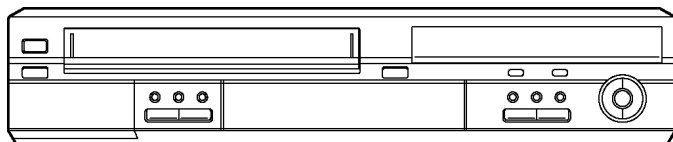


Service Manual

DVD Video Recorder



Note 1:

This model's DVD Drive is VXY1867.

Note 2:

This model's VHS Mechanism is
R4 Mechanism Chassis for Euro Model.

:Order No. MAD0403002C2

DMR-ES30VGN

DMR-ES30VGC

DMR-ES30VEE

Vol.1

Colour

(S).....Silver Type

Panasonic

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Introduction

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.

- 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 RAM drive.
- 2) The following category are recycle module part. Please send them to Central Repair Center.
 - * Digital P.C.B. (ES30VGN:VEP79104G,ES30VGC:VEP79104M,ES30VEE:VEP79104N)
 - * RAM drive (VXY1867)
- 3) If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.
- 4) Adjustment procedures, Disassembly Procedures and Assembly Procedures for VCR Mechanism Chassis are separate volume from this service manual. Please refer to the service manual for R4 Mechanism Chassis for EURO model (MAD0403002C2).

Specifications

Power Supply:	ES30VGN, EE : AC 220 - 240 V, 50 Hz ES30VGC : AC 220 - 240 V, 50 Hz/ 60 Hz
Power Consumption:	36 W (Approx. 7W in Normal standby mode/ Approx. 15W in Quick start standby mode/ Approx. 4W in power save mode)

Dimensions:	Approx. 430 mm (W) × 89 mm (H) × 352 mm(D)
Mass:	Approx. 5.8kg
Operating Temperature:	5°C – 40°C
Operating Humidity:	35% – 80% RH (no condensation)

DVD		DVD	
Recording format:	DVD-RAM : DVD Video Recording format DVD-R, DVD-RW : DVD-Video format Video : MPEG2 Audio : Dolby Digital 2CH	Audio interface Input (Input impedance of each input terminal is more than 47 kΩ) AV1 Pin jack: Standard: 0.5 Vrms, Full scale: 2 Vrms at 1 kHz AV2 Pin jack: Standard: 0.5 Vrms, Full scale: 2 Vrms at 1 kHz AV3 Pin jack: Standard: 0.5 Vrms, Full scale: 2 Vrms at 1 kHz Output (Output impedance of each output terminal is less than 1 kΩ) DVD/VHS COMMON Pin jack: Standard: 0.5 Vrms, Full scale: 2 Vrms at 1 kHz DVD Pin jack: Standard: 0.5 Vrms, Full scale: 2 Vrms at 1 kHz Digital Audio (Optical terminal): PCM, Dolby Digital, DTS	
Recording format:	DVD-RAM : DVD Video Recording format DVD-R, DVD-RW : DVD-Video format Video : MPEG2 Audio : Dolby Digital 2CH		
Optical pick-up:	System with 1 lens, 2 integration units (662 nm wavelength for DVD, 795 nm wavelength for CD)		
Recording disc:	DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB, 8 cm 2.8 GB (Ver. 2.0) (Ver. 2.1/ 3 × -SPEED DVD-RAM Revision 1.0) (Ver. 2.2/ 5 × -SPEED DVD-RAM Revision 2.0) DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0) (for General Ver. 2.0/4 × -SPEED DVD-R Revision 1.0) (for General Ver. 2.0/8 × -SPEED DVD-R Revision 3.0) DVD-RW: 12 cm 4.7 GB, 8 cm 1.4 GB (Ver. 1.1) (Ver. 1.1/ 2 × -SPEED DVD-RW Revision 1.0) (Ver. 1.2/ 4 × -SPEED DVD-RW Revision 2.0) +R: 12 cm 4.7 GB (Ver. 1.0), (Ver. 1.1), (Ver. 1.2)		
Recording mode/ recording time (with 4.7 GB disc):	XP : approx. 10 Mbps/ approx. 60 min SP : approx. 5 Mbps/ approx. 120 min LP : approx. 2.5 Mbps/ approx. 240 min EP : approx. 1.7/1.2 Mbps/ approx. 360/480 min		
Playable discs:	DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB, 8 cm 2.8 GB (Ver. 2.0) (Ver. 2.1/ 3 × -SPEED DVD-RAM Revision 1.0) (Ver. 2.2/ 5 × -SPEED DVD-RAM Revision 2.0) DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0) (for General Ver. 2.0/4 × -SPEED DVD-R Revision 1.0) (for General Ver. 2.0/8 × -SPEED DVD-R Revision 3.0) DVD-RW: 12 cm 4.7 GB, 8 cm 1.4 GB (Ver. 1.1) (Ver. 1.1/ 2 × -SPEED DVD-RW Revision 1.0) (Ver. 1.2/ 4 × -SPEED DVD-RW Revision 2.0) +R: 12 cm 4.7 GB (Ver. 1.0), (Ver. 1.1), (Ver. 1.2) DVD+RW, DVD-Video, DVD-Audio, Video CD, CD-Audio(CD-DA), CD-R/RW (MP3, JPEG, CD-DA, Video CD formatted discs)		
Region code:	ES30VGN : 4 ES30VGC : 2 ES30VEE : 5		
Video interface	TV System 625/50 : PAL MESECAM (only input) 525/60 : NTSC Input (Input impedance of each input terminals 75 Ω) AV1 Pin jack: Video : 1 Vp-p AV2 Pin jack: Video : 1 Vp-p S-Video : Y: 1 Vp-p, C: 0.286 Vp-p AV3 Pin jack: Video : 1 Vp-p S-Video : Y: 1 Vp-p, C: 0.286 Vp-p Output (Output impedance of each output terminals 75 Ω) DVD/VHS COMMON Pin jack: Video : 1 Vp-p DVD Pin jack: Video : 1 Vp-p S-Video : Y: 1 Vp-p, C: 0.286 Vp-p Component Video (Pin jack): Y: 1 Vp-p, PB: 0.7 Vp-p, PR: 0.7 Vp-p		
VHS		VHS	
Recording format:	VHS Video Cassette System Standard with FM audio (PAL, MESECAM, NTSC*) * NTSC recording from external source or DVD disc, not from TV tuner.		
Heads:	4 helical scan heads for video 2 helical scan heads for FM audio 1 fixed head for Normal audio		
Recording mode/ recording time (with E-240 cassette):	PAL/ MESECAM: SP : 23.39 mm/s 240 min LP : 11.7 mm/s 480 min EP : 7.8 mm/s 720 min NTSC: SP : 33.35 mm/s 168 min EP : 11.12 mm/s 505 min Others: FF/REW : approx. 60 s, JET REW: approx. 43 s (with E-180 cassette)		
Video interface	TV System 625/50: PAL MESECAM 525/60: NTSC Input (Input impedance of each input terminals 75Ω) AV1 Pin jack: Video : 1 Vp-p AV2 Pin jack: Video : 1 Vp-p S-Video : Y: 1 Vp-p, C: 0.286 Vp-p AV3 Pin jack: Video : 1 Vp-p S-Video : Y: 1 Vp-p, C: 0.286 Vp-p Output (Output impedance of each output terminals 75Ω) DVD/VHS COMMON Pin jack: Video : 1 Vp-p		
Audio interface	Input (Input impedance of each terminal is more than 47kΩ) AV1 Pin jack: -6 dBV AV2 Pin jack: -6 dBV AV3 Pin jack: -6 dBV Output (Output impedance of each output terminal is less than 1kΩ) DVD/VHS COMMON Pin jack: -6 dBV		

Tuner:	Two built-in tuners (one for DVD and another for VCR)					
Tuner system:	ES30VGN		ES30VGC		ES30VEE	
Channel coverage:	Australia (PAL-BGH)	VHF: CH 0 - CH 12 UHF: CH 28 - CH 69 CATV: CH 45 MHz - 470 MHz	CCIR (PAL-BGH)	VHF: CH E2 - CH E12 UHF: CH E21 - CH E69 CATV: CH S1 - S41	OIRT (PAL-DK) (SECAM-DKK1)	VHF: CH R1 - CH R12 UHF: CH 21 - CH 69 CATV: CH 44 MHz - 470 MHz
	New Zealand (PAL-BGH)	VHF: CH 0 - CH 11 UHF: CH 21 - CH 69 CATV: CH 44 MHz - 470 MHz		CCIR (PAL-BGH) (SECAM-BG)	VHF: CH E2 - CH E12 UHF: CH E21 - CH E69 CATV: CH S01 - S05, M1 - M10, U1 - U10, S21 - S41	
RF converter:	Not provided					

LASER Specification			
Class 1 LASER Product (Pickup)		(NORSK)	
Wave Length:	795 nm, 662 nm	Bølgelengde:	795 nm, 658 nm
Laser Power:	No hazardous radiation is emitted with the safety protection	Laserstyrke	Ingen farlig stråling sendes ut

Note

Mass and dimensions shown are approximate.
Specifications are subject to change without notice.

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⚠ 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.

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1 Safety precautions

1.1. General guidelines

1. Be careful during removing metal parts, sharp edges.
2. 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.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
4. 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 $1\text{M}\Omega$ and $5.2\text{M}\Omega$.

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

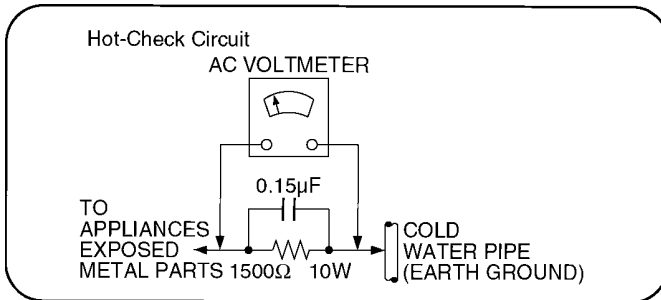


Figure 1

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 $1.5\text{k}\Omega$, 10 watts resistor, in parallel with a $0.15\mu\text{F}$ 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.

2 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.

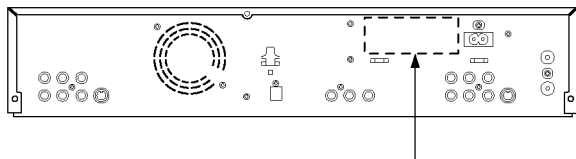
3 Precaution of Laser Diode

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)/795 nm (CDs)
Maximum output radiation power from pickup: 100 μ 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.



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



ACHTUNG:

Dieses Produkt enthält eine Lasereinheit.

Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

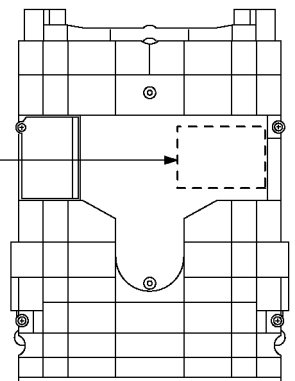
Wellenlänge: 662 nm (DVDs)/795 nm (CDs)

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

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

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Lasereinheit 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.

DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC 60825-1)
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSETTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALTITIN NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注意	- 打开时有可见及不可见激光辐射。避免激光束照射。
注意	- ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。 RQLS0233



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.

4 Handling the Lead-free Solder

4.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

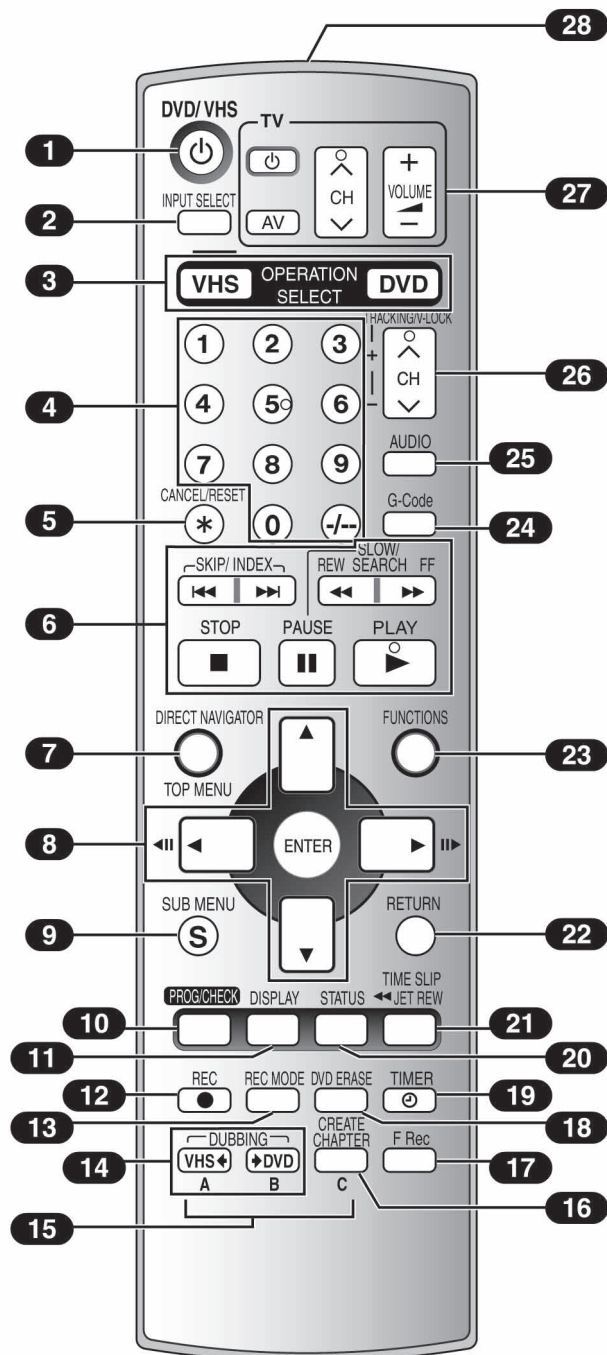
P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

5 Each Buttons

Remote control



■ [VHS] and [DVD] button 3

[DVD]

- Before performing DVD operations, be sure to press the [DVD] button. Also, make sure the DVD indicator lights up on the unit.



[VHS]

- Before performing VHS operations, be sure to press the [VHS] button. Also, make sure the VHS indicator lights up on the unit.

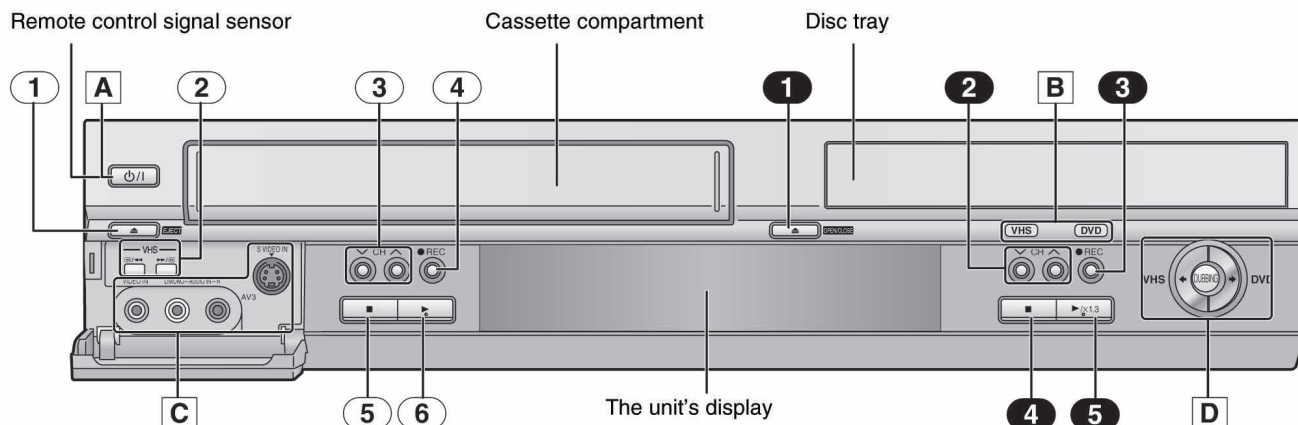


- 1 Turn the unit on
- 2 Input select (AV1, AV2, AV3, TP or DC)
- 3 Select drive (DVD or VHS)
- 4 Select channels and title numbers etc./Enter numbers
- 5 Cancel/Reset the tape counter
- 6 Basic operations for recording and play
- 7 Show Top menu/Direct Navigator
- 8 Selection/Enter, Frame-by-frame
- 9 Show sub menu
- 10 Show timer recording list
- 11 Show DISPLAY menu
- 12 Start recording
- 13 Change recording mode
- 14 One touch transfer (dubbing)
View select (A, B)
- 15 Manual tuning operation (A, B, C)
- 16 Create chapters
- 17 Start Flexible Recording
- 18 Erase items
- 19 Timer recording standby/release
- 20 Show status messages
- 21 Skip the specified time/Display the TV image as a picture-in-picture (TIME SLIP)
Jet rewind button (◀◀JET REW)
- 22 Return to previous screen
- 23 Show FUNCTIONS window
Show VHS FUNCTIONS menu
- 24 Show G-CODE screen (GN Only)
- 25 Select audio
- 26 Channel select
TRACKING/V-LOCK
- 27 TV operations
- 28 Transmission window

Note

- Buttons such as the [●, REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- The word "button" is not used in these operating instructions so "Press the [ENTER] button." is shown as "Press [ENTER]."
- You can use this remote control to operate your TV if you set the TV manufacturer code.

Main unit



Common to DVD/VHS

- A Standby/on switch (⏻/⏻)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- B DVD/VHS drive indicator**
• Lights when the DVD or VHS drive is selected.
- C AV3 input terminals (AV3)**
- D One Touch Transfer (Dubbing) operation button**
• From VHS to DVD
• From DVD to VHS

DVD

- 1 Disc tray open/close button (⏏, OPEN/CLOSE)**
2 DVD Channel up/down buttons (CH, ⬆, ⬇)
3 DVD Recording button (●, REC)
4 DVD Stop button (■)
5 DVD Play/x1.3 button (▶/x1.3)

VHS

- 1 Cassette eject button (⏏, EJECT)**
2 VHS Search buttons (⏮/⏪, ⏩/⏭)
3 VHS Channel up/down buttons (CH, ⬆, ⬇)
4 VHS Recording button (●, REC)
5 VHS Stop button (■)
6 VHS Play button (▶)

6 New Features

The description concerning HDD is applied only to models with HDD.

6.1. Quick start function (REC)

1. General

A few seconds after tuning on the unit, you can start recording to DVD-RAM, HDD.

You can switch the operation of this function (ON/OFF) on the menu screen. .

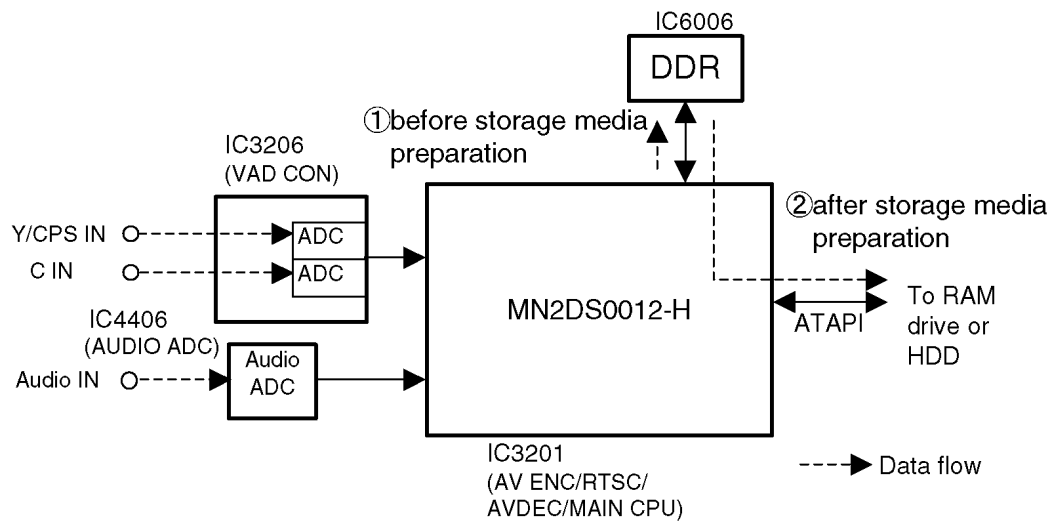
2. Quick start(REC) principle

In the power-off at Quick start, only power supplies for video IC, tuner and storage media are cut off.

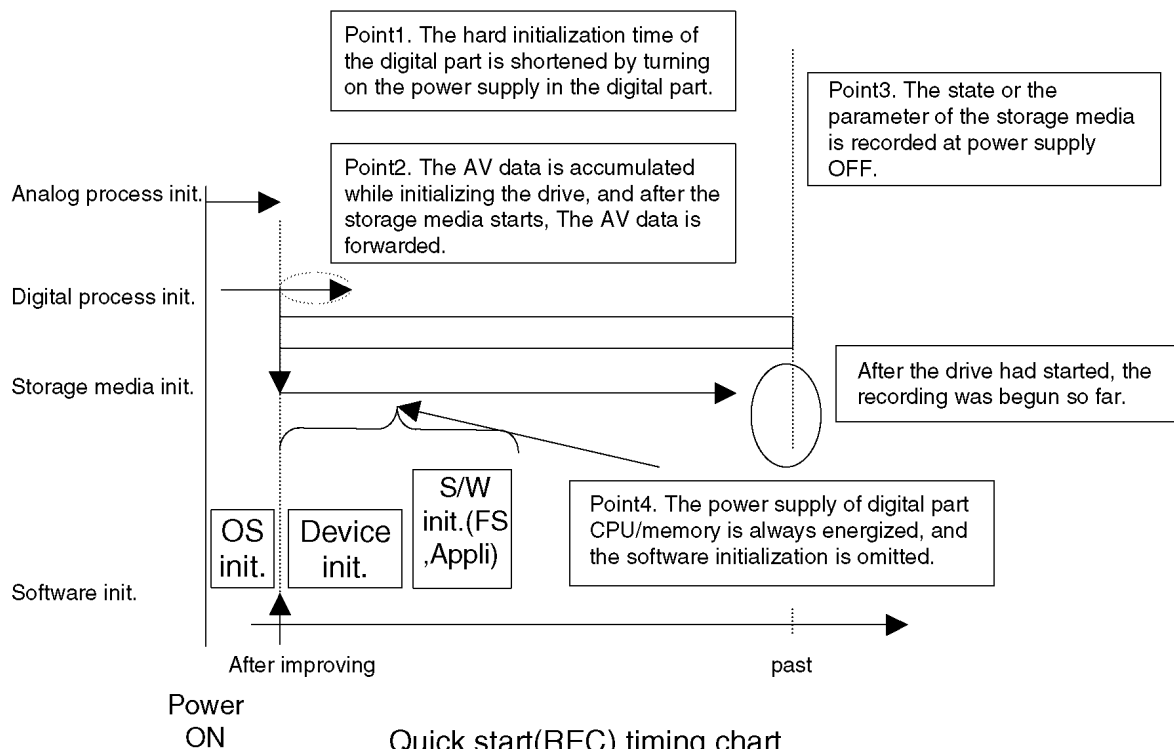
- ① When the REC button is pushed a few second after the power button is pushed, Audio and Video data are stored in DDR SDRAM before a storage media(DVD-RAM or HDD) preparation.

*Preparation time → DVD-RAM: Fabout 8seconds

- ② After a storage media(DVD-RAM or HDD) preparation, Audio and Video data are transfer from DDR SDRAM to the storage media.



Quick start(REC) explanation chart



Quick start(REC) timing chart

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

7.1. (DVD) Forcible Disc Eject

7.1.1. (DVD) When the power can be turned off.

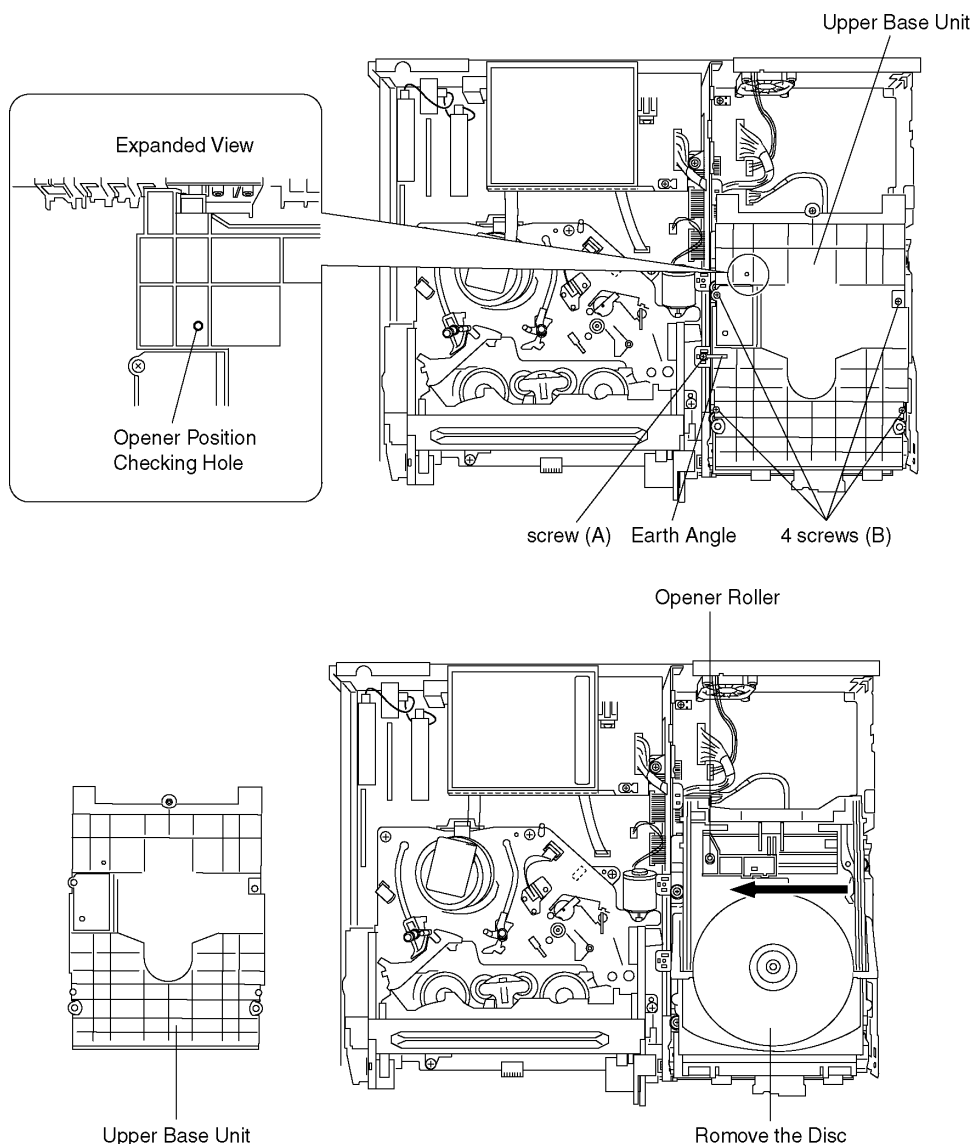
1. Turn off the power and press [(DVD) STOP], [(DVD) CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.2. (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 [(DVD) STOP] [(DVD) CH UP] keys on the front panel simultaneously for 5 seconds.

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

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Remove the Front Panel.
4. Remove screw (A) and Earth Angle.
5. Remove 4 screws (B) and Upper Base Unit from DVD-RAM Drive.
6. Take out the disc and put the Opener Roller on fully position for direction of Arrow.
7. Put the Upper Base Unit so that the Opener Roller is inserted into the groove.
8. Check center of Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws (B).



8 (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.

8.1. (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 [FF] and [EJECT] button simultaneously for more than 3 seconds and set the Service Mode to 7.
2. Press [STOP] button in order to unload the mechanism. (Pay attention to tape slack)

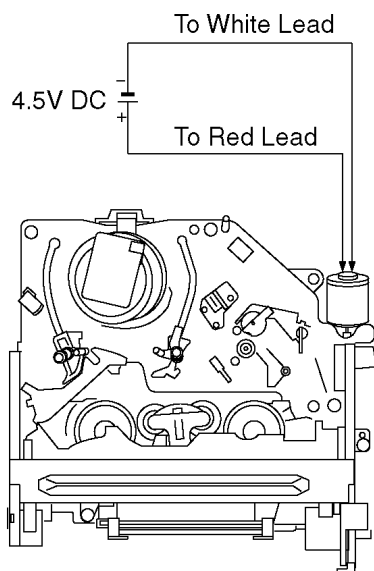
Service Mode Display:

7 ** * (STOP) → 7 0L ** (EJECT)

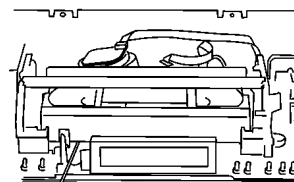
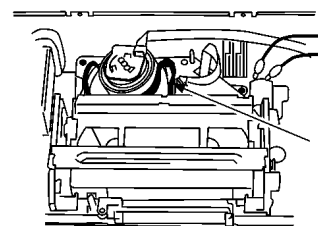
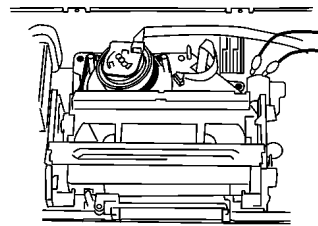
8.2. (VHS) Removal by manual operation by rotating the Loading Motor with the batteries.

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

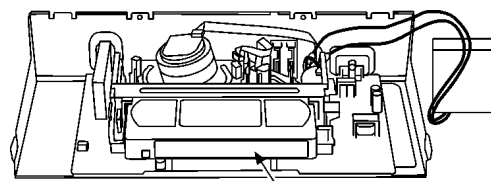


3. Stop unloading just before unloading will be completed as shown below, and then the tape becomes slack as shown below.
4. Rotate the S-Reel by a small minus screwdriver to remove the slack tape as shown below.



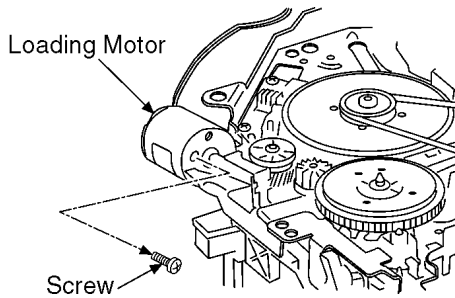
Minus Screw Driver (Small)

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

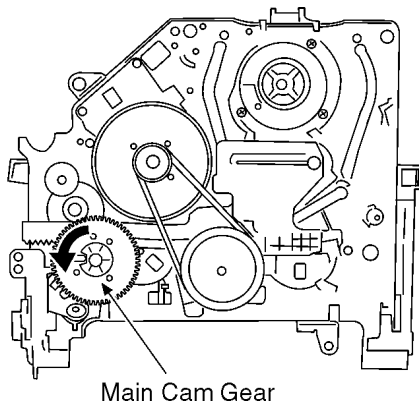


8.3. (VHS) Take out Cassette Tape manually after removing the mechanism

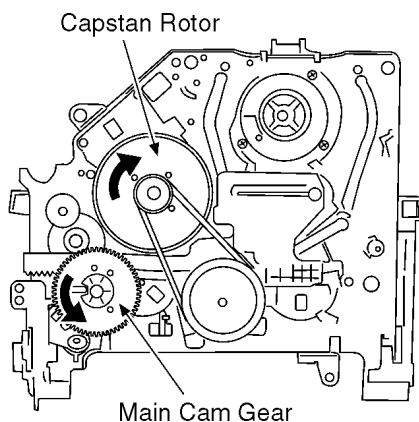
1. Disconnect the AC plug, and remove the Top Panel, Front Panel and the Mechanism by referring to "12 Assembling and Disassembling"
2. Remove the Screw and remove the Loading Motor as shown below.



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.

Fig. (B)

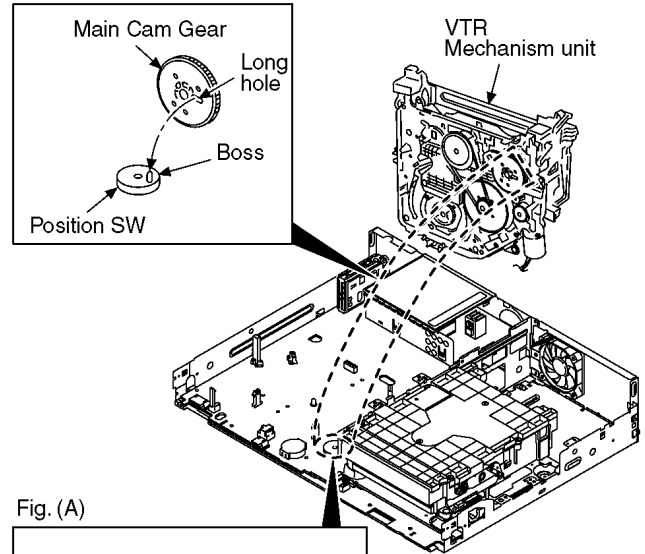
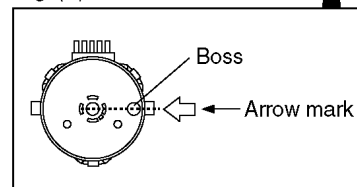


Fig. (A)

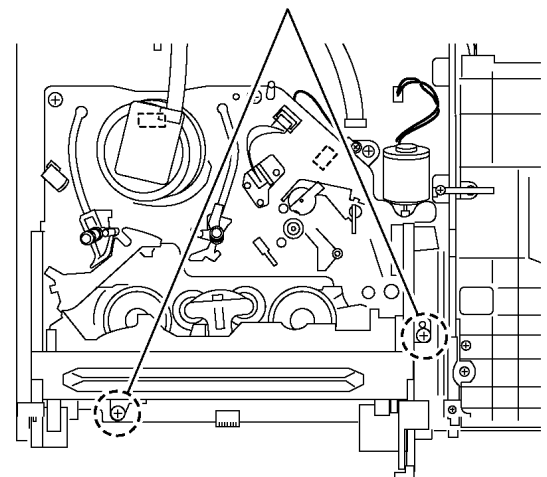


Caution:

In some case, washer is used for 2 Black Screws fixing front side of R4 Mechanism.

In this case, do not mistake washer position when installing R4 Mechanism.

Washer



9 (DVD) Service Explorer

Confirm "RAM-Drive Last Error" in Service Mode

Execute Service Mode

1. When the power is off, press [VHS to DVD DUBBING], [OPEN/CLOSE] and [(DVD) STOP] keys simultaneously for 5 seconds.

FL Display:

SERV

*After finishing display "(7). Factor of Drive Error occurring", press [0] [2] ~[1] [9] keys of the Remote Controller so that 19 memories can be displayed as maximum.

2. Press [4] [2] keys of remote controller.

Example of FL Display:

- (1) Error Number is displayed for 5 seconds.

NO 01

- (2) Time when the error has occurred is displayed for 5 seconds.

502161915

The error has occurred at 2005(year)/Feb.(month)/16(day)/19(hour):15(minute)

- (3) Last Drive Error (1/2) is displayed for 5 seconds.

03 1000

Error Sense
Key

{ 00: Bad disc
03: Bad disc
04: Bad disc or RAM-Drive malfunction

When above error codes are displayed, confirm operation with Panasonic RAM disc or Panasonic DVD-R disc.

***If the operation is OK, judge the error is due to media.**

***If the operation is NG and symptom as BLOCK NOISES and so on, that are particular symptom of Digital appears, judge the error is due to RAM-Drive or Digital PCB.**

- (4) Last Drive Error (2/2) is displayed for 5 seconds.

00 13 00 00

*This error code is unnecessary for service.

(5) Error occurring Disc type is displayed for 5 seconds.

DVDR

Disc type

*The error disc cannot be specified, display as "DVD".

(6) Disc Maker's ID is displayed for 5 seconds.

MXLR061

Example of Disc Maker's ID:

DVD-R Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	Japan
2	PVC	Pioneer	Japan
3	MCC	Mitsubishi Chemical Corporation	Japan
4	TDK	TDK	Japan
5	MXL	Maxell	Japan
6	MCI	MITUI CHEMICALS	Japan
7	JVC	Victor JVC	Japan
8	TAIYOYUDEN TYG	Taiyo yuden	Japan
9	GSC	Giga Storage	Taiwan
10	PRODISC	Prodisc	Taiwan
11	PRINCO	PRINCO	Taiwan
12	RITEK	RITEK	Taiwan
13	OPTDISC	OPTDISC	Taiwan
14	LEAD DATA	LEAD DATA	Taiwan
15	CMC	CMC	Taiwan
16	AUVISTAR	AUVISTAR	Taiwan
17	ACER	Acer	Taiwan
18	VIVASTAR	VIVASTAR	Switzerland
19	LGE	LG Electronics	Korea

DVD-RAM Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	
2	MATSUSHITA	Panasonic	Japan
3	MXL	Maxell	Japan
4	PRODISC	Prodisc	Taiwan
5	OPTDISC	OPTDISC	Taiwan
6	CMC	CMC	Taiwan

*Since an display is arbitrarily set up by the disk producer side, the above-mentioned display may be changed.

Please make it reference as an example of a display.

(7) Factor of Drive Error occurring is left displayed

INFO A804 40

Error occurring disc state

Error occurring disc type

Error Occurring Disc Type

FL Display	Disc Type
00	DVD-ROM/Video
01	Audio-CD
02	2.6GB DVD-RAM
03	4.7GB DVD-RAM
04	DVD-R

Error Occurring Disc State

FL Displays (Hexadecimal)	Description			
	Disc distinction state	Cartridge disc state	Cartridge disc state	Disc size
00	OK	With cartridge	Has not been opened yet.	12 cm
10	OK	With cartridge	Has not been opened yet.	8 cm
20	OK	With cartridge	Has been opened.	12 cm
30	OK	With cartridge	Has been opened.	8 cm
40	OK	Bare	Has not been opened yet.	12 cm
50	OK	Bare	Has not been opened yet.	8 cm
60	OK	Bare	Has been opened.	12 cm
70	OK	Bare	Has been opened.	8 cm
80	NG	With cartridge	Has not been opened yet.	12 cm
90	NG	With cartridge	Has not been opened yet.	8 cm
A0	NG	With cartridge	Has been opened.	12 cm
B0	NG	With cartridge	Has been opened.	8 cm
C0	NG	Bare	Has not been opened yet.	12 cm
D0	NG	Bare	Has not been opened yet.	8 cm
E0	NG	Bare	Has been opened.	12 cm
F0	NG	Bare	Has been opened.	8 cm

10 (DVD) Self-Diagnosis and Special Mode Setting

10.1. (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.**

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

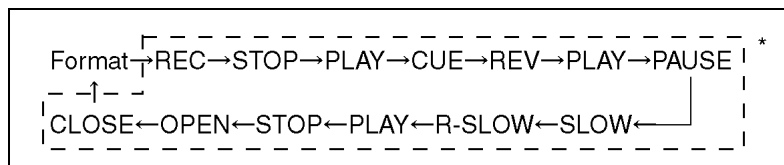
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	<div>REMOTE MODE **</div> <p>“**” is remote controller code of the main unit. Display for 5 seconds.</p>
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. 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>U59</div> <p>“U59” is displayed for 30 minutes.</p>
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	<div>U99</div> <p>Displayed is left until the [POWER] key is pressed.</p>
H19	Inoperative fan motor	Display appears when inoperative fan motor is detected after powered on. The power is turned off when detecting.	No display	No display
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
F58	Drive hardware error	Display appears when drive unit error is detected. The event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	Display appears when initialization error is detected after starting up main microprocessor for program recording. The event is saved in memory. The power is turned off when detecting.	No display	No display
UN SUPPORT	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.”	<div>UNSUPPORT</div> <p>Display for 5 seconds.</p>
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.”	<div>NO READ</div>
HARD ERR	Drive error	The drive detected a hard error.	“DVD drive error.”	<p>Display for 5 seconds.</p> <div>HARD ERR</div>
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. / RAM drive.	No display	<div>SELF CHECK</div>
Full Program	16 programs are already set.	16 programs are already set.	No display	<div>PROG FULL</div>

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
UN FORMAT	The disc is not formatted	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment. If you will use this disc, format is necessary. But, all programs recorded on this disc will be deleted.	Format This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	UNFORMAT
F60	DVD module has not been started.	Defect of Digital P.C.B. Mode: No change	No display	F60

10.2. (DVD) Special Modes Setting

Item		FL display	Key operation
Mode name	Description		Front Key
TEST Mode	*All the main unit's parameters (include tuner) are initialized.	A1 TEST	Press [VHS to DVD DUBBING], [OPEN/CLOSE] and [(DVD) REC] keys simultaneously for 5 seconds when power is off.
Service Mode	Setting every kind of modes for servicing. *Details are described in "10.3. (DVD) Service Mode".	SERV	When the power is off, press [VHS to DVD DUBBING], [(DVD) STOP] and [OPEN/CLOSE] keys simultaneously for 5 seconds.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	While the tray is open, press [(DVD) REC] and [(DVD) PLAY] 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. *When Timer REC is ON, execute " Forced disc eject " after releasing Timer REC. *This command is not effective during "Child lock" is ON.	The display before execution leaves. *****	When the power is off, press [(DVD) STOP] and [(DVD) 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 Timer REC is ON, execute "Forced Power-off" after releasing Timer REC. Action: The tray will open, and the power will turn off.	Display in P-off mode.	Press [Power] key over than 10 seconds.
Aging	Perform sequence of modes as * Aging Description shown below continually.	Display following the then mode.	When the power is ON, press [(DVD) CH DOWN], [VHS to DVD DUBBING] and [OPEN / CLOSE] simultaneously for over 5 seconds and less than 10 seconds. *When 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.

Aging Contents (Example):



*XP mode repeat twice
 SP mode repeat 4 times
 LP mode repeat 8 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. <div>LOCK</div>	When the power is on, press [(DVD) STOP] and [POWER] keys simultaneously for 5 seconds.
		"LOCK" is displayed for 3 seconds.	
		*When unlock the tray. <div>UNLOCK</div>	When the power is on, press [(DVD) STOP] and [POWER] keys simultaneously for 5 seconds.
		"UNLOCK" is displayed for 3 seconds.	
ATP re-execution	Re-execute ATP.	*When pressing OPEN/CLOSE key while the tray is locked. <div>LOCK</div>	Press [OPEN/CLOSE] key while the tray is locked.
		Display "LOCK" for 3 seconds.	
Progressive initialization	The progressive setting is initialized to Interface.	<div>*****</div>	When the power is on (E-E mode), press [(DVD) CH UP] and [(DVD) CH DOWN] simultaneously for 5 seconds.
		The display before execution leaves. <div>*****</div>	When the power is on (E-E mode), press [(DVD) STOP] and [VHS to DVD DUBBING] simultaneously for 5 seconds.

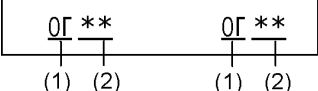
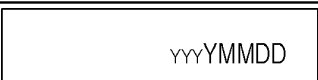

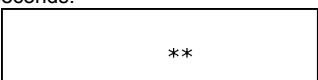
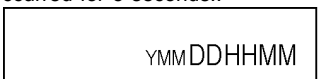
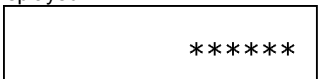

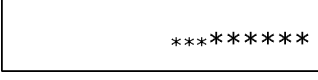
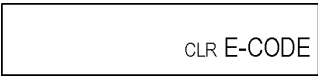

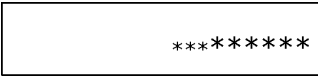
10.3. (DVD) Service Modes

Service mode setting: While the power is off, press [VHS to DVD DUBBING], [OPEN/CLOSE] and [(DVD) STOP] keys simultaneously for 5 seconds.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	<div>SERV</div>	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in "10.1. (DVD) Self-Diagnosis Functions".	<div>♣□□</div> *♣ shows U/H/F. □□ shows number.	Press [0] [1] in service mode

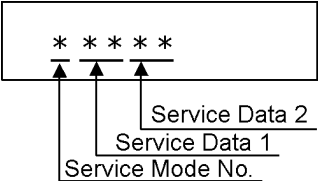
Item		FL display	Key operation
Mode name	Description		(Remote controller key)
ROM Version Display	(01)Region code, (02)MAIN firmware version, (03)TIMER firmware version, (04)DRIVE firmware version, (05)ROM collection version, (06)VHS microprocessor version are displayed on FL for 5 seconds per each version in order, but (07)VHS ROM collection version will be left displayed.	(01)Region code <div>01 No*</div> (02)MAIN firmware version <div>02 *****</div> (03)TIMER firmware version <div>03 *****</div> (04)DRIVE firmware version Type <div>04 *****</div> (05)ROM collection version + ROM <div>05 ***</div> (06)VHS microprocessor version <div>06 *****</div> (07)VHS ROM collection version <div>07 **</div> * 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". <div>WHITE</div>	Press [1] [1] in service mode.
		Switch Interlace/Progressive <div>P WHITE</div>	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". <div>MAGE</div>	Press [1] [2] in service mode.
		Switch Interlace/Progressive <div>P MAGE</div>	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.
RTSC Return in XP (A & V)	AV1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace/ XP/ Audio 48kHz <div>48 EE2 XP</div>	Press [1] [3] in service mode.
		Switch Interlace/Progressive <div>48P EE2 XP</div>	Press [1] [4] in RTSC Return XP mode. *I/P are switched alternately.
		Audio 44.1 kHz/ 48 kHz Switch <div>44 EE2 XP</div>	Press [2] [4] in RTSC Return XP mode. *48 kHz / 44.1 kHz 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 "RTSC Return in XP (A & V)" modes.	Initial mode is Interlace <div>14 SERV</div> Switch Interlace/Progressive <div>14P SERV</div>	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.

[illegible]

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front P.C.B.	 <p>(1) (2) (1) (2)</p> <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>	Press [5] [4] in service mode.
Production Date Display	Display the date when the unit was produced.	 <p>YYY: Year MM: Month DD: Day</p>	Press [6] [1] in service mode.
Display the accumulated working time	Display the accumulated unit's working time.	 <p>(Indicating unit: Second)</p>	Press [6] [4] in service mode.
Display the Error History	Display the Error History stored on the unit.	<p>Display reason of error for 5 seconds.</p>  <p>Display the time when the error has occurred for 5 seconds..</p>  <p>Y: Year MM: Month DD: Day HH: Hour MM: Minute Accumulated working time till occurring of the error is left displayed.</p>  <p>(Indicating unit: Second)</p>	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.		Press [9] [7] in service mode.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	 <p>"**" is number of open/close cycle times.</p>	Press [9] [1] in service mode *When releasing this mode, press the [POWER] button on Front Panel more than 10 seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)		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. Then VHS Microprocessor is initialized to shipping setting too.		Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	<p>Display in STOP (E-E) mode.</p> 	Press power button on the front panel in service mode.

11 (VHS) Self-Diagnosis and Special Mode Setting

11.1. (VHS) Special Modes Setting

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 [(VHS) CH UP] and [(VHS) 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 "11.2. (VHS) Service Mode".		Press [FF], and [EJECT] keys simultaneously for 3 seconds when power is off.
Releasing Timer Program	Releasing Continuation Timer Program	No display.	While in Timer REC mode, press [(VHS) STOP] key for 3 seconds.
Eject	Ejecting Cassette Tape	No display.	While in other than Timer REC mode, press [(VHS) STOP] key for 3 seconds or press [STOP] key of the Remote Controller for 3 seconds in VHS mode.

11.2. (VHS) Service Modes

1. When power is off, press [FF] and [EJECT] keys simultaneously for 3 seconds, to start up the Service Mode.
2. In service mode, press [FF] and [EJECT] keys simultaneously to add Service Number.

