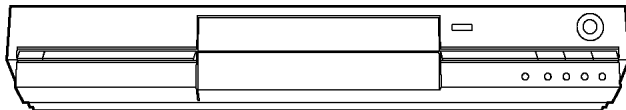


Service Manual

DVD Video Recorder



**Notes: The part of DVD Drive (VXY1814) is listed separately.
Please refer ORDER No. RAM0402001C0**

When replacing with Digital P.C.B. or HDD,
"UNFORMAT" indication is displayed and HDD must be formatted.

After that, programme in the HDD will be lost.

In detail, please refer to each content in this service manual.

DMR-E85HP
DMR-E85HPC

Colour

(S).....Silver Type

Panasonic

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Specifications

Power supply	AC120 V, 60 Hz
Power consumption	35 W
Power consumption in standby mode	approx. 14 W
Recording system	DVD Video Recording format (DVD-RAM), DVD Video format (DVD-R)
Optical pick-up	System with 1 lens, 2 integration units (658 nm wavelength for DVDs, 795 nm wavelength for CDs)
Recordable discs	- DVD-RAM: 12cm 4.7GB, 12cm 9.4GB, 8cm 2.8GB, 12cm 4.7GB (Ver. 2.1 /3X-SPEED DVD-RAM Revision 1.0) - DVD-R: 12cm 4.7GB, 8cm 1.4GB (for General Ver. 2.0), 12cm 4.7GB (for General Ver. 2.0 /4X-SPEED DVD-R Revision 1.0)
Recording time	- Maximum 8 hours (with 4.7 GB disc) - XP: Approx. 1 hours - SP: Approx. 2 hours - LP: Approx. 4 hours - EP: Approx. 6 hours or 8 hours - Maximum 213 hours (with built in 120GB HDD) - XP: Approx. 26 hours - SP: Approx. 52 hours - LP: Approx. 104 hours - EP: Approx. 160 hours or 213 hours
Region number	Region No.1
Playable discs	- DVD-RAM: 12cm 4.7GB, 12cm 9.4GB, 8cm 2.8GB, 12cm 4.7GB (Ver. 2.1 /3X-SPEED DVD-RAM Revision 1.0) - DVD-R: 12cm 4.7GB, 8cm 1.4GB (for General Ver. 2.0), 12cm 4.7GB (for General Ver. 2.0 /4X-SPEED DVD-R Revision 1.0) - DVD-VIDEO, DVD-Audio, CD-Audio (CD-DA), Video CD, CD-R/ CD-RW (MP3, CD-DA, Video CD formatted discs)
Built-in HDD Capacity	120GB
Drive Unit	High Speed Drive (correspond to 4times speed with DVD-R disc and 3times speed with DVD-RAM disc)
Video system	
Television system	NTSC color signal, 525 lines, 60 fields
Recording system	MPEG2 (Hybrid VBR)

Input	- LINE (pin jack x3), 1.0 Vp-p; 75 Ω - S connector x3 - Y: 1.0 Vp-p; 75 Ω - C: 0.286 Vp-p; 75 Ω
Output	- LINE (pin jack x2), 1.0 Vp-p; 75 Ω - S connector x2 - Y: 1.0 Vp-p; 75 Ω - C: 0.286 Vp-p; 75 Ω
Component video output (480P/480i)	Y: 1.0 Vp-p; 75 Ω PB: 0.7 Vp-p; 75 Ω PR: 0.7 Vp-p; 75 Ω
Antenna reception input	TV Channel: 2ch-69ch, 75 Ω CATV Channel: 1ch-125ch, 75 Ω
Audio system	
Recording system	Dolby Digital 2ch, Linear PCM (XP mode, 2ch)
Input	LINE (pin jack) x3 Reference input: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Input impedance: 47 kΩ
Output	LINE (pin jack) x2 Reference output: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Output impedance: 1 kΩ (Load impedance: 10 kΩ)
Digital Audio Out	Optical terminal (PCM, Dolby Digital, DTS)
Channel Number	2ch (L/R)
Others	
Dimensions	Approx. 430 (W) x 79 (H) x 274 (D) mm [Approx. 16 15/16" (W) x 3 1/8" (H) x 10 13/16" (D)]
Weight	Approx. 4.2 kg (9.24 lbs)
Operating Temperature	5 °C-40°C (41 F-104 F)
Operating Humidity range	10 %-80 % RH (no condensation)
Clock unit	Quartz-controlled 12-hour digital display
LASER Specification (Class I LASER Product)	
Wave Length	795 nm, 658 nm
Laser Power	No hazardous radiation is emitted with the safety protection.
Solder	This model uses lead free solder (PbF)

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

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

1.1.1. Leakage current cold check

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

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

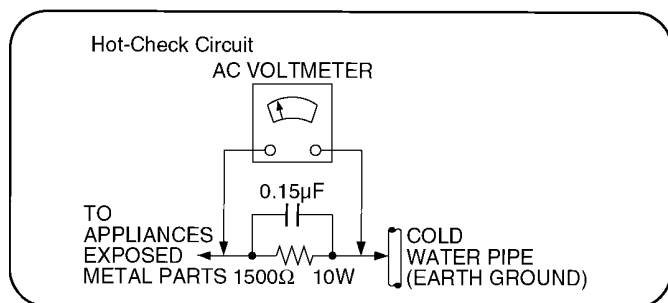


Figure 1

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 $1.5k\Omega$, 10 watts resistor, in parallel with a $0.15\mu F$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

1.2. Caution for fuse replacement

(For English)

CAUTION:

Replace with the same type fuse:

(Manufacturer: SOC or Hollyland, Type: ET or 50T, 1.6A, 250V)

(For Canadian French)

ATTENTION:

Utiliser un fusible de rechange de même type:

(Fabricant: SOC ou Hollyland, Type: ET ou 50T, 1.6A, 250V)

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  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:

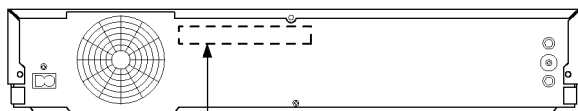
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

Wave length: 795 nm/658 nm

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.



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

ACHTUNG:

Dieses Produkt enthält eine Lasereinheit.

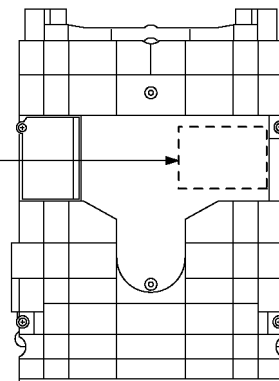
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge: 795 nm/658 nm

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

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

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines 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. (IEC60825-1)
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 ALTTIINA 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 LASERSTRÄHLUNG, 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、照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 How to replace the Lithium Battery

REPLACEMENT PROCEDURE

1. Remove the Top case and DVD-RAM drive unit with Main P.C.B. by referring the Disassembling Procedure.
2. Unsolder the Lithium Batteries: B7501 and then replace it into new one.
(As shown in 20.2.1. The Main P.C.B.)

NOTE:

The lithium battery is a critical component. (Type No.: CR2354-1GUF Manufactured by Panasonic.)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(For French)

PRECAUTION

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

5 Handling the Lead-free Solder

5.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

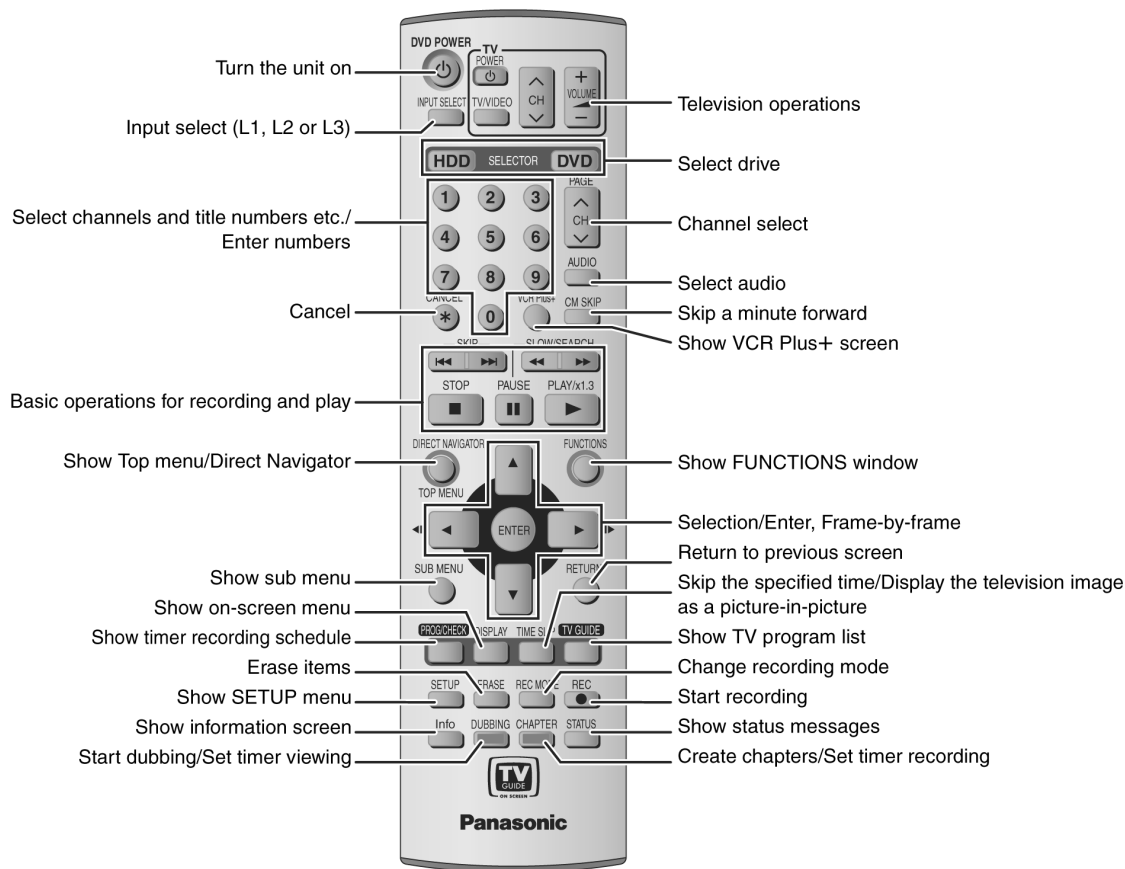
P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

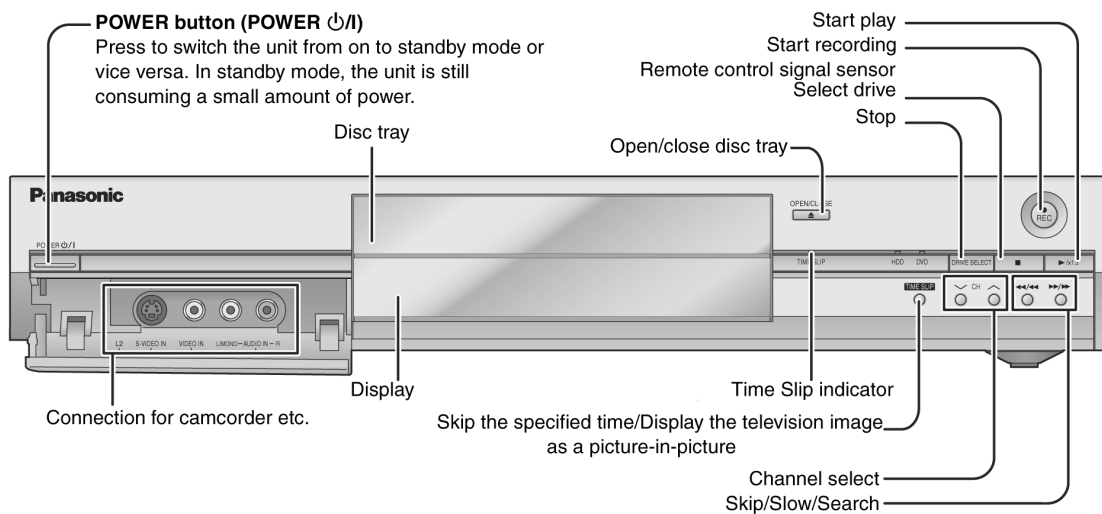
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to 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.

6 Each Buttons

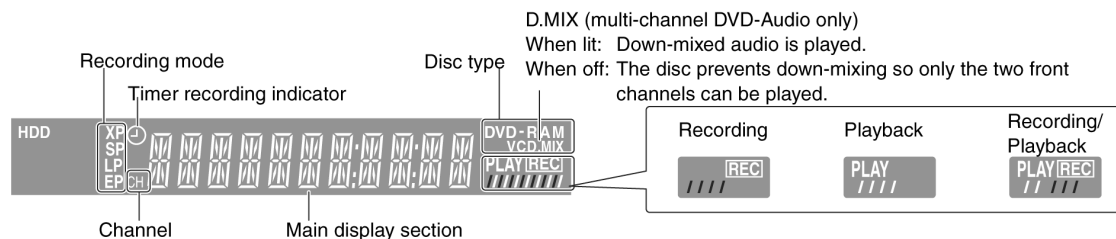
Remote control



Main unit



The unit's display



7 New Features

7.1. Function of Power Circuit (IC1150)

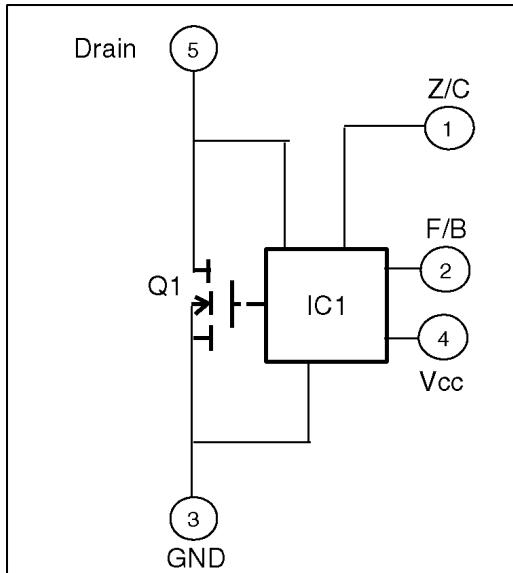
1. General

We adopted IC module as the Switching Power Circuit for lower power consumption.

IC1150 is constructed with Switching materials and Control IC, and is partial resonance module.

We realized Switching Power with high efficiency, low noise and low power consumption.

2. Equivalence Circuit to IC1150



Pin No.	Symbol	Description
1	Z/C	Trigger input terminal. Zero detection voltage: 0.25V It becomes less than 3V, the mode turns to standby.
2	F/B	Bias current feedback input terminal. ● Switching ON time (min.) ~ (max.) 1.5V ~ 4.5V / 0μsec. ~ 25μsec. ● In standby mode Oscillation stops: less than 0.8V Oscillation starts: over 1.8V
3	GND	GND terminal
4	Vcc	Power terminal of IC. Oscillation starting voltage: Vcc = and over 14.5V Oscillation stop voltage: Vcc = and less than 9.6V Over voltage latching voltage: Vcc = 20V
5	Drain	Drain terminal for Main switching material.

3. Startup Circuit

When power is turned on, input voltage of the Switching Transformer is supplied to IC1150 as the startup power.

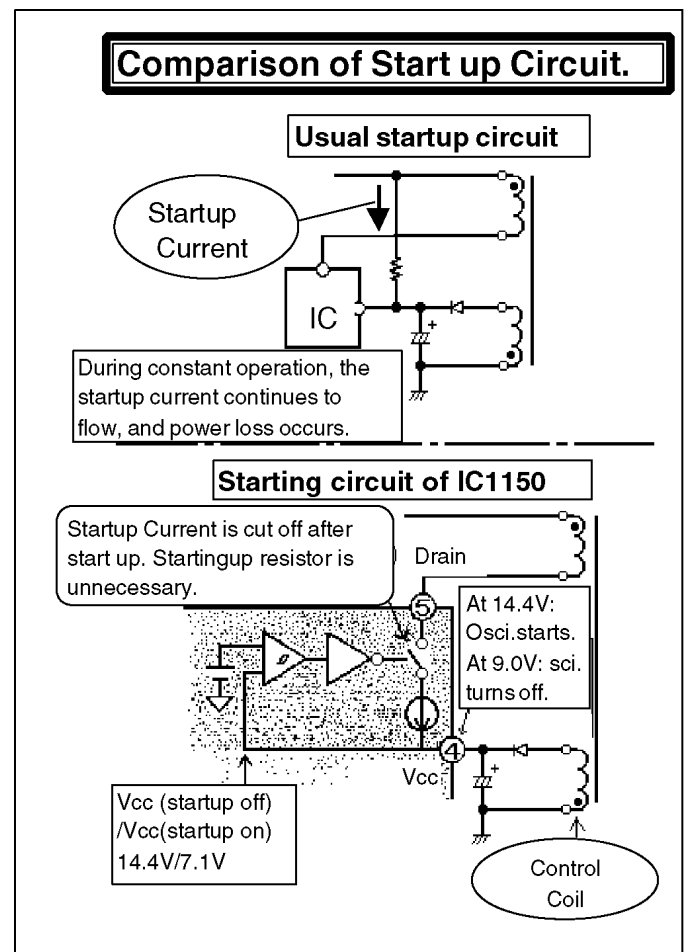
After IC1150 has started, the startup current is cut off.

The current of Startup Circuit is supplied as constant current source in IC1150 and as charge current for the capacitor connected between Vcc terminal and GND out side of IC1150 until Vcc reaches 14.4V.

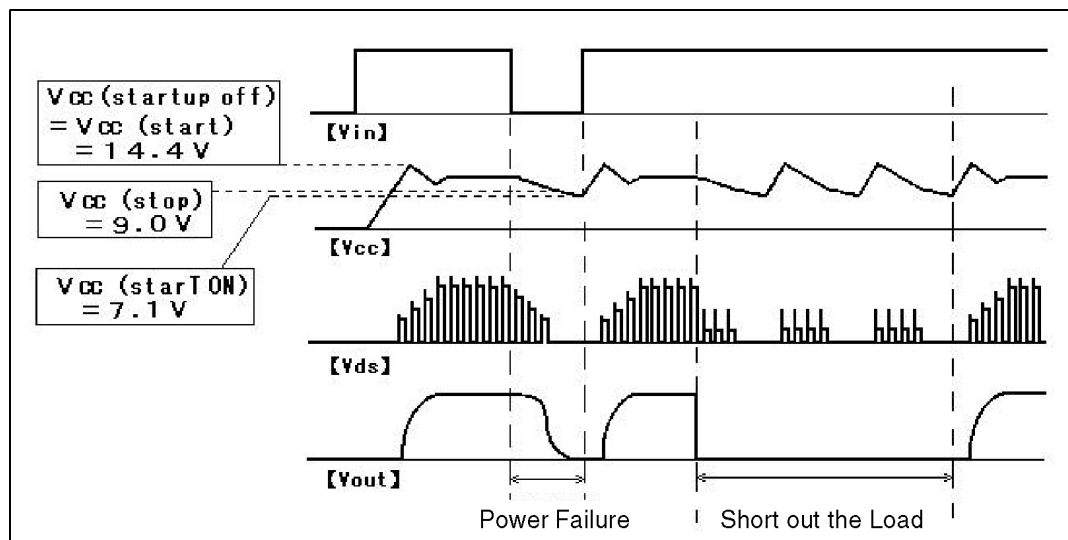
When Vcc reaches 14.4V, the Startup Circuit is cut off, then oscillation starts.

