ⑬ REC/PB

73 — 780 mVp-p, H
Q418 ② REC/PB

74 — 600 mVp-p, H
Q421 Ⓑ REC/PB

75 — 1.9 Vp-p, H
IC418 ⑪, ⑬ REC/PB

76 — 1.2 Vp-p
20 MHz
IC709 ㊶ REC/PB

77 — 2.5 Vp-p
32.768 kHz
IC709 ㉜ REC/PB

CM-59 BOARD

1 — 3.0 Vp-p
900 Hz
IC500 ㊿ REC/PB

2 — 2.9 Vp-p
150 Hz
IC500 ④ REC/PB

3 — 2.1 Vp-p
900 Hz
IC501 ②, ⑱, ㉓ REC/PB

4 — 3.0 Vp-p
1.62 kHz (DVCAM)
1.08 kHz (DV)
IC400 ㉔ REC/PB

5 — 420 mVp-p (DVCAM)
330 mVp-p (DV)
18 Hz (DVCAM)
12 Hz (DV)
IC400 ⑤, ⑦, ⑨ REC/PB

FR-157 BOARD

1 — 3.1 Vp-p
13.5 MHz
IC404 ③ REC/PB

PD-125 BOARD

1 — 270 mVp-p, H
IC8001 ⑧ REC/PB

2 — 250 mVp-p, H
IC8001 ⑨ REC/PB

3 — 260 mVp-p, H
IC8001 ⑩ REC/PB

4 — 5.6 Vp-p, 2H
IC8001 ⑳ REC/PB

5 — 5.7 Vp-p, 2H
IC8001 ㉒ REC/PB

6 — 6.9 Vp-p, 2H
IC8001 ㉔ REC/PB

7 — 4.8 Vp-p, 2H
IC8001 ㊲ REC/PB

8 — 2.7 Vp-p, V
IC8201 ⑳ REC/PB

9 — 2.5 Vp-p
18 MHz
IC8201 ㉞ REC/PB

4-4. PARTS LOCATION

RP-234 BOARD (SIDE A)

CN101	B-5
CN201	A-5
CN202	B-2
CN203	B-4
IC101	B-5
IC102	B-4

RP-234 BOARD (SIDE B)

IC201	A-4
IC301	B-2
Q201	B-3
Q202	B-4
Q203	B-5

JC-20 BOARD (SIDE A)

CN1101	B-11
CN4401	D-6
CN4402	D-5
CN5005	D-10
CN6001	A-8
CN7001	B-4
CN7002	A-3
D4400	B-6
IC1000	D-12
IC1001	C-12
IC1002	C-12
IC1100	D-5
IC1101	D-10
IC1105	A-9
IC1106	B-10
IC1107	C-10
IC1111	A-11
IC1112	B-12
IC1113	B-2
IC2208	C-9
IC2210	D-9
IC2211	D-9
IC2212	D-9
IC2213	D-9
IC3300	B-8
IC3301	D-9
IC3302	D-8
IC3303	B-6
IC4400	B-5
IC4401	D-4
IC4402	D-2
IC5003	D-6
IC5006	D-8
Q1100	D-11
Q1101	B-11
Q1103	D-11
Q1104	B-11
Q1109	C-11
Q1111	D-11
Q1112	C-11
Q1114	C-11
Q1116	D-10
Q1129	A-11
Q1130	A-11
Q1131	B-3
Q1132	B-3
Q2200	C-8
Q2201	C-7
Q3300	B-9
Q3301	B-9
Q3302	B-9
Q6011	C-5
Q6012	C-5

JC-20 BOARD (SIDE B)

CN1100	B-1
CN4400	D-1
CN6002	A-7
CN8001	D-8
D2201	C-7
D5001	C-4
IC1102	C-11
IC1103	C-11
IC1104	C-12
IC1108	A-9
IC1109	B-9
IC1110	D-9
IC2200	C-8
IC2202	C-5
IC2203	D-5
IC2204	B-7
IC2209	C-9
IC2214	C-9
IC2215	B-9
IC5001	C-4
IC5002	D-5
IC5007	D-4
IC5008	D-6
IC6001	B-6
IC6003	A-4
IC6004	A-6
Q1117	A-11
Q1118	B-12
Q1119	C-12
Q1120	A-11
Q1121	B-11
Q1122	B-11
Q1123	A-10
Q1124	B-11
Q1125	C-11
Q1126	A-10
Q1127	B-10
Q1128	C-11
Q2202	A-9
Q2203	D-6
Q5001	C-4
Q5002	C-4
Q6003	A-4
Q6004	A-4
Q6005	A-4

DI-73 BOARD (SIDE A)

CN9500	A-5
IC8000	D-7
IC8001	D-7
IC8002	D-7
IC8003	D-9
IC8004	B-8
IC8005	B-8
IC8006	B-9
IC8007	A-9
IC8008	B-8
IC8009	C-11
IC8010	B-7
IC8011	B-7
IC8201	B-10
IC9000	C-2
IC9001	B-1
IC9005	D-4
IC9007	B-2
IC9008	C-4
IC9009	D-4
IC9010	B-3
IC9017	D-1
IC9018	D-1
IC9019	D-3
IC9504	C-5
IC9507	D-5
IC9508	D-5
IC9514	D-6
IC9515	D-6
IC9517	C-5
IC9518	D-5
IC9519	D-5
Q8000	B-9
Q8001	C-7
Q8201	C-9
Q8202	C-8
Q9000	B-1
Q9001	B-1
Q9002	B-2
Q9003	B-2
Q9004	B-3
Q9005	B-3

DI-73 BOARD (SIDE B)

D7301	D-9
D7302	D-7
IC7000	A-9
IC7001	A-7
IC7002	A-9
IC7003	A-7
IC7004	B-9
IC7005	B-9
IC7006	B-7
IC7007	B-8
IC7008	C-9
IC7009	C-8
IC7010	C-9
IC7011	C-8
IC7013	C-9
IC7014	D-8
IC7016	D-9
IC7018	D-8
IC7020	C-6
IC7021	D-6
IC9004	D-1
IC9006	D-1
IC9011	A-4
IC9012	D-4
IC9013	D-2
IC9014	D-4
IC9015	B-4
IC9016	C-4
IC9500	D-3
IC9501	D-3
IC9502	D-4
IC9503	D-4
IC9505	D-4
IC9506	D-5
IC9509	D-5
IC9510	D-6
IC9511	D-6
IC9512	C-5
IC9513	C-6
IC9516	C-6
Q7000	B-8
Q7001	B-9
Q7002	B-9
Q7003	B-7
Q7004	B-6
Q7005	B-5
Q7007	D-7
Q7008	D-7
Q9502	C-5

VD-28 BOARD
(SIDE A)

CN101	A-6
CN332	G-5
CN401	A-8
CN601	C-4
CN602	B-4
CN606	C-5
CN702	D-8
CN703	E-8
D105	E-7
D106	F-6
D401	A-8
D402	G-6
D403	G-6
D404	F-6
D601	A-4
D602	A-4
D603	A-4
D604	B-4
D605	B-4
D606	A-4
D712	D-8
D713	D-8
D716	G-10
D717	G-10
D901	E-3
D902	E-3
D903	F-3
D904	D-3
D905	C-2
D906	F-3
D907	C-1
D910	B-1
D911	B-1
D912	C-1
D913	C-1
D915	F-2
D916	F-2
D917	G-3
D918	G-3
IC001	F-8
IC002	G-8
IC003	B-9
IC004	B-9
IC005	A-10
IC007	G-8
IC008	B-9
IC009	G-7
IC012	B-9
IC013	G-7
IC014	B-10
IC016	B-9
IC017	G-7
IC018	B-10
IC019	B-10
IC020	B-10
IC021	B-9
IC022	B-10
IC023	C-10
IC024	D-9
IC025	C-10
IC026	C-10
IC027	C-9
IC028	C-10
IC029	C-10
IC030	C-10
IC031	D-9
IC032	D-10
IC033	C-10
IC034	D-10
IC035	D-9
IC037	D-10
IC039	D-10
IC042	D-10
IC043	D-9
IC044	D-10
IC046	C-8
IC047	C-8
IC048	C-8
IC049	B-8
IC050	A-10
IC051	B-10
IC052	A-10
IC054	B-10
IC056	A-10
IC106	D-6
IC112	D-6
IC120	F-6
IC121	F-5
IC124	E-6
IC132	D-7
IC134	B-6
IC332	E-7
IC335	E-8
IC336	E-8
IC412	B-8
IC414	G-6
IC415	H-6
IC421	B-8
IC426	A-7
IC606	A-4
IC607	A-4
IC704	G-9
IC706	E-8
IC707	E-9
IC708	D-8
IC709	F-9
IC712	G-10
IC713	G-9
IC900	E-1
IC902	G-1
IC908	B-2
IC909	C-1
Q111	A-7
Q112	A-7
Q116	B-7
Q120	B-7
Q148	C-7
Q150	C-7
Q151	C-7
Q152	C-7
Q156	C-6
Q157	C-6
Q160	B-6
Q335	E-7
Q337	E-7
Q338	E-7
Q401	G-4
Q413	F-6
Q414	G-6
Q415	G-6
Q416	G-6
Q419	G-6
Q420	H-6
Q422	G-6
Q423	G-6
Q428	A-8
Q429	B-8
Q430	B-7
Q432	B-7
Q437	H-5
Q438	G-5
Q605	C-4
Q607	B-4
Q708	G-10
Q709	G-9
Q906	B-1
Q907	E-1
Q908	E-1
Q909	D-2
Q910	F-2
Q911	D-2
Q912	F-2
Q913	C-1
Q914	D-2
Q915	E-2
Q916	F-2
Q917	D-2
Q918	B-1
Q919	B-2
Q920	D-2
Q921	F-3
Q922	D-4
Q924	C-2
Q925	B-2
Q926	F-1
Q927	F-1
Q928	D-1
Q929	G-2
Q930	B-1
Q931	C-2
Q932	B-1
Q933	G-2
Q935	G-1
Q936	G-1

VD-28 BOARD (SIDE B)

CN102	A-7
CN331	G-9
CN333	H-9
CN603	A-4
CN604	A-3
CN605	C-4
CN607	A-10
CN701	F-10
CN704	C-10
CN705	G-10
CN706	H-1
CN900	A-1
CN901	B-1
CN902	A-1
CN903	A-2
CN904	C-3
CN905	C-3
D003	F-4
D005	C-9
D101	A-6
D102	A-6
D103	A-6
D107	E-7
D108	D-6
D110	A-6
D331	G-8
D332	G-9
D333	G-8
D334	G-8
D335	G-9
D336	G-9
D337	G-9
D338	G-8
D339	G-9
D701	H-8
D702	H-8
D709	G-9
D710	E-9
D714	H-9
D908	B-1
D909	B-1
D914	C-1
D919	D-1
D920	D-1
D921	E-3
D922	E-3
D923	F-2
D924	G-3
D925	G-3
D926	D-1
D927	E-3
D928	G-3
D929	F-2
D930	E-3
D931	F-3
D932	F-2
IC040	D-9
IC041	F-4
IC055	D-8
IC057	B-9
IC058	B-9
IC059	B-9
IC060	C-9
IC061	F-8
IC062	B-9
IC063	B-9
IC101	A-5
IC102	A-6
IC103	A-6
IC104	B-7
IC105	B-5
IC107	D-5
IC108	B-5
IC109	B-6
IC110	C-5
IC113	B-5
IC115	D-4
IC116	E-4
IC117	E-6
IC118	E-5
IC119	C-7
IC122	F-6
IC125	E-4
IC126	F-4
IC127	F-6
IC128	F-6
IC129	F-5
IC130	F-6
IC131	C-6
IC133	B-6
IC333	E-7
IC334	E-7
IC402	G-5
IC403	H-5
IC404	C-8
IC405	C-8
IC410	G-6
IC411	B-9
IC413	B-8
IC416	F-6
IC417	B-7
IC418	A-7
IC419	C-7
IC420	A-9
IC422	A-7
IC423	B-8
IC424	C-8
IC425	A-8
IC427	G-5
IC428	G-6
IC601	C-4
IC602	C-4
IC603	B-4
IC604	B-4
IC605	A-4
IC701	D-8
IC702	D-9
IC705	G-9
IC710	D-8
IC901	F-3
Q001	A-9
Q002	B-9
Q003	A-8
Q004	D-9
Q005	D-9
Q006	D-9
Q101	D-5
Q102	D-5
Q103	D-5
Q104	D-5
Q105	A-7
Q106	D-5
Q109	D-5
Q110	B-6
Q115	D-5
Q121	B-7
Q124	D-6
Q125	D-5
Q126	E-6
Q127	E-5
Q128	E-4
Q129	E-6
Q130	E-5
Q131	E-6
Q132	E-6
Q133	E-4
Q134	F-6
Q135	F-5
Q136	E-5
Q137	F-5
Q138	F-5
Q139	E-6
Q141	E-6
Q142	E-5
Q143	E-6
Q144	F-5
Q145	F-5
Q149	F-4
Q153	C-6
Q158	D-5
Q159	B-6
Q331	D-7
Q332	D-8
Q333	E-7
Q334	E-7
Q402	G-4
Q403	H-4
Q404	C-8
Q405	C-7
Q406	C-8
Q407	C-9
Q408	C-8
Q409	F-6
Q410	C-8
Q411	G-6
Q412	G-6
Q417	C-8
Q418	C-7
Q421	B-7
Q424	B-7
Q425	G-7
Q426	G-7
Q427	G-7
Q431	A-8
Q434	G-5
Q435	G-5
Q436	H-4
Q439	B-7
Q601	C-4
Q602	C-4
Q603	C-4
Q604	C-4
Q606	B-4
Q701	E-8
Q702	E-9
Q705	D-8
Q706	D-8
Q707	D-8
Q900	C-1
Q901	C-1
Q903	B-2
Q905	B-2
Q923	B-1
Q934	C-1
Q937	C-1
Q938	E-1
Q939	G-1
Q940	B-1
Q941	B-1
Q942	C-2
Q943	C-2

CM-59 BOARD
(SIDE A)

CN001	A-5
CN200	A-2
CN201	A-1
CN300	A-4
CN400	A-2
CN500	A-3
CN501	A-4
IC100	B-4
IC102	A-6
IC202	B-2
IC300	A-4
IC501	A-3
Q201	A-2

CM-59 BOARD
(SIDE B)

CN100	A-6
D101	B-5
D102	B-4
D103	B-5
D104	B-5
IC101	A-5
IC200	B-1
IC500	B-3
Q100	B-5
Q101	B-4
Q102	B-5
Q103	B-5
Q104	B-4
Q105	B-4
Q200	B-2
Q301	A-3
Q302	A-3

MD-76 BOARD (SIDE A)

CN001	A-1
CN002	A-2
CN003	G-6
IC001	D-5
IC002	D-5
IC003	C-5

MD-76 BOARD (SIDE B)

D001	D-11
IC004	F-12
IC005	F-10
Q001	C-8
Q002	C-14

FR-157 BOARD (SIDE A)

CN503	A-9
D402	C-5
D403	B-5
D503	A-9
D504	B-9
D505	B-9
D506	B-9
D507	B-8
D508	B-8
D509	B-9
D510	C-9
D511	C-8
D512	C-8
D513	C-9
D514	C-9
D518	C-8
D519	C-8
D520	C-9
D521	C-9
D522	A-1
D523	C-8
D524	C-8
D525	C-9
D526	C-9
D527	C-7
D528	C-9
D530	A-8
D531	B-7
D532	A-8
D533	C-7
D534	B-4
D536	C-4
D538	C-1
D539	C-1
D540	C-1
D541	C-1
D552	C-1
D553	C-1
D554	C-1
D555	C-1
IC402	C-6
IC404	C-6
IC502	B-8
Q502	B-8
Q503	B-8
Q504	B-9
Q505	C-9
Q506	C-8
Q507	C-8
Q508	C-9
Q509	C-9
Q513	A-9
Q514	A-8

FR-157 BOARD (SIDE B)

CN501	A-9
CN502	C-3
CN504	C-2
CN505	A-1
D401	C-7
D515	A-8
D516	A-9
D517	A-9
D535	B-6
D537	C-6
D542	A-8
D543	A-8
D544	A-8
D545	B-8
D546	A-8
D547	A-8
D548	B-8
D549	B-8
D550	A-1
D551	C-8
IC401	C-5
IC403	C-6
IC501	B-9
IC504	D-9
IC505	D-9
Q501	B-9
Q510	A-8
Q511	A-9
Q512	A-9
Q515	D-9

JK-169 BOARD (SIDE A)

CN101	C-1
CN103	C-4
CN104	C-6
CN105	C-8
IC101	B-5
IC102	C-5
IC103	C-5
IC104	A-5
IC105	C-5

JK-169 BOARD (SIDE B)

CN102	C-9
CN106	B-5
CN107	B-6
CN108	B-7
CN109	B-8
D101	B-1
D103	C-1
D104	B-1
D105	B-2
D106	B-2
D107	B-2
D108	B-3
D109	B-3
D110	B-4
D111	C-3
D112	A-4
D113	C-3
D114	A-3
D115	C-4
D116	B-4
D117	C-3
D118	C-4
D119	A-4
D120	C-2
D121	A-4
D122	C-9
D123	C-9
D124	A-5
D125	A-6
D126	A-6
D127	A-7
D134	A-7
D135	A-8
D136	A-7
D137	A-8
D144	A-3
D145	C-1
D146	C-1
IC107	A-4
IC108	C-8
IC109	C-9
IC110	A-5
IC111	A-6
IC112	C-8
IC113	A-7
IC114	A-8
IC115	C-3
Q101	A-5
Q102	A-6
Q103	A-7
Q104	A-8
Q105	A-5
Q106	A-6
Q107	A-7
Q108	A-8
Q109	C-3
Q110	C-3

PD-125 BOARD

CN8001	A-1
CN8002	C-1
CN8200	C-2
CN8201	A-3
D8100	D-3
D8200	C-1
D8202	C-2
IC8001	A-2
IC8200	C-3
IC8201	B-2
IC8202	C-1
Q8000	B-1
Q8001	B-1
Q8003	B-2
Q8007	B-3
Q8009	B-3
Q8010	B-3
Q8011	A-3
Q8100	D-4
Q8101	A-3
Q8102	A-3
Q8204	D-3

HP-117 BOARD
(SIDE A)

CN301	B-1
D309	A-2
IC302	B-2
Q302	A-1
Q303	A-1

HP-117 BOARD
(SIDE B)

D301	A-1
D302	A-1
D303	A-1
D304	A-2
D305	A-2
D306	B-3
D307	B-3
D308	B-3
IC301	A-2
IC303	B-1
IC304	B-1
IC305	B-2
Q301	B-2
Q304	B-3
Q305	B-3
Q306	B-1
Q307	A-1

SECTION 5
ADJUSTMENTS

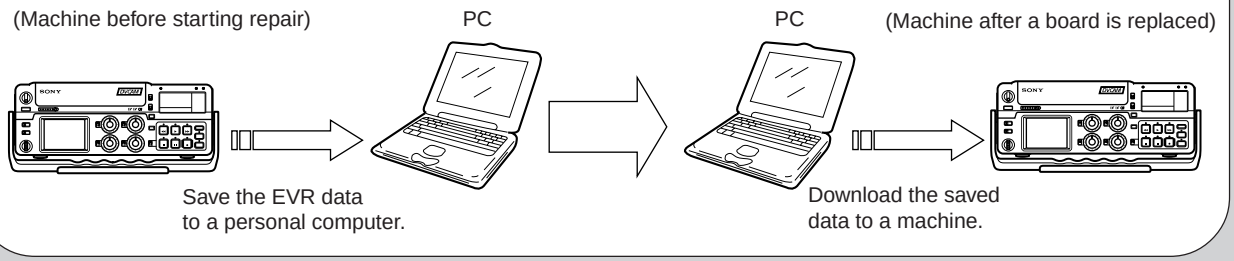
1. Before starting adjustment

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.

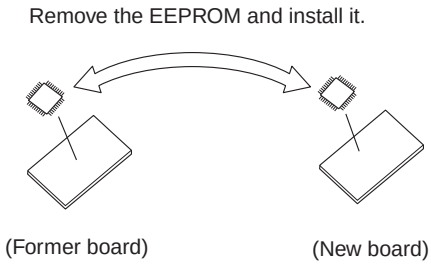
Procedure 1

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.



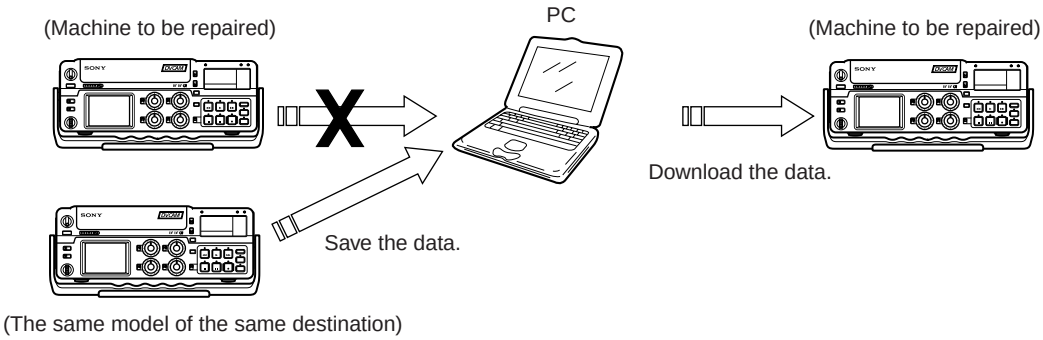
Procedure 2

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



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: Mechanism deck	Mechanism deck (Drum assembly)	Mechanism deck M903 (Capstan motor)	LCD block LCD901 (LCD panel)	LCD block ND901 (Fluorescent tube)	Mounted part replacement: PR-234 board IC101 (TRW)	RP-234 board IC201 (TRF)	JC-20 board IC1108-1110 (A/D CONV.)	JC-20 board IC2204 (CLOCK GEN.)	JC-20 board IC3300 (VFD)	DI-73 board IC9000 (D/A CONV.)	VD-28 board IC116, 122 (VC AMP)	VD-28 board IC119 (Y/C SEP.)	VD-28 board IC124 (C DECODE)	VD-28 board IC402, 403 (VC DELAY)	VD-28 board IC404 (VC AMP)	VD-28 board IC405 (VC AMP)	VD-28 board IC410 (Y BLANKING, SETUP ADD)	VD-28 board IC411 (VC AMP)	VD-28 board IC413 (C ENCODE)	VD-28 board IC427, 428 (VC AMP)	PD-125 board IC8001 (RGB DRIVER)	PD-125 board IC8201 (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_0 adj.	●	●				●	●																
Video	VFD SPCK adj.										●													
	A/D converter reference voltage adj.								●															
	Y/CR/CB clamp reference voltageadj.								●															
	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 signal level adj.																							
	Composite E-E CR/CB signal delay adj.																							
	H phase adj.																							
	E-E SC phase adj.																							
	Playback SC phase adj.																							
LCD	VCO adj.																						●	●
	Black limit adj.																						●	
	Bright adj.																						●	
	Gamma 1 adj.																						●	
	Contrast adj.																						●	
	Center voltage adj.				●																		●	
	White balance adj.				●	●																	●	
Audio	Audio PAL data input (*2)																							
Mechanism	Tape path adj.	●	●	●																				

• Adjusting items when replacing a board or EEPROM

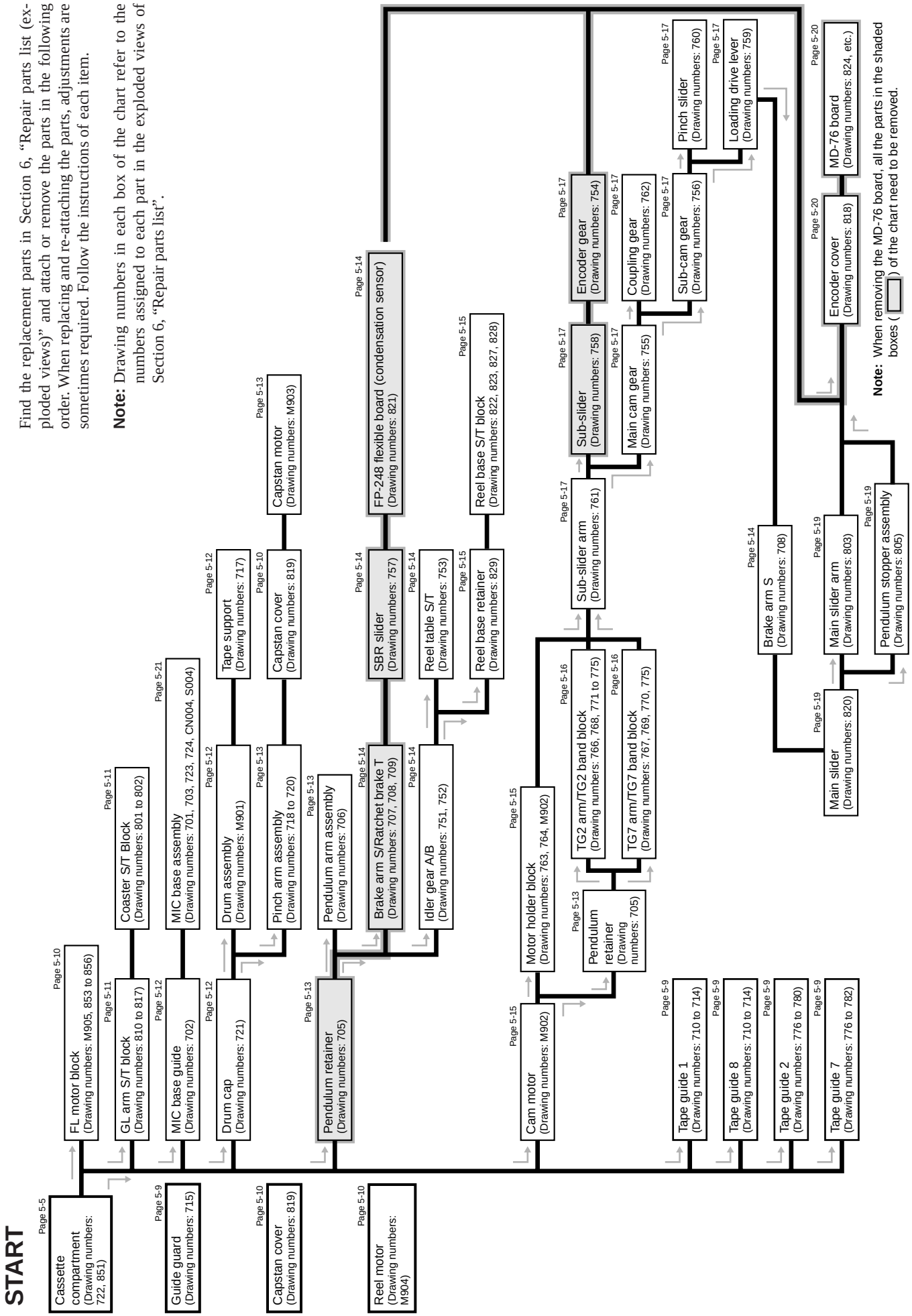
When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced part: Board replcement: CM-59 board (COMPLETE)	RP-234 board (COMPLETE)	JC-20 board (COMPLETE)	DI-73 board (COMPLETE)	VD-28 board (COMPLETE)	PD-125 board (COMPLETE)	JC-20 board IC5006 (EEP ORM)	VD-28 board IC706 (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_0 adj.		●	●				●	
Video	VFD SPCK adj.			●				●	
	A/D converter reference voltage adj.			●				●	
	Y/CR/CB clamp reference voltageadj.			●				●	
	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 signal level adj.					●			●
	Composite E-E CR/CB signal delay adj.					●			●
	H phase adj.					●			●
	E-E SC phase adj.					●			●
	Playback SC phase adj.					●			●
LCD	VCO adj.						●		●
	Black limit adj.						●		●
	Bright adj.						●		●
	Gamma 1 adj.						●		●
	Contrast adj.						●		●
	Center voltage adj.						●		●
	White balance adj.						●		●
Audio	Audio PAL data inpit (*2)			●				●	
Mechanism	Tape path adj.								

Note:
*1: DSR-50 only
*2: DSR-50P only

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".



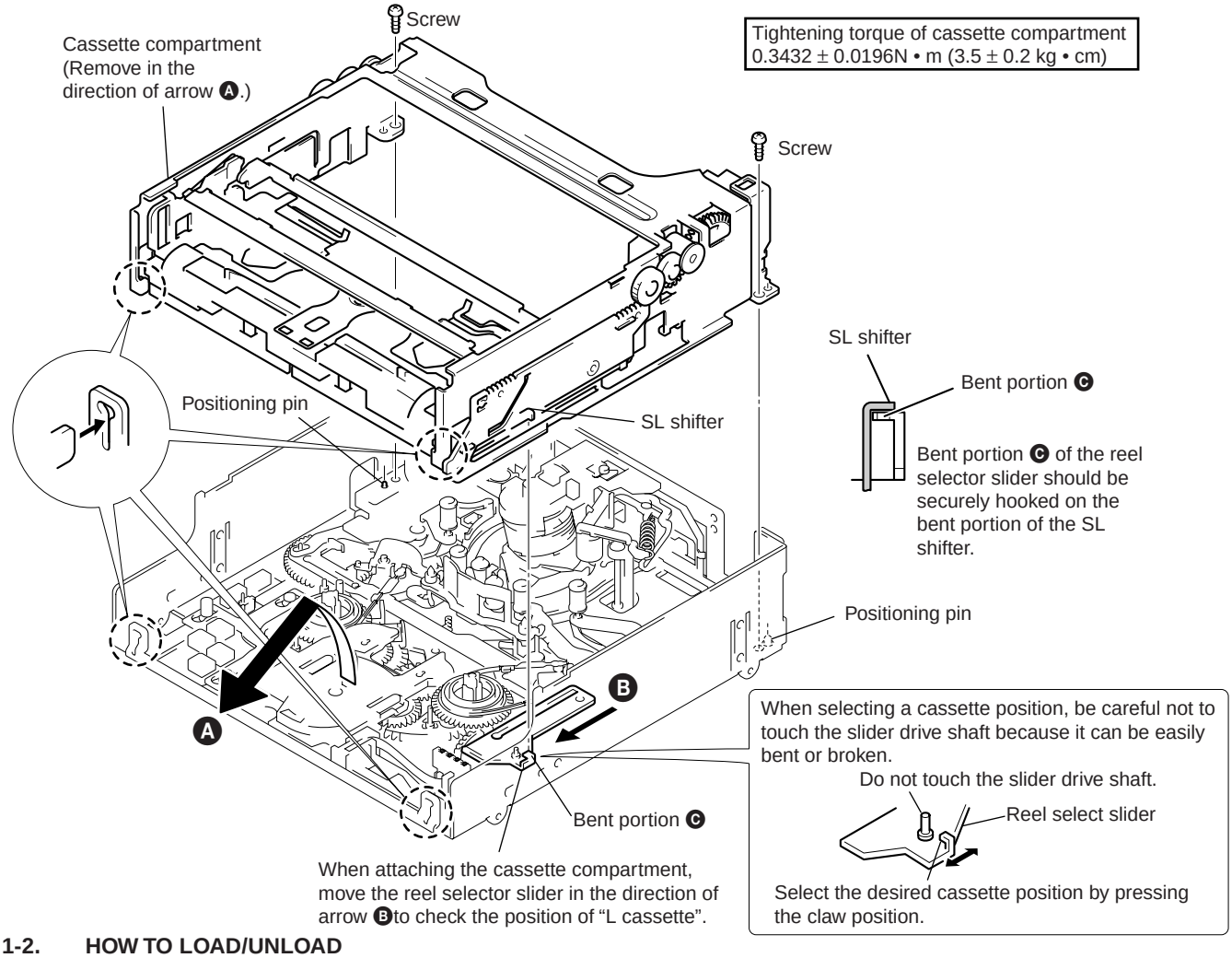
5-1. MECHANICAL SECTION ADJUSTMENTS

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.

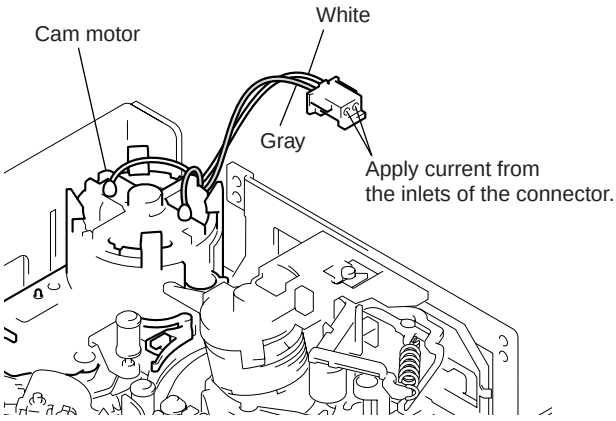
Before attaching or removing the cassette compartment, check the position of "L cassette".



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.



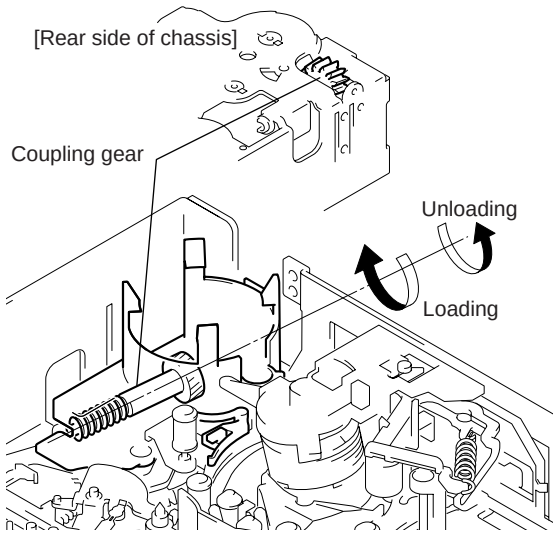
Loading : Apply positive polarity (+) of power supply to the gray wire and negative polarity (–) of power supply to the white wire.

Unloading : Apply negative polarity (–) of power supply to the gray wire and positive polarity (+) of power supply to the white wire.

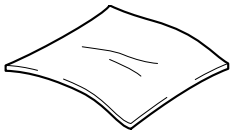
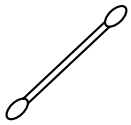
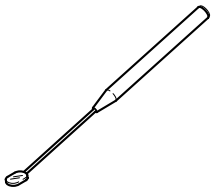
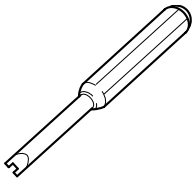
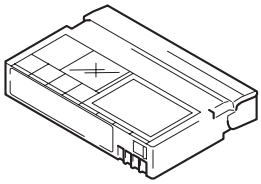
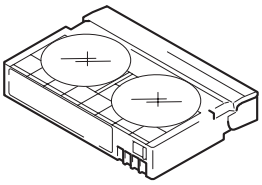
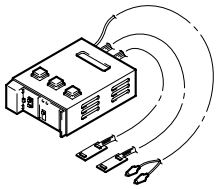
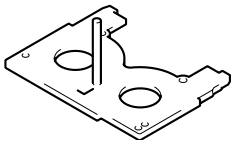
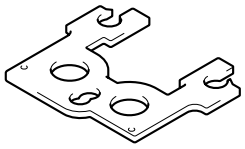
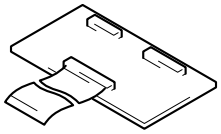
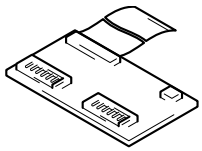
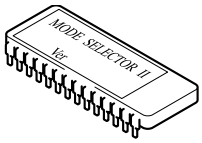
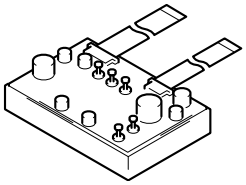
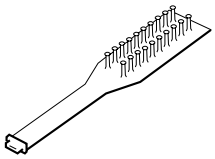
[Manual: No cam motor]

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

J-1. Cleaning fluid (9-919-573-01)	J-2. Wiping cloth (7-741-900-53) 	J-3. Super fine applicator (Made by NIPPON APPLICATOR (P752D)) (J-2501-023-A) 	J-4. Mirror (Small oval type) (J-6080-840-A) 
J-5. Screwdriver for tape path (J-6082-026-A) 	J-6. Tracking tape (XH2-1A1) (8-967-999-03) 	J-7. Mini DV torque cassette (J-6082-360-A) 	J-8. Adjusting remote commander (RM-95) (remodeled partly) Note 1 (J-6082-053-B)
J-9. Mode selector II (J-6082-282-B) 	J-10. Floil Grease (SG-941) (7-622-001-39)	J-11. Cassette reference plate (J-6082-330-A) 	J-12. Reel reference plate (J-6082-331-A)
J-13. TG 2/7 preset plate (J-6082-459-A) 	J-14. Relay board for tension regulator adjustment (J-6082-461-A) 	J-15. Mode selector conversion board (J-6082-460-A) 	J-16. ROM for Mode Selector (Cope with R mechanism: Note 2) (J-6082-314-E) 
J-17. Board for tension regulator adjustment (J-6082-359-A) 	J-18. CPC-8 jig (J-6082-388-A) 		

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.

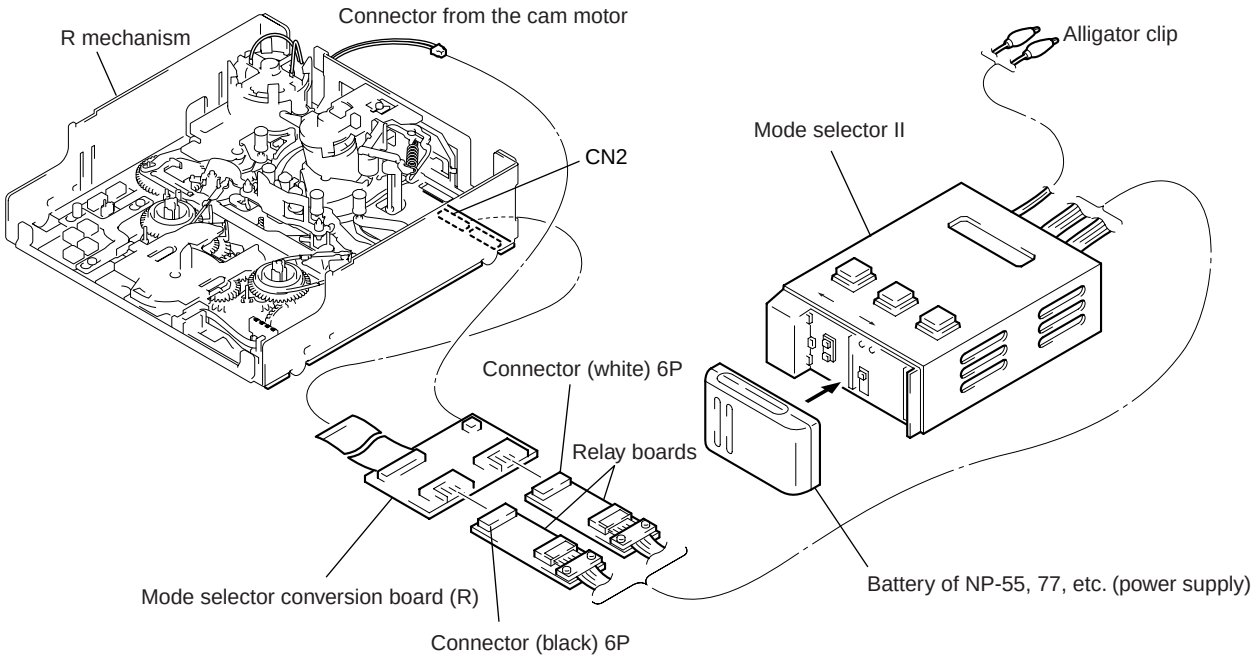
3. Auto test
A mode that checks if the mechanism operates normally according to the condition shift table recorded in the unit for each mechanism deck. All the conditions of the decks are checked through a series of operations.
An error message is displayed and operations are stopped if incorrect shifts 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).

MD name / Code					R mechanism
A	B	C	D		
0	1	1	1	1	ULE
0	0	1	1	2	DEW
1	0	1	1	3	LE
1	0	0	1	4	REW
1	0	1	0	5	FF
1	1	1	0	6	STOP
1	1	0	1	7	FWD / RVS

4-3. MODE SELECTOR II CONNECTION



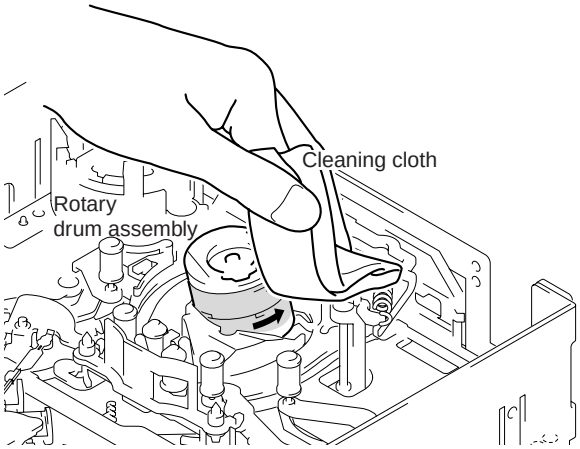
5-1-2. PERIODIC CHECK

• 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.

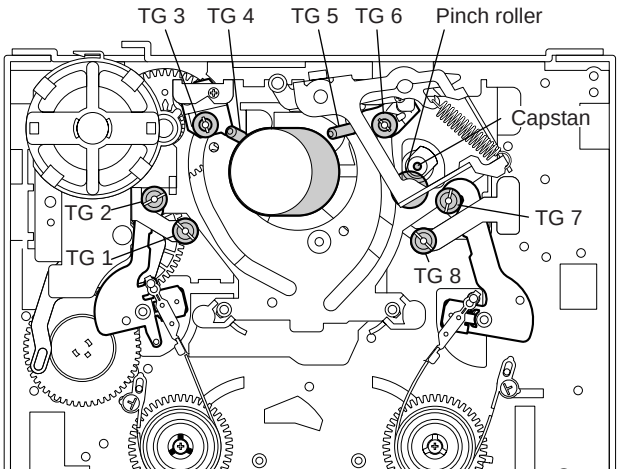


2-2. CLEANING OF TAPE PATH SYSTEM

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	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 ◎: Appling 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

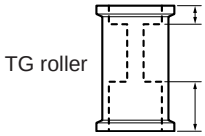
For details on disassembling the cabinets, boards and other parts, refer to “Section 2, Disassembly”. For details on replacing parts (disassembly, assembly) of the mechanism deck, refer to “Information” on page 5-4.

3-1. TAPE GUIDE 1/8 AND GUIDE GUARD

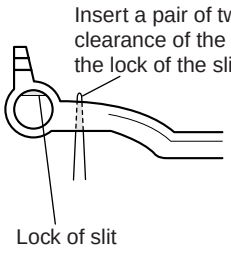
Disassembly/Assembly

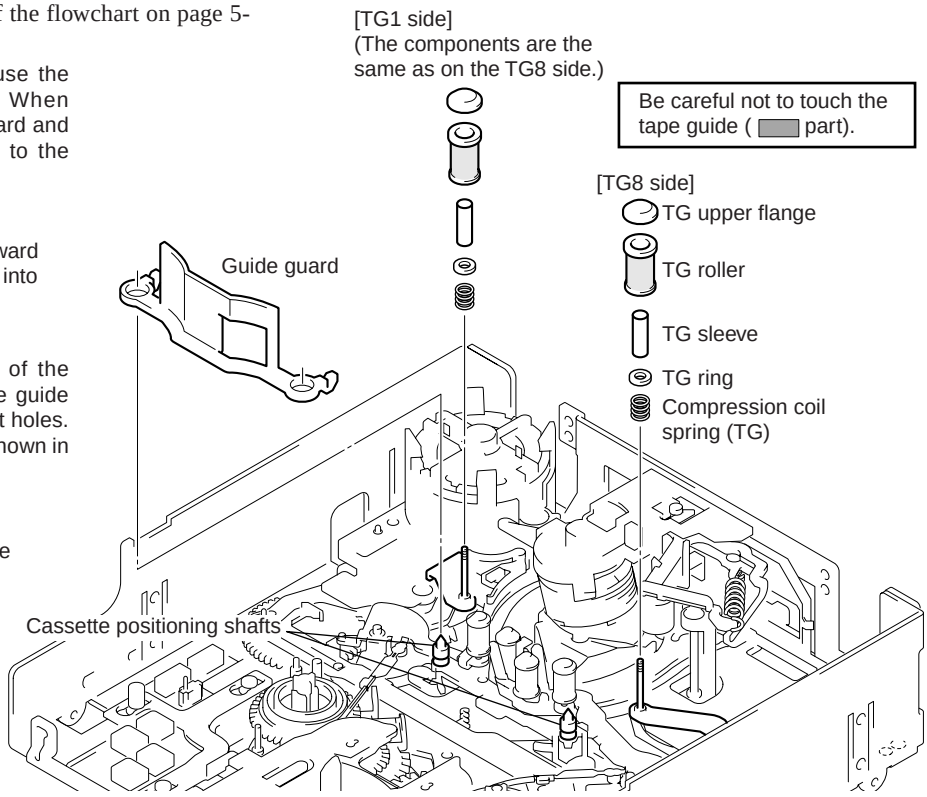
When the tape guide 1/8 is replaced or attached, perform each adjustment from Adjustment Start -2 of the flowchart on page 5-23.

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.



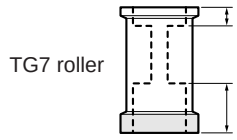


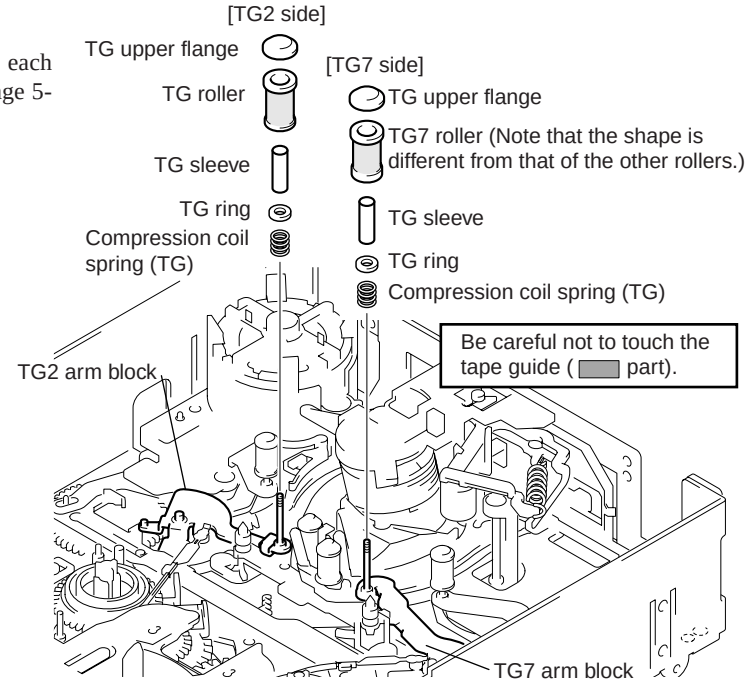
3-2. TAPE GUIDE 2/7

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.

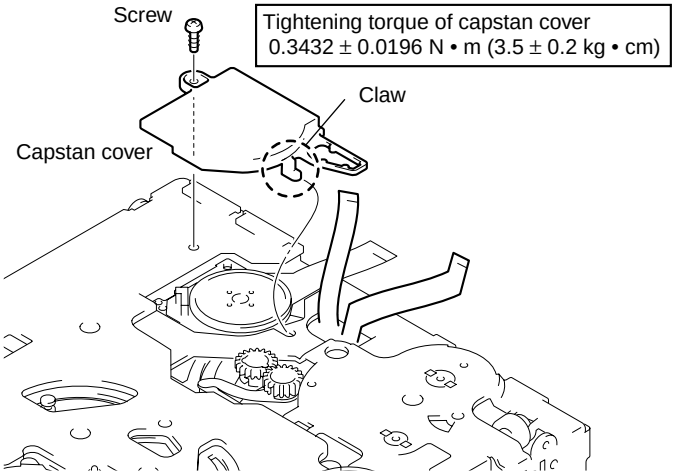
To attach or remove the tape guide, use the screwdriver for the tape path (J-5). When attaching the TG rollers, check the upward and downward directions and that the TG roller to be attached to the TG7 side is exclusively for the TG7 side. Then attach the TG rollers to the chassis shaft.

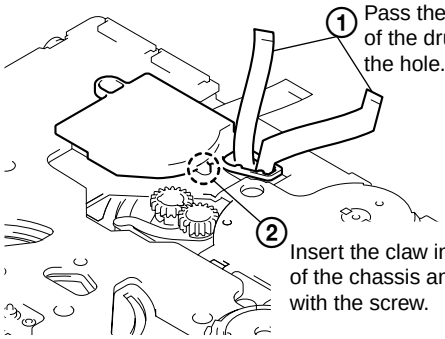




3-3. CAPSTAN COVER

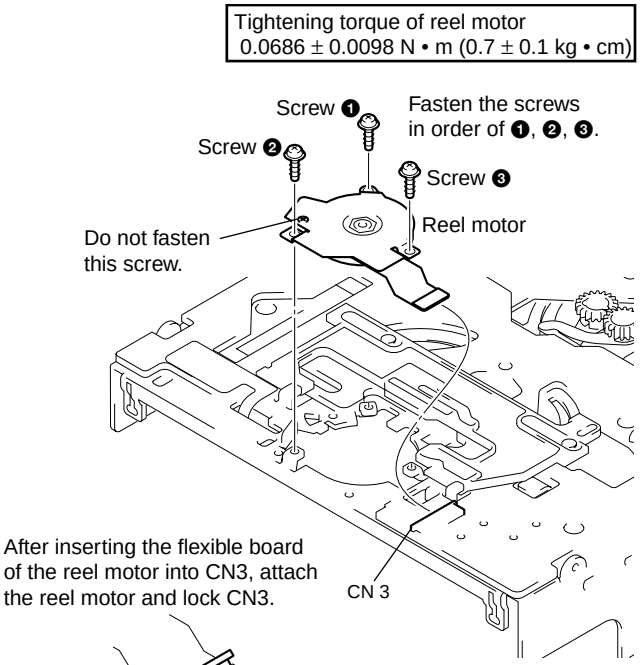
Disassembly/Assembly



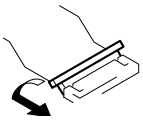


3-4. REEL MOTOR

Disassembly/Assembly

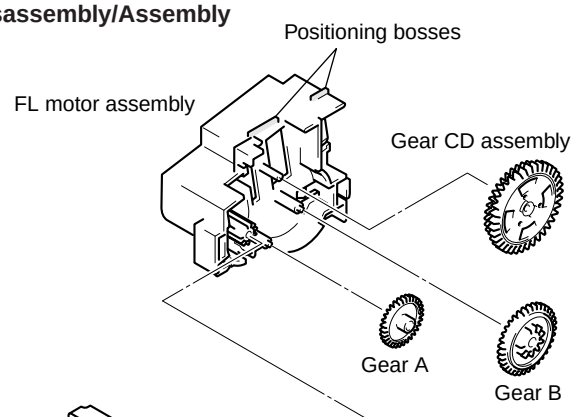


After inserting the flexible board of the reel motor into CN3, attach the reel motor and lock CN3.

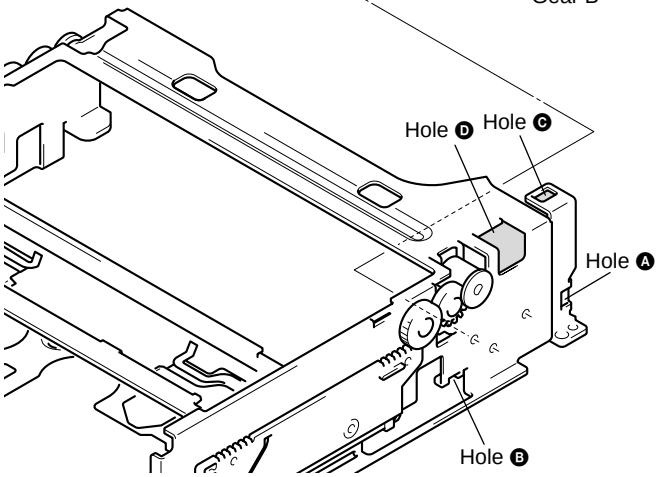


3-5. FL MOTOR ASSEMBLY, GEAR A, GEAR B AND GEAR CD ASSEMBLY

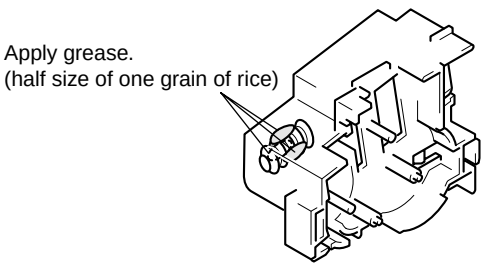
Disassembly/Assembly



Remove the claws of the FL motor assembly from hole Ⓐ and hole Ⓑ 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 Ⓒ and Ⓓ then fit the two claws in each hole Ⓐ and Ⓑ.



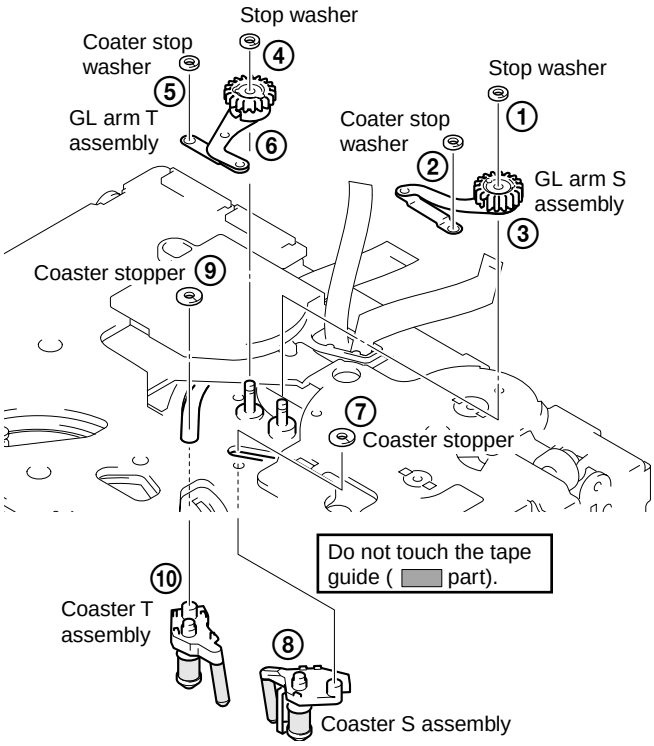
The worm gears are attached inside the FL motor assembly. When attaching the FL motor assembly, apply grease there.



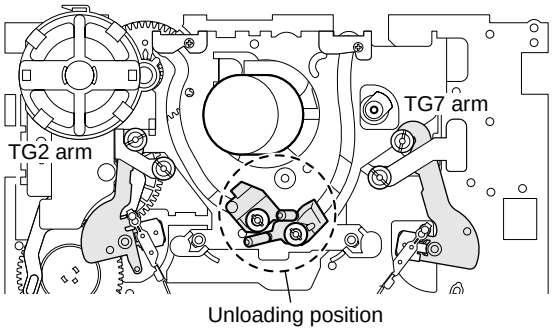
3-6. GL ARM S ASSEMBLY, GL ARM T ASSEMBLY, COASTER S ASSEMBLY AND COASTER T ASSEMBLY

Disassembly: Remove the parts in order of ①➡②➡③➡④➡⑤➡⑥➡⑦➡⑧➡⑨➡⑩

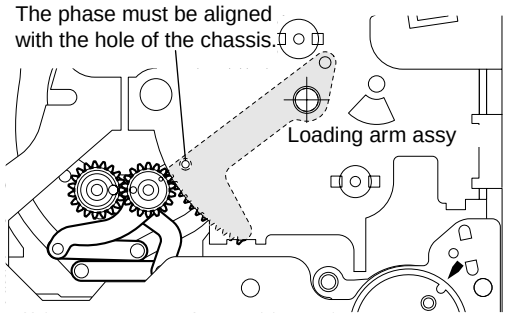
For the disassembling and assembling procedures of the GL gear, GL helical torsion spring, etc., refer to page 5-21.



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.

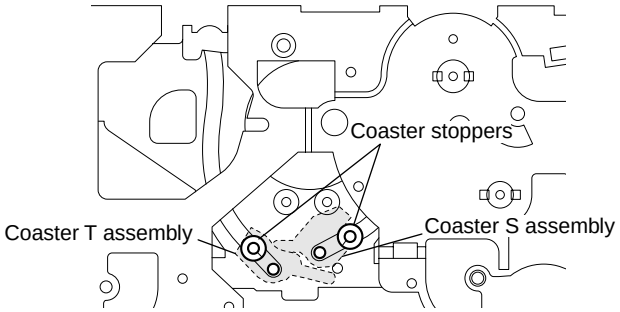


With consideration for future assembly, check from the rear of the chassis that the phase of the loading arm assy is aligned.

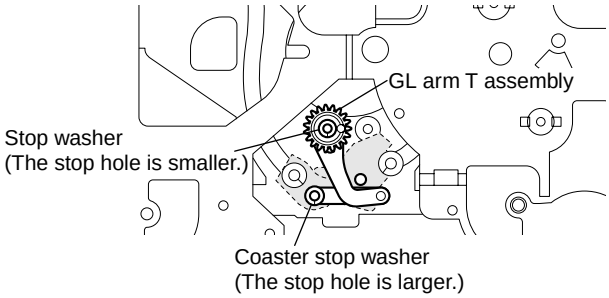


Assembly

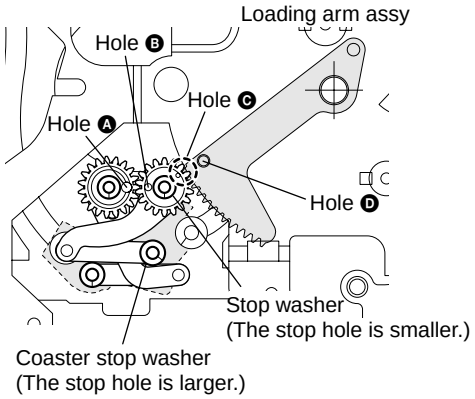
① Attach the coaster S/T assembly to the chassis with a new coaster stopper while being careful not to touch the tape guide. Do the work while holding the drum side of each coaster.



② Attach the GL arm T assembly. Fix the stop washers in the correct position, using new stop washers.



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.

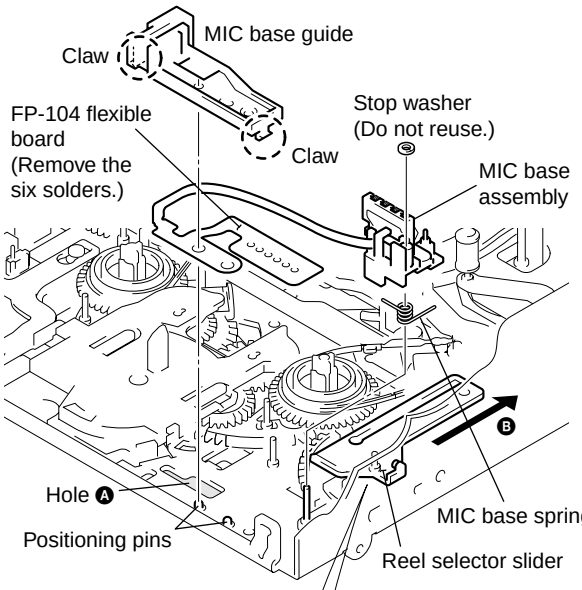


Check each phase adjustment while referring to the above figure.
Hole ❹ of the GL gear T and hole ❽ of the GL gear S must face each other. Hole ❼ of the loading arm assy must be aligned with the hole of the chassis, and the endmost gear tooth of the loading arm assy must face toward hole ❻ of the GL gear S.

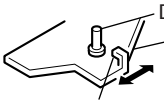
3-7. MIC BASE GUIDE, MIC BASE ASSEMBLY AND MIC BASE SPRING

Disassembly/Assembly

For the disassembling and assembling procedures of the components of the MIC base assembly, refer to page 5-21.

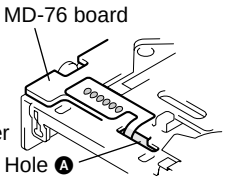


When selecting a cassette position, be careful not to touch the slider drive shaft because it can be easily bent or broken.



Select the desired cassette position by pressing the claw position.

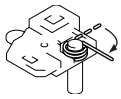
Remove the six solders on the FP-104 flexible board from the rear of the chassis. Pass the flexible board through hole Ⓐ and pull it out of the front side of the chassis while being careful not to damage it. To attach the flexible board, perform the steps of disassembly in reverse order.



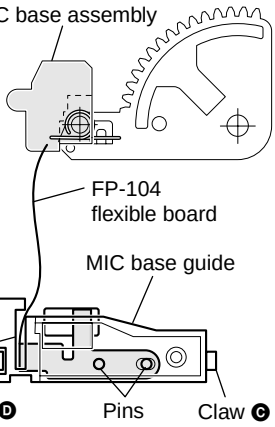
Six solders
Temperature of tip of soldering iron : 350 ± 20 °C
Hold time : one second or shorter

Move the reel selector slider in the direction of arrow Ⓑ 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.

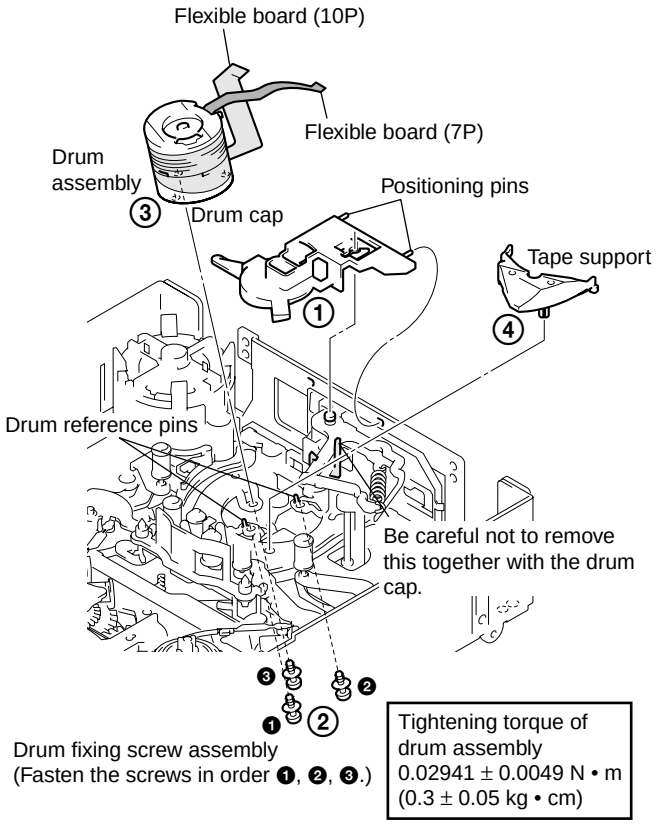


When attaching the MIC base guide, lock the positioning pins, claw Ⓒ, and claw Ⓓ in this order. Route the flexible board into the clearance of the MIC base guide.

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.



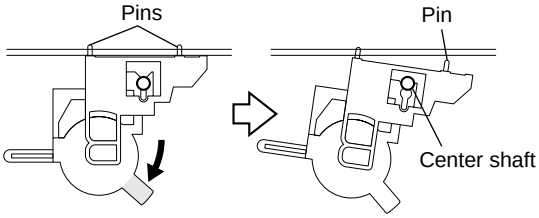
Tightening torque of drum assembly
0.02941 ± 0.0049 N • m
(0.3 ± 0.05 kg • cm)

Assembly: Attach the parts while referring to the disassembly procedure and the figure below.

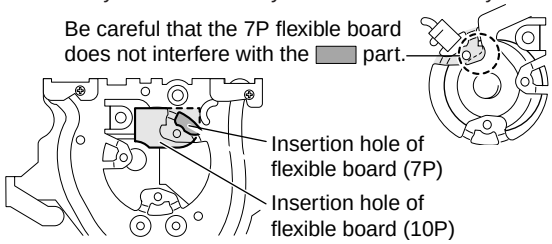
(After assembling, adjust the tape path while referring to page 5-23 and thereafter.)

Assembly and disassembly of the drum assembly

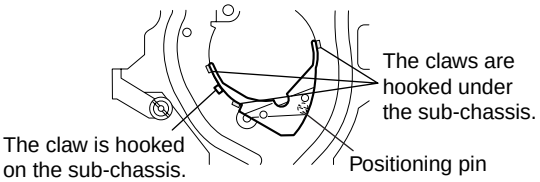
When pulling the ▭ part in the direction of the arrow, the claw is removed from the center shaft, then the right pin and the drum cap are removed as shown in the figure on the right. To attach the drum assembly, perform the disassembly steps in reverse order.