Service Mode 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 of the mechanism movement (Real time)	
1	Indication for the inner data of IC6001	Tape beginning and ending detection data (Real time) 00: Both tape beginning and ending have not been detected 01: Tape ending is detecting now 02: Tape beginning is detecting now 03: Both tape beginning and ending are detecting now	Key code (Real time) Indicate the receiving code when the key of VCR or remote controller being operated.	
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 0 - : FF/REW position 0_ : 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)	The following functions are prohibited to operate the mechanism without cassette tape. !Tape beginning and ending detection. !Reel lock detection !Tape detection and tape position detection 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.
3	Self-diagnosis history (1st)	1st history of error number	"- -" is displayed.	
4	Self-diagnosis history (2nd)	2nd history of error number	"- -" is displayed	
5	Self-diagnosis history (3rd)	3rd history of error number	"- -" is displayed	
6	Indication for the inner data of IC6001	Servo data (4 digits) (Real time)		
7	Manual mechanism operation	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 0 - : FF/REW position 0_ : Intermediate between each positions	Ordering for the Motors 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)	Press the following key; PLAY key : Loading STOP key : Unloading

11.3. (VHS) Self-Diagnosis Functions

This model has a self-diagnosis. If the VHS section detects trouble during installation or during use, the power is automatically turned off or become power-save mode and it is memorized into the EEPROM as error code of two-digit number. It's memorized error code can be displayed in "second" display portion (the last 2 digits of the FIP) by placing the unit in Service Mode Number 2 when turning on Service Information Display as for example "01" or "02" etc as below. If a second error occurs, the most recent error will be memorized and can be displayed in Service Mode Number 2. It can be memorized until 3 self-diagnosis histories in maximum.

In order to erase the memorized error code, press FF and EJECT buttons on the Front Panel simultaneously over 5 seconds during turning on Service Information Display mode.

11.3.1. Memory of the self-diagnosis history

*This is effective only in Service Mode 3, 4, 5.

11.3.1.1. Error Numbers at a glance

Memory No. (Error Code)	Reason
01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)
02	The CAP FG could not be detected.
03	Mechanism lock during without the unloading and the cassette-up.
04	Mechanism lock during unloading
05	S-reel pulse cannot be detected during unloading. (Error of the S-reel circuit or the Capstan circuit)
06	Mechanism lock during the Cassette-up.
15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel circuit or the Capstan circuit)
16	Detection of the Cylinder lock during the constant rotation
17	Detection of S-reel lock during the constant tape running
18	Detection of T-reel lock during the constant tape running
2*	An error while the PG Automatic Adjustment
Refer to following Note	
80	An exceptional ejection depends on a accidental error

Note:

2* is as follows.

20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)
21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)
22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.)
23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)

11.3.1.2. Memory for the self-diagnosis history

- The self-diagnosis result is memorized the state of the moment of detecting.
- There are the histories from number 1 to number 3.
- The latest error is memorized on history number 1, and then the old histories are shifted to the history number 2 and 3. The error code memorized in the history number 2 and 3 is over-written by shift.
- If the latest error is the same with the history number 1 (2nd-latest), it is not memorized.
(The same error code is not memorized in succession)

11.3.1.3. Clear for the self-diagnosis history

- Press FF and EJECT buttons on the VCR simultaneously over 5 seconds during turning on Service Information Display mode.

11.3.1.4. Indication of the self-diagnosis history.

The self-diagnosis histories can be indicated on the FIP with Service Mode number 3 to 5.

The procedure of service mode setting and indication format are the same as usual.

FIP INDICATION: 4 0 3 - -

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

The Error code of history 1, 2 and 3 can be indicated by selecting the Service mode 3, 4 and 5 as shown above.
In case of no error code in the memory, it is indicated as "00".

12 Assembling and Disassembling

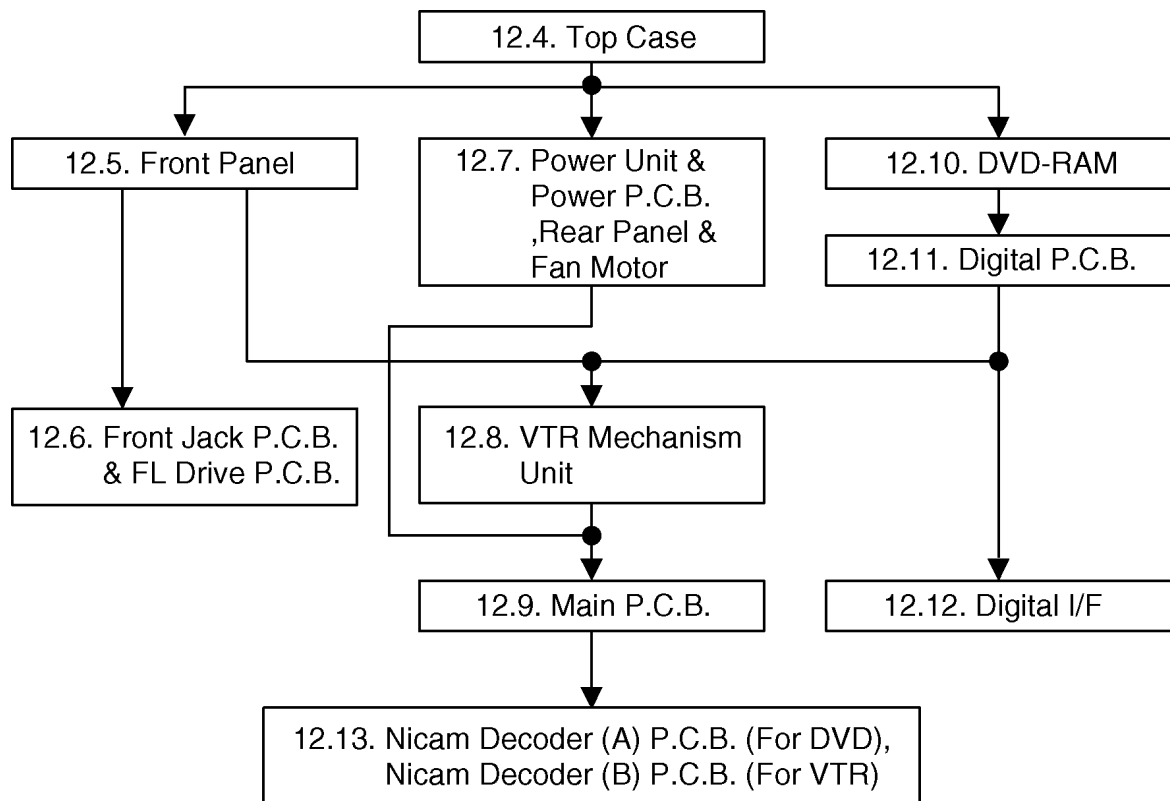
Caution:

Original screws should be used.

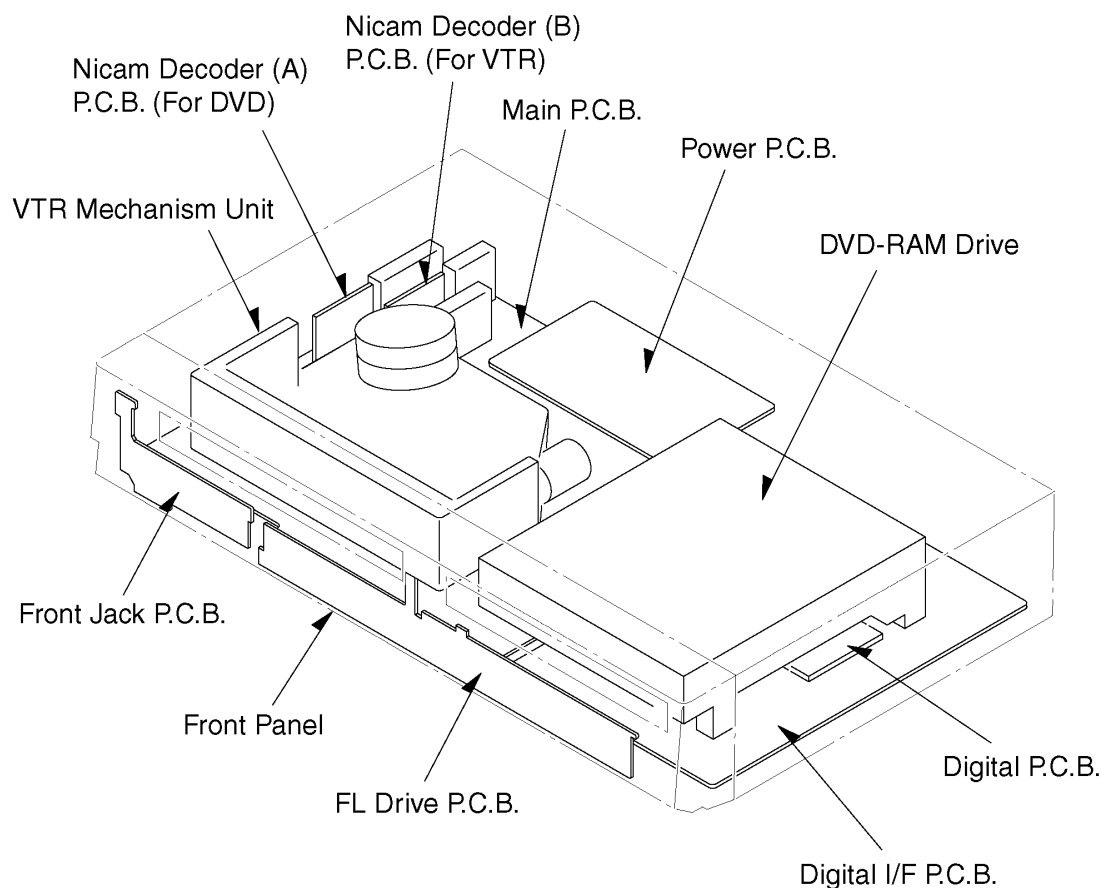
12.1. Disassembly Flow Chart

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.



12.2. P.C.B. Positions



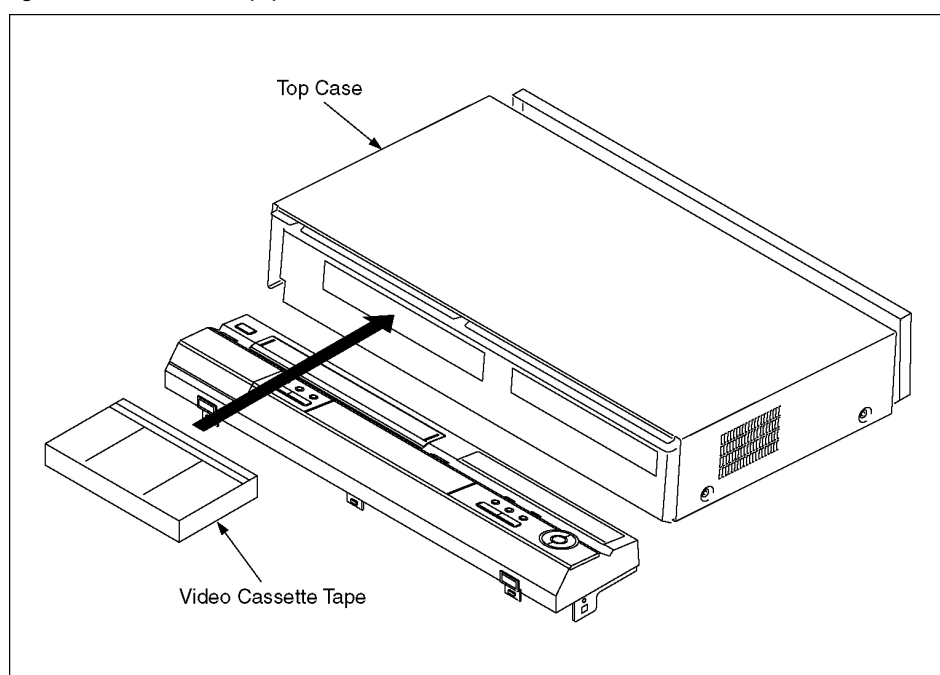
12.3. Caution with inserting cassette tape when disassembling the unit

Note1:

For description of the disassembling procedure, see the section 14.4.

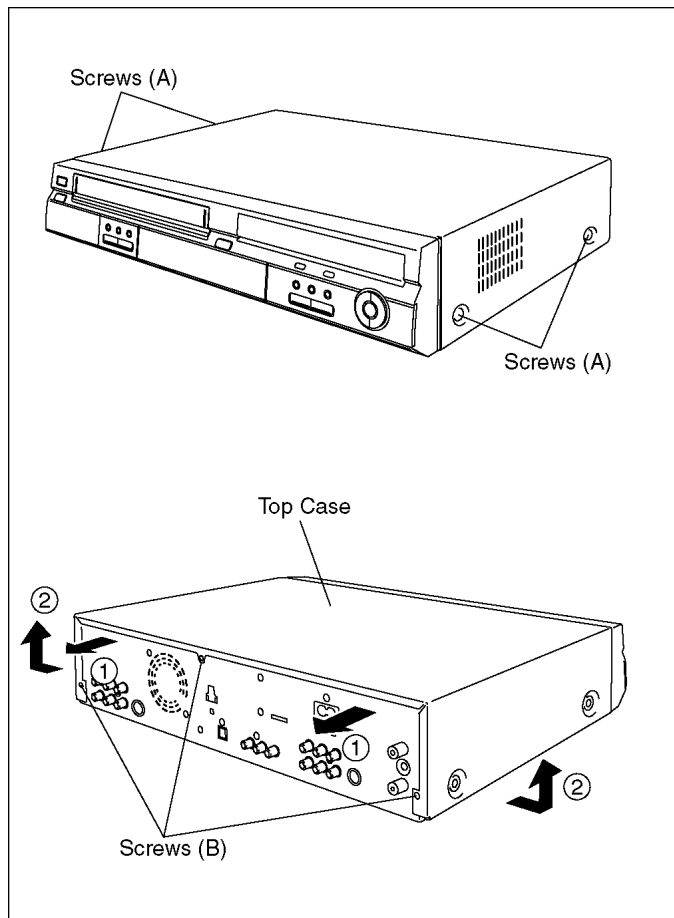
Note2:

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.



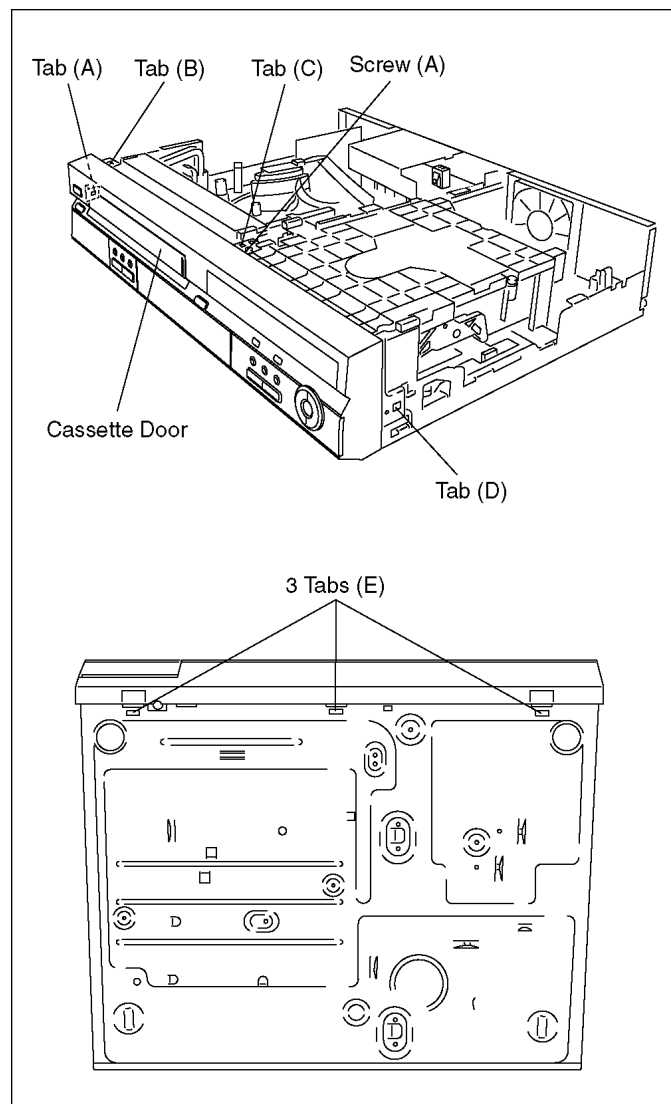
12.4. Top Case

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



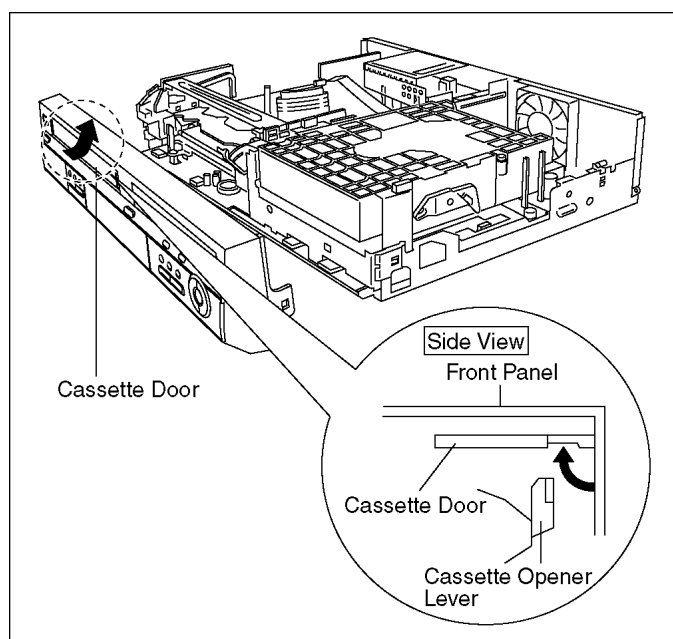
12.5. Front Panel

1. Remove 1 screw (A).
2. Unlock tab (A) and tab (B) simultaneously.
3. Unlock tab (C) and tab (D) simultaneously.
4. Unlock 3 tabs (E) respectively, and pull out Front Panel with connector slightly.



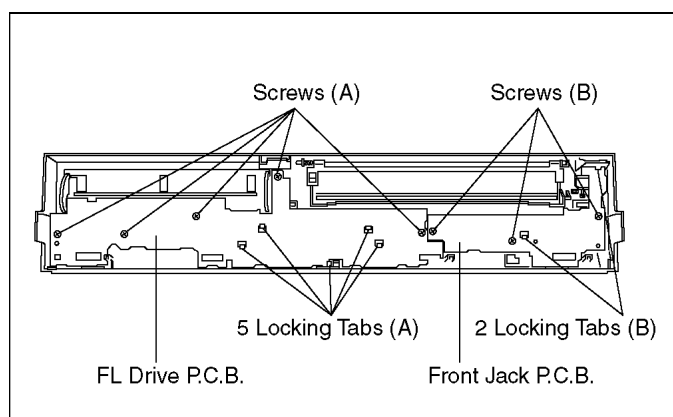
Note:

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.



12.6. Front Jack P.C.B. & FL Drive P.C.B.

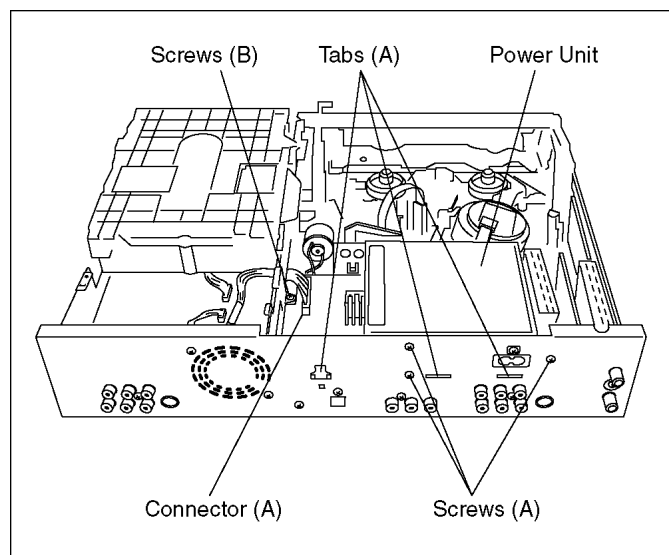
1. Remove 5 screws (A), and unlock 5 Locking Tabs (A) to remove FL Drive P.C.B.
2. Remove 3 screws (B), and unlock 2 Locking Tabs (B) to remove Front Jack P.C.B.



12.7. Power Unit and Power P.C.B., Rear Panel & Fan Motor

12.7.1. Power Unit

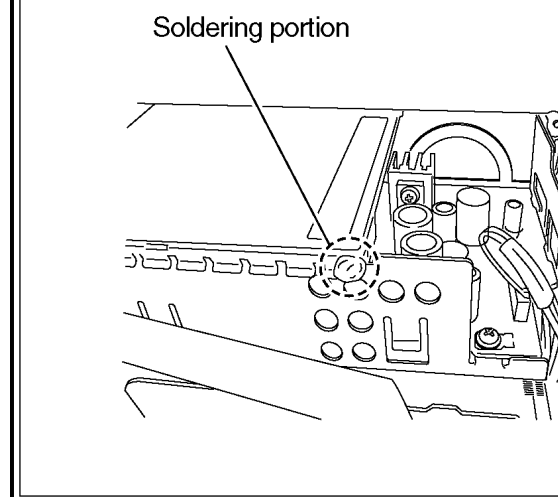
1. Disconnect Connector (A).
2. Remove 3 Screws (A) and 1 Screw (B).
3. Pull Power Unit upward to remove it from hanging 3 tabs (A).



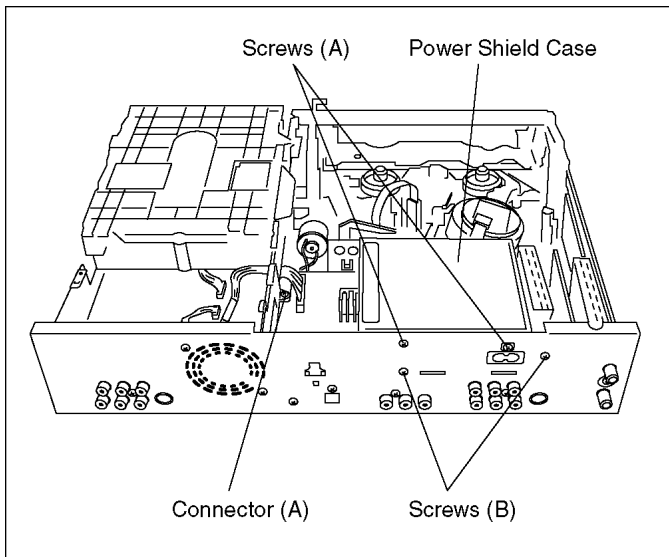
12.7.1.1. Only Power P.C.B.

Caution:

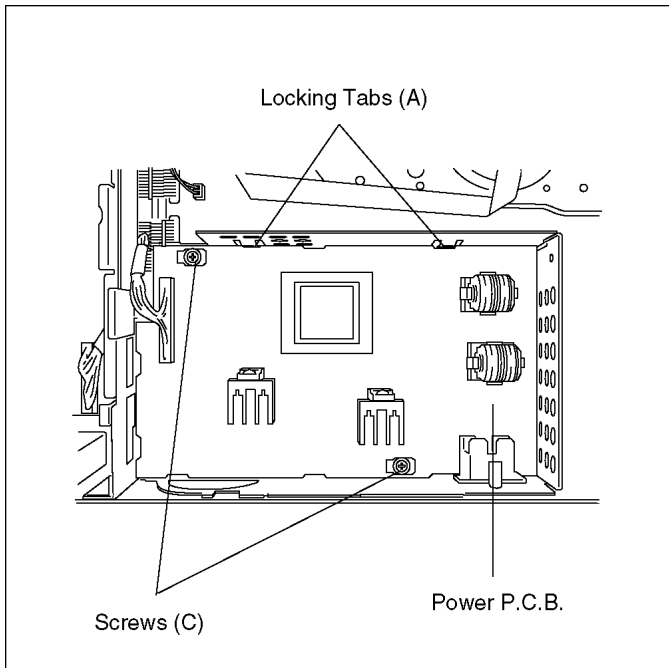
In some case, Shield Case of Power Unit is soldered. In this case, remove solder when removing Shield Case and certainly solder Shield Case when installing. If soldering was not done, noises mix into picture.



1. Disconnect Connector (A).
2. Remove 2 Screws (A), loosen 2 Screws (B) and remove Power Shield Case.

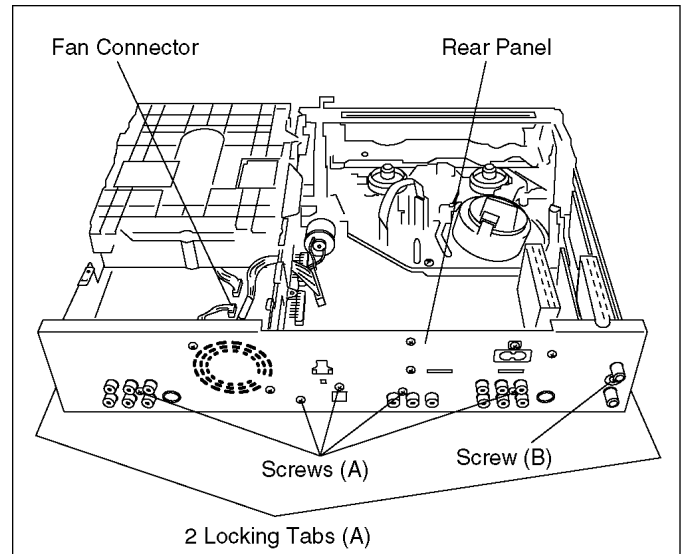


3. Remove 2 Screws (C) and unlock 2 locking Tabs (A) to remove Power P.C.B.



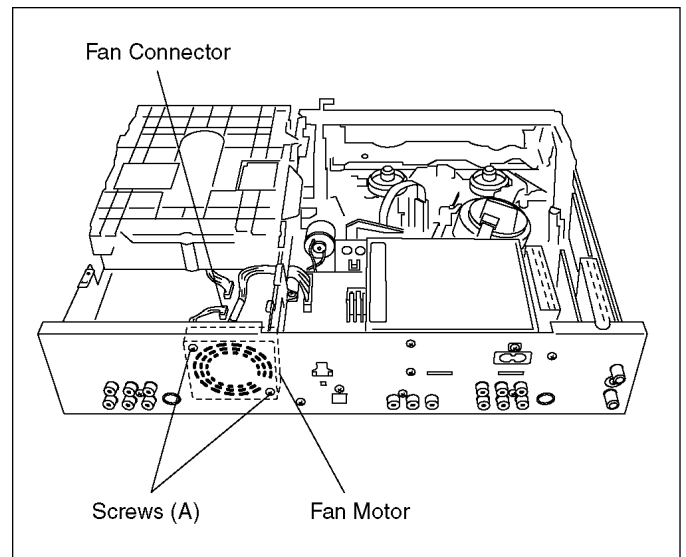
12.7.2. Rear Panel with Fan Motor

1. After removing Power Unit as shown above, disconnect Fan Connector.
2. Remove 5 Screws (A) and 1 Screw (B).
3. Unlock 2 Locking Tabs (A) to remove Rear Panel with Fan Motor.



12.7.2.1. Only Fan Motor

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

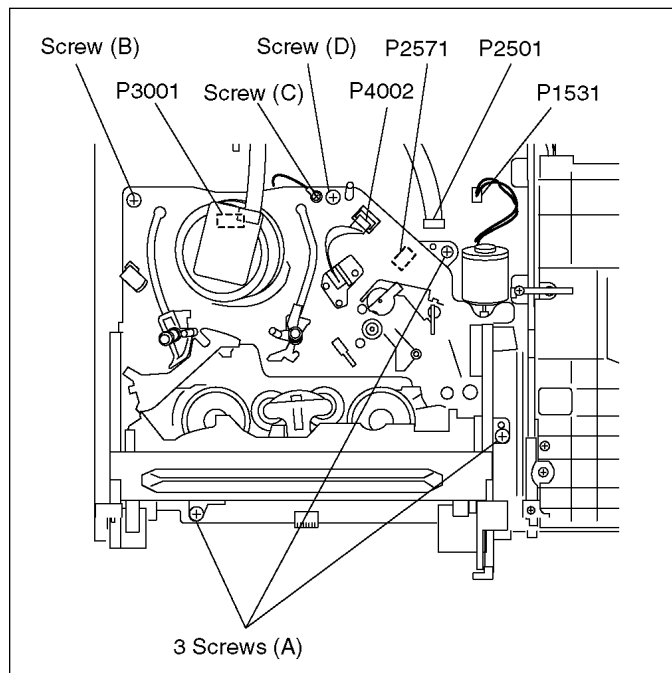


12.8. VTR Mechanism Unit

1. Disconnect 3 Connectors (P1531, P2501 and P4002).
2. Remove 3 Black 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.



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).

Fig. (B)

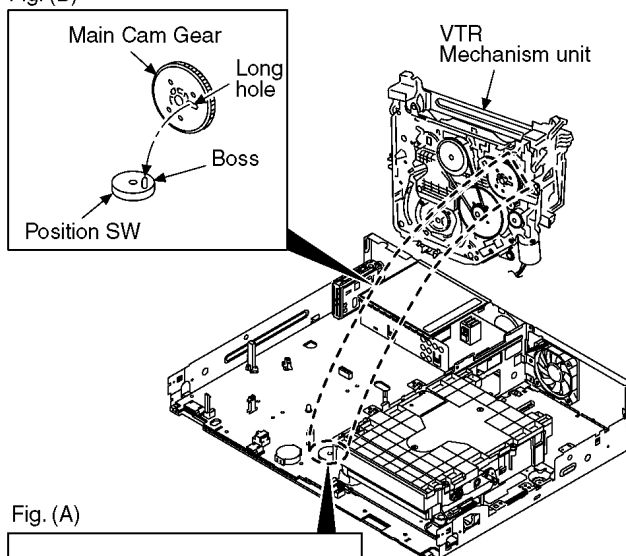
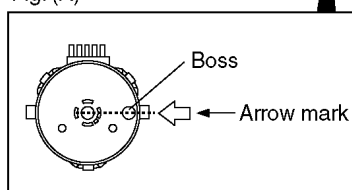


Fig. (A)

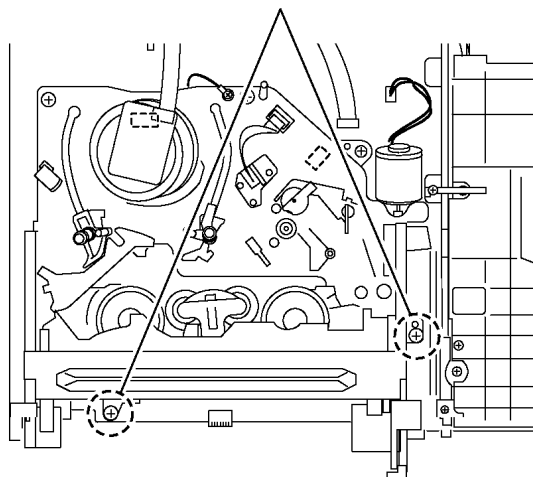


12.8.1. Caution for attaching VTR Mechanism Unit

Caution:

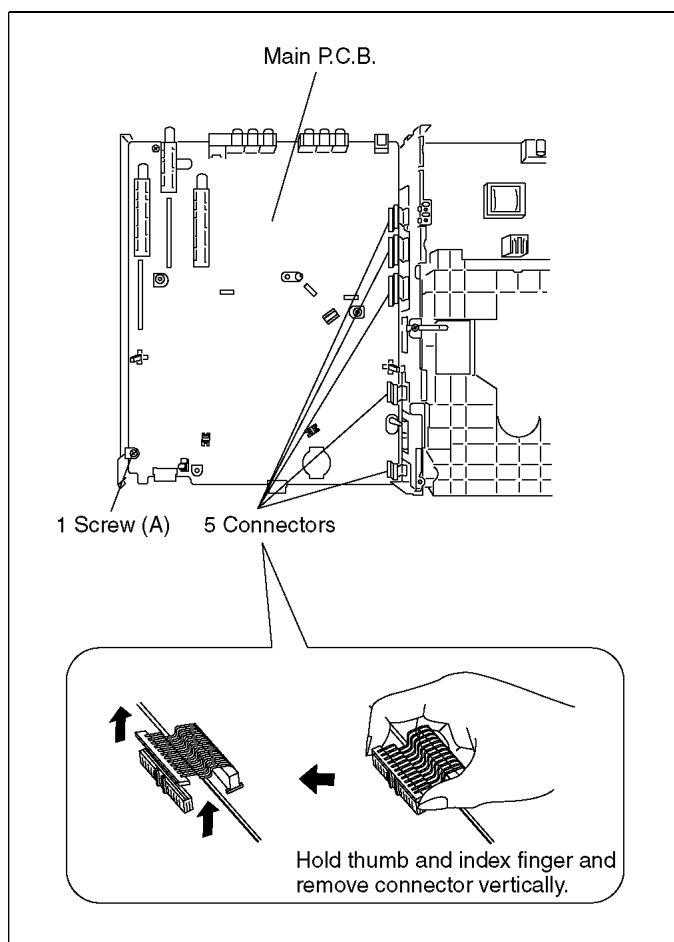
In some case, washer is used for 2 Black Screws fixing front side of R4 Mechanism.
In this case, do not mistake washer position when installing R4 Mechanism.

Washer

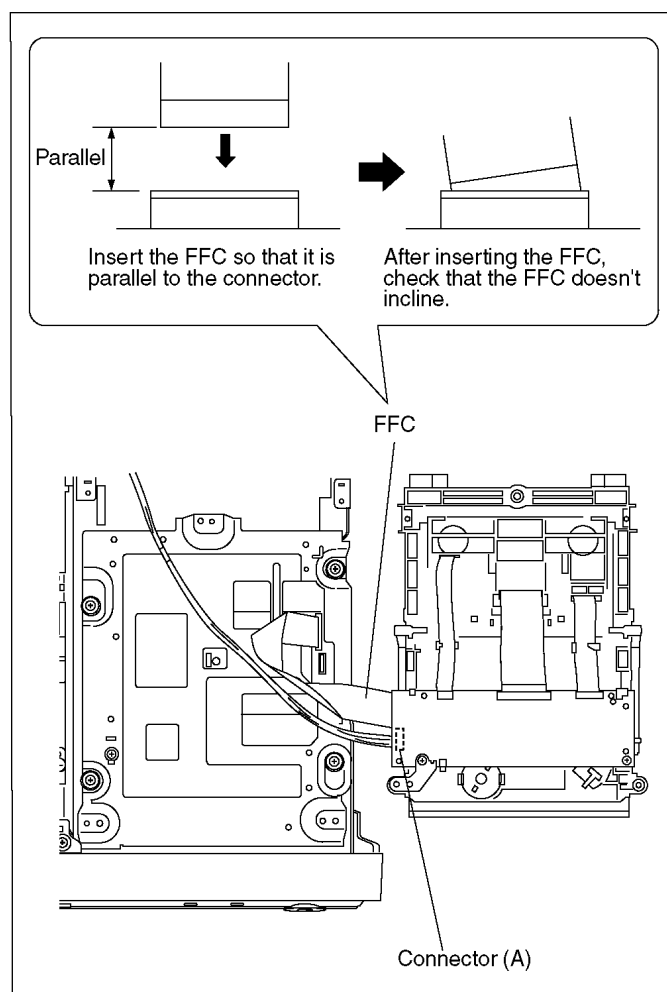


12.9. Main P.C.B.

1. Disconnect 5 Connectors.
2. Remove 1 Screw (A), and remove Main P.C.B.

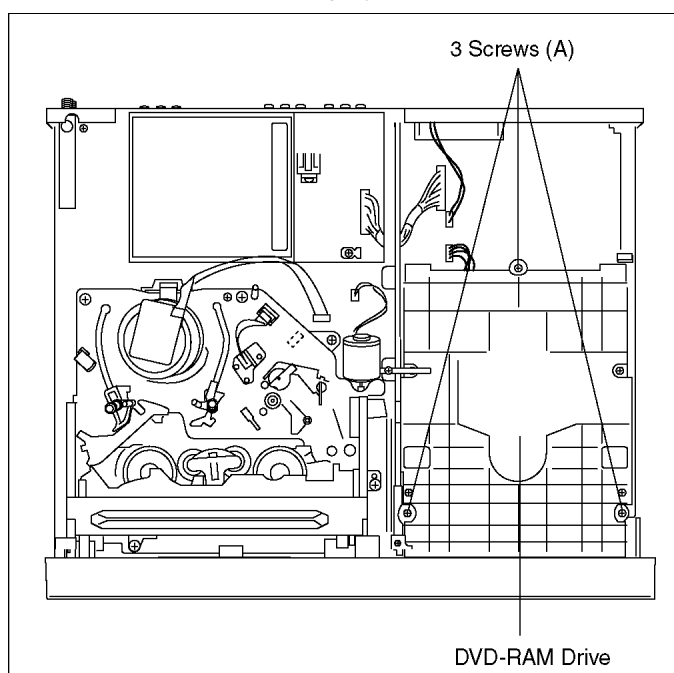


3. Disconnect Connector (A) and FFC from DVD-RAM Drive.



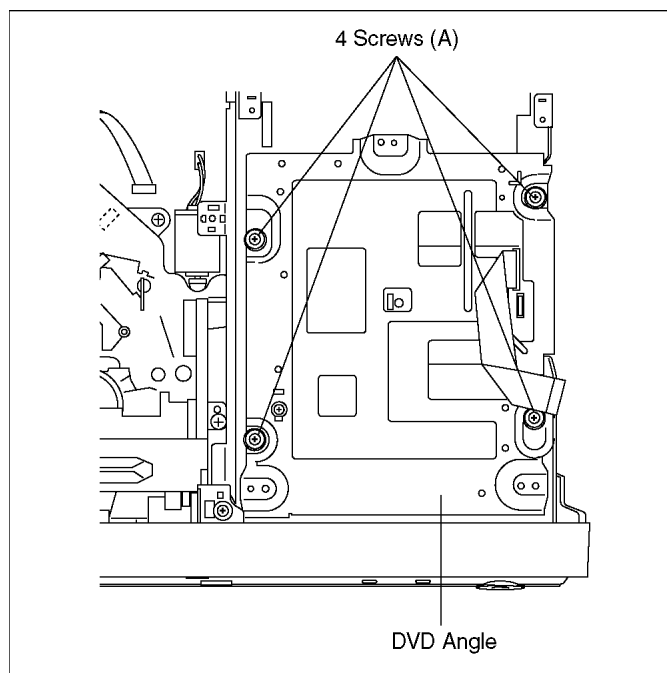
12.10. DVD-RAM Drive

1. Remove 3 Screws (A).
2. Lift up DVD-RAM Drive slightly.



12.11. Digital P.C.B.

1. Remove 4 Screws (A) and DVD Angle.



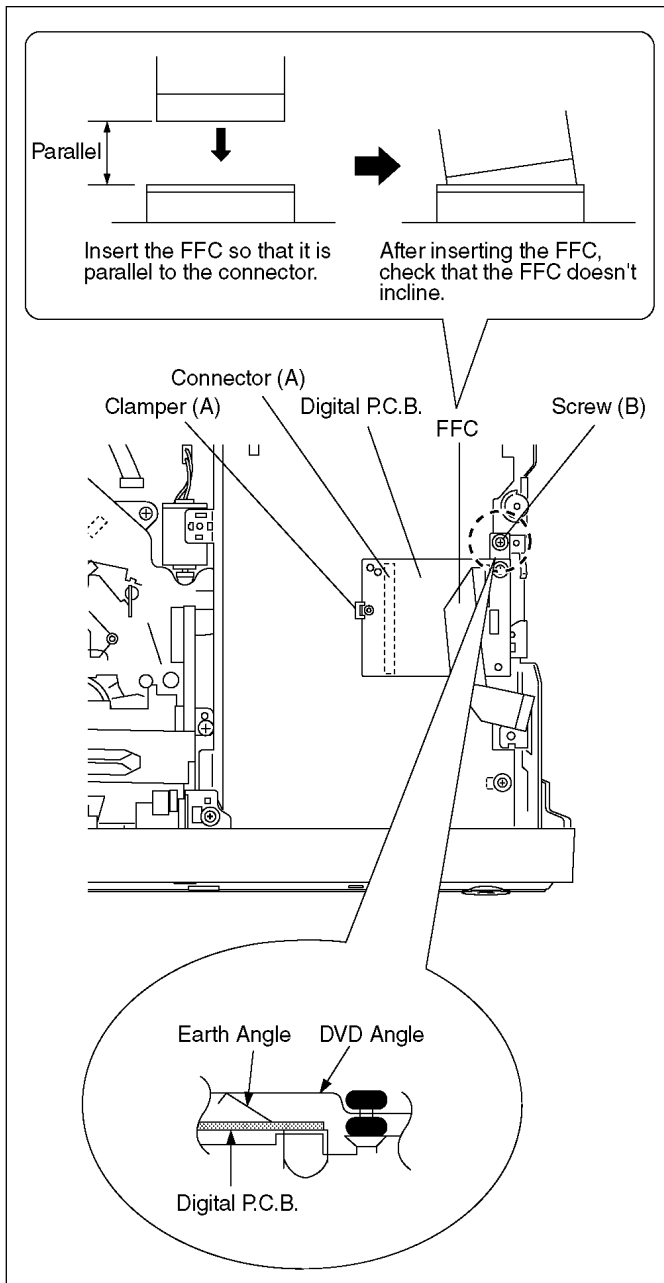
2. Disconnect FFC.
3. Remove Screw (B).
4. Unlock Clamper (A), pay attention to Connector (A), and pull out Digital P.C.B. to disconnect Connector (A).

CAUTION 1:

When replacing Digital P.C.B., pay attention to inserting FFC.

CAUTION 2:

When attaching Digital P.C.B. on to Earth Angle, Earth Angle should be touched to DVD angle as shown below.



12.12. Digital I/F P.C.B.

Note:

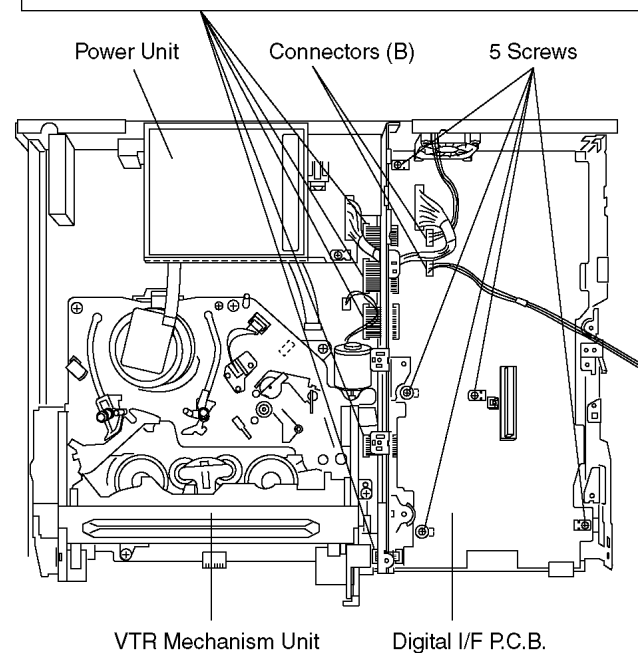
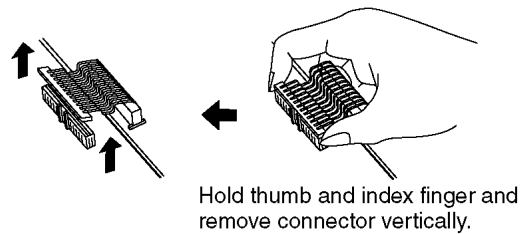
If connection of 5 Connectors (A) are tight, remove connectors after removing VTR Mechanism (refer to 12.8.) and Power Unit (refer to 12.7.1.) once.

1. Remove Fan Motor (refer to 12.7.2.1.).
2. Disconnect 5 Connectors (A) and 2 Connectors (B).
3. Remove the 5 screws.
4. Remove Digital I/F P.C.B.

5 Connectors (A)

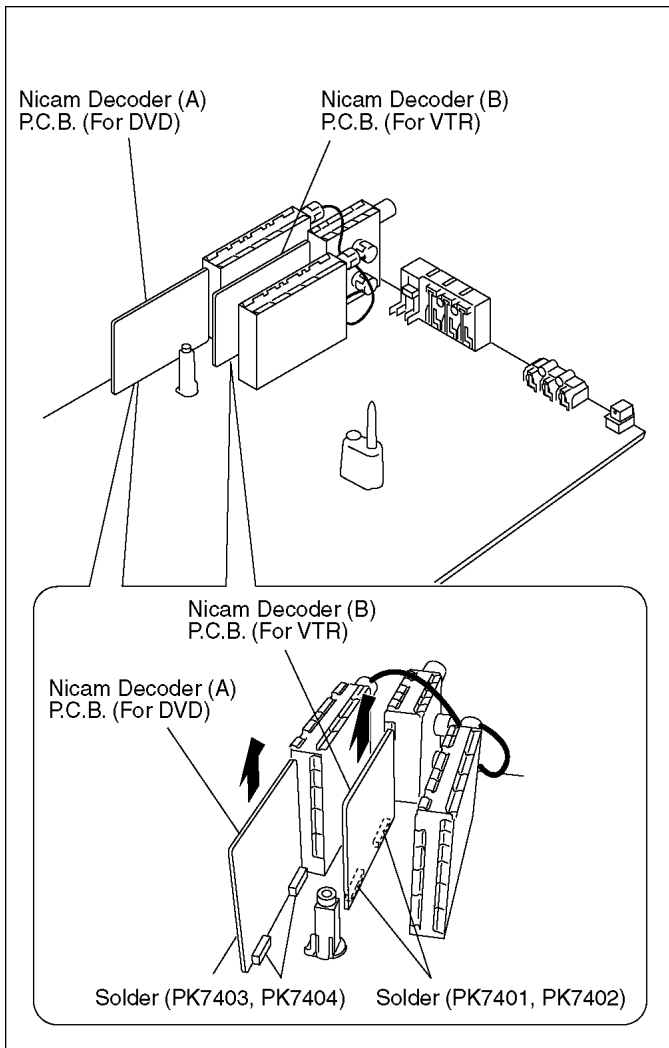
Note:

If connection of 5 Connectors (A) are tight, remove connectors after removing VTR Mechanism (refer to 12.8.) and Power Unit (refer to 12.7.1.) once.



12.13. Nicam Decoder (A) P.C.B. (For DVD) & Nicam Decoder (B) P.C.B. (For VTR)

1. Remove the solders.
2. Pull out the Nicam Decoder P.C.B. (A) or (B).



13 Service Fixture and Tools

(For DVD)

Part Number	Description	Pcs	Compatibility
RFKZ0125	Extension FFC (Digital P.C.B. - DVD-RAM Drive / 40 Pin)	1	Same as DMR-E50 series
RFKZ0168	Extension Cable (Digital I/F P.C.B. - FAN / 3 Pin)	1	Same as DMR-E50 series
RFKZ0126	Extension Cable (RAM Drive - Digital I/F P.C.B. / 4 Pin)	1	Same as DMR-E30/ES10 series
VFK1729	Extension Cable (Main P.C.B. - Digital I/F P.C.B./13pin/40mm)	2	Same as DMR-E75V series (GN), New (EE/GC)
	Extension Cable (Main P.C.B. - Digital I/F P.C.B./13pin/40mm)		
RFKZ0240	Extension Cable (Main P.C.B. - Digital I/F P.C.B./19pin/40mm)	2	Same as DMR-E75V series (GN), New (EE/GC)
	Extension Cable (Main P.C.B. - Digital I/F P.C.B./19pin/40mm)		
RFKZ0178	Extension Cable (Main P.C.B. - Digital I/F P.C.B./7pin/40mm)	1	Same as DMR-E75V series (GN), New (EE/GC)
RFKZ0260	Extension Cable (Digital I/F P.C.B. - Digital P.C.B. / 88 Pin)	1	Same as DMR-ES10/EH50 series
RFKZ0215	Extension Cable (Main P.C.B. - Front (Jack) P.C.B. / 12 Pin)	1	Same as DMR-E55
RFKZ0239	Extension Cable (Power & Digital I/F P.C.B. - FL Drive P.C.B. / 10 Pin)	1	Same as DMR-E75V series (GN), New (EE/GC)
RFKZ0238	Extension Cable (Main P.C.B. - FL Drive P.C.B. / 8 Pin)	1	Same as DMR-E75V series (GN), New (EE/GC)

(For VHS)

Part Number	Description	Pcs	Compatibility
VFJ8125H3F	PAL VHS Alignment Tape	1	Same as usual
VFK0329	Post Adjustment Screwdriver	1	Same as usual
VFK0330	Fine Adjustment Gear Driver	1	Same as usual

14 Service Positions

Note:

For description of the disassembling procedure, see the section 12.

14.1. Checking and Repairing of Power P.C.B.

1. Top Case

Remove 4 Screws (A) on side

Remove 3 Screws (B) on rear

Remove Top Case

2. Power P.C.B.

↓
Disconnect Connector (A) on Power P.C.B.