After then, power of IC1150 is supplied from control coil.

In case, the power failure or short out of the load, when Vcc becomes 9.0V; the oscillation stops, furthermore Vcc becomes 7.1V the Startup Circuit starts up and Vcc starts to rise.



Startup Circuit Timing Chart



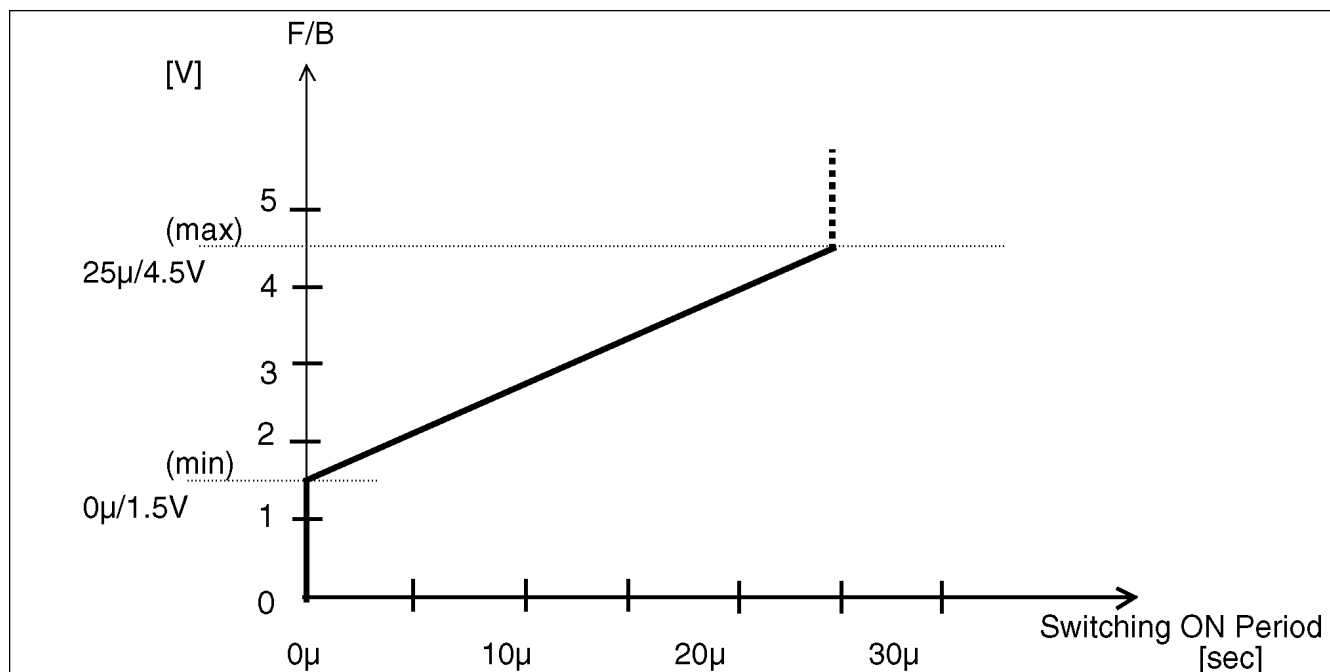
Function of Z/C Terminal

When voltage of Z/C reaches 0.25V, Gate signal is output and Drain current starts to flow.

Function of F/B terminal

F/B signal decides Switching ON width in low voltage controlling.

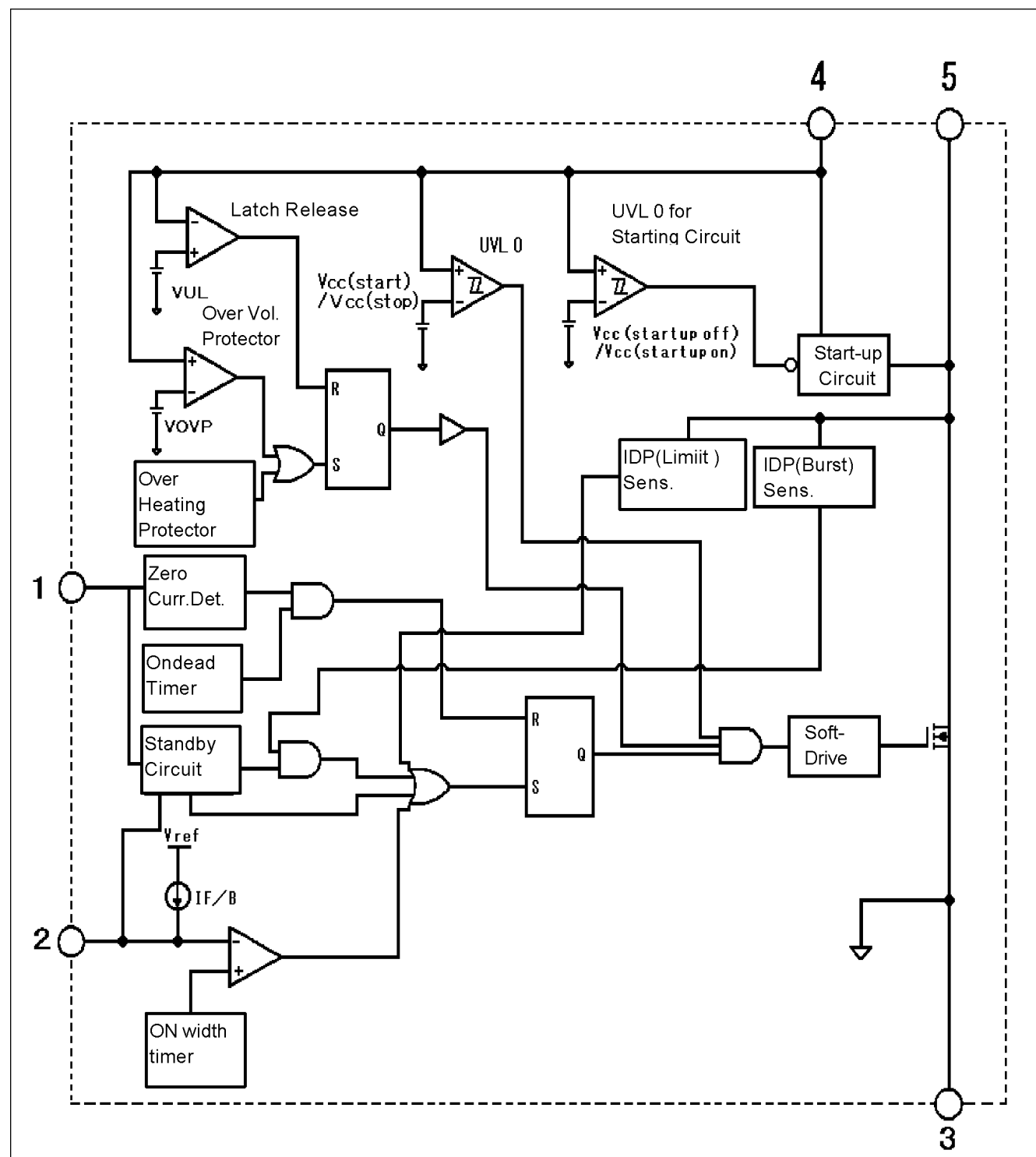
The Switching ON width responds to change of F/B Voltage.



Standby Function

When Z/C Voltage becomes less than 3V, the unit changes to Standby mode.

IC1150 Block Diagram



Signal name

Pin No.	Name	Symbol
1	Zero Current Det.	Z/C
2	Feed back	F/B
3	GND	GND
4	Vcc	Vcc
5	Drain	Drain

8 Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

8.1. Forcible Disc Eject

8.1.1. When the power can be turned off.

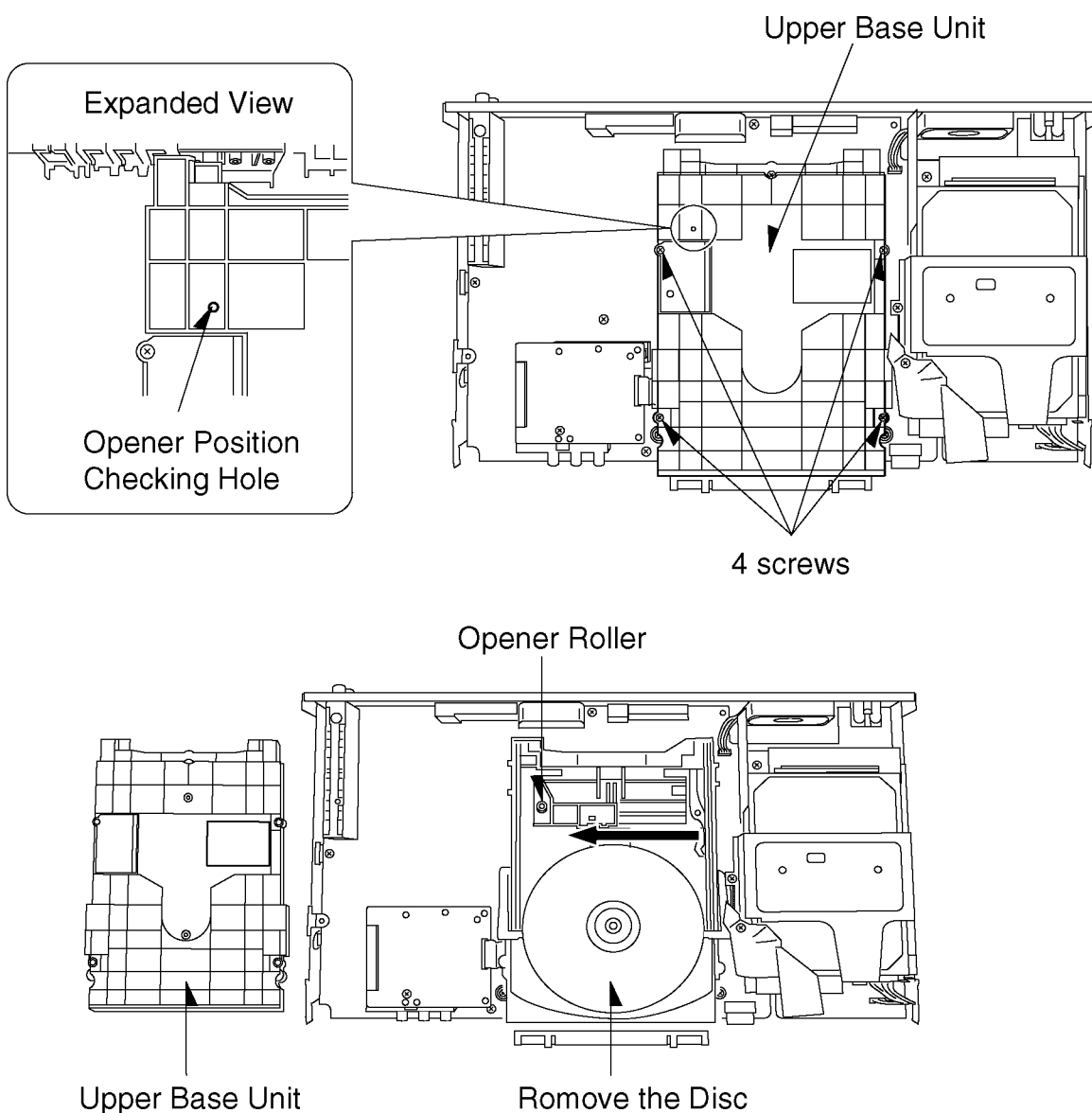
1. Turn off the power and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

8.1.2. When the power can not be turned off.

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

8.2. 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 4 screws and Upper Base Unit from DVD-RAM Drive.
5. Take out the disc and put the Opener Roller on fully position for direction of Arrow.
6. Put the Upper Base Unit so that the Opener Roller is inserted into the groove.
7. Check center of Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws.



9 Service Explorer

Confirm "RAM-Drive Last Error" in Service Mode

Execute Service Mode

1. Press [STOP], [TIME SLIP] and [OPEN/CLOSE] simultaneously for 5 seconds when P-off.

FL Display:

SERVICE MODE

*After finishing display "(7). Factor of Drive Error occurring", press [0] [2] ~[9] [9] keys of the Remote Controller so that 99 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.

40216191526

The error has occurred at 2004(year)/Feb.(month)/16(day)/19(hour):15(minute):26(second)

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

031000

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.



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



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	Taiyo yuden	Japan
	TYG		
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

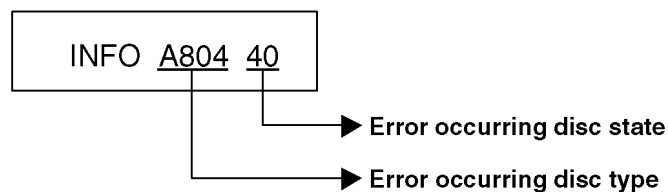
DVD-RAM Disc

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



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 Self-Diagnosis and Special Mode Setting

10.1. Self-Diagnosis Functions

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

U14, 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	FL display
U12	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	*CHK REMOTE "*" is remote controller code of the main unit. Display for 5 seconds.
U14	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	U14 "U14" is displayed for 30 minutes.
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99 Displayed is left until the [POWER] key is pressed.
H01	Inoperative fan motor	Display appears when inoperative fan motor is detected after powered on. The power is turned off when detecting.	No display	H01 Displayed is left.
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	F00 Displayed is left.
F01	Drive hardware error	Display appears when drive unit error is detected. The event is saved in memory.	No display	F01 Displayed is left.
F12	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	F12 Displayed is left.
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	"This disc is incompatible."	UNSUPPORT Display for 5 seconds.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	"Cannot read. Please check the disc."	NOREAD
HARD ERR	Drive error	The drive detected a hard error.	"DVD drive error."	HARD ERR Display for 5 seconds.
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	SELF CHECK
Full Program	32 programs are already set.	32 programs are already set.	No display	PROG FULL

Error Code	Diagnosis contents	Description	Monitor Display	FL display
HDD SLEEP	In order to extend HDD life, the HDD is in SLEEP (not activated) mode.	If there is no disc in the unit, the HDD will go into SLEEP mode after there has been no operation for 30 minutes or longer. *While in SLEEP mode play or recording may not begin right away because the HDD takes time to be re-activated.		HDD SLP

10.2. 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.	TEST L1	Press [SKIP (REV)], [TIME SLIP] and [OPEN/CLOSE] keys simultaneously for five seconds when power is off.
Service Mode	Setting every kind of modes for servicing. *Details are described in "10.3. Service Mode".	SERVICE MODE	When the power is off, press [STOP], [TIME SLIP] and [OPEN/CLOSE] keys simultaneously for 5 seconds.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	Open the tray, and press [SKIP (REV)] and [SKIP (FWD)] simultaneously for five 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 or EXT-LINK is ON, execute " Forced disc eject " after releasing Timer REC or EXT-LINK. *This command is not effective during "Child lock" is ON.	The display before execution leaves. *****	When the power is off, press [STOP] and [CH UP] keys simultaneously for five 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 or EXT-LINK is ON, execute "Forced Power-off" after releasing Timer REC or EXT-LINK. 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 [CH DOWN], [TIME SLIP] and [OPEN / CLOSE] simultaneously for over five seconds and less than 10 seconds. *The [REC MODE] should be set to EP or LP. *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.
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by "Main unit initialization" of service mode.	*When lock the tray. LOCK "LOCK" is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for five seconds.
		*When unlock the tray. UNLOCK "UNLOCK" is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for five seconds.
		*When press OPEN/CLOSE key while the tray being locked. LOCK Display "LOCK" for 3 seconds.	Press [OPEN/CLOSE] key while the tray being locked.
ATP Initialization	ATP setting is initialized, and the unit turns off automatically.	It is same with display in stop mode. *****	When the power is on (E-E mode), press [CH UP] and [CH DOWN] simultaneously for five seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. *****	When the power is on (E-E mode), press [STOP] and [TIME SLIP] simultaneously for five seconds.

Format→REC→Play→STOP→Play→Skip(R)→Cue
 ↑
 Stop←Play←R-Slow←Slow←Pause←Play←Rev
 *The unit repeats above sequence.

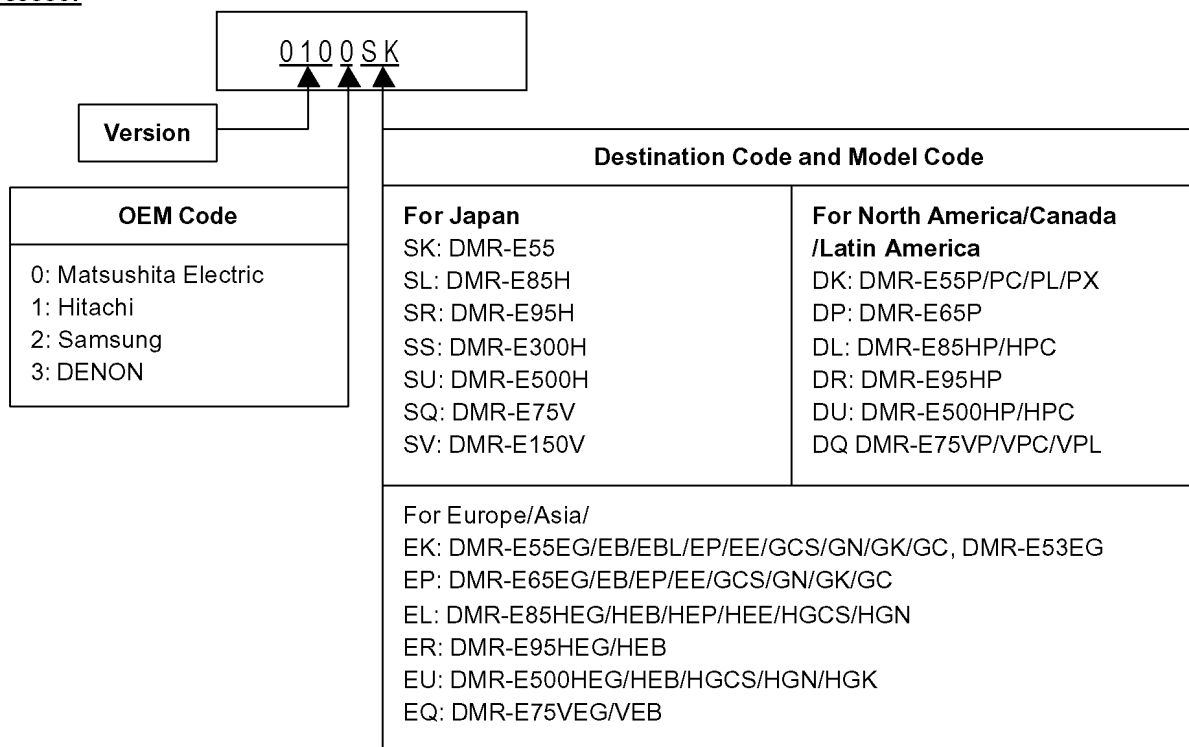
10.3. Service Modes

Service mode setting: While the power is off, press TIME SLIP, STOP and OPEN / CLOSE simultaneously for five seconds.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	SERVICE MODE	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U14/H/F held by Timer is displayed on FL. *Details are described in "10.1. Self-Diagnosis Functions".	♣ □ □ * ♣ shows U/H/F. □ □ shows number.	Press [0] [1] in service mode
ROM Version Display	Region code, MAIN firm version, TIMER firm version and DRIVE firmware versions are displayed on FL for five seconds per each version in order, but ROM version will be left displayed.	REGION* MAIN ***** TIMER***** DRIVE **** ROM * *** " -" are version displays.	Press [0] [2] in service mode

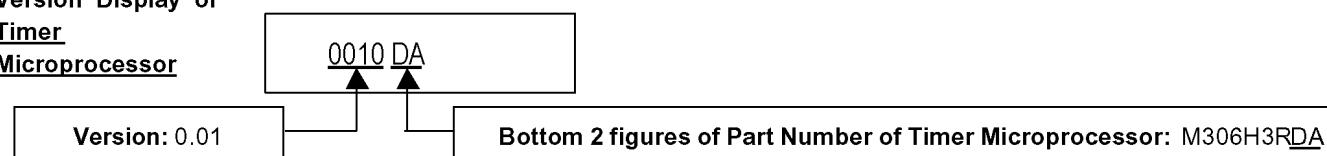
Version Display of Main Microprocessor

Example of FL Display



Version Display of Timer Microprocessor

Example of FL Display



Item		FL display	Key operation
Mode name	Description		(Remote controller key)
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". WHIT I	Press [1] [1] in service mode.
		Switch Interlace/Progressive WHIT P	Press [1] [4] in White Picture Output mode. *I/P are switched alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE I	Press [1] [2] in service mode.
		Switch Interlace/Progressive MAGE P	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.
RTSC Return in XP (A & V)	L1 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 EE2 I XP 48	Press [1] [3] in service mode.
		Switch Interlace/Progressive EE2 P XP 48	Press [1] [4] in RTSC Return XP mode. *I/P are switched alternately.
		Audio 44.1 kHz/ 48 kHz Switch EE2 P XP 44	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 SERVICE I	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.
		Switch Interlace/Progressive SERVICE P	
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	TIMER MUTE	Press [2] [1] in service mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B. (GLUE IC).	MAIN MUTE	Press [2] [2] in service mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) AUDIO 48	Press [2] [3] in service mode.
		Audio 44.1kHz/48kHz switching AUDIO 44	Press [2] [4] in Audio Pattern Output mode. *48 kHz / 44.1 kHz are switched alternately.