Assembly and disassembly of the drum assembly



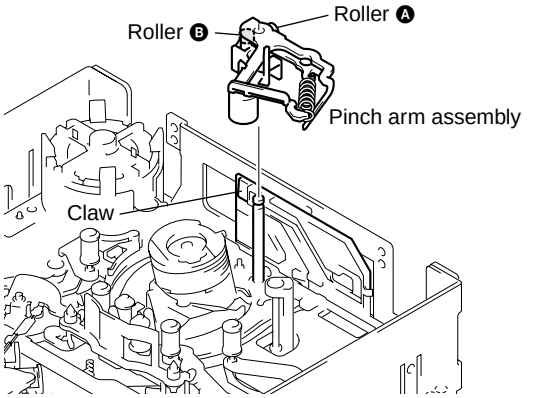
Assembly and disassembly of the tape support



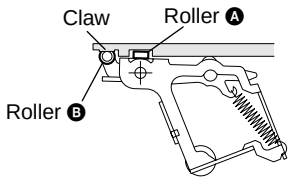
3-9. PINCH ARM ASSEMBLY

Disassembly/Assembly

For the disassembling and assembling procedures of the tape retainer and compression coil spring (tape retainer), refer to page 5-22.



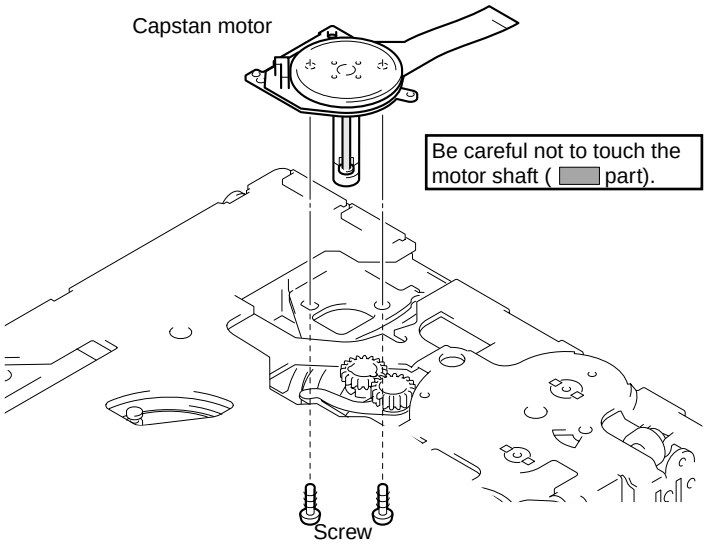
Push roller Ⓐ into the groove as shown in the figure. Insert roller Ⓑ into the claw. To remove the pinch arm assembly, pull out the pinch arm upward while pushing the claw.



3-10. CAPSTAN MOTOR

Disassembly/Assembly

(After assembling, adjust the tape path from page 5-23.)

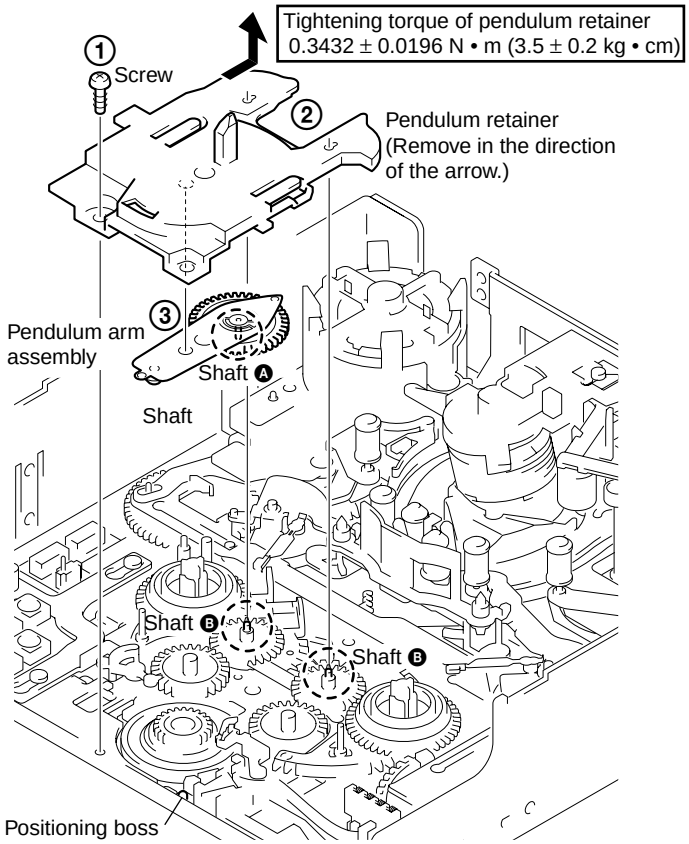


Tightening torque of capstan motor
0.1961 ± 0.0196 N • m (2.0 ± 0.2 kg • cm)

3-11. PENDULUM RETAINER AND PENDULUM ARM ASSEMBLY

Disassembly: Remove them in order of ①➡②➡③

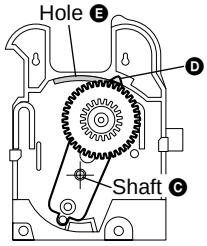
(To attach them, perform the disassembly steps in reverse order.)



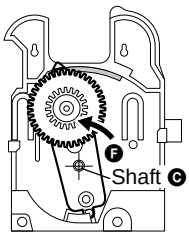
Notes during assembly

When assembling or disassembling the pendulum arm assembly, be careful of the following.

[Rear side of pendulum retainer]

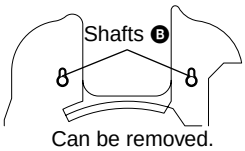


Insert tip Ⓓ of the pendulum arm into hole Ⓔ of the pendulum retainer and insert the pendulum into shaft Ⓒ.

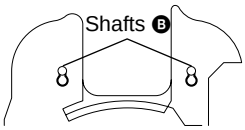


Slide the pendulum arm in the direction of arrow Ⓕ and attach it to the chassis.

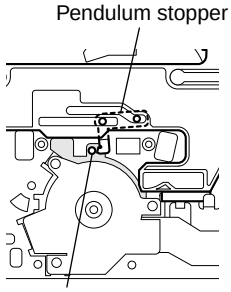
Attach the pendulum retainer to shaft Ⓑ. Be careful of the positions of the pendulum stopper at the rear of the chassis and shaft Ⓐ of the pendulum arm.



Can be removed.



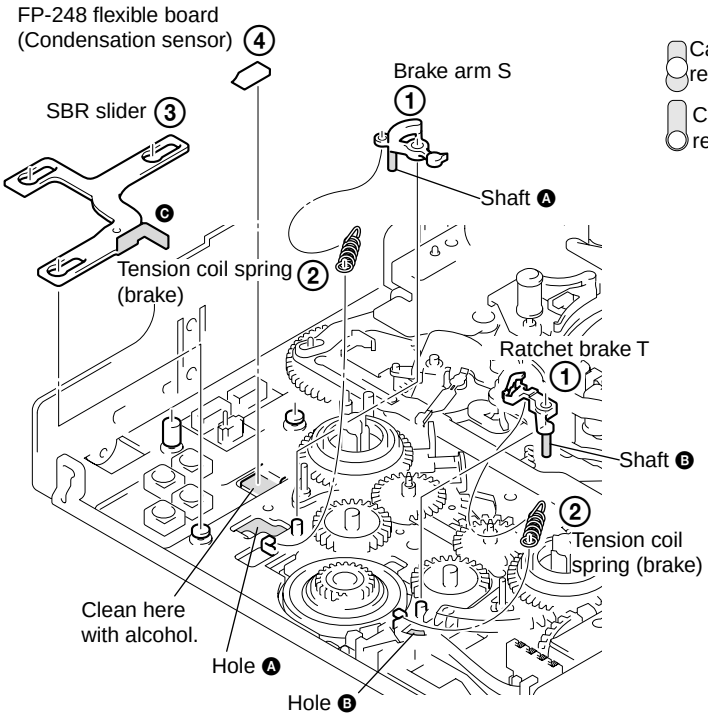
Cannot be removed.

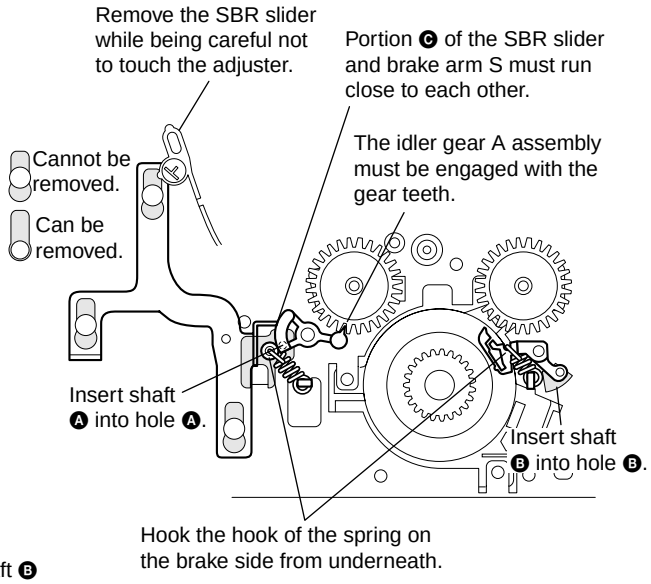


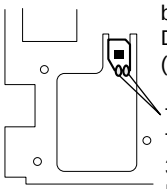
Shaft Ⓐ of the pendulum must be in this position.

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.)





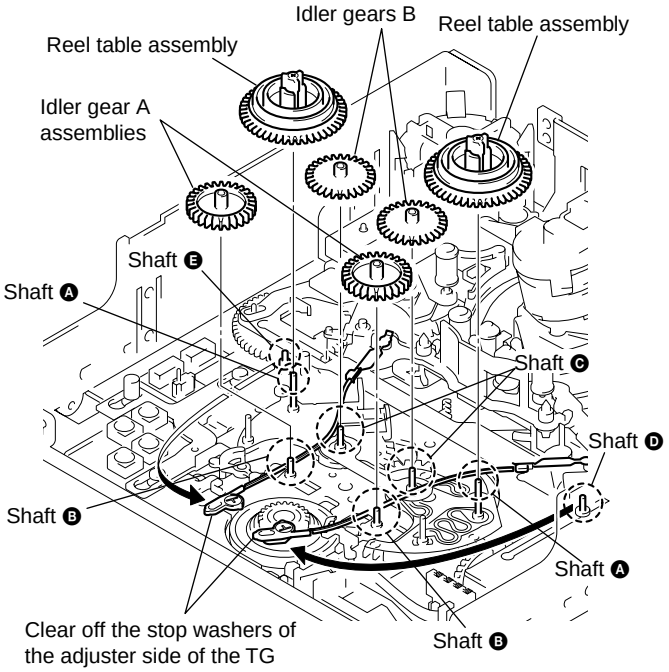


When attaching the FP-248 flexible board, scrape the contact surface with a swab to stick the flexible board to the chassis.
Do not touch the sensor block (black area).

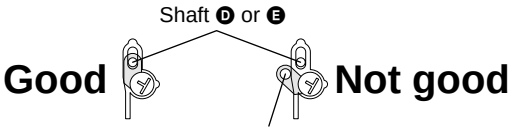
Two solders
Temperature of tip of soldering iron: 350 ± 20 °C
Hold time:
one second or shorter

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.

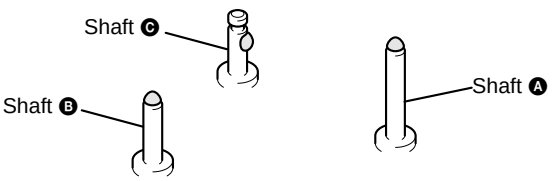


Checks before work
The TG band winds around the slit of the reel table assembly. Before removing the reel table assembly, clear off the TG band while referring to the left figure. When attaching the TG band, be sure to use new stop washers.

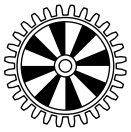


When attaching the TG band, the part also must be inserted into shaft Ⓓ or Ⓔ.

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 Ⓒ.
When attaching the idler gear A assembly, be careful not to apply grease to the reflection panel.



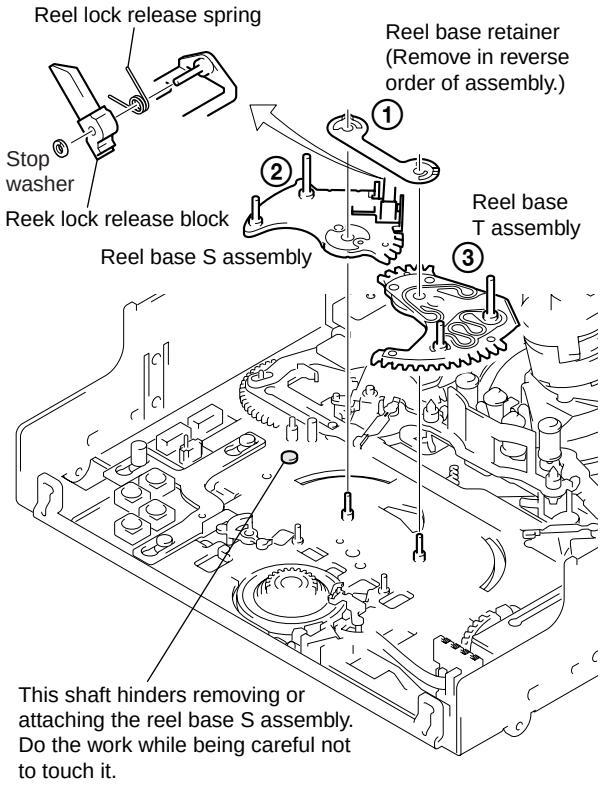
Apply grease to ▭ part.
(half size of one grain of rice)



When attaching the idler gear A assembly, be careful not to apply grease to the reflection panel.

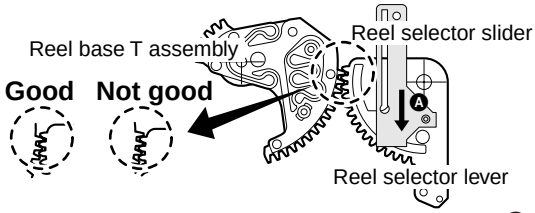
3-14. REEL BASE RETAINER, REEL BASE T ASSEMBLY AND REEL BASE S ASSEMBLY (REEL LOCK RELEASE BLOCK AND REEL LOCK RELEASE SPRING)

Disassembly: Remove them in order of ①➡②➡③
(Refer to Assembly, too.)

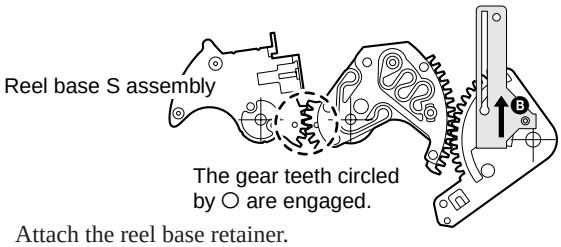


Assembly: Attach them in order of ①➡②➡③

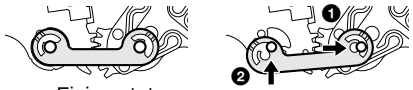
① Move the reel selector slider in the direction of arrow Ⓐ to check that the reel selector lever is "L cassette". At this position, attach the reel base T assembly. The gear teeth must be engaged as shown in the figure.



② Move the reel selector slider in the direction of arrow Ⓑ 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.



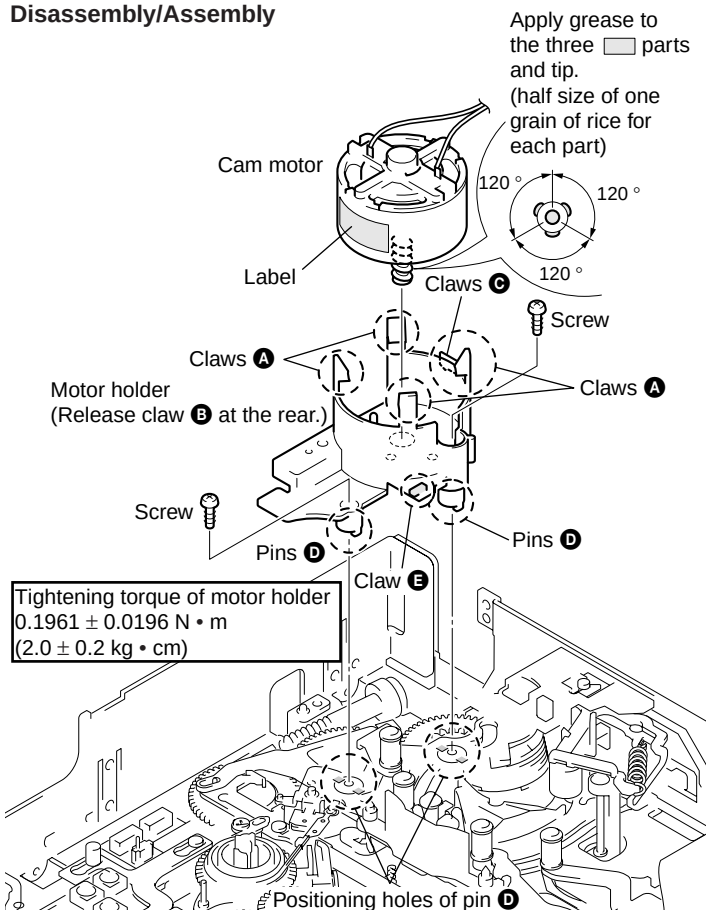
③ Attach the reel base retainer.



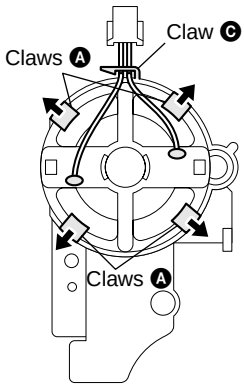
Note: Do not hold the shaft when selecting the reels.

3-15. CAM MOTOR, MOTOR HOLDER

Disassembly/Assembly

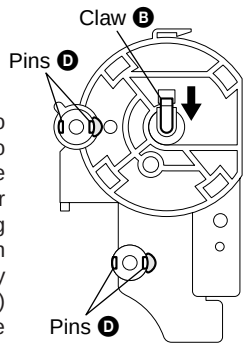


Checks before disassembly and assembly
The cam motor is fixed on the motor holder by the four claws. Releasing the four claws enables the cam motor to be removed without removing the motor holder from the chassis. When attaching the cam motor, be careful of the assembling direction (the label must face 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 Ⓐ 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 Ⓒ.

When attaching the TG2 control arm, claw Ⓔ 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 Ⓑ at the rear. To remove it, push claw Ⓑ in the direction of the arrow from the rear of the chassis. Note that positioning pins Ⓓ 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.

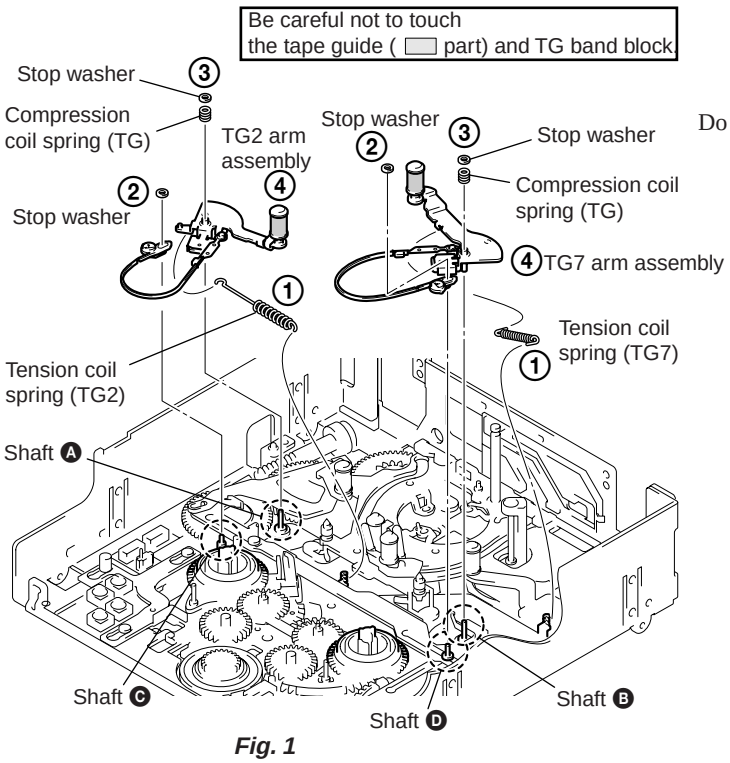


Fig. 1

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 Ⓔ 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 Ⓔ to lock.

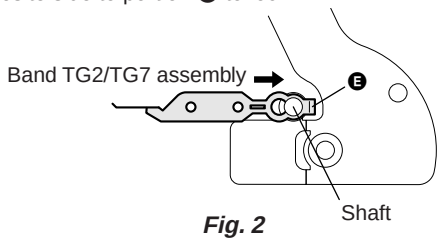


Fig. 2

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.

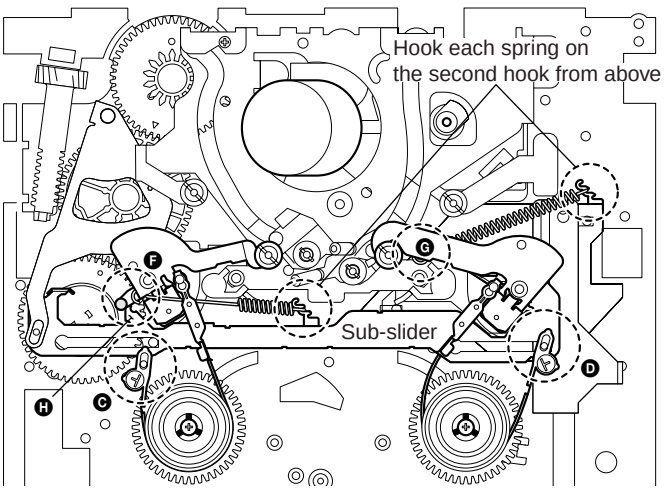


Fig. 3

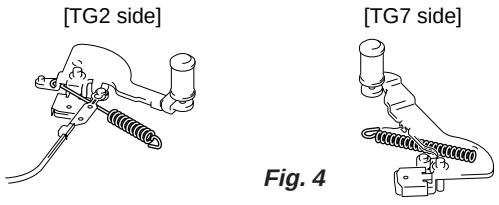
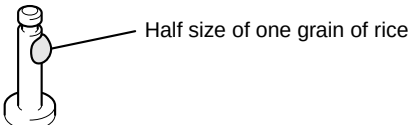


Fig. 4

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.

① Apply grease to the top side of the fixing shaft (Ⓐ or Ⓑ) of the TG arm. (Fig. 1)



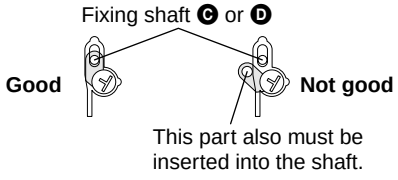
② Attach the TG band assembly to the TG arm assembly. (Fig. 2) Be sure that the felt sides of the TG band face toward the reel tables so that they surround the respective reel tables.

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-Ⓕ, 4)
- Hook the spring of the tension coil spring (TG7) from the outside and put it under the TG7 band. (Fig. 3-Ⓖ, 4)

④ Attach the TG arm block to the shaft (Ⓐ or Ⓑ) and attach the tension coil spring to the second hook. When attaching the TG2 arm, the part must be at the left of portion Ⓗ of the slider. (Fig. 3)

⑤ Attach the adjuster of the TG band to shafts Ⓒ and Ⓓ.



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

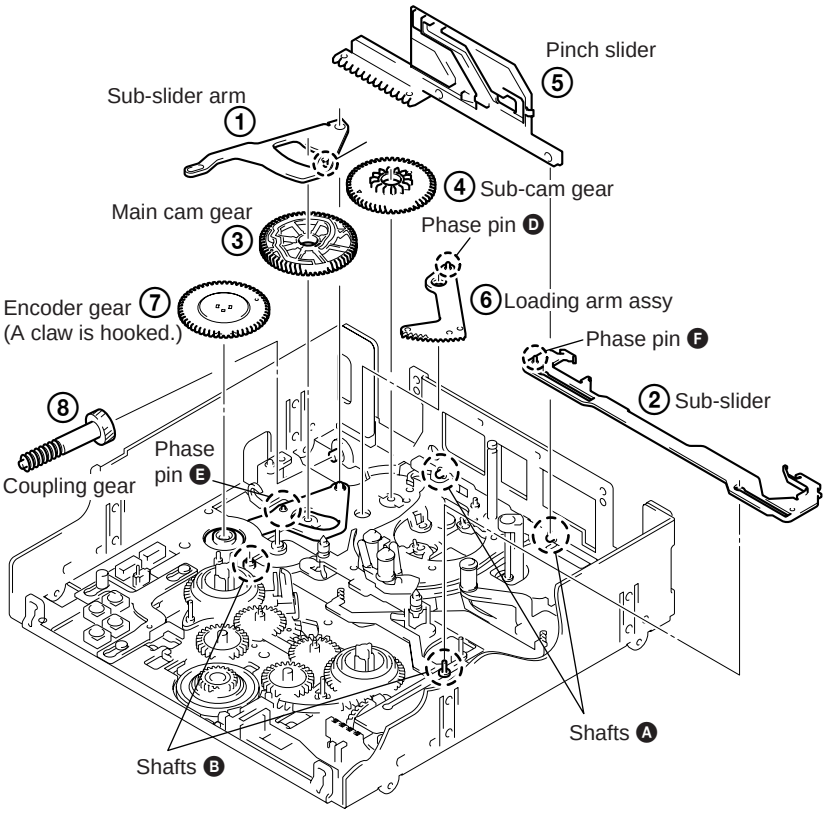


Fig. 1

Disassembly of the pinch slider

Move the pinch slider to the leftmost end, and slide it upward and remove it when two shafts Ⓐ are superimposed on the holes of the pinch slider.

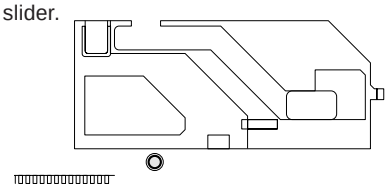
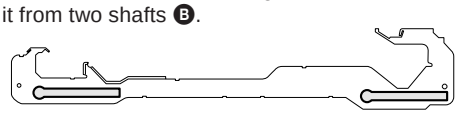


Fig. 2

Disassembly of the sub-slider

Move the sub-slider to the rightmost and remove it from two shafts Ⓑ.



This can be removed.

This cannot be removed.

Fig. 3

Disassembly of the encoder gear

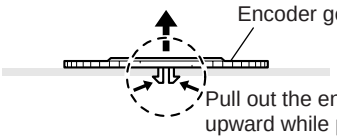


Fig. 4

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.

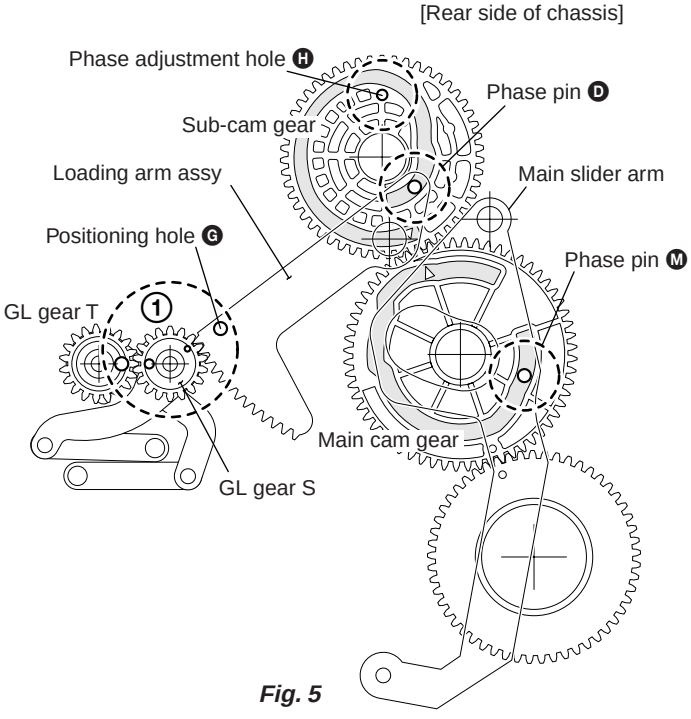


Fig. 5

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 Ⓖ 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 Ⓓ of the loading arm assy must be inserted into the groove at the rear of the sub-cam gear. (Fig. 5, 7)

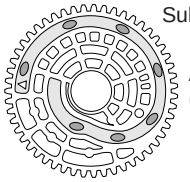


Fig. 6

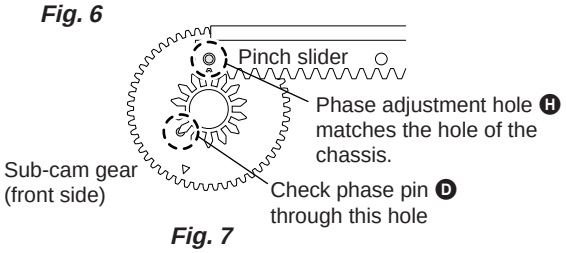


Fig. 7

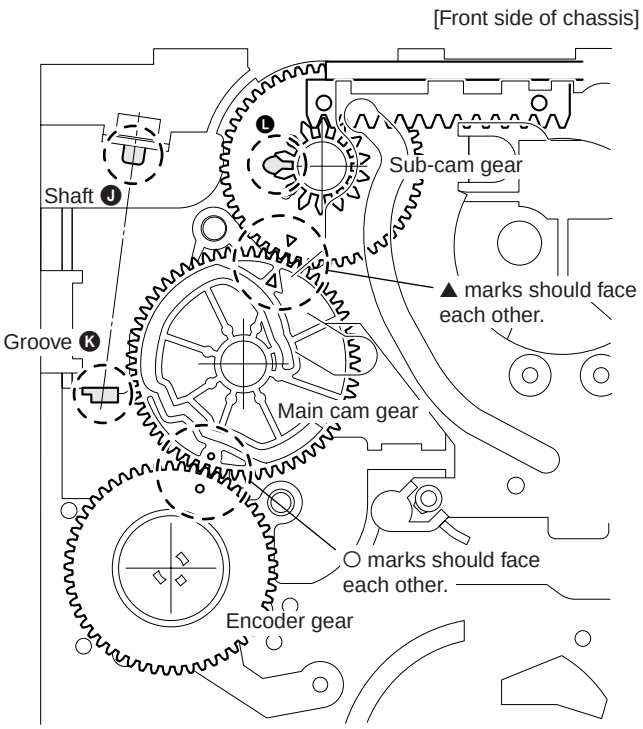


Fig. 8

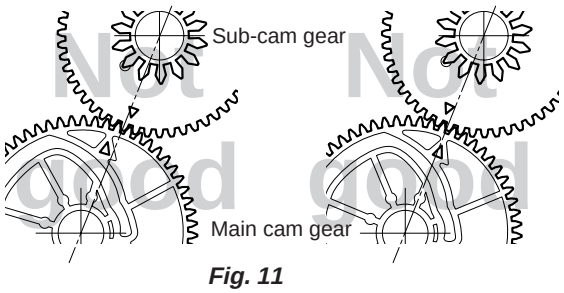


Fig. 11

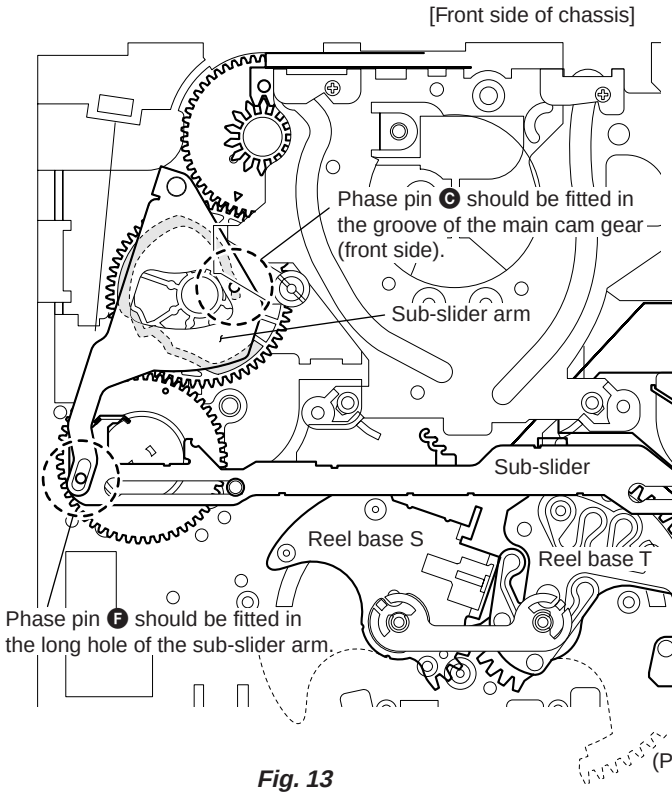


Fig. 13

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)

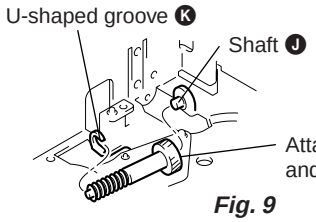


Fig. 9

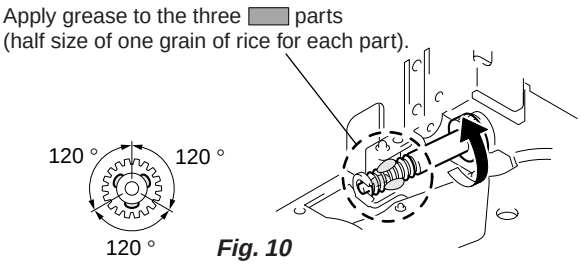


Fig. 10

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)

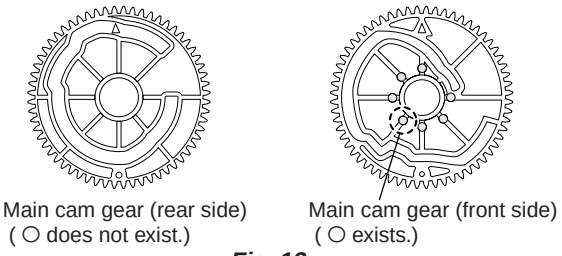


Fig. 12

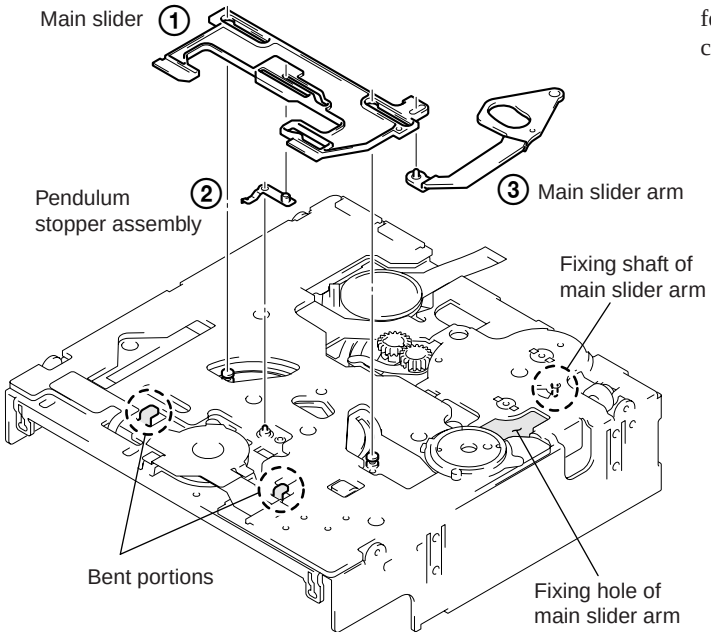
⑦ Attach the encoder gear. (Fig. 3)
Adjust the phases (marked) to those of the main cam gear. (Fig. 4/Fig. 8)

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)

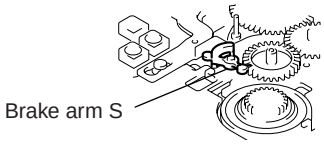
3-18. MAIN SLIDER, MAIN SLIDER ARM AND PENDULUM STOPPER ASSEMBLY

Disassembly: Remove them in order of ①➡②➡③



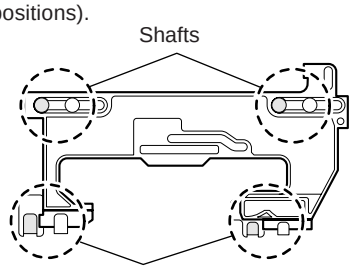
Disassembly of each part

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.



Main slider

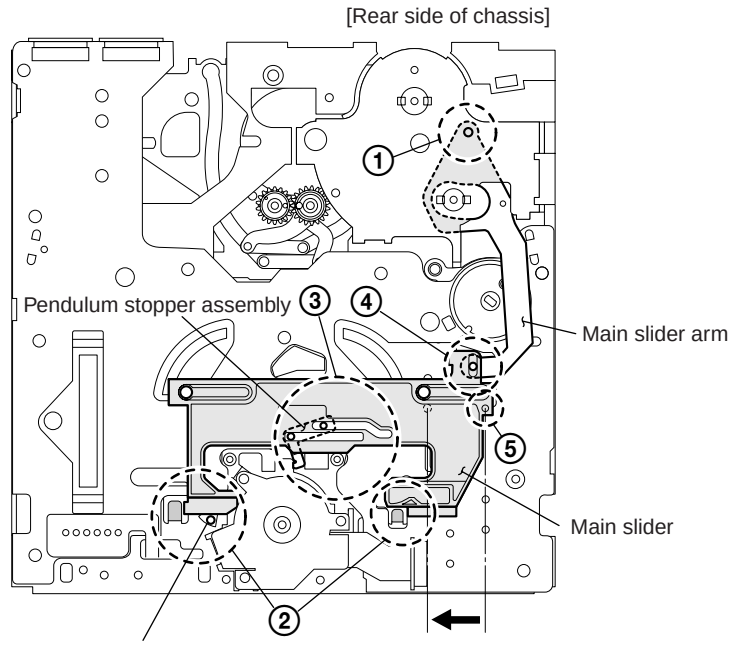
The main slider is fixed by the two shafts and the two bent portions at the rear of the chassis. The main slider can be removed when it is moved to the rightmost end (▭ positions).



Assembly: Attach them while referring to the figure above or below and the descriptions.

Assembly of each part

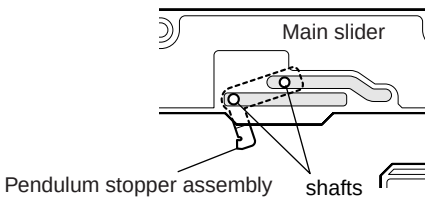
Attach each part while referring to the figure above or below. When attaching the parts, adjust the positions carefully while referring to the instructions in the figure below. Because these positioning will be used as a reference when assembling in future, make sure to adjust the positions and phases 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.

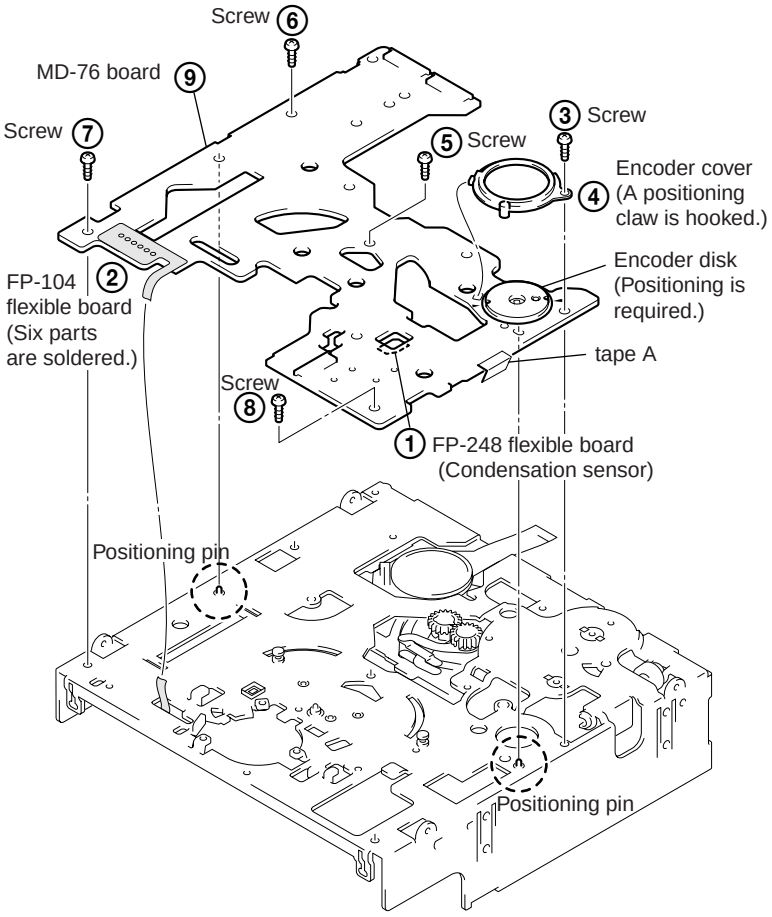


④ Attach the shaft of the main slider arm to the long hole of the main slider.

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



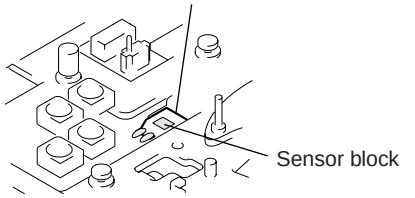
Disassembly of MD-76 board

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.

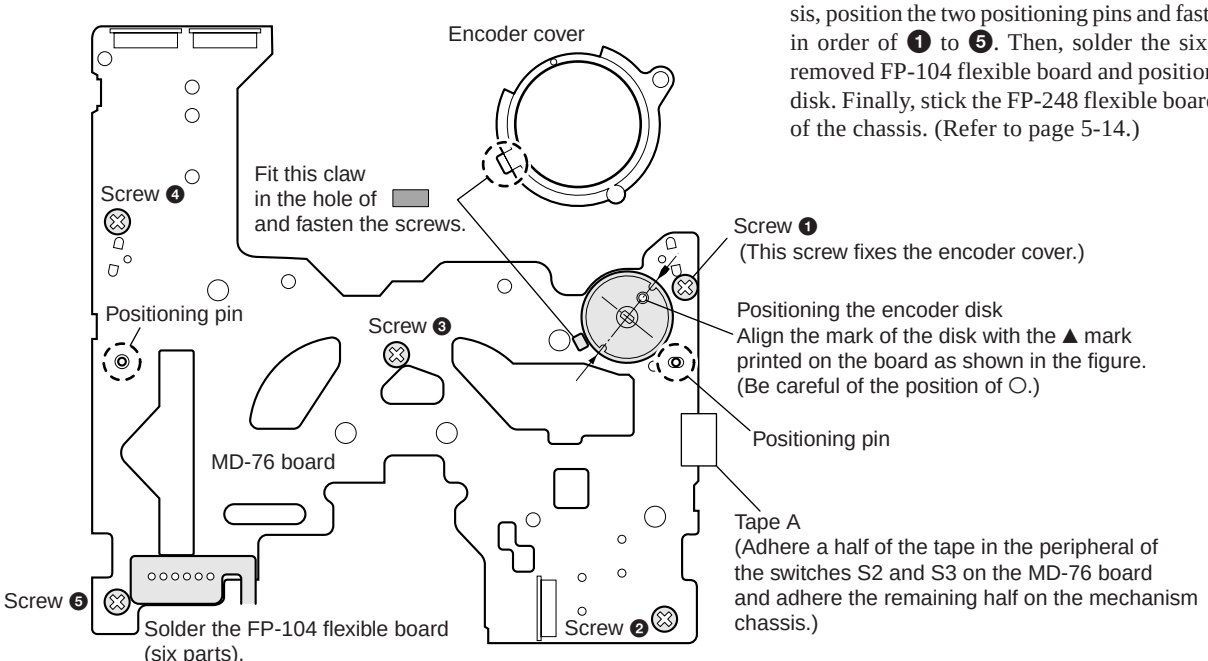
Note: When the tape A is removed, use the new tape A for replacement. (See the illustration below.)

FP-248 flexible board

Peel off the flexible board while being careful not to get the sensor block dirty or damage the sensor block.



Assembly: Attach them in order of ⑨➡④➡③➡⑤➡⑥➡⑦➡⑧➡①➡②
(Refer to the figure above or below.)



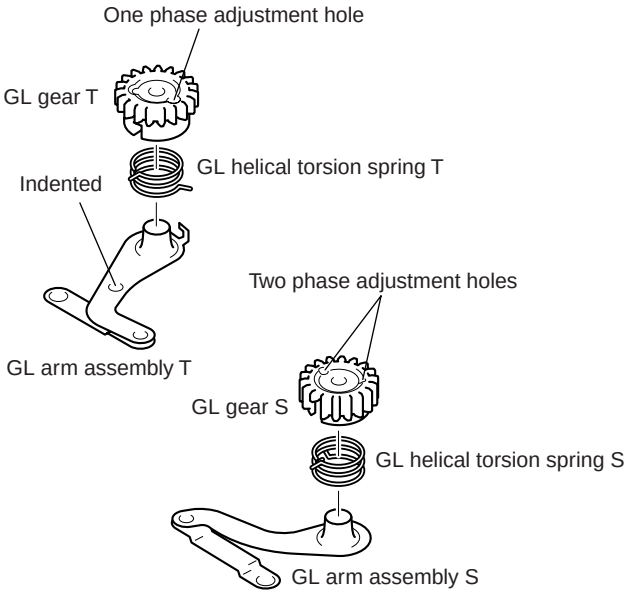
Assembly of MD-76 board

While being careful not to let the sensors touch the chassis, position the two positioning pins and fasten the screws in order of ❶ to ❺. 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)

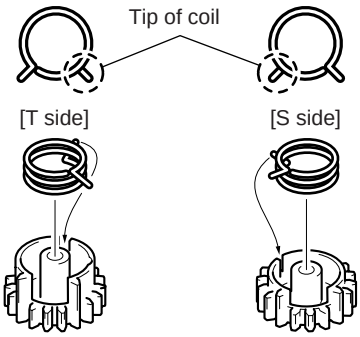
3-20. COMPONENTS OF GL ARM S/T ASSEMBLY (GL ARM ASSEMBLY, GL HELICAL TORSION SPRING, GL GEAR)

Disassembly and distinguishing the S side from the T side



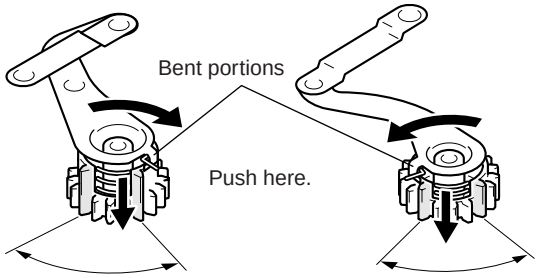
Assembly

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.

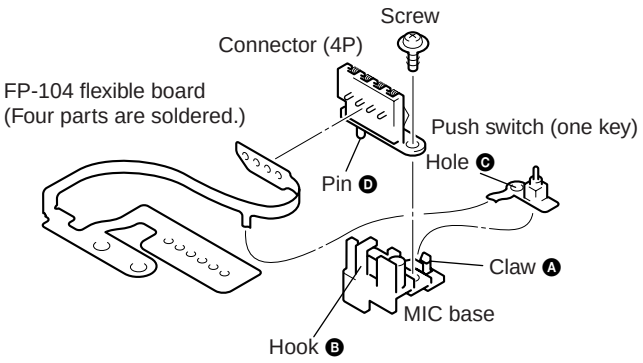


When the bent portion of the GL arm comes inside this range, push the bent portion into the gear.

3-21. COMPONENTS OF MIC BASE ASSEMBLY (FP-104 FLEXIBLE BOARD, MIC BASE)

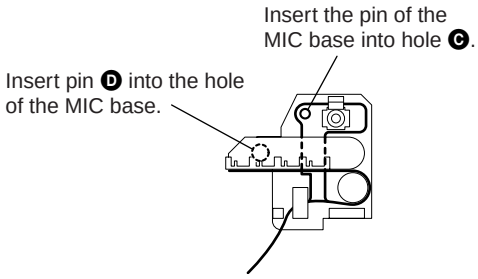
Disassembly

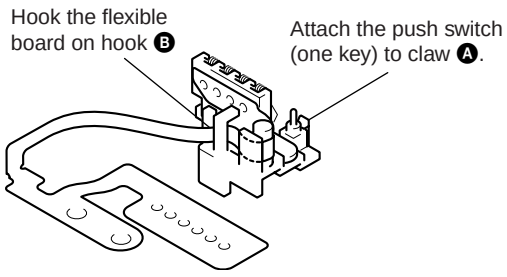
Remove the push switch from claw Ⓐ of the MIC base. Remove the screw and connector (4P). Then, remove the flexible board while being careful not to touch hook Ⓑ.



Tightening torque of connector (4P)
0.0392 ± 0.0098N • m (0.4 ± 0.1 kg • cm)

Assembly

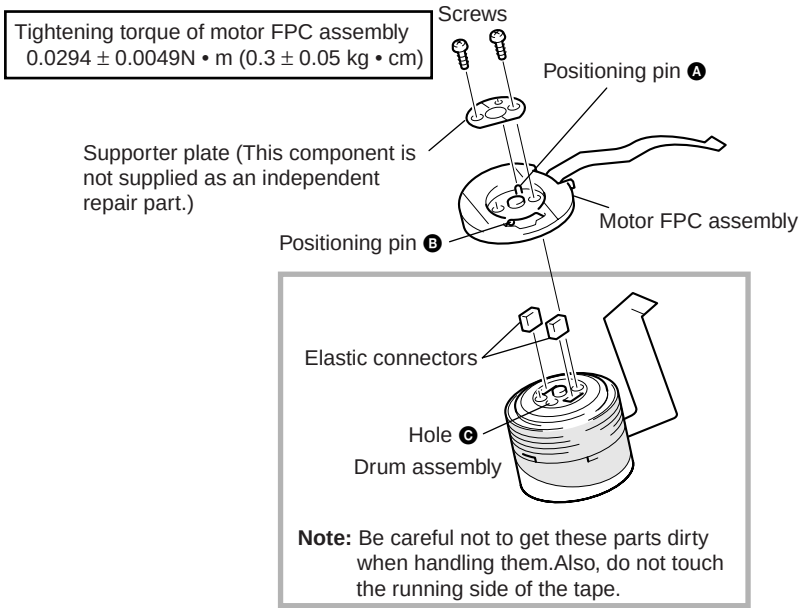




3-22. COMPONENTS OF DRUM ASSEMBLY (MOTOR FPC ASSEMBLY, ELASTIC CONNECTOR)

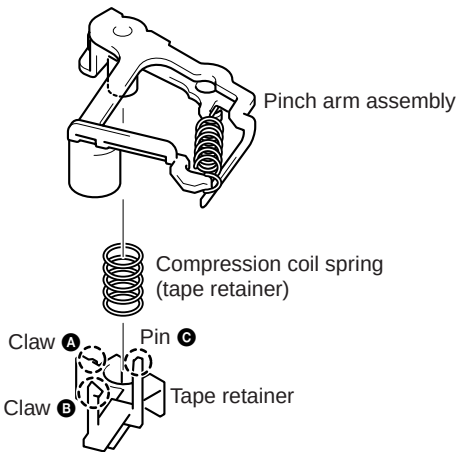
Disassembly/Assembly

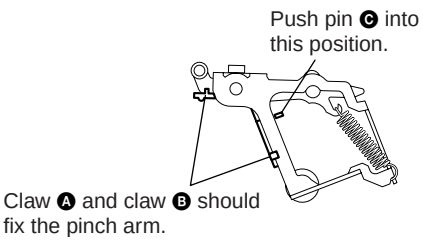
Connect the elastic connector to the drum assembly and attach the motor FPC assembly while aligning pin Ⓑ with hole Ⓒ of the drum assembly. Fix the supporter plate with the screws while being careful of pin Ⓐ of the motor FPC assembly.



3-23. COMPONENTS OF PINCH ARM ASSEMBLY (TAPE RETAINER, COMPRESSION COIL SPRING)

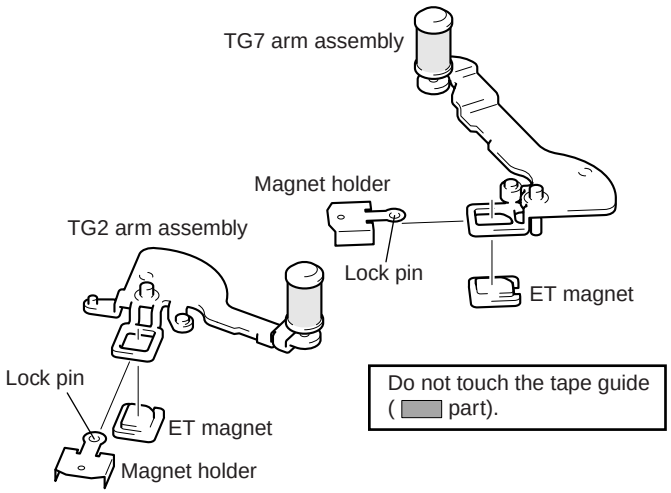
Disassembly/Assembly



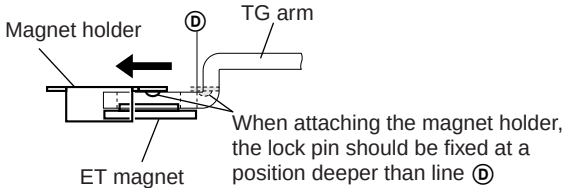


3-24. COMPONENTS OF TG2/7 ARM ASSEMBLY (ET MAGNET, MAGNET HOLDER)

Disassembly/Assembly



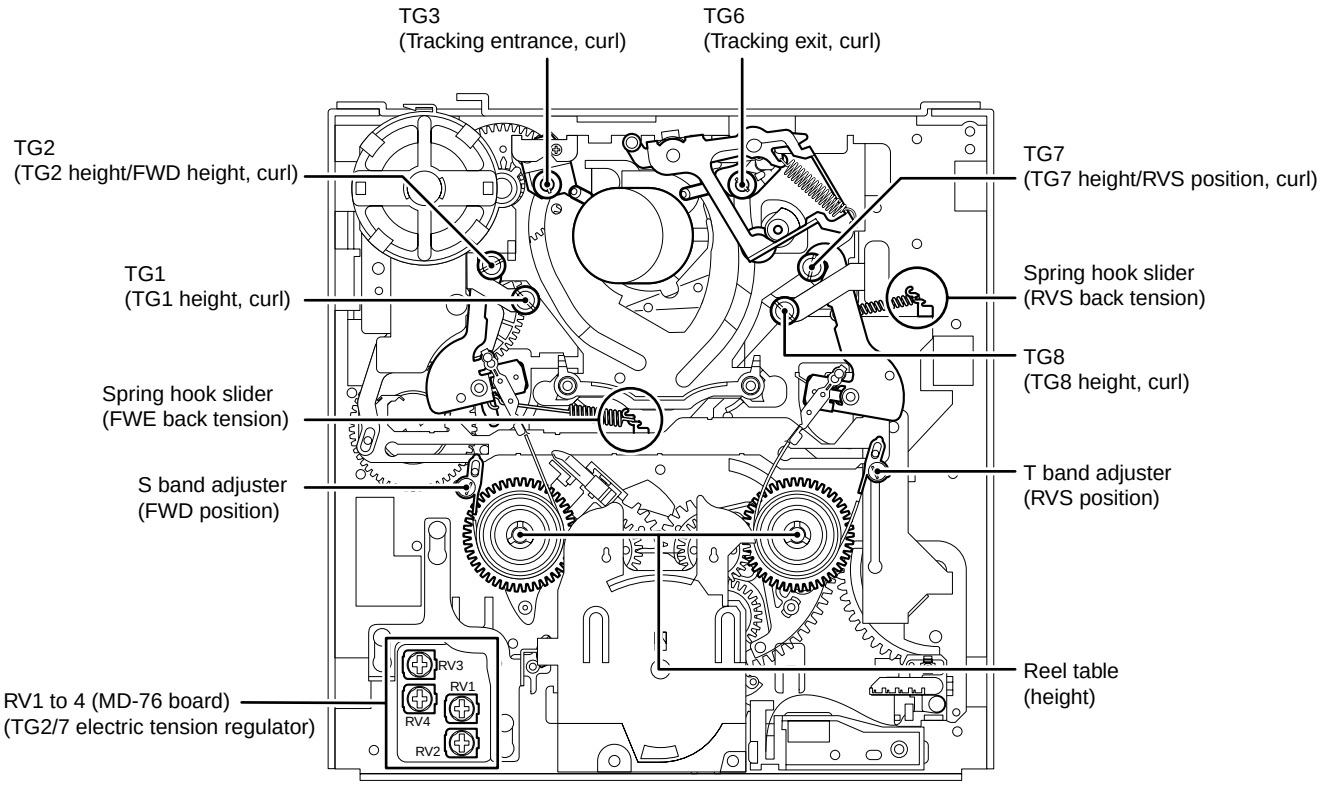
Remove the TG2 arm assembly and the TG7 arm assembly in the direction of the arrow while pushing the lock pin of the magnet holder from the rear of each TG arm. To attach them, insert the TG2 or TG7 arm assembly in the direction opposite to the arrow while holding the ET magnet with the magnet holder, then hook the lock pin.



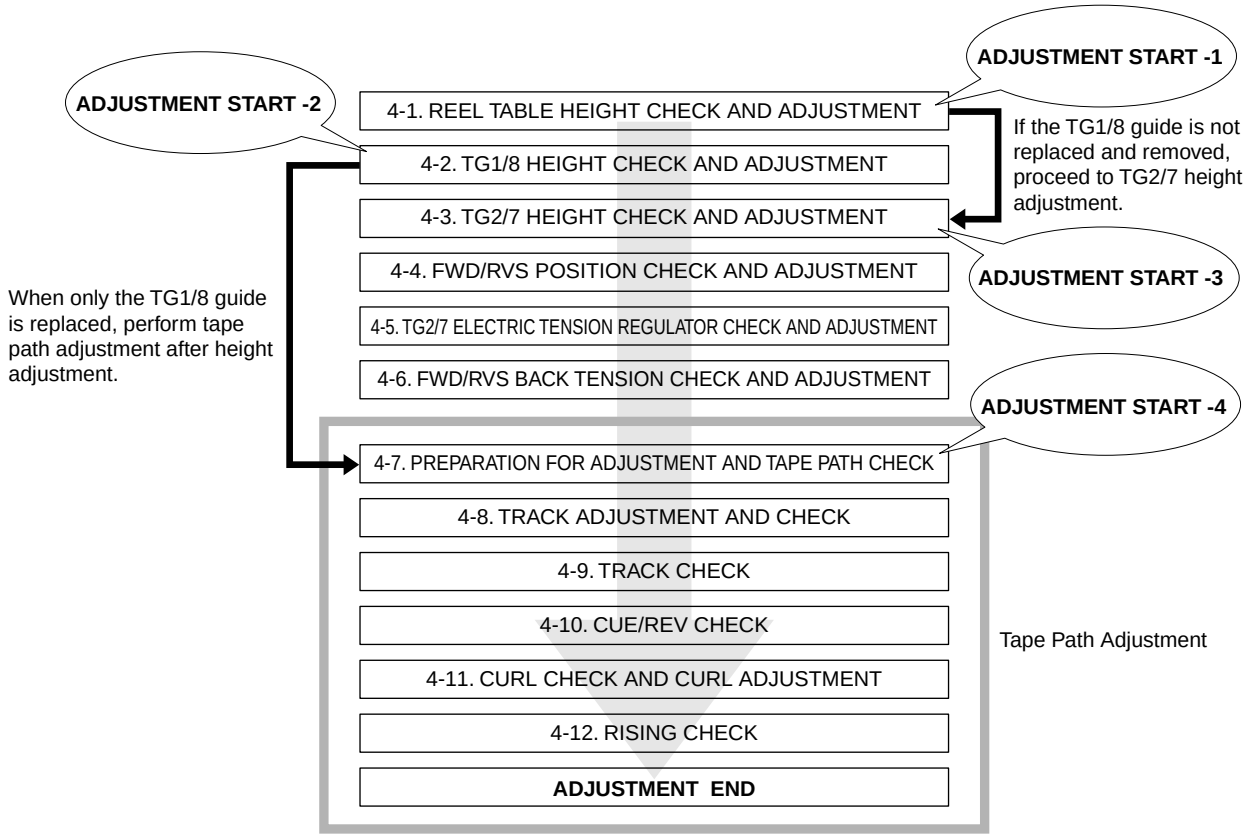
5-1-4. CHECK AND ADJUSTMENT

- 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)**

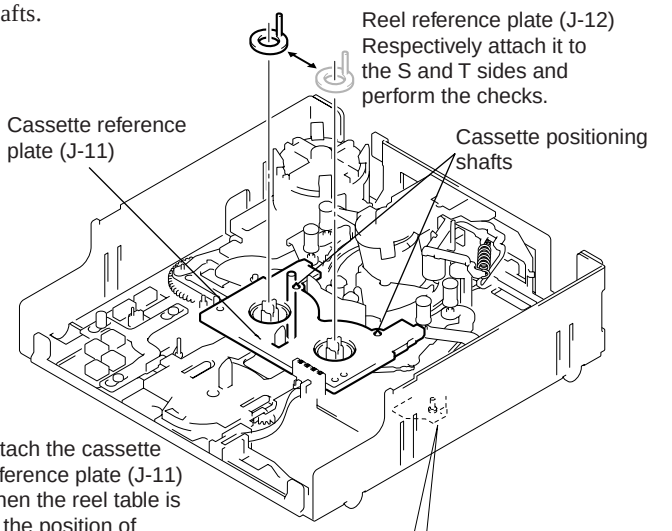


4-1. REEL TABLE HEIGHT CHECK AND ADJUSTMENT

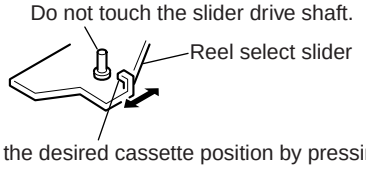
1. Preparation before check

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.

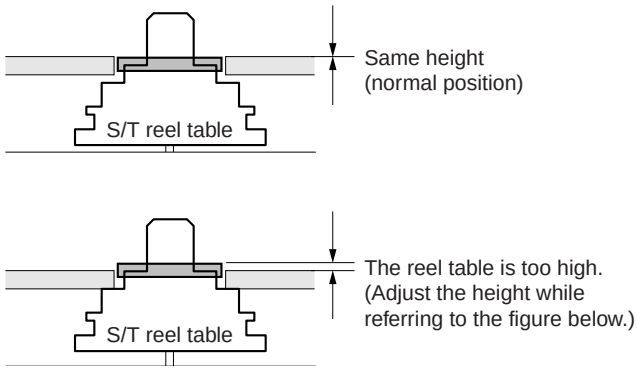


When selecting a cassette position, be careful not to touch the slider drive shaft because it can be easily bent or broken.

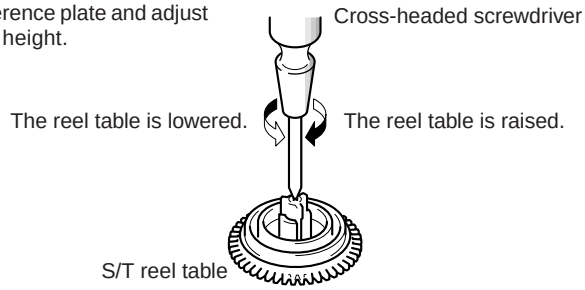


2. Check and adjustment

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.



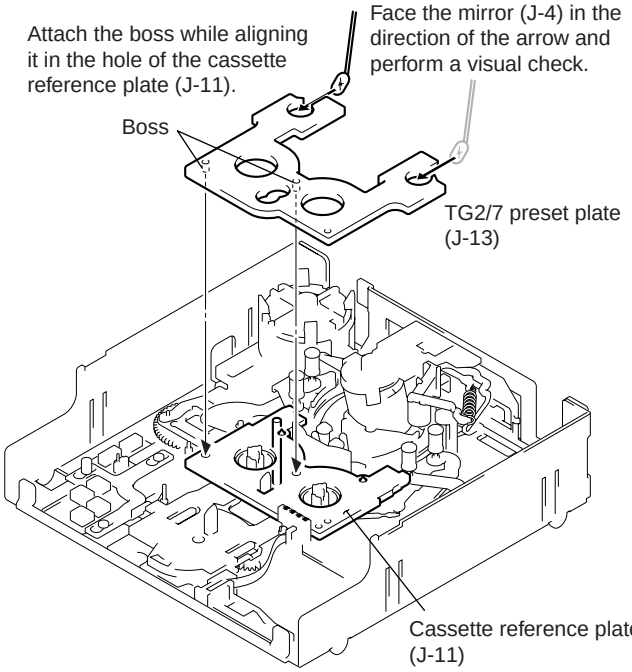
Put the reel and cassette reference plate and adjust the height.