Remove 1 Screw (A) fixing upper side of Power Unit

Remove 1 Screw (A) fixing AC Inlet

Loosen 1 Screw (B) fixing lower side of Power Unit

Loosen 1 Screw (B) fixing right side of Power Unit

Remove Shield Case from Power Unit

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

Unlock 2 Locking Tabs to remove Power P.C.B.

Put Power P.C.B. on Insulation Board

Connect Power Cable to Power P.C.B.

Caution 1:

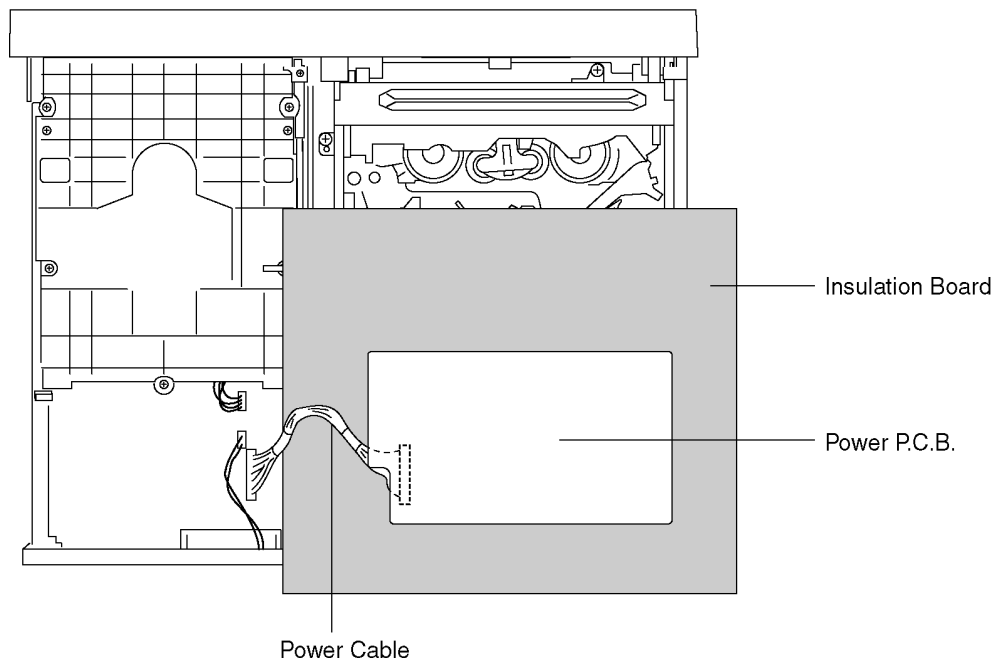
Original screw should be used.

Caution 2:

In some case, Shield Case of Power Unit is soldered.

In this case, remove solder when removing Shield Case and certainly solder Shield Case when installing.

If soldering was not done, noises mix into picture.



14.2. Checking and Repairing of & Digital I/F P.C.B.

1. Top Case

Remove 4 Screws (A) on side

Remove 3 Screws (B) on rear

Remove Top Case

2. Front Panel

Remove 1 Screw (A) on center.

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

Unlock 3 Locking Tabs (E) on bottom to remove Front Panel

3. Power Unit

Disconnect Power Connector from Power P.C.B.

Remove 3 Screws (A) fixing Power Unit with Rear Panel

Remove 1 Screw (B) fixing Power Unit with Center Chassis

Pull up Power Unit to remove it from hanging 3 tabs (A)

4. Fan Motor

Remove Fan Connector from Digital I/F P.C.B.

Remove 2 Screws fixing Fan Motor to remove Fan Motor

5. DVD-RAM Drive

Remove 3 Screws (A) fixing DVD-RAM Drive

Lift up DVD-RAM Drive slightly

Disconnect Connector and FFC from DVD-RAM Drive

Remove DVD-RAM Drive and put it beside chassis

6. Digital P.C.B.

Remove 4 Screws (A) for DVD Angle

Remove DVD Angle

Disconnect FFC from Digital P.C.B.

Remove 1 Screw fixing Digital P.C.B.

Leave Digital P.C.B. attached on Digital I/F P.C.B.

7. Digital I/F P.C.B.

Remove 5 Connectors between Main P.C.B. and Digital I/F P.C.B.

Remove Fan Connector & Power Connector from Digital I/F P.C.B.

Remove 5 Screws from Digital I/F P.C.B.

Remove Digital I/F P.C.B. with Digital P.C.B.

Put an insulated sheet on RAM Drive, and place the Digital I/F P.C.B. on insulation Board so that the foil side faces up

Connect Extension Cables,

*between Main P.C.B. and Digital I/F P.C.B. with (RFKZ0178/ RFKZ0240 x 2/ VFK1729 x 2),

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

*between Main P.C.B. and FL Drive P.C.B. with (RFKZ0238),

*between Digital I/F P.C.B. and FL Drive P.C.B. with (RFKZ0239),

*between Digital I/F P.C.B. and DVD-RAM Drive with (RFKZ0126),

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

*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125).

*between Power Unit-Digital I/F P.C.B. with Original Cable.

Caution 1:

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

Caution 2:

Original screw should be used.

Main P.C.B.-Digital I/F
P.C.B Extension
Cables.

(VFK1729)

(RFKZ0240)

(RFKZ0240)

(VFK1729)

(RFKZ0178)

Note:

If these connections are tight, remove connectors after moving VTR Mechanism once.

VTR Mechanism Unit

Main P.C.B. - Front Jack P.C.B.
Extension Cable
(RFKZ0215)

Main P.C.B.

Digital I/F P.C.B. - Fan
Motor Extension Cable
(RFKZ0168)

Fan Motor

Power Unit

Digital I/F P.C.B.

Insulation Board

DVD-RAM Drive

Digital I/F P.C.B.- DVD-
RAM Drive Extension
Cable (RFKZ0126)

Digital P.C.B. - DVD-RAM Drive
Extension FFC
(RFKZ0125)

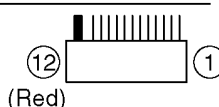
Digital I/F P.C.B. - FL Drive P.C.B.
Extension Cable (RFKZ0239)

Main P.C.B. - FL Drive P.C.B. Extension Cable
(RFKZ0238)

FL Drive P.C.B.

Front Jack P.C.B.

Caution: For only this connector, red wire should be connected to pin 12.



14.3. Checking and Repairing of Main P.C.B.

1. Top Case

- Remove 4 Screws (A) on side.
- Remove 3 Screws (B) on rear.
- Remove Top Case.

2. Front Panel

- Remove one Screw (A) on center.
- Unlock 4 Locking Tabs (A),(B),(C),(D)
- Unlock 3 Locking Tabs (E) on bottom
- Remove Front Panel

3. Power Unit

- Disconnect Power Connector from Power P.C.B.
- Remove 3 Screws (A) fixing Power Unit with Rear Panel
- Remove 1 Screw (B) fixing Power Unit with Center Chassis
- Pull up Power Unit to remove it from hanging 3 tabs (A)

4. Rear Panel with Fan Motor

- Disconnect Fan Connector
- Remove 5 Screws (A) and 1 Screw (B) fixing Rear Panel
- Unlock 2 Locking Tabs to remove Rear Panel with Fan Motor

5. VTR Mechanism Unit

- Disconnect 3 Connectors
- Remove 3 Black Screws (A)
- Remove 3 Screws (B), (C) and (D)
- Lift up VTR Mech. Unit to remove it

6. Main P.C.B.

- Disconnect 5 Connectors from Digital I/F P.C.B.
- Remove 1 Screw (A) fixing Main P.C.B. to 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

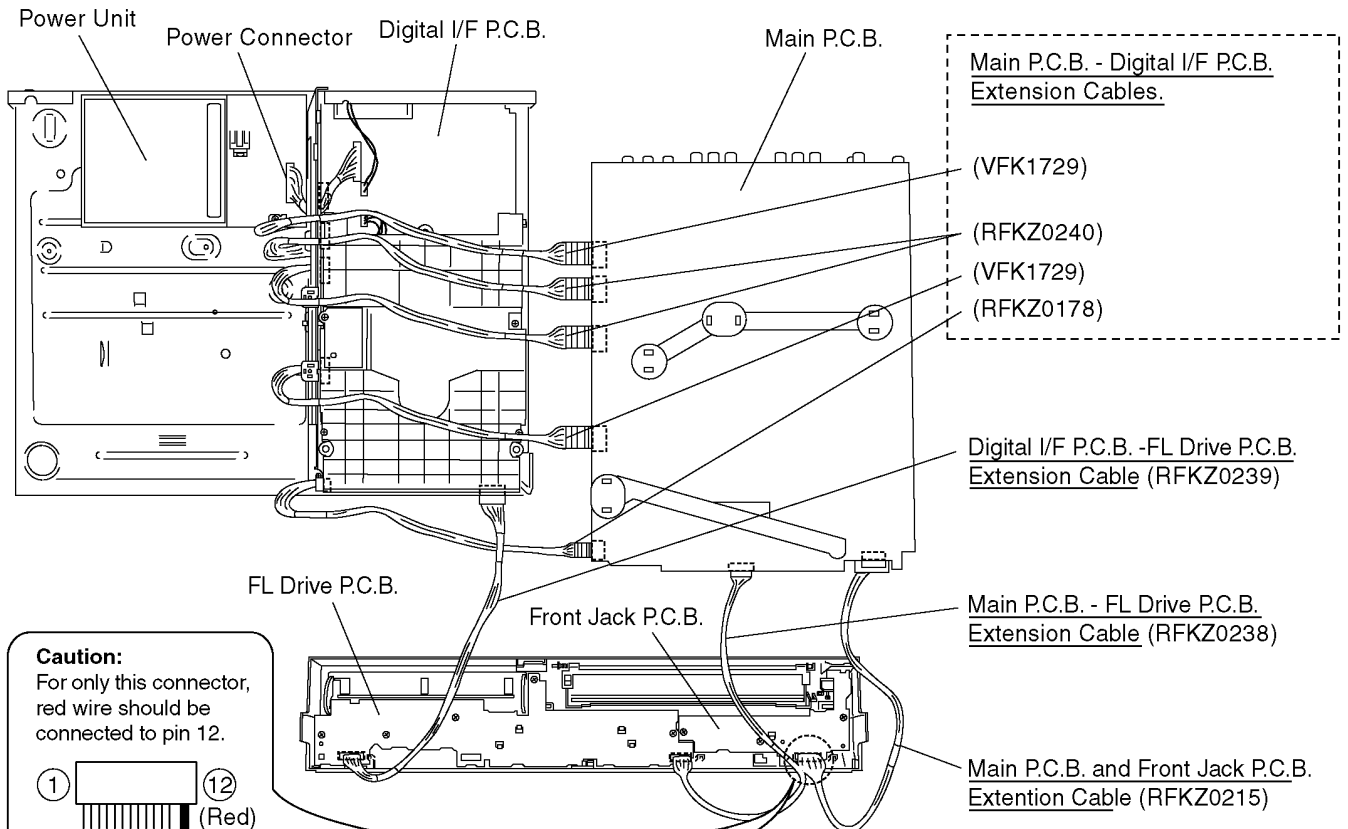
Hold Main P.C.B. with VTR Mechanism, make it upside-down, and put it. Attach Rear Panel with Fan to Chassis and connect Fan Connector. Attach Power Unit and connect Power Connector.

Connect Extension Cables,
 *between Main P.C.B. and Digital I/F P.C.B. with (RFKZ0178/ RFKZ0240 x 2/ VFK1729 x 2),
 *between Main P.C.B. and Front Jack P.C.B. with (RFKZ0215),
 *between Main P.C.B. and FL Drive P.C.B. with (RFKZ0238),
 *between Digital I/F P.C.B. and FL Drive P.C.B. with (RFKZ0239)

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

Caution 2: Original screw should be used.

Caution 3: In some case, washer is used for 2 Black Screws fixing front side of R4 Mechanism. In this case, do not mistake washer position when installing R4 Mechanism.



14.4. Checking and Repairing of Digital P.C.B.

1. Top Case

Remove 4 Screws (A) on side

Remove 3 Screws (B) on rear

Remove Top Case

2. DVD-RAM Drive

Remove 3 Screws (A) fixing DVD-RAM Drive

Lift up DVD-RAM Drive slightly

Remove Cable between DVD-RAM Drive and Digital I/F P.C.B.

Disconnect FFC from DVD-RAM Drive

Remove DVD-RAM Drive and put it beside chassis.

3. Digital P.C.B.

Remove 4 Screws (A) fixing DVD Angle.

Remove DVD Angle.

Disconnect FFC from Digital P.C.B.

Remove 1 Screw (B) fixing Digital P.C.B.

Unlock Clamper (A) locking Digital P.C.B., pay attention to Connector (A), and pull out Digital P.C.B. to disconnect Connector (A)

Connect Extension Cables,

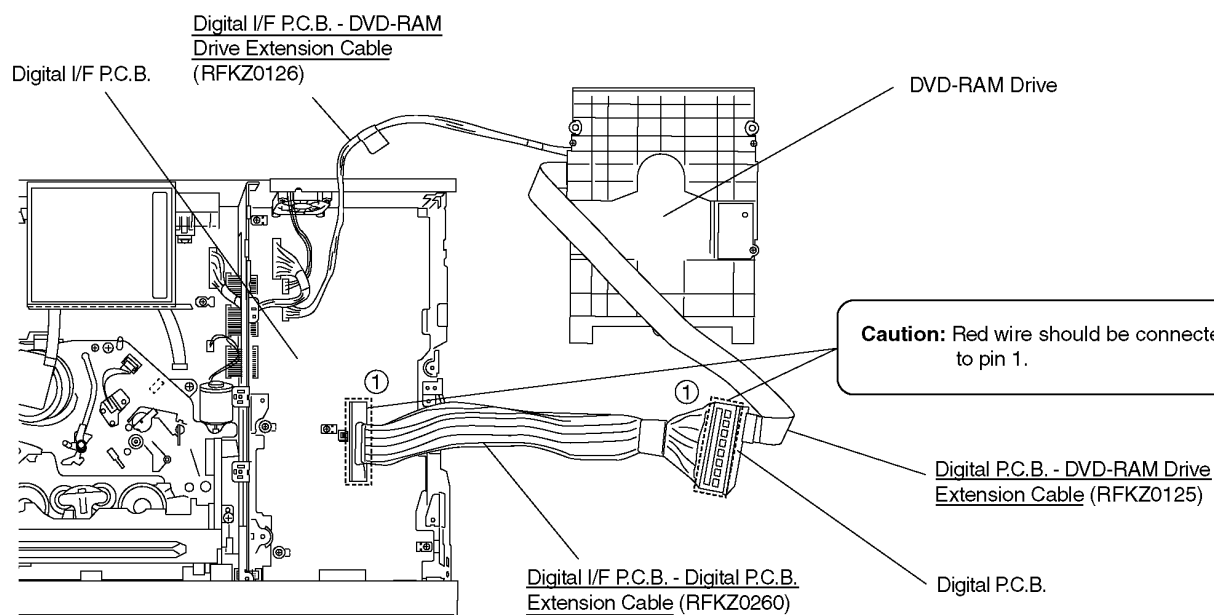
*between Digital I/F P.C.B. and Digital P.C.B. with (RFKZ0260),

*between Digital I/F P.C.B. and DVD-RAM Drive with(RFKZ0126),

*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125).

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

Caution 2: Original screw should be used.



14.5. Checking and DVD-RAM Drive

1. Top Case

Remove 4 Screws (A) on side.

Remove 3 Screws (B) on rear.

Remove Top Case.

2. DVD-RAM Drive

Remove 3 Screws (A) fixing DVD-RAM Drive

Lift up DVD-RAM Drive slightly

Remove Cable between DVD-RAM Drive and Digital I/F P.C.B.

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

Remove DVD-RAM Drive and put it beside chassis

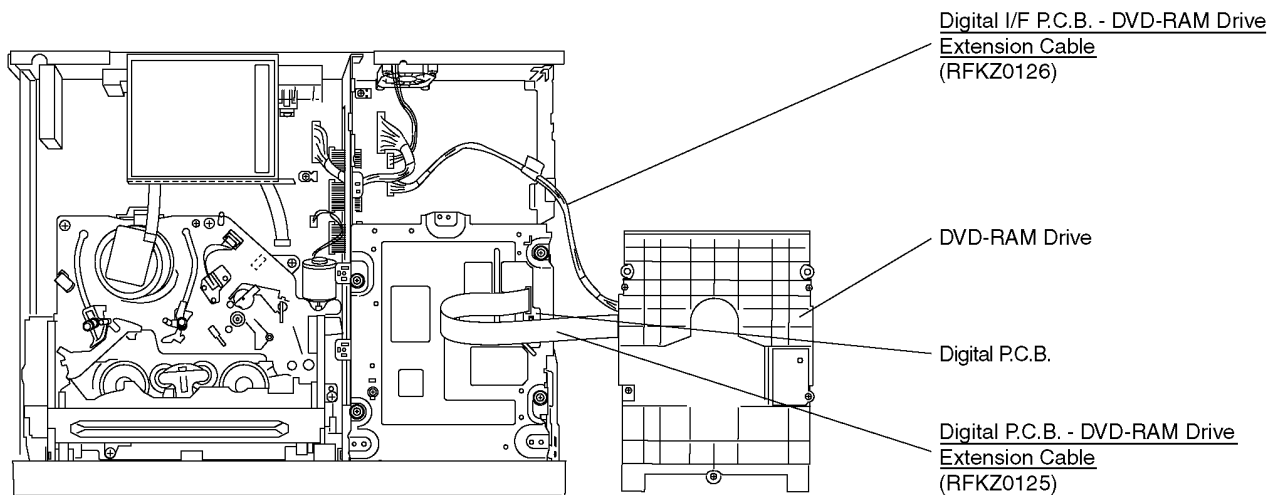
Connect Extension Cables,

*between Digital I/F P.C.B. and DVD-RAM Drive with (RFKZ0126),

*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125)

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

Caution 2: Original screw should be used.



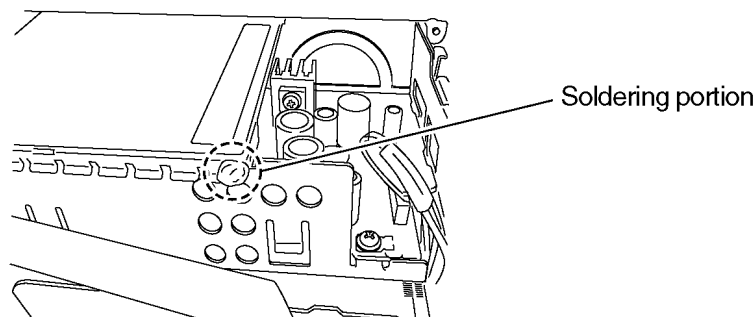
15 (Power P.C.B.) Caution after replacing parts

Caution:

In some case, Shield Case of Power Unit is soldered.

In this case, remove solder when removing Shield Case and certainly solder Shield Case when installing.

If soldering was not done, noises mix into picture.



16 (DVD) Caution after parts replacing parts

16.1. (DVD) After replacing the RAM Drive with new one

After replacing RAM drive unit, TEST mode is not necessary. Please confirm operation for RAM drive

16.2. (DVD) When the unit does not operate normally after replacing the Timer Microprocessor (IC37501) or Digital I/F P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	While power is ON, short IC37508-4 pin (RESET-OUT) and the GND momentarily.	"RESET (L)" is transmitted to the XRESET terminal of Timer Microprocessor (IC37501-11 pin), then the unit operates normally.

16.3. (DVD) After replacing EEPROM (IC37502) or Digital I/F P.C.B.

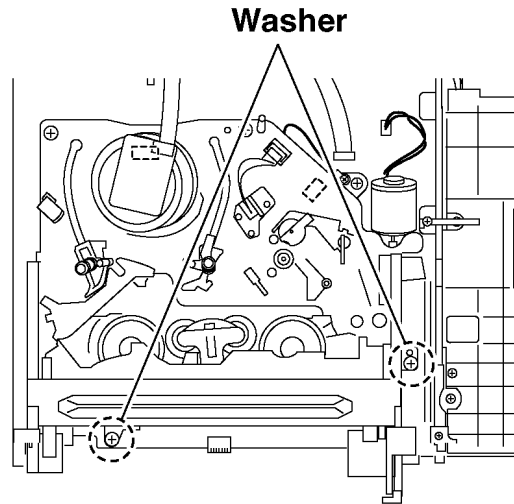
IC37502 has Cock setting data, Tuning data, Self-Diagnosis data (DVD & VHS) and VHS PG Shifter adjustment data.

Therefore after replacing IC37502, PG Shifter should be adjusted (refer to 17.1).

17 (VHS) Caution after replacing parts

Caution for attaching VTR Mechanism Unit

In some case, washer is used for 2 Black Screws fixing front side of R4 Mechanism.
In this case, do not mistake washer position when installing R4 Mechanism.



PG Shifter Automatic Adjustment and X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT should be performed after replacing DD Cylinder, IC37502 (EEPROM) or Digital I/F P.C.B.

Note:

The "X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT" is not necessary after only replacement of IC37502 (EEPROM) or Digital I/F P.C.B.

17.1. (VHS) Adjustment Procedures after replacing DD Cylinder, IC37502 (EEPROM) or Digital I/F P.C.B.

ADJUSTMENT PROCEDURE

PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode 1. Press the FF key and the EJECT key simultaneously for more than 3 seconds.	00000
Activate the Service Mode 2 2. While keep pressing FF key, press the EJECT key twice.	20000
Activate the Entering Mode. 3. Press the EJECT key for more than 3 seconds.	2 00
Set the Mode 2. 4. Press the CH UP key once.	2 100
Insert the alignment cassette tape (VFM8125H3F) 5. The PG Shifter Adjustment starts automatically.	2 100
When the sequence of the automatic adjustment has been terminated, the following action has been made. I SUCCEED: The cassette tape is ejected. I ERROR: The "F20", "F21", "F22" or "F23" is displayed. Refer to next PG Shifter Adjustment Self-Diagnosis Indication Table regarding the details of the indications.	
Exit from Service Mode. 6. Press FF and EJECT keys simultaneously in 6 times. Then the FIP becomes normal indication.	10:00
(Normal Indication)	

PG SHIFTER AUTOMATIC ADJUSTMENT SELF-DIAGNOSIS INDICATION

F20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)
F21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)
F22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.)
F23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)

NOTE:

When DD Cylinder was replaced, the Tape Interchangeability adjustment (X-Value Adjustment, P2 and P3 Posts Adjustment) shown below should be performed after the PG Shifter Automatic Adjustment.

17.2. (VHS) X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT

1. Set the Auto Tracking to off.

(1) Press the FF key and the EJECT key simultaneously for more than 3 seconds to enter Service Mode.

(2) While keep pressing FF key, press the EJECT key twice to activate Service Mode 2, then Auto-Tracking is turned off.

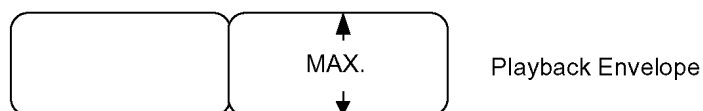
2. Perform the X-VALUE ADJUSTMENT

(1) After turning off the Auto tracking, playback the alignment Tape and press [(VHS) CH UP] and [(VHS) 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	VFM8125H3F
Test Point of Playback Envelope	TW3001 (or TW4502)

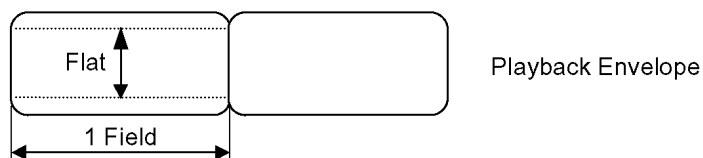


3. Perform the LINEARITY ADJUSTMENT

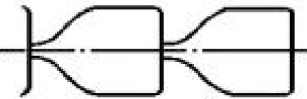



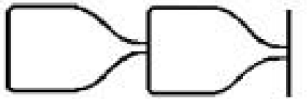

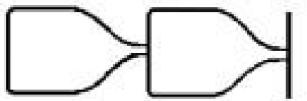

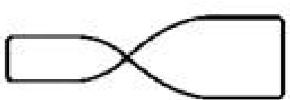


(1) After turning off the Auto tracking, playback the alignment Tape and press [(VHS) CH UP] and [(VHS) CH DOWN] keys simultaneously to adjust the tracking to FIX value.

(2) Adjust the LINEARITY so that the envelope is flat when moving tracking to (+) and (-) directions.

Alignment Tape	VFM8125H3F
Test Point of Playback Envelope	TW3001 (or TW4502)



I 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 1revolution)
	P3 Post		

17.3. (VHS) Caution after replacing VHS Microprocessor (IC6001)

After replacing VHS Microprocessor (IC6001), if the unit does not operate normally, reset IC6001.

1. Turn on the power.
2. Short out circuit between TL6004 (RESET_L) and TL6002 (GND) momentarily to reset IC6001.

18 (DVD) 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.
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	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears in the FL displays. *[UNFORMAT] display means the unit is already updated to newest same version. Then version up is not necessary.
7	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 SERV] appears in the FL display. After checking it, turn the power off.
8	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLR LASER] appears in the FL display. After that, turn 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				

19 Voltage and Waveform Chart

Note)

Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

19.1. Power P.C.B.

[illegible]

19.2. Digital I/F P.C.B.

Ref No.	IC15002									IC15003												
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8					
REC	12.3	0	1.3	4.1	0	1.1	0.8	3.9		12.2	4.4	1.2	1.2	1.2	0	7.5	12.2					
PLAY	12.3	0	1.3	4.1	0	1.1	0.8	3.8		12.2	4.4	1.2	1.2	1.2	0	7.7	12.3					
STOP	12.3	0	1.3	4.1	0	1.1	0.8	3.8		12.3	4.4	1.2	1.2	1.2	0	7.7	12.3					
Ref No.	IC15004									IC31502												
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5								
REC	12.3	4.5	1.2	1.2	0.8	0	10.8	12.3		5.8	4.9	3.3	-	0								
PLAY	12.3	4.5	1.2	1.2	0.8	0	10.9	12.3		5.8	4.9	3.3	-	0								
STOP	12.3	4.5	1.2	1.2	0.8	0	10.9	12.3		5.8	4.9	3.3	-	0								
Ref No.	IC31510																					
MODE	1	2	3	4	5																	
REC	1.2	0	4.9	5.8	5.0																	
PLAY	1.2	0	4.9	5.8	5.0																	
STOP	1.2	0	4.9	5.8	5.0																	
Ref No.	IC35005																					
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
REC	4.7	2.2	2.3	1.8	4.6	1.8	0	2.1	2.1	0	2.2	2.2	1.9	1.9	1.9	2.2						
PLAY	4.7	2.2	2.3	1.8	4.6	1.8	0	2.1	2.1	0	2.2	2.2	1.9	1.9	1.9	2.2						
STOP	4.7	2.2	2.3	1.8	4.6	1.8	0	2.1	2.1	0	2.2	2.2	1.9	1.9	1.9	2.2						
Ref No.	IC37001																					
MODE	1	2	3	4	5	6	7	8														
REC	5.8	1.8	1.8	0	1.8	1.8	1.8	12.3														
PLAY	5.8	1.8	1.8	0	1.8	1.8	1.8	12.3														
STOP	5.8	1.8	1.8	0	1.8	1.8	1.8	12.3														
Ref No.	IC37501																					
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
REC	4.1	4.9	0	0.7	0.7	4.3	0	0	0	0	4.9	1.5	0	2.0	3.3	4.9	3.3	3.1	3.1	3.2		
PLAY	4.1	4.9	0	0.7	0.7	4.3	0	0	0	0	4.9	1.5	0	2.0	3.3	4.9	3.3	3.1	3.1	3.2		
STOP	4.1	4.9	0	0.7	0.7	4.3	0	0	0	0	4.9	1.5	0	2.0	3.3	4.9	3.3	3.1	3.1	3.2		
Ref No.	IC37501																					
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
REC	0	0	1.8	0	0	0	0	3.7	3.8	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3		
PLAY	0	0	1.8	0	0	0	0	3.7	3.8	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3		
STOP	0	0	1.8	0	0	0	0	3.7	3.8	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3		
Ref No.	IC37501																					
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
REC	0	0.1	3.1	3.3	0	0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	0	0	4.9	0	0	0		
PLAY	0	0.1	3.1	3.3	0	0	4.9	4.9	4.9	4.9	4.9	4.9	2.5	4.9	4.9	0	0	4.9	0	0		
STOP	0	0.1	3.1	3.3	0	0	4.9	4.9	4.9	4.9	4.9	4.9	2.5	4.9	4.9	0	0	4.9	0	0		
Ref No.	IC37501																					
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		
REC	0	0	4.9	0	0	0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9		
PLAY	0	0	4.9	0	0	0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9		
STOP	0	0	4.9	0	0	0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9		
Ref No.	IC37501																					
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	0	0	0	0	0	0	0	4.9	2.6	0	3.8	0	4.7	4.7	0		
PLAY	0	0	0	0	0	0	0	0	0	0	0	0	4.9	2.6	0	3.8	0	4.7	4.7	0		
STOP	0	0	0	0	0	0	0	0	0	0	0	0	4.9	2.6	0	3.8	0	4.7	4.7	0		
Ref No.	IC37501																					
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116						
REC	4.9	4.9	0	4.9	4.9	4.9	3.9	4.9	1.8	1.3	0	4.9	1.8	0	0	2.2						
PLAY	4.9	4.9	0	4.9	4.9	4.9	3.9	4.9	1.8	1.3	0	4.9	1.8	0	0	2.2						
STOP	4.9	4.9	0	4.9	4.9	4.9	3.9	4.9	1.8	1.3	0	4.9	1.8	0	0	2.2						

Ref No.	IC37502								IC37503									
MODE	1	2	3	4	5	6	7	8	1	2	3	4	5					
REC	0	0	0	0	4.2	4.5	4.8	4.9	4.9	4.9	0	-	-					
PLAY	0	0	0	0	4.2	4.5	4.8	4.9	4.9	4.9	0	-	-					
STOP	0	0	0	0	4.2	4.5	4.8	4.9	4.9	4.9	0	-	-					
Ref No.	IC37504				IC37505					IC37508								
MODE	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5			
REC	5.7	0	4.9	1.2	3.3	2.3	3.3	0	-	-	0	0	0	4.9	4.9			
PLAY	5.7	0	4.9	1.2	3.3	2.3	3.3	0	-	-	0	0	0	4.9	4.9			
STOP	5.7	0	4.9	1.2	3.3	2.3	3.3	0	-	-	0	0	0	4.9	4.9			
Ref No.	IC45001				IC45002													
MODE	1	2	3	4	5	1	2	3	4	5	6	7	8					
REC	1.3	0	4.9	5.9	5.0	10.6	5.0	5.0	0	5.0	5.0	5.0	12.3					
PLAY	1.3	0	4.9	5.9	5.0	10.6	5.0	5.0	0	5.0	5.0	5.0	12.3					
STOP	1.3	0	4.9	5.9	5.0	10.6	5.0	5.0	0	5.0	5.0	5.0	12.3					
Ref No.	IC45003																	
MODE	1	2	3	4	5	6	7	8										
REC	3.8	2.5	2.5	0	2.5	2.5	3.8	10.6										
PLAY	3.8	2.5	2.5	0	2.5	2.5	3.8	10.6										
STOP	3.8	2.5	2.5	0	2.5	2.5	3.8	10.6										
Ref No.	Q15001								Q15002									
MODE	1	2	3	4	5	6	7	8	1	2	3	4	5	6				
REC	12.3	12.3	12.3	6.1	12.3	12.3	12.3	12.3	5.5	5.6	7.6	12.2	5.5	5.5				
PLAY	12.3	12.3	12.3	6.1	12.3	12.3	12.3	12.3	5.1	5.1	7.7	12.3	5.2	5.2				
STOP	12.3	12.3	12.3	6.1	12.3	12.3	12.3	12.3	5.1	5.1	7.7	12.3	5.2	5.2				
Ref No.	Q15003				Q33501				Q33502				Q33503					
MODE	1	2	3	4	5	6	E	C	B	E	C	B	E	C	B			
REC	1.1	1.1	10.9	12.3	1.1	1.1	2.7	0	2.1	2.0	5.0	1.6	3.1	0	2.4			
PLAY	1.1	1.1	10.9	12.3	1.1	1.1	2.7	0	2.1	2.0	5.0	1.6	3.1	0	2.4			
STOP	1.1	1.1	10.9	12.3	1.1	1.1	2.7	0	2.1	2.0	5.0	1.6	3.1	0	2.4			
Ref No.	Q33504				Q33505				Q37001									
MODE	E	C	B		E	C	B		E	C	B							
REC	1.8	5.0	1.6		2.4	0	1.8		5.7	12.3	5.1							
PLAY	1.8	5.0	1.6		2.4	0	1.8		5.7	12.3	5.1							
STOP	1.8	5.0	1.6		2.4	0	1.8		5.7	12.3	5.1							
Ref No.	QR15001			QR15002			QR15003			QR15004			QR15005					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
REC	0	0	4.9	0	4.4	0	0	0	4.9	0	0	4.9	0	0	4.9			
PLAY	0	0	4.9	0	4.4	0	0	0	4.9	0	0	4.9	0	0	4.9			
STOP	0	0	4.9	0	4.4	0	0	0	4.9	0	0	4.9	0	0	4.9			
Ref No.	QR15007			QR33701			QR37501			QR37502			QR45001					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
REC	0	4.5	0	0	4.4	0.2	0	0	4.9	0	0	2.2	5.8	-0.4	5.8			
PLAY	0	4.5	0	0	4.4	0.2	0	0	4.9	0	0	2.2	5.8	-0.4	5.8			
STOP	0	4.5	0	0	4.4	0.2	0	0	4.9	0	0	2.2	5.8	-0.4	5.8			
Ref No.	QR45002			QR45003			QR45004			QR45005			QR45006					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
REC	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	4.9			
PLAY	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	4.9			
STOP	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	-0.4	0	0	4.9			
Ref No.	QR45007			QR45008			QR45009											
MODE	E	C	B	E	C	B	E	C	B									
REC	0	5.7	0	0	5.7	0	0	0	2.3									
PLAY	0	5.7	0	0	5.7	0	0	0	2.3									
STOP	0	5.7	0	0	5.7	0	0	0	2.3									

Ref No.	QR3901				QR4003				QR4004				QR4005				QR4501			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	4.4	0		0	0	0		5.0	0	4.8		0	0.1	4.8		0	0	4.6	
PLAY	0	4.4	0		0	0	0		5.0	4.9	0		0	5.7	0		0	0	4.6	
STOP	0	4.4	0		0	0	0		5.0	4.9	0		0	5.7	0		0	0	4.6	
Ref No.	QR4908				QR4911				QR4912				QR4913				QR4914			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	-0.4	0		4.7	4.6	0		0	0	4.6		0	0	4.6		0	0	4.4	
PLAY	0	-0.3	0		4.7	4.6	0		0	0	4.6		0	0	4.6		0	0	4.4	
STOP	0	-0.3	0		4.7	4.6	0		0	0	4.6		0	0	4.6		0	0	4.4	
Ref No.	QR4915				QR4916				QR6801				QR7401				QR7402			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	0	-0.3		0	0	-0.3		12.2	0	12.0		26.7	26.6	0		26.7	26.6	0	
PLAY	0	0	-0.3		0	0	-0.3		12.2	0	12.0		26.7	26.6	0		26.7	26.6	0	
STOP	0	0	-0.3		0	0	-0.3		12.2	0	12.0		26.7	26.6	0		26.7	26.6	0	

19.4. FL Drive P.C.B.

Ref No.	IC7502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.8	2.5	4.2	0.8	0	2.2	2.2	4.9	-19.8	-22.7	-19.7	-19.7	-28.5	-25.6	-19.7	-19.7	-28.5	4.9	-19.7	-28.5
Ref No.	IC7502																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	-25.6	-22.6	-28.5	-10.8	-19.7	-7.9	-16.8	-11.0	-16.8	-19.7	-22.7	-5.0	-10.9	-13.8	-16.8	-28.5	-22.7	-28.5	-28.5	-25.6
Ref No.	IC7502																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	-28.5	-16.8	-19.8	-22.6	-25.6	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-28.5	-25.7	-25.7	-25.7	-25.7	-25.7	-25.8	-25.7
Ref No.	IC7502																			
MODE	61	62	63	64																
STOP	-25.7	-25.7	-25.7	-29.0																
Ref No.	QR7501				QR7501				QR7503				QR7505							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
STOP	-25.9	4.9	-25.8		0	4.4	0		0	4.3	0		0	0.1	4.8					

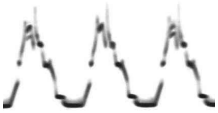

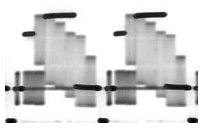
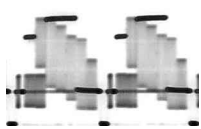
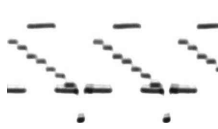
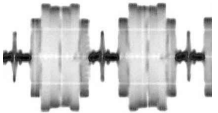


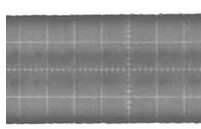

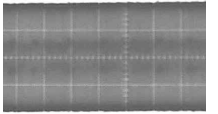



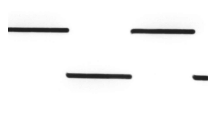

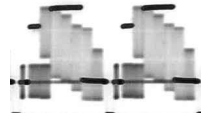



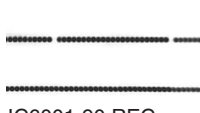
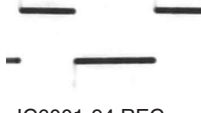


19.5. Front Jack P.C.B.



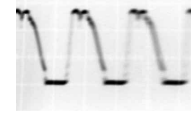




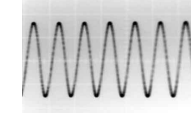
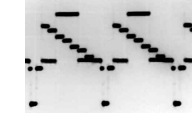
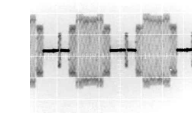
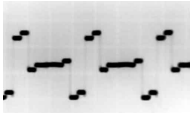
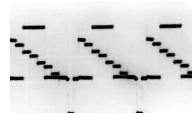
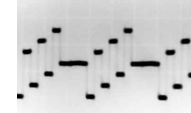
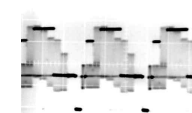
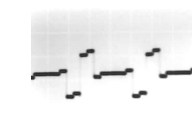
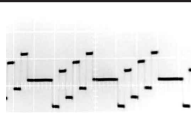
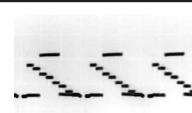
Ref No.	IC7801		
MODE	1	2	3
STOP	4.9	0	4.9

19.6. P9001 Connector

Ref No.	P9001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	-	-	1	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
PLAY	-	-	-	1	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
STOP	-	-	-	1	-	3.3	3.3	3.2	0.2	3.1	-	3.2	-	3.3	2.3	-	5.1	-	-	-
Ref No.	P9001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
PLAY	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
STOP	-	-	-	-	0	-	0	-	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
Ref No.	P9001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.8	0	3.8	1.1	-
PLAY	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.8	0	3.8	1.1	-
STOP	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	3.8	0	3.8	1.1	-
Ref No.	P9001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	-	1.0	-	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	0.3	0	-
PLAY	0	-	1.0	-	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	0.3	0	-
STOP	0	-	1.0	-	0	0	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	0.3	0	-
Ref No.	P9001																			
MODE	81	82	83	84	85	86	87	88												
REC	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
PLAY	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
STOP	0	1.5	1.5	1.5	0	1.5	2.1	1.5												

19.7. Waveform

 IC2501-22,23,25 PLAY 8.0Vp-p (2msec.div.)	 IC3001-6 REC/PLAY 0.8Vp-p (2msec.div.)	 IC3001-19 REC 1.1Vp-p (20usec.div.)	 IC3001-29 REC/PLAY 2.2Vp-p (20usec.div.)	 IC3001-36 PLAY 0.4Vp-p (20usec.div.)
 IC3001-45,46 REC/PLAY 0.4Vp-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 1.4Vp-p (1msec.div.)
 IC4501-21(TW4501) REC 1.4Vp-p (20usec.div.)	 IC4501-53 REC/PLAY 1.8Vp-p (0.5msec.div.)	 IC4501-57 REC/PLAY 1.8Vp-p (0.5msec.div.)		
 IC6001-18(TW2001) REC 5.0Vp-p (10msec.div.)	 IC6001-19 PLAY 5.0Vp-p (5msec.div.)	 IC6001-50 REC/PLAY 2.0Vp-p (20usec.div.)	 IC6001-52 REC/PLAY 2.0Vp-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.)				

 T11101-2 STOP 60Vp-p (5 μ sec.div)	 T11101-3 STOP 56Vp-p (5 μ sec.div)	 T11101-8 STOP 30Vp-p (5 μ sec.div)	 T11101-9 STOP 560Vp-p (5 μ sec.div)	 T11101-12 STOP 8Vp-p (5m sec.div)
 IC11201-1 STOP 8.0Vp-p (5 μ sec.div)	 IC11201-2 STOP 0.5Vp-p (5 μ sec.div)	 P9001-29,31 REC/PLAY 0.8Vp-p (1m sec.div)	 P9001-47 REC/PLAY 1.0Vp-p (20 μ sec.div)	 P9001-51 REC/PLAY 0.7Vp-p (20 μ sec.div)
 P9001-55 REC/PLAY 0.6Vp-p (20 μ sec.div)	 P9001-59 REC/PLAY 1.0Vp-p (20 μ sec.div)	 P9001-63 REC/PLAY 0.6Vp-p (20 μ sec.div)	 P9001-83 REC/PLAY 1.0Vp-p (20 μ sec.div)	 JK35001-14 REC/PLAY 1.1Vp-p (20 μ sec.div)
 JK35001-18 REC/PLAY 1.1Vp-p (20 μ sec.div)	 JK35001-22 REC/PLAY 2.0Vp-p (20 μ sec.div)			