Item		FL display	Key operation (Remote controller key)
Mode name	Description		
HDD READ inspection	Perform a complete read inspection of the HDD.	When the HDD is OK HDD RDOK If the HDD is defective HDD RDNG□○○ □ : Judge of Forward rate. <u>*When normal</u> (Forward rate is 35Mbps or more, and there is no HDD error): _ is Space. <u>*When Abnormal</u> (Forward rate is less than 35Mbps): _ is X. ○○ : Number of what have spent time for seeking over 100ms. <u>*When normal</u>: ○○ are spaces. <u>*When Abnormal</u>: Display Number of what have spent time for seeking over 100ms. However, if the number is more than 100, Display [XX]. We judge it is normal that the number is less than 4.	Press [3] [1] in the service mode. *When canceling the checking mode while executing, do "forced power-off". Method: Press the "POWER" button on the Front Panel more than 10 seconds.
Laser Used Time Indiction	Check laser used time (hours) of drive.	LASER***** ●(*****) is the used time display in hour. ●Laser used time of DVD/ CD in Playback/Recording mode is counted.	Press [4] [1] in service mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLR LASER	Press [9] [5] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive. *Details are described in "9. Service Explorer".	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred is displayed for 5 seconds. YMMDDhhmmss Y: Year MM: Month DD: Day hh: Hour mm: Minute ss: Second 3. Last Drive Error (1/2) is displayed for 5 seconds. ***** 4. Last Drive Error (2/2) is displayed for 5 seconds. ***** 5. Error occurring Disc type is displayed for 5 seconds. MEDIA***** 6. Disc Maker ID is displayed for 5 seconds. ***** 7. Factor of Drive Error occurring is left displayed INFO*****	Press [4] [2] in service mode. Then press [0] [1] ~ [9] [9], the past 99 errors are displayed. In case that the supplier cannot be identified, display is black out.
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	CLR DRIVE	Press [9] [6] in service mode.
Turn on all FL/LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in service mode.
S1 signal output	Forcibly superimpose the S1 signal (approx. 4.5V DC) on the EE chroma signal, and check the output on the S terminal.	S1 OUTPUT	Press [5] [2] in service mode.
S2 signal output	Forcibly superimpose the S2 signal (approx. 2V DC) on the EE chroma signal, and check the output on the S terminal.	S2 OUTPUT	Press [5] [3] in service mode.
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front P.C.B.	000Γ (1) ** (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in service mode.
Production Date Display	Display the date when the unit was produced.	PD YYYYMMDD YYY: Year MM: Month DD: Day	Press [6] [1] in service mode.

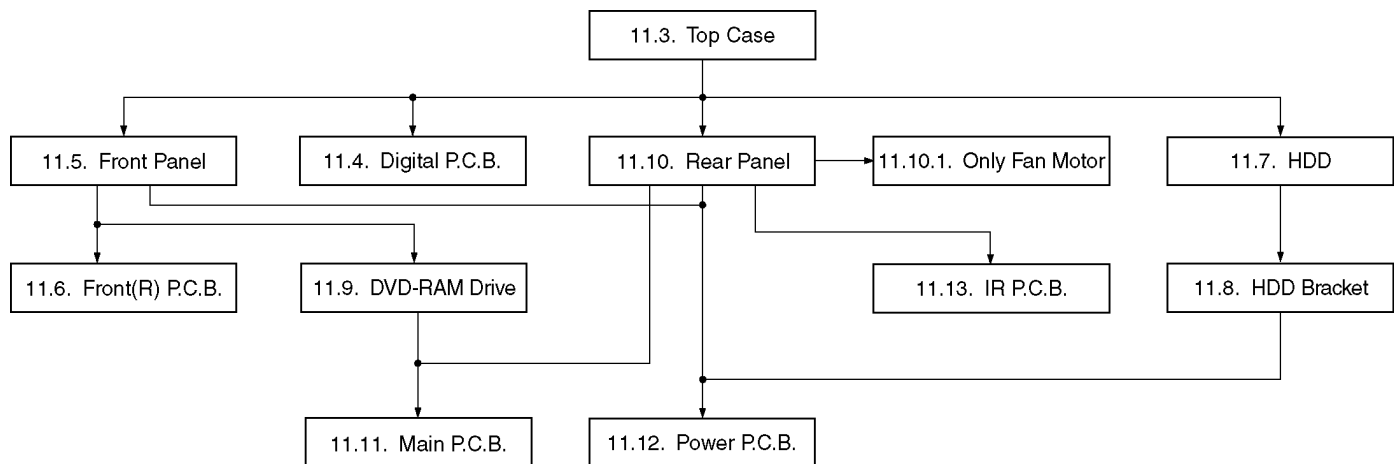
Item		FL display	Key operation (Remote controller key)
Mode name	Description		
Display the accumulated working time	Display the accumulated unit's working time.	***** (Indicating unit: Second)	Press [6] [4] in service mode.
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. FTREC*** Display the time when the error has occurred for 5 seconds.. YYMMDDHHMM YY: Year MM: Month DD: Day HH: Hour MM: Minute Display the accumulated working time to occurring of the error for 5 seconds.. ***** (Indicating unit: Second)	Press [6] [5] in service mode. Then press [0] [1] ~ [1] [9], the past 19 error histories are displayed.
Delete the Error History	Delete Error History information stored on the unit.	CLR FTREC	Press [9] [7] in service mode.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	NO***** "*" is number of open/close cycle times.	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)	CLR E-CODE	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.	CLR SERV	Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. *****	Press power button on the front panel in service mode.

11 Assembling and Disassembling

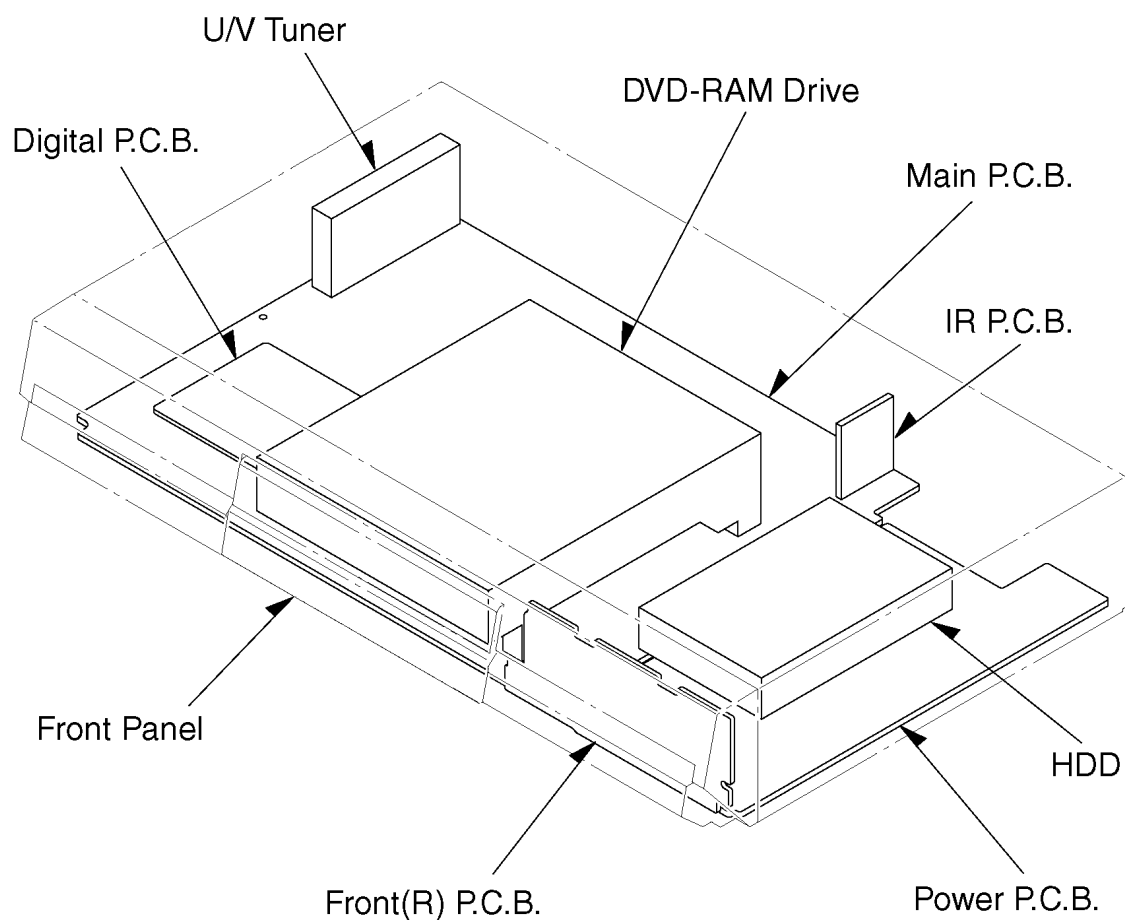
11.1. Disassembly Flow Chart

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.

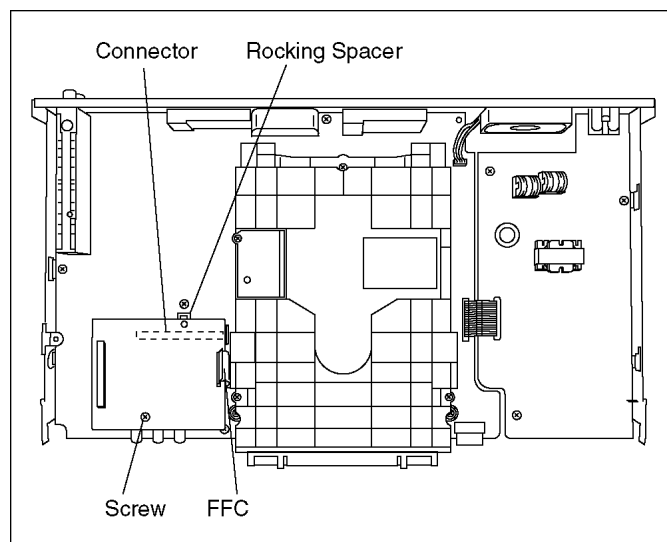
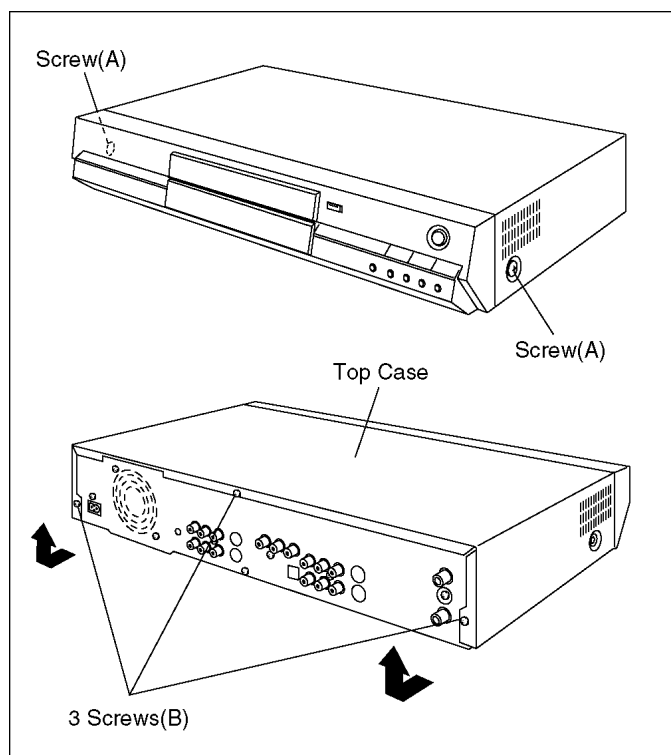


11.2. P.C.B. Positions



11.3. Top Case

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



CAUTION:

When replacing Digital P.C.B., pay attention as below.

11.4. Digital P.C.B.

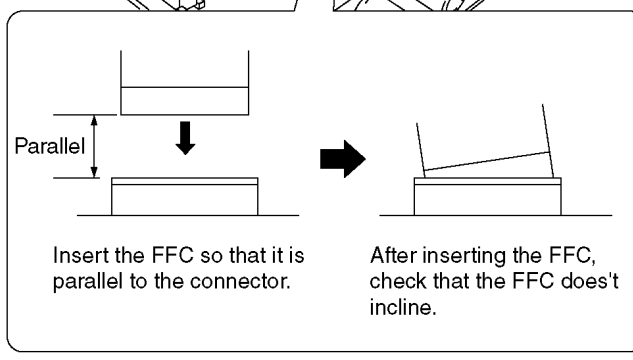
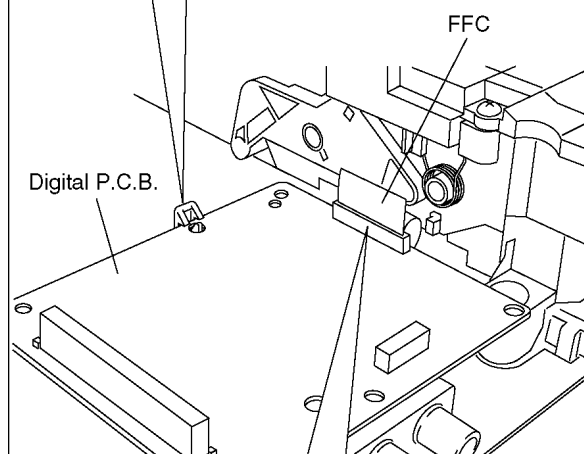
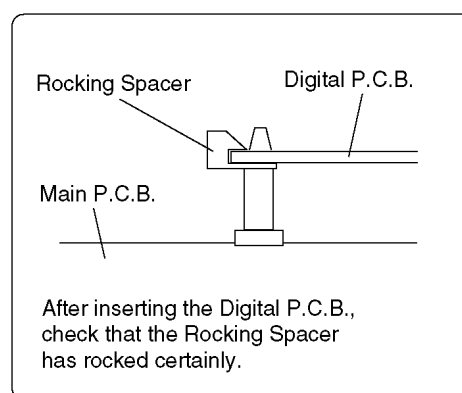
When replacing with Digital P.C.B., "UNFORMAT" indication is displayed and HDD must be formatted.

After that, programme in the HDD will be lost.

- How to format the HDD -

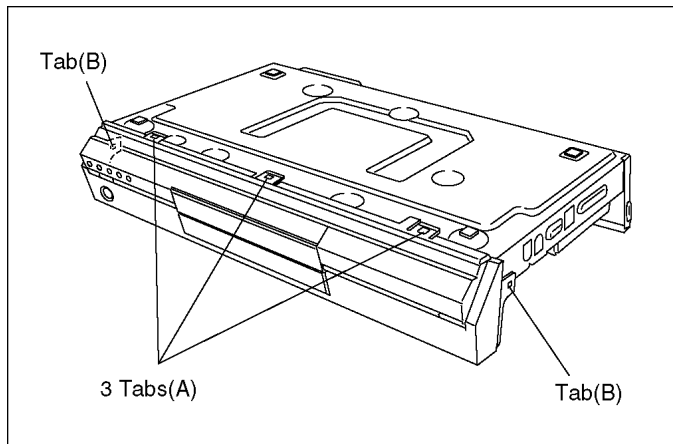
- 1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.
- 2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

1. Remove the FFC and a Screw.
2. Unlock a Rocking Spacer.
3. Lift up Digital P.C.B. slightly so to disconnect Connector to remove Digital P.C.B.

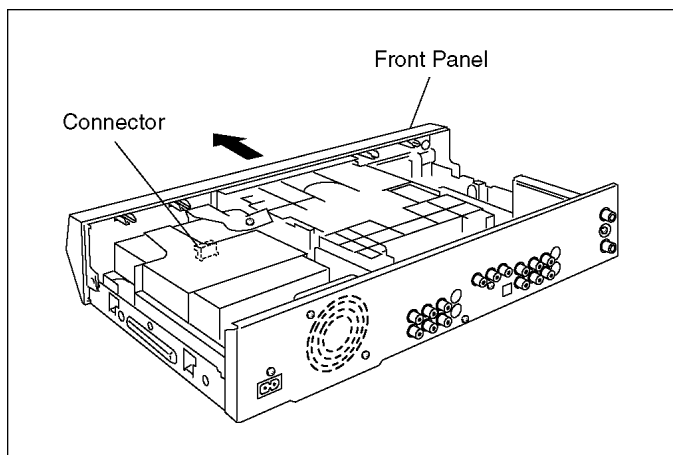


11.5. Front Panel

1. Remove 3 tabs (A) and 2 tabs (B) in this order. (The tab (A) and (B) should be removed at the same time, respectively.)

