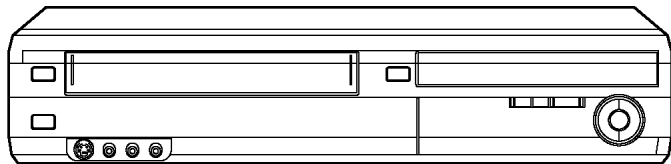


# Service Manual

## DVD Recorder

**Note 1:**

This model's DVD Drive is VXY2010.

**Note 2:**

This model's VHS Mechanism is R4  
Mechanism Chassis for North America Model.  
 :Order No. VR0404003C1

Model No. **DMR-EZ48VP**  
**DMR-EZ48VPC**  
**DMR-EZ485VP**

Vol. 1

Colour

(K).....Black Type

Manufactured under license from Dolby Laboratories.  
 Dolby and the double-D symbol are trademarks of Dolby  
 Laboratories.

"DTS" is a registered trademark of DTS, Inc. and "DTS 2.0+Digital  
 Out" is a trademark of DTS, Inc.

U. S. Patent Nos. 6,836,549; 6,381,747; 7,050,698; 6,516,132; and  
 5,583,936.

Official DivX® Certified product.  
 Plays all versions of DivX® video (including DivX® 6) with standard  
 playback of DivX® media files. DivX, DivX Certified, and associated  
 logos are trademarks of DivX, Inc. and are used under license.

HDAVI Control™ is a trademark of Matsushita Electric Industrial Co.,  
 Ltd.

This product incorporates copyright protection technology that  
 is protected by U.S. patents and other intellectual property rights.  
 Use of this copyright protection technology must be authorized by  
 Macrovision, and is intended for home and other limited viewing  
 uses only unless otherwise authorized by Macrovision.  
 Reverse engineering or disassembly is prohibited.

HDMI, the HDMI logo and High-Definition Multimedia Interface are  
 trademarks or registered trademarks of HDMI Licensing LLC.

- SDHC logo is a trademark.
- Portions of this product are protected under copyright law and are  
 provided under license by ARIS/SOLANA/4C.

EZ Sync™ is a trademark of Matsushita Electric Industrial Co., Ltd.

# Panasonic®

© 2008 Matsushita Electric Industrial Co., Ltd. All  
 rights reserved. Unauthorized copying and  
 distribution is a violation of law.

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**CONTENTS**

	<b>Page</b>	<b>Page</b>
<b>1 Safety Precaution</b> .....	<b>4</b>	
1.1. General guidelines .....	4	
1.2. Caution for fuse replacement .....	4	
<b>2 Warning</b> .....	<b>5</b>	
2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices .....	5	
2.2. Precaution of Laser Diode .....	6	
2.3. Service caution based on legal restrictions .....	7	
<b>3 Service Navigation</b> .....	<b>8</b>	
3.1. Service Information .....	8	
3.2. Caution for DivX .....	8	
<b>4 Specifications</b> .....	<b>9</b>	
<b>5 Location of Controls and Components</b> .....	<b>11</b>	
5.1. Each Buttons .....	11	
<b>6 Operation Instructions</b> .....	<b>13</b>	
6.1. (DVD) Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button .....	13	
6.2. (VHS) Removing Cassette Tape manually .....	15	
<b>7 Service Mode</b> .....	<b>17</b>	
7.1. (DVD) Self-Diagnosis and Special Mode Setting .....	17	
7.2. (VHS) Self-Diagnosis and Special Mode Setting .....	27	
<b>8 Service Fixture &amp; Tools</b> .....	<b>33</b>	
<b>9 Assembling and Disassembling Instructions</b> .....	<b>34</b>	
9.1. Disassembly Flow Chart .....	34	
9.2. P.C.B. Positions .....	35	
9.3. Caution with inserting cassette tape when disassembling the unit .....	36	
9.4. Top cover .....	37	
9.5. Front Panel .....	37	
9.6. Front (L) P.C.B. & Front (R) P.C.B. ....	38	
9.7. DVD drive .....	40	
9.8. DV/SD/USB P.C.B. ....	40	
9.9. Rear Panel, Fan Motor .....	41	
9.10. Digital P.C.B. ....	41	
9.11. VTR Mechanism Unit .....	42	
9.12. Main P.C.B. ....	43	
9.13. Digital I/F P.C.B. ....	43	
<b>10 Measurements and Adjustments</b> .....	<b>44</b>	
10.1. Service Positions .....	44	
10.2. Caution for Replacing Parts .....	48	
10.3. Standard Inspection Specifications after Making Repairs .....	51	
<b>11 Block Diagram</b> .....	<b>53</b>	
11.1. Power Supply Block Diagram .....	53	
11.2. Main P.C.B. Regulator Block Diagram .....	54	
11.3. Analog Video Block Diagram .....	55	
11.4. Analog Audio Block Diagram .....	57	
11.5. Analog Timer Block Diagram .....	58	
11.6. System Control & Servo Block Diagram .....	59	
<b>12 Schematic Diagram</b> .....	<b>61</b>	
12.1. Interconnection Schematic Diagram .....	61	
12.2. Power Supply Section (Power & Digital I/F P.C.B.(1/3)) Schematic Diagram (P) .....	63	
12.3. Digital I/F (1/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF) .....	65	
12.4. Digital I/F (2/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF) .....	66	
12.5. Digital I/F (3/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF) .....	67	
12.6. Digital I/F (4/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF) .....	68	
12.7. Tuner Section (Power & Digital I/F P.C.B.(3/3)) Schematic Diagram (TU) .....	70	
12.8. Video Section (Main P.C.B.(1/4)) Schematic Diagram (V) .....	72	
12.9. VHS Audio Section (Main P.C.B.(2/4)) Schematic Diagram (A) .....	73	
12.10. Syscon/Servo/Timer (1/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S) .....	74	
12.11. Syscon/Servo/Timer (2/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S) .....	75	
12.12. Syscon/Servo/Timer (3/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S) .....	76	
12.13. Syscon/Servo/Timer (4/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S) .....	77	
12.14. I/O Section (1/4) (Main P.C.B.(4/4)) Schematic Diagram (I) .....	79	
12.15. I/O Section (2/4) (Main P.C.B.(4/4)) Schematic Diagram (I) .....	80	
12.16. I/O Section (3/4) (Main P.C.B.(4/4)) Schematic Diagram (I) .....	81	
12.17. I/O Section (4/4) (Main P.C.B.(4/4)) Schematic Diagram (I) .....	82	
12.18. DV/SD/USB Schematic Diagram .....	84	
12.19. Front (L) Schematic Diagram .....	85	
12.20. Front (R) Schematic Diagram .....	85	
<b>13 Printed Circuit Board</b> .....	<b>87</b>	
13.1. Power & Digital I/F P.C.B. ....	87	
13.2. Main P.C.B. ....	92	
13.3. DV/SD/USB P.C.B. ....	97	
13.4. Front (L) P.C.B., Front (R) P.C.B. ....	98	
<b>14 Appendix for Schematic Diagram</b> .....	<b>99</b>	
14.1. Voltage and Waveform Chart .....	99	

14.2. Abbreviations ..... 106  
**15 Parts and Exploded Views ..... 112**

15.1. Exploded Views ..... 112  
15.2. Replacement Parts List ..... 116

# 1 Safety Precaution

## 1.1. General guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

### 1.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between  $1M\Omega$  and  $5.2M\Omega$ .

When the exposed metal does not have a return path to the chassis, the reading must be  $\infty$ .

### 1.1.2. Leakage current hot check (See Figure 1 .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a  $1.5k\Omega$ , 10 watts resistor, in parallel with a  $0.15\mu F$  capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.

4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

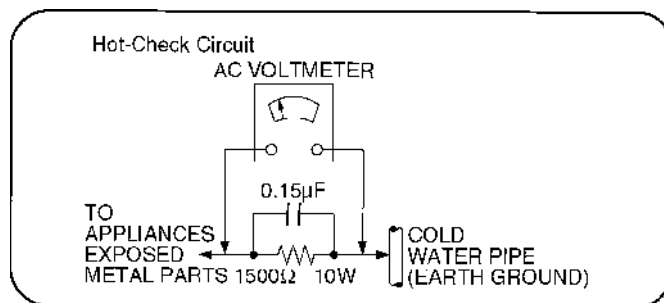


Figure 1

## 1.2. Caution for fuse replacement

(For English)

**CAUTION:**

Replace with the same type fuse:  
(Manufacturer: Hollyland, Type: 50T, 2A, 250V)

## 2 Warning

### 2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

#### Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

#### IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  $\triangle$  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

## 2.2. Precaution of Laser Diode

### CAUTION:

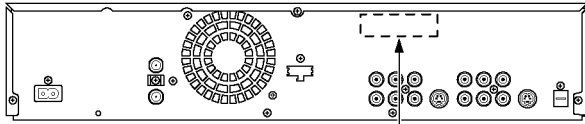
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

Wave length: 662 nm (DVDs)/780 nm (CDs)

Maximum output radiation power from pickup: 100  $\mu$  W/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.



Product complies with DHHS Rules 21 CFR  
Subchapter J in effect at date of manufacture.  
Matsushita Electric Industrial Co., Ltd.  
Kadoma, Osaka, Japan

### ACHTUNG:

Dieses Produkt enthält eine Laserdiode.

Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

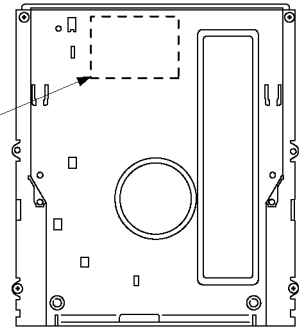
Wellenlänge: 662 nm (DVDs)/780 nm (CDs)

Maximale Strahlungsleistung der Lasereinheit: 100  $\mu$  W/VDE

Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

<b>DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.</b> FDA 21 CFR/Class IIIb	
<b>CAUTION</b> - CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. IEC60825-1 +A2/Class 3B	
<b>ATTENTION</b> - RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 3B, EN CAS D'OUVERTURE. EVITER L'EXPOSITION AU FAISCEAU.	
<b>FORSIGTIG</b> - SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 3B, NÅR LAGET ER ÅBENT. UNDGÅ AT BLIVE UDSAT FOR STRÅLEN.	
<b>VARO</b> - AVATTAESSA OLET ALLTAIN LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTELYÄ, VARO ALTISTUMISTA SÄTEELLE.	
<b>WARNING</b> - KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. UNDVIK EXPONERING FÖR STRÅLEN.	
<b>VORSICHT</b> - SICHTBARE UND UNSICHTBARE LASERSTRALUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.	
<b>注意</b> - 打开时有可见及不可见激光辐射。避免光束照射。	
<b>注意</b> - ここを開くと可視及び不可視レーザー光が出ます。ビームを見たり、触れたりしないでください。VOL1J70	



### CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

## 2.3. Service caution based on legal restrictions

### 2.3.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

#### Definition of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	<b>PbF</b>

#### Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.  
(Definition: The letter of "PbF" is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

#### Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
- RFKZ03D01K----- (0.3mm 100g Reel)  
 RFKZ06D01K----- (0.6mm 100g Reel)  
 RFKZ10D01K----- (1.0mm 100g Reel)

#### Note

\* Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

## 3 Service Navigation

### 3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

1) This service manual does not contain the following information, because of the impossibility of servicing at component level.

- \* Schematic Diagram, Block Diagram and P.C.B. layout of Digital P.C.B..
- \* Parts List for individual parts of Digital P.C.B..
- \* Exploded View and Parts List for individual parts of DVD Drive.

2) The following category are recycle module part. Please send them to Central Repair Center.

- \* Digital P.C.B. (EZ48VP/EZ48VPC/EZ485VP : RFKB79180C)
- \* DVD-RAM Drive (VXY2010)

### 3.2. Caution for DivX

Please will always pass the customer "Warning for Customers Who Use the DivX Video-on-Demand content." with the product and get it when you unavoidably exchange Digital P.C.B. (When the product is exchanged, it is the same.).

You must use print attached to service part (Digital P.C.B.) or must use copy of print below as "Warning for Customers who use the DivX Video-on-Demand content."

Information needed without fail for the customer for whom it is used continuing DivX Video-on-Demand Service to "Manual for the customer" is recorded.

Appendix:

- \* Parts that memorize user's information are only Nor-Flash on Digital P.C.B..
- \* The registration of Registration Code is possible for half a year up to 6 recorders up to 10 recorders a year. Replacement of Digital P.C.B. spends one of this.

Registration Code is memorized in Nor-Flash on Digital P.C.B..

If exchange Digital P.C.B., new registration Code differ from previous Registration Code will be generated.

In this case if your customer uses DivX Video-on-Demand service, he/she will no longer be able to play any content that he/she purchased under that same registration code.

Therefore your customer will need to obtain and register the new registration code.

\*Copy this page and cut on the dotted line and give the lower half to your customer.

#### Warning for Customers who use the DivX Video-on-Demand content.

1. The registration code has been changed for the repair of the product or the product exchange.
2. Obtain and register a new registration code, otherwise you will no longer be able to play DivX Video-on-Demand content.
3. Follow the procedure on the DivX Video-on-Demand web site to register at

<http://vod.divx.com/>

- \* If you do not use the DivX Video-on-Demand content, please ignore this warning.



# 4 Specifications

Power Supply	AC 120 V, 60 Hz				
Power Consumption	Approx. 40 W				
Power Consumption in standby mode	Approx. 3.5 W (Shipping Condition) Approx. 1 / 6 W (User Setting: Quick Start:ON)				
Recording system:	DVD-RAM: DVD Video Recording format DVD-R: DVD Video format DVD-R DL (Dual Layer): DVD Video format DVD-RW: DVD-Video format ±: VR format ±DL (Double Layer): VR format ±RW: VR format				
Optical pickup:	System with 1 lens, 2 integration units (wavelength: 662 nm for DVDs, 780 nm for CDs)				
Recordable discs	DVD-RAM: 2x SPFFD (Ver. 2.0) 2-3x SPCED (Ver. 2.1) 2-5x SPCED (Ver. 2.2)				
	DVD-R (SL): 1x SPFFD (Ver. 2.0) 1-4x SPFFD (Ver. 2.0) 1-8x SPFFD (Ver. 2.0) 1-16x SPLLD (Ver. 2.1)				
	DVD-R (DL): 2-4x SPFFD (Ver. 3.0) 2-8x SPFFD (Ver. 3.0)				
	DVD-RW: 1x SPFFD (Ver. 1.1) 1-2x SPLLD (Ver. 1.1) 2-4x SPLLD (Ver. 1.2) 2-6x SPCED (Ver. 1.2)				
	±R (SL): 2-4x SPFFD (Ver. 1.0) 2-4-4x SPFFD (Ver. 1.1) 2-4-8x SPCED (Ver. 1.2) 2-4-16x SPCED (Ver. 1.3)				
	±R (DL): 2-4x SPFFD (Ver. 1.0) 2-4-8x SPFFD (Ver. 1.1)				
±RW (DL): 2-4x SPLLD (Ver. 1.1) 2-4-4x SPCED (Ver. 1.2)					
Playable discs	DVD-RAM: DVD Video Recording format DVD-R: DVD-Video format, DivX, MP3, JPG DVD-R DL (Dual Layer): DVD Video format, DivX, MP3, JPLG DVD RW: DVD Video format, ±: DVD Video Recording format ±: DVD Video format, +VR format ±DL (Double Layer): DVD Video format, +VR format, ±RW: DVD-Video format, +VR format DVD-Audio (CD-DA), CD-R (CD DA, MP3, JPF-C, DivX)				
Others:	Region code: 1				
Recording time:	Max. 9 Hours (Using 4.7 GB disc) XP: Approx. 1 hour SP: Approx. 2 hours LP: Approx. 4 hours ±P: Approx. 6 hours/8 hours Approx.				
LASER Spec.	Recording Mode:	DVD-RAM 4.7GB	DVD-R/RW 8.2GB (Double Sided)	DVD-R DL ± RW 4.7GB	DVD-R DL ± DL 8.5GB
	XP High picture quality recording mode	1 hour	2 hours	1 hour	1 hour 45 minis
	SP Standard recording mode	2 hours	4 hours	2 hours	3 hour 35 minis
	LP Long recording mode	4 hours	8 hours	4 hours	7 hours 10 minis
	LP Extra long recording mode(8hours)	6 hours	12 hours	6 hours	10 hours 45 minis
	LP Extra long recording mode(8hours)	8 hours	16 hours	8 hours	14 hours 20 minis
Class 1 LASER Product:	Wave length: 780 nm (CDs), 662 nm (DVDs) Laser Power: No hazardous radiation is emitted with the safety protector				
VHS	Recording format:	VHS Video Cassette System Standard with FM audio			
	Heads:	4 helical scan heads for video 2 helical scan heads for FM audio 1 fixed head for Normal audio			
	Tape speed/recording time:	SP: 33.35 mm/s, 120min FP: 11.17 mm/s, 360 min (with T-120 cassette)			
	FF/REW time:	FF/REW: Approx. 60 s (with T-120 cassette) JolifREW: Approx. 43 s (with T-120 cassette)			
Television system	TV system:	NTSC system, 525 lines, 30 fields			
	Antenna reception input: RF converter output:	Analog TV Channel: 2 ch - 69 ch Analog CATV Channel: 1 ch - 135 ch Digital V Channel: 2 ch - 69 ch Digital CATV Channel: 1 ch - 35 ch Provide 3 ch or 4 ch			
HiDVI output	19pin type A x 1 (480i/480P/720P/1080i/1080P) · This unit supports "HDMI Control 3" function.				

Video:	Recording system: (for DVD) MPF-G2 (Hybrid VBR)
	Input: LINE (pin jack) x 2 1.0 Vp-p; 75 ohm S connector x 2 Y: 1.0 Vp-p; 75 ohm C: 0.296 Vp-p; 75 ohm Output: (for DVD PRIORITY 1) LINE (pin jack) x 2 1.0 Vp-p; 75 ohm S connector x 1 Y: 1.0 Vp-p; 75 ohm C: 0.296 Vp-p; 75 ohm Component video output: (for DVD PRIORITY) Y, Pb, Pr x 1 (480i/480P/720P/1080i) Y: 1.0 Vp-p; 75 ohm Pb: 0.7 Vp-p; 75 ohm Pr: 0.7 Vp-p; 75 ohm
Audio:	Recording system: (for DVD) Dolby Digital (2 ch)
	Analog Input: LINE (pin jack) x 2 Reference input: 309 mVrms FS: 2 Vrms (1k Hz, 0dB) input impedance: 22 k ohm Analog Output: (for DVD PRIORITY 1) LINE (pin jack) x 2 Reference output: 309 mVrms FS: 2 Vrms (1k Hz, 0dB) Output impedance: 1 k ohm (Load impedance: 10 k ohm) Number of channels: (for DVD) Recording: 2 channels Playback: 2 channels Number of track (for VHS): High: 2 track Normal: 1 track Digital Output: (for DVD PRIORITY) Digital audio optical output connector x 1 (PCM, Dolby Digital, DTS)
DVD / VHS Common	Recording system: (for DVD) Dolby Digital (2 ch)
	Analog Input: LINE (pin jack) x 2 Reference input: 309 mVrms FS: 2 Vrms (1k Hz, 0dB) input impedance: 22 k ohm Analog Output: (for DVD PRIORITY 1) LINE (pin jack) x 2 Reference output: 309 mVrms FS: 2 Vrms (1k Hz, 0dB) Output impedance: 1 k ohm (Load impedance: 10 k ohm) Number of channels: (for DVD) Recording: 2 channels Playback: 2 channels Number of track (for VHS): High: 2 track Normal: 1 track Digital Output: (for DVD PRIORITY) Digital audio optical output connector x 1 (PCM, Dolby Digital, DTS)
	DVD (DivX), CD (DivX)
	Plays all versions of DivX video (including DivX 6) with standard playback of DivX media files. Certified to the DivX Home Theater Profile. GMC (Global Motion Compensation) is not supported.
	DVD (DivX), CD (DivX) Common Items
	Maximum number of folders: 300 Recognizable folders per disc on this unit (including the root folder) Maximum number of DivX files: 200 Recognizable DivX files per disc on this unit*1 *1 Total number of recognizable file including MP3, JPG, DivX and other type of files is 4000.
	DVD (MP3), CD (MP3)
	Format: ISO9660 level 1 or 2 (except for extended formats), Jolif Compatible compression rate: 32kbps ~ 320kbps Compatible sampling rate: 16kl Hz, 22.05kl Hz, 24kl Hz, 32kl Hz, 44.1kl Hz, 48kl Hz This unit is not compatible with ID3 tags.
	DVD (JPEG), CD (JPEG)
	Format: ISO9660 level 1 or 2 (except for extended formats), Jolif Compatible pixels: between 34 x 34 and 6744 x 4096 pixels Sub sampling 4:2:2 or 4:2:0 This unit is not compatible with MCT ON JPEG.
DVD (MP3), CD (MP3), CD (JPEG) Common Items	
Maximum number of folders: :99 Recognizable folders per disc on this unit (including the root folder) Maximum number of files: :999 Recognizable files per disc on this unit (total number for all the MP3, CD, JPEG) and other type of files.) This unit is compatible with multi session This unit is not compatible with packet writing	
DVD (JPEG) Items	
Maximum number of folders: :300 Recognizable folders per disc on this unit (including the root folder) Maximum number of JPEG files: :3300 Recognizable JPEG files per disc on this unit (Total number of recognizable file including MP3, JPEG, DivX and other type of files is 4000.) This unit is compatible with multi-session This unit is not compatible with packet writing.	

USB	
USB Port	Type A x 1
USB standard Format	USB 2.0 Full Speed FAT16, FAT32
DivX	
Plays all versions of DivX video (including DivX 6) with standard playback of DivX media files. Certified to the DivX Home Theater Profile. GMC (Global Motion Compensation) is not supported.	
DivX Items	
Maximum number of folders	300 Recognizable folders per disc on this unit (including the root folder)
Maximum number of DivX files	200 Recognizable DivX files per disc on this unit *6
MP3	
Compatible compression rate	32kbps - 320kbps
Compatible sampling rate	16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz
This unit is not compatible with ID3 tags.	
MP3 Items	
Maximum number of folders	99 Recognizable folders per disc on this unit (including the root folder)
Maximum number of files	999 Recognizable files per disc on this unit *6
JPEG	
Compatible pixels	between 34x34 and 6144x4096 pixels Sub Sampling 4:2:2 or 4:2:0
This unit is not compatible with MOTION JPEG.	
JPEG Items	
Maximum number of folders	300 Recognizable folders per disc on this unit (including the root folder)
Maximum number of JPEG files	3000 Recognizable JPEG files per disc on this unit *6

\*6 : Total number of recognizable file including MP3, JPEG, DivX and other type of files is 4000.

DV Input	IEEE 1394 Standard, 4pin x 1
SD Card Slot	SD Memory Card Slot x 1
Compatible media	SD Memory Card* *Includes miniSD Cards (A miniSD adaptor needs to be inserted.) and SDHC compatible card (Class is not supported.)
Format	FAT12, FAT16* (In case of SD Memory Card), FAT32* (In case of SDHC Memory Card) *Long file names unsupported.
Still picture (JPEG)	
Image File Format	JPEG Conforming DCF (Design rule for Camera File system); Sub sampling 4:2:2 or 4:2:0.
Number of pixels	34 x 34 pixels to 6144 x 4096 pixels
Quick Start for Recording (Quick Start: ON)	1 Sec. Quick Start for Recording on DVD-RAM* *From the power off state, recording on DVD-RAM starts about 1 second after first pressing the Power button and then sequentially pressing the REC button (Quick Start Mode).
Dimensions (W) x (H) x (D)	Approx. 430 (W) x 84 (H) x 37.5 (D) mm [Approx. 16.929" (W) x 3.307" (H) x 1.476" (D)]
Mass	Approx. 5.4 kg (11.90 lbs)
Operating Temperature	5 °C - 40 °C (41 °F - 104 °F)
Operating Humidity	35%–80% RH (no condensation)
Clock unit	Quartz - controlled 12 - hour digital display
Solder	This model uses lead free solder (Pb free).

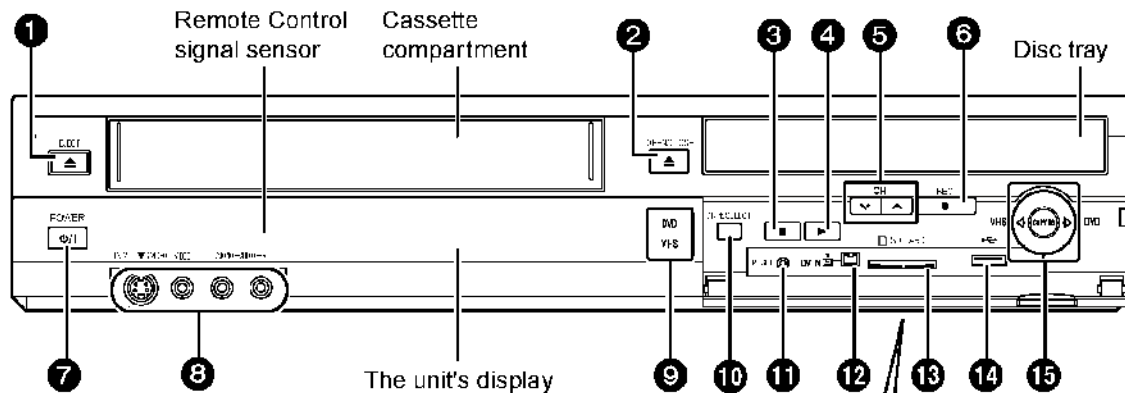
**Notes: Mass and dimensions are approximate.**

**Specifications are subject to change without notice.**

## 5 Location of Controls and Components

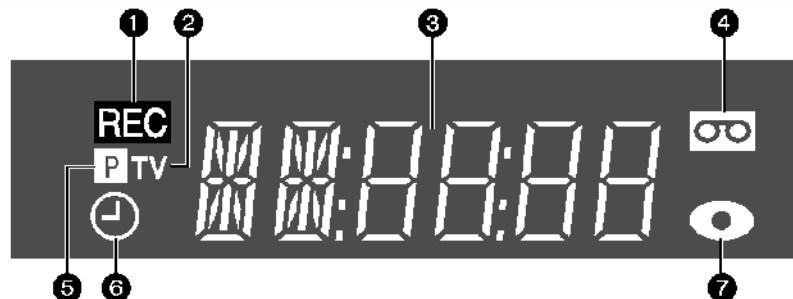
### 5.1. Each Buttons

#### Main Unit



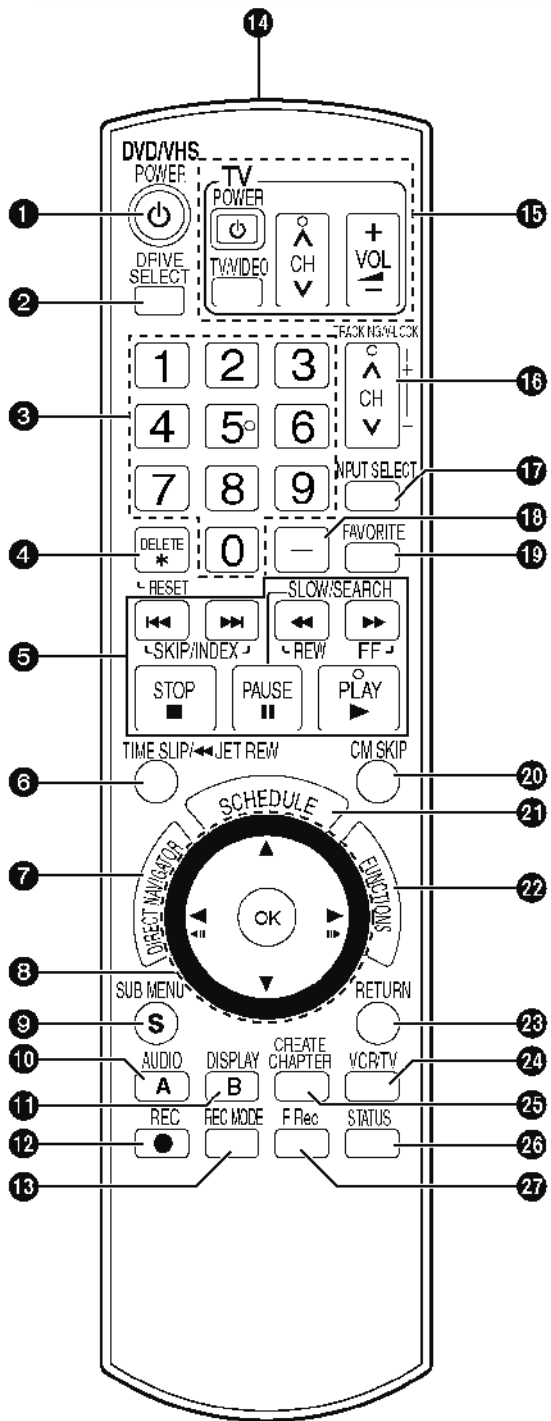
- |  |   |
|--|---|
| <p>❶ Cassette eject button</p> <p>❷ Disc tray open/close button</p> <p>❸ Stop button</p> <p>❹ Play/x 1.3 button</p> <p>❺ Channel Select button</p> <p>❻ Recording button</p> <p>❼ DVD/VHS POWER on/off button<br/>(⏻ / ⏻ POWER)</p> <ul style="list-style-type: none"> <li>• Press to switch the unit from on to standby mode or vice versa. In the standby mode, the unit is still consuming a small amount of power.</li> </ul> <p>❽ IN2 input terminals</p> | <p>❾ DVD/VHS drive indicator</p> <ul style="list-style-type: none"> <li>• Lights when the DVD or VHS drive is selected</li> </ul> <p>❿ DRIVE SELECT button</p> <ul style="list-style-type: none"> <li>• Drive changes each time you press [DRIVE SELECTED].</li> </ul> <p>⓫ Reset button</p> <p>⓬ DV IN terminal (for a digital video camcorder)</p> <p>⓭ SD CARD Slot</p> <p>⓮ USB port</p> <p>⓯ One Touch Copying operation button</p> <ul style="list-style-type: none"> <li>• From VHS to DVD</li> <li>• From DVD to VHS</li> </ul> |
|--|---|

#### The Unit's Display



- |  |   |
|--|---|
| <p>❶ Recording indicator</p> <p>❷ TV indicator</p> <p>The indicator lights during TV mode and it goes out during VCR mode. You can switch the mode by using [VCR/TV]</p> <p>❸ Main display section</p> <p>❹ Tape indicator</p> <p>❺ Progressive indicator</p> <p>This indicator lights up when you select "24p" in "Progressive/24p"</p> | <p>❻ Scheduled recording indicator</p> <p>On:</p> <p>When a scheduled recording program is registered and a recordable disc or tape is inserted.</p> <p>Flashes:</p> <p>The scheduled recording indicator flashes when the unit cannot go to scheduled recording standby (e.g. there is no disc or tape, etc). It does not flash if Quick Start is off.</p> <p>❼ Disc indicator</p> <p>This indicator lights up when a disc that is supported by this unit is inserted.</p> |
|--|---|

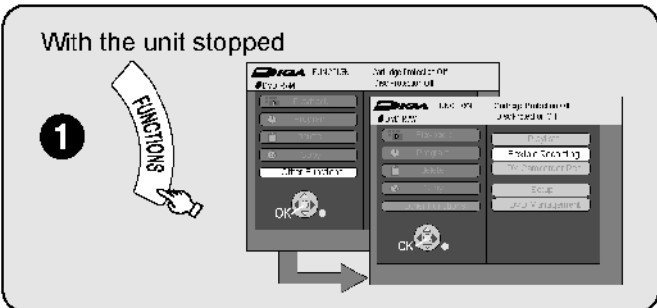
# Remote Control



- 1 Turn the unit on or off
- 2 Select drive (DVD, VHS or SD)
- 3 Select channels and recording numbers etc./  
Enter numbers
- 4 Delete /Reset the tape counter
- 5 Basic operations for recording and play
- 6 Skip the specified time/  
Jet rewind button
- 7 Direct Navigator
- 8 Selection/ OK, Frame-by-frame
- 9 Show sub menu
- 10 Select audio  
[A] for Recordings screen
- 11 Show DVD on-screen menu  
[B] for Album View screen
- 12 Start recording
- 13 Change recording mode
- 14 Transmission window
- 15 TV and Set Top Box operations
- 16 Channel select/TRACKING/V-LOCK
- 17 Input select (TV, IN1, IN2, DV)
- 18 Sub channel access for digital broadcasts
- 19 Favorite
- 20 Skip 1 minute forward
- 21 Show scheduled recording list
- 22 Show FUNCTIONS window .....(→ below)
- 23 Return to previous screen
- 24 Select VCR/TV
- 25 Create chapters
- 26 Show status messages
- 27 Start Flexible Recording

# FUNCTIONS Window

By using the FUNCTIONS window you may access the main functions quickly and easily.



**2** ▲, ▼ to select a menu item, then OK

- If you select "Other Functions", press [▲, ▼] to select a menu item and press [OK].

## 6 Operation Instructions

### 6.1. (DVD) Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

#### 6.1.1. (DVD) Forcible Disc Eject

##### 6.1.1.1. (DVD) When the power can be turned off.

1. Turn off the power and press [STOP], [CH UP] keys on the front panel simultaneously for 5 seconds.

##### 6.1.1.2. (DVD) When the power can not be turned off.

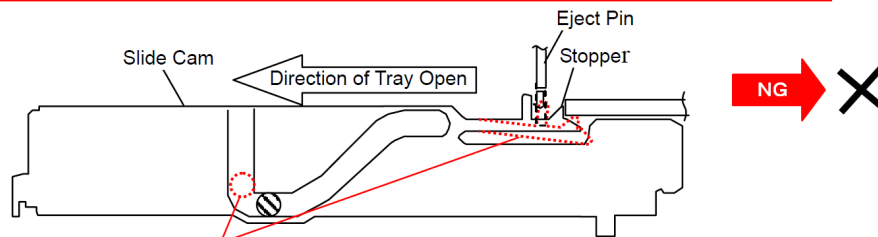
1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

#### 6.1.2. (DVD) When the Forcible Disc Eject can not be done.

#### Caution!

- 1: If you push strong and move the Slide Cam to counter direction of the arrow, the Stopper will be bended and Slide Cam won't stop at Stopper and will reach position for taking out Traverse Base. And Traverse Base might fall down later.

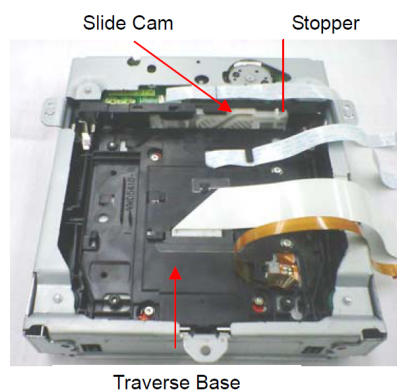
**Absolutely, please do not move Slid Cam in the counter direction of the arrow.**



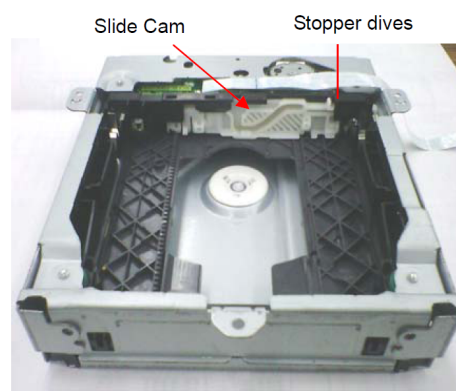
#### **NG Position (Traverse Base might fall down later)**

**If you move the Slide Cam to counter direction of the arrow, Slide Cam won't stop at Stopper and will reach position for taking out Traverse Base. And Traverse Base might fall down later.**

**Before fall down of Traverse Base**



**After fall down of Traverse Base**

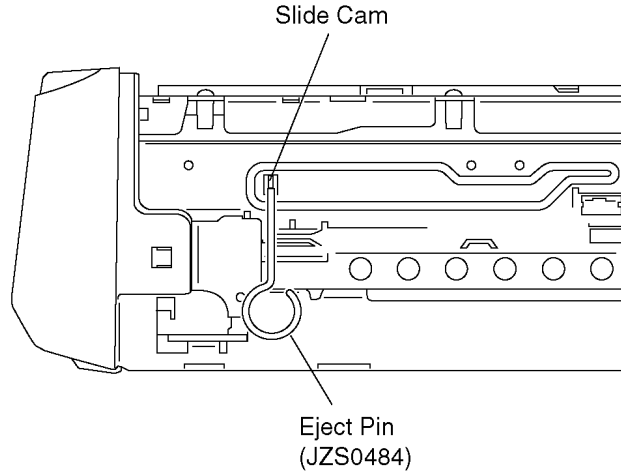


- 2: Moreover, the slide cam will be on irregular position against condition of the shipment if the tray is pushed by the hand after manual tray ejection is done, the hold of traverse Base becomes imperfect, and the danger of fall of traverse Base increases.

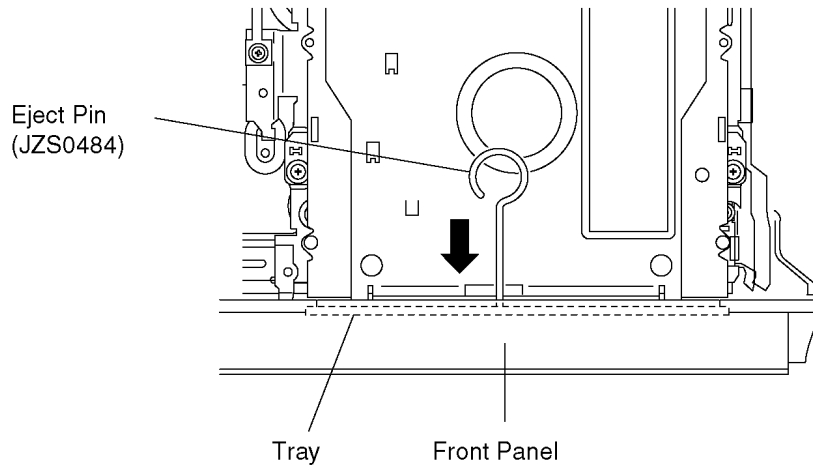
**Absolutely, complete close of tray by electricity** after manual tray ejection was done.

(Especially finish CLOSE function of tray by electricity when the product will be transported after inspection.)

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Push in SLIDE CAM by Eject Pin(JSJ0484) or minus screw driver (small) to eject tray slightly.



4. Push out Tray by Eject Pin (JZS0484) or minus screw driver (small).



## 6.2. (VHS) Removing Cassette Tape manually

When the cassette tape could not be uninstalled from an electrical malfunction, there are 2 ways to remove a cassette tape.

### 6.2.1. (VHS) Removal by compulsory unloading.

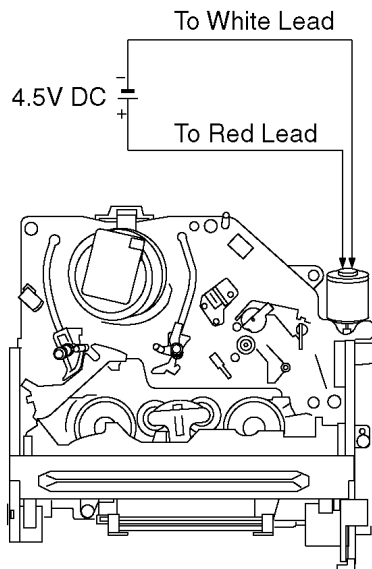
If Service Mode can be activated when the power can not be turned on, this operation is able.

1. Press [STOP] and [CH UP] button simultaneously for more than 5 seconds.

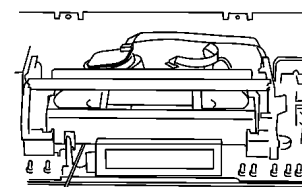
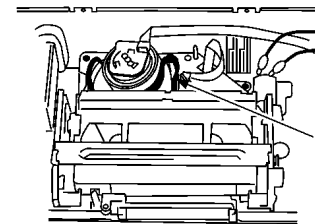
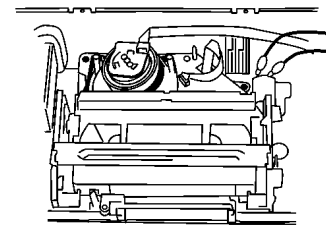
### 6.2.2. (VHS) Removal by manual operation by rotating the Loading Motor with the batteries.

1. Disconnect the AC plug, and remove the Top Panel and the Front Panel by referring to the Disassembly Procedures.
2. Connect three batteries (1.5V spec.) to the Loading Motor in series for supplying 4.5V to rotate the Loading Motor as shown below.

#### CONNECTION for UNLOADING

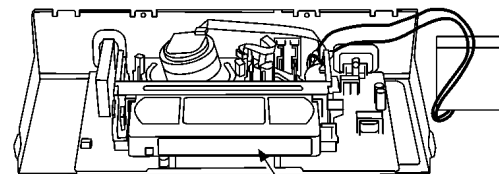


3. Stop unloading just before unloading will be completed as shown below, and then the tape becomes slack as shown below.
4. Rotate the S-Reel by a small minus screwdriver to remove the slack tape as shown below.



Minus Screw Driver (Small)

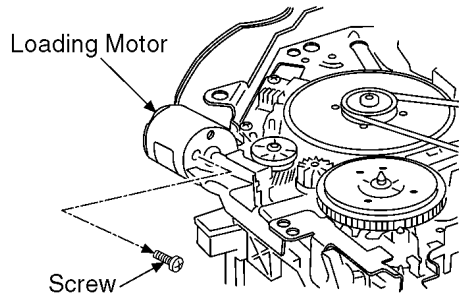
5. Then unload again to remove the cassette tape as shown below.



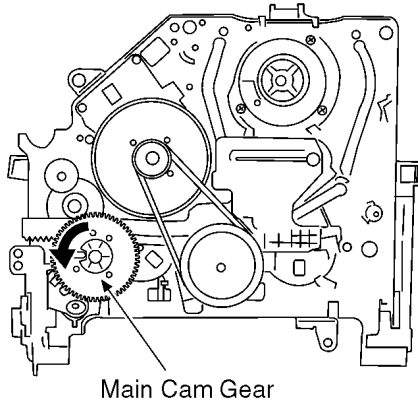
Cassette Tape

### 6.2.3. (VHS) Take out Cassette Tapemanually after removing the mechanism

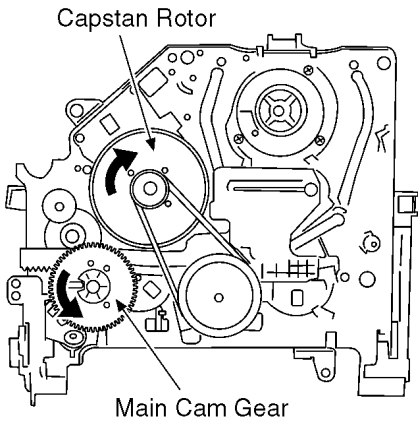
1. Disconnect the AC plug, and remove the Top Case, Front Panel and the Mechanism by referring to "9 Assembling and Disassembling Instructions"
2. Remove the Screw and remove the Loading Motor as shown below.



3. Rotate the Main Cam Gear counter-clockwise until just before the unloading will be completed as shown below. .

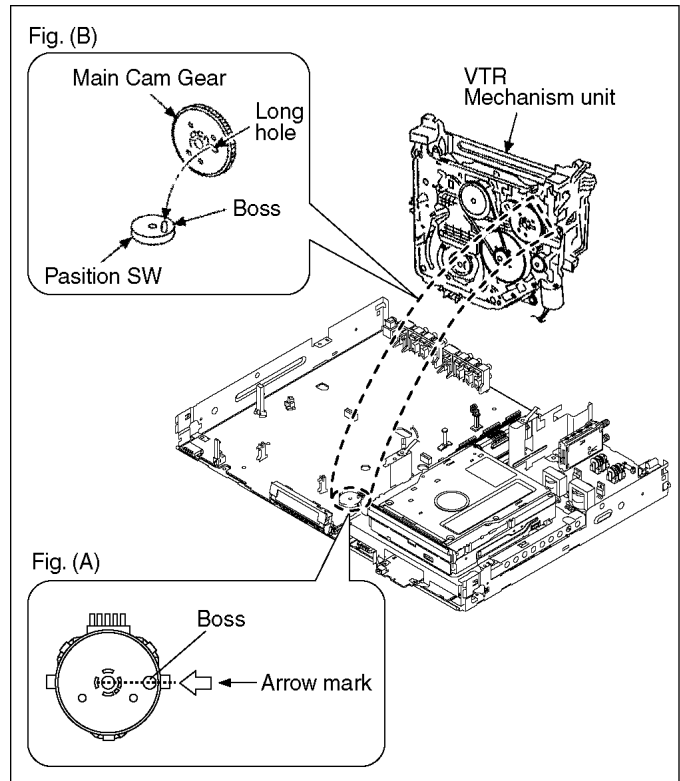


4. Rotate the Capstan Motor clockwise to remove the slack tape as shown below.  
 5. Rotate the Main Cam Gear counter-clockwise again to remove the cassette-tape as shown below.



6. Attach Loading Motor and tighten the screw.

7. Set the Position Switch to EJECT POSITION certainly and attach the mechanism to chassis as shown below.





## 7 Service Mode

### 7.1. (DVD) Self-Diagnosis and Special Mode Setting

#### 7.1.1. (DVD) Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

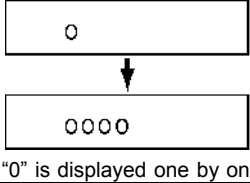
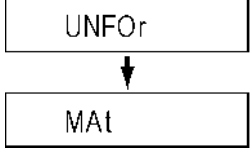
**U\*\*, H\*\* and F\*\* are stored in memory and held.**

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

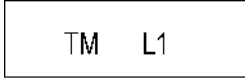

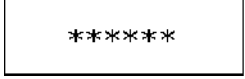
Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">RC *</div> <p>“*” is remote controller code of the main unit. Display for 5 seconds.</p>
U59	Abnormal inner temperature detected	Display appears when the drive has abnormal temperature. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U59</div> <p>“U59 is displayed for 30 minutes.</p>
U61	The unit is carrying out its recovery process. (with no disc in the disc tray)	<ul style="list-style-type: none"> <li>The unit detected an error while recording or playing with no disc in the disc tray.</li> <li>The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</li> </ul>	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U61</div>
U72	HDMI connection error (communication error)	This error is displayed when there are any communication problems with the unit and the equipments (TV, amplifier etc.) connected to the unit by HDMI. (or when there is a problem with the HDMI cable)		<div style="border: 1px solid black; padding: 5px; text-align: center;">U72</div> <p>U72 display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.</p>
U73	HDMI connection error (authentication error)	When authentication error occurs while the equipments (TV, amplifier etc.) are connected by HDMI. (or when there is a problem with the HDMI cable)	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U73</div> <p>U73 display disappears when error has been solved by Power OFF/ON of connecting equipment or by inserting/removing of HDMI cable.</p>
U76	Injustice disc error	HDMI cannot output because you are connected to a model that does not support copyright protection.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U76</div>
U88	The unit is carrying out its recovery process. (with a disc in the disc tray)	<ul style="list-style-type: none"> <li>The unit detected an error while recording or playing with a disc in the disc tray.</li> <li>The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</li> </ul>	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U88</div>
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	<div style="border: 1px solid black; padding: 5px; text-align: center;">U99</div> <p>Displayed is left until the [POWER] key is pressed.</p>
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
F09	Serial Communication Error between VHS Microprocessor and Timer Microprocessor.	Please confirm Serial Communication terminal of Microprocessor. <b>NOTE:</b> If F09 appears just after updating Firmware, pull off and insert AC plug, then it will disappear.	No display	F09
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F60	DVD module has not been started.	Defect of Digital P.C.B. Mode: No change	No display	F60
HDMI	HDMI connection check	This unit is confirming that it is connected with equipment compatible with HDAVI control.	No display	HD 771
F74	HDIM Device Key Communication error.	HDMI connection could not be authenticated due to a transfer malfunction. Factor of HDMI Device key-road failure · When HDMI LSI is damaged. · When the bus line of I2C doesn't operate normally. · When device key information recorded is damaged.	No display	F74
F75	HDIM Device Key Information error	HDMI connection could not be authenticated due to an internal data malfunction. Factor of HDMI Device key-road failure · When HDMI LSI is damaged. · When the bus line of I2C doesn't operate normally. · When device key information recorded is damaged.	No display	F75
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	"This disc is incompatible."	UNSUP ↓ Port Display for 5 seconds.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	"Cannot read. Please check the disc."	NO ↓ REAd
HARD ERR	Drive error	The drive detected a hard error.	"DVD drive error."	Display for 5 seconds. HARd ↓ Err
No REC	Recording is impossible	[No REC] is displayed when recording is impossible due to the defect, dirt or wound of media.	No display	WR ItE ↓ Err
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B.	No display	0 ↓ 0000 "0" is displayed one by one.

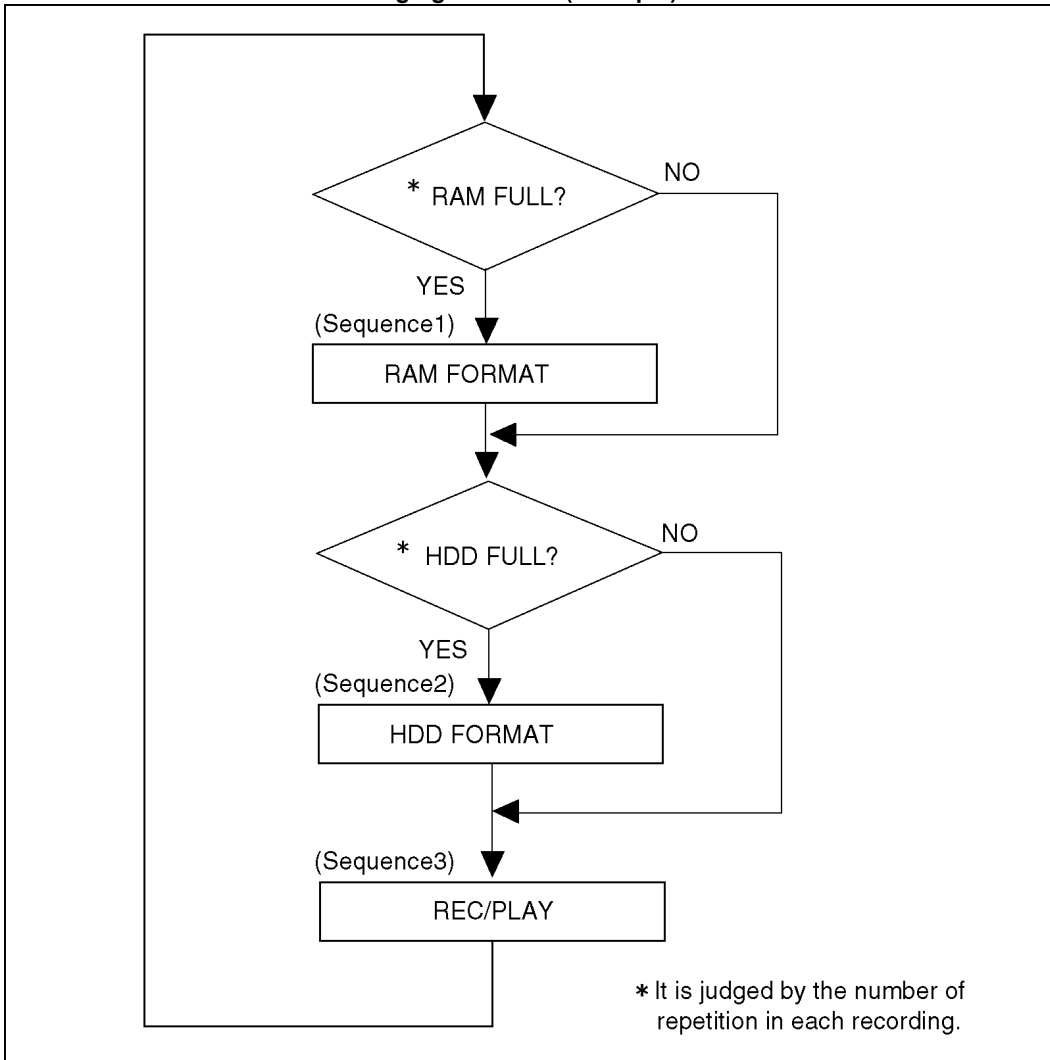
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. "BYE" is displayed and power will be turned off. In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.	No display	 <p>"0" is displayed one by one.</p>
UNFORMAT	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment.	<div style="border: 1px solid black; padding: 2px; width: fit-content;">           Format            This disc is not formatted properly.            Format the disc in DISK MANAGEMENT?         </div>	

## 7.1.2. (DVD) Special Modes Setting

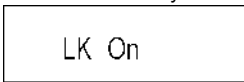

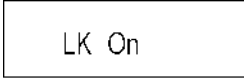

Item		FL display	Key operation
Mode name	Description		Front Key
TEST Mode	*All the main unit's parameters are initialized.		Press [VHS to DVD COPYING], [REC] and [OPEN/CLOSE] keys simultaneously for five seconds when power is off.
Rating password	The audiovisual level setting password is initialized to "Level 8".	No display	When the power is on (E-E mode). While the tray is open, press [REC] and [PLAY] simultaneously for 5 seconds.
Service Mode	Setting every kind of modes for servicing. *Details are described in "7.1.3. (DVD) Service Modes at a glance".		When the power is off, press [VHS to DVD COPYING], [OPEN/CLOSE] and [STOP] keys simultaneously for 5 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *During Schedule Recording, Forced disc eject is invalid. While Demonstration Lock is being set, this Forced disc eject function is not accepted.	The display before execution leaves. 	When the power is off, press [STOP] and [CH UP] keys simultaneously for 5 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Schedule Recording is ON, execute "Forced Power-off" after releasing Schedule Recording.	Display in P-off mode.	Press [POWER] key over than 10 seconds.
Aging	Perform sequence of modes as * Aging Description shown below continually. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Caution:</b>            All programs in DVD-RAM disc will be deleted because Formatting is done once in Aging process.         </div>	Display following the then mode.	Set DRIVE SELECT to DVD. When the power is ON, press [CH DOWN], [VHS to DVD COPYING] and [OPEN/CLOSE] simultaneously for over 5 seconds and less than 10 seconds. <b>NOTE1:</b> If Unit has not turned into Aging mode by operations shown above, execute TEST MODE once and re-execute operation shown above. (*All the main unit's parameters are initialized by TEST mode.) <b>NOTE2:</b> If the unit has hung-up because of pressing keys for over 10 seconds, once turn off the power, and re-execute this command. *When releasing Aging mode, press [POWER] key, AC-OFF.

Item		FL display	Key operation
Mode name	Description		Front Key

**Aging Contents (Example):**



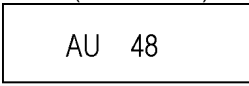
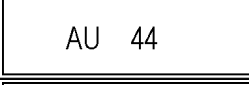
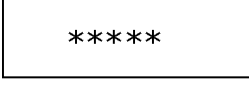
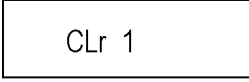
- \*XP mode . . . . . repeat once
- SP mode . . . . . repeat 2 times
- LP mode . . . . . repeat 4 times
- EP mode . . . . . repeat 12 times

Item		FL display	Key operation
Mode name	Description		Front Key
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by "Main unit initialization" of service mode.	*When lock the tray.  "LOCK" is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds. *The time difference of simultaneous key pressings should be within 0.5 sec. <b>Note1:</b> When a disc is not in tray, this setting is not effective. <b>Note2:</b> Time difference between pressing of [STOP] and [POWER] should be within 0.5 seconds.
		*When unlock the tray.  "UNLOCK" is displayed for 3 seconds.	When the power is on and tray being locked, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When press OPEN/CLOSE key while the tray being locked.  Display "LOCK" for 3 seconds.	Press [OPEN/CLOSE] key while the tray being locked.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. 	When the power is on (E-E mode), press [STOP] and [VHS to DVD COPYING] simultaneously for 5 seconds.
ATP Initialization	ATP setting and all parameters (including clock) are initialized, and the unit turns off automatically.	It is same with display in stop mode.	When the power is on (E-E mode), press [CH UP] and [CH DOWN] simultaneously for 5 seconds.

### 7.1.3. (DVD) Service Modes at a glance

Service mode setting: While the power is off, press [STOP], [VHS to DVD COPYING] and [OPEN / CLOSE] simultaneously for five seconds.