4-2. TG1/8 HEIGHT CHECK AND ADJUSTMENT

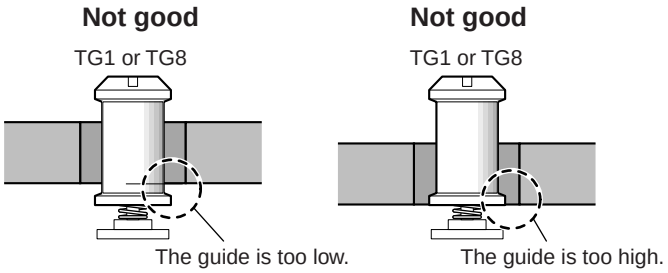
1. Preparation before check

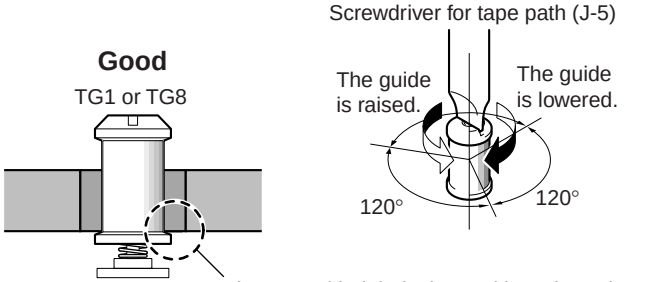
1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the “LE position” using the mode selector II. (Refer to page 5-5.)
3) Place the TG2/7 preset plate (J-13).



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.



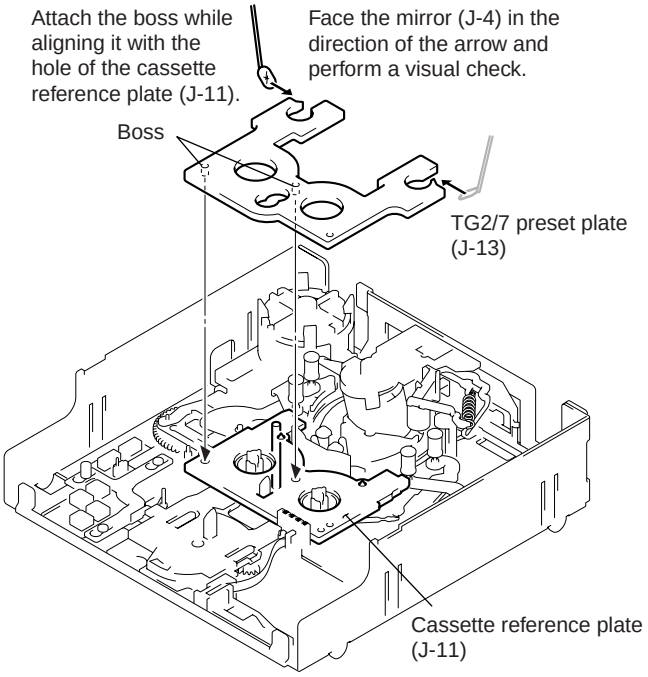


The normal height is the position where the TC upper flange is rotated by 120° in the direction of lowering the guide from the adjusted height while referring to the figure below.

4-3. TG2/7 HEIGHT CHECK AND ADJUSTMENT

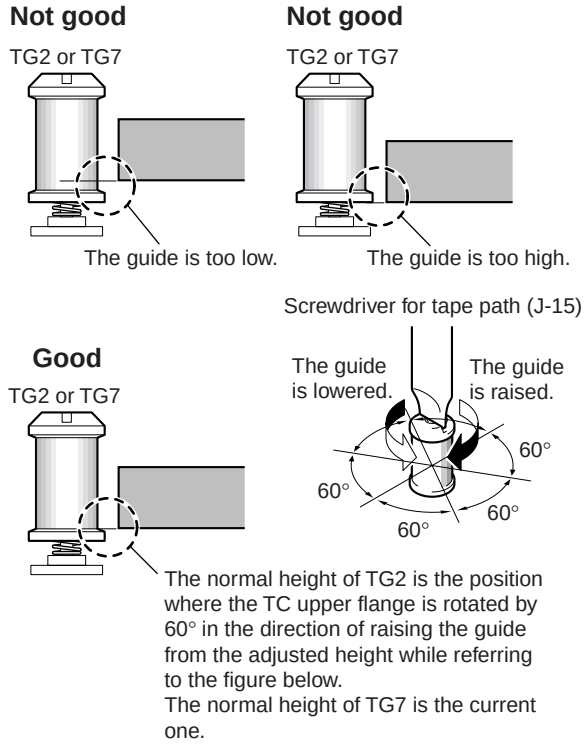
1. Preparation before check

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).



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.



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.

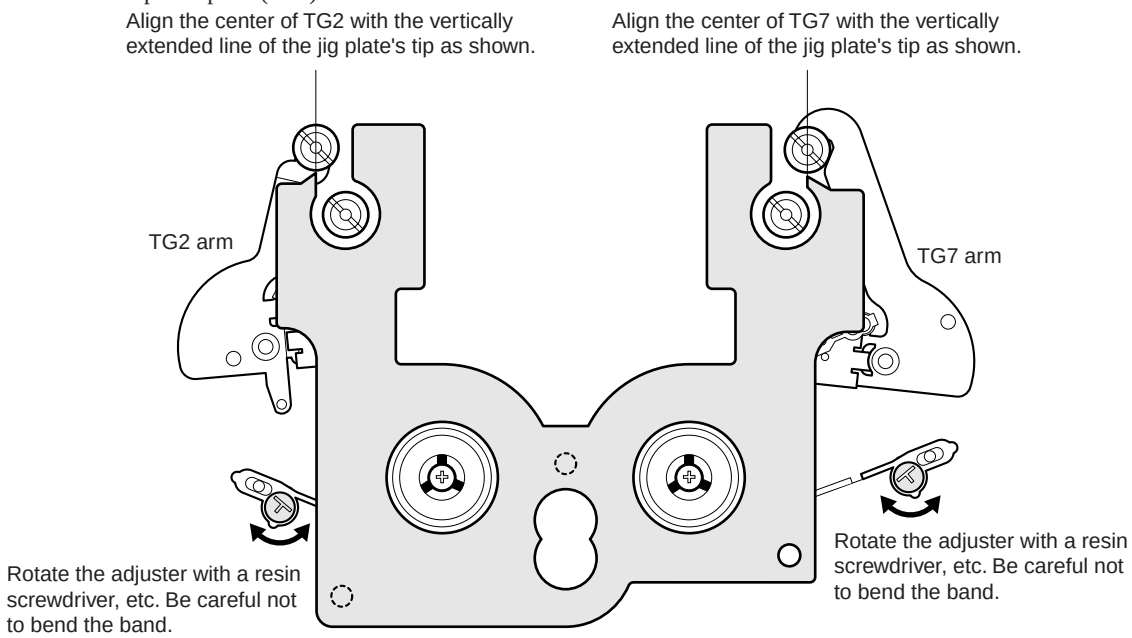
4-4. FWD/RVS POSITION CHECK AND ADJUSTMENT

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).

2. Check and adjustment

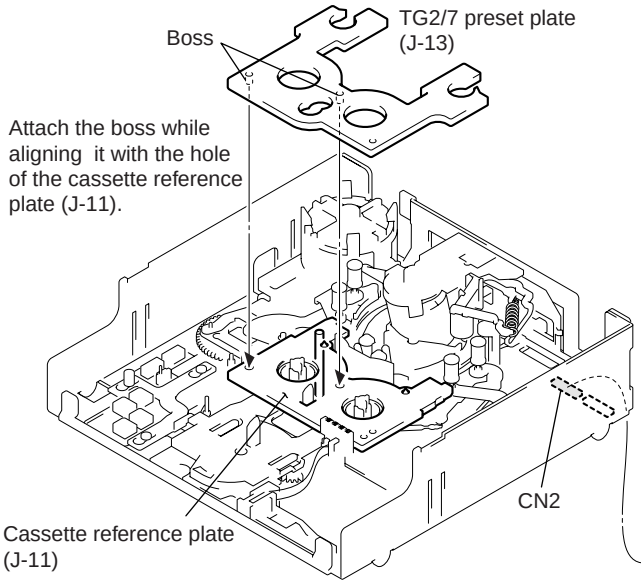
Rotate each adjuster to adjust the TG2/7 position until ◿ or ◺ of the TG2/7 preset plate (J-13), TG2 and TG7 are in line.

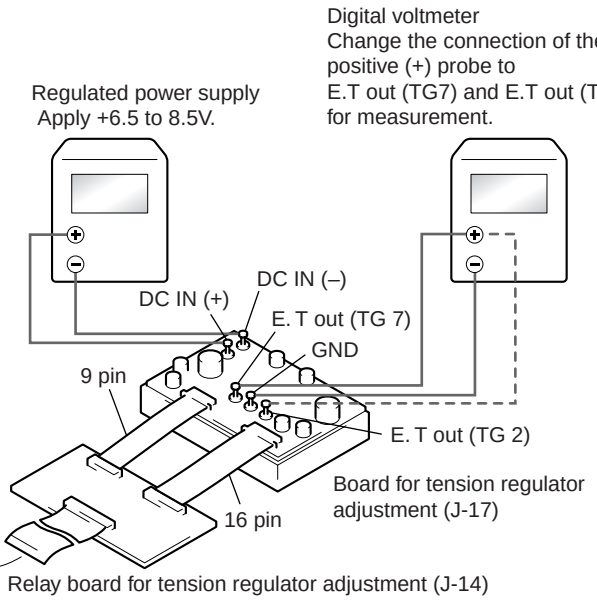


4-5. ELECTRIC TENSION REGULATOR CHECK AND ADJUSTMENT OF TG2/7 ARM

1. Preparation before check

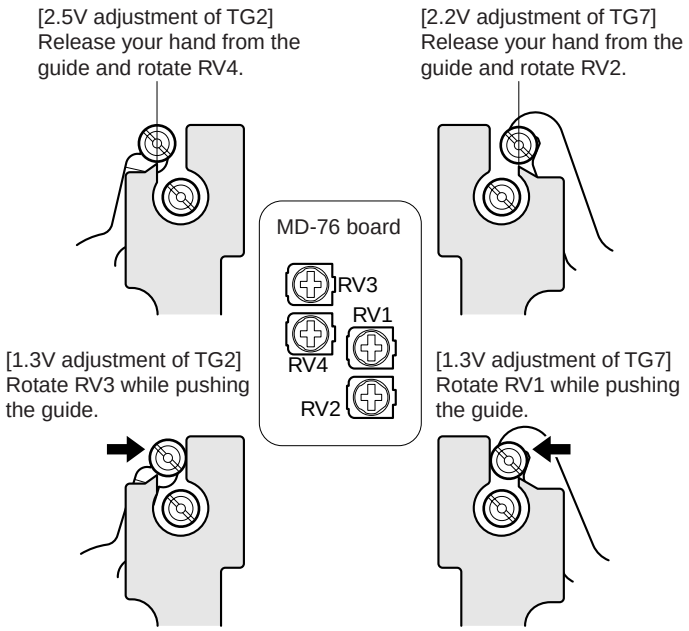
1) Check that the cassette compartment block has already been removed. (Refer to page 5-5.)
2) Set the mechanism deck to the loading end position (TG2 to 7 already moved to the loading end position and the pinch roller is in the unloading position). Alternatively, set the mechanism deck to the "LE position" 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.



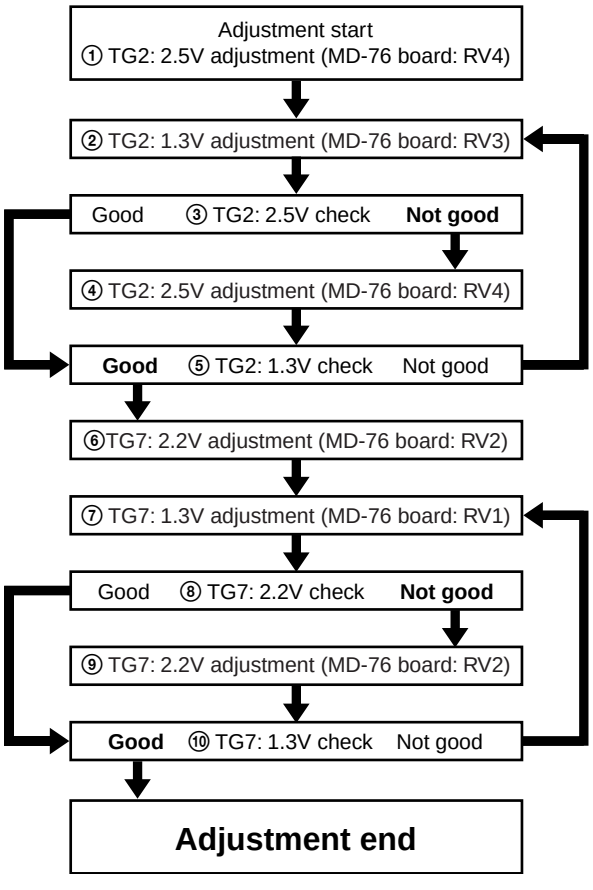


2. Check and adjustment

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 ± 0.1 V (TG2 side) or 2.2 ± 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 ± 0.1 V.



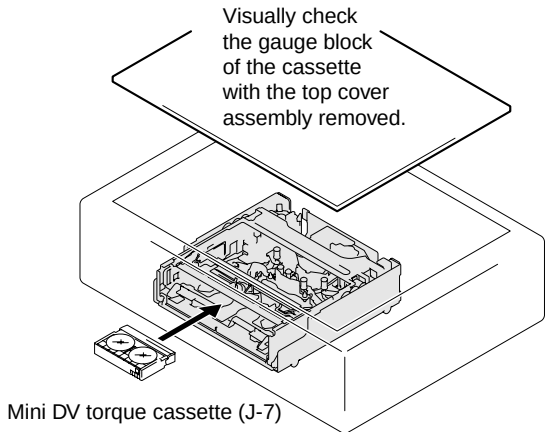
[Adjustment order]

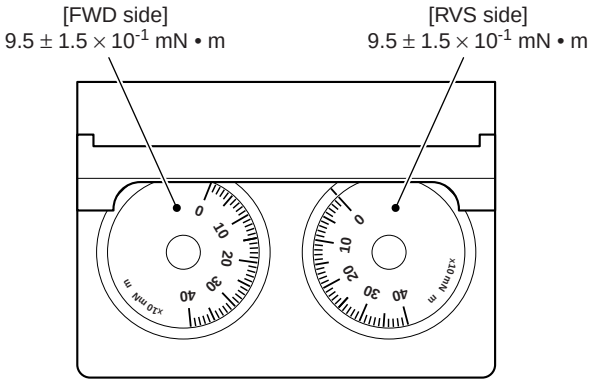


4-6. FWD/RVS BACK TENSION CHECK AND ADJUSTMENT

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.



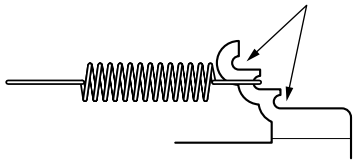


2. Check and adjustment

• FWD (TG2) side

The torque value should satisfy $9.5 \pm 1.5 \times 10^{-1}$ mN • 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.

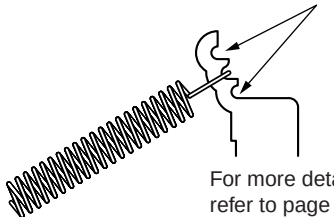


For more details, refer to page 5-23.

• RVS (TG7) side

The torque value should satisfy $9.5 \pm 1.5 \times 10^{-1}$ mN • 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.



For more details, refer to page 5-23.

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).

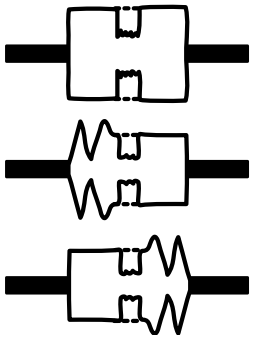
2. Turn the HOLD switch of the adjustment remote commander to the ON position.

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)

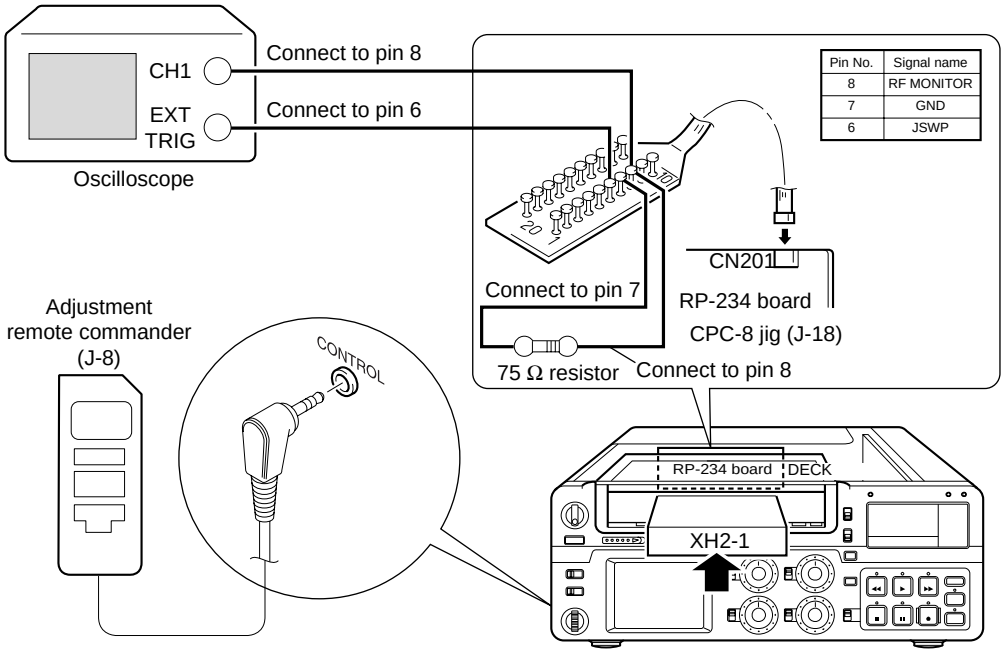
Play back the tracking tape (J-6) and check the states at the entrance and exit of the RF waveform. If it is not flat at either side, perform the adjustments from Adjustment Start-4 in the flowchart on page 5-23.



Normal entrance and exit sides

Faulty entrance side

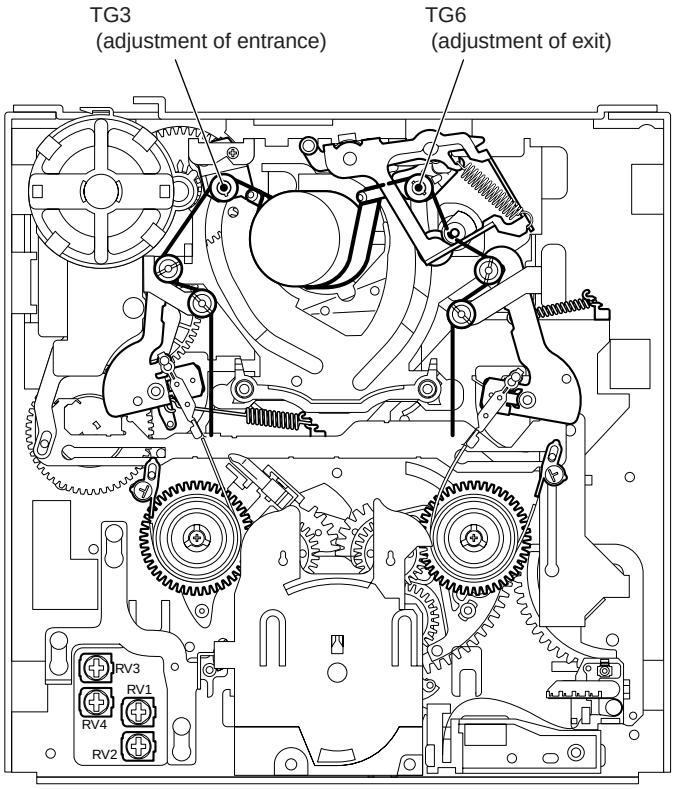
Faulty exit side



4-8. TRACK ADJUSTMENT AND CHECK (Checking the RF Waveform)

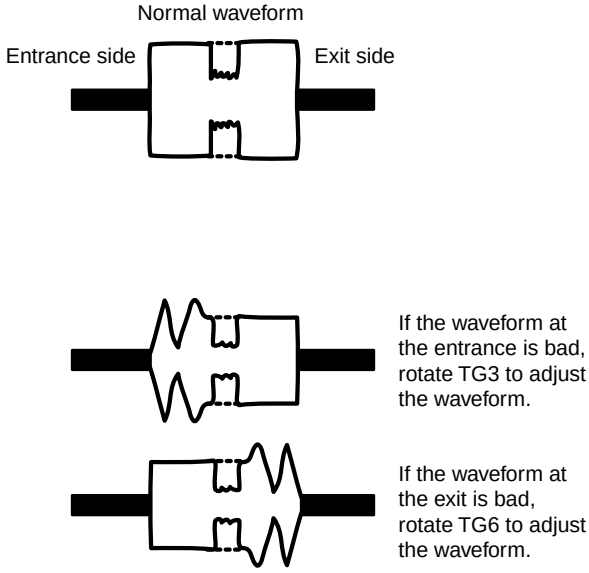
• Checking the RF waveform

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.

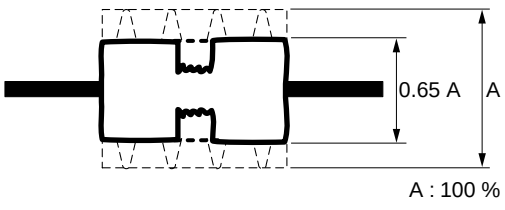


4-9. TRACK CHECK

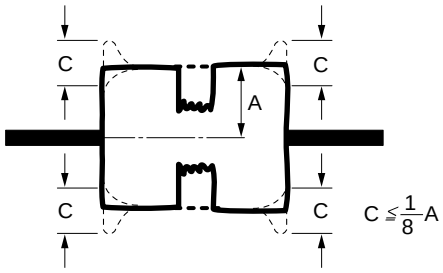
• Check

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.

Tracking waveform check -1

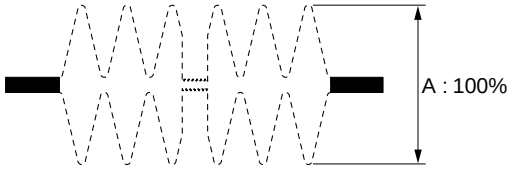


Tracking waveform check -2

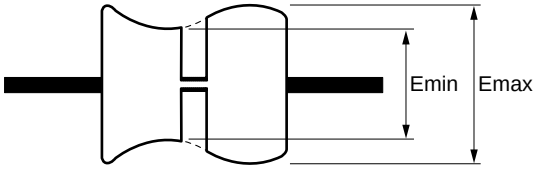


The waveform should not change sharply.

[Waveform in CUE or REV mode]



[Waveform in FWD mode]



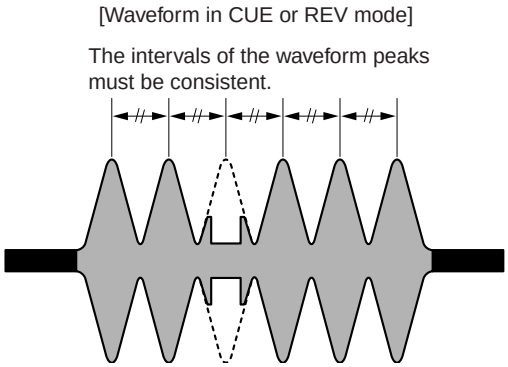
Emin: Minimum value
Emax: Maximum value

(Emin - Emax) ≦ 30% or ($\frac{3}{10}$A)

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”.

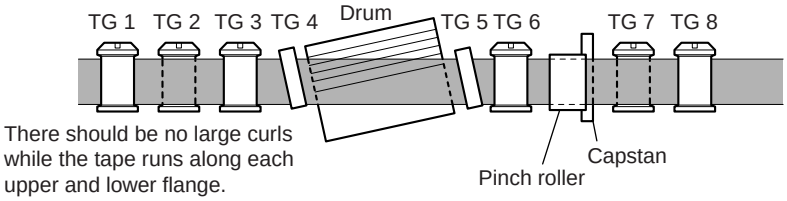
4-11. CURL CHECK AND ADJUSTMENT

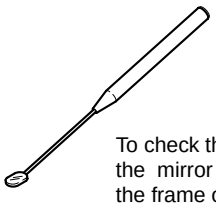
• Check

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.

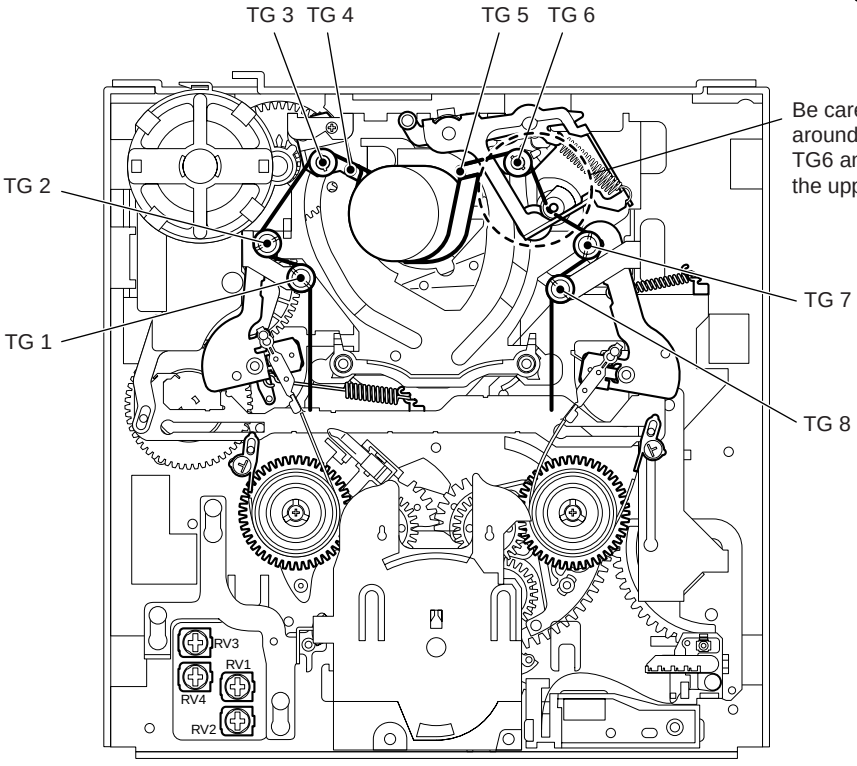
• If the curl is large

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.



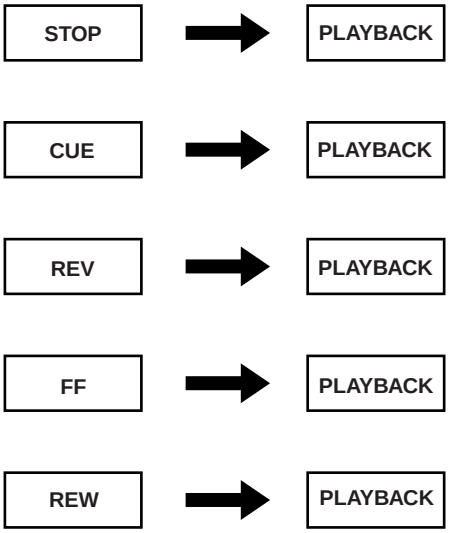
Be careful that there are often large curls around the capstan and pinch roller between TG6 and TG7. If there are large curls, rotate the upper flange of TG7 to remove the curls.

4-12. RISING CHECK

• Check

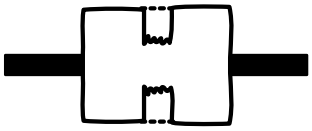
Check that when the tracking tape (J-6) is switched from the STOP, CUE, REV, FF, REW modes to the PLAYBACK mode, the waveform rises horizontally within 2 seconds. (Perform this 2 or 3 times.)

• 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.

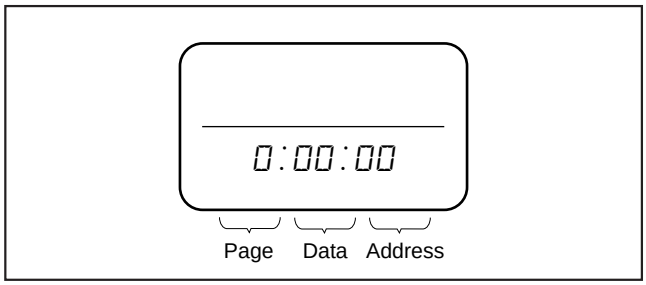


Fig. 5-2-1

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 nonvolatile 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 nontation-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 (R)	B (b)	C (c)	D (d) ② ↓	E (E)	F (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 (R)	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. Emergence 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 2: 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: 10.
4) Select page: 0, address: 01, and set data: 00.

2. EMG Code (Emergency Code)

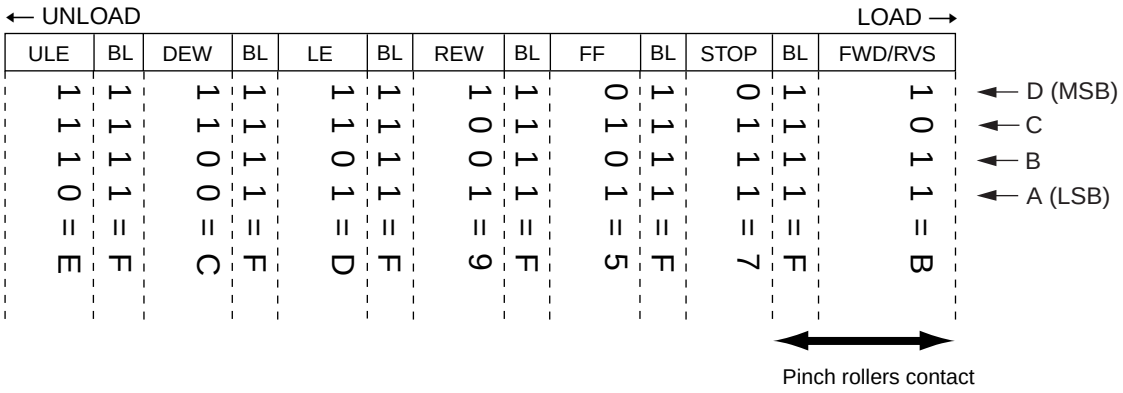
Codes corresponding to the errors which occur are written in addresses 38, 3C, 3E. The type of error indicated by the code are shown in the following table.

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.

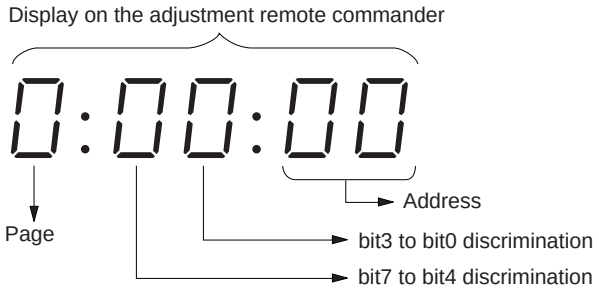
Mechanism position



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. Us the table below to discriminate if the bit value is “1” or “0”.



(Example) If the remote commander display is “8E”, bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

	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
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (C)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	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 and 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. Switch Check (Audio jack 1)

Page 9	Address E0

Bit	Function	When bit value = 0, 0	When bit value = 0, 1	When bitvalue = 1, 0
1,0	Audio input level switch (CH-1) (JK-169 board S102)	+4	-60	-20
3,2	Audio input level switch (CH-2) (JK-169 board S103)	+4	-60	-20
5,4	Audio input level switch (CH-3) (JK-169 board S106)	+4	-60	-20
7,6	Audio input level switch (CH-4) (JK-169 board S107)	+4	-60	-20

Using method:

1) Select page: 9, address: E0.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

7. Switch Check (Audio jack 2)

Page 9	Address E1

Bit	Function	When bit value = 0, 0	When bit value = 0, 1	When bitvalue = 1, 0
1,0	Audio input select switch (CH-1) (JK-169 board S104)	CAM	LINE	+48V ON
3,2	Audio input select switch (CH-2) (JK-169 board S105)	CAM	LINE	+48V ON
5,4	Audio input select switch (CH-3) (JK-169 board S108)	CAM	LINE	+48V ON
7,6	Audio input select switch (CH-4) (JK-169 board S109)	CAM	LINE	+48V ON

Using method:

1) Select page: 9, address: E1.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

8. Switch Check (Video jack)

Page 9	Address E2

Bit	Function	When bit value = 0	When bit value = 1
0	SUPERIMPOSE (JK-169 board S110)	OFF	ON
1	INPUT SELECT (JK-169 board S111)		DV
2			VIDEO
3			S VIDEO
4			CAMERA

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.

9. Switch Check (Key code)

Page 9	Address 13

Function	Data
PLAY (FR-157 board S528)	01
STOP (FR-157 board S531)	02
F FWD (FR-157 board 529)	03
REW (FR-157 board S527)	04
PAUSE (FR-157 board S532)	05
REC (FR-157 board S533)	15
REC (FR-157 board S533) + PLAY (FR-157 board S528)	06
END SEARCH (FR-157 board S535)	10
DUP (FR-157 board S530)	1D
AUDIO DUB (FR-157 board S534)	1C
AUDIO DUB (FR-157 board S534) + PLAY (FR-157 board S528)	0B
DUP (FR-157 board S530) + PLAY (FR-157 board S528)	1A
DUP (FR-157 board S530) + PLAY (FR-157 board S528) + PAUSE (FR-157 board S532)	1E
INDEX (FR-157 board S515)	1B

Using method:
1) Select page: 9, address: 13.
2) By discriminating the display data, the pressed key can be discriminated.

10. Switch Check (Key data 1)

Page 9	Address 26

Bit	Function
0	STOP (FR-157 board S531)
1	REW (FR-157 board S527)
2	PLAY (FR-157 board S528)
3	REC (FR-157 board S533)
4	PAUSE (FR-157 board S532)
5	F FWD (FR-157 board S529)
6	END SERCH (FR-157 board S535)
7	

Using method:
1) Select page: 9, address: 26.
2) By discriminating the bit value of display data, the pressed key can be discriminated.

11. Switch Check (Key data 2)

Page 9	Address 27

Bit	Function
0	AUDIO DUB (FR-157 board S534)
1	INDEX (FR-157 board S515)
2	DUP (FR-157 board S530)
3	FINE (FR-157 board S536)
4	LIGHT (FR-157 board S538)
5	
6	
7	

Using method:
1) Select page: 9, address: 27.
2) By discriminating the bit value of display data, the pressed key can be discriminated.

12. Switch Check (Slide switch 1)

Page 9	Address 28

Bit	Function	When bit value = 0	When bit value = 1
0	DV CAM/DV (VD-28 board S702)	DV CAM	DV

Using method:
1) Select page: 9, address: 28.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

13. Switch Check (Slide switch 2)

Page 9	Address 28

Bit	Function	When bit value = 0, 1	When bit value = 1, 0	When bit value = 1, 1
5, 4	DISPLAY (ON/OFF/LCD OFF) (FR-157 board S524)	OFF	ON	LCD OFF
7, 6	DISPLAY (AUDIO/TC/MENU) (FR-157 board S525)	TC	AUDIO	MENU

Using method:
1) Select page: 9, address: 28.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

14. Switch Check (Slide switch 3)

Page 9	Address 29

Bit	Function	When bit value = 0	When bit value = 1
0	METER (FR-157 board S516)	CH 3/4	CH 1/2
1			
2	COUNTER (FR-157 board S518)	U-BIT	TC
3	KEY INH (FR-157 board S519)	OFF	ON
4	AUDIO SELECT (CH-1) (FR-157 board S520)	MANU	AUTO
5	AUDIO SELECT (CH-2) (FR-157 board S521)	MANU	AUTO
6	AUDIO SELECT (CH-3) (FR-157 board S522)	MANU	AUTO
7	AUDIO SELECT (CH-4) (FR-157 board S523)	MANU	AUTO

Using method:
1) Select page: 9, address: 29.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

5-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts on page 5-98.

3-1. PREPARATIONS BEFORE ADJUSTMENT

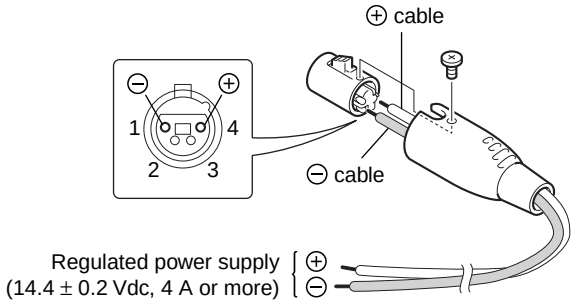
3-1-1. Equipment Used

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) Balanced audio generator
6) Audio level meter
7) Audio noise meter
8) Audio attenuator
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-20 board and CN9500 of the DI-73 board. (120P, 0.5 mm) (J-6082-511-A)
15) Regulated power supply
16) Time code generator (NTSC : BVG-1600/
    PAL : BVG-1600P etc.)
17) Time code reader (BVG-1500 etc.)
18) Circular connector (PF, XLR4P)
    - For connection of the regulated power supply. (Note)
      Parts code: 1-784-897-11

    NTSC : DSR-50
    PAL : DSR-50P

Note: How to Make DC Cable

Solder a ⊖ cable to the pin 1 and a ⊕ cable to the pin 4 of the circular connector (PF, XLR4P) (1-784-897-11).



3-1-2. Connection of Equipment

According to the specification for the input terminal (CAMERA 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 CAMERA 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.

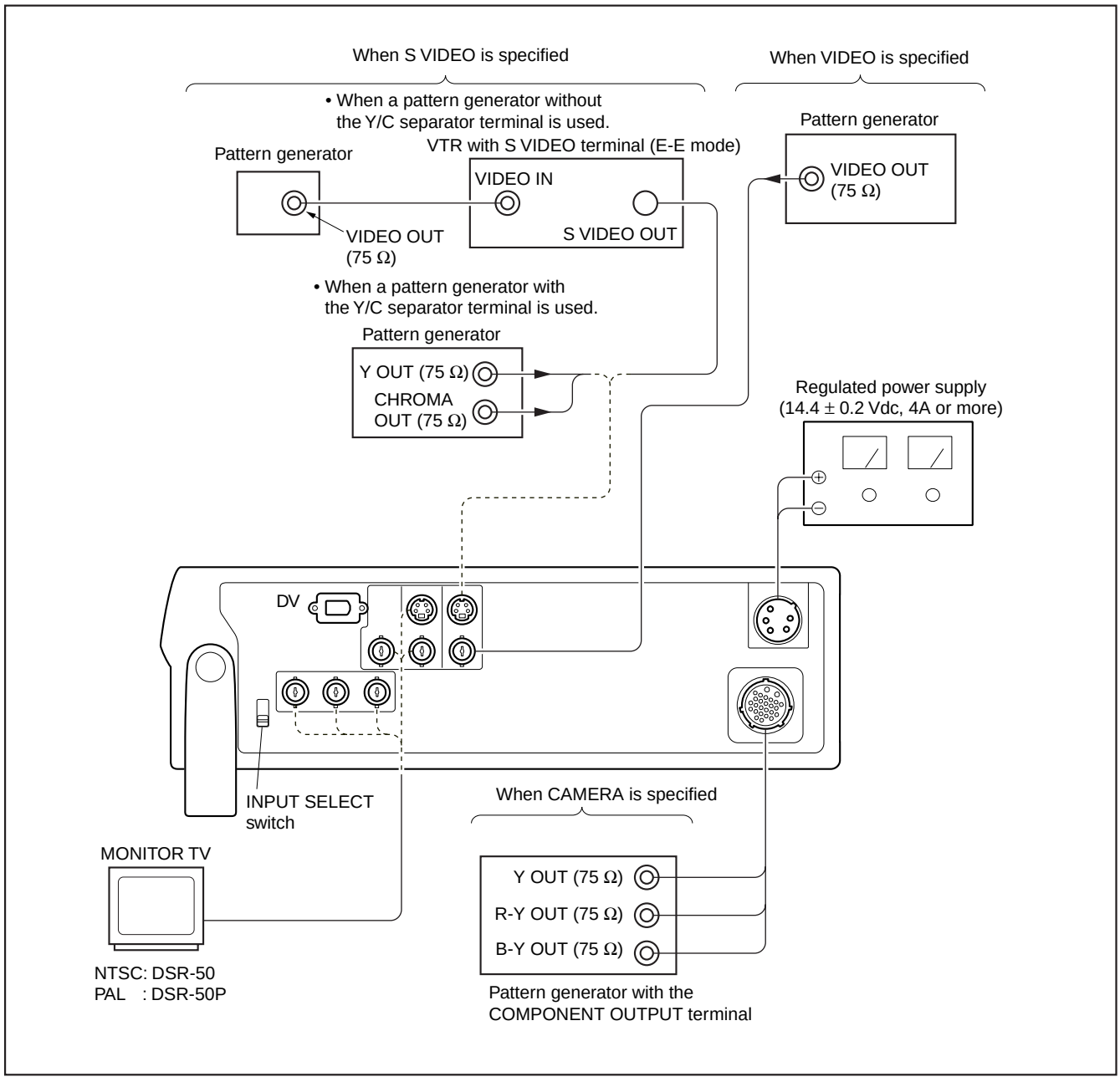


Fig. 5-3-1

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 input 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. (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 input terminal, and check that the burst signal amplitude of the chroma signal is approximately <0.286> [0.30] V and flat, and that the red signal amplitude of the chroma signal is approximately <0.66> [0.67] V. The Y and chroma signals used in the adjustment are shown in Fig. 5-3-2.

< >: NTSC model

[ ]: PAL model

2. VIDEO Input

Connect the oscilloscope to the VIDEO input terminal, and check that the sync signal amplitude of the video signal is approximately <0.286> [0.30] V, the amplitude of the video section is approximately <0.714> [0.70] V, the amplitude of the burst signal is approximately <0.286> [0.30] V and flat, and that the red signal amplitude of the chroma signal is approximately <0.66> [0.67] V. The video signal (color bar) used for adjustments is shown in Fig. 5-3-3.

< >: NTSC model

[ ]: PAL model

NTSC: DSR-50
PAL : DSR-50P

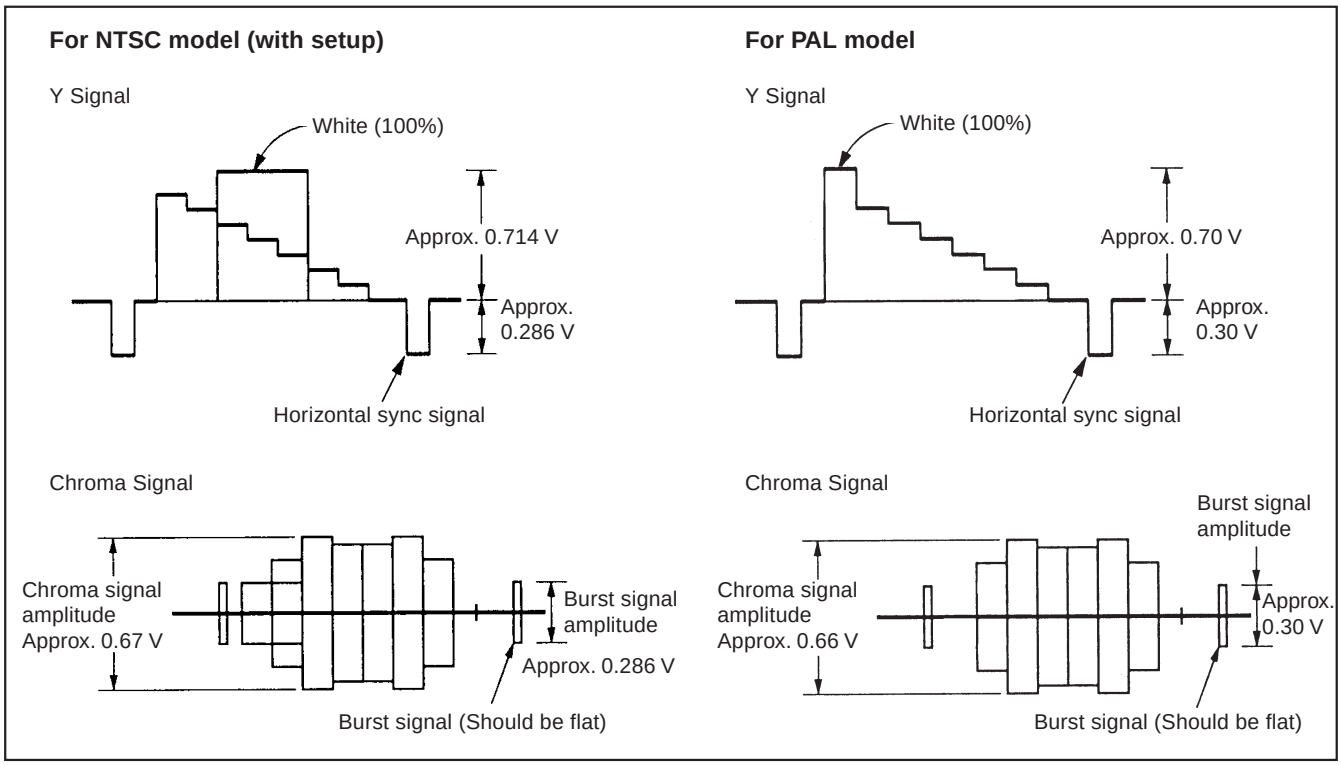


Fig. 5-3-2 *Color Bar Signal of Pattern Generator*

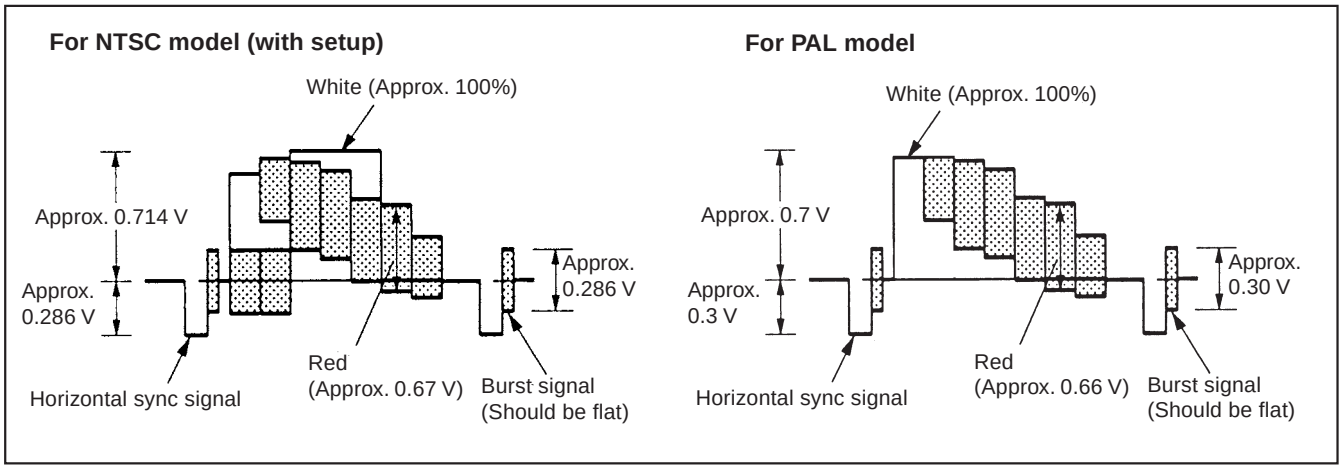


Fig. 5-3-3 *Color Bar Signal of Pattern Generator*

3. CAMERA Input

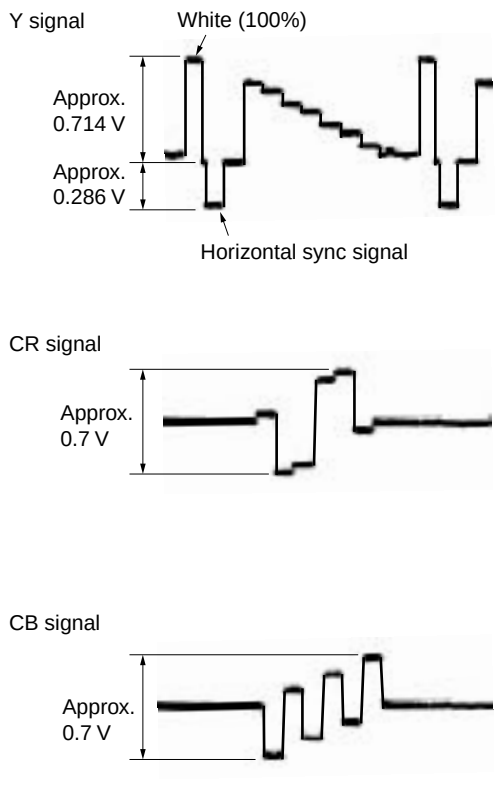
Connect the oscilloscope to the Y signal terminal of the CAMERA terminal, and check that the sync signal of the Y signal is approximately <0.286> [0.30] V and that the amplitude of the video section is approximately <0.714> [0.70] V. Connect the oscilloscope to the R-Y signal terminal of the CAMERA terminal, 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 CAMERA 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-50
PAL : DSR-50P

For NTSC model (with Setup)



For PAL model

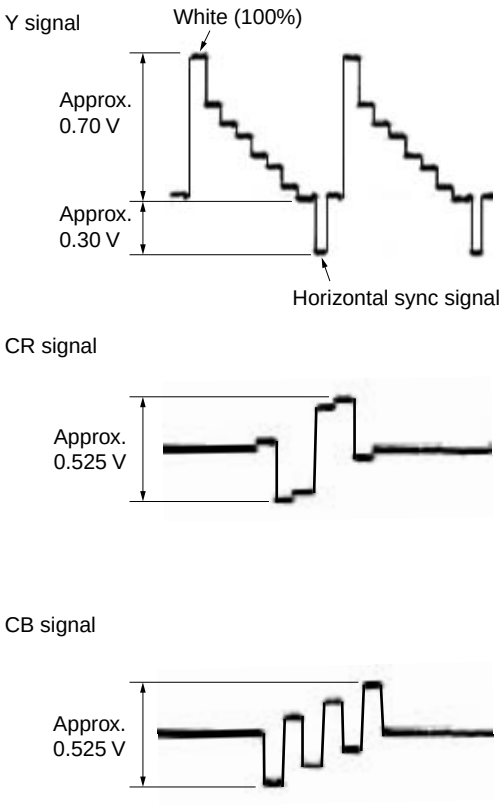


Fig. 5-3-4

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
BIST check (XH5-6 (NTSC), XH5-6P (PAL))	BIST check

Table 5-3-1

Fig. 5-3-5 shows the color bar signals recorded on the alignment tape for Audio Operation Check.

NTSC: DSR-50
PAL : DSR-50P

Note: Measure with video terminal (Terminated at 75 Ω)

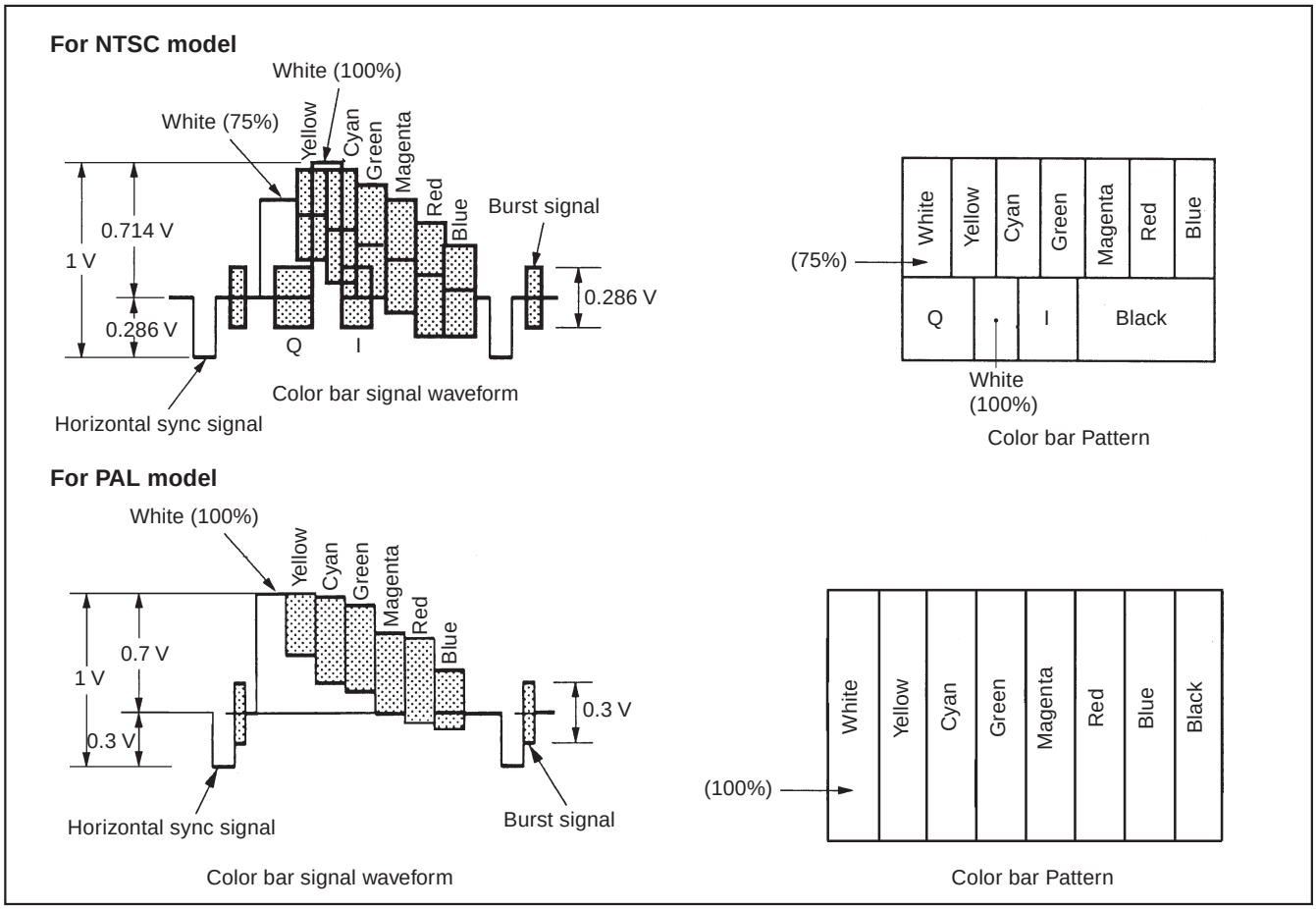


Fig. 5-3-5 *Color Bar Signal of Alignment Tapes*

3-1-5. Input/output Level and Impedance

Inputs

VIDEO/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-50)
0.3 Vp-p (DSR-50P)
(75 ohms unbalanced)

DV IN/OUT — 6-pin IEEE-1394 standard jack (i.LINK)

AUDIO INPUT (CH-1 to CH-4) — XLR 3-pin, female, +4/ −20/ −60 dBu, Impedance more than 3 kohms, balanced (48 V phantom power supply)
Maximum input level
−60: −19 dBu (about 90 mVrms)
−20: +8 dBu (about 2 Vrms)
+4: +30 dBu (about 25 Vrms)

CAMERA — 26-pin
Composite: 1 Vp-p (75 ohms, unbalanced)
Component:
Y : 1 Vp-p (75 ohms, unbalanced)
B-Y: 0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
R-Y: 0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
Audio: −20/ −60 dBu, Impedance more than 3 kohms, balanced

TC IN — BNC type
0.5 to 18 Vp-p (time code input)
0.5 to 4 Vp-p (through output)

Outputs

VIDEO OUT1 — BNC type, 1 Vp-p (75 ohms, unbalanced) (superimpose)

VIDEO OUT2 — BNC type, 1 Vp-p (75 ohms, unbalanced)

COMPONENT OUTPUT
Y: BNC type
1 Vp-p (75 ohms, unbalanced)
R-Y: BNC type
0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)
B-Y: BNC type
0.7 Vp-p (75 ohms, unbalanced)
(DSR-50: 75%, color bars / DSR-50P: 100%, colour bars)

S VIDEO OUT — Mini DIN 4-pin
Luminance signal: 1 Vp-p (75 ohms, unbalanced)
Chrominance signal:
0.286 Vp-p (DSR-50)
0.3 Vp-p (DSR-50P)
(75 ohms, unbalanced)

AUDIO OUTPUT (CH-1 to CH-4) — Phono jack, −10 dBu, 47 kohms,
Output impedance: less than 1 kohms
(DSR-50: −20 dB from full bit / DSR-50P: −18 dB from full bit)

AUDIO MONITOR OUT — 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 phone jack
−∞ to −19 dBu, adjustable

DC IN 12V — XLR 4-pin, male, 12 V

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 E8

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

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) Disconnect the adjustment remote commander, and turn the POWER switch OFF.
6) Turn off the regulated power supply connected to the DCIN terminal once, and turn it on again.
7) Check that the date, time, available tape capacity, and format are displayed on the display window (monochrome LCD) of the set.
8) Turn the POWER switch ON.
9) Press the RESET switch at the bottom of the set using a thin and long pin.
10) 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_0 adj.
20	3E	3E	
21	DC	DC	CLK DELAY and AEQ adj.
22	99	99	PLL f_0 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	
44 to 46			Fixed data-1 (Initialized data)
47	20	20	PLL f_0 adj.
48 to 72			Fixed data-1 (Initialized data)
73	03	03	CLK DELAY and AEQ adj.
74 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 21			Fixed data-1 (Initialized data)
22			Fixed data-2
23 to 35			Fixed data-1 (Initialized data)
36			Fixed data-2
37			
38 to 3B			Fixed data-1 (Initialized data)
3C			Fixed data-2
3D			
3E, 3F			Fixed data-1 (Initialized data)

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 29			Fixed data-1 (Initialized data)
2A	08	08	H phase adj.
2B to 69			Fixed data-1 (Initialized data)
6A			Fixed data-2
6B			
6C			
6D			Fixed data-1 (Initialized data)
6E			Fixed data-2
6F			
70 to 7F			Fixed data-1 (Initialized data)
80	90	90	White barance adj. (LCD)
81	8E	8E	
82	74	74	Black limit adj. (LCD)
83	82	82	Gamma 1 adj. (LCD)
84	7B	7B	VCO adj. (LCD)
85	69	69	Center voltage adj. (LCD)
86			Fixed data-1 (Initialized data)
87	69	69	Black limit adj. (LCD)
88, 89			Fixed data-1 (Initialized data)
8A	90	90	Bright adj. (LCD)
8B			Fixed data-1 (Initialized data)
8C	B0	B0	Contrast adj. (LCD)
8D to 8F			Fixed data-1 (Initialized data)
90	2A	26	Composite E-E Y signal level adj.
91			Fixed data-2
92			Fixed data-1 (Initialized data)
93	72	3B	Decoder HUE adj.
94	26	27	Component E-E Y signal level adj.
95	42	BC	Component E-E CB signal level adj.
96	4A	C2	Component E-E CR signal level adj.
97			Fixed data-1 (Initialized data)
98	72	4E	Component E-E CB signal delay adj.
99	70	45	Component E-E CR signal delay adj.
9A			Fixed data-1 (Initialized data)
9B	2A	49	Playback CB signal delay adj.
9C	2A	59	Playback CR signal delay adj.
9D	7A	88	Playback sync level adj.
9E			Fixed data-1 (Initialized data)
9F	A8	50	Burst level adj.
A0	–	62	Fixed data-2 (NTSC) / Burst level adj. (PAL)
A1	93	A6	Color level adj. with 0% setup
A2	B9	CE	
A3	B1	AF	Carrier balance adj.
A4	8F	89	
A5	83	86	Encoder free run adj.
A6			Fixed data-1 (Initialized data)
A7	58	B8	Playback SC phase adj. (EXT SYNC ON)
A8	35	36	SC_V phase adj.

Address	Initial value		Remark
	NTSC	PAL	
A9	5C	75	Decoder free run adj.
AA	93	A5	Playback blanking level adj. with 0% Setup
AB			Fixed data-1 (Initialized data)
AC	4F	4F	Playback Y signal level adj. with 0% Setup
AD	AD	A5	Playback CB signal level adj. with 0% Setup
AE	94	A5	Playback CR signal level adj. with 0% Setup
AF to B4			Fixed data-1 (Initialized data)
B5	BF	46	S Video E-E CB signal delay adj.
B6	A5	77	S Video E-E CR signal delay adj.
B7			Fixed data-1 (Initialized data)
B8	E3	7A	Composite E-E CB signal delay adj.
B9	AF	4D	Composite E-E CR signal delay adj.
BA			Fixed data-2
BB			
BC			
BD	A0	9E	S video E-E Y signal level adj.
BE	A0	BA	S video E-E CB signal level adj.
BF	9B	C1	S video E-E CR signal level adj.
C0	94	–	Chroma level adj. with 7.5% setup (NTSC)
C1	B1	–	Fixed data-1 (Initialized data) (PAL)
C2	40	–	Playback Y signal level adj. with 7.5% setup (NTSC) Fixed data-1 (Initialized data) (PAL)
C3	8B	–	Playback CB signal level adj. with 7.5% setup (NTSC) Fixed data-1 (Initialized data) (PAL)
C4	7C	–	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	72	–	Playback blanking level adj. with 7.5% Setup (NTSC) Fixed data-1 (Initialized data) (PAL)
C9	94	76	H phase adj.
CA	8F	B0	E-E chroma level adj.
CB	AA	CA	
CC	94	A6	E-E blanking level adj.
CD			Fixed data-1 (Initialized data)
CE	88	5E	E-E SC phase adj.
CF	3F	31	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	

Address	Initial value		Remark
	NTSC	PAL	
DB	00	00	Record of use
DC	00	00	
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 to E8			Fixed data-1 (Initialized data)

9. Node Unique ID No. Input

Note 1: Perform "2-2. 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

Write the company ID to the EEPROM (nonvolatile memory).

Page	C
Address	2C, 2D, 2E, 2F, 30

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) 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

3) Select page: 0, address: 01, and set data: 00.

9-2. Input of Serial No.

Write the serial No. and model code to the EEPROM (nonvolatile memory).
In writing the serial No., a decimal number should be converted into
a hexadecimal number.

Page	C
Address	31, 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_1.
   Example: If serial No. is "77881",
   D_1 = 77881
3) From Table 5-3-2, obtain D_2 and H_1 that correspond to D_1.
   Example: If D_1 = 77881,
   $D_2 = D_1 - 65536 = 12345$
   H_1 = 5A

D_1 (decimal)	D_2 (decimal) (Service model code)	H_1 (hexadecimal)
00001 to 65535	D_1	5A
65536 to 131071	$D_1 - 65536$	5A
131072 to196607	$D_1 - 131072$	5A

Table 5-3-2

4) Enter H_1 to address: 31 on page: C.
   Example: If H_1 = 5A,
   select page: C, address: 31, and set data: 5A, then press the PAUSE button.
5) From Table 5-3-3, obtain the maximum decimal number less than D_2, and it is assumed to be D_3.
   Example: If D_2 = 12345.
   D_3 = 12288
6) From Table 5-3-3, obtain a hexadecimal number that corresponds to D_3, and it is assumed to be H_3.
   Example: If D_3 = 12288,
   H_3 = 3000
7) Caluculate D_4 using following equations (decimal caluculation). ($0 \leqq D_4 \leqq 225$)
   $D_4 = D_2 - D_3$
   Example: If D_2 = 12345 and D_3 = 12288,
   $D_4 = 12345 - 12288 = 57$
8) Convert D_4 into a hexadecimal number to obtain H_4. (See Table 5-2-2 "Hexadecimal - decimal conversion table" in 5-2. Service Mode)
   Example: If D_4 = 57,
   H_4 = 39
9) Enter higher two digits of H_3 to address: 32 on page: C.
   Example: If H_3 = 3000,
   select page: C, address: 32, and set data: 30, then press the PAUSE button.
10) Enter H_4 to address: 33 on page: C.
    Example: If H_4 = 39,
    select page: C, address: 33, and set data: 39, then press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

D_3	H_3	D_3	H_3	D_3	H_3	D_3	H_3	D_3	H_3	D_3	H_3	D_3	H_3	D_3	H_3
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_3: Decimal
H_3: 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_0 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:

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: 07, 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.

6. PLL f_0 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:

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.

3-4. VIDEO SYSTEM ADJUSTMENTS

3-4-1. JC-20 Board Adjustment

1. VFD SPCK Adjustment (JC-20 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:

1) Set the VFD SPCK frequency (f) to the specified value using CT3300.

2. A/D Converter Reference Voltage Adjustment (1) (JC-20 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:

1) Set the VRT voltage (A) to the specified value using RV1100.

3. A/D Converter Reference Voltage Adjustment (2) (JC-20 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:

1) Set the VBT voltage (A) to the specified value using RV1101.

4. Y Signal Clamp Reference Voltage Adjustment (JC-20 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-20 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-20 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-20 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-20 Board)

Mode	Recording
Signal	Color bar
Measuring Point	CH1: Pin ㉑ of IC1108 (CL1157) CH2: Pin ㉘ 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 vale using RV2201.

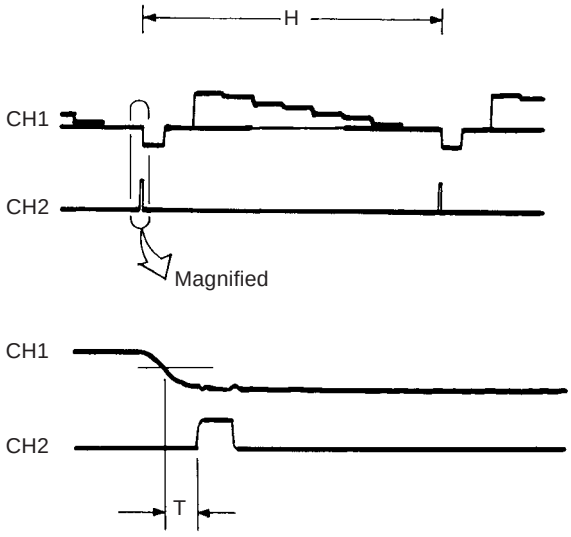


Fig. 5-3-6

9. AFC Adjustment (JC-20 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-20 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.