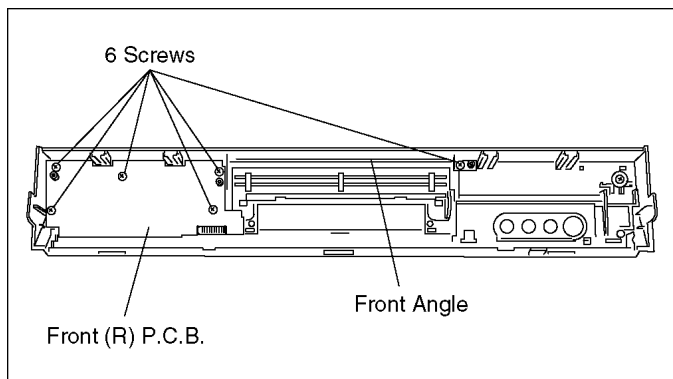


2. Move the front panel to front side straight and slowly so to remove it with Connector.



11.6. Front (R) P.C.B.

1. Remove 6 screws and Front Angle.



11.7. HDD

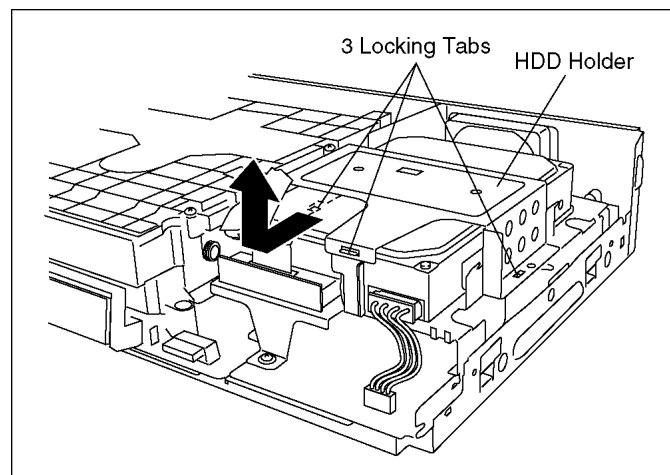
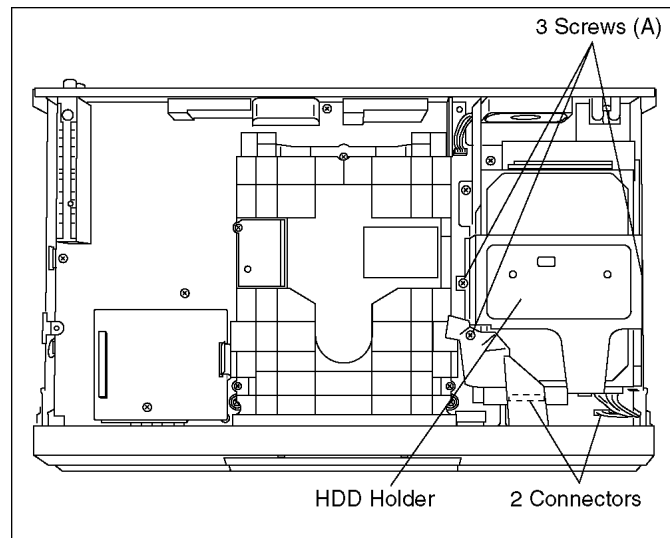
When replacing with HDD, "UNFORMAT" indication is displayed and HDD must be formatted.

After that, **programme in the HDD will be lost.**

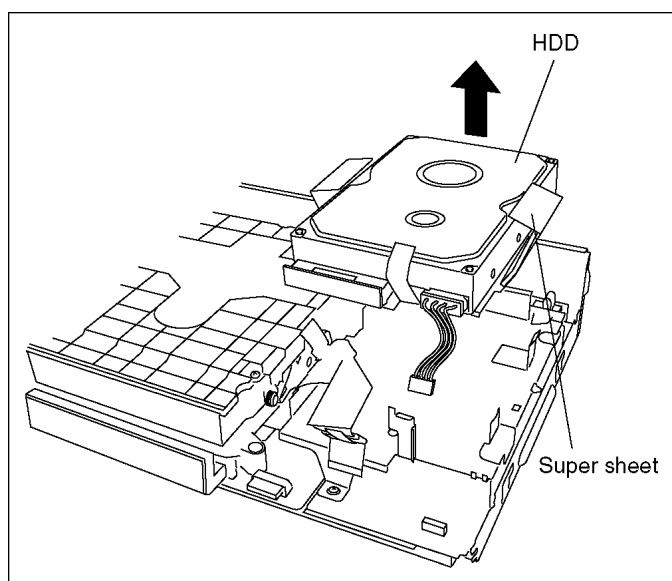
- How to format the HDD -

- 1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.
- 2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

1. Remove 3 Screws (A) and 2 connectors.
2. Slide and lift up HDD Holder in the direction of the arrows so to unlock 3 locking tabs.



3. Lift up HDD with super sheet vertically and remove super sheet.



Handling of HDD

The following precautions should be taken when handling HDD.

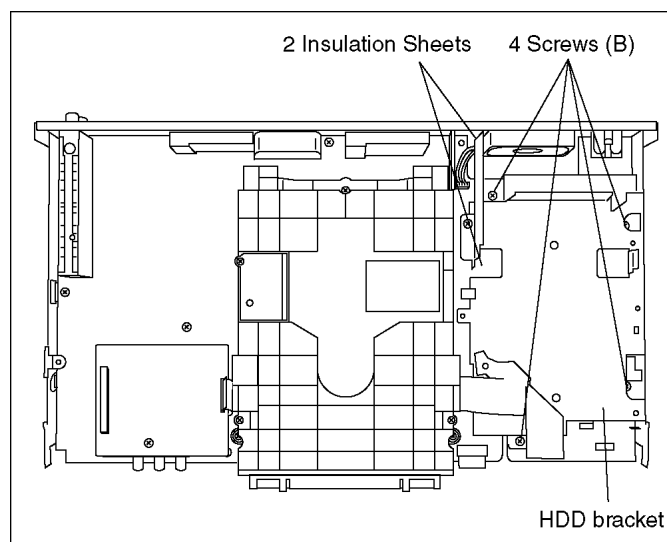
- a. Never give an impact to HDD. (Even a drop from 1cm height can be a cause of HDD failure.
- b. When placing HDD on a workbench, provide a mat on a bench for shock absorption and anti-static purposes.
- c. When installing HDD, release it from your hands only after confirming that it is fully set on the chassis.
- d. Avoid stacking up HDD.
- e. HDD is unstable and easy to fall. Do not stand it on its side face.
- f. When handling HDD, hold its side faces to avoid static hazard.
- g. Do not place HDD on its wrapping bag after removal. (Prevention of static hazard)
- h. Use a screwdriver with low impact and anti-static features.
- i. To replace HDD, remove the vertical short-circuit pin.
(Keep the horizontal short-circuit pin in its place)

Note:

When replacing HDD, please make the rear jumper slave or cable select configuration.
(same configuration as HDD to exchange)

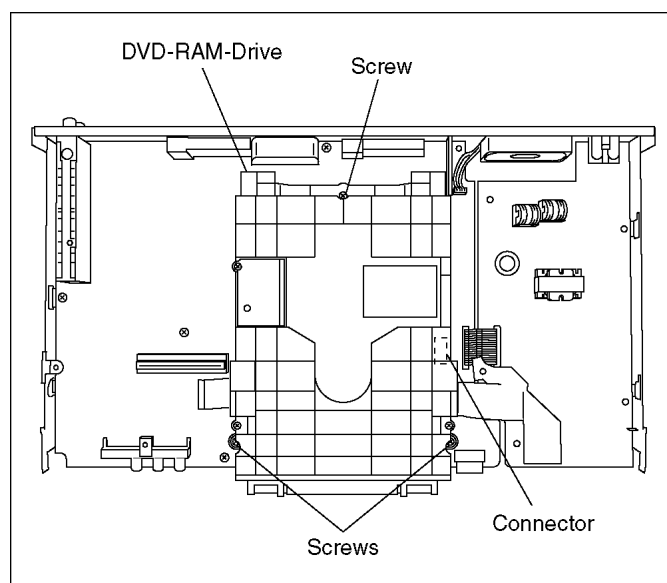
11.8. HDD Bracket

1. Remove 4 screws (B) and HDD Bracket with 2 Insulation Sheets.



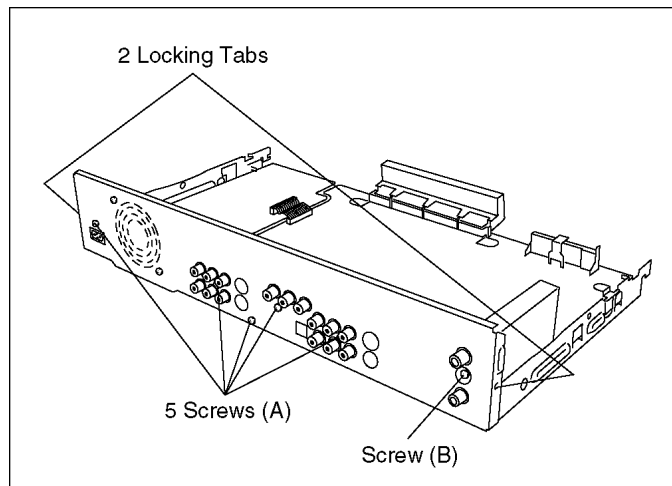
11.9. DVD-RAM Drive

1. Remove 3 Screws.
2. Pull out DVD-RAM Drive vertically so to remove it with Connector.



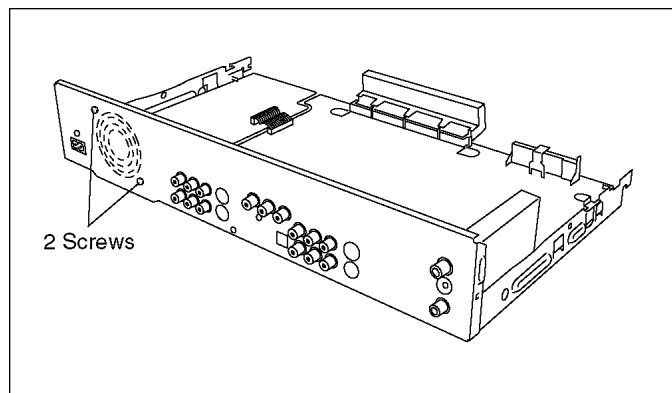
11.10. Rear Panel

1. Remove the 5 screws (A) and screw (B).
2. Unlock 2 Locking Tabs to remove Rear Panel.

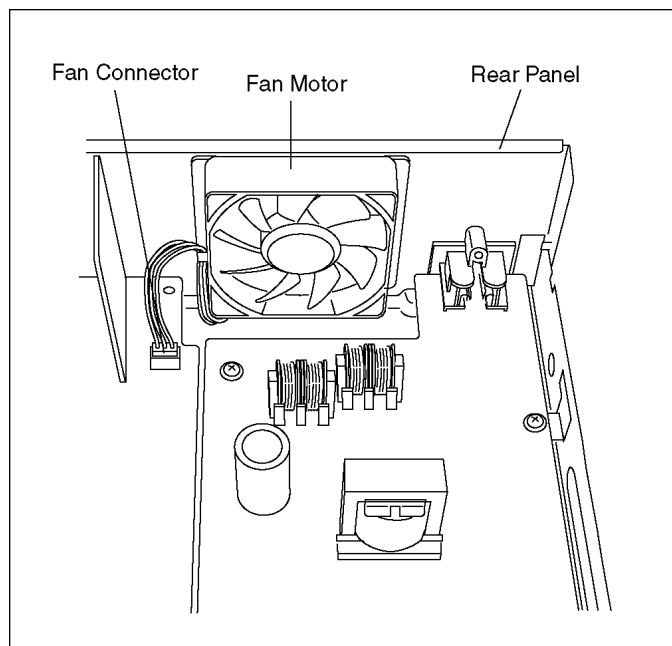


11.10.1. Only Fan Motor

1. Remove the 2 screws.

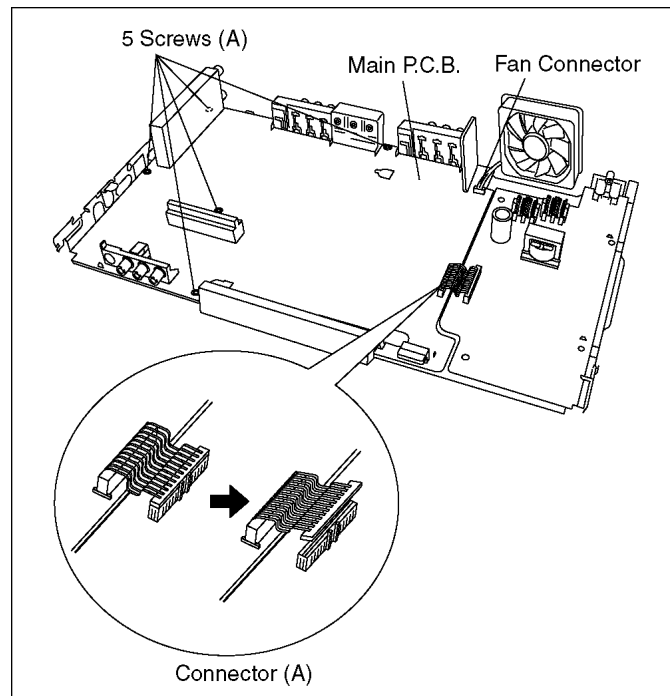


2. Remove Fan Connector to remove Fan Motor.

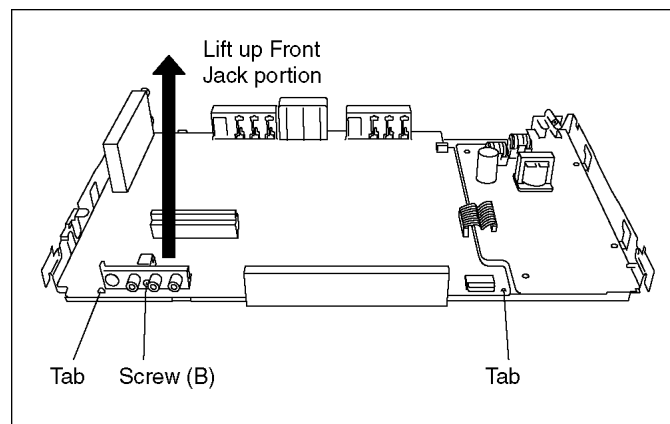


11.11. Main P.C.B.

1. Remove the 5 screws (A), Connector (A) and Fan Connector.

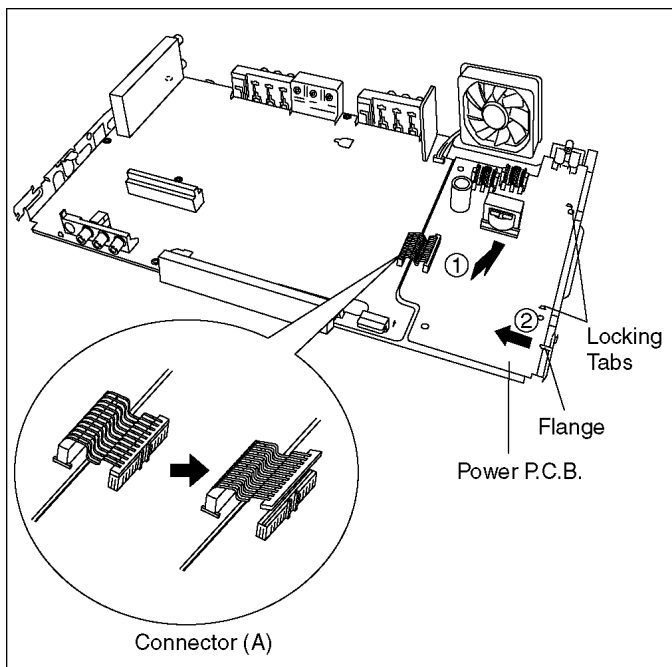


2. Remove a Screw (B) and lift up Front Jack portion of Main P.C.B. slightly so to unlock Tab to remove Main P.C.B..



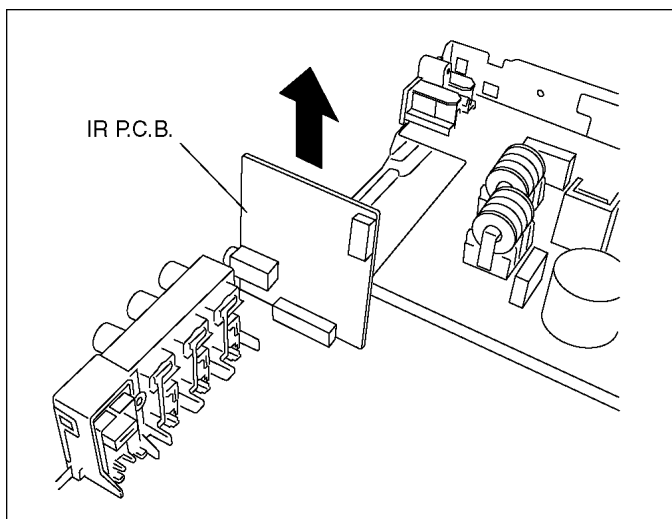
11.12. Power P.C.B.

1. Remove Connector (A).
2. Lift up Power P.C.B. a little so to unlock 2 Tabs and slide Power P.C.B. so to unlock Flange to remove Power P.C.B.



11.13. IR P.C.B.

1. Pull out IR P.C.B. in the direction of the arrow.



12 Service Fixture and Tools

Part Number	Description	Compatibility
RFKZ0125	Extension FFC (Digital P.C.B. - DVD-RAM Drive / 40 Pin)	Same as E50 series
RFKZ0168	Extension Cable (Main P.C.B. - Fan / 3 Pin)	Same as E50 series
RFKZ0169	Extension Cable (Power P.C.B. - HDD / 4 Pin)	Same as E100H series
RFKZ0197	Extension Cable (Main P.C.B. - DVD-RAM Drive / 8 Pin)	New
RFKZ0214	Extension Cable (MainP.C.B. - Digital P.C.B. / 88 Pin)	New
RFKZ0215	Extension Cable (MainP.C.B. - Front (R) P.C.B. / 12 Pin)	New
RFKZ0216	Extension Cable (MainP.C.B. - Power P.C.B. / 23 Pin)	New

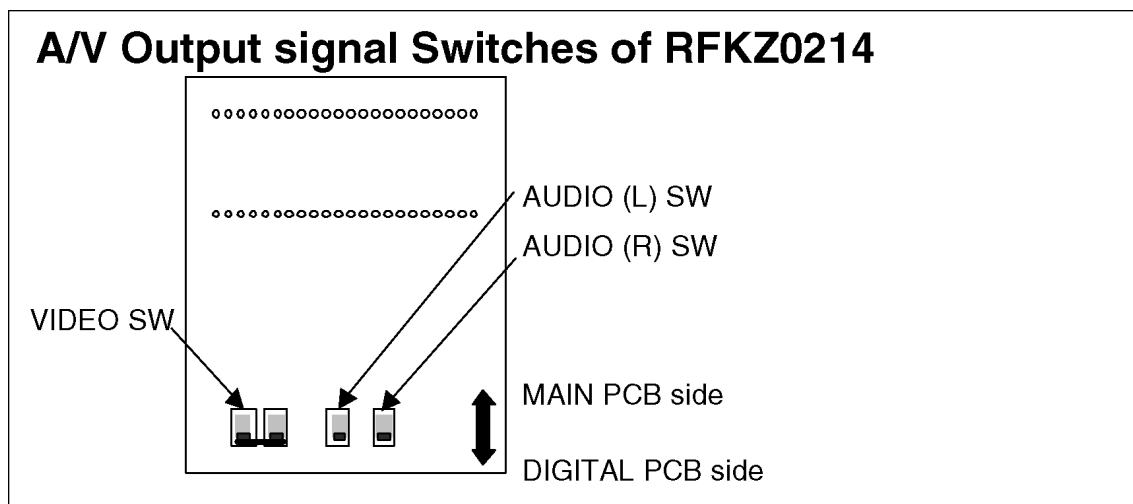
NOTE:

Extension Cable RFKZ0214 has A/V Output Signal switches.