Item		FL display	Key operation (Remote controller key)
Mode name	Description		
Release Items	Item of Service Mode executing is cancelled.	SM	Press [0] [0] or [Return] in service mode.
ROM Version Display	1. Region code (displayed for 5 sec.) 2. Main firm version (displayed for 5 sec.) 3. Timer firm version (displayed for 5 sec.) 4. Drive firm version (displayed for 5 sec.) 5. ROM correction version (displayed for 5 sec.) 6. VHS Microprocessor version (displayed for 5 sec.) 7. VHS ROM correction version (left displayed)	1. NO* 2. ***** 3. ***** 4. **** 5. *** 6. **** 7. ** * are version displays.	Press [0] [2] in service mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WH it	Press [1] [1] in service mode.
		Switch Interlace/Progressive WH it P	Press [1] [4] in White Picture Output mode. *I/P are switched alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE	Press [1] [2] in service mode.
		Switch Interlace/Progressive MAGE P	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is "Interlace". *This command is effective during executing "White Picture Output", "Magenta Picture Output" and mode.	Initial mode is Interlace SM P Switch Interlace/Progressive SM I	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	X T	Press [2] [1] in service mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	D T	Press [2] [2] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) 	Press [2] [3] in service mode.
		Audio 44.1kHz/48kHz switching 	Press [2] [4] in Audio Pattern Output mode. *48 kHz / 44.1 kHz are switched alternately.
Laser Used Time Indiction	Check laser used time (hours) of drive.	  ●(*****) is the used time display in hour. ●Laser used time of DVD/ CD in Playback/Recording mode is counted.	Press [4] [1] in service mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.		Press [9] [5] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive.	<p>1. Error Number is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">NO **</div> <p>2. Time when the error has occurred (1/2) is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">YYMMDD</div> <p>YY: Year MM: Month DD: Day</p> <p>3. Time when the error has occurred (2/2) is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">hhmmss</div> <p>hh: Hour mm: Minute ss: Second</p> <p>4. Last Drive Error code No.1 is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">***** ↑</div> <p>03: Bad disc 04: Bad disc or drive malfunction</p> <p>5. Last Drive Error code No.2 (1/2) is displayed for 5 seconds. (This Error Code is unnecessary for service.)</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">****</div> <p>6. Last Drive Error code No.2 (2/2) is displayed for 5 seconds. (This Error Code is unnecessary for service.)</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">****</div> <p>7. Error occurring Disc type is displayed for 5 seconds.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">DISC *</div> <p>DISC 1: DVD DISC 2: CD DISC 3: DVD-RAM 2.6GB DISC 4: DVD-RAM 4.7GB DISC 5: DVD-R DISC : Unknown Disc</p> <p>8. Unused (No display)</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> </div> <p>9. Factor of Drive Error occurring is left displayed</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">*****</div>	Press [4] [2] in service mode. When "INFO*****" is being displayed, past 99 error histories can be displayed by pressing [0] [1] - [9] [9]
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">CLr 2</div>	Press [9] [6] in service mode.



Item		FL display	Key operation															
Mode name	Description		(Remote controller key)															
Laser power confirmation	Drive state is judged based on difference between laser power value at shipping and present laser power value.	<div style="border: 1px solid black; padding: 5px; text-align: center;">TEST *</div> <p>* is judgment result</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 40%;">Power value difference</th> <th style="width: 50%;">Evaluation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1mW or less</td> <td>Very good.</td> </tr> <tr> <td>1</td> <td>2mW or less</td> <td>Good.</td> </tr> <tr> <td>2</td> <td>3mW or less</td> <td>Bad.</td> </tr> <tr> <td>3</td> <td>4mW or more</td> <td>Very bad.</td> </tr> </tbody> </table> <p>If DVD-RAM disc is not inserted, [NO DISC] is displayed. If power value study was filed, [ERROR] is displayed.</p>		Power value difference	Evaluation	0	1mW or less	Very good.	1	2mW or less	Good.	2	3mW or less	Bad.	3	4mW or more	Very bad.	1. Insert DVD-RAM disc (5×) into RAM Drive in service mode. (Other media are assumed to be non-correspondence.) 2. Press [4] [4].
	Power value difference	Evaluation																
0	1mW or less	Very good.																
1	2mW or less	Good.																
2	3mW or less	Bad.																
3	4mW or more	Very bad.																
Turn on all FL/LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in service mode.															
S1 signal output	Forcibly superimpose the S1 signal (approx. 4.5V DC) on the EE chroma signal, and check the output on the S terminal.	<div style="border: 1px solid black; padding: 5px; font-size: 24px;">S1</div>	Press [5] [2] in service mode.															
S2 signal output	Forcibly superimpose the S2 signal (approx. 2V DC) on the EE chroma signal, and check the output on the S terminal.	<div style="border: 1px solid black; padding: 5px; font-size: 24px;">S2</div>	Press [5] [3] in service mode.															
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <table style="margin: auto;"> <tr> <td style="text-align: center;">0Γ</td> <td style="text-align: center;">**</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">(1)</td> <td style="text-align: center;">(2)</td> </tr> </table> </div> <p>(1) Each time a key is pressed, segment turned on increases one by one. (2) Total number of keys that have been pressed.</p>	0Γ	**			(1)	(2)	Press [5] [4] in service mode. *When finish this mode, press [POWER] for 10 seconds.									
0Γ	**																	
(1)	(2)																	
Production Date Display	Display the date when the unit was produced.	<div style="border: 1px solid black; padding: 5px; font-size: 24px;">YYMMDD</div> <p>YY: Year MM: Month DD: Day</p>	Press [6] [1] in service mode.															
Display the accumulated working time	Display the accumulated unit's working time.	<div style="border: 1px solid black; padding: 5px; font-size: 24px;">*****</div> <p>(Indicating unit: Second)</p>	Press [6] [4] in service mode.															

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. <div style="border: 1px solid black; padding: 5px; text-align: center;">NO ***</div> 01: Defect of Digital P.C.B. (AV DEC / MAIN CPU) 02: Defect of RAM Drive. 03: Defect of Disc. 04: Defect of Digital P.C.B. or Communication Error. 05: Defect of Digital P.C.B. (AV DEC / MAIN CPU)  Display the time when the error has occurred for 5 seconds. <div style="border: 1px solid black; padding: 5px; text-align: center;">DDhhmm</div> DD: Day hh: Hour mm: Minute Accumulated working time till occurring of the error is left displayed. <div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div> (Indicating unit: Second)	Press [6] [5] in service mode. Then press [0] [1] ~ [1] [9], the past 19 error histories are displayed.
Delete the Error History	Delete Error History information stored on the unit.	<div style="border: 1px solid black; padding: 5px; text-align: center;">CLr 3</div>	Press [9] [7] in service mode.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	<div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div> * is number of open/close cycle times.	Press [9] [1] in service mode *When releasing this mode, press the [POWER] button of Remote Controller more than 10 seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	<div style="border: 1px solid black; padding: 5px; text-align: center;">CLr 4</div>	Press [9] [8] in service mode.
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	<div style="border: 1px solid black; padding: 5px; text-align: center;">CLr 5</div>	Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. <div style="border: 1px solid black; padding: 5px; text-align: center;">*****</div>	Press power button on the front panel or Remote controller in service mode.

## 7.2. (VHS) Self-Diagnosis and Special Mode Setting

### 7.2.1. (VHS) Self-Diagnosis Functions

This model has a self-diagnosis and display function. If the VHS section detects trouble during installation or during use, one of the following Error Codes will automatically appear in the display on VHS side. Error Codes are displayed in the form of a single English letter followed by two numbers, as for example "H01".

**Note:**

1. The indication "U" is displayed on the FIP while power remains on.
2. The indication "H" or "F" is displayed on the FIP, and the power is automatically turned off. When the power is turned on again, the Error indication code will disappear and the unit will return to normal display mode (either clock or counter is displayed).
3. This Error indication code will be stored in the microprocessor even after the AC plug being disconnected.  
The two-digit number portion of the stored Error indication code can be re-displayed in "second" display portion (the last 2 digits of the FIP) by placing the unit in Service Mode Number 3. When turning on Service Data Display as for example "01" or "02" etc. If a second error occurs, the most recent error will be displayed and stored until 3 self-diagnosis histories in maximum.
4. To erase the stored Error Code data, Press STOP and EJECT buttons on VCR simultaneously for over 5 seconds in Service Mode 3.

#### Example of Error Indication on the FIP

		U, H or F	0	5
		↓	↓	↓
10min.	1min.	10sec.	1sec.	
Blank	Blank	Management Sign	Service Data No.	

#### Division of Management

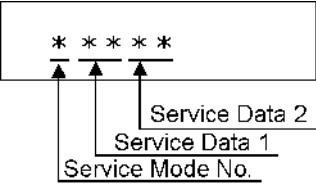
Management Sign	Management Division
U	User can deal with.
H	Shop can deal with.
F	It should be dealt with in service shop.

#### Error Number at a glance

Memory No. (Error No.)	Reason	Automatic display	Memory
H01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)	Yes	Yes
H02	The CAP FG could not be detected.	Yes	Yes
F03	Mechanism lock during without the unloading and the cassette-up.	Yes	Yes
F04	Mechanism lock during unloading	Yes	Yes
F05	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	No	Yes
F06	Mechanism lock during the Cassette-up.	Yes	Yes
F09	Communication Error between VHS Microprocessor (IC6001) and Timer Microprocessor (IC7501)	Yes	Yes
H07	The recording circuit can not be operated in REC mode.	Yes	Yes
H08	The recording circuit is operated in except for REC mode.	Yes	Yes
U11	Cylinder clogs during the PLAY mode.	Yes	Yes
F15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	No	Yes
H16	Detection of the Cylinder lock during the constant rotation	No	Yes
H17	Detection of S-reel lock during the constant tape running	Yes	Yes
H18	Detection of T-reel lock during the constant tape running	Yes	Yes
F20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	Yes	Yes
F21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	Yes	Yes
F22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.)	Yes	Yes
F23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	Yes	Yes
H80	An exceptional ejection depends on a Error	No	Yes

## 7.2.2. (VHS) Special Modes Setting

**NOTE:**  
**OPERATION SELECT should be set to VHS.**

Item		FL display	Key operation
Mode name	Description		Front Key
Tracking Center	Tape Tracking is adjusted to center FIX position.	No display.	During PLAYBACK, press [CH UP] and [CH DOWN] keys simultaneously.
VHS Service Mode	In order to make service easy, a part of inside information of a microprocessor is displayed on FIP. *Details are described in "7.2.3. (VHS) Service Modes".		Press [STOP], and [EJECT] keys simultaneously for 3 seconds when power is off.
Eject	Ejecting Cassette Tape	No display.	While in other than Timer REC mode, press [STOP] key for 3 seconds or press [STOP] key of the Remote Controller for 3 seconds in VHS mode.

## 7.2.3. (VHS) Service Modes

### <Service Mode Setting>

Set OPERATION SELECT to VHS.

When power is OFF, press [STOP] and [EJECT] keys simultaneously for 3 seconds to into Service Mode.

In Service Mode, press [STOP] and [EJECT] keys simultaneously to add Service Number.

### 7.2.3.1. (VHS) Service Mode and Service Data at a glance

Service Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
0	Indication for the inner data of IC6001	VHS mode (Real time)	Process number (Real time)	
		VCR mode (OPM)	Management number of the processing during mechanism shifting	
1	Indication for the inner data of IC6001	Starting / finishing edges detecting data (Real time)	Data of receiving key (Real time)	
		00: Both starting / finishing edges have not been 01: Starting edge is detecting now 02: Finishing edge is detecting now 03: Both starting / finishing edges are detecting now	Indicate the receiving code when the key of VCR or remote controller being operated.	

Service Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
2	Indication for the inner data of IC6001	Mechanism position (Real time) 0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position - : FF/REW position - : Intermediate between each positions	Ordering for the Motors (Real time) 0*, 2*: CYL off, CAP off 1*: CYL off, CAP on (fwd) 3*: CYL off, CAP on (rev) 8*, A*: CYL on, CAP off 9*: CYL on, CAP on (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1: Loading *2: Unloading *3: Break (Load + Unload)	There are next conditions in this mode for enable the mechanism operations without a cassette tape. ● The starting / finishing edges are not detected. ● The reel lock is not detected ● The tape and the positions are not detected. , And so on. Press the EJET key for over 3 seconds in this mode, and then the VCR is shifted into the special modes, such as PG Adjustment, Model Code Setting, and so on. The orders for the motors are as follows. Bit 7: CYL ON/OFF Bit 6: ----- Bit 5: CAP FWD/REV Bit 4: CAP ON/OFF Bit 3: ----- Bit 2: ----- Bit 1: UNLOADING(H) Bit 0: LOADING(H)
3	Self-diagnosis history (1st)	Error number of history 1	Supplementary data 1 and 2 of history 1.	In the Self-Diagnosis Memory, next 3 BYTE is memorized for an Error. 1 BYTE: Its Error number 2 BYTE: Its supplementary data In these modes, the supplementary data 3 and 4 instead of the Error number and supplementary data 1 and 2 are indicated only while pressing STOP key.
4	Self-diagnosis history (2nd)	Error number of history 2	Supplementary data 1 and 2 of history 2.	
5	Self-diagnosis history (3rd)	Error number of history 3	Supplementary data 1 and 2 of history 3.	
6	Indication for the inner data of IC6001	Real time servo data (4 digits) (Real time) Higher rank 1 BYTE of SERVO data	Lower rank 1 BYTE of SERVO data	
7	Manual mechanism operation	Real time mechanism position 0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position - : FF/REW position - : Intermediate between each positions	Real time ordering for the Motors 0*, 2*: CYL off, CAP off 1*: CYL off, CAP on (fwd) 8*, A*: CYL on, CAP off 9*: CYL on, CAP on (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1: Loading *2: Unloading *3: Break (Load + Unload)	Press the STOP key, and then the cassette tape is unloaded.

### 7.2.3.2. Example of FIP

<b>4</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>2</b>
HOUR	10min.	1min.	10sec.	1sec.
Service No.	Service Data 1		Service Data 2	

### 7.2.4. (VHS) Self-Diagnosis History Memory Function

#### 7.2.4.1. (VHS) Condition for memorizing of the self-diagnosis history

1. The self-diagnosis result and the supplementary data are the condition memorized just as an Error is detected.
2. There are the histories from number 1 to number 3.
3. The latest Error is memorized on history number 1, and then the old histories are shifted to the history number 2, 3.
4. Put out data from the memory number 3 by the shift is deleted.
5. If the latest Error is same with the history number 1 (2nd-latest), it is not memorized.

(The same Error number is not memorized in succession)

### 7.2.4.2. (VHS) Condition for clearing the self-diagnosis history

1. A case of that press the STOP key and the EJECT key simultaneously over 5 seconds.

### 7.2.4.3. (VHS) Indication of the self-diagnosis history.

1. The self-diagnosis histories and its supplementary data could be indicated on the FIP with Service mode of number from 3 to 5.
2. The procedure of setting the service mode and the format if the indication are same as usual.

FIP INDICATION:

4	0	3	5	2
Hour of one-digit	Minute of two-digit	Minute of one-digit	Second of two-digit	Second of one-digit
Service mode number	Error number		Supplementary Data	
3	Number of history 1 (The latest)		Supplementary data 1 of history 1	Supplementary data 2 of history 1
4	Number of history 2 (2nd latest)		Supplementary data 1 of history 2	Supplementary data 2 of history 2
5	Number of history 3 (3rd latest)		Supplementary data 1 of history 3	Supplementary data 2 of history 3

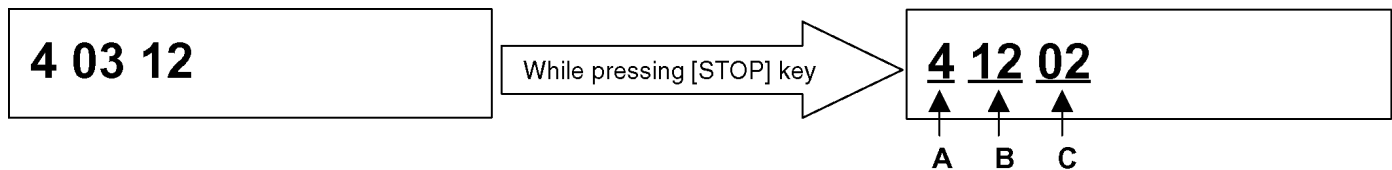
Both the Error numbers and its supplementary data of history 1, 2 and 3 are indicated by selecting the Service mode 3, 4 and 5 as shown above.

In case of that any Error has not been memorized, the Error number and its supplementary data is indicated as " - ".

### 7.2.4.4. (VHS) Display of Supplementary Data 3 and 4

During displaying the Self-Diagnosis History, press [STOP] key on front panel to change the display.

\*Example of Display



**A: Service Mode Number.**

**B: Supplementary Data 3...Mechanism process shifting Number.**

**C: Supplementary Data 4...LM(Loading Motor information)**

\*Display of 4 12 02 means that " Loading Motor turns ON when [EJECT] button was pressed, but an error has occurred while mechanism was between REV position and LOAD position.

#### <Supplementary Data 3>

[EJECT]	[FF]	[REW]
10: PLAY → passing REV 11: passing REV 12: passing REV → LOAD (Capstan STOP) 13: LOAD → DOWN 14: DOWN → EJECT 15: EJECT completion	U0: PLAY → STOP F U1: STOP F → FF U2: FF starting up	A0: PLAY → STOP F A1: STOP → REW A2: REW starting up
[PLAY]	[REC]	[STILL]
20: Cylinder starting up, Phase drawing 21: Audio muting, VV selection	30: Cylinder starting up, Phase drawing 31: REC signal output	40: Turning forward 41: Speed is 0, Capstan is OFF
[P.ON]	[STILL → PLAY]	[CUE]
-- Process of turning on power	48: Tape sending	49: x2 speed sending, Turning point of Calculating remains
[P.OFF]	[CUE → PLAY]	[REV]
70: PLAY → P.OFF	4A: Finishing edge Checking, Tape sending 4-: PLAY Checking, Tape sending	80: PLAY → P.OFF 81: Rewinding P.OFF → REV

**<Supplementary Data 4> (LM Information)**

Result of request of driving Loading Motor.

Display	Description
1	There was no change of mechanism position. (Loading Motor was OFF)
2	There was some change of mechanism position. (Loading Motor was ON)

**7.2.5. (VHS) Description of Self Diagnosis Memory**

In this Self-Diagnosis Function, in case error has occurred continuously, maximum of the newest 3 error data are memorized.

And in order to analyze cause of error, the error number and the supplementary data of mode, mechanism position and so on are memorized.

**7.2.5.1. (VHS) Error Number and Supplementary Data**

The Supplementary Data as shown below are memorized to each error number.

Error No.	Reason	Supplementary Data			
		Data 1	Data 2	Data 3	Data 4
01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)	VHS mode	-	-	-
02	The CAP FG could not be detected.	VHS mode	-	Process No.	Number of FG
03	Mechanism lock during without the unloading and the cassette-up.	VHS mode	Standby position	Process No.	LM information
04	Mechanism lock during unloading	VHS mode	-	Process No.	LM information
05	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	VHS mode	Tape position	Process No.	LM information
06	Mechanism lock during the Cassette-up.	VHS mode	Standby position	Process No.	LM information
07	The recording circuit can not be operated in REC mode.	VHS mode	-	Process No.	-
08	The recording circuit is operated in except for REC mode.	VHS mode	-	Process No.	-
09	Serial communication Error between VHS Microprocessor (IC6001) and Timer Microprocessor (IC7501).	-	-	-	-
11	Cylinder clogs during the PLAY mode.	VHS mode	-	Process No.	-
15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	VHS mode	Value of S-Reel Pulse counted	Process No.	-
16	Detection of the Cylinder lock during the constant rotation	VHS mode	Tape position	Process No.	-
17	Detection of S-reel lock during the constant tape running	VHS mode	Tape position	Process No.	Number of FG
18	Detection of T-reel lock during the constant tape running	VHS mode	Tape position	Process No.	Number of FG
20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	VHS mode	-	Process No.	-
21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	VHS mode	-	Process No.	-
22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.)	VHS mode	-	Process No.	-
23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	VHS mode	-	Process No.	-
80	An exceptional ejection depends on a Error	VHS mode	Refer to *Note 3	Process No.	-

**Note 1: Details of "VHS mode" of the Supplementary Data 1 (These values are hexadecimal indication)**

0: STOP, 1: EJECT, 2: REW, 3: FF, 4:REV, 5: CUE, 6: SLOW, 7: POWEROFF, 8: PLAY, 9: STIL,  
A: REC, B: REC PAUSE, C: ADUB, D: ADUB PAUSE, E: INSERT, F: INSERT PAUSE

**Note 2: Explanation of "Tape position" of the Supplementary Data**

The Tape position Data is the area data of S-reel that is used for judgment of reducing speed in the Main microprocessor IC6001, and as the tape position is moved from the starting edge to the finishing edge, the value becomes smaller.

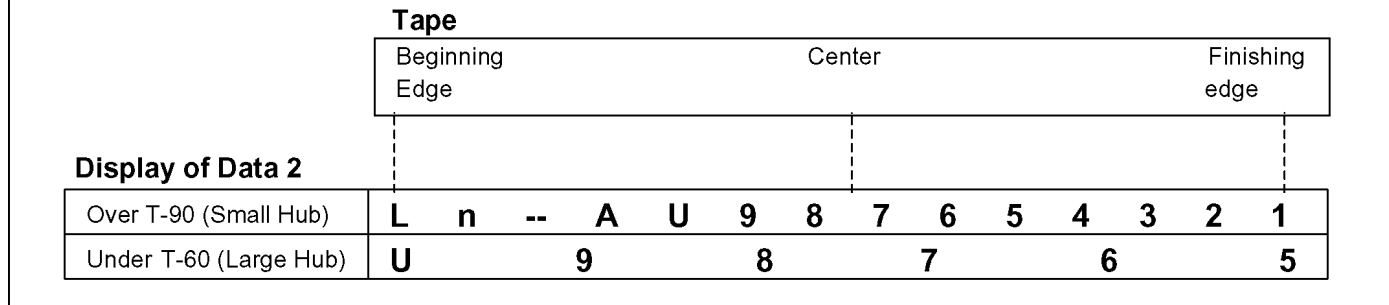
The Tape Data does not become "0" even if the tape reaches the finishing edge as the hub remains, and the tape position values are different between the large hub and the small hub as the each diameters are different from each other.

Tape Type	The aim of Tape position between the starting edge and the finishing edge
60 min. or less type (Large Hub)	The Tape position is divided into 6 stages between the Tape beginning edge: "A " and the Tape end edge: "5".
90 min. or over type (Small Hub)	The Tape position is divided into 14 stages between the Tape beginning edge: "E " and the Tape end edge: "1".

- "A" and "E" is hexadecimal. "A" =10 (Decimal), "E" =14 (Decimal).
- Hexadecimal indication from "A" to "E" are shown below.

A:	□	B:	□	C:	—	D:	□	E:	□	F:	
----	---	----	---	----	---	----	---	----	---	----	--

### Tape position and Display



### Note 3: Supplementary Data 2 (Reason of Ejection)

Supplementary Data 2	Reason
1	S-reel pulse is less than 3 when the loading has been completed. (Miss catching the tape)
2	Pulse Timer over during the short rewind at the DOWN position. (Error of S-photo sensor system, S-reel system, Capstan system)
3	Mechanism lock from the DOWN position to the LOAD position during the loading.
4	Both ends have been detected at the LOAD position when the loading is started.



## 8 Service Fixture & Tools

(For DVD)

Part Number	Description	Compatibility
RFKZ0168	Extension Cable (Power & Digital I/F P.C.B. - FAN / 3 Pin)	Same as E50 / ES30V / ES40V Series
RFKZ0169	Extension Cable (Power & Digital I/F P.C.B. - DVD Drive / 4 Pin)	Same as E100H Series
RFKZ0366	Extension FFC (Digital P.C.B. - DVD Drive / 40 Pin)	Same as EH55 Series
RFKZ0327	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 15 Pin / 40 mm)	Same as ES40V Series
RFKZ0240	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 19 Pin / 40 mm)	Same as EH75V / ES30V / ES40V Series
RFKZ0178	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 7 Pin)	Same as EH75V Series
RFKZ0215	Extension Cable (Main P.C.B. - Front (L) P.C.B. / 12 Pin)	Same as ES15 / E55 / ES30V / ES40V Series
RFKZ0239	Extension Cable (Power & Digital I/F P.C.B. - Front (R) P.C.B. / 10 Pin)	Same as E75V / ES30V Series
RFKZ0260	Extension Cable (Power & Digital I/F P.C.B. - Digital P.C.B. / 88 Pin)	Same as ES15 / EH55 Series
JZS0484	Eject Pin	Same as ES15 / E50 Series
RFKZ03D01K	Lead Free Solder (0.3mm/100g Reel)	Same as ES15 Series
RFKZ06D01K	Lead Free Solder (0.6mm/100g Reel)	Same as ES15 Series
RFKZ10D01	Lead Free Solder (1.0mm/100g Reel))	Same as ES15 Series
RFKZ0316	Solder Remover (Lead free low temperature Solder/50g)	Same as ES15 Series
RFKZ0328	Flux	Same as ES15 Series

(For VHS)

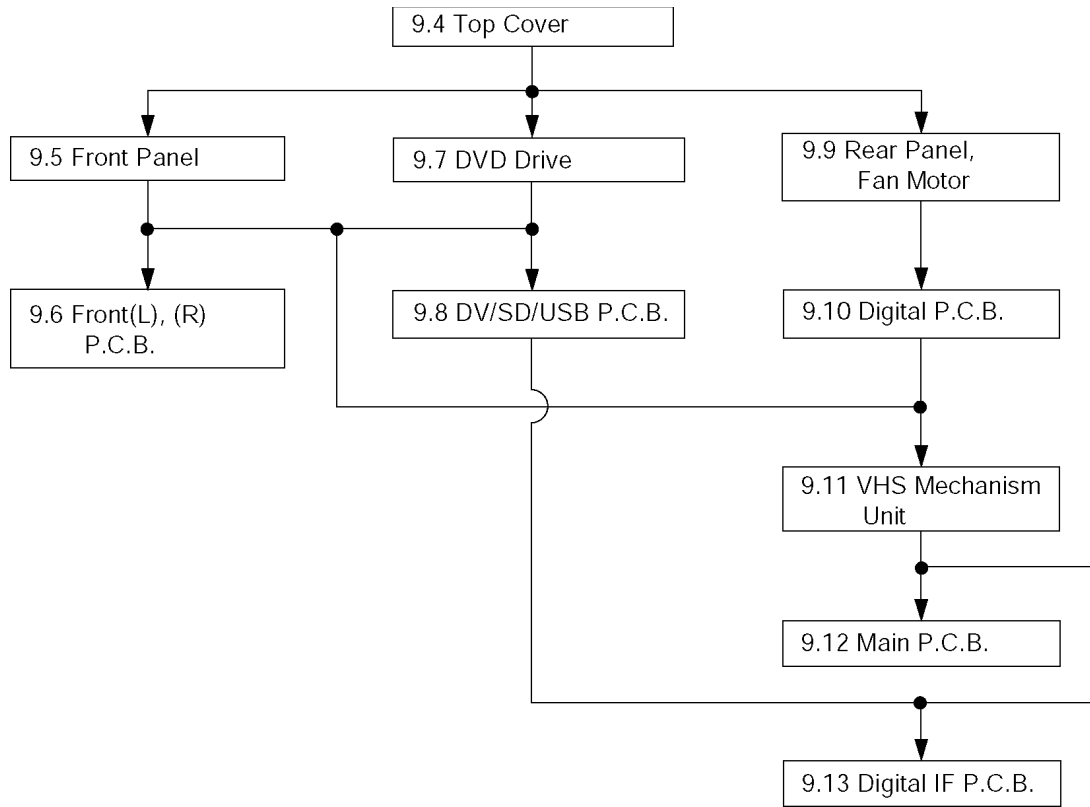
Part Number	Description	Compatibility
VFM8080HQFP	NTSC VHS Alignment Tape	Same as E75V / ES30V / ES40V Series
VFK0329	Post Adjustment Screwdriver	Same as E75V / ES30V / ES40V Series
VFK0330	Fine Adjustment Gear Driver	Same as E75V / ES30V / ES40V Series

# 9 Assembling and Disassembling Instructions

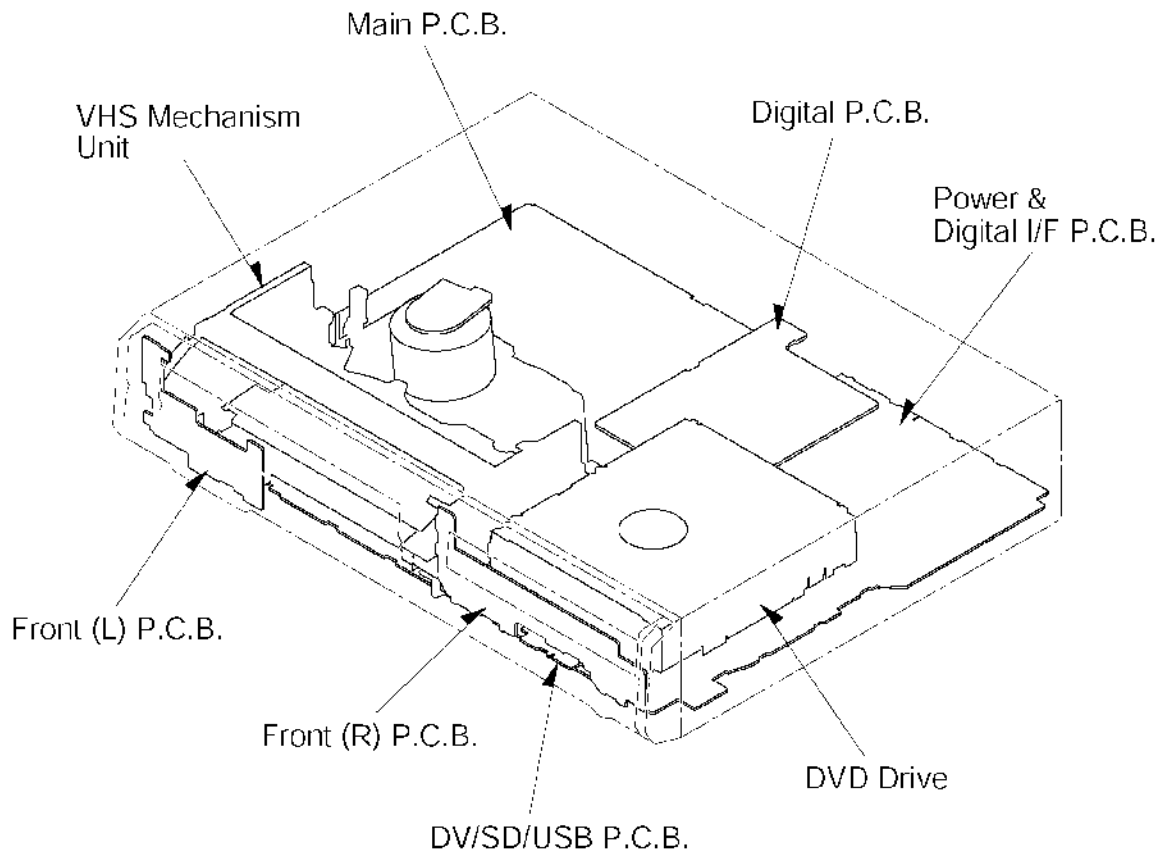
## 9.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.



## 9.2. P.C.B. Positions



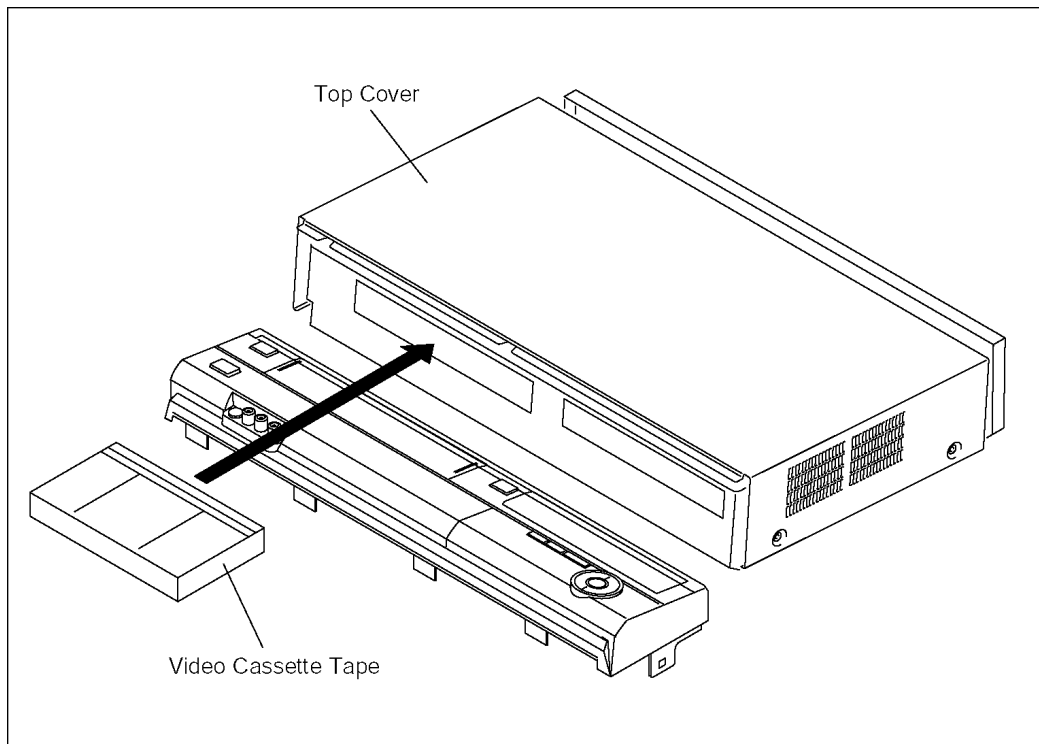
### 9.3. Caution with inserting cassette tape when disassembling the unit

**Note1:**

For description of the disassembling procedure, see the section 9.4.

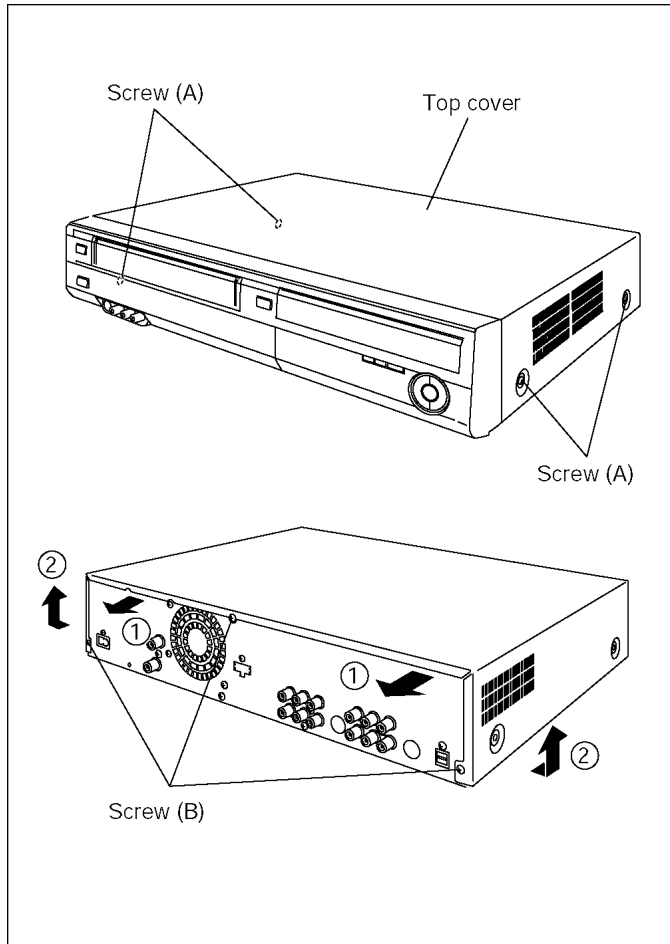
**Note2:**

Video Cassette might not enter when a strong lighting is applied to VHS Mechanism when Video Cassette is inserted. Please weaken the lighting or cover with the top panel etc.

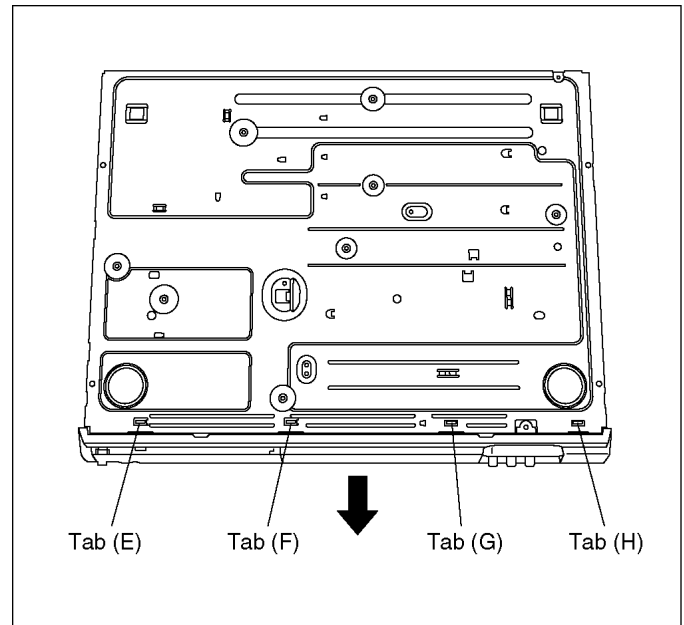


## 9.4. Top cover

1. Remove the 4 screws (A) and 3 screws (B).
2. Slide Top cover rearward and open the both ends at rear side of the Top cover a little and lift the Top cover in the direction of the arrows.

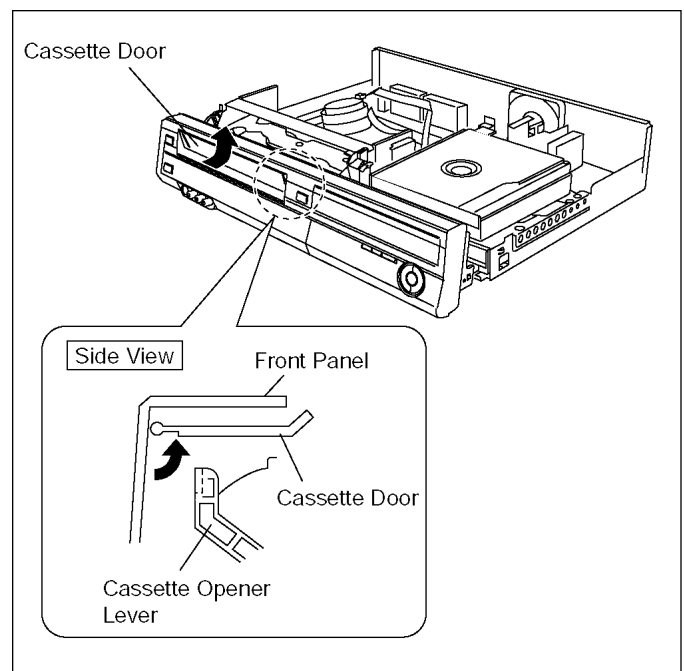


arrow.



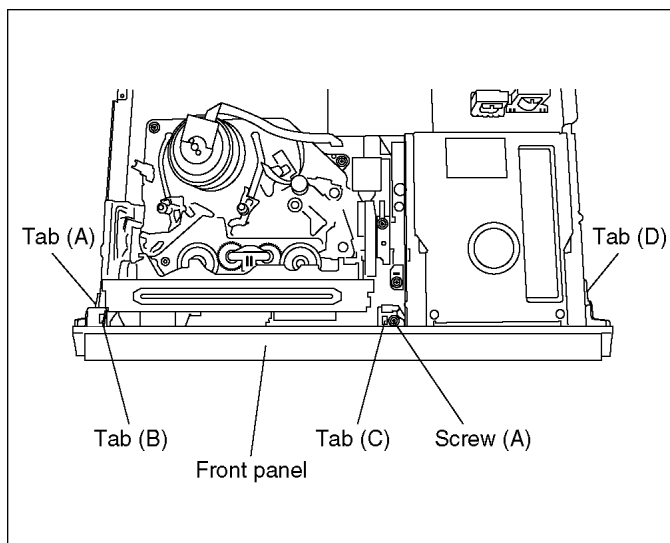
### Note:

When attaching Front Panel, in order to hook Cassette Door Opener Lever to Cassette Door, push up cassette door in the direction of arrow and insert a front panel.



## 9.5. Front Panel

1. Remove one screw (A).
2. Unlock 4 tabs in (A) - (D) turn.  
Pull with the front panel in the direction of your side.



3. Make the unit turn inside out, push the tabs (E) - (H) by (-) screwdriver while pulling Front panel in the direction of

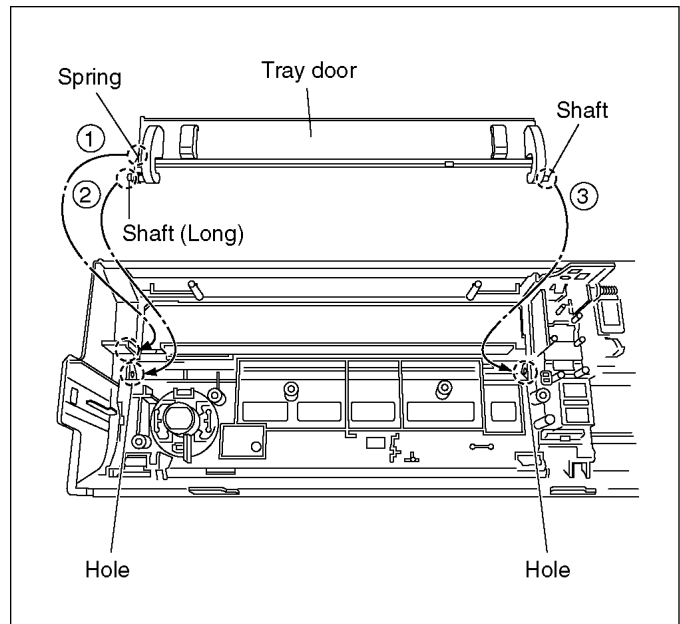
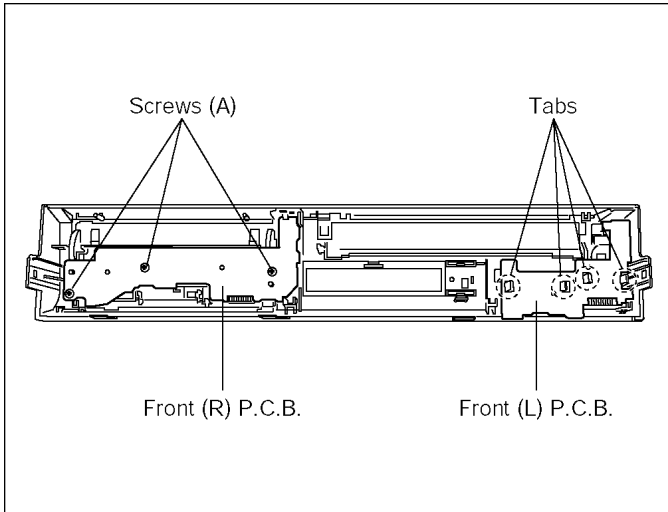
## 9.6. Front (L) P.C.B. & Front (R) P.C.B.

### 9.6.1. Front (L) P.C.B.

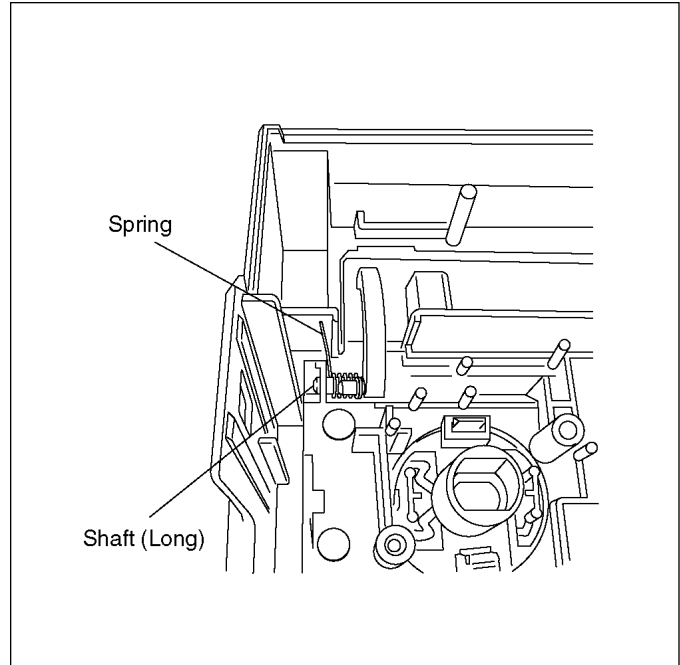
1. Remove 4 tabs to remove Front (L) P.C.B..

### 9.6.2. Front (R) P.C.B.

1. Remove 3 screws (A) and tab to remove Front (R) P.C.B..

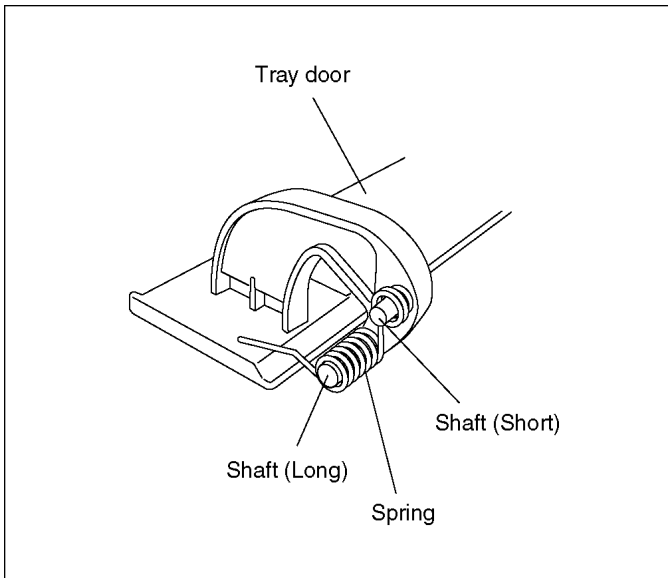


3. Confirm the Brinder spring is attached as following.



### 9.6.3. How to assemble Tray door ass'y

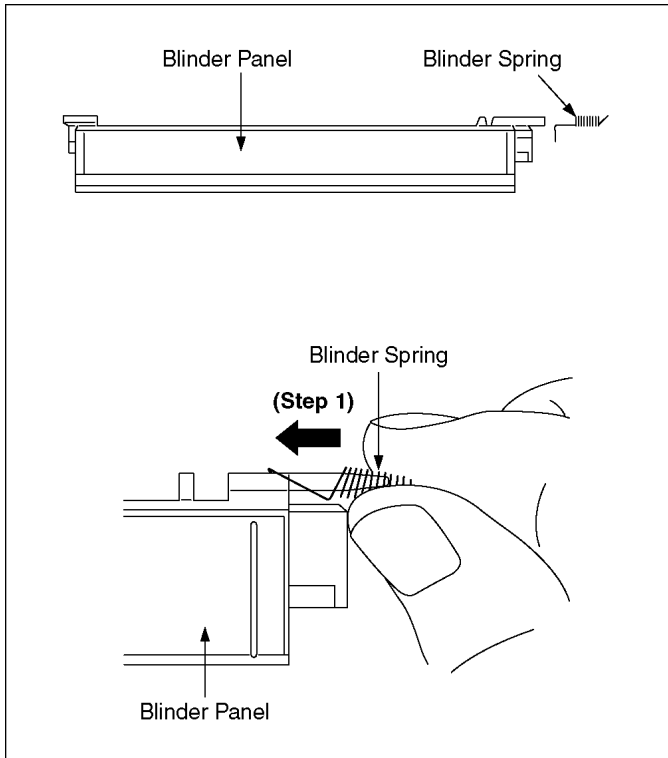
1. Attach Brinder spring to Tray door ass'y.



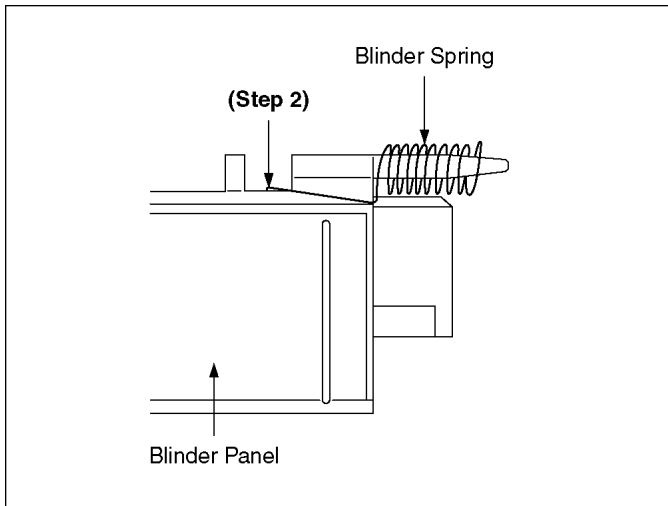
2. Attach Tray door ass'y in order from ① to ③.

- ①: Put the Brinder spring on the front panel.
- ②: Insert the shaft in the hole.
- ③: Insert the shaft in the hole.

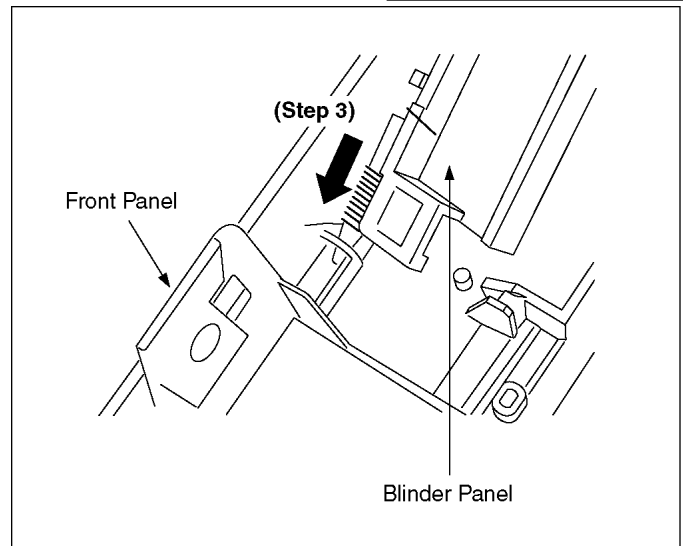
### 9.6.4. Assembly of Blinder Panel and Blinder Spring



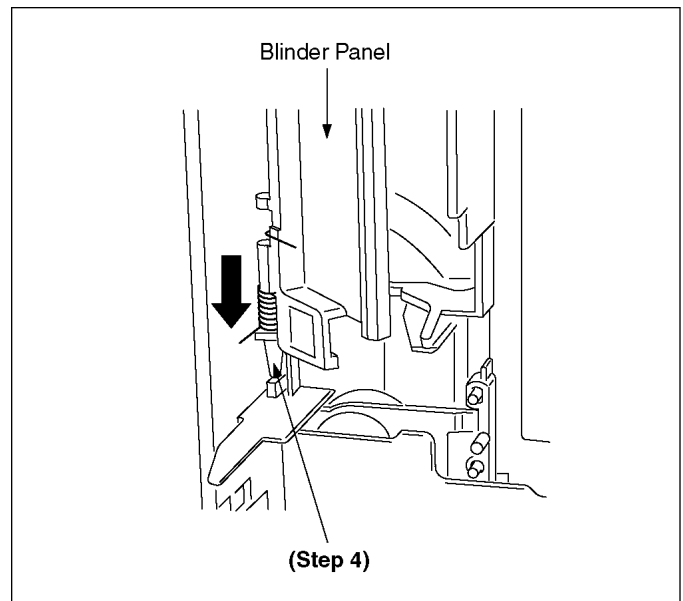
Step 1 : Insert Blinder Spring into shaft of Blinder Panel.



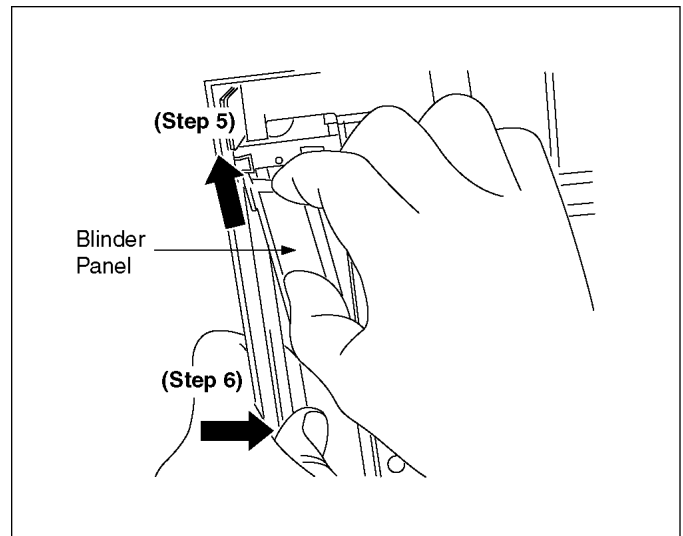
Step 2 : Hook Blinder Spring to bottom of the shaft.



Step 3 : Slide Blinder Panel into shaft hole of Front Panel.



Step 4 : Slide down Blinder Panel to touch the shaft on top of the rib.

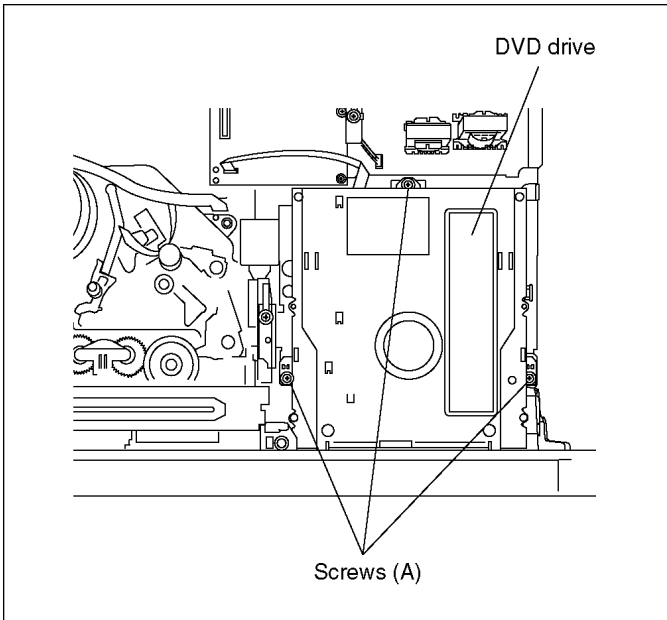


Step 5 : Push shaft into shaft hole.

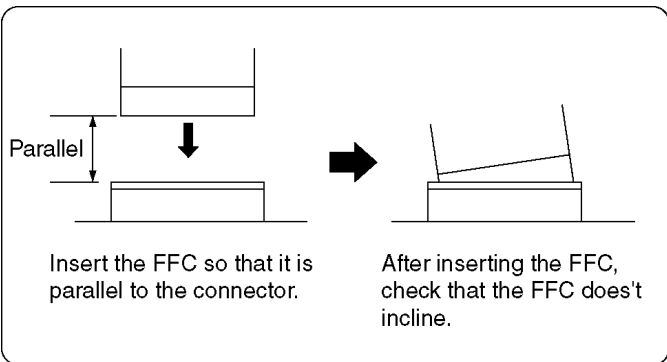
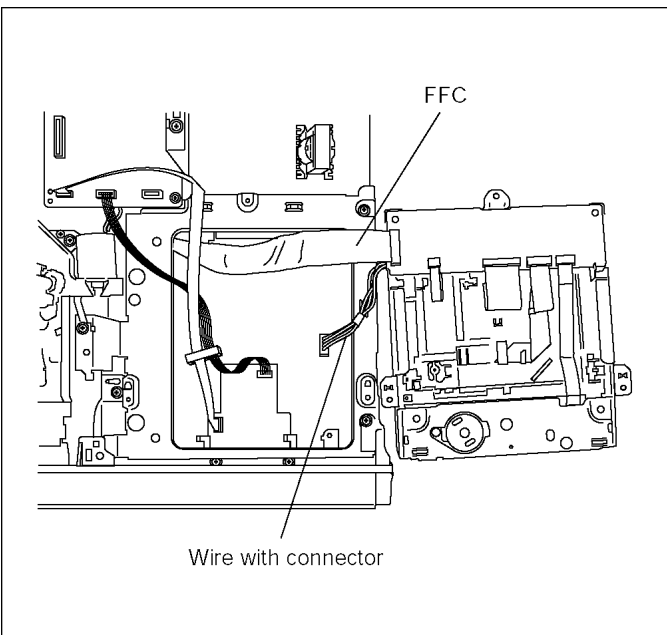
Step 6 : Press centre of Blinder Panel and bow down.