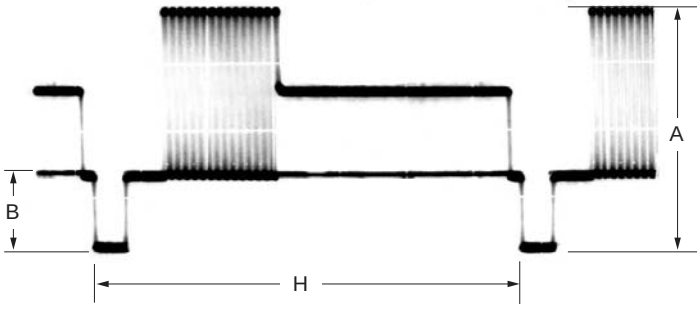


Fig. 5-3-7

11. Playback C level Adjustment (JC-20 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.

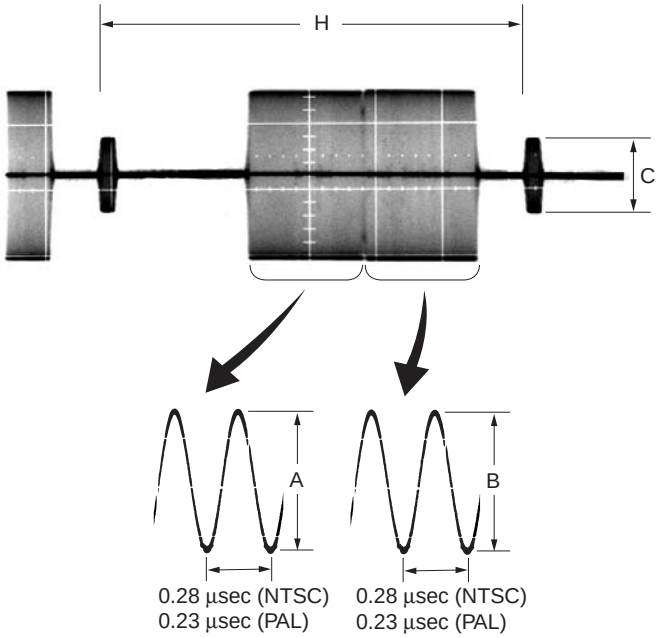


Fig. 5-3-8

3-4-2. General Adjustment

1. Playback Sync Level Adjustment (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT Y terminal (75 Ω terminated) VIDEO OUT 2 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.

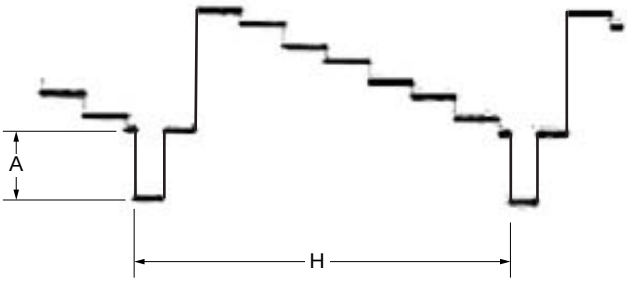


Fig. 5-3-9

2. Playback Blanking Level Adjustment with 0% Setup (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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.

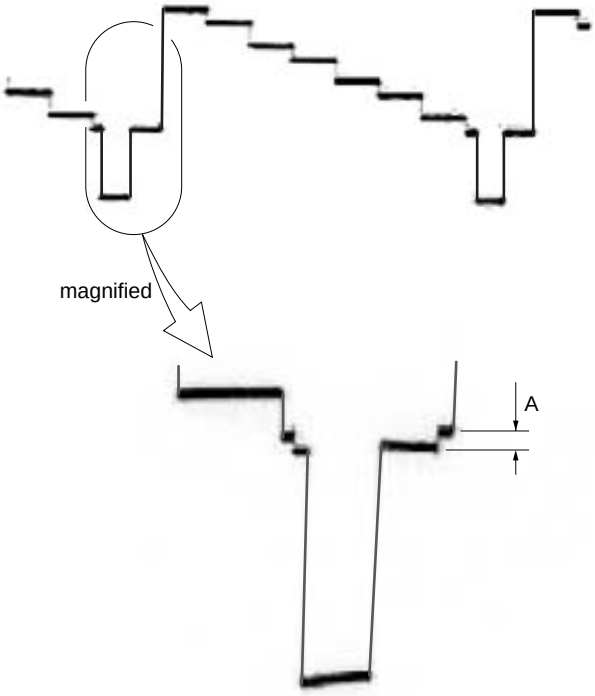


Fig. 5-3-10

3. Playback Y Signal Level Adjustment with 0% Setup (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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_{AC}.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: E, address: BA, set data: D_{AC}, 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.

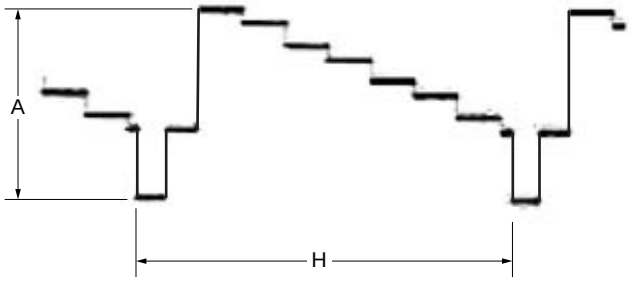


Fig. 5-3-11

4. Playback CR Signal Level Adjustment with 0% Setup (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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_{AE}.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: E, address: BC, set data: D_{AE}, 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.

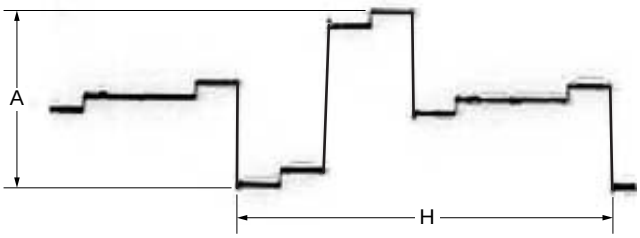


Fig. 5-3-12

5. Playback CB Signal Level Adjustment with 0% Setup (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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_{AD}.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: E, address: BB, set data: D_{AD}, 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.

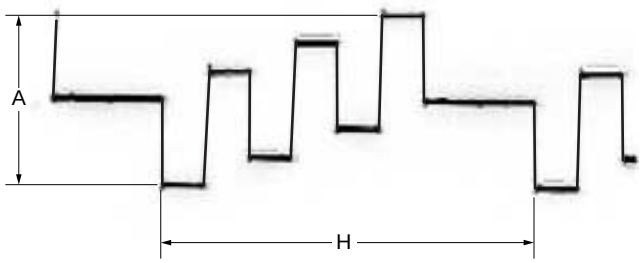


Fig. 5-3-13

6. Playback CR Signal Delay Adjustment (VD-28 Board)

Mode	Playback
Signal	A tape that the color bar signal is recorded (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT 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.

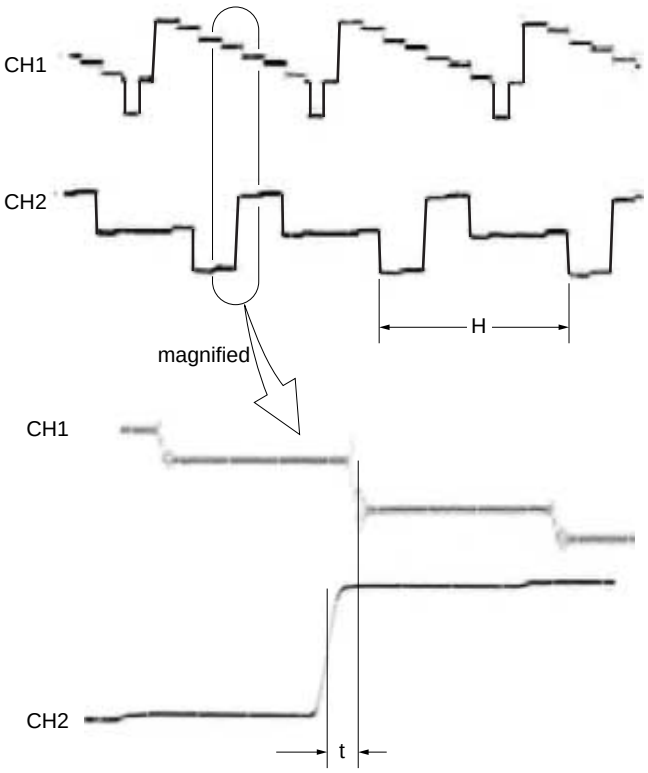


Fig. 5-3-14

7. Playback CB Signal Delay Adjustment (VD-28 Board)

Mode	Playback
Signal	A tape that the color bar signal is recorded (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	9B
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 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.

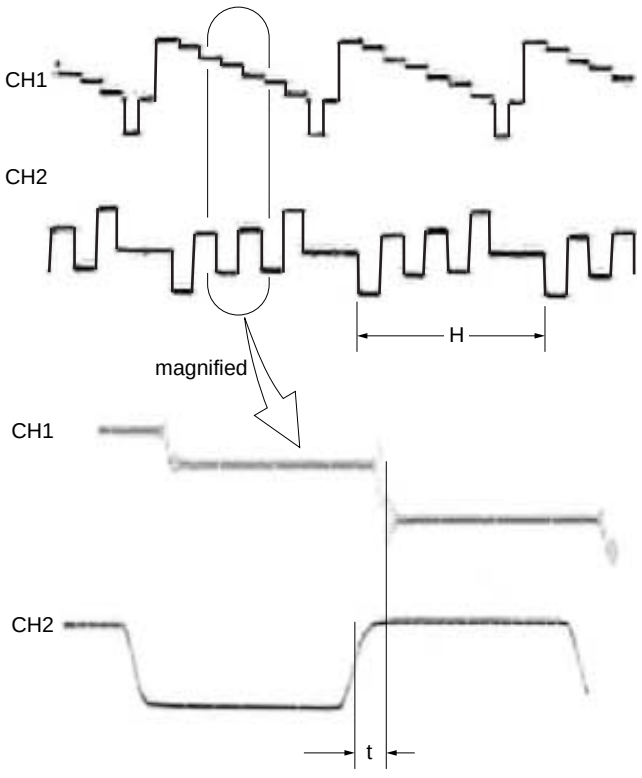
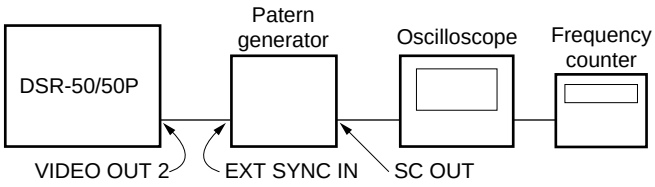


Fig. 5-3-15

8. Encoder Free Run Adjustment (VD-28 Board)

Mode	E-E
Signal	No signal (DV input) (Note1)
Measurement Point	VIDEO OUT 2 terminal
Measuring Instrument	Pattern generator (External synchronization mode) Oscilloscope Frequency counter (Note2)
Adjustment Page	E
Adjustment Address	A5
Specified Value	f = 3579545 ± 10 Hz (NTSC) f = 4433618 ± 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: 28, set data: 81, and press the PAUSE button of the adjustment remote commander.
3) Select page: E, address: A5, change the data and adjust the encoder free run frequency (f) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: E, address: 28, set data: 80, and press the PAUSE button.
6) Select page: 0, address: 01, and set data: 00.

9. Carrier Balance Adjustment (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 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.

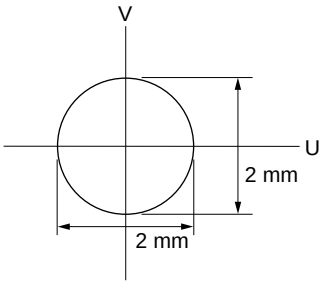


Fig. 5-3-16

10. Burst Level Adjustment (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 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 tha 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.

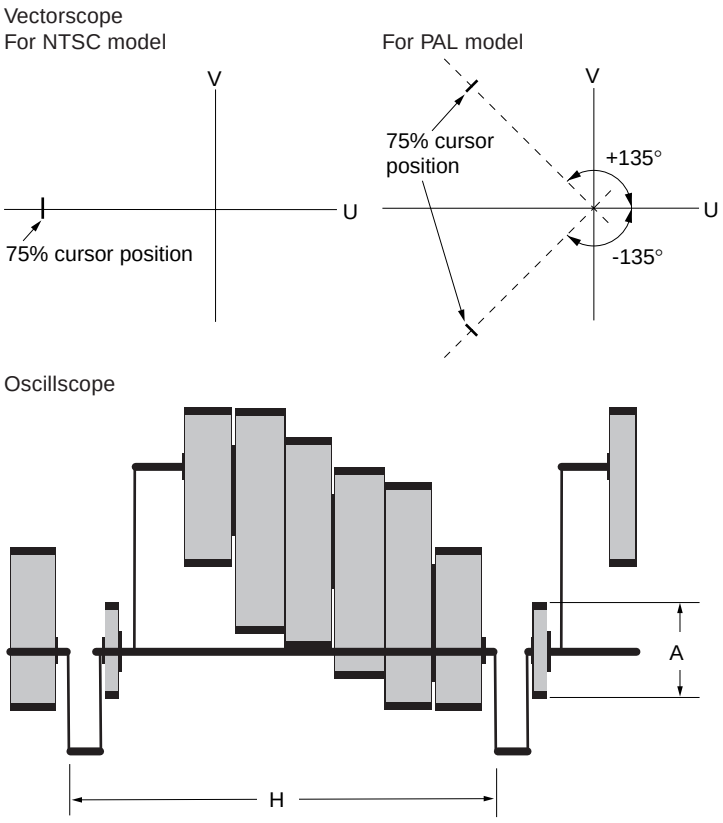


Fig. 5-3-17

11. Color Level Adjustment with 0% Setup (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode)
Adjustment Page	E
Adjustment Address	A1, A2
Specified Value	From the center of ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

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 ⊞ 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-28 Board)

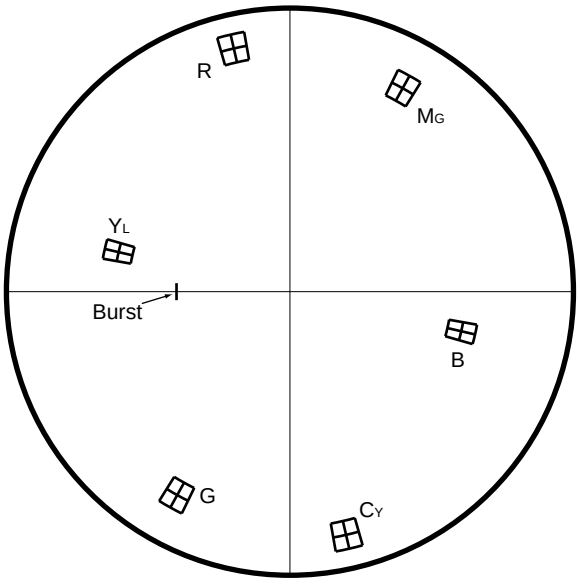
Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 0% setup mode)
Adjustment Page	E
Adjustment Address	A8
Specified Value	From the center of ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

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 ⊞ 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

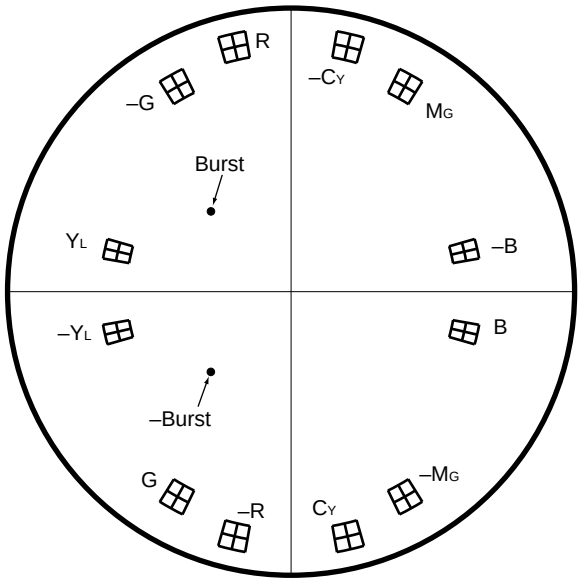


Fig. 5-3-18

13. Playback Blanking Level Adjustment with 7.5% Setup (VD-28 Board) (DSR-50)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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.

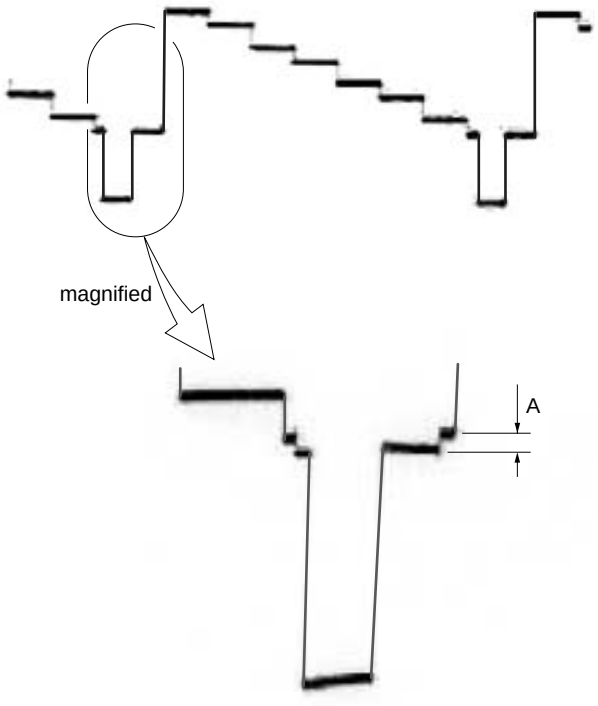


Fig. 5-3-19

14. Playback Y Signal Level Adjustment with 7.5% Setup (VD-28 Board) (DSR-50)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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.

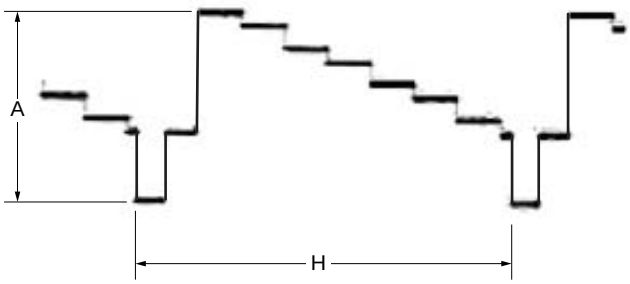


Fig. 5-3-20

15. Playback CR Signal Level Adjustment with 7.5% Setup (VD-28 Board) (DSR-50)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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.

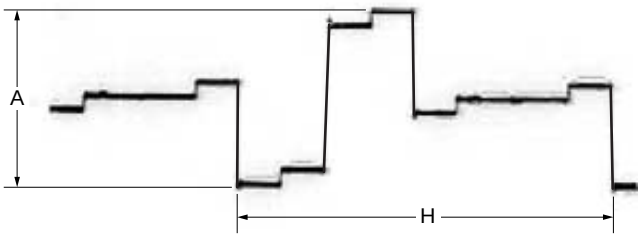


Fig. 5-3-21

16. Playback CB Signal Level Adjustment with 7.5% Setup (VD-28 Board) (DSR-50)

Mode	Playback
Signal	Arbitrary
Measurement Point	COMPONENT OUTPUT 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.

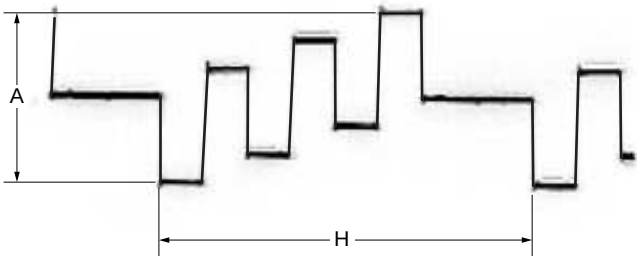


Fig. 5-3-22

17. Color Level Adjustment with 7.5% Setup (VD-28 Board) (DSR-50)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (7.5% setup mode)
Adjustment Page	E
Adjustment Address	C0, C1
Specified Value	From the center of ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

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 ⊞ 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.

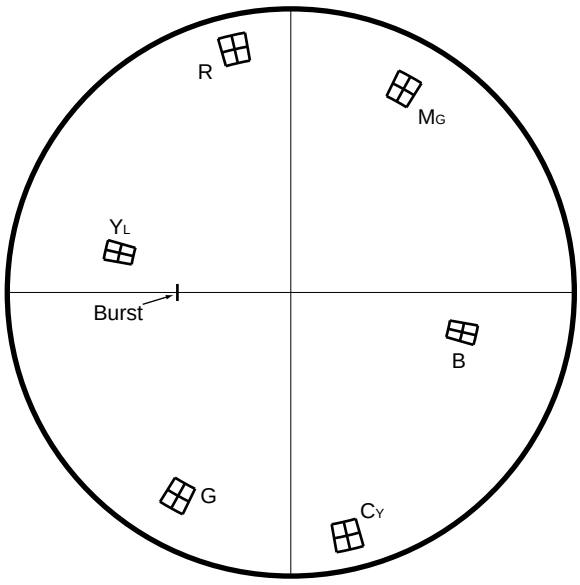


Fig. 5-3-23

18. Video Output Level Check (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 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 video signal level (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.

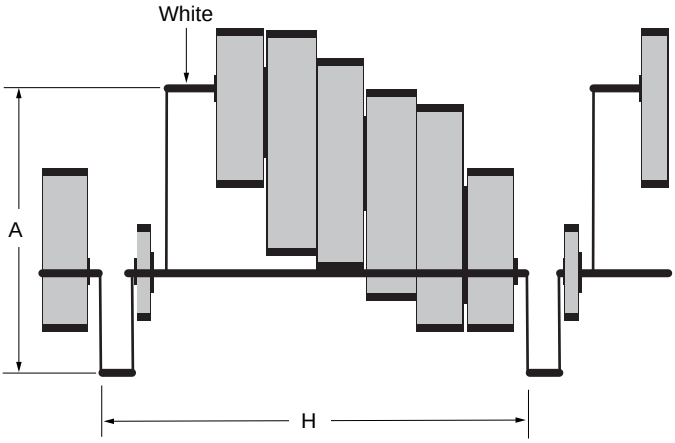


Fig. 5-3-24

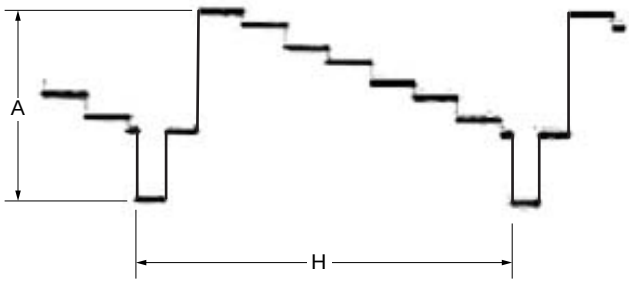
19. S-Video Output Level Check (VD-28 Board)

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 ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

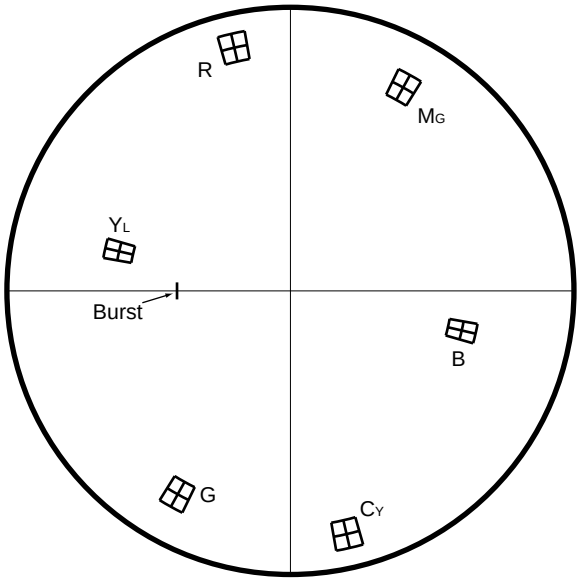
Adjusting method:

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 ⊞ 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

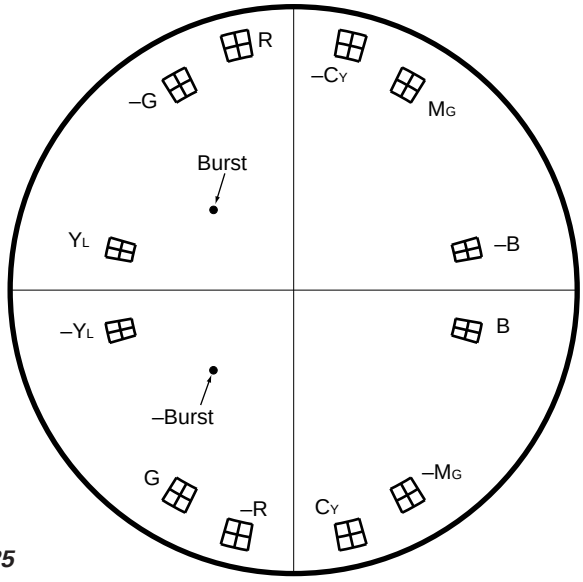


Fig. 5-3-25

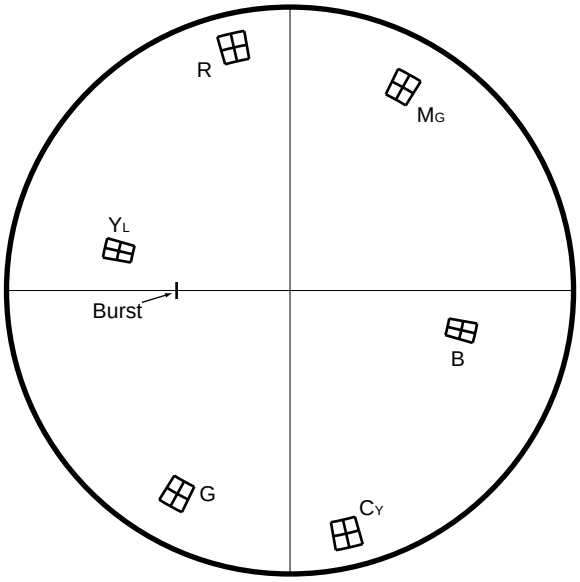
20. Monitor Terminal Output Level Adjustment (JC-20 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 1 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 ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

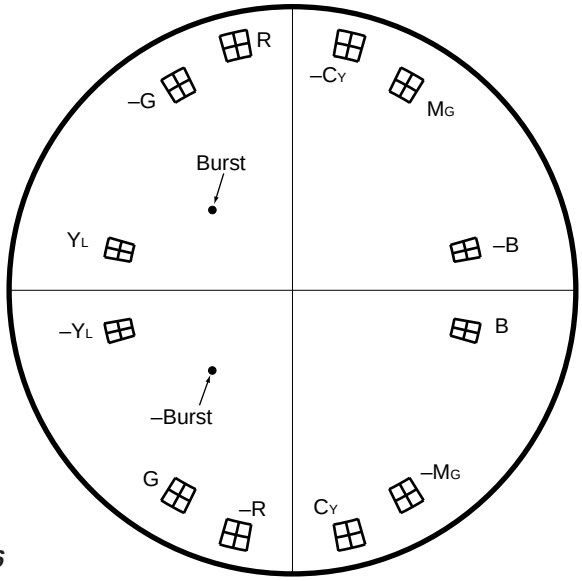
Adjusting method:

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: E, addresses: 26, 27 and adjust so that each luminance point positions at the ⊞ 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

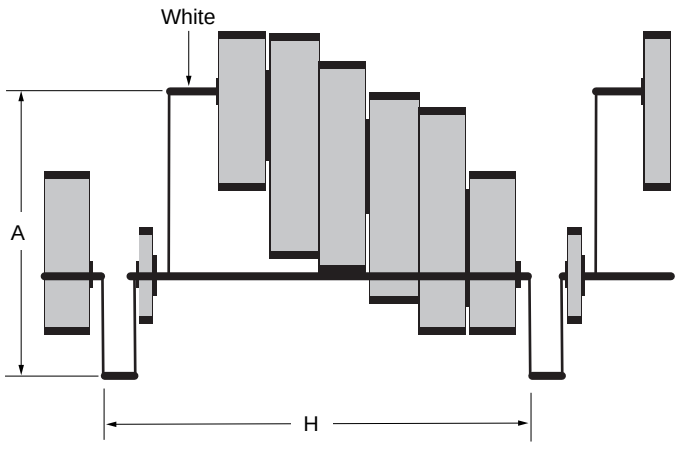


Fig. 5-3-26

21. E-E Blanking Level Adjustment (VD-28 Board)

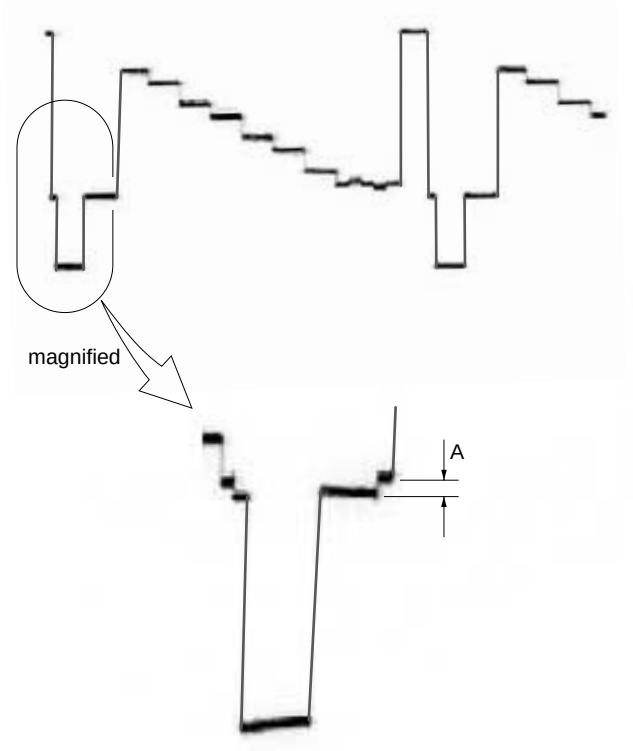
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (CAMERA input) (Note)
Measurement Point	COMPONENT OUTPUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	CC
Specified Value	A = 0 ± 3 mV

Note1: Set “CAMERA” 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

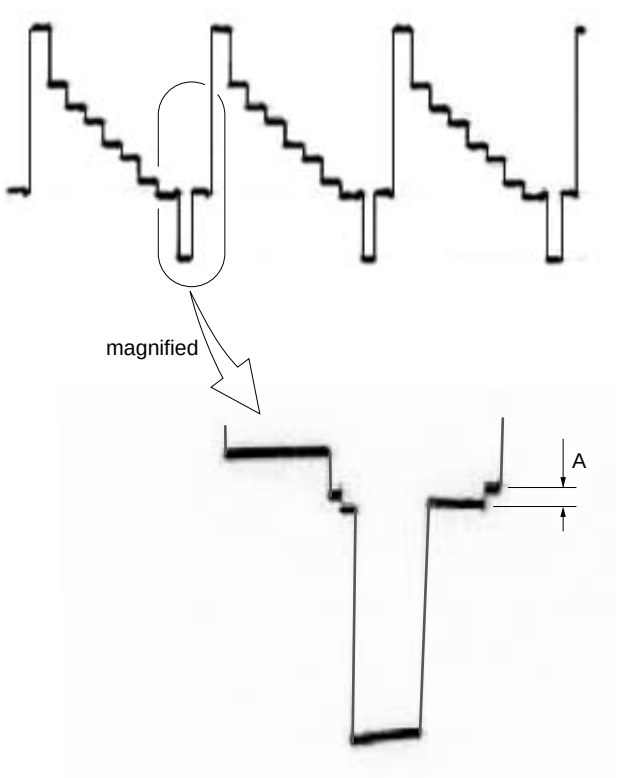


Fig. 5-3-27

22. Component E-E Y Signal Level Adjustment (VD-28 Board)

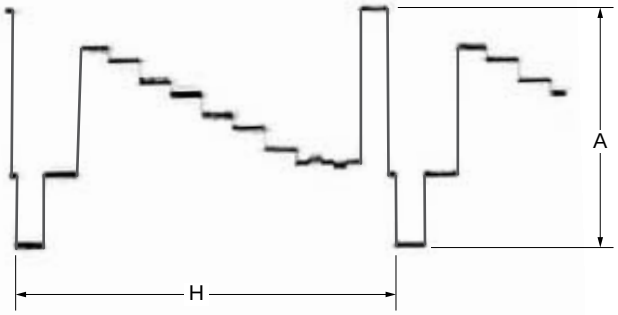
Mode	E-E
Signal	Color bar (CAMERA input) (Note)
Measurement Point	COMPONENT OUTPUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	94
Specified Value	A = 1000 ± 10 mVp-p

Note1: Set "CAMERA" 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

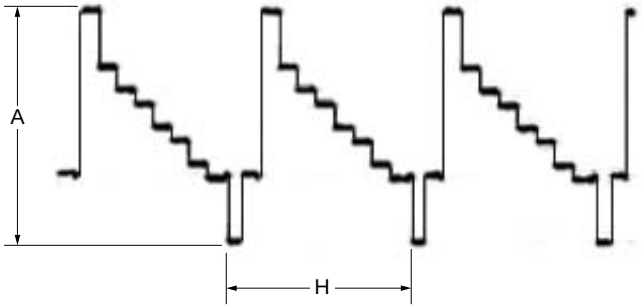


Fig. 5-3-28

23. Component E-E CR Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (CAMERA input) (Note)
Measurement Point	COMPONENT OUTPUT 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 "CAMERA" 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.

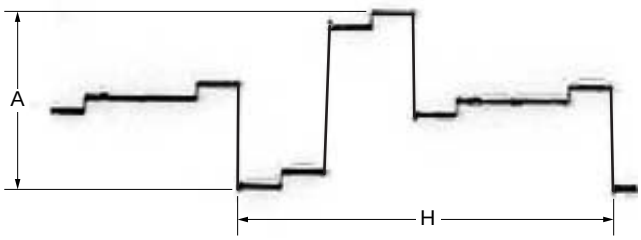


Fig. 5-3-29

24. Component E-E CB Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (CAMERA input) (Note)
Measurement Point	COMPONENT OUTPUT 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)

Note1: Set “CAMERA” 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.

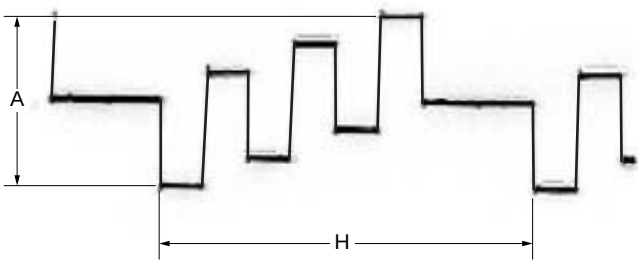


Fig. 5-3-30

25. Component E-E CR Signal Delay Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (CAMERA input) (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	99
Specified Value	t = 0 ± 20 nsec

Note1: Set "CAMERA" 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.

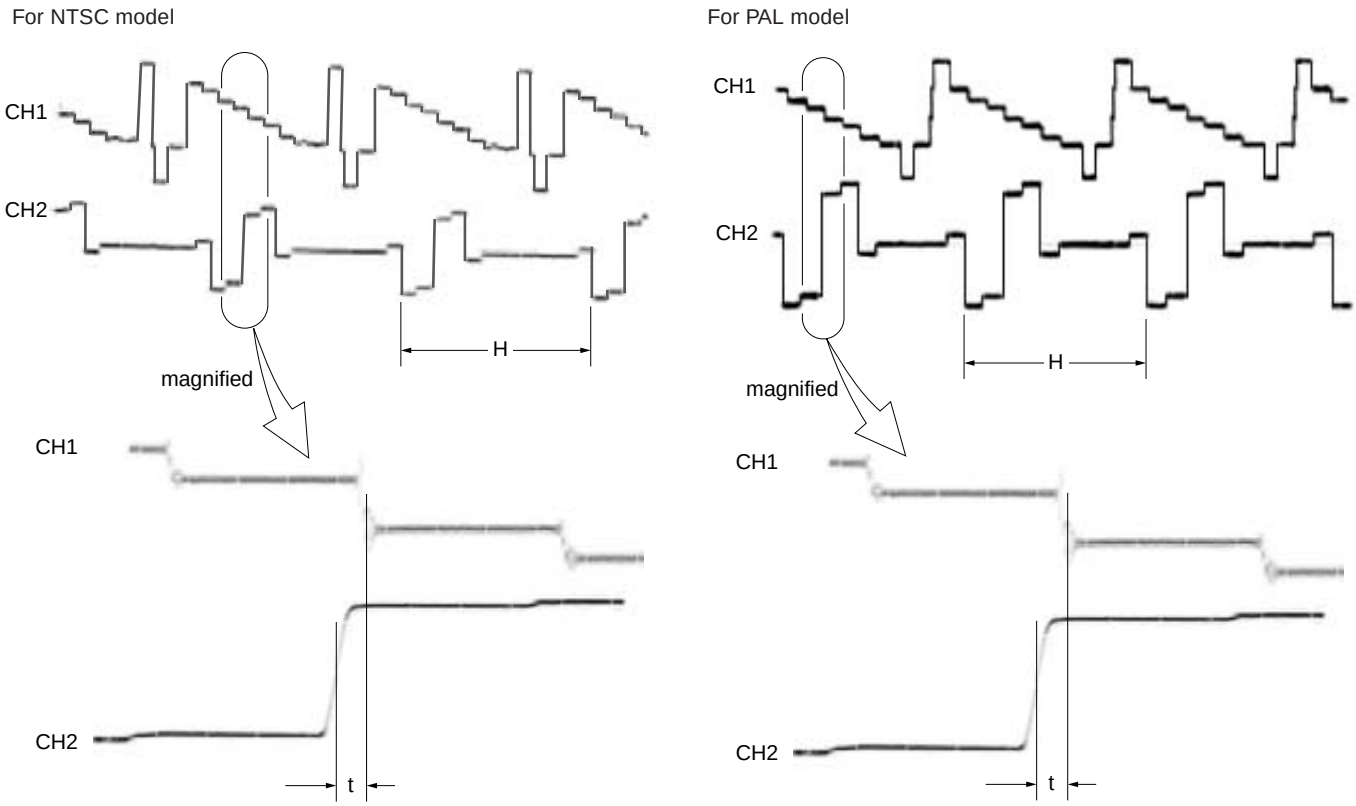


Fig. 5-3-31

26. Component E-E CB Signal Delay Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (CAMERA input) (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	98
Specified Value	t = 0 ± 20 nsec

Note1: Set "CAMERA" 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.

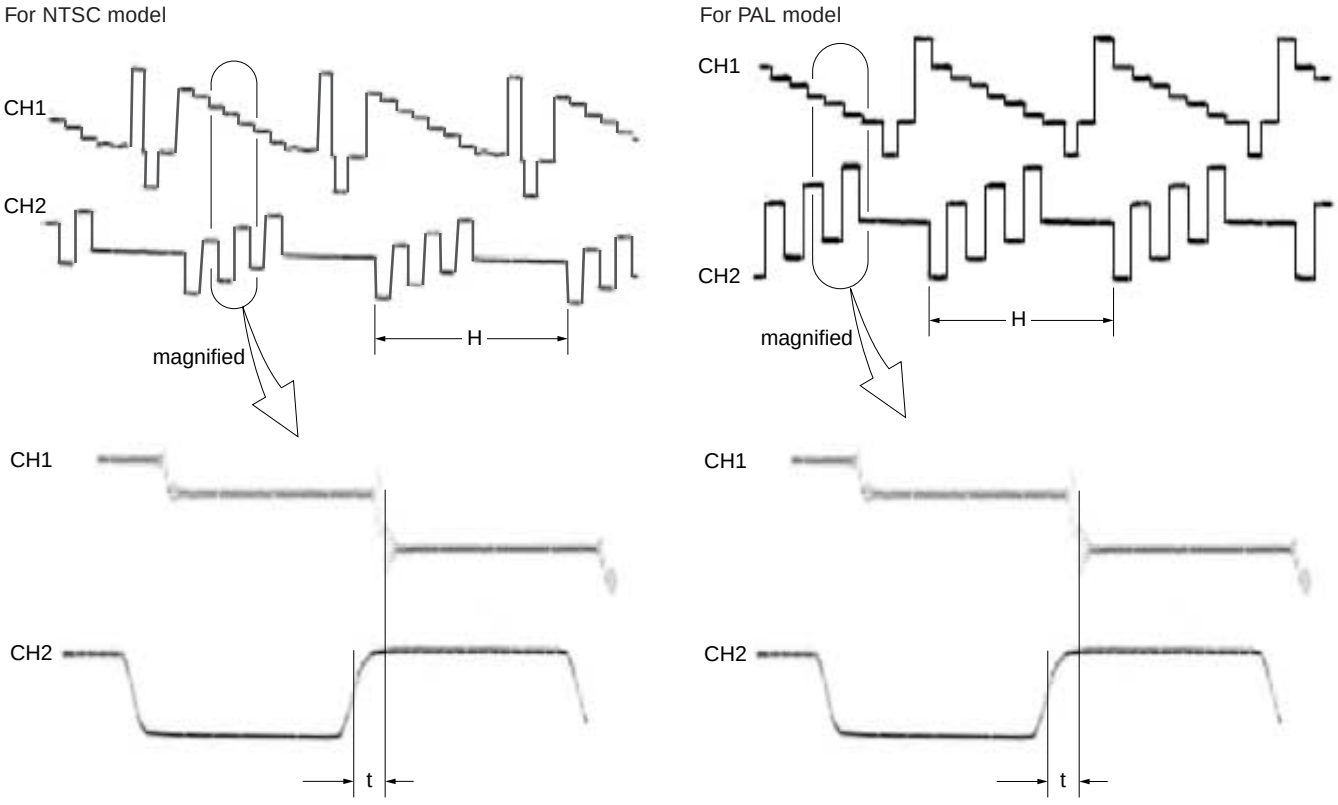


Fig. 5-3-32

27. E-E Color Level Adjustment (VD-28 Board)

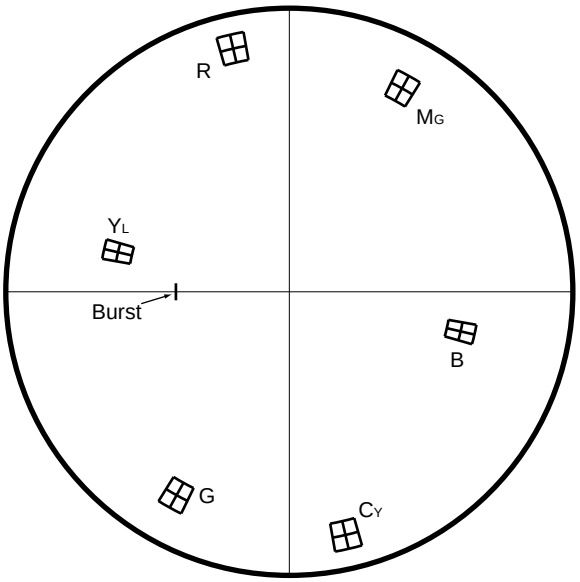
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (CAMERA input) (Note)
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode)
Adjustment Page	E
Adjustment Address	CA, CB
Specified Value	From the center of ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

Note1: Set "CAMERA" 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 ⊞ 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

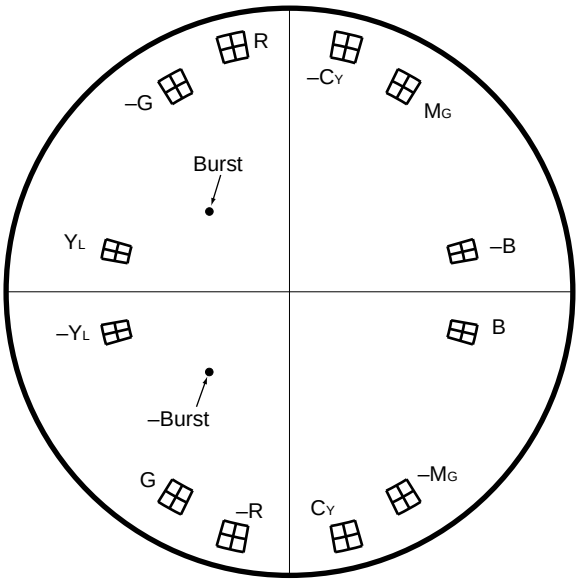
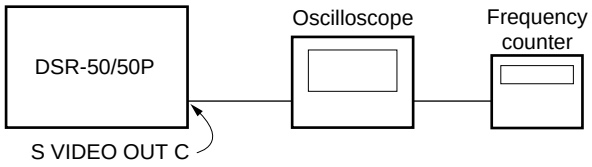


Fig. 5-3-33

28. Decoder Free Run Adjustment (VD-28 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
Specified Value	f = 3579545 ± 20 Hz (NTSC) f = 4433618 ± 20 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, 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-28 Board)

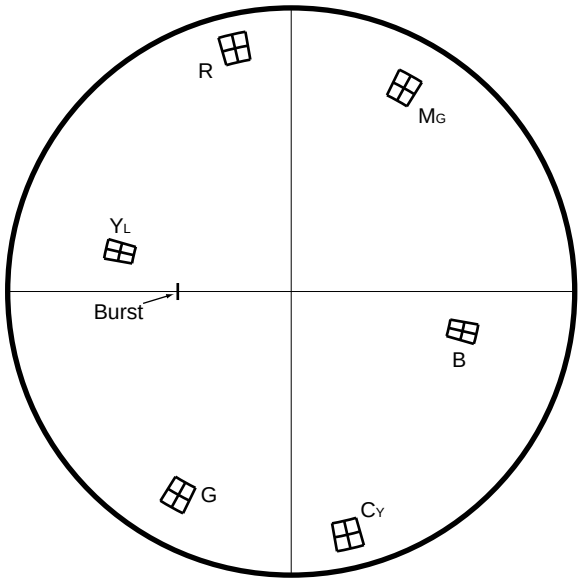
Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (NTSC: 7.5% setup mode)
Adjustment Page	E
Adjustment Address	93
Specified Value	From the center of ⊞ mark on the vectorscope, each luminance point must satisfy the following: Level: ± 5% Phase: ± 3º

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 ⊞ 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

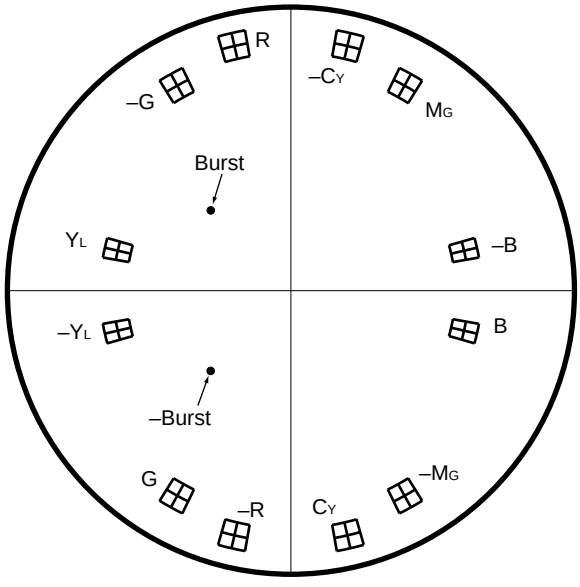


Fig. 5-3-34

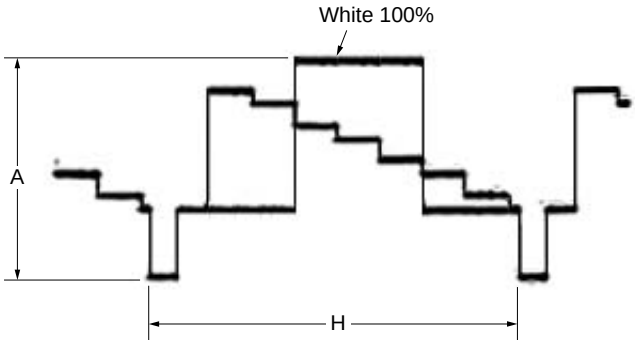
30. S Video E-E Y Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (S VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT 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

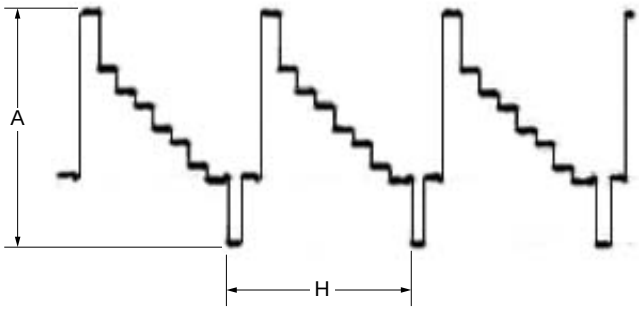


Fig. 5-3-35

31. S Video E-E CR Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT 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.

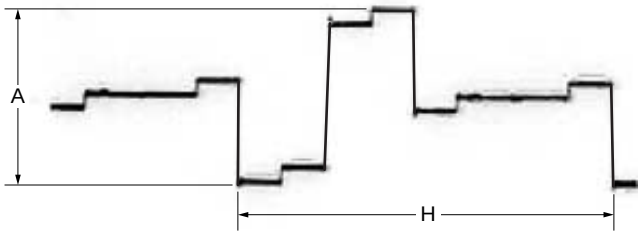


Fig. 5-3-36

32. S Video E-E CB Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (S VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	BE
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: 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.

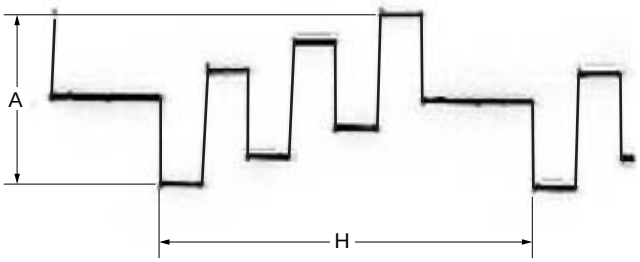


Fig. 5-3-37

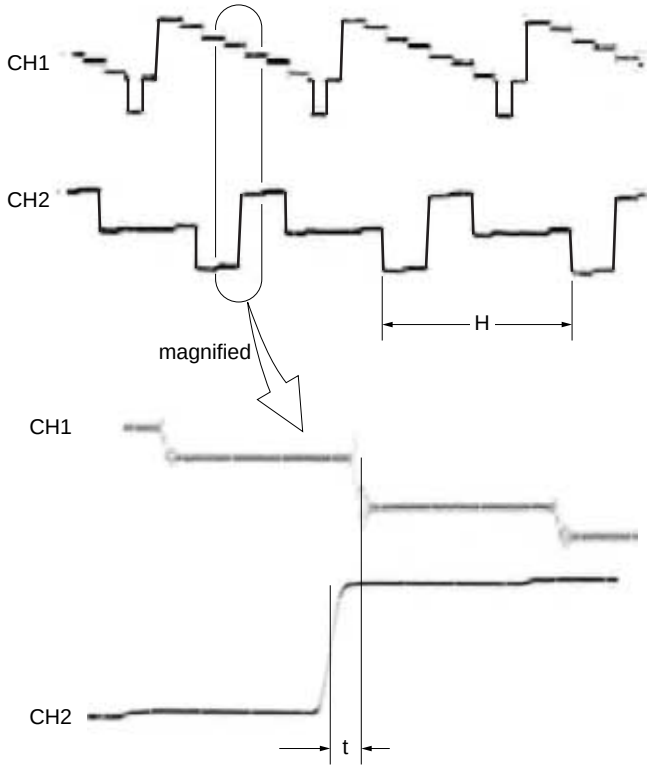
33. S Video E-E CR Signal Delay Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (S VIDEO input) (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B6
Specified Value	t = 0 ± 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

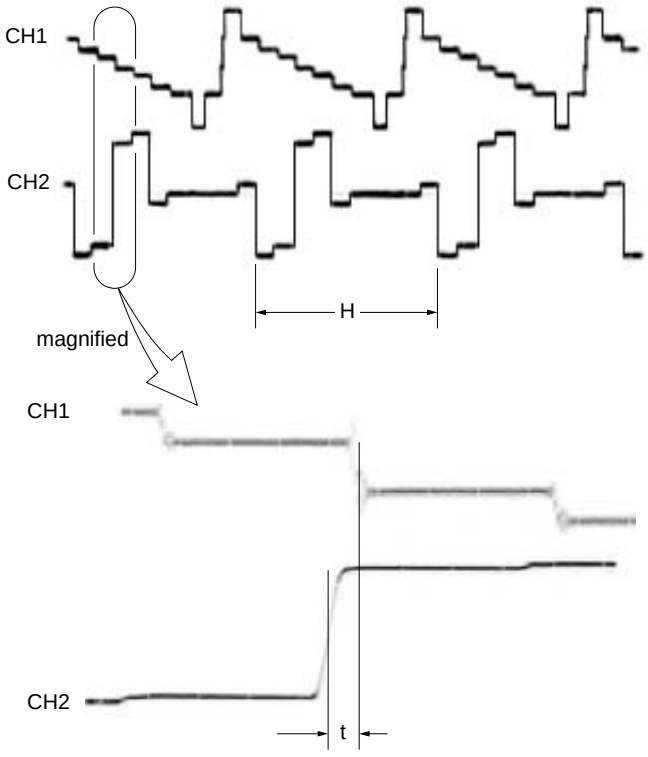


Fig. 5-3-38

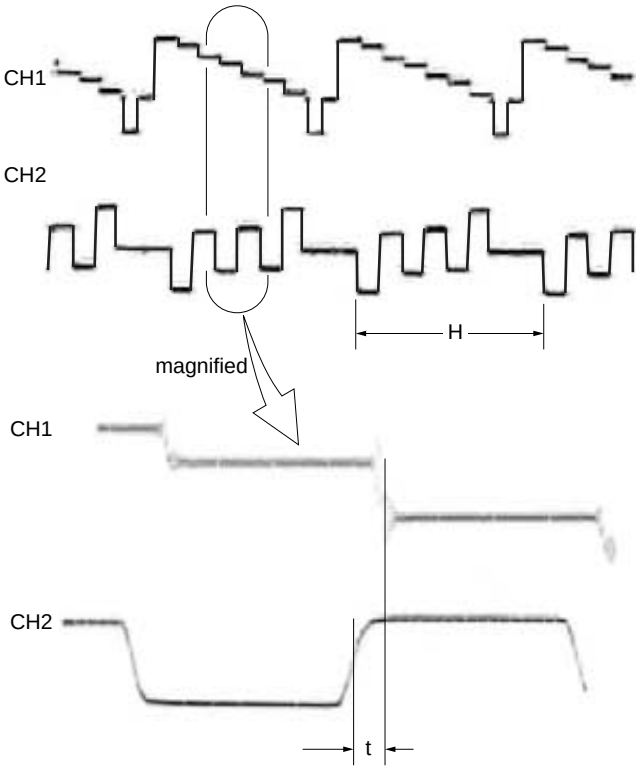
34. S Video E-E CB Signal Delay Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (S VIDEO input) (Note1)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B5
Specified Value	t = 0 ± 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 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

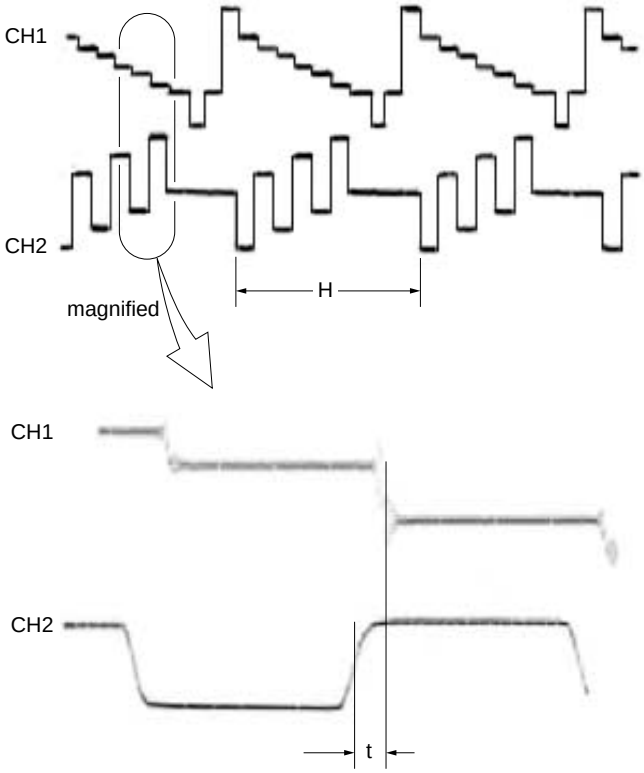


Fig. 5-3-39

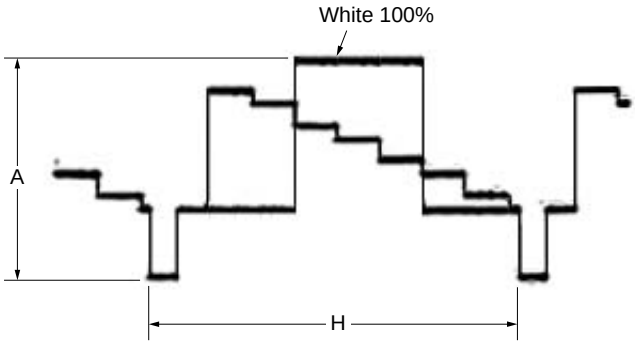
35. Composite E-E Y Signal Level Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT 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

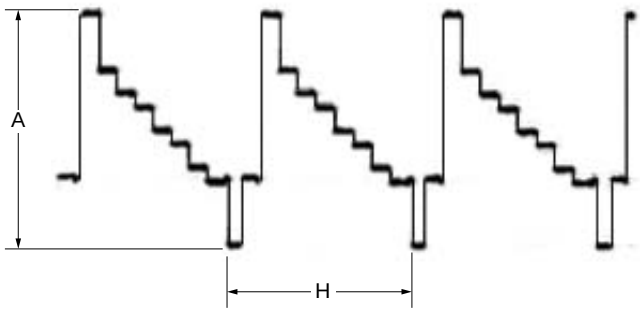


Fig. 5-3-40

36. Composite E-E CR Signal Level Check (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT 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.

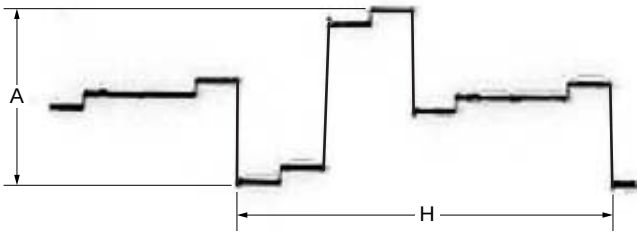


Fig. 5-3-41

37. Composite E-E CB Signal Level Check (VD-28 Board)

Mode	E-E
Signal	Color bar (NTSC: with 7.5% setup) (VIDEO input) (Note)
Measurement Point	COMPONENT OUTPUT B-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 CB signal level (A) to the specified value.

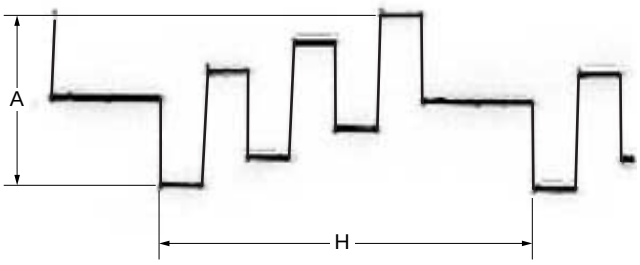


Fig. 5-3-42

38. Composite E-E CR Signal Delay Adjustment (VD-28 Board)

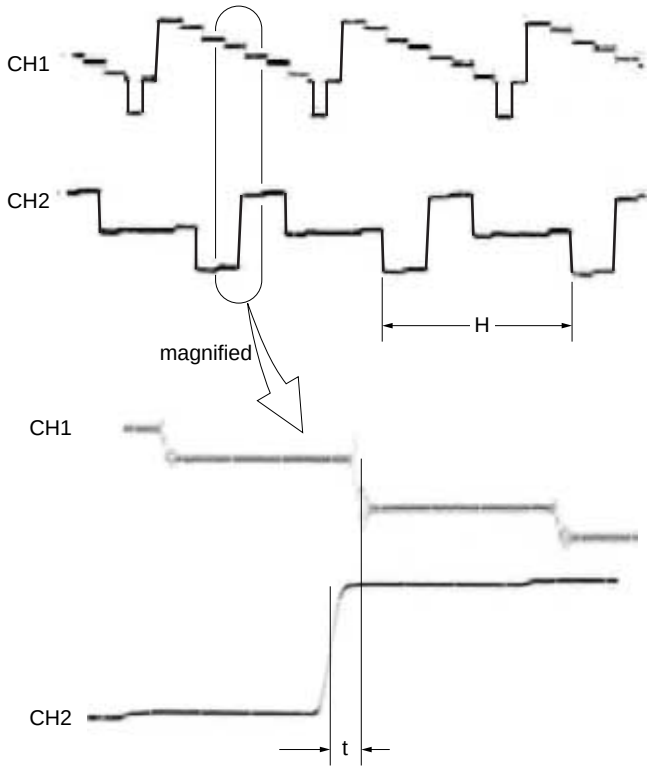
Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT R-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B9
Specified Value	t = 0 ± 20 nsec

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: B9, 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

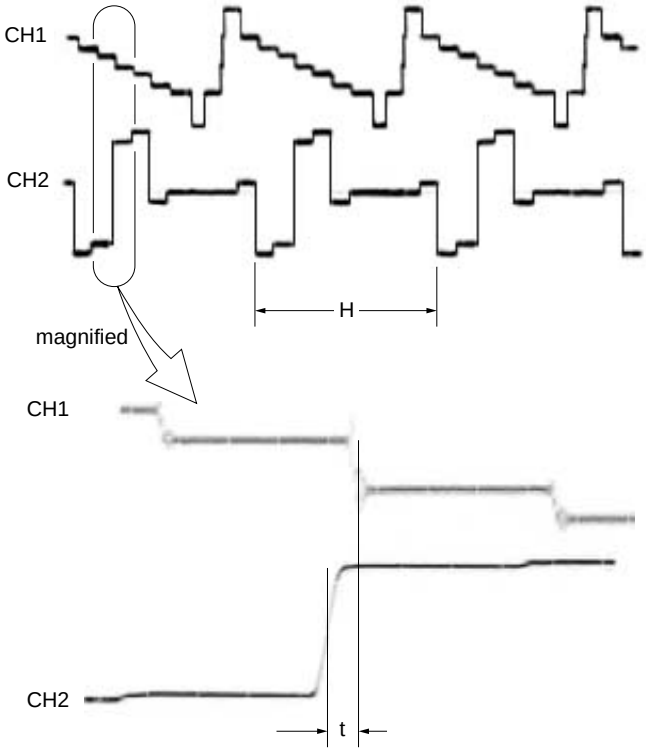


Fig. 5-3-43

39. Composite E-E CB Signal Delay Adjustment (VD-28 Board)

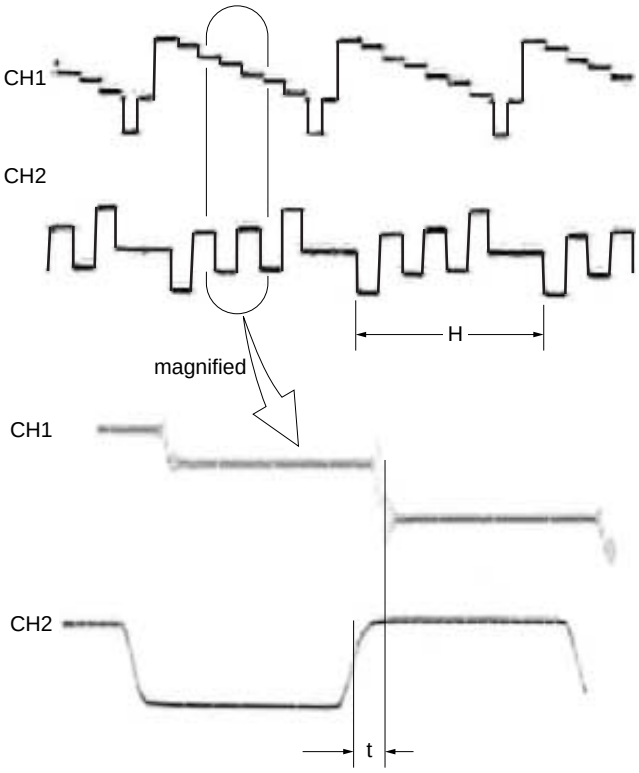
Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	CH1: COMPONENT OUTPUT Y terminal (75 Ω terminated) CH2: COMPONENT OUTPUT B-Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	B8
Specified Value	t = 0 ± 20 nsec

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: B8, 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

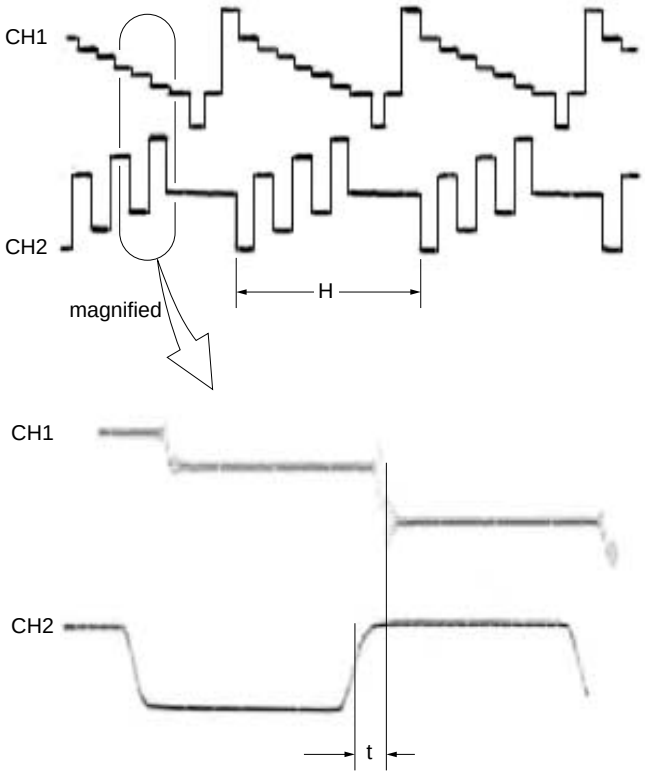


Fig. 5-3-44

40. H Phase Adjustment (VD-28 Board)

Mode	PB (EXT SYNC ON) (Note)
Signal	Arbitray tape Color bar (VIDEO input)
Measurement Point	CH1: Color bar (The same signal that VIDEO input) CH2: COMPONENT OUTPUT Y terminal (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	2A (Coarse), C9 (Fine)
Specified Value	t = 0 ± 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 3). (Initial value of data on page: E, address: 2A is 08)
4) Select page: 0, address: 01, and set data: 00.