Output signals can be switched from MAIN PCB side or DIGITAL PCB side.

When check MAIN PCB, turn switches to MAIN PCB side.

When check DIGITAL PCB, turn switches to DIGITAL P.C.B. side.

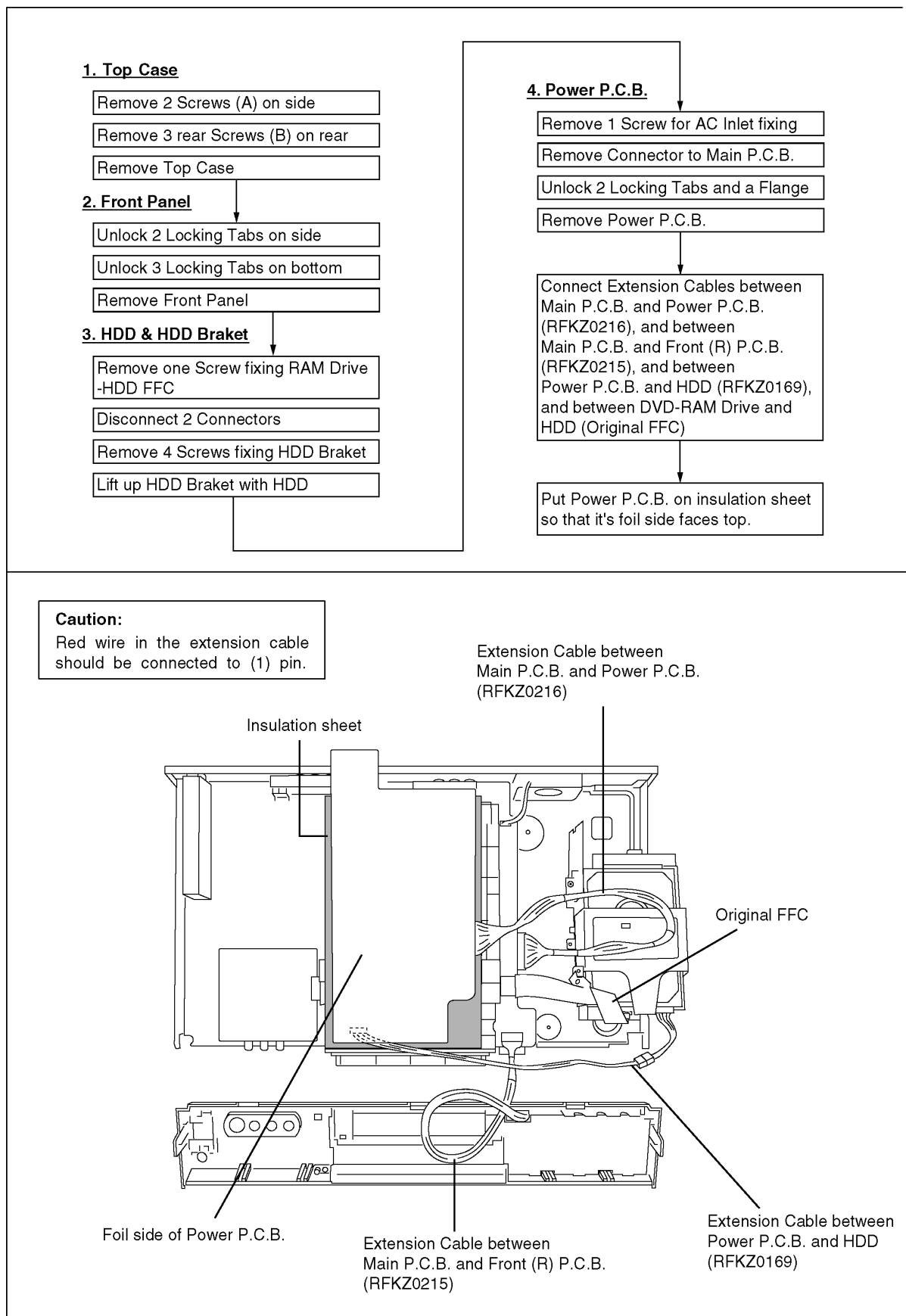


13 Service Positions

Note:

For description of the disassembling procedure, see the section 11.

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



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

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Front Panel

Unlock 2 Locking Tabs on side

Unlock 3 Locking Tabs on bottom

Remove Front Panel

3. Rear Panel

Remove 5 Screws(A) and Screw(B)

Remove Fan Connector

Unlock 2 Locking Tabs on side

Remove Rear Panel with FAN

4. HDD & HDD Bracket

Remove one Screw fixing RAM Drive
-HDD FFC

Disconnect 2 Connectors

Remove 4 Screws fixing HDD Bracket

Lift up HDD Bracket with HDD

5. DVD-RAM Drive

Remove FFC to Digital P.C.B.

Remove 3 Screws fixing RAM-Drive

Lift up DVD-RAM Drive to remove it

6. Main P.C.B. and Power P.C.B.

Disconnect Connector between Main
P.C.B. and Power P.C.B.

Remove 5 Screws (A) and Screws (B)
fixing Main P.C.B.

Unlock 2 Locking Tabs for Power P.C.B.

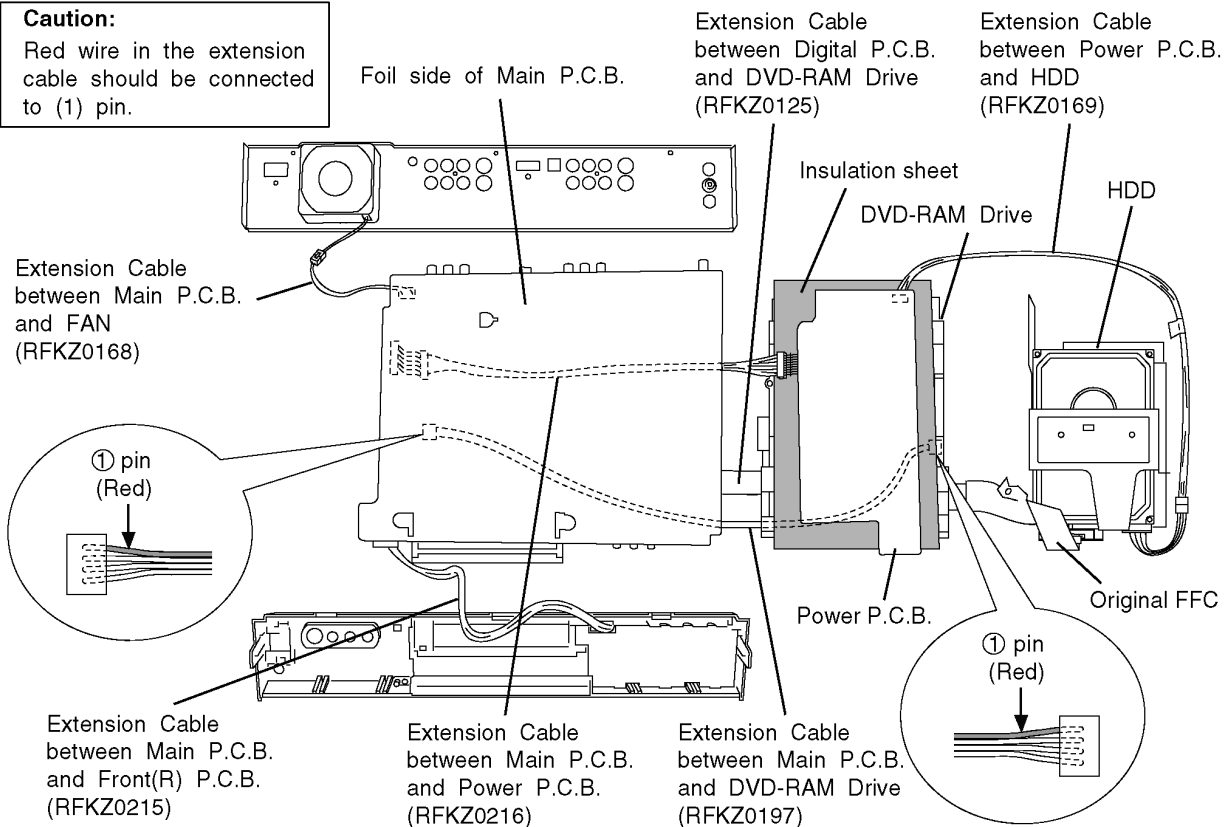
Remove a Flange for Power P.C.B.

Remove Main P.C.B. and Power P.C.B.
from Chassis, and put Main P.C.B. so that
it's foil side faces top. Put Insulation Sheet
on DVD-RAM Drive, then place Power
P.C.B. on Insulation Sheet

Connect Extension Cables between
Main P.C.B. and Front P.C.B. (RFKZ0215)
, between Main P.C.B. and Power P.C.B.
(RFKZ0216), and between Main P.C.B.
and DVD-RAM Drive (RFKZ0197), and
between Digital P.C.B. and DVD-RAM
Drive (RFKZ0125), and between
Main P.C.B. and Fan (RFKZ0168), and
between Power P.C.B. and HDD
(RFKZ0169), and between DVD-RAM
Drive and HDD (Original FFC)

Caution:

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



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

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Digital P.C.B.

Remove FFC to RAM-Drive

Unlock a Rocking Spacer

Remove a Screw fixing Digital P.C.B.

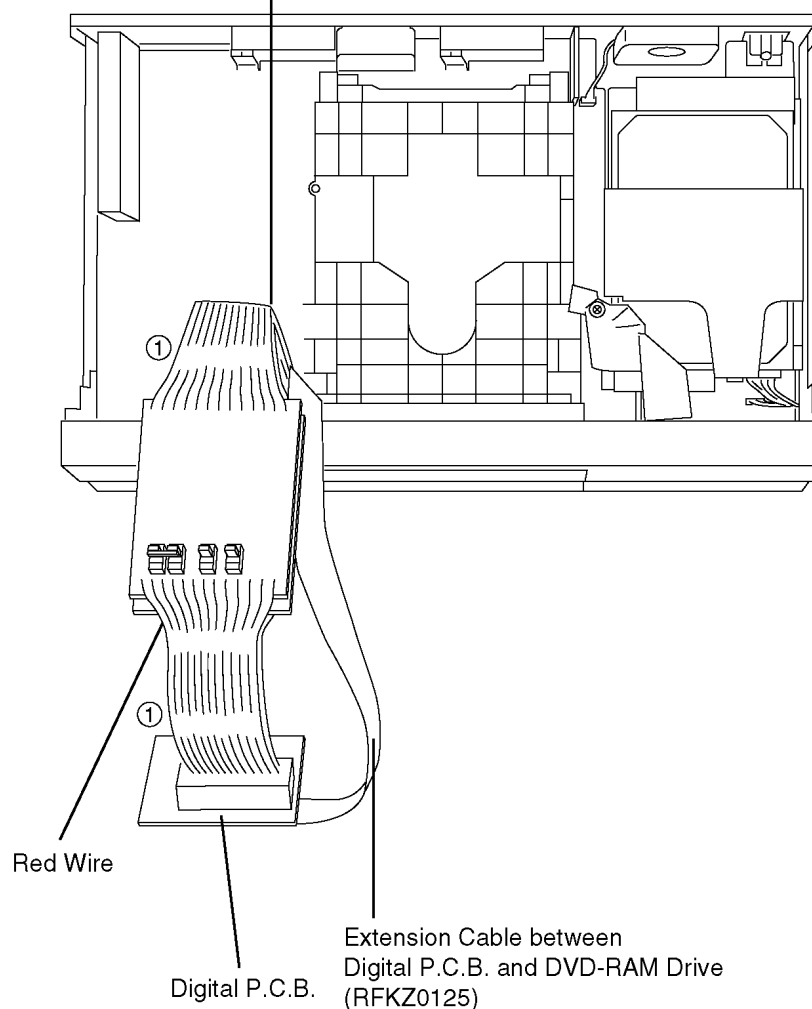
Lift up Digital P.C.B. to remove it

Connect Extension Cables between Main P.C.B. and Digital P.C.B. (RFKZ0214), and between Digital P.C.B. and DVD-RAM Drive (RFKZ0125).

Extension Cable between Main P.C.B. and Digital P.C.B. (RFKZ0214)

Caution:

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



13.4. Checking and Repairing of DVD-RAM Drive

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Front Panel

Unlock 2 Locking Tabs on side

Unlock 3 Locking Tabs on bottom

Remove Front Panel

3. HDD

Remove one Screw

Disconnect 2 Connectors

Remove 4 Screws fixing HDD Braket

Lift up HDD Braket with HDD

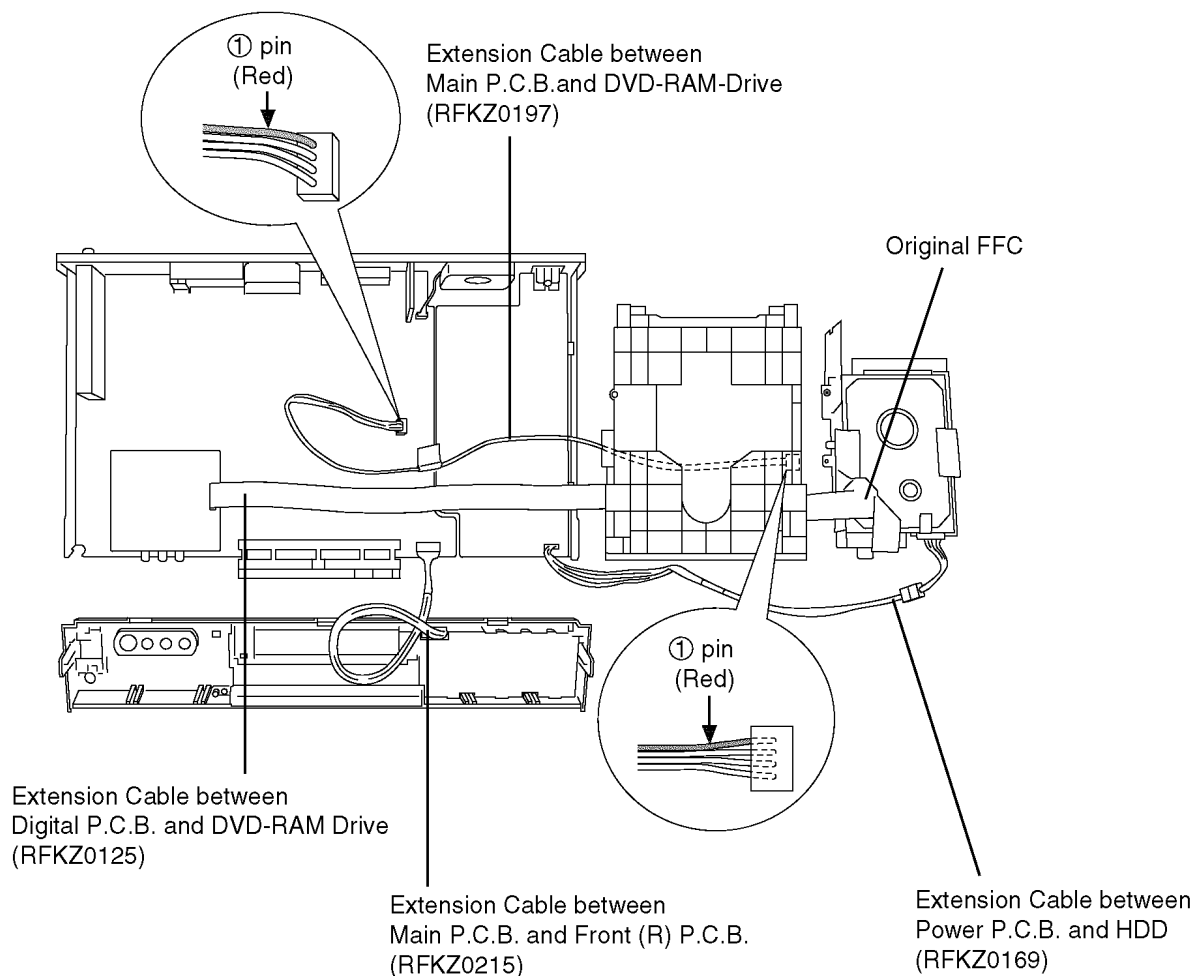
4. DVD-RAM Drive

Remove 3 Screws fixing RAM Drive

Remove FFC to Digital P.C.B.