### 9.7. DVD drive

1. Remove 3 Screws (A).

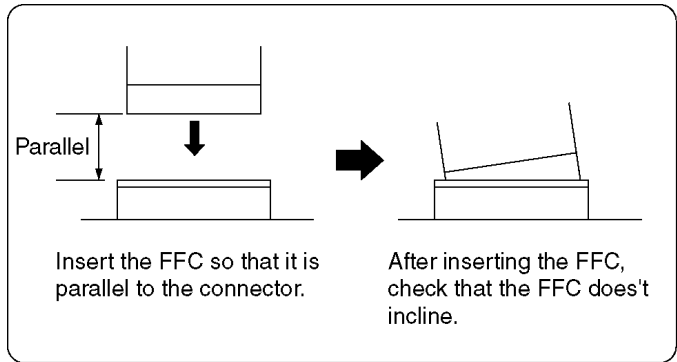
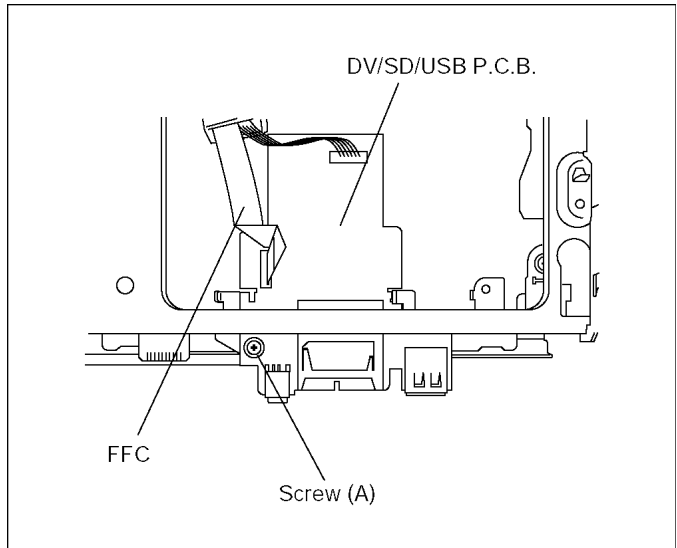


2. Disconnect FFC and Wire with connector, remove DVD drive.



### 9.8. DV/SD/USB P.C.B.

1. Remove 1 Screw (A) to remove DV/SD/USB P.C.B..

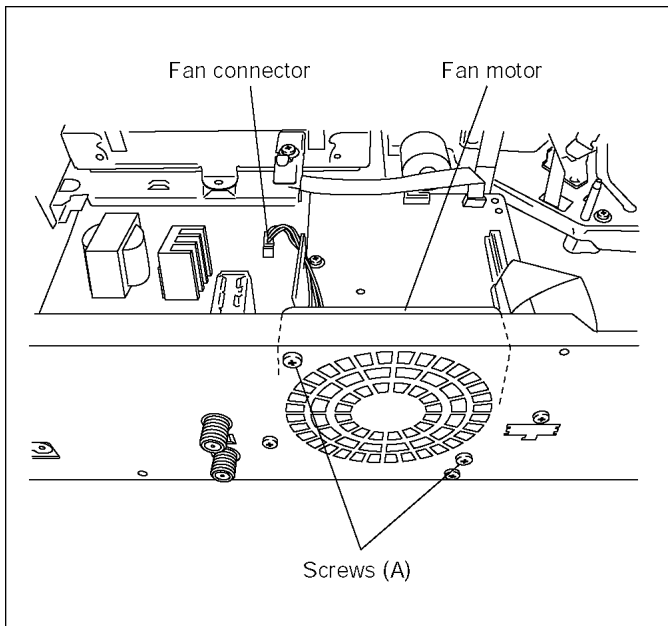




## 9.9. Rear Panel, Fan Motor

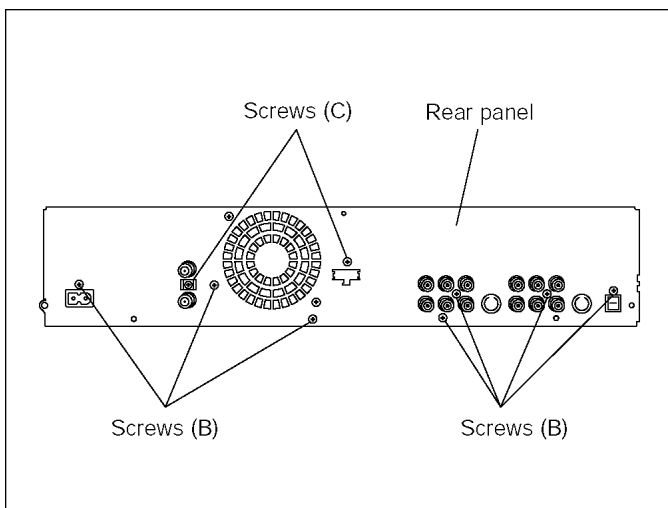
### 9.9.1. Only Fan motor

1. Disconnect Fan Connector.
2. Remove 2 Screws (A) to Remove Fan Motor.



### 9.9.2. Rear panel with fan motor

1. Disconnect Fan Connector.
2. Remove 7 Screws (B) and 2 Screws (C).
3. Unlock 2 Locking Tabs (A) to remove Rear Panel with Fan Motor.



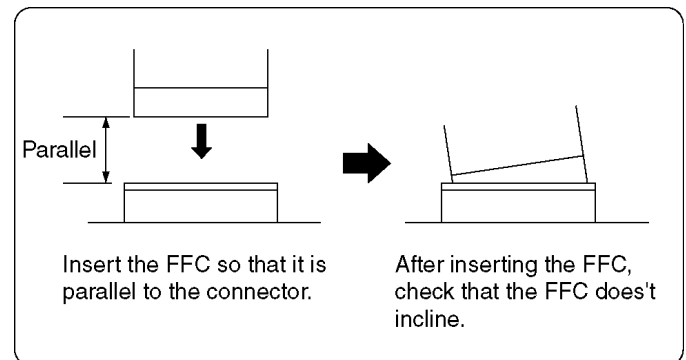
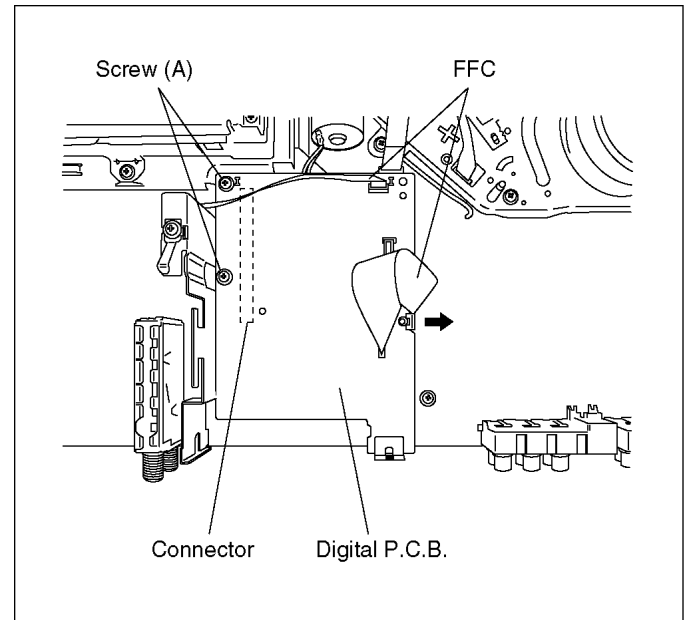
## 9.10. Digital P.C.B.

### Caution:

It is necessary to adjust PG shifter when replacing of Digital P.C.B.  
Because FROM as IC56002 have adjustment data for PG shifter.

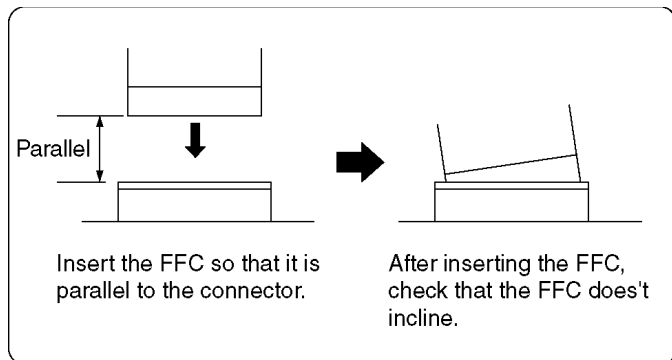
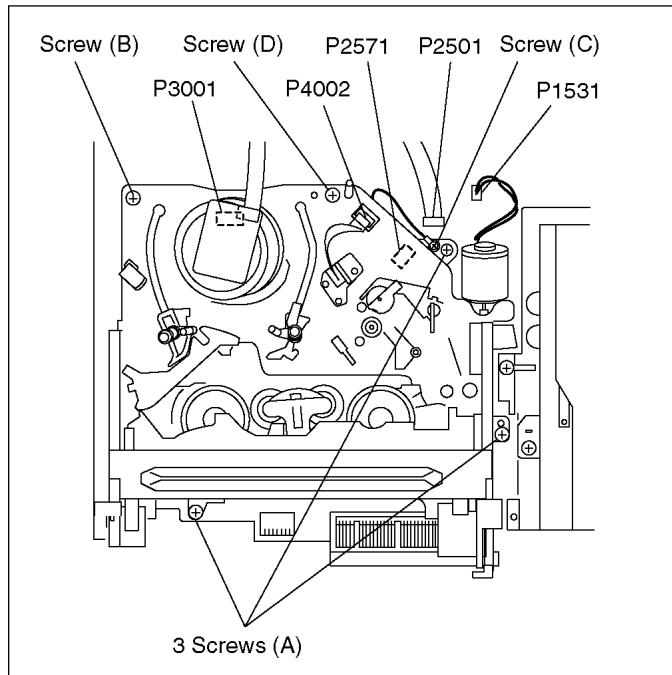
1. Remove 2 Screws (A) and 2 FFCs.

And lift up Digital P.C.B. slightly so to disconnect connectors to remove Digital P.C.B..



## 9.11. VTR Mechanism Unit

1. Disconnect 3 Connectors (P1531, P2501 and P4002).
2. Remove 3 Screws (A), Screw (B), Screw (C) and Screw (D).
3. Lift up VTR Mechanism Unit perpendicularly so to disconnect Connectors (P2571 and P3001).

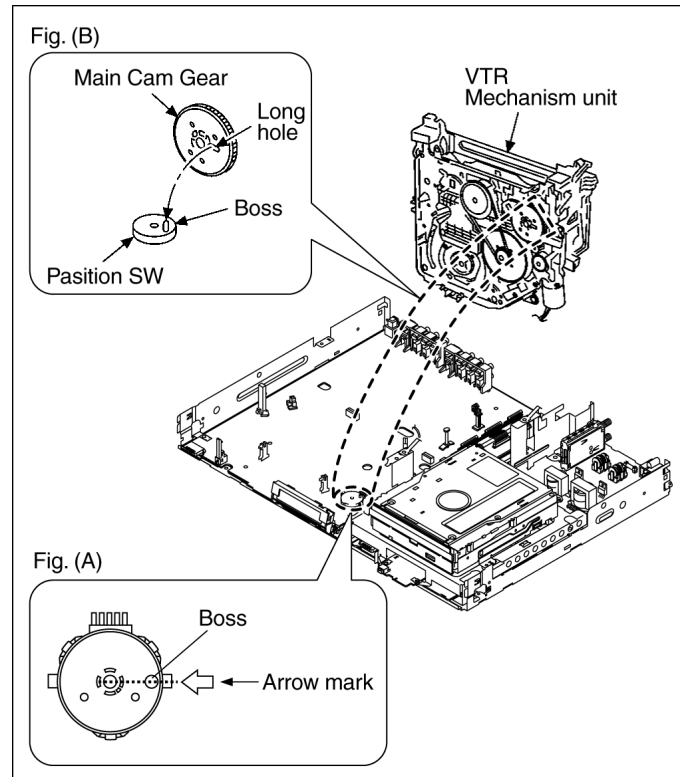


### Note:

Pay attention to stiff connections of P2571 and P3001, when removing VTR Mechanism Unit.

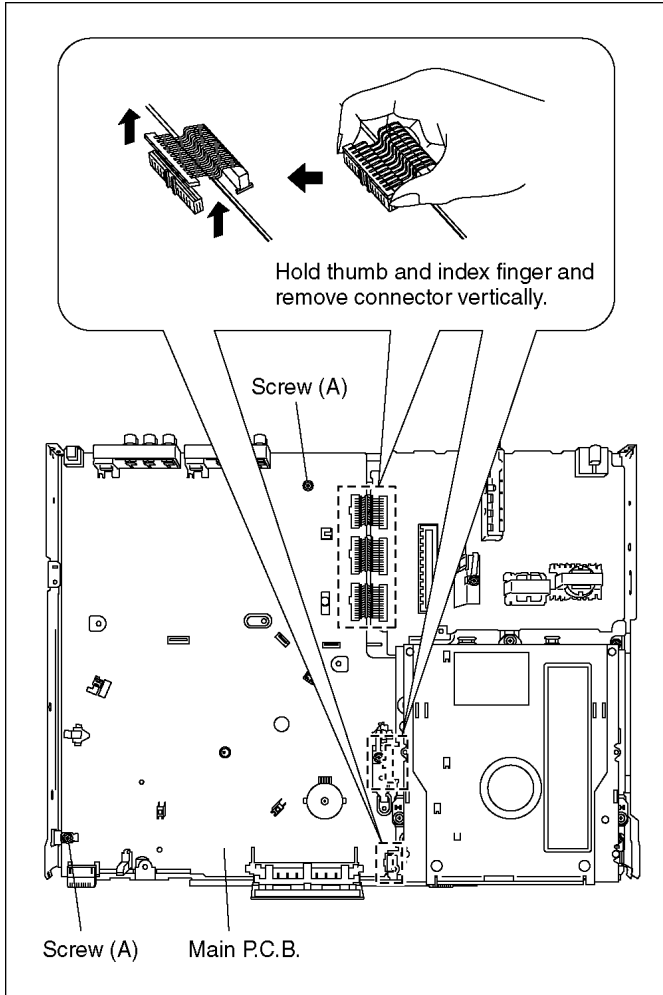
### 9.11.1. Caution for attaching VTR Mechanism Unit

1. Because Position SW should be set to "Eject Position", refer to fig.(A) and set the position switch so that the boss and arrow mark come on a straight line.
2. Attach VTR Mechanism Unit so that Boss of Position SW is put into long hole of Main Cam Gear, refer to Fig. (B).



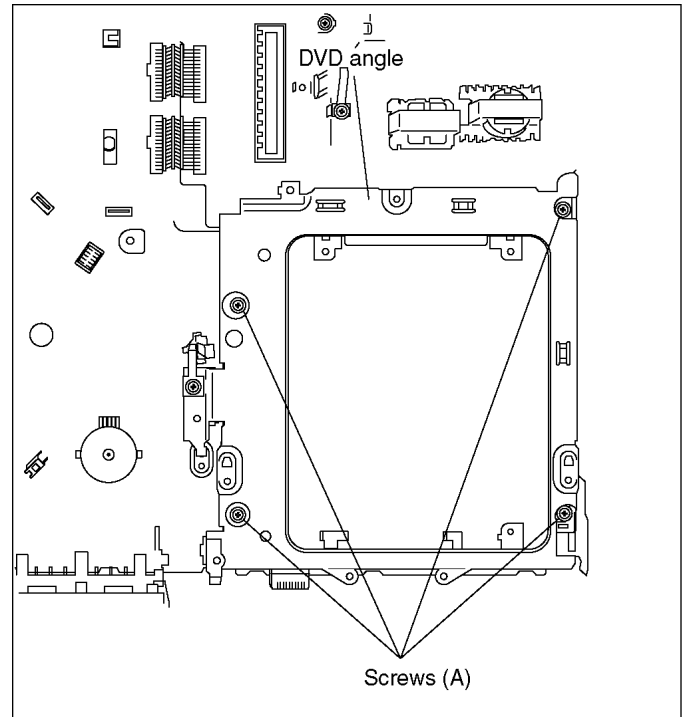
## 9.12. Main P.C.B.

1. Disconnect 4 Connectors.
2. Remove 2 Screws (A) and remove Main P.C.B.

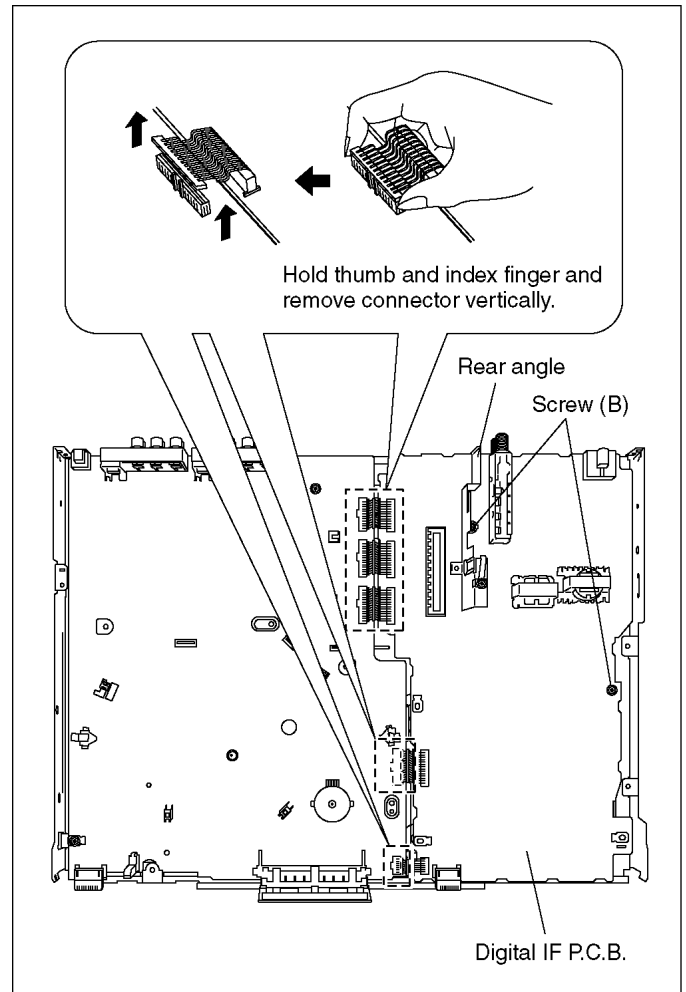


## 9.13. Digital I/F P.C.B.

1. Remove 4 Screws (A) to remove DVD angle.



2. Disconnect 4 Connectors.
3. Remove the Screw (B) to remove Digital I/F P.C.B. after removed Rear angle.



# 10 Measurements and Adjustments

## 10.1. Service Positions

### Note:

For description of the disassembling procedure, see the section 9.

### 10.1.1. Checking and Repairing of Power & Digital I/F P.C.B.

#### 1. Top Cover

Remove 4 Screws (A) on side.

Remove 3 Screws (B) on rear.

Remove Top Cover.

#### 2. Front Panel

Remove 1 Screw (A) on center.

Unlock 4 Locking Tabs (A),(B),(C),(D).

Unlock 4 Locking Tabs (E),(F),(G),(H) on bottom to remove Front Panel

#### 3. DVD Drive

Remove 3 Screws (A) fixing DVD Drive.

Left up DVD Drive slightly.

Remove Cable between DVD Drive and Power & Digital P.C.B..

Remove FFC between DVD Drive and Digital P.C.B..

Remove DVD Drive and put it beside chassis.

#### 4. Digital P.C.B.

Disconnect 1 FFC from DVD Drive.

Disconnect 1 FFC from DV/SD/USB P.C.B..

Remove 1 Screw (A) on rear.

Remove 2 Screws (B) fixing Digital P.C.B..

Right up Digital P.C.B. slightly to remove it.

#### 5. DVD Angle with DV/SD/USB P.C.B.

Remove 5 Screws (A) fixing DVD Angle with DV/SD/USB P.C.B..

#### 6. Power & Digital I/F P.C.B.

Disconnect FAN Motor Connector.

Disconnect 5 Connectors (A) between Main P.C.B. and Power & Digital I/F P.C.B..

Remove 1 Screw (A), and 3 Screws (B) on rear.

Remove Power & Digital I/F P.C.B..

Connect an original FFC between Digital P.C.B. and DV/SD/USB P.C.B. and the foil side the Power & Digital I/F P.C.B. faces up

Connect Extension Cables.

\*between Main P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0327/ RFKZ0240 x 3/ RFKZ0178).

\*between Main P.C.B. and Front (L) P.C.B. with (RFKZ0215).

\*between Main P.C.B. and Front (R) P.C.B. with (RFKZ0239).

\*between Power & Digital I/F P.C.B. and Fan Motor with (RFKZ0168).

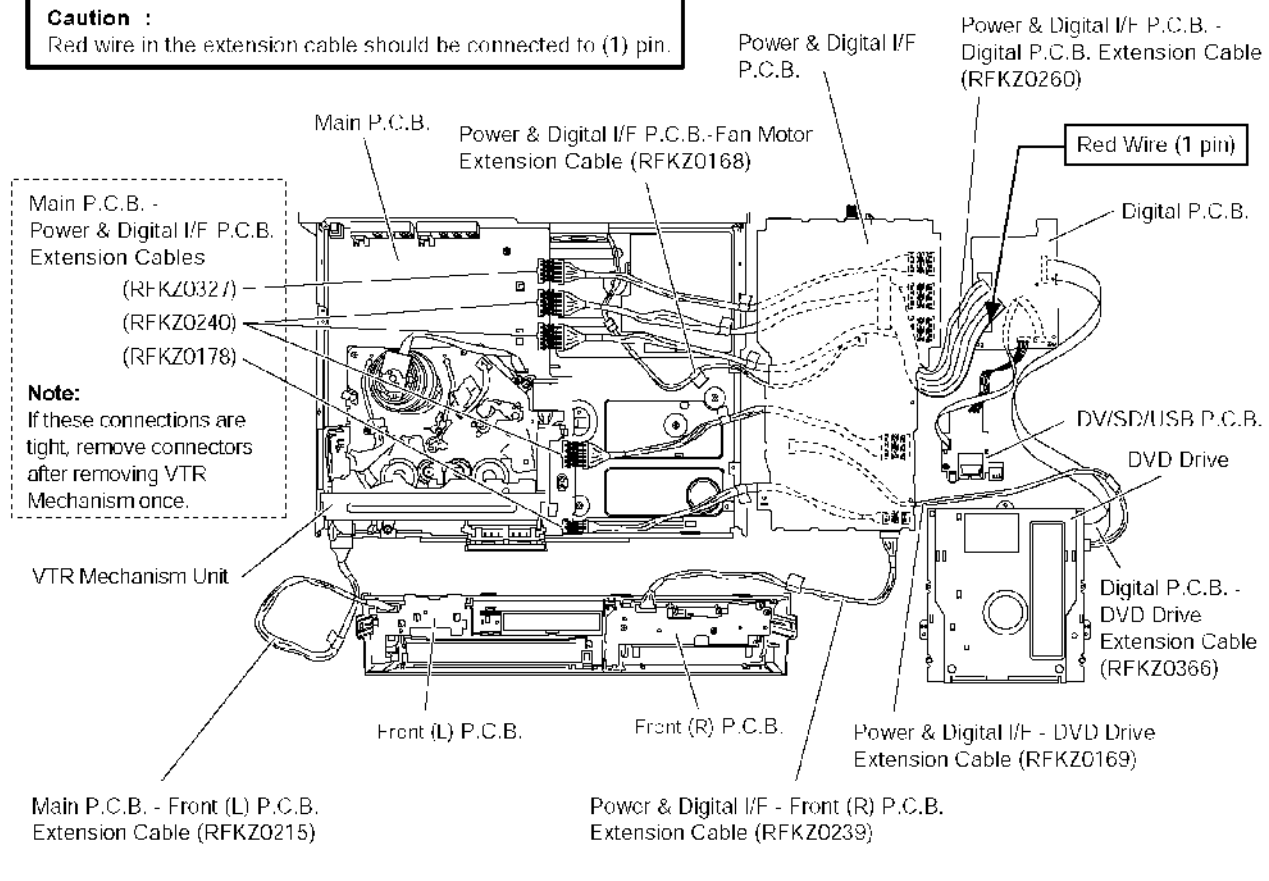
\*between Digital P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0260).

\*between DVD Drive and Power & Digital I/F P.C.B. with (RFKZ0169).

\*between Digital P.C.B. and DVD Drive with (RFKZ0366).

#### Caution :

Red wire in the extension cable should be connected to (1) pin.



## 10.1.2. Checking and Repairing of Main P.C.B.

### 1. Top Cover

Remove 4 Screws (A) on side.

Remove 3 Screws (B) on rear.

Remove Top Cover.

### 2. Front Panel

Remove 1 Screw (A) on center.

Unlock 4 Locking Tabs (A),(B),(C),(D).

Unlock 4 Locking Tabs (E),(F),(G),(H) on bottom to remove Front Panel

### 3. DVD Drive

Remove 3 Screws (A) fixing DVD Drive.

Left up DVD Drive slightly.

Remove Cable between DVD Drive and Power & Digital P.C.B..

Remove FFC between DVD Drive and Digital P.C.B..

Remove DVD Drive and put it beside chassis.

### 4. Digital P.C.B.

Disconnect 1 FFC from DVD Drive.

Disconnect 1 FFC from DV/SD/USB P.C.B..

Remove 1 Screw (A) on rear.

Remove 2 Screws (B) fixing Digital P.C.B..

Right up Digital P.C.B. slightly to remove it.

### 5. DVD Angle with DV/SD/USB P.C.B.

Remove 5 Screws (A) fixing DVD Angle with DV/SD/USB P.C.B..

### 6. VTR Mechanism Unit

Disconnect 3 Connectors.

Remove 3 Screws (A), Screw (B), Screw (C), Screw (D).

Left up VTR Mech. Unit to remove it.

### 7. Main P.C.B.

Disconnect 5 Connectors (A) between Main P.C.B. and Power & Digital I/F P.C.B..

Remove 2 Screws (A) fixing Main P.C.B., and 3 Screws (B) on rear.

Remove Main P.C.B..

Attach VTR Mechanism Unit on to Main P.C.B..

Tighten Screw (C) with Earth Wire.

Tighten Screw (D) beside Screw (C).

Insert 1 Connector and 2 FFCs.

Hold Main P.C.B. with VTR Mechanism, make it upside-down, and put it.

Connect Extension Cables.

\*between Main P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0327/ RFKZ0240 x 3/ RFKZ0178),

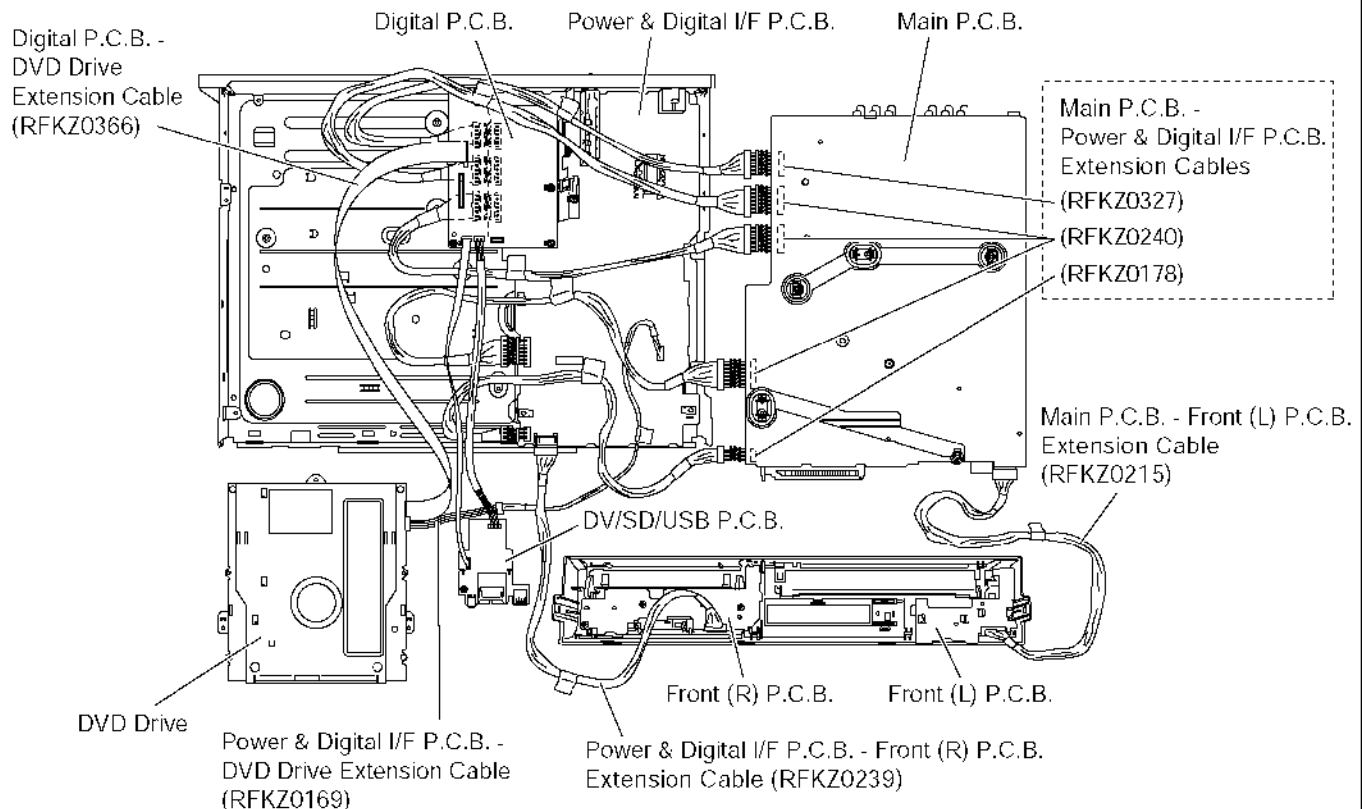
\*between Main P.C.B. and Front (L) P.C.B. with (RFKZ0215),

\*between Main P.C.B. and Front (R) P.C.B. with (RFKZ0239),

\*between DVD Drive and Power & Digital I/F P.C.B. with (RFKZ0169),

\*between Digital P.C.B. and DVD Drive with (RFKZ0366).

**Caution** : Red wire in the extension cable should be connected to (1) pin.



### 10.1.3. Checking and Repairing of Digital P.C.B.

#### 1. Top Cover

Remove 1 Screws (A) on side.

Remove 3 Screws (B) on rear.

Remove Top Cover.

#### 2. DVD Drive

Remove 3 Screws (A) fixing DVD Drive.

Left up DVD Drive slightly.

Remove Cable between DVD Drive and Power & Digital I/F P.C.B.

Remove FFC between DVD Drive and Digital P.C.B..

Remove DVD Drive and put it beside chassis.

#### 3. Digital P.C.B.

Disconnect 1 FFC from DVD Drive.

Disconnect 1 FFC from DV/SD/USB P.C.B..

Remove 1 Screw (A) on rear.

Remove 2 Screws (B) fixing Digital P.C.B..

Right up Digital P.C.B. slightly to remove it.

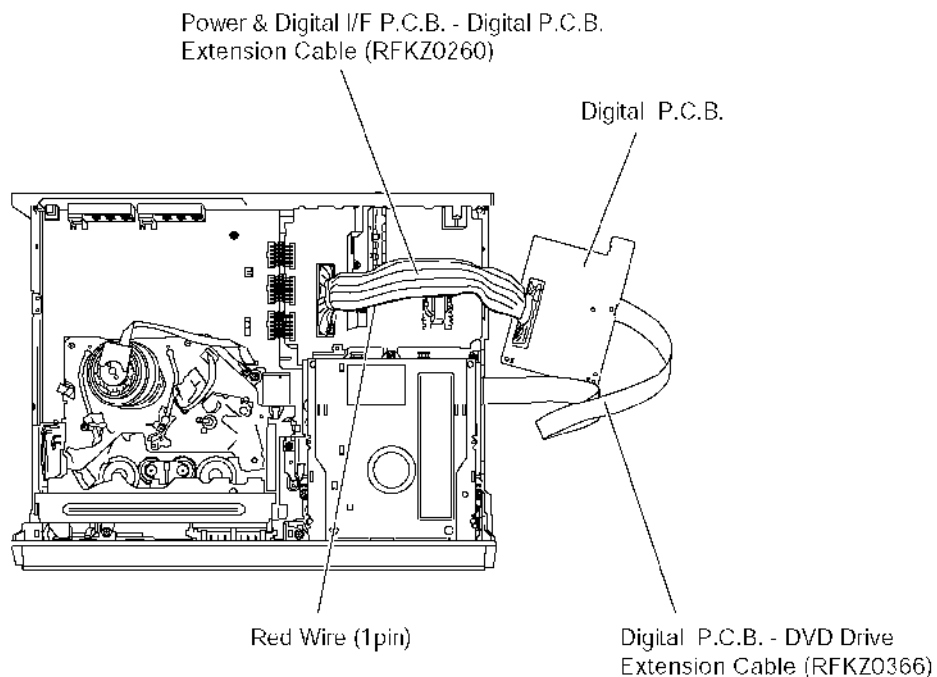
Attach DVD Drive to DVD Angle and connect 1 connector from Power & Digital I/F P.C.B..

Connect Extension Cables,

\*between Digital P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0260),

\*between Digital P.C.B. and DVD Drive with (RFKZ0366).

**Caution** : Red wire in the extension cable should be connected to (1) pin.



## 10.1.4. Checking and Repairing of DVD

### 1. Top Cover

Remove 4 Screws (A) on side.

Remove 3 Screws (B) on rear.

Remove Top Cover.

### 2. DVD Drive

Remove 3 Screws (A) fixing DVD Drive.

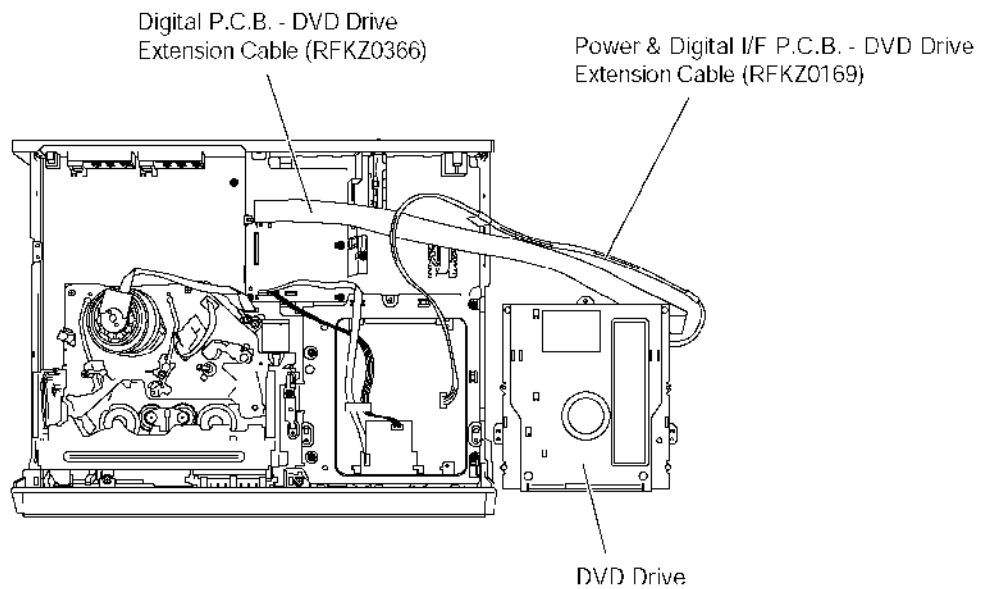
Left up DVD Drive slightly.

Remove Cable between DVD Drive and Power & Digital I/F P.C.B.

Remove FFC between DVD Drive and Digital P.C.B..

Remove DVD Drive and put it beside chassis.

Connect Extension Cables,  
 \*between DVD Drive and Power & Digital I/F P.C.B. with (RFKZ0169),  
 \*between DVD Drive and Digital P.C.B. with (RFKZ0366).



## 10.2. Caution for Replacing Parts

### 10.2.1. Notice after replacing Digital P.C.B.

[TM L1] is displayed, after replacing Digital P.C.B.

Once power off, and start up again.

### 10.2.2. Items that should be done after replacing parts

√: Necessary      —: Unnecessary

	Obtain and register a new registration code. (*Note1)	PG Shifter Automatic Adjustment (*Note2)	X-VALUE & LINEARITY (P2 and P3 Posts) Adjustment (*Note3)	Update Firmware
DD Cylinder	—	√	√	—
Main P.C.B.	√	—	—	—
IC6001	—	—	—	—
IC7501	—	—	—	—
Digital P.C.B.	√	√	—	√
DVD Drive	—	—	—	√

#### \*Note1:

Please will always pass the customer “Warning for Customers Who Use the DivX Video-on-Demand content.” with the product and get it when you unavoidably exchange Digital P.C.B. (When the product is exchanged, it is the same.).

You must use print attached to service part (Digital P.C.B.) or must use copy of print below as “Warning for Customers who use the DivX Video-on-Demand content.”

Information needed without fail for the customer for whom it is used continuing DivX Video-on-Demand Service to “Manual for the customer” is recorded.

#### Appendix:

- \* Parts that memorize user’s information are only Nor-Flash on Digital P.C.B..
- \* The registration of Registration Code is possible for half a year up to 6 recorders up to 10 recorders a year. Replacement of Digital P.C.B. spends one of this.

Registration Code is memorized in Nor-Flash on Digital P.C.B..

If exchange Digital P.C.B., new registration Code differ from previous Registration Code will be generated.

In this case if your customer uses DivX Video-on-Demand service, he/she will no longer be able to play any content that he/she purchased under that same registration code.

Therefore your customer will need to obtain and register the new registration code.

\*Copy this page and cut on the dotted line and give the lower half to your customer.

### Warning for Customers who use the DivX Video-on-Demand content.

1. The registration code has been changed for the repair of the product or the product exchange.
2. Obtain and register a new registration code, otherwise you will no longer be able to play DivX Video-on-Demand content.
3. Follow the procedure on the DivX Video-on-Demand web site to register at <http://vod.divx.com/>

\* If you do not use the DivX Video-on-Demand content, please ignore this warning.



**\*Note2:**

## PG Shifter Automatic Adjustment Procedure

PROCEDURE		F.I.P. DISPLAY	
Turn on the Service Mode. 1. Set Drive Select to VHS and press the [STOP] and [EJECT] key simultaneously for more than 3 seconds.		00000	
Activate the Service Mode 2. (Auto tracking will be turned off) 2. Press the [STOP] and [EJECT] key simultaneously twice.		20000	
Put it in PG adjustment mode. 3. Press the EJECT key for more than 3 seconds.		2 00	
Set it adjustment No.1. 4. Press the CH UP key once.		2 100	
Insert the alignment cassette tape (VFM8080HQFP). 5. The PG Shifter Adjustment starts automatically.		2 100	
6. This display means that adjustment data was saved in memory.		For example: 055F	
Result	Success	Cassette tape is ejected automatically.	2 100
	Error	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	F20
		NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	F21
		NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.	F22
		NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	F23
Exit from Service Mode. 7. Press [STOP] and [EJECT] keys simultaneously in 6 times. * Then the FIP becomes normal indication.		10:00 (Normal Indication)	

**\*Note3:**

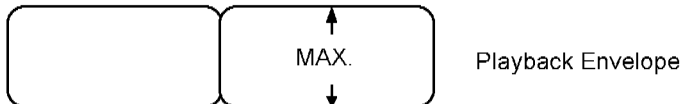
X-VALUE & LINEARITY (P2 and P3 Posts) Adjustment Procedure

1. Set the Auto Tracking to off.
  - (1) Set Drive Select to VHS and press the [STOP] and [EJECT] keys simultaneously for more than 3 seconds to enter Service Mode.
  - (2) Press [STOP] and [EJECT] keys simultaneously twice to activate Service Mode 2, and then Auto-Tracking is turned off.
2. Perform the X-VALUE ADJUSTMENT

X-VALUE ADJUSTMENT

1. After turning off the Auto tracking, playback the alignment Tape and press [CH UP] and [CH DOWN] keys simultaneously to adjust the tracking to FIX value.
2. Adjust A/C Head Base so that the envelope becomes maximum level. (It is described on "5-2. Tape Interchangeability Adjustment" in "R4 Mechanism" that is separated volume.)

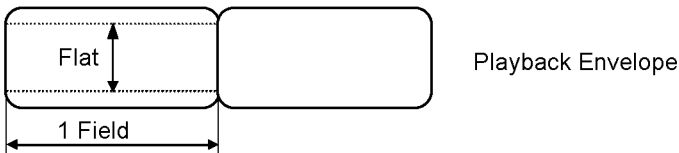
Alignment Tape	VFM8080HQFP
Test Point of Playback Envelope	TW3001 (or TW4502)



LINEARITY ADJUSTMENT

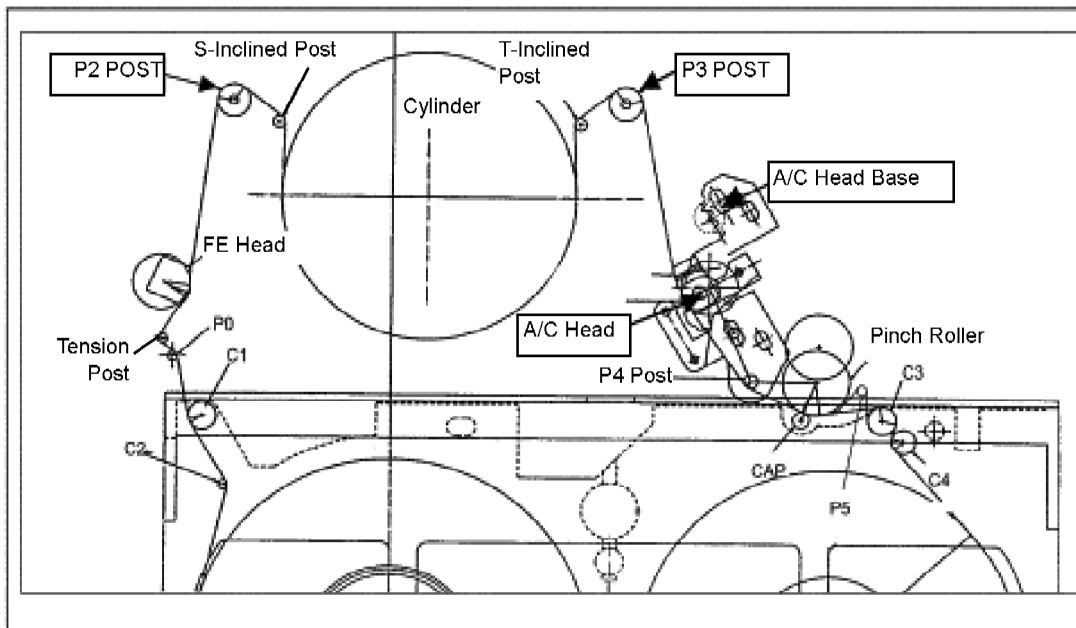
1. After turning off the Auto tracking, playback the alignment Tape and press [CH UP] and [CH DOWN] keys simultaneously to adjust the tracking to FIX value.
2. Adjust the LINEARITY so that the envelope is flat when moving tracking to (+) and (-) directions.

Alignment Tape	VFM8080HQFP
Test Point of Playback Envelope	TW3001 (or TW4502)



● Main symptoms and Adjustment point

Envelope	Post Name		Adjustment Method
	P2 Post		Turn P2 Post counter-clockwise (Approx. 1/2 revolution)
	P2 Post		Turn P2 Post clockwise (Approx. 1/4 revolution)
	P3 Post		Turn P3 Post clockwise (Approx. 1/2 revolution)
	P3 Post		Turn P3 Post counter-clockwise (Approx. 1/4 revolution)
	P2 Post		Turn P2 Post clockwise (Less than 1 revolution) Turn P3 Post counter-clockwise (Less than 1 revolution)
	P3 Post		



### 10.3. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the picture, sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-RAM disc should be used when recording and playback.
5	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
6	Models with SD Card Slot or DV Input Jack: In case of that the trouble is caused by SD card and/or DV terminal.	Models with SD Card or DV Input Jack: 1) SD Card: Check to be able to display and copy the picture. 2) DV terminal: Check to be able to record from DVC.
7	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [UPD OK] appears in the FL displays.

#### Caution for updating Firmware

Firmware of this model is compulsively changed even if new version has already been installed in product. UNFORMAT in not displayed.

Please confirm firm version of the product before update, to avoid making down version.

step1. Confirm firm version of the product

- Press [CH UP] + [OPEN/CLOSE] + [REC] buttons of product simultaneously for 5 seconds to turn it in Service Mode.
- Press [0] [2] of the remote controller.

Region code/ MAIN firm version/ TIMER firm version/ DRIVE firmware version/ ROM Correction version is displayed in this order.

step2. Compare Main firm version and Drive firm version of FL display with versions of updating disc.

For Example:

Versions of updating disc		Versions of FL display		Judgment of updating disc	Descriptions
Main firm	Drive firm	Main firm	Drive firm		
3090U5	S126	3090U5	S155	NG	If this updating disc was used, the product will be made down version. 1. Download latest firmware from TSN System, and burn it to CD-R or CD-RW. 2. Update product with this downloaded latest firmware.
3010C5	S155	3040C5	S155		
3090U5	S155	3090U5	S126	OK	If this updating disc was used, the product will be made up version.
3040C5	S155	3010C5	S155		

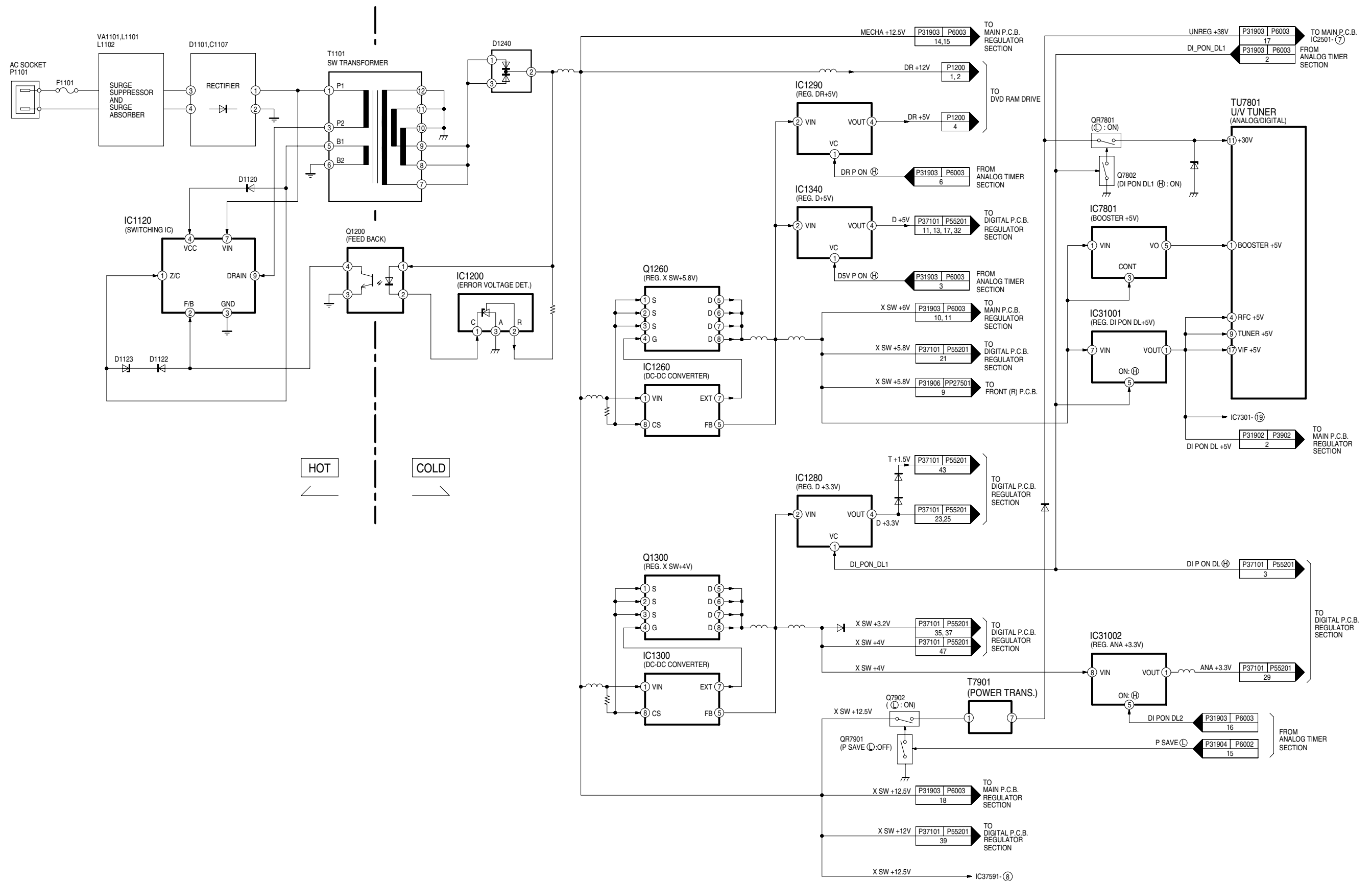
8	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR] appears in the FL display. After checking it, turn the power off.
---	--	--

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering color				
	Color fading				

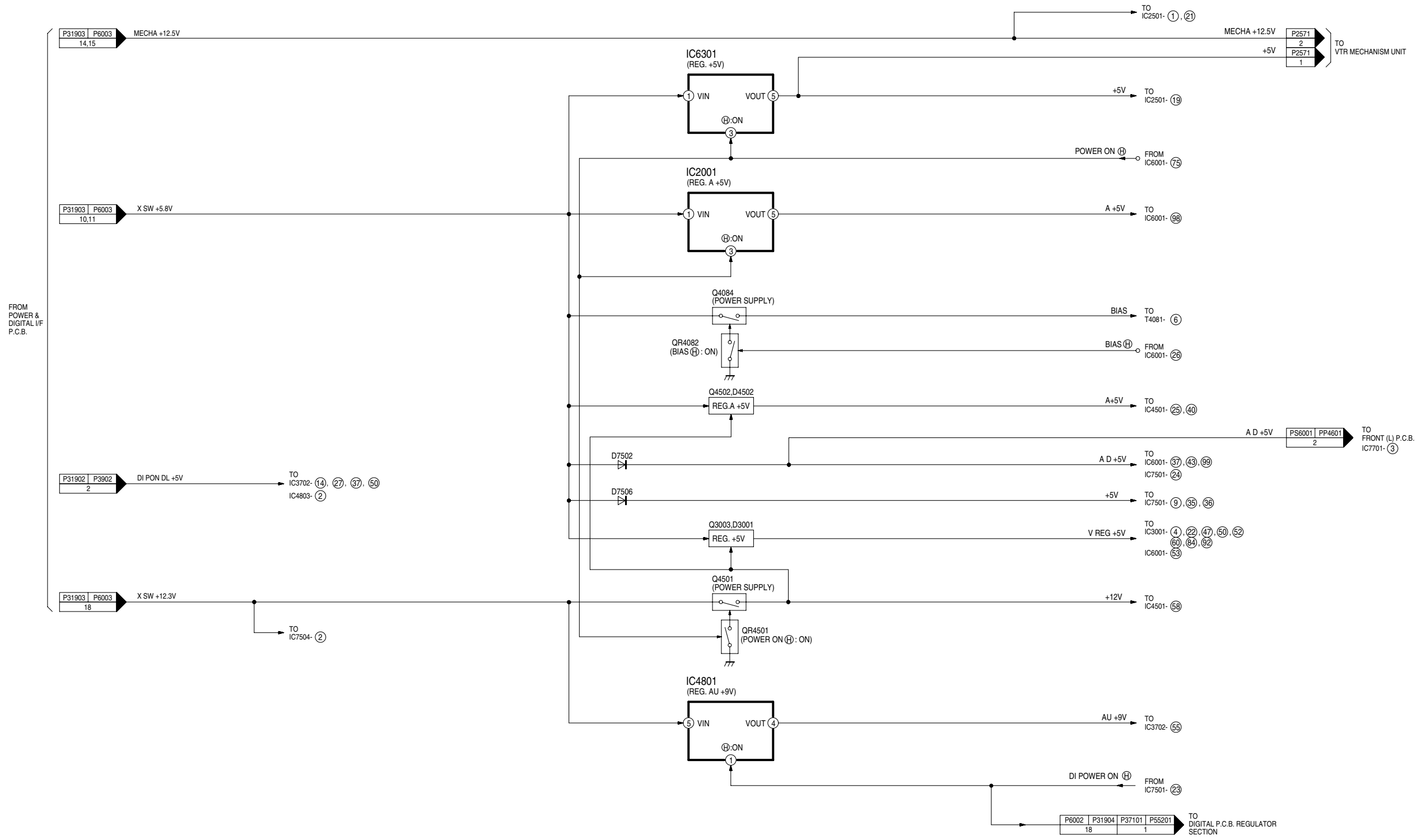
# 11 Block Diagram

## 11.1. Power Supply Block Diagram



DMR-EZ48VP/PC, EZ485VP  
Power Supply Block Diagram

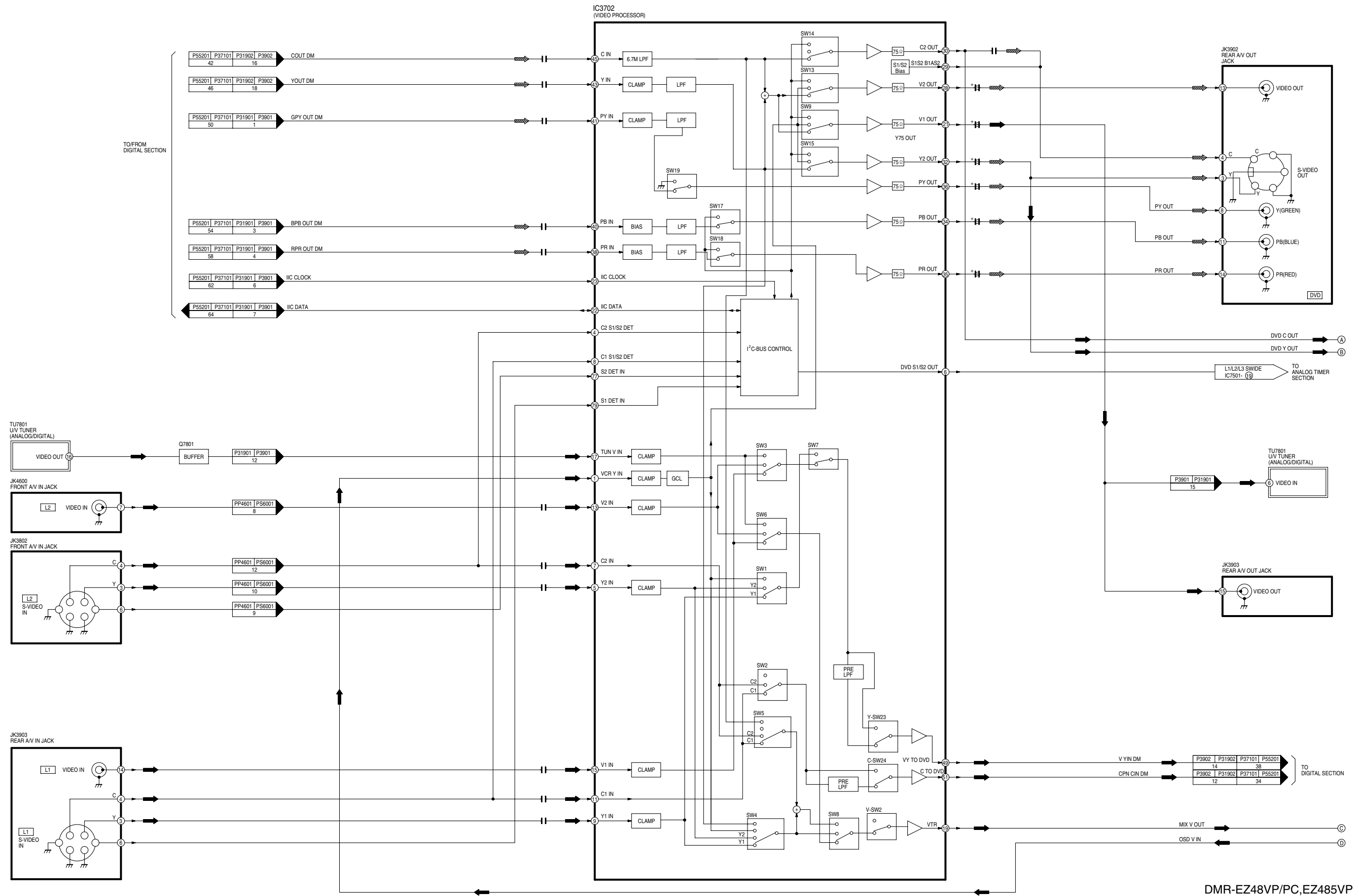
### 11.2. Main P.C.B. Regulator Block Diagram