20 Abbreviations

20.1. DVD

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

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

20.2. VHS

443NT [L] A. COMP A. COMPO A. D.P [L] A. D/L [L] A. DEF [S] A. DEF [S] [L] A. DUB P [L] A. DUB [H] A. ERASE A. H. SW A. HEAD [R] A. HEAD [W] A. IN [L] A. IN [R] A. MUT [H] A. MUTE [H] A. OUT [L] A. OUT [R] A. RF OUT A/V/S. DATA AC ONLINE AC. O/EE. H AFC S C AFC [S] AFC. DEF ARFC OUT ART. V ART. V. MM ART. V/H/N AT. V/H/N ATSW/TEST/NOR/SE AUDIO IN [L] AUDIO IN [R] AUDIO OUT [L] AUDIO OUT [R] AUDIO SELECT [H] AUDIO. L AUDIO. R AV CNT AV CTL AV CTL/S. CLK AV. C.M. AVCNT/METER. R AVSW/METER. L B MODE. H B.G.P BACKUP 5V BAND. U.E. BANDVL. D BI/MI [L]	4.43 NTSC ① AUDIO COMPONENT SIGNAL AUDIO COMPONENT SIGNAL AUDIO DUBBING PAUSE ① AUDIO DUBBING PAUSE ① AUDIO DEFEAT AUDIO DEFEAT AUDIO DUBBING PAUSE ① AUDIO DUBBING ② AUDIO ERASE AUDIO HEAD SWITCHING PULSE AUDIO HEAD (REC) AUDIO HEAD (PLAY) AUDIO INPUT (L) AUDIO INPUT (R) AUDIO MUTE ② AUDIO MUTE ② AUDIO OUTPUT (L) AUDIO OUTPUT (R) AUDIO RF SIGNAL OUTPUT AV SW/SERIAL DATA AC ONLINE AC ONLINE/EE ② AFC S CURVE AFC S CURVE AFC DEFEAT AUDIO RF SIGNAL OUTPUT ARTIFICIAL VERTICAL SYNC SIGNAL ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI ARTIFICIAL VERTICAL SYNC SIGNAL ②/NORMAL ARTIFICIAL VERTICAL SYNC SIGNAL TEST/NORMAL/SERVICE AUDIO INPUT (L) AUDIO INPUT (R) AUDIO OUTPUT (L) AUDIO OUTPUT (R) AUDIO SELECT ② AUDIO (L) AUDIO (R) AV CONTROL AV CONTROL AV CONTROL/SERIAL CLOCK AV CONTROL MODE AV CONTROL/LEVEL METER (R) AV SW/LEVEL METER (L) B MODE ② BURST GATE PULSE BACK UP 5V BAND U BAND VL BILINGUAL/MIX ①	BIL BIL [L] BIL. [H] BIL/M1 [L] BS CLOCK BS DATA BS LCH IN BS MIX [H] BS MON [H] BS MONI [H] BS RCH IN BS VIDEO BS VIDEO/BS1 BS [H] BS. LEVEL BS. M [H] BS/VTR [H] BUS CLK BUS LSN BUS TLK BUZZER CAP EC CAP M GND CAP. ET CAP. FG1 CAP. FG2 CAS. SW CCN CCP CHM CHP CINEM [L] CINEMA [L] CINEMA/MIX CKL CKS CL CLK CLK (C.G) CLOCK. IN CLP COL/B/W/NOR COLOR [H] CONV CS CTL GND CTL HEAD [+] CTL HEAD [-] CTL [+] CTL [-] CUE BIAS CURRENT LIM CYL ET	BILINGUAL BILINGUAL ① BILINGUAL ② BILINGUAL ① BS CLOCK BS DATA BS L CHANNEL INPUT BS MIX ② BS MONITOR ② BS MONITOR ② BS R CHANNEL INPUT BS VIDEO SIGNAL BS VIDEO SIGNAL BS ② BS LEVEL BS MONITOR ② BS/VTR ② BUS CLOCK BUS LISTEN BUS TALK BUZZER CAPSTAN TORQUE CONTROL CAPSTAN MOTOR GND CAPSTAN TORQUE CONTROL CAPSTAN FG1 PULSE CAPSTAN FG2 PULSE CASSETTE SW PLAYBACK CONTROL SIGNAL (-) PLAYBACK CONTROL SIGNAL (+) CONTROL SIGNAL (+) CONTROL SIGNAL (-) CINEMA ① CINEMA ① CINEMA/MIX RATCH LOCK SHIFT LOCK CLOCK CLOCK CLOCK CLOCK CLOCK INPUT CLAMP COLOUR/BLACK & WHITE/NORMAL COLOUR ② CONVERTOR CHIP SELECT CONTROL GND CONTROL HEAD (+) CONTROL HEAD (-) CONTROL HEAD (+) CONTROL HEAD (-) CUE BIAS CURRENT LIMMITER CYLINDER TORQUE CONTROL
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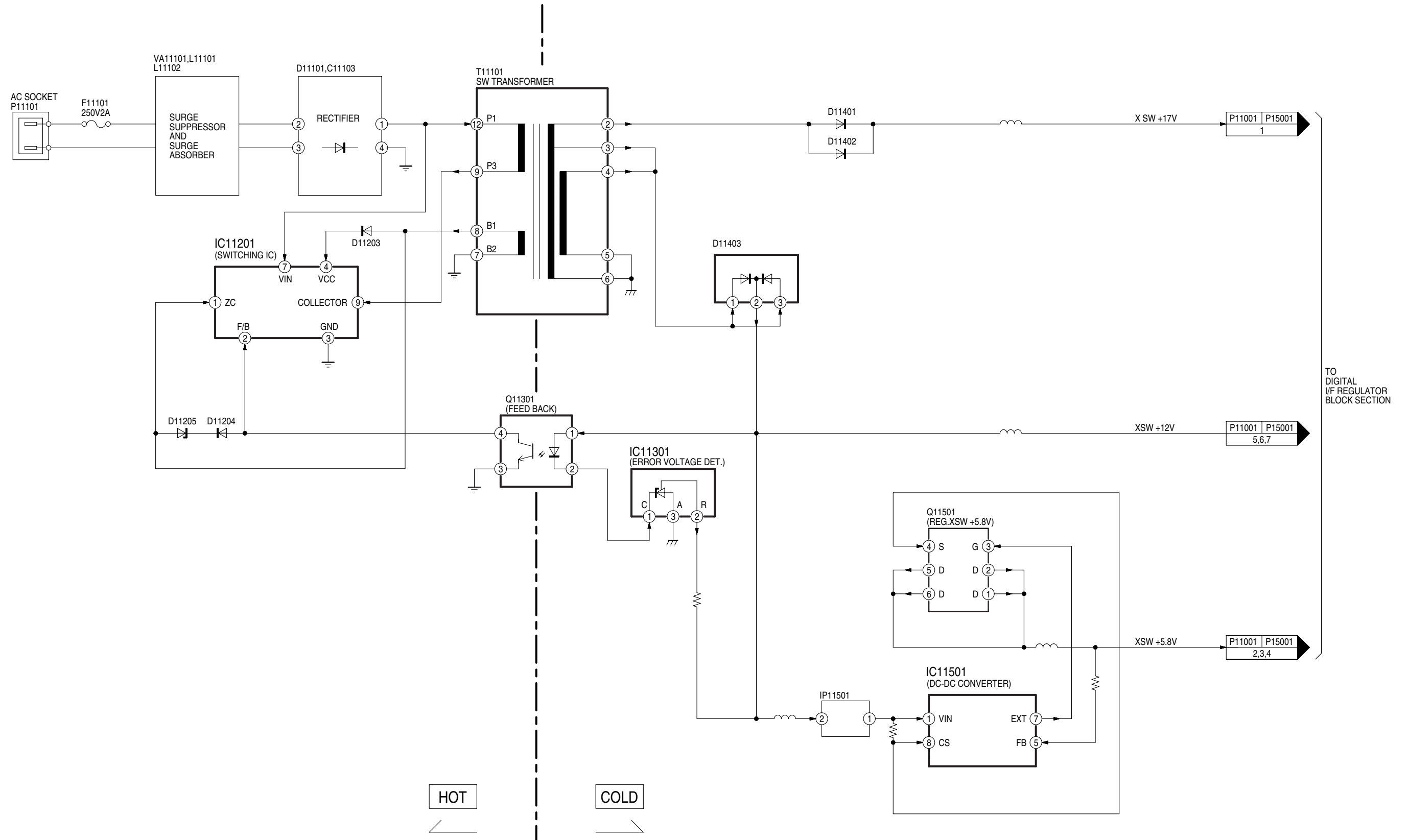
CYL GND D.F.M. REC [H] D. FM REC [L] D. GND D. REC [H] D4/S. LED D4/STILLED DAC [CLK] DAC/FSCS DAREC [H] DATA DECODER [L] DECODER [R] DEW DEW SNS DFMRE [H] E. REC 5V EC ECR EDT TRIG [L] EDIT [H] EE [H] EE [H]/INS [M] EE. VV. TR EJECT. PO EJECT/VDET ENV. SEL ENVE. OUT ENVE. SEL ENV SELECT EP [H] EP/LP [H] EP/LP/SP EP/SS [H] EPROMCS EX. REC 5V FF/REW [L] FG1 IN FG2 IN FILTER ADJUSTMENT FLY ERASE [H] FLY ON [H] FLY. E [H] FM MUT [H] FM MUTE [H] FM OUT [L] FM OUT [R] FM PACK OUT [L] FM PACK OUT [R] FM/BS SEL [L] FM/BS SEL [R] FS. CLK FUL. E [H] FULL. E [H]	CYLINDER GND DELAIED FM RECORDING \textcircled{H} DELAIED FM RECORDING \textcircled{L} DIGITAL GND DELAYED RECORDING \textcircled{H} D4/STILL LED D4/STILL LED TUNER DAC (CLOCK) TUNER DAC/FS CHIP SELECT DELAYED AUDIO RECORDING \textcircled{H} DATA DECODER (L) DECODER (R) DEW DEW SENSOR DELAYED FM AUDIO RECORDING \textcircled{H} EXCEPT RECORDING 5V ERROR TORQUE CONTROL ERROR TORQUE CONTROL REFERENCE VOLTAGE EDIT TRIGGER \textcircled{L} EDIT \textcircled{H} EE \textcircled{H} EE \textcircled{H} /INSERT \textcircled{M} EE/VV/TRICK PLAY EJECT POSITION EJECT/REVERSE SLOW LOCK ENVELOPE SELECT ENVELOPE OUTPUT ENVELOPE SELECT ENVELOPE SELECT LP \textcircled{H} LP \textcircled{H} LP/SP LP/SLOW/STILL/STOP \textcircled{H} EPROM CHIP SELECT EXCEPT RECORDING 5V FIRST FORWARD/REWIND \textcircled{L} FG1 PULSE INPUT FG2 PULSE INPUT FILTER ADJUSTMENT FLYING ERASE HEAD ON \textcircled{H} FLYING ERASE HEAD ON \textcircled{H} FLYING ERASE HEAD ON \textcircled{H} FM AUDIO MUTE \textcircled{H} FM AUDIO MUTE \textcircled{H} FM OUTPUT (L) FM OUTPUT (R) FM PACK OUTPUT (L) FM PACK OUTPUT (R) FM/BS SELECT (L) FM/BS SELECT (R) FS CLOCK FULL ERASE HEAD ON \textcircled{H} FULL ERASE HEAD ON \textcircled{H}	FULL. E. 12V GND [A] GND [TU] GND/N. SW. 12V H. SYNC H. AMP. SW H. P <R> H. P <L> H. P GND H. P OUT [L] H. P OUT [R] H. SW HEAD PHONE [L] HEAD PHONE [R] HEAD SW HEATER [+] HEATER [-] HSS HTR [+] HTR [-] I RFE ICL IF IN SELA1 IN SELA2 IN SELA3 INS L/R [L] INS. [H] INSEL A1 INSEL A2 INSERT INSERT [H] IO CS JOG1 JOG S3 LED/FOWRD JOG/F. LED JSB [H] JST. CLCK JST. CLK JST. CLOCK L. OUT L. CH [H] L. CH [L] LED (MAIN) LED (STEREO) LED (SUB) LED CKL LED CKS LED DATA LINE IN 1 [L] LINE IN 1 [R] LINE IN 2 [L] LINE IN 2 [R] LINE IN V LINE IN [L]	FULL ERASE 12V GND (ANALOG) GND (TUNER) GND/NON SW 12V HORIZONTAL SYNC HEAD AMP SW PULSE HEAD PHONE (R) HEAD PHONE (L) HEAD PHONE GND HEAD PHONE OUTPUT (L) HEAD PHONE OUTPUT (R) HEAD SW PULSE HEAD PHONE (L) HEAD PHONE (R) HEAD SW HEATER (+) HEATER (-) HORIZONTAL SYNC SIGNAL HEATER (+) HEATER (-) REFERENCE CURRENT CONTROL AGC CIRCUIT INTERMEDIATE FREQUENCY INPUT SELECT A1 POSITION INPUT SELECT A2 POSITION INPUT SELECT A3 POSITION INSERT Lch/Rch \textcircled{L} INSERT \textcircled{H} INPUT SELECT A1 POSITION INPUT SELECT A2 POSITION INSERT INSERT \textcircled{H} INPUT/OUTPUT CHIP SELECT JOG1 JOG LED/FORWARD LED JOG LED/FORWARD LED JSB \textcircled{H} JUST CLOCK JUST CLOCK JUST CLOCK Lch OUTPUT Lch \textcircled{H} Lch \textcircled{L} LED (MAIN) LED (STEREO) LED (SUB) LED SERIAL CLOCK LED SERIAL CLOCK LED SERIAL DATA LINE INPUT 1 (L) LINE INPUT 1 (R) LINE INPUT 2 (L) LINE INPUT 2 (R) LINE INPUT VIDEO LINE INPUT (L)
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LINE IN [R]	LINE INPUT (R)	P-OFF [H]	POWER OFF $\textcircled{\text{H}}$
LINE OUT [L]	LINE OUTPUT (L)	P-OFF [L]	POWER OFF $\textcircled{\text{L}}$
LINE OUT [R]	LINE OUTPUT (R)	P. FAIL	POWER FAILURE DETECT
LP [H]	LP $\textcircled{\text{H}}$	P. OFF [H]	POWER OFF $\textcircled{\text{H}}$
LPTRI [L]	LP TRICK PLAY $\textcircled{\text{L}}$	P. OFF [L]	POWER OFF $\textcircled{\text{L}}$
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL $\textcircled{\text{H}}$
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL $\textcircled{\text{L}}$ /NTSC $\textcircled{\text{H}}$
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN $\textcircled{\text{L}}$	PB. H	PLAYBACK $\textcircled{\text{H}}$
MAIN/MONO	MAIN/MONAUURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM $\textcircled{\text{H}}$	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM $\textcircled{\text{H}}$	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM $\textcircled{\text{L}}$	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 $\textcircled{\text{H}}$
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF $\textcircled{\text{L}}$
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL $\textcircled{\text{H}}$
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX $\textcircled{\text{H}}$ /BILIGUAL	R. CH [H]	Rch $\textcircled{\text{H}}$
MIC GND	MIC GND	R. CH [L]	Rch $\textcircled{\text{L}}$
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE $\textcircled{\text{H}}$ /STOP $\textcircled{\text{M}}$ /FORWARD $\textcircled{\text{L}}$
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch $\textcircled{\text{H}}$
MIC [H]	MIC $\textcircled{\text{H}}$	REC 12V	RECORDING 12V
MIX [H]	MIX $\textcircled{\text{H}}$	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX $\textcircled{\text{H}}$ /CINEMA SOUND $\textcircled{\text{L}}$	REC H	RECORDING $\textcircled{\text{H}}$
MIX/CINE	MIX $\textcircled{\text{H}}$ /CINEMA SOUND $\textcircled{\text{L}}$	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX $\textcircled{\text{H}}$ /CINEMA SOUND $\textcircled{\text{L}}$	REC OUT [L]	RECORDING OUTPUT $\textcircled{\text{L}}$
MN. H/M. L	MONAUURAL $\textcircled{\text{H}}$ /MAIN $\textcircled{\text{L}}$	REC START	RECORDING START
MN. H/MAI. L	MONAUURAL $\textcircled{\text{H}}$ /MAIN $\textcircled{\text{L}}$	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAUURAL 2/MESECAM $\textcircled{\text{L}}$	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 $\textcircled{\text{H}}$
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAUURAL $\textcircled{\text{H}}$	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAUURAL $\textcircled{\text{H}}$ /MAIN $\textcircled{\text{L}}$	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAUURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAUURAL 2/MESECAM (FM $\textcircled{\text{L}}$)	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 $\textcircled{\text{L}}$	REV MOTOR F/R	REVIEW MOTOR
NOL [H]	PAL $\textcircled{\text{H}}$ /4.43 NTSC $\textcircled{\text{M}}$ /3.58 NTSC $\textcircled{\text{L}}$		FORWARD/REVERSE
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY $\textcircled{\text{H}}$	REV MOTOR V1	REVIEW MOTOR V1
NORMAL [H]	NORMAL $\textcircled{\text{H}}$	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC $\textcircled{\text{L}}$	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	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 ①	T. END [L]	TAPE END ①
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END ①
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END ①/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 ①
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRIC PLAY ①
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 ①	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 ①	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 ①
SLW TR. REF	SLOW TRACKING REFERENCE	TV. AUDIO	TV AUDIO
	VOLTAGE	TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON ①
SOFT [H]	SOFT TAPE PLAY ①	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY ①/NORMAL ①	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON ①	UNREG19V	UNREGULATOR 19V
SP [H]	SP ①	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE ①
SSS [L]	SLOW/STILL/STOP	V. EE [L]	VIDEO EE ①
STEREO LED	STEREO LED	VCO REF	REFERENCE OSCILLATER
STEREO [H]	STEREO ①	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO ①	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE ①
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 ①
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO ①	VTR [H]	VTR ①
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPUT
SVHS CAS [L]	S-VHS CASSETTE ①	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC ①		

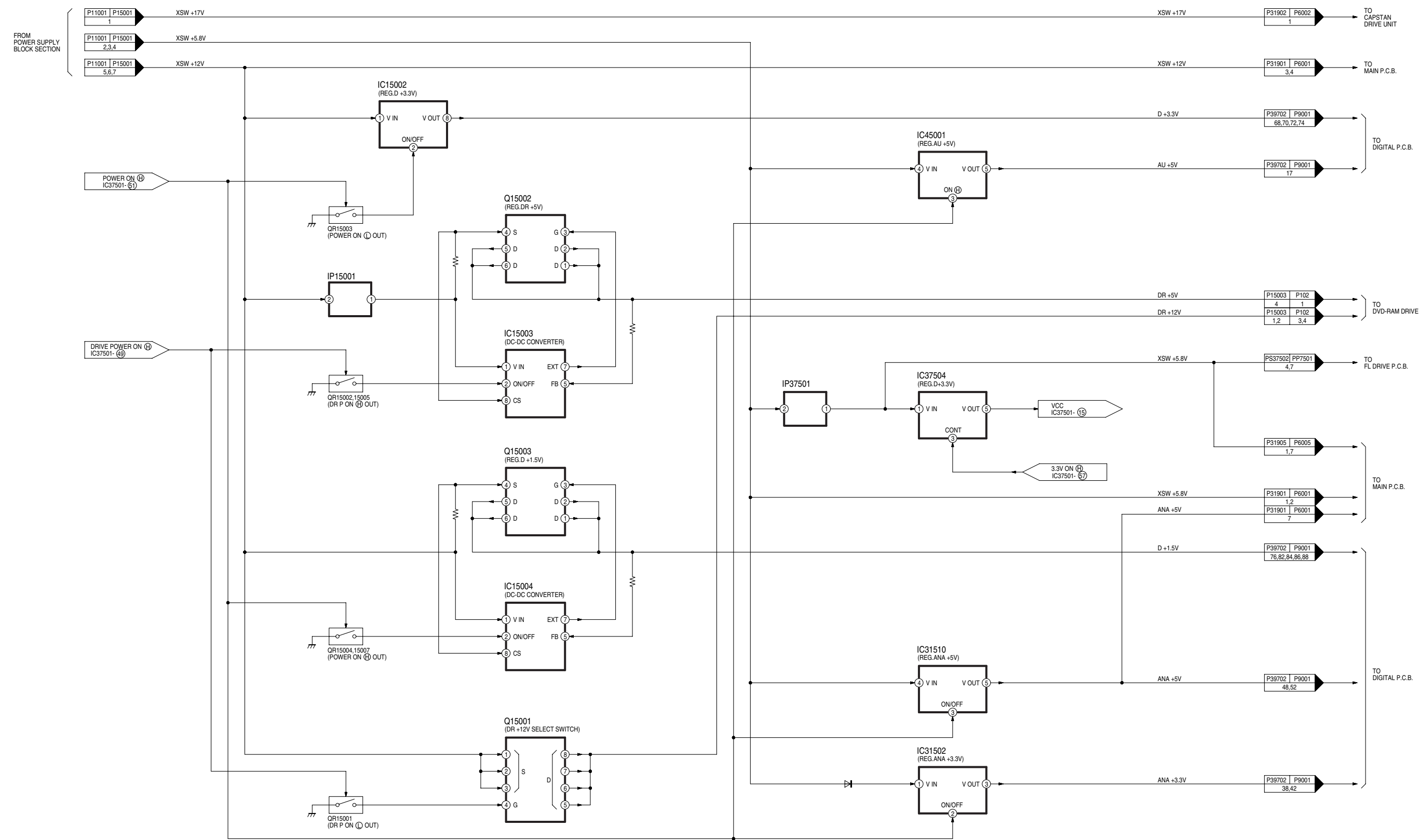
21 Block Diagram

21.1. Power Supply Block Diagram



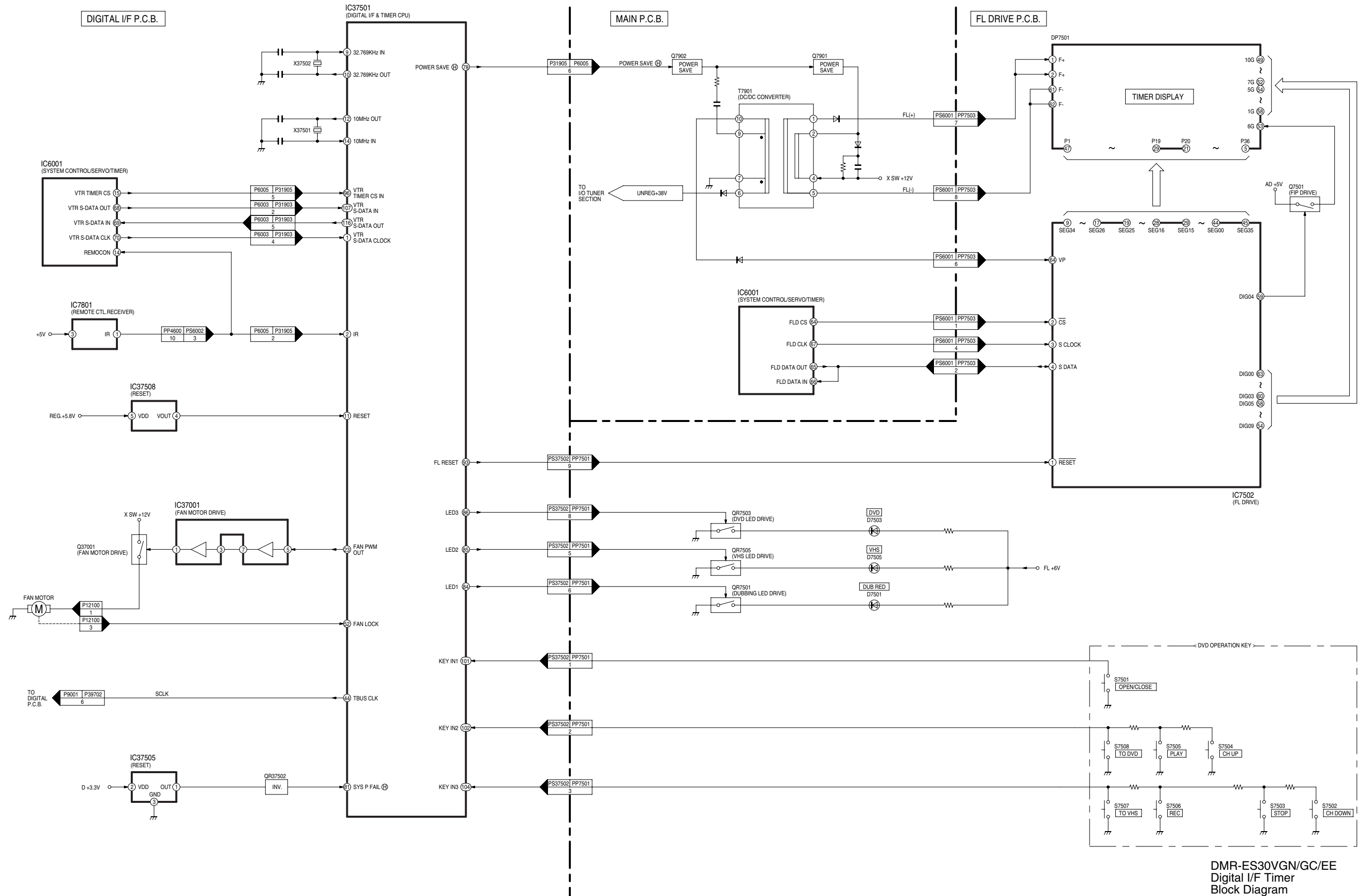
DMR-ES30VGN/GC/EE
Power Supply Block Diagram

21.2. Digital I/F Regulator Block Diagram



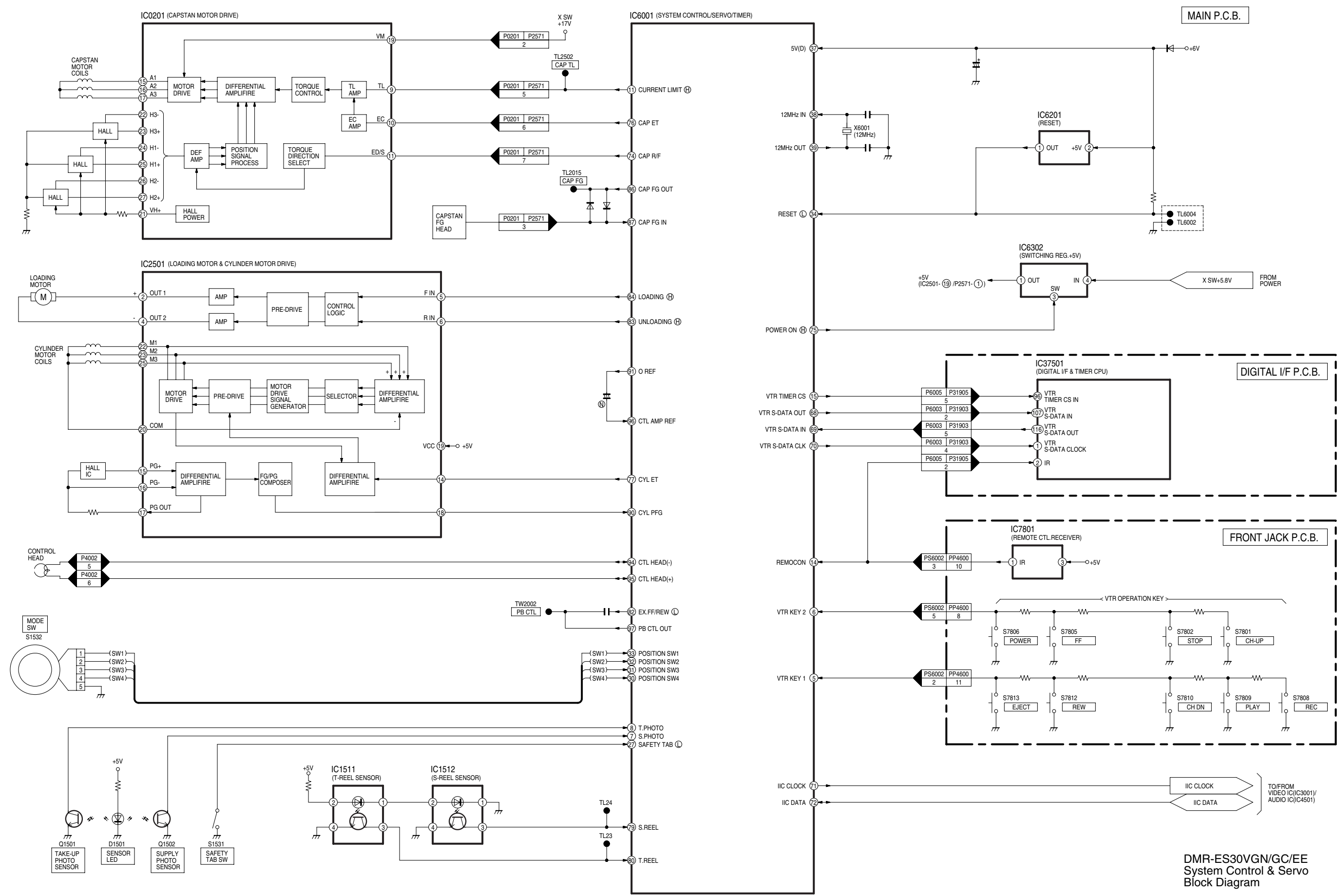
DMR-ES30VGN/GC/EE
Digital I/F Regulator
Block Diagram

21.3. Digital I/F Timer Block Diagram



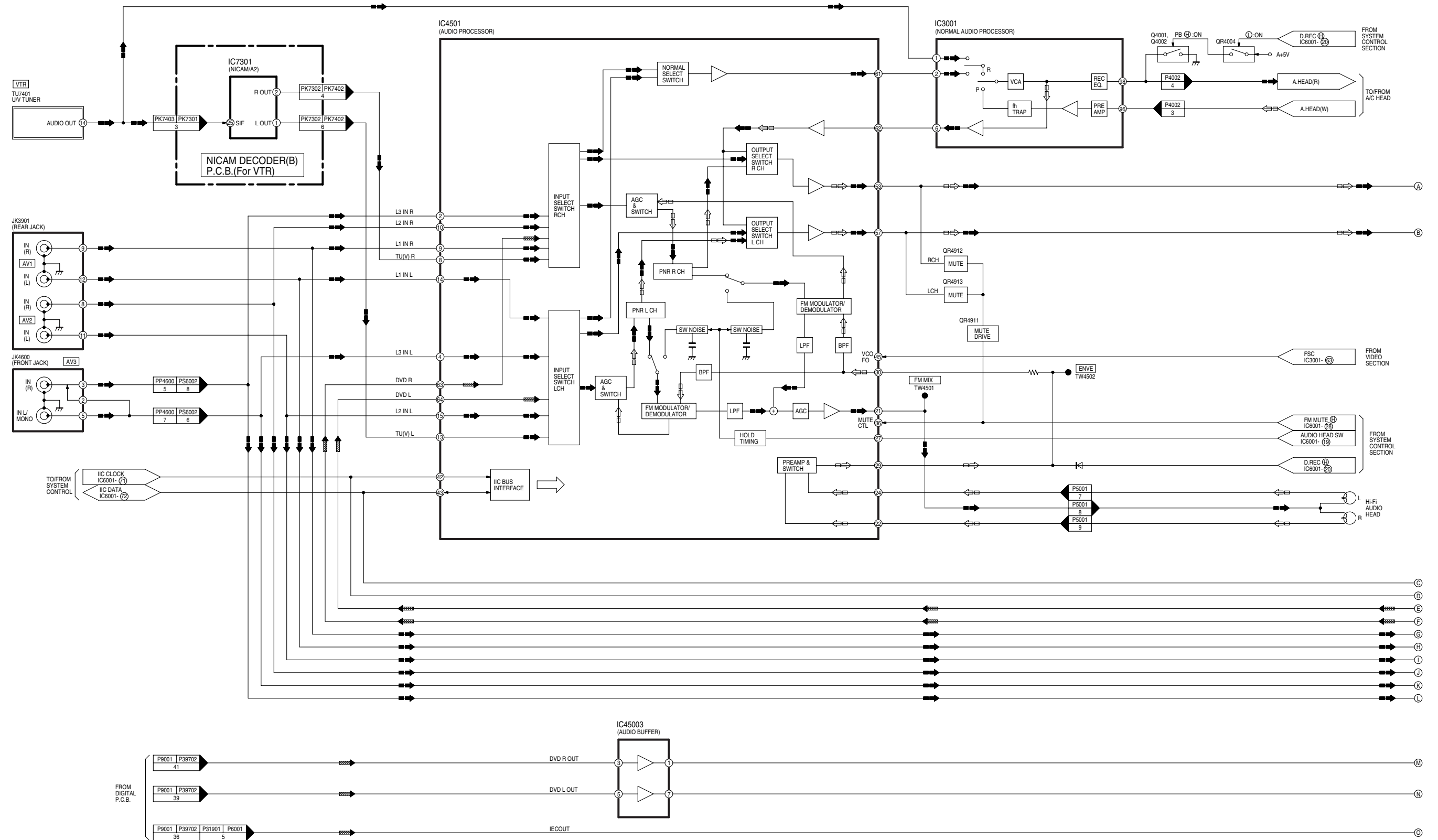
DMR-ES30VGN/GC/EE
Digital I/F Timer
Block Diagram

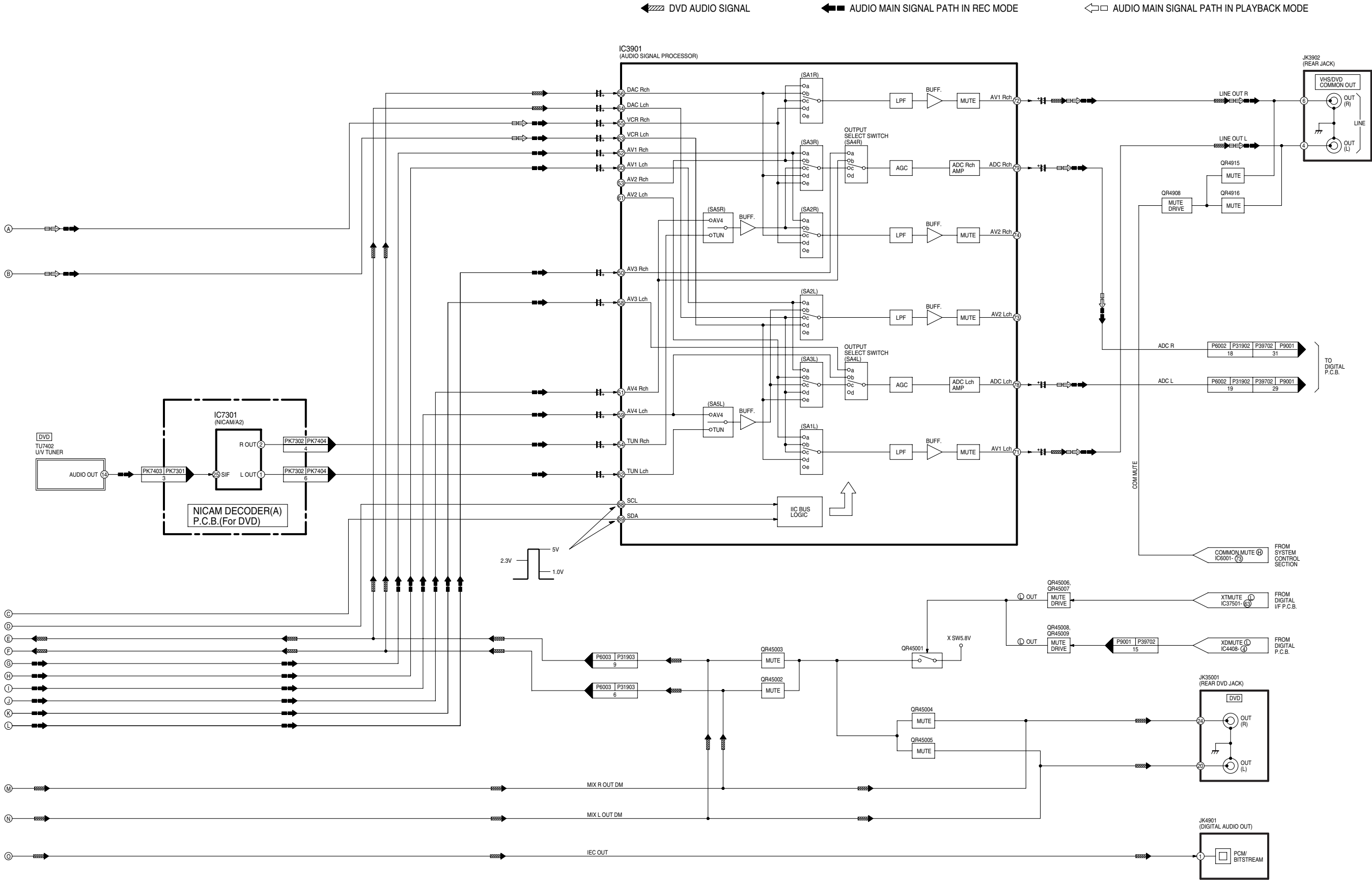
21.4. System Control & Servo Block Diagram



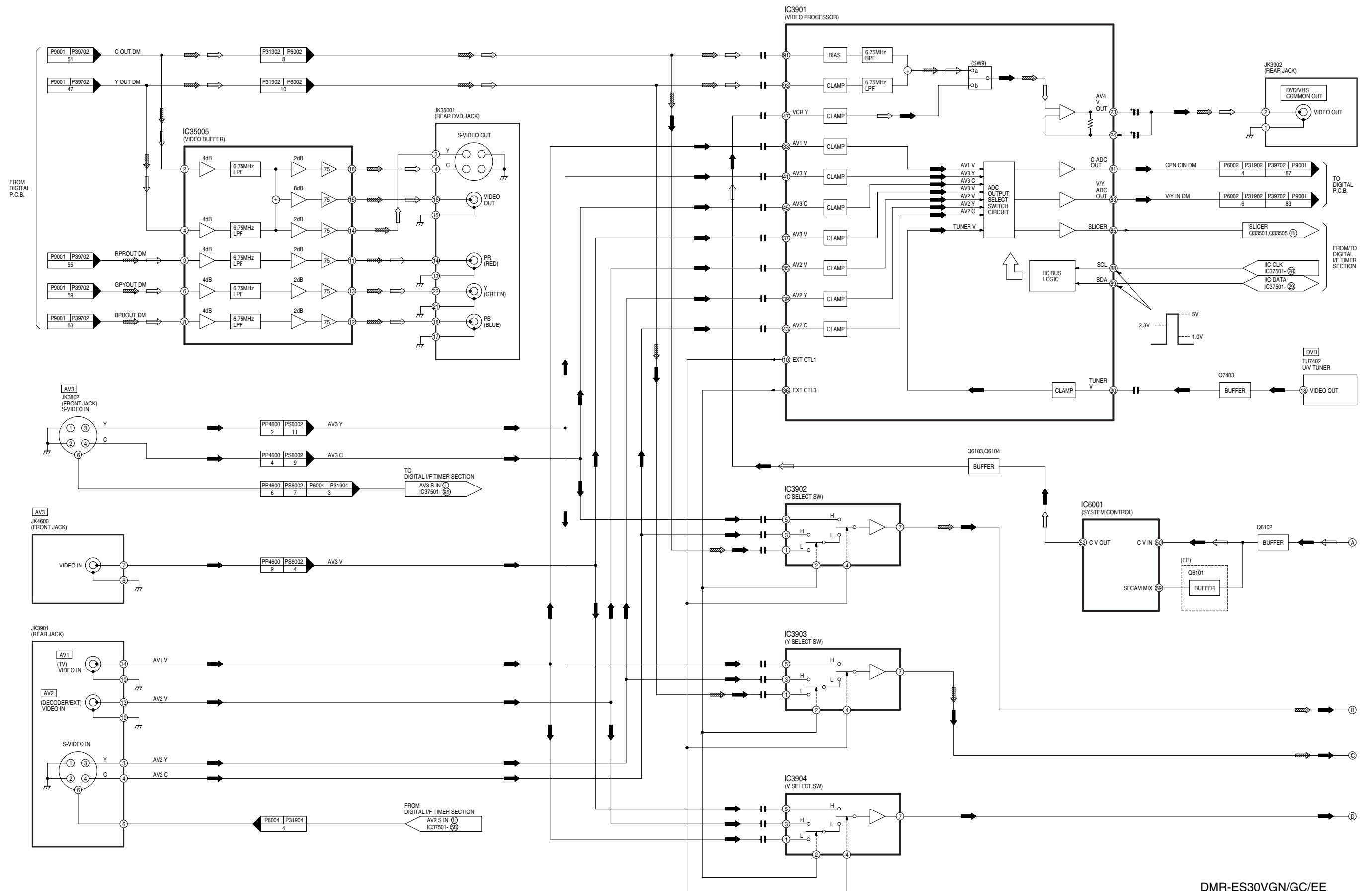
DMR-ES30VGN/GC/EE
System Control & Servo
Block Diagram

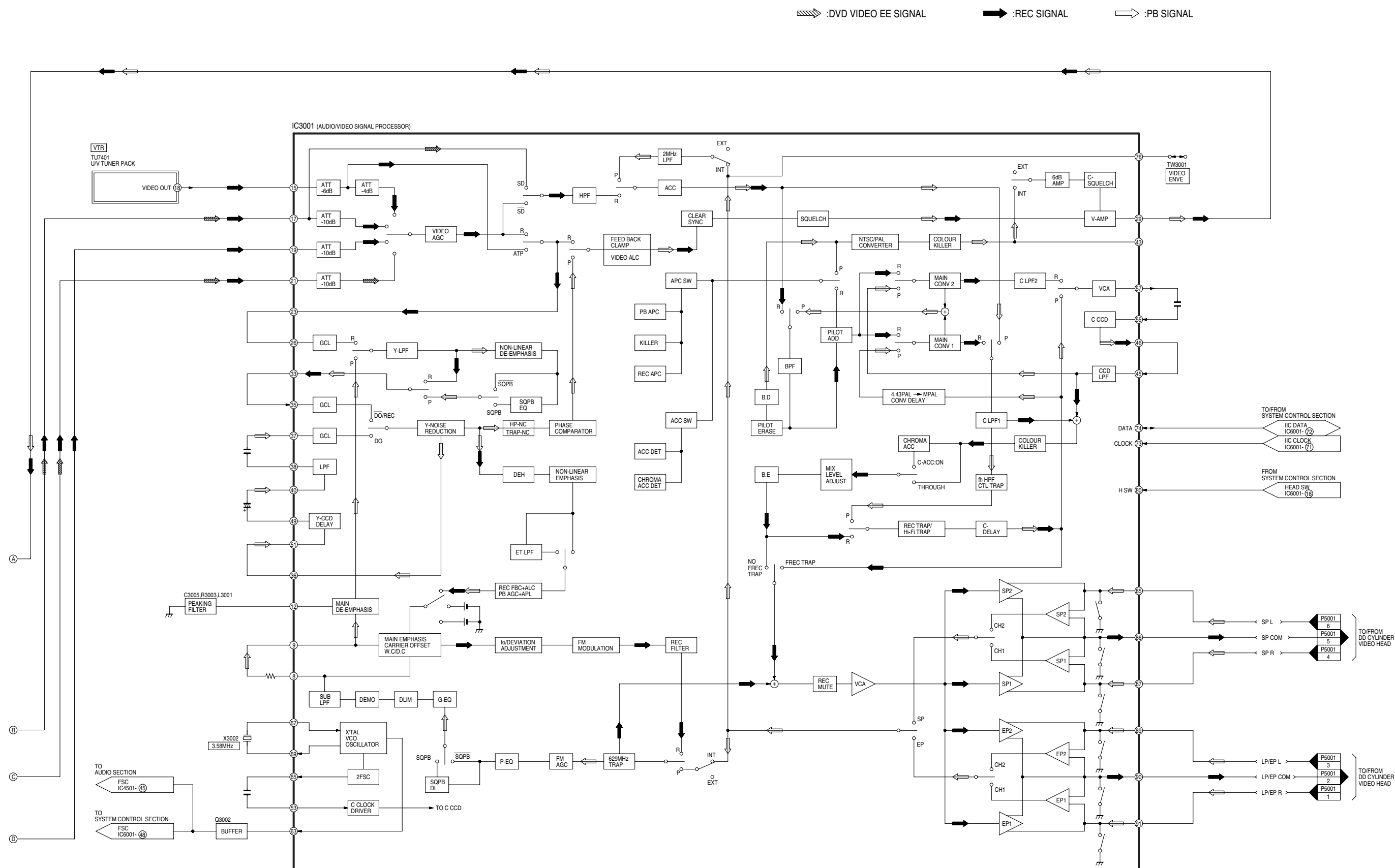
21.5. Audio Block Diagram

DMR-ES30VGN/GC/EE
Audio Block Diagram



21.6. Video Block Diagram

DMR-ES30VGN/GC/EE
Video Block Diagram

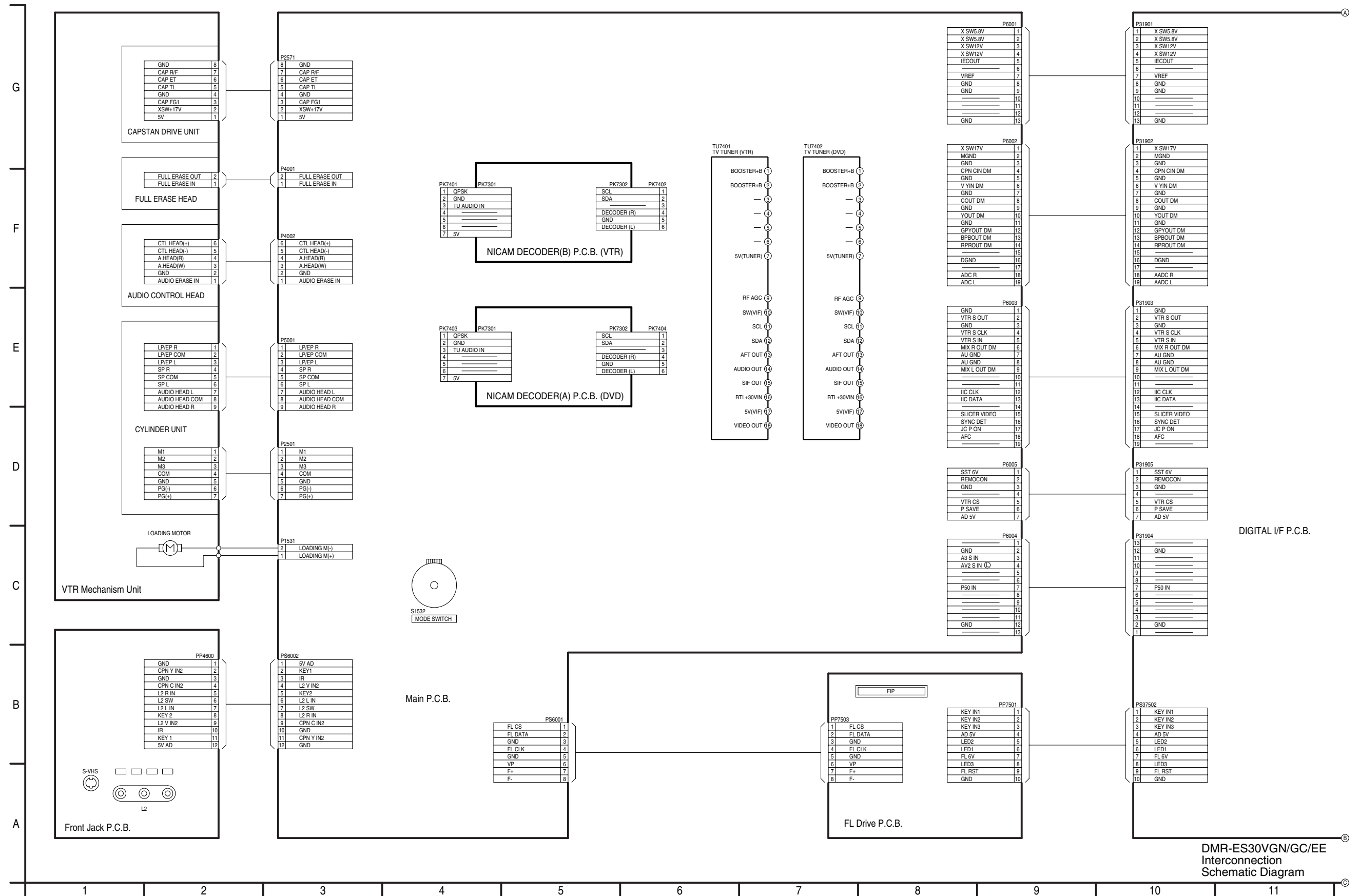


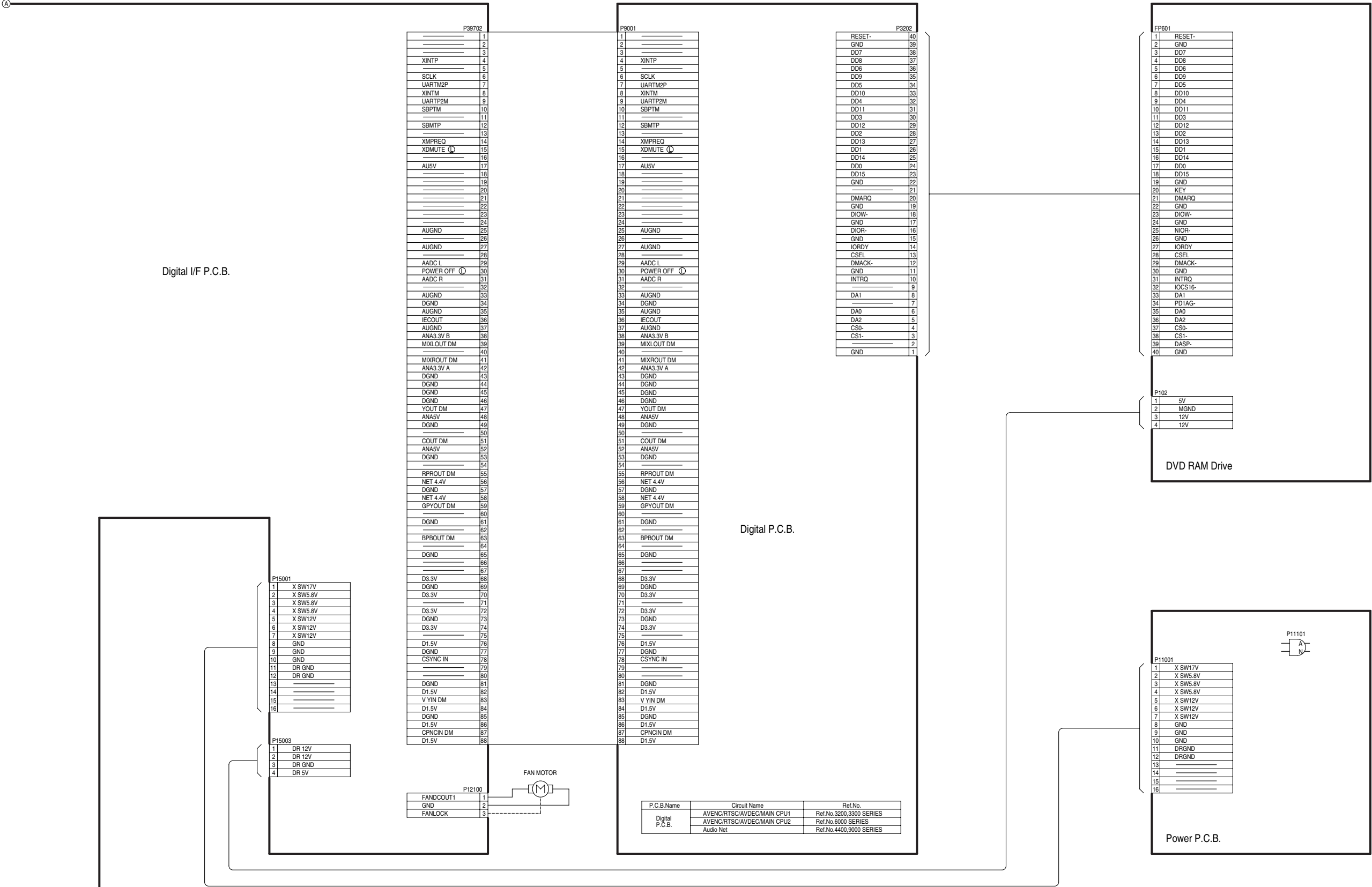
DMR-ES30VGN/GC/EE Video Block Diagram

DMR-ES30VGN/GC/EE Video Block Diagram

22 Schematic Diagram

22.1. Interconnection Schematic Diagram



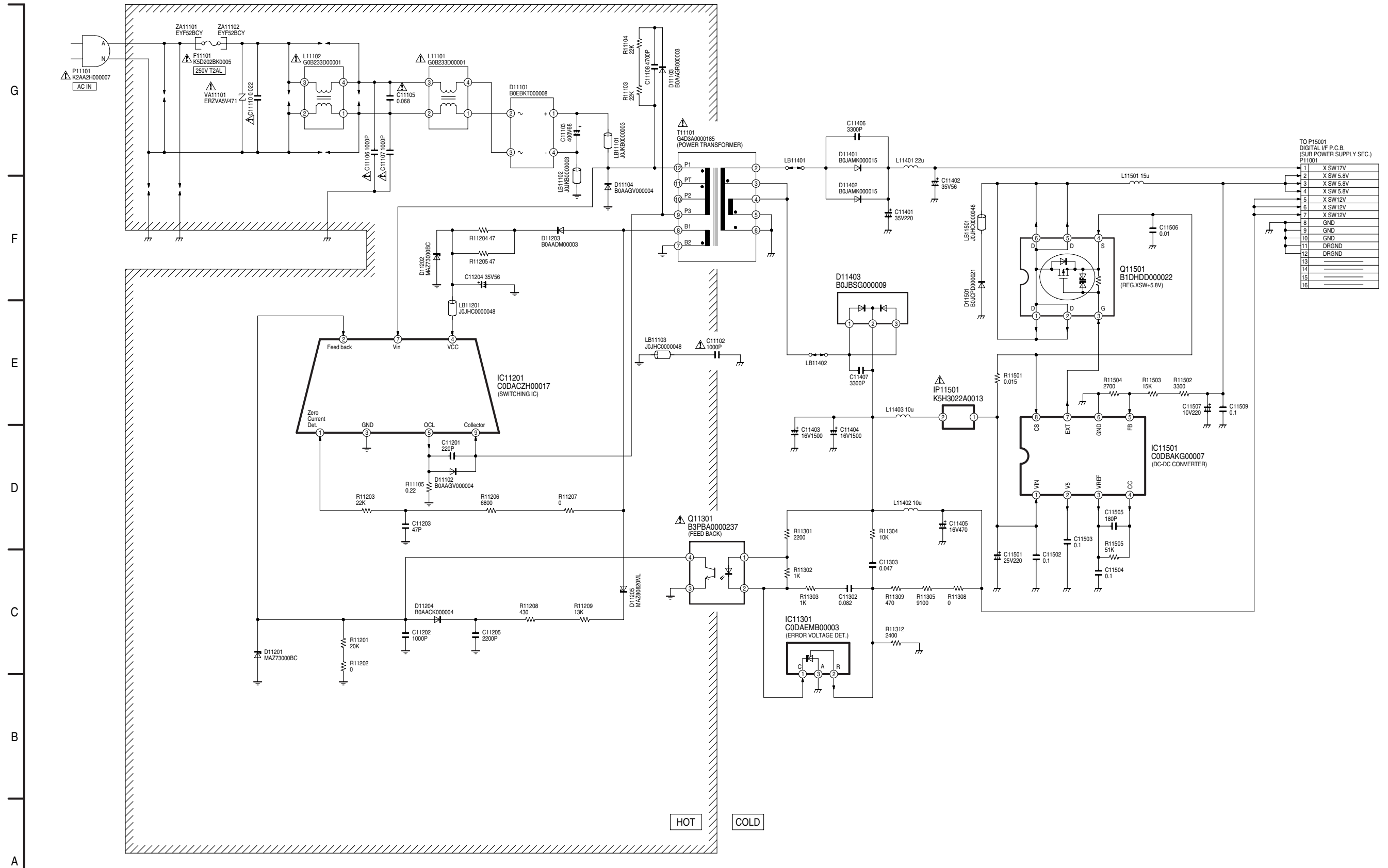


DMR-ES30VGN/GC/EE
Interconnection
Schematic Diagram

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-ES30VGN/GC/EE
Interconnection
Schematic Diagram