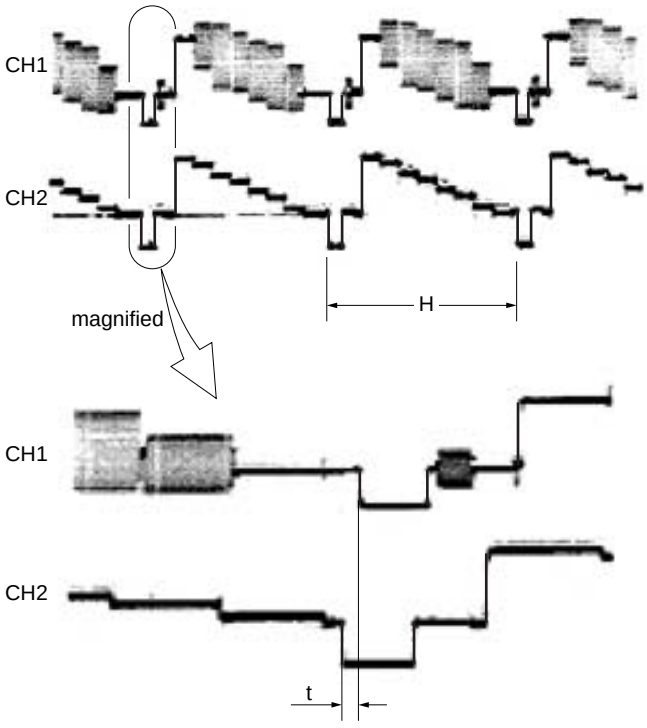


Fig. 5-3-45

41. E-E SC Phase Adjustment (VD-28 Board)

Mode	E-E
Signal	Color bar (VIDEO input) (Note)
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	CE
Specified Value	Ø = 0 ± 5°

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 tha data and adjust the phase difference (Ø) 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.

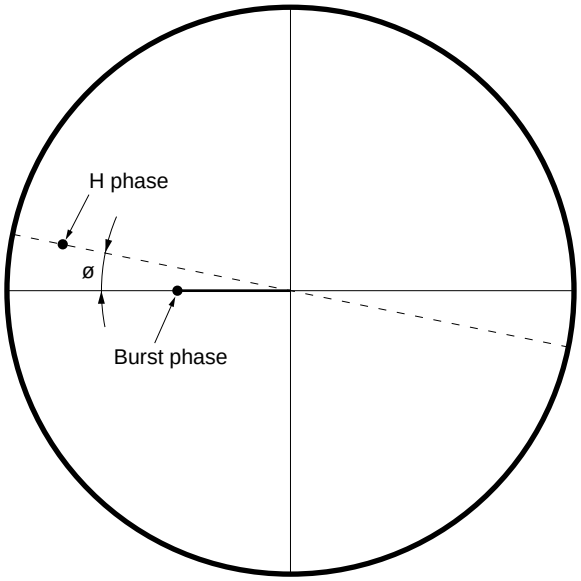


Fig. 5-3-46

42. Playback SC Phase Adjustment (EXT SYNC OFF) (VD-28 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	CF
Specified Value	Ø = 0 ± 5°

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 tha data and adjust the phase difference (Ø) 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.

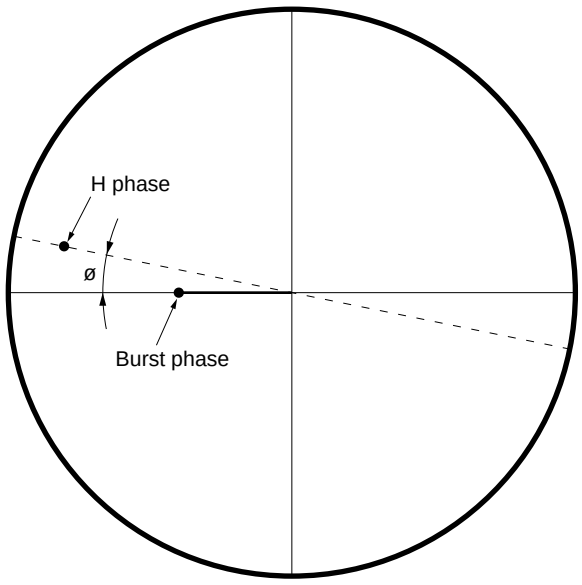


Fig. 5-3-47

43. Playback SC Phase Adjustment (EXT SYNC ON) (VD-28 Board)

Mode	Playback
Signal	Arbitrary Color bar (VIDEO input (REF. IN))
Measurement Point	VIDEO OUT 2 terminal (75 Ω terminated)
Measuring Instrument	Vectorscope (SCH measurement mode)
Adjustment Page	E
Adjustment Address	A7
Specified Value	Ø = 0 ± 5°

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 tha data and adjust the phase difference (Ø) 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.

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 CN505 of FR-157 board.

The following table shows the Pin No. and signal name of the CN505.

Pin No.	Signal Name
1	VCO_CENT
2	PSIG
3	GND
4	COM
5	VG

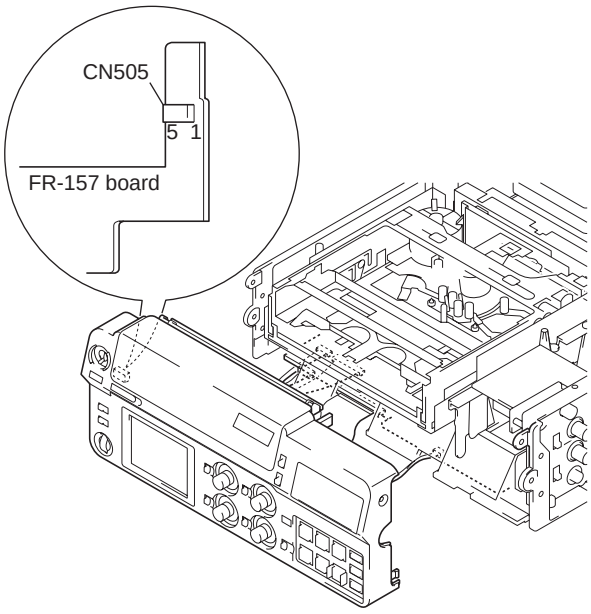


Fig. 5-3-48

1. VCO Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ① of CN505 on FR-157 board (VCO CENT)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	E
Adjustment Address	84
Specified Value	A = 1.8 ± 0.1 V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check that the GND level of oscilloscope.
3) Select page: E, address: 84, change the data and adjust the voltage (A) of the VCO output to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 01, and set data: 00.

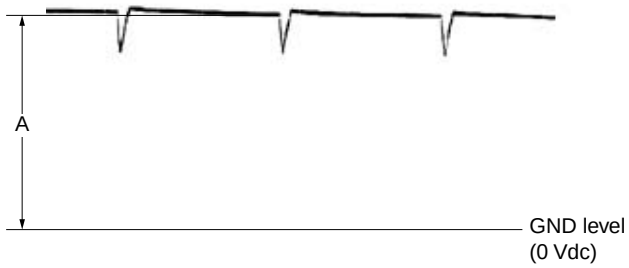


Fig. 5-3-49

2. Black Limit Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ② of CN505 on FR-157 board (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	82 (WIDE mode), 87 (NORMAL mode)
Specified Value	WIDE mode: A = 8.00 ± 0.05 Vp-p NORMAL mode: B = 5.00 ± 0.05 Vp-p

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 9, address: 0F, set data: 01, and press the PAUSE button.
3) Check that the LCD screen change to wide mode.
4) Select page: E, address: 82, change the data and adjust PSIG signal (A) to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 9, address: 0F, set data: 00, and press the PAUSE button.
7) Check that the LCD screen change to normal mode.
8) Select page: E, address: 87, change the data and adjust PSIG signal (B) to the specified value.
9) Press the PAUSE button of the adjustment remote commander.
10) Select page: 0, address: 01, and set data: 00.

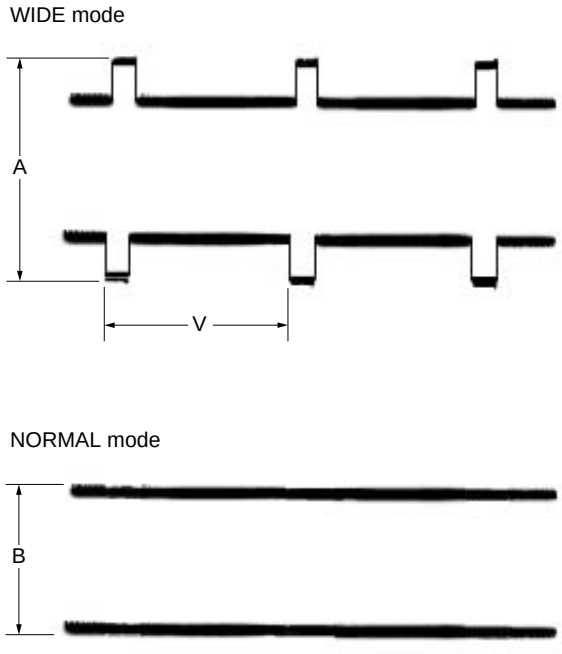


Fig. 5-3-50

3. Bright Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN505 on FR-157 board (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	8A
Specified Value	A = 5.75 ± 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: 08, and press the PAUSE button.
4) Select page: E, address: 8A, change the data and adjust the voltage (A) between the reversed waveform black level and non-reversed waveform black level 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.

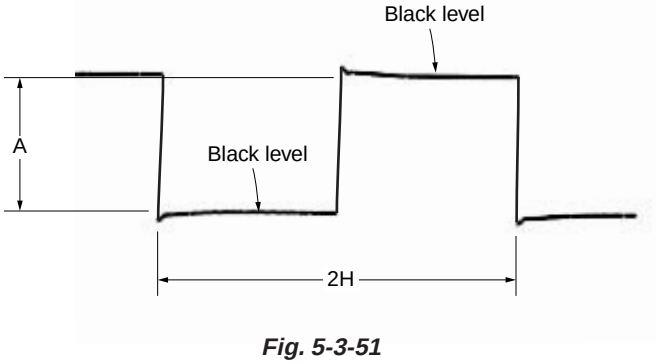


Fig. 5-3-51

4. Gamma 1 Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN505 on FR-157 board (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	83
Specified Value	A = 0.92 ± 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: 9, address: 0E, set data: 40, and press the PAUSE button.
5) Select page: E, address: 83, change the data and adjust 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, set data: 00, and press the PAUSE button.
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.

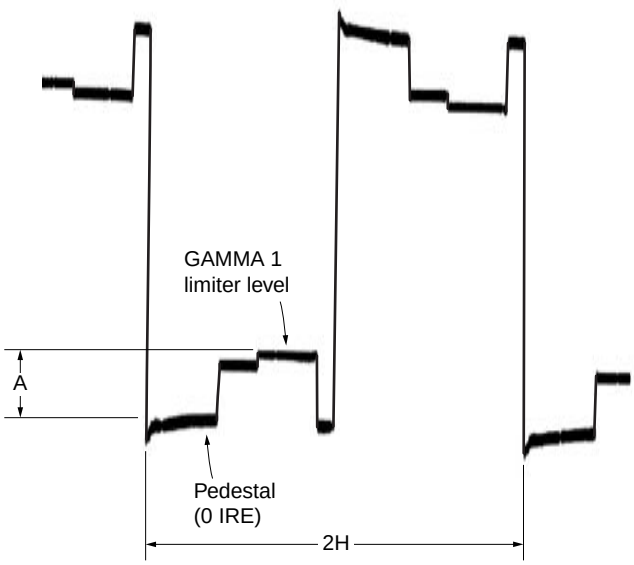


Fig. 5-3-52

5. Contrast Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN505 on FR-157 board (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	8C
Specified Value	A = 2.00 ± 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: 01, and press the PAUSE button.
4) Select page: E, address: 8C, change the data and adjust the voltage (A) between the pedestal and 90IRE 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.

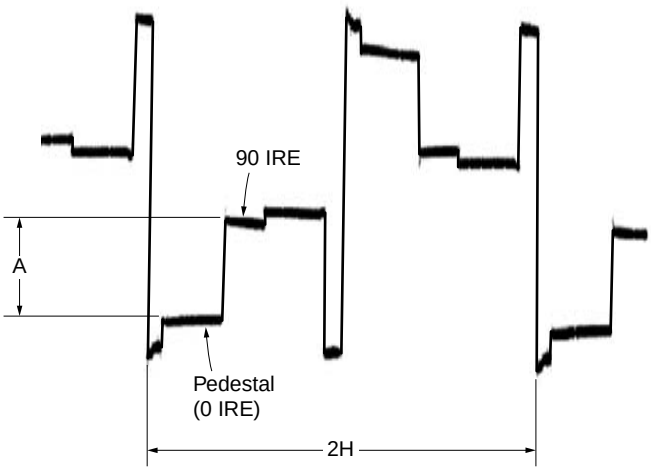


Fig. 5-3-53

6. Center Voltage Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN505 on FR-157 board (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	E
Adjustment Address	85
Specified Value	A = 5.50 ± 0.10 V

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: 08, and press the PAUSE button.
4) Select page: E, address: 85, change the data and adjust the voltage (A) between the pin ⑤ (VG) of CN505 board and pin ③ (GND) of CN505 on FR-157 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.

7. White Balance Adjustment (PD-125 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	E
Adjustment Address	80, 81
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. IC8001

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: 80 and 81, and set data to the initial value.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data	
	NTSC	PAL
80	93	94
81	7C	7D

5) Check that the LCD screen is not colored. If colored, change the data of page: E, address:80 and 81 so that the LCD screen is not colored.

Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

6) Select page: 3, address: 22, set data: 00, and 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.

3-6. AUDIO SYSTEM ADJUSTMENTS

Set the switches and menu to the following positions unless otherwise specified.

Switch setting

DVCAM/DV SELECT switch (Inside of the cover at left panel) ..... DVCAM
REC LEVEL CONTROL SELECT switch (Front panel) (CH-1 to CH-4) ..... AUTO
REC LEVEL CONTROL knob (Front panel) (CH-1 to CH-4) ..... CENTER
AUDIO INPUT SELECT switch (Right panel) (CH-1 to CH-4) ..... LINE
AUDIO INPUT LEVEL CONTROL switch (Right panel) (CH-1 to CH-4) ..... –20
MONITOR SELECT (Right panel) CH1/2
DISPLAY (LCD OFF/OFF/ON) switch (Front panel) ..... ON
DISPLAY (MENU/TC/AUDIO) switch (Front panel) ..... AUDIO
METER switch (Front panel) CH1/2
VIDEO INPUT SELECT switch (Right panel) ..... VIDEO (except DV)

Menu setting (AUDIO SET menu)

AUDIO MODE FS32K
AUDIO DUB CH3, 4
JOG AUDIO ..... ON
REF LEVEL ..... –20
AGC CH1, 2 ..... SEPARATE
AGC CH3, 4 ..... SEPARATE
LIMITER ..... OFF
WIND (CH-1 to CH-4) ..... OFF

Connection of equipment

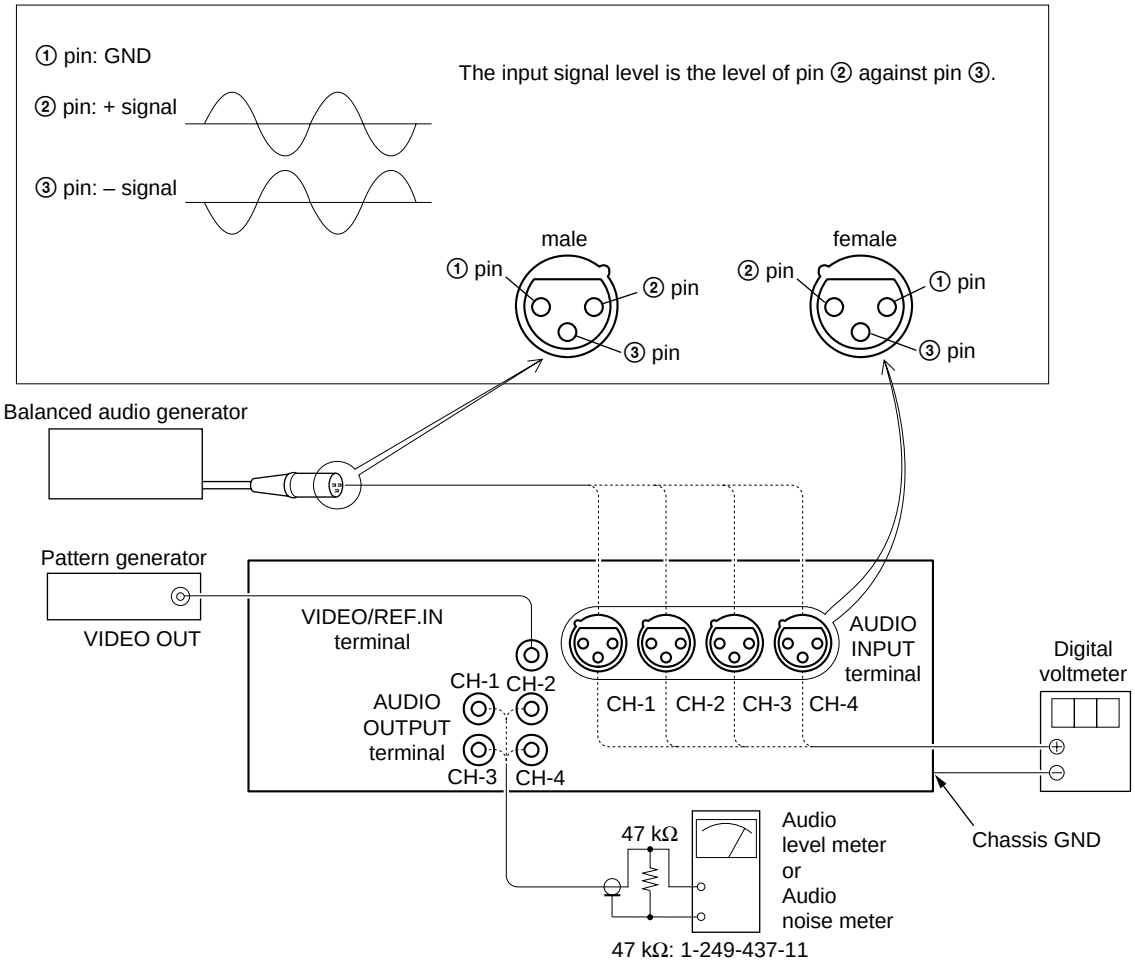


Fig. 5-3-54

1. Audio PAL Data Input (DSR-50P)

When replacing JC-20 board or IC5006 of JC-20 board, change the data of the address shown in the following tables by manual input.

Mode	VTR stop
Signal	Arbitray
Adjustment Page	D
Adjustment Address	40 to 47

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 (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

3) Select page: 0, address: 01, and set data: 00.

Address	Data
40	00
41	18
42	AC
43	65
44	00
45	1A
46	AC
47	65

2. Playing Level Check

Mode	PLAY
Signal	Alignment tape: For audio check (NTSC: XH5-3/PAL: XH5-3P)
Measurement point	AUDIO OUTPUT terminal (CH-1, 2)
Measuring instrument	Audio level meter, Oscilloscope
Specified value	32kHz mode section: 1 kHz signal must be outputted. 48kHz mode section: 1 kHz signal level is +6 to +10 dBV. 44.1kHz mode EMP ON section: 7.35 kHz signal level is 0 to +4 dBV. 44.1kHz mode EMP OFF section: 7.35 kHz signal level is +6 to +10 dBV.

Note: 0 dBV = 1 Vrms

Checking method (NTSC):

1) Play the alignment tape (XH5-3).
2) Check that the play signal level satisfies the specified value.
3) Check with the oscilloscope that no clip is found in the output waveform.

Checking method (PAL) :

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 40, and check that the data is “00”.
3) Select page: D, address: 41, and check that the data is “18”.
4) Select page: D, address: 42, set data: FF, and press the PAUSE button on the adjustment remote commander.
5) Select page: D, address: 43, set data: 7F, and press the PAUSE button.
6) Select page: D, address: 44, and check that the data is “00”.
7) Select page: D, address: 45, and check that the data is “1A”.
8) Select page: D, address: 46, set data: FF, and press the PAUSE button.
9) Select page: D, address: 47, set data: 7F, and press the PAUSE button.
10) Disconnect the adjustment remote commander, and turn the POWER switch OFF.
11) Turn the POWER switch ON.
12) Play the aligment tape (XH5-3P).
13) Check that the play signal level satisfies the specified value.
14) Check with the oscilloscope that no clip is found in the output waveform.
15) Connect the adjustment remote commander.
16) Select page: 0, address: 01, and set data: 01.
17) Select page: D, address: 40, and check that the data is “00”.
18) Select page: D, address: 41, and check that the data is “18”.
19) Select page: D, address: 42, set data: AC, and press the PAUSE button.
20) Select page: D, address: 43, set data: 65, and press the PAUSE button.
21) Select page: D, address: 44, and check that the data is “00”.
22) Select page: D, address: 45, and check that the data is “1A”.
23) Select page: D, address: 46, set data: AC, and press the PAUSE button.
24) Select page: D, address: 47, set data: 65, and press the PAUSE button.
25) Disconnect the adjustment remote commander, and turn the POWER switch OFF.

3. Audio Level Indication Check

Mode	STOP
Signal	Audio: 1 kHz, 0 dBu signal AUDIO INPUT terminal (CH-1 to 4)
Measurement point	Audio level indication on the front panel
Measuring instrument	(Indication on LCD monitor and on display window of the set)
Specified value	LCD monitor: All level meters light up and a red LED on the right side of meter lights up. Display window of the set: All level meter light up and the OVER indicator on the meter lights up.

Note: 0 dBu = 0.775 Vrms/balance

Switch setting
DISPLAY (LCD OFF/OFF/ON) switch ..... ON
DISPLAY (MENU/TC/AUDIO) switch ..... AUDIO
VIDEO INPUT SELECT switch ..... VIDEO (except DV)
AUDIO INPUT SELECT switch (CH-1 to CH-4) ..... LINE
AUDIO INPUT LEVEL CONTROL switch (CH-1 to CH-4) .... –20

Menu setting (AUDIO SET menu)
AUDIO MODE FS32K
LIMITER ..... OFF

Checking method:
1) Enter 1 kHz, 0 dBu signal to the AUDIO INPUT terminal (CH-1).
2) Set the REC level mode switch (CH-1) on the front panel to "MANU", and rotate the REC level adjusting knob to the maximum position (clockwise).
3) At this time, check that the CH-1 level meters on the LCD monitor all light up, and a red LED on the right side of meter lights up.
4) Set the METER switch on the front panel to "CH1/2".
5) At this time, check that the CH-1 level meters on the display window of the set all light up, and the OVER indicator on the meter lights up.
6) For the CH-2, 3 and 4, perform checking in the same manner.

4. Recording and Playing Check

Mode	REC and PLAY
Signal	Audio: 1 kHz, 0 dBu signal AUDIO INPUT terminal (CH-1 to 4)
	Video: Color bar VIDEO IN terminal
Measurement point	AUDIO OUTPUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter, Oscilloscope
Specified value	REC level adjusting knob: Within 1 division from the center. Output level: +6 to +10 dBV Output waveform: No clip When the recorded part is cued/reversed, the playback sounds at the changed speed must be outputted.

Switch setting
DISPLAY (LCD OFF/OFF/ON) switch ..... ON
DISPLAY (MENU/TC/AUDIO) switch ..... AUDIO
VIDEO INPUT SELECT switch ..... VIDEO (except DV)
AUDIO INPUT SELECT switch (CH-1 to CH-4) ..... LINE
AUDIO INPUT LEVEL CONTROL switch (CH-1 to CH-4) .... –20

Menu setting (AUDIO SET menu)
AUDIO MODE FS32K
LIMITER ..... OFF

Checking method:
1) Enter 1 kHz, 0 dBu signal to the AUDIO INPUT terminal (CH-1).
2) Set the REC level mode switch (CH-1) on the front panel to "MANU".
3) Rotate the REC level adjusting knob so that 0 dB on the CH-1 level meter on the LCD monitor lights up and a red LED on the right side of meter does not light up.
4) At this time, check that the rotating angle of the REC level adjusting knob is within 1 division from the center.
   Note: Hence, do not rotate the REC level adjusting knob unless otherwise specified, as this set position (rotating angle) of the REC level adjusting knob is required in other checking items.
5) Perform recording continuously for about 30 seconds, and play the recorded part.
6) Check that the output level on CH-1 satisfies the specified value.
7) Observing the output waveform on CH-1 with the oscilloscope, check that no clip is found.
8) Check that the playback sounds at the changed speed are outputted, when the recorded part is cued/reversed.
9) For the CH-2, 3 and 4, perform checking in the same manner.

5. FS48 kHz Frequency Characteristic Check

Mode	STOP
Signal	Audio: 1 kHz, –4 dBu signal 10 Hz, –4 dBu signal 20 kHz, –4 dBu signal AUDIO INPUT terminal (CH-1, 2)
Measurement point	AUDIO OUTPUT terminal (CH-1, 2)
Measuring instrument	Audio level meter
Specified value	Difference in output level: A = –2.0 dB to +1.0 dB B = –1.0 dB to +1.0 dB

Switch setting

REC LEVEL CONTROL knob (Front panel) (CH-1 to CH-4)
.....The position at Recording and Playing Check

Menu setting (AUDIO SET menu)

AUDIO MODE FS48K

Checking method:

1) Enter 1 kHz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
2) At this time, measure the output level on CH-1, and the measured value is assumed to be “a” (dBV).
3) Enter 10 Hz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
4) At this time, measure the output level on CH-1, and the measured value is assumed to be “b” (dBV).
5) Enter 20 kHz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
6) At this time, measure the output level on CH-1, and the measured value is assumed to be “c” (dBV).
7) Obtain the difference A (dB) between output level “b” (dBV) and “a” (dBV) to check that it satisfies the specified value.
   A = b – a
8) Obtain the difference B (dB) between output level “c” (dBV) and “b” (dBV) to check that it satisfies the specified value.
   B = c – b
9) For the CH-2, perform checking in the same manner.

6. FS48 kHz Noise Level Check

Mode	STOP
Signal	Audio: No signal Nothing is connected to the AUDIO INPUT terminal (CH-1, 2)
Measurement point	AUDIO OUTPUT terminal (CH-1, 2)
Measuring instrument	Audio noise meter (with A-weight filter)
Specified value	–78 dBV or less (A-weight filter ON)

Switch setting

REC LEVEL CONTROL knob (Front panel) (CH-1 to CH-4)
..... The position at Recording and Playing Check

Menu setting (AUDIO SET menu)

AUDIO MODE FS48K

Checking method:

1) Connect the audio noise meter to the AUDIO OUTPUT terminal (CH-1), and turn the A-weight filter on.
2) At this time, measure the noise level to check that it satisfies the specified value.
3) For the CH-2, perform checking in the same manner.

7. FS32 kHz Frequency Characteristic Check

Mode	STOP
Signal	Audio: 1 kHz, –4 dBu signal 10 Hz, –4 dBu signal 14 kHz, –4 dBu signal 40 Hz, –4 dBu signal AUDIO INPUT terminal (CH-1 to 4)
Measurement point	AUDIO OUTPUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified value	Difference in output level: A = –2.0 dB to +1.0 dB B = –1.0 dB to +1.0 dB C = –2.0 dB to +1.0 dB D = –20.0 dB to –12.0 dB

Switch setting
REC LEVEL CONTROL knob (Front panel) (CH-1 to CH-4)
..... The position at Recording and Playing Check

Menu setting (AUDIO SET menu)
AUDIO MODE FS32K

Checking method:
1) Enter 1 kHz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
2) At this time, measure the output level on CH-1, and the measured value is assumed to be “a” (dBV).
3) Enter 10 Hz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
4) At this time, measure the output level on CH-1, and the measured value is assumed to be “b” (dBV).
5) Enter 14 kHz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
6) At this time, measure the output level on CH-1 to attain “c” (dBV).
7) Obtain the difference A (dB) between output level “b” (dBV) and “a” (dBV) to check that it satisfies the specified value.
   A = b – a
8) Obtain the difference B (dB) between output level “c” (dBV) and “b” (dBV) to check that it satisfies the specified value.
   B = c – b
9) Set the “WIND CH-1” of the AUDIO SET menu to ON.
10) Enter 1 kHz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
11) At this time, measure the output level on CH-1 to attain “d” (dBV).
12) Enter 40 Hz, –4 dBu signal to the AUDIO INPUT terminal (CH-1).
13) t this time, measure the output level on CH-1 to attain “e” (dBV).
14) Set the “WIND CH-1” of the AUDIO SET menu to OFF.
15) Obtain the difference C (dB) between output level “d” (dBV) and “a” (dBV) to check that it satisfies the specified value.
   C = d – a
16) Obtain the difference D (dB) between output level “e” (dBV) and “a” (dBV) to check that it satisfies the specified value.
   D = e – a
17) For the CH-2, 3 and 4, perform checking in the same manner.

8. FS32 kHz Noise Level Check

Mode	STOP
Signal	Audio: No signal Nothing is connected to the AUDIO INPUT terminal (CH-1 to 4)
Measurement point	AUDIO OUTPUT terminal (CH-1 to 4)
Measuring instrument	Audio noise meter (with A-weight filter)
Specified value	–78 dBV or less (A-weight filter ON)

Switch setting
REC LEVEL CONTROL knob (Front panel) (CH-1 to CH-4)
..... The position at Recording and Playing Check

Menu setting (AUDIO SET menu)
AUDIO MODE FS32K

Checking method:
1) Connect the audio noise meter to the AUDIO OUTPUT terminal (CH-1), and turn the A-weight filter on.
2) At this time, measure the noise level on the CH-1 to check that it satisfies the specified value.
3) For the CH-2, 3 and 4, perform checking in the same manner.

9. Input Level Switching Check

Switch setting
DISPLAY (LCD OFF/OFF/ON) switch ..... ON
DISPLAY (MENU/TC/AUDIO) switch ..... AUDIO
REC LEVEL CONTROL SELECT switch (CH-1 to CH-4) ..... AUTO
VIDEO INPUT SELECT switch ..... VIDEO (except DV)
AUDIO INPUT SELECT switch (CH-1 to CH-4) ..... LINE

Menu setting (AUDIO SET menu)
AUDIO MODE FS32K
REF LEVEL ..... –20
LIMITER ..... OFF

(1) –20 dB check

Mode	STOP
Signal	Audio: 1 kHz, –22 dBu (to –18 dBu) signal AUDIO INPUT terminal (CH-1 to 4)
Measurement point	AUDIO INPUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified value	–22.0 dBu to –18.0 dBu

Checking method
1) Set the input level adjusting switch (CH-1) on the right panel to "–20".
2) Enter 1 kHz, –22 dBu signal to the AUDIO INPUT terminal (CH-1).
3) Press the "FINE" button on the front panel to display the audio level indication of the LCD monitor on the FINE screen.
4) Raise the output of balance audio oscillator to "–22.0 dBu" → "–21.9 dBu" → "–21.8 dBu" ... until the level indication on the FINE screen on the CH-1 becomes "–20.0 dBu".
5) At this time, measure the AUDIO INPUT terminal level on the CH-1 to check that it satisfies the specific value.
6) For the CH-2, 3 and 4, perform checking in the same manner.

(2) –60 dB check

Mode	STOP
Signal	Audio: 1 kHz, –60 dBu signal
	AUDIO INPUT terminal (CH-1 to 4)
Measurement point	AUDIO OUTPUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified value	–14.0 dBV to –10.0 dBV

Checking method
1) Set the input level adjusting switch (CH-1) on the right panel to "–60".
2) Enter 1 kHz, –60 dBu signal to the AUDIO INPUT terminal (CH-1).
3) At this time, measure the AUDIO OUTPUT terminal level on the CH-1 to check that it satisfies the specific value.
4) For the CH-2, 3 and 4, perform checking in the same manner.

(3) +4 dB check

Mode	STOP
Signal	Audio: 1 kHz, +4 dBu signal AUDIO INPUT terminal (CH-1 to 4)
Measurement point	AUDIO OUTPUT terminal (CH-1 to 4)
Measuring instrument	Audio level meter
Specified value	–15.0 dBV to –9.0 dBV

Checking method
1) Set the input level adjusting switch (CH-1) on the right panel to "+4".
2) Enter 1 kHz, +4 dBu signal to the AUDIO INPUT terminal (CH-1).
3) At this time, measure the AUDIO OUTPUT terminal level on the CH-1 to check that it satisfies the specific value.
4) For the CH-2, 3 and 4, perform checking in the same manner.

10. Microphone Power Supply Check

Mode	STOP
Signal	No signal
Measurement point	AUDIO INPUT terminal (CH-1 to 4) + probe: pin ②, ③ – probe: GND (Note 1)
Measuring instrument	Digital voltmeter
Specified value	Audio input select switch In +48V ON position: A = +45 V to +50 V In CAM or LINE position: B = 0 V to +1 V

Note 1: Connect to the chassis of the set (such as GND of VIDEO/REF.IN terminal).

Switch setting
AUDIO INPUT LEVEL CONTROL switch (CH-1 to CH-4)
..... –60

Checking method:
1) Connect the + probe of digital voltmeter to the pin ② on CH-1.
2) Set the audio input select switch (CH-1) on the right panel to "+48V ON".
3) At this time, check that the DC voltage (A) satisfies the specified value.
4) Check that the DC voltage (B) satisfies the specified value when the audio input select switch (CH-1) on the right panel is set to "LINE" and "CAM".

Note 2: In the "LINE" position, the discharge time of +48V is long, and therefore set the switch to "CAM" first to discharge +48V rapidly.

5) Connect the + probe of digital voltmeter to the pin ③ on CH-1, and repeat steps 2) to 4).
6) For the CH-2, 3 and 4, perform checking in the same manner.

3-7. TIME CODE SYSTEM ADJUSTMENTS

Set the switches to the following positions unless otherwise specified.

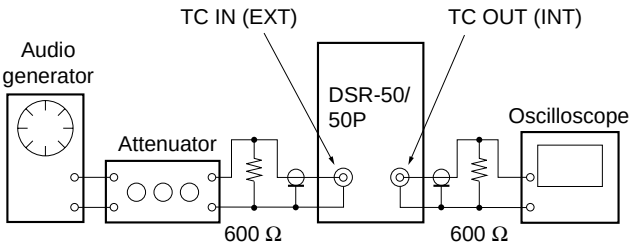
Operation mode switch ..... DVCAM
VIDEO INPUT SELECT switch ..... VIDEO (except DV)
Cassette tape ..... None

1. Analog Through (E-E) Level Check

Mode	STOP (no cassette tape) Press the REC button.
Signal	TC IN (INT) 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.

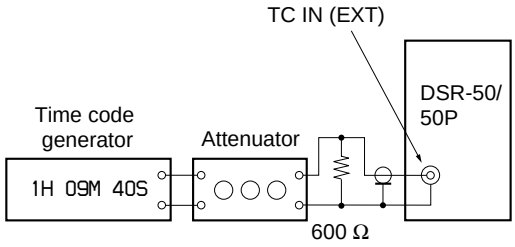
2. Time Code Reading Check

Mode	STOP (no cassette tape) Press the REC button.
Signal	TC IN (INT) 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



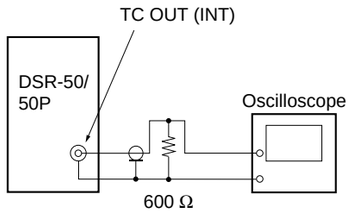
600 Ω: 270 (1-249-410-11) +330 (1-249-411-11)

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.

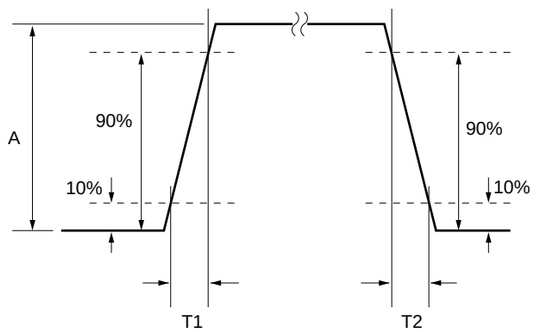


Fig. 5-3-55

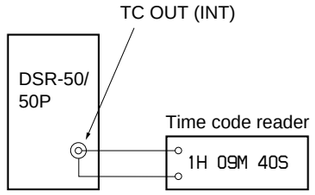
4. Internal Time Code Output Check

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

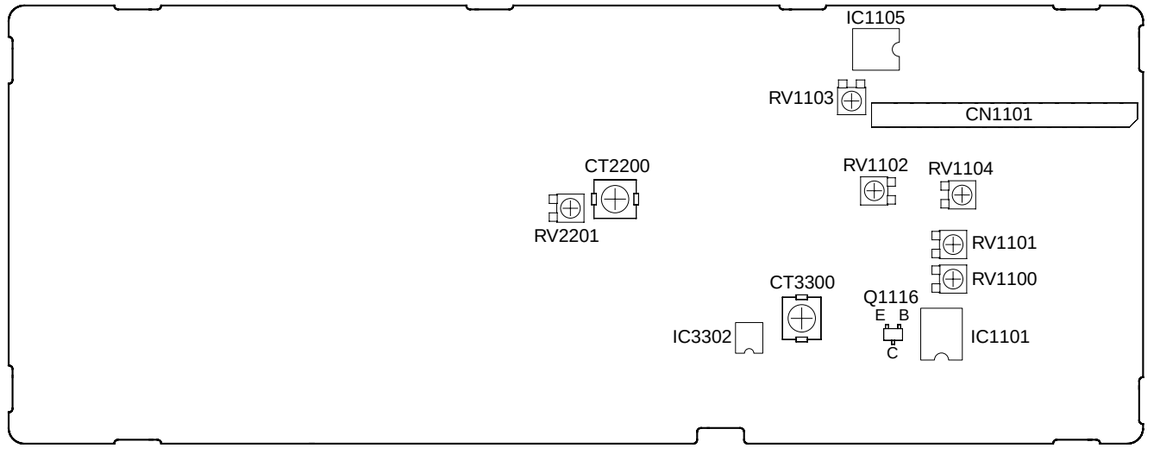


Checking method:

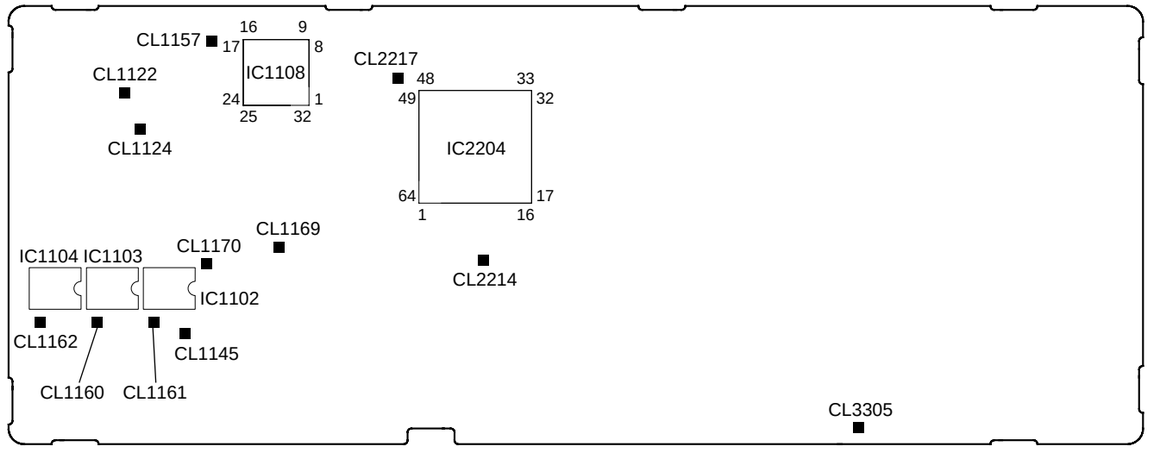
1) Connect the time code reader (such as BVG-1500) to the TC OUT (INT) terminal.
2) Check that the counter value on the front panel is same as the value indicated on the time code reader.

3-8. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

JC-20 BOARD (SIDE A)



JC-20 BOARD (SIDE B)



SECTION 6
REPAIR PARTS LIST

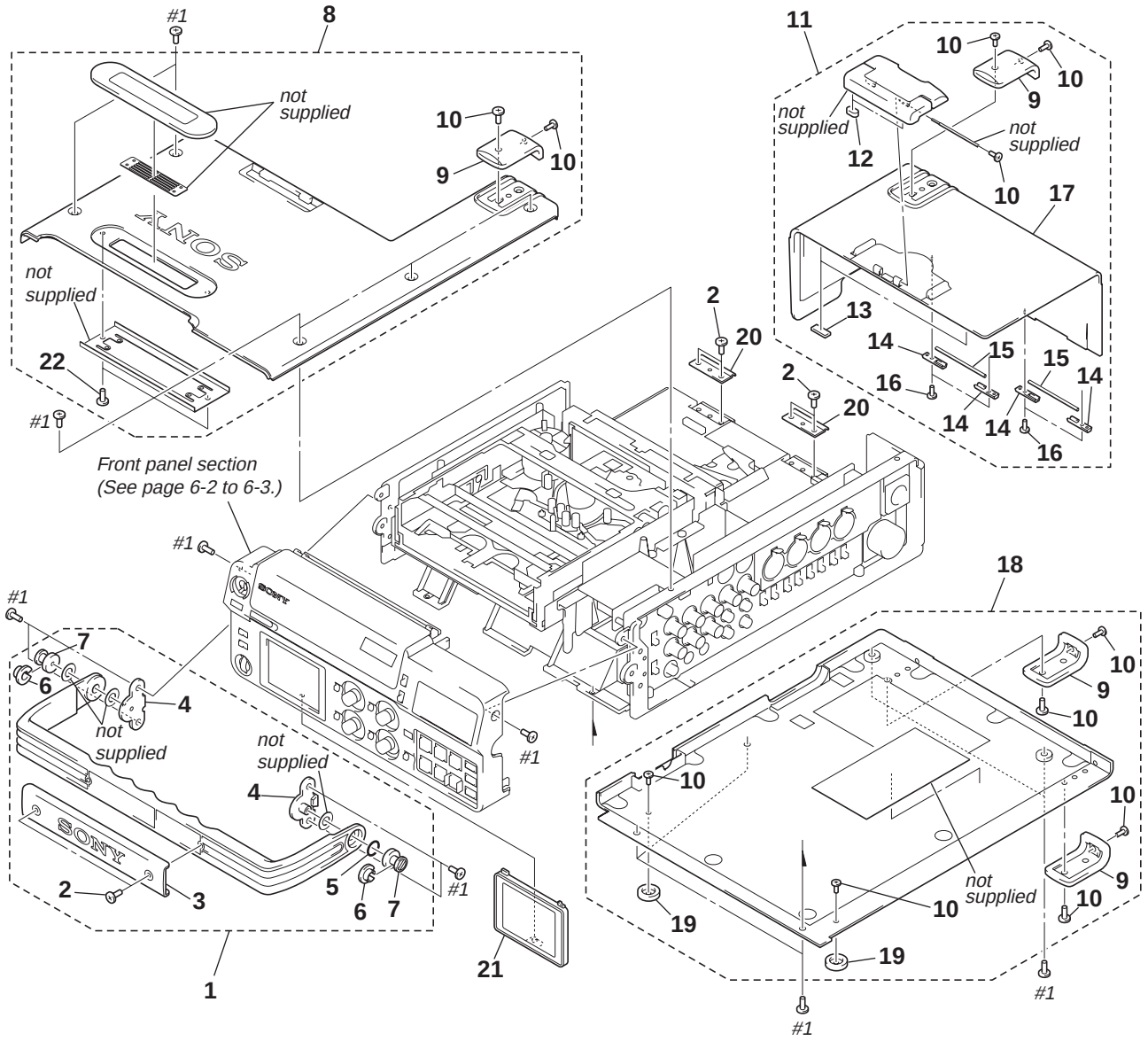
6-1. EXPLODED VIEWS

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 ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

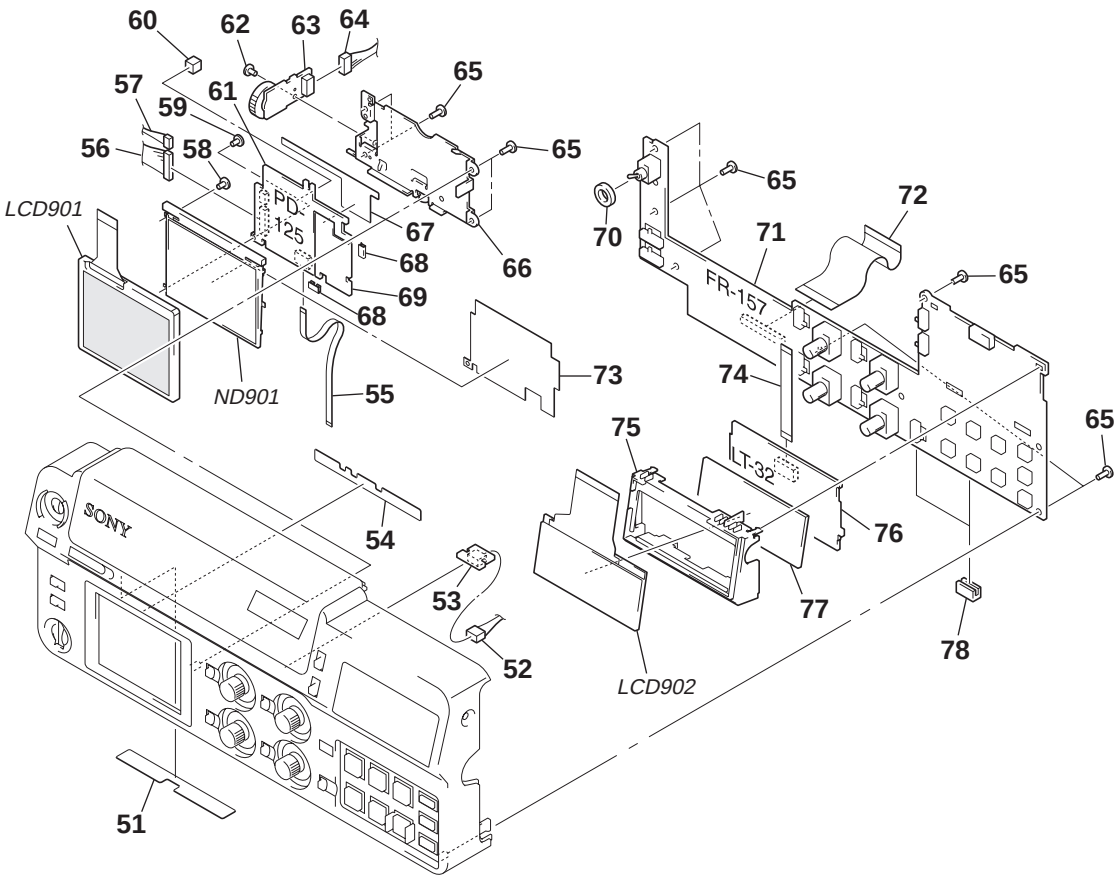
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3950-890-1	HANDLE ASSY, CARRYING	
2	3-063-328-01	SCREW (M3X6), BIND	
3	3-063-325-01	COVER, HANDLE	
4	3-063-322-01	RETAINER, HANDLE SHAFT	
5	3-950-858-01	RING (P-9), O	
6	3-063-330-01	GUIDE, CARRYING BELT	
7	3-063-329-01	SHAFT, CARRYING BELT	
8	X-3950-889-1	COVER ASSY, TOP	
9	3-063-315-01	FOOT (L)	
10	3-968-729-31	SCREW (M2), LOCK ACE, P2	
* 11	X-3950-886-1	COVER ASSY, BATTERY	
* 12	3-063-308-01	CUSHION, BUCKLE	
* 13	3-063-307-01	CUSHION, BT RUBBER	
* 14	3-063-302-01	RETAINER, HINGE SHAFT	
* 15	3-063-301-01	SHAFT, HINGE	
16	3-989-735-81	SCREW (M1.7), LOCK ACE, P2	
* 17	3-063-300-01	COVER, BATTERY	
* 18	X-3950-888-1	COVER ASSY, BOTTOM	
19	3-063-316-01	FOOT (S)	
20	3-063-339-01	HINGE	
21	X-3950-892-1	GUARD ASSY, LCD	
22	3-968-729-91	SCREW (M2), LOOK ACE, P2	

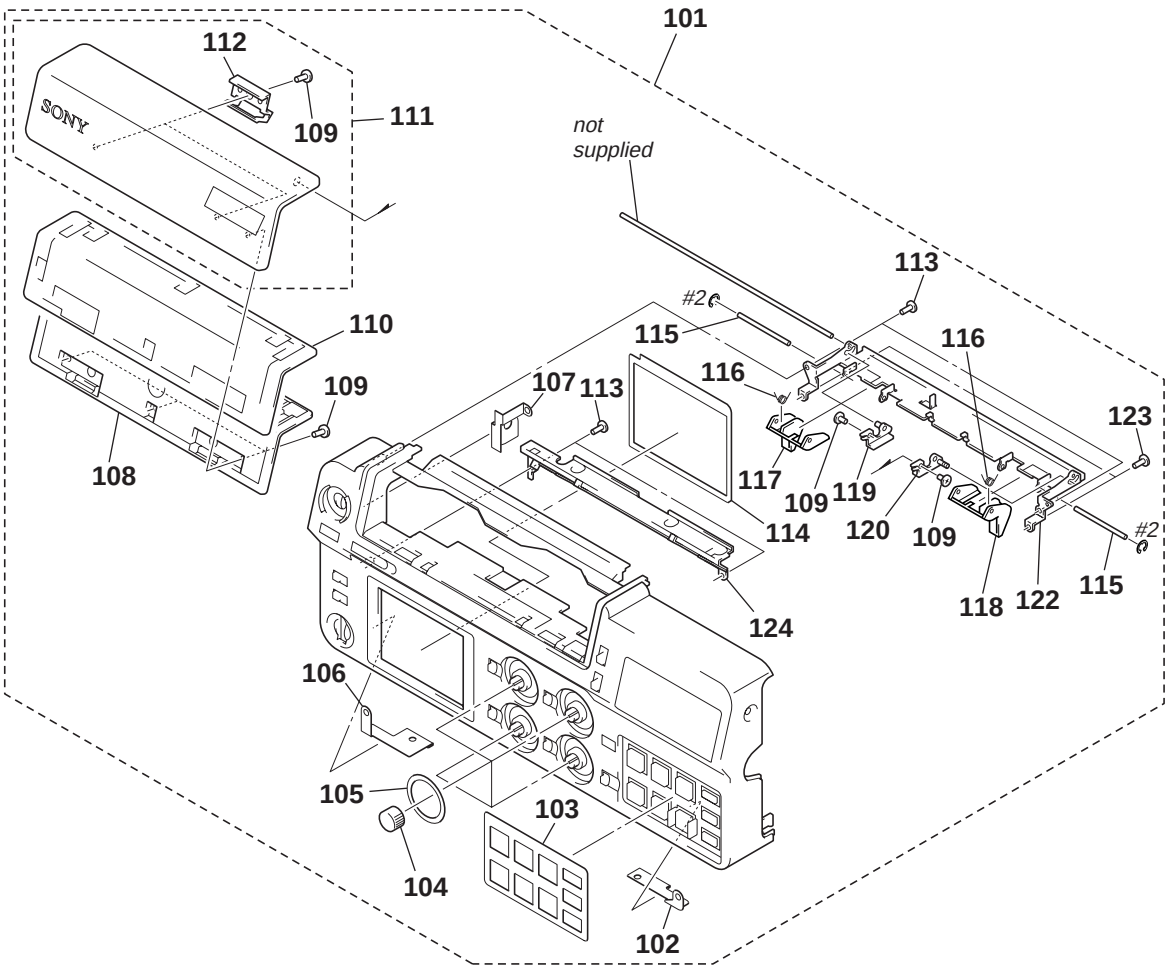
6-1-2. FRONT PANEL ASSEMBLY-1



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.

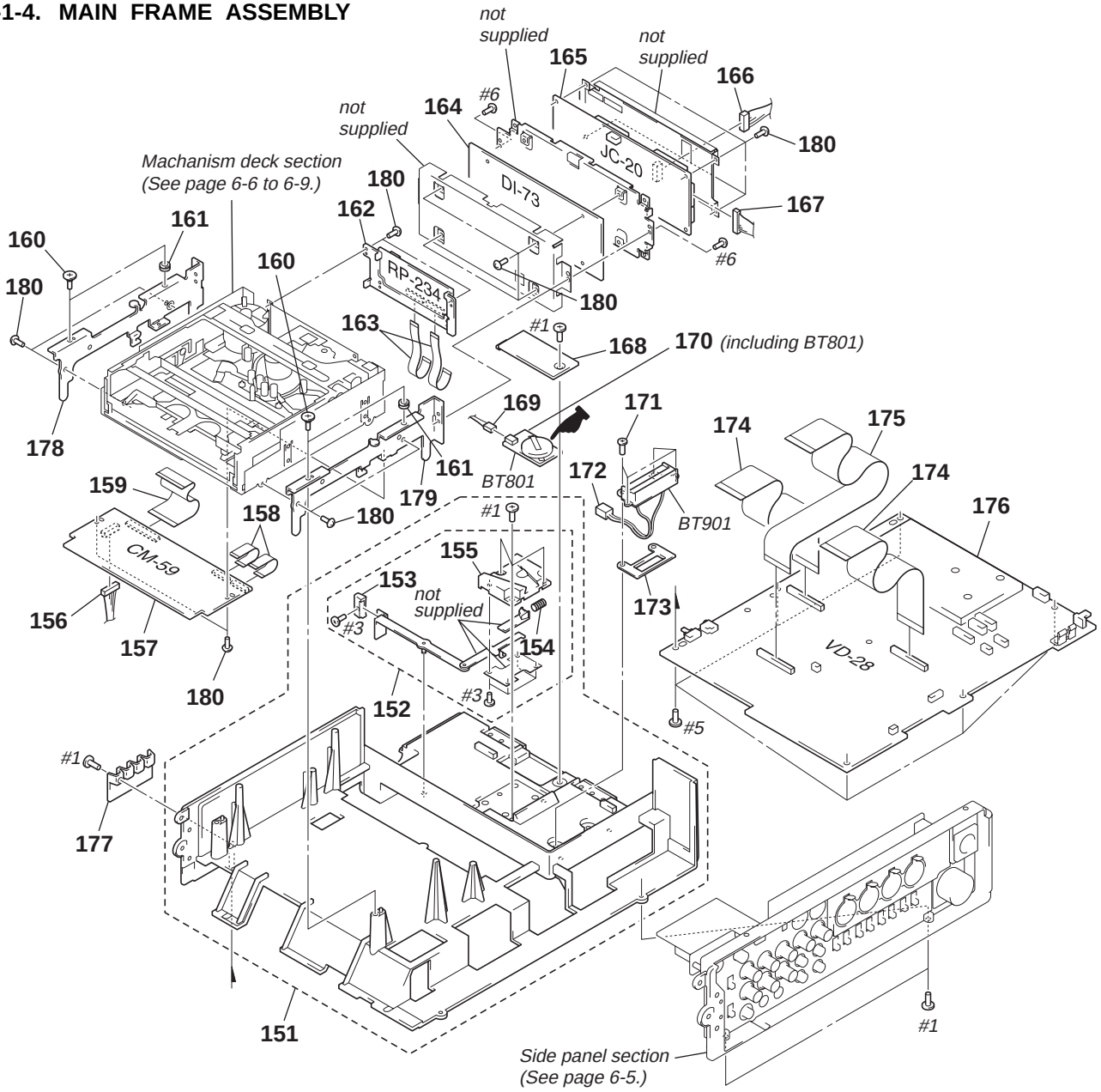
Ref. No.	Part No.	Description	Remark
* 51	3-065-147-01	SHEET (A), LIGHT INTERCEPTION	
52	1-960-626-11	HARNESS (EV-70)	
53	A-7074-529-A	EJ-28 BOARD, COMPLETE	
* 54	3-065-148-01	SHEET (A), LIGHT INTERCEPTION	
55	1-792-981-11	CABLE, FLAT (FJV-3)	
56	1-960-627-11	HARNESS (LC-111)	
57	1-960-634-11	HARNESS (RM-129)	
58	3-713-791-71	SCREW (M1.7X4)	
59	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
60	3-062-195-01	SPACER, PD	
61	A-7074-107-A	PD-125 BOARD, COMPLETE	
62	3-968-729-51	SCREW (M2), LOCK ACE, P2	
63	A-7074-528-A	KP-8 BOARD, COMPLETE	
64	1-960-638-11	HARNESS (KP-52)	
65	3-948-339-61	TAPPING	
* 66	3-063-334-01	FRAME, LCD	
* 67	3-063-349-01	SHEET, BL INSULATING	
* 68	3-051-232-01	CLIP, PCB	
⚠69	1-418-517-11	TRANSFORMER UNIT, INVERTER	
70	3-063-890-01	CUSHION (POWER), PROTECTION	
71	A-7067-277-A	FR-157 BOARD, COMPLETE	
72	1-782-824-11	CABLE, FLAT (FVJ-7)	
73	3-055-797-01	SHEET, BL SHIELD	
74	1-792-983-11	CABLE, FLAT (FVJ-12)	
* 75	3-063-335-01	HOLDER, LCD	
76	A-7074-527-A	LT-32 BOARD, COMPLETE	
* 77	3-063-336-01	ILLUMINATOR, LCD	
* 78	3-065-766-01	EDGING, RUBBER	
LCD901	8-753-050-58	ACX300BK-2	
LCD902	1-801-515-21	DISPLAY PANEL, LIQUID CRYSTAL	
⚠ND901	1-517-877-21	TUBE, FLUORESCENT,COLD CATHODE	

6-1-3. FRONT PANEL ASSEMBLY-2



Ref. No.	Part No.	Description	Remark
101	X-3950-877-1	PANEL ASSY, FRONT (DSR-50)	
101	X-3950-893-1	PANEL ASSY, FRONT (DSR-50P)	
* 102	3-063-263-01	PLATE (A), FR GROUND	
* 103	3-063-266-01	LABEL, CONTROL KEY	
104	3-063-271-01	RUBBER, VOLUME KNOB	
* 105	3-063-265-01	LABEL, VOL	
* 106	3-063-272-01	PLATE, LC GROUND	
* 107	3-063-274-01	PLATE (B), FR GROUND	
108	3-063-262-01	RETAINER, CC PACKING	
109	3-968-729-61	SCREW (M2X3), LOCK ACE, P2	
110	3-063-261-01	PACKING, CC	
* 111	X-3950-883-1	COVER ASSY, CASSETTE	
* 112	3-063-292-01	LOCK, CC	
113	3-948-339-61	TAPPING	
* 114	3-063-892-01	PACKING, LCD	
* 115	3-063-889-01	SHAFT, CG	
* 116	3-063-532-01	SPRING, CC TORSION COIL	
* 117	3-063-536-01	GUIDE (L), CASSETTE	
* 118	3-063-524-01	GUIDE (R), CASSETTE	
* 119	X-3950-881-1	ARM (L) ASSY, CC	
* 120	X-3950-880-1	ARM (R) ASSY, CC	
* 122	X-3950-878-1	FRAME ASSY, CC	
123	3-948-339-71	TAPPING	
* 124	X-3950-882-1	SLIDER ASSY, CC	

6-1-4. MAIN FRAME ASSEMBLY



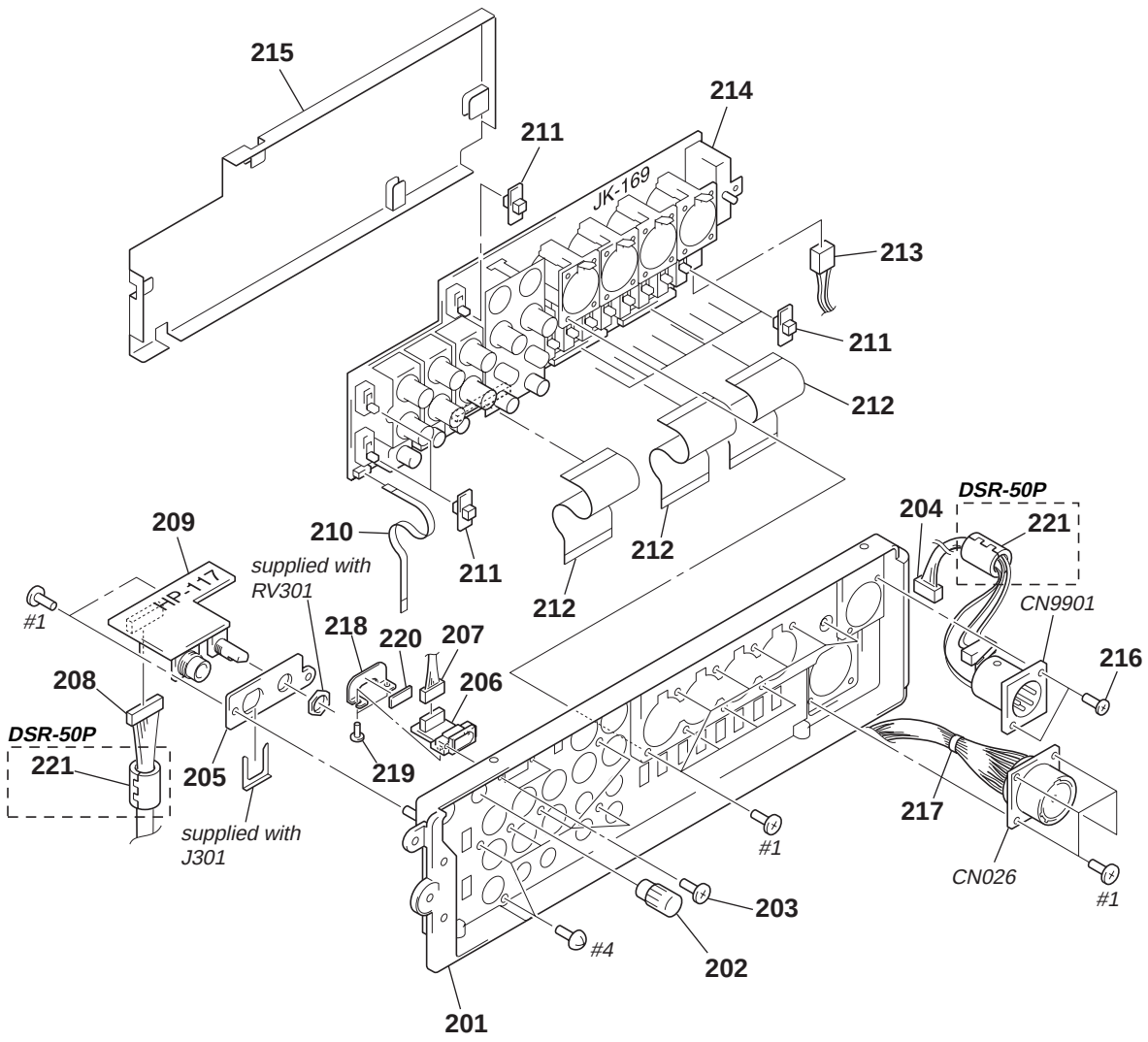
CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

: *BT801 (V/L RECHARGEABLE BATTERY)*
Board on the mount position. (See page 4-69.)