DMR-EZ48VP/PC,EZ485VP  
Main P.C.B. Regulator  
Block Diagram

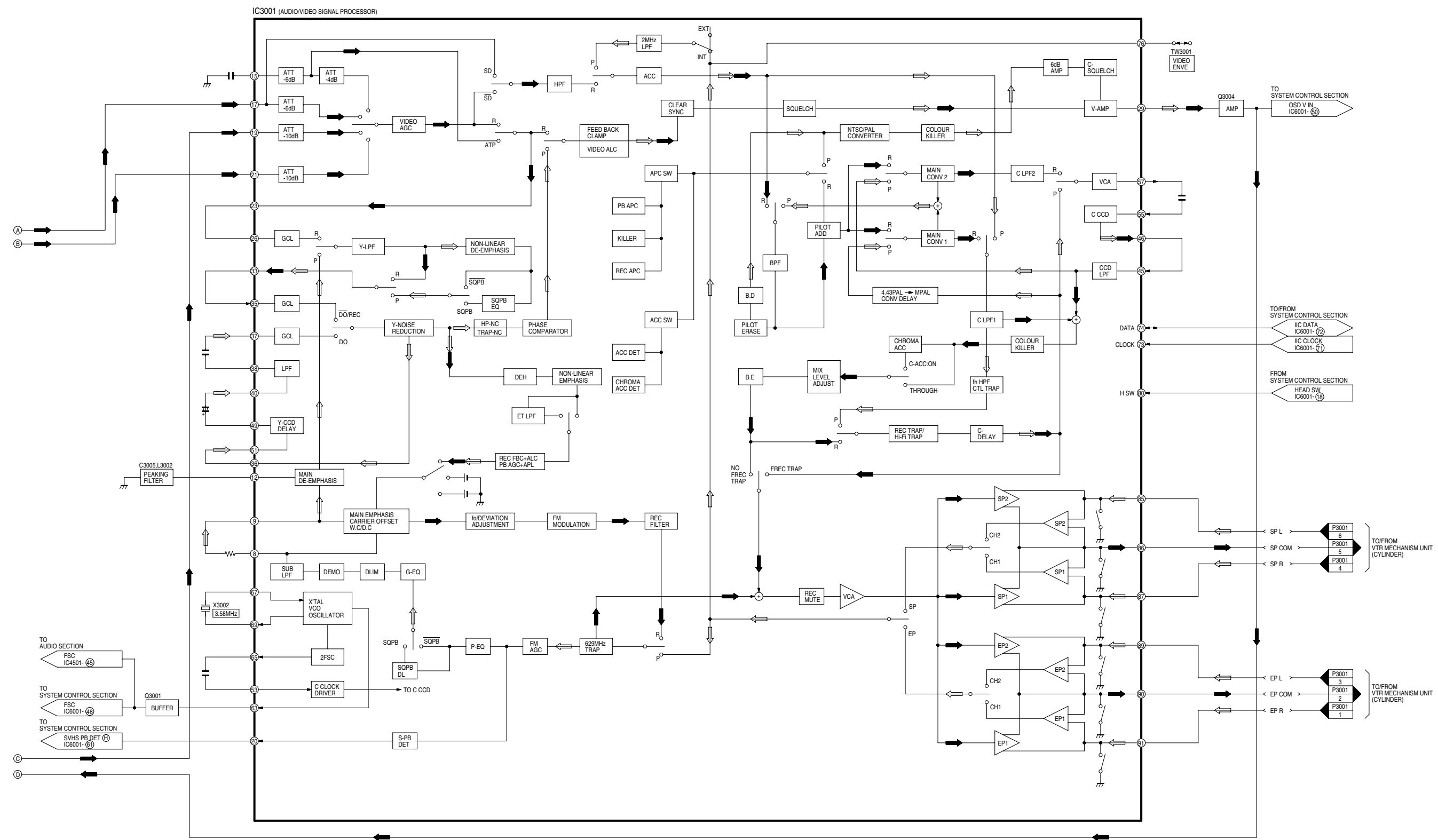
### 11.3. Analog Video Block Diagram

 :DVD VIDEO EE SIGNAL    
  :REC SIGNAL    
  :PB SIGNAL



DMR-EZ48VP/PC, EZ485VP  
Analog Video Block Diagram

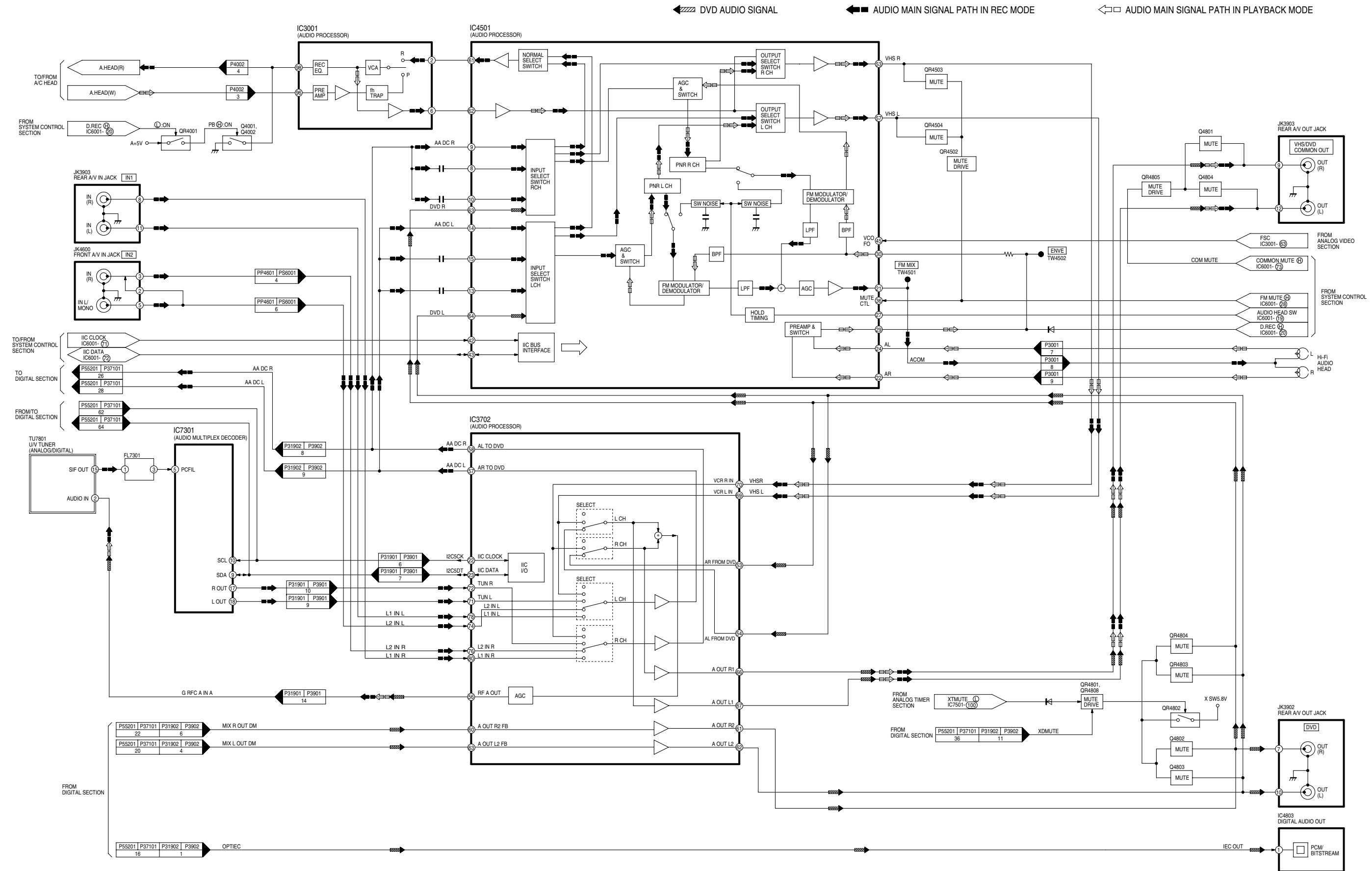
↔ :DVD VIDEO EE SIGNAL    → :REC SIGNAL    ⇨ :PB SIGNAL



DMR-EZ48VP/PC, EZ485VP  
Analog Video Block Diagram

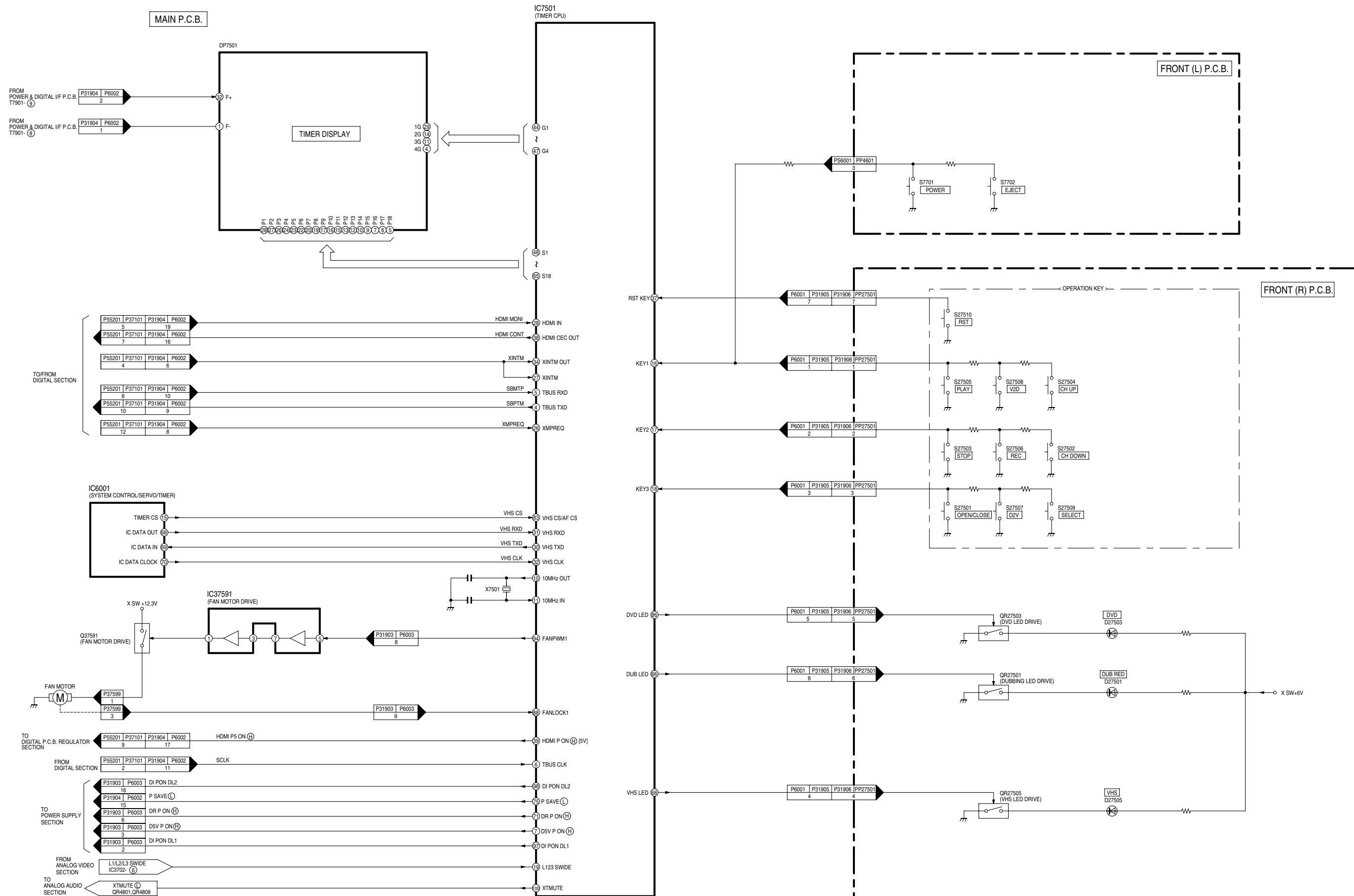


# 11.4. Analog Audio Block Diagram



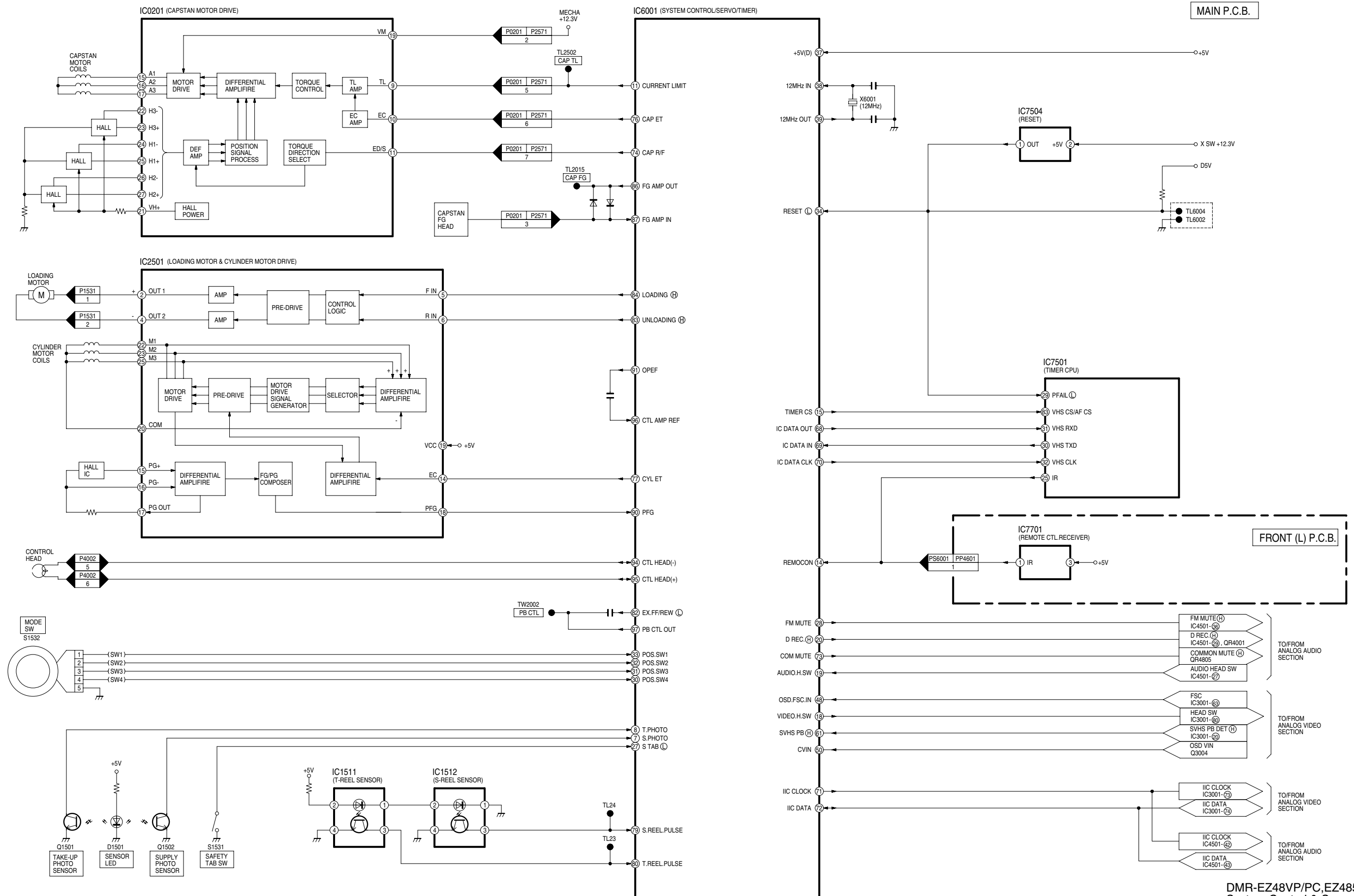
DMR-EZ48VP/PC,EZ485VP Analog Audio Block Diagram

# 11.5. Analog Timer Block Diagram



DMR-EZ48VP/PC,EZ485VP  
Analog Timer Block Diagram

# 11.6. System Control & Servo Block Diagram

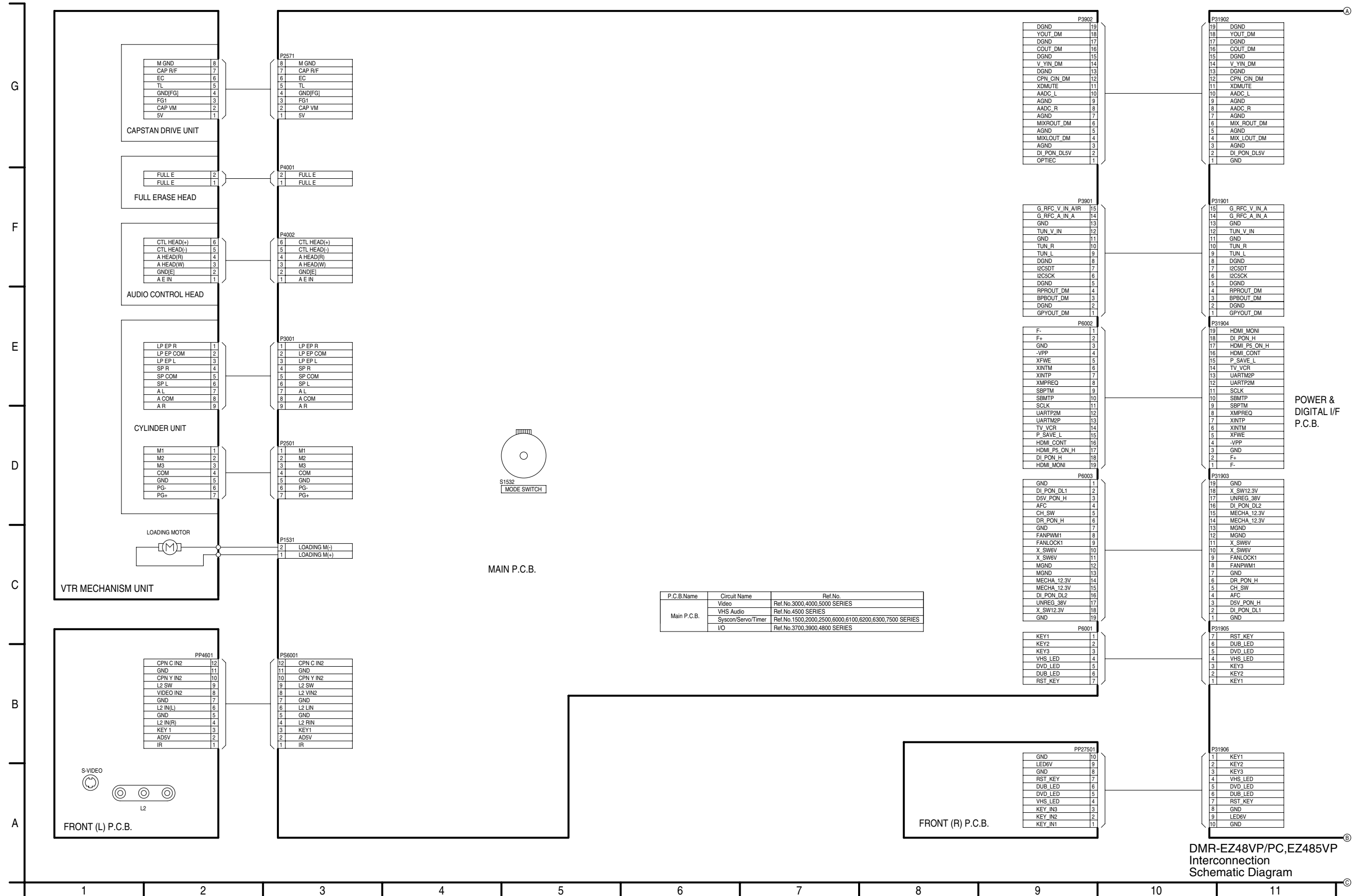


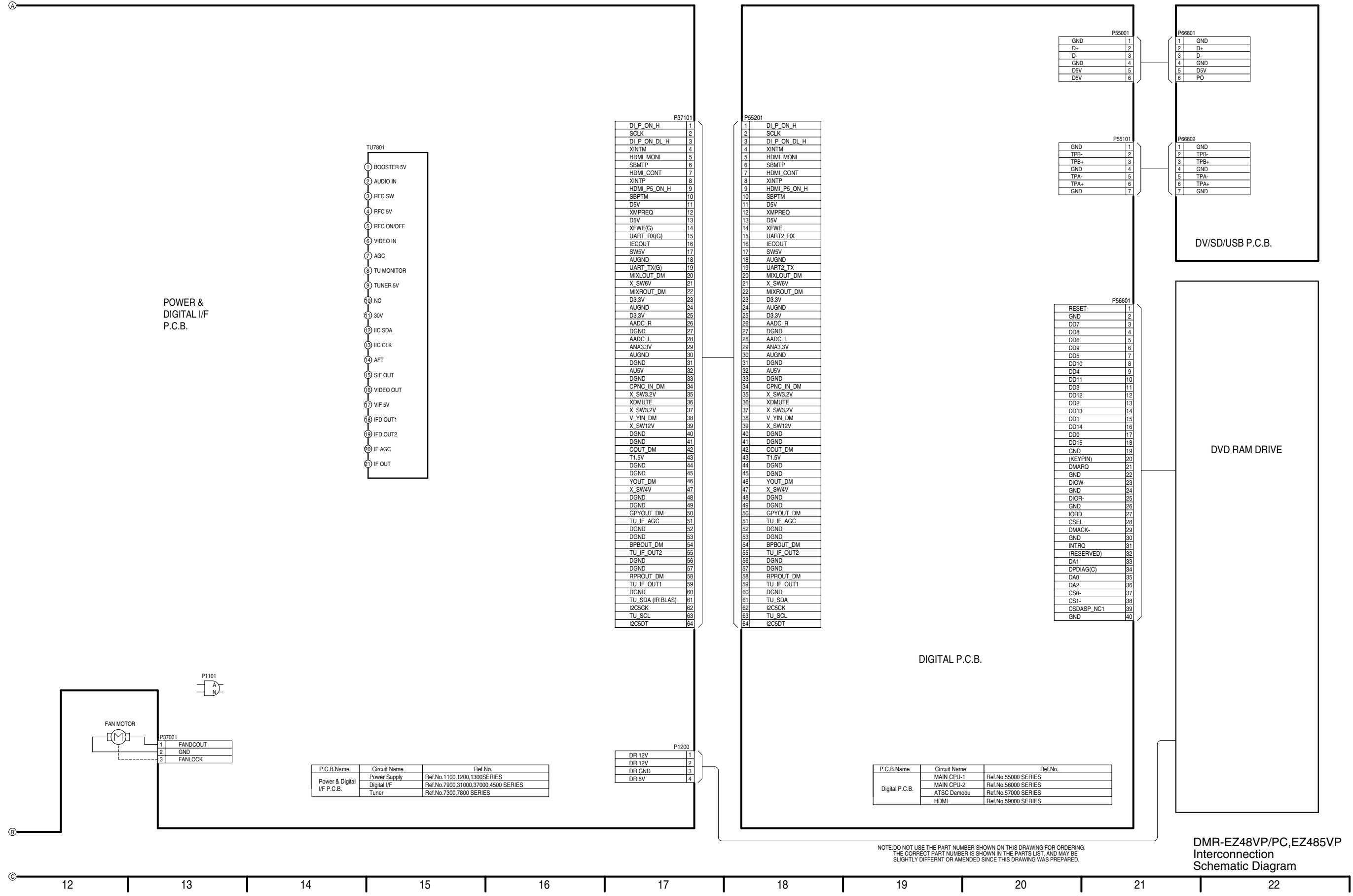
DMR-EZ48VP/PC, EZ485VP System Control & Servo Block Diagram



# 12 Schematic Diagram

## 12.1. Interconnection Schematic Diagram





POWER & DIGITAL I/F P.C.B.

DIGITAL P.C.B.

DV/SD/USB P.C.B.

DVD RAM DRIVE

P.C.B. Name	Circuit Name	Ref.No.
Power & Digital I/F P.C.B.	Power Supply	Ref.No.1100,1200,1300SERIES
	Digital I/F	Ref.No.7900,31000,37000,4500 SERIES
	Tuner	Ref.No.7300,7800 SERIES

P.C.B. Name	Circuit Name	Ref.No.
Digital P.C.B.	MAIN CPU-1	Ref.No.55000 SERIES
	MAIN CPU-2	Ref.No.56000 SERIES
	ATSC Demodu	Ref.No.57000 SERIES
	HDMI	Ref.No.59000 SERIES

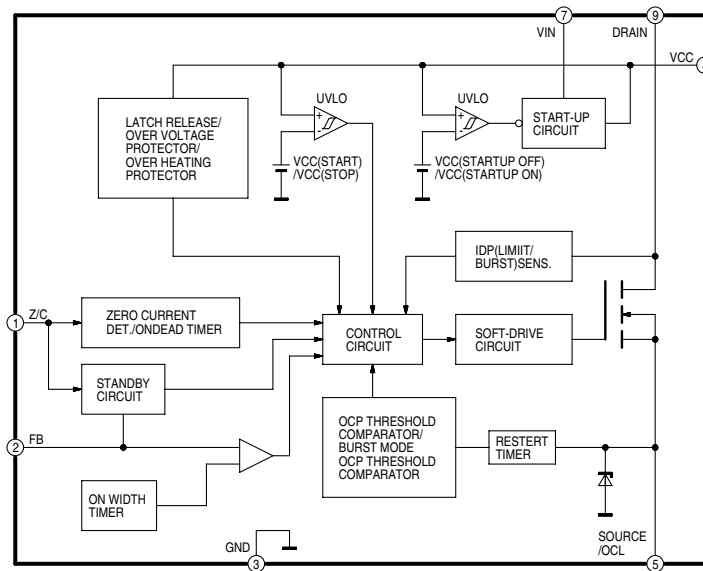
P.C.B. Name	Circuit Name	Ref.No.
Digital P.C.B.	MAIN CPU-1	Ref.No.55000 SERIES
	MAIN CPU-2	Ref.No.56000 SERIES
	ATSC Demodu	Ref.No.57000 SERIES
	HDMI	Ref.No.59000 SERIES

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

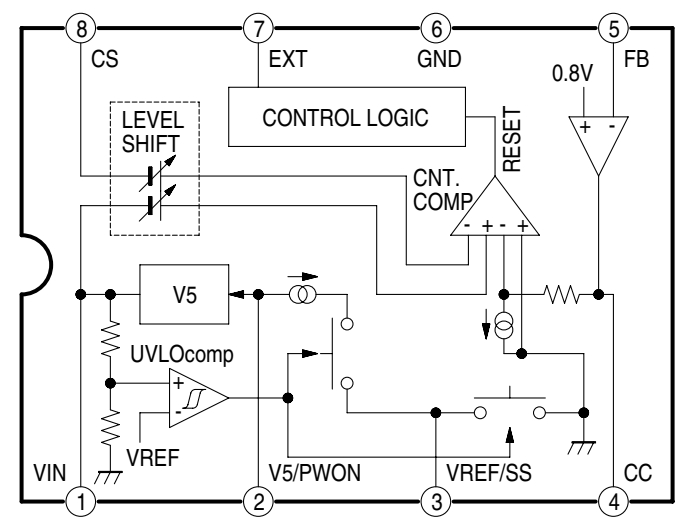
DMR-EZ48VP/PC, EZ485VP Interconnection Schematic Diagram



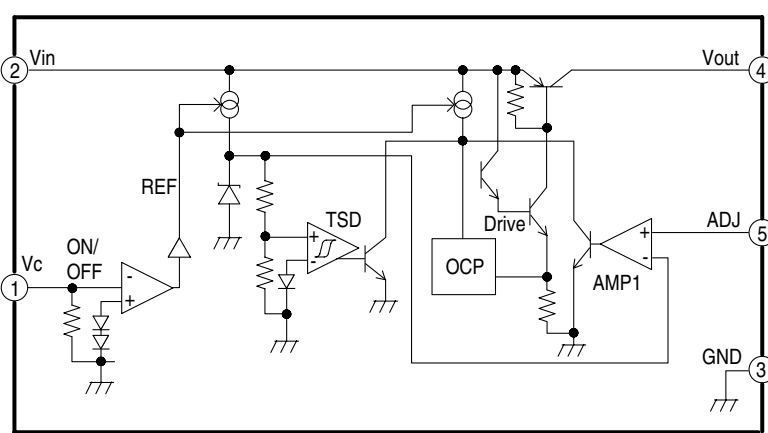
**IC1120  
SWITCHING IC  
IC-DETAIL BLOCK DIAGRAM**



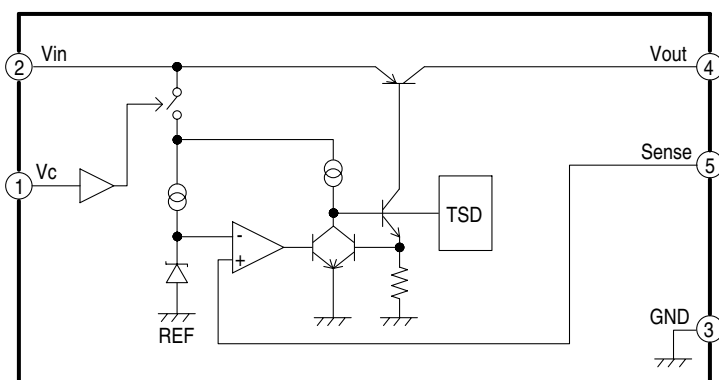
**IC1260,IC1300  
DC-DC CONVERTER  
IC-DETAIL BLOCK DIAGRAM**



**IC1280  
REG. D+3.3V  
IC1340  
REG. D+5V  
IC-DETAIL BLOCK DIAGRAM**



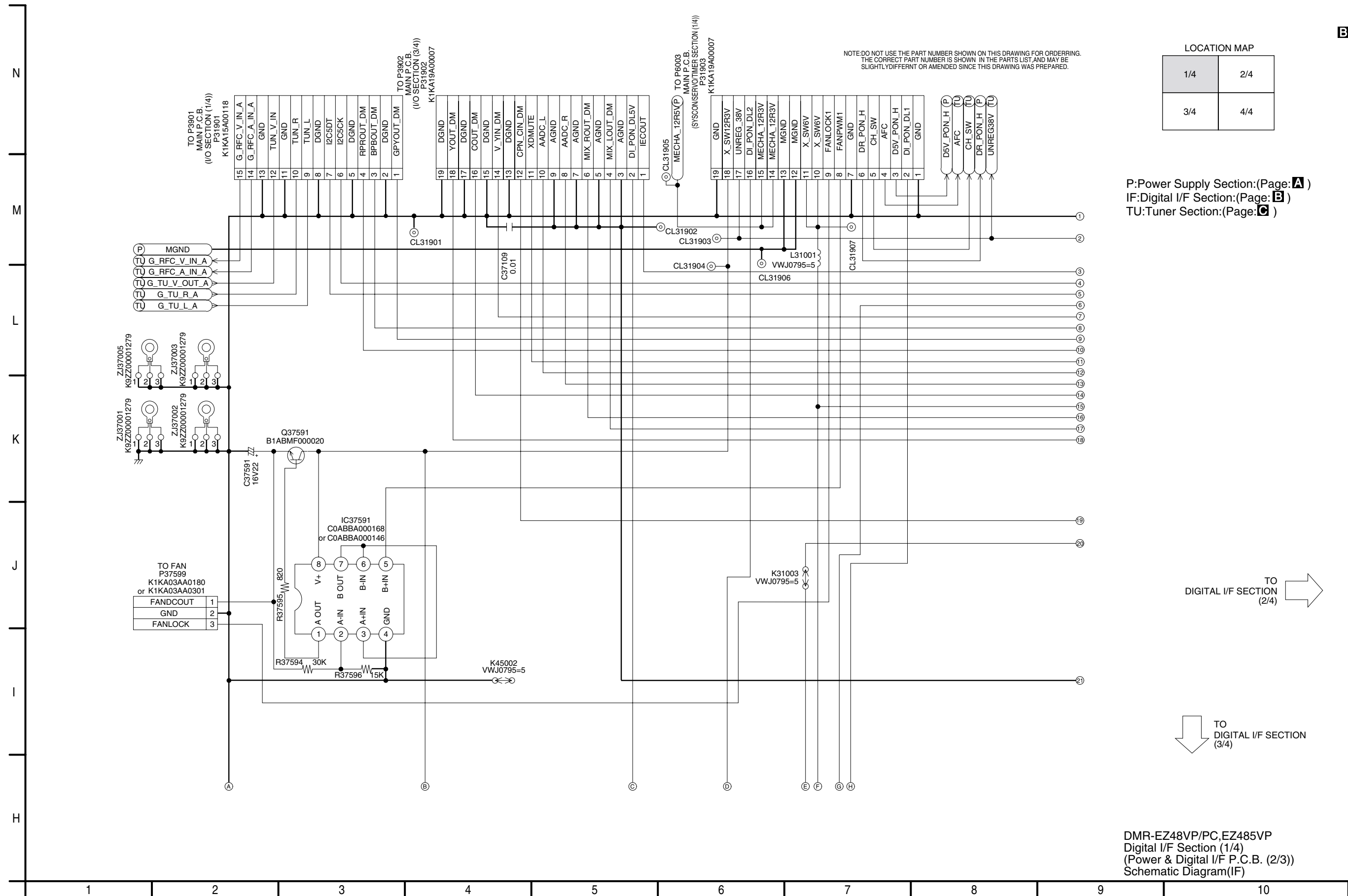
**IC1290  
REG. DR+5V  
IC-DETAIL BLOCK DIAGRAM**



- IC1120 Detail Block Diagram
- IC1260 Detail Block Diagram
- IC1280 Detail Block Diagram
- IC1290 Detail Block Diagram
- IC1300 Detail Block Diagram
- IC1340 Detail Block Diagram
- DMR-EZ48VP/PC,EZ485VP IC-Detail Block Diagram



### 12.3. Digital I/F (1/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF)



DMR-EZ48VP/PC, EZ485VP  
 Digital I/F Section (1/4)  
 (Power & Digital I/F P.C.B. (2/3))  
 Schematic Diagram (IF)

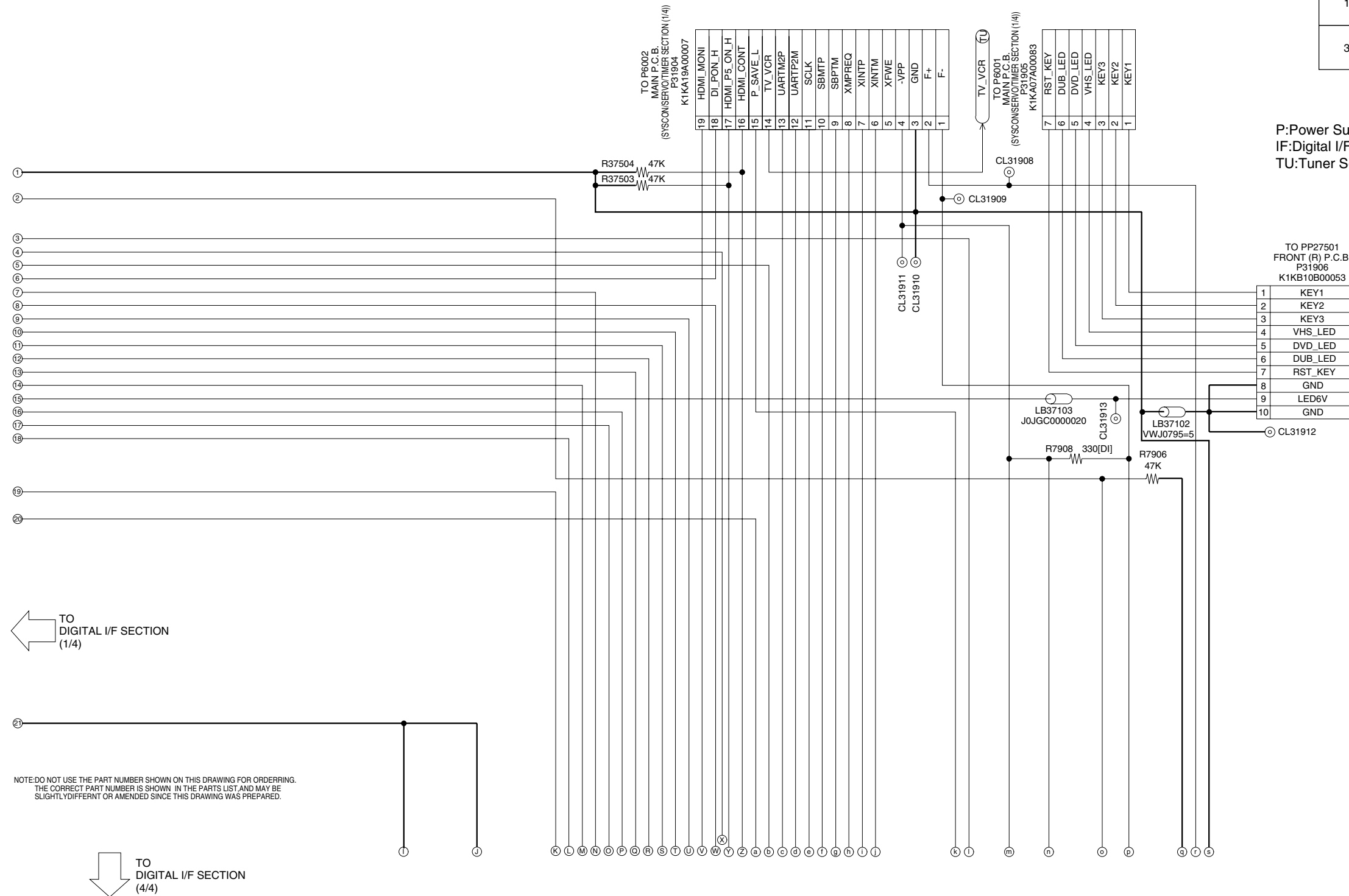
### 12.4. Digital I/F (2/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF)

B

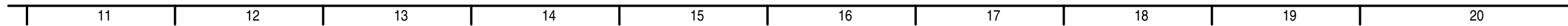
LOCATION MAP

1/4	2/4
3/4	4/4

P:Power Supply Section:(Page: **A** )  
 IF:Digital I/F Section:(Page: **B** )  
 TU:Tuner Section:(Page: **C** )

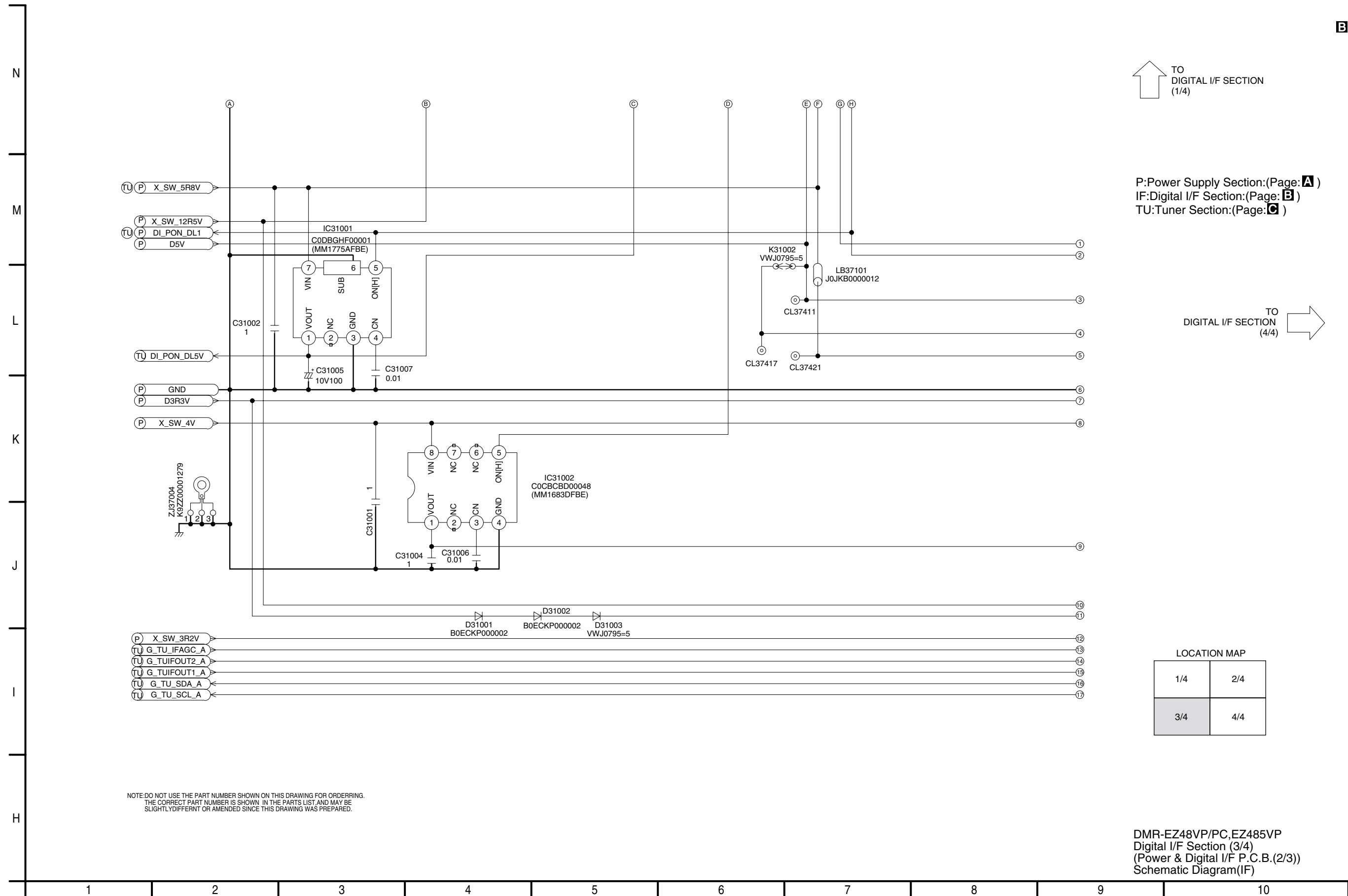


DMR-EZ48VP/PC,EZ485VP  
 Digital I/F Section (2/4)  
 (Power & Digital I/F P.C.B. (2/3))  
 Schematic Diagram(IF)



### 12.5. Digital I/F (3/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF)

**B**



↑ TO  
DIGITAL I/F SECTION  
(1/4)

P:Power Supply Section:(Page: **A** )  
IF:Digital I/F Section:(Page: **B** )  
TU:Tuner Section:(Page: **C** )

→ TO  
DIGITAL I/F SECTION  
(4/4)

LOCATION MAP

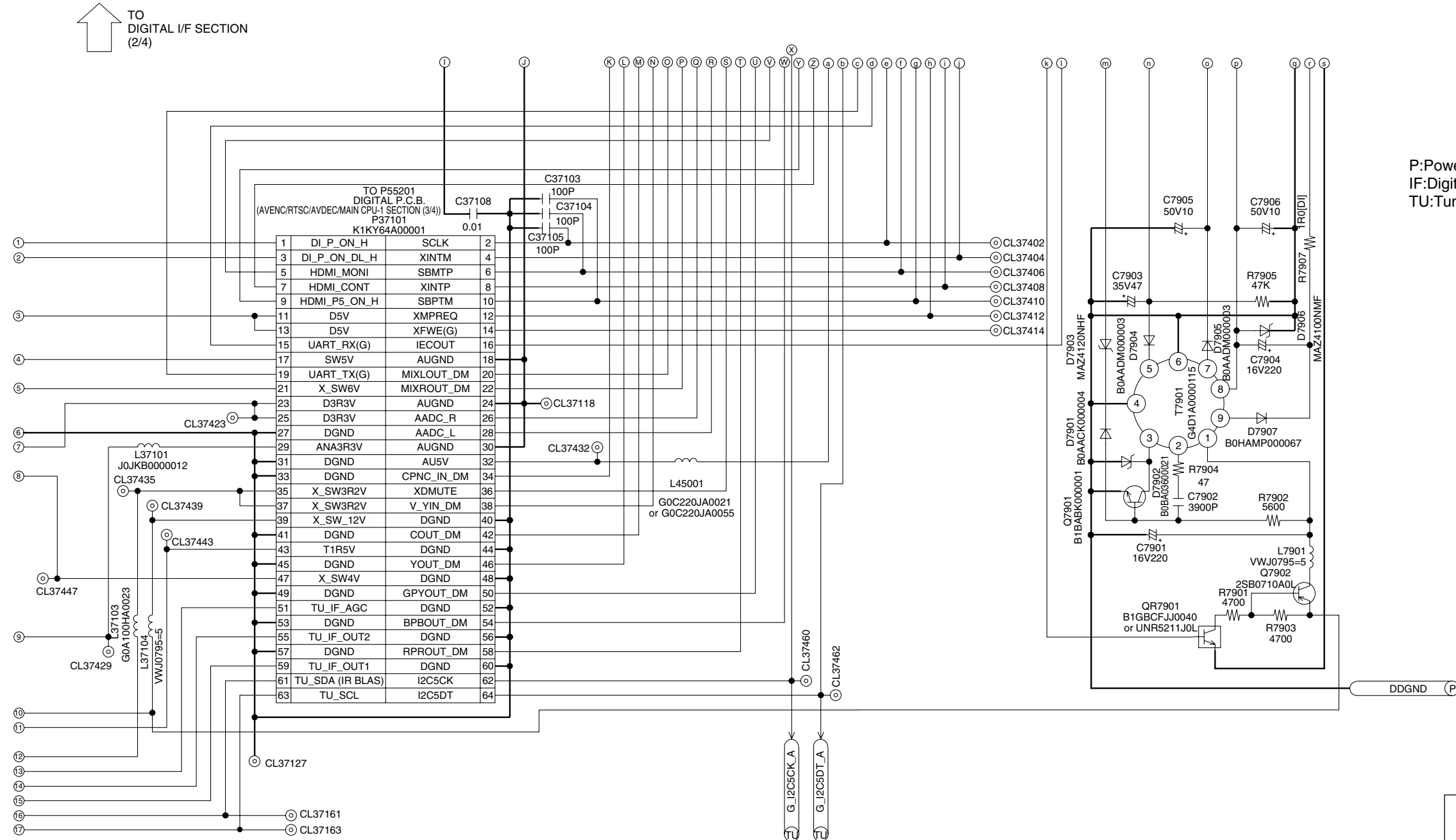
1/4	2/4
3/4	4/4

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EZ48VP/PC,EZ485VP  
Digital I/F Section (3/4)  
(Power & Digital I/F P.C.B.(2/3))  
Schematic Diagram(IF)

### 12.6. Digital I/F (4/4) Section (Power & Digital I/F P.C.B.(2/3)) Schematic Diagram (IF)

B



P:Power Supply Section:(Page: A )  
 IF:Digital I/F Section:(Page: B )  
 TU:Tuner Section:(Page: C )

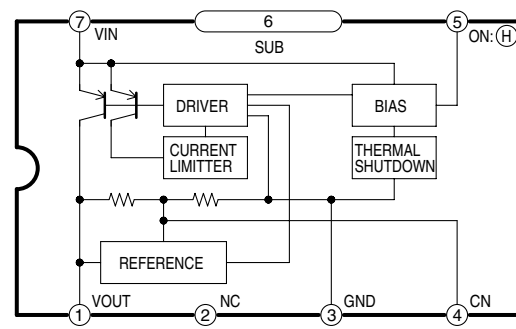
LOCATION MAP

1/4	2/4
3/4	4/4

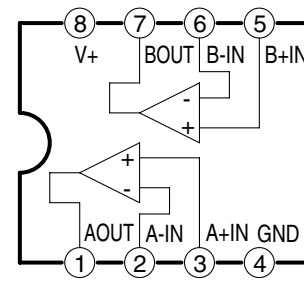
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
 THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EZ48VP/PC,EZ485VP  
 Digital I/F Section (4/4)  
 (Power & Digital I/F P.C.B. (2/3))  
 Schematic Diagram(IF)

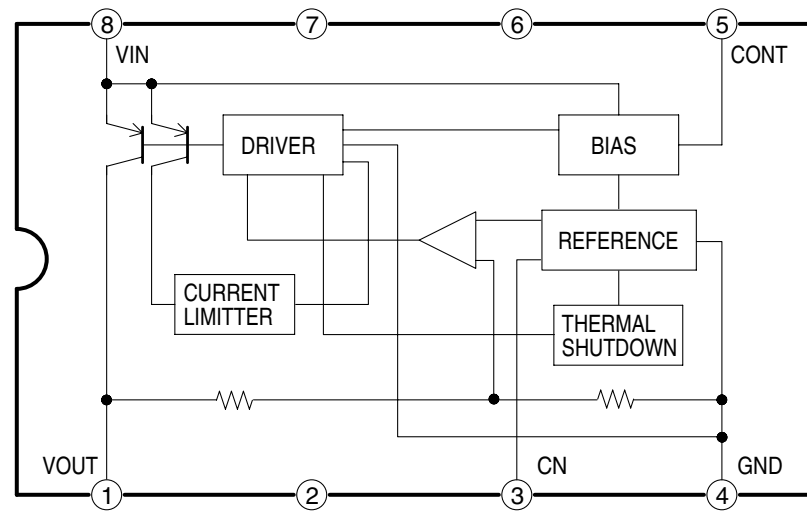
**IC31001**  
**REG. DI PON DL+5V**  
**IC-DETAIL BLOCK DIAGRAM**



**IC37591**  
**FAN MOTOR DRIVE**  
**IC-DETAIL BLOCK DIAGRAM**

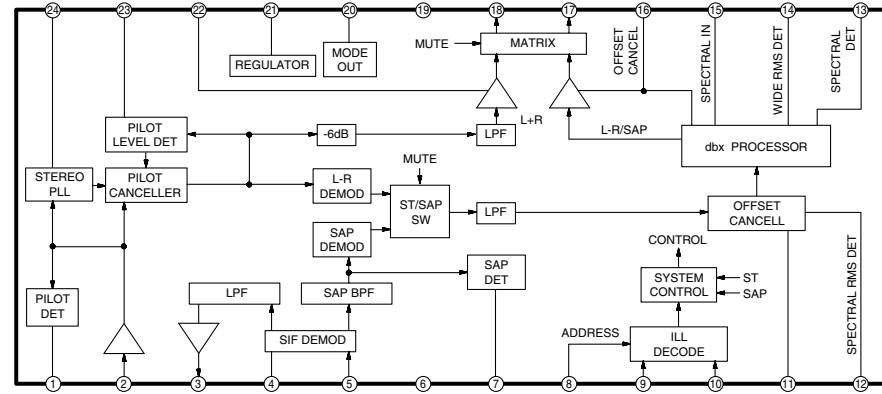


**IC31002**  
**REG. ANA+3.3V**  
**IC-DETAIL BLOCK DIAGRAM**

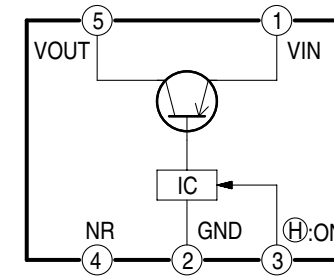




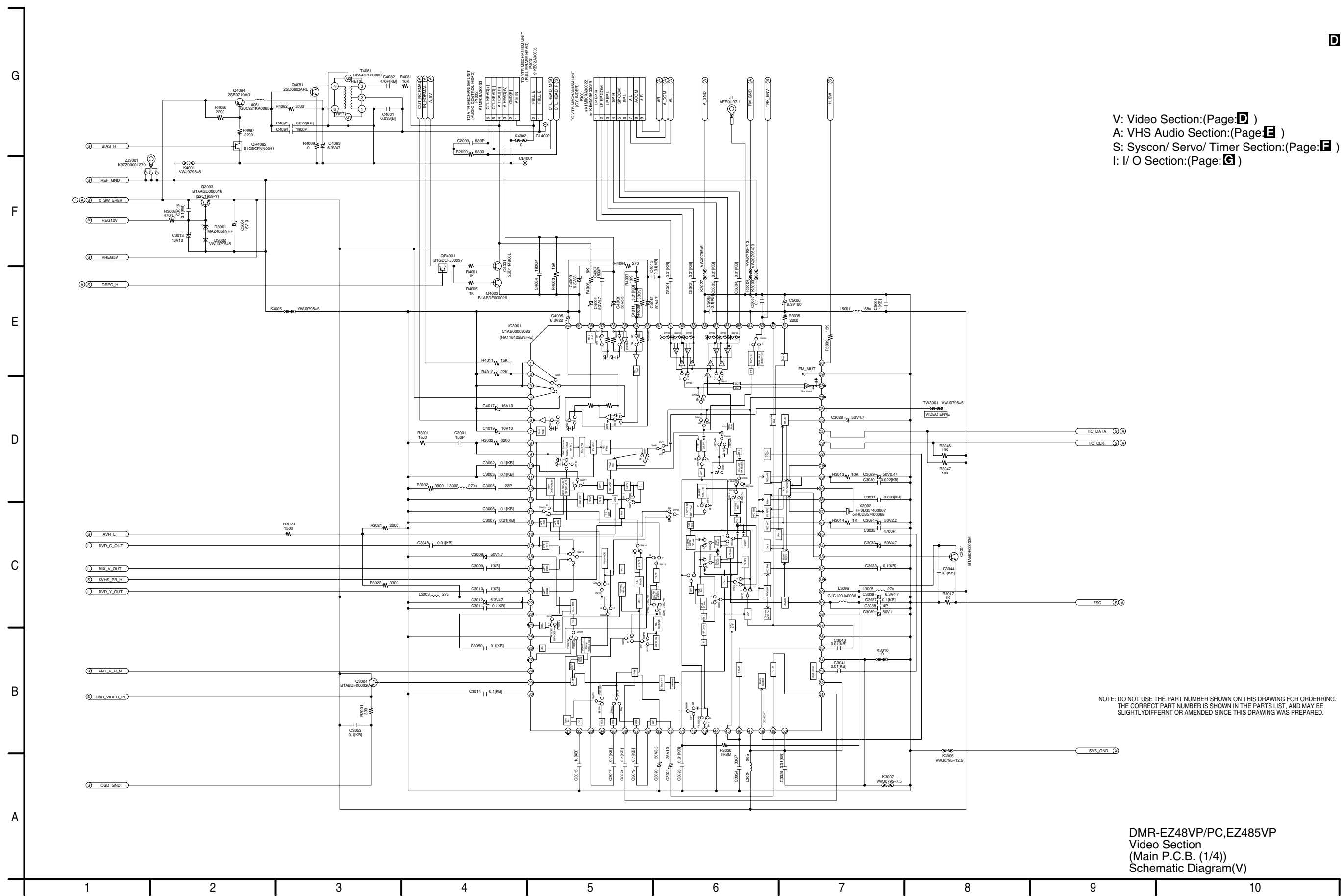
**IC7301  
AUDIO MULTIPLEX DECODER  
IC-DETAIL BLOCK DIAGRAM**



**IC7801  
REG. BOOSTER+5V  
IC-DETAIL BLOCK DIAGRAM**



### 12.8. Video Section (Main P.C.B.(1/4)) Schematic Diagram (V)



V: Video Section:(Page **D**)  
 A: VHS Audio Section:(Page **E**)  
 S: Syscon/ Servo/ Timer Section:(Page **F**)  
 I: I/ O Section:(Page **C**)

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
 THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EZ48VP/PC,EZ485VP  
 Video Section  
 (Main P.C.B. (1/4))  
 Schematic Diagram(V)







# 12.11. Syscon/Servo/Timer (2/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S)

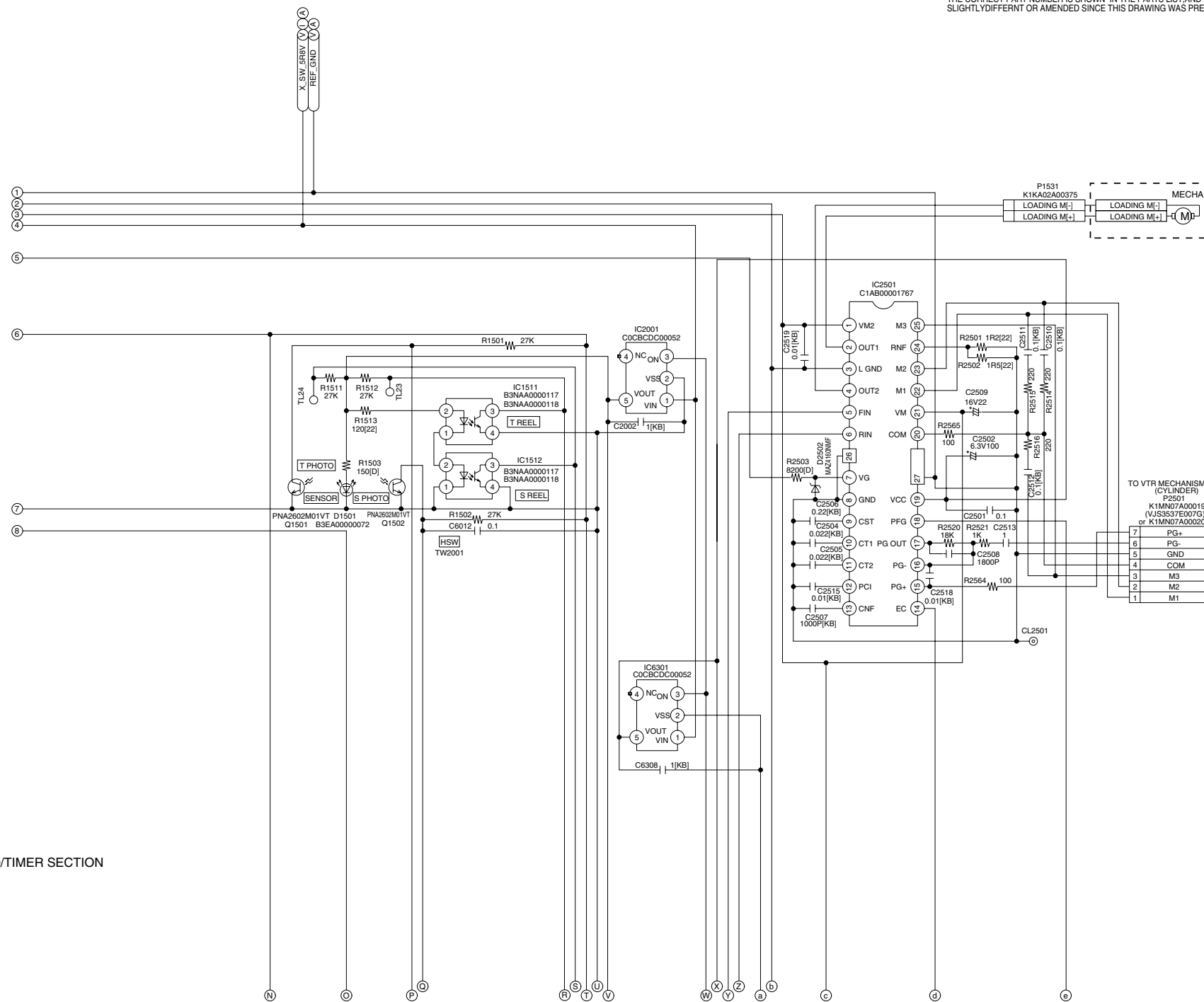
F

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

LOCATION MAP

1/4	2/4
3/4	4/4

V: Video Section:(Page: **D**)  
 A: VHS Audio Section:(Page: **E**)  
 S: Syscon/Servo/Timer Section:(Page: **F**)  
 I: I/O Section:(Page: **G**)