22.2. Main Power Supply Schematic Diagram

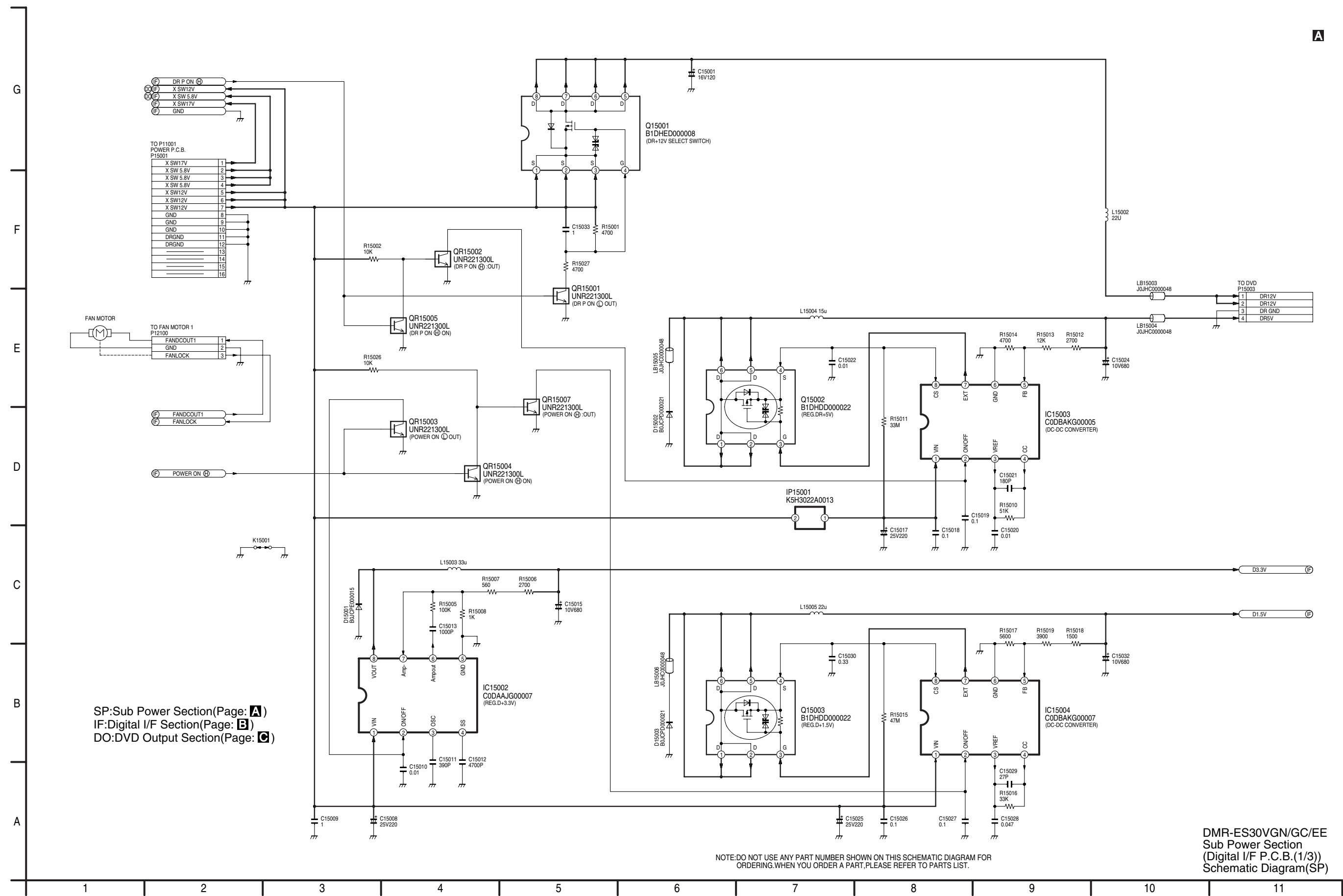


NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

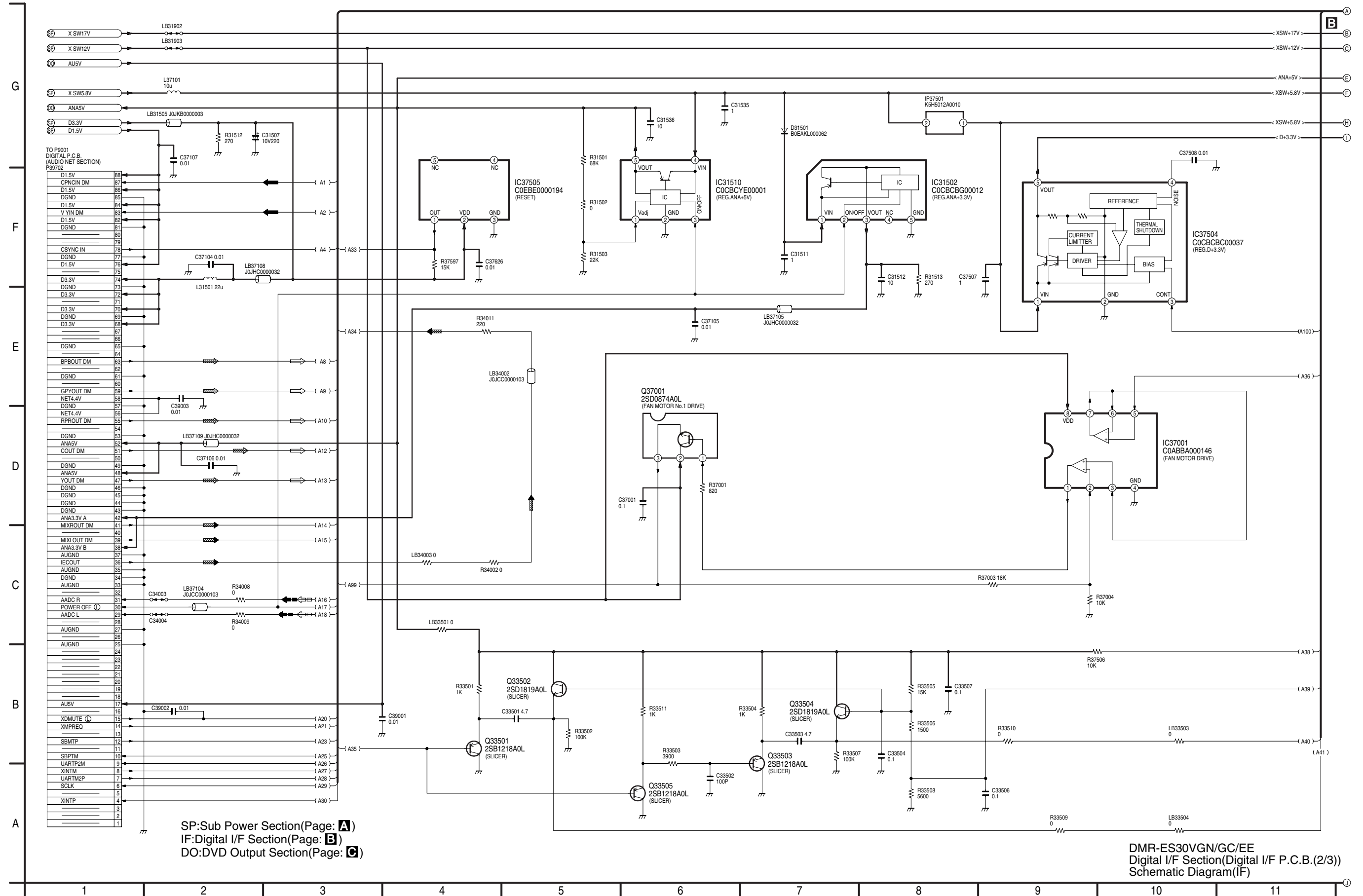
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK Δ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, ONLY THE SAME TYPE.

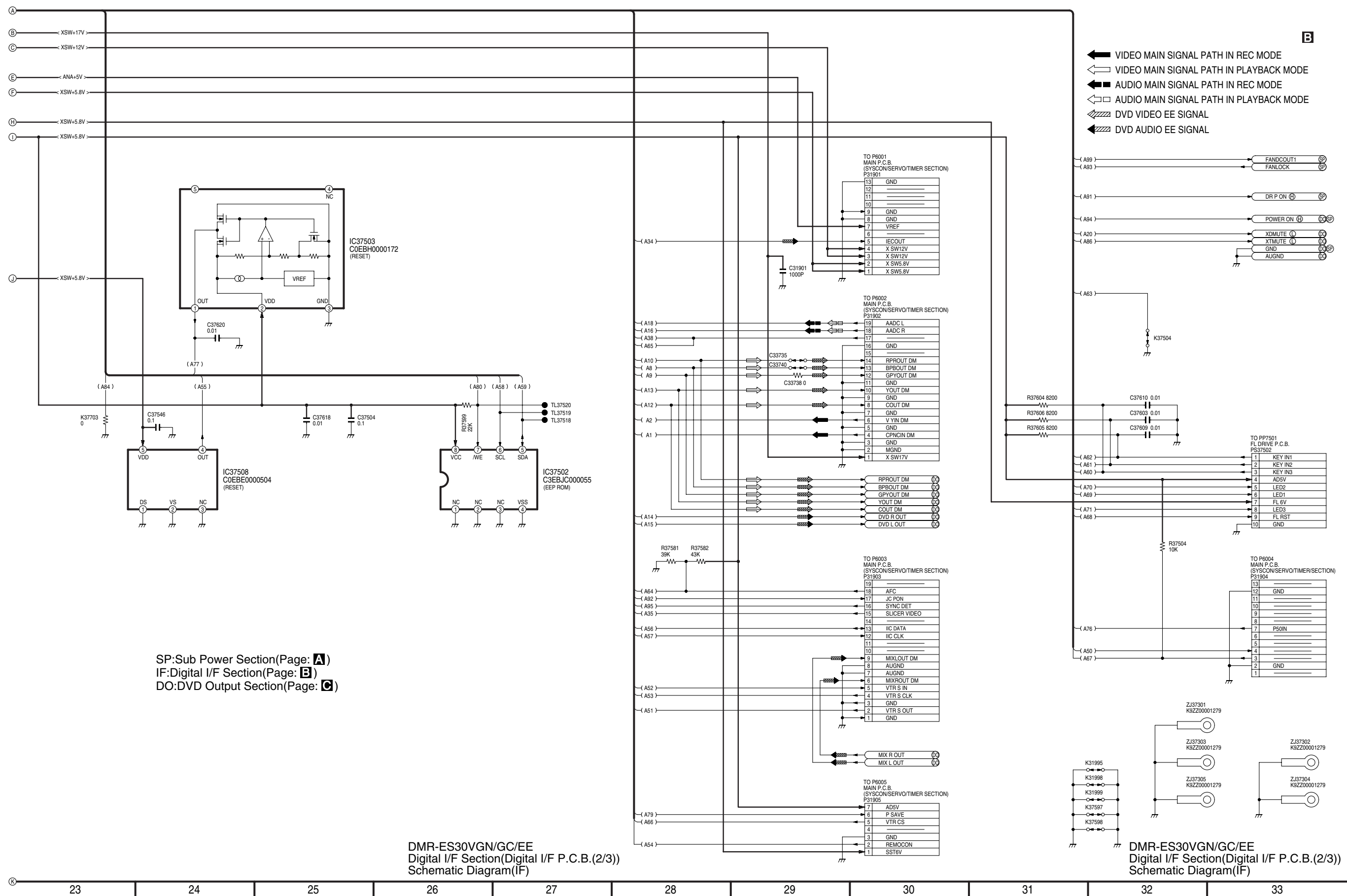
DMR-ES30VGN/GC/EE
Main Power
Schematic Diagram

22.3. Sub Power Section (Digital I/F P.C.B.(1/3)) Schematic Diagram (SP)

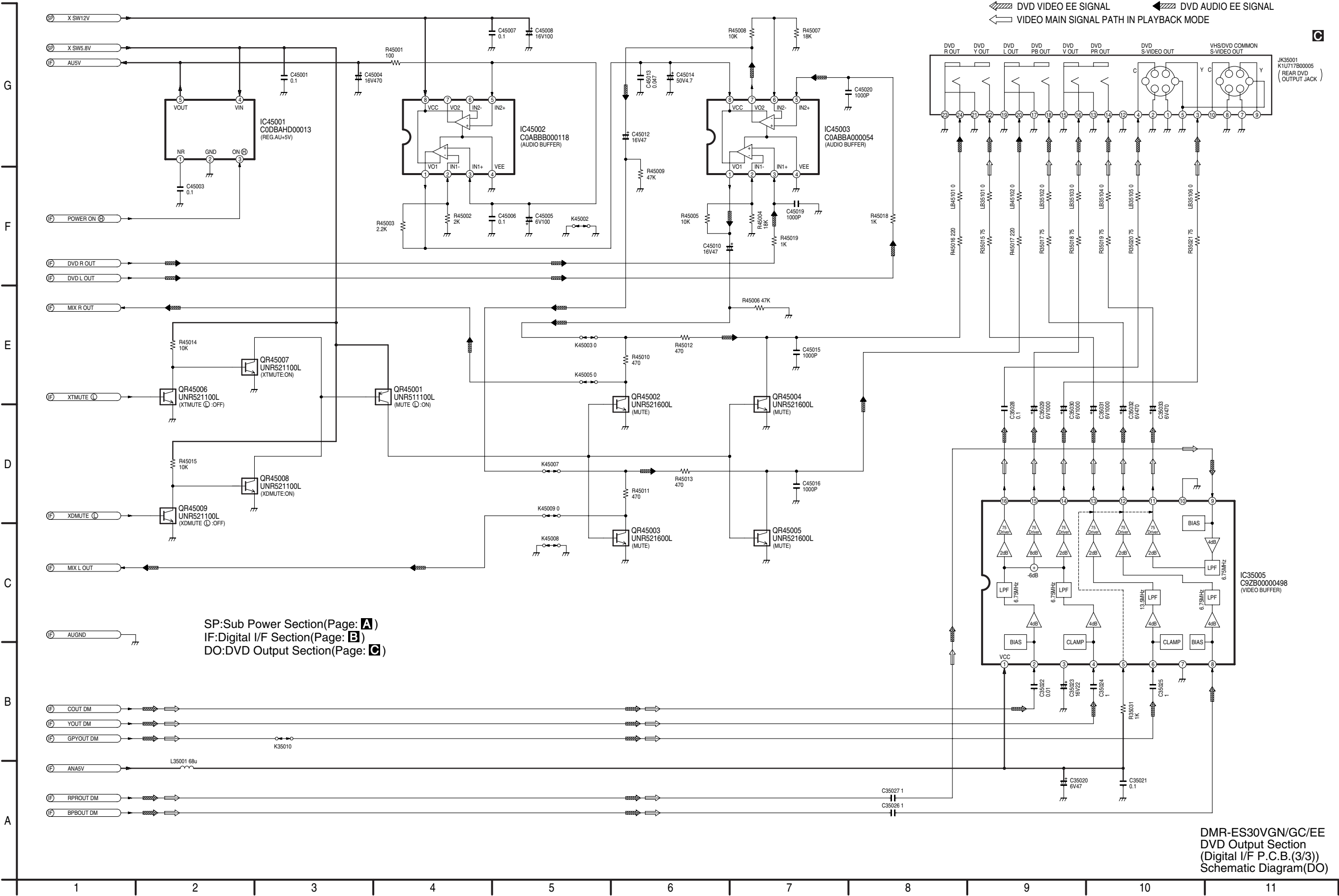


22.4. Digital I/F Section (Digital I/F P.C.B.(2/3)) Schematic Diagram (IF)

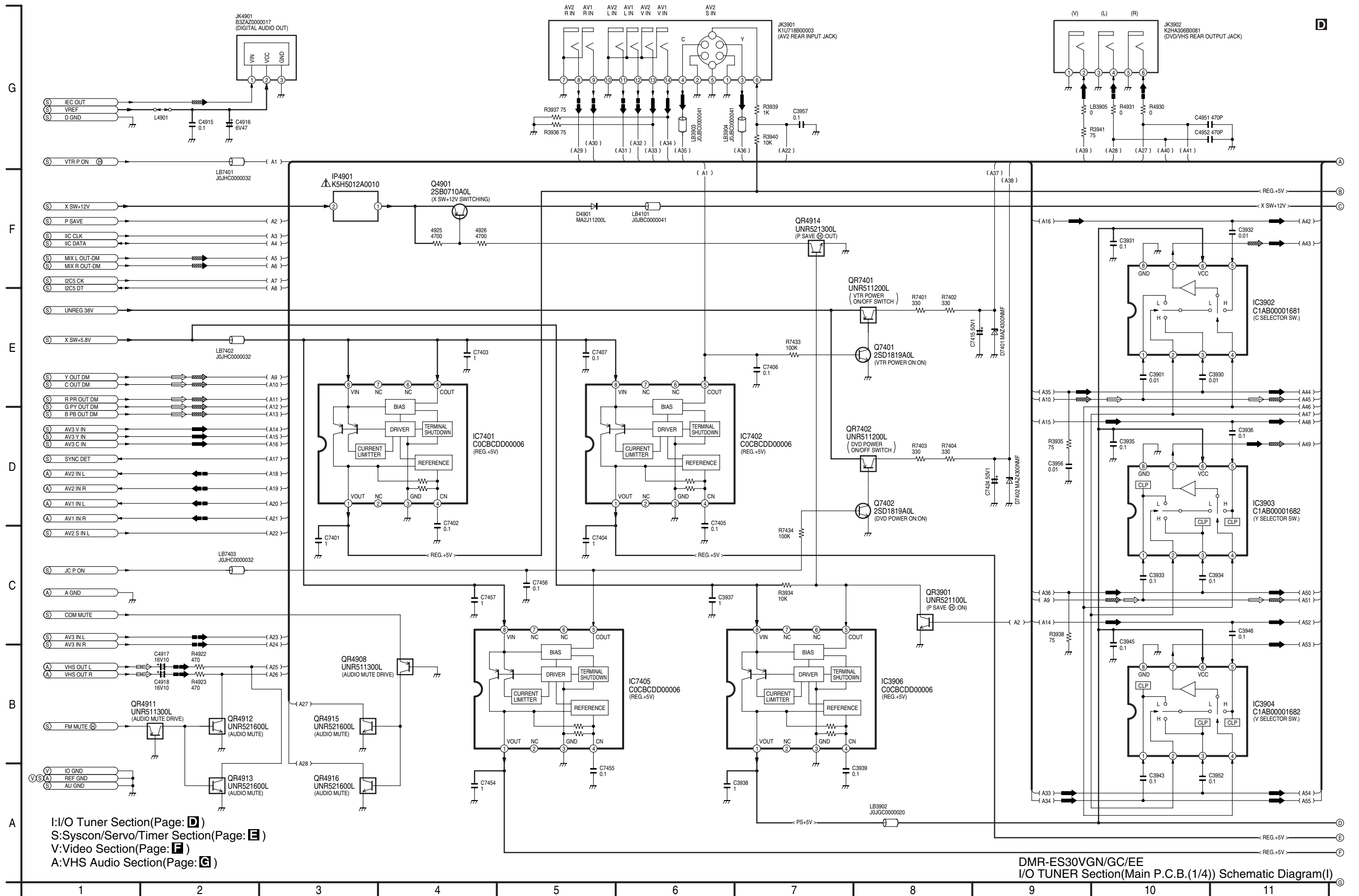


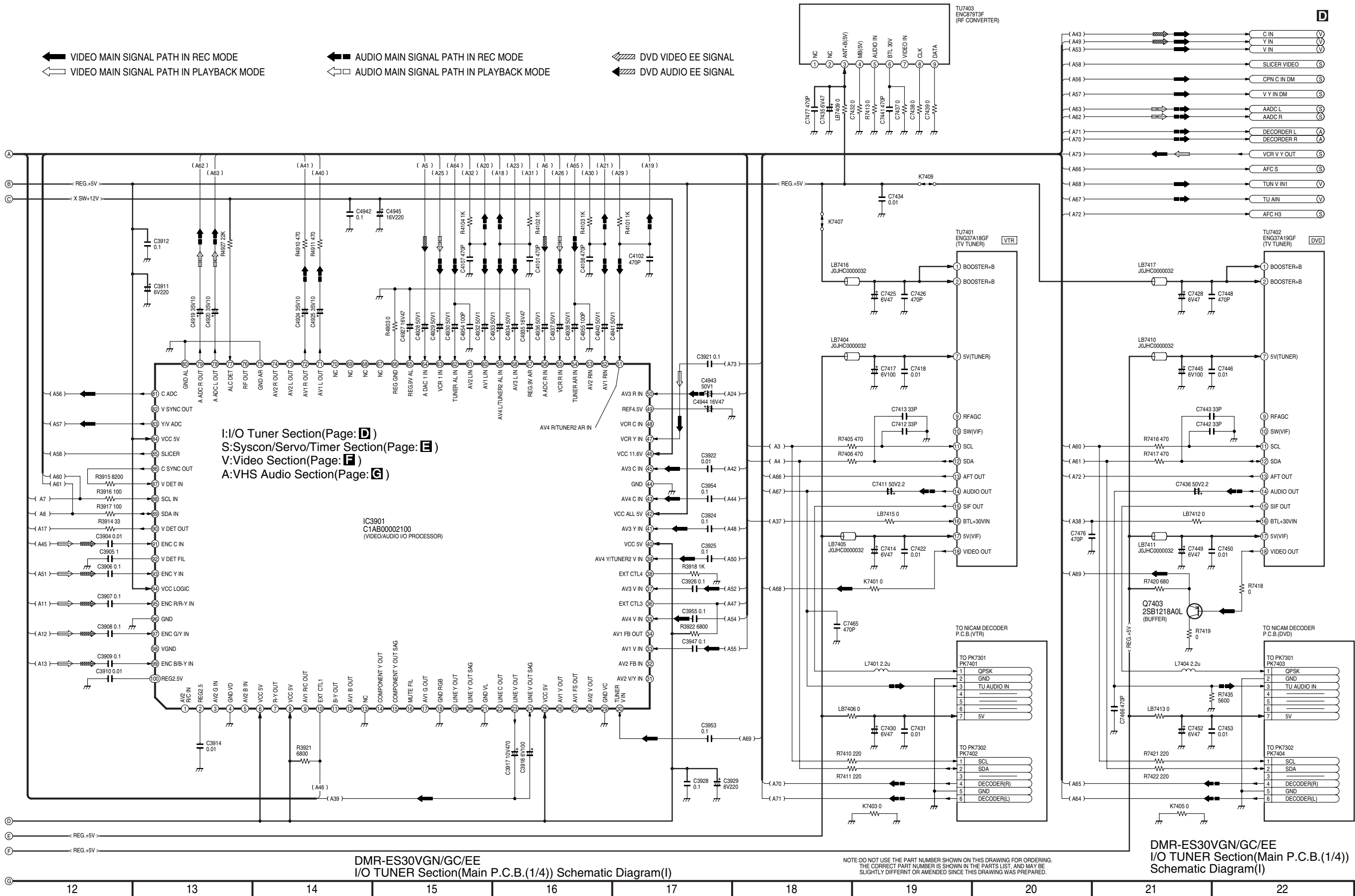


22.5. DVD Output Section (Digital I/F P.C.B.(3/3)) Schematic Diagram (DO)

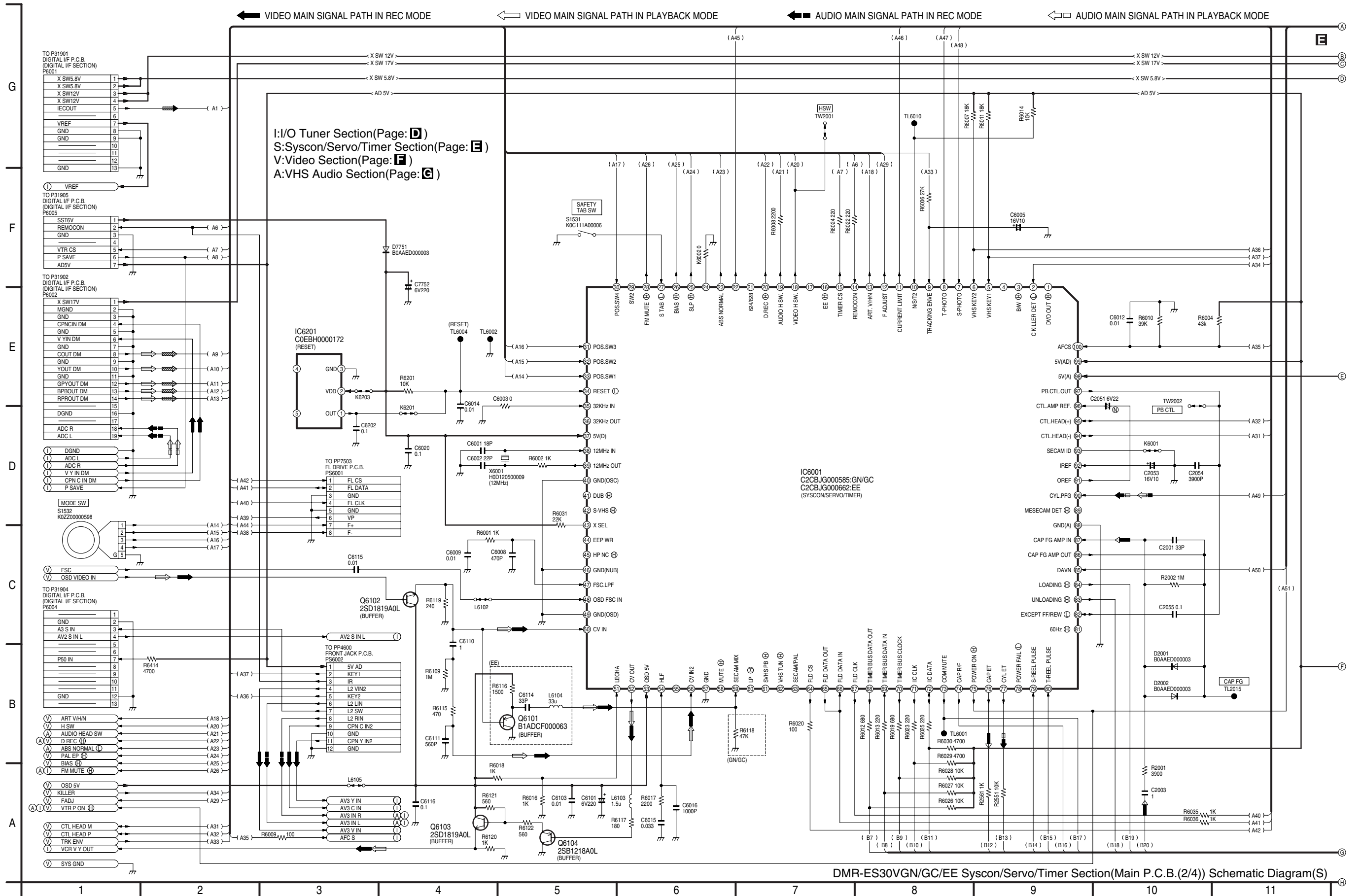


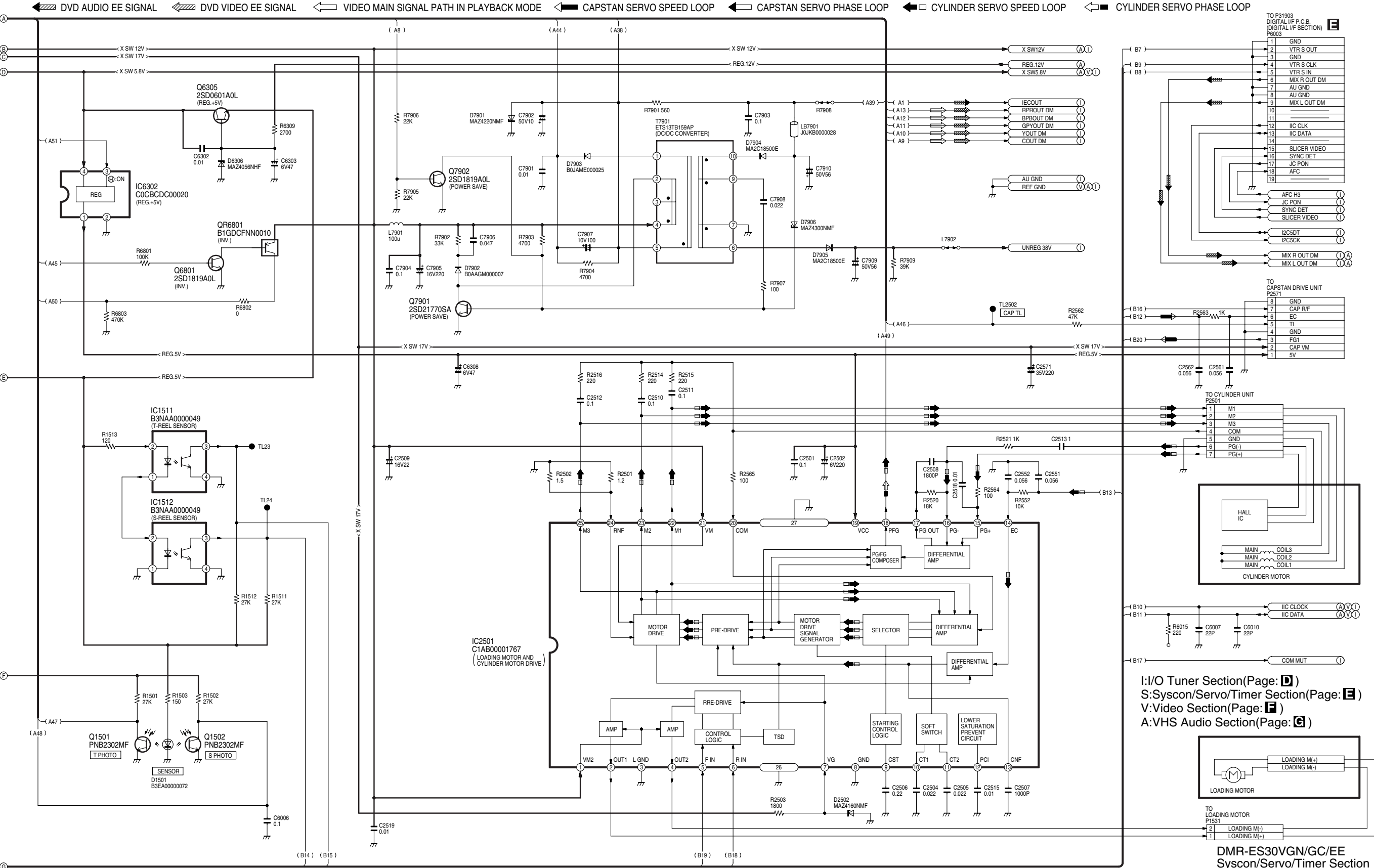
22.6. I/O Tuner Section (Main P.C.B.(1/4)) Schematic Diagram (I)





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



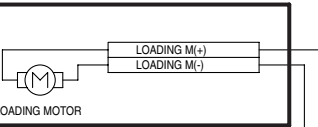


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, ONLY THE SAME TYPE.

DMR-ES30VGN/GC/EE
Syscon/Servo/Timer Section(Main P.C.B.(2/4)) Schematic Diagram(S)

NOTE:DO NOT USE ANY PART NUMBER ON THIS SCHEMATIC DIAGRAM FOR
ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

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

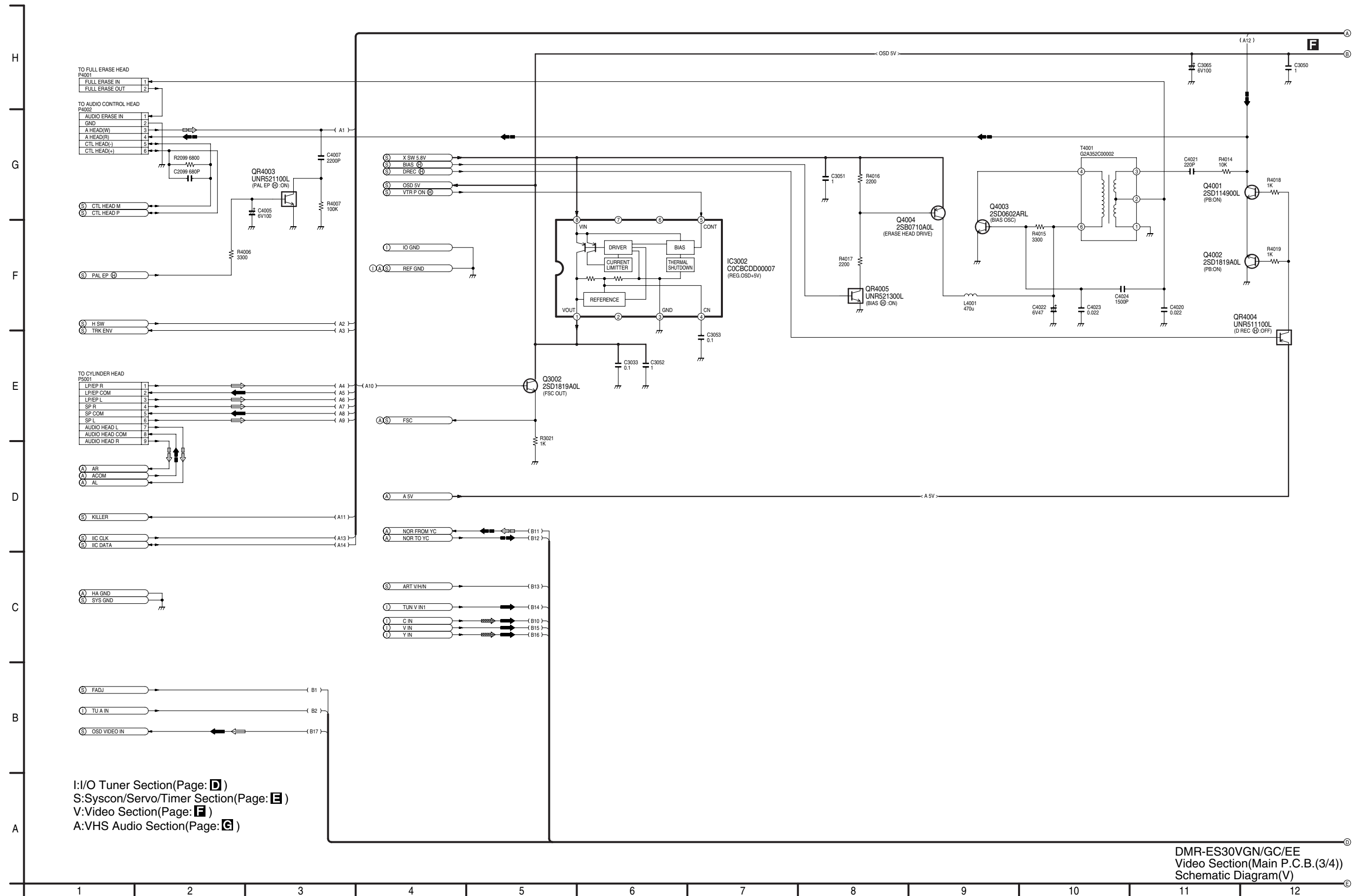


TO LOADING MOTOR
P1531

2	LOADING M(-)
1	LOADING M(+)

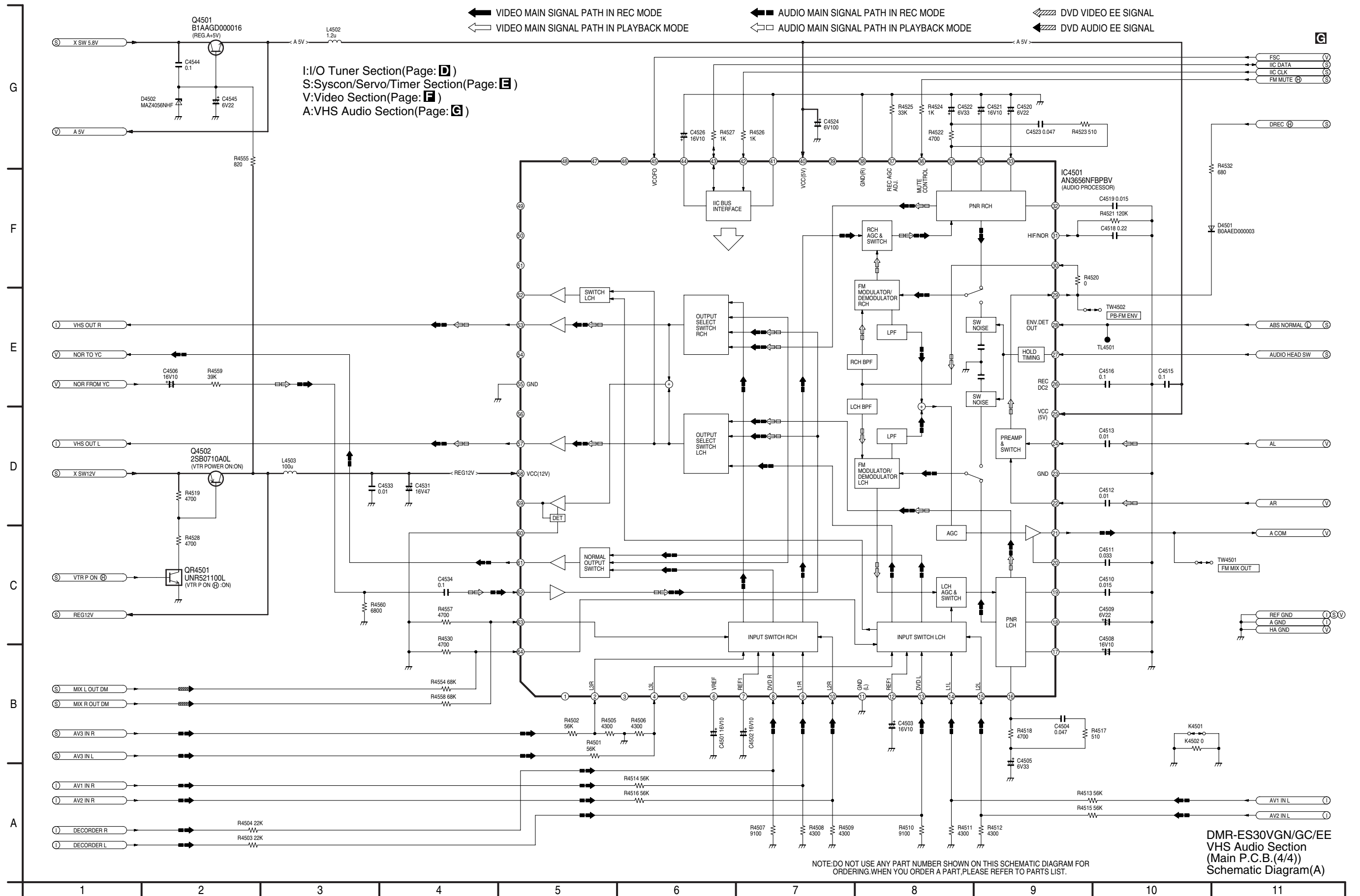
DMR-ES30VGN/GC/EE
Syscon/Servo/Timer Section
(Main P.C.B.(2/4))
Schematic Diagram(S)

22.8. Video Section (Main P.C.B.(3/4)) Schematic Diagram (V)

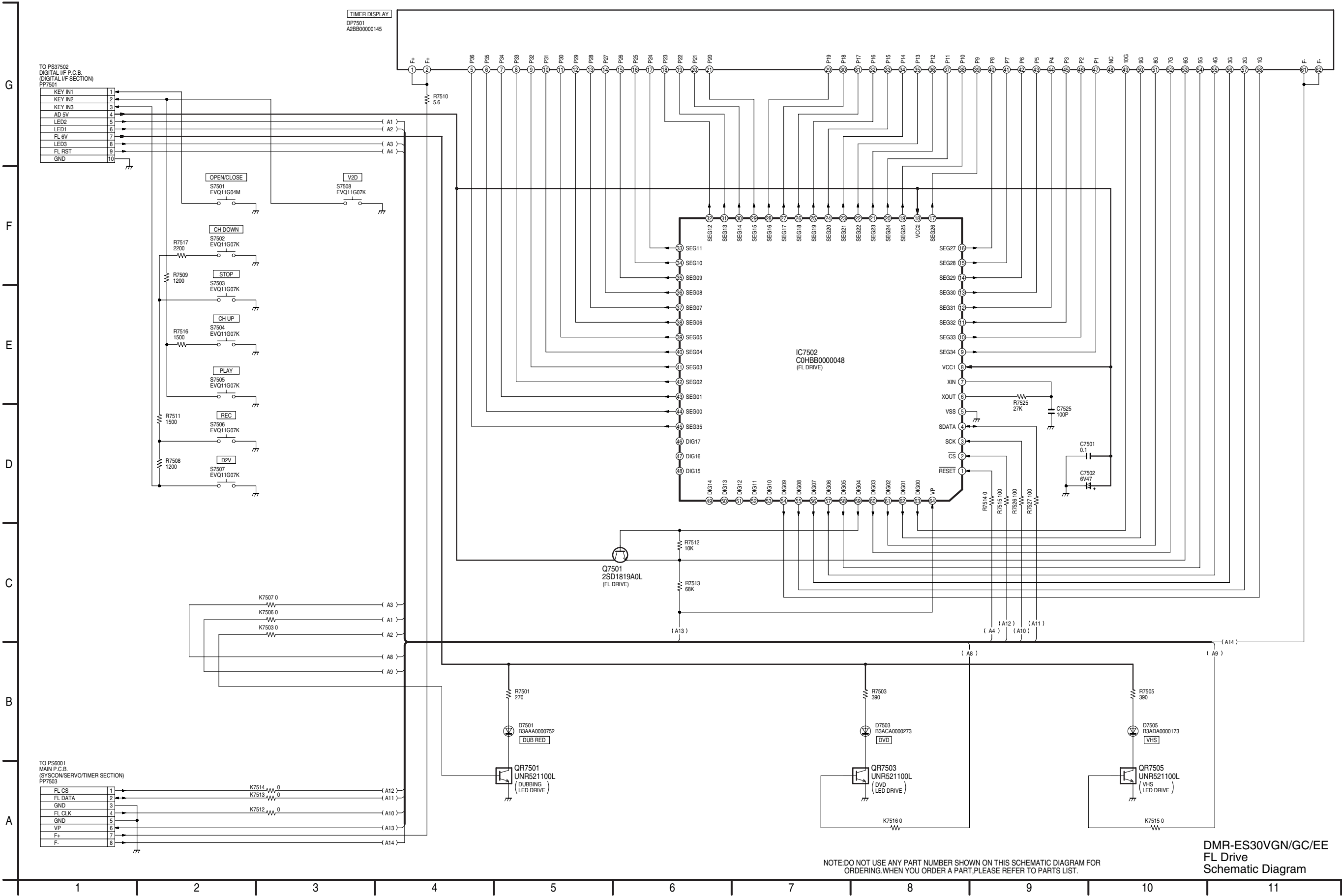


DMR-ES30VGN/GC/EE
Video Section(Main P.C.B.(3/4))
Schematic Diagram(V)

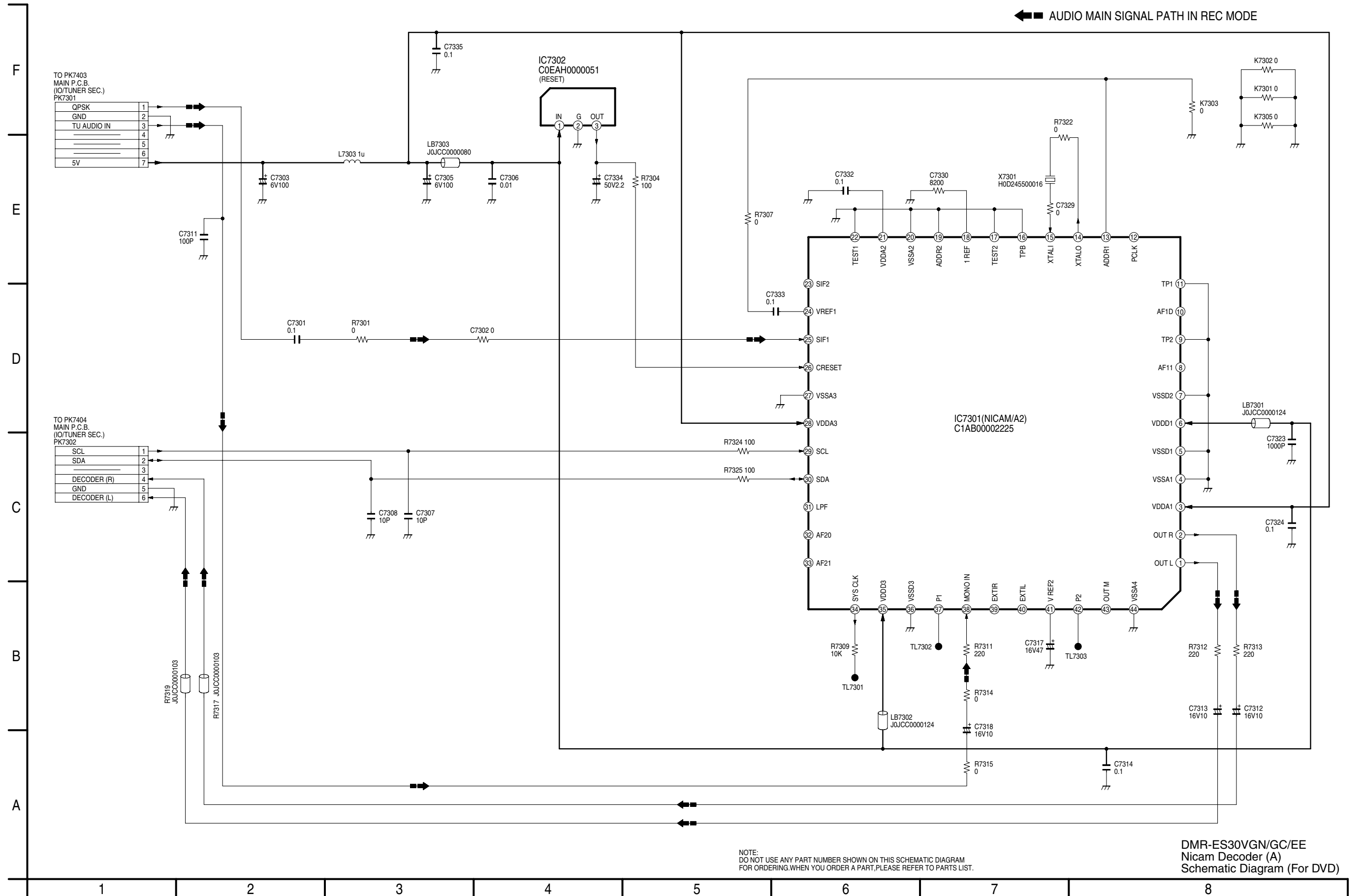
22.9. VHS Audio Section (Main P.C.B.(4/4)) Schematic Diagram (A)