Ref. No.	Part No.	Description	Remark
* 151	X-3950-884-1	FRAME ASSY, MAIN	
* 152	X-3950-885-1	MOUNT ASSY, BATTERY	
* 153	3-680-952-01	KNOB,RELEASE LEVER	
* 154	3-679-648-02	SPRING,COMPRESSION	
* 155	3-679-690-02	MOUNT,V	
156	1-960-629-11	HARNESS (VC-58)	
157	A-7067-274-A	CM-59 BOARD, COMPLETE	
158	1-791-662-11	CABLE, FLEXIBLE FLAT (FMD-14)	
159	1-791-660-11	CABLE, FLEXIBLE FLAT (FJC-1)	
160	3-974-010-01	SCREW (M3), STEP	
161	3-974-011-01	RUBBER, VIBRATION PROOF	
162	A-7067-275-A	RP-234 BOARD, COMPLETE	
163	1-791-661-11	CABLE, FLEXIBLE FLAT (FRJ-1)	
164	A-7067-272-A	DI-73 BOARD, COMPLETE	
165	A-7067-273-A	JC-20 BOARD, COMPLETE	
166	1-960-630-11	HARNESS (JV-58)	
167	1-960-636-11	HARNESS (VJ-106)	

Ref. No.	Part No.	Description	Remark
168	3-063-344-01	COVER, VL	
169	1-960-633-11	HARNESS (BU-50)	
170	A-7074-524-A	VL-26 BOARD, COMPLETE	
171	3-061-062-01	BOLT (M2.6)	
172	1-960-632-11	HARNESS (BA-54)	
173	3-063-361-01	SPACER, TERMINAL	
174	1-792-984-11	CABLE, FLAT (FVJ-13)	
175	1-792-985-11	CABLE, FLAT (FVJ-14)	
176	A-7067-271-A	VD-28 BOARD, COMPLETE (DSR-50)	
176	A-7067-278-A	VD-28 BOARD, COMPLETE (DSR-50P)	
177	3-063-341-01	COVER, TERMINAL	
* 178	3-057-525-02	BRACKET (L), MD	
* 179	3-057-526-02	BRACKET (R), MD	
180	3-732-817-01	SCREW (2X4.5), TAPPING	
BT801	1-528-694-11	BATTERY, V/L RICHARGEABLE	
BT901	1-766-377-12	CONNECTOR, BATTERY	

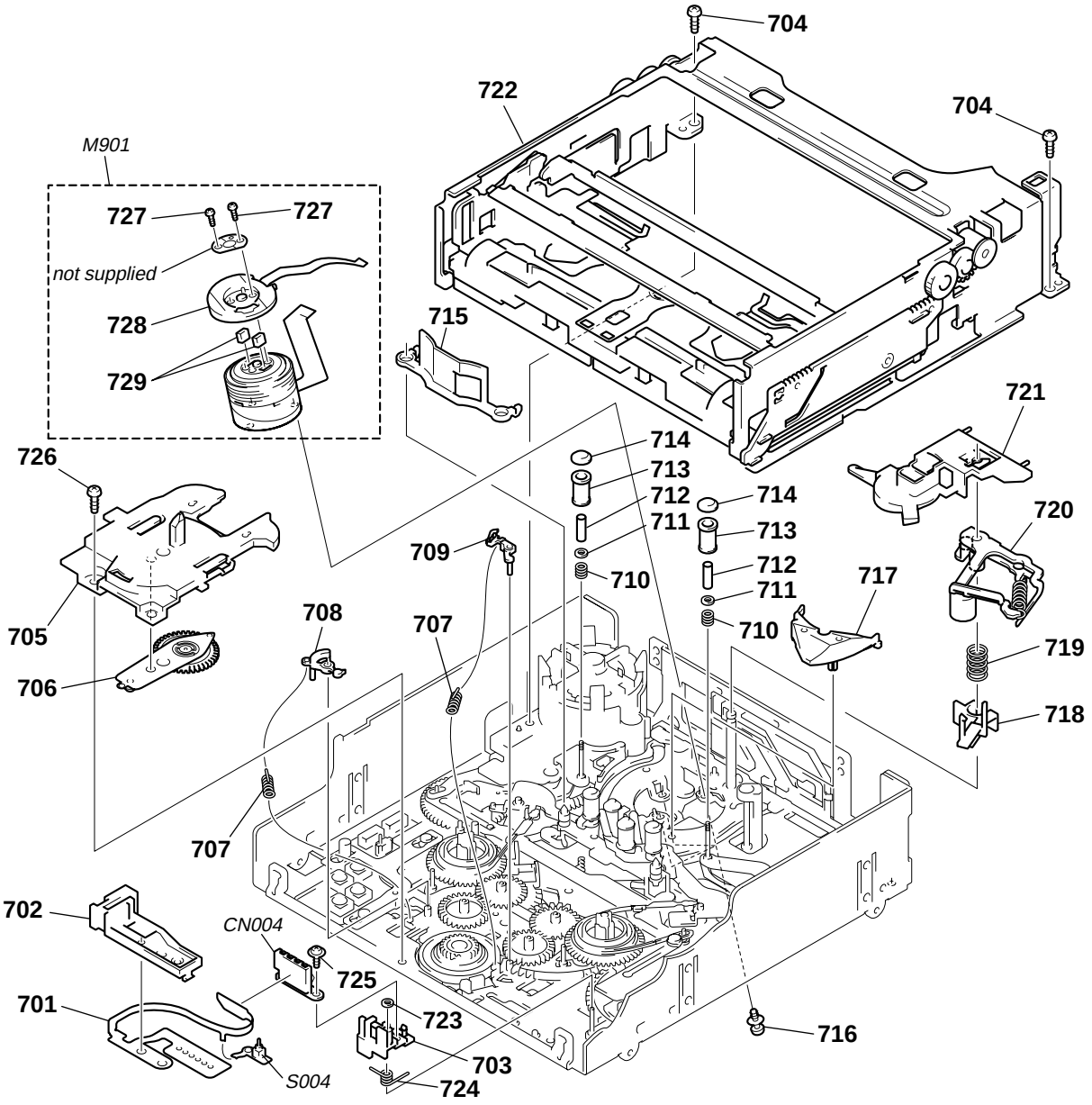
6-1-5. SIDE PANEL ASSEMBLY



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	Remark
201	X-3950-887-1	PANEL ASSY, SIDE	
* 202	3-063-350-01	KNOB, ROTARY	
203	3-968-729-11	SCREW (M2), LOCK ACE, P2	
204	1-960-637-11	HARNESS (DC-66)	
* 205	3-063-338-01	HOLDER, HP	
206	A-7074-525-A	IL-013 BOARD, COMPLETE	
207	1-960-635-11	HARNESS (IN-50)	
208	1-960-628-11	HARNESS (HP-135)	
209	A-7074-526-A	HP-117 BOARD, COMPLETE	
210	1-792-982-11	CABLE, FLAT (FVJ-10)	
* 211	3-063-337-01	SWITCH, SLIDE	
212	1-782-824-11	CABLE, FLAT (FVJ-7)	
213	1-960-631-11	HARNESS (VB-50)	
214	A-7067-276-A	JK-169 BOARD, COMPLETE	
215	3-063-351-01	COVER, JK	
216	3-061-062-01	BOLT (M2.6)	
217	1-757-063-11	WIRE, SPECIAL TERMINAL PROCESS	
* 218	3-064-914-01	REINFORCEMENT, DV TERMINAL	
219	3-719-381-11	SCREW (M2X5)	
* 220	3-065-149-01	SHEET, DV TERMINAL PROTECTION	
221	1-500-051-11	BEAD, FERRITE (WITH CASE) (DSR-50P)	
CN026	1-562-245-11	RECEPTACLE, CONNECTOR (26P)	
⚠CN9901	1-564-603-11	CONNECTOR (WITH DC SW) 4P	

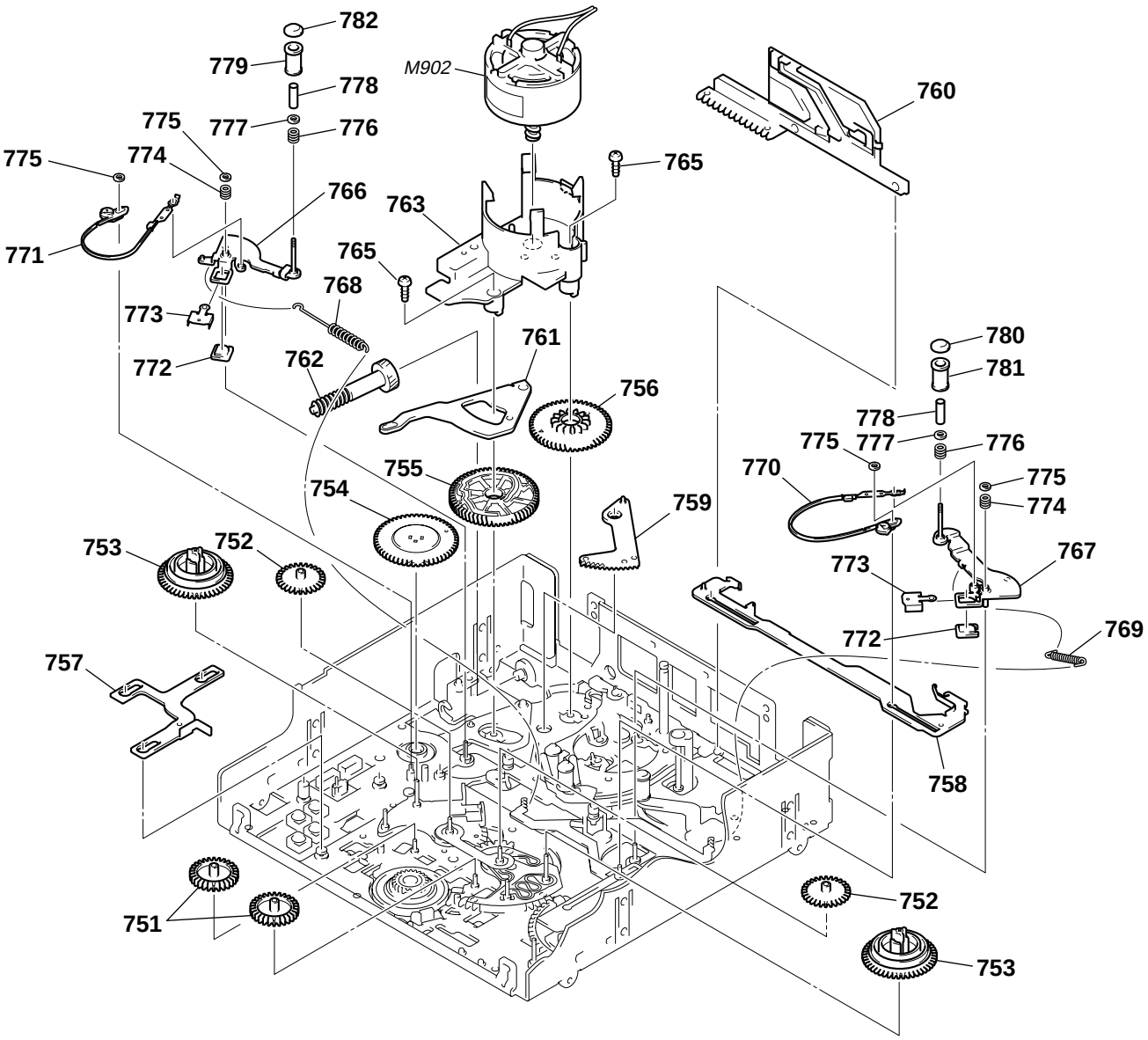
6-1-6. MECHANISM DECK ASSEMBLY (DRUM ASSEMBLY)



Ref. No.	Part No.	Description	Remark
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	Remark
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)	

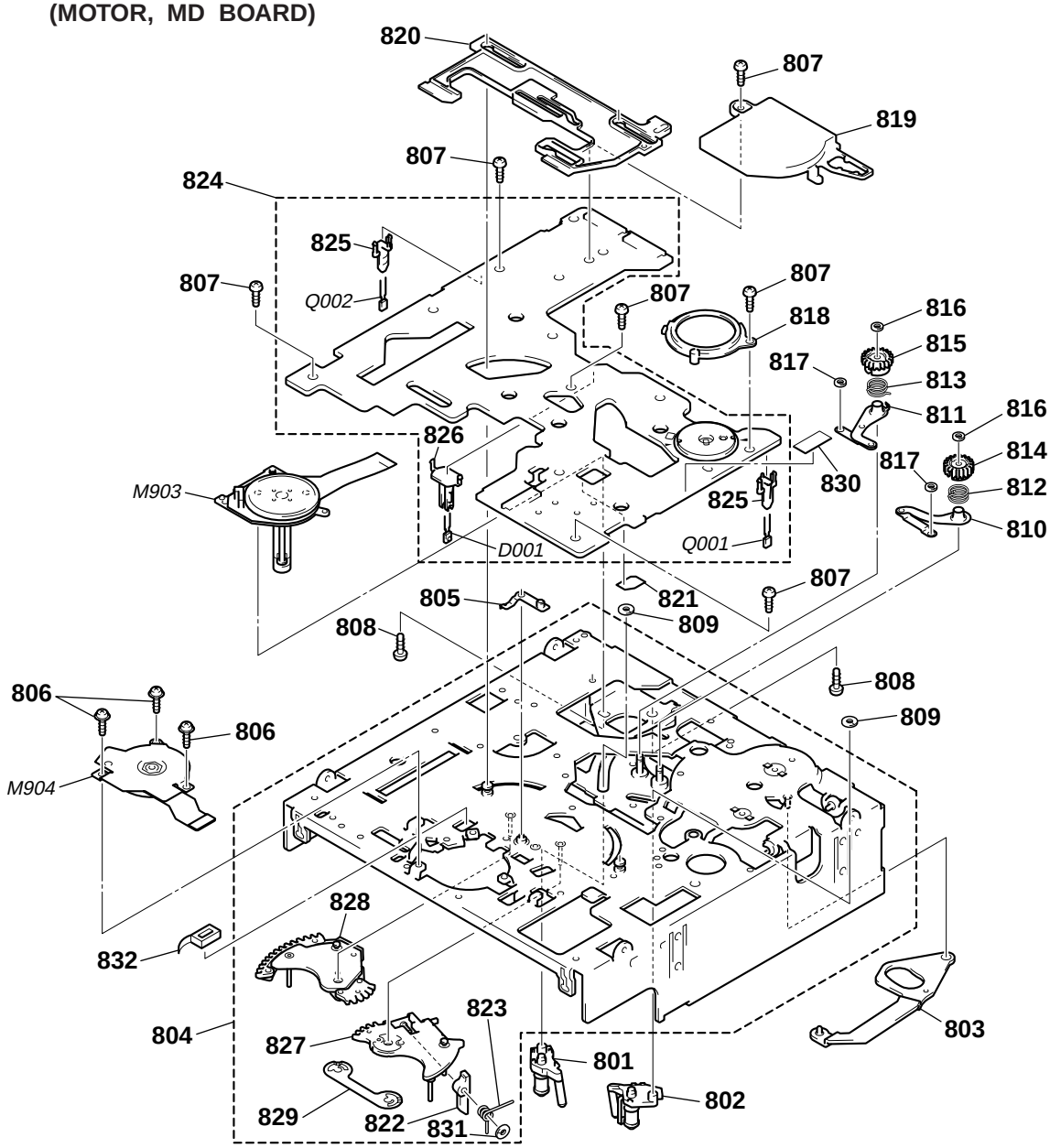
6-1-7. MECHANISM DECK ASSEMBLY (GEAR, ARM)



Ref. No.	Part No.	Description	Remark
751	X-3949-923-1	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	Remark
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	

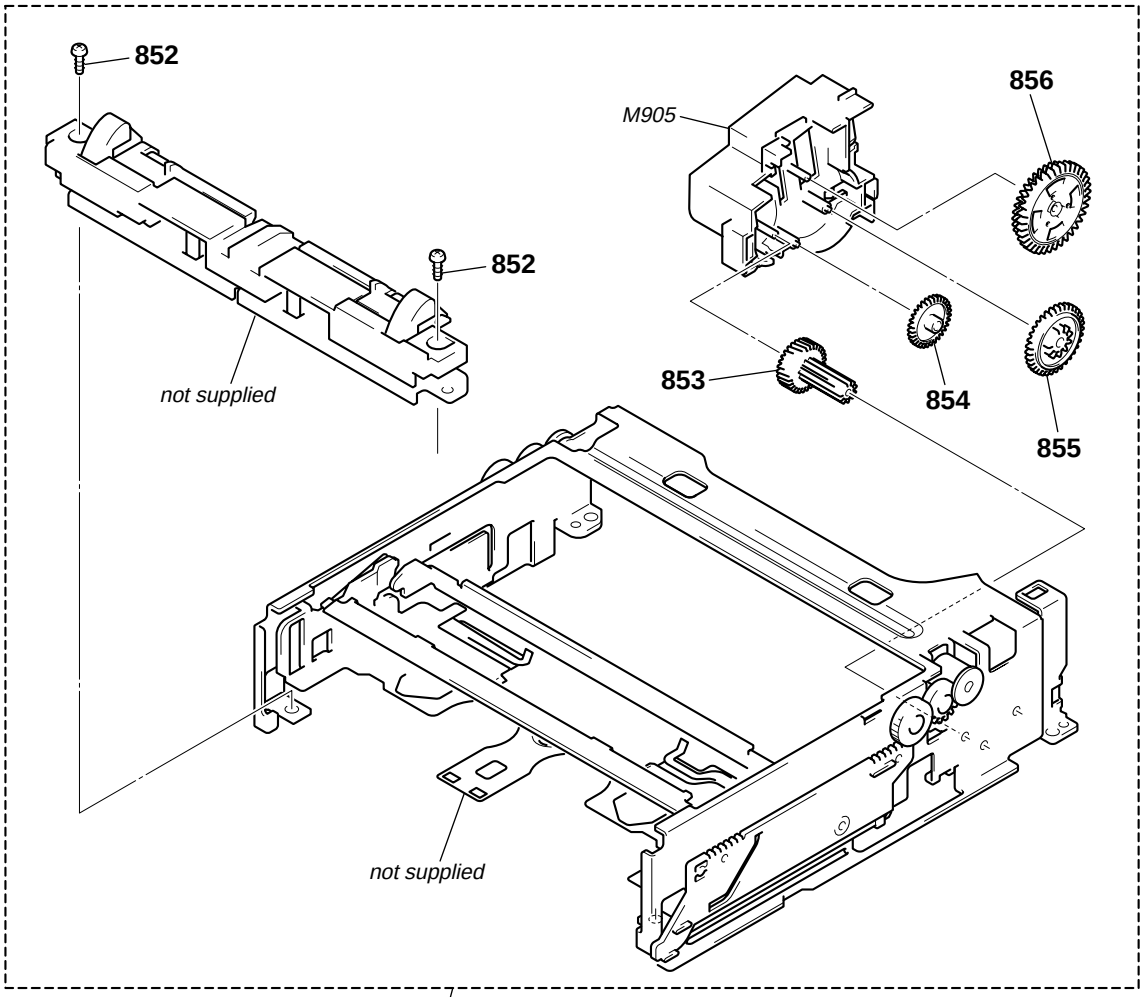
6-1-8. MECHANISM DECK ASSEMBLY (MOTOR, MD BOARD)



Ref. No.	Part No.	Description	Remark
801	A-7025-007-A	COASTER (T) BLOCK ASSY	
802	A-7025-006-A	COASTER (S) BLOCK ASSY	
* 803	3-057-283-01	ARM, MAIN SLIDER	
804	X-3949-916-9	CHASSIS ASSY, MECHANICAL	
805	X-3949-924-1	STOPPER ASSY, PENDULUM	
806	3-947-503-01	SCREW (M1.4)	
807	3-732-817-01	SCREW (2X4.5), TAPPING	
808	3-973-266-01	SCREW (M2X2.2 (MEK)), HEAD	
809	3-973-142-01	STOPPER, COASTER PUNCHING	
810	X-3946-690-1	ARM (S) ASSY, GL	
811	X-3946-689-1	ARM (T) ASSY, GL	
812	3-973-146-02	SPRING (S), GL TORSION	
813	3-973-156-02	SPRING (T), GL TORSION	
814	3-973-264-01	GEAR (S), GL	
815	3-973-138-01	GEAR (T), GL	
816	3-727-176-01	WASHER, STOPPER	
817	3-973-143-01	WASHER, COASTER STOPPER	
818	3-057-339-01	COVER, ENCODER	
819	3-057-340-01	COVER, CAPSTAN	

Ref. No.	Part No.	Description	Remark
820	3-057-282-01	SLIDER, MAIN	
821	1-657-785-11	FP-248 FLEXIBLE BOARD (DEW SENSOR)	
822	3-057-320-01	BLOCK, REEL LOCK RELEASE	
823	3-057-354-01	SPRING, REEL LOCK RELEASE	
824	A-7067-229-A	MD-76 BOARD, COMPLETE	
* 825	3-057-376-01	HOLDER, SENSOR	
* 826	3-057-555-01	HOLDER, LED	
827	X-3950-199-1	BASE (S) ASSY, REEL	
828	X-3950-200-1	BASE (T) ASSY, REEL	
829	3-057-265-01	RETAINER, REEL BASE	
830	3-941-343-21	TAPE (A)	
831	3-726-829-01	WASHER, STOPPER	
832	3-064-576-01	ECLIPSER	
D001	8-719-988-42	DIODE GL453S	
M903	8-835-648-01	MOTOR, DC SCD17A/J-N (CAPSTAN)	
M904	X-3949-928-1	MOTOR ASSY, REEL	
Q001	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE END)	
Q002	8-729-907-25	PHOTO TRANISTOR PT4850F (TAPE TOP)	

6-1-9. MECHANISM DECK ASSEMBLY (CASSETTE COMPARTMENT)



Ref. No.	Part No.	Description	Remark
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)	
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
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. .: µPB. . uPC. . : µPC. .
  uPD. .: µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

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 critiquens 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			Remark
	A-7067-274-A	CM-59 BOARD, COMPLETE			
		**********			
		(Ref. No. 20,000 Series)			
		< 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
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
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

Ref. No.	Part No.	Description			Remark
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
		< 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)			
		< JUMPER RESISTOR >			
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		

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q100	8-729-048-75	TRANSISTOR	CPH3109-TL		
Q101	8-729-048-75	TRANSISTOR	CPH3109-TL		
Q102	8-729-048-75	TRANSISTOR	CPH3109-TL		
Q103	8-729-048-75	TRANSISTOR	CPH3109-TL		
Q104	8-729-216-22	TRANSISTOR	2SB709A-QRS-TX		
Q105	8-729-037-72	TRANSISTOR	UN9211J- (TX).SO		
Q200	8-729-216-22	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%	1/16W
R105	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R106	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R107	1-218-865-11	METAL CHIP	5.6K	0.5%	1/16W
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%	1/16W
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%	1/16W
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%	1/16W
R203	1-218-873-11	METAL CHIP	12K	0.5%	1/16W
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	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R214	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
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

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			Remark
R225	1-216-295-11	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	1-216-295-11	SHORT	0		
R307	1-216-821-11	METAL CHIP	1K	5%	1/16W
R308	1-216-821-11	METAL CHIP	1K	5%	1/16W
R309	1-216-821-11	METAL CHIP	1K	5%	1/16W
R310	1-216-821-11	METAL CHIP	1K	5%	1/16W
R311	1-218-859-11	METAL CHIP	3.3K	0.5%	1/16W
R312	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
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%	1/16W
R340	1-218-859-11	METAL CHIP	3.3K	0.5%	1/16W
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	1-216-295-11	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	1-216-295-11	SHORT	0		
R501	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R503	1-216-833-11	METAL CHIP	10K	5%	1/16W
R504	1-216-833-11	METAL CHIP	10K	5%	1/16W
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%	1/16W
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%	1/16W
R519	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R520	1-218-897-11	METAL CHIP	120K	0.5%	1/16W
R522	1-218-901-11	METAL CHIP	180K	0.5%	1/16W
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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(Ref. No.10,000 Series)

< 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
C7038	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7039	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7040	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7041	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7042	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7043	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C7044	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C7045	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7046	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7047	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7048	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C7049	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V

Ref. No.	Part No.	Description			Remark
C7050	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C7051	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7052	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7053	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7054	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C7055	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7056	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7057	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7058	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7059	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7060	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7061	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7062	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C7063	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C7064	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7065	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7066	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C7067	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C7068	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7069	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7100	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7101	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C7201	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C7202	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C7203	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C7204	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C7301	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7302	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7303	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7304	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C7305	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7306	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7307	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7308	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7401	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7402	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C7403	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7404	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C7405	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C8000	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8001	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C8002	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C8003	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8004	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8005	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C8006	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8007	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8008	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8009	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C8010	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C8011	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C8012	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C8013	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8014	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C8015	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C8016	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8017	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C8018	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C8019	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C8020	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8021	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8022	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C8024	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8025	1-162-625-11	CERAMIC CHIP	0.0047uF	5%	50V
C8026	1-164-686-11	CERAMIC CHIP	0.0015uF	5%	50V
C8027	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C8100	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C8101	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C8102	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C8201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C9000	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C9001	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9002	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9003	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C9004	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9005	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9006	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9007	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C9008	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C9009	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9010	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9011	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C9012	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9013	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9014	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9015	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C9016	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9017	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9018	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9019	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9020	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C9021	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9022	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9023	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9024	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9025	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9026	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9027	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9028	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9029	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C9030	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C9031	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9032	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9033	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C9034	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C9035	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C9036	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C9037	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9038	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9500	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9501	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9502	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9503	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9504	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9505	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9506	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9507	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9508	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9510	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

Ref. No.	Part No.	Description			Remark
C9511	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C9512	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9513	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C9514	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C9515	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C9516	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CONNECTOR >			
CN9500	1-794-773-11	CONNECTOR BOARD TO BOARD 120P			
		< DIODE >			
D7301	8-719-421-67	DIODE MA132WK-TX			
D7302	8-719-421-67	DIODE MA132WK-TX			
		< FILTER >			
FL9000	1-233-345-21	FILTER, LOW PASS (5.5MHz)			
FL9001	1-233-345-21	FILTER, LOW PASS (5.5MHz)			
FL9002	1-233-345-21	FILTER, LOW PASS (5.5MHz)			
		< IC >			
IC7000	8-759-422-21	IC NJM4580V (TE2)			
IC7001	8-759-422-21	IC NJM4580V (TE2)			
IC7002	8-759-358-47	IC NJM2115V (TE2)			
IC7003	8-759-358-47	IC NJM2115V (TE2)			
IC7004	8-759-523-02	IC TC74HC4053AFT (EL)			
IC7005	8-759-523-02	IC TC74HC4053AFT (EL)			
IC7006	8-759-523-02	IC TC74HC4053AFT (EL)			
IC7007	8-759-523-02	IC TC74HC4053AFT (EL)			
IC7008	8-759-358-47	IC NJM2115V (TE2)			
IC7009	8-759-358-47	IC NJM2115V (TE2)			
IC7010	8-759-358-47	IC NJM2115V (TE2)			
IC7011	8-759-358-47	IC NJM2115V (TE2)			
IC7013	8-759-358-47	IC NJM2115V (TE2)			
IC7014	8-759-358-47	IC NJM2115V (TE2)			
IC7016	8-759-679-92	IC AK4528VF-E2			
IC7018	8-759-679-92	IC AK4528VF-E2			
IC7020	8-759-359-49	IC NJM3414AV (TE2)			
IC7021	8-759-359-49	IC NJM3414AV (TE2)			
IC8000	8-759-058-60	IC TC7SU04FU (TE85R)			
IC8001	8-759-058-62	IC TC7S08FU (TE85R)			
IC8002	8-759-083-94	IC TC7W74FU (TE12R)			
IC8003	8-752-391-87	IC CXD2712R			
IC8004	8-759-678-15	IC TLV2231CDBVR			
IC8005	8-759-369-73	IC NJM4556AM-A-TE2			
IC8006	8-759-494-88	IC TC75S56F (TE85R)			
IC8007	8-759-523-02	IC TC74HC4053AFT (EL)			
IC8008	8-759-678-15	IC TLV2231CDBVR			
IC8009	8-759-696-00	IC HD6433837TSC73X			
IC8010	8-759-564-49	IC TC7W53FU (TE12R)			
IC8011	8-759-058-62	IC TC7S08FU (TE85R)			
IC8201	8-759-443-08	IC TC7W241FU-TE12R			
IC9000	8-752-371-65	IC CXD2304R-T4			
IC9001	8-759-449-58	IC LM7131BCM5X			
IC9004	8-759-524-52	IC TC74VHC574FT (EL)			
IC9005	8-759-270-56	IC SN74HC377ANSR			
IC9006	8-759-523-95	IC TC74VHC74FT (EL)			
IC9007	8-759-449-58	IC LM7131BCM5X			
IC9008	8-759-270-56	IC SN74HC377ANSR			
IC9009	8-759-270-56	IC SN74HC377ANSR			
IC9010	8-759-449-58	IC LM7131BCM5X			
IC9011	8-759-582-71	IC M66280FP-280D			
IC9012	8-759-524-10	IC TC74VHC157FT (EL)			
IC9013	8-759-582-71	IC M66280FP-280D			
IC9014	8-759-531-92	IC TC7WH04FU (TE12R)			
IC9015	8-759-524-50	IC TC74VHC541FT (EL)			
IC9016	8-759-524-50	IC TC74VHC541FT (EL)			
IC9017	8-759-368-81	IC TK11630UTL			
IC9018	8-759-528-99	IC TC74VHC221AFT (EL)			
IC9019	8-759-196-97	IC TC7SH32FU-TE85R			
IC9500	8-759-082-57	IC TC7W04FU (TE12R)			
IC9501	8-759-524-04	IC TC74VHC125FT (EL)			
IC9502	8-759-524-48	IC TC74VHC393FT (EL)			
IC9503	8-759-431-92	IC AV9173-15CS08T			
IC9504	8-759-443-08	IC TC7W241FU-TE12R			
IC9505	8-759-058-64	IC TC7S32FU (TE85R)			
IC9506	8-759-524-18	IC TC74VHC163FT (EL)			
IC9507	8-759-524-19	IC TC74VHC164FT (EL)			
IC9508	8-759-083-94	IC TC7W74FU (TE12R)			
IC9509	8-759-524-18	IC TC74VHC163FT (EL)			
IC9510	8-759-524-48	IC TC74VHC393FT (EL)			
IC9511	8-759-524-19	IC TC74VHC164FT (EL)			
IC9512	8-759-524-18	IC TC74VHC163FT (EL)			
IC9513	8-759-447-77	IC TC7WH74FU (TE12R)			
IC9514	8-759-443-08	IC TC7W241FU-TE12R			
IC9515	8-759-443-08	IC TC7W241FU-TE12R			
IC9516	8-759-531-92	IC TC7WH04FU (TE12R)			
IC9517	8-759-528-99	IC TC74VHC221AFT (EL)			
IC9518	8-759-058-64	IC TC7S32FU (TE85R)			
IC9519	8-759-058-64	IC TC7S32FU (TE85R)			
		< JUMPER RESISTOR >			
JS7201	1-216-296-91	SHORT	0		
		< COIL >			
L7301	1-414-398-11	INDUCTOR	10uH		
L7302	1-414-398-11	INDUCTOR	10uH		
L8201	1-414-398-11	INDUCTOR	10uH		
L8202	1-414-398-11	INDUCTOR	10uH		
L8203	1-414-398-11	INDUCTOR	10uH		
L9000	1-414-398-11	INDUCTOR	10uH		
L9001	1-414-398-11	INDUCTOR	10uH		
L9002	1-414-398-11	INDUCTOR	10uH		
L9003	1-414-398-11	INDUCTOR	10uH		
L9500	1-414-398-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q7000	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q7001	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q7002	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q7003	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q7004	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B		
Q7005	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B		
Q7007	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		
Q7008	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q8000	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q8001	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO		
Q8201	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q8202	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q9000	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		

Ref. No.	Part No.	Description			Remark
Q9001	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q9002	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		
Q9003	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q9004	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		
Q9005	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q9502	8-729-402-42	TRANSISTOR	UN5213-TX		
		< RESISTOR >			
R7002	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7003	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7006	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7007	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7008	1-216-864-11	METAL CHIP	0	5%	1/16W
R7009	1-216-864-11	METAL CHIP	0	5%	1/16W
R7014	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7015	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7016	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7017	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7018	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7019	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7020	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7021	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7022	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7023	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7024	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7025	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7026	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7027	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7028	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7030	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7031	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7032	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7033	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7034	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7035	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7036	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7037	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7038	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7039	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7040	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7041	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7042	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7043	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7044	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7045	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7046	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7047	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7048	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7049	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7050	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7051	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7052	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7053	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7054	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7055	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7056	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7057	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7058	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7059	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7060	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7061	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7062	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7063	1-216-809-11	METAL CHIP	100	5%	1/16W
R7064	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7065	1-216-809-11	METAL CHIP	100	5%	1/16W
R7066	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R7067	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7068	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R7069	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7071	1-216-809-11	METAL CHIP	100	5%	1/16W
R7072	1-216-809-11	METAL CHIP	100	5%	1/16W
R7076	1-216-809-11	METAL CHIP	100	5%	1/16W
R7077	1-216-809-11	METAL CHIP	100	5%	1/16W
R7080	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7081	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7083	1-216-809-11	METAL CHIP	100	5%	1/16W
R7084	1-216-809-11	METAL CHIP	100	5%	1/16W
R7085	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7086	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7087	1-216-809-11	METAL CHIP	100	5%	1/16W
R7088	1-216-809-11	METAL CHIP	100	5%	1/16W
R7089	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7090	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7091	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7093	1-216-809-11	METAL CHIP	100	5%	1/16W
R7094	1-216-809-11	METAL CHIP	100	5%	1/16W
R7095	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7096	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7098	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R7099	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7100	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R7101	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7105	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7106	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7107	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7108	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7109	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7110	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7111	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7112	1-218-839-11	METAL CHIP	470	0.5%	1/16W
R7115	1-216-864-11	METAL CHIP	0	5%	1/16W
R7116	1-216-864-11	METAL CHIP	0	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
R7125	1-216-813-11	METAL CHIP	220	5%	1/16W
R7126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7127	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7128	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7129	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7130	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7131	1-216-813-11	METAL CHIP	220	5%	1/16W
R7132	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7133	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7134	1-216-813-11	METAL CHIP	220	5%	1/16W
R7135	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7136	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R7137	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7138	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7139	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7140	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7143	1-216-813-11	METAL CHIP	220	5%	1/16W
R7144	1-216-813-11	METAL CHIP	220	5%	1/16W
R7145	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7146	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7147	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7148	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7149	1-216-841-11	METAL CHIP	47K	5%	1/16W
R7150	1-216-809-11	METAL CHIP	100	5%	1/16W
R7151	1-216-809-11	METAL CHIP	100	5%	1/16W
R7152	1-216-809-11	METAL CHIP	100	5%	1/16W
R7153	1-216-809-11	METAL CHIP	100	5%	1/16W
R7156	1-216-864-11	METAL CHIP	0	5%	1/16W
R7157	1-216-864-11	METAL CHIP	0	5%	1/16W
R7201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7202	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7203	1-216-809-11	METAL CHIP	100	5%	1/16W
R7204	1-216-809-11	METAL CHIP	100	5%	1/16W
R7205	1-216-809-11	METAL CHIP	100	5%	1/16W
R7206	1-216-809-11	METAL CHIP	100	5%	1/16W
R7301	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7302	1-216-833-11	METAL CHIP	10K	5%	1/16W
R7303	1-216-813-11	METAL CHIP	220	5%	1/16W
R7304	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7307	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7308	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7309	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7310	1-216-813-11	METAL CHIP	220	5%	1/16W
R7403	1-216-841-11	METAL CHIP	47K	5%	1/16W
R7404	1-216-845-11	METAL CHIP	100K	5%	1/16W
R7405	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7406	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7407	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R7408	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R7501	1-216-864-11	METAL CHIP	0	5%	1/16W
R7502	1-216-864-11	METAL CHIP	0	5%	1/16W
R8001	1-216-864-11	METAL CHIP	0	5%	1/16W
R8002	1-216-849-11	METAL CHIP	220K	5%	1/16W
R8007	1-216-864-11	METAL CHIP	0	5%	1/16W
R8008	1-216-864-11	METAL CHIP	0	5%	1/16W
R8009	1-216-864-11	METAL CHIP	0	5%	1/16W
R8010	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8011	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8014	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R8015	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R8016	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R8017	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R8018	1-216-811-11	METAL CHIP	150	5%	1/16W
R8019	1-216-811-11	METAL CHIP	150	5%	1/16W
R8020	1-216-864-11	METAL CHIP	0	5%	1/16W
R8021	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8022	1-216-864-11	METAL CHIP	0	5%	1/16W
R8023	1-216-864-11	METAL CHIP	0	5%	1/16W
R8024	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8025	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8026	1-216-837-11	METAL CHIP	22K	5%	1/16W
R8029	1-216-797-11	METAL CHIP	10	5%	1/16W

Ref. No.	Part No.	Description			Remark
R8030	1-216-180-00	RES-CHIP	180	5%	1/8W
R8031	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R8032	1-216-180-00	RES-CHIP	180	5%	1/8W
R8033	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8034	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R8035	1-216-833-11	METAL CHIP	10K	5%	1/16W
R8036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8037	1-216-797-11	METAL CHIP	10	5%	1/16W
R8038	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R8039	1-216-857-11	METAL CHIP	1M	5%	1/16W
R8040	1-216-833-11	METAL CHIP	10K	5%	1/16W
R8041	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R8042	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8044	1-216-833-11	METAL CHIP	10K	5%	1/16W
R8045	1-216-833-11	METAL CHIP	10K	5%	1/16W
R8046	1-216-803-11	METAL CHIP	33	5%	1/16W
R8047	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8048	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8049	1-216-857-11	METAL CHIP	1M	5%	1/16W
R8050	1-216-836-11	METAL CHIP	18K	5%	1/16W
R8051	1-216-864-11	METAL CHIP	0	5%	1/16W
R8053	1-216-809-11	METAL CHIP	100	5%	1/16W
R8054	1-216-864-11	METAL CHIP	0	5%	1/16W
R8055	1-216-809-11	METAL CHIP	100	5%	1/16W
R8056	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8057	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R8058	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8059	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8060	1-216-803-11	METAL CHIP	33	5%	1/16W
R8061	1-216-803-11	METAL CHIP	33	5%	1/16W
R8062	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8063	1-216-803-11	METAL CHIP	33	5%	1/16W
R8064	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8065	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8066	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8067	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8068	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8069	1-216-821-11	METAL CHIP	1K	5%	1/16W
R8070	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8071	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8072	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8073	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8074	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8075	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8076	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8077	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8079	1-216-845-11	METAL CHIP	100K	5%	1/16W
R8080	1-216-864-11	METAL CHIP	0	5%	1/16W
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

Ref. No.	Part No.	Description			Remark
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
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	1-216-295-11	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
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
R9508	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-7074-529-A EJ-28 BOARD, COMPLETE

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(Ref. No. 50,000 Series)

< CONNECTOR >

* CN101	1-580-055-21	PIN, CONNECTOR (SMD) 2P	

< DIODE >

D101	8-719-421-59	DIODE MA3075WA- (TX)	

< SWITCH >

S101	1-572-725-11	SWITCH, TACTILE (EJECT ⏏)	

A-7067-277-A FR-157 BOARD, COMPLETE

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(Ref. No. 30,000 Series)

< CAPACITOR >

C401	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C402	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C403	1-115-156-11	CERAMIC CHIP	1uF		10V
C404	1-115-156-11	CERAMIC CHIP	1uF		10V
C405	1-115-156-11	CERAMIC CHIP	1uF		10V
C406	1-115-156-11	CERAMIC CHIP	1uF		10V
C407	1-115-156-11	CERAMIC CHIP	1uF		10V
C408	1-115-156-11	CERAMIC CHIP	1uF		10V
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	1-115-156-11	CERAMIC CHIP	1uF		10V
C414	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C415	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C416	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C417	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C506	1-164-346-11	CERAMIC CHIP	1uF		16V
C507	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C508	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C509	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C510	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C511	1-164-505-11	CERAMIC CHIP	2.2uF		16V

< CONNECTOR >

CN501	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P
CN502	1-774-770-11	CONNECTOR, FFC/FPC 30P
CN503	1-566-521-11	CONNECTOR, FPC (ZIF) 5P
* CN504	1-750-075-11	CONNECTOR, FFC/FPC 10P

Ref. No.	Part No.	Description	Remark
CN505	1-770-688-11	CONNECTOR, FFC/FPC 5P	
		< DIODE >	
D401	8-719-421-59	DIODE MA3075WA- (TX)	
D402	8-719-421-59	DIODE MA3075WA- (TX)	
D403	8-719-421-59	DIODE MA3075WA- (TX)	
D503	8-719-421-59	DIODE MA3075WA- (TX)	
D504	8-719-421-59	DIODE MA3075WA- (TX)	
D505	8-719-421-59	DIODE MA3075WA- (TX)	
D506	8-719-421-59	DIODE MA3075WA- (TX)	
D507	8-719-033-13	DIODE CL-170Y-CD-T (REW ◀◀)	
D508	8-719-033-14	DIODE CL-170PG-CD-T (PLAY ▶)	
D509	8-719-033-13	DIODE CL-170Y-CD-T (F FWD ▶▶)	
D510	8-719-033-13	DIODE CL-170Y-CD-T (DUP)	
D511	8-719-033-13	DIODE CL-170Y-CD-T (STOP ■)	
D512	8-719-033-13	DIODE CL-170Y-CD-T (PAUSE ❚❚)	
D513	8-719-026-34	DIODE CL-170UR-CD-T (REC ●)	
D514	8-719-033-13	DIODE CL-170Y-CD-T (AUDIO DUB)	
D515	8-719-989-53	DIODE CL-200HR-C-TSL (WARNING)	
D516	8-719-989-53	DIODE CL-200HR-C-TSL (OVER)	
D517	8-719-989-53	DIODE CL-200HR-C-TSL (OVER)	
D518	8-719-049-09	DIODE 1SS367-T3SONY	
D519	8-719-049-09	DIODE 1SS367-T3SONY	
D520	8-719-049-09	DIODE 1SS367-T3SONY	
D521	8-719-049-09	DIODE 1SS367-T3SONY	
D522	8-719-049-09	DIODE 1SS367-T3SONY	
D523	8-719-049-09	DIODE 1SS367-T3SONY	
D524	8-719-049-09	DIODE 1SS367-T3SONY	
D525	8-719-049-09	DIODE 1SS367-T3SONY	
D526	8-719-049-09	DIODE 1SS367-T3SONY	
D527	8-719-049-09	DIODE 1SS367-T3SONY	
D528	8-719-049-09	DIODE 1SS367-T3SONY	
D530	8-719-049-09	DIODE 1SS367-T3SONY	
D531	8-719-049-09	DIODE 1SS367-T3SONY	
D532	8-719-049-09	DIODE 1SS367-T3SONY	
D533	8-719-049-09	DIODE 1SS367-T3SONY	
D534	8-719-049-09	DIODE 1SS367-T3SONY	
D535	8-719-049-09	DIODE 1SS367-T3SONY	
D536	8-719-049-09	DIODE 1SS367-T3SONY	
D537	8-719-049-09	DIODE 1SS367-T3SONY	
D538	8-719-049-09	DIODE 1SS367-T3SONY	
D539	8-719-049-09	DIODE 1SS367-T3SONY	
D540	8-719-049-09	DIODE 1SS367-T3SONY	
D541	8-719-049-09	DIODE 1SS367-T3SONY	
D542	8-719-421-59	DIODE MA3075WA- (TX)	
D543	8-719-421-59	DIODE MA3075WA- (TX)	
D544	8-719-421-59	DIODE MA3075WA- (TX)	
D545	8-719-421-59	DIODE MA3075WA- (TX)	
D546	8-719-421-59	DIODE MA3075WA- (TX)	
D547	8-719-421-59	DIODE MA3075WA- (TX)	
D548	8-719-421-59	DIODE MA3075WA- (TX)	
D549	8-719-421-59	DIODE MA3075WA- (TX)	
D550	8-719-421-59	DIODE MA3075WA- (TX)	
D551	8-719-421-59	DIODE MA3075WA- (TX)	
D552	8-719-049-09	DIODE 1SS367-T3SONY	
D553	8-719-049-09	DIODE 1SS367-T3SONY	
D554	8-719-049-09	DIODE 1SS367-T3SONY	
D555	8-719-049-09	DIODE 1SS367-T3SONY	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC401	8-759-512-69	IC S-81350HG-KD-T1	
IC402	8-759-248-78	IC MB88102PFV-G-BND-ER	
IC403	8-759-388-63	IC NJU7064V (TE2)	
IC404	8-759-242-70	IC TC7WU04F (TE12R)	
IC501	8-759-580-20	IC uPD16431AGC-7ET	
IC502	8-759-082-60	IC TC7S66FU (TE85R)	
IC504	8-759-186-23	IC TC74VHC595F (EL)	
IC505	8-759-186-23	IC TC74VHC595F (EL)	
		< COIL >	
L401	1-412-032-11	INDUCTOR CHIP 100uH	
L402	1-412-029-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q501	8-729-402-93	TRANSISTOR UN5214-TX	
Q502	8-729-402-93	TRANSISTOR UN5214-TX	
Q503	8-729-402-93	TRANSISTOR UN5214-TX	
Q504	8-729-402-93	TRANSISTOR UN5214-TX	
Q505	8-729-402-93	TRANSISTOR UN5214-TX	
Q506	8-729-402-93	TRANSISTOR UN5214-TX	
Q507	8-729-402-93	TRANSISTOR UN5214-TX	
Q508	8-729-402-93	TRANSISTOR UN5214-TX	
Q509	8-729-402-93	TRANSISTOR UN5214-TX	
Q510	8-729-402-93	TRANSISTOR UN5214-TX	
Q511	8-729-402-93	TRANSISTOR UN5214-TX	
Q512	8-729-402-93	TRANSISTOR UN5214-TX	
Q513	8-729-904-48	TRANSISTOR DTB113EK-T-146	
Q514	8-729-904-48	TRANSISTOR DTB113EK-T-146	
Q515	8-729-402-93	TRANSISTOR UN5214-TX	
		< RESISTOR >	
R401	1-216-857-11	METAL CHIP 1M 5% 1/16W	
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	
R410	1-216-817-11	METAL CHIP 470 5% 1/16W	
R411	1-216-864-11	METAL CHIP 0 5% 1/16W	
R505	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R506	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R507	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R508	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R519	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R520	1-216-170-00	RES-CHIP 68 5% 1/8W	
R521	1-216-166-00	RES-CHIP 47 5% 1/8W	
R522	1-216-170-00	RES-CHIP 68 5% 1/8W	
R523	1-216-170-00	RES-CHIP 68 5% 1/8W	
R524	1-216-170-00	RES-CHIP 68 5% 1/8W	
R525	1-216-170-00	RES-CHIP 68 5% 1/8W	
R526	1-216-174-00	RES-CHIP 100 5% 1/8W	
R527	1-216-170-00	RES-CHIP 68 5% 1/8W	
R528	1-216-174-00	RES-CHIP 100 5% 1/8W	
R529	1-216-174-00	RES-CHIP 100 5% 1/8W	
R530	1-216-174-00	RES-CHIP 100 5% 1/8W	
R531	1-216-178-00	RES-CHIP 150 5% 1/8W	
R532	1-216-178-00	RES-CHIP 150 5% 1/8W	
R533	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV401	1-223-649-11	RES, VAR, CARBON 20K (CH-1)	
RV402	1-223-649-11	RES, VAR, CARBON 20K (CH-2)	
RV403	1-223-649-11	RES, VAR, CARBON 20K (CH-3)	
RV404	1-223-649-11	RES, VAR, CARBON 20K (CH-4)	
		< SWITCH >	
S515	1-572-725-11	SWITCH, TACTILE (INDEX)	
S516	1-572-272-11	SWITCH, SLIDE (METER)	
S518	1-572-272-11	SWITCH, SLIDE (COUNTER)	
S519	1-572-272-11	SWITCH, SLIDE (KEY INH)	
S520	1-572-272-11	SWITCH, SLIDE (CH-1)	
S521	1-572-272-11	SWITCH, SLIDE (CH-2)	
S522	1-572-272-11	SWITCH, SLIDE (CH-3)	
S523	1-572-272-11	SWITCH, SLIDE (CH-4)	
S524	1-572-342-11	SWITCH, SLIDE (DISPLAY ON/OFF/LCD OFF)	
S525	1-572-342-11	SWITCH, SLIDE (DISPLAY AUDIO/TC/MENU)	
S526	1-570-984-11	SWITCH, TOGGLE (POWER)	
S527	1-692-838-21	SWITCH, TACTILE (RUBBER) (REW ◀◀)	
S528	1-692-838-21	SWITCH, TACTILE (RUBBER) (PLAY ▶)	
S529	1-692-838-21	SWITCH, TACTILE (RUBBER) (F FWD ▶▶)	
S530	1-692-838-21	SWITCH, TACTILE (RUBBER) (DUP)	
S531	1-692-838-21	SWITCH, TACTILE (RUBBER) (STOP ■)	
S532	1-692-838-21	SWITCH, TACTILE (RUBBER) (PAUSE ▮▮)	
S533	1-692-838-21	SWITCH, TACTILE (RUBBER) (REC ●)	
S534	1-692-838-21	SWITCH, TACTILE (RUBBER) (AUDIO DUB)	
S535	1-692-838-21	SWITCH, TACTILE (RUBBER) (END SEARCH)	
S536	1-572-725-11	SWITCH, TACTILE (FINE)	
S537	1-692-088-41	SWITCH, TACTILE (RESET)	
S538	1-572-725-11	SWITCH, TACTILE (LIGHT)	
		< VIBRATOR >	
X401	1-760-654-21	VIBRATOR, CRYSTAL (13.5MHz)	

	A-7074-526-A	HP-117 BOARD, COMPLETE			
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		(Ref. No. 40,000 Series)			
		< CAPACITOR >			
C312	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C313	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C314	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C315	1-128-004-11	ELECT CHIP	10uF	20%	16V
C316	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C317	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C318	1-164-346-11	CERAMIC CHIP	1uF		16V
C319	1-164-346-11	CERAMIC CHIP	1uF		16V
C320	1-164-346-11	CERAMIC CHIP	1uF		16V
C321	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C322	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C323	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C324	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C325	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C326	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C327	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C328	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C329	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C330	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C331	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C332	1-164-346-11	CERAMIC CHIP	1uF		16V
C333	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C334	1-128-004-11	ELECT CHIP	10uF	20%	16V
C335	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
		< CONNECTOR >			
* CN301	1-766-383-11	PIN, CONNECTOR (1.5mm) (SMD) 12P			
		< DIODE >			
D301	8-719-421-59	DIODE MA3075WA- (TX)			
D302	8-719-421-59	DIODE MA3075WA- (TX)			
D303	8-719-421-59	DIODE MA3075WA- (TX)			
D304	8-719-421-59	DIODE MA3075WA- (TX)			
D305	8-719-421-59	DIODE MA3075WA- (TX)			
D306	8-719-801-78	DIODE MA152WK-TX			
D307	8-719-801-78	DIODE MA152WK-TX			
D308	8-719-801-78	DIODE MA152WK-TX			
D309	8-719-041-79	DIODE MA721WA-TX			
		< FERRITE BEAD >			
FB301	1-543-813-21	FERRITE 0uH			
FB302	1-543-813-21	FERRITE 0uH			
		< IC >			
* IC301	8-759-390-22	IC LM4880M			
IC302	8-759-822-99	IC L88MS05T-FA-TL			
IC303	8-759-180-19	IC NJU7211U50-TE1			
IC304	8-759-711-38	IC NJU7201U50-TE1			
IC305	8-759-369-73	IC NJM4556AM-A-TE2			
		< JACK >			
J301	1-778-723-11	JACK (LARGE TYPE) (PHONES)			
		< TRANSISTOR >			
Q301	8-729-424-18	TRANSISTOR UN2113-TX			
Q302	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-AB			
Q303	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-AB			
Q304	8-729-424-18	TRANSISTOR UN2113-TX			
Q305	8-729-119-64	TRANSISTOR 2SA811A-T1C17			
Q306	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-AB			
Q307	8-729-202-38	TRANSISTOR 2SC3326N-TE85L-AB			
		< RESISTOR >			
R301	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R302	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R303	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R304	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R305	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R306	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R307	1-216-089-11	RES-CHIP	47K	5%	1/10W
R308	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R309	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R310	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R311	1-216-041-00	METAL CHIP	470	5%	1/10W
R312	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R313	1-216-025-11	RES-CHIP	100	5%	1/10W
R314	1-216-041-00	METAL CHIP	470	5%	1/10W
R315	1-216-041-00	METAL CHIP	470	5%	1/10W
R316	1-216-166-00	RES-CHIP	47	5%	1/8W
R317	1-216-166-00	RES-CHIP	47	5%	1/8W

Ref. No.	Part No.	Description			Remark
R318	1-216-166-00	RES-CHIP	47	5%	1/8W
R319	1-216-166-00	RES-CHIP	47	5%	1/8W
R320	1-216-166-00	RES-CHIP	47	5%	1/8W
R321	1-216-166-00	RES-CHIP	47	5%	1/8W
R322	1-216-166-00	RES-CHIP	47	5%	1/8W
R323	1-216-166-00	RES-CHIP	47	5%	1/8W
R324	1-216-295-11	SHORT	0		
R325	1-216-295-11	SHORT	0		
R326	1-216-041-00	METAL CHIP	470	5%	1/10W
R327	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R328	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R329	1-216-295-11	SHORT	0		
R330	1-216-295-11	SHORT	0		
R332	1-216-089-11	RES-CHIP	47K	5%	1/10W
R333	1-216-049-11	RES-CHIP	1K	5%	1/10W
R334	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R335	1-216-035-00	METAL CHIP	270	5%	1/10W
R336	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R337	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R338	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R339	1-216-295-11	SHORT	0		
		< VARIABLE RESISTOR >			
RV301	1-227-214-11	RES, VAR, CARBON 20K/20K (PHONE LEVEL)			
	A-7074-525-A	IL-013 BOARD, COMPLETE			
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		(Ref. No. 10,000 Series)			
		< CONNECTOR >			
CN391	1-506-485-11	PIN, CONNECTOR 6P			
CN392	1-793-304-12	SQUARE-BUILT CONNECTOR (1394)			
		(DV IN/OUT)			
		< RESISTOR >			
R391	1-216-296-91	SHORT	0		
R392	1-216-296-91	SHORT	0		
	A-7067-273-A	JC-20 BOARD, COMPLETE			
		**********			
		(Ref. No. 20,000 Series)			
		< 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

Ref. No.	Part No.	Description			Remark
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
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

Ref. No.	Part No.	Description			Remark
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	1-162-974-11	CERAMIC CHIP	0.01uF		50V
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
C1194	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C1195	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C1196	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C1197	1-115-156-11	CERAMIC CHIP	1uF		10V
C2200	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C2201	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2202	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C2203	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C2204	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2205	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C2206	1-110-569-11	TANTAL. CHIP	47uF	20%	4V
C2207	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2208	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2209	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2210	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2211	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2212	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C2213	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C2214	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C2215	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2216	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C2217	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2218	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C2219	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C2220	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C2222	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C2224	1-104-912-11	TANTAL. CHIP	3.3uF	20%	16V
C2226	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C2227	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C2228	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C2233	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2235	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C2236	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C2238	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2239	1-115-156-11	CERAMIC CHIP	1uF		10V
C2240	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2241	1-115-156-11	CERAMIC CHIP	1uF		10V
C2242	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2244	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2245	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C2246	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C3300	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C3301	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C3302	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C3303	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C3304	1-162-974-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C3305	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C3306	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C3307	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C3308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3309	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C3310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3312	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C3313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4400	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C4401	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C4402	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C4403	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4405	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4406	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4407	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C4408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C4410	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C4411	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C4412	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4413	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4414	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4416	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4418	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4420	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4421	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4422	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C5002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5004	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5005	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C5006	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5007	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C5008	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C5009	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C5011	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5012	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5013	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5015	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5016	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C6004	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C6005	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C6006	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C6007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C6008	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C6009	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C6010	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C6011	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C6012	1-164-156-11	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

CN1100	1-506-488-11	PIN, CONNECTOR 9P	
CN1101	1-774-770-11	CONNECTOR, FFC/FPC 30P	
CN4400	1-506-485-11	PIN, CONNECTOR 6P	
CN4401	1-691-386-11	CONNECTOR, FFC/FPC 22P	
CN4402	1-691-386-11	CONNECTOR, FFC/FPC 22P	
CN5005	1-778-637-21	CONNECTOR, FFC/FPC (ZIF) 50P	

Ref. No.	Part No.	Description	Remark
CN6001	1-774-770-11	CONNECTOR, FFC/FPC 30P	
CN6002	1-750-303-41	CONNECTOR, BOARD TO BOARD 20P	
* CN7001	1-691-591-11	PIN, CONNECTOR (1.5mm) (SMD) 8P	
CN7002	1-774-770-11	CONNECTOR, FFC/FPC 30P	
* CN8001	1-785-551-21	CONNECTOR, BOARD TO BOARD 120P	
		< TRIMMER >	
CT2200	1-141-423-61	CAP, ADJ 20PF (AFC)	
CT3300	1-141-422-11	CAP, ADJ 10PF (VFD SPCK)	
		< DIODE >	
D2201	8-719-041-39	DIODE KV1470TL00	
D4400	8-719-055-86	DIODE KV1470TL1-3	
D5001	8-719-421-67	DIODE MA132WK-TX	
		< FILTER >	
FL1100	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL1101	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL1102	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL1103	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL1104	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
		< IC >	
IC1000	8-759-449-58	IC LM7131BCM5X	
IC1001	8-759-449-58	IC LM7131BCM5X	
IC1002	8-759-449-58	IC LM7131BCM5X	
IC1100	8-759-477-81	IC TK11220BMCL	
IC1101	8-759-523-03	IC TC74HC4066AFS-EL	
IC1102	8-759-338-78	IC BA10324AFV-E2	
IC1103	8-759-338-78	IC BA10324AFV-E2	
IC1104	8-759-338-78	IC BA10324AFV-E2	
IC1105	8-759-510-71	IC BA10358F-E2	
IC1106	8-759-338-78	IC BA10324AFV-E2	
IC1107	8-759-359-51	IC NJM431M (TE2)	
IC1108	8-752-352-09	IC CXD2300Q-T4	
IC1109	8-752-352-09	IC CXD2300Q-T4	
IC1110	8-752-352-09	IC CXD2300Q-T4	
IC1111	8-759-449-58	IC LM7131BCM5X	
IC1112	8-759-449-58	IC LM7131BCM5X	
IC1113	8-759-157-22	IC PQ05TZ1U	
IC2200	8-759-368-81	IC TK11630UTL	
IC2202	8-759-485-79	IC TC7SET08FU (TE85R)	
IC2203	8-759-523-97	IC TC74VHC123AFT (EL)	
IC2204	8-759-343-09	IC CXD2193AR-ER	
IC2208	8-759-196-93	IC TC7SH00FU-TE85R	
IC2209	8-759-524-27	IC TC74VHC244FT (EL)	
IC2210	8-759-271-86	IC TC7SH04FU-TE85R	
IC2211	8-759-196-96	IC TC7SH08FU-TE85R	
IC2212	8-759-196-93	IC TC7SH00FU-TE85R	
IC2213	8-759-447-77	IC TC7WH74FU (TE12R)	
IC2214	8-759-524-41	IC TC74VHC374FT (EL)	
IC2215	8-759-524-50	IC TC74VHC541FT (EL)	
IC3300	8-759-570-60	IC M65511FP-R60S	
IC3301	8-759-058-60	IC TC7SU04FU (TE85R)	
IC3302	8-759-531-92	IC TC7WH04FU (TE12R)	
IC3303	8-759-579-96	IC MB90097PFV-G-120-BND	
IC4400	8-759-570-61	IC HG73C050TETL	
IC4401	8-752-390-00	IC CXD3129R-T6	
IC4402	8-759-566-52	IC SN104266PN-TEB	
IC5001	8-759-512-69	IC S-81350HG-KD-T1	
IC5002	8-759-427-85	IC MB88146APFV-G-BND	
IC5003	8-759-693-43	IC MB91192PFF-G-119-BND-ER	
IC5006	8-759-445-94	IC AK6480AM-E2	
IC5007	8-759-443-08	IC TC7W241FU-TE12R	
IC5008	8-759-523-81	IC TC74VHC08FT (EL)	
IC6001	8-759-695-23	IC S579637PZ-TEB	
IC6003	8-759-475-45	IC TC74LCX157FT (EL)	
IC6004	8-759-058-58	IC TC7S04FU (TE85R)	
		< JUMPER RESISTOR >	
JS7001	1-216-864-11	METAL CHIP 0 5% 1/16W	
JS7002	1-216-864-11	METAL CHIP 0 5% 1/16W	
JS7003	1-216-864-11	METAL CHIP 0 5% 1/16W	
JS7004	1-216-864-11	METAL CHIP 0 5% 1/16W	
		< COIL >	
L1000	1-414-760-21	FERRITE 0uH	
L1001	1-414-760-21	FERRITE 0uH	
L1101	1-414-760-21	FERRITE 0uH	
L1107	1-414-760-21	FERRITE 0uH	
L1108	1-414-398-11	INDUCTOR 10uH	
L1109	1-414-398-11	INDUCTOR 10uH	
L1110	1-414-398-11	INDUCTOR 10uH	
L1111	1-414-398-11	INDUCTOR 10uH	
L1112	1-414-398-11	INDUCTOR 10uH	
L1113	1-414-398-11	INDUCTOR 10uH	
L1114	1-414-398-11	INDUCTOR 10uH	
L1115	1-414-398-11	INDUCTOR 10uH	
L1116	1-414-398-11	INDUCTOR 10uH	
L1122	1-414-760-21	FERRITE 0uH	
L2200	1-410-390-11	INDUCTOR CHIP 56uH	
L2201	1-410-655-31	INDUCTOR CHIP 120uH	
L2202	1-414-398-11	INDUCTOR 10uH	
L2203	1-414-398-11	INDUCTOR 10uH	
L2204	1-411-275-21	COIL, VARIABLE	
L2205	1-414-398-11	INDUCTOR 10uH	
L3300	1-414-398-11	INDUCTOR 10uH	
L3301	1-414-398-11	INDUCTOR 10uH	
L3302	1-414-398-11	INDUCTOR 10uH	
L3303	1-414-398-11	INDUCTOR 10uH	
L4400	1-414-398-11	INDUCTOR 10uH	
L4401	1-414-398-11	INDUCTOR 10uH	
L4402	1-414-398-11	INDUCTOR 10uH	
L4403	1-410-371-41	INDUCTOR CHIP 1.5uH	
L4404	1-414-754-11	INDUCTOR 10uH	
L5001	1-414-754-11	INDUCTOR 10uH	
L5002	1-414-751-11	INDUCTOR 1uH	
L6001	1-414-754-11	INDUCTOR 10uH	
L6003	1-414-751-11	INDUCTOR 1uH	
L6007	1-414-760-21	FERRITE 0uH	
L6010	1-414-760-21	FERRITE 0uH	
L6011	1-414-760-21	FERRITE 0uH	
L6012	1-414-760-21	FERRITE 0uH	
L6014	1-414-760-21	FERRITE 0uH	
		< TRANSISTOR >	
Q1100	8-729-026-52	TRANSISTOR 2SA1576A-T106-R	
Q1101	8-729-026-52	TRANSISTOR 2SA1576A-T106-R	
Q1103	8-729-905-35	TRANSISTOR 2SC4081T106R	
Q1104	8-729-905-35	TRANSISTOR 2SC4081T106R	
Q1109	8-729-026-52	TRANSISTOR 2SA1576A-T106-R	