Lift up DVD-RAM Drive to remove it

Connect Extension Cables between Main P.C.B. and DVD-RAM Drive (RFKZ0197), between Digital P.C.B. and DVD-RAM Drive (RFKZ0125), and between Main P.C.B. and Front (R) P.C.B. (RFKZ0215), between Power P.C.B. and HDD (RFKZ0169), and between DVD-RAM Drive and HDD (Original FFC)



13.5. Checking and Repairing of HDD

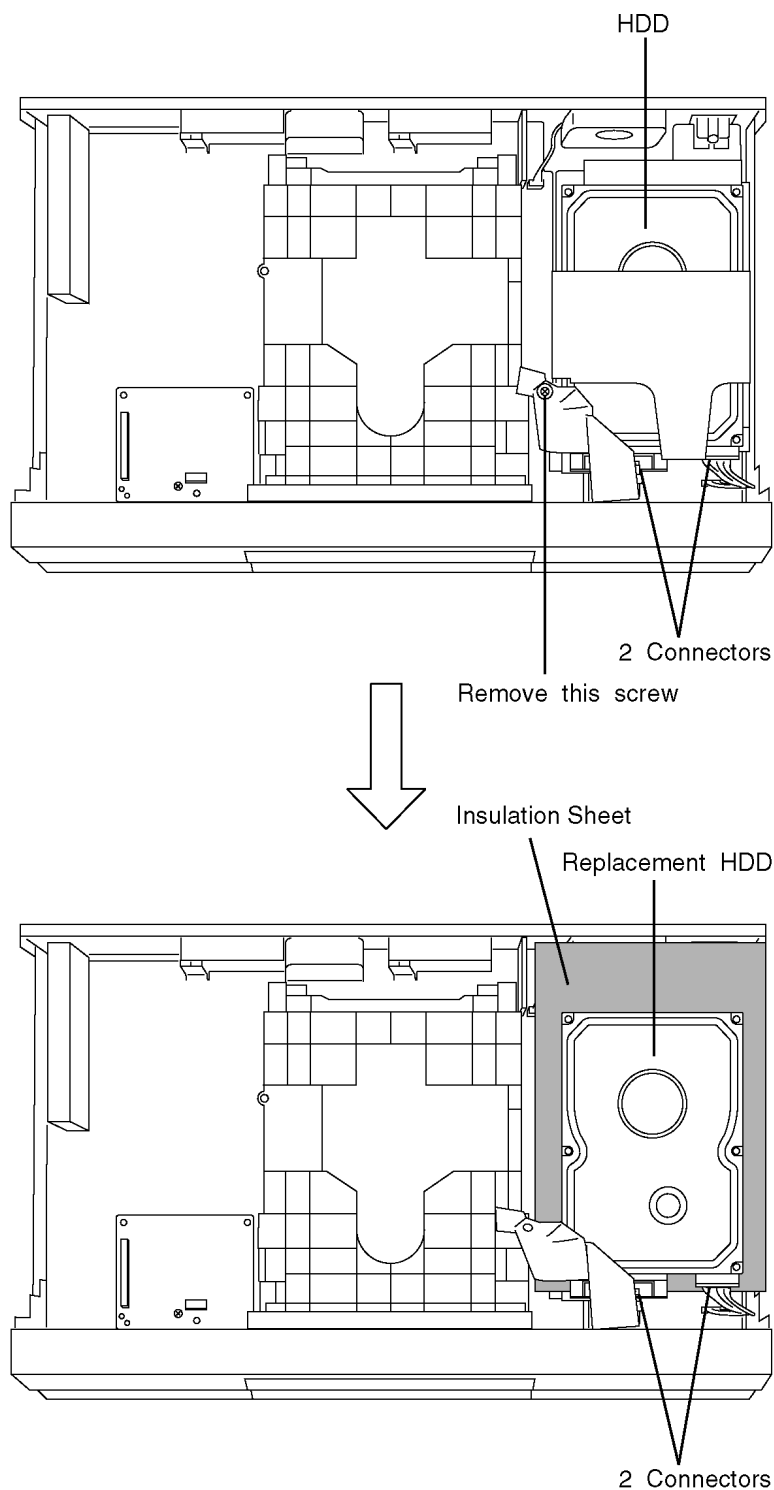
1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B).on rear

Remove Top Case

- ↓
- (1) Remove one Screw fixing RAM Drive-HDD FFC
 - (2) Disconnect 2 Connectors
 - (3) Put a Insulation Sheet on HDD
 - (4) Put Replacement HDD on the Insulation Sheet
 - (5) Connect 2 Connectors to Replacement HDD



13.6. Checking of IR P.C.B.

1. Top Case

Remove 2 Screws (A) and 3 Screws (B).

Remove Top Case.

2. Rear Panel

Remove 5 Screws (A) and one Screw (B).

Unlock 2 Locking Tabs to remove Rear Panel.

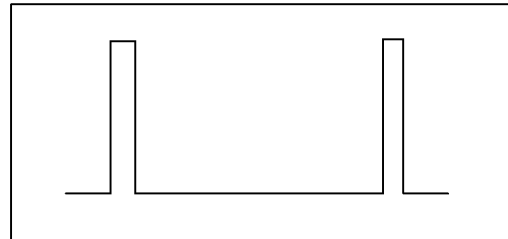
Connect TV Monitor.

Connect Oscilloscope to JK8001-4 (Hot) and GND.

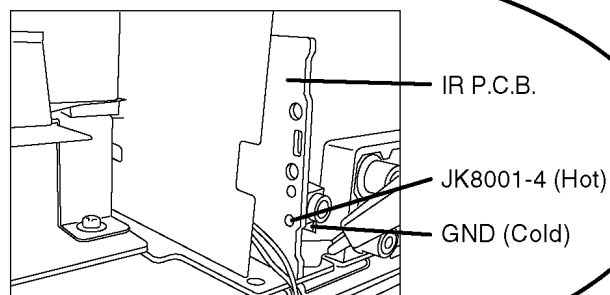
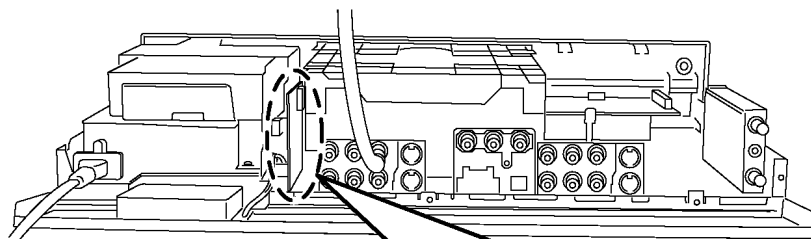
8. Select "Yes", and then press [ENTER].
9. Select "Yes", and then press [ENTER].
10. Select "L3", and then press [ENTER].
11. Press [ENTER].
12. Select "**Not Listed**", and then press [ENTER].
13. Press [ENTER], and then if the P.C.B. is "OK", pulse signals of approx. 4.5Vp-p are output twice from JK8001-4. (When you want to check again, select "**Test this code again**" and press [ENTER], then Pulse signals are output again.

Checking Procedure:

1. Turn on the power. Then if "Welcome ..." was displayed on the TV monitor, press [RETURN]. (*After "EPG" has been set up, this indication will not appear.)
2. Press [FUNCTIONS].
3. Select "**SET UP**", and press [ENTER].
4. Select "**TV GUIDE Setting**" of the channel menu, and then press [ENTER].
5. Select "**No, repeat setup process**", and then press [ENTER].
6. Select "**USA**", and then press [ENTER].
7. Input "**0 2 0 3 2**", and then press [ENTER].



*Recommended ranges of the Oscilloscope:
V: DC range, and 1V/div.
T: 1msec./div.



14 Adjustment Procedures

14.1. After replacing the RAM Drive with new one

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

Caution:

In this case, all parameters are initialized.

14.2. When the unit does not operate normally after replacing the Timer Microprocessor with new one

in order to transmit the

Step	Operation	Descriptions
1	While power is ON, short IC7503-1 pin (RESET) and the GND.	"RESET (L)" is transmitted to the reset terminal of Timer Microprocessor (IC7501-80 pin), then the unit operates normally.

15 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	Model with the HDD : Perform auto recording and playback for one minute using the HDD	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-R disc should be used when recording and playback.
6	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.
7	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears in the FL displays. *[UNSUPPORT] display means the unit is already updated to newest same version. Then version up is not necessary.
8	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR SERV] appears in the FL display. After checking it, turn the power off.
9	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				

16 Voltage and Waveform Chart

Note)

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.

Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

16.1. Power P.C.B.

Ref No.	IC1150					IC1200			IC1270																
MODE	1	2	3	4	5		1	2	3		1	2	3	4	5										
REC	2.3	1.8	0	14.6	-205		5.2	2.5	0		0	1.8	12.1	12.1	13.1										
PLAY	2.3	1.8	0	14.6	-234		5.2	2.5	0		0	1.8	12.1	12.1	13.1										
STOP	2.3	1.8	0	14.6	-229		5.2	2.5	0		0	1.8	12.1	12.1	13.1										
Ref No.	IC1400								IC1401																
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8								
REC	12.3	0	1.5	4.2	0	1.3	0.8	5.4		13.1	4.5	1.2	1.3	1.2	0	11.6	13.1								
PLAY	12.3	0	1.5	4.3	0	1.3	0.8	5.0		13.1	4.5	1.2	1.2	1.2	0	11.6	13.1								
STOP	12.3	0	1.5	4.3	0	1.3	0.8	5.3		13.1	4.5	1.2	1.2	1.2	0	11.6	13.1								
Ref No.	IC1500																								
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
REC	6.0	6.0	13.1	13.1	13.1	13.1	8.7	12.1	0	2.6	4.9	1.8	2.4	4.3	5.0	5.1	0	0	13.1	6.7					
PLAY	6.0	6.0	13.1	13.1	13.1	13.1	8.7	12.1	0	2.6	4.9	1.8	2.4	4.3	5.0	5.1	0	0	13.1	6.7					
STOP	6.0	6.0	13.1	13.1	13.1	13.1	8.7	12.1	0	2.6	4.9	1.8	2.4	4.3	5.0	5.1	0	0	13.1	6.7					
Ref No.	IC1500																								
MODE	21	22	23	24	25	26																			
REC	-	6.0	6.0	6.0	6.0	0																			
PLAY	-	6.0	6.0	6.0	6.0	0																			
STOP	-	6.0	6.0	6.0	6.0	0																			
Ref No.	IC1501																								
MODE	1	2	3	4	5																				
REC	-	0	0	4.9	5.0																				
PLAY	-	0	0	4.9	5.0																				
STOP	-	0	0	4.9	5.0																				
Ref No.	Q1200					Q1400					Q4004					Q4005									
MODE	1	2	3	4		1	2	3	4	5	6		E	C	B		E	C	B						
REC	6.2	5.2	0	1.8		0.8	0.8	11.5	13.1	0.8	0.8		0	0	-0.1		0	0	-0.1						
PLAY	6.2	5.2	0	1.8		0.8	0.8	11.5	13.1	0.8	0.8		0	0	-0.1		0	0	-0.1						
STOP	6.2	5.2	0	1.8		0.8	0.8	11.5	13.1	0.8	0.8		0	0	-0.1		0	0	-0.1						
Ref No.	Q7517					Q7520																			
MODE	E	C	B			E	C	B																	
REC	-19.8	-19.8	-19.1			0	2.7	0																	
PLAY	-19.8	-19.8	-19.1			0	2.7	0																	
STOP	-19.8	-19.8	-19.1			0	2.7	0																	
Ref No.	QR1300					QR1301					QR1303					QR1304					QR1307				
MODE	E	C	B			E	C	B			E	C	B			E	C	B							
REC	0	4.5	0			0	0	3.3			0	0	5.0			0	0	5.0							
PLAY	0	4.5	0			0	0	3.3			0	0	5.0			0	0	5.0							
STOP	0	4.5	0			0	0	3.3			0	0	5.0			0	0	5.0							
Ref No.	QR1308					QR7507																			
MODE	E	C	B			E	C	B																	
REC	0	1.8	0			4.9	4.9	0																	
PLAY	0	1.8	0			4.9	4.8	0																	
STOP	0	1.8	0			4.9	4.8	0																	

16.2. Main P.C.B.

Ref No.	IC1502						IC1505									IC1506				
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8		1	2	3	4	5
REC	6.0	4.9	5.0	-	0		5.2	-	0	3.3	6.0	-	-	6.0		1.2	0	4.9	6.0	5.0
PLAY	6.0	4.9	5.0	-	0		5.2	-	0	3.3	6.0	-	-	6.0		1.2	0	4.9	6.0	5.0
STOP	6.0	4.9	5.0	-	0		5.2	-	0	3.3	6.0	-	-	6.0		1.2	0	4.9	6.0	5.0
Ref No.	IC1507									IC1508						IC1509				
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5		1	2	3	4	5
REC	5.0	-	0	3.1	4.9	-	-	6.0		6.0	4.9	3.3	-	0		1.8	3.3	1.2	1.0	0
PLAY	5.0	-	0	3.1	4.9	-	-	6.0		6.0	4.9	3.3	-	0		1.8	3.3	1.2	1.0	0
STOP	5.0	-	0	3.1	4.9	-	-	6.0		6.0	4.9	3.3	-	0		1.8	3.3	1.2	1.0	0
Ref No.	IC1510																			
MODE	1	2	3	4	5	6	7	8												
REC	1.5	0.8	3.3	3.3	0	0	1.8	1.8												
PLAY	1.5	0.8	3.3	3.3	0	0	1.8	1.8												
STOP	1.5	0.8	3.3	3.3	0	0	1.8	1.8												
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	1.3	0	2.1	4.9	1.3	4.8	1.4	4.6	0.1	2.6	0	1.3	4.8	1.3	0	0.1	2.6	0	1.7	4.8
PLAY	1.4	0	2.1	4.9	1.4	4.8	1.4	4.6	0.1	2.6	0	1.4	4.8	1.4	0	0.1	2.6	0	1.8	4.8
STOP	1.3	0	2.1	4.9	1.3	4.8	1.3	4.6	0.1	2.6	0	1.3	4.8	1.3	0	0.1	2.6	0	1.8	4.8
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	1.3	0	0.1	2.6	4.9	1.6	1.6	1.8	1.8	2.1	0	2.1	2.1	2.1	2.1	1.6	1.5	0	1.8	4.9
PLAY	1.4	0	0.1	2.6	4.9	1.6	1.6	1.8	1.8	2.1	0	2.1	2.1	2.1	2.1	1.6	1.5	0	1.8	4.9
STOP	1.3	0	0.1	2.6	4.9	1.6	1.6	1.8	1.8	2.1	0	2.1	2.1	2.1	2.1	1.6	1.5	0	1.8	4.9

Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.7	0	2.7	4.9	2.7	2.7	1.7	4.6	2.7	0	2.7	4.9	2.7	2.9	1.0	0	4.9	4.9	4.9	0.1
PLAY	2.7	0	2.7	4.9	2.7	2.7	1.8	4.6	2.7	0	2.7	4.9	2.7	2.9	1.0	0	4.9	4.9	4.9	0.1
STOP	2.7	0	2.7	4.9	2.7	2.7	1.7	4.6	2.7	0	2.7	4.9	2.7	3.0	1.0	0	4.9	4.9	4.9	0.1
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0.8	0.8	4.9	1.2	0	1.6	0	2.0	0	-	4.9	-	0	-	0	0	4.9	0	0
PLAY	0	1.6	0.8	4.9	1.6	0	1.6	0	2.0	0	-	4.9	-	0	-	0	0	4.9	0	0
STOP	0	0.8	0.8	4.9	1.2	0	1.6	0	2.0	0	-	4.9	-	0	-	0	0	4.9	0	0
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	4.4	4.4	-	-	4.4	4.4	3.4	4.4	4.4	4.4	4.4	4.4	4.4	0	4.4	0	4.4	0	4.9
PLAY	-	4.4	4.4	-	-	4.4	4.4	3.4	4.4	4.4	4.4	4.4	4.4	4.4	0	4.4	0	4.4	0	4.9
STOP	-	4.4	4.4	-	-	4.5	4.5	3.4	4.4	4.4	4.4	4.4	4.4	4.4	0	4.5	0	4.4	0	4.9
Ref No.	IC4001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	4.9	0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	8.9	4.4	4.4								
PLAY	4.9	0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	8.9	4.4	4.4								
STOP	4.9	0	4.5	4.4	4.4	4.4	4.4	4.4	4.5	8.9	4.4	4.4								
Ref No.	IC4004					IC4005					IC7404									
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	4.9	0	1.2	4.9	6.0		4.9	0	1.2	8.9	13.1		0	2.5	1.9	0	2.8	2.5	3.3	5.0
PLAY	4.9	0	1.2	4.9	6.0		4.9	0	1.2	8.9	13.4		0	2.5	1.9	0	2.8	2.5	3.3	5.0
STOP	4.9	0	1.2	4.9	6.0		4.9	0	1.2	8.9	13.4		0	2.5	1.9	0	2.8	2.5	3.3	5.0
Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.9	4.9	0	4.1	3.9	4.4	0	0	0.4	0.5	4.8	1.6	0	2.1	4.9	4.9	5.0	0	0.3	4.9
PLAY	4.9	4.9	0	3.9	3.9	4.4	0	0	0.4	0.5	4.8	1.6	0	2.1	4.9	4.9	5.0	0	0.3	4.9
STOP	5.0	4.9	0	3.9	3.9	4.4	0	0	0.4	0.6	4.8	1.6	0	2.1	5.0	5.0	5.0	0	0.3	4.9
Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	0	1.8	0	0	0	5.0	0	0	0	1.8	1.7	0	4.9	2.5	0	0.3	4.9	5.0	5.0
PLAY	0	0	1.8	0	0	0	5.0	0	0	0	1.8	1.7	0	4.9	2.5	0	0.3	4.9	5.0	5.0
STOP	0	0	1.8	0	0	0	5.0	0	0	0	1.8	1.7	0	5.0	2.5	0	0.3	5.0	5.0	5.0
Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0	0	0	0	0	0	0	0	0	0	0	5.0	0	0	4.9	0	0	4.9	4.9
PLAY	0	0	0	0	0	0	0	0	0	0	0	0	5.0	0	0	4.9	0	0	4.9	4.9
STOP	0	0	0	0	0	0	0	0	0	0	0	0	5.0	0	0	4.9	0	0	4.9	5.0
Ref No.	IC7501																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0	0	2.5	5.0	0	0	0	4.9	5.0	0	0	0	0	4.8	5.0	0	0	4.9	4.9
PLAY	0	0	0	2.5	4.9	0	0	0	5.0	4.9	0	0	0	0	4.8	5.0	0	0	4.9	4.9
STOP	0	0	0	2.5	5.0	0	0	0	5.0	4.9	0	0	0	0	4.8	5.0	0	0	5.0	5.0
Ref No.	IC7501																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	5.0	5.0	4.9	5.0	4.9	3.0	4.9	4.9	3.3	0	0	0	4.9	5.0	5.0	5.0	4.9	4.6	0
PLAY	0	5.0	5.0	4.9	5.0	4.9	3.0	4.9	4.9	3.3	0	0	0	4.9	5.0	5.0	5.0	4.9	4.6	0
STOP	0	5.0	5.0	5.0	5.0	4.9	3.0	4.9	4.9	3.3	0	0	0	5.0	5.0	5.0	5.0	5.0	4.6	0
Ref No.	IC7501																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116				
REC	0	0	0	5.0	5.0	4.9	5.0	0	1.7	1.3	0	4.9	1.7	0	0	4.9				
PLAY	0	0	0	5.0	5.0	4.9	5.0	0	1.7	1.3	0	4.9	1.7	0	0	4.9				
STOP	0	0	0	5.0	5.0	5.0	5.0	0	1.8	1.3	0	5.0	1.8	0	0	5.0				
Ref No.	IC7502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.9	3.0	4.4	3.9	0	2.2	2.2	5.0	-28.0	-28.0	-28.0	-28.0	-28.0	-24.4	-24.4	-20.8	-28.0	5.0	-28.0	-28.0
PLAY	4.9	3.0	4.4	3.9	0	2.2	2.2	5.0	-28.0	-28.0	-28.0	-28.0	-28.0	-24.4	-21.4	-20.8	-28.0	5.0	-28.0	-28.0
STOP	5.0	3.0	4.4	3.9	0	2.2	2.2	5.0	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-24.4	-20.8	-28.0	5.0	-24.4	-28.0
Ref No.	IC7502																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-28.0	-28.0	-28.0	-28.0	-24.4	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-17.2	-17.2	-20.8	-20.8	-20.8	-20.8	-24.4	-24.4
PLAY	-24.4	-28.0	-28.0	-24.4	-24.4	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-17.2	-17.2	-24.4	-20.8	-24.4	-24.4	-24.4	-20.8
STOP	-28.0	-28.0	-28.0	-24.4	-20.7	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-28.0	-20.8	-20.8	-24.4	-20.8	-28.0	-20.8	-24.4	-17.1
Ref No.	IC7502																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	-13.5	-20.6	-28.0	-28.0	-28.0	-28.0	-20.6	-24.3	-20.8	-20.8	-17.1	-28.0	-28.0	-28.0	-28.0	-24.4	-24.4	-24.4	-24.4	-24.4
PLAY	-17.1	-20.6	-28.0	-28.0	-28.0	-24.4	-20.6	-24.4	-17.2	-13.4	-16.8	-28.0	-28.0	-28.0	-28.0	-24.4	-23.9	-23.7	-23.4	-23.3
STOP	-20.7	-17.1	-28.0	-28.0	-28.0	-28.0	-20.6	-24.4	-20.8	-17.2	-17.1	-28.0	-28.0	-28.0	-28.0	-24.4	-24.4	-24.4	-24.4	-24.4
Ref No.	IC7502																			
MODE	61	62	63	64																
REC	-24.4	-24.4	-24.4	-28.4																
PLAY	-24.4	-24.4	-24.4	-28.4																
STOP	-24.4	-24.4	-24.4	-28.4																
Ref No.	IC7503					IC7505					IC7506									
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	4.9	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.8	1.8	0	1.8	1.8	1.8	13.1
PLAY	4.9	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.8	1.8	0	1.8	1.8	1.8	13.1
STOP	5.0	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.8	1.8	0	1.8	1.8	1.8	13.1