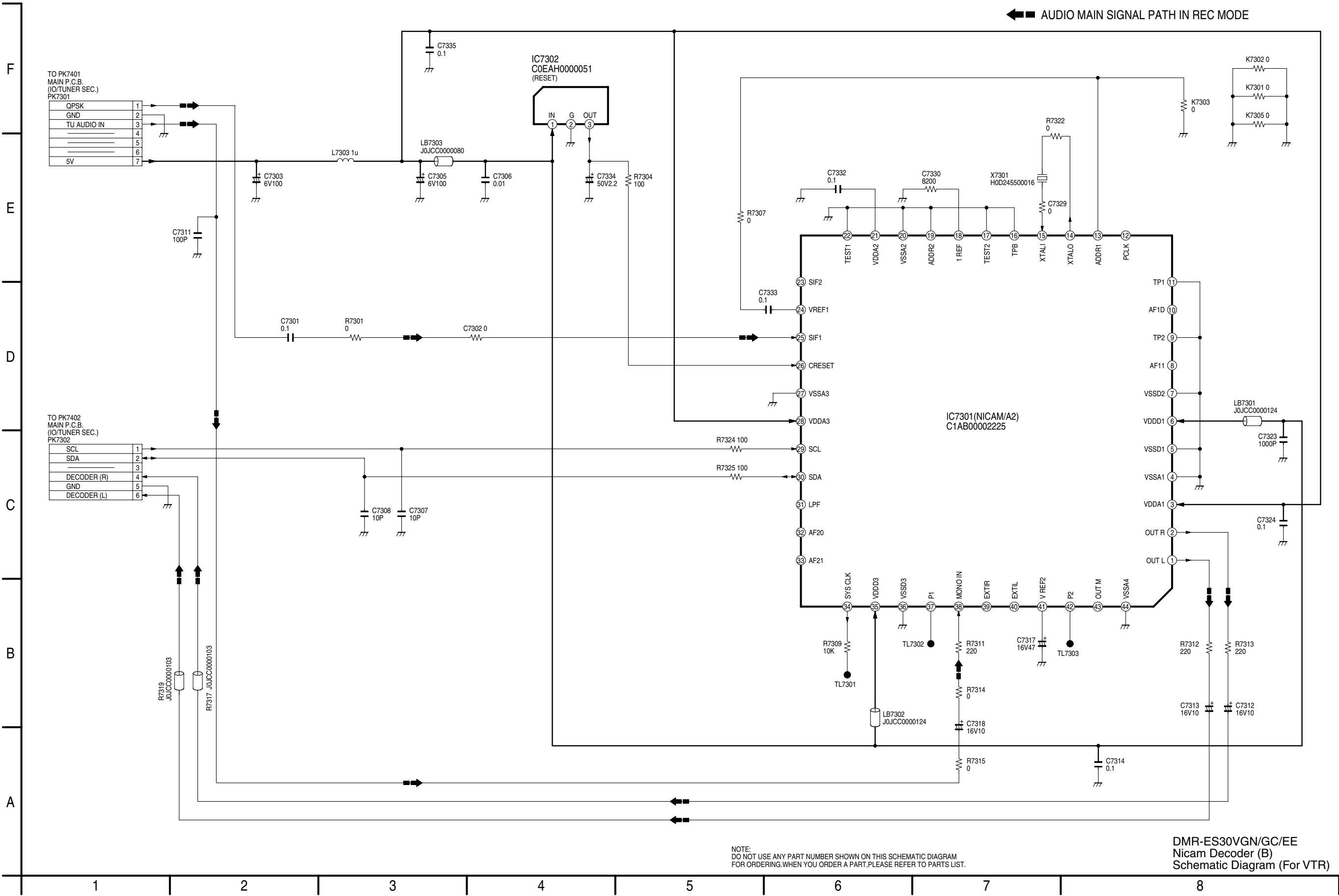
22.10. FL Drive Schematic Diagram



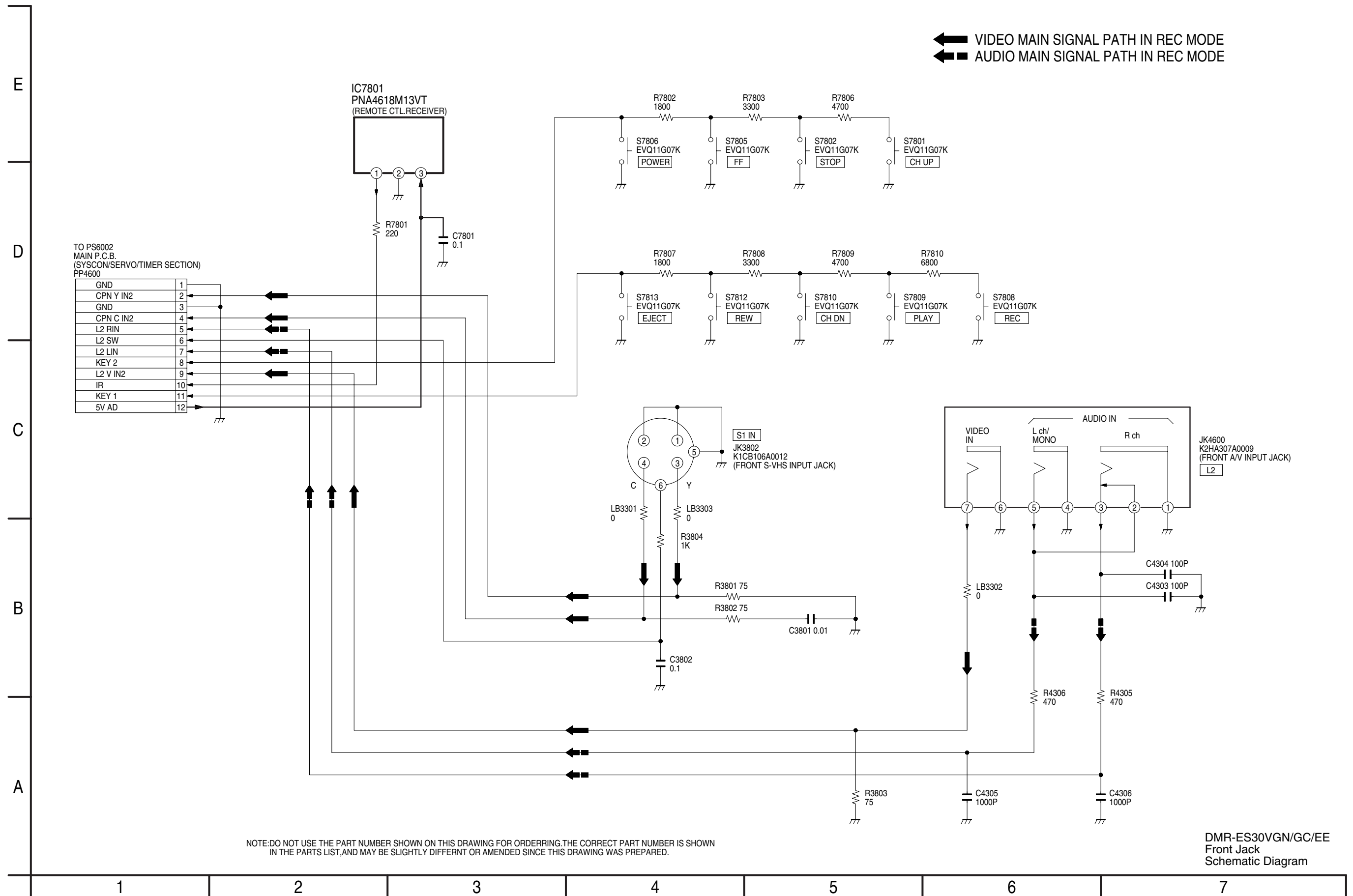
22.11. Nicam Decoder (A) Schematic Diagram (For DVD)



22.12. Nicam Decoder (B) Schematic Diagram (For VTR)

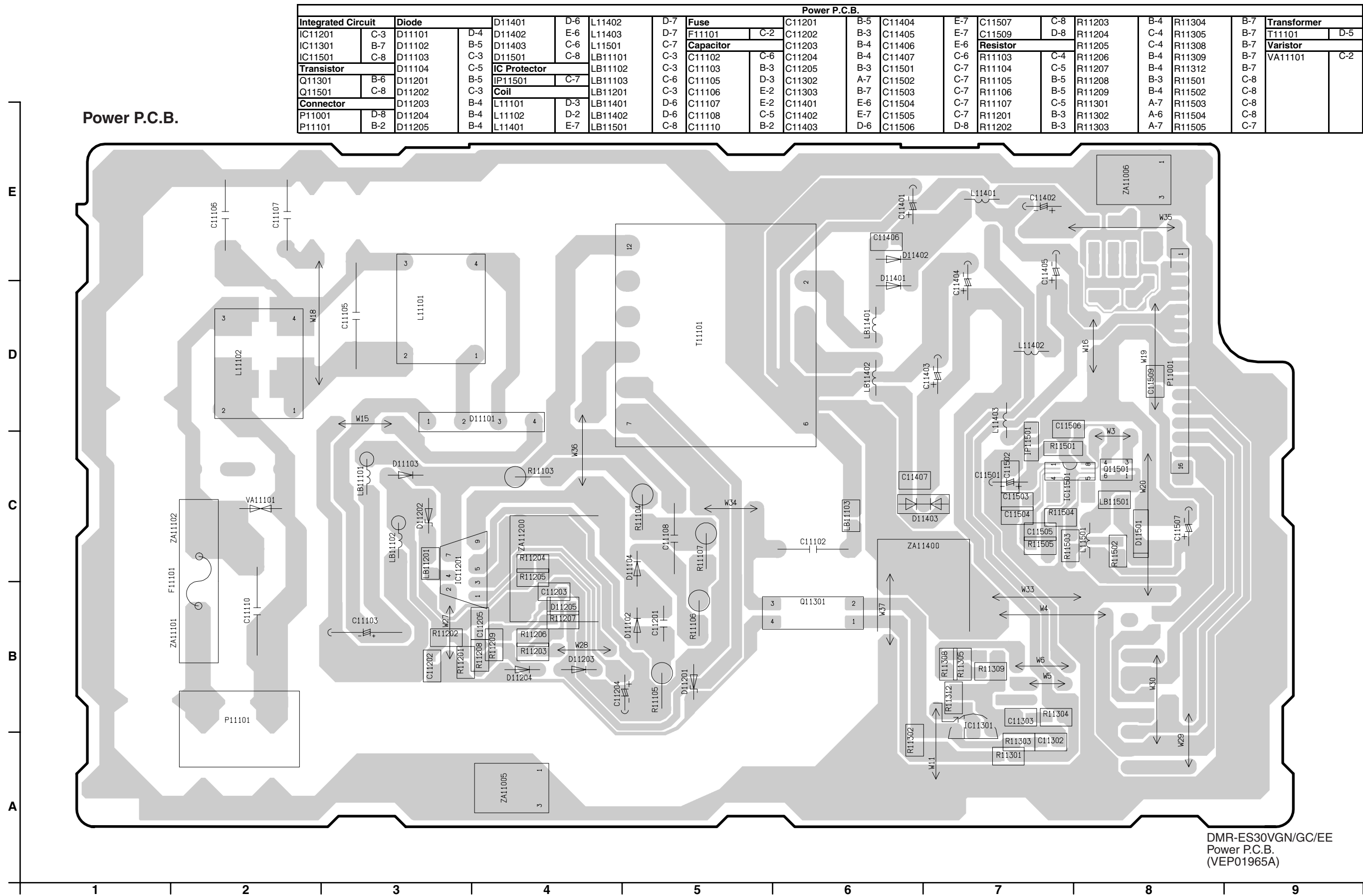


22.13. Front Jack Schematic Diagram



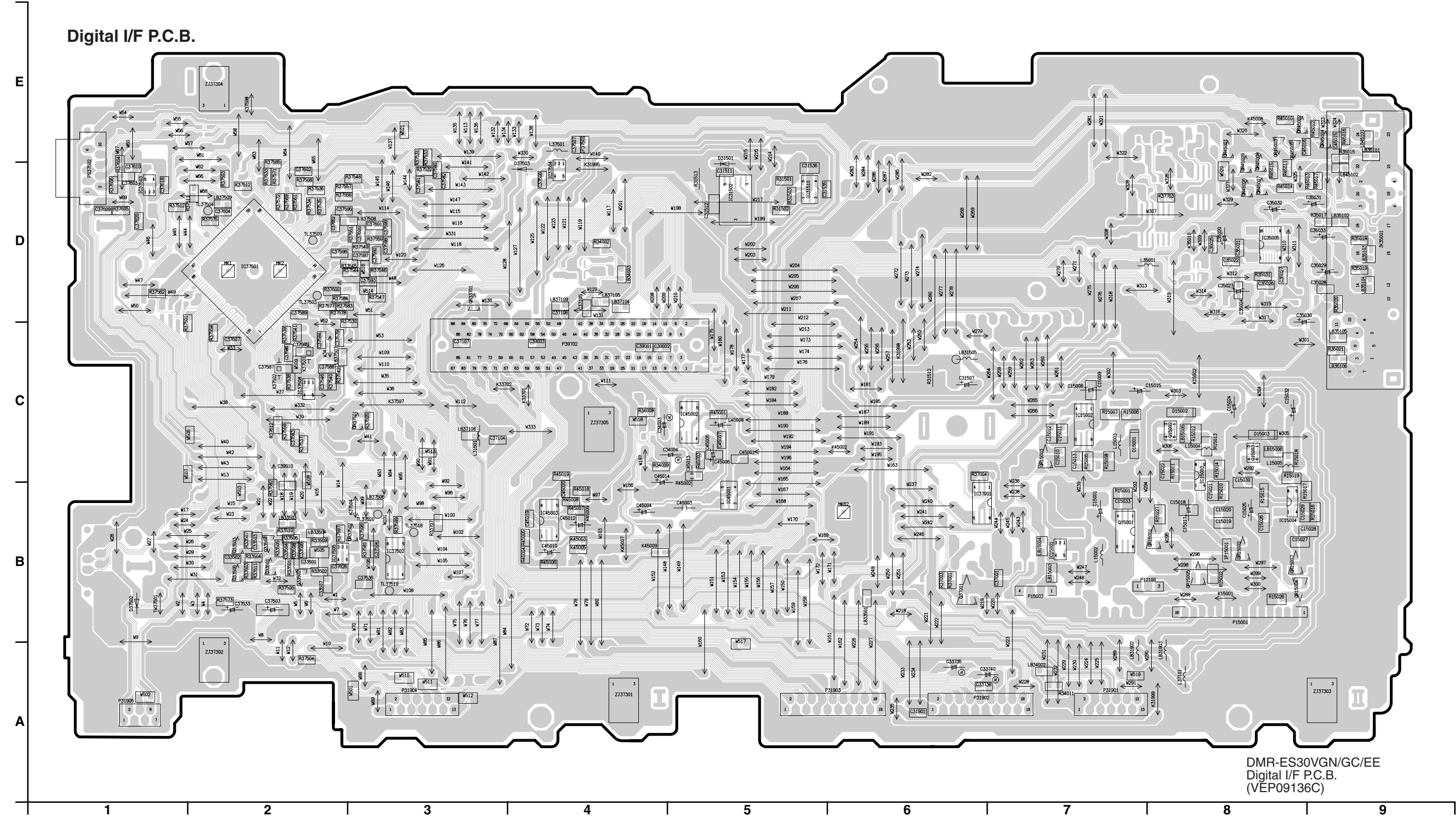
23 Print Circuit Board

23.1. Power P.C.B



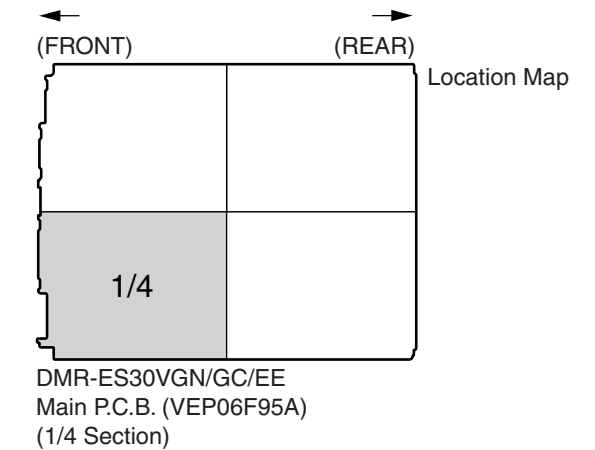
23.2. Digital I/F P.C.B.

23.2.1. Digital I/F P.C.B.

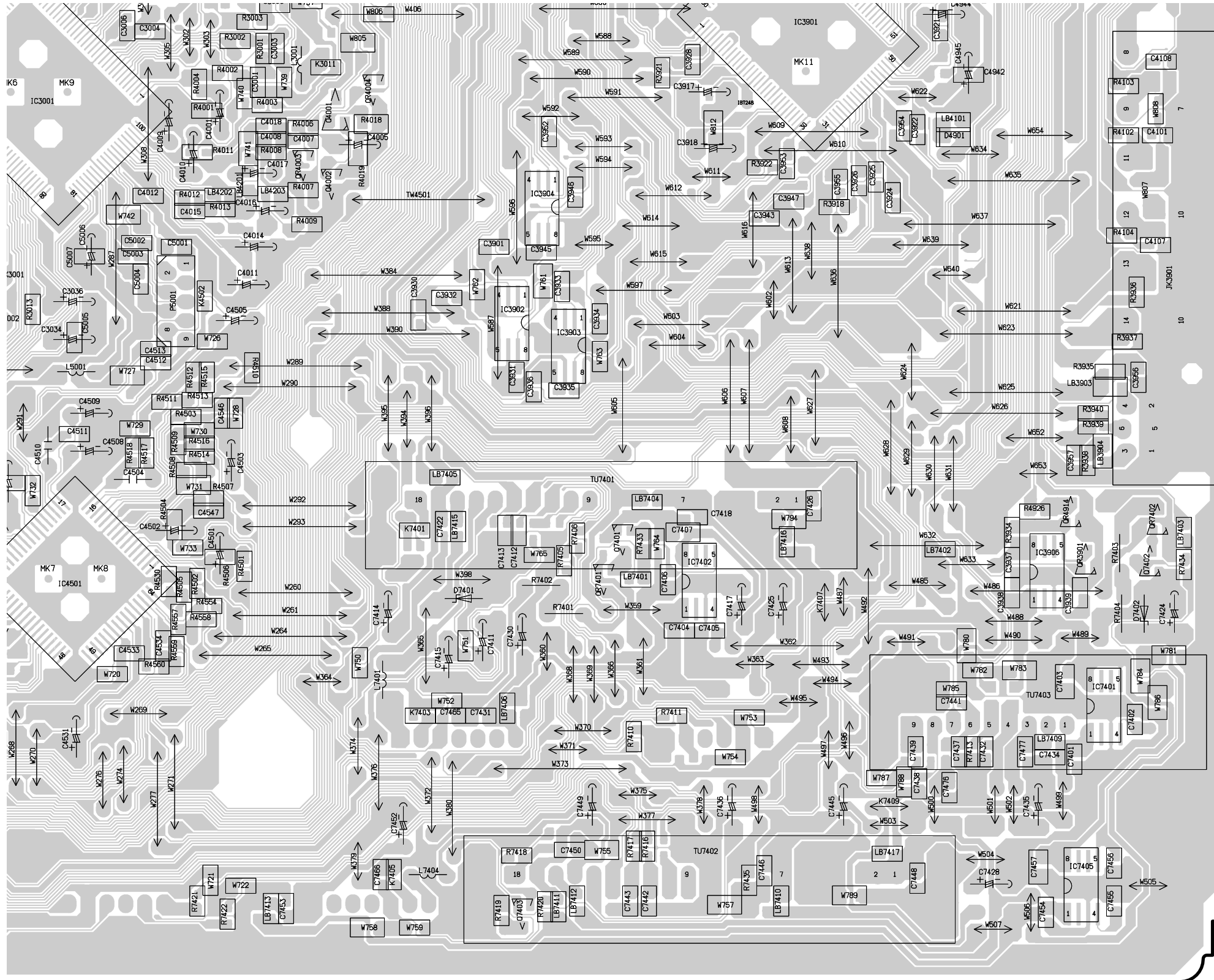


23.2.2. Digital I/F P.C.B. Address Information

Digital I/F P.C.B.									
Integrated Circuit		Diode		C15026		B-8		C37601	
IC15001	B-7	D15001	C-7	C15027	B-8	C37602	D-2	R34002	B-3
IC15002	C-7	D15002	C-8	C15028	B-9	C37603	D-1	R34008	D-4
IC15003	C-8	D15003	C-8	C15029	B-9	C37604	D-1	R34009	C-4
IC15004	B-8	D31501	E-5	C15030	B-8	C37607	C-2	R34011	A-7
IC31502	D-5	D37502	B-1	C15032	C-9	C37609	D-1	R35015	E-9
IC31510	D-5	D37503	D-4	C15033	B-7	C37610	E-1	R35017	D-9
IC35005	D-8	Crystal Osillator		C31507	C-6	C37618	D-1	R35018	D-9
IC37001	B-6	X37501	C-2	C31511	D-5	C37620	D-1	R35019	D-9
IC37501	D-2	X37502	C-2	C31512	D-5	C37626	B-2	R35020	D-9
IC37502	B-3	IC Protector		C31535	D-5	C37633	B-2	R35021	C-9
IC37503	D-1	IP15001	B-8	C31536	E-5	C37636	B-2	R35031	D-8
IC37504	D-4	IP37501	E-4	C31901	A-6	C37652	D-2	R37001	B-6
IC37505	B-2	Coil		C33501	B-2	C39001	C-4	R37003	B-6
IC37508	C-2	L15002	B-7	C33502	B-2	C39002	C-4	R37004	C-6
IC45001	B-5	L15003	C-7	C33503	B-2	C39003	C-4	R37501	D-1
IC45002	C-5	L15004	C-8	C33504	B-2	C39010	B-2	R37503	D-1
IC45003	B-4	L15005	C-9	C33506	B-2	C45001	C-5	R37504	A-2
Transistor		L31501	C-3	C33507	B-2	C45003	B-5	R37505	C-2
Q15001	B-7	L35001	D-8	C33735	A-6	C45004	B-4	R37506	B-2
Q15002	C-8	L37101	A-8	C33738	A-6	C45005	C-5	R37508	D-2
Q15003	C-8	L37501	E-4	C33740	A-7	C45006	C-5	R37511	D-1
Q33501	B-2	LB15003	B-7	C34003	C-4	C45007	C-5	R37512	D-1
Q33502	B-2	LB15004	B-7	C34004	C-5	C45008	C-5	R37530	D-2
Q33503	B-2	LB15005	C-8	C35020	D-8	C45010	B-4	R37531	E-3
Q33504	B-2	LB15006	C-8	C35021	D-8	C45012	B-4	R37532	D-3
Q33505	B-2	LB31505	C-6	C35022	D-8	C45013	B-5	R37533	E-3
Q37001	B-6	LB31902	A-8	C35023	D-8	C45014	B-4	R37534	D-2
Transistor-resistor		LB31903	A-8	C35024	D-8	C45015	E-9	R37535	D-2
QR15001	B-8	LB33501	B-6	C35025	D-8	C45016	E-9	R37536	D-2
QR15002	B-8	LB33503	B-2	C35026	D-8	C45019	B-3	R37537	C-2
QR15003	C-7	LB33504	B-2	C35027	D-8	C45020	B-4	R37538	C-2
QR15004	B-8	LB34002	A-7	C35028	D-9	Resistor		R37539	C-2
QR15005	B-8	LB34003	D-4	C35029	D-9	R15001	B-7	R37540	C-2
QR15007	B-8	LB35101	E-9	C35030	C-9	R15002	B-8	R37541	C-2
QR33701	D-3	LB35102	D-9	C35031	D-9	R15005	C-7	R37542	C-2
QR37501	C-2	LB35103	D-9	C35032	D-8	R15006	C-7	R37544	D-2
QR37502	B-2	LB35104	D-9	C35033	D-9	R15007	C-7	R37545	D-2
QR45001	E-8	LB35105	C-9	C37001	B-7	R15008	C-7	R37546	D-2
QR45002	E-9	LB35106	C-9	C37104	C-3	R15010	B-8	R37547	D-2
QR45003	E-8	LB37104	D-4	C37105	D-4	R15011	C-8	R37548	D-2
QR45004	E-9	LB37105	D-4	C37106	D-4	R15012	C-8	R37549	D-2
QR45005	E-8	LB37108	C-3	C37107	C-3	R15013	C-8	R37550	D-2
QR45006	D-8	LB37109	D-4	C37503	B-2	R15014	C-8	R37551	D-2
QR45007	D-8	LB37506	B-2	C37504	B-2	R15015	B-8	R37556	D-2
QR45008	E-8	LB37507	C-2	C37507	E-4	R15016	B-9	R37557	D-2
QR45009	E-8	LB37508	D-2	C37508	D-4	R15017	B-9	R37558	C-1
Test Point		LB37509	D-1	C37546	C-2	R15018	C-8	R37559	C-2
TL37503	D-2	LB45101	E-9	C37579	C-2	R15019	B-8	R37561	D-2
TL37504	D-2	LB45102	E-9	C37580	D-3	R15026	B-8	R37562	D-1
TL37509	D-2	Capacitor		C37581	D-3	R15027	B-8	R37569	D-2
TL37518	B-3	C15001	B-7	C37582	D-3	R31501	D-5	R37571	D-2
TL37519	B-3	C15008	C-7	C37583	C-2	R31502	D-5	R37572	D-2
TL37520	B-3	C15009	C-7	C37584	C-2	R31503	D-5	R37573	B-1
TW37501	B-1	C15010	C-7	C37585	C-2	R31512	C-6	R37575	D-1
Connector		C15011	C-7	C37586	C-2	R31513	D-5	R37577	D-2
JK35001	D-9	C15012	C-7	C37587	C-2	R33501	B-2	R37578	D-2
P12100	B-8	C15013	C-7	C37588	C-2	R33502	B-2	R37581	B-2
P15001	B-8	C15015	C-8	C37589	D-2	R33503	B-2	R37582	B-2
P15003	B-7	C15017	B-8	C37592	D-2	R33504	B-2	R37583	D-2
P31901	A-7	C15018	B-8	C37593	D-2	R33505	B-2	R37584	D-2
P31902	A-7	C15019	B-8	C37595	D-2	R33506	B-2	R37585	E-2
P31903	A-6	C15020	B-8	C37596	D-2	R33507	B-2	R37596	B-2
P31904	A-3	C15021	B-8	C37597	D-2	R33508	B-2	R37597	B-2
P31905	A-1	C15022	C-8	C37598	D-3	R33509	B-2	R37599	B-3
P39702	C-4	C15024	C-8	C37599	D-3	R33510	B-2	R37600	D-2
PS37502	D-1	C15025	B-8	C37600	D-2	R33511	B-2	R37604	E-1



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



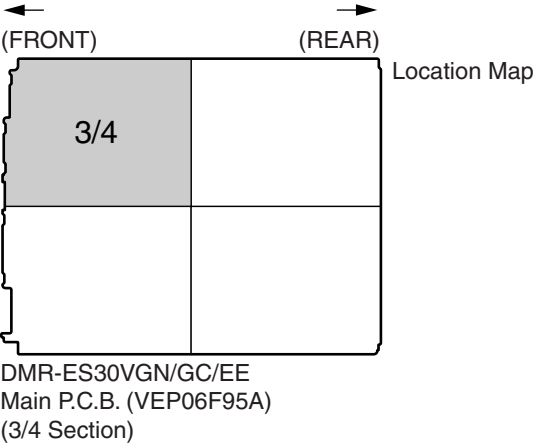
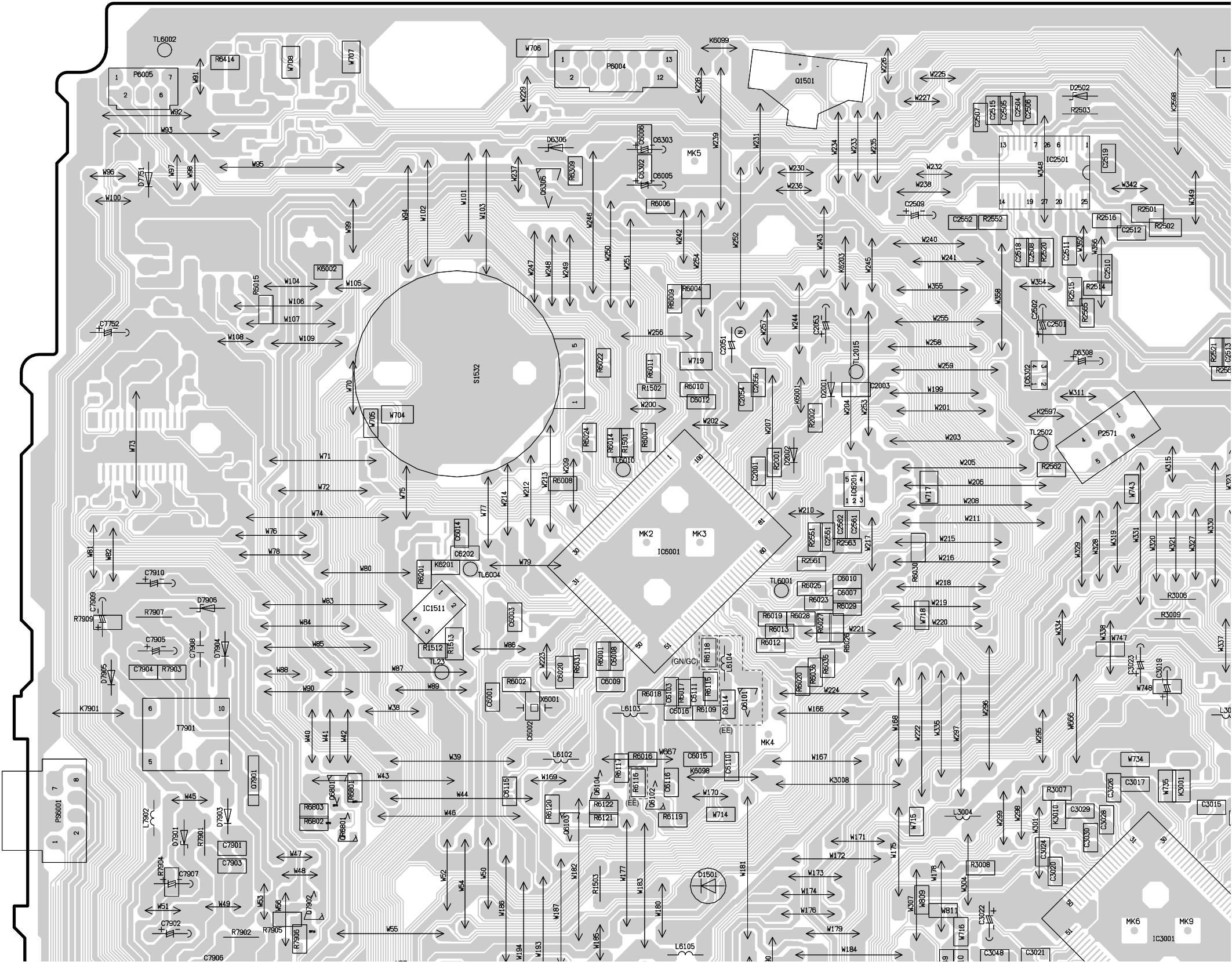
DMR-ES30VGN/GC/EE
Main P.C.B. (VEP06F95A)
(2/4 Section)

23.3.3. Main P.C.B. (3/4 Section)

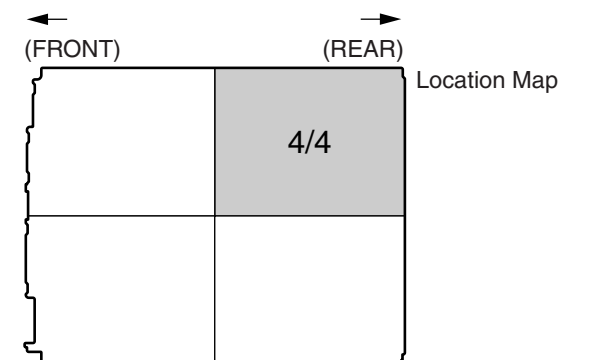
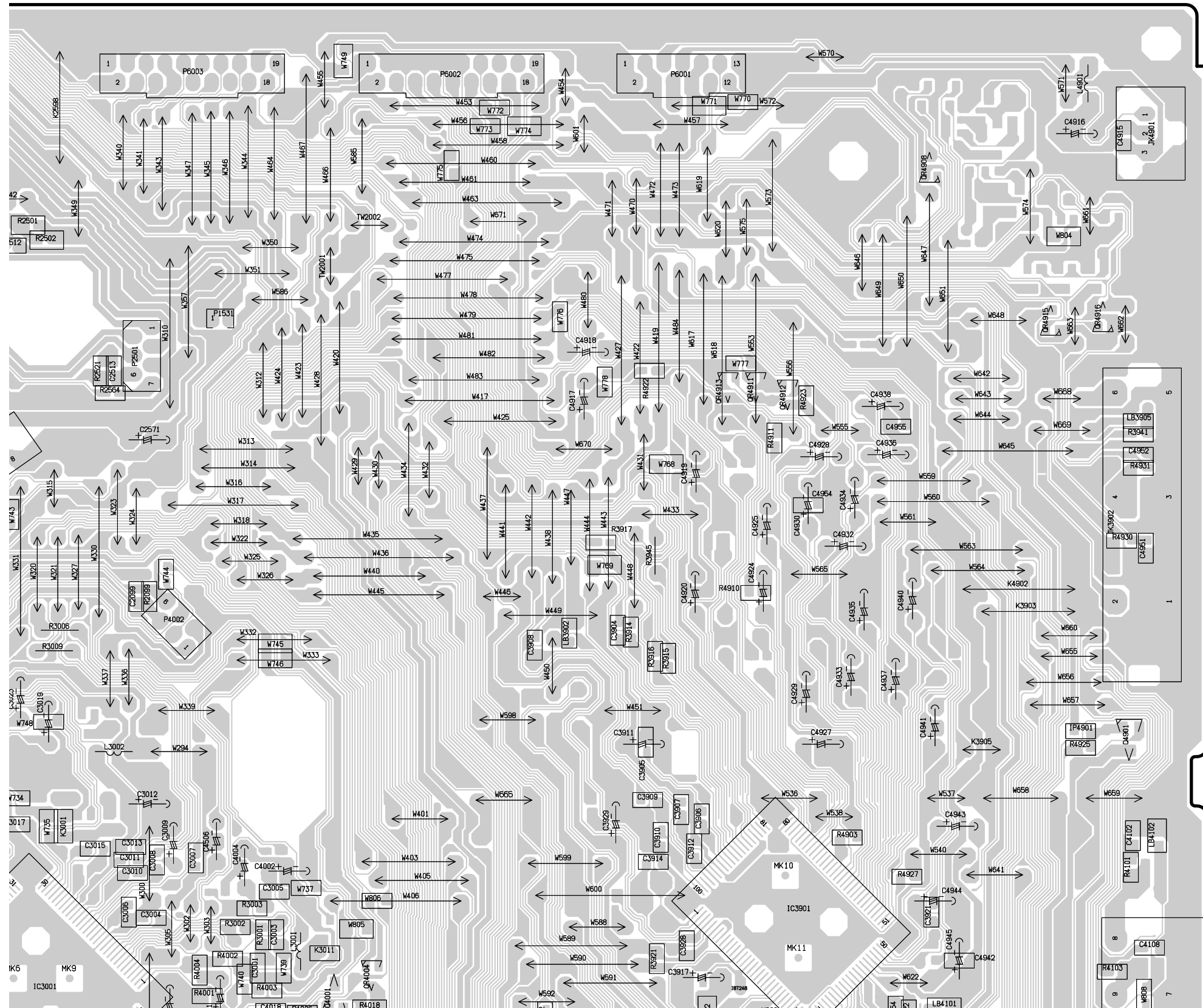
F

E

D



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

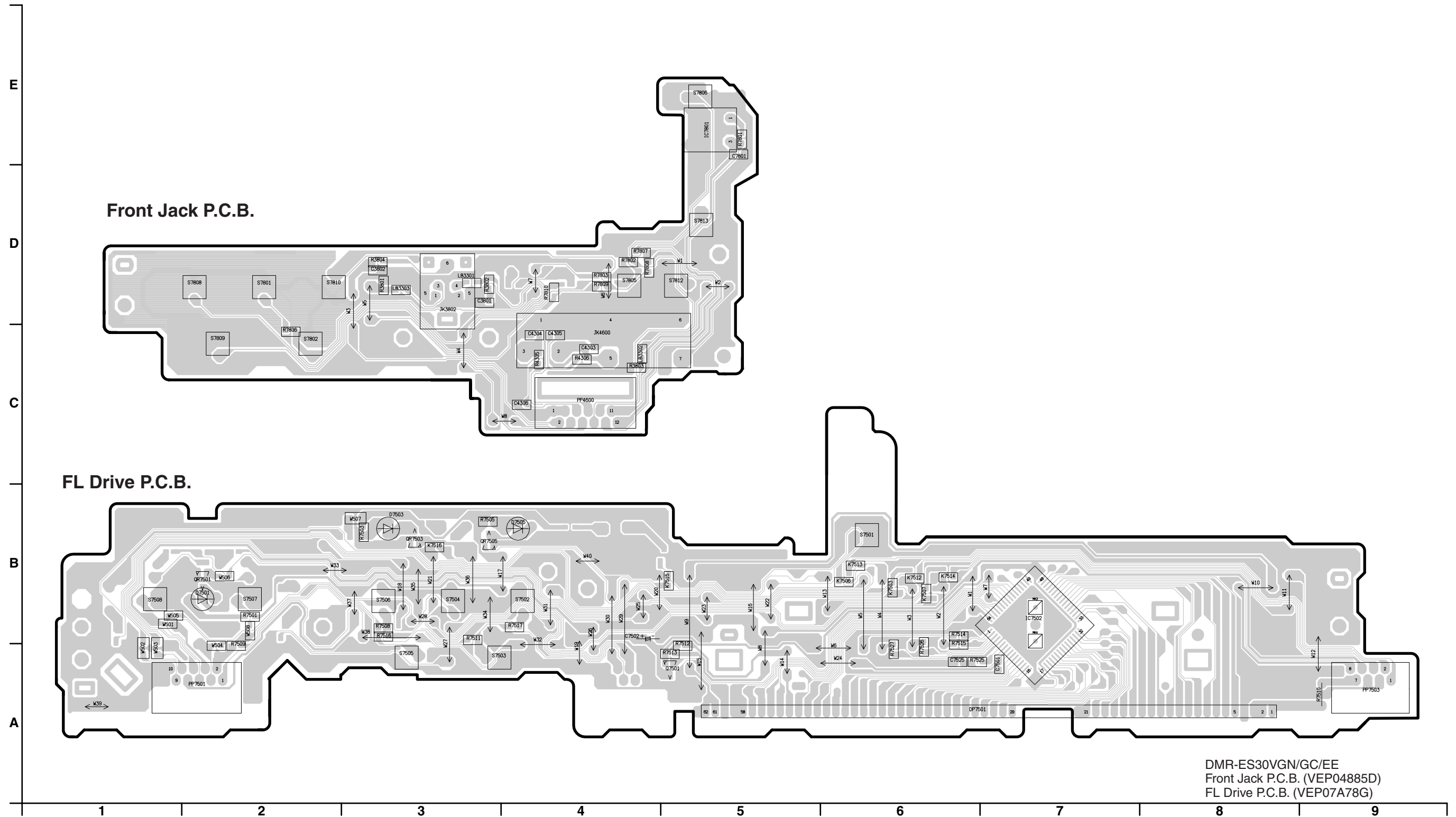


DMR-ES30VGN/GC/EE
Main P.C.B. (VEP06F95A)
(4/4 Section)