Ref. No.	Part No.	Description			Remark
Q1111	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1112	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		
Q1114	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1116	8-729-402-42	TRANSISTOR	UN5213-TX		
Q1117	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1118	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1119	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1120	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B		
Q1121	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B		
Q1122	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-B		
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		
Q1126	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1127	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1128	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1129	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1130	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q1131	8-729-046-75	TRANSISTOR	SI2301DS-T1		
Q1132	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q2200	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q2201	8-729-026-52	TRANSISTOR	2SA1576A-T106-R		
Q2202	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q2203	8-729-402-42	TRANSISTOR	UN5213-TX		
Q3300	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO		
Q3301	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO		
Q3302	8-729-037-52	TRANSISTOR	2SD2216J-QR (K8).SO		
Q5001	8-729-141-48	TRANSISTOR	2SB624-T1BV4		
Q5002	8-729-402-42	TRANSISTOR	UN5213-TX		
Q6003	8-729-037-61	TRANSISTOR	UN9113J- (K8).SO		
Q6004	8-729-427-70	TRANSISTOR	XP4401-TXE		
Q6005	8-729-141-48	TRANSISTOR	2SB624-T1BV4		
Q6011	8-729-402-42	TRANSISTOR	UN5213-TX		
Q6012	8-729-402-42	TRANSISTOR	UN5213-TX		
		< RESISTOR >			
R1000	1-216-864-11	METAL CHIP	0	5%	1/16W
R1001	1-216-820-11	METAL CHIP	820	5%	1/16W
R1002	1-216-820-11	METAL CHIP	820	5%	1/16W
R1004	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1005	1-216-864-11	METAL CHIP	0	5%	1/16W
R1006	1-216-864-11	METAL CHIP	0	5%	1/16W
R1007	1-216-820-11	METAL CHIP	820	5%	1/16W
R1008	1-216-820-11	METAL CHIP	820	5%	1/16W
R1010	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1011	1-216-864-11	METAL CHIP	0	5%	1/16W
R1012	1-216-864-11	METAL CHIP	0	5%	1/16W
R1013	1-216-820-11	METAL CHIP	820	5%	1/16W
R1014	1-216-820-11	METAL CHIP	820	5%	1/16W
R1015	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1016	1-216-864-11	METAL CHIP	0	5%	1/16W
R1017	1-216-864-11	METAL CHIP	0	5%	1/16W
R1018	1-216-864-11	METAL CHIP	0	5%	1/16W
R1101	1-216-864-11	METAL CHIP	0	5%	1/16W
R1102	1-216-797-11	METAL CHIP	10	5%	1/16W
R1103	1-216-797-11	METAL CHIP	10	5%	1/16W
R1104	1-216-797-11	METAL CHIP	10	5%	1/16W
R1105	1-216-797-11	METAL CHIP	10	5%	1/16W
R1107	1-216-797-11	METAL CHIP	10	5%	1/16W
R1108	1-216-813-11	METAL CHIP	220	5%	1/16W
R1109	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1111	1-216-813-11	METAL CHIP	220	5%	1/16W
R1112	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1113	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1114	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1115	1-216-797-11	METAL CHIP	10	5%	1/16W
R1116	1-216-817-11	METAL CHIP	470	5%	1/16W
R1117	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1118	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1119	1-216-797-11	METAL CHIP	10	5%	1/16W
R1120	1-216-817-11	METAL CHIP	470	5%	1/16W
R1121	1-216-797-11	METAL CHIP	10	5%	1/16W
R1122	1-216-797-11	METAL CHIP	10	5%	1/16W
R1123	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1125	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1127	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1129	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1134	1-216-817-11	METAL CHIP	470	5%	1/16W
R1136	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1139	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1143	1-216-817-11	METAL CHIP	470	5%	1/16W
R1150	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1151	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1152	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1153	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1154	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1155	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1156	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1158	1-216-864-11	METAL CHIP	0	5%	1/16W
R1159	1-216-864-11	METAL CHIP	0	5%	1/16W
R1160	1-216-864-11	METAL CHIP	0	5%	1/16W
R1164	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1165	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1166	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1167	1-216-809-11	METAL CHIP	100	5%	1/16W
R1168	1-216-809-11	METAL CHIP	100	5%	1/16W
R1169	1-216-809-11	METAL CHIP	100	5%	1/16W
R1170	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1171	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1172	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1173	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1175	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1176	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1177	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1178	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1179	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1180	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1181	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1182	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1183	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1184	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1185	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1186	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1187	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1188	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R1190	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1191	1-216-809-11	METAL CHIP	100	5%	1/16W
R1192	1-216-809-11	METAL CHIP	100	5%	1/16W
R1193	1-216-809-11	METAL CHIP	100	5%	1/16W
R1194	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

JC-20

Ref. No.	Part No.	Description			Remark
R1196	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1197	1-216-864-11	METAL CHIP	0	5%	1/16W
R1198	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1199	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1200	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1201	1-216-805-11	METAL CHIP	47	5%	1/16W
R1202	1-216-816-11	METAL CHIP	390	5%	1/16W
R1203	1-216-864-11	METAL CHIP	0	5%	1/16W
R1204	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1205	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1206	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1207	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1208	1-216-864-11	METAL CHIP	0	5%	1/16W
R1209	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1210	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1211	1-216-864-11	METAL CHIP	0	5%	1/16W
R1212	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1213	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1214	1-216-817-11	METAL CHIP	470	5%	1/16W
R1215	1-216-864-11	METAL CHIP	0	5%	1/16W
R1216	1-216-837-11	METAL CHIP	22K	5%	1/16W
R1217	1-216-817-11	METAL CHIP	470	5%	1/16W
R1218	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1219	1-216-864-11	METAL CHIP	0	5%	1/16W
R1221	1-216-864-11	METAL CHIP	0	5%	1/16W
R1222	1-216-864-11	METAL CHIP	0	5%	1/16W
R1223	1-216-864-11	METAL CHIP	0	5%	1/16W
R1229	1-216-864-11	METAL CHIP	0	5%	1/16W
R1230	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1231	1-216-849-11	METAL CHIP	220K	5%	1/16W
R1232	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1233	1-216-835-11	METAL CHIP	15K	5%	1/16W
R1236	1-216-295-11	SHORT	0		
R1237	1-216-295-11	SHORT	0		
R2200	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2201	1-216-840-11	METAL CHIP	39K	5%	1/16W
R2202	1-216-864-11	METAL CHIP	0	5%	1/16W
R2203	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2204	1-216-817-11	METAL CHIP	470	5%	1/16W
R2205	1-216-817-11	METAL CHIP	470	5%	1/16W
R2206	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2209	1-216-864-11	METAL CHIP	0	5%	1/16W
R2212	1-216-864-11	METAL CHIP	0	5%	1/16W
R2213	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R2215	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2217	1-216-864-11	METAL CHIP	0	5%	1/16W
R2218	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R2219	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R2220	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R2221	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2222	1-216-814-11	METAL CHIP	270	5%	1/16W
R2223	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2224	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W
R2225	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R2226	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2227	1-216-814-11	METAL CHIP	270	5%	1/16W
R2228	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2229	1-216-864-11	METAL CHIP	0	5%	1/16W
R2230	1-216-855-11	METAL CHIP	680K	5%	1/16W
R2233	1-216-839-11	METAL CHIP	33K	5%	1/16W
R2234	1-216-864-11	METAL CHIP	0	5%	1/16W
R2235	1-216-839-11	METAL CHIP	33K	5%	1/16W
R2236	1-216-864-11	METAL CHIP	0	5%	1/16W
R2237	1-216-839-11	METAL CHIP	33K	5%	1/16W
R2238	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2239	1-216-821-11	METAL CHIP	1K	5%	1/16W
R2240	1-216-839-11	METAL CHIP	33K	5%	1/16W
R2246	1-216-864-11	METAL CHIP	0	5%	1/16W
R2247	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2250	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2252	1-216-864-11	METAL CHIP	0	5%	1/16W
R2253	1-216-864-11	METAL CHIP	0	5%	1/16W
R2255	1-216-864-11	METAL CHIP	0	5%	1/16W
R2256	1-216-864-11	METAL CHIP	0	5%	1/16W
R2257	1-216-864-11	METAL CHIP	0	5%	1/16W
R2258	1-216-864-11	METAL CHIP	0	5%	1/16W
R2259	1-216-864-11	METAL CHIP	0	5%	1/16W
R2261	1-216-844-11	METAL CHIP	82K	5%	1/16W
R2262	1-216-844-11	METAL CHIP	82K	5%	1/16W
R2263	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2264	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2265	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2266	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2267	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2268	1-216-864-11	METAL CHIP	0	5%	1/16W
R2269	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R2270	1-216-864-11	METAL CHIP	0	5%	1/16W
R3300	1-216-864-11	METAL CHIP	0	5%	1/16W
R3301	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R3303	1-216-864-11	METAL CHIP	0	5%	1/16W
R3304	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R3306	1-216-864-11	METAL CHIP	0	5%	1/16W
R3307	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R3308	1-216-817-11	METAL CHIP	470	5%	1/16W
R3309	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R3310	1-216-817-11	METAL CHIP	470	5%	1/16W
R3311	1-216-864-11	METAL CHIP	0	5%	1/16W
R3312	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R3313	1-216-864-11	METAL CHIP	0	5%	1/16W
R3314	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R3315	1-216-817-11	METAL CHIP	470	5%	1/16W
R3316	1-216-864-11	METAL CHIP	0	5%	1/16W
R3317	1-216-857-11	METAL CHIP	1M	5%	1/16W
R3318	1-218-840-11	METAL CHIP	510	0.5%	1/16W
R3319	1-216-815-11	METAL CHIP	330	5%	1/16W
R3320	1-216-864-11	METAL CHIP	0	5%	1/16W
R3321	1-216-864-11	METAL CHIP	0	5%	1/16W
R3322	1-216-864-11	METAL CHIP	0	5%	1/16W
R3323	1-216-864-11	METAL CHIP	0	5%	1/16W
R3324	1-216-864-11	METAL CHIP	0	5%	1/16W
R3325	1-216-864-11	METAL CHIP	0	5%	1/16W
R4400	1-216-805-11	METAL CHIP	47	5%	1/16W
R4401	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R4402	1-216-815-11	METAL CHIP	330	5%	1/16W
R4403	1-216-833-11	METAL CHIP	10K	5%	1/16W
R4404	1-216-833-11	METAL CHIP	10K	5%	1/16W
R4405	1-216-864-11	METAL CHIP	0	5%	1/16W
R4406	1-216-864-11	METAL CHIP	0	5%	1/16W
R4407	1-216-864-11	METAL CHIP	0	5%	1/16W
R4408	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R4409	1-216-864-11	METAL CHIP	0	5%	1/16W
R4411	1-216-864-11	METAL CHIP	0	5%	1/16W
R4412	1-216-864-11	METAL CHIP	0	5%	1/16W
R4413	1-216-864-11	METAL CHIP	0	5%	1/16W
R4415	1-216-864-11	METAL CHIP	0	5%	1/16W
R4416	1-216-864-11	METAL CHIP	0	5%	1/16W
R4420	1-216-864-11	METAL CHIP	0	5%	1/16W
R4423	1-216-864-11	METAL CHIP	0	5%	1/16W
R4424	1-216-864-11	METAL CHIP	0	5%	1/16W
R4425	1-216-864-11	METAL CHIP	0	5%	1/16W
R4431	1-216-834-11	METAL CHIP	12K	5%	1/16W
R4432	1-216-864-11	METAL CHIP	0	5%	1/16W
R4434	1-216-834-11	METAL CHIP	12K	5%	1/16W
R4435	1-216-864-11	METAL CHIP	0	5%	1/16W
R4437	1-211-987-11	METAL CHIP	56	0.5%	1/16W
R4438	1-211-987-11	METAL CHIP	56	0.5%	1/16W
R4439	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R4440	1-211-987-11	METAL CHIP	56	0.5%	1/16W
R4441	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R4442	1-211-987-11	METAL CHIP	56	0.5%	1/16W
R4443	1-216-805-11	METAL CHIP	47	5%	1/16W
R4444	1-216-864-11	METAL CHIP	0	5%	1/16W
R4445	1-216-864-11	METAL CHIP	0	5%	1/16W
R4446	1-216-864-11	METAL CHIP	0	5%	1/16W
R4447	1-216-864-11	METAL CHIP	0	5%	1/16W
R5003	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5004	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5005	1-216-809-11	METAL CHIP	100	5%	1/16W
R5008	1-216-809-11	METAL CHIP	100	5%	1/16W
R5009	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5013	1-216-809-11	METAL CHIP	100	5%	1/16W
R5014	1-216-809-11	METAL CHIP	100	5%	1/16W
R5015	1-216-809-11	METAL CHIP	100	5%	1/16W
R5018	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5019	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5020	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5025	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5026	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5028	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5029	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5030	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5031	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5032	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5033	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5034	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5035	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5037	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R5038	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5039	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R5040	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5041	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R5042	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5044	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5045	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5046	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5047	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5048	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5049	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5050	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5051	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5052	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5053	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5055	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5057	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5058	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5059	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5060	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5061	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5062	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5063	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5064	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5065	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5066	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5067	1-216-809-11	METAL CHIP	100	5%	1/16W
R5068	1-216-821-11	METAL CHIP	1K	5%	1/16W
R5069	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5070	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6009	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6013	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R6017	1-216-809-11	METAL CHIP	100	5%	1/16W
R6018	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6019	1-216-809-11	METAL CHIP	100	5%	1/16W
R6020	1-216-809-11	METAL CHIP	100	5%	1/16W
R6022	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6025	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6026	1-216-833-11	METAL CHIP	10K	5%	1/16W
R6027	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6029	1-216-833-11	METAL CHIP	10K	5%	1/16W
R6032	1-216-833-11	METAL CHIP	10K	5%	1/16W
R6033	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6034	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6035	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6037	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6038	1-216-809-11	METAL CHIP	100	5%	1/16W
R6039	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6040	1-216-841-11	METAL CHIP	47K	5%	1/16W
R6041	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6042	1-216-857-11	METAL CHIP	1M	5%	1/16W
R6043	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6046	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6047	1-216-845-11	METAL CHIP	100K	5%	1/16W
R6048	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6049	1-219-570-11	RES-CHIP	10M	5%	1/16W
R6050	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6052	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6053	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6054	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6055	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6056	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6057	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R6058	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R6059	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R6060	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R6061	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R6062	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R6063	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R6064	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R6065	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6066	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6067	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6068	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6072	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6073	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6074	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6075	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6076	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6077	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6078	1-216-853-11	METAL CHIP	470K	5%	1/16W
R6079	1-216-833-11	METAL CHIP	10K	5%	1/16W
R6080	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6081	1-216-821-11	METAL CHIP	1K	5%	1/16W
R6082	1-216-809-11	METAL CHIP	100	5%	1/16W
R6083	1-216-809-11	METAL CHIP	100	5%	1/16W
R6084	1-216-809-11	METAL CHIP	100	5%	1/16W
R6085	1-216-809-11	METAL CHIP	100	5%	1/16W
R6086	1-216-864-11	METAL CHIP	0	5%	1/16W
R6087	1-216-864-11	METAL CHIP	0	5%	1/16W
R6088	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
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. VOLTTAGE1)			
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)			

Ref. No.	Part No.	Description			Remark
	A-7067-276-A	JK-169 BOARD, COMPLETE ********** (Ref. No. 40,000 Series)			
		< CAPACITOR >			
C102	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C103	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C104	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C105	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C106	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C107	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C108	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C109	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C110	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C111	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C112	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C113	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C114	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C115	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C117	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C118	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C119	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C120	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C129	1-113-992-11	TANTAL. CHIP	3.3uF	20%	35V
C130	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C139	1-113-992-11	TANTAL. CHIP	3.3uF	20%	35V
C140	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C141	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C145	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C146	1-126-399-11	ELECT CHIP	10uF	20%	35V
C147	1-126-399-11	ELECT CHIP	10uF	20%	35V
C148	1-126-399-11	ELECT CHIP	10uF	20%	35V
C149	1-126-399-11	ELECT CHIP	10uF	20%	35V
C150	1-119-667-11	CERAMIC CHIP	22uF		10V
C151	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C152	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C153	1-126-399-11	ELECT CHIP	10uF	20%	35V
C154	1-126-399-11	ELECT CHIP	10uF	20%	35V
C155	1-126-399-11	ELECT CHIP	10uF	20%	35V
C156	1-126-399-11	ELECT CHIP	10uF	20%	35V
C157	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C158	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C159	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C160	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C161	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C162	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C163	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C164	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C165	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C166	1-119-667-11	CERAMIC CHIP	22uF		10V
C167	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C168	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C169	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C170	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C171	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C172	1-126-399-11	ELECT CHIP	10uF	20%	35V
C173	1-126-399-11	ELECT CHIP	10uF	20%	35V

Ref. No.	Part No.	Description			Remark
C174	1-126-399-11	ELECT CHIP	10uF	20%	35V
C175	1-126-399-11	ELECT CHIP	10uF	20%	35V
C176	1-126-399-11	ELECT CHIP	10uF	20%	35V
C177	1-126-399-11	ELECT CHIP	10uF	20%	35V
C178	1-126-399-11	ELECT CHIP	10uF	20%	35V
C179	1-126-399-11	ELECT CHIP	10uF	20%	35V
C180	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C181	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C182	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C183	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C184	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C185	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C187	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C188	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CIRCUIT BREAKER >			
⚠ CB101	1-532-525-31	BREAKER, CIRCUIT (BREAKER)			
		< CONNECTOR >			
CN101	1-779-353-21	CONNECTOR, FFC/FPC 5P			
* CN102	1-568-226-11	PIN, CONNECTOR 2P			
CN103	1-774-770-11	CONNECTOR, FFC/FPC 30P			
CN104	1-774-770-11	CONNECTOR, FFC/FPC 30P			
CN105	1-774-770-11	CONNECTOR, FFC/FPC 30P			
CN106	1-750-788-11	CONNECTOR (XLR TYPE) 3P (AUDIO INPUT CH-1)			
CN107	1-750-788-11	CONNECTOR (XLR TYPE) 3P (AUDIO INPUT CH-2)			
CN108	1-750-788-11	CONNECTOR (XLR TYPE) 3P (AUDIO INPUT CH-3)			
CN109	1-750-788-11	CONNECTOR (XLR TYPE) 3P (AUDIO INPUT CH-4)			
		< DIODE >			
D101	8-719-421-59	DIODE MA3075WA- (TX)			
D103	8-719-421-59	DIODE MA3075WA- (TX)			
D104	8-719-062-19	DIODE MA3200WA-TX			
D105	8-719-062-19	DIODE MA3200WA-TX			
D106	8-719-421-59	DIODE MA3075WA- (TX)			
D107	8-719-421-59	DIODE MA3075WA- (TX)			
D108	8-719-421-59	DIODE MA3075WA- (TX)			
D109	8-719-421-59	DIODE MA3075WA- (TX)			
D110	8-719-421-59	DIODE MA3075WA- (TX)			
D111	8-719-421-59	DIODE MA3075WA- (TX)			
D112	8-719-421-59	DIODE MA3075WA- (TX)			
D113	8-719-421-59	DIODE MA3075WA- (TX)			
D114	8-719-421-59	DIODE MA3075WA- (TX)			
D115	8-719-421-59	DIODE MA3075WA- (TX)			
D116	8-719-421-59	DIODE MA3075WA- (TX)			
D117	8-719-421-59	DIODE MA3075WA- (TX)			
D118	8-719-421-59	DIODE MA3075WA- (TX)			
D119	8-719-421-59	DIODE MA3075WA- (TX)			
D120	8-719-421-59	DIODE MA3075WA- (TX)			
D121	8-719-421-59	DIODE MA3075WA- (TX)			
D122	8-719-800-76	DIODE MA153-TX			
D123	8-719-800-76	DIODE MA153-TX			
D124	8-719-800-76	DIODE MA153-TX			
D125	8-719-800-76	DIODE MA153-TX			
D126	8-719-800-76	DIODE MA153-TX			
D127	8-719-800-76	DIODE MA153-TX			
D134	8-719-800-76	DIODE MA153-TX			
D135	8-719-800-76	DIODE MA153-TX			
D136	8-719-800-76	DIODE MA153-TX			
D137	8-719-800-76	DIODE MA153-TX			
D144	8-719-421-59	DIODE MA3075WA- (TX)			
D145	8-719-421-59	DIODE MA3075WA- (TX)			
D146	8-719-421-59	DIODE MA3075WA- (TX)			
		< FERRITE BEAD >			
FB101	1-500-241-22	FERRITE 0uH			
FB102	1-500-241-22	FERRITE 0uH			
FB103	1-500-241-22	FERRITE 0uH			
FB104	1-500-241-22	FERRITE 0uH			
FB105	1-500-241-22	FERRITE 0uH			
FB106	1-500-241-22	FERRITE 0uH			
FB107	1-500-241-22	FERRITE 0uH			
FB108	1-500-241-22	FERRITE 0uH			
FB109	1-500-241-22	FERRITE 0uH			
FB110	1-500-241-22	FERRITE 0uH			
FB111	1-500-241-22	FERRITE 0uH			
FB112	1-500-241-22	FERRITE 0uH			
		< IC >			
IC101	8-759-524-20	IC TC74VHC165FT (EL)			
IC102	8-759-524-20	IC TC74VHC165FT (EL)			
IC103	8-759-524-20	IC TC74VHC165FT (EL)			
IC104	8-759-242-70	IC TC7WU04F (TE12R)			
IC105	8-759-062-66	IC TC7S66F (TE85R)			
IC107	8-759-081-48	IC TC74VHC08F (EL)			
IC108	8-759-180-19	IC NJU7211U50-TE1			
IC109	8-759-394-76	IC NJM2068M-D-TE2			
IC110	8-759-394-76	IC NJM2068M-D-TE2			
IC111	8-759-394-76	IC NJM2068M-D-TE2			
IC112	8-759-711-38	IC NJU7201U50-TE1			
IC113	8-759-394-76	IC NJM2068M-D-TE2			
IC114	8-759-394-76	IC NJM2068M-D-TE2			
IC115	8-759-711-38	IC NJU7201U50-TE1			
		< JACK >			
J101	1-766-596-11	JACK, PIN 1P (AUDIO MONITOR OUT)			
* J102	1-764-066-11	CONNECTOR, BNC (TC IN (EXT)) (COMPONENT OUTPUT Y)			
* J103	1-764-066-11	CONNECTOR, BNC (TC OUT (INT)) (COMPONENT OUTPUT R-Y)			
* J104	1-764-066-11	CONNECTOR, BNC (VIDEO OUT 1) (COMPONENT OUTPUT B-Y)			
J105	1-694-727-11	TERMINAL BOARD (S VIDEO IN/OUT) (VIDEO OUT 2) (VIDEO/REF. IN) (AUDIO OUTPUT)			
J106	1-507-792-31	JACK (REMOTE)			
J107	1-507-792-31	JACK (CONTROL S)			
		< JUMPER RESISOR >			
JS101	1-216-296-91	SHORT 0			
JS103	1-216-296-91	SHORT 0			
JS106	1-216-296-91	SHORT 0			

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			Remark
JS108	1-216-296-91	SHORT	0		
JS109	1-216-296-91	SHORT	0		
JS111	1-216-296-91	SHORT	0		
JS114	1-216-296-91	SHORT	0		
JS116	1-216-296-91	SHORT	0		
		< COIL >			
L103	1-410-380-31	INDUCTOR CHIP	8.2uH		
L104	1-410-380-31	INDUCTOR CHIP	8.2uH		
L105	1-410-380-31	INDUCTOR CHIP	8.2uH		
L106	1-410-380-31	INDUCTOR CHIP	8.2uH		
L107	1-410-380-31	INDUCTOR CHIP	8.2uH		
L108	1-410-380-31	INDUCTOR CHIP	8.2uH		
L109	1-410-380-31	INDUCTOR CHIP	8.2uH		
L110	1-410-380-31	INDUCTOR CHIP	8.2uH		
L111	1-412-029-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q101	8-729-900-52	TRANSISTOR	UN2214-TX		
Q102	8-729-900-52	TRANSISTOR	UN2214-TX		
Q103	8-729-900-52	TRANSISTOR	UN2214-TX		
Q104	8-729-900-52	TRANSISTOR	UN2214-TX		
Q105	8-729-119-64	TRANSISTOR	2SA811A-T1C17		
Q106	8-729-119-64	TRANSISTOR	2SA811A-T1C17		
Q107	8-729-119-64	TRANSISTOR	2SA811A-T1C17		
Q108	8-729-119-64	TRANSISTOR	2SA811A-T1C17		
Q109	8-729-900-52	TRANSISTOR	UN2214-TX		
Q110	8-729-424-18	TRANSISTOR	UN2113-TX		
		< RESISTOR >			
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-216-049-11	RES-CHIP	1K	5%	1/10W
R103	1-216-049-11	RES-CHIP	1K	5%	1/10W
R104	1-216-049-11	RES-CHIP	1K	5%	1/10W
R105	1-216-049-11	RES-CHIP	1K	5%	1/10W
R106	1-216-049-11	RES-CHIP	1K	5%	1/10W
R107	1-216-049-11	RES-CHIP	1K	5%	1/10W
R108	1-216-049-11	RES-CHIP	1K	5%	1/10W
R109	1-216-049-11	RES-CHIP	1K	5%	1/10W
R110	1-216-049-11	RES-CHIP	1K	5%	1/10W
R111	1-216-049-11	RES-CHIP	1K	5%	1/10W
R112	1-216-049-11	RES-CHIP	1K	5%	1/10W
R113	1-216-049-11	RES-CHIP	1K	5%	1/10W
R114	1-216-049-11	RES-CHIP	1K	5%	1/10W
R115	1-216-049-11	RES-CHIP	1K	5%	1/10W
R116	1-216-049-11	RES-CHIP	1K	5%	1/10W
R117	1-216-049-11	RES-CHIP	1K	5%	1/10W
R118	1-216-182-00	RES-CHIP	220	5%	1/8W
R119	1-216-182-00	RES-CHIP	220	5%	1/8W
R120	1-216-009-91	RES-CHIP	22	5%	1/10W
R121	1-216-097-11	RES-CHIP	100K	5%	1/10W
R122	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R123	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R124	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R125	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R126	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R127	1-208-762-11	METAL CHIP	150	0.5%	1/10W
R128	1-216-049-11	RES-CHIP	1K	5%	1/10W
R129	1-216-049-11	RES-CHIP	1K	5%	1/10W
R130	1-216-049-11	RES-CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R131	1-216-049-11	RES-CHIP	1K	5%	1/10W
R132	1-216-049-11	RES-CHIP	1K	5%	1/10W
R133	1-216-049-11	RES-CHIP	1K	5%	1/10W
R134	1-216-049-11	RES-CHIP	1K	5%	1/10W
R135	1-216-049-11	RES-CHIP	1K	5%	1/10W
R136	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R137	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R138	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R139	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R140	1-216-097-11	RES-CHIP	100K	5%	1/10W
R141	1-216-097-11	RES-CHIP	100K	5%	1/10W
R142	1-216-097-11	RES-CHIP	100K	5%	1/10W
R143	1-216-097-11	RES-CHIP	100K	5%	1/10W
R144	1-208-794-11	METAL CHIP	3.3K	0.5%	1/10W
R145	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R146	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R147	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R148	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R149	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R150	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R151	1-208-772-11	METAL CHIP	390	0.5%	1/10W
R152	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R154	1-208-772-11	METAL CHIP	390	0.5%	1/10W
R155	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R157	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R158	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R159	1-216-295-11	SHORT	0		
R160	1-216-295-11	SHORT	0		
R161	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R162	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R163	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R164	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R165	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R166	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R167	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R168	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R169	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R170	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R171	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R172	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R173	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R174	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R175	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R176	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R177	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R178	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R179	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R180	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R181	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R182	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R183	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R184	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R185	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R186	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R187	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R188	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R189	1-216-097-11	RES-CHIP	100K	5%	1/10W
R190	1-216-097-11	RES-CHIP	100K	5%	1/10W
R191	1-216-182-00	RES-CHIP	220	5%	1/8W
R192	1-208-812-11	METAL CHIP	18K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R193	1-216-097-11	RES-CHIP	100K	5%	1/10W
R194	1-216-097-11	RES-CHIP	100K	5%	1/10W
R195	1-216-182-00	RES-CHIP	220	5%	1/8W
R196	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R197	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R198	1-216-295-11	SHORT	0		
R199	1-216-295-11	SHORT	0		
R200	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R201	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R202	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R203	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R204	1-208-758-11	METAL CHIP	100	0.5%	1/10W
R206	1-216-097-11	RES-CHIP	100K	5%	1/10W
R207	1-216-097-11	RES-CHIP	100K	5%	1/10W
R209	1-216-097-11	RES-CHIP	100K	5%	1/10W
R210	1-216-097-11	RES-CHIP	100K	5%	1/10W
R211	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R212	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R213	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R214	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R215	1-208-772-11	METAL CHIP	390	0.5%	1/10W
R216	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R218	1-208-772-11	METAL CHIP	390	0.5%	1/10W
R219	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R221	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R222	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R223	1-216-295-11	SHORT	0		
R224	1-216-295-11	SHORT	0		
R225	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R226	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R227	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R228	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R229	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R230	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R231	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R232	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R233	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R234	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R235	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R236	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R237	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R238	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R239	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R240	1-208-822-11	METAL CHIP	47K	0.5%	1/10W
R241	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R242	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R243	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R244	1-208-774-11	METAL CHIP	470	0.5%	1/10W
R245	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R246	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R247	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R248	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R249	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R250	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R251	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R252	1-216-097-11	RES-CHIP	100K	5%	1/10W
R253	1-216-097-11	RES-CHIP	100K	5%	1/10W
R255	1-208-812-11	METAL CHIP	18K	0.5%	1/10W
R256	1-216-097-11	RES-CHIP	100K	5%	1/10W
R257	1-216-097-11	RES-CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R259	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R260	1-208-788-11	METAL CHIP	1.8K	0.5%	1/10W
R261	1-216-295-11	SHORT	0		
R262	1-216-295-11	SHORT	0		
R263	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R264	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R265	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R266	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R268	1-216-097-11	RES-CHIP	100K	5%	1/10W
R269	1-216-097-11	RES-CHIP	100K	5%	1/10W
R271	1-216-097-11	RES-CHIP	100K	5%	1/10W
R272	1-216-097-11	RES-CHIP	100K	5%	1/10W
R273	1-216-025-11	RES-CHIP	100	5%	1/10W
R274	1-216-097-11	RES-CHIP	100K	5%	1/10W
R275	1-216-049-11	RES-CHIP	1K	5%	1/10W
R276	1-216-049-11	RES-CHIP	1K	5%	1/10W
R277	1-216-049-11	RES-CHIP	1K	5%	1/10W
R278	1-216-049-11	RES-CHIP	1K	5%	1/10W
R279	1-216-097-11	RES-CHIP	100K	5%	1/10W
R280	1-216-097-11	RES-CHIP	100K	5%	1/10W
R281	1-216-097-11	RES-CHIP	100K	5%	1/10W
R285	1-216-184-00	RES-CHIP	270	5%	1/8W
R286	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R287	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R288	1-216-097-11	RES-CHIP	100K	5%	1/10W
R289	1-216-049-11	RES-CHIP	1K	5%	1/10W
R290	1-216-295-11	SHORT	0		
R291	1-216-295-11	SHORT	0		
R292	1-216-295-11	SHORT	0		
R293	1-216-295-11	SHORT	0		
R294	1-216-295-11	SHORT	0		
R295	1-216-295-11	SHORT	0		
R296	1-216-295-11	SHORT	0		
R297	1-216-295-11	SHORT	0		
R298	1-216-295-11	SHORT	0		
R299	1-216-295-11	SHORT	0		

< SWITCH >

S101	1-692-505-11	SWITCH, SLIDE (MONITOR SELECT)
S102	1-762-825-11	SWITCH, SLIDE (CH-1 -60/-20/+4)
S103	1-762-825-11	SWITCH, SLIDE (CH-2 -60/-20/+4)
S104	1-762-825-11	SWITCH, SLIDE (CH-1 CAM/LINE/+48V ON)
S105	1-762-825-11	SWITCH, SLIDE (CH-2 CAM/LINE/+48V ON)
S106	1-762-825-11	SWITCH, SLIDE (CH-3 -60/-20/+4)
S107	1-762-825-11	SWITCH, SLIDE (CH-4 -60/-20/+4)
S108	1-762-825-11	SWITCH, SLIDE (CH-3 CAM/LINE/+48V ON)
S109	1-762-825-11	SWITCH, SLIDE (CH-4 CAM/LINE/+48V ON)
S110	1-762-824-11	SWITCH, SLIDE (SUPER IMPOSE)
S111	1-572-561-11	SWITCH, SLIDE (INPUT SELECT)

	A-7074-528-A	KP-8 BOARD, COMPLETE
		**********
		(Ref. No. 20,000 Series)

< CONNECTOR >

* CN601	1-569-775-21	PIN, CONNECTOR (SMD) 5P

< DIODE >

D601	8-719-421-59	DIODE MA3075WA- (TX)

Ref. No.	Part No.	Description	Remark
D602	8-719-421-59	DIODE MA3075WA- (TX)	
		< SWITCH >	
S601	1-771-025-21	SWITCH, ROTARY (ENCODER) (LCD BRIGHT)	
	A-7074-527-A	LT-32 BOARD, COMPLETE ********** (Ref. No. 50,000 Series)	
		< CONNECTOR >	
CN301	1-566-521-11	CONNECTOR, FPC (ZIF) 5P	
		< DIODE >	
D301	8-719-059-99	DIODE CL-220TY-C-TS	
D302	8-719-059-99	DIODE CL-220TY-C-TS	
D303	8-719-059-99	DIODE CL-220TY-C-TS	
D304	8-719-059-99	DIODE CL-220TY-C-TS	
D305	8-719-059-99	DIODE CL-220TY-C-TS	
D306	8-719-059-99	DIODE CL-220TY-C-TS	
D307	8-719-059-99	DIODE CL-220TY-C-TS	
D308	8-719-059-99	DIODE CL-220TY-C-TS	
D309	8-719-059-99	DIODE CL-220TY-C-TS	
D310	8-719-059-99	DIODE CL-220TY-C-TS	
	A-7067-229-A	MD-76 BOARD, COMPLETE ********** (Ref. No. 30,000 Series)	
*	3-057-376-01	HOLDER, SENSOR	
*	3-057-555-01	HOLDER, LED	
	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 (TAPE LED)	
		< 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	8-719-801-60	PHOTO TRASISTOR TLP907-OLB	
IC005	8-719-801-60	PHOTO TRASISTOR TLP907-OLB	
		< JUMPER RESISTOR >	
JR001	1-216-296-91	SHORT 0	
JR003	1-216-296-91	SHORT 0	
JR004	1-216-296-91	SHORT 0	
JR005	1-216-296-91	SHORT 0	
JR006	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F	(TAPE END)
Q002	8-729-907-25	PHOTO TRANSISTOR 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	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R006	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
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	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R011	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
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 (OFFSET)	
RV003	1-241-770-11	RES, ADJ, CARBON 1M (GAIN)	
RV004	1-238-019-11	RES, ADJ, CARBON 47K (OFFSET)	
		< 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-7074-107-A	PD-125 BOARD, COMPLETE ********** (Ref. No. 30,000 Series)	
		< CAPACITOR >	
C8008	1-164-939-11	CERAMIC CHIP 0.0022uF 10% 16V	
C8009	1-131-862-91	TANTAL. CHIP 47uF 20% 4V	
C8010	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C8011	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C8012	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C8013	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C8014	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C8015	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C8016	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C8017	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C8018	1-104-915-11	TANTAL. CHIP 2.2uF 20% 20V	
C8019	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C8020	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C8021	1-125-838-11	CERAMIC CHIP 2.2uF 10% 6.3V	
C8022	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C8023	1-164-505-11	CERAMIC CHIP 2.2uF 16V	

Ref. No.	Part No.	Description			Remark
C8024	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8025	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C8026	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8028	1-113-988-11	TANTAL. CHIP	68uF	20%	4V
C8100	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8101	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8102	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8103	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8104	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8200	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8201	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C8202	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8203	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8204	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8205	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C8206	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C8207	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8208	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8209	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8211	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8212	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8213	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C8214	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
		< CONNECTOR >			
CN8001	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
CN8002	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P			
* CN8200	1-778-172-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN8201	1-764-704-21	CONNECTOR, FFC/FPC (LIF) 5P			
		< DIODE >			
D8100	8-719-059-47	DIODE PG1111R-TR			
D8200	8-713-102-80	DIODE 1T369-01-T8A			
D8202	8-719-050-39	DIODE RD2.7UM-T1B			
		< IC >			
IC8001	8-759-524-98	IC CXA8116R-T4			
IC8200	8-759-364-05	IC M62376GP-65AD			
IC8200	8-759-364-05	IC MB40D001PFV-G-BND-ER			
IC8201	8-752-401-19	IC CXD2471AR-T4			
IC8202	8-759-580-26	IC NJM2130F (TE2)			
		< COIL >			
L8001	1-469-525-91	INDUCTOR	10uH		
L8002	1-469-525-91	INDUCTOR	10uH		
L8100	1-412-056-11	INDUCTOR	4.7uH		
L8101	1-469-528-91	INDUCTOR	100uH		
L8200	1-469-525-91	INDUCTOR	10uH		
L8201	1-412-945-11	INDUCTOR	3.3uH		
L8202	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q8000	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO		
Q8001	8-729-427-16	TRANSISTOR	XP4113-TXE		
Q8003	8-729-041-23	TRANSISTOR	NDS356AP		
Q8007	8-729-046-75	TRANSISTOR	SI2301DS-T1		
Q8009	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q8010	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q8011	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q8100	8-729-042-59	TRANSISTOR	UN9112J- (K8).SO		

Ref. No.	Part No.	Description			Remark
Q8101	8-729-042-26	TRANSISTOR	2SB1462J-QR (K8).SO		
Q8102	8-729-042-72	TRANSISTOR	UN9214J- (K8).SO		
Q8204	8-729-042-26	TRANSISTOR	2SB1462J-QR (K8).SO		
		< RESISTOR >			
R8000	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8003	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8004	1-218-990-11	SHORT	0		
R8005	1-218-990-11	SHORT	0		
R8006	1-218-990-11	SHORT	0		
R8012	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8014	1-218-968-11	RES-CHIP	18K	5%	1/16W
R8015	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8016	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8017	1-218-971-11	RES-CHIP	33K	5%	1/16W
R8018	1-218-972-11	RES-CHIP	39K	5%	1/16W
R8019	1-218-985-11	RES-CHIP	470K	5%	1/16W
R8020	1-218-969-11	RES-CHIP	22K	5%	1/16W
R8021	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8022	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8023	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8024	1-218-969-11	RES-CHIP	22K	5%	1/16W
R8025	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8026	1-218-971-11	RES-CHIP	33K	5%	1/16W
R8027	1-218-972-11	RES-CHIP	39K	5%	1/16W
R8028	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8030	1-218-974-11	RES-CHIP	56K	5%	1/16W
R8031	1-218-941-11	RES-CHIP	100	5%	1/16W
R8032	1-218-941-11	RES-CHIP	100	5%	1/16W
R8033	1-218-941-11	RES-CHIP	100	5%	1/16W
R8034	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R8035	1-218-982-11	METAL CHIP	270K	0.5%	1/16W
R8036	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R8037	1-218-981-11	RES-CHIP	220K	5%	1/16W
R8038	1-218-969-11	RES-CHIP	22K	5%	1/16W
R8039	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R8040	1-218-971-11	RES-CHIP	33K	5%	1/16W
R8042	1-218-990-11	SHORT	0		
R8043	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8044	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8045	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8046	1-218-990-11	SHORT	0		
R8052	1-218-990-11	SHORT	0		
R8100	1-218-941-11	RES-CHIP	100	5%	1/16W
R8101	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8102	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8200	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8201	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8202	1-218-968-11	RES-CHIP	18K	5%	1/16W
R8205	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8206	1-218-971-11	RES-CHIP	33K	5%	1/16W
R8207	1-218-949-11	RES-CHIP	470	5%	1/16W
R8208	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8211	1-216-864-11	METAL CHIP	0	5%	1/16W
R8212	1-216-864-11	METAL CHIP	0	5%	1/16W
R8213	1-218-990-11	SHORT	0		
R8214	1-218-990-11	SHORT	0		
R8215	1-218-941-11	RES-CHIP	100	5%	1/16W
R8216	1-218-941-11	RES-CHIP	100	5%	1/16W
R8217	1-218-941-11	RES-CHIP	100	5%	1/16W

Ref. No.	Part No.	Description			Remark
R8218	1-218-941-11	RES-CHIP	100	5%	1/16W
R8220	1-218-990-11	SHORT	0		
R8221	1-218-990-11	SHORT	0		
R8222	1-218-990-11	SHORT	0		
R8223	1-218-990-11	SHORT	0		
R8224	1-218-990-11	SHORT	0		
R8225	1-218-990-11	SHORT	0		
R8230	1-218-990-11	SHORT	0		
R8232	1-218-990-11	SHORT	0		
R8233	1-216-864-11	METAL CHIP	0	5%	1/16W
R8234	1-218-990-11	SHORT	0		
R8235	1-216-864-11	METAL CHIP	0	5%	1/16W
R8236	1-218-990-11	SHORT	0		
R8238	1-218-979-11	RES-CHIP	150K	5%	1/16W
R8239	1-218-986-11	RES-CHIP	560K	5%	1/16W
R8240	1-218-971-11	RES-CHIP	33K	5%	1/16W
R8241	1-218-974-11	RES-CHIP	56K	5%	1/16W
R8242	1-218-985-11	RES-CHIP	470K	5%	1/16W
R8243	1-218-985-11	RES-CHIP	470K	5%	1/16W
R8245	1-218-990-11	SHORT	0		
R8246	1-218-990-11	SHORT	0		
R8250	1-218-973-11	RES-CHIP	47K	5%	1/16W

A-7067-275-A RP-234 BOARD, COMPLETE
****
(Ref. No. 30,000 Series)

3-732-817-01 SCREW (2X4.5), TAPPING

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
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
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	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C334	1-216-864-11	METAL CHIP	0	5%	1/16W (Note)

< CONNECTOR >

Ref. No.	Part No.	Description
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 >

Ref. No.	Part No.	Description
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 >

Ref. No.	Part No.	Description	
L102	1-414-754-11	INDUCTOR	10uH
L201	1-414-754-11	INDUCTOR	10uH
L202	1-414-754-11	INDUCTOR	10uH

< TRANSISTOR >

Ref. No.	Part No.	Description	
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 >

Ref. No.	Part No.	Description			Remark
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%	1/16W
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%	1/16W
R109	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R110	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R111	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R112	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R113	1-218-831-11	METAL CHIP	220	0.5%	1/16W

Note: Resistor is mounted to the location where C334 is printed.

Ref. No.	Part No.	Description			Remark
R115	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R201	1-216-833-11	METAL CHIP	10K	5%	1/16W
R202	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
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-7067-271-A VD-28 BOARD, COMPLETE (DSR-50)
A-7067-278-A VD-28 BOARD, COMPLETE (DSR-50P)
****
(Ref. No. 10,000 Series)

⚠ 3-065-228-01 COVER, FUSE

< CAPACITOR >

C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C002	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C003	1-115-156-11	CERAMIC CHIP	1uF		10V
C004	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C005	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C006	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C008	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C009	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C010	1-126-396-11	ELECT CHIP	47uF	20%	16V
C011	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C012	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C013	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C014	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C015	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C016	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C017	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C018	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C019	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C020	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C021	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C022	1-162-921-11	CERAMIC CHIP	33PF	5%	50V

Ref. No.	Part No.	Description			Remark
C023	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C024	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C025	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C026	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C027	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C028	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C029	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C030	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C031	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C032	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C033	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C034	1-115-156-11	CERAMIC CHIP	1uF		10V
C035	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C036	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C037	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C038	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C039	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C040	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C041	1-104-850-11	TANTAL. CHIP	6.8uF	20%	10V
C042	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C043	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C044	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C045	1-126-396-11	ELECT CHIP	47uF	20%	16V
C046	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C047	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C048	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C049	1-164-156-11	CERAMIC CHIP	0.1uF		25V
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	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C054	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C055	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C056	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C057	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C058	1-104-850-11	TANTAL. CHIP	6.8uF	20%	10V
C059	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C060	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C061	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C062	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C063	1-164-156-11	CERAMIC CHIP	0.1uF		25V (DSR-50)
C064	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C066	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C071	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C072	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C073	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C074	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C075	1-104-850-11	TANTAL. CHIP	6.8uF	20%	10V
C076	1-104-850-11	TANTAL. CHIP	6.8uF	20%	10V
C077	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C078	1-126-396-11	ELECT CHIP	47uF	20%	16V
C079	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C080	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C081	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C082	1-128-405-11	ELECT CHIP	22uF	20%	50V
C083	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C084	1-164-156-11	CERAMIC CHIP	0.1uF		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.

VD-28

Ref. No.	Part No.	Description			Remark
C085	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C086	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C089	1-104-850-11	TANTAL. CHIP	6.8uF	20%	10V
C091	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C092	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C093	1-126-396-11	ELECT CHIP	47uF	20%	16V
C094	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C095	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C096	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C097	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C098	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C099	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C100	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C101	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C102	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C103	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C104	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C105	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C106	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C107	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C108	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C109	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C113	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C114	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C115	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C116	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C117	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C118	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C119	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C120	1-115-156-11	CERAMIC CHIP	1uF		10V
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C125	1-162-918-11	CERAMIC CHIP	18PF	5%	50V (DSR-50P)
C125	1-162-919-11	CERAMIC CHIP	22PF	5%	50V (DSR-50)
C126	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C127	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C128	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C129	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C131	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V (DSR-50P)
C131	1-164-230-11	CERAMIC CHIP	220PF	5%	50V (DSR-50)
C132	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C133	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C135	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (DSR-50P)
C135	1-162-928-11	CERAMIC CHIP	120PF	5%	50V (DSR-50)
C137	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C138	1-128-003-11	ELECT CHIP	22uF	20%	4V
C139	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C140	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C141	1-128-003-11	ELECT CHIP	22uF	20%	4V
C143	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C144	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C145	1-128-003-11	ELECT CHIP	22uF	20%	4V
C146	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C147	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C148	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C153	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C155	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C158	1-115-156-11	CERAMIC CHIP	1uF		10V
C159	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C161	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C162	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C163	1-128-003-11	ELECT CHIP	22uF	20%	4V
C165	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C166	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C167	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C168	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C170	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C172	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C173	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C174	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C175	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C180	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C183	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C185	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C187	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C189	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C190	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C191	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C192	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C193	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C194	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C195	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C196	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C197	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C198	1-128-003-11	ELECT CHIP	22uF	20%	4V
C199	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C200	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C201	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C202	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C203	1-164-156-11	CERAMIC CHIP	0.1uF		25V
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	1-126-607-11	ELECT CHIP	47uF	20%	4V
C208	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C209	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C210	1-162-920-11	CERAMIC CHIP	27PF	5%	50V (DSR-50P)
C210	1-164-378-11	CERAMIC CHIP	30PF	5%	50V (DSR-50)
C211	1-162-920-11	CERAMIC CHIP	27PF	5%	50V (DSR-50P)
C211	1-164-378-11	CERAMIC CHIP	30PF	5%	50V (DSR-50)
C212	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C213	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C214	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C215	1-162-916-11	CERAMIC CHIP	12PF	5%	50V (DSR-50P)
C215	1-162-917-11	CERAMIC CHIP	15PF	5%	50V (DSR-50)
C216	1-162-916-11	CERAMIC CHIP	12PF	5%	50V (DSR-50P)
C216	1-162-917-11	CERAMIC CHIP	15PF	5%	50V (DSR-50)

Ref. No.	Part No.	Description			Remark
C217	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C218	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C219	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C220	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C221	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C222	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C223	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C224	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C225	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C226	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C227	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C228	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C229	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C230	1-126-607-11	ELECT CHIP	47uF	20%	4V
C231	1-126-607-11	ELECT CHIP	47uF	20%	4V
C232	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C233	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C234	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C235	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C236	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C237	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C238	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C239	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C240	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C241	1-126-607-11	ELECT CHIP	47uF	20%	4V
C242	1-126-607-11	ELECT CHIP	47uF	20%	4V
C243	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C245	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C247	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C248	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C249	1-115-156-11	CERAMIC CHIP	1uF		10V
C251	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C252	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C253	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C254	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C255	1-128-003-11	ELECT CHIP	22uF	20%	4V
C256	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C259	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C260	1-128-003-11	ELECT CHIP	22uF	20%	4V
C261	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C262	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C263	1-128-007-11	ELECT CHIP	2.2uF	20%	35V
C264	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C265	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C266	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C267	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C268	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C269	1-162-911-11	CERAMIC CHIP	6PF	0.50PF	50V (DSR-50P)
C269	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V (DSR-50)
C270	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (DSR-50)
C270	1-164-739-11	CERAMIC CHIP	560PF	5%	50V (DSR-50P)
C271	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C272	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C273	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C274	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C275	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C276	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C277	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C278	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (DSR-50P)
C279	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C280	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C281	1-128-003-11	ELECT CHIP	22uF	20%	4V
C282	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C283	1-128-003-11	ELECT CHIP	22uF	20%	4V
C284	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C285	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C286	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C287	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C288	1-164-156-11	CERAMIC CHIP	0.1uF		25V (DSR-50P)
C289	1-162-928-11	CERAMIC CHIP	120PF	5%	50V (DSR-50P)
C290	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C291	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C292	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C293	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C294	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C295	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C296	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C297	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C298	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C299	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C300	1-164-156-11	CERAMIC CHIP	0.1uF		25V (DSR-50P)
C301	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C302	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C303	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C304	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C331	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C333	1-128-004-11	ELECT CHIP	10uF	20%	16V
C334	1-115-156-11	CERAMIC CHIP	1uF		10V
C335	1-128-004-11	ELECT CHIP	10uF	20%	16V
C336	1-128-004-11	ELECT CHIP	10uF	20%	16V
C338	1-162-920-11	CERAMIC CHIP	27PF	5%	50V (DSR-50)
C338	1-162-921-11	CERAMIC CHIP	33PF	5%	50V (DSR-50P)
C339	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C340	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C342	1-162-917-11	CERAMIC CHIP	15PF	5%	50V (DSR-50)
C343	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C345	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C346	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C347	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C348	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C349	1-128-004-11	ELECT CHIP	10uF	20%	16V
C350	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C351	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C352	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C353	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C354	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C355	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C356	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C401	1-126-205-11	ELECT CHIP	47uF	20%	6.3V

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Ref. No.	Part No.	Description			Remark
C402	1-126-607-11	ELECT CHIP	47uF	20%	4V
C403	1-126-607-11	ELECT CHIP	47uF	20%	4V
C405	1-126-607-11	ELECT CHIP	47uF	20%	4V
C406	1-126-607-11	ELECT CHIP	47uF	20%	4V
C407	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C409	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C410	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C411	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C412	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C414	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C415	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C416	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C424	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C425	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C426	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C427	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V (DSR-50P)
C433	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C434	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C435	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C436	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C437	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C439	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C440	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C441	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C442	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C443	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C444	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C445	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C446	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C447	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C448	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C449	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C450	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C451	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C452	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C453	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C454	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C455	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C456	1-117-720-11	CERAMIC CHIP	4.7uF		10V (DSR-50P)
C457	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C458	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C459	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C460	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C461	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C462	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C463	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C464	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C465	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C466	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C467	1-128-004-11	ELECT CHIP	10uF	20%	16V
C468	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C469	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C470	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C471	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C472	1-128-004-11	ELECT CHIP	10uF	20%	16V
C473	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C474	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C475	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C476	1-128-004-11	ELECT CHIP	10uF	20%	16V
C477	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C478	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C479	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C480	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C481	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C482	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C483	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C485	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C486	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C487	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C488	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C489	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C490	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C491	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C492	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C493	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C494	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C495	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C496	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C497	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C498	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C499	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C500	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C501	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C502	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C503	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C504	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C505	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C506	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C507	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C508	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C509	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C510	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C511	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C512	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C513	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C514	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C515	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C516	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C517	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C518	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C519	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C520	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C521	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C522	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C523	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C524	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C525	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C526	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C527	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C528	1-126-607-11	ELECT CHIP	47uF	20%	4V
C529	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C530	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C531	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C532	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C533	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C534	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C535	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C538	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C540	1-126-607-11	ELECT CHIP	47uF	20%	4V
C541	1-126-607-11	ELECT CHIP	47uF	20%	4V
C542	1-126-607-11	ELECT CHIP	47uF	20%	4V
C544	1-128-003-11	ELECT CHIP	22uF	20%	4V
C545	1-128-003-11	ELECT CHIP	22uF	20%	4V (DSR-50P)
C546	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C547	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C548	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C601	1-115-156-11	CERAMIC CHIP	1uF		10V
C602	1-115-156-11	CERAMIC CHIP	1uF		10V
C603	1-115-156-11	CERAMIC CHIP	1uF		10V
C604	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C605	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C606	1-115-156-11	CERAMIC CHIP	1uF		10V
C607	1-115-156-11	CERAMIC CHIP	1uF		10V
C608	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C609	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C610	1-115-156-11	CERAMIC CHIP	1uF		10V
C611	1-115-156-11	CERAMIC CHIP	1uF		10V
C612	1-128-004-11	ELECT CHIP	10uF	20%	16V
C613	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C614	1-128-004-11	ELECT CHIP	10uF	20%	16V
C615	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C616	1-115-156-11	CERAMIC CHIP	1uF		10V
C617	1-115-156-11	CERAMIC CHIP	1uF		10V
C618	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C619	1-115-156-11	CERAMIC CHIP	1uF		10V
C620	1-126-396-11	ELECT CHIP	47uF	20%	16V
C621	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C622	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C624	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C625	1-126-396-11	ELECT CHIP	47uF	20%	16V
C626	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C627	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C628	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C629	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C630	1-126-396-11	ELECT CHIP	47uF	20%	16V
C631	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C632	1-126-396-11	ELECT CHIP	47uF	20%	16V
C633	1-126-396-11	ELECT CHIP	47uF	20%	16V
C634	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C635	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C637	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C701	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C702	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C703	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C705	1-128-004-11	ELECT CHIP	10uF	20%	16V
C706	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C707	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C710	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C711	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C712	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C713	1-126-396-11	ELECT CHIP	47uF	20%	16V
C714	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C715	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C716	1-126-412-11	ELECT CHIP	220uF	20%	4V
C717	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C718	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C719	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C720	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C721	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C722	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C723	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C724	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C725	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C726	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C727	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C728	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C729	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C730	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C731	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C732	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C733	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C734	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C735	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C736	1-126-412-11	ELECT CHIP	220uF	20%	4V
C737	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C738	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C739	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C740	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C741	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C901	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C907	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C908	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C909	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C914	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C916	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C918	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C919	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C920	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C921	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C922	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C923	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C925	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C926	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C927	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C930	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C931	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C932	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C933	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C934	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C935	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C936	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C937	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C938	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C939	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C941	1-127-530-11	ELECT	22uF	20%	20V
C942	1-127-530-11	ELECT	22uF	20%	20V
C943	1-127-530-11	ELECT	22uF	20%	20V
C944	1-128-400-11	ELECT CHIP	47uF	20%	25V
C945	1-128-405-11	ELECT CHIP	22uF	20%	50V
C946	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C947	1-128-405-11	ELECT CHIP	22uF	20%	50V
C948	1-127-530-11	ELECT	22uF	20%	20V
C949	1-127-530-11	ELECT	22uF	20%	20V
C950	1-127-530-11	ELECT	22uF	20%	20V

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Ref. No.	Part No.	Description			Remark
C951	1-128-406-11	ELECT CHIP	33uF	20%	50V
C952	1-128-406-11	ELECT CHIP	33uF	20%	50V
C953	1-128-405-11	ELECT CHIP	22uF	20%	50V
C954	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C955	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C956	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C957	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C958	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C959	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C960	1-128-405-11	ELECT CHIP	22uF	20%	50V
C961	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C962	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C963	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C964	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C965	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C967	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C968	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C969	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C970	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C971	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C973	1-128-405-11	ELECT CHIP	22uF	20%	50V
C974	1-128-405-11	ELECT CHIP	22uF	20%	50V
C975	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C976	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C977	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C978	1-104-919-11	TANTAL. CHIP	10uF	20%	25V
C979	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C980	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C981	1-128-405-11	ELECT CHIP	22uF	20%	50V
C982	1-128-405-11	ELECT CHIP	22uF	20%	50V
C983	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C984	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C985	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C986	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C987	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C988	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C989	1-128-406-11	ELECT CHIP	33uF	20%	50V
C990	1-128-400-11	ELECT CHIP	47uF	20%	25V
C991	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C992	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C993	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C994	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C995	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C996	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C997	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C998	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C999	1-127-562-11	ELECT	47uF	20%	6.3V
C1001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1002	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1004	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V (DSR-50P)
C1004	1-162-911-11	CERAMIC CHIP	6PF	0.50PF	50V (DSR-50)
C1005	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C1006	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1008	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1009	1-128-004-11	ELECT CHIP	10uF	20%	16V
C1010	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1011	1-126-392-11	ELECT CHIP	100uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C1012	1-128-013-11	ELECT CHIP	1uF	20%	50V
C1013	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1014	1-128-004-11	ELECT CHIP	10uF	20%	16V
C1015	1-128-004-11	ELECT CHIP	10uF	20%	16V
C1017	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1018	1-162-926-11	CERAMIC CHIP	82PF	5%	50V (DSR-50P)
C1018	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (DSR-50)
C1019	1-162-926-11	CERAMIC CHIP	82PF	5%	50V (DSR-50P)
C1019	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (DSR-50)
C1020	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1021	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C1022	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C1023	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C1024	1-126-392-11	ELECT CHIP	100uF	20%	6.3V
C1026	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1027	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1028	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C1029	1-126-607-11	ELECT CHIP	47uF	20%	4V
C1030	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1101	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1102	1-115-156-11	CERAMIC CHIP	1uF		10V
C1906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1907	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1909	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1914	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1916	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1918	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C1919	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1920	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C1921	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1922	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1923	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1925	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1926	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1927	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1929	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1930	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C1931	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C1932	1-135-212-21	TANTAL. CHIP	2.2uF	20%	35V
C1935	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1936	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1937	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1938	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1939	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1940	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1941	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1942	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1943	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1944	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1945	1-127-530-11	ELECT	22uF	20%	20V
C1946	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1947	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1948	1-128-400-11	ELECT CHIP	47uF	20%	25V
C1949	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1950	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1951	1-164-505-11	CERAMIC CHIP	2.2uF		16V

Ref. No.	Part No.	Description			Remark
C1952	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1953	1-127-530-11	ELECT	22uF	20%	20V
C1954	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1955	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1956	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1957	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1959	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C1969	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1988	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1989	1-128-405-11	ELECT CHIP	22uF	20%	50V
C1990	1-128-400-11	ELECT CHIP	47uF	20%	25V
C1991	1-117-720-11	CERAMIC CHIP	4.7uF		10V
		< CONNECTOR >			
* CN101	1-691-591-11	PIN, CONNECTOR (1.5mm) (SMD) 8P			
* CN102	1-569-035-11	CONNECTOR, FPC (ZIF) 30P			
CN331	1-779-065-11	PIN, CONNECTOR (PC BOARD) 13P			
CN332	1-774-770-11	CONNECTOR, FFC/FPC 30P			
CN333	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P			
* CN401	1-695-320-21	PIN, CONNECTOR (1.5mm) (SMD) 2P			
* CN601	1-766-383-11	PIN, CONNECTOR (1.5mm) (SMD) 12P			
* CN602	1-573-768-21	PIN, CONNECTOR (1.5mm) (SMD) 5P			
* CN603	1-569-035-11	CONNECTOR, FPC (ZIF) 30P			
* CN604	1-569-035-11	CONNECTOR, FPC (ZIF) 30P			
CN605	1-506-473-11	PIN, CONNECTOR 8P			
CN606	1-774-770-11	CONNECTOR, FFC/FPC 30P			
CN607	1-566-521-11	CONNECTOR, FPC (ZIF) 5P			
* CN701	1-569-035-11	CONNECTOR, FPC (ZIF) 30P			
CN702	1-691-550-11	PIN, CONNECTOR (1.5mm) (SMD) 3P			
CN703	1-774-770-11	CONNECTOR, FFC/FPC 30P			
* CN704	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CN705	1-569-775-21	PIN, CONNECTOR (SMD) 5P			
* CN706	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CN900	1-566-693-11	PIN, CONNECTOR 2P			
* CN901	1-564-005-11	PIN, CONNECTOR 6P			
CN902	1-564-320-00	PIN, CONNECTOR 2P			
CN903	1-564-321-00	PIN, CONNECTOR 2P			
CN904	1-506-474-11	PIN, CONNECTOR 9P			
CN905	1-506-473-11	PIN, CONNECTOR 8P			
		< DIODE >			
D003	8-719-067-56	DIODE	MA112-TX		
D005	8-719-067-56	DIODE	MA112-TX		
D101	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D102	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D103	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D105	8-719-067-56	DIODE	MA112-TX		
D106	8-719-067-56	DIODE	MA112-TX		
D107	8-719-055-86	DIODE	KV1470TL1-3		
D108	8-719-067-56	DIODE	MA112-TX		
D110	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D331	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D332	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D333	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D334	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D335	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D336	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D337	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D338	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D339	8-719-062-16	DIODE	01ZA8.2 (TPL3)		
D401	8-719-062-16	DIODE	01ZA8.2 (TPL3)		

Ref. No.	Part No.	Description		Remark
D402	8-719-067-56	DIODE	MA112-TX	
D403	8-719-067-56	DIODE	MA112-TX	
D404	8-719-067-56	DIODE	MA112-TX	
D601	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D602	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D603	8-719-062-19	DIODE	MA3200WA-TX	
D604	8-719-067-56	DIODE	MA112-TX	
D605	8-719-067-56	DIODE	MA112-TX	
D606	8-719-073-28	DIODE	MA729- (K8).S0	
D701	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D702	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D709	8-719-073-28	DIODE	MA729- (K8).S0	
D710	8-719-067-56	DIODE	MA112-TX	
D712	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D713	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D714	8-719-062-16	DIODE	01ZA8.2 (TPL3)	
D716	8-719-067-56	DIODE	MA112-TX	
D717	8-719-067-56	DIODE	MA112-TX	
D901	8-719-987-21	DIODE	SB02-09CP-TB	
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	
D908	8-719-067-56	DIODE	MA112-TX	
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	
D915	8-719-066-98	DIODE	RB051L-40TE25	
D916	8-719-066-98	DIODE	RB051L-40TE25	
D917	8-719-066-98	DIODE	RB051L-40TE25	
D918	8-719-073-28	DIODE	MA729- (K8).S0	
D919	8-719-067-56	DIODE	MA112-TX	
D920	8-719-067-56	DIODE	MA112-TX	
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)	
D930	8-719-067-56	DIODE	MA112-TX	
D931	8-719-067-56	DIODE	MA112-TX	
D932	8-719-067-56	DIODE	MA112-TX	
		< DELAY LINE >		
DL101	1-415-551-11	DELAY LINE	140nS	
DL102	1-234-528-21	DELAY LINE		
DL401	1-415-551-11	DELAY LINE	140nS	
DL402	1-415-551-11	DELAY LINE	140nS	
DL403	1-415-551-11	DELAY LINE	140nS	
DL404	1-234-528-21	DELAY LINE		

Ref. No.	Part No.	Description	Remark
		< FUSE >	
⚠ F900	1-532-861-11	FUSE, GLASS TUBE (8A/125V)	
⚠ F901	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F902	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F903	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F904	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠ F905	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F906	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F908	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F910	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F911	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠ F912	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F913	1-576-447-21	FUSE, MICRO (630mA/24V)	
⚠ F914	1-576-286-21	FUSE, MICRO (1.4A/24V)	
⚠ F915	1-576-286-21	FUSE, MICRO (1.4A/24V)	
		< FERRITE BEAD >	
FB001	1-414-445-11	FERRITE 0uH	
FB002	1-414-445-11	FERRITE 0uH	
FB003	1-414-445-11	FERRITE 0uH	
FB004	1-414-445-11	FERRITE 0uH	
FB005	1-414-445-11	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	
FB011	1-500-283-11	INDUCTOR CHIP 0uH	
FB012	1-500-283-11	INDUCTOR CHIP 0uH	
FB401	1-414-445-11	FERRITE 0uH	
FB402	1-414-445-11	FERRITE 0uH	
FB403	1-414-445-11	FERRITE 0uH	
FB404	1-414-445-11	FERRITE 0uH	
FB405	1-414-445-11	FERRITE 0uH	
FB406	1-414-445-11	FERRITE 0uH	
FB407	1-414-445-11	FERRITE 0uH	
FB408	1-414-445-11	FERRITE 0uH	
FB409	1-414-445-11	FERRITE 0uH	
FB410	1-414-445-11	FERRITE 0uH	
FB411	1-414-445-11	FERRITE 0uH	
FB412	1-414-445-11	FERRITE 0uH	
FB601	1-414-445-11	FERRITE 0uH	
FB602	1-414-445-11	FERRITE 0uH	
FB603	1-414-445-11	FERRITE 0uH	
FB604	1-414-445-11	FERRITE 0uH	
FB701	1-414-445-11	FERRITE 0uH	
FB702	1-414-445-11	FERRITE 0uH	
FB703	1-414-445-11	FERRITE 0uH	
FB704	1-414-445-11	FERRITE 0uH	
FB705	1-414-445-11	FERRITE 0uH	
FB706	1-414-445-11	FERRITE 0uH	
FB707	1-414-445-11	FERRITE 0uH	
FB900	1-414-772-11	FERRITE 0uH	
FB902	1-414-864-11	FERRITE 0uH	
FB904	1-414-772-11	FERRITE 0uH	
FB906	1-414-864-11	FERRITE 0uH	
FB908	1-414-864-11	FERRITE 0uH	
FB910	1-414-772-11	FERRITE 0uH	
FB912	1-414-864-11	FERRITE 0uH	
FB914	1-414-864-11	FERRITE 0uH	
FB916	1-414-864-11	FERRITE 0uH	
FB918	1-414-864-11	FERRITE 0uH	
FB920	1-414-864-11	FERRITE 0uH	
		< FILTER >	
FL103	1-233-500-11	FILTER, LOW PASS	
FL104	1-233-501-11	FILTER, LOW PASS	
FL105	1-233-501-11	FILTER, LOW PASS	
FL106	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL107	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL108	1-233-345-21	FILTER, LOW PASS (5.5MHz)	
FL401	1-235-584-11	FILTER, LOW PASS	
FL402	1-235-584-11	FILTER, LOW PASS (DSR-50P)	
FL402	1-235-786-11	FILTER, LOW PASS (3MHz) (DSR-50)	
FL403	1-235-161-00	FILTER, BAND PASS (DSR-50)	
FL403	1-235-181-00	FILTER, BAND PASS (DSR-50P)	
FL404	1-233-501-11	FILTER, LOW PASS	
FL405	1-233-501-11	FILTER, LOW PASS	
FL406	1-233-500-11	FILTER, LOW PASS	
		< IC >	
IC001	8-759-491-47	IC TC74VHCT08AFT (EL)	
IC002	8-759-357-72	IC NJU3712M (TE2)	
IC003	8-759-987-27	IC LM1881MX	
IC004	8-759-523-78	IC TC74VHC00FT (EL)	
IC005	8-759-523-79	IC TC74VHC02FT (EL)	
IC007	8-759-357-72	IC NJU3712M (TE2)	
IC008	8-759-058-56	IC TC7S02FU (TE85R)	
IC009	8-759-635-27	IC M62352GP-70ED	
IC012	8-752-335-47	IC CXD1216M-T6	
IC013	8-759-635-27	IC M62352GP-70ED	
IC014	8-759-491-47	IC TC74VHCT08AFT (EL)	
IC016	8-759-523-02	IC TC74HC4053AFT (EL)	
IC017	8-759-635-27	IC M62352GP-70ED	
IC018	8-759-524-48	IC TC74VHC393FT (EL)	
IC019	8-759-523-97	IC TC74VHC123AFT (EL)	
IC020	8-759-524-19	IC TC74VHC164FT (EL)	
IC021	8-759-144-72	IC uPC358G2-E2	
IC022	8-759-144-72	IC uPC358G2-E2	
IC023	8-759-523-78	IC TC74VHC00FT (EL)	
IC024	8-759-491-50	IC TC74VHCT244AFT (EL)	
IC025	8-759-524-18	IC TC74VHC163FT (EL)	
IC026	8-759-524-19	IC TC74VHC164FT (EL)	
IC027	8-752-341-58	IC CXD1217Q-T4	
IC028	8-759-524-18	IC TC74VHC163FT (EL)	
IC029	8-759-491-46	IC TC74VHC04FT (EL)	
IC030	8-759-523-95	IC TC74VHC74FT (EL)	
IC031	8-759-523-97	IC TC74VHC123AFT (EL)	
IC032	8-759-524-19	IC TC74VHC164FT (EL)	
IC033	8-759-058-56	IC TC7S02FU (TE85R)	
IC034	8-759-524-19	IC TC74VHC164FT (EL)	
IC035	8-759-144-72	IC uPC358G2-E2	
IC037	8-759-523-97	IC TC74VHC123AFT (EL)	
IC039	8-759-524-19	IC TC74VHC164FT (EL)	
IC040	8-759-195-81	IC TC7S86FU (TE85R)	