TO  
 SYSCON/SERVO/TIMER SECTION  
 (1/4)

TO  
 SYSCON/SERVO/TIMER SECTION  
 (4/4)

TO VTR MECHANISM UNIT  
 (CYLINDER)  
 P2501  
 K1M1N07A00019  
 (VJ3S37E007G)  
 or K1M1N07A00020

7	PG+
6	PG-
5	GND
4	COM
3	M3
2	M2
1	M1

### 12.12. Syscon/Servo/Timer (3/4) Section (Main P.C.B.(3/4)) Schematic Diagram (S)

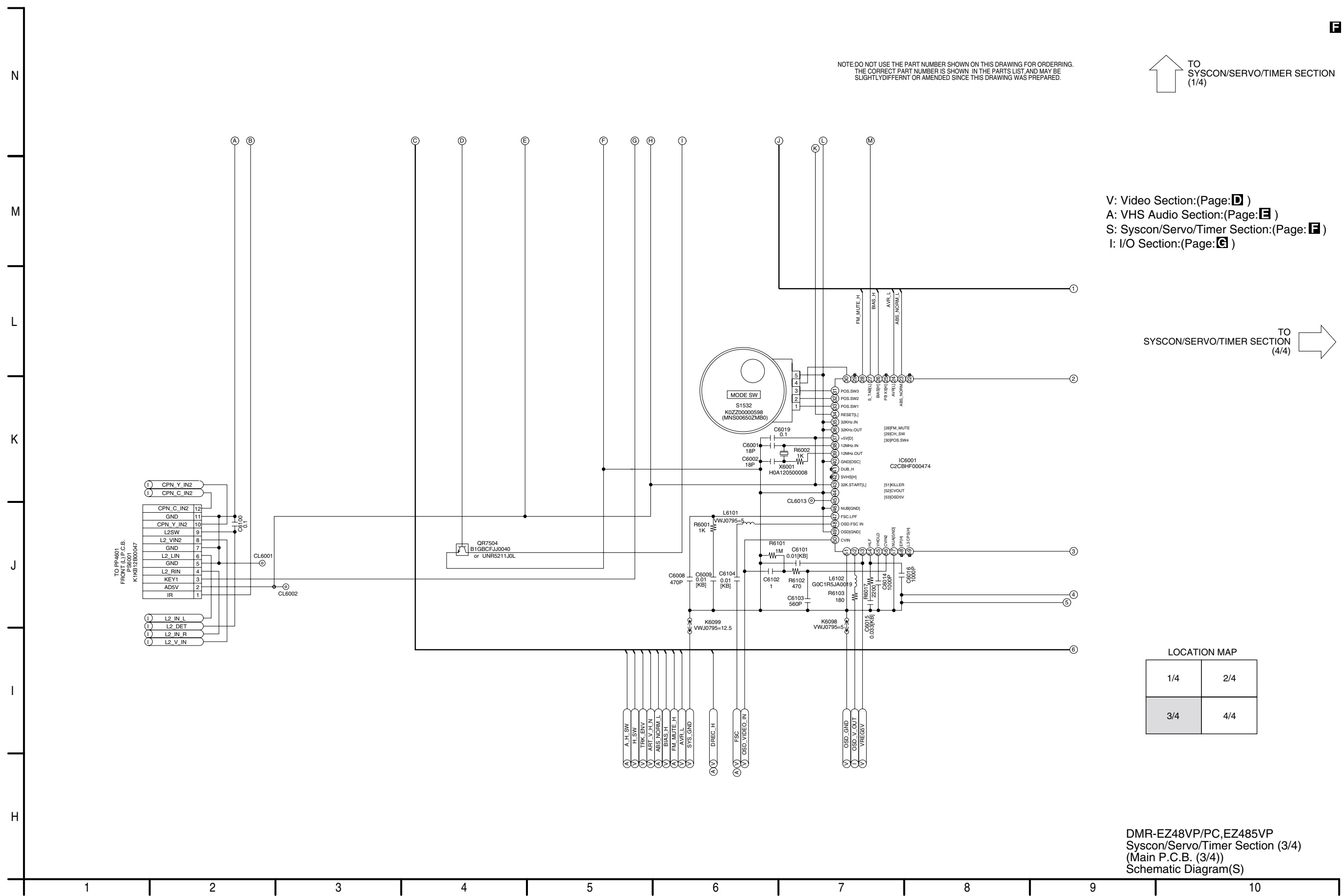


NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

↑ TO  
SYSCON/SERVO/TIMER SECTION  
(1/4)

V: Video Section:(Page: **D** )  
A: VHS Audio Section:(Page: **E** )  
S: Syscon/Servo/Timer Section:(Page: **F** )  
I: I/O Section:(Page: **G** )

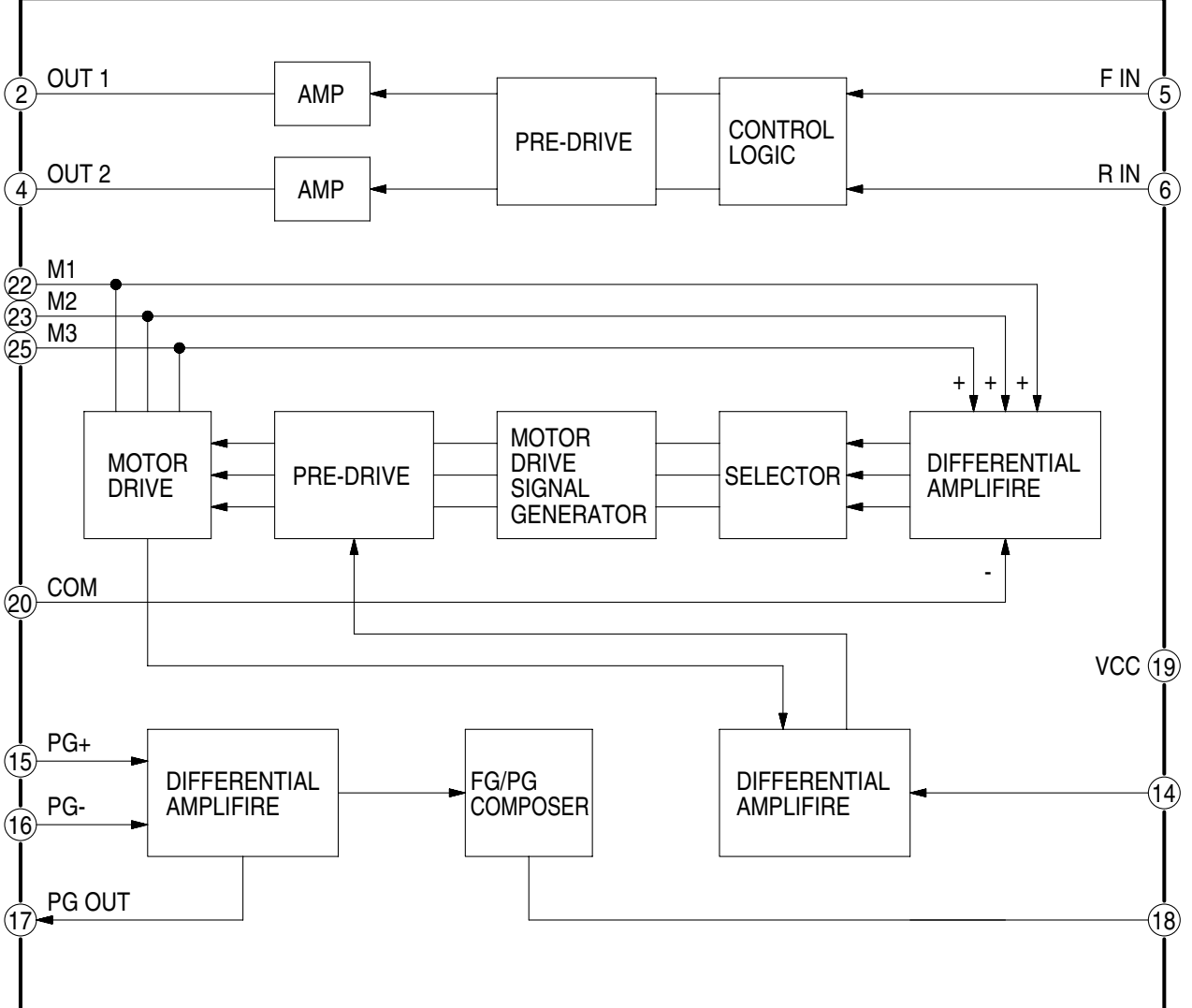
→ TO  
SYSCON/SERVO/TIMER SECTION  
(4/4)



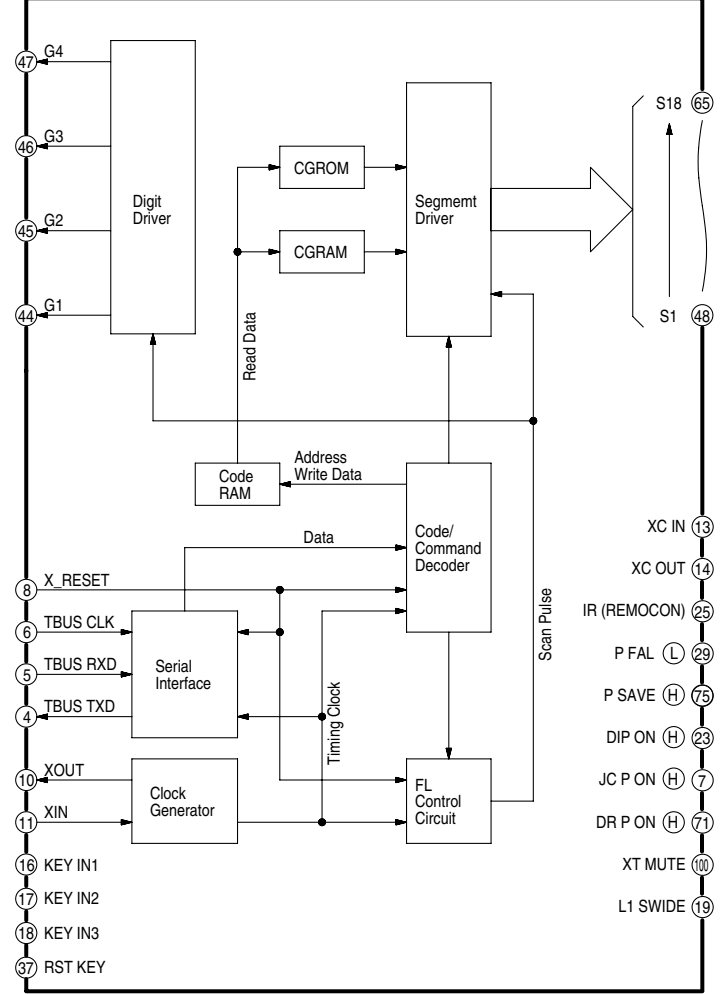
DMR-EZ48VP/PC,EZ485VP  
Syscon/Servo/Timer Section (3/4)  
(Main P.C.B. (3/4))  
Schematic Diagram(S)



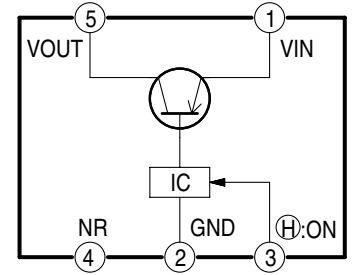
**IC2501**  
**LOADING MOTOR & CYLINDER MOTOR DRIVE**  
**IC-DETAIL BLOCK DIAGRAM**



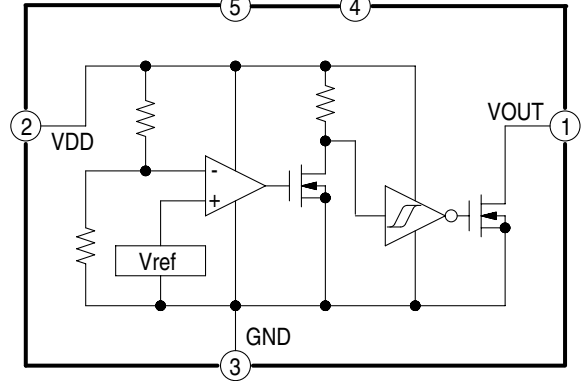
**IC7501**  
**TIMER**  
**IC-DETAIL BLOCK DIAGRAM**



**IC2001**  
**REG. A+5V**  
**IC6301**  
**REG. +5V**  
**IC-DETAIL BLOCK DIAGRAM**



**IC7504**  
**RESET**  
**IC-DETAIL BLOCK DIAGRAM**



IC2001 Detail Block Diagram  
 IC2501 Detail Block Diagram  
 IC6301 Detail Block Diagram  
 IC7501 Detail Block Diagram  
 IC7504 Detail Block Diagram  
 DMR-EZ48VP/PC,EZ485VP IC-Detail Block Diagram

### 12.14. I/O Section (1/4) (Main P.C.B.(4/4)) Schematic Diagram (I)

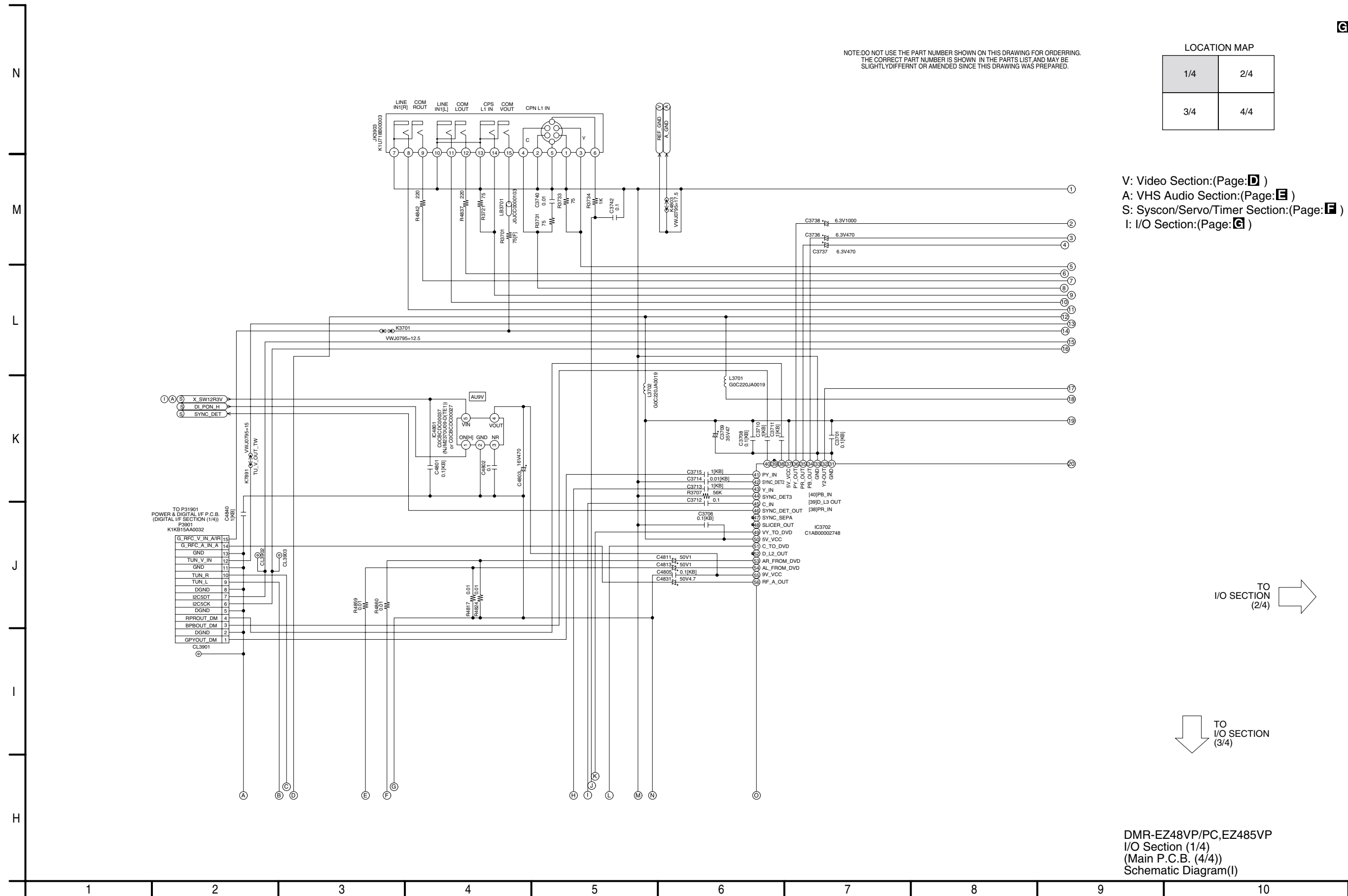
G

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

LOCATION MAP

1/4	2/4
3/4	4/4

V: Video Section:(Page: **D** )  
 A: VHS Audio Section:(Page: **E** )  
 S: Syscon/Servo/Timer Section:(Page: **F** )  
 I: I/O Section:(Page: **G** )



TO I/O SECTION (2/4) →

↓ TO I/O SECTION (3/4)

DMR-EZ48VP/PC,EZ485VP  
 I/O Section (1/4)  
 (Main P.C.B. (4/4))  
 Schematic Diagram(I)

# 12.15. I/O Section (2/4) (Main P.C.B.(4/4)) Schematic Diagram (I)

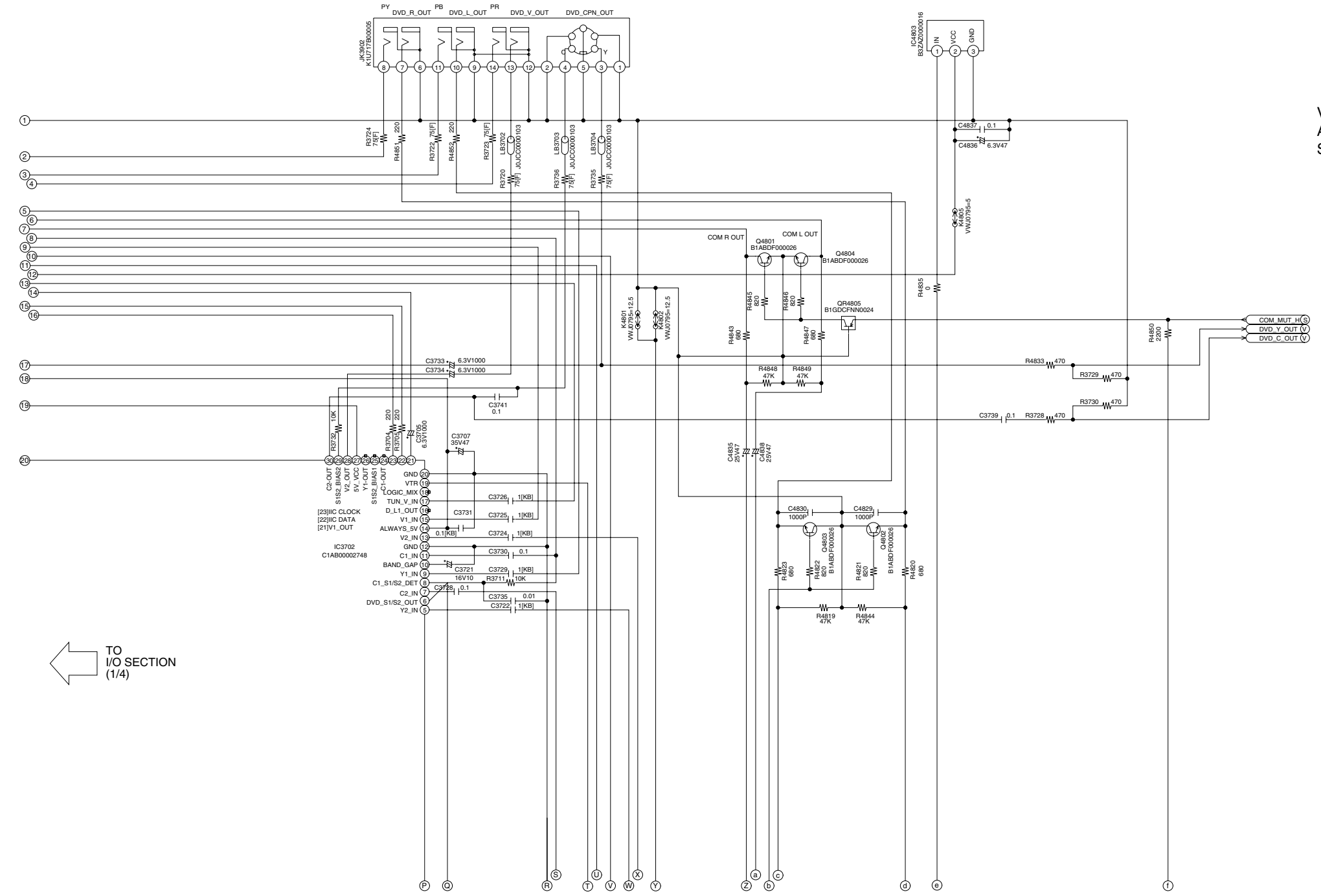
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE SLIGHTLYDIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

**C**

LOCATION MAP

1/4	2/4
3/4	4/4

V: Video Section:(Page:**D**)  
A: VHS Audio Section:(Page:**E**)  
S: Syscon/Servo/Timer Section:(Page:**F**)  
I: I/O Section:(Page:**C**)



TO I/O SECTION (1/4)

TO I/O SECTION (4/4)

DMR-EZ48VP/PC,EZ485VP  
I/O Section (2/4)  
(Main P.C.B. (4/4))  
Schematic Diagram(I)



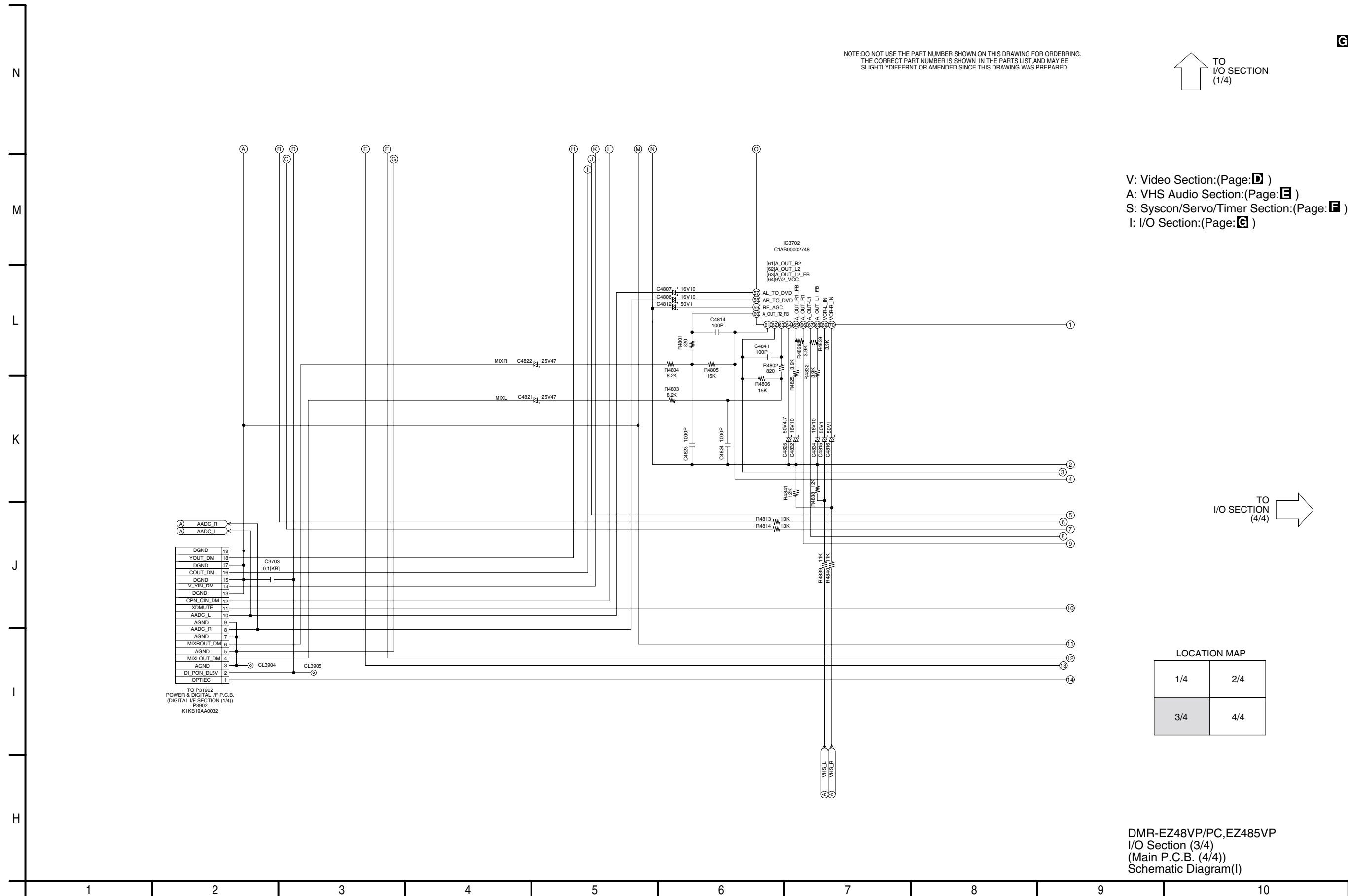
### 12.16. I/O Section (3/4) (Main P.C.B.(4/4)) Schematic Diagram (I)

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

↑ TO I/O SECTION (1/4)



V: Video Section: (Page: **D**)  
 A: VHS Audio Section: (Page: **E**)  
 S: Syscon/Servo/Timer Section: (Page: **F**)  
 I: I/O Section: (Page: **G**)



DMR-EZ48VP/PC,EZ485VP  
 I/O Section (3/4)  
 (Main P.C.B. (4/4))  
 Schematic Diagram(I)

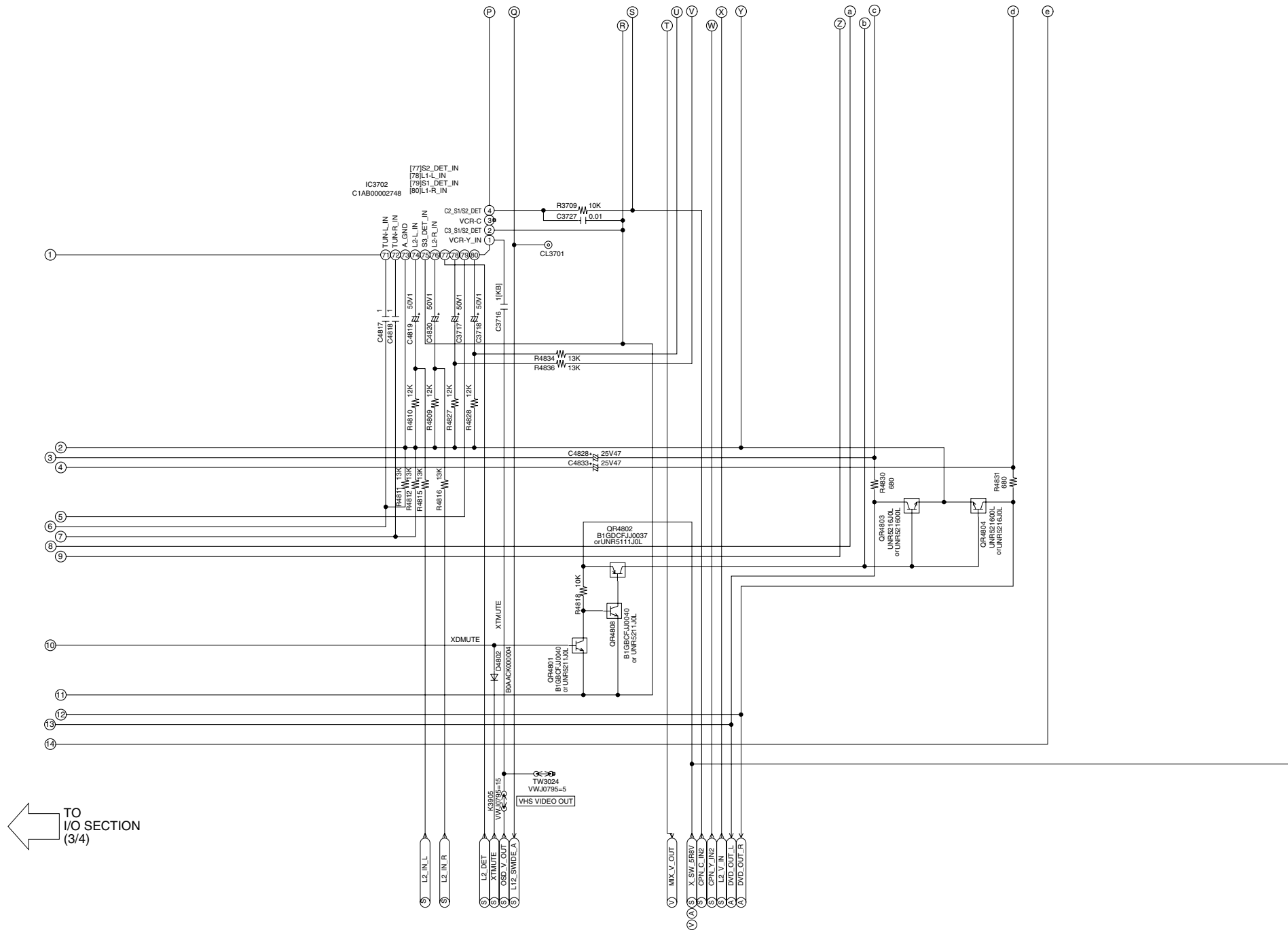
# 12.17. I/O Section (4/4) (Main P.C.B.(4/4)) Schematic Diagram (I)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE SLIGHTLYDIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

**G**

↑ TO I/O SECTION (2/4)

V: Video Section:(Page: **D** )  
A: VHS Audio Section:(Page: **E** )  
S: Syscon/Servo/Timer Section:(Page: **F** )  
I: I/O Section:(Page: **G** )

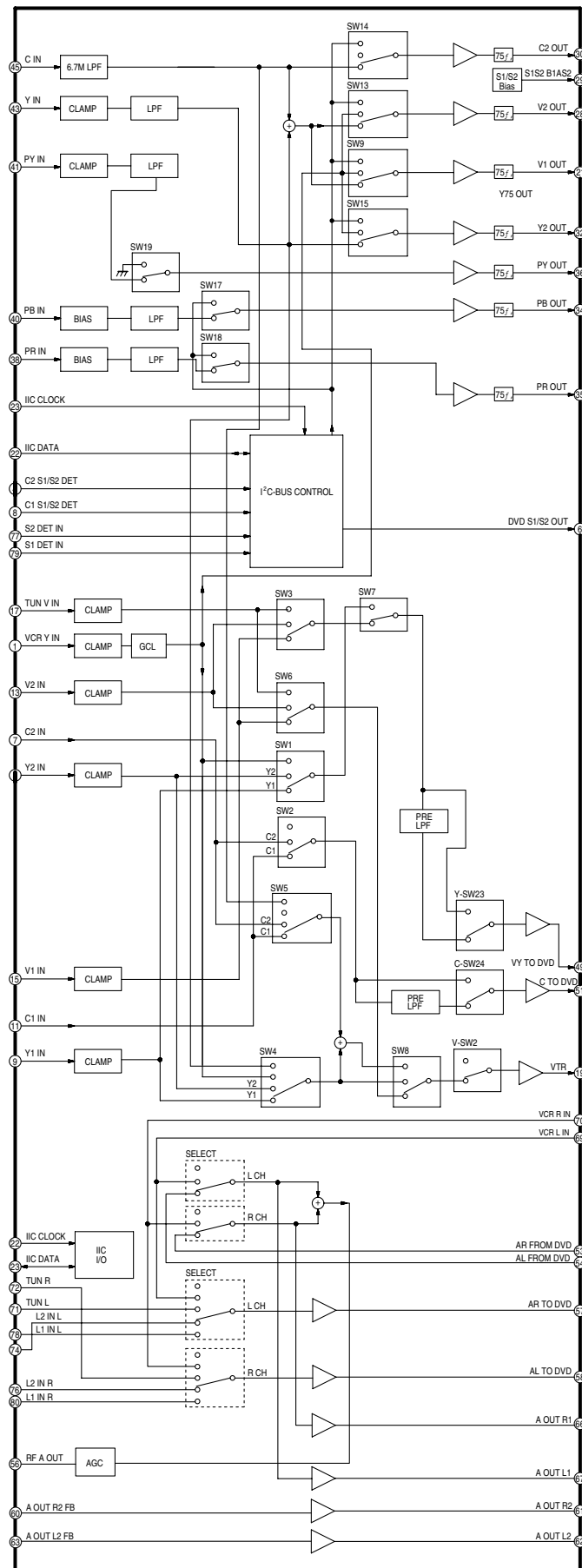


← TO I/O SECTION (3/4)

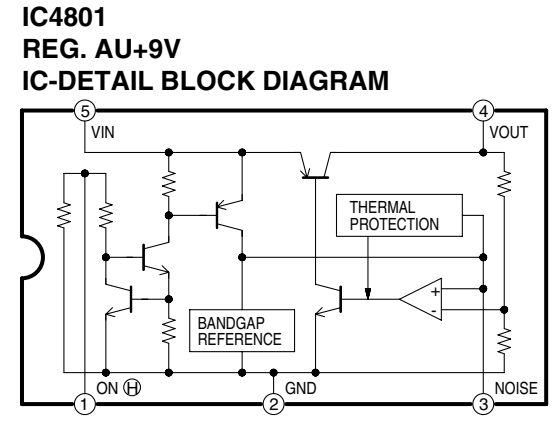
LOCATION MAP

1/4	2/4
3/4	4/4

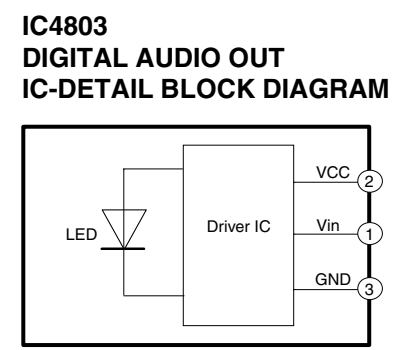
DMR-EZ48VP/PC,EZ485VP  
I/O Section (4/4)  
(Main P.C.B. (4/4))  
Schematic Diagram(I)



**IC3702**  
**VIDEO/AUDIO PROCESSOR**  
**IC-DETAIL BLOCK DIAGRAM**



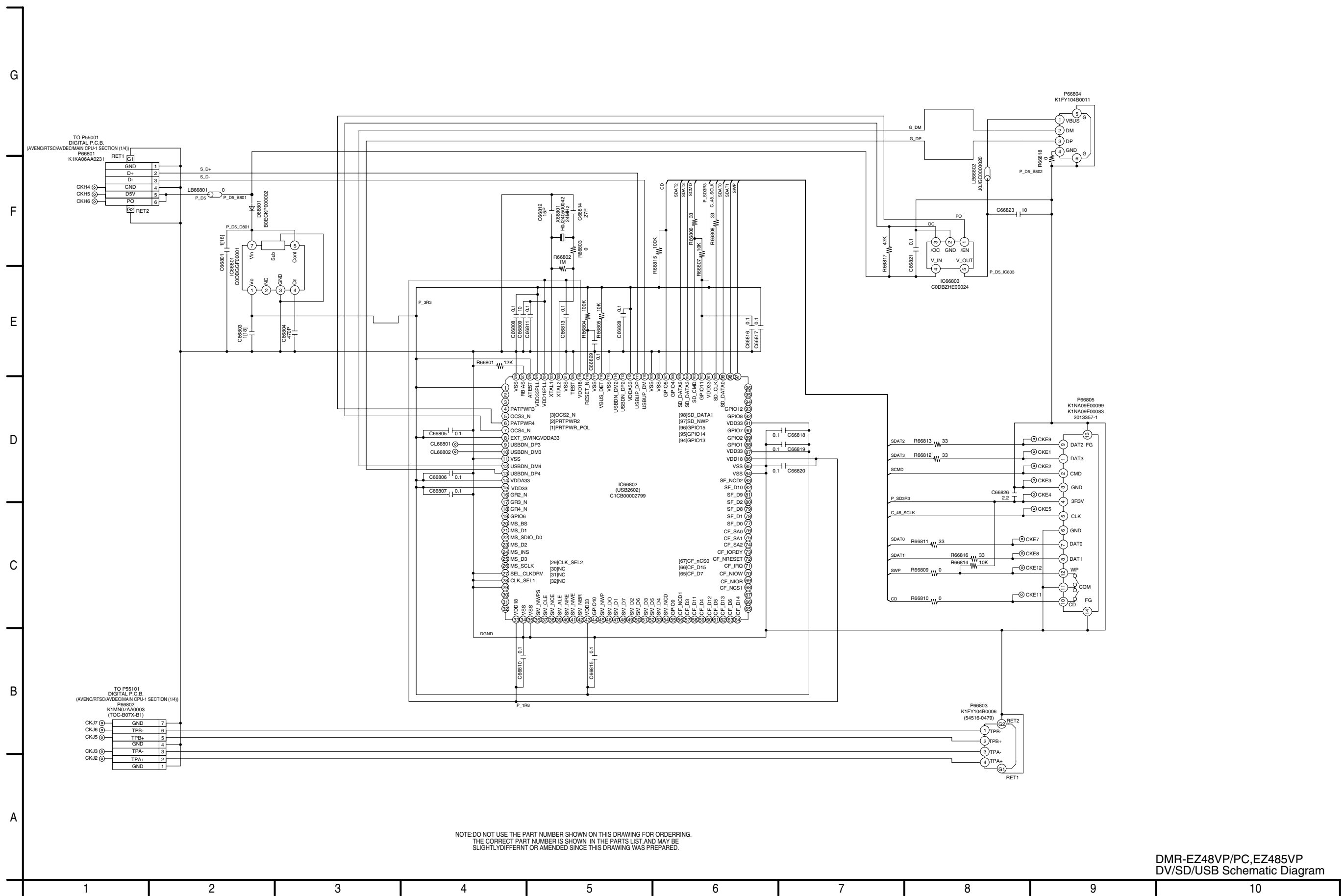
**IC4801**  
**REG. AU+9V**  
**IC-DETAIL BLOCK DIAGRAM**



**IC4803**  
**DIGITAL AUDIO OUT**  
**IC-DETAIL BLOCK DIAGRAM**

IC3702 Detail Block Diagram  
 IC4801 Detail Block Diagram  
 IC4803 Detail Block Diagram  
 DMR-EZ48VP/PC,EZ485VP IC-Detail Block Diagram

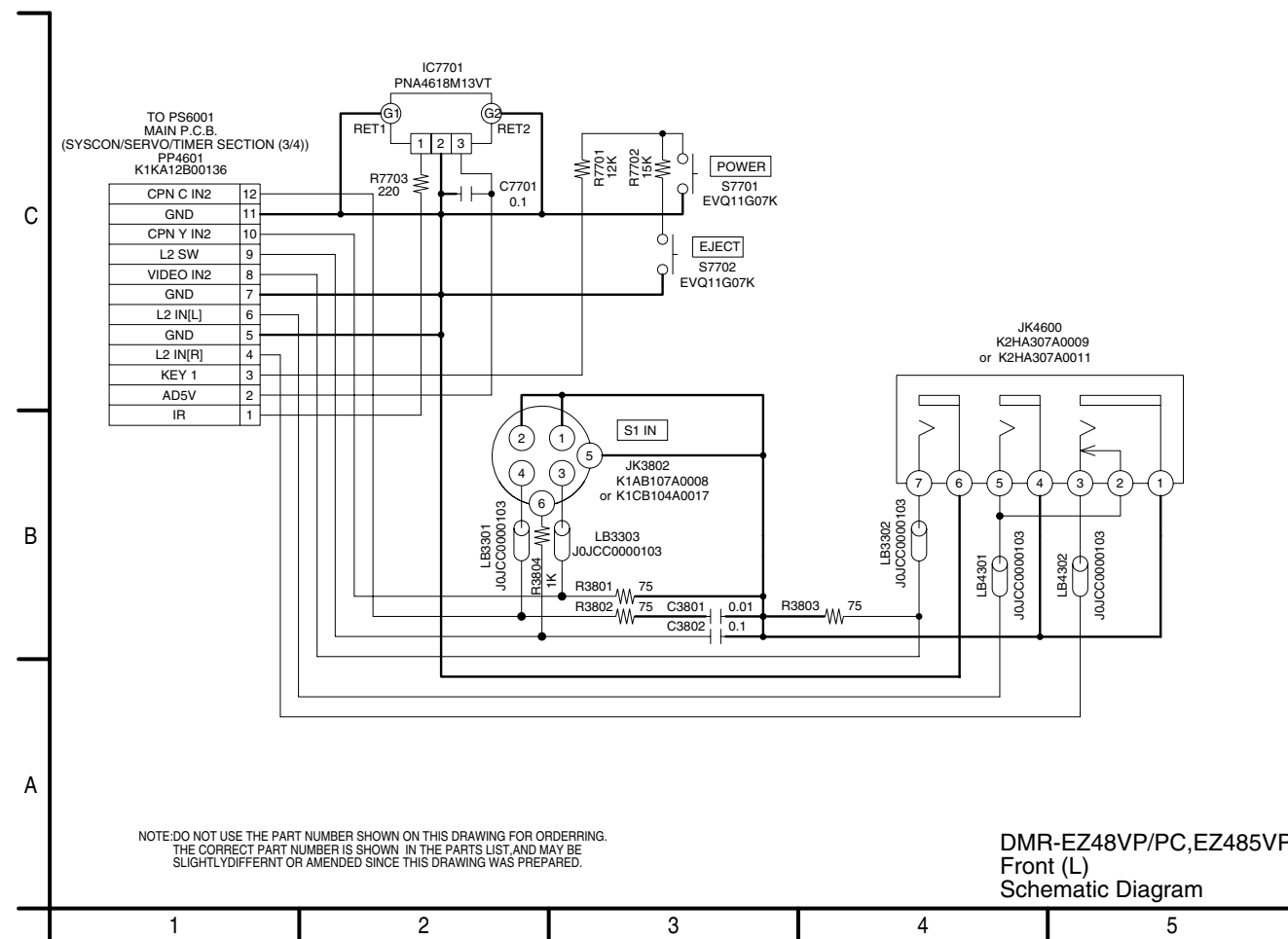
# 12.18. DV/SD/USB Schematic Diagram



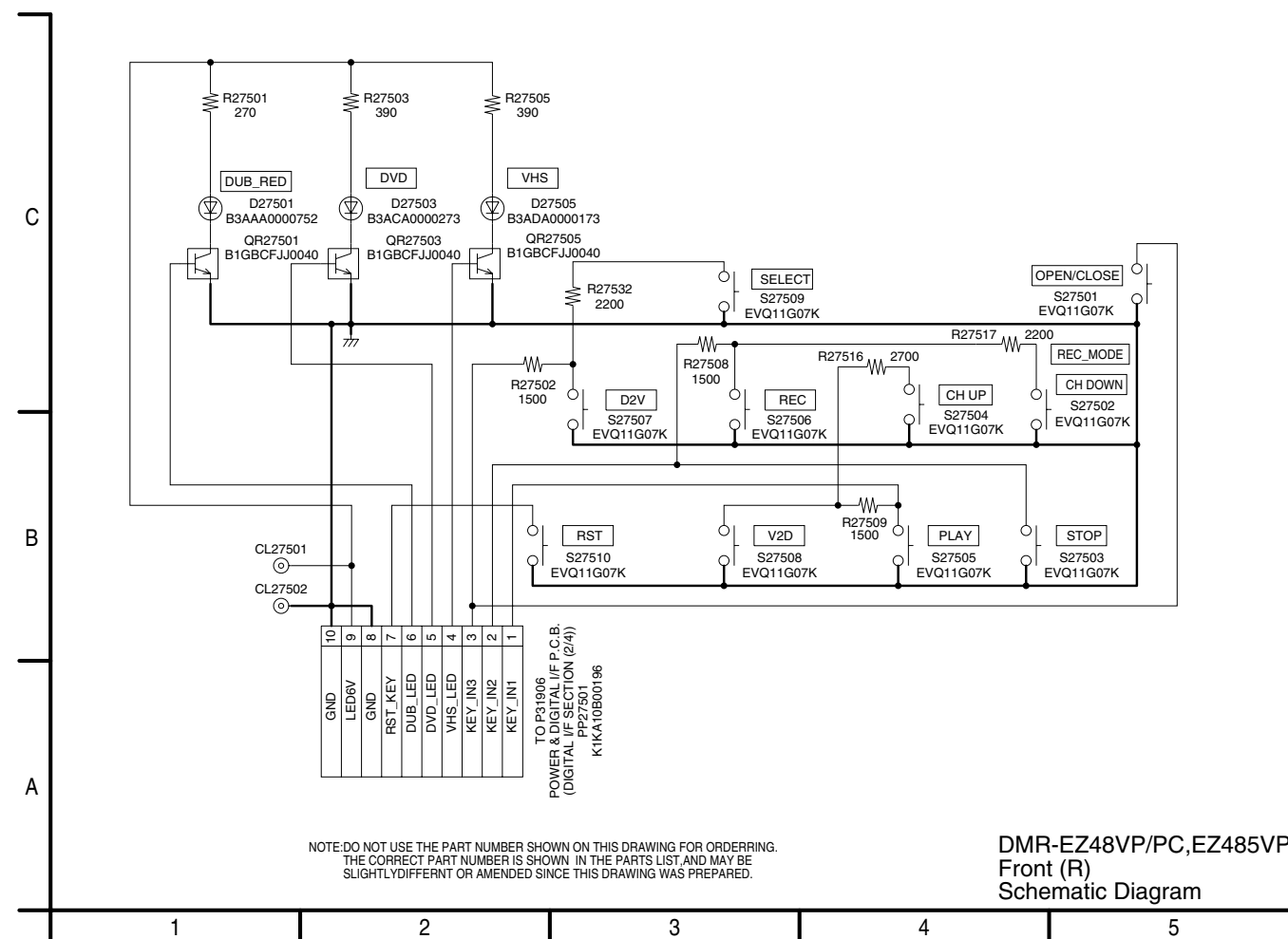
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.  
 THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST AND MAY BE  
 SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EZ48VP/PC, EZ485VP  
 DV/SD/USB Schematic Diagram

### 12.19. Front (L) Schematic Diagram



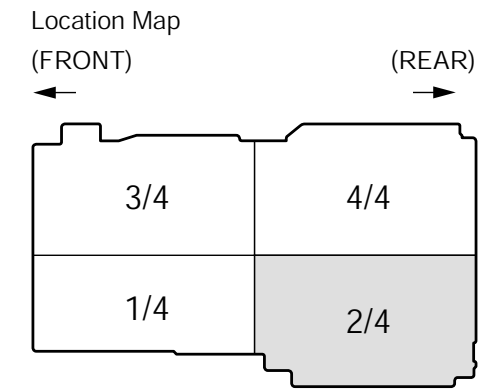
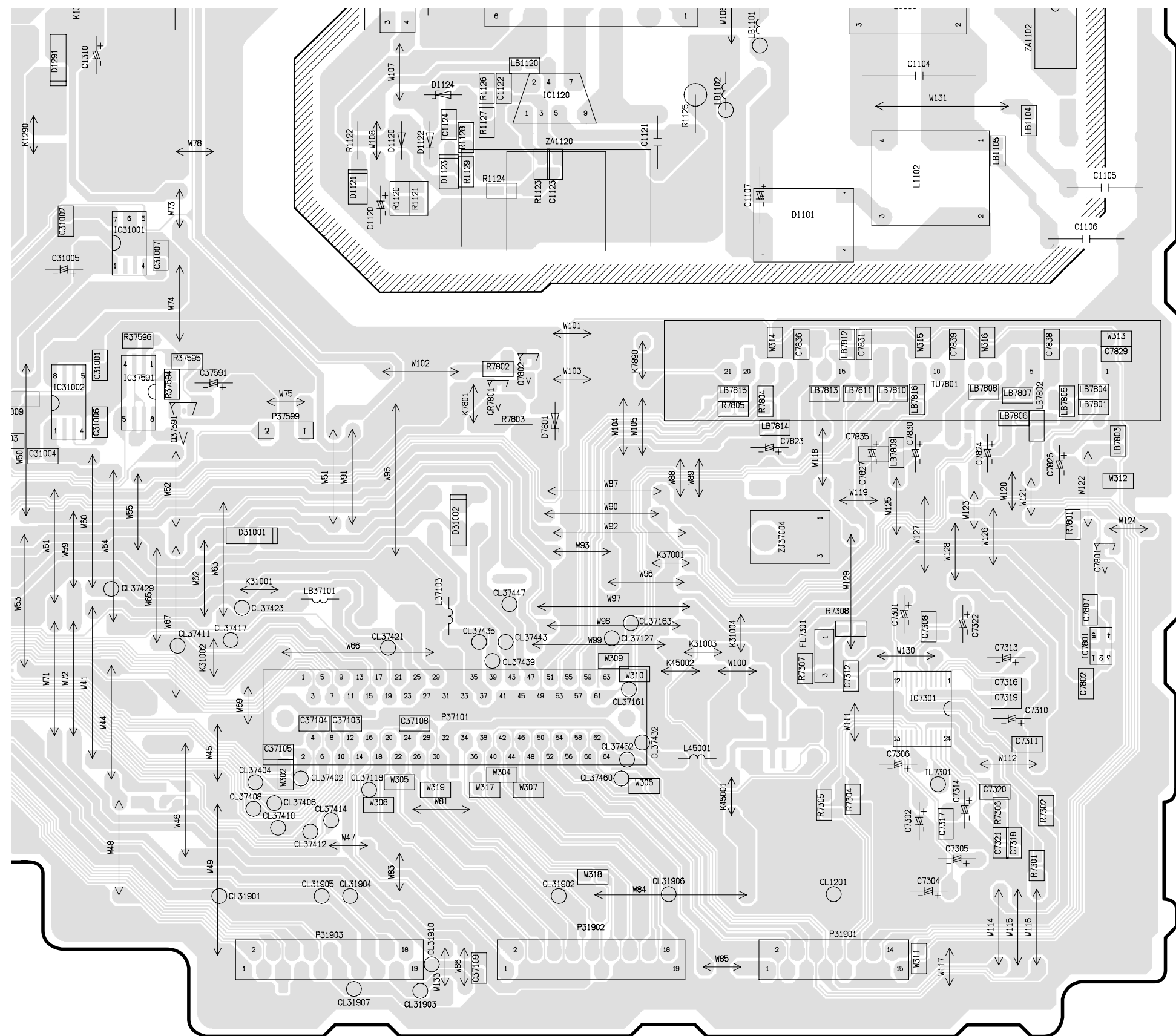
### 12.20. Front (R) Schematic Diagram







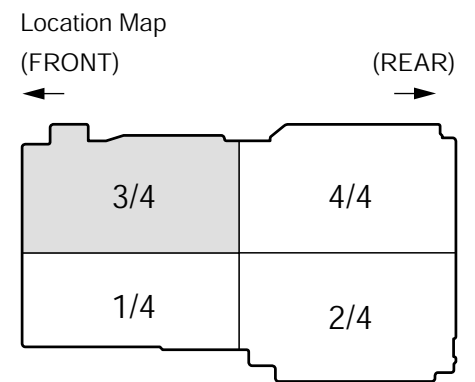
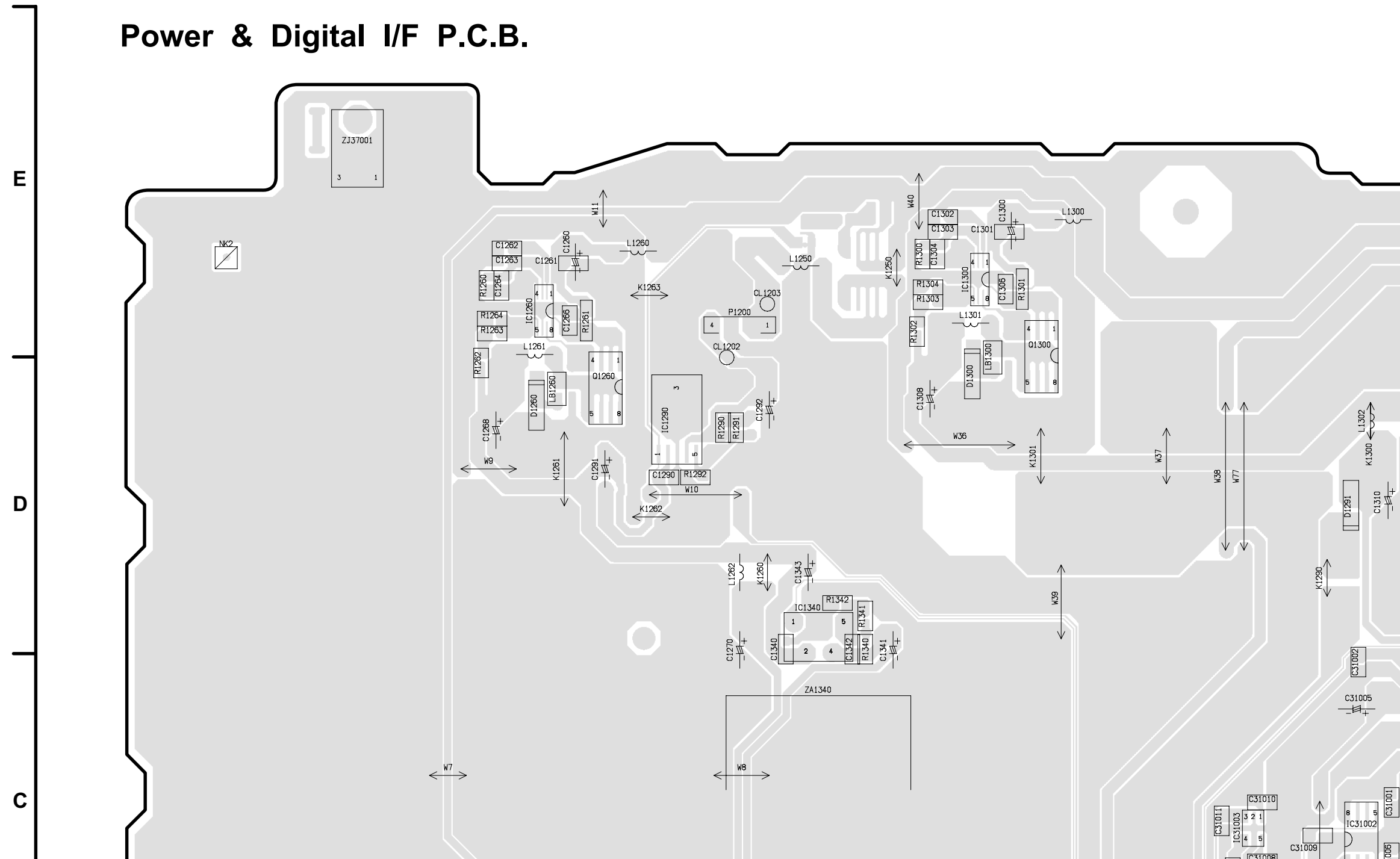
### 13.1.2. Power & Digital I/F P.C.B. (2/4 Section)



DMR-EZ48VP/PC  
DMR-EZ485VP  
Power & Digital I/F P.C.B.  
(VEP09150A: EZ48P, EZ485P)  
(VEP09150B: EZ48PC)  
(2/4 Section)