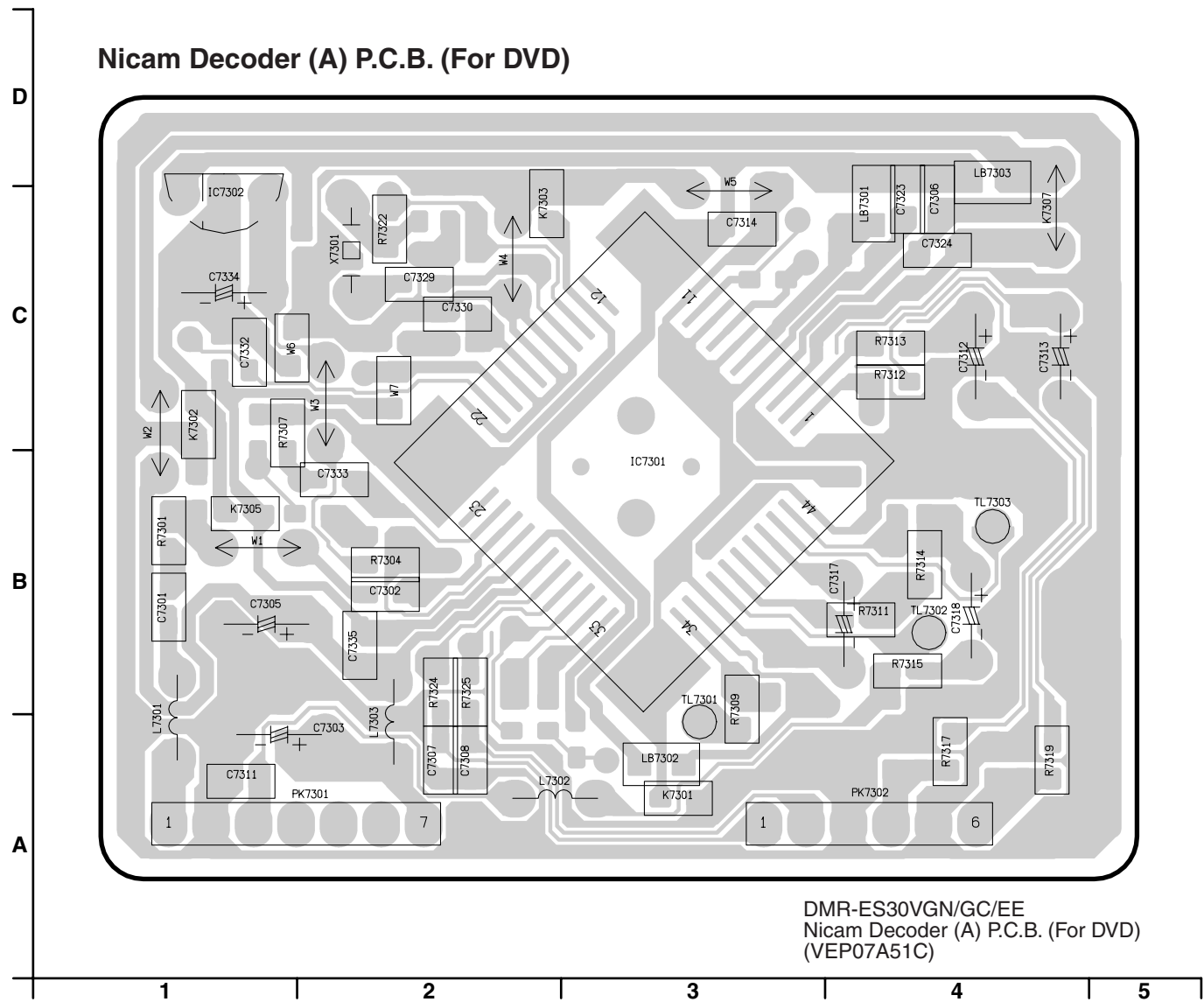
23.3.5. Main P.C.B. Address Information

Main P.C.B.															
Integrated Circuit		PS6001	D-1	C2506	F-4	C3929	D-6	C4924	E-6	C7438	A-7	R3937	C-8	R6010	E-3
IC1511	D-2	PS6002	B-1	C2507	F-4	C3930	C-5	C4925	E-6	C7439	A-7	R3938	B-7	R6011	E-3
IC1512	C-2	Diode	D-3	C2508	F-4	C3931	C-6	C4927	D-7	C7441	B-7	R3939	B-7	R6012	D-3
IC2501	F-4			D1501	D-3	C2509	F-4	C3932	C-6	C4928	E-7	C7442	A-6	R3940	B-7
IC3001	C-4	D2001	E-3	C2510	E-4	C3933	C-6	C4929	D-7	C7443	A-6	R3941	E-8	R6014	E-3
IC3002	C-2	D2002	E-3	C2511	F-4	C3934	C-6	C4930	E-7	C7445	A-7	R3945	E-6	R6015	E-2
IC3901	D-7	D2502	F-4	C2512	F-4	C3935	C-6	C4932	E-7	C7446	A-6	R4001	C-5	R6016	D-3
IC3902	C-6	D4501	B-4	C2513	E-5	C3936	C-6	C4933	D-7	C7448	A-7	R4002	C-5	R6017	D-3
IC3903	C-6	D4502	B-2	C2515	F-4	C3937	B-7	C4934	E-7	C7449	A-6	R4003	C-5	R6018	D-3
IC3904	C-6	D4901	C-7	C2518	F-4	C3938	B-7	C4935	E-7	C7450	A-6	R4004	C-5	R6019	D-3
IC3906	B-7	D6306	F-2	C2519	F-4	C3939	B-7	C4936	E-7	C7452	A-5	R4006	C-5	R6020	D-3
IC4501	B-4	D7401	B-6	C2551	E-3	C3943	C-6	C4937	D-7	C7453	A-5	R4007	C-5	R6022	E-3
IC6001	E-3	D7402	B-8	C2552	F-4	C3945	C-6	C4938	E-7	C7454	A-7	R4008	C-5	R6023	D-3
IC6201	E-3	D7751	F-1	C2561	E-3	C3946	C-6	C4940	E-7	C7455	A-8	R4009	C-5	R6024	E-3
IC6302	E-4	D7901	D-1	C2562	E-3	C3947	C-7	C4941	D-7	C7456	A-8	R4011	C-5	R6025	D-3
IC7401	B-7	D7902	C-1	C2571	E-5	C3952	C-6	C4942	C-7	C7457	A-7	R4012	C-5	R6026	D-3
IC7402	B-6	D7903	D-1	C3001	C-5	C3953	C-7	C4943	D-7	C7465	B-6	R4013	C-5	R6027	D-3
IC7405	A-7	D7904	D-1	C3003	D-5	C3954	C-7	C4944	D-7	C7466	A-5	R4014	B-2	R6028	D-3
Transistor		D7905	D-1	C3004	D-5	C3955	C-7	C4945	C-7	C7476	A-7	R4015	B-1	R6029	D-3
Q1501	F-3	D7906	D-1	C3005	D-5	C3956	C-8	C4951	E-8	C7477	A-7	R4016	B-2	R6030	E-4
Q1502	A-3	Crystal Osillator		C3006	D-5	C3957	B-7	C4952	E-8	C7752	E-1	R4017	B-2	R6031	D-3
Q3002	C-4	X3001	C-4	C3007	D-5	C4001	C-5	C4954	E-7	C7901	D-1	R4018	C-5	R6035	D-3
Q4001	C-5	X3002	C-4	C3008	D-5	C4002	D-5	C4955	E-7	C7902	C-1	R4019	C-5	R6036	D-3
Q4002	C-5	X6001	D-2	C3009	D-5	C4004	D-5	C5001	C-5	C7903	D-1	R4101	D-8	R6109	D-3
Q4003	B-2	IC Protector		C3010	D-5	C4005	C-5	C5002	C-5	C7904	D-1	R4102	C-8	R6115	D-3
Q4004	B-2	IP4901	D-7	C3011	D-5	C4007	C-5	C5003	C-5	C7905	D-1	R4103	C-8	R6117	D-3
Q4501	B-2	Coil		C3012	D-5	C4008	C-5	C5004	C-5	C7906	C-1	R4104	C-8	R6118	D-3
Q4502	C-1	L3001	C-5	C3013	D-5	C4009	C-5	C5005	C-4	C7907	D-1	R4501	B-5	R6119	D-3
Q4901	D-8	L3002	D-5	C3015	D-4	C4010	C-5	C5006	C-4	C7908	D-1	R4502	B-5	R6120	D-2
Q6102	D-3	L3004	D-4	C3017	D-4	C4011	C-5	C5007	C-4	C7909	D-1	R4503	B-5	R6121	D-3
Q6103	D-2	L3006	C-4	C3019	D-4	C4012	C-5	C6001	D-2	C7910	E-1	R4504	B-5	R6122	D-3
Q6104	D-3	L3007	C-4	C3020	D-4	C4014	C-5	C6002	D-2	Resistor		R4505	B-5	R6201	E-2
Q6305	F-2	L4001	B-2	C3021	C-4	C4015	C-5	C6003	D-2	R1501	E-3	R4506	B-5	R6309	F-2
Q6801	D-2	L4502	B-4	C3022	C-4	C4016	C-5	C6005	F-3	R1502	E-3	R4507	B-5	R6414	F-1
Q7401	B-6	L4503	B-1	C3023	D-4	C4017	C-5	C6006	F-3	R1503	D-3	R4508	B-5	R6801	D-2
Q7402	B-8	L4901	F-7	C3024	D-4	C4018	C-5	C6007	D-3	R1511	B-2	R4509	B-5	R6802	D-2
Q7403	A-6	L5001	C-4	C3026	D-4	C4020	B-2	C6008	D-3	R1512	D-2	R4510	C-5	R6803	D-2
Q7901	D-1	L6102	D-2	C3028	D-4	C4021	A-2	C6009	D-3	R1513	D-2	R4511	B-5	R7401	B-6
Q7902	C-2	L6103	D-3	C3029	D-4	C4022	B-1	C6010	D-3	R2001	E-3	R4512	C-5	R7402	B-6
Transistor-resistor		L6105	C-3	C3030	D-4	C4023	A-2	C6012	E-3	R2002	E-3	R4513	B-5	R7403	B-7
QR3901	B-7	L7401	B-5	C3033	B-3	C4024	A-2	C6014	E-2	R2099	E-5	R4514	B-5	R7404	B-7
QR4003	C-5	L7404	A-5	C3034	C-4	C4101	C-8	C6015	D-3	R2501	F-4	R4515	C-5	R7405	B-6
QR4004	C-5	L7901	C-1	C3036	C-4	C4102	D-8	C6016	D-3	R2502	F-4	R4516	B-5	R7406	B-6
QR4005	B-2	L7902	D-1	C3037	C-4	C4107	C-8	C6020	D-2	R2503	F-4	R4517	B-5	R7410	A-6
QR4501	C-2	LB3902	D-6	C3038	C-4	C4108	C-8	C6101	C-2	R2514	E-4	R4518	B-5	R7411	B-6
QR4908	F-7	LB3903	C-7	C3039	C-4	C4501	B-5	C6103	D-3	R2515	E-4	R4519	C-1	R7413	A-7
QR4911	E-6	LB3904	B-7	C3040	C-4	C4502	B-5	C6110	D-3	R2516	F-4	R4520	B-4	R7416	A-6
QR4912	E-7	LB3905	E-8	C3041	C-4	C4503	B-5	C6111	D-3	R2520	F-4	R4521	B-4	R7417	A-6
QR4913	E-6	LB4101	C-7	C3042	C-4	C4504	B-5	C6115	D-2	R2521	E-5	R4522	B-4	R7418	A-6
QR4914	B-7	LB4102	D-8	C3043	C-4	C4505	C-5	C6116	D-3	R2551	E-3	R4523	B-4	R7419	A-6
QR4915	E-7	LB4201	C-5	C3044	C-4	C4506	D-5	C6202	E-2	R2552	F-4	R4524	B-4	R7420	A-6
QR4916	E-8	LB4202	C-5	C3045	C-4	C4508	B-4	C6302	F-3	R2561	E-3	R4525	B-4	R7421	A-5
QR6801	D-2	LB4203	C-5	C3046	C-4	C4509	B-4	C6303	F-3	R2562	E-4	R4526	B-4	R7422	A-5
QR7401	B-6	LB7401	B-6	C3047	C-4	C4510	B-4	C6308	E-4	R2563	E-3	R4527	B-4	R7433	B-6
QR7402	B-8	LB7402	B-7	C3048	C-4	C4511	B-4	C7401	A-7	R2564	E-5	R4528	C-1	R7434	B-8
Test Point		LB7403	B-8	C3049	C-4	C4512	C-5	C7402	B-8	R2565	E-4	R4530	B-5	R7435	A-6
TL23	D-2	LB7404	B-6	C3050	C-4	C4513	C-5	C7403	B-7	R3001	D-5	R4532	B-4	R7901	D-1
TL24	B-2	LB7405	B-6	C3051	C-2	C4515	B-4	C7404	B-6	R3002	D-5	R4554	B-5	R7902	C-1
TL2015	E-3	LB7406	B-6	C3052	C-2	C4516	B-4	C7405	B-6	R3003	D-5	R4555	C-1	R7903	D-1
TL2502	E-4	LB7409	A-7	C3053	C-2	C4518	B-4	C7406	B-6	R3006	D-4	R4557	B-5	R7904	D-1
TL4501	B-4	LB7410	A-7	C3065	B-2	C4519	B-4	C7407	B-6	R3007	D-4	R4558	B-5	R7905	C-2
TL6001	D-3	LB7411	A-6	C3901	C-6	C4520	B-4	C7411	B-6	R3008	D-4	R4559	B-5	R7906	C-2
TL6002	F-1	LB7412	A-6	C3904	D-6	C4521	B-4	C7412	B-6	R3009	D-4	R4560	B-5	R7907	D-1
TL6004	E-2	LB7413	A-5	C3905	D-6	C4522	B-4	C7413	B-6	R3010	B-4	R4903	D-7	R7908	C-1
TL6010	E-3	LB7415	B-6	C3906	D-6	C4523	B-4	C7414	B-5	R3013	C-4	R4910	E-6	R7909	D-1
Connector		LB7416	B-7	C3907	D-6	C4524	B-4	C7415	B-6	R3014	C-4	R4911	E-7	Transformer	
JK3901	C-8	LB7417	A-7	C3908	D-6	C4526	B-4	C7417	B-6	R3015	C-4	R4922	E-6	T4001	B-2
JK3902	E-8	LB7901	C-1	C3909	D-6	C4531	B-4	C7418	B-6	R3016	C-4	R4923	E-7	T7901	D-1
JK4901	F-8	Capacitor		C3910	D-6	C4533	B-5	C7422	B-6	R3017	C-4	R4925	D-7		
P1531	E-5	C2001	E-3	C3911	D-6	C4534	B-5	C7424	B-8	R3021	C-4	R4926	B-7		
P2501	E-5	C2003	E-3	C3912	D-6	C4544	C-2	C7425	B-7	R3914	D-6	R4927	D-7		
P2571	E-4	C2051	E-3	C3914	D-6	C4545	B-2	C7426	B-7	R3915	D-6	R4930	E-8		
P4001	B-4	C2053	E-3	C3917	C-6	C4546	B-5	C7428	A-7	R3916	D-6	R4931	E-8		
P4002	D-5	C2054	E-3	C3918	C-6	C4547	B-5	C7430	B-6	R3917	E-6	R6001	D-3		
P5001	C-5	C2055	E-3	C3921	D-7	C4915	F-8	C7431	B-6	R3918	C-7	R6002	D-2		
P6001	F-6	C2099	E-5	C3922	C-7	C4916	F-7	C7432	A-7	R3921	C-6	R6004	E-3		
P6002	F-6	C2501	E-4	C3924	C-7	C4917	E-6	C7434	A-7	R3922	C-6	R6006	F-3		
P6003	F-5	C2502	E-4	C3925	C-7	C4918	E-6	C7435	A-7	R3934	B-7	R6007	E-3		
P6004	F-3	C2504	F-4	C3926	C-7	C4919	E-6	C7436	A-6	R3935	C-7	R6008	E-2		
P6005	F-1	C2505	F-4	C3928	C-6	C4920	E-6	C7437	A-7	R3936	C-8	R6009	E-3		

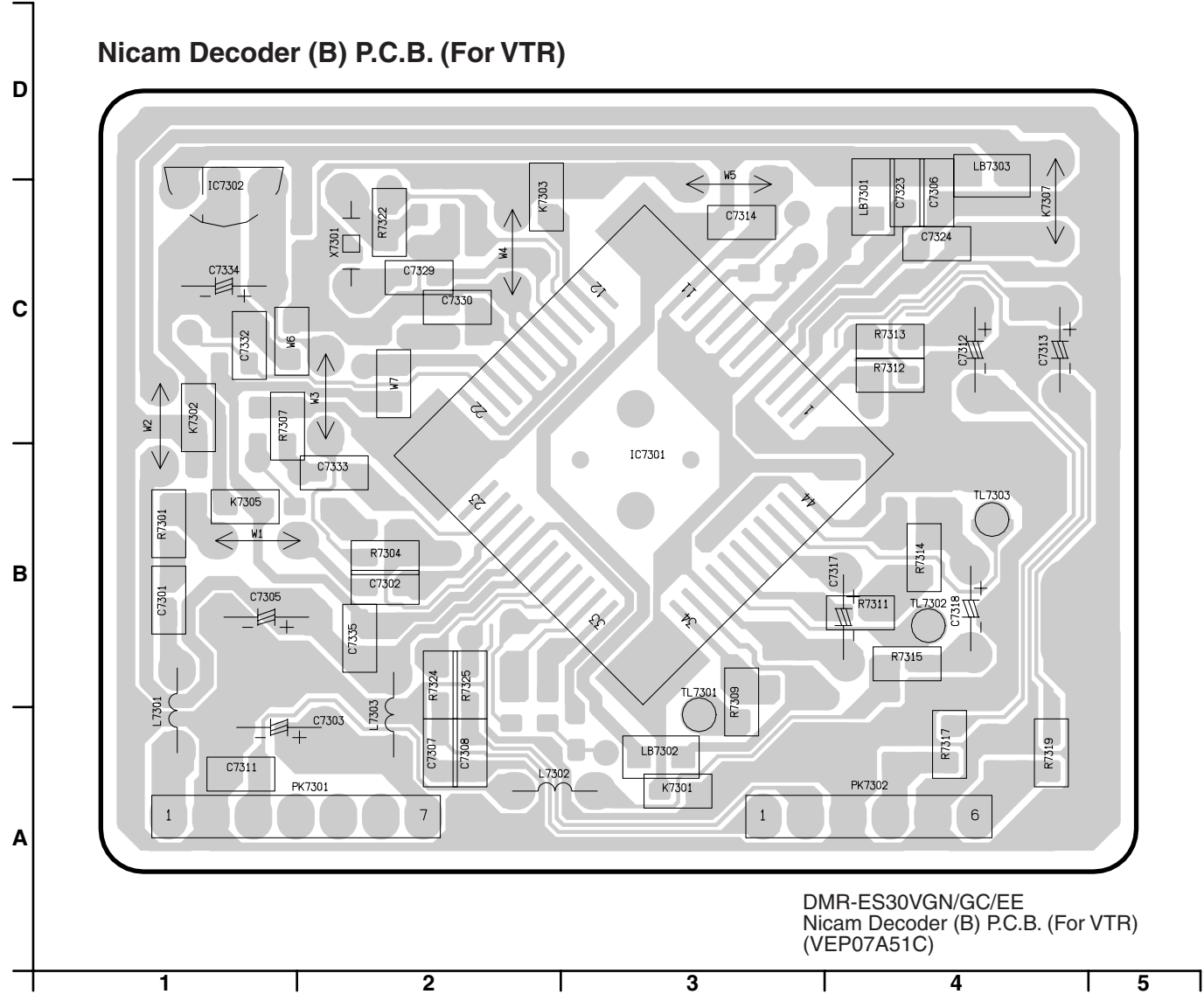
23.4. Front Jack P.C.B. , FL Drive P.C.B



23.5. Nicam Decoder (A) P.C.B. (For DVD)

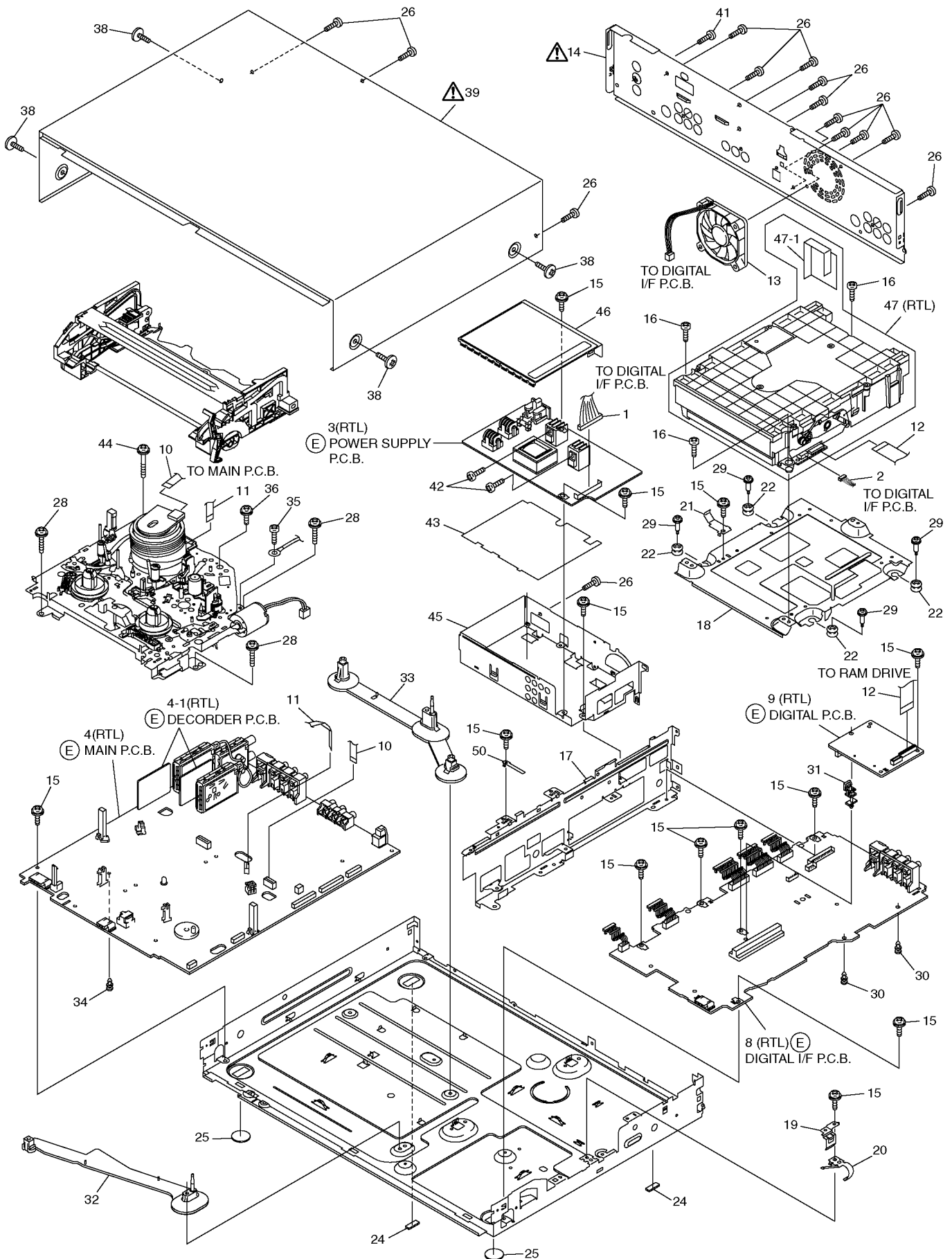


23.6. Nicam Decoder (B) P.C.B. (For VTR)

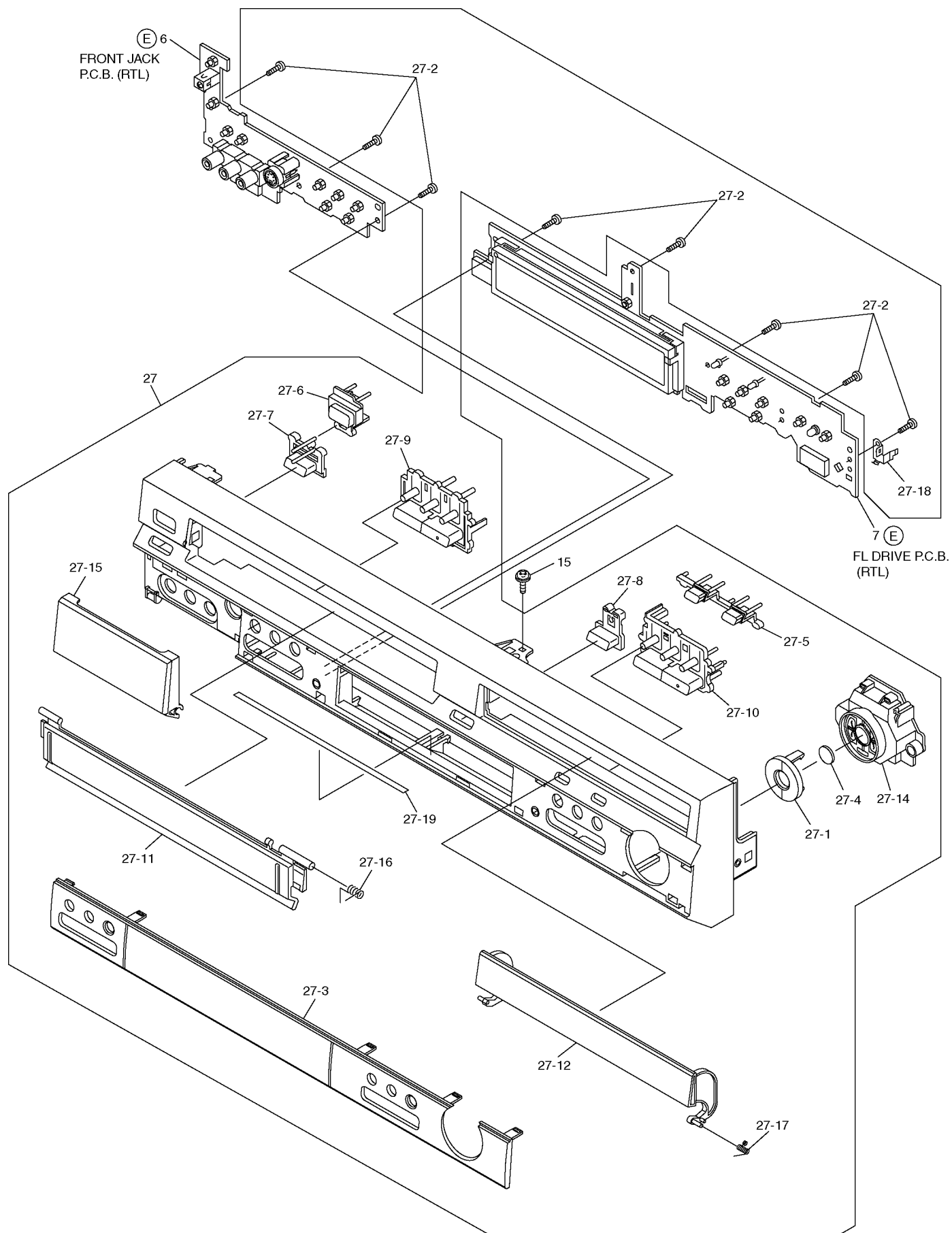


24 Exploded Views

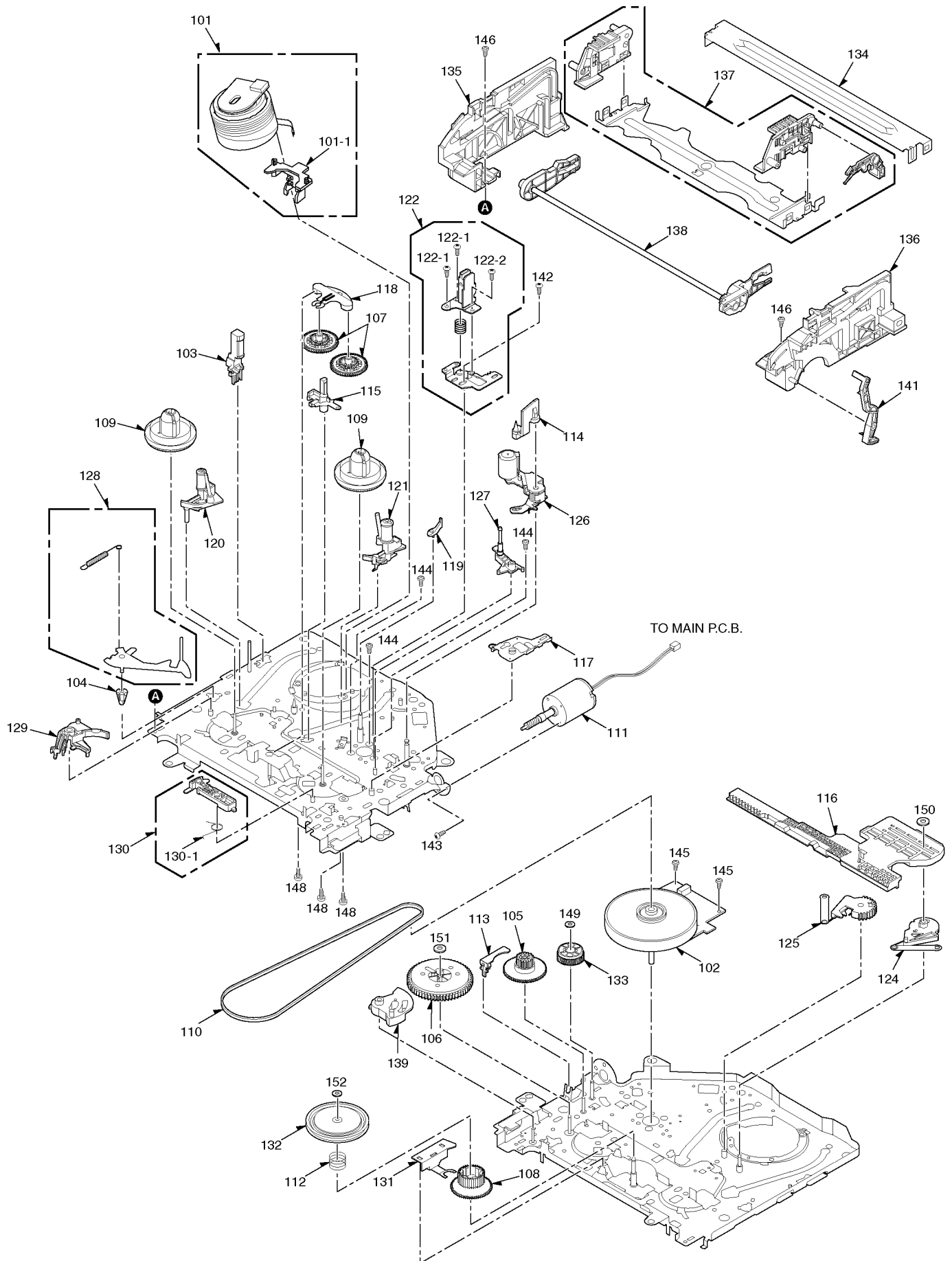
24.1. Casing Parts & Mechanism Section 1



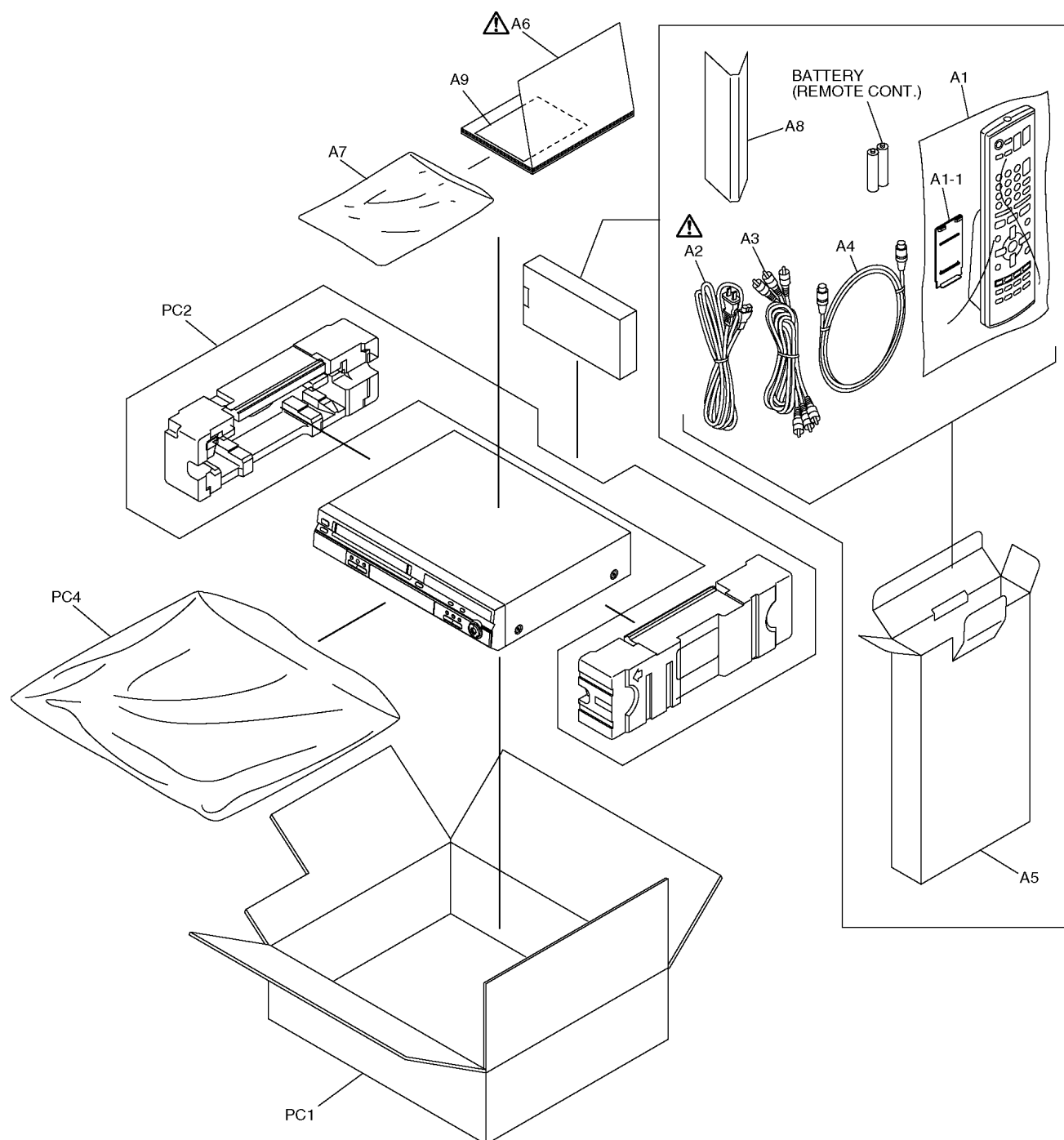
24.2. Casing Parts & Mechanism Section 2



24.3. VHS Mechanism Section



24.4. Packing & Accessories Section



25 Replacement Parts List

Notes:

*Important safety notice:

Components identified by \triangle 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 (μ 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)-(ID)”, marks in Remarks indicate languages of instruction manuals. [(IA): English, (IB): English/ Alabic, (IC): Ukrainian, (ID): Russian]

*All parts except parts mentioned [SPC] in the Remarks column are supplied from PAVC JM.

*Parts mentioned [SPC] are supplied from PAVC.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
n	01	CASING/ACCESSPRY/PACKING	1	(RTL)
1	VEE0Z83-1	WIRE WITH CONNECTOR (16P)	1	
2	VEE1A64	WIRE WITH CONNECTOR (4P)	1	
3	VEP01965A	POWER SUPPLY P.C.B.	1	(RTL)
4	VEP06F95A	MAIN P.C.B.	1	(RTL) GN, GC
4	VEP06F95B	MAIN P.C.B.	1	(RTL) EE
4-1	VEP07A51C	RECORDER P.C.B.	2	
6	VEP04885D	FRONT JACK P.C.B.	1	(RTL)
7	VEP07A78G	FL DRIVE P.C.B.	1	(RTL)
8	VEP09136C	DIGITAL I/F P.C.B.	1	(RTL)
9	VEP79104G	DIGITAL P.C.B.	1	(RTL) GN
9	VEP79104M	DIGITAL P.C.B.	1	(RTL) GC
9	VEP79104N	DIGITAL P.C.B.	1	(RTL) EE
10	VWJ1727	FFC (7P)	1	
11	VWJ1728	FFC (6P)	1	
12	VWJ1776-1	FFC (40P)	1	
13	L6FAKCE0007	SMALL DC FAN MOTOR	1	
14	RGR0355C-A1	REAR PANEL	1	GN \triangle
14	RGR0355C-B1	REAR PANEL	1	GC \triangle
14	RGR0355C-C	REAR PANEL	1	EE \triangle
15	RHD30111-3	SCREW	14	
16	RHD30115-3	SCREW	3	
17	RMA1897	CENTER ANGLE	1	
18	RMA1905	DVD ANGLE	1	
19	RMA1914	DIGITAL ANGLE	1	
20	RMC0622	EARTH SPRING (DIGITAL)	1	
21	RMC0632	EARTH SPRING	1	
22	RMG0677-K	DAMPER	4	
24	VKA0382	LEG CUSHION	2	
25	RKA0178-X	LEG	2	
26	VHD0690-1	SCREW	14	
27	RYP1277B-S	FRONT PANEL ASS'Y	1	GN