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	Remark
IC041	8-759-182-88	IC PQ09TZ5U	
IC042	8-759-144-72	IC uPC358G2-E2	
IC043	8-759-523-96	IC TC74VHC86FT (EL)	
IC044	8-759-058-62	IC TC7S08FU (TE85R)	
IC046	8-759-524-48	IC TC74VHC393FT (EL)	
IC047	8-759-524-19	IC TC74VHC164FT (EL)	
IC048	8-759-524-19	IC TC74VHC164FT (EL)	
IC049	8-752-341-58	IC CXD1217Q-T4	
IC050	8-759-530-31	IC TC74VHC4040FT (EL)	
IC051	8-759-523-91	IC TC74VHC20FT (EL)	
IC052	8-759-523-95	IC TC74VHC74FT (EL)	
IC054	8-759-196-97	IC TC7SH32FU-TE85R	
IC055	8-759-523-97	IC TC74VHC123AFT (EL)	
IC056	8-759-271-86	IC TC7SH04FU-TE85R	
IC057	8-759-523-78	IC TC74VHC00FT (EL)	
IC058	8-759-058-56	IC TC7S02FU (TE85R)	
IC059	8-759-524-19	IC TC74VHC164FT (EL)	
IC060	8-759-523-78	IC TC74VHC00FT (EL) (DSR-50)	
IC061	8-759-196-97	IC TC7SH32FU-TE85R	
IC062	8-759-523-78	IC TC74VHC00FT (EL)	
IC063	8-759-523-97	IC TC74VHC123AFT (EL)	
IC101	8-759-257-87	IC MM1117XFBE	
IC102	8-759-337-26	IC MM1115XFBE	
IC103	8-759-337-26	IC MM1115XFBE	
IC104	8-759-432-78	IC MM1111XFBE	
IC105	8-759-257-87	IC MM1117XFBE	
IC106	8-759-164-09	IC LA7218M-TE-R	
IC107	8-759-337-26	IC MM1115XFBE	
IC108	8-759-257-87	IC MM1117XFBE	
IC109	8-759-433-44	IC MM1031XML	
IC110	8-759-446-66	IC MM1113XFBE	
IC112	8-759-164-09	IC LA7218M-TE-R	
IC113	8-759-446-66	IC MM1113XFBE	
IC115	8-759-449-58	IC LM7131BCM5X	
IC116	8-752-054-80	IC CXA1521M-T4	
IC117	8-759-432-78	IC MM1111XFBE	
IC118	8-759-432-78	IC MM1111XFBE	
IC119	8-752-352-20	IC CXD2023Q (DSR-50)	
IC119	8-752-372-78	IC CXD2024AQ (DSR-50P)	
IC120	8-759-498-27	IC TK16074MTL	
IC121	8-759-498-27	IC TK16074MTL	
IC122	8-752-053-21	IC CXA1211M-T4	
IC124	8-759-603-54	IC M51271FP-70AD	
IC125	8-759-449-58	IC LM7131BCM5X	
IC126	8-759-337-26	IC MM1115XFBE	
IC127	8-759-528-99	IC TC74VHC221AFT (EL) (DSR-50P)	
IC128	8-759-449-58	IC LM7131BCM5X	
IC129	8-759-449-58	IC LM7131BCM5X	
IC130	8-759-058-54	IC TC7S00FU (TE85R) (DSR-50P)	
IC131	8-759-711-62	IC NJM2240M (TE2)	
IC132	8-759-432-78	IC MM1111XFBE	
IC133	8-759-433-44	IC MM1031XML	
IC134	8-759-449-58	IC LM7131BCM5X	
IC332	8-759-349-01	IC MC68HC68VBIFB	
IC333	8-759-491-47	IC TC74VHCT08AFT (EL)	
IC334	8-759-491-47	IC TC74VHCT08AFT (EL)	
IC335	8-759-523-81	IC TC74VHC08FT (EL)	
IC336	8-759-497-44	IC TC7WH125FU (TE12R)	
IC402	8-759-498-27	IC TK16074MTL	
IC403	8-759-498-27	IC TK16074MTL	
IC404	8-752-053-21	IC CXA1211M-T4	
IC405	8-752-054-80	IC CXA1521M-T4	
IC410	8-752-052-73	IC CXA1451M-T4	
IC411	8-752-053-21	IC CXA1211M-T4	
IC412	8-759-058-56	IC TC7S02FU (TE85R)	
IC413	8-759-603-56	IC M51272FP-TE2	
IC414	8-759-449-58	IC LM7131BCM5X	
IC415	8-759-449-58	IC LM7131BCM5X	
IC416	8-759-449-58	IC LM7131BCM5X	
IC417	8-759-449-58	IC LM7131BCM5X	
IC418	8-752-052-73	IC CXA1451M-T4	
IC419	8-759-449-58	IC LM7131BCM5X	
IC420	8-759-449-58	IC LM7131BCM5X	
IC421	8-759-449-58	IC LM7131BCM5X	
IC422	8-752-052-73	IC CXA1451M-T4	
IC423	8-752-052-73	IC CXA1451M-T4	
IC424	8-752-052-73	IC CXA1451M-T4	
IC425	8-752-052-73	IC CXA1451M-T4	
IC426	8-752-052-73	IC CXA1451M-T4	
IC427	8-752-054-80	IC CXA1521M-T4	
IC428	8-752-053-21	IC CXA1211M-T4	
IC601	8-759-523-03	IC TC74HC4066AFT (EL)	
IC602	8-759-357-68	IC NJM2115M-TE2	
IC603	8-759-357-68	IC NJM2115M-TE2	
IC604	8-759-357-68	IC NJM2115M-TE2	
IC605	8-759-391-99	IC NJU7102AM-TE1	
IC606	8-759-180-19	IC NJU7211U50-TE1	
IC607	8-759-711-38	IC NJU7201U50-TE1	
IC701	8-759-271-86	IC TC7SH04FU-TE85R	
IC702	8-759-196-97	IC TC7SH32FU-TE85R	
IC704	8-759-424-79	IC S-8423YFS-T2	
IC705	8-759-580-27	IC S-81236SGUP-DQ7-T1	
IC706	8-759-445-93	IC AK6440AM-E2	
IC707	8-759-642-45	IC TL1596CPWR	
IC708	8-759-491-47	IC TC74VHCT08AFT (EL)	
IC709	8-759-713-39	IC S579642PZ-TEB	
IC710	8-759-196-97	IC TC7SH32FU-TE85R	
IC712	8-759-486-99	IC S-81250SGUP-DQD-T1	
IC713	8-759-391-99	IC NJU7102AM-TE1	
IC900	8-759-581-08	IC FA3675F	
IC901	8-759-180-19	IC NJU7211U50-TE1	
IC902	8-759-581-08	IC FA3675F	
IC908	8-759-391-99	IC NJU7102AM-TE1	
IC909	8-759-486-99	IC S-81250SGUP-DQD-T1	
		< JACK >	
J701	1-565-276-31	JACK, ULTRA SMALL 1P (CONTROL)	
		< COIL >	
L001	1-412-029-11	INDUCTOR CHIP 10uH	
L002	1-412-029-11	INDUCTOR CHIP 10uH	
L003	1-412-029-11	INDUCTOR CHIP 10uH	
L004	1-412-029-11	INDUCTOR CHIP 10uH	
L005	1-412-029-11	INDUCTOR CHIP 10uH	
L006	1-412-029-11	INDUCTOR CHIP 10uH	
L102	1-410-392-11	INDUCTOR CHIP 82uH (DSR-50P)	
L102	1-410-393-11	INDUCTOR CHIP 100uH (DSR-50)	
L104	1-410-380-31	INDUCTOR CHIP 8.2uH (DSR-50P)	
L104	1-410-381-11	INDUCTOR CHIP 10uH (DSR-50)	

Ref. No.	Part No.	Description		Remark
L106	1-412-029-11	INDUCTOR CHIP	10uH	
L107	1-412-029-11	INDUCTOR CHIP	10uH	
L108	1-412-029-11	INDUCTOR CHIP	10uH	
L109	1-412-029-11	INDUCTOR CHIP	10uH	
L110	1-412-029-11	INDUCTOR CHIP	10uH	
L111	1-412-029-11	INDUCTOR CHIP	10uH	
L112	1-412-029-11	INDUCTOR CHIP	10uH	
L113	1-412-029-11	INDUCTOR CHIP	10uH	
L114	1-410-382-31	INDUCTOR CHIP	12uH (DSR-50P)	
L114	1-410-383-31	INDUCTOR CHIP	15uH (DSR-50)	
L115	1-410-382-31	INDUCTOR CHIP	12uH (DSR-50P)	
L115	1-410-383-31	INDUCTOR CHIP	15uH (DSR-50)	
L116	1-410-379-31	INDUCTOR CHIP	6.8uH (DSR-50P)	
L116	1-410-380-31	INDUCTOR CHIP	8.2uH (DSR-50)	
L117	1-410-379-31	INDUCTOR CHIP	6.8uH (DSR-50P)	
L117	1-410-380-31	INDUCTOR CHIP	8.2uH (DSR-50)	
L118	1-412-808-21	INDUCTOR	470uH	
L120	1-412-029-11	INDUCTOR CHIP	10uH	
L121	1-412-029-11	INDUCTOR CHIP	10uH	
L122	1-412-029-11	INDUCTOR CHIP	10uH	
L123	1-412-029-11	INDUCTOR CHIP	10uH	
L124	1-412-029-11	INDUCTOR CHIP	10uH	
L125	1-410-381-11	INDUCTOR CHIP	10uH	
L126	1-412-029-11	INDUCTOR CHIP	10uH	
L127	1-410-384-31	INDUCTOR CHIP	18uH (DSR-50P)	
L127	1-410-385-11	INDUCTOR CHIP	22uH (DSR-50)	
L128	1-410-384-31	INDUCTOR CHIP	18uH (DSR-50P)	
L128	1-410-385-11	INDUCTOR CHIP	22uH (DSR-50)	
L331	1-412-029-11	INDUCTOR CHIP	10uH	
L332	1-410-388-31	INDUCTOR CHIP	39uH (DSR-50P)	
L332	1-410-389-31	INDUCTOR CHIP	47uH (DSR-50)	
L333	1-412-029-11	INDUCTOR CHIP	10uH	
L334	1-412-029-11	INDUCTOR CHIP	10uH	
L335	1-412-029-11	INDUCTOR CHIP	10uH	
L401	1-412-029-11	INDUCTOR CHIP	10uH	
L402	1-412-029-11	INDUCTOR CHIP	10uH	
L403	1-412-029-11	INDUCTOR CHIP	10uH	
L404	1-412-029-11	INDUCTOR CHIP	10uH	
L405	1-412-029-11	INDUCTOR CHIP	10uH	
L406	1-412-029-11	INDUCTOR CHIP	10uH	
L407	1-412-029-11	INDUCTOR CHIP	10uH	
L408	1-412-029-11	INDUCTOR CHIP	10uH	
L409	1-412-029-11	INDUCTOR CHIP	10uH	
L410	1-412-029-11	INDUCTOR CHIP	10uH	
L411	1-412-029-11	INDUCTOR CHIP	10uH	
L701	1-412-029-11	INDUCTOR CHIP	10uH	
L702	1-412-029-11	INDUCTOR CHIP	10uH	
L703	1-412-029-11	INDUCTOR CHIP	10uH	
L704	1-412-029-11	INDUCTOR CHIP	10uH	
L705	1-412-029-11	INDUCTOR CHIP	10uH	
L706	1-412-029-11	INDUCTOR CHIP	10uH	
L900	1-409-529-41	INDUCTOR	10uH	
L901	1-409-529-41	INDUCTOR	10uH	
L902	1-409-535-41	INDUCTOR	100uH	
L903	1-412-029-11	INDUCTOR CHIP	10uH	
L904	1-416-758-21	INDUCTOR	22uH	
L905	1-412-029-11	INDUCTOR CHIP	10uH	
L906	1-416-758-21	INDUCTOR	22uH	
L907	1-412-029-11	INDUCTOR CHIP	10uH	
L908	1-416-606-11	INDUCTOR	47uH	
L909	1-412-029-11	INDUCTOR CHIP	10uH	
L910	1-409-535-41	INDUCTOR	100uH	
L911	1-409-556-11	INDUCTOR	47uH	
L912	1-409-535-41	INDUCTOR	100uH	
L913	1-409-529-41	INDUCTOR	10uH	
L914	1-409-529-41	INDUCTOR	10uH	
L915	1-409-529-41	INDUCTOR	10uH	
L916	1-409-529-41	INDUCTOR	10uH	
L918	1-409-529-41	INDUCTOR	10uH	
L919	1-409-529-41	INDUCTOR	10uH	
L920	1-409-529-41	INDUCTOR	10uH	
L921	1-409-529-41	INDUCTOR	10uH	
L922	1-409-529-41	INDUCTOR	10uH	
L923	1-409-529-41	INDUCTOR	10uH	
L924	1-409-535-41	INDUCTOR	100uH	
L925	1-409-535-41	INDUCTOR	100uH	
L926	1-409-529-41	INDUCTOR	10uH	
L927	1-416-606-11	INDUCTOR	47uH	
L928	1-409-529-41	INDUCTOR	10uH	
L929	1-409-535-41	INDUCTOR	100uH	
L930	1-416-606-11	INDUCTOR	47uH	
L931	1-409-556-11	INDUCTOR	47uH	
L932	1-409-535-41	INDUCTOR	100uH	
L933	1-409-529-41	INDUCTOR	10uH	
L934	1-409-529-41	INDUCTOR	10uH	
L935	1-409-529-41	INDUCTOR	10uH	
L936	1-409-529-41	INDUCTOR	10uH	

< TRANSISTOR >

Q001	8-729-427-83	TRANSISTOR	XP6501- (TX).SO	
Q002	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q003	8-729-141-53	TRANSISTOR	2SK94-T1X2X3X4	
Q004	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q005	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q006	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q101	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q102	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	
Q103	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q104	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	
Q105	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q106	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q109	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q110	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q111	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q112	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q115	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q116	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q120	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q121	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q124	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q125	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q126	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q127	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q128	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q129	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q130	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q131	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q132	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q133	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q134	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	

Ref. No.	Part No.	Description		Remark
Q135	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q136	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q137	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q138	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q139	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q141	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q142	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q143	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q144	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q145	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q148	8-729-041-23	TRANSISTOR	NDS356AP	
Q149	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q150	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	
Q151	8-729-041-23	TRANSISTOR	NDS356AP	
Q152	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	
Q153	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q156	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q157	8-729-402-84	TRANSISTOR	XN4601-TW	
Q158	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q159	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q160	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q331	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q332	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q333	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q334	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q335	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q337	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q338	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q401	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q402	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q403	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q404	8-729-402-84	TRANSISTOR	XN4601-TW	
Q405	8-729-402-84	TRANSISTOR	XN4601-TW	
Q406	8-729-402-84	TRANSISTOR	XN4601-TW	
Q407	8-729-402-84	TRANSISTOR	XN4601-TW	
Q408	8-729-402-84	TRANSISTOR	XN4601-TW	
Q409	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q410	8-729-402-84	TRANSISTOR	XN4601-TW	
Q411	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q412	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q413	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q414	8-729-402-84	TRANSISTOR	XN4601-TW	
Q415	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q416	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q417	8-729-402-84	TRANSISTOR	XN4601-TW (DSR-50P)	
Q418	8-729-402-84	TRANSISTOR	XN4601-TW	
Q419	8-729-402-84	TRANSISTOR	XN4601-TW	
Q420	8-729-402-84	TRANSISTOR	XN4601-TW	
Q421	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q422	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q423	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q424	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q425	8-729-402-84	TRANSISTOR	XN4601-TW	
Q426	8-729-402-84	TRANSISTOR	XN4601-TW	
Q427	8-729-402-84	TRANSISTOR	XN4601-TW	
Q428	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q429	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q430	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q431	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	
Q432	8-729-037-72	TRANSISTOR	UN9211J- (K8).SO	

Ref. No.	Part No.	Description		Remark
Q434	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q435	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q436	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q437	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q438	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q439	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q601	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q602	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q603	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q604	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q605	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q606	8-729-202-38	TRANSISTOR	2SC3326N-TE85L-AB	
Q607	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q701	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q702	8-729-042-58	TRANSISTOR	UN9111J- (K8).SO	
Q705	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q706	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q707	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q708	8-729-041-23	TRANSISTOR	NDS356AP	
Q709	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q900	8-729-045-32	TRANSISTOR	HAT1036R-EL	
Q901	8-729-045-32	TRANSISTOR	HAT1036R-EL	
Q903	8-729-045-32	TRANSISTOR	HAT1036R-EL	
Q905	8-729-045-32	TRANSISTOR	HAT1036R-EL	
Q906	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q907	8-729-037-61	TRANSISTOR	UN9113J- (K8).SO	
Q908	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	
Q909	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q910	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q911	8-729-048-12	TRANSISTOR	CPH6302-TL	
Q912	8-729-048-12	TRANSISTOR	CPH6302-TL	
Q913	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	
Q914	8-729-048-12	TRANSISTOR	CPH6302-TL	
Q915	8-729-048-12	TRANSISTOR	CPH6302-TL	
Q916	8-729-048-12	TRANSISTOR	CPH6302-TL	
Q917	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q918	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO	
Q919	8-729-026-52	TRANSISTOR	2SA1576A-T106-R	
Q920	8-729-017-65	TRANSISTOR	2SK1764KYTR	
Q921	8-729-044-26	TRANSISTOR	CPH3404-TL	
Q922	8-729-905-35	TRANSISTOR	2SC4081T106R	
Q923	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q924	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q925	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q926	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q927	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q928	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q929	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q930	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q931	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q932	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q933	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q934	8-729-048-11	TRANSISTOR	CPH3304-TL	
Q935	8-729-037-61	TRANSISTOR	UN9113J- (K8).SO	
Q936	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q937	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q938	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q939	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q940	8-729-048-50	TRANSISTOR	2SK3018-T106	
Q941	8-729-048-50	TRANSISTOR	2SK3018-T106	

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Ref. No.	Part No.	Description			Remark
Q942	8-729-048-50	TRANSISTOR	2SK3018-T106		
Q943	8-729-048-50	TRANSISTOR	2SK3018-T106		
		< RESISTOR >			
R001	1-216-864-11	METAL CHIP	0	5%	1/16W
R002	1-216-864-11	METAL CHIP	0	5%	1/16W
R003	1-216-864-11	METAL CHIP	0	5%	1/16W
R004	1-216-864-11	METAL CHIP	0	5%	1/16W
R005	1-216-821-11	METAL CHIP	1K	5%	1/16W
R006	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
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	1-216-839-11	METAL CHIP	33K	5%	1/16W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R013	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R014	1-216-851-11	METAL CHIP	330K	5%	1/16W
R015	1-216-849-11	METAL CHIP	220K	5%	1/16W
R016	1-216-844-11	METAL CHIP	82K	5%	1/16W
R017	1-216-845-11	METAL CHIP	100K	5%	1/16W
R018	1-216-821-11	METAL CHIP	1K	5%	1/16W
R019	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R020	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R021	1-216-845-11	METAL CHIP	100K	5%	1/16W
R022	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R023	1-216-833-11	METAL CHIP	10K	5%	1/16W
R024	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R025	1-216-864-11	METAL CHIP	0	5%	1/16W
R026	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R027	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R028	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R029	1-216-809-11	METAL CHIP	100	5%	1/16W
R030	1-216-809-11	METAL CHIP	100	5%	1/16W
R031	1-216-809-11	METAL CHIP	100	5%	1/16W
R032	1-216-809-11	METAL CHIP	100	5%	1/16W
R033	1-216-809-11	METAL CHIP	100	5%	1/16W
R034	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R035	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R036	1-216-864-11	METAL CHIP	0	5%	1/16W
R037	1-216-845-11	METAL CHIP	100K	5%	1/16W
R038	1-216-833-11	METAL CHIP	10K	5%	1/16W
R039	1-216-833-11	METAL CHIP	10K	5%	1/16W
R040	1-216-821-11	METAL CHIP	1K	5%	1/16W
R041	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R042	1-216-821-11	METAL CHIP	1K	5%	1/16W
R043	1-216-833-11	METAL CHIP	10K	5%	1/16W
R044	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R045	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R046	1-216-833-11	METAL CHIP	10K	5%	1/16W
R047	1-216-839-11	METAL CHIP	33K	5%	1/16W
R048	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R049	1-218-854-11	METAL CHIP	2K	0.5%	1/16W
R050	1-216-833-11	METAL CHIP	10K	5%	1/16W
R051	1-216-821-11	METAL CHIP	1K	5%	1/16W
R052	1-216-844-11	METAL CHIP	82K	5%	1/16W
R053	1-216-809-11	METAL CHIP	100	5%	1/16W
R055	1-216-843-11	METAL CHIP	68K	5%	1/16W
R056	1-216-821-11	METAL CHIP	1K	5%	1/16W
R057	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R058	1-216-809-11	METAL CHIP	100	5%	1/16W
R059	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R060	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R061	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R062	1-218-854-11	METAL CHIP	2K	0.5%	1/16W
R063	1-216-833-11	METAL CHIP	10K	5%	1/16W
R064	1-216-839-11	METAL CHIP	33K	5%	1/16W
R065	1-216-809-11	METAL CHIP	100	5%	1/16W
R066	1-216-837-11	METAL CHIP	22K	5%	1/16W
R067	1-216-833-11	METAL CHIP	10K	5%	1/16W
R068	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R069	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R070	1-216-809-11	METAL CHIP	100	5%	1/16W
R071	1-216-833-11	METAL CHIP	10K	5%	1/16W
R072	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R073	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R074	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R075	1-218-854-11	METAL CHIP	2K	0.5%	1/16W
R076	1-216-833-11	METAL CHIP	10K	5%	1/16W
R077	1-216-839-11	METAL CHIP	33K	5%	1/16W
R078	1-216-809-11	METAL CHIP	100	5%	1/16W
R079	1-216-833-11	METAL CHIP	10K	5%	1/16W
R080	1-216-837-11	METAL CHIP	22K	5%	1/16W
R084	1-216-864-11	METAL CHIP	0	5%	1/16W
R085	1-216-809-11	METAL CHIP	100	5%	1/16W
R086	1-216-833-11	METAL CHIP	10K	5%	1/16W
R087	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R088	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R089	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R090	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R091	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R092	1-216-864-11	METAL CHIP	0	5%	1/16W
R094	1-218-854-11	METAL CHIP	2K	0.5%	1/16W
R095	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R096	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R097	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R098	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R099	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R101	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R102	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R103	1-216-809-11	METAL CHIP	100	5%	1/16W
R104	1-216-833-11	METAL CHIP	10K	5%	1/16W
R105	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R106	1-216-833-11	METAL CHIP	10K	5%	1/16W
R107	1-216-809-11	METAL CHIP	100	5%	1/16W
R108	1-216-821-11	METAL CHIP	1K	5%	1/16W
R109	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R110	1-216-864-11	METAL CHIP	0	5%	1/16W
R111	1-216-845-11	METAL CHIP	100K	5%	1/16W
R112	1-216-817-11	METAL CHIP	470	5%	1/16W
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W
R115	1-216-817-11	METAL CHIP	470	5%	1/16W
R120	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R121	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R124	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R125	1-218-861-11	METAL CHIP	3.9K	0.5%	1/16W
R127	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R130	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R131	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R132	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R134	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R135	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R136	1-211-985-11	METAL CHIP	47	0.5%	1/16W
R137	1-216-837-11	METAL CHIP	22K	5%	1/16W
R138	1-216-837-11	METAL CHIP	22K	5%	1/16W
R139	1-216-821-11	METAL CHIP	1K	5%	1/16W
R140	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R141	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R144	1-216-837-11	METAL CHIP	22K	5%	1/16W
R145	1-216-833-11	METAL CHIP	10K	5%	1/16W
R146	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R147	1-216-821-11	METAL CHIP	1K	5%	1/16W
R149	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R150	1-216-821-11	METAL CHIP	1K	5%	1/16W
R153	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R154	1-218-861-11	METAL CHIP	3.9K	0.5%	1/16W
R159	1-216-809-11	METAL CHIP	100	5%	1/16W
R161	1-216-821-11	METAL CHIP	1K	5%	1/16W
R163	1-216-821-11	METAL CHIP	1K	5%	1/16W
R165	1-216-837-11	METAL CHIP	22K	5%	1/16W
R166	1-216-833-11	METAL CHIP	10K	5%	1/16W
R167	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R169	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R172	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R177	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R178	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R179	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R186	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R187	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R191	1-216-837-11	METAL CHIP	22K	5%	1/16W
R192	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R193	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R194	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R195	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R196	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R197	1-216-809-11	METAL CHIP	100	5%	1/16W
R198	1-216-809-11	METAL CHIP	100	5%	1/16W
R199	1-216-833-11	METAL CHIP	10K	5%	1/16W
R200	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R201	1-216-809-11	METAL CHIP	100	5%	1/16W
R202	1-216-809-11	METAL CHIP	100	5%	1/16W
R203	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R204	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R205	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R206	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R207	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R208	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R209	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R210	1-216-817-11	METAL CHIP	470	5%	1/16W
R211	1-216-821-11	METAL CHIP	1K	5%	1/16W
R212	1-216-821-11	METAL CHIP	1K	5%	1/16W
R213	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R214	1-216-833-11	METAL CHIP	10K	5%	1/16W
R216	1-216-813-11	METAL CHIP	220	5%	1/16W
R217	1-216-833-11	METAL CHIP	10K	5%	1/16W
R218	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R219	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R220	1-216-817-11	METAL CHIP	470	5%	1/16W
R221	1-216-817-11	METAL CHIP	470	5%	1/16W
R222	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R223	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R224	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R225	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R226	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R227	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R228	1-216-833-11	METAL CHIP	10K	5%	1/16W
R229	1-216-835-11	METAL CHIP	15K	5%	1/16W
R230	1-216-834-11	METAL CHIP	12K	5%	1/16W
R231	1-216-813-11	METAL CHIP	220	5%	1/16W
R232	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R233	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R234	1-216-821-11	METAL CHIP	1K	5%	1/16W
R235	1-216-864-11	METAL CHIP	0	5%	1/16W
R236	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R237	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R238	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R239	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R240	1-216-836-11	METAL CHIP	18K	5%	1/16W
R241	1-216-838-11	METAL CHIP	27K	5%	1/16W
R242	1-216-836-11	METAL CHIP	18K	5%	1/16W
R243	1-216-838-11	METAL CHIP	27K	5%	1/16W
R244	1-216-821-11	METAL CHIP	1K	5%	1/16W
R245	1-216-836-11	METAL CHIP	18K	5%	1/16W
R246	1-216-839-11	METAL CHIP	33K	5%	1/16W
R247	1-216-836-11	METAL CHIP	18K	5%	1/16W
R248	1-216-839-11	METAL CHIP	33K	5%	1/16W
R249	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R250	1-216-840-11	METAL CHIP	39K	5%	1/16W
R251	1-216-833-11	METAL CHIP	10K	5%	1/16W
R252	1-216-833-11	METAL CHIP	10K	5%	1/16W
R253	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R254	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R255	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R256	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R257	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R258	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R259	1-216-864-11	METAL CHIP	0	5%	1/16W
R260	1-216-839-11	METAL CHIP	33K	5%	1/16W
R261	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R263	1-216-864-11	METAL CHIP	0	5%	1/16W
R267	1-218-878-11	METAL CHIP	20K	0.5%	1/16W (DSR-50)
R267	1-218-879-11	METAL CHIP	22K	0.5%	1/16W (DSR-50P)

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Ref. No.	Part No.	Description			Remark
R268	1-216-844-11	METAL CHIP	82K	5%	1/16W
R269	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R270	1-218-869-11	METAL CHIP	8.2K	0.5%	1/16W
R273	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R274	1-216-833-11	METAL CHIP	10K	5%	1/16W
					(DSR-50)
R275	1-216-821-11	METAL CHIP	1K	5%	1/16W
R276	1-216-853-11	METAL CHIP	470K	5%	1/16W
R277	1-216-837-11	METAL CHIP	22K	5%	1/16W
R278	1-216-833-11	METAL CHIP	10K	5%	1/16W
R279	1-216-837-11	METAL CHIP	22K	5%	1/16W
R280	1-216-833-11	METAL CHIP	10K	5%	1/16W
R281	1-216-837-11	METAL CHIP	22K	5%	1/16W
R282	1-216-833-11	METAL CHIP	10K	5%	1/16W
R283	1-216-833-11	METAL CHIP	10K	5%	1/16W
R284	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R285	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R286	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R287	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R288	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R289	1-211-987-11	METAL CHIP	56	0.5%	1/16W
					(DSR-50P)
R289	1-216-805-11	METAL CHIP	47	5%	1/16W
					(DSR-50)
R290	1-216-815-11	METAL CHIP	330	5%	1/16W
					(DSR-50)
R290	1-218-823-11	METAL CHIP	100	0.5%	1/16W
					(DSR-50P)
R291	1-216-864-11	METAL CHIP	0	5%	1/16W
					(DSR-50P)
R292	1-216-864-11	METAL CHIP	0	5%	1/16W
					(DSR-50)
R293	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R294	1-218-833-11	METAL CHIP	270	0.5%	1/16W
					(DSR-50P)
R294	1-218-835-11	METAL CHIP	330	0.5%	1/16W
					(DSR-50)
R295	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R296	1-218-839-11	METAL CHIP	470	0.5%	1/16W
					(DSR-50)
R296	1-218-841-11	METAL CHIP	560	0.5%	1/16W
					(DSR-50P)
R297	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R298	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R299	1-216-839-11	METAL CHIP	33K	5%	1/16W
R300	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R301	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R303	1-216-840-11	METAL CHIP	39K	5%	1/16W
					(DSR-50P)
R304	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R305	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R310	1-216-837-11	METAL CHIP	22K	5%	1/16W
R311	1-216-837-11	METAL CHIP	22K	5%	1/16W
R312	1-216-845-11	METAL CHIP	100K	5%	1/16W
R313	1-216-857-11	METAL CHIP	1M	5%	1/16W
R314	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R315	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R316	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R317	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R318	1-216-842-11	METAL CHIP	56K	5%	1/16W
					(DSR-50P)
R319	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W

Ref. No.	Part No.	Description			Remark
R320	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R321	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R322	1-216-845-11	METAL CHIP	100K	5%	1/16W
R323	1-216-857-11	METAL CHIP	1M	5%	1/16W
R324	1-216-864-11	METAL CHIP	0	5%	1/16W
R325	1-216-864-11	METAL CHIP	0	5%	1/16W
R326	1-216-864-11	METAL CHIP	0	5%	1/16W
R331	1-216-864-11	METAL CHIP	0	5%	1/16W
R332	1-216-864-11	METAL CHIP	0	5%	1/16W
R333	1-216-864-11	METAL CHIP	0	5%	1/16W
R334	1-216-864-11	METAL CHIP	0	5%	1/16W
R335	1-216-864-11	METAL CHIP	0	5%	1/16W
R336	1-216-864-11	METAL CHIP	0	5%	1/16W
R337	1-216-864-11	METAL CHIP	0	5%	1/16W
R338	1-216-864-11	METAL CHIP	0	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
R342	1-216-864-11	METAL CHIP	0	5%	1/16W
R343	1-216-809-11	METAL CHIP	100	5%	1/16W
R344	1-216-809-11	METAL CHIP	100	5%	1/16W
R345	1-216-809-11	METAL CHIP	100	5%	1/16W
R346	1-216-809-11	METAL CHIP	100	5%	1/16W
R347	1-216-809-11	METAL CHIP	100	5%	1/16W
R348	1-216-809-11	METAL CHIP	100	5%	1/16W
R349	1-216-809-11	METAL CHIP	100	5%	1/16W
R350	1-216-809-11	METAL CHIP	100	5%	1/16W
R351	1-216-841-11	METAL CHIP	47K	5%	1/16W
R352	1-216-841-11	METAL CHIP	47K	5%	1/16W
R353	1-216-821-11	METAL CHIP	1K	5%	1/16W
R354	1-216-849-11	METAL CHIP	220K	5%	1/16W
R355	1-216-837-11	METAL CHIP	22K	5%	1/16W
R356	1-216-839-11	METAL CHIP	33K	5%	1/16W
R357	1-216-819-11	METAL CHIP	680	5%	1/16W
R358	1-216-816-11	METAL CHIP	390	5%	1/16W
R359	1-216-821-11	METAL CHIP	1K	5%	1/16W
R360	1-216-817-11	METAL CHIP	470	5%	1/16W
R361	1-216-833-11	METAL CHIP	10K	5%	1/16W
R362	1-216-836-11	METAL CHIP	18K	5%	1/16W
R363	1-216-837-11	METAL CHIP	22K	5%	1/16W
R364	1-216-821-11	METAL CHIP	1K	5%	1/16W
R365	1-216-815-11	METAL CHIP	330	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-833-11	METAL CHIP	10K	5%	1/16W
R369	1-216-853-11	METAL CHIP	470K	5%	1/16W
R370	1-216-821-11	METAL CHIP	1K	5%	1/16W
R371	1-216-841-11	METAL CHIP	47K	5%	1/16W
R372	1-216-841-11	METAL CHIP	47K	5%	1/16W
R373	1-216-821-11	METAL CHIP	1K	5%	1/16W
R374	1-216-845-11	METAL CHIP	100K	5%	1/16W
R375	1-216-833-11	METAL CHIP	10K	5%	1/16W
R376	1-216-797-11	METAL CHIP	10	5%	1/16W
R377	1-216-797-11	METAL CHIP	10	5%	1/16W
R378	1-216-797-11	METAL CHIP	10	5%	1/16W
R379	1-216-797-11	METAL CHIP	10	5%	1/16W
R381	1-216-809-11	METAL CHIP	100	5%	1/16W
R382	1-216-797-11	METAL CHIP	10	5%	1/16W
R383	1-216-809-11	METAL CHIP	100	5%	1/16W
R384	1-216-797-11	METAL CHIP	10	5%	1/16W
R385	1-216-797-11	METAL CHIP	10	5%	1/16W

Ref. No.	Part No.	Description			Remark
R386	1-216-797-11	METAL CHIP	10	5%	1/16W
R389	1-216-809-11	METAL CHIP	100	5%	1/16W
R390	1-216-809-11	METAL CHIP	100	5%	1/16W
R393	1-216-864-11	METAL CHIP	0	5%	1/16W
R401	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R402	1-216-821-11	METAL CHIP	1K	5%	1/16W
R403	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R404	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R405	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R406	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R407	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R408	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R409	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R410	1-216-821-11	METAL CHIP	1K	5%	1/16W
R411	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R412	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R413	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R414	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R415	1-218-859-11	METAL CHIP	3.3K	0.5%	1/16W
R416	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R417	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R420	1-216-836-11	METAL CHIP	18K	5%	1/16W
R421	1-216-838-11	METAL CHIP	27K	5%	1/16W
R422	1-216-836-11	METAL CHIP	18K	5%	1/16W
R423	1-216-838-11	METAL CHIP	27K	5%	1/16W
R424	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R425	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R426	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R427	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R428	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R429	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R430	1-216-833-11	METAL CHIP	10K	5%	1/16W
R431	1-216-833-11	METAL CHIP	10K	5%	1/16W
R432	1-216-837-11	METAL CHIP	22K	5%	1/16W
R433	1-216-839-11	METAL CHIP	33K	5%	1/16W
R436	1-216-836-11	METAL CHIP	18K	5%	1/16W
R437	1-216-839-11	METAL CHIP	33K	5%	1/16W
R438	1-216-836-11	METAL CHIP	18K	5%	1/16W
R439	1-216-839-11	METAL CHIP	33K	5%	1/16W
R440	1-216-835-11	METAL CHIP	15K	5%	1/16W
R441	1-216-834-11	METAL CHIP	12K	5%	1/16W
R443	1-216-833-11	METAL CHIP	10K	5%	1/16W
R444	1-216-833-11	METAL CHIP	10K	5%	1/16W
R446	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R447	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R448	1-218-871-11	METAL CHIP	10K	0.5%	1/16W (DSR-50P)
R450	1-216-837-11	METAL CHIP	22K	5%	1/16W
R451	1-218-871-11	METAL CHIP	10K	0.5%	1/16W (DSR-50P)
R452	1-216-837-11	METAL CHIP	22K	5%	1/16W
R453	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R454	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R455	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R456	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R457	1-216-829-11	METAL CHIP	4.7K	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	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R461	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R462	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R463	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R464	1-216-833-11	METAL CHIP	10K	5%	1/16W
R465	1-216-833-11	METAL CHIP	10K	5%	1/16W
R466	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (DSR-50P)
R467	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R468	1-216-825-11	METAL CHIP	2.2K	5%	1/16W (DSR-50P)
R469	1-218-869-11	METAL CHIP	8.2K	0.5%	1/16W
R470	1-218-868-11	METAL CHIP	7.5K	0.5%	1/16W
R471	1-216-837-11	METAL CHIP	22K	5%	1/16W
R472	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R473	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R474	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R475	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R476	1-216-864-11	METAL CHIP	0	5%	1/16W
R477	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R478	1-216-821-11	METAL CHIP	1K	5%	1/16W
R479	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R480	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R481	1-216-837-11	METAL CHIP	22K	5%	1/16W
R482	1-216-841-11	METAL CHIP	47K	5%	1/16W
R483	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R484	1-216-833-11	METAL CHIP	10K	5%	1/16W
R485	1-216-809-11	METAL CHIP	100	5%	1/16W
R486	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R487	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R488	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R489	1-216-833-11	METAL CHIP	10K	5%	1/16W
R490	1-216-841-11	METAL CHIP	47K	5%	1/16W
R491	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R492	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R493	1-216-842-11	METAL CHIP	56K	5%	1/16W
R494	1-218-857-11	METAL CHIP	2.7K	0.5%	1/16W
R495	1-216-842-11	METAL CHIP	56K	5%	1/16W
R496	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R497	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R498	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R499	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R500	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R501	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R502	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R503	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W (DSR-50P)
R503	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W (DSR-50)
R504	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W (DSR-50P)
R504	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W (DSR-50)
R505	1-218-833-11	METAL CHIP	270	0.5%	1/16W
R506	1-216-864-11	METAL CHIP	0	5%	1/16W
R507	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R508	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R509	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R510	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R511	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R512	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R513	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R514	1-218-831-11	METAL CHIP	220	0.5%	1/16W

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Ref. No.	Part No.	Description			Remark
R515	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R516	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R517	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R518	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R519	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R520	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R521	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R522	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R523	1-216-821-11	METAL CHIP	1K	5%	1/16W
R524	1-218-857-11	METAL CHIP	2.7K	0.5%	1/16W
R525	1-218-873-11	METAL CHIP	12K	0.5%	1/16W
R526	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R527	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R528	1-216-864-11	METAL CHIP	0	5%	1/16W
R530	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R531	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R532	1-216-813-11	METAL CHIP	220	5%	1/16W
R533	1-218-858-11	METAL CHIP	3K	0.5%	1/16W
R534	1-218-857-11	METAL CHIP	2.7K	0.5%	1/16W
R535	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W
R536	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R537	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W
R538	1-216-864-11	METAL CHIP	0	5%	1/16W
R539	1-218-858-11	METAL CHIP	3K	0.5%	1/16W
R540	1-216-864-11	METAL CHIP	0	5%	1/16W
R541	1-218-858-11	METAL CHIP	3K	0.5%	1/16W
R542	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R543	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R544	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R545	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R546	1-216-833-11	METAL CHIP	10K	5%	1/16W
R547	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R548	1-216-833-11	METAL CHIP	10K	5%	1/16W
R549	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R550	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R551	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R552	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R553	1-216-841-11	METAL CHIP	47K	5%	1/16W
R554	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R555	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R556	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R557	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R558	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R559	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R560	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R561	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R562	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R564	1-216-864-11	METAL CHIP	0	5%	1/16W
R565	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W
R566	1-216-864-11	METAL CHIP	0	5%	1/16W
R567	1-216-864-11	METAL CHIP	0	5%	1/16W
R568	1-216-864-11	METAL CHIP	0	5%	1/16W
R570	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R571	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R572	1-216-833-11	METAL CHIP	10K	5%	1/16W
R575	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R576	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R577	1-216-835-11	METAL CHIP	15K	5%	1/16W
R578	1-216-834-11	METAL CHIP	12K	5%	1/16W
R581	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R582	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R583	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R585	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R591	1-216-845-11	METAL CHIP	100K	5%	1/16W
R592	1-216-845-11	METAL CHIP	100K	5%	1/16W
R593	1-216-845-11	METAL CHIP	100K	5%	1/16W
R594	1-216-845-11	METAL CHIP	100K	5%	1/16W
R595	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R601	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R602	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R603	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R604	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R605	1-216-182-00	RES-CHIP	220	5%	1/8W
R606	1-216-182-00	RES-CHIP	220	5%	1/8W
R607	1-216-182-00	RES-CHIP	220	5%	1/8W
R608	1-216-182-00	RES-CHIP	220	5%	1/8W
R609	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R610	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R611	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R612	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R613	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R614	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R615	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R616	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R617	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R618	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R619	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R620	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R621	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R622	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R623	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R624	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R625	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R626	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R627	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R628	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R629	1-216-833-11	METAL CHIP	10K	5%	1/16W
R630	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R631	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R632	1-216-841-11	METAL CHIP	47K	5%	1/16W
R633	1-216-864-11	METAL CHIP	0	5%	1/16W
R634	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R635	1-216-841-11	METAL CHIP	47K	5%	1/16W
R636	1-216-842-11	METAL CHIP	56K	5%	1/16W
R637	1-216-833-11	METAL CHIP	10K	5%	1/16W
R638	1-216-182-00	RES-CHIP	220	5%	1/8W
R639	1-216-833-11	METAL CHIP	10K	5%	1/16W
R640	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R641	1-216-841-11	METAL CHIP	47K	5%	1/16W
R642	1-216-843-11	METAL CHIP	68K	5%	1/16W
R644	1-216-833-11	METAL CHIP	10K	5%	1/16W
R645	1-216-833-11	METAL CHIP	10K	5%	1/16W
R646	1-216-833-11	METAL CHIP	10K	5%	1/16W
R647	1-216-847-11	METAL CHIP	150K	5%	1/16W
R648	1-216-851-11	METAL CHIP	330K	5%	1/16W
R649	1-216-847-11	METAL CHIP	150K	5%	1/16W
R650	1-216-864-11	METAL CHIP	0	5%	1/16W
R651	1-216-864-11	METAL CHIP	0	5%	1/16W
R652	1-216-844-11	METAL CHIP	82K	5%	1/16W
R653	1-216-839-11	METAL CHIP	33K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R655	1-216-864-11	METAL CHIP	0	5%	1/16W
R701	1-216-845-11	METAL CHIP	100K	5%	1/16W
R702	1-216-833-11	METAL CHIP	10K	5%	1/16W
R703	1-216-853-11	METAL CHIP	470K	5%	1/16W
R704	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R705	1-216-802-11	RES-CHIP	27	5%	1/16W
R707	1-216-864-11	METAL CHIP	0	5%	1/16W
R708	1-216-802-11	RES-CHIP	27	5%	1/16W
R709	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R710	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R711	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R712	1-216-833-11	METAL CHIP	10K	5%	1/16W
R713	1-216-817-11	METAL CHIP	470	5%	1/16W
R714	1-216-805-11	METAL CHIP	47	5%	1/16W
R715	1-216-805-11	METAL CHIP	47	5%	1/16W
R716	1-216-805-11	METAL CHIP	47	5%	1/16W
R717	1-216-805-11	METAL CHIP	47	5%	1/16W
R718	1-216-845-11	METAL CHIP	100K	5%	1/16W
R719	1-216-841-11	METAL CHIP	47K	5%	1/16W
R720	1-216-809-11	METAL CHIP	100	5%	1/16W
R721	1-216-805-11	METAL CHIP	47	5%	1/16W
R722	1-216-805-11	METAL CHIP	47	5%	1/16W
R723	1-216-805-11	METAL CHIP	47	5%	1/16W
R724	1-216-805-11	METAL CHIP	47	5%	1/16W
R725	1-216-809-11	METAL CHIP	100	5%	1/16W
R726	1-216-805-11	METAL CHIP	47	5%	1/16W
R727	1-216-853-11	METAL CHIP	470K	5%	1/16W
R728	1-216-845-11	METAL CHIP	100K	5%	1/16W
R729	1-216-845-11	METAL CHIP	100K	5%	1/16W
R730	1-216-845-11	METAL CHIP	100K	5%	1/16W
R731	1-216-845-11	METAL CHIP	100K	5%	1/16W
R732	1-216-805-11	METAL CHIP	47	5%	1/16W
R733	1-216-864-11	METAL CHIP	0	5%	1/16W
R734	1-216-805-11	METAL CHIP	47	5%	1/16W
R735	1-216-805-11	METAL CHIP	47	5%	1/16W
R736	1-216-809-11	METAL CHIP	100	5%	1/16W
R737	1-216-817-11	METAL CHIP	470	5%	1/16W
R738	1-216-817-11	METAL CHIP	470	5%	1/16W
R739	1-216-817-11	METAL CHIP	470	5%	1/16W
R740	1-216-809-11	METAL CHIP	100	5%	1/16W
R741	1-216-809-11	METAL CHIP	100	5%	1/16W
R742	1-216-809-11	METAL CHIP	100	5%	1/16W
R743	1-216-845-11	METAL CHIP	100K	5%	1/16W
R744	1-216-805-11	METAL CHIP	47	5%	1/16W
R745	1-216-805-11	METAL CHIP	47	5%	1/16W
R746	1-216-805-11	METAL CHIP	47	5%	1/16W
R747	1-216-805-11	METAL CHIP	47	5%	1/16W
R748	1-216-845-11	METAL CHIP	100K	5%	1/16W
R749	1-216-857-11	METAL CHIP	1M	5%	1/16W
R750	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R751	1-216-805-11	METAL CHIP	47	5%	1/16W
R752	1-216-805-11	METAL CHIP	47	5%	1/16W
R753	1-216-857-11	METAL CHIP	1M	5%	1/16W
R754	1-216-809-11	METAL CHIP	100	5%	1/16W
R755	1-216-864-11	METAL CHIP	0	5%	1/16W
R756	1-216-864-11	METAL CHIP	0	5%	1/16W
R757	1-216-845-11	METAL CHIP	100K	5%	1/16W
R758	1-216-845-11	METAL CHIP	100K	5%	1/16W
R759	1-216-845-11	METAL CHIP	100K	5%	1/16W
R760	1-216-805-11	METAL CHIP	47	5%	1/16W
R761	1-216-805-11	METAL CHIP	47	5%	1/16W
R762	1-216-841-11	METAL CHIP	47K	5%	1/16W
R763	1-216-857-11	METAL CHIP	1M	5%	1/16W
R764	1-216-805-11	METAL CHIP	47	5%	1/16W
R765	1-216-841-11	METAL CHIP	47K	5%	1/16W
R766	1-216-809-11	METAL CHIP	100	5%	1/16W
R767	1-216-809-11	METAL CHIP	100	5%	1/16W
R768	1-216-809-11	METAL CHIP	100	5%	1/16W
R769	1-216-809-11	METAL CHIP	100	5%	1/16W
R770	1-216-805-11	METAL CHIP	47	5%	1/16W
R771	1-216-864-11	METAL CHIP	0	5%	1/16W
R772	1-216-809-11	METAL CHIP	100	5%	1/16W
R773	1-216-864-11	METAL CHIP	0	5%	1/16W
R774	1-216-864-11	METAL CHIP	0	5%	1/16W
R775	1-216-845-11	METAL CHIP	100K	5%	1/16W
R776	1-216-845-11	METAL CHIP	100K	5%	1/16W
R777	1-216-845-11	METAL CHIP	100K	5%	1/16W
R778	1-216-809-11	METAL CHIP	100	5%	1/16W
R779	1-216-809-11	METAL CHIP	100	5%	1/16W
R780	1-216-845-11	METAL CHIP	100K	5%	1/16W
R781	1-216-837-11	METAL CHIP	22K	5%	1/16W
R782	1-216-837-11	METAL CHIP	22K	5%	1/16W
R783	1-216-821-11	METAL CHIP	1K	5%	1/16W
R784	1-216-845-11	METAL CHIP	100K	5%	1/16W
R785	1-216-809-11	METAL CHIP	100	5%	1/16W
R786	1-216-809-11	METAL CHIP	100	5%	1/16W
R787	1-216-845-11	METAL CHIP	100K	5%	1/16W
R788	1-216-837-11	METAL CHIP	22K	5%	1/16W
R789	1-216-805-11	METAL CHIP	47	5%	1/16W
R790	1-216-805-11	METAL CHIP	47	5%	1/16W
R791	1-216-805-11	METAL CHIP	47	5%	1/16W
R792	1-216-805-11	METAL CHIP	47	5%	1/16W
R793	1-216-845-11	METAL CHIP	100K	5%	1/16W
R795	1-216-809-11	METAL CHIP	100	5%	1/16W
R796	1-216-809-11	METAL CHIP	100	5%	1/16W
R797	1-216-845-11	METAL CHIP	100K	5%	1/16W
R798	1-216-805-11	METAL CHIP	47	5%	1/16W
R799	1-219-570-11	RES-CHIP	10M	5%	1/16W
R800	1-216-841-11	METAL CHIP	47K	5%	1/16W
R801	1-216-841-11	METAL CHIP	47K	5%	1/16W
R802	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R803	1-216-821-11	METAL CHIP	1K	5%	1/16W
R804	1-216-841-11	METAL CHIP	47K	5%	1/16W
R805	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R806	1-216-845-11	METAL CHIP	100K	5%	1/16W
R807	1-216-809-11	METAL CHIP	100	5%	1/16W
R808	1-216-857-11	METAL CHIP	1M	5%	1/16W
R809	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R810	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R811	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R812	1-218-905-11	METAL CHIP	270K	0.5%	1/16W
R813	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R814	1-211-969-11	METAL CHIP	10	0.5%	1/16W
R815	1-218-904-11	METAL CHIP	240K	0.5%	1/16W
R816	1-218-907-11	METAL CHIP	330K	0.5%	1/16W
R818	1-216-809-11	METAL CHIP	100	5%	1/16W
R820	1-216-821-11	METAL CHIP	1K	5%	1/16W
R821	1-216-821-11	METAL CHIP	1K	5%	1/16W
R822	1-216-864-11	METAL CHIP	0	5%	1/16W
R825	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R827	1-216-864-11	METAL CHIP	0	5%	1/16W
R828	1-216-821-11	METAL CHIP	1K	5%	1/16W
R903	1-216-857-11	METAL CHIP	1M	5%	1/16W
R904	1-216-295-11	SHORT	0		
R905	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R906	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R907	1-218-875-11	METAL CHIP	15K	0.5%	1/16W
R908	1-218-861-11	METAL CHIP	3.9K	0.5%	1/16W
R909	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R910	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R911	1-218-853-11	METAL CHIP	1.8K	0.5%	1/16W
R912	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R913	1-216-857-11	METAL CHIP	1M	5%	1/16W
R914	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R915	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R916	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R917	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R918	1-216-295-11	SHORT	0		
R919	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R920	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R921	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R922	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R923	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R924	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R925	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R926	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R927	1-218-909-11	METAL CHIP	390K	0.5%	1/16W
R928	1-218-907-11	METAL CHIP	330K	0.5%	1/16W
R929	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R930	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R931	1-218-907-11	METAL CHIP	330K	0.5%	1/16W
R932	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R933	1-218-908-91	METAL CHIP	360K	0.5%	1/16W
R934	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R935	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R936	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R937	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R938	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R939	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R940	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R941	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R942	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R943	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R944	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R945	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R946	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R947	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R948	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R949	1-218-873-11	METAL CHIP	12K	0.5%	1/16W
R950	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R951	1-216-857-11	METAL CHIP	1M	5%	1/16W
R952	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R953	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R954	1-216-857-11	METAL CHIP	1M	5%	1/16W
R955	1-216-857-11	METAL CHIP	1M	5%	1/16W
R956	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R957	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R958	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R959	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R960	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R961	1-216-857-11	METAL CHIP	1M	5%	1/16W
R962	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R963	1-216-857-11	METAL CHIP	1M	5%	1/16W
R964	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R965	1-216-857-11	METAL CHIP	1M	5%	1/16W
R966	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R967	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R968	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R969	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R970	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R971	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R973	1-216-295-11	SHORT	0		
R978	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R979	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R980	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R983	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R985	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R986	1-216-857-11	METAL CHIP	1M	5%	1/16W
R988	1-216-857-11	METAL CHIP	1M	5%	1/16W
R990	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R991	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R992	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R993	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R994	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R1002	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R1003	1-218-827-11	METAL CHIP	150	0.5%	1/16W
R1004	1-218-859-11	METAL CHIP	3.3K	0.5%	1/16W
R1005	1-218-836-11	METAL CHIP	360	0.5%	1/16W
R1006	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1007	1-216-849-11	METAL CHIP	220K	5%	1/16W
R1015	1-216-845-11	METAL CHIP	100K	5%	1/16W
R1016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R1017	1-216-817-11	METAL CHIP	470	5%	1/16W
R1018	1-216-817-11	METAL CHIP	470	5%	1/16W
R1019	1-216-805-11	METAL CHIP	47	5%	1/16W
R1020	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R1021	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R1023	1-218-847-11	METAL CHIP	1K	0.5%	1/16W (DSR-50)
R1023	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1024	1-216-864-11	METAL CHIP	0	5%	1/16W
R1027	1-218-845-11	METAL CHIP	820	0.5%	1/16W
R1028	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R1029	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1030	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1031	1-216-813-11	METAL CHIP	220	5%	1/16W
R1032	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R1033	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1034	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1035	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1036	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R1101	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1102	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R1103	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1104	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R1107	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R1109	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R1110	1-216-855-11	METAL CHIP	680K	5%	1/16W
R1111	1-216-864-11	METAL CHIP	0	5%	1/16W
R1114	1-216-864-11	METAL CHIP	0	5%	1/16W
R1118	1-216-864-11	METAL CHIP	0	5%	1/16W
R1120	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1121	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R1122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1124	1-216-842-11	METAL CHIP	56K	5%	1/16W
R1125	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1126	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R1127	1-216-864-11	METAL CHIP	0	5%	1/16W
R1129	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50)
R1130	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1131	1-216-864-11	METAL CHIP	0	5%	1/16W (DSR-50P)
R1132	1-216-864-11	METAL CHIP	0	5%	1/16W
R1133	1-500-283-11	INDUCTOR CHIP	0uH (Note)		
R1134	1-500-283-11	INDUCTOR CHIP	0uH (Note)		
R1135	1-216-809-11	METAL CHIP	100	5%	1/16W
R1136	1-216-809-11	METAL CHIP	100	5%	1/16W (DSR-50)
R1137	1-216-809-11	METAL CHIP	100	5%	1/16W
R1138	1-216-809-11	METAL CHIP	100	5%	1/16W
R1139	1-216-809-11	METAL CHIP	100	5%	1/16W
R1140	1-216-809-11	METAL CHIP	100	5%	1/16W
R1141	1-216-809-11	METAL CHIP	100	5%	1/16W
R1142	1-500-283-11	INDUCTOR CHIP	0uH (Note)		
R1201	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R1202	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R1203	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R1204	1-218-841-11	METAL CHIP	560	0.5%	1/16W
R1205	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1206	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1207	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R1208	1-218-843-11	METAL CHIP	680	0.5%	1/16W
R1209	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R1211	1-216-864-11	METAL CHIP	0	5%	1/16W
R1212	1-216-809-11	METAL CHIP	100	5%	1/16W
R1213	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R1215	1-218-877-11	METAL CHIP	18K	0.5%	1/16W
R1216	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R1217	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W
R1218	1-218-837-11	METAL CHIP	390	0.5%	1/16W
R1907	1-216-864-11	METAL CHIP	0	5%	1/16W
R1908	1-218-884-11	METAL CHIP	36K	0.5%	1/16W
R1909	1-218-913-91	METAL CHIP	560K	0.5%	1/16W
R1910	1-218-865-11	METAL CHIP	5.6K	0.5%	1/16W
R1911	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R1912	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R1915	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R1916	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
R1917	1-218-863-11	METAL CHIP	4.7K	0.5%	1/16W
R1918	1-216-295-11	SHORT	0		
R1922	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R1923	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R1925	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R1926	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R1927	1-218-909-11	METAL CHIP	390K	0.5%	1/16W
R1928	1-218-907-11	METAL CHIP	330K	0.5%	1/16W
R1929	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R1931	1-218-907-11	METAL CHIP	330K	0.5%	1/16W
R1933	1-218-909-11	METAL CHIP	390K	0.5%	1/16W
R1934	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R1935	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1936	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R1937	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1938	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R1939	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R1940	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1941	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R1942	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1944	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1945	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R1946	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R1948	1-218-885-11	METAL CHIP	39K	0.5%	1/16W
R1949	1-218-873-11	METAL CHIP	12K	0.5%	1/16W
R1950	1-218-866-11	METAL CHIP	6.2K	0.5%	1/16W
R1958	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R1959	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R1960	1-216-863-11	RES-CHIP	3.3M	5%	1/16W
R1967	1-218-823-11	METAL CHIP	100	0.5%	1/16W
R1983	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB001	1-239-437-91	NETWORK RESISTOR (CHIP) 39K			
RB002	1-239-437-91	NETWORK RESISTOR (CHIP) 39K			
		< SWITCH >			
S702	1-692-990-21	SWITCH, SLIDE (DV CAM/DV)			
		< VIBRATOR >			
X001	1-760-266-11	OSCILLATOR, CRYSTAL (VCO TYPE) (14.1875MHz) (DSR-50P)			
X001	1-760-267-11	OSCILLATOR, CRYSTAL (VCO TYPE) (14.31818MHz) (DSR-50)			
X002	1-760-267-11	OSCILLATOR, CRYSTAL (VCO TYPE) (14.31818MHz) (DSR-50)			
X002	1-760-268-11	OSCILLATOR, CRYSTAL (VCO TYPE) (17.734475MHz) (DSR-50P)			
X101	1-577-165-11	VIBLATOR, CERAMIC (500kHz)			
X102	1-577-165-11	VIBLATOR, CERAMIC (500kHz)			
X104	1-579-738-21	VIBRATOR, CRYSTAL (14.318182MHz) (DSR-50)			
X104	1-579-780-21	VIBRATOR, CRYSTAL (17.734475MHz) (DSR-50P)			
* X331	1-579-466-11	VIBRATOR, CRYSTAL (3.579545MHz) (DSR-50)			
X331	1-579-661-21	OSCILLATOR, CRYSTAL (4.433619MHz) (DSR-50P)			
X701	1-767-450-11	VIBRATOR, CERAMIC (20MHz)			

Note: Ferrite beads are mounted to the location where R1133, R1134 and R1142 are printed.

Ref. No.	Part No.	Description	Remark
X702	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)	
	A-7074-524-A	VL-26 BOARD, COMPLETE ********** (Ref. No. 20,000 Series)	
		< BATTERY >	
BT801	1-528-694-11	BATTERY, V/L RECHARGEABLE	
		< CONNECTOR >	
* CN801	1-580-055-21	PIN, CONNECTOR (SMD) 2P	
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-547-09	SCREW +B 3X6	
#2	7-624-101-04	STOP RING 1.2 (E TYPE)	
#3	7-627-553-38	SCREW, PRECISION +P 2X3	
#4	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#5	7-682-547-04	SCREW +B 3X6	
#6	7-621-772-10	SCREW +B 2X4	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-063-346-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	
	3-063-346-21	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (DSR-50P)	
	8-883-121-64	TAPE, DV CASSETTE DVM-4CLD J	

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DSR-50/50P

SONY

SERVICE MANUAL

2001. 10

US Model
Canadian Model
DSR-50
AEP Model
UK Model
E Model
Australian Model
New Zealand Model
DSR-50P

SUPPLEMENT-1

File this supplement with the service manual.

(PV01-019)

• Changed of parts No.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

☛ : Points changed portion.

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1-1. OVER ALL ASSEMBLY (Service manual page 6-1)

Former Type				New Type			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
8	X-3950-889-1	COVER ASSY, TOP		8	X-3950-889-1	COVER ASSY, TOP (DSR-50)	
				8	X-3951-431-2	COVER ASSY, TOP (DSR-50P)	
* 18	X-3950-888-1	COVER ASSY, BOTTOM		* 18	X-3950-888-1	COVER ASSY, BOTTOM (DSR-50)	
				* 18	X-3951-432-2	COVER ASSY, BOTTOM (DSR-50P)	

6-1-4. MAIN FRAME ASSEMBLY (Service manual page 6-4)

Former Type				New Type			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151	X-3950-884-1	FRAME ASSY, MAIN		* 151	X-3950-884-1	FRAME ASSY, MAIN (DSR-50)	
				* 151	X-3951-429-3	FRAME ASSY, MAIN (DSR-50P)	
* 152	X-3950-885-1	MOUNT ASSY, BATTERY		* 152	X-3950-885-2	MOUNT ASSY, BATTERY	

6-1-5. SIDE PANEL ASSEMBLY (Service manual page 6-5)

Former Type				New Type			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	X-3950-887-1	PANEL ASSY, SIDE		201	X-3950-887-1	PANEL ASSY, SIDE (DSR-50)	
				201	X-3951-430-1	PANEL ASSY, SIDE (DSR-50P)	

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SUPPLEMENT-2

File this supplement with the service manual.
(PV02-020)

• Change of a repair part

SECTION 6
REPAIR PARTS LIST

6-2. ELECTRICAL PARTS LIST

Page	FORMER				NEW			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		A-7067-273-A	JC-20 BOARD, COMPLETE ********** (Ref. No. 20,000 Series)			A-7067-273-A	JC-20 BOARD, COMPLETE ********** (Ref. No. 20,000 Series)	
6-22	IC5003	8-759-693-43	IC MB91192PFF-G-119-BND-ER		IC5003	6-802-635-01	IC MB91192PFF-G-160-BND-ER	

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Australian Model
New Zealand Model
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SUPPLEMENT-3

File this supplement with the service manual.

(PV05-098)

• **Change of a repair part**

SECTION 6
REPAIR PARTS LIST

☞ **: Points changed portion.**

6-1. EXPLODED VIEWS

Page	FORMER			NEW			
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
6-6	M901	A-7048-947-A	DRUM ASSY (DEH-21A-R)	M901	A-1153-061-A	DRUM ASSY (DEH-21B/J-RP)	☞

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Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2000.08	Official Release	—	—
1.1	2001.05	Correction	S.M. correction: Page 5-6	Yes
1.2	2001.10	Supplement-1 (S1 PV01-019)	• Changed of parts No.	No
1.3	2003.04	Supplement-2 (S2 PV02-020)	• Change of a repair part	No
1.4	2004.10	Correction-2 (C2)	• Addition of Note about Lithium Secondary Battery S.M. correction: Page 6-4	Yes
1.5	2006.03	Supplement-3 (S3 PV05-098)	• Change of a repair part	No