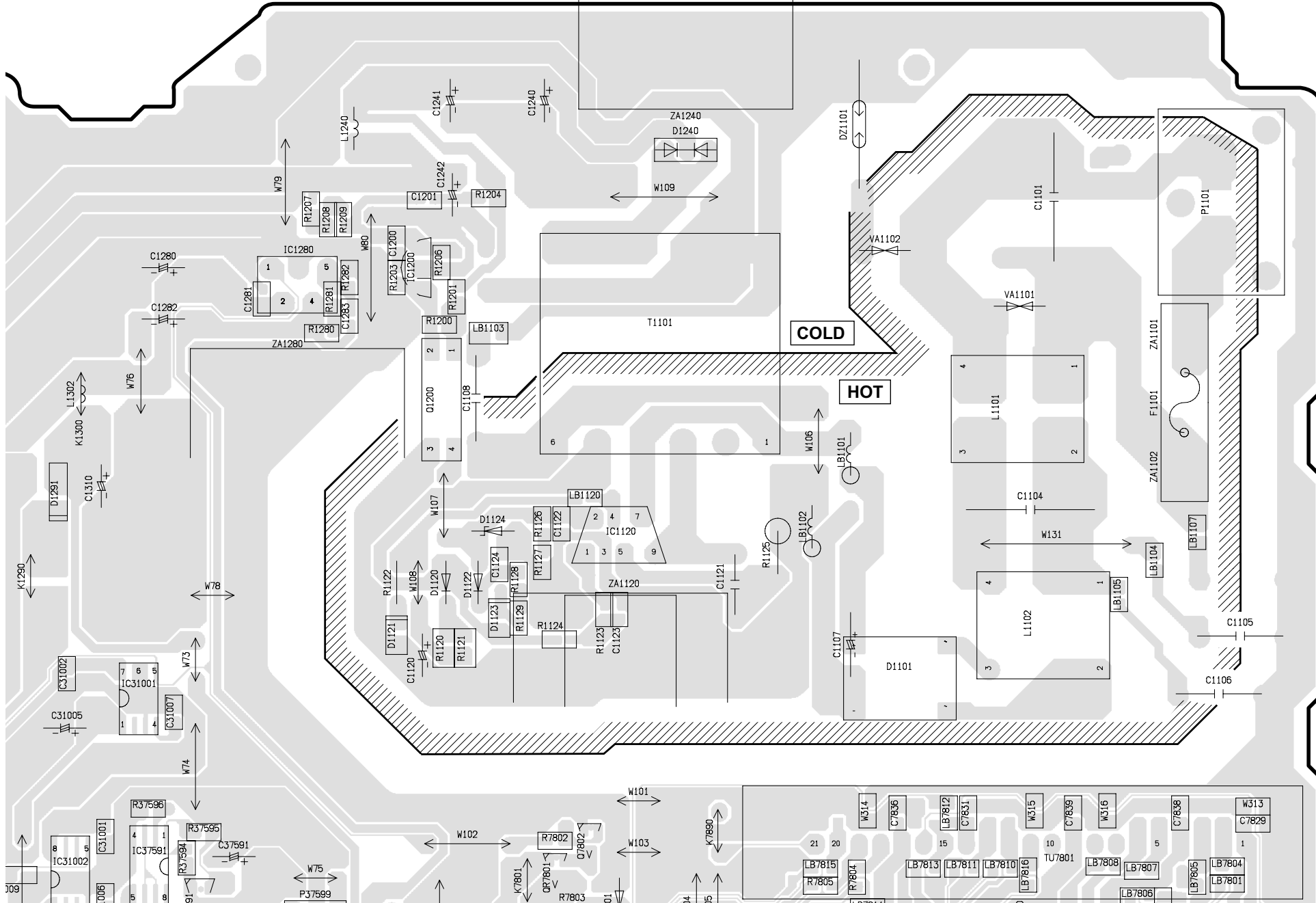


13.1.3. Power & Digital I/F P.C.B. (3/4 Section)

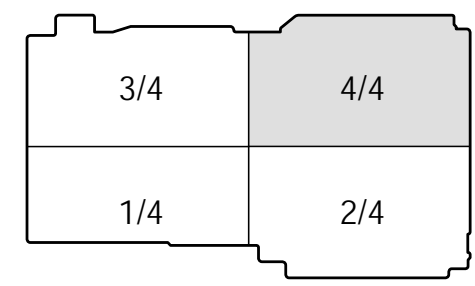


DMR-EZ48VP/PC  
 DMR-EZ485VP  
 Power & Digital I/F P.C.B.  
 (VEP09150A: EZ48P, EZ485P)  
 (VEP09150B: EZ48PC)  
 (3/4 Section)

13.1.4. Power & Digital I/F P.C.B. (4/4 Section)



Location Map  
(FRONT) (REAR)



DMR-EZ48VP/PC  
DMR-EZ485VP  
Power & Digital I/F P.C.B.  
(VEP09150A: EZ48P, EZ485P)  
(VEP09150B: EZ48PC)  
(4/4 Section)

## 13.1.5. Power &amp; Digital I/F P.C.B. Address Information

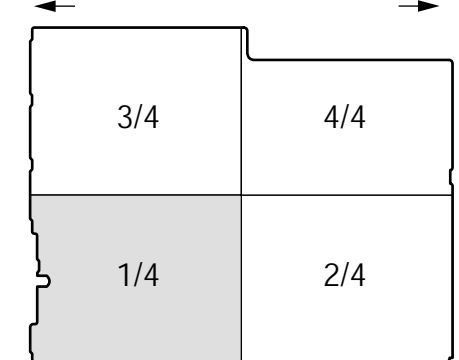
Power & Digital I/F P.C.B.																		
<b>Integrated Circuit</b>	CL31906	A-7	P1200	E-3	L1102	D-8	LB7813	C-7	C1291	D-2	C7312	B-8	R1124	D-6	R37504	B-3	FL7301	B-7
IC1120	D-6	CL31907	A-6	P31901	A-7	L1240	E-6	LB7814	C-7	C1292	D-3	C7313	B-8	R1125	D-7	R37594		
IC1200	E-6	CL31908	B-3	P31902	A-7	L1250	E-3	LB7815	C-7	C1300	E-4	C7314	A-8	R1126	D-6	R37595	C-5	
IC1260	E-2	CL31909	B-3	P31903	A-6	L1260	E-2	LB7816	C-8	C1301	E-4	C7316	B-8	R1127	D-6	R37596	C-5	
IC1280	E-6	CL31910	A-6	P31904	B-3	L1261	E-2	<b>Capasitor</b>		C1302	E-4	C7317	A-8	R1128	D-6	R7301	A-8	
IC1290	D-3	CL31911	B-3	P31905	B-1	L1262	D-3	C1101	E-8	C1303	E-4	C7318	A-8	R1129	D-6	R7302	A-8	
IC1300	E-4	CL31912	B-1	P31906	B-1	L1300	E-4	C1104	D-8	C1304	E-4	C7319	B-8	R1200	E-6	R7304	B-8	
IC1340	D-3	CL31913	B-1	P37101	B-6	L1301	E-4	C1105	D-8	C1306	E-4	C7320	B-8	R1201	E-6	R7305	A-7	
IC31001	C-5	CL37118	B-6	P37599	C-6	L1302	D-5	C1106	C-8	C1308	D-3	C7321	A-8	R1203	E-6	R7306	A-8	
IC31002	C-5	CL37127	B-7	<b>Diode</b>		L37103	B-6	C1107	D-7	C1310	D-5	C7322	B-8	R1204	E-6	R7307	B-7	
IC37591	C-5	CL37161	B-7	D1101	C-7	L37104	B-6	C1108	D-6	C1340	D-3	C7802	B-8	R1206	E-6	R7308	B-8	
IC7301	B-8	CL37163	B-7	D1120	D-6	L45001	B-7	C1120	D-6	C1341	D-3	C7807	B-8	R1207	E-6	R7801	B-8	
IC7801	B-8	CL37402	B-6	D1121	D-6	LB1101	D-7	C1121	D-7	C1342	D-3	C7823	C-7	R1208	E-6	R7802	C-6	
<b>Transistor</b>		CL37404	B-6	D1122	D-6	LB1102	D-7	C1122	D-6	C1343	D-3	C7824	C-8	R1209	E-6	R7803	C-6	
Q1200	D-6	CL37406	B-6	D1123	D-6	LB1103	D-6	C1123	D-7	C31001	C-5	C7826	C-8	R1260	E-2	R7804	C-7	
Q1260	D-2	CL37408	B-6	D1124	D-6	LB1104	D-8	C1124	D-6	C31002	C-5	C7827	C-7	R1261	E-2	R7805	C-7	
Q1300	E-4	CL37410	B-6	D1240	E-7	LB1105	D-8	C1200	E-6	C31004	C-5	C7829	C-8	R1262	E-2	R7901	B-2	
Q37591	C-5	CL37411	B-5	D1260	D-2	LB1120	D-6	C1201	E-6	C31005	C-5	C7830	C-8	R1263	E-2	R7902	B-2	
Q7801	B-8	CL37412	B-6	D1291	D-5	LB1260	D-2	C1240	E-6	C31006	C-5	C7831	C-8	R1264	E-2	R7903	B-2	
Q7802	C-6	CL37414	B-6	D1300	D-4	LB1300	E-4	C1241	E-6	C31007	C-5	C7835	C-8	R1280	D-6	R7904	B-2	
Q7901	B-2	CL37417	B-6	D31001	B-6	LB37101	B-6	C1242	E-6	C37103	B-6	C7836	C-7	R1281	E-6	R7905	B-3	
Q7902	B-2	CL37421	B-6	D31002	B-6	LB37103	B-1	C1260	E-2	C37104	B-6	C7838	C-8	R1282	E-6	R7906	B-3	
<b>Transistor-resistor</b>		CL37423	B-6	D31003	B-6	LB7801	C-8	C1261	E-2	C37105	B-6	C7839	C-8	R1290	D-3	R7907	B-2	
QR7801	C-6	CL37429	B-5	D7801	C-6	LB7802	C-8	C1262	E-2	C37108	B-6	C7901	B-2	R1291	D-3	R7908	B-3	
QR7901	B-2	CL37432	B-7	D7901	B-3	LB7803	C-8	C1263	E-2	C37109	A-6	C7902	B-2	R1292	D-3	<b>Transformer</b>		
<b>Test Point</b>		CL37435	B-6	D7902	B-2	LB7804	C-8	C1264	E-2	C37591	C-5	C7903	B-3	R1300	E-3	T1101	D-7	
CL1201	A-7	CL37439	B-6	D7903	B-3	LB7805	C-8	C1266	E-2	C7301	B-8	C7904	B-2	R1301	E-4	T7901	B-2	
CL1202	E-3	CL37443	B-6	D7904	B-3	LB7806	C-8	C1268	D-2	C7302	A-8	C7905	B-3	R1302	E-3	<b>Tuner</b>		
CL1203	E-3	CL37447	B-6	D7905	B-2	LB7807	C-8	C1270	D-3	C7304	A-8	C7906	B-2	R1303	E-4	TU7801	C-8	
CL31901	A-5	CL37460	B-7	D7906	B-2	LB7808	C-8	C1280	E-5	C7305	A-8	<b>Resistor</b>		R1304	E-4	<b>Varistor</b>		
CL31902	A-7	CL37462	B-7	D7907	B-2	LB7809	C-8	C1281	E-6	C7306	B-8	R1120	D-6	R1340	D-3	VA1101	E-8	
CL31903	A-6	TL7301	B-8	DZ1101	E-7	LB7810	C-8	C1282	E-5	C7308	B-8	R1121	D-6	R1341	D-3	VA1102	E-7	
CL31904	A-6	<b>Connector</b>		<b>Coil</b>		LB7811	C-8	C1283	E-6	C7310	B-8	R1122	D-6	R1342	D-3	<b>Fuse</b>		
CL31905	A-6	P1101	E-8	L1101	D-8	LB7812	C-8	C1290	D-3	C7311	B-8	R1123	D-7	R37503	B-3	F1101	D-8	

### 13.2. Main P.C.B.

#### 13.2.1. Main P.C.B. (1/4 Section)

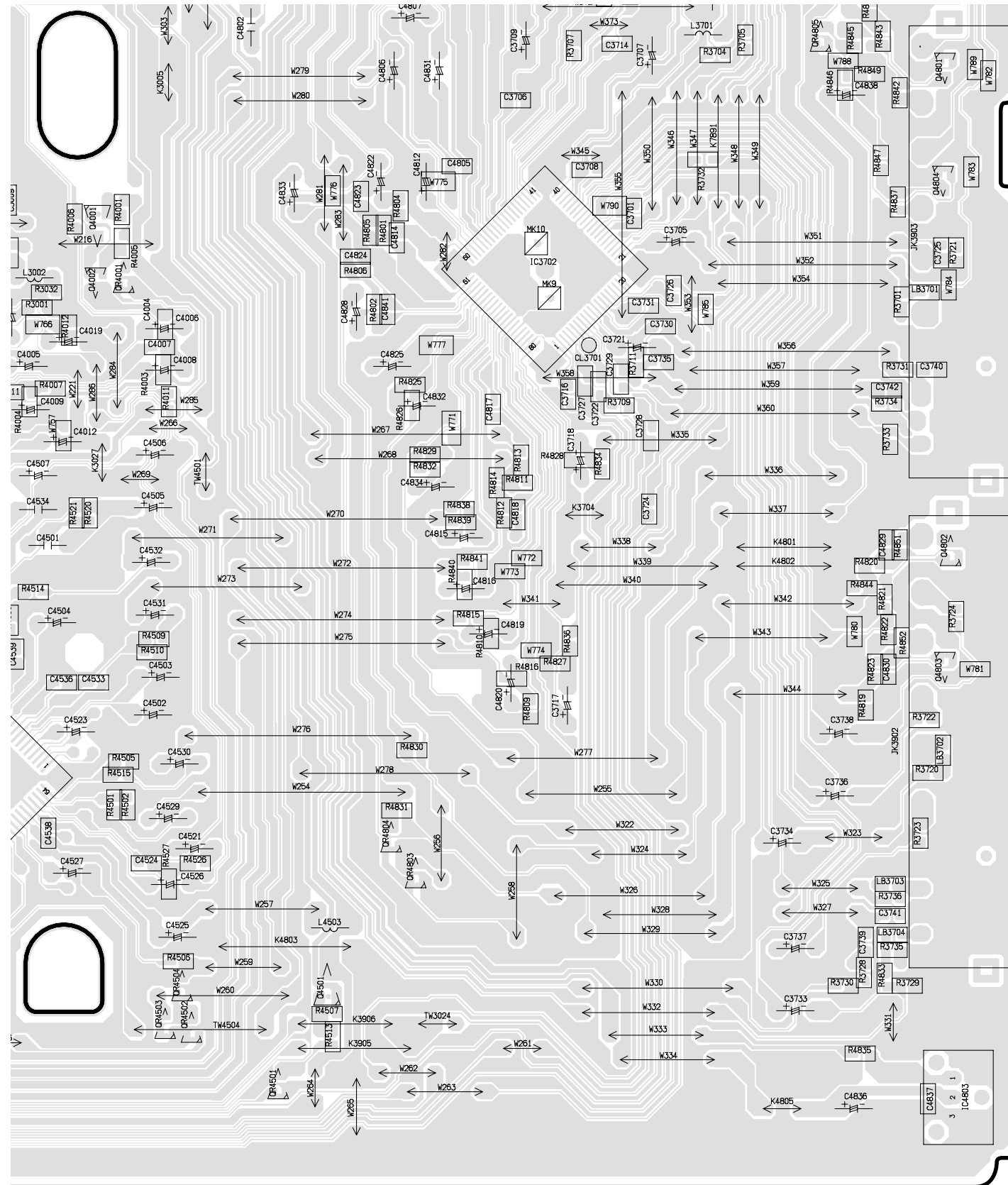


Location Map (FRONT) (REAR)

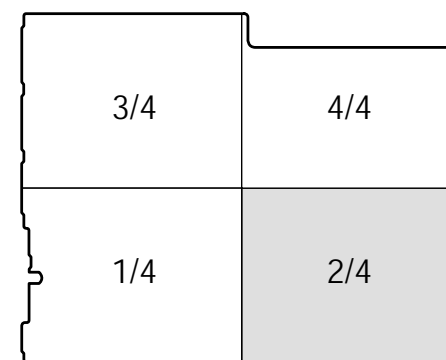


DMR-EZ48VP/PC  
DMR-EZ485VP  
Main P.C.B. (VEP06G41A)  
(1/4 Section)

13.2.2. Main P.C.B. (2/4 Section)



Location Map  
(FRONT) (REAR)

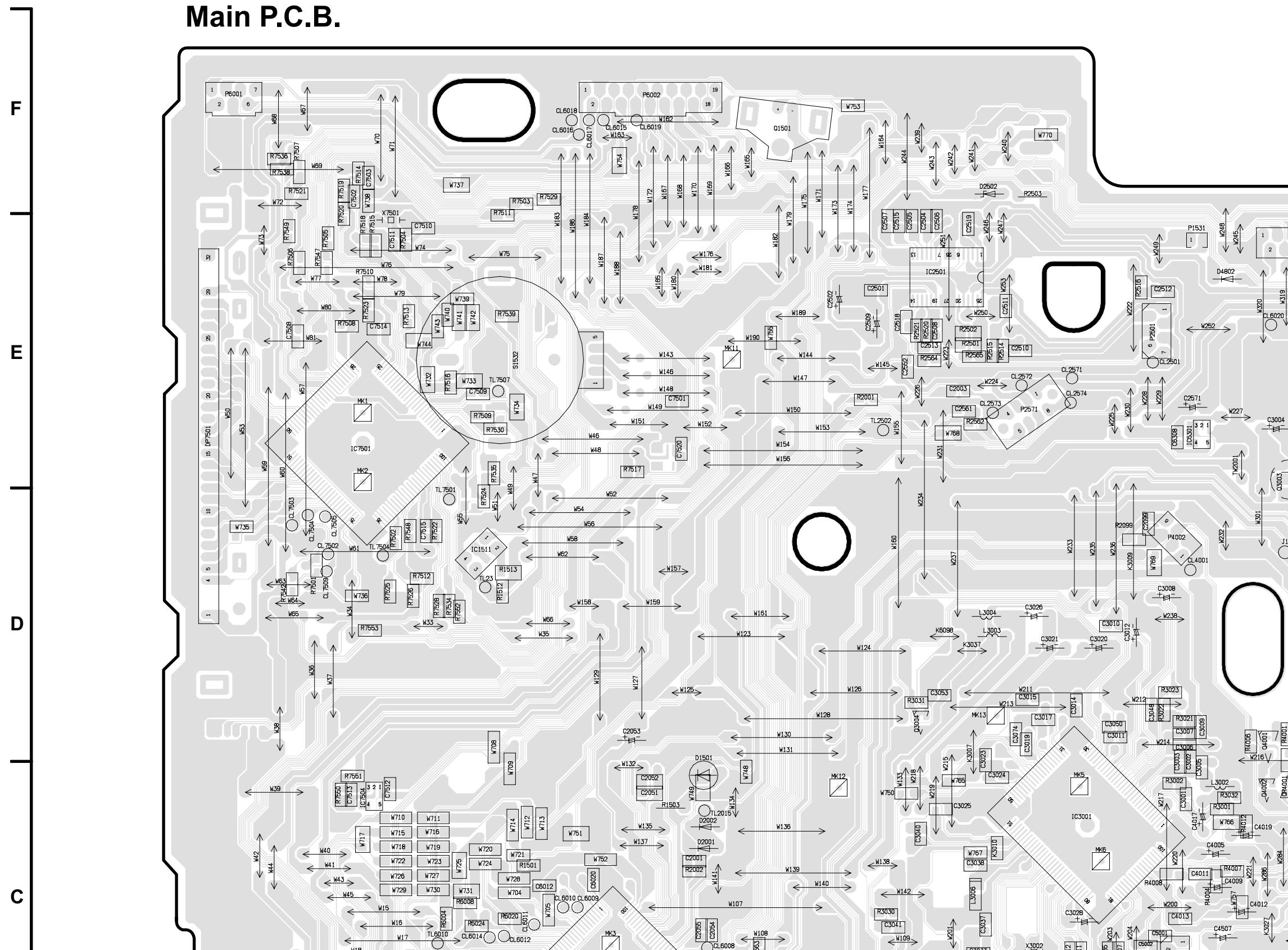


DMR-EZ48VP/PC  
DMR-EZ485VP  
Main P.C.B. (VEP06G41A)  
(2/4 Section)

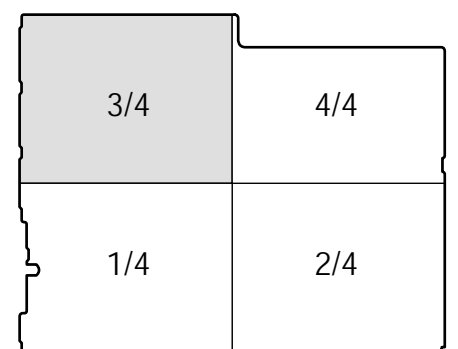


### 13.2.3. Main P.C.B. (3/4 Section)

## Main P.C.B.

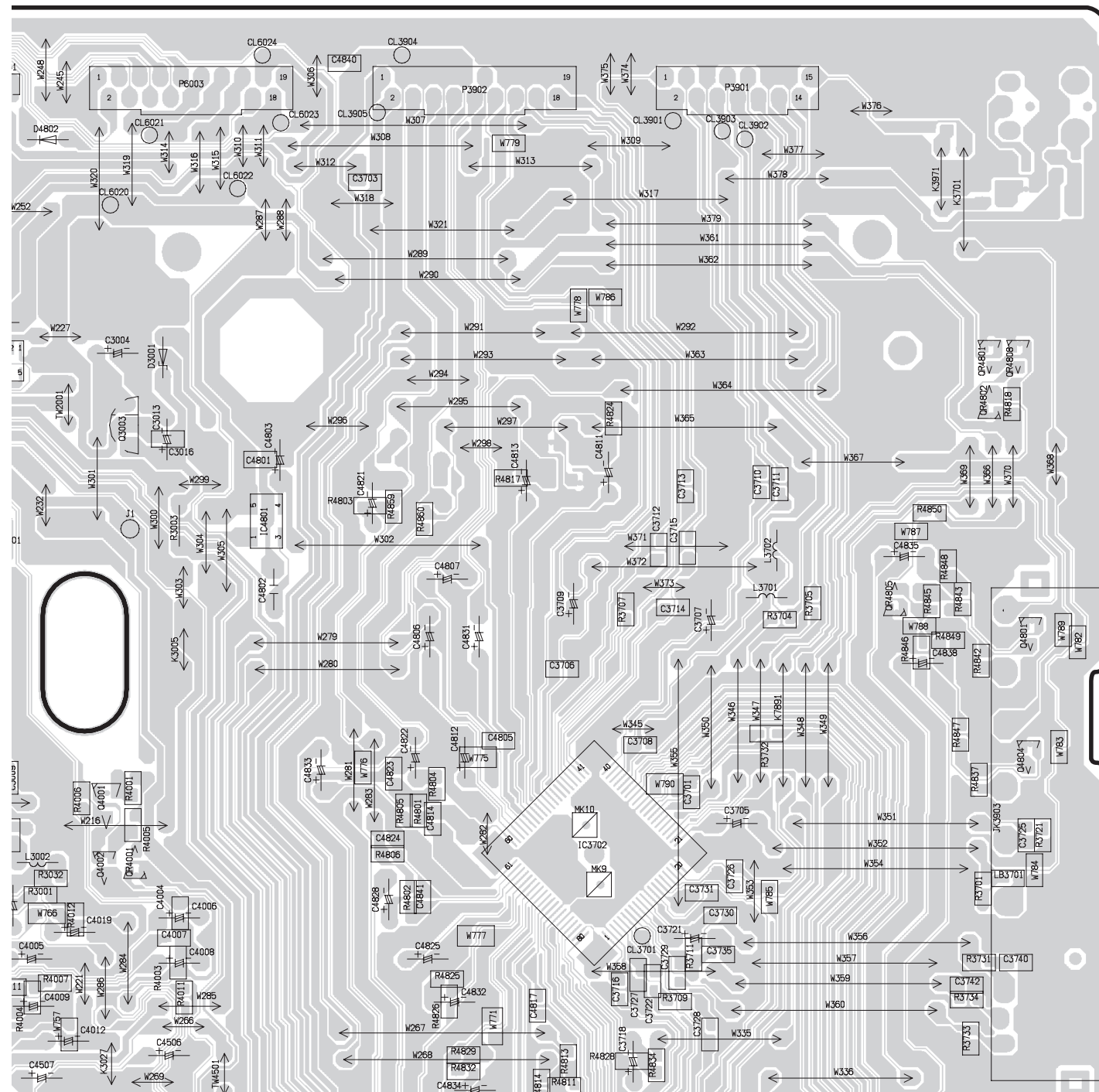


Location Map  
(FRONT) ← → (REAR)

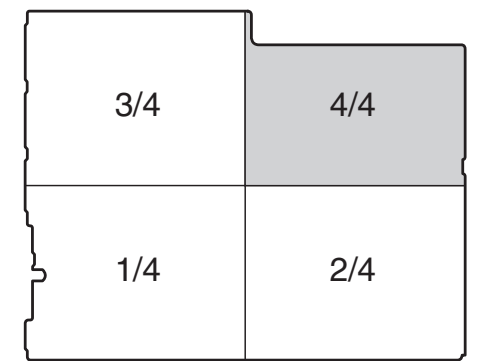


DMR-EZ48VP/PC  
DMR-EZ485VP  
Main P.C.B. (VEP06G41A)  
(3/4 Section)

13.2.4. Main P.C.B. (4/4 Section)



Location Map  
(FRONT) (REAR)



DMR-EZ48VP/PC  
DMR-EZ485VP  
Main P.C.B. (VEP06G41A)  
(4/4 Section)

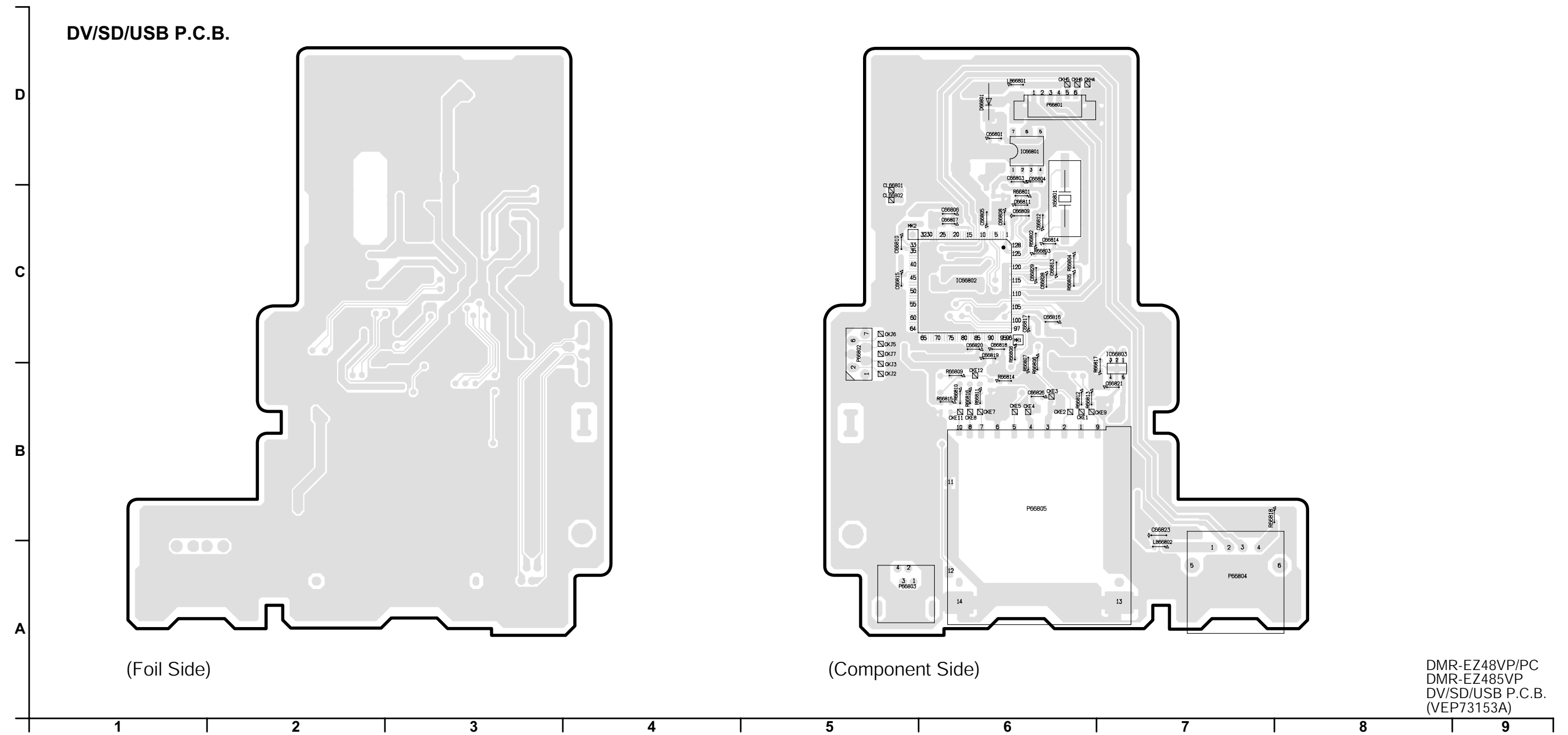


## 13.2.5. Main P.C.B. Address Information

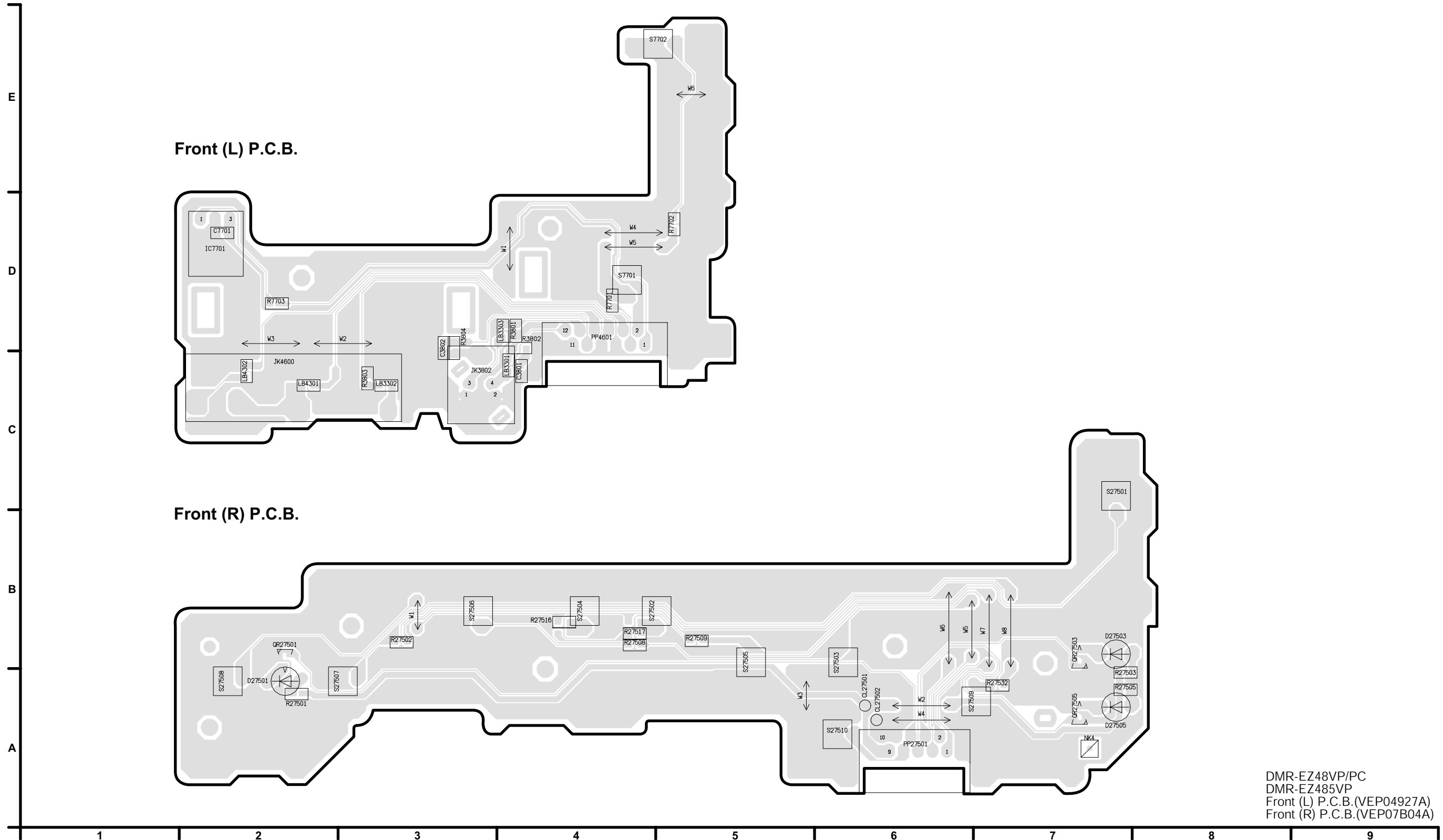
Main P.C.B.																					
<b>Integrated Circuit</b>	CL6002	A-1	D1501	C-3	C2561	E-4	C3717	B-7	C4522	B-4	C5007	C-4	R3001	C-5	R4509	B-5	R4845	D-7	R7534	D-2	
IC1511	D-3	CL6003	B-3	D2001	C-3	C2562	C-3	C3718	C-7	C4523	B-5	C5008	B-4	R3002	C-5	R4510	B-5	R4846	D-7	R7535	E-2
IC1512	B-2	CL6004	B-3	D2002	C-3	C2571	E-5	C3721	C-7	C4524	B-5	C6001	B-2	R3003	D-6	R4513	A-6	R4847	D-7	R7536	F-1
IC2001	B-2	CL6005	B-3	D2502	F-4	C3001	C-5	C3722	C-6	C4525	B-6	C6002	B-2	R3009	C-4	R4514	C-5	R4848	D-7	R7538	F-1
IC2501	E-4	CL6006	B-3	D3001	E-6	C3002	C-5	C3724	C-7	C4526	B-6	C6005	B-2	R3013	C-4	R4515	B-5	R4849	D-7	R7539	E-2
IC3001	C-4	CL6007	C-3	D4501	B-5	C3003	C-5	C3725	C-7	C4527	B-5	C6008	B-2	R3014	C-4	R4516	B-5	R4850	D-7	R7542	D-1
IC3702	C-6	CL6008	C-3	D4502	B-2	C3004	E-5	C3726	C-7	C4528	A-5	C6009	B-2	R3017	C-4	R4520	C-5	R4851	C-7	R7547	E-2
IC4501	B-5	CL6009	C-3	D4802	E-5	C3005	C-5	C3727	C-6	C4529	B-6	C6010	B-3	R3021	D-5	R4521	C-5	R4852	B-7	R7548	D-2
IC4801	D-5	CL6010	C-2	D7502	B-2	C3006	D-5	C3728	C-7	C4530	B-6	C6011	B-3	R3022	D-5	R4522	B-4	R4859	D-6	R7549 E-1	
IC4803	A-8	CL6011	C-2	D7506	B-2	C3007	D-5	C3729	C-7	C4531	B-6	C6012	C-2	R3023	D-5	R4525	B-4	R4860	D-6	R7550	C-2
IC6001	C-3	CL6012	C-2	<b>Crystal Osillator</b>		C3008	D-5	C3730	C-7	C4532	C-6	C6014	B-3	R3030	C-4	R4526	B-5	R6001	B-2	R7551	C-2
IC6301	E-5	CL6013	B-2	X3002	C-5	C3009	D-5	C3731	C-7	C4533	B-5	C6015	B-3	R3031	D-4	R4527	B-5	R6002	B-2	R7552	D-2
IC7501	E-2	CL6014	C-2	X6001	B-5	C3010	D-4	C3733	A-7	C4534	C-5	C6016	B-3	R3032	C-5	R4529	B-4	R6004	C-2	R7553	D-2
IC7504	C-2	CL6015	F-3	X7501	E-2	C3011	D-4	C3734	B-7	C4535	B-5	C6019	B-2	R3035	C-4	R4534	B-4	R6006	B-2	<b>Switch</b>	
<b>Transistor</b>	CL6016	F-3	<b>Coil</b>			C3012	D-5	C3735	C-7	C4536	B-5	C6020	C-3	R3046	B-4	R4538	B-4	R6008	C-2	S1531	B-2
Q1501	F-4	CL6017	F-3	L3002	C-5	C3013	D-6	C3736	B-8	C4537	B-4	C6100	B-2	R3047	B-4	R4539	B-5	R6012	B-3	S1532	E-3
Q1502	A-4	CL6018	F-2	L3003	D-4	C3014	D-4	C3737	B-7	C4538	B-5	C6101	B-3	R3701	C-7	R4540	B-4	R6013	B-3	<b>Transformer</b>	
Q3001	C-4	CL6019	F-3	L3004	D-4	C3015	D-4	C3738	B-8	C4539	B-5	C6102	B-3	R3704	D-7	R4801	D-6	R6017	B-3	T4081	A-2
Q3003	E-6	CL6020	E-5	L3005	C-4	C3016	D-5	C3739	B-7	C4540	B-5	C6103	B-3	R3705	D-7	R4802	C-6	R6020	C-2	<b>Display</b>	
Q3004	D-4	CL6021	E-5	L3006	C-4	C3017	D-4	C3740	C-7	C4801	D-5	C6104	B-2	R3707	D-6	R4803	D-6	R6022	B-3	DP7501	E-2
Q4001	D-5	CL6022	E-5	L3701	D-7	C3019	D-4	C3741	B-7	C4802	D-6	C6308	E-5	R3709	C-7	R4804	D-6	R6023	B-3		
Q4002	C-5	CL6023	E-5	L3702	D-7	C3020	D-5	C3742	C-7	C4803	D-6	C7501	E-3	R3711	C-7	R4805	D-6	R6024	C-2		
Q4081	A-2	CL6024	E-5	L4061	A-3	C3021	D-5	C4001	A-2	C4805	D-6	C7502	F-2	R3720	B-7	R4806	C-6	R6026	B-3		
Q4084	A-2	CL7502	D-2	L4501	B-4	C3023	C-4	C4004	C-5	C4806	D-6	C7503	F-2	R3721	C-7	R4809	B-6	R6027	B-3		
Q4501	A-6	CL7503	D-1	L4502	B-4	C3024	C-4	C4005	C-5	C4807	D-6	C7505	B-2	R3722	B-7	R4810	B-6	R6028	B-3		
Q4502	B-2	CL7504	D-2	L4503	B-6	C3025	C-4	C4006	C-6	C4811	D-7	C7508	E-1	R3723	B-7	R4811	C-6	R6029	B-3		
Q4801	D-7	CL7505	D-2	L5001	C-5	C3028	C-5	C4007	C-5	C4812	D-6	C7509	E-2	R3724	B-7	R4812	C-6	R6101	B-3		
Q4802	C-7	CL7509	D-2	L6102	B-3	C3029	C-5	C4008	C-6	C4813	D-7	C7510	E-2	R3728	A-7	R4813	C-6	R6102	B-3		
Q4803	B-7	TL1002	A-2	LB3701	C-7	C3030	C-4	C4009	C-5	C4814	D-6	C7511	E-2	R3729	A-7	R4814	C-6	R6103	B-3		
Q4804	D-7	TL2015	C-3	LB3702	B-7	C3031	C-4	C4011	C-5	C4815	C-6	C7512	C-2	R3730	A-7	R4815	B-6	R6201	C-2		
<b>Transistor-resistor</b>	TL23	D-2	LB3703	B-7	C3032	C-5	C4012	C-5	C4816	C-6	C7513	C-2	R3731	C-7	R4816	B-6	R7501	D-2			
QR4001	C-5	TL24	B-2	LB3704	B-7	C3033	C-4	C4013	C-5	C4817	C-6	C7514	E-2	R3732	D-7	R4817	D-6	R7502	D-2		
QR4082	A-2	TL2502	E-4	<b>Capasitor</b>		C3034	C-4	C4017	C-5	C4818	C-6	C7515	D-2	R3733	C-7	R4818	E-7	R7503	F-2		
QR4501	A-6	TL4501	B-4	C2001	C-3	C3035	C-4	C4019	C-5	C4819	B-7	C7520	E-3	R3734	C-7	R4819	B-7	R7504	E-2		
QR4502	A-5	TL4502	B-4	C2002	B-1	C3036	C-4	C4081	A-2	C4820	B-7	<b>Resistor</b>		R3735	B-7	R4820	C-7	R7505	E-2		
QR4503	A-5	TL4507	B-4	C2003	E-4	C3037	C-4	C4082	A-2	C4821	D-6	R1501	C-2	R3736	B-7	R4821	B-7	R7506	E-1		
QR4504	A-5	TL6002	B-2	C2051	C-3	C3038	C-4	C4083	A-3	C4822	D-6	R1502	A-3	R4001	D-5	R4822	B-7	R7507	F-1		
QR4801	E-7	TL6004	C-2	C2052	C-3	C3039	C-4	C4084	A-2	C4823	D-6	R1503	C-3	R4003	C-5	R4823	B-7	R7508	E-2		
QR4802	E-7	TL6010	C-2	C2053	D-3	C3040	C-4	C4501	C-5	C4824	C-6	R1511	B-2	R4004	C-5	R4824	E-6	R7509	E-2		
QR4803	B-6	TL7501	D-2	C2054	C-3	C3041	C-4	C4502	B-6	C4825	C-6	R1512	D-2	R4005	C-5	R4825	C-6	R7510	E-2		
QR4804	B-6	TL7504	D-2	C2055	C-3	C3044	C-4	C4503	B-6	C4828	C-6	R1513	D-2	R4006	D-5	R4826	C-6	R7511	E-2		
QR4805	D-7	TL7507	E-2	C2099	D-5	C3048	D-5	C4504	B-5	C4829	C-7	R2001	E-4	R4007	C-5	R4827	B-6	R7512	D-2		
QR4808	E-7	<b>Connector</b>		C2501	E-4	C3050	D-4	C4505	C-6	C4830	B-7	R2002	C-3	R4008	C-5	R4828	C-6	R7513	E-2		
QR7504	B-2	J1	D-6	C2502	E-4	C3053	D-4	C4506	C-6	C4831	D-6	R2099	D-5	R4009	A-2	R4829	C-6	R7514	F-2		
<b>Test Point</b>	JK3902	B-8	C2504	E-4	C3074	D-4	C4507	C-5	C4832	C-6	R2501	E-4	R4011	C-5	R4830	B-6	R7515	E-2			
CL2501	E-5	JK3903	C-8	C2505	E-4	C3701	D-7	C4508	B-5	C4833	D-6	R2502	E-4	R4012	C-5	R4831	B-6	R7516	E-2		
CL2571	E-4	P1531	E-5	C2506	E-4	C3703	E-6	C4509	B-5	C4834	C-6	R2503	F-5	R4081	A-2	R4832	C-6	R7517	E-3		
CL2572	E-4	P2501	E-5	C2507	E-4	C3705	D-7	C4510	B-5	C4835	D-8	R2514	E-4	R4082	A-2	R4833	A-7	R7518	E-2		
CL2573	E-4	P2571	E-5	C2508	E-4	C3706	D-6	C4511	B-4	C4836	A-8	R2515	E-4	R4086	A-2	R4834	C-6	R7519	F-2		
CL2574	E-4	P3001	C-5	C2509	E-4	C3707	D-7	C4512	B-4	C4837	A-7	R2516	E-5	R4087	A-2	R4835	A-7	R7520	F-2		
CL3701	C-6	P3901	E-7	C2510	E-4	C3708	D-6	C4513	B-5	C4838	D-8	R2520	E-4	R4500	B-4	R4836	B-6	R7521	F-1		
CL3901	E-6	P3902	E-6	C2511	E-4	C3709	D-7	C4514	B-5	C4840	E-6	R2521	E-4	R4501	B-5	R4837	D-7	R7522	D-2		
CL3902	E-7	P4001	B-4	C2512	E-5	C3710	D-7	C4515	B-4	C4841	C-6	R2551	C-3	R4502	B-5	R4838	C-6	R7523	E-2		
CL3903	E-7	P4002	D-5	C2513	E-4	C3711	D-7	C4516	B-5	C5001	C-5	R2552	C-3	R4503	B-5	R4839	C-6	R7524	D-2		
CL3904	E-6	P6001	F-2	C2515	E-4	C3712	D-6	C4517	B-5	C5002	C-5	R2561	B-3	R4504	B-2	R4840	C-6	R7525	D-2		
CL3905	E-6	P6002	F-3	C2518	E-4	C3713	D-7	C4518	B-4	C5003	C-5	R2562	E-4	R4505	B-5	R4841	C-6	R7526	D-2		
CL4001	D-5	P6003	E-6	C2519	E-4	C3714	D-6	C4519	B-2	C5004	C-5	R2563	C-3	R4506	A-5	R4842	D-7	R7528	D-2		
CL4002	B-4	PS6001	A-2	C2551	C-3	C3715	D-7	C4520	B-2	C5005	C-4	R2564	E-4	R4507	A-6	R4843	D-7	R7529	F-2		
CL6001	A-1	<b>Diode</b>		C2552	E-4	C3716	C-6	C4521	B-6	C5006	C-5	R2565	E-4	R4508	B-4	R4844	C-7	R7530	E-2		



### 13.3. DV/SD/USB P.C.B.



### 13.4. Front (L) P.C.B., Front (R) P.C.B.



DMR-EZ48VP/PC  
DMR-EZ485VP  
Front (L) P.C.B.(VEP04927A)  
Front (R) P.C.B.(VEP07B04A)



## 14.1.2. Main P.C.B.

Ref No.	IC1511				IC1512				IC2001												
	MODE	1	2	3	4	1	2	3	4	1	2	3	4	5							
REC	1.2	2.4	0.2	0	0	1.2	4.9	0	5.9	0	4.6	-	5.0								
PLAY	1.2	2.4	0.1	0	0	1.2	4.9	0	5.9	0	4.6	-	5.0								
STOP	1.2	2.4	0.2	0	0	1.2	4.9	0	5.9	0	4.6	-	5.0								
Ref No.	IC2501																				
	MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	12.2	0.1	0	0.1	0	0	16.1	0	2.8	1.6	1.6	0.6	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.8	
PLAY	12.2	0.1	0	0.1	0	0	16.2	0	2.8	1.6	1.6	0.6	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.6	
STOP	12.2	0.1	0	0.1	0	0	16.2	0	2.8	1.6	1.6	0.6	1.5	2.4	2.5	2.5	2.5	1.3	5.0	3.6	
Ref No.	IC2501																				
	MODE	21	22	23	24	25	26	27													
REC	12.2	3.8	3.8	0	3.8	0	0														
PLAY	12.2	3.6	3.6	0	3.6	0	0														
STOP	12.2	3.6	3.6	0	3.6	0	0														
Ref No.	IC3001																				
	MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	0	0	5.1	2.1	2.6	2.8	1.9	1.9	2.3	2.6	1.5	0	2.8	2.7	2.0	2.7	2.0	2.7	0	
PLAY	0	0	0	5.1	2.1	2.6	2.8	1.9	1.9	2.3	2.6	1.5	0	2.8	2.7	2.0	2.7	2.0	2.7	0	
STOP	0	0	0	5.1	2.1	2.6	2.8	1.9	1.9	2.3	2.6	1.5	0	2.8	2.7	2.0	2.7	2.0	2.7	0	
Ref No.	IC3001																				
	MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	2.7	5.0	2.3	0.1	0	2.9	0	0	2.4	2.8	0.4	2.2	2.0	1.7	3.0	2.3	3.0	2.1	1.4	2.1	
PLAY	2.7	5.0	2.3	0.1	0	2.9	0	0	2.4	2.8	0.4	2.2	2.0	1.7	3.0	2.3	3.0	2.1	1.4	2.1	
STOP	2.7	5.0	2.3	0	0	3.0	0	0	2.4	2.8	0.4	2.2	2.1	1.7	3.0	2.3	3.0	2.1	1.5	2.1	
Ref No.	IC3001																				
	MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.5	2.0	2.1	0	3.2	3.2	5.0	5.0	3.1	5.0	1.9	5.0	2.6	0	1.9	0	2.2	2.2	5.0	5.0	
PLAY	2.5	2.0	2.1	0	3.2	3.2	5.0	5.0	3.1	5.0	1.9	5.0	2.6	0	1.9	0	2.2	2.2	5.0	5.0	
STOP	2.5	2.0	2.1	0	3.2	3.2	5.0	5.0	0	5.0	1.9	5.0	2.6	0	1.9	0	2.2	2.2	5.0	5.0	
Ref No.	IC3001																				
	MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	4.0	2.3	2.2	2.4	2.2	2.4	2.2	1.2	2.0	2.7	0	5.0	0	2.4	2.8	2.2	2.8	0	0	2.6	
PLAY	4.0	2.3	2.2	2.4	2.2	2.4	2.2	1.2	2.0	2.7	0	5.0	0	2.4	2.8	2.2	2.8	0	0	2.6	
STOP	4.0	2.3	2.2	2.4	2.2	2.4	2.2	1.2	0	2.7	0	0	2.9	2.4	2.7	2.2	2.8	5.0	0	2.4	
Ref No.	IC3001																				
	MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0.7	0	3.2	4.9	2.4	2.3	2.4	0	0	0	0	5.1	0.5	2.6	2.5	2.5	0	2.3	0	2.6	
PLAY	0.7	0	3.2	4.9	2.4	2.3	2.4	0	0	0	0	5.1	0.5	2.6	2.5	2.5	0	2.3	0	2.6	
STOP	0.7	0	3.2	5.0	2.3	2.3	2.3	0	2.3	2.3	2.3	5.1	0.6	2.5	2.5	2.5	0	2.3	0	2.6	
Ref No.	IC3702																				
	MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	2.6	0	2.3	0.1	2	4	2.3	0.1	1.8	2.9	2.3	0	1.7	5.1	1.7	0.1	2.6	4	2.6	0	
PLAY	2.6	0	2.3	0.1	2	4	2.3	0.1	1.8	2.9	2.3	0	1.7	5.1	1.7	0.1	2.6	4	2.6	0	
STOP	2.6	0	2.3	0.1	2	4	2.3	0.1	1.8	2.9	2.3	0	1.7	5.1	1.7	0.1	2.6	4	2.6	0	
Ref No.	IC3702																				
	MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	2.3	3.3	3.3	2.4	0.1	2.3	5	2.3	0.1	2.4	0	2.2	0	2.4	2.4	2.2	5	2.3	0.1	2.3	
PLAY	2.3	3.3	3.3	2.4	0.1	2.3	5	2.3	0.1	2.4	0	2.2	0	2.4	2.4	2.2	5	2.3	0.1	2.3	
STOP	2.1	3.3	3.3	2.4	0.1	2.1	5	2.1	0.1	2.4	0	2.1	0	2.4	2.4	2.0	5	2.3	0.1	2.3	
Ref No.	IC3702																				
	MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.1	2.3	2.2	1.3	2.3	0.1	4.9	2.9	2.6	5	2.3	0.1	4.4	4.4	8.9	4.5	4.5	4.5	0.5	4.5	
PLAY	2.1	2.3	2.2	1.3	2.3	0.1	4.9	2.9	2.6	5	2.3	0.1	4.4	4.4	8.9	4.5	4.5	4.5	0.5	4.5	
STOP	2.1	2.3	2.1	1.3	2.3	0.1	4.9	2.9	2.6	5	2.3	0.1	4.4	4.4	8.9	4.5	4.5	4.5	0.5	4.5	
Ref No.	IC3702																				
	MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	4.4	4.4	4.5	4.4	4.6	4.6	4.6	4.6	4.3	4.3	4.4	4.4	0	4.3	0	4.3	4.9	4.3	4.9	4.3	
PLAY	4.4	4.4	4.5	4.4	4.6	4.6	4.6	4.6	4.3	4.3	4.4	4.4	0	4.3	0	4.3	4.9	4.3	4.9	4.3	
STOP	4.4	4.4	4.5	4.4	4.6	4.6	4.6	4.6	4.3	4.3	4.4	4.4	0	4.3	0	4.3	4.9	4.3	4.9	4.3	
Ref No.	IC4501																				
	MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	2.3	0	2.3	0	0	2.5	2.1	0	0	0	0	2.1	0	0	0	2.7	0.6	2.6	2.6	2.1	
PLAY	2.3	0	2.3	0	0	2.5	2.1	0	0	0	0	2.1	0	0	0	2.7	0.6	2.6	2.6	2.1	
STOP	2.3	0	2.3	0	0	2.5	2.1	0	0	0	0	2.1	0	0	0	2.7	0.6	2.6	2.6	2.1	
Ref No.	IC4501																				
	MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	2.0	2.1	0	2.1	5.1	2.1	0	4.3	3.9	3.7	1.1	2.5	2.6	0.8	2.6	0	2.0	0	0	5.1	
PLAY	2.0	2.1	0	2.1	5.1	2.1	0	4.3	3.9	3.7	1.1	2.5	2.6	0.8	2.6	0	2.0	0	0	5.1	
STOP	2.1	2.1	0	2.1	5.1	2.1	0	4.3	1.8	1.8	0	2.6	2.6	0.8	2.6	0	2.0	0	0	5.1	
Ref No.	IC4501																				
	MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	2.9	2.4	3.3	1.6	2.5	2.5	2.5	3.6	2.5	5.1	0.1	5.9	0	0	0	5.9	12.1	6.0	0	
PLAY	0	2.9	2.4	3.3	1.6	2.5	2.5	2.5	3.6	2.5	5.1	0.1	5.9	0	0	0	5.9	12.1	6.0	0	
STOP	0	2.9	2.4	3.3	1.6	2.5	1.6	2.5	3.6	2.5	5.1	0.1	6.0	0	0	0	6.0	12.1	6.1	0	
Ref No.	IC4501																				
	MODE	61	62	63	64																
REC	2.5	2.4	2.5	2.5																	
PLAY	2.5	2.4	2.5	2.5																	
STOP	2.6	2.4	2.5	2.5																	