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
27	RYP1277J-S	FRONT PANEL ASS'Y	1	GC
27	RYP1277P-S	FRONT PANEL ASS'Y	1	EE
27-1	RGU2375-S	DUB BUTTON (2)	1	
27-2	RHD26045-L	SCREW	8	
27-3	RKW0777-S	FRONT WINDOW	1	
27-4	RKW0781-Q	DUB WINDOW	1	
27-5	RGL0673-W	PANEL LIGHT	1	
27-6	RGU2369-W	POWER BUTTON	1	
27-7	RGU2370-S	EJECT BUTTON	1	
27-8	RGU2371-S	OPEN BUTTON	1	
27-9	RGU2372D-S	PLAY BUTTON (VHS)	1	
27-10	RGU2373D-S	PLAY BUTTON (DVD)	1	
27-11	RKF0722A-S	BLINDER PANEL	1	
27-12	RKF0723-S1	TRAY DOOR	1	GN, GC
27-12	RKF0723-S	TRAY DOOR	1	EE
27-14	RGU2374-H	DUB BUTTON (1)	1	
27-15	RYF0762-S	DOOR ASS'Y	1	
27-16	VMB2521	BLINDER SPRING	1	
27-17	VMB3410	TRAY SPRING	1	
27-18	RMC0637	EARTH SPRING (C)	1	
27-19	RMX0330	WINDOW SHEET	1	
28	VHD1453-3	SCREW	3	
29	VHD1662	SCREW	4	
30	VKC0295	PCB HOLDER	2	
31	VKC0612	PCB SPACER	1	
32	VMX3115	MECHA SPACER (F)	1	
33	VMX3229	MECHA SPACER (R)	1	
34	VMX3277	SPACER	1	
35	XTV26+5FFJ	SCREW	1	
36	XTW3+10PN	SCREW	1	
38	RHD30113	SCREW	4	
39	VGM2077	TOP PANEL	1	\triangle
41	XSN3+4FJK	SCREW	1	
42	XYN3+F8FJ	SCREW	2	
43	RMZ0778	POWER BARRIER	1	
44	VHD1452-2	SCREW	1	
45	RSC0770C	SHIELD CASE (B)	1	
46	VSC5586-1	SHIELD CASE (T)	1	
47	RFKNVXY1867	RAM DRIVE UNIT	1	(RTL) (SPC)
47-1	RMV0307	BARRIER	1	(SPC)
50	RMC0637	EARTH SPRING (C)	1	
101	VEG1642-DKIT	RDD CYLINDER ASS'Y	1	GN, GC
101	VEG1643-DKIT	RDD CYLINDER ASS'Y	1	EE
101-1	VMD4983	FPC HOLDER	1	
102	VEM0750T	CAPSTAN MOTOR	1	
103	L1AZ00000004	FE HEAD ASS'Y	1	
104	VDB1431	TENSION ARM BOSH	1	
105	VDG1510	INTERMEDIATE GEAR	1	
106	VDG1511-4	MAIN CAM GEAR	1	
107	VDG1512-1	IDLER GEAR	2	
108	VDG1514-3	CHANGE GEAR	1	
109	VDR0372A	REEL TABLE	2	
110	VDV0391-2	CAPSTAN BELT	1	
111	VEM0797	LOADING MOTOR	1	
112	VMB3550	CHANGING GEAR SPRING	1	
113	VMD4987	WORM SHAFT HOLDER	1	
114	VMD4252	OPENER PIECE	1	
115	VMD4253	LED PRISM	1	
116	VML3624-2	MAIN LEVER	1	
117	VML3626-1	PINCH CHARGE ARM	1	
118	VML3632	IDLER ARM	1	
119	VMX3092	P4 CAP	1	
120	VXA7105-3	S SHAFT HOLDER	1	
121	VXA7106-3	T SHAFT HOLDER	1	
122	L1AE000000036	AC HEAD ASS'Y	1	
122-1	VHD1066-2	SCREW	2	
122-2	VHD1185	SCREW	1	
124	VXL3107	S LOADING ARM	1	
125	VXL3108	T LOADING ARM	1	
126	VXL3109-6	PINCH ARM	1	
127	VXL3110	P5 ARM	1	
128	VXL3111-1	TENSION ARM	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
129	VXL3252	S BRAKE ARM	1	
130	VXL3113	T BRAKE ARM	1	
130-1	VMB3548-2	T BRAKE SPRING	1	
131	VXL3124-2	CHANGING LEVER U	1	
132	VXP2133-2	CENTER CLUTH U	1	
133	VXP2168	TORQUE CLUTCH	1	
134	VMA0L25	TOP PLATE	1	
135	VMD4255-4	SIDE PLATE L	1	
136	VMD4254-4	SIDE PLATE R	1	
137	VXA7110-4	CASSETTE HOLDER UNIT	1	
138	VXL3160	MAIN SHAFT	1	
139	VXA7311-1	SECTOR GEAR	1	
141	VML3706-1	OPENER LEVER	1	
142	VHD1044-1	A/C SET SCREW	1	
143	XYN3+C4FJ	SCREW	1	
144	XTN26+7JFJ	SCREW	3	
145	XTV26+5FFJ	SCREW	2	
146	XTV26+8FFJ	SCREW	2	
148	VHD1117-1	SCREW	3	
149	VMX2208	WASHER	1	
150	VMX3114	WASHER	1	
151	VMX2699	WASHER	1	
152	VMX3196	WASHER	1	
A1	EUR7720KW0	REMOTE CONTROL ASS'Y	1	GN
A1	EUR7720KX0	REMOTE CONTROL ASS'Y	1	GC
A1	EUR7720KZ0	REMOTE CONTROL ASS'Y	1	EE
A1-1	UR77EC2003A	BATTERY COVER	1	
A2	K2CJ2DA00008	AC CORD	1	GN △
A2	RJA0053-3X	AC CORD	1	GC △
A2	K2CQ2CA00006	AC CORD	1	GC,EE △
A3	K2KA6BA00003	AV CORD	1	GN,GC
A3	K2KA6CA00001	AV CORD	1	EE
A4	K1TWACC00001	RF COAXIAL CABLE	1	
A5	RPQF0254	ACCESSORY CASE	1	
A6	VQT0P03	OPERATING INSTRUCTIONS	1	(IB) GN △
A6	VQT0Q46	OPERATING INSTRUCTIONS	1	(IA) GC △
A6	VQT0S96	OPERATING INSTRUCTIONS	1	(IC) EE △
A6	VQT0S97	OPERATING INSTRUCTIONS	1	(ID) EE △
A7	RPF0042-2	VINYL BAG (F.B.)	1	GN,GC
A8	RPQ1594	PAD	1	
A9	RQCC2705	DVD MEDIA SHEET	1	GN,GC
PC1	RPG7556	PACKING CASE	1	GN
PC1	RPG7557	PACKING CASE	1	GC
PC1	RPG7681	PACKING CASE	1	EE
PC2	RPN1797	CUSHION	1	
PC4	VPF1122-1	POLYETHYLENE BAG	1	
n	02	VEP06F95A/B	1	(MAIN P.C.B.)
C2001	ECJ1VC1H330J	50V 33P	1	
C2003	ECJ1VF1A105Z	10V 1U	1	
C2051	ECEA0JKN220B	6.3V 22U	1	
C2053	ECEA1CKA100B	16V 10U	1	
C2054	F1H1H392A013	50V 3900	1	
C2055	F1H1C104A008	16V 0.1U	1	
C2099	ECJ1VC1H681J	50V 680P	1	
C2501	F1H1C104A008	16V 0.1U	1	
C2502	ECEA0JKA221B	6.3V 220U	1	
C2504,05	F1H1E223A002	25V 0.022U	2	
C2506	ECJ1VB1A224K	10V 0.22U	1	
C2507	F1H1H102A219	50V 1000P	1	
C2508	ECJ1VB1H182K	50V 1800P	1	
C2509	ECEA1CKA220B	16V 22U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2510-12	F1H1C104A041	16V 0.1U	3	
C2513	ECJ1VF1A105Z	10V 1U	1	
C2515	F1H1H103A220	50V 0.01U	1	
C2518,19	F1H1H103A220	50V 0.01U	2	
C2551,52	ECJ1VB1C563K	16V 0.056U	2	
C2561,62	ECJ1VB1C563K	16V 0.056U	2	
C2571	ECA1VM221B	35V 220U	1	
C3001	ECJ1VC1H151J	50V 150P	1	
C3003	F1H0J1050010	CHIP CAPACITOR	1	
C3004	F1H1C104A041	16V 0.1U	1	
C3005	ECJ1VC1H390J	50V 39P	1	
C3006	F1H1C104A041	16V 0.1U	1	
C3007	F1H0J1050010	CHIP CAPACITOR	1	
C3008	F1H1H103A219	50V 0.01U	1	
C3009	ECEA1HKA4R7B	50V 4.7U	1	
C3010,11	F1H0J1050010	CHIP CAPACITOR	2	
C3012	ECEA0JKA470B	6.3V 47U	1	
C3013	F1H1C104A041	16V 0.1U	1	
C3015	F1H1C104A041	16V 0.1U	1	
C3017	F1H0J1050010	CHIP CAPACITOR	1	
C3019	ECEA1CKA100B	16V 10U	1	
C3020	ECJ1VC1H331J	50V 330P	1	
C3021	F1H1H103A220	50V 0.01U	1	
C3022	ECEA0JKA470B	6.3V 47U	1	
C3023	ECEA1HKA3R3B	50V 3U	1	
C3024	F1H1H103A219	50V 0.01U	1	
C3026	F1H0J1050010	CHIP CAPACITOR	1	
C3028-30	F1H1C104A041	16V 0.1U	3	
C3033	F1H1C104A041	16V 0.1U	1	
C3034	ECEA1HKA010B	50V 1U	1	
C3036	ECEA1HKA4R7B	50V 4.7U	1	
C3037	ECEA1HKA4R7B	50V 0.47U	1	
C3038	F1H1E223A002	25V 0.022U	1	
C3039	F1H1C3330001	16V 0.033U	1	
C3040	ECEA1HKA2R2B	50V 2.2U	1	
C3041	F1H1E223A002	25V 0.022U	1	
C3042	ECJ2YB0J335K	6.3V 3.3U	1	
C3043	F1H1C104A041	16V 0.1U	1	
C3044	ECEA0JKA470B	6.3V 47U	1	
C3045	F1H1C104A041	16V 0.1U	1	
C3046	ECJ1VC1H030C	50V 3P	1	
C3047	ECEA1HKA010B	50V 1U	1	
C3048,49	F1H1H103A220	50V 0.01U	2	
C3050	ECJ1VF1A105Z	10V 1U	1	
C3051	ECJ1VB1A105K	10V 1U	1	
C3052	F1H0J1050010	CHIP CAPACITOR	1	
C3053	F1H1C104A041	16V 0.1U	1	
C3065	ECEA0JKA101B	6.3V 100U	1	
C3901	F1H1H103A219	50V 0.01U	1	
C3904	F1H1H103A219	50V 0.01U	1	
C3905	F1H0J1050010	CHIP CAPACITOR	1	
C3906-09	F1H1C104A041	16V 0.1U	4	
C3910	F1H1H103A219	50V 0.01U	1	
C3911	ECEA0JKA221B	6.3V 220U	1	
C3912	F1H1C104A041	16V 0.1U	1	
C3914	F1H1H103A219	50V 0.01U	1	
C3917	F2A1A4710038	10V 470U	1	
C3918	ECEA0JKA101B	6.3V 100U	1	
C3921	F1H1C104A041	16V 0.1U	1	
C3922	F1H1H103A219	50V 0.01U	1	
C3924-26	F1H1C104A041	16V 0.1U	3	
C3928	F1H1C104A041	16V 0.1U	1	
C3929	ECEA0JKA221B	6.3V 220U	1	
C3930	F1H1H103A219	50V 0.01U	1	
C3931	F1H1C104A041	16V 0.1U	1	
C3932	F1H1H103A219	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3933-36	F1H1C104A041	16V 0.1U	4	
C3937	ECJ1VB1A105K	10V 1U	1	
C3938	F1H0J1050010	CHIP CAPACITOR	1	
C3939	F1H1C104A041	16V 0.1U	1	
C3943	F1H1C104A041	16V 0.1U	1	
C3945-47	F1H1C104A041	16V 0.1U	3	
C3952-55	F1H1C104A041	16V 0.1U	4	
C3956	F1H1H103A219	50V 0.01U	1	
C3957	F1H1C104A041	16V 0.1U	1	
C4001,02	ECEA1CKA100B	16V 10U	2	
C4004	ECEA1CKA100B	16V 10U	1	
C4005	ECEA0JKA101B	6.3V 100U	1	
C4007	ECJ1VB1H222K	50V 2200P	1	
C4008	ECJ1VB1H182K	50V 1800P	1	
C4009	ECEA0JKA220B	6.3V 22U	1	
C4010	ECEA1EKA4R7B	16V 4.7U	1	
C4011	ECEA0JKA470B	6.3V 47U	1	
C4012	F1H1H103A220	50V 0.01U	1	
C4014	ECEA1HKA4R7B	50V 4.7U	1	
C4015	ECJ1VB1H682K	50V 6800P	1	
C4016	ECEA0JKA220B	6.3V 22U	1	
C4017	ECEA1HKA3R3B	50V 3U	1	
C4018	ECJ1VB1H182K	50V 1800P	1	
C4020	ECQB1H223JF3	50V 0.023U	1	
C4021	ECJ1VC1H221J	50V 220P	1	
C4022	ECEA0JKA470B	6.3V 47U	1	
C4023	F1H1E223A002	25V 0.022U	1	
C4024	ECJ1VB1H152K	50V 1500P	1	
C4101,02	ECJ1VC1H471J	50V 470P	2	
C4107,08	ECJ1VC1H471J	50V 470P	2	
C4501-03	ECEA1CKA100B	16V 10U	3	
C4504	ECQB1H473JF3	50V 0.047U	1	
C4505	ECEA0JKA330B	6.3V 33U	1	
C4506	ECEA1CKA100B	16V 10U	1	
C4508	ECEA1CKA100B	16V 10U	1	
C4509	ECEA0JKA220B	6.3V 22U	1	
C4510	ECQB1H153JF3	50V 0.015U	1	
C4511	F1H1C3330001	16V 0.033U	1	
C4512,13	F1H1H103A220	50V 0.01U	2	
C4515	F1H1C104A008	16V 0.1U	1	
C4516	F1H1C104A041	16V 0.1U	1	
C4518	F1H1A224A025	10V 0.224U	1	
C4519	ECQB1H153JF3	50V 0.015U	1	
C4520	ECEA0JKA220B	6.3V 22U	1	
C4521	ECEA1CKA100B	16V 10U	1	
C4522	ECEA0JKA330B	6.3V 33U	1	
C4523	ECQB1H473JF3	50V 0.047U	1	
C4524	ECEA0JKA101B	6.3V 100U	1	
C4526	ECEA1CKA100B	16V 10U	1	
C4531	ECEA1CKA470B	16V 47U	1	
C4533	F1H1H103A220	50V 0.01U	1	
C4534	F1H1C104A041	16V 0.1U	1	
C4544	F1H1C104A008	16V 0.1U	1	
C4545	ECEA0JKA220B	6.3V 22U	1	
C4546,47	ECJ1VC1H101J	50V 100P	2	
C4915	F1H1C104A041	16V 0.1U	1	
C4916	F2A0J470A599	6.3V 47U	1	
C4917,18	ECEA1CKA100B	16V 10U	2	
C4919,20	F2A1V100A534	35V 10U	2	
C4924,25	F2A1V100A534	35V 10U	2	
C4927	F2A1C470A637	16V 47U	1	
C4928-30	F2A1H1R0A236	50V 1U	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4932-34	F2A1H1R0A236	50V 1U	3	
C4935	F2A1C470A637	16V 47U	1	
C4936-38	F2A1H1R0A236	50V 1U	3	
C4940,41	F2A1H1R0A236	50V 1U	2	
C4942	F1H1C104A008	16V 0.1U	1	
C4943	F2A1H1R0A236	50V 1U	1	
C4944	F2A1C470A637	16V 47U	1	
C4945	F2A1C221A637	16V 220U	1	
C4951,52	ECJ1VC1H471J	50V 470P	2	
C4954,55	ECJ1VC1H101J	50V 100P	2	
C5001-04	F1H1H103A219	50V 0.01U	4	
C5005	F1H1C104A008	16V 0.1U	1	
C5006	ECEA0JKA101B	6.3V 100U	1	
C5007	F1H1C104A041	16V 0.1U	1	
C6001	ECJ1VC1H180J	50V 18P	1	
C6002	ECJ1VC1H220J	50V 22P	1	
C6003	ERJ3GEY0R00V	1/10W 0	1	
C6005	ECEA1CKA100B	16V 10U	1	
C6006	F1H1C104A008	16V 0.1U	1	
C6007	ECJ1VC1H220J	50V 22P	1	
C6008	ECJ1VC1H471J	50V 470P	1	
C6009	F1H1H103A220	50V 0.01U	1	
C6010	ECJ1VC1H220J	50V 22P	1	
C6012	F1H1H103A220	50V 0.01U	1	
C6014	F1H1H103A220	50V 0.01U	1	
C6015	F1H1C3330001	16V 0.033U	1	
C6016	F1H1H102A219	50V 1000P	1	
C6020	F1J1H104A578	50V 0.1U	1	
C6101	ECEA0JKA221B	6.3V 220U	1	
C6103	F1H1H103A220	50V 0.01U	1	
C6110	ECJ1VFA1A105Z	10V 1U	1	
C6111	ECJ1VC1H561J	50V 560P	1	
C6114	ECJ1VC1H330J	50V 33P	1	EE
C6115	F1H1H103A220	50V 0.01U	1	
C6116	F1H1C104A041	16V 0.1U	1	
C6202	F1H1C104A008	16V 0.1U	1	
C6302	F1H1H103A220	50V 0.01U	1	
C6303	ECEA0JKA470B	6.3V 47U	1	
C6308	ECEA0JKA470B	6.3V 47U	1	
C7401	F1H0J1050010	CHIP CAPACITOR	1	
C7402	F1H1C104A041	16V 0.1U	1	
C7403	ECJ2FB1A105K	10V 1U	1	
C7404	F1H0J1050010	CHIP CAPACITOR	1	
C7405,06	F1H1C104A041	16V 0.1U	2	
C7407	ECJ2FB1A105K	10V 1U	1	
C7411	ECEA1HKA2R2B	50V 2.2U	1	
C7412,13	ECJ1VC1H330J	50V 33P	2	
C7414	ECEA0JKA470B	6.3V 47U	1	
C7415	ECEA1HKA010B	50V 1U	1	
C7417	ECEA0JKA101B	6.3V 100U	1	
C7418	F1H1H103A219	50V 0.01U	1	
C7422	F1H1H103A219	50V 0.01U	1	
C7424	ECEA1HKA010B	50V 1U	1	
C7425	ECEA0JKA470B	6.3V 47U	1	
C7426	ECJ1VC1H471J	50V 470P	1	
C7428	ECEA0JKA470B	6.3V 47U	1	
C7430	ECEA0JKA470B	6.3V 47U	1	
C7431	F1H1H103A219	50V 0.01U	1	
C7432	ERJ3GEY0R00V	1/10W 0	1	
C7434	F1H1H103A219	50V 0.01U	1	
C7435	ECEA0JKA470B	6.3V 47U	1	
C7436	ECEA1HKA2R2B	50V 2.2U	1	
C7437-39	ERJ3GEY0R00V	1/10W 0	3	
C7441	ECJ1VC1H471J	50V 470P	1	
C7442,43	ECJ1VC1H330J	50V 33P	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7445	ECEA0JKA101B	6.3V 100U	1	
C7446	F1H1H103A219	50V 0.01U	1	
C7448	ECJ1VC1H471J	50V 470P	1	
C7449	ECEA0JKA470B	6.3V 47U	1	
C7450	F1H1H103A219	50V 0.01U	1	
C7452	ECEA0JKA470B	6.3V 47U	1	
C7453	F1H1H103A219	50V 0.01U	1	
C7454	F1H0J1050010	CHIP CAPACITOR	1	
C7455,56	F1H1C104A041	16V 0.1U	2	
C7457	ECJ2FB1A105K	10V 1U	1	
C7465,66	ECJ1VC1H471J	50V 470P	2	
C7476,77	ECJ1VC1H471J	50V 470P	2	
C7752	ECA0JM221B	6.3V 220U	1	
C7901	F1H1H103A220	50V 0.01U	1	
C7902	ECEA1HKA100B	50V 10U	1	
C7903	ECJ1VF1H104Z	50V 0.1U	1	
C7904	F1H1C104A041	16V 0.1U	1	
C7905	F2A1C221A019	16V 220U	1	
C7906	ECQB1H473JF3	50V 0.047U	1	
C7907	F2A1A1010072	10V 100U	1	
C7908	ECQB1H223JF3	50V 0.023U	1	
C7909,10	F2A1H5600009	50V 56U	2	
D1501	B3EA00000072	LED	1	
D2001,02	B0AAED000003	DIODE	2	
D2502	MAZ4160NMF	DIODE	1	
D4501	B0AAED000003	DIODE	1	
D4502	MAZ4056NHF	DIODE	1	
D4901	MA2J11200L	DIODE	1	
D6306	MAZ4056NHF	DIODE	1	
D7401,02	MAZ4300NMF	DIODE	2	
D7751	B0AAED000003	DIODE	1	
D7901	MAZ4220NMF	DIODE	1	
D7902	B0AAGM000007	DIODE	1	
D7903	B0JAME000025	DIODE	1	
D7904,05	MA2C18500E	DIODE	2	
D7906	MAZ4300NMF	DIODE	1	
IC1511,12	B3NAA0000049	IC	2	
IC2501	C1AB00001767	IC	1	
IC3001	C1AB00002084	IC	1	
IC3002	C0CBCDD00007	IC	1	
IC3901	C1AB00002100	IC	1	
IC3902	C1AB00001681	IC	1	
IC3903,04	C1AB00001682	IC	2	
IC3906	C0CBCDD00006	IC	1	
IC4501	AN3656NFBPBV	IC	1	
IC6001	C2CBJG0000585	IC	1	GN, GC
IC6001	C2CBJG0000662	IC	1	EE
IC6201	C0EBH0000172	IC	1	
IC6302	C0CBCDC00020	IC	1	
IC7401,02	C0CBCDD00006	IC	2	
IC7405	C0CBCDD00006	IC	1	
IP4901	K5H5012A0010	IC PROTECTOR	1	△
JK3901	K1U718B00003	JACK, AV1, AV2	1	
JK3902	K2HA306B0081	JACK, DVD/VHS OUT	1	
JK4901	B3ZAZ0000017	JACK, DIGITAL AUDIO OUT	1	
K3001	ERJ6GEY0R00V	1/8W 0	1	
K3010,11	ERJ3GEY0R00V	1/10W 0	2	
K4502	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
K6002	ERJ3GEY0R00V	1/10W 0	1	
K6201	ERJ3GEY0R00V	1/10W 0	1	
K7401	ERJ3GEY0R00V	1/10W 0	1	
K7403	ERJ3GEY0R00V	1/10W 0	1	
K7405	ERJ3GEY0R00V	1/10W 0	1	
L3001	G0C271JA0019	COIL	1	
L3002	G0C270JA0019	COIL 27UH	1	
L3004	G0C680JA0019	COIL	1	
L3006	G0C270JA0019	COIL 27UH	1	
L3007	G1C120JA0036	COIL	1	
L4001	G0C471KA0065	COIL	1	
L4502	G0C1R2J00004	COIL 1.2UH	1	
L4503	G0C101JA0019	COIL 100UH	1	
L5001	G0C680JA0019	COIL	1	
L6103	G0C1R5JA0019	COIL	1	
L6104	G0C330JA0019	COIL 33UH	1	EE
L7401	G0C2R2JA0019	COIL 2.2UH	1	
L7404	G0C2R2JA0019	COIL 2.2UH	1	
L7901	G0A101EA0017	COIL	1	
LB3902	J0JGC0000020	COIL	1	
LB3903,04	J0JBC0000041	COIL	2	
LB3905	ERJ3GEY0R00V	1/10W 0	1	
LB4101,02	J0JBC0000041	COIL	2	
LB4201,02	J0JBC0000070	COIL	2	
LB4203	ERJ3GEY0R00V	1/10W 0	1	
LB7401-05	J0JHC0000032	COIL	5	
LB7406	ERJ3GEY0R00V	1/10W 0	1	
LB7409	ERJ3GEY0R00V	1/10W 0	1	
LB7410,11	J0JHC0000032	COIL	2	
LB7412,13	ERJ3GEY0R00V	1/10W 0	2	
LB7415	ERJ3GEY0R00V	1/10W 0	1	
LB7416,17	J0JHC0000032	COIL	2	
LB7901	J0JKB0000028	COIL	1	
P1531	K1KA02A00375	CONNECTOR (2P)	1	
P2501	K1MN07A00020	CONNECTOR (7P)	1	
P2571	K1KA08A00290	CONNECTOR (8P)	1	
P4001	K1MZ02A00003	CONNECTOR (2P)	1	
P4002	K1MN06A00034	CONNECTOR (6P)	1	
P5001	K1MN09A00029	CONNECTOR (9P)	1	
P6001	K1KB13AA0032	CONNECTOR (13P)	1	
P6002,03	K1KB19AA0032	CONNECTOR (19P)	2	
P6004	K1KB13AA0032	CONNECTOR (13P)	1	
P6005	K1KB07AA0032	CONNECTOR (7P)	1	
PS6001	K1KB08B00043	CONNECTOR (8P)	1	
PS6002	K1KB12B00040	CONNECTOR (FEMALE) 12P	1	
Q1501,02	PNB2302MF	TRANSISTOR	2	
Q3002	2SD1819A0L	TRANSISTOR	1	
Q4001	2SD114900L	TRANSISTOR	1	
Q4002	2SD1819A0L	TRANSISTOR	1	
Q4003	2SD0602ARL	CHIP TRANSISTOR	1	
Q4004	2SB0710A0L	TRANSISTOR	1	
Q4501	B1AAGD000016	TRANSISTOR	1	
Q4502	2SB0710A0L	TRANSISTOR	1	
Q4901	2SB0710A0L	TRANSISTOR	1	
Q6101	B1ADCF000063	TRANSISTOR	1	EE
Q6102,03	2SD1819A0L	TRANSISTOR	2	
Q6104	2SB1218A0L	TRANSISTOR	1	
Q6305	2SD0601A0L	TRANSISTOR	1	
Q6801	2SD1819A0L	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q7401,02	2SD1819A0L	TRANSISTOR	2	
Q7403	2SB1218A0L	TRANSISTOR	1	
Q7901	2SD21770SA	TRANSISTOR	1	
Q7902	2SD1819A0L	TRANSISTOR	1	
QR3901	UNR521100L	TRANSISTOR	1	
QR4003	UNR521100L	TRANSISTOR	1	
QR4004	UNR511100L	TRANSISTOR	1	
QR4005	UNR521300L	TRANSISTOR	1	
QR4501	UNR521100L	TRANSISTOR	1	
QR4908	UNR511300L	TRANSISTOR	1	
QR4911	UNR511300L	TRANSISTOR	1	
QR4912,13	UNR521600L	TRANSISTOR	2	
QR4914	UNR521300L	TRANSISTOR	1	
QR4915,16	UNR521600L	TRANSISTOR	2	
QR6801	B1GDCFNN0010	DIGITAL TRANSISTOR	1	
QR7401,02	UNR511200L	TRANSISTOR	2	
R1501,02	D0GB273JA007	1/10W 27K	2	
R1503	ERDS2TJ151T	1/4W 150	1	
R1511,12	D0GB273JA007	1/10W 27K	2	
R1513	ERJ6GEYJ121V	1/8W 120	1	
R2001	D0GB392JA007	1/10W 3.9K	1	
R2002	D0GB105JA007	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	ERDS2TJ182T	1/4W 1.8K	1	
R2514-16	D0GB221JA041	1/10W 220	3	
R2520	D0GB183JA007	1/10W 18K	1	
R2521	ERJ3GEYJ102V	1/10W 1K	1	
R2551,52	ERJ3GEYJ103V	1/10W 10K	2	
R2561	ERJ3GEYJ102V	1/10W 1K	1	
R2562	D0GB473JA041	1/10W 47K	1	
R2563	ERJ3GEYJ102V	1/10W 1K	1	
R2564,65	D0GB101JA007	1/10W 100	2	
R3001	D0GB152JA007	1/10W 1.5K	1	
R3002	ERJ3GEYJ622V	1/10W 6.2K	1	
R3003	ERJ3GEYJ822V	1/10W 8.2K	1	
R3007	D0GB101JA007	1/10W 100	1	
R3008	ERJ3GEYJ106V	1/10W 10M	1	
R3010	D0GB153JA007	1/10W 15K	1	
R3013,14	D0GB101JA007	1/10W 100	2	
R3015	D0GB273JA007	1/10W 27K	1	
R3016	D0GB471JA041	1/10W 470	1	
R3017	D0GB332JA007	1/10W 3.3K	1	
R3021	ERJ3GEYJ102V	1/10W 1K	1	
R3914	D0GB330JA007	1/10W 33	1	
R3915	ERJ3GEYJ822V	1/10W 8.2K	1	
R3916,17	D0GB101JA007	1/10W 100	2	
R3918	ERJ3GEYJ102V	1/10W 1K	1	
R3921,22	ERJ3GEYJ682V	1/10W 6.8K	2	
R3934	ERJ3GEYJ103V	1/10W 10K	1	
R3935-38	ERJ3GEYF750V	1/10W 75	4	
R3939	ERJ3GEYJ102V	1/10W 1K	1	
R3940	ERJ3GEYJ103V	1/10W 10K	1	
R3941	ERJ3GEYF750V	1/10W 75	1	
R3945	ERDS2TJ392T	1/4W 3.9K	1	
R4001	ERJ3GEYJ202V	1/10W 2K	1	
R4002	D0GB153JA007	1/10W 15K	1	
R4003	D0GB392JA007	1/10W 3.9K	1	
R4004	D0GB472JA041	1/10W 4.7K	1	
R4006	D0GB332JA007	1/10W 3.3K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4007	D0GB104JA007	1/10W 100K	1	
R4008	D0GB153JA007	1/10W 15K	1	
R4009	D0GB271JA007	1/10W 270	1	
R4011	D0GB203JA007	1/10W 20K	1	
R4012	D0GB474JA041	1/10W 470K	1	
R4013	D0GB153JA007	1/10W 15K	1	
R4014	ERJ3GEYJ103V	1/10W 10K	1	
R4015	D0GB332JA007	1/10W 3.3K	1	
R4016,17	D0GB222JA041	1/10W 2.2K	2	
R4018,19	ERJ6GEYJ102V	1/8W 1K	2	
R4101-04	ERJ3GEYJ102V	1/10W 1K	4	
R4501,02	D0GB563JA007	1/10W 56K	2	
R4503,04	D0GB223JA041	1/10W 22K	2	
R4505,06	ERJ3GEYJ432V	1/10W 4.3K	2	
R4507	ERJ3GEYJ912V	1/10W 9.1K	1	
R4508,09	ERJ3GEYJ432V	1/10W 4.3K	2	
R4510	ERJ3GEYJ912V	1/10W 9.1K	1	
R4511,12	ERJ3GEYJ432V	1/10W 4.3K	2	
R4513-16	D0GB563JA007	1/10W 56K	4	
R4517	ERJ3GEYJ511V	1/10W 510	1	
R4518,19	D0GB472JA041	1/10W 4.7K	2	
R4520	ERJ3GEY0R00V	1/10W 0	1	
R4521	D0GB124JA007	1/10W 120K	1	
R4522	D0GB472JA041	1/10W 4.7K	1	
R4523	ERJ3GEYJ511V	1/10W 510	1	
R4524	ERJ3GEYJ102V	1/10W 1K	1	
R4525	D0GB333JA007	1/10W 33K	1	
R4526,27	ERJ3GEYJ102V	1/10W 1K	2	
R4528	D0GB472JA041	1/10W 4.7K	1	
R4530	D0GB472JA041	1/10W 4.7K	1	
R4532	ERJ3GEYJ681V	1/10W 680	1	
R4554	D0GB683JA007	1/10W 68K	1	
R4555	ERDS2TJ821T	1/4W 820	1	
R4557	D0GB472JA041	1/10W 4.7K	1	
R4558	D0GB683JA007	1/10W 68K	1	
R4559	D0GB393JA041	1/10W 39K	1	
R4560	ERJ3GEYJ682V	1/10W 6.8K	1	
R4903	ERJ3GEY0R00V	1/10W 0	1	
R4910,11	D0GB471JA041	1/10W 470	2	
R4922,23	D0GB471JA041	1/10W 470	2	
R4925,26	D0GB472JA041	1/10W 4.7K	2	
R4927	D0GB223JA041	1/10W 22K	1	
R4930,31	ERJ3GEY0R00V	1/10W 0	2	
R6001,02	ERJ3GEYJ102V	1/10W 1K	2	
R6004	ERJ3GEYJ433V	1/10W 43K	1	
R6006	D0GB273JA007	1/10W 27K	1	
R6007	D0GB183JA007	1/10W 18K	1	
R6008	D0GB222JA041	1/10W 2.2K	1	
R6009	D0GB101JA007	1/10W 100	1	
R6010	D0GB393JA041	1/10W 39K	1	
R6011	D0GB183JA007	1/10W 18K	1	
R6012	ERJ3GEYJ681V	1/10W 680	1	
R6013	D0GB221JA041	1/10W 220	1	
R6014	ERJ3GEYJ103V	1/10W 10K	1	
R6015	D0GB221JA041	1/10W 220	1	
R6016	ERJ3GEYJ102V	1/10W 1K	1	
R6017	D0GB222JA041	1/10W 2.2K	1	
R6018	ERJ3GEYJ102V	1/10W 1K	1	
R6019	ERJ3GEYJ681V	1/10W 680	1	
R6020	D0GB101JA007	1/10W 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6022-25	D0GB221JA041	1/10W 220	4	
R6026-28	ERJ3GEYJ103V	1/10W 10K	3	
R6029,30	D0GB472JA041	1/10W 4.7K	2	
R6031	D0GB223JA041	1/10W 22K	1	
R6035,36	ERJ3GEYJ102V	1/10W 1K	2	
R6109	D0GB105JA007	1/10W 1M	1	
R6115	D0GB471JA041	1/10W 470	1	
R6116	D0GB152JA007	1/10W 1.5K	1	EE
R6117	D0GB181JA007	1/10W 180	1	
R6118	D0GB473JA041	1/10W 47K	1	GN,GC
R6119	ERJ3GEYJ241V	1/10W 240	1	
R6120	ERJ3GEYJ102V	1/10W 1K	1	
R6121,22	ERJ3GEYJ561V	1/10W 560	2	
R6201	ERJ3GEYJ103V	1/10W 10K	1	
R6309	D0GB272JA007	1/10W 2.7K	1	
R6414	D0GB472JA041	1/10W 4.7K	1	
R6801	D0GB104JA007	1/10W 100K	1	
R6802	ERJ3GEY0R00V	1/10W 0	1	
R6803	D0GB474JA041	1/10W 470K	1	
R7401-04	D0AE331JA048	1/4W 330	4	
R7405,06	D0GB471JA041	1/10W 470	2	
R7410,11	D0GB221JA041	1/10W 220	2	
R7413	ERJ3GEY0R00V	1/10W 0	1	
R7416,17	D0GB471JA041	1/10W 470	2	
R7418,19	ERJ3GEY0R00V	1/10W 0	2	
R7420	ERJ3GEYJ681V	1/10W 680	1	
R7421,22	D0GB221JA041	1/10W 220	2	
R7433,34	D0GB104JA007	1/10W 100K	2	
R7435	D0GB562JA007	1/10W 5.6K	1	
R7901	ERDS2TJ561T	1/4W 560	1	
R7902	ERDS2TJ333T	1/4W 33K	1	
R7903,04	D0GB472JA041	1/10W 4.7K	2	
R7905,06	D0GB223JA041	1/10W 22K	2	
R7907	D0AE101JA048	1/4W 100	1	
R7909	D0GB393JA041	1/10W 39K	1	
S1531	K0C111A00006	SWITCH,SAFTY TAB	1	
S1532	K0ZZ00000598	SWITCH,MODE	1	
T4001	G2A352C00002	IF TRANSFORMER	1	△
T7901	ETS13TB159AP	TRANSFORMER	1	△
TU7401	ENG37A18GF	TUNER PACK	1	
TU7402	ENG37A19GF	TUNER PACK	1	
TU7403	ENC879T3F	TUNER PACK	1	
W701	ERJ6GEY0R00V	1/8W 0	1	
W702,03	ERJ3GEY0R00V	1/10W 0	2	
W704	ERJ6GEY0R00V	1/8W 0	1	
W705	ERJ3GEY0R00V	1/10W 0	1	
W706-08	ERJ6GEY0R00V	1/8W 0	3	
W709-16	ERJ3GEY0R00V	1/10W 0	8	
W717	ERJ6GEY0R00V	1/8W 0	1	
W718	ERJ3GEY0R00V	1/10W 0	1	
W719	ERJ6GEY0R00V	1/8W 0	1	
W720-22	ERJ3GEY0R00V	1/10W 0	3	
W724-26	ERJ3GEY0R00V	1/10W 0	3	
W727	ERJ6GEY0R00V	1/8W 0	1	
W728-30	ERJ3GEY0R00V	1/10W 0	3	
W731	ERJ6GEY0R00V	1/8W 0	1	
W732-34	ERJ3GEY0R00V	1/10W 0	3	
W735	ERJ6GEY0R00V	1/8W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W737	ERJ3GEY0R00V	1/10W 0	1	
W739,40	ERJ3GEY0R00V	1/10W 0	2	
W741,42	ERJ6GEY0R00V	1/8W 0	2	
W743,44	ERJ3GEY0R00V	1/10W 0	2	
W745,46	ERJ6GEY0R00V	1/8W 0	2	
W747,48	ERJ3GEY0R00V	1/10W 0	2	
W749	ERJ6GEY0R00V	1/8W 0	1	
W750-54	ERJ3GEY0R00V	1/10W 0	5	
W755	ERJ6GEY0R00V	1/8W 0	1	
W757,58	ERJ6GEY0R00V	1/8W 0	2	
W759	ERJ3GEY0R00V	1/10W 0	1	
W761	ERJ6GEY0R00V	1/8W 0	1	
W762-65	ERJ3GEY0R00V	1/10W 0	4	
W768,69	ERJ6GEY0R00V	1/8W 0	2	
W770	ERJ3GEY0R00V	1/10W 0	1	
W771	ERJ6GEY0R00V	1/8W 0	1	
W772,73	ERJ3GEY0R00V	1/10W 0	2	
W774	ERJ6GEY0R00V	1/8W 0	1	
W775-78	ERJ3GEY0R00V	1/10W 0	4	
W780,81	ERJ6GEY0R00V	1/8W 0	2	
W782	ERJ3GEY0R00V	1/10W 0	1	
W783,84	ERJ6GEY0R00V	1/8W 0	2	
W785	ERJ3GEY0R00V	1/10W 0	1	
W786	ERJ6GEY0R00V	1/8W 0	1	
W787,88	ERJ3GEY0R00V	1/10W 0	2	
W789	ERJ6GEY0R00V	1/8W 0	1	
W794	ERJ6GEY0R00V	1/8W 0	1	
W804,05	ERJ6GEY0R00V	1/8W 0	2	
W806-11	ERJ3GEY0R00V	1/10W 0	6	
W812	ERJ6GEY0R00V	1/8W 0	1	
X3001	H0D443400040	CRYSTAL OSCILLATOR	1	
X3002	H0D357400068	CRYSTAL OSCILLATOR	1	
X6001	H0D120500009	OSCILLATOR	1	
ZD7401,02	K2KA29A00013	CABLE	2	
n	03	VEP07A51C	1	(DECORDER P.C.B.)
C7301	F1H1C104A008	16V 0.1U	1	
C7302	ERJ3GEY0R00V	1/10W 0	1	
C7303	ECEA0JKA101B	6.3V 100U	1	
C7305	ECEA0JKA101B	6.3V 100U	1	
C7306	F1H1H103A220	50V 0.01U	1	
C7307,08	ECJ1VC1H100D	50V 10P	2	
C7311	ECJ1VC1H101J	50V 100P	1	
C7312,13	ECEA1CKA100B	16V 10U	2	
C7314	F1H1C104A008	16V 0.1U	1	
C7317	ECEA1CKA470B	16V 47U	1	
C7318	ECEA1CKA100B	16V 10U	1	
C7323	ECJ1VC1H102J	50V 1000P	1	
C7324	F1H1C104A008	16V 0.1U	1	
C7329	ERJ3GEY0R00V	1/10W 0	1	
C7330	ERJ3GEYJ822V	1/10W 8.2K	1	
C7332	F1H1C104A008	16V 0.1U	1	
C7333	F1H1C104A041	16V 0.1U	1	
C7334	ECEA1HKA2R2B	50V 2.2U	1	
C7335	F1H1C104A008	16V 0.1U	1	
IC7301	C1AB00002225	IC	1	
IC7302	C0EAH0000051	IC	1	
K7301-03	ERJ3GEY0R00V	1/10W 0	3	
K7305	ERJ3GEY0R00V	1/10W 0	1	
L7303	G0C1R0JA0019	COIL 1UH	1	
LB7301,02	J0JCC0000124	COIL	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB7303	J0JCC0000080	COIL	1	
PK7301	K1MM07B00002	CONNECTOR (7P)	1	
PK7302	K1MM06B00002	CONNECTOR (6P)	1	
R7301	ERJ3GEY0R00V	1/10W 0	1	
R7304	D0GB101JA007	1/10W 100	1	
R7307	ERJ3GEY0R00V	1/10W 0	1	
R7309	ERJ3GEYJ103V	1/10W 10K	1	
R7311	D0GB221JA041	1/10W 220	1	
R7312,1 3	ERJ3GEYG221V	1/10W 220	2	
R7314,1 5	ERJ3GEY0R00V	1/10W 0	2	
R7317	J0JCC0000103	COIL	1	
R7319	J0JCC0000103	COIL	1	
R7322	ERJ3GEY0R00V	1/10W 0	1	
R7324,2 5	D0GB101JA007	1/10W 100	2	
W6,W7	ERJ3GEY0R00V	1/10W 0	2	
X7301	H0D245500016	CRYSTAL OSCILLATOR	1	
n	05	VEP01965A	1	(POWER SUPPLY P.C.B.)
C11102	ECKMNA102MEV	0.01U	1	△
C11103	F2B2G680A050	400V 68U	1	
C11105	ECQU2A683MLC	0.068U	1	△
C11106, 07	F1B2G1020002	1000P	2	△
C11108	F1B3A4720013	4700P	1	△
C11110	ECQU2A223MLC	0.022U	1	△
C11201	F1B3D221A011	220P	1	△
C11202	F1J1H102A623	50V 1000P	1	
C11203	ECJ2VC1H470J	50V 47P	1	
C11204	F2A1V5600013	35V 56U	1	
C11205	F1J1H222A623	50V 22U	1	
C11302	ECJ2VB1E823K	25V 0.08U	1	
C11303	ECJ2VB1E473K	25V 0.047U	1	
C11401	EEUFM1V221B	35V 220P	1	
C11402	F2A1V5600013	35V 56U	1	
C11403, 04	F2A1C1520011	16V 1500U	2	
C11405	EEUFM1C471B	16V 470P	1	
C11406, 07	F1J2A332A023	100V 3.3U	2	
C11501	EEUFM1E221B	25V 220U	1	
C11502, 03	F1J1H104A578	50V 0.1U	2	
C11504	ECJ2VB1E104K	25V 0.1U	1	
C11505	ECJ2VC1H181J	50V 180P	1	
C11506	F1J1H103A702	50V 0.01U	1	
C11507	F2A1A2210063	10V 220U	1	
C11509	ECJ2VB1E104K	25V 0.1U	1	
D11101	B0EBKT000008	DIODE	1	
D11102	B0AAGV000004	DIODE	1	
D11103	B0AAGR000003	DIODE	1	
D11104	B0AAGV000004	DIODE	1	
D11201, 02	MAZ73000BC	DIODE	2	
D11203	B0AADM000003	DIODE	1	
D11204	B0AACK000004	DIODE	1	
D11205	MAZ80820ML	DIODE	1	
D11401, 02	B0JAMK000015	DIODE	2	
D11501	B0JCPD000021	DIODE	1	
F11101	K5D202BK0005	FUSE	1	
IC11201	C0DACZH00017	IC	1	
IC11301	C0DAEMB00003	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC11501	C0DBAKG00007	IC	1	
IP11501	K5H3022A0013	IC PROTECTOR	1	△
L11101, 02	G0B233D00001	COIL	2	
L11401	G0A220GA0026	COIL 22UH	1	
L11402	G0A100H00025	COIL 10UH	1	
L11403	G0A100HA0023	COIL 10UH	1	
L11501	G0A150ZA0051	COIL	1	
LB11101, 02	J0JKB0000003	COIL	2	
LB11103	J0JHC0000048	FILTER	1	
LB11201	J0JHC0000048	FILTER	1	
LB11501	J0JHC0000048	FILTER	1	
P11001	K1KA16AA0194	CONNECTOR (16P)	1	
P11101	K2AA2H000007	AC INLET	1	△
Q11301	B3PBA0000237	TRANSISTOR	1	
Q11501	B1DHDD000022	TRANSISTOR	1	
R11103, 04	ERG2SJ223E	22K	2	
R11105	ERX2SJR22E	2W 22	1	
R11106, 07	ERG2SJ223E	22K	2	
R11201	ERJ6GEYG203V	1/8W 20K	1	
R11202	ERJ6GEY0R00V	1/8W 0	1	
R11203	ERJ6GEYJ223V	1/8W 22K	1	
R11204, 05	ERJ6GEYJ470V	1/8W 47	2	
R11206	ERJ6GEYG682V	1/8W 6.8K	1	
R11207	ERJ6GEY0R00V	1/8W 0	1	
R11208	ERJ6GEYG431V	1/8W 430	1	
R11209	ERJ6GEYG133V	1/8W 13K	1	
R11301	ERJ6GEYJ222V	1/8W 2.2K	1	
R11302, 03	ERJ6GEYJ102V	1/8W 1K	2	
R11304	ERJ6GEYJ103V	1/8W 10K	1	
R11305	ERJ6GEYG912V	1/8W 9.1K	1	
R11308	ERJ6GEY0R00V	1/8W 0	1	
R11309	ERJ6GEYG471V	1/8W 470	1	
R11312	ERJ6GEYG242V	1/8W 2.4K	1	
R11501	D1BFR0150001	15	1	
R11502	ERJ6RBD272V	1/10W 2.7K	1	
R11503	ERJ6RBD153V	1/10W 15K	1	
R11504	ERJ6RBD272V	1/10W 2.7K	1	
R11505	ERJ6GEYJ513V	1/8W 51K	1	
T11101	G4D3A0000185	TRANSFORMER	1	△ ;
VA11101	ERZVA5V471	SURGE ABSORBER	1	△
ZA11101, 02	EYF52BCY	FUSE HOLDER	2	
n	06	VEP09136C	1	(DIGITAL I/F P.C.B.)
C15001	EEUFM1C121B	16V 120U	1	
C15008	EEUFM1E221B	25V 220U	1	
C15009	ECJ2VF1C105Z	16V 1U	1	
C15010	ECJ2VF1H103Z	50V 0.01U	1	
C15011	ECJ2VB1H391K	25V 390U	1	
C15012	ECJ2VB1H472K	50V 4700P	1	
C15013	F1J1H102A623	50V 1000P	1	
C15015	F2A1A681A540	10V 680U	1	
C15017	EEUFM1E221B	25V 220U	1	
C15018, 19	F1J1H104A578	50V 0.1U	2	
C15020	F1J1H103A702	50V 0.01U	1	
C15021	ECJ2VC1H181J	50V 180P	1	
C15022	F1J1H103A702	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C15024	F2A1A681A540	10V 680U	1	
C15025	EEUFM1E221B	25V 220U	1	
C15026, 27	FLJ1H104A578	50V 0.1U	2	
C15028	ECJ2VB1E473K	25V 0.047U	1	
C15029	ECJ2VC1H270J	50V 27P	1	
C15030	FLJ1C334A091	16V 0.33U	1	
C15032	F2A1A681A540	10V 680U	1	
C15033	FLJ1C105A091	16V 1U	1	
C31507	F2A1A2210063	10V 220U	1	
C31511	FLH1A105A028	10V 1U	1	
C31512	FLJ0J106A014	6.3V 10U	1	
C31535	FLH1A105A028	10V 1U	1	
C31536	FLJ0J106A014	6.3V 10U	1	
C31901	ECJ1VC1H102J	50V 1000P	1	
C33501	FLJ0J475A008	6.3V 4.7U	1	
C33502	ECJ1VC1H101J	50V 100P	1	
C33503	FLJ0J475A008	6.3V 4.7U	1	
C33504	FLH1C104A041	16V 0.1U	1	
C33506	FLH1C104A041	16V 0.1U	1	
C33507	FLH1C104A008	16V 0.1U	1	
C33738	ERJ3GEY0R00V	1/10W 0	1	
C35020	ECEA0JKA470B	6.3V 47U	1	
C35021	FLH1C104A041	16V 0.1U	1	
C35022	FLH1H103A219	50V 0.01U	1	
C35023	ECEA1CKA220B	16V 22U	1	
C35024-27	FLH0J1050010	CHIP CAPACITOR	4	
C35028	FLH1C104A041	16V 0.1U	1	
C35029-31	ECA0JM102B	6.3V 1000U	3	
C35032, 33	ECA0JM471B	6.3V 470U	2	
C37001	FLH1C104A008	16V 0.1U	1	
C37104-07	FLH1H103A219	50V 0.01U	4	
C37503	F4D55473A013	5.5V 0.047U	1	
C37504	FLH1C104A008	16V 0.1U	1	
C37507	FLH0J1050010	CHIP CAPACITOR	1	
C37508	FLH1H103A220	50V 0.01U	1	
C37546	FLH1C104A008	16V 0.1U	1	
C37579-82	ECJ1VC1H100D	50V 10P	4	
C37583	ECJ1VC1H101J	50V 100P	1	
C37584, 85	ECJ1VC1H270J	50V 27P	2	
C37586, 87	ECJ1VC1H180J	50V 18P	2	
C37588	FLH1H103A220	50V 0.01U	1	
C37589	FLH1C104A008	16V 0.1U	1	
C37592, 93	ECJ1VC1H100D	50V 10P	2	
C37595	FLH1C104A008	16V 0.1U	1	
C37596	FLH1H470A230	50V 47P	1	
C37597	FLH1H103A220	50V 0.01U	1	
C37598	FLH1H470A230	50V 47P	1	
C37599	FLH1C104A008	16V 0.1U	1	
C37600	FLH1H470A230	50V 47P	1	
C37601	FLH1C104A008	16V 0.1U	1	
C37602, 03	FLH1H103A220	50V 0.01U	2	
C37604	FLH1C104A008	16V 0.1U	1	
C37607	FLH1C104A008	16V 0.1U	1	
C37609, 10	FLH1H103A220	50V 0.01U	2	
C37618	FLH1H103A220	50V 0.01U	1	
C37620	FLH1H103A220	50V 0.01U	1	
C37626	FLH1H103A220	50V 0.01U	1	
C37633	ECEA0JKA101B	6.3V 100U	1	
C37636	ECJ1VF1A105Z	10V 1U	1	
C37652	ECJ1VF1A105Z	10V 1U	1	
C39001-03	FLH1H103A219	50V 0.01U	3	
C39010	FLH1C104A041	16V 0.1U	1	
C45001	FLH1C104A008	16V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C45003	ECQV1H104JL3	50V 0.1U	1	
C45004	F2A1C471A628	16V 470U	1	
C45005	F2A0J101A592	6.3V 10U	1	
C45006, 07	FLH1C104A008	16V 0.1U	2	
C45008	F2A1C101A699	16V 100U	1	
C45010	F2A1C470A637	16V 47U	1	
C45012	F2A1C470A637	16V 47U	1	
C45013	ECQB1H473JF3	50V 0.047U	1	
C45014	F2A1H4R7A638	50V 4.7U	1	
C45015, 16	FLH1H102A219	50V 1000P	2	
C45019, 20	FLH1H102A219	50V 1000P	2	
D15001	B0JCPE000015	DIODE	1	
D15002, 03	B0JCPD000021	DIODE	2	
D31501	B0EAKL000062	DIODE	1	
D37502, 03	B0AAED000003	DIODE	2	
IC15002	C0DAAJG00007	IC	1	
IC15003	C0DBAKG00005	IC	1	
IC15004	C0DBAKG00007	IC	1	
IC31502	C0CBCBG00012	IC	1	
IC31510	C0CBCYE00001	IC	1	
IC35005	C9ZB00000498	IC	1	
IC37001	C0ABBA000146	IC	1	
IC37501	C2CBJG000548	IC	1	
IC37502	C3EBJC000055	IC	1	
IC37503	C0EBH0000172	IC	1	
IC37504	C0CBCBC00037	IC	1	
IC37505	C0EBE0000194	IC	1	
IC37508	C0EBE0000504	IC	1	
IC45001	C0DBAHD00013	IC	1	
IC45002	C0ABBB000118	IC	1	
IC45003	C0ABBA000054	IC	1	
IP15001	K5H3022A0013	IC PROTECTOR	1	△
IP37501	K5H5012A0010	IC PROTECTOR	1	△
JK35001	K1U717B00005	JACK,DVD OUT	1	
K37512	ERJ3GEY0R00V	1/10W 0	1	
K37703	ERJ3GEY0R00V	1/10W 0	1	
K45003	ERJ3GEY0R00V	1/10W 0	1	
K45005	ERJ3GEY0R00V	1/10W 0	1	
K45009	ERJ3GEY0R00V	1/10W 0	1	
L15002	G0A220GA0026	COIL 22UH	1	
L15003	G0A330ZA0030	COIL 33UH	1	
L15004	G0A150ZA0030	COIL	1	
L15005	G0A220ZA0030	COIL 22UH	1	
L31501	G0A220ZA0030	COIL 22UH	1	
L35001	G0C680JA0019	COIL	1	
L37101	G0A100HA0023	COIL 10UH	1	
LB15003-06	J0JHC0000048	FILTER	4	
LB31505	J0JKB0000003	COIL	1	
LB33501	ERJ3GEY0R00V	1/10W 0	1	
LB33503, 04	ERJ3GEY0R00V	1/10W 0	2	
LB34002	J0JCC0000103	COIL	1	
LB34003	ERJ3GEY0R00V	1/10W 0	1	
LB35101-06	ERJ3GEY0R00V	1/10W 0	6	
LB37104	J0JCC0000103	COIL	1	
LB37105	J0JHC0000032	COIL	1	
LB37108, 09	J0JHC0000032	COIL	2	
LB37506-09	ERJ3GEY0R00V	1/10W 0	4	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB45101,02	ERJ3GEY0R00V	1/10W 0	2	
P12100	K1KA03AA0301	CONNECTOR (3P)	1	
P15001	K1KA16AA0194	CONNECTOR	1	
P15003	K1KA04AA0180	CONNECTOR (4P)	1	
P31901	K1KA13A00074	CONNECTOR (13P)	1	
P31902,03	K1KA19A00007	CONNECTOR (19P)	2	
P31904	K1KA13A00074	CONNECTOR (13P)	1	
P31905	K1KA07A00083	CONNECTOR (7P)	1	
P39702	K1KA88A00003	CONNECTOR (88P)	1	
PS37502	K1KB10B00045	CONNECTOR (FEMALE) 10P	1	
Q15001	B1DHED000008	TRANSISTOR	1	
Q15002,03	B1DHDD000022	TRANSISTOR	2	
Q33501	2SB1218A0L	TRANSISTOR	1	
Q33502	2SD1819A0L	TRANSISTOR	1	
Q33503	2SB1218A0L	TRANSISTOR	1	
Q33504	2SD1819A0L	TRANSISTOR	1	
Q33505	2SB1218A0L	TRANSISTOR	1	
Q37001	2SD0874A0L	TRANSISTOR	1	
QR15001-07	UNR221300L	TRANSISTOR	7	
QR33701	UNR521100L	TRANSISTOR	1	
QR37501	UNR521300L	TRANSISTOR	1	
QR37502	UNR521200L	TRANSISTOR	1	
QR45001	UNR511100L	TRANSISTOR	1	
QR45002-05	UNR521600L	TRANSISTOR	4	
QR45006-09	UNR521100L	TRANSISTOR	4	
R15001	ERJ6GEYJ472V	1/8W 4.7K	1	
R15002	ERJ6GEYJ103V	1/8W 10K	1	
R15005	ERJ6GEYJ104V	1/8W 100K	1	
R15006	ERJ6RBD272V	1/10W 2.7K	1	
R15007	ERJ6RBD561V	1/10W 560	1	
R15008	ERJ6RBD102V	1/10W 1K	1	
R15010	ERJ6GEYJ513V	1/8W 51K	1	
R15011	D1BFR033A010	33	1	
R15012	ERJ6RBD272V	1/10W 2.7K	1	
R15013	ERJ6RBD123V	1/10W 12K	1	
R15014	ERJ6RBD472V	1/10W 4.7K	1	
R15015	D1BFR047A010	47	1	
R15016	ERJ6GEYJ333V	1/8W 33K	1	
R15017	ERJ6RBD562V	1/10W 5.6K	1	
R15018	ERJ6RBD152V	1/10W 1.5K	1	
R15019	ERJ6RBD392V	1/10W 3.9K	1	
R15026	ERJ6GEYJ103V	1/8W 10K	1	
R15027	ERJ6GEYJ472V	1/8W 4.7K	1	
R31501	ERJ3GEYF683V	1/10W 68K	1	
R31502	ERJ3GEY0R00V	1/10W 0	1	
R31503	ERJ3GEYF223V	1/10W 22K	1	
R31512,13	ERDS2TJ271T	1/4W 270	2	
R33501	ERJ3GEYJ102V	1/10W 1K	1	
R33502	D0GB104JA007	1/10W 100K	1	
R33503	D0GB392JA007	1/10W 3.9K	1	
R33504	ERJ3GEYJ102V	1/10W 1K	1	
R33505	ERJ3GEYG153V	1/10W 15K	1	
R33506	ERJ3GEYG152V	1/10W 1.5K	1	
R33507	D0GB104JA007	1/10W 100K	1	
R33508	ERJ3GEYG562V	1/10W 5.6K	1	
R33509,10	ERJ3GEY0R00V	1/10W 0	2	
R33511	ERJ3GEYJ102V	1/10W 1K	1	
R33707	D0GB472JA041	1/10W 4.7K	1	
R34002	ERJ3GEY0R00V	1/10W 0	1	
R34008,09	ERJ3GEY0R00V	1/10W 0	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R34011	D0GB221JA041	1/10W 220	1	
R35015	ERJ3GEYF750V	1/10W 75	1	
R35017-21	ERJ3GEYF750V	1/10W 75	5	
R35031	ERJ3GEYJ102V	1/10W 1K	1	
R37001	D0GB821JA007	1/10W 820	1	
R37003	D0GB183JA007	1/10W 18K	1	
R37004	ERJ3GEYJ103V	1/10W 10K	1	
R37501	D0GB101JA007	1/10W 100	1	
R37503,04	ERJ3GEYJ103V	1/10W 10K	2	
R37505	D0GB473JA041	1/10W 47K	1	
R37506	ERJ3GEYJ103V	1/10W 10K	1	
R37508	D0GB104JA007	1/10W 100K	1	
R37511,12	D0GB101JA007	1/10W 100	2	
R37530-33	D0GB473JA041	1/10W 47K	4	
R37534-37	D0GB101JA007	1/10W 100	4	
R37538	D0GB472JA041	1/10W 4.7K	1	
R37539	ERJ3GEY0R00V	1/10W 0	1	
R37540	D0GB332JA007	1/10W 3.3K	1	
R37541	ERJ3GEY0R00V	1/10W 0	1	
R37542	ERJ3GEYJ103V	1/10W 10K	1	
R37544,45	D0GB221JA041	1/10W 220	2	
R37546-48	D0GB472JA041	1/10W 4.7K	3	
R37549	ERJ3GEYJ511V	1/10W 510	1	
R37550,51	ERJ3GEYJ202V	1/10W 2K	2	
R37556-59	D0GB101JA007	1/10W 100	4	
R37561	D0GB392JA007	1/10W 3.9K	1	
R37562	D0GB101JA007	1/10W 100	1	
R37569	D0GB101JA007	1/10W 100	1	
R37571,72	D0GB101JA007	1/10W 100	2	
R37573	D0GB181JA007	1/10W 180	1	
R37575	D0GB104JA007	1/10W 100K	1	
R37577,78	D0GB101JA007	1/10W 100	2	
R37581	ERJ3GEYG393V	1/10W 39K	1	
R37582	ERJ3GEYG433V	1/10W 43K	1	
R37583,84	D0GB473JA041	1/10W 47K	2	
R37585	D0GB223JA041	1/10W 22K	1	
R37596	D0GB473JA041	1/10W 47K	1	
R37597	D0GB153JA007	1/10W 15K	1	
R37599	D0GB223JA041	1/10W 22K	1	
R37600	D0GB153JA007	1/10W 15K	1	
R37604-06	ERJ3GEYJ822V	1/10W 8.2K	3	
R37612	D0GB101JA007	1/10W 100	1	
R37633	D0GB223JA041	1/10W 22K	1	
R45001	D0GB101JA007	1/10W 100	1	
R45002	D0HB202ZA002	1/16W 2K	1	
R45003	D0HB222ZA002	1/16W 2.2K	1	
R45004	D0HB183ZA002	1/16W 18K	1	
R45005	D0HB103ZA002	1/10W 10K	1	
R45006	D0GB473JA041	1/10W 47K	1	
R45007	D0HB183ZA002	1/16W 18K	1	
R45008	D0HB103ZA002	1/10W 10K	1	
R45009	D0GB473JA041	1/10W 47K	1	
R45010-13	D0GB471JA041	1/10W 470	4	
R45014,15	ERJ3GEYJ103V	1/10W 10K	2	
R45016,17	D0GB221JA041	1/10W 220	2	
R45018,19	ERJ3GEYJ102V	1/10W 1K	2	
W501,62	ERJ6GEY0R00V	1/8W 0	2	
W503	ERJ3GEY0R00V	1/10W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W505	ERJ6GEY0R00V	1/8W 0	1	
W506 63-09	ERJ3GEY0R00V	1/10W 0	4	
W510-12	ERJ6GEY0R00V	1/8W 0	3	
W513,14	ERJ3GEY0R00V	1/10W 0	2	
W516	ERJ3GEY0R00V	1/10W 0	1	
W517	ERJ6GEY0R00V	1/8W 0	1	
W518,19	ERJ3GEY0R00V	1/10W 0	2	
W520	ERJ6GEY0R00V	1/8W 0	1	
W521	ERJ3GEY0R00V	1/10W 0	1	
X37501	H0D100500006	CRYSTAL OSCILLATOR	1	
X37502	H0A327200098	CRYSTAL OSCILLATOR	1	
n	07	VEP07A78G	1	(FL DRIVE P.C.B.)
C7501	F1H1C104A008	16V 0.1U	1	
C7502	ECEA0JKA470B	6.3V 47U	1	
C7525	ECJ1VC1H101J	50V 100P	1	
D7501	B3AAA0000752	DIODE	1	
D7503	B3ACA0000273	DIODE	1	
D7505	B3ADA0000173	DIODE	1	
DP7501	A2BB00000145	FIP DISPLAY	1	
IC7502	C0HBB0000048	IC	1	
K7503	ERJ3GEY0R00V	1/10W 0	1	
K7506,0 7	ERJ3GEY0R00V	1/10W 0	2	
K7512- 16	ERJ3GEY0R00V	1/10W 0	5	
PP7501	K1KA10B00176	CONNECTOR (10P)	1	
PP7503	K1KA08B00210	CONNECTOR (8P)	1	
Q7501	2SD1819A0L	TRANSISTOR	1	
QR7501	UNR521100L	TRANSISTOR	1	
QR7503	UNR521100L	TRANSISTOR	1	
QR7505	UNR521100L	TRANSISTOR	1	
R7501	D0GB271JA007	1/10W 270	1	
R7503	D0GB391JA041	1/10W 390K	1	
R7505	D0GB391JA041	1/10W 390K	1	
R7508,0 9	ERJ3GEYJ122V	1/10W 1.2K	2	
R7510	ERDS2TJ5R6T	1/4W 5.6	1	
R7511	D0GB152JA007	1/10W 1.5K	1	
R7512	ERJ3GEYJ103V	1/10W 10K	1	
R7513	D0GB683JA007	1/10W 68K	1	
R7514	ERJ3GEY0R00V	1/10W 0	1	
R7515	D0GB101JA007	1/10W 100	1	
R7516	D0GB152JA007	1/10W 1.5K	1	
R7517	D0GB222JA041	1/10W 2.2K	1	
R7525	D0GB273JA007	1/10W 27K	1	
R7526,2 7	D0GB101JA007	1/10W 100	2	
S7501	EVQ11G04M	SWITCH, OPEN/CLOSE	1	
S7502	EVQ11G07K	SWITCH, CH DOWN	1	
S7503	EVQ11G07K	SWITCH, STOP	1	
S7504	EVQ11G07K	SWITCH, CH UP	1	
S7505	EVQ11G07K	SWITCH, PLAY	1	
S7506	EVQ11G07K	SWITCH, REC	1	
S7507	EVQ11G07K	SWITCH, D2V	1	
S7508	EVQ11G07K	SWITCH, V2D	1	
W501	ERJ3GEY0R00V	1/10W 0	1	
W502,03	ERJ6GEY0R00V	1/8W 0	2	
W504-06	ERJ3GEY0R00V	1/10W 0	3	
W507	ERJ6GEY0R00V	1/8W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W508	ERJ3GEY0R00V	1/10W 0	1	
n	08	VEP04885D	1	(FRONT JACK P.C.B.)
C3801	F1H1H103A220	50V 0.01U	1	
C3802	F1H1C104A008	16V 0.1U	1	
C4303,0 4	ECJ1VC1H101J	50V 100P	2	
C4305,0 6	ECJ1VB1H102K	50V 1000P	2	
C7801	F1H1C104A008	16V 0.1U	1	
IC7801	PNA4618M13VT	IC	1	
JK3802	K1CB106A0012	JACK, S-VIDEO IN	1	
JK4600	K2HA307A0009	JACK, AV3	1	
LB3301- 03	ERJ3GEY0R00V	1/10W 0	3	
PP4600	K1KA12B00129	CONNECTOR (12P)	1	
R3801- 03	ERJ3GEYJ750V	1/10W 75	3	
R3804	ERJ3GEYJ102V	1/10W 1K	1	
R4305,0 6	D0GB471JA041	1/10W 470	2	
R7801	D0GB221JA041	1/10W 220	1	
R7802	D0GB182JA007	1/10W 1.8K	1	
R7803	D0GB332JA007	1/10W 3.3K	1	
R7806	D0GB472JA041	1/10W 4.7K	1	
R7807	D0GB182JA007	1/10W 1.8K	1	
R7808	D0GB332JA007	1/10W 3.3K	1	
R7809	D0GB472JA041	1/10W 4.7K	1	
R7810	ERJ3GEYJ682V	1/10W 6.8K	1	
S7801	EVQ11G07K	SWITCH, CH UP	1	
S7802	EVQ11G07K	SWITCH, STOP	1	
S7805	EVQ11G07K	SWITCH, FF	1	
S7806	EVQ11G07K	SWITCH, POWER	1	
S7808	EVQ11G07K	SWITCH, REC	1	
S7809	EVQ11G07K	SWITCH, PLAY	1	
S7810	EVQ11G07K	SWITCH, CH DOWN	1	
S7812	EVQ11G07K	SWITCH, REW	1	
S7813	EVQ11G07K	SWITCH, EJECT	1	