Ref No.	Q4001				Q4002				Q4003				Q4004				Q4005			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	5.2	-0.1	5.2		0	0	-0.1		0	0	-0.1		0	0	-0.1		0	0	-0.1	
PLAY	5.2	-0.1	5.2		0	0	-0.1		0	0	-0.1		0	0	-0.1		0	0	-0.1	
STOP	5.2	-0.1	5.2		0	0	-0.1		0	0	-0.1		0	0	-0.1		0	0	-0.1	
Ref No.	Q7401				Q7503				Q7504				Q7507				Q7508			
MODE	E	C	B		E	C	B		E	C	B		1	2	3		E	C	B	
REC	2.7	0	2.0		0	3.4	-1.0		0	-1.0	-1.0		2.3	0	1.6		1.7	5.0	1.6	
PLAY	2.7	0	2.1		0	3.2	-0.9		0	-0.9	-1.0		2.3	0	1.6		1.8	5.0	1.6	
STOP	2.7	0	2.1		0	3.1	-1.0		0	-1.0	-1.0		2.3	0	1.6		1.8	5.0	1.6	
Ref No.	Q7512				Q7517				Q7520											
MODE	1	2	3		1	2	3		E	C	B									
REC	5.0	13.1	5.7		-19.8	-19.8	-19.1		0	2.7	0									
PLAY	5.0	13.1	5.7		-19.8	-19.8	-19.1		0	2.7	0									
STOP	5.0	13.1	5.7		-19.8	-19.8	-19.1		0	2.7	0									
Ref No.	QR4001				QR4002				QR4003				QR4004				QR7502			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	0	4.9		0	0	2.3		0	5.2	0		0	5.2	0		0	0	2.2	
PLAY	0	0	4.9		0	0	2.4		0	5.2	0		0	5.2	0		0	0	2.2	
STOP	0	0	4.9		0	0	2.4		0	5.2	0		0	5.2	0		0	0	2.2	
Ref No.	QR7507																			
MODE	E	C	B																	
REC	4.9	4.9	0																	
PLAY	4.9	4.9	0																	
STOP	4.9	4.9	0																	

16.3. IR P.C.B.

Ref No.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	0	0	0	0	0	0	0	4.7	2.4	0	2.3	5.0	5.0	0	0	5.0	0	0	0
PLAY	0	0	0	0	0	0	0	0	4.7	2.4	0	2.3	5.0	5.0	0	0	5.0	0	0	0
STOP	0	0	0	0	0	0	0	0	4.7	2.4	0	2.3	5.0	5.0	0	0	5.0	0	0	0
Ref No.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	0	0	0	0	0	0	4.2	4.2	4.4	0	0	0	0	0	5.0	0	0	0	0
PLAY	0	0	0	0	0	0	0	4.2	4.2	4.4	0	0	0	0	0	5.0	0	0	0	0
STOP	0	0	0	0	0	0	0	4.2	4.2	4.4	0	0	0	0	0	5.0	0	0	0	0
Ref No.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STOP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC8001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0	5.0	0	0
PLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0	5.0	0	0
STOP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0	5.0	0	0
Ref No.	IC8002																			
MODE	1	2	3	4	5															
REC	4.7	5.0	0	0	1.8															
PLAY	4.7	5.0	0	0	1.8															
STOP	4.7	5.0	0	0	1.8															
Ref No.	Q8001				Q8002				Q8003				Q8004				Q8005			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	4.4	4.4	4.6		3.9	4.2	4.3		4.9	5.0	5.0		0	5.0	0		0	0	0	
PLAY	4.4	4.4	4.6		3.9	4.2	4.3		4.9	5.0	5.0		0	5.0	0		0	0	0	
STOP	4.4	4.4	4.6		3.9	4.2	4.3		4.9	5.0	5.0		0	5.0	0		0	0	0	

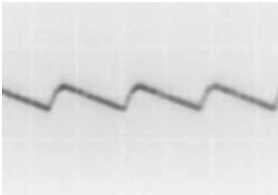
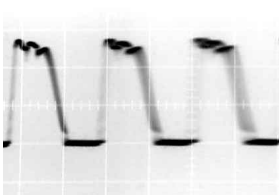
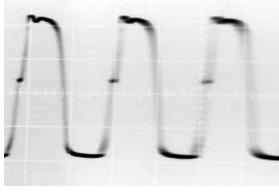
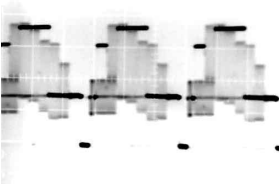
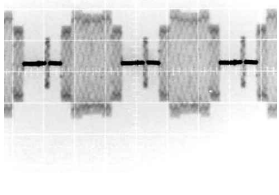
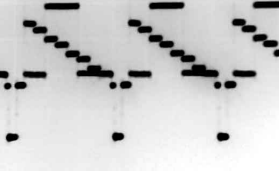
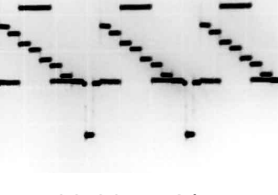
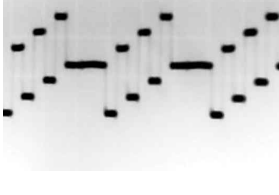
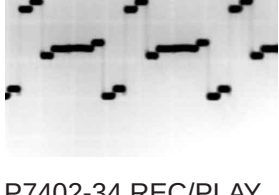
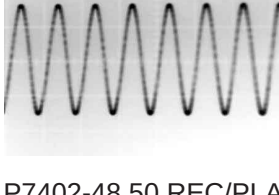
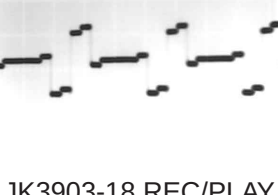
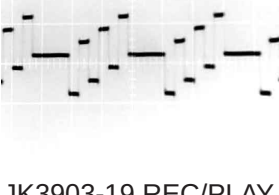
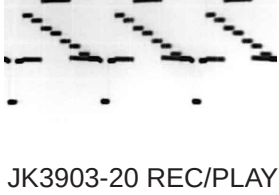
16.4. Front (R) P.C.B.

Ref No.	QR7801				QR7804				QR7805				QR7806			
MODE	E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	3.5	0		0	3.5	0		0	0.1	4.9		0	0	4.9	
PLAY	0	3.5	0		0	3.5	0		0	0.1	4.9		0	0	4.9	
STOP	0	3.5	0		0	3.5	0		0	0.1	4.9		0	0	4.9	

16.5. 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	2.0	1.2	0	0	0	0	0	0	0	3.3	0	0	0	0	3.3	0	4.9	1.5	4.9	0
PLAY	2.0	1.2	0	0	0	0	0	0	0	3.3	0	0	0	0	3.3	0	4.9	1.1	4.9	0
STOP	2.0	1.2	0	0	0	0	0	0	0	3.3	0	0	0	0	3.3	0	4.9	1.5	4.9	0
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	4.9	1.1	3.3	0	0	1.0	5.0	0	4.9	1.0	0.1	0	4.9	1.0	5.0	0	5.0	-	4.9	0
PLAY	4.9	1.0	3.3	0	0	1.0	5.0	0	5.0	1.0	0.1	0	5.0	1.0	5.0	0	5.0	-	5.0	0
STOP	4.9	1.1	3.3	0	0	1.0	5.0	0	5.0	1.0	0.1	0	5.0	1.0	5.0	0	5.0	-	4.9	0
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	-	3.3	0	0	3.3	0	3.0	2.5	0	2.5	0	0	0	0	0	0	0	2.4	0	0
PLAY	-	3.3	0	0	3.3	0	3.0	2.5	0	2.5	0	0	0	0	0	0	0	2.4	0	0
STOP	-	3.3	0	0	3.3	0	3.0	2.5	0	2.5	0	0	0	0	0	0	0	2.4	0	0
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	2.5	0	0	4.9	-	0	4.9	5.0	2.3	-	1.6	-	3.3	3.3	3.3	0	1.5	5.0	1.5
PLAY	0	2.5	0	0	5.0	-	0	5.0	5.0	2.4	-	1.6	-	3.3	3.3	3.3	0	1.5	5.0	1.5
STOP	0	2.5	0	0	5.0	-	0	4.9	5.0	2.4	-	1.6	-	3.3	3.3	3.3	0	1.5	5.0	1.5
Ref No.	P9001																			
MODE	81	82	83	84	85	86	87	88												
REC	6.0	1.2	5.0	1.5	6.0	1.2	6.0	1.2												
PLAY	6.0	1.2	5.0	1.5	6.0	1.2	6.0	1.2												
STOP	6.0	1.2	5.0	1.5	6.0	1.2	6.0	1.2												

16.6. Waveform Chart

			
T1151-3 STOP 30Vp-p (5 μ sec.div)	T1151-4 STOP 330Vp-p (5 μ sec.div)	T1151-6 STOP 20Vp-p (5m sec.div)	T1151-8 STOP 30Vp-p (5 μ sec.div)
			
T1151-10 STOP 15Vp-p (5 μ sec.div)	IC1150-1 STOP 8.0Vp-p (5 μ sec.div)	IC1150-2 STOP 0.5Vp-p (5 μ sec.div)	P7402-2 REC/PLAY 0.8Vp-p (20 μ sec.div)
			
P7402-18 REC/PLAY 0.7Vp-p (20 μ sec.div)	P7402-22 REC/PLAY 0.8Vp-p (20 μ sec.div)	P7402-26 REC/PLAY 0.8Vp-p (20 μ sec.div)	P7402-30 REC/PLAY 0.6Vp-p (20 μ sec.div)
			
P7402-34 REC/PLAY 0.6Vp-p (20 μ sec.div)	P7402-48,50 REC/PLAY 0.8Vp-p (1m sec.div)	JK3903-18 REC/PLAY 1.2Vp-p (20 μ sec.div)	JK3903-19 REC/PLAY 1.2Vp-p (20 μ sec.div)
			
JK3903-20 REC/PLAY 1.5Vp-p (20 μ sec.div)			

17 Abbreviations

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
B	ASYN	AUDIO WORD DISTINCTION SYNC
	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
C	BYP	BYPATH
	BYTCK	BYTE CLOCK
	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSC	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
D	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
E	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYN	COMPOSITE SYNC IN
	CSYNOUT	COMPOSITE SYNC OUT
	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
F	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
	DSL	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

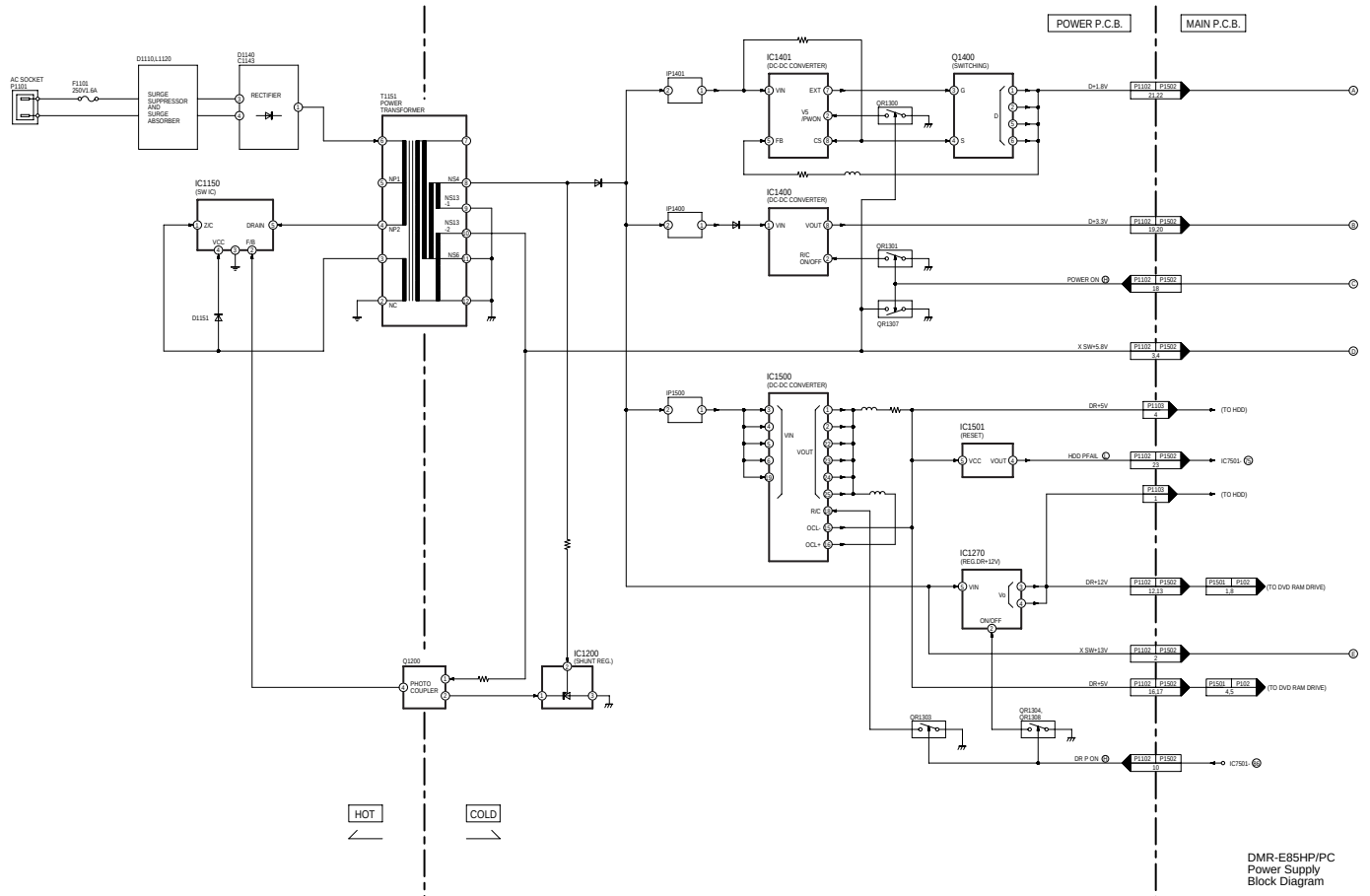
INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL
	ENCSEL	REFERENCE
	ETMCLK	ENCODER SELECT
F	ETSC	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSC	EXTERNAL S CLOCK (54MHz)
	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
G	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP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

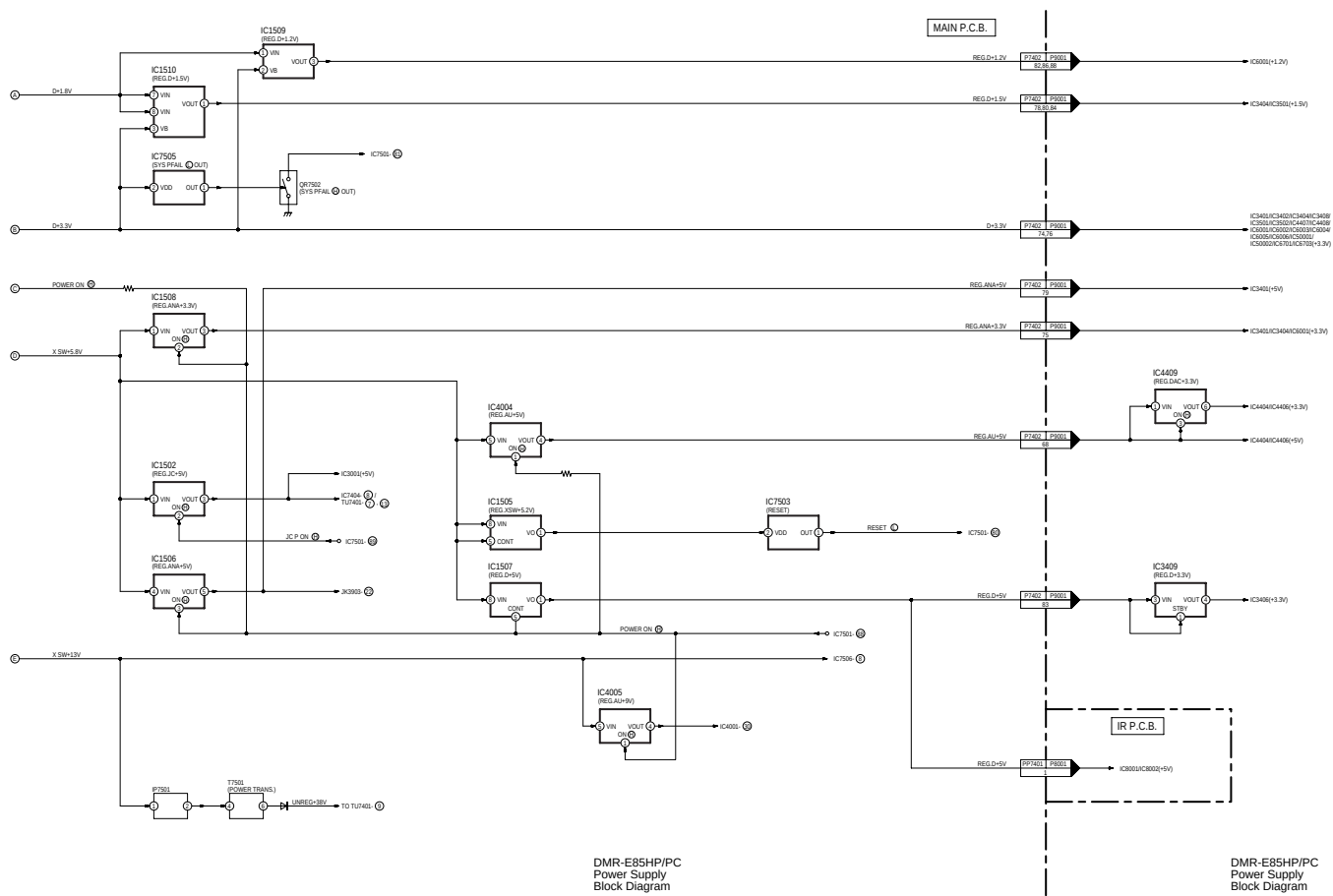
INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
S	RSV	RESERVE
	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER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