Ref No.	IC4801					IC4803														
MODE	1	2	3	4	5	1	2	3												
REC	4.9	0	1.3	8.9	12.1	1.5	5.1	0												
PLAY	4.9	0	1.3	8.9	12.1	1.5	5.1	0												
STOP	4.9	0	1.3	8.9	12.1	1.5	5.1	0												
Ref No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	0	0	0	4.9	4.9	4.8	4.6	3.2	0	4.7	4.9	0	4.9	3.8	0	4.8	0	0	4.8
PLAY	0	0	0	0	4.9	4.9	4.8	4.6	3.2	0	0	0	0	4.9	3.8	0	4.8	2.4	0	4.8
STOP	4.8	0	0	0	4.9	4.9	4.8	4.6	3.3	0	0	0	0	4.9	3.8	0	4.8	2.4	0	0
Ref No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	4.9	0	4.3	2.0	0	4.8	0	0	4.9	0	4.8	4.8	0	4.9	1.5	1.3	4.9	-	-	0
PLAY	4.9	0	4.3	2.0	0	4.8	0	0	4.9	0	4.8	4.8	0	4.9	1.5	1.3	4.9	-	-	0
STOP	4.9	0	4.3	2.0	0	0	0	0	4.9	0	4.8	4.8	0	4.9	1.5	1.3	4.9	-	-	0
Ref No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0	0	4.7	4.7	0	1.4	2.1	0	1.7	5.0	1.7	5.1	2.1	1.7	2.0	0	0	0	0
PLAY	0	0	0	4.7	4.7	0	1.4	2.1	0	1.7	5.0	1.7	5.1	2.1	1.7	2.0	0	0	0	0
STOP	0	0	0	4.7	4.7	0	0	2.1	0	1.7	5.0	1.7	5.1	2.1	2.2	2.0	0	0	0	0
Ref No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0	0	0	0	0	0	4.0	2.2	4.2	4.2	4.1	0.1	0	4.6	2.5	2.4	4.8	4.8	4.5
PLAY	0	0	0	0	0	0	0	4.0	2.2	4.2	4.2	4.1	0.1	0	4.6	2.5	2.4	4.8	4.8	0.2
STOP	0	0	0	0	0	0	0	4.0	2.2	4.2	4.2	4.1	0.1	0	4.6	0	2.4	4.8	5.0	0.2
Ref No.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	0	0	0	0	2.5	2.5	0	0	1.3	2.5	2.5	0	2.3	2.8	2.5	2.5	5.1	4.9	0
PLAY	0	0	0	0	0	2.5	2.5	0	0	1.3	2.5	2.5	0	2.3	2.8	2.5	2.5	5.1	4.9	0
STOP	0	0	0	0	0	2.6	2.6	0	0	1.3	2.5	2.5	0	2.5	2.5	2.5	2.5	5.1	4.9	0
Ref No.	IC6301																			
MODE	1	2	3	4																
REC	5.0	0	4.6	5.7																
PLAY	5.0	0	4.6	5.7																
STOP	5.0	0	4.6	5.7																
Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.8	4.8	0	4.8	4.8	4.8	4.7	4.8	4.8	-	-	0	0	-	0	4.8	4.8	4.8	4.0	0
PLAY	4.8	4.8	0	4.8	4.8	4.8	4.7	4.8	4.8	-	-	0	0	-	0	4.8	4.8	4.8	4.0	0
STOP	4.8	4.8	0	4.8	4.8	4.8	4.7	4.8	4.8	-	-	0	0	-	0	4.8	4.8	4.8	4.0	0
Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0.4	4.6	4.7	4.9	4.8	4.8	4.8	0.5	4.8	3.7	3.8	4.1	3.2	4.8	4.8	4.8	0	0	4.8	0
PLAY	0.4	4.6	4.7	4.9	4.8	4.8	4.8	0.5	4.8	3.7	3.8	4.1	3.2	4.8	4.8	4.8	0	0	4.8	0
STOP	0.4	4.6	4.7	4.9	4.8	4.8	4.8	0.5	4.8	3.7	3.8	4.1	3.2	4.8	4.8	4.8	0	0	4.8	0
Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0	0	-8.5	-8.3	-8.3	-8.3	-10.4	-10.4	-10.4	-5.0	-10.4	-10.4	-10.4	-4.9	-4.9	-10.4	-10.4	-5.8	-8.6
PLAY	0	0	0	-8.5	-8.3	-8.3	-8.3	-8.3	-8.3	-8.3	-1.5	-8.3	-8.3	-10.4	-0.6	-2.2	-5.0	-4.6	-0.4	-4.6
STOP	0	0	0	-8.5	-8.3	-8.3	-8.3	-10.4	-10.4	-10.4	-5.0	-10.4	-10.4	-10.4	-4.9	-4.9	-10.4	-10.4	-5.8	-8.6
Ref No.	IC7501																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	-8.6	-8.6	-8.6	-9.1	-8.6	0	-	0	-	-	4.8	-	-	0	-	0	0	0	0	0
PLAY	-12.1	-12.1	-12.1	-2.2	-12.1	0	-	0	-	-	4.8	-	-	0	-	0	0	0	0	0
STOP	-8.6	-8.6	-8.6	-9.1	-8.6	0	-	0	-	-	4.8	-	-	0	-	0	0	0	0	0
Ref No.	IC7501																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	0	4.3	0	0	2.6	0	2.3	0	-12.3	0	0	0	2.6	-	-	4.8	0	-	4.6
PLAY	0	0	4.3	0	0	2.6	0	2.3	0	-12.3	0	0	0	2.6	-	-	4.8	0	-	4.6
STOP	0	0	4.3	0	0	2.6	0	2.3	0	-12.3	0	0	0	2.6	-	-	4.8	0	-	4.6
Ref No.	IC7504																			
MODE	1	2	3	4	5															
REC	5	7.8	0	-	-															
PLAY	5	7.8	0	-	-															
STOP	4.9	7.8	0	-	-															
Ref No.	Q1501			Q1502			Q3001			Q3003			Q3004							
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
REC	0	4.6	0	0	4.9	0	1.6	5	2.3	5.0	5.9	5.6	1.3	5.1	1.9					
PLAY	0	4.7	0	0	4.9	0	1.6	5	2.3	5.0	5.9	5.6	1.3	5.1	1.9					
STOP	0	4.7	0	0	4.9	0	1.6	5	2.3	5.0	5.9	5.6	1.3	5.1	1.9					
Ref No.	Q3970			Q4001			Q4002			Q4081			Q4084							
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
REC	1.3	5.1	1.9	-19.4	10.4	-28.1	-19.4	0	-28.1	0	5.1	-0.6	5.7	5.6	4.9					
PLAY	1.3	5.1	1.9	0	0	0.7	0	0	0.7	0	0.3	0.3	5.7	0.4	5.7					
STOP	1.3	5.1	1.9	0	0	0.7	0	0	0.7	0	0.3	0.3	5.7	0.4	5.7					
Ref No.	Q4501			Q4502			Q4801			Q4802			Q4803							
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
REC	12.6	12.5	11.8	5.1	5.7	5.8	0	5.7	0	1.3	5.1	1.9	1.3	5.1	1.9	1.3	5.1	1.9		
PLAY	12.6	12.5	11.8	5.1	5.7	5.8	0	5.7	0	1.3	5.1	1.9	1.3	5.1	1.9	1.3	5.1	1.9		
STOP	12.6	12.5	11.8	5.1	5.7	5.8	0	5.7	0	1.2	5.1	1.8	1.3	5.1	1.8	1.3	5.1	1.8		

RefNo.	Q4804																	
MODE	E	C	B															
REC	1.3	5.1	1.9															
PLAY	1.3	5.1	1.9															
STOP	1.2	5.1	1.9															
RefNo.	QR4001			QR4082			QR4501			QR4502			QR4503					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
REC	5.1	5	0.1	0	5.7	0	0	0	4.8	4.8	4.8	0	0	0	4.8			
PLAY	5.1	5	0.1	0	5.7	0	0	0	4.8	4.8	4.8	0	0	0	4.8			
STOP	5.1	5	0.1	0	5.7	0	0	0	4.8	4.8	4.8	0	0	0	4.8			
RefNo.	QR4504			QR4801			QR4802			QR4803			QR4804					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
REC	0	0	4.8	0	0	4.8	5.8	-1.2	5.8	0	0	-2.4	0	0	-2.4			
PLAY	0	0	4.8	0	0	4.8	5.8	-1.2	5.8	0	0	-2.4	0	0	-2.4			
STOP	0	0	4.8	0	0	4.8	5.8	5.66	0	0	0	5.7	0	0	5.7			
RefNo.	QR4805			QR4808			QR7504											
MODE	E	C	B	E	C	B	E	C	B									
REC	4.8	4.8	0	0	0	4.8	0	5	0									
PLAY	4.8	4.8	0	0	0	4.8	0	5	0									
STOP	4.8	4.8	0	0	0	4.8	0	4.9	0									

## 14.1.3. Front (L) P.C.B.

Ref No.	IC7701																		
MODE	1	2	3																
STOP	4.8	0	4.9																


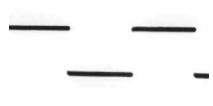









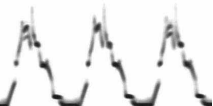




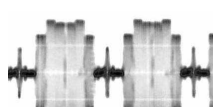


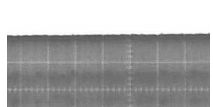

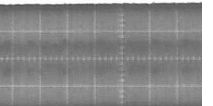


## 14.1.4. Front (R) P.C.B.

Ref No.	QR27501			QR27503			QR27505												
MODE	E	C	B	E	C	B	E	C	B										
STOP	0	5.1	0	0	0	4.8	0	5.1	0										







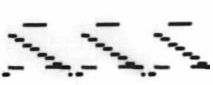

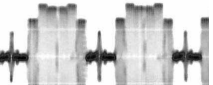

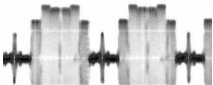

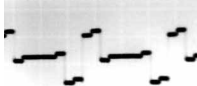


## 14.1.5. P37101 Connector

Ref No.	P37101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.9	5	4.9	5	4.8	0.1	0	4.9	4.9	4.9	5	5	5	3.4	2.3	1.5	5	0	3.3	2.5
PLAY	4.9	5	4.9	5	4.8	0.1	0	4.9	4.9	4.9	5	5	5	3.4	2.3	1.5	5	0	3.3	2.5
STOP	4.9	5	4.9	5	4.8	0.1	0	4.9	4.9	4.9	5	5	5	3.4	2.3	1.5	5	0	3.3	2.5
Ref No.	P37101																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	5.8	2.5	3.4	0	3.4	2.5	0	2.5	3.3	0	0	5	0	2.3	3.6	2.4	3.6	2.7	12.1	0
PLAY	5.8	2.5	3.4	0	3.4	2.5	0	2.5	3.3	0	0	5	0	2.3	3.6	2.4	3.6	2.7	12.1	0
STOP	5.8	2.5	3.4	0	3.4	2.5	0	2.5	3.3	0	0	5	0	2.3	3.6	2.4	3.6	2.7	12.1	0
Ref No.	P37101																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0.7	1.8	0	0	0.6	4	0	0	0.6	0	0	0	0.7	0	0	0	0.7	0	0
PLAY	0	0.7	1.8	0	0	0.6	4	0	0	0.6	0	0	0	0.7	0	0	0	0.7	0	0
STOP	0	0.7	1.8	0	0	0.6	4	0	0	0.6	0	0	0	0.7	0	0	0	0.7	0	0
Ref No.	P37101																			
MODE	61	62	63	64																
REC	3.1	3.2	3.1	3.2																
PLAY	3.1	3.2	3.1	3.2																
STOP	3.1	3.2	3.1	3.2																

## 14.1.6. Waveform Chart

 IC6001-18(TW2001) REC 5.0Vp-p (10msec.div.)	 IC6001-19 PLAY 5.0Vp-p (5msec.div.)	 IC6001-50 REC/PLAY 2.2Vp-p (20usec.div.)	 IC6001-52 REC/PLAY 2.2Vp-p (20usec.div.)	 IC6001-79 FF/REW 5.0Vp-p (1msec.div.)
 IC6001-80 FF/REW 5.0Vp-p (1msec.div.)	 IC6001-86(TL2015) PLAY 0.7Vp-p (0.5msec.div.)	 IC6001-90 REC 5.0Vp-p (10msec.div.)	 IC6001-94 REC 2.4Vp-p (10msec.div.)	 IC6001-95 REC 2.4Vp-p (10msec.div.)
 IC6001-97(TW2002) PLAY 4.4Vp-p (5msec.div.)				
 IC2501-22,23,25 PLAY 8.0Vp-p (2msec.div.)				
 IC3001-6 REC/PLAY 0.9Vp-p (2msec.div.)	 IC3001-19 REC 1.0Vp-p (20usec.div.)	 IC3001-29 REC/PLAY 2.4Vp-p (20usec.div.)	 IC3001-36 PLAY 0.5Vp-p (20usec.div.)	 IC3001-57 REC/PLAY 0.2Vp-p (20usec.div.)
 IC3001-67 PLAY 0.5Vp-p (0.5usec.div.)	 IC3001-80 REC/PLAY 0.5Vp-p (10msec.div.)	 IC3001-86 REC 1.4Vp-p (20usec.div.)	 IC3001-98 REC 1.5Vp-p (1msec.div.)	
 IC4501-21(TW4501) REC 1.1Vp-p (20usec.div.)	 IC4501-53 REC/PLAY 1.6Vp-p (0.5msec.div.)	 IC4501-57 REC/PLAY 1.6Vp-p (0.5msec.div.)		



 <p>IC1120-9 STOP 0.3Vp-p (5usec.div)</p>				
 <p>T1101-1 STOP 20Vp-p (2msec.div)</p>	 <p>T1101-3 STOP 260Vp-p (5usec.div)</p>	 <p>T1101-5 STOP 36Vp-p (5usec.div)</p>	 <p>T1101-7,8,9 STOP 40Vp-p (2msec.div)</p>	
 <p>P37101-58,54 REC/PLAY 0.8Vp-p (1msec.div)</p>	 <p>P37101-50 REC/PLAY 1.0Vp-p (20usec.div.)</p>	 <p>P37101-46 REC/PLAY 0.8Vp-p (20usec.div.)</p>	 <p>P37101-42 REC/PLAY 0.6Vp-p (20usec.div)</p>	
 <p>JK3902-3 REC/PLAY 2.0Vp-p (20usec.div)</p>	 <p>JK3902-4 REC/PLAY 1.5Vp-p (20usec.div)</p>	 <p>JK3902-16 REC/PLAY 2.0Vp-p (20usec.div)</p>		
 <p>JK3902-14 REC/PLAY 1.2Vp-p (20usec.div)</p>	 <p>JK3902-18 REC/PLAY 1.2Vp-p (20usec.div)</p>	 <p>JK3902-22 REC/PLAY 2.0Vp-p (20usec.div)</p>		

## 14.2. Abbreviations

### 14.2.1. DVD

INITIAL/LOGO	ABBREVIATIONS
A	A0~UP ACLK AD0~UP ADATA ALE AMUTE AREQ ARF ASI ASO ASYN
B	BCK BCKIN BDO BLKCK BOTTOM BYP BYTCK
C	CAV CBDO CD CDSCK CDSRDATA CDRF CDV CHNDATA CKSL CLV COFTR CPA CPCS CPDT CPUADR CPUADT CPUIRQ CPRD CPWR CS CSYNIN CSYNOUT
D	DACCK DEEMP DEMPH DIG0~UP DIN DMSRCK DMUTE DO DOUT0~UP DRF DRPOUT DREQ DRESP DSC DSLIF DVD
	ADDRESS AUDIO CLOCK ADDRESS BUS AUDIO PES PACKET DATA ADDRESS LATCH ENABLE AUDIO MUTE AUDIO PES PACKET REQUEST AUDIO RF SERVO AMP INVERTED INPUT SERVO AMP OUTPUT AUDIO WORD DISTINCTION SYNC
	BIT CLOCK (PCM) BIT CLOCK INPUT BLACK DROP OUT SUB CODE BLOCK CLOCK CAP. FOR BOTTOM HOLD BYPATH BYTE CLOCK
	CONSTANT ANGULAR VELOCITY CAP. BLACK DROP OUT COMPACT DISC CD SERIAL DATA CLOCK CD SERIAL DATA CD RF (EFM) SIGNAL COMPACT DISC-VIDEO CHANNEL DATA SYSTEM CLOCK SELECT CONSTANT LINEAR VELOCITY CAP. OFF TRACK CPU ADDRESS CPU CHIP SELECT CPU DATA CPU ADDRESS LATCH CPU ADDRESS DATA BUS CPU INTERRUPT REQUEST CPU READ ENABLE CPU WRITE ENABLE CHIP SELECT COMPOSITE SYNC IN COMPOSITE SYNC OUT
	D/A CONVERTER CLOCK DEEMPHASIS BIT ON/OFF DEEMPHASIS SWITCHING FL DIGIT OUTPUT DATA INPUT DM SERIAL DATA READ CLOCK DIGITAL MUTE CONTROL DROP OUT DATA OUTPUT DATA SLICE RF (BIAS) DROP OUT SIGNAL DATA REQUEST DATA RESPONSE DIGITAL SERVO CONTROLLER DATA SLICE LOOP FILTER DIGITAL VIDEO DISC

INITIAL/LOGO	ABBREVIATIONS
E	EC ECR ENCSEL ETMCLK ETSCLK
F	FBAL FCLK FE FFI FEO FG FSC FSCK
G	GND
H	HA0~UP HD0~UP HINT HRXW
I	IECOUT IPFRAG IREF ISEL
L	LDON LPC LRCK
M	MA0~UP MCK MCKI MCLK MDATA MDQ0~UP MDQM MLD MPEG
O	ODC OFTR OSCI OSCO OSD
P	P1~UP PCD PCK PDVD PEAK PLLCLK PLLOK PWMCTL PWMDA PWMOA, B
	ERROR TORQUE CONTROL ERROR TORQUE CONTROL REFERENCE ENCODER SELECT EXTERNAL M CLOCK (81MHz/40.5MHz) EXTERNAL S CLOCK (54MHz)
	FOCUS BALANCE FRAME CLOCK FOCUS ERROR FOCUS ERROR AMP INVERTED INPUT FOCUS ERROR AMP OUTPUT FREQUENCY GENERATOR FREQUENCY SUB CARRIER FS (384 OVER SAMPLING) CLOCK
	COMMON GROUNDING (EARTH)
	HOST ADDRESS HOST DATA HOST INTERRUPT HOST READ/WRITE
	IEC958 FORMAT DATA OUTPUT INTERPOLATION FLAG I (CURRENT) REFERENCE INTERFACE MODE SELECT
	LASER DIODE CONTROL LASER POWER CONTROL L CH/R CH DISTINCTION CLOCK
	MEMORY ADDRESS MEMORY CLOCK MEMORY CLOCK INPUT MEMORY SERIAL COMMAND CLOCK MEMORY SERIAL COMMAND DATA MEMORY DATA INPUT/OUTPUT MEMORY DATA I/O MASK MEMORY SERIAL COMMAND LOAD MOVING PICTURE EXPERTS GROUP
	OPTICAL DISC CONTROLLER OFF TRACKING OSCILLATOR INPUT OSCILLATOR OUTPUT ON SCREEN DISPLAY
	PORT CD TRACKING PHASE DIFFERENCE PLL CLOCK DVD TRACKING PHASE DIFFERENCE CAP. FOR PEAK HOLD CHANNEL PLL CLOCK PLL LOCK PWM OUTPUT CONTROL PULSE WAVE MOTOR DRIVE A PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
S	RSV	RESERVE
	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECT CLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUB CODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
STVALID	STREAM DATA VALIDITY	
SUBC	SUB CODE SERIAL	
SBCK	SUB CODE CLOCK	
SUBQ	SUB CODE Q DATA	
SYSCLK	SYSTEM CLOCK	
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
W	VSS	SOURCE POWER SUPPLY VOLTAGE
	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
X	WSR	WORD SELECT RECEIVER
	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
XSRMWE	X SRAM WRITE ENABLE	
XVCS	X V-DEC CHIP SELECT	
XVDS	X V-DEC CONTROL BUS STROBE	
XVSYNCO	X VERTICAL SYNC OUTPUT	

## 14.2.2. VHS

443NT [L]	4.43 NTSC (L)	BIL	BILINGUAL
A. COMP	AUDIO COMPONENT SIGNAL	BIL [L]	BILINGUAL (L)
A. COMPO	AUDIO COMPONENT SIGNAL	BIL. [H]	BILINGUAL (H)
A. D.P [L]	AUDIO DUBBING PAUSE (L)	BIL/M1 [L]	BILINGUAL (L)
A. D/L [L]	AUDIO DUBBING PAUSE (L)	BS CLOCK	BS CLOCK
A. DEF [S]	AUDIO DEFEAT	BS DATA	BS DATA
A. DEF [S] [L]	AUDIO DEFEAT	BS LCH IN	BS L CHANNEL INPUT
A. DUB P [L]	AUDIO DUBBING PAUSE (L)	BS MIX [H]	BS MIX (H)
A. DUB [H]	AUDIO DUBBING (H)	BS MON [H]	BS MONITOR (H)
A. ERASE	AUDIO ERASE	BS MONI [H]	BS MONITOR (H)
A. H. SW	AUDIO HEAD SWITCHING PULSE	BS RCH IN	BS R CHANNEL INPUT
A. HEAD [R]	AUDIO HEAD (REC)	BS VIDEO	BS VIDEO SIGNAL
A. HEAD [W]	AUDIO HEAD (PLAY)	BS VIDEO/BS1	BS VIDEO SIGNAL
A. IN [L]	AUDIO INPUT (L)	BS [H]	BS (H)
A. IN [R]	AUDIO INPUT (R)	BS. LEVEL	BS LEVEL
A. MUT [H]	AUDIO MUTE (H)	BS. M [H]	BS MONITOR (H)
A. MUTE [H]	AUDIO MUTE (H)	BS/VTR [H]	BS/VTR (H)
A. OUT [L]	AUDIO OUTPUT (L)	BUS CLK	BUS CLOCK
A. OUT [R]	AUDIO OUTPUT (R)	BUS LSN	BUS LISTEN
A. RF OUT	AUDIO RF SIGNAL OUTPUT	BUS TLK	BUS TALK
A/V/S. DATA	AV SW/SERIAL DATA	BUZZER	BUZZER
AC ONLINE	AC ONLINE	CAP EC	CAPSTAN TORQUE CONTROL
AC. O/EE. H	AC ONLINE/EE (H)	CAP M GND	CAPSTAN MOTOR GND
AFC S C	AFC S CURVE	CAP. ET	CAPSTAN TORQUE CONTROL
AFC [S]	AFC S CURVE	CAP. FG1	CAPSTAN FG1 PULSE
AFC. DEF	AFC DEFEAT	CAP. FG2	CAPSTAN FG2 PULSE
ARFC OUT	AUDIO RF SIGNAL OUTPUT	CAS. SW	CASSETTE SW
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL	CCN	PLAYBACK CONTROL SIGNAL (-)
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI	CCP	PLAYBACK CONTROL SIGNAL (+)
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL (H)/NORMAL	CHM	CONTROL SIGNAL (+)
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL	CHP	CONTROL SIGNAL (-)
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE	CINEM [L]	CINEMA (L)
AUDIO IN [L]	AUDIO INPUT (L)	CINEMA [L]	CINEMA (L)
AUDIO IN [R]	AUDIO INPUT (R)	CINEMA/MIX	CINEMA/MIX
AUDIO OUT [L]	AUDIO OUTPUT (L)	CKL	RATCH LOCK
AUDIO OUT [R]	AUDIO OUTPUT (R)	CKS	SHIFT LOCK
AUDIO SELECT [H]	AUDIO SELECT (H)	CL	CLOCK
AUDIO. L	AUDIO (L)	CLK	CLOCK
AUDIO. R	AUDIO (R)	CLK (C.G)	CLOCK
AV CNT	AV CONTROL	CLOCK. IN	CLOCK INPUT
AV CTL	AV CONTROL	CLP	CLAMP
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK	COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
AV. C.M.	AV CONTROL MODE	COLOR [H]	COLOUR (H)
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)	CONV	CONVERTOR
AVSW/METER. L	AV SW/LEVEL METER (L)	CS	CHIP SELECT
B MODE. H	B MODE (H)	CTL GND	CONTROL GND
B.G.P	BURST GATE PULSE	CTL HEAD [+]	CONTROL HEAD (+)
BACKUP 5V	BACK UP 5V	CTL HEAD [-]	CONTROL HEAD (-)
BAND. U.E.	BAND U	CTL [+]	CONTROL HEAD (+)
BANDVL. D	BAND VL	CTL [-]	CONTROL HEAD (-)
BI/MI [L]	BILINGUAL/MIX (L)	CUE BIAS	CUE BIAS
		CURRENT LIM	CURRENT LIMMITER
		CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND	FULL. E. 12V	FULL ERASE 12V
D.F.M. REC [H]	DELAIED FM RECORDING $\text{\textcircled{H}}$	GND [A]	GND (ANALOG)
D. FM REC [L]	DELAIED FM RECORDING $\text{\textcircled{L}}$	GND [TU]	GND (TUNER)
D. GND	DIGITAL GND	GND/N. SW. 12V	GND/NON SW 12V
D. REC [H]	DELAYED RECORDING $\text{\textcircled{H}}$	H. SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING $\text{\textcircled{H}}$	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING $\text{\textcircled{H}}$	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [-]	HEATER (-)
EC	ERROR TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [-]	HEATER (-)
	EDIT TRIGGER $\text{\textcircled{L}}$	I RFE	REFERENCE CURRENT
EDT TRIG [L]	EDIT $\text{\textcircled{H}}$	ICL	CONTROL AGC CIRCUIT
EDIT [H]	EE $\text{\textcircled{H}}$	IF	INTERMEDIATE FREQUENCY
EE [H]	EE $\text{\textcircled{H}}$ /INSERT $\text{\textcircled{M}}$	IN SELA1	INPUT SELECT A1 POSITION
EE [H]/INS [M]	EE/VV/TRICK PLAY	IN SELA2	INPUT SELECT A2 POSITION
EE. VV. TR	EJECT POSITION	IN SELA3	INPUT SELECT A3 POSITION
EJECT. PO	EJECT/REVERSE SLOW LOCK	INS L/R [L]	INSERT Lch/Rch $\text{\textcircled{L}}$
EJECT/VDET	ENVELOPE SELECT	INS. [H]	INSERT $\text{\textcircled{H}}$
ENV. SEL	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. OUT	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENVE. SEL	ENVELOPE SELECT	INSERT	INSERT
ENV SELECT	LP $\text{\textcircled{H}}$	INSERT [H]	INSERT $\text{\textcircled{H}}$
EP [H]	LP $\text{\textcircled{H}}$	IO CS	INPUT/OUTPUT CHIP SELECT
EP/LP [H]	LP/SP	JOG1	JOG1
EP/LP/SP	LP/SLOW/STILL/STOP $\text{\textcircled{H}}$	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EP/SS [H]	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EPROMCS	EXCEPT RECORDING 5V	JSB [H]	JSB $\text{\textcircled{H}}$
EX. REC 5V	FIRST FORWARD/REWIND $\text{\textcircled{L}}$	JST. CLCK	JUST CLOCK
FF/REW [L]	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG1 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FG2 IN	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FILTER ADJUSTMENT	FLYING ERASE HEAD ON $\text{\textcircled{H}}$	L. CH [H]	Lch $\text{\textcircled{H}}$
FLY ERASE [H]	FLYING ERASE HEAD ON $\text{\textcircled{H}}$	L. CH [L]	Lch $\text{\textcircled{L}}$
FLY ON [H]	FLYING ERASE HEAD ON $\text{\textcircled{H}}$	LED (MAIN)	LED (MAIN)
FLY. E [H]	FM AUDIO MUTE $\text{\textcircled{H}}$	LED (STEREO)	LED (STEREO)
FM MUT [H]	FM AUDIO MUTE $\text{\textcircled{H}}$	LED (SUB)	LED (SUB)
FM MUTE [H]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [L]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM OUT [R]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [L]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM PACK OUT [R]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [L]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FM/BS SEL [R]	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FS. CLK	FULL ERASE HEAD ON $\text{\textcircled{H}}$	LINE IN V	LINE INPUT VIDEO
FUL. E [H]	FULL ERASE HEAD ON $\text{\textcircled{H}}$	LINE IN [L]	LINE INPUT (L)

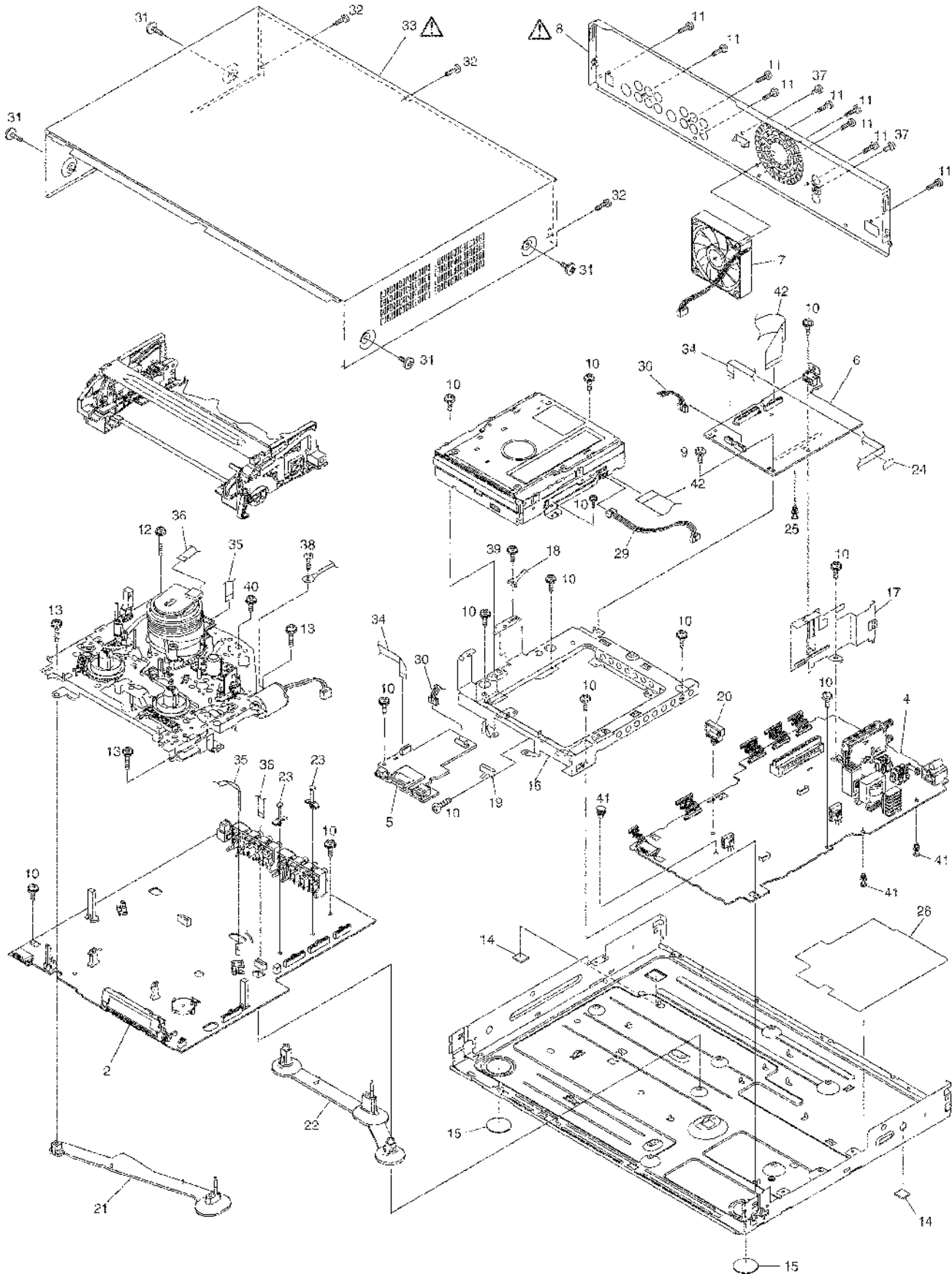
LINE IN [R]	LINE INPUT (R)	P-OFF [H]	POWER OFF $\text{\textcircled{H}}$
LINE OUT [L]	LINE OUTPUT (L)	P-OFF [L]	POWER OFF $\text{\textcircled{L}}$
LINE OUT [R]	LINE OUTPUT (R)	P. FAIL	POWER FAILURE DETECT
LP [H]	LP $\text{\textcircled{H}}$	P. OFF [H]	POWER OFF $\text{\textcircled{H}}$
LPTRI [L]	LP TRICK PLAY $\text{\textcircled{L}}$	P. OFF [L]	POWER OFF $\text{\textcircled{L}}$
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL $\text{\textcircled{H}}$
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL $\text{\textcircled{L}}$ /NTSC $\text{\textcircled{H}}$
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN $\text{\textcircled{L}}$	PB. H	PLAYBACK $\text{\textcircled{H}}$
MAIN/MONO	MAIN/MONAUROAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM $\text{\textcircled{H}}$	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM $\text{\textcircled{H}}$	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM $\text{\textcircled{L}}$	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW $\text{\textcircled{H}}$
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF $\text{\textcircled{L}}$
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL $\text{\textcircled{H}}$
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX $\text{\textcircled{H}}$ /BILIGUAL	R. CH [H]	Rch $\text{\textcircled{H}}$
MIC GND	MIC GND	R. CH [L]	Rch $\text{\textcircled{L}}$
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE $\text{\textcircled{H}}$ /STOP $\text{\textcircled{M}}$ /FORWARD $\text{\textcircled{L}}$
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch $\text{\textcircled{H}}$
MIC [H]	MIC $\text{\textcircled{H}}$	REC 12V	RECORDING 12V
MIX [H]	MIX $\text{\textcircled{H}}$	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX $\text{\textcircled{H}}$ /CINEMA SOUND $\text{\textcircled{L}}$	REC H	RECORDING $\text{\textcircled{H}}$
MIX/CINE	MIX $\text{\textcircled{H}}$ /CINEMA SOUND $\text{\textcircled{L}}$	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX $\text{\textcircled{H}}$ /CINEMA SOUND $\text{\textcircled{L}}$	REC OUT [L]	RECORDING OUTPUT $\text{\textcircled{L}}$
MN. H/M. L	MONAUROAL $\text{\textcircled{H}}$ /MAIN $\text{\textcircled{L}}$	REC START	RECORDING START
MN. H/MAI. L	MONAUROAL $\text{\textcircled{H}}$ /MAIN $\text{\textcircled{L}}$	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAUROAL 2/MESECAM $\text{\textcircled{L}}$	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING $\text{\textcircled{H}}$
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAUROAL $\text{\textcircled{H}}$	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAUROAL $\text{\textcircled{H}}$ /MAIN $\text{\textcircled{L}}$	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAUROAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAUROAL 2/MESECAM (FM $\text{\textcircled{L}}$ )	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR
N. SW 12V	NON SW 12V		FORWARD/REVERSE
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM $\text{\textcircled{L}}$	REV MOTOR F/R	REVIEW MOTOR
NOL [H]	PAL $\text{\textcircled{H}}$ /4.43 NTSC $\text{\textcircled{M}}$ /3.58 NTSC $\text{\textcircled{L}}$		FORWARD/REVERSE
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY $\text{\textcircled{H}}$	REV MOTOR V1	REVIEW MOTOR V1
NORMAL [H]	NORMAL $\text{\textcircled{H}}$	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC $\text{\textcircled{L}}$	REV MOTOR [-]	REVIEW MOTOR (-)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT	SYSCON 5V	SYSTEM CONTROL 5V
RF Y	RF LUMINANCE SIGNAL	SYSTEM SW	SYSTEM SW
RF. Y. IN	RF LUMINANCE SIGNAL INPUT	T-PHOTO	TAKE-UP PHOTO TRANSISTOR
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT	T-RL. PLS	TAKE-UP REEL PULSE
ROTAR. SW	ROTARY SW	T. BUSCLK	TIMER BUS CLOCK
ROTARY	ROTARY SW	T. BUSLSN	TIMER BUS LISTEN
RST	RESET	T. BUSTLK	TIMER BUS TALK
RST [L]	RESET $\textcircled{L}$	T. END [L]	TAPE END $\textcircled{L}$
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END $\textcircled{L}$
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END $\textcircled{L}$ /CAMERA PAUSE
S-PHOTO	SUPPLY PHOTO TRANSISTOR	TEST	TEST MODE
S-RL. PLS	SUPPLY REEL PULSE	TPZ	TRAPEZOIDAL WAVE CIRCUIT
S. CLK	SERIAL CLOCK	TRIC [L]	TRIC PLAY $\textcircled{L}$
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRIC PLAY $\textcircled{L}$
S. DATA	SERIAL DATA	TRK. ENV	AUTO TRACKING ENVELOPE DETECT
S. DATA/A	SERIAL DATA	TU. AUDIO	TUNER AUDIO
S. PHOTO	SUPPLY PHOTO TRANSISTOR	TU. GND	TUNER GND
S. TAB [L]	SAFETY TAB SW ON $\textcircled{L}$	TU. V. IN	TUNER VIDEO SIGNAL INPUT
S/P/N	SECAM/PAL/NTSC	TU. VIDEO	TUNER VIDEO
SC IN	SERIAL CLOCK INPUT	TUN NOR IN	TUNER NORMAL INPUT
SC OUT	SERIAL CLOCK OUTPUT	TUN R	TUNER AUDIO (R)
SCK SELECT	SERIAL CLOCK SELECT	TUN. AUDIO IN	TUNER AUDIO INPUT
SEL OUT [L]	SELECT OUTPUT (L)	TUNER 12V	TUNER 12V
SEL OUT [R]	SELECT OUTPUT (R)	TUNER L	TUNER AUDIO (L)
SHUTTLE 1	SHUTTLE 1	TUNER V IN	TUNER VIDEO SIGNAL INPUT
SIF	SOUND INTERMEDIATE FREQUENCY	TUNER [L]	TUNER AUDIO (L)
SLMUT [H]	INPUT SELECT MUTE $\textcircled{H}$	TUNER [N]	TUNER AUDIO (NORMAL)
SLNID [+]	SOLENOID (+)	TUNER [R]	TUNER AUDIO (R)
SLNID [-]	SOLENOID (-)	TUNER. 12	TUNER 12V
SLW TR. MM	SLOW TRACKING MONO MULTI	TUOFF [H]	TUNER OFF $\textcircled{H}$
SLW TR. REF	SLOW TRACKING REFERENCE	TV. AUDIO	TV AUDIO
	VOLTAGE	TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON $\textcircled{L}$
SOFT [H]	SOFT TAPE PLAY $\textcircled{H}$	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY $\textcircled{H}$ /NORMAL $\textcircled{H}$	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON $\textcircled{L}$	UNREG19V	UNREGULATOR 19V
SP [H]	SP $\textcircled{H}$	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE $\textcircled{H}$
SSS [L]	SLOW/STILL/STOP	V. EE [L]	VIDEO EE $\textcircled{L}$
STEREO LED	STEREO LED	VCO REF	REFERENCE OSCILLATER
STEREO [H]	STEREO $\textcircled{H}$	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO $\textcircled{L}$	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE $\textcircled{L}$
STOP/5V	STOP POSITION/5V	VIDEO IN	VIDEO SIGNAL INPUT
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT	VIDEO OUT	VIDEO SIGNAL OUTPUT
STOP1/PAL:ST	STOP1 POSITION/PAL	VM	MOTOR VOLTAGE
STOP2. PO	STOP 2 POSITION	VM DOWN [L]	MOTOR VOLTAGE DOWN $\textcircled{L}$
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO $\textcircled{H}$	VTR [H]	VTR $\textcircled{H}$
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPUT
SVHS CAS [L]	S-VHS CASSETTE $\textcircled{L}$	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC $\textcircled{L}$		

# 15 Parts and Exploded Views

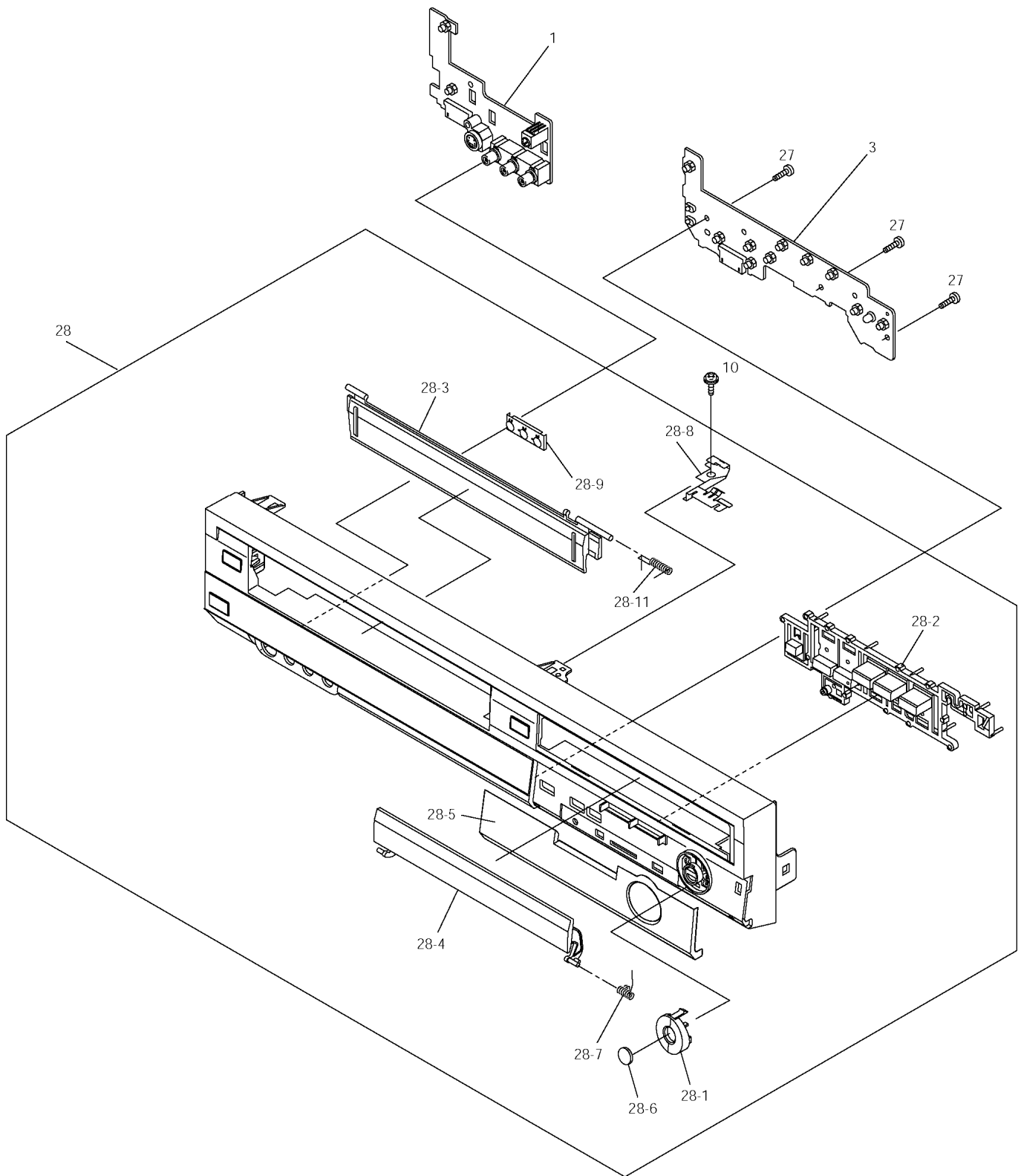
## 15.1. Exploded Views

### 15.1.1. Casing Parts & Mechanism Section1

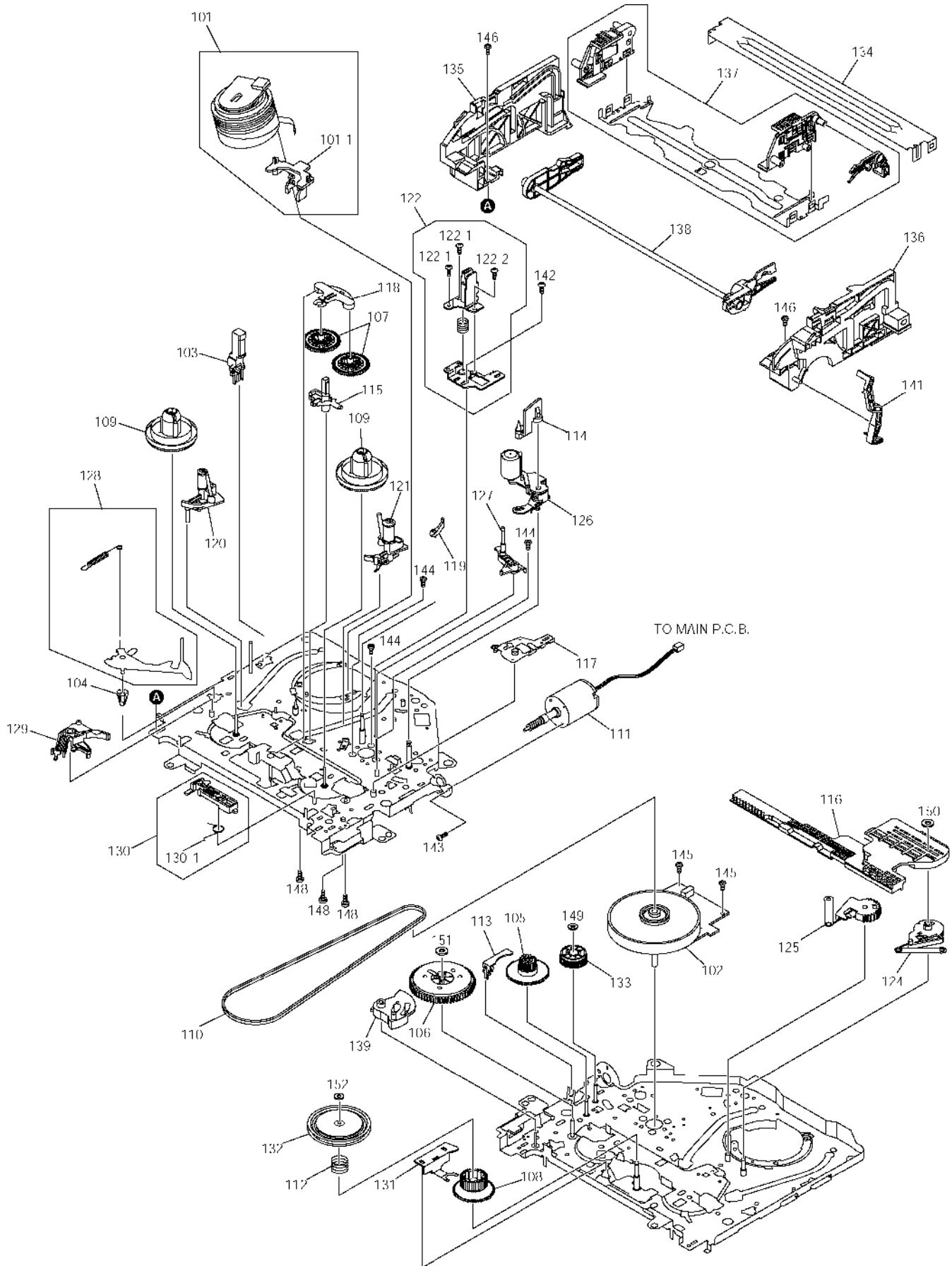




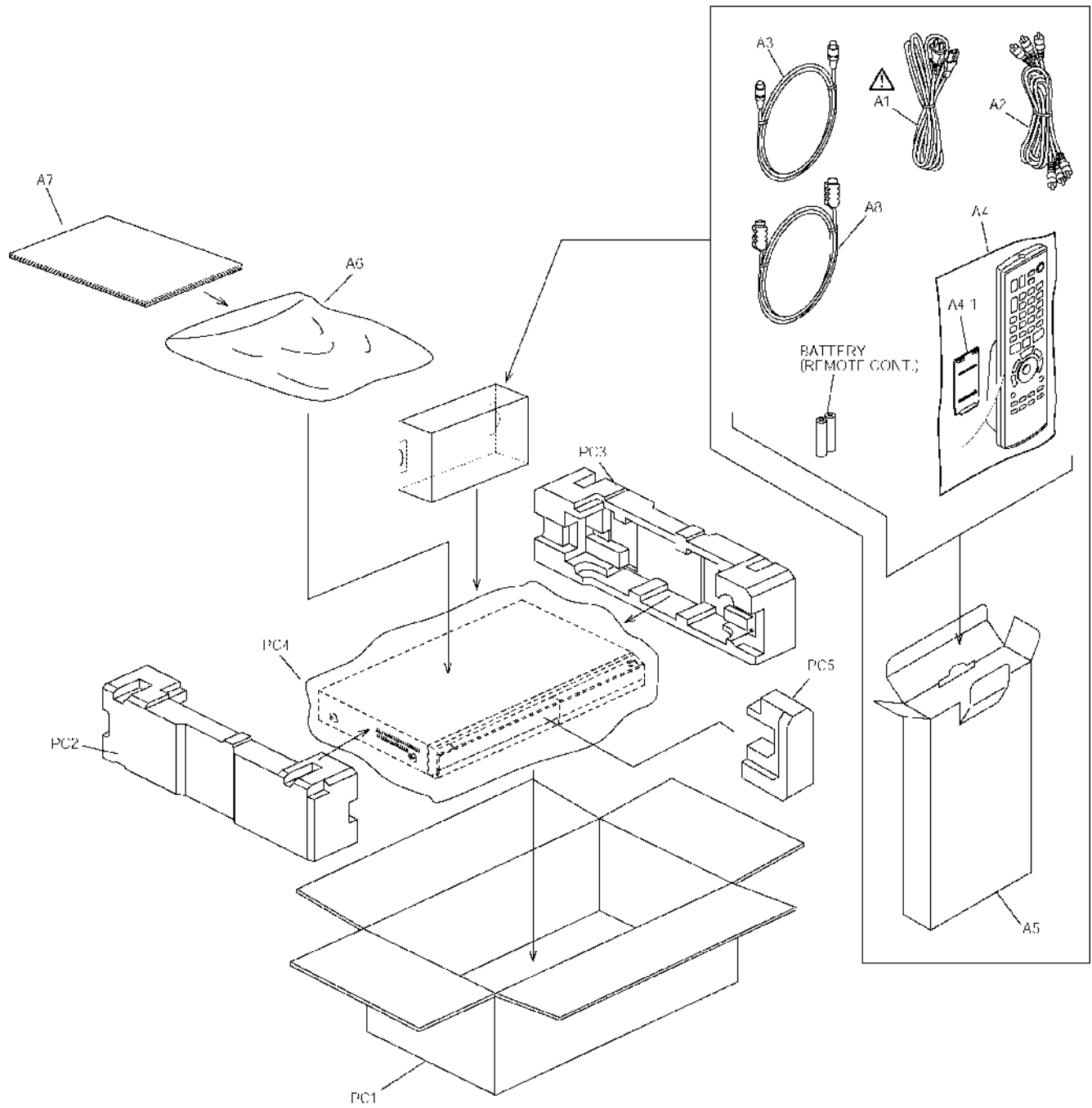
## 15.1.2. Casing Parts &amp; Mechanism Section 2



### 15.1.3. VHS Mechanism Section




### 15.1.4. Packing & Accessories Section



## 15.2. Replacement Parts List

### Notes:

\*Important safety notice:

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

\*Warning: This product uses a laser diode. Refer to caution statements.

\*Capacity values are in microfarads ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).

\*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

\*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

\*“(IA), (IB)”, marks in Remarks indicate languages of instruction manuals. [(IA): English, (IB): Canadian French]

\*All parts are supplied by PAVCSG.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	VEP06G41A	MAIN P.C.B.	1	(RTL)
C2001	ECJ1VC1H330J	50V 33P	1	
C2002	ECJ1VB0J105K	6.3V 1U	1	
C2003	ECJ1VF1A105Z	10V 1U	1	
C2051	F1J0J106A014	6.3V 10U	1	
C2052	F1J0J106A014	6.3V 10U	1	
C2053	F2A1C1000021	16V 10U	1	
C2054	ECJ1VB1H392K	50V 3900P	1	
C2055	ECJ1VF1C104Z	16V 0.1U	1	
C2099	F1H1H681A799	50V 0.68U	1	
C2501	ECJ1VF1C104Z	16V 0.1U	1	
C2502	F2A0J101A825	6.3V 100U	1	
C2504	ECJ1VB1E223K	25V 0.022U	1	
C2505	ECJ1VB1E223K	25V 0.022U	1	
C2506	ECJ1VB1A224K	10V 0.22U	1	
C2507	ECJ1VB1H102K	50V 1000P	1	
C2508	ECJ1VB1H182K	50V 1800P	1	
C2509	F2A1C220B100	16V 22U	1	
C2510	F1H1C104A090	16V 0.1U	1	
C2511	F1H1C104A090	16V 0.1U	1	
C2512	F1H1C104A090	16V 0.1U	1	
C2513	ECJ1VF1A105Z	10V 1U	1	
C2515	ECJ1VB1H103K	50V 0.01U	1	
C2518	ECJ1VB1H103K	50V 0.01U	1	
C2519	ECJ1VB1H103K	50V 0.01U	1	
C2551	ECJ1VB1C473K	16V 0.047U	1	
C2552	ECJ1VB1C683K	16V 0.068U	1	
C2561	ECJ1VB1C683K	16V 0.068U	1	
C2562	ECJ1VB1C473K	16V 0.047U	1	
C2571	F2A1C2210095	16V 220U	1	
C3001	ECJ1VC1H151J	50V 150P	1	
C3002	F1H1C104A090	16V 0.1U	1	
C3003	F1H1C104A090	16V 0.1U	1	
C3004	F2A1C100B099	16V 10U	1	
C3005	F1H1H220A799	50V 22P	1	
C3006	F1H1C104A090	16V 0.1U	1	
C3007	ECJ1VB1H103K	50V 0.01U	1	
C3008	F2A1H4R7B033	50V 4.7U	1	
C3009	ECJ1VB0J105K	6.3V 1U	1	
C3010	ECJ1VB0J105K	6.3V 1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3011	F1H1C104A090	16V 0.1U	1	
C3012	F2A0J470A824	6.3V 47U	1	
C3013	F2A1C100B099	16V 10U	1	
C3014	F1H1C104A090	16V 0.1U	1	
C3015	ECJ1VB0J105K	6.3V 1U	1	
C3016	F1H1C104A090	16V 0.1U	1	
C3017	F1H1C104A090	16V 0.1U	1	
C3019	F1H1C104A090	16V 0.1U	1	
C3020	F2A1H3R3B032	50V 3.3U	1	
C3021	F2A1V100A824	35V 10U	1	
C3023	ECJ1VB1H103K	50V 0.01U	1	
C3024	ECJ1VC1H331J	50V 330P	1	
C3025	ECJ1VB1H103K	50V 0.01U	1	
C3028	F2A1H4R7B033	50V 4.7U	1	
C3029	F2A1HR47B032	50V 47U	1	
C3030	ECJ1VB1E223K	25V 0.022U	1	
C3031	ECJ1VB1C333K	16V 0.033U	1	
C3032	F2A1H4R7B033	50V 4.7U	1	
C3033	F1H1C104A090	16V 0.1U	1	
C3034	F2A1H2R2B032	50V 2.2U	1	
C3035	F1H1H472A798	50V 4700P	1	
C3036	F2A0J470A824	6.3V 47U	1	
C3037	F1H1C104A090	16V 0.1U	1	
C3038	ECJ1VC1H040C	50V 4P	1	
C3039	F2A1H1R0B032	50V 1U	1	
C3040	ECJ1VB1H103K	50V 0.01U	1	
C3041	ECJ1VB1H103K	50V 0.01U	1	
C3044	F1H1C104A090	16V 0.1U	1	
C3048	ECJ1VB1H103K	50V 0.01U	1	
C3050	F1H1C104A090	16V 0.1U	1	
C3053	F1H1C104A090	16V 0.1U	1	
C3074	F1H1C104A090	16V 0.1U	1	
C3701	F1H1C104A090	16V 0.1U	1	
C3703	F1H1C104A090	16V 0.1U	1	
C3705	F2A0J102A833	6.3V 1000U	1	
C3706	F1H1C104A090	16V 0.1U	1	
C3707	F2A1V470A831	35V 47U	1	
C3708	F1H1C104A090	16V 0.1U	1	
C3709	F2A1V470A831	35V 47U	1	
C3710	ECJ1VB0J105K	6.3V 1U	1	
C3711	ECJ1VB0J105K	6.3V 1U	1	
C3712	ECJ1VF1C104Z	16V 0.1U	1	
C3713	ECJ1VB0J105K	6.3V 1U	1	
C3714	ECJ1VB1H103K	50V 0.01U	1	
C3715	ECJ1VB0J105K	6.3V 1U	1	
C3716	ECJ1VB0J105K	6.3V 1U	1	
C3717	F2A1H1R0B040	50V 1U	1	
C3718	F2A1H1R0B040	50V 1U	1	
C3721	F2A1C100B110	16V 10U	1	
C3722	ECJ1VB0J105K	6.3V 1U	1	
C3724	ECJ1VB0J105K	6.3V 1U	1	
C3725	ECJ1VB0J105K	6.3V 1U	1	
C3726	ECJ1VB0J105K	6.3V 1U	1	
C3727	ECJ1VF1H103Z	50V 0.01U	1	
C3728	ECJ1VF1C104Z	16V 0.1U	1	
C3729	ECJ1VB0J105K	6.3V 1U	1	
C3730	ECJ1VF1C104Z	16V 0.1U	1	
C3731	F1H1C104A090	16V 0.1U	1	
C3733	F2A0J102A833	6.3V 1000U	1	
C3734	F2A0J102A833	6.3V 1000U	1	
C3735	ECJ1VF1H103Z	50V 0.01U	1	
C3736	F2A0J471A832	6.3V 470U	1	
C3737	F2A0J471A832	6.3V 470U	1	
C3738	F2A0J102A833	6.3V 1000U	1	
C3739	ECJ1VF1C104Z	16V 0.1U	1	
C3740	ECJ1VF1H103Z	50V 0.01U	1	
C3741	ECJ1VF1C104Z	16V 0.1U	1	
C3742	ECJ1VF1C104Z	16V 0.1U	1	
C4001	ECQB1H333JF3	50V 0.033U	1	
C4004	ECJ1VB1H182K	50V 1800P	1	
C4005	F2A0J220A878	6.3V 22U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4006	F2A1H4R7B033	50V 4.7U	1	
C4007	ECJ1VB1H182K	50V 1800P	1	
C4008	F2A1H3R3B032	50V 3.3U	1	
C4009	F2A0J330A824	6.3V 33U	1	
C4011	ECJ1VB1H103K	50V 0.01U	1	
C4012	F2A1H4R7B033	50V 4.7U	1	
C4013	ECJ1VB1H103K	50V 0.01U	1	
C4017	F2A1C100B099	16V 10U	1	
C4019	F2A1C100B099	16V 10U	1	
C4081	ECJ1VB1E223K	25V 0.022U	1	
C4082	ECJ1VB1H471K	50V 470P	1	
C4083	F2A0J470A824	6.3V 47U	1	
C4084	ECJ1VB1H182K	50V 1800P	1	
C4501	ECQB1H473JF3	50V 0.047U	1	
C4502	F2A1C100B099	16V 10U	1	
C4503	F2A1C100B099	16V 10U	1	
C4504	F2A1C100B099	16V 10U	1	
C4505	F2A0J330A824	6.3V 33U	1	
C4506	F2A1C100B099	16V 10U	1	
C4507	F2A0J220A878	6.3V 22U	1	
C4508	ECJ1VB1C333K	16V 0.033U	1	
C4509	ECJ1VB1H103K	50V 0.01U	1	
C4510	ECJ1VB1H103K	50V 0.01U	1	
C4511	F1H1C104A090	16V 0.1U	1	
C4512	ECJ1VB1A224K	10V 0.22U	1	
C4513	F2A0J220A878	6.3V 22U	1	
C4514	F2A1C100B099	16V 10U	1	
C4515	F2A0J330A824	6.3V 33U	1	
C4516	F2A1C100B099	16V 10U	1	
C4517	F2A0J220A878	6.3V 22U	1	
C4518	ECJ1VB1H103K	50V 0.01U	1	
C4519	ECJ1VF1C104Z	16V 0.1U	1	
C4520	F2A0J220A878	6.3V 22U	1	
C4521	F2A1C100B099	16V 10U	1	
C4522	ECQB1H473JF3	50V 0.047U	1	
C4523	F2A1C220B100	16V 22U	1	
C4524	F1H1C104A090	16V 0.1U	1	
C4525	F2A1C101B102	16V 100U	1	
C4526	F2A1C100B099	16V 10U	1	
C4527	F2A1C100B099	16V 10U	1	
C4528	F2A1C100B099	16V 10U	1	
C4529	F2A1C100B099	16V 10U	1	
C4530	F2A1C100B099	16V 10U	1	
C4531	F2A1C100B099	16V 10U	1	
C4532	F2A1C100B099	16V 10U	1	
C4533	ECJ1VB1C105K	16V 1U	1	
C4534	ECQB1H153JF3	50V 0.015U	1	
C4535	ECQB1H153JF3	50V 0.015U	1	
C4536	ECJ1VB1C105K	16V 1U	1	
C4537	ECJ2VC1H560G	50V 56P	1	
C4538	ECJ1VB1H103K	50V 0.01U	1	
C4539	ECJ1VB1C105K	16V 1U	1	
C4540	ECJ1VB1C105K	16V 1U	1	
C4801	F1H1C104A090	16V 0.1U	1	
C4802	ECQV1H104JL3	50V 0.1U	1	
C4803	F2A1C471B112	16V 470U	1	
C4805	F1H1C104A090	16V 0.1U	1	
C4806	F2A1C100B110	16V 10U	1	
C4807	F2A1C100B110	16V 10U	1	
C4811	F2A1H1R0B040	50V 1U	1	
C4812	F2A1H1R0B040	50V 1U	1	
C4813	F2A1H1R0B040	50V 1U	1	
C4814	ECJ1VC1H101J	50V 100P	1	
C4815	F2A1H1R0B040	50V 1U	1	
C4816	F2A1H1R0B040	50V 1U	1	
C4817	ECJ1VB1C105K	16V 1U	1	
C4818	ECJ1VB1C105K	16V 1U	1	
C4819	F2A1H1R0B040	50V 1U	1	
C4820	F2A1H1R0B040	50V 1U	1	
C4821	F2A1E470B030	25V 47U	1	
C4822	F2A1E470B030	25V 47U	1	
C4823	ECJ1VC1H102J	50V 1000P	1	
C4824	ECJ1VC1H102J	50V 1000P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4825	F2A1H4R7B040	50V 4.7U	1	
C4828	F2A1E470B030	25V 47U	1	
C4829	ECJ1VC1H102J	50V 1000P	1	
C4830	ECJ1VC1H102J	50V 1000P	1	
C4831	F2A1H4R7B040	50V 4.7U	1	
C4832	F2A1C100B110	16V 10U	1	
C4833	F2A1E470B030	25V 47U	1	
C4834	F2A1C100B110	16V 10U	1	
C4835	F2A1E470B030	25V 47U	1	
C4836	F2A0J470A831	6.3V 47U	1	
C4837	ECJ1VF1C104Z	16V 0.1U	1	
C4838	F2A1E470B030	25V 47U	1	
C4840	ECJ1VB0J105K	6.3V 1U	1	
C4841	ECJ1VC1H101J	50V 100P	1	
C5001	ECJ1VB1H103K	50V 0.01U	1	
C5002	ECJ1VB1H103K	50V 0.01U	1	
C5003	ECJ1VB1H103K	50V 0.01U	1	
C5004	ECJ1VB1H103K	50V 0.01U	1	
C5005	F1H1C104A090	16V 0.1U	1	
C5006	F2A0J101A825	6.3V 100U	1	
C5007	ECJ1VF1C104Z	16V 0.1U	1	
C5008	ECJ1VB0J105K	6.3V 1U	1	
C6001	ECJ1VC1H180J	50V 18P	1	
C6002	ECJ1VC1H180J	50V 18P	1	
C6005	F2A1H3R3B032	50V 3.3U	1	
C6008	ECJ1VC1H471J	50V 470P	1	
C6009	ECJ1VB1H103K	50V 0.01U	1	
C6010	ECJ1VC1H120J	50V 12P	1	
C6011	ECJ1VC1H120J	50V 12P	1	
C6012	ECJ1VF1C104Z	16V 0.1U	1	
C6014	ECJ1VB1H102K	50V 1000P	1	
C6015	ECJ1VB1C333K	16V 0.033U	1	
C6016	ECJ1VB1H102K	50V 1000P	1	
C6019	ECJ1VF1C104Z	16V 0.1U	1	
C6020	ECJ1VB1H102K	50V 1000P	1	
C6100	ECJ1VF1C104Z	16V 0.1U	1	
C6101	ECJ1VB1H103K	50V 0.01U	1	
C6102	ECJ1VF1A105Z	10V 1U	1	
C6103	ECJ1VC1H561J	50V 560P	1	
C6104	ECJ1VB1H103K	50V 0.01U	1	
C6308	ECJ1VB0J105K	6.3V 1U	1	
C7501	ECJ1VB1H103K	50V 0.01U	1	
C7502	ECJ1VB1H103K	50V 0.01U	1	
C7503	ECJ1VB1H103K	50V 0.01U	1	
C7505	F2A0J470A831	6.3V 47U	1	
C7508	ECJ1VF1C104Z	16V 0.1U	1	
C7509	ECJ1VF1C104Z	16V 0.1U	1	
C7510	ECJ1VC1H180J	50V 18P	1	
C7511	F1H1H150A799	50V 15P	1	
C7512	ECJ1VF1C104Z	16V 0.1U	1	
C7513	ECJ1VB1H103K	50V 0.01U	1	
C7514	ECJ1VF1C104Z	16V 0.1U	1	
C7515	ECJ1VF1A105Z	10V 1U	1	
C7520	F1H1A105A028	10V 1U	1	
D1501	B3EA00000072	LED	1	
D2001	B0AACK000004	DIODE	1	
D2002	B0AACK000004	DIODE	1	
D2502	MAZ4160NMF	DIODE	1	
D3001	MAZ4056NHF	DIODE	1	
D4501	B0AACK000004	DIODE	1	
D4502	MAZ4056NHF	DIODE	1	
D4802	B0AACK000004	DIODE	1	
D7502	B0AACK000004	DIODE	1	
D7506	B0AACK000004	DIODE	1	
DP7501	A2BD00000176	DISPLAY TUBE	1	
IC1511	B3NAA0000117	IC	1	
IC1512	B3NAA0000117	IC	1	
IC2001	C0CBCDC00052	IC	1	
IC2501	C1AB00001767	IC	1	
IC3001	C1AB00002083	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC3702	C1AB00002748	IC	1	
IC4501	AN3656NFBPBV	IC	1	
IC4801	C0CBCDC00037	IC	1	
IC4803	B3ZAZ0000016	IC	1	
IC6001	C2CBHF000474	IC	1	
IC6301	C0CBCDC00052	IC	1	
IC7501	MN67789TA	IC	1	
IC7504	C0EBK0000206	IC	1	
J1	VEE0U97-1	WIRE	1	
JK3902	K1U717B00005	JACK,AV OUT	1	
JK3903	K1U718B00003	JACK,AV IN/OUT	1	
K3010	ERJ3GEY0R00V	1/10W 0	1	
K4002	ERJ3GEY0R00V	1/10W 0	1	
K4506	ERJ3GEY0R00V	1/10W 0	1	
L3002	G0C271JA0019	COIL	1	
L3003	G0C270JA0019	COIL 27UH	1	
L3004	G0C680JA0019	COIL 68UH	1	
L3005	G0C270JA0019	COIL 27UH	1	
L3006	G1C120JA0036	COIL 12UH	1	
L3701	G0C220JA0019	COIL 22UH	1	
L3702	G0C220JA0019	COIL 22UH	1	
L4061	G0C221KA0065	COIL 220UH	1	
L4501	G0C1R2J00004	COIL 1.2UH	1	
L4502	G0C391JA0019	COIL 390UH	1	
L4503	G0C101JA0019	COIL 100UH	1	
L5001	G0C680JA0019	COIL 68UH	1	
L6102	G0C1R5JA0019	COIL 1.5UH	1	
LB3701	J0JCC0000103	COIL	1	
LB3702	J0JCC0000103	COIL	1	
LB3703	J0JCC0000103	COIL	1	
LB3704	J0JCC0000103	COIL	1	
P1531	K1KA02A00375	CONNECTOR (2P)	1	
P2501	K1MN07A00019	CONNECTOR (7P)	1	
P2571	K1KA08A00355	CONNECTOR (8P)	1	
P3001	K1MN09A00022	CONNECTOR (9P)	1	
P3901	K1KB15AA0032	CONNECTOR (15P)	1	
P3902	K1KB19AA0032	CONNECTOR (19P)	1	
P4001	K1KB02A00035	CONNECTOR (2P)	1	
P4002	K1MN06A00033	CONNECTOR (6P)	1	
P6001	K1KB07AA0032	CONNECTOR (7P)	1	
P6002	K1KB19AA0032	CONNECTOR (19P)	1	
P6003	K1KB19AA0032	CONNECTOR (19P)	1	
PS6001	K1KB12B00047	CONNECTOR (12P)	1	
Q1501	PNA2602M01VT	TRANSISTOR	1	
Q1502	PNA2602M01VT	TRANSISTOR	1	
Q3001	B1ABDF000026	TRANSISTOR	1	
Q3003	B1AAGD000016	TRANSISTOR	1	
Q3004	B1ABDF000026	TRANSISTOR	1	
Q4001	2SD114900L	TRANSISTOR	1	
Q4002	B1ABDF000026	TRANSISTOR	1	
Q4081	2SD0602ARL	TRANSISTOR	1	
Q4084	2SB0710A0L	TRANSISTOR	1	
Q4501	2SB0710A0L	TRANSISTOR	1	
Q4502	B1AAGD000016	TRANSISTOR	1	
Q4801	B1ABDF000026	TRANSISTOR	1	
Q4802	B1ABDF000026	TRANSISTOR	1	
Q4803	B1ABDF000026	TRANSISTOR	1	
Q4804	B1ABDF000026	TRANSISTOR	1	
QR4001	B1GDCFJJ0037	TRANSISTOR	1	
QR4082	B1GBCFNN0041	TRANSISTOR	1	
QR4501	B1GBCFJJ0040	TRANSISTOR	1	
QR4502	B1GDCFNN0024	TRANSISTOR	1	
QR4503	UNR5216J0L	TRANSISTOR	1	
QR4504	UNR5216J0L	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
QR4801	B1GBCFJJ0040	TRANSISTOR	1	
QR4802	B1GDCFJJ0037	TRANSISTOR	1	
QR4803	UNR5216J0L	TRANSISTOR	1	
QR4804	UNR5216J0L	TRANSISTOR	1	
QR4805	B1GDCFNN0024	TRANSISTOR	1	
QR4808	B1GBCFJJ0040	TRANSISTOR	1	
QR7504	B1GBCFJJ0040	TRANSISTOR	1	
R1501	ERJ3GEYJ273V	1/10W 27K	1	
R1502	ERJ3GEYJ273V	1/10W 27K	1	
R1503	ERDS2TJ151T	1/4W 150	1	
R1511	ERJ3GEYJ273V	1/10W 27K	1	
R1512	ERJ3GEYJ273V	1/10W 27K	1	
R1513	ERJ6GEYJ121V	1/8W 120	1	
R2001	ERJ3GEYJ392V	1/10W 3.9K	1	
R2002	ERJ3GEYJ105V	1/10W 1M	1	
R2099	ERJ3GEYJ682V	1/10W 6.8K	1	
R2501	ERJ6GEYJ1R2V	1/8W 1.2	1	
R2502	ERJ6GEYJ1R5V	1/8W 1.5	1	
R2503	ERDS2TJ822T	1/4W 8.2K	1	
R2514	ERJ3GEYJ221V	1/10W 220	1	
R2515	ERJ3GEYJ221V	1/10W 220	1	
R2516	ERJ3GEYJ221V	1/10W 220	1	
R2520	ERJ3GEYJ183V	1/10W 18K	1	
R2521	ERJ3GEYJ102V	1/10W 1K	1	
R2551	ERJ3GEYJ103V	1/10W 10K	1	
R2552	ERJ3GEYJ103V	1/10W 10K	1	
R2561	ERJ3GEYJ102V	1/10W 1K	1	
R2562	ERJ3GEYJ473V	1/10W 47K	1	
R2563	ERJ3GEYJ102V	1/10W 1K	1	
R2564	ERJ3GEYJ101V	1/10W 100	1	
R2565	ERJ3GEYJ101V	1/10W 100	1	
R3001	ERJ3GEYJ152V	1/10W 1.5K	1	
R3002	ERJ3GEYJ622V	1/10W 6.2K	1	
R3003	ERDS2TJ471T	1/4W 470	1	
R3009	ERJ3GEYJ153V	1/10W 15K	1	
R3013	ERJ3GEYJ103V	1/10W 10K	1	
R3014	ERJ3GEYJ102V	1/10W 1K	1	
R3017	ERJ3GEYJ102V	1/10W 1K	1	
R3021	ERJ3GEYJ222V	1/10W 2.2K	1	
R3022	ERJ3GEYJ332V	1/10W 3.3K	1	
R3023	ERJ3GEYJ152V	1/10W 1.5K	1	
R3030	ERJ3GEYJ685V	1/10W 6.8M	1	
R3031	ERJ3GEYJ331V	1/10W 330	1	
R3032	ERJ3GEYJ392V	1/10W 3.9K	1	
R3035	ERJ3GEYJ222V	1/10W 2.2K	1	
R3046	ERJ3GEYJ103V	1/10W 10K	1	
R3047	ERJ3GEYJ103V	1/10W 10K	1	
R3701	ERJ3GEYF750V	1/10W 75	1	
R3704	ERJ3GEYJ221V	1/10W 220	1	
R3705	ERJ3GEYJ221V	1/10W 220	1	
R3707	ERJ3GEYJ563V	1/10W 56K	1	
R3709	ERJ3GEYJ103V	1/10W 10K	1	
R3711	ERJ3GEYJ103V	1/10W 10K	1	
R3720	ERJ3GEYF750V	1/10W 75	1	
R3721	ERJ3GEYJ750V	1/10W 75	1	
R3722	ERJ3GEYF750V	1/10W 75	1	
R3723	ERJ3GEYF750V	1/10W 75	1	
R3724	ERJ3GEYF750V	1/10W 75	1	
R3728	ERJ3GEYJ471V	1/10W 470	1	
R3729	ERJ3GEYJ471V	1/10W 470	1	
R3730	ERJ3GEYJ471V	1/10W 470	1	
R3731	ERJ3GEYJ750V	1/10W 75	1	
R3732	ERJ3GEYJ103V	1/10W 10K	1	
R3733	ERJ3GEYJ750V	1/10W 75	1	
R3734	ERJ3GEYJ102V	1/10W 1K	1	
R3735	ERJ3GEYF750V	1/10W 75	1	
R3736	ERJ3GEYF750V	1/10W 75	1	
R4001	ERJ3GEYJ102V	1/10W 1K	1	
R4003	ERJ3GEYJ153V	1/10W 15K	1	
R4004	ERJ3GEYJ271V	1/10W 270	1	
R4005	ERJ3GEYJ102V	1/10W 1K	1	
R4006	ERJ3GEYJ153V	1/10W 15K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4007	ERJ3GEYJ103V	1/10W 10K	1	
R4008	ERJ3GEYJ334V	1/10W 330K	1	
R4009	ERJ3GEY0R00V	1/10W 0	1	
R4011	ERJ3GEYJ153V	1/10W 15K	1	
R4012	ERJ3GEYJ223V	1/10W 22K	1	
R4081	ERJ3GEYJ103V	1/10W 10K	1	
R4082	ERJ3GEYJ332V	1/10W 3.3K	1	
R4086	ERJ3GEYJ222V	1/10W 2.2K	1	
R4087	ERJ3GEYJ222V	1/10W 2.2K	1	
R4500	ERJ3GEYJ102V	1/10W 1K	1	
R4501	ERJ3GEYJ563V	1/10W 56K	1	
R4502	ERJ3GEYJ682V	1/10W 6.8K	1	
R4503	ERJ3GEYJ102V	1/10W 1K	1	
R4504	ERDS2TJ821T	1/4W 820	1	
R4505	ERJ3GEYJ682V	1/10W 6.8K	1	
R4506	ERJ3GEYJ102V	1/10W 1K	1	
R4507	ERJ3GEYJ472V	1/10W 4.7K	1	
R4508	ERJ3GEYJ472V	1/10W 4.7K	1	
R4509	ERJ3GEYJ473V	1/10W 47K	1	
R4510	ERJ3GEYJ473V	1/10W 47K	1	
R4513	ERJ3GEYJ472V	1/10W 4.7K	1	
R4514	ERJ3GEYJ473V	1/10W 47K	1	
R4515	ERJ3GEYJ563V	1/10W 56K	1	
R4516	ERJ3GEYJ473V	1/10W 47K	1	
R4520	ERJ3GEYJ472V	1/10W 4.7K	1	
R4521	ERJ3GEYJ511V	1/10W 510	1	
R4522	ERJ3GEYJ511V	1/10W 510	1	
R4525	ERJ3GEYJ102V	1/10W 1K	1	
R4526	ERJ3GEYJ243V	1/10W 24K	1	
R4527	ERJ3GEYJ682V	1/10W 6.8K	1	
R4529	ERJ3GEYJ681V	1/10W 680	1	
R4534	ERJ3GEYJ124V	1/10W 120K	1	
R4538	ERJ3GEYJ393V	1/10W 39K	1	
R4539	ERJ3GEYJ102V	1/10W 1K	1	
R4540	ERJ3GEYJ102V	1/10W 1K	1	
R4801	D0HB821ZA002	1/16W 820	1	
R4802	D0HB821ZA002	1/16W 820	1	
R4803	D0HB822ZA002	1/16W 8.2K	1	
R4804	D0HB822ZA002	1/16W 8.2K	1	
R4805	D0HB153ZA002	1/10W 15K	1	
R4806	D0HB153ZA002	1/10W 15K	1	
R4809	ERJ3GEYJ123V	1/10W 12K	1	
R4810	ERJ3GEYJ123V	1/10W 12K	1	
R4811	ERJ3GEYJ133V	1/10W 13K	1	
R4812	ERJ3GEYJ133V	1/10W 13K	1	
R4813	ERJ3GEYJ133V	1/10W 13K	1	
R4814	ERJ3GEYJ133V	1/10W 13K	1	
R4815	ERJ3GEYJ133V	1/10W 13K	1	
R4816	ERJ3GEYJ133V	1/10W 13K	1	
R4817	D0HB103ZA002	1/10W 10K	1	
R4818	ERJ3GEYJ103V	1/10W 10K	1	
R4819	ERJ3GEYJ473V	1/10W 47K	1	
R4820	ERJ3GEYJ681V	1/10W 680	1	
R4821	ERJ3GEYJ821V	1/10W 820	1	
R4822	ERJ3GEYJ821V	1/10W 820	1	
R4823	ERJ3GEYJ681V	1/10W 680	1	
R4824	D0HB103ZA002	1/10W 10K	1	
R4825	D0HB392ZA002	1/16W 3.9K	1	
R4826	D0HB392ZA002	1/16W 3.9K	1	
R4827	ERJ3GEYJ123V	1/10W 12K	1	
R4828	ERJ3GEYJ123V	1/10W 12K	1	
R4829	D0HB392ZA002	1/16W 3.9K	1	
R4830	ERJ3GEYJ681V	1/10W 680	1	
R4831	ERJ3GEYJ681V	1/10W 680	1	
R4832	D0HB392ZA002	1/16W 3.9K	1	
R4833	ERJ3GEYJ471V	1/10W 470	1	
R4834	ERJ3GEYJ133V	1/10W 13K	1	
R4835	ERJ3GEY0R00V	1/10W 0	1	
R4836	ERJ3GEYJ133V	1/10W 13K	1	
R4837	ERJ3GEYJ221V	1/10W 220	1	
R4838	ERJ3GEYJ123V	1/10W 12K	1	
R4839	ERJ3GEYJ113V	1/10W 11K	1	
R4840	ERJ3GEYJ113V	1/10W 11K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4841	ERJ3GEYJ123V	1/10W 12K	1	
R4842	ERJ3GEYJ221V	1/10W 220	1	
R4843	ERJ3GEYJ681V	1/10W 680	1	
R4844	ERJ3GEYJ473V	1/10W 47K	1	
R4845	ERJ3GEYJ821V	1/10W 820	1	
R4846	ERJ3GEYJ821V	1/10W 820	1	
R4847	ERJ3GEYJ681V	1/10W 680	1	
R4848	ERJ3GEYJ473V	1/10W 47K	1	
R4849	ERJ3GEYJ473V	1/10W 47K	1	
R4850	ERJ3GEYJ222V	1/10W 2.2K	1	
R4851	ERJ3GEYJ221V	1/10W 220	1	
R4852	ERJ3GEYJ221V	1/10W 220	1	
R4859	D0HB103ZA002	1/10W 10K	1	
R4860	D0HB103ZA002	1/10W 10K	1	
R6001	ERJ3GEYJ102V	1/10W 1K	1	
R6002	ERJ3GEYJ102V	1/10W 1K	1	
R6004	ERJ3GEYJ103V	1/10W 10K	1	
R6006	ERJ3GEYJ183V	1/10W 18K	1	
R6008	ERJ3GEYJ222V	1/10W 2.2K	1	
R6012	ERJ3GEYJ221V	1/10W 220	1	
R6013	ERJ3GEYJ221V	1/10W 220	1	
R6017	ERJ3GEYJ222V	1/10W 2.2K	1	
R6020	ERJ3GEYJ221V	1/10W 220	1	
R6022	ERJ3GEYJ221V	1/10W 220	1	
R6023	ERJ3GEYJ221V	1/10W 220	1	
R6024	ERJ3GEYJ221V	1/10W 220	1	
R6026	ERJ3GEYJ103V	1/10W 10K	1	
R6027	ERJ3GEYJ103V	1/10W 10K	1	
R6028	ERJ3GEYJ103V	1/10W 10K	1	
R6029	ERJ3GEYJ221V	1/10W 220	1	
R6101	ERJ3GEYJ105V	1/10W 1M	1	
R6102	ERJ3GEYJ471V	1/10W 470	1	
R6103	ERJ3GEYJ181V	1/10W 180	1	
R6201	ERJ3GEYJ473V	1/10W 47K	1	
R7501	ERJ3GEYJ101V	1/10W 100	1	
R7502	ERJ3GEYJ104V	1/10W 100K	1	
R7503	ERJ3GEYJ101V	1/10W 100	1	
R7504	ERJ3GEYJ221V	1/10W 220	1	
R7505	ERJ3GEYJ101V	1/10W 100	1	
R7506	ERJ3GEYJ101V	1/10W 100	1	
R7507	ERJ3GEYJ101V	1/10W 100	1	
R7508	ERJ3GEYJ101V	1/10W 100	1	
R7509	ERJ3GEYJ101V	1/10W 100	1	
R7510	ERJ3GEYF823V	1/10W 82K	1	
R7511	ERJ3GEYJ101V	1/10W 100	1	
R7512	ERJ3GEYJ101V	1/10W 100	1	
R7513	ERJ3GEYJ101V	1/10W 100	1	
R7514	ERJ3GEYJ101V	1/10W 100	1	
R7515	ERJ3GEYJ101V	1/10W 100	1	
R7516	ERJ3GEYJ472V	1/10W 4.7K	1	
R7517	ERJ3GEYJ274V	1/10W 270K	1	
R7518	ERJ3GEYJ822V	1/10W 8.2K	1	
R7519	ERJ3GEYJ822V	1/10W 8.2K	1	
R7520	ERJ3GEYJ822V	1/10W 8.2K	1	
R7521	ERJ3GEYJ473V	1/10W 47K	1	
R7522	ERJ3GEYJ103V	1/10W 10K	1	
R7523	ERJ3GEYJ221V	1/10W 220	1	
R7524	ERJ3GEY0R00V	1/10W 0	1	
R7525	ERJ3GEY0R00V	1/10W 0	1	
R7526	ERJ3GEYJ223V	1/10W 22K	1	
R7528	ERJ3GEYJ101V	1/10W 100	1	
R7529	ERJ3GEYJ101V	1/10W 100	1	
R7530	ERJ3GEYJ101V	1/10W 100	1	
R7534	ERJ3GEYJ101V	1/10W 100	1	
R7535	ERJ3GEYJ101V	1/10W 100	1	
R7536	ERJ3GEYJ101V	1/10W 100	1	
R7538	ERJ3GEYJ101V	1/10W 100	1	
R7539	ERJ3GEYJ101V	1/10W 100	1	
R7542	ERJ3GEYJ101V	1/10W 100	1	
R7547	ERJ3GEYF753V	1/10W 75K	1	
R7548	ERJ3GEYJ101V	1/10W 100	1	
R7549	ERJ3GEYJ102V	1/10W 1K	1	
R7550	ERJ3GEYJ332V	1/10W 3.3K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7551	ERJ3GEYJ182V	1/10W 1.8K	1	
R7552	ERJ3GEYJ101V	1/10W 100	1	
R7553	ERJ3GEYJ101V	1/10W 100	1	
S1531	K0C111A00006	SWITCH,SAFETY TAB	1	
S1532	K0Z200000598	SWITCH,MODE	1	
T4081	G2A472C00003	TRANSFORMER	1	
W701	ERJ3GEY0R00V	1/10W 0	1	
W702	ERJ3GEY0R00V	1/10W 0	1	
W703	ERJ3GEY0R00V	1/10W 0	1	
W704	ERJ8GEY0R00V	1/4W 0	1	
W705	ERJ8GEY0R00V	1/4W 0	1	
W706	ERJ3GEY0R00V	1/10W 0	1	
W707	ERJ3GEY0R00V	1/10W 0	1	
W708	ERJ8GEY0R00V	1/4W 0	1	
W709	ERJ8GEY0R00V	1/4W 0	1	
W710	ERJ8GEY0R00V	1/4W 0	1	
W711	ERJ8GEY0R00V	1/4W 0	1	
W712	ERJ8GEY0R00V	1/4W 0	1	
W713	ERJ8GEY0R00V	1/4W 0	1	
W714	ERJ8GEY0R00V	1/4W 0	1	
W715	ERJ8GEY0R00V	1/4W 0	1	
W716	ERJ8GEY0R00V	1/4W 0	1	
W717	ERJ6GEY0R00V	1/8W 0	1	
W718	ERJ8GEY0R00V	1/4W 0	1	
W719	ERJ8GEY0R00V	1/4W 0	1	
W720	ERJ8GEY0R00V	1/4W 0	1	
W721	ERJ3GEY0R00V	1/10W 0	1	
W722	ERJ8GEY0R00V	1/4W 0	1	
W723	ERJ8GEY0R00V	1/4W 0	1	
W724	ERJ8GEY0R00V	1/4W 0	1	
W725	ERJ6GEY0R00V	1/8W 0	1	
W726	ERJ8GEY0R00V	1/4W 0	1	
W727	ERJ8GEY0R00V	1/4W 0	1	
W728	ERJ8GEY0R00V	1/4W 0	1	
W729	ERJ8GEY0R00V	1/4W 0	1	
W730	ERJ8GEY0R00V	1/4W 0	1	
W731	ERJ6GEY0R00V	1/8W 0	1	
W732	ERJ6GEY0R00V	1/8W 0	1	
W733	ERJ6GEY0R00V	1/8W 0	1	
W734	ERJ6GEY0R00V	1/8W 0	1	
W735	ERJ3GEY0R00V	1/10W 0	1	
W736	ERJ3GEY0R00V	1/10W 0	1	
W737	ERJ6GEY0R00V	1/8W 0	1	
W738	ERJ3GEY0R00V	1/10W 0	1	
W739	ERJ3GEY0R00V	1/10W 0	1	
W740	ERJ3GEY0R00V	1/10W 0	1	
W741	ERJ6GEY0R00V	1/8W 0	1	
W742	ERJ6GEY0R00V	1/8W 0	1	
W743	ERJ3GEY0R00V	1/10W 0	1	
W744	ERJ6GEY0R00V	1/8W 0	1	
W745	ERJ3GEY0R00V	1/10W 0	1	
W746	ERJ3GEY0R00V	1/10W 0	1	
W747	ERJ3GEY0R00V	1/10W 0	1	
W748	ERJ3GEY0R00V	1/10W 0	1	
W749	ERJ6GEY0R00V	1/8W 0	1	
W750	ERJ3GEY0R00V	1/10W 0	1	
W751	ERJ6GEY0R00V	1/8W 0	1	
W752	ERJ8GEY0R00V	1/4W 0	1	
W753	ERJ3GEY0R00V	1/10W 0	1	
W754	ERJ6GEY0R00V	1/8W 0	1	
W755	ERJ3GEY0R00V	1/10W 0	1	
W756	ERJ3GEY0R00V	1/10W 0	1	
W757	ERJ3GEY0R00V	1/10W 0	1	
W758	ERJ3GEY0R00V	1/10W 0	1	
W759	ERJ3GEY0R00V	1/10W 0	1	
W760	ERJ3GEY0R00V	1/10W 0	1	
W761	ERJ6GEY0R00V	1/8W 0	1	
W762	ERJ3GEY0R00V	1/10W 0	1	
W763	ERJ6GEY0R00V	1/8W 0	1	
W764	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W765	ERJ3GEY0R00V	1/10W 0	1	
W766	ERJ6GEY0R00V	1/8W 0	1	
W767	ERJ3GEY0R00V	1/10W 0	1	
W768	ERJ6GEY0R00V	1/8W 0	1	
W769	ERJ6GEY0R00V	1/8W 0	1	
W770	ERJ3GEY0R00V	1/10W 0	1	
W771	ERJ6GEY0R00V	1/8W 0	1	
W772	ERJ3GEY0R00V	1/10W 0	1	
W773	ERJ3GEY0R00V	1/10W 0	1	
W774	ERJ3GEY0R00V	1/10W 0	1	
W775	ERJ6GEY0R00V	1/8W 0	1	
W776	ERJ3GEY0R00V	1/10W 0	1	
W777	ERJ6GEY0R00V	1/8W 0	1	
W778	ERJ3GEY0R00V	1/10W 0	1	
W779	ERJ3GEY0R00V	1/10W 0	1	
W780	ERJ3GEY0R00V	1/10W 0	1	
W781	ERJ3GEY0R00V	1/10W 0	1	
W782	ERJ3GEY0R00V	1/10W 0	1	
W783	ERJ3GEY0R00V	1/10W 0	1	
W784	ERJ3GEY0R00V	1/10W 0	1	
W785	ERJ3GEY0R00V	1/10W 0	1	
W786	ERJ3GEY0R00V	1/10W 0	1	
W787	ERJ3GEY0R00V	1/10W 0	1	
W788	ERJ3GEY0R00V	1/10W 0	1	
W789	ERJ3GEY0R00V	1/10W 0	1	
X3002	H0D357400067	OSCILLATOR	1	
X6001	HOA120500008	CRYSTAL OSCILLATOR	1	
X7501	H0D100500016	CRYSTAL OSCILLATOR	1	
ZB1501	VMD5470	SPACER	1	
ZB1502	VMD5470	SPACER	1	
ZB7501	RMN0870	HOLDER	1	
ZB7502	RMN0871	HOLDER	1	
ZJ3001	K9ZZ00001279	EARTH PLATE	1	
■	VEP04927A	FRONT (L) P.C.B.	1	(RTL)
C3801	ECJ1VF1H103Z	50V 0.01U	1	
C3802	ECJ1VF1C104Z	16V 0.1U	1	
C7701	ECJ1VF1C104Z	16V 0.1U	1	
IC7701	PNA4618M13VT	IC	1	
JK3802	K1AB107A0008	JACK,S VIDEO IN	1	
JK4600	K2HA307A0009	JACK,AV IN	1	
LB3301	J0JCC0000103	COIL	1	
LB3302	J0JCC0000103	COIL	1	
LB3303	J0JCC0000103	COIL	1	
LB4301	J0JCC0000103	COIL	1	
LB4302	J0JCC0000103	COIL	1	
PP4601	K1KA12B00136	CONNECTOR (12P)	1	
R3801	ERJ3GEYJ750V	1/10W 75	1	
R3802	ERJ3GEYJ750V	1/10W 75	1	
R3803	ERJ3GEYJ750V	1/10W 75	1	
R3804	ERJ3GEYJ102V	1/10W 1K	1	
R7701	ERJ3GEYJ123V	1/10W 12K	1	
R7702	ERJ3GEYJ153V	1/10W 15K	1	
R7703	ERJ3GEYJ221V	1/10W 220	1	
S7701	EVQ11G07K	SWITCH,POWER	1	
S7702	EVQ11G07K	SWITCH,EJECT	1	
■	VEP07B04A	FRONT (R) P.C.B.	1	(RTL)
D27501	B3AAA0000752	DIODE	1	
D27503	B3ACA0000273	DIODE	1	
D27505	B3ADA0000173	DIODE	1	



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
PP27501	K1KA10B00196	CONNECTOR (10P)	1	
QR27501	B1GBCFJJ0040	TRANSISTOR	1	
QR27503	B1GBCFJJ0040	TRANSISTOR	1	
QR27505	B1GBCFJJ0040	TRANSISTOR	1	
R27501	ERJ3GEYJ271V	1/10W 270	1	
R27502	ERJ3GEYJ152V	1/10W 1.5K	1	
R27503	ERJ3GEYJ391V	1/10W 390	1	
R27505	ERJ3GEYJ391V	1/10W 390	1	
R27508	ERJ3GEYJ152V	1/10W 1.5K	1	
R27509	ERJ3GEYJ152V	1/10W 1.5K	1	
R27516	ERJ3GEYJ272V	1/10W 2.7K	1	
R27517	ERJ3GEYJ222V	1/10W 2.2K	1	
R27532	ERJ3GEYJ222V	1/10W 2.2K	1	
S27501	EVQ11G07K	SWITCH, OPEN/CLOSE	1	
S27502	EVQ11G07K	SWITCH, CH DOWN	1	
S27503	EVQ11G07K	SWITCH, STOP	1	
S27504	EVQ11G07K	SWITCH, CH UP	1	
S27505	EVQ11G07K	SWITCH, PLAY	1	
S27506	EVQ11G07K	SWITCH, REC	1	
S27507	EVQ11G07K	SWITCH, D2V	1	
S27508	EVQ11G07K	SWITCH, V2D	1	
S27509	EVQ11G07K	SWITCH, DRIVE SELECT	1	
S27510	EVQ11G07K	SWITCH, RESET	1	
■	VEP73153A	DV/SD/USB P.C.B.	1	(RTL)
C66801	ECJ1VB0J105K	6.3V 1U	1	
C66803	ECJ1VB0J105K	6.3V 1U	1	
C66804	ECJ1VC1H471J	50V 470P	1	
C66805	F1H1C104A090	16V 0.1U	1	
C66806	F1H1C104A090	16V 0.1U	1	
C66807	F1H1C104A090	16V 0.1U	1	
C66808	F1H1C104A090	16V 0.1U	1	
C66809	F1J0J106A013	6.3V 10U	1	
C66810	F1H1C104A090	16V 0.1U	1	
C66811	F1H1C104A090	16V 0.1U	1	
C66812	F1H1H150A799	50V 15P	1	
C66813	F1H1C104A090	16V 0.1U	1	
C66814	ECJ1VC1H270J	50V 27P	1	
C66815	F1H1C104A090	16V 0.1U	1	
C66816	F1H1C104A090	16V 0.1U	1	
C66817	F1H1C104A090	16V 0.1U	1	
C66818	F1H1C104A090	16V 0.1U	1	
C66819	F1H1C104A090	16V 0.1U	1	
C66820	F1H1C104A090	16V 0.1U	1	
C66821	F1H1C104A090	16V 0.1U	1	
C66823	F1J0J106A014	6.3V 10U	1	
C66826	F1H1A225A051	10V 22U	1	
C66828	F1H1C104A090	16V 0.1U	1	
C66829	F1H1C104A090	16V 0.1U	1	
D66801	BOECKP000002	DIODE	1	
IC66801	C0DBGGF00001	IC	1	
IC66802	C1CB00002799	IC	1	
IC66803	C0DBZHE00024	IC	1	
LB66801	ERJ3GEY0R00V	1/10W 0	1	
LB66802	J0JGC0000020	COIL	1	
P66801	K1KA06AA0231	CONNECTOR (6P)	1	
P66802	K1MN07AA0003	CONNECTOR (7P)	1	
P66803	K1FY104B0006	CONNECTOR (4P)	1	
P66804	K1FY104B0011	USB CONNECTOR	1	
P66805	K1NA09E00099	SD CARD CONNECTOR	1	
R66801	ERJ3RBD123V	1/16W 12K	1	
R66802	ERJ3GEYJ105V	1/10W 1M	1	
R66803	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R66804	ERJ3GEYJ104V	1/10W 100K	1	
R66805	ERJ3GEYJ103V	1/10W 10K	1	
R66806	ERJ3GEYJ330V	1/10W 33	1	
R66807	ERJ3GEYJ103V	1/10W 10K	1	
R66808	ERJ3GEYJ330V	1/10W 33	1	
R66809	ERJ3GEY0R00V	1/10W 0	1	
R66810	ERJ3GEY0R00V	1/10W 0	1	
R66811	ERJ3GEYJ330V	1/10W 33	1	
R66812	ERJ3GEYJ330V	1/10W 33	1	
R66813	ERJ3GEYJ330V	1/10W 33	1	
R66814	ERJ3GEYJ103V	1/10W 10K	1	
R66815	ERJ3GEYJ104V	1/10W 100K	1	
R66816	ERJ3GEYJ330V	1/10W 33	1	
R66817	ERJ3GEYJ473V	1/10W 47K	1	
R66818	ERJ3GEY0R00V	1/10W 0	1	
X66801	H0J240500042	CRYSTAL OSCILLATOR	1	
■	VEP09150A	DIGITAL I/F P.C.B.	1	(RTL) (P)
■	VEP09150B	DIGITAL I/F P.C.B.	1	(RTL) (PC)
C1101	ECQU2A224MLC	0.22U	1	△
C1104	ECQU2A683MLC	0.068U	1	△
C1105	F1B2G1020002	1000P	1	△
C1106	F1B2G1020002	1000P	1	△
C1107	F2B2E2210011	250V 220U	1	
C1108	F1B2G1020002	1000P	1	△
C1120	F2A1E1010103	25V 0.01U	1	
C1121	F1B3A332A008	3300P	1	
C1122	ECJ1VB1H102K	50V 1000P	1	
C1123	ECJ1VC1H101J	50V 100P	1	
C1124	F1H1H222A798	50V 2200P	1	
C1200	ECJ1VB1A224K	10V 0.22U	1	
C1201	ECJ1VB1C473K	16V 0.047U	1	
C1240	F2A1C1520021	16V 1500U	1	
C1241	F2A1C1520021	16V 1500U	1	
C1242	F2A1C1020095	16V 1000U	1	
C1260	F2A1C4710079	16V 470U	1	
C1261	F1H1C105A095	16V 1U	1	
C1262	F1H1C104A090	16V 0.1U	1	
C1263	F1H1C104A090	16V 0.1U	1	
C1264	ECJ1VC1H270J	50V 27P	1	
C1266	ECJ1VB1H103K	50V 0.01U	1	
C1268	F2A1A6810022	10V 680U	1	
C1270	F2A1A1010072	10V 100U	1	
C1280	F2A1A1010072	10V 100U	1	
C1281	F1H1A105A028	10V 1U	1	
C1282	F2A1A1010072	10V 100U	1	
C1283	ECJ1VB1C333K	16V 0.033U	1	
C1290	F1H1A105A028	10V 1U	1	
C1291	F2A1A1010072	10V 100U	1	
C1292	F2A1A1010072	10V 100U	1	
C1300	F2A1C4710079	16V 470U	1	
C1301	F1H1C105A095	16V 1U	1	
C1302	F1H1C104A090	16V 0.1U	1	
C1303	F1H1C104A090	16V 0.1U	1	
C1304	ECJ1VC1H270J	50V 27P	1	
C1306	ECJ1VB1H103K	50V 0.01U	1	
C1308	F2A1A6810022	10V 680U	1	
C1310	F2A1A1010072	10V 100U	1	
C1340	F1H1A105A028	10V 1U	1	
C1341	F2A1A1010072	10V 100U	1	
C1342	ECJ1VB1C333K	16V 0.033U	1	
C1343	F2A1A1010072	10V 100U	1	
C7301	F2A0J220A878	6.3V 22U	1	
C7302	F2A1H4R7B033	50V 4.7U	1	
C7304	F2A0J220A878	6.3V 22U	1	
C7305	F2A1H4R7B033	50V 4.7U	1	
C7306	F2A1H4R7B033	50V 4.7U	1	
C7308	ECJ1VB1C473K	16V 0.047U	1	
C7310	F2A0J470A824	6.3V 47U	1	
C7311	ECJ1VB1H103K	50V 0.01U	1	
C7312	F1H1C104A090	16V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7313	F2A1C100B099	16V 10U	1	
C7314	F2A1H2R2B032	50V 2.2U	1	
C7316	ECJ1VB0J105K	6.3V 1U	1	
C7317	ECJ1VB0J105K	6.3V 1U	1	
C7318	ECJ1VB0J105K	6.3V 1U	1	
C7319	ECJ1VB0J105K	6.3V 1U	1	
C7320	F1H1C104A090	16V 0.1U	1	
C7321	ECJ1VB0J105K	6.3V 1U	1	
C7322	F2A1H2R2B032	50V 2.2U	1	
C7802	ECJ1VB1A105K	10V 1U	1	
C7807	ECJ1VB0J105K	6.3V 1U	1	
C7823	F2A0J470A824	6.3V 47U	1	
C7824	F2A0J470A824	6.3V 47U	1	
C7826	F2A0J470A824	6.3V 47U	1	
C7827	F2A1H1R0B032	50V 1U	1	
C7829	ECJ1VB1H103K	50V 0.01U	1	
C7830	F2A0J470A824	6.3V 47U	1	
C7831	F1H1C104A090	16V 0.1U	1	
C7835	ECJ1VB1H103K	50V 0.01U	1	
C7836	ECJ1VB1H103K	50V 0.01U	1	
C7838	ECJ1VB1H103K	50V 0.01U	1	
C7839	ECJ1VB1H103K	50V 0.01U	1	
C7901	F2A1C221B111	16V 220U	1	
C7902	ECQB1H392KF3	50V 3900P	1	
C7903	F2A1V470A831	35V 47U	1	
C7904	F2A1C221B111	16V 220U	1	
C7905	F2A1H100B040	50V 10U	1	
C7906	F2A1H100B040	50V 10U	1	
C31001	F1H1A105A028	10V 1U	1	
C31002	F1H1A105A028	10V 1U	1	
C31004	ECJ1VB0J105K	6.3V 1U	1	
C31005	F2A1A1010072	10V 100U	1	
C31006	ECJ1VB1H103K	50V 0.01U	1	
C31007	ECJ1VB1H103K	50V 0.01U	1	
C37103	ECJ1VC1H101J	50V 100P	1	
C37104	ECJ1VC1H101J	50V 100P	1	
C37105	ECJ1VC1H101J	50V 100P	1	
C37108	ECJ1VB1H103K	50V 0.01U	1	
C37109	ECJ1VB1H103K	50V 0.01U	1	
C37591	F2A1C220B110	16V 22U	1	
D1101	B0EDKT000009	DIODE	1	
D1120	B0AADM000003	DIODE	1	
D1121	B0BC01600013	DIODE	1	
D1122	B0AACK000004	DIODE	1	
D1123	B0BC01200019	DIODE	1	
D1124	MAZ73000BC	DIODE	1	
D1240	B0JBSG000047	DIODE	1	
D1260	B0JCPE000038	DIODE	1	
D1291	B0JCPE000038	DIODE	1	
D1300	B0JCPE000038	DIODE	1	
D7801	B0BA03000015	DIODE	1	
D7901	B0AACK000004	DIODE	1	
D7902	B0BA03600021	DIODE	1	
D7903	MAZ4120NHF	DIODE	1	
D7904	B0AADM000003	DIODE	1	
D7905	B0AADM000003	DIODE	1	
D7906	MAZ4100NMF	DIODE	1	
D7907	B0HAMP000067	DIODE	1	
D31001	B0ECKP000002	DIODE	1	
D31002	B0ECKP000002	DIODE	1	
DZ1101	J0LV00000001	SERGE ABSORBER	1	(PC) ⚠
DZ1101	J0LY000000045	SERGE ABSORBER	1	(P) ⚠
F1101	K5D202BK0005	FUSE	1	⚠
FL7301	J0B4504AA026	FILTER	1	
IC1120	C0DACZH00035	IC	1	
IC1200	C0DAEMZ00001	IC	1	
IC1260	C0DBAZZ00132	IC	1	
IC1280	C0DAEYH00002	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC1290	C0DBEKG00003	IC	1	
IC1300	C0DBAZZ00132	IC	1	
IC1340	C0DAEYH00002	IC	1	
IC7301	C1AB00002666	IC	1	
IC7801	C0CBCDC00052	IC	1	
IC31001	C0DBGHF00001	IC	1	
IC31002	C0CBCBD00048	IC	1	
IC37591	C0ABBA000168	IC	1	
L1101	G0B123E00001	COIL	1	⚠
L1102	G0B123E00001	COIL	1	⚠
L1240	G0A100H00025	COIL 10UH	1	
L1250	G0A100HA0023	COIL 10UH	1	
L1260	G0A100HA0023	COIL 10UH	1	
L1261	G0A100K00003	COIL	1	
L1262	G0A100H00025	COIL 10UH	1	
L1300	G0A100HA0023	COIL 10UH	1	
L1301	G0A100K00003	COIL	1	
L1302	G0A100H00025	COIL 10UH	1	
L37103	G0A100HA0023	COIL 10UH	1	
L45001	G0C220JA0021	COIL 22UH	1	
LB1101	J0JKB0000003	COIL	1	
LB1102	J0JKB0000003	COIL	1	
LB1103	ERJ6GEY0R00V	1/8W 0	1	
LB1104	J0JGC0000020	COIL	1	
LB1105	J0JGC0000020	COIL	1	
LB1120	ERJ3GEY0R00V	1/10W 0	1	
LB1260	J0JHC0000048	FILTER	1	
LB1300	J0JHC0000048	FILTER	1	
LB7801	J0JCC0000103	COIL	1	
LB7802	J0JCC0000103	COIL	1	
LB7803	J0JHC0000032	COIL	1	
LB7804	J0JCC0000103	COIL	1	
LB7805	J0JCC0000103	COIL	1	
LB7806	J0JHC0000032	COIL	1	
LB7807	J0JCC0000103	COIL	1	
LB7808	ERJ3GEY0R00V	1/10W 0	1	
LB7809	J0JHC0000032	COIL	1	
LB7810	J0JCC0000103	COIL	1	
LB7811	J0JCC0000103	COIL	1	
LB7812	ERJ3GEY0R00V	1/10W 0	1	
LB7813	ERJ3GEY0R00V	1/10W 0	1	
LB7814	J0JHC0000032	COIL	1	
LB7815	ERJ3GEY0R00V	1/10W 0	1	
LB7816	ERJ3GEY0R00V	1/10W 0	1	
LB37101	J0JKB0000012	COIL	1	
LB37103	J0JGC0000020	COIL	1	
P1101	K2AB2B000007	AC INLET	1	⚠
P1200	K1KA04AA0180	CONNECTOR (4P)	1	
P31901	K1KA15A00118	CONNECTOR (15P)	1	
P31902	K1KA19A00007	CONNECTOR (19P)	1	
P31903	K1KA19A00007	CONNECTOR (19P)	1	
P31904	K1KA19A00007	CONNECTOR (19P)	1	
P31905	K1KA07A00083	CONNECTOR (7P)	1	
P31906	K1KB10B00053	CONNECTOR (10P)	1	
P37101	K1KY64A00001	CONNECTOR (64P)	1	
P37599	K1KA03AA0180	CONNECTOR (3P)	1	
Q1200	B3PBA0000454	TRANSISTOR	1	⚠
Q1260	B1DHED000008	TRANSISTOR	1	
Q1300	B1DHED000008	TRANSISTOR	1	
Q7801	2SB1218K0L	TRANSISTOR	1	
Q7802	2SD1819K0L	TRANSISTOR	1	
Q7901	B1BABK000001	TRANSISTOR	1	
Q7902	2SB0710A0L	TRANSISTOR	1	
Q37591	B1ABMF000020	TRANSISTOR	1	
QR7801	UNR5112J0L	TRANSISTOR	1	
QR7901	B1GBCFJ00040	TRANSISTOR	1	
R1120	ERJ6GEYJ100V	1/8W 10	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1121	ERJ6GEYJ100V	1/8W 10	1	
R1122	ERDS2TJ221T	1/4W 220	1	
R1123	ERJ3GEYJ103V	1/10W 10K	1	
R1124	ERJ3GEYJ103V	1/10W 10K	1	
R1125	ERX2SZJR10E	2W 10	1	
R1126	ERJ3RBD153V	1/16W 15K	1	
R1127	ERJ3RBD102V	1/16W 1K	1	
R1128	ERJ3RBD182V	1/16W 1.8K	1	
R1129	ERJ3RBD682V	1/16W 6.8K	1	
R1200	ERJ3GEYJ102V	1/10W 1K	1	
R1201	ERJ3GEYJ271V	1/10W 270	1	
R1203	ERJ3GEYJ222V	1/10W 2.2K	1	
R1204	ERJ3GEYJ103V	1/10W 10K	1	
R1206	ERJ3RBD272V	1/16W 2.7K	1	
R1207	ERJ3GEY0R00V	1/10W 0	1	
R1208	ERJ3RBD561V	1/16W 560	1	
R1209	ERJ3RBD103V	1/16W 10K	1	
R1260	ERJ3GEYJ333V	1/10W 33K	1	
R1261	D1BFR033A010	1/2W 0.033	1	
R1262	ERJ3RBD681V	1/16W 680	1	
R1263	ERJ3RBD133V	1/16W 13K	1	
R1264	ERJ3RBD362V	1/16W 3.6K	1	
R1280	ERJ3RBD102V	1/16W 1K	1	
R1281	ERJ3RBD223V	1/16W 22K	1	
R1282	ERJ3RBD113V	1/16W 11K	1	
R1290	ERJ3RBD362V	1/16W 3.6K	1	
R1291	ERJ3RBD683V	1/16W 68K	1	
R1292	ERJ3RBD243V	1/16W 24K	1	
R1300	ERJ3GEYJ333V	1/10W 33K	1	
R1301	D1BFR0270001	1/2W 0.027	1	
R1302	ERJ3RBD821V	1/16W 820	1	
R1303	ERJ3RBD103V	1/16W 10K	1	
R1304	ERJ3RBD472V	1/16W 4.7K	1	
R1340	ERJ3RBD102V	1/16W 1K	1	
R1341	ERJ3RBD393V	1/16W 39K	1	
R1342	ERJ3RBD113V	1/16W 11K	1	
R7301	ERJ3GEYJ101V	1/10W 100	1	
R7302	ERJ3GEYJ101V	1/10W 100	1	
R7304	ERJ3GEY0R00V	1/10W 0	1	
R7305	ERJ3GEY0R00V	1/10W 0	1	
R7306	ERJ3GEYJ472V	1/10W 4.7K	1	
R7307	ERJ3GEYJ102V	1/10W 1K	1	
R7308	ERJ3GEY0R00V	1/10W 0	1	
R7801	ERJ3GEYJ681V	1/10W 680	1	
R7802	ERJ3GEYJ104V	1/10W 100K	1	
R7803	ERDS2TJ102T	1/4W 1K	1	
R7804	ERJ3GEY0R00V	1/10W 0	1	
R7805	ERJ3GEY0R00V	1/10W 0	1	
R7901	ERJ3GEYJ472V	1/10W 4.7K	1	
R7902	ERJ3GEYJ562V	1/10W 5.6K	1	
R7903	ERJ3GEYJ472V	1/10W 4.7K	1	
R7904	ERJ3GEYJ470V	1/10W 47	1	
R7905	ERJ3GEYJ473V	1/10W 47K	1	
R7906	ERJ3GEYJ473V	1/10W 47K	1	
R7907	ERDS2TJ1R0T	1/4W 1.0	1	
R7908	ERDS2TJ331T	1/4W 330	1	
R37503	ERJ3GEYJ473V	1/10W 47K	1	
R37504	ERJ3GEYJ473V	1/10W 47K	1	
R37594	ERJ3GEYJ303V	1/10W 30K	1	
R37595	ERJ3GEYJ821V	1/10W 820	1	
R37596	ERJ3GEYJ153V	1/10W 15K	1	
T1101	G4D2A0000292	TRANSFORMER	1	▲
T7901	G4D1A0000115	TRANSFORMER	1	
TU7801	ENG56E02G1F	TUNER,VHF/UHF	1	
VA1101	ERZVA5V471	VARISTOR	1	
VA1102	ERZVA5V471	VARISTOR	1	
W300	ERJ3GEY0R00V	1/10W 0	1	
W301	ERJ3GEY0R00V	1/10W 0	1	
W302	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W303	ERJ3GEY0R00V	1/10W 0	1	
W304	ERJ3GEY0R00V	1/10W 0	1	
W305	ERJ3GEY0R00V	1/10W 0	1	
W306	ERJ3GEY0R00V	1/10W 0	1	
W307	ERJ3GEY0R00V	1/10W 0	1	
W308	ERJ3GEY0R00V	1/10W 0	1	
W309	ERJ3GEY0R00V	1/10W 0	1	
W310	ERJ3GEY0R00V	1/10W 0	1	
W311	ERJ3GEY0R00V	1/10W 0	1	
W312	ERJ3GEY0R00V	1/10W 0	1	
W313	ERJ3GEY0R00V	1/10W 0	1	
W314	ERJ3GEY0R00V	1/10W 0	1	
W315	ERJ3GEY0R00V	1/10W 0	1	
W316	ERJ3GEY0R00V	1/10W 0	1	
W317	ERJ3GEY0R00V	1/10W 0	1	
W318	ERJ3GEY0R00V	1/10W 0	1	
W319	ERJ3GEY0R00V	1/10W 0	1	
ZA1101	EYF52BCY	FUSE HOLDER	1	
ZA1102	EYF52BCY	FUSE HOLDER	1	
ZA1120	VSC5713-A	EARTH PLATE	1	
ZA1121	XYN3+J8FJ	SCREW	1	
ZA1240	VSC5984	HEAT SINK	1	
ZA1241	XYN3+J8FJ	SCREW	1	
ZA1280	VSC5839-A	HEAT SINK	1	
ZA1281	XYN3+J8FJ	SCREW	1	
ZA1340	VSC5836-A	EARTH PLATE	1	
ZA1341	XYN3+J8FJ	SCREW	1	
ZJ37001	K9ZZ00001279	EARTH PLATE	1	
ZJ37002	K9ZZ00001279	EARTH PLATE	1	
ZJ37003	K9ZZ00001279	EARTH PLATE	1	
ZJ37004	K9ZZ00001279	EARTH PLATE	1	
ZA37005	K9ZZ00001279	EARTH PLATE	1	
■		CASING/ACCESSORY/PACKING		
1	VEP04927A	FRONT (L) P.C.B.	1	(RTL)
2	VEP06G41A	MAIN P.C.B.	1	(RTL)
3	VEP07B04A	FRONT (R) P.C.B.	1	(RTL)
4	VEP09150A	DIGITAL I/F P.C.B.	1	(RTL) (EZ48VP/EZ485V)
4	VEP09150B	DIGITAL I/F P.C.B.	1	(RTL) (EZ48VPC)
5	VEP73153A	DV/SD/USB P.C.B.	1	(RTL)
6	RFKB79180C	DIGITAL P.C.B.	1	(RTL)
7	L6FALCCH0002	FAN MOTOR	1	
8	RGR0374A-E1	REAR PANEL	1	(EZ48VP) ▲
8	RGR0374A-F1	REAR PANEL	1	(EZ48VPC) ▲
8	RGR0374A-G	REAR PANEL	1	(EZ485V) ▲
9	RHD26054	SCREW	1	
10	RHD30111-3	SCREW	15	
11	RHD30119-L	SCREW	9	
12	RHD30148	SCREW	1	
13	RHDC0023	SCREW	3	
14	RKA0137-K	FOOT RUBBER	2	
15	RKA0178-X	FOOT	2	
16	RMA2044-1	DVD ANGLE	1	
17	RMA2060	REAR ANGLE	1	
18	RMC0708-1	EARTH SPRING	1	
19	RMC0741	EARTH PLATE (T)	1	
20	RMN0885	SPACER	1	
21	RMX0354	MECHA SPACER (F)	1	
22	RMX0355	MECHA SPACER (R)	1	
23	RMX0390	PCB SUPPORT	2	
24	RMX0398	FCF SPACER	1	
25	RMX0411	PCB SUPPORT	1	
26	RMZ0891	INSULATION SHEET	1	
27	RHD26045-J	SCREW	3	
28	RYP1418-K	FRONT PANEL ASS'Y	1	(EZ48V) 1