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

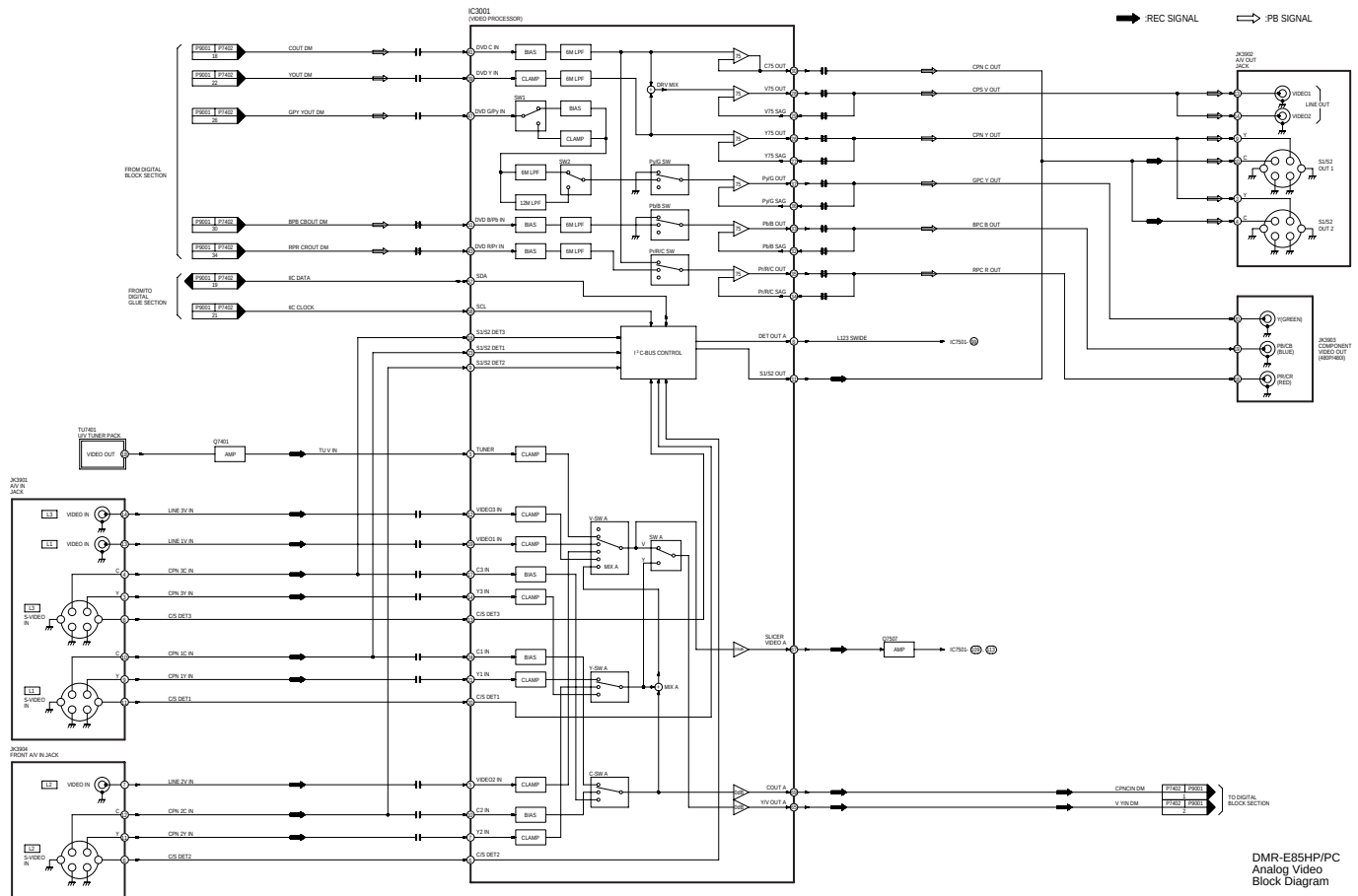
18 Block Diagram

18.1. Power Supply Block Diagram



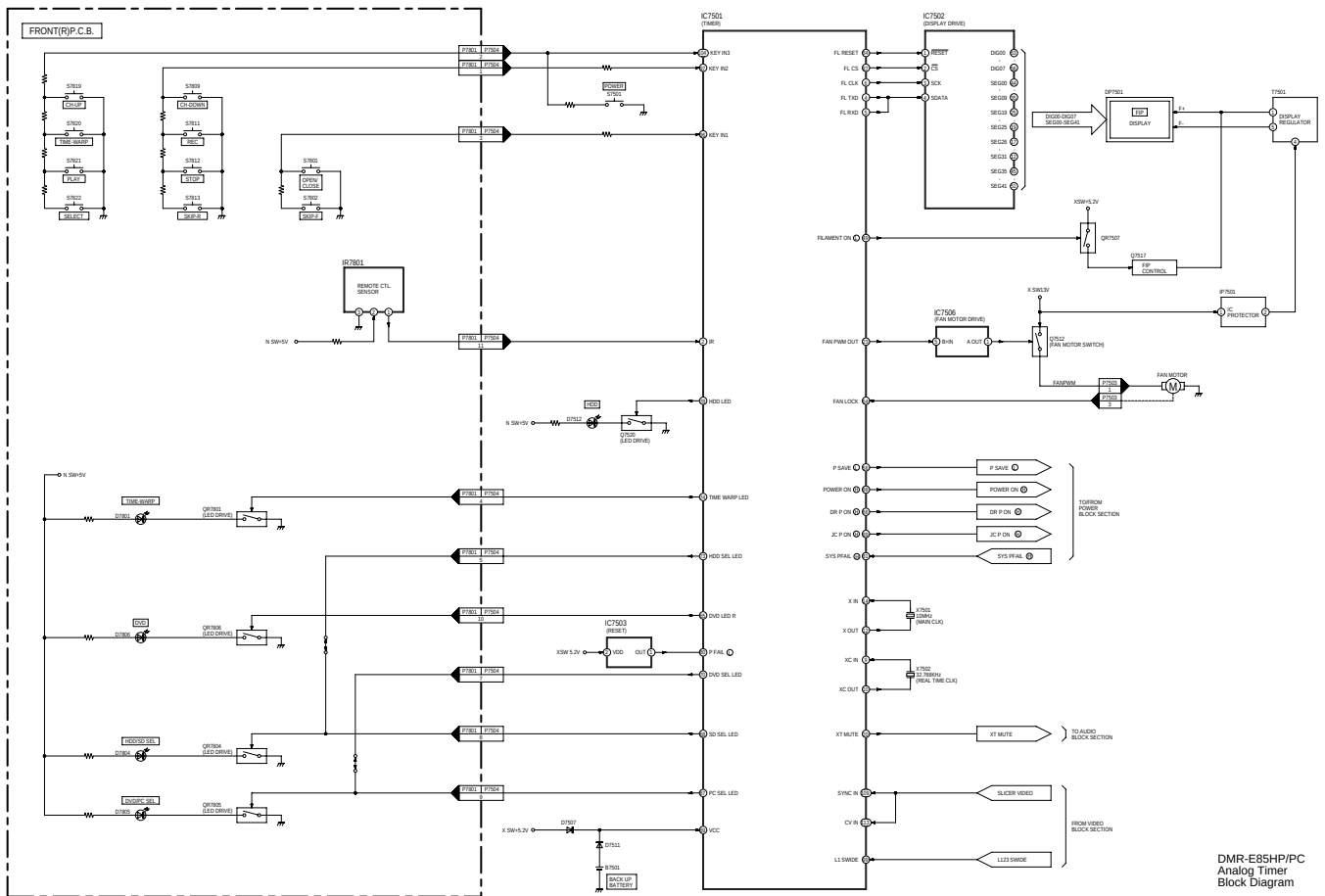


18.2. Analog Video Block Diagram





18.4. Timer Block Diagram

DMR-E85HP/PC
Analog Timer
Block Diagram



18.6. Digital Block IC Pin Terminal Chart (TC1-22)

IC Pin Terminal Chart (TC1 - TC8)

IC3404 / AV ENC				IC3402 / SDRAM				IC3501 / RTSC				IP3501 (TO DVD RAM&HDD)					
TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	Port Name		
1	ARDQ0	334	MADQ80	2	DO0	2	IHDD0	251	RAMD0	24	DD0	3	IHDD0	251	RAMD0	24	DD0
	ARDQ1	335	MADQ81	3	DO1		IHDD1	250	RAMD1	26	DD1		IHDD1	250	RAMD1	26	DD1
	ARDQ2	336	MADQ82	4	DO2		IHDD2	249	RAMD2	28	DD2		IHDD2	249	RAMD2	28	DD2
	ARDQ3	337	MADQ83	5	DO3		IHDD3	248	RAMD3	30	DD3		IHDD3	248	RAMD3	30	DD3
	ARDQ4	4	MADQ84	6	DO4		IHDD4	246	RAMD4	32	DD4		IHDD4	246	RAMD4	32	DD4
	ARDQ5	5	MADQ85	7	DO5		IHDD5	245	RAMD5	34	DD5		IHDD5	245	RAMD5	34	DD5
	ARDQ6	7	MADQ86	8	DO6		IHDD6	244	RAMD6	36	DD6		IHDD6	244	RAMD6	36	DD6
	ARDQ7	9	MADQ87	11	DO7		IHDD7	243	RAMD7	38	DD7		IHDD7	243	RAMD7	38	DD7
	ARDQ8	16	MADQ88	12	DO8		IHDD8	238	RAMD8	37	DD8		IHDD8	238	RAMD8	37	DD8
	ARDQ9	17	MADQ89	13	DO9		IHDD9	237	RAMD9	35	DD9		IHDD9	237	RAMD9	35	DD9
	ARDQ10	18	MADQ90	14	DO10		IHDD10	236	RAMD10	33	DD10		IHDD10	236	RAMD10	33	DD10
	ARDQ11	20	MADQ91	15	DO11		IHDD11	236	RAMD11	31	DD11		IHDD11	236	RAMD11	31	DD11
	ARDQ12	22	MADQ92	16	DO12		IHDD12	235	RAMD12	29	DD12		IHDD12	235	RAMD12	29	DD12
	ARDQ13	23	MADQ93	17	DO13		IHDD13	233	RAMD13	27	DD13		IHDD13	233	RAMD13	27	DD13
	ARDQ14	25	MADQ94	18	DO14		IHDD14	232	RAMD14	25	DD14		IHDD14	232	RAMD14	25	DD14
	ARDQ15	26	MADQ95	19	DO15		IHDD15	231	RAMD15	23	DD15		IHDD15	231	RAMD15	23	DD15
	ARA0	28	MAB0	21	A0												
ARA1	29	MAB1	22	A1													
ARA2	31	MAB2	23	A2													
ARA3	32	MAB3	24	A3													
ARA4	34	MAB4	27	A4													
ARA5	35	MAB5	28	A5													
ARA6	37	MAB6	29	A6													
ARA7	38	MAB7	30	A7													
ARA8	41	MAB8	31	A8													
ARA9	42	MAB9	32	A9													
ARA10	44	MAB10	33	A10													
ARA11	45	BACS D	19	A11													

IC3404 / AV ENC				IC3402 / SDRAM				IC3501 / RTSC				IC6001 / AV DEC&MAIN CPU				IC3404 / AV ENC			
TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name		
1	MDQ0	86	MDQAO	2	DO0	2	VDOUT1	288	R656DEC1	284	RS66IN1	3	R656OUT0	296	R656ENC0	278	VDIN0		
	MDQ1	87	MDQAO	3	DO1		VDOUT2	289	R656DEC2	285	RS66IN2		R656OUT1	297	R656ENC1	277	VDIN1		
	MDQ2	81	MDQAO	5	DO2		VDOUT3	289	R656DEC3	284	RS66IN3		R656OUT2	298	R656ENC2	272	VDIN2		
	MDQ3	92	MDQAO	7	DO3		VDOUT4	283	R656DEC4	288	RS66IN4		R656OUT3	301	R656ENC3	271	VDIN3		
	MDQ4	93	MDQAO	7	DO4		VDOUT5	283	R656DEC5	289	RS66IN5		R656OUT4	301	R656ENC4	270	VDIN4		
	MDQ5	94	MDQAO	10	DO5		VDOUT6	282	R656DEC6	280	RS66IN6		R656OUT5	302	R656ENC5	269	VDIN5		
	MDQ6	96	MDQAO	11	DO6		VDOUT7	281	R656DEC7	281	RS66IN7		R656OUT6	303	R656ENC6	268	VDIN6		
	MDQ7	97	MDQAO	13	DO7								R656OUT7	304	R656ENC7	266	VDIN7		
	MDQ8	98	MDQAO	14	DO8														
	MDQ9	100	MDQAO	17	DO9														
	MDQ10	101	MDQAO	77	DO10														
	MDQ11	102	MDQAO	77	DO11														
	MDQ12	104	MDQAO	80	DO12														
	MDQ13	105	MDQAO	82	DO13														
	MDQ14	106	MDQAO	83	DO14														
	MDQ15	108	MDQAO	85	DO15														
	MDQ16	115	MDQAO	81	DO16														
MDQ17	116	MDQAO	83	DO17															
MDQ18	116	MDQAO	83	DO18															
MDQ19	119	MDQAO	86	DO19															
MDQ20	120	MDQAO	87	DO20															
MDQ21	122	MDQAO	89	DO21															
MDQ22	123	MDQAO	90	DO22															
MDQ23	124	MDQAO	92	DO23															
MDQ24	127	MDQAO	94	DO24															
MDQ25	128	MDQAO	97	DO25															
MDQ26	129	MDQAO	98	DO26															
MDQ27	131	MDQAO	100	DO27															
MDQ28	132	MDQAO	101	DO28															
MDQ29	133	MDQAO	53	DO29															
MDQ30	135	MDQAO	54	DO30															
MDQ31	136	MDQAO	56	DO31															
MA0	147	MAAO	25	A0															
MA1	148	MAA1	26	A1															
MA2	148	MAA2	27	A2															
MA3	152	MAA3	30	A3															
MA4	153	MAA4	31	A4															
MA5	154	MAA5	32	A5															
MA6	156	MAA6	33	A6															
MA7	157	MAA7	34	A7															
MA8	158	MAA8	35	A8															
MA9	159	MAA9	36	A9															
MA10	161	MAA10	24	A10															

IC3404 / AV ENC				IC3402 / SDRAM				IC3501 / RTSC				IC6701 / GLUE				IC6703 / DATA STRAGE															
TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name														
1	BDATA0	46	ST00	251	SDT0	2	CD0	ED0	229	ED0	27	BDATA0	46	ST00	251	SDT0															
	BDATA1	47	ST01	250	SDT1		3	CD1	ED1	228	ED1	28	BDATA1	47	ST01	250	SDT1														
	BDATA2	48	ST02	249	SDT2			4	CD2	ED2	231	ED2	30	BDATA2	48	ST02	249	SDT2													
	BDATA3	49	ST03	248	SDT3				5	CD3	ED3	233	ED3	31	BDATA3	49	ST03	248	SDT3												
	BDATA4	53	ST04	247	SDT4					6	CD4	ED4	234	ED4	33	BDATA4	53	ST04	247	SDT4											
	BDATA5	54	ST05	245	SDT5						7	CD5	ED5	236	ED5	34	BDATA5	54	ST05	245	SDT5										
	BDATA6	55	ST06	244	SDT6							8	CD6	ED6	238	ED6	36	BDATA6	55	ST06	244	SDT6									
	BDATA7	56	ST07	243	SDT7								9	CD7	ED7	239	ED7	37	BDATA7	56	ST07	243	SDT7								
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IC Pin Terminal Chart (TC9 - TC12)

IC6001 / AV DEC&MAIN CPU				IC50001 / SDRAM				IC6001 / AV DEC&MAIN CPU				IC6005/IC6006 / W-MEMORY					
TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	Port Name		
9	MDQM0	343	DO0	21	DO0	11	MD1	118	MD0	21	DO0	12	MD1	118	MD0	21	DO0
	MDQM1	346	DO1	4	DO1		MD2	121	MD1	4	DO1		MD2	121	MD1	4	DO1
	MDQM2	348	DO2	5	DO2		MD3	123	MD2	5	DO2		MD3	123	MD2	5	DO2
	MDQM3	350	DO3	7	DO3		MD4	125	MD3	7	DO3		MD4	125	MD3	7	DO3
	MDQM4	353	DO4	8	DO4		MD5	128	MD4	8	DO4		MD5	128	MD4	8	DO4
	MDQM5	355	DO5	10	DO5		MD6	130	MD5	10	DO5		MD6	130	MD5	10	DO5
	MDQM6	358	DO6	11	DO6		MD7	133	MD6	11	DO6		MD7	133	MD6	11	DO6
	MDQM7	360	DO7	13	DO7		MD8	135	MD7	13	DO7		MD8	135	MD7	13	DO7
	MDQM8	359	DO8	42	DO8		MD9	134	MD8	42	DO8		MD9	134	MD8	42	DO8
	MDQM9	356	DO9	44	DO9		MD10	131	MD9	44	DO9		MD10	131	MD9	44	DO9
	MDQM10	354	DO10	45	DO10		MD11	129	MD10	45	DO10		MD11	129	MD10	45	DO10
	MDQM11	352	DO11	47	DO11		MD12	127	MD11	47	DO11		MD12	127	MD11	47	DO11
	MDQM12	349	DO12	48	DO12		MD13	124	MD12	48	DO12		MD13	124	MD12	48	DO12
	MDQM13	347	DO13	50	DO13		MD14	122	MD13	50	DO13		MD14	122	MD13	50	DO13
	MDQM14	344	DO14	51	DO14		MD15	119	MD14	51	DO14		MD15	119	MD14	51	DO14
MDQM15	342	DO15	53	DO15	MD15	117	MD15	53	DO15	MD15	117	MD15	53	DO15			
9	MAM0	317	A0	23	A0	11	MA0	160	MA0	23	A0	12	MA0	160	MA0	23	A0
	MAM1	320	A1	24	A1		MA1	163	MA1	24	A1		MA1	163	MA1	24	A1
	MAM2	322	A2	25	A2		MA2	165	MA2	25	A2		MA2	165	MA2	25	A2
	MAM3	328	A3	26	A3		MA3	167	MA3	26	A3		MA3	167	MA3	26	A3
	MAM4	330	A4	29	A4		MA4	166	MA4	29	A4		MA4	166	MA4	29	A4
	MAM5	332	A5	30	A5		MA5	164	MA5	30	A5		MA5	164	MA5	30	A5
	MAM6	331	A6	31	A6		MA6	161	MA6	31	A6		MA6	161	MA6	31	A6
	MAM7	325	A7	32	A7		MA7	159	MA7	32	A7		MA7	159	MA7	32	A7
	MAM8	323	A8	33	A8		MA8	156	MA8	33	A8		MA8	156	MA8	33	A8
	MAM9	321	A9	34	A9		MA9	153	MA9	34	A9		MA9	153	MA9	34	A9
	MAM10	318	A10	22	A10		MA10	157	MA10	22	A10		MA10	157	MA10	22	A10
	MAM11	316	A11	35	A11		MA11	151	MA11	35	A11		MA11	151	MA11	35	A11
							MA12	147	MA12	36	NC		MA12	147	MA12	36	NC
							MA13	154	MA13	21	A12		MA13	154	MA13	21	A12
							MA14	152	MA14	20	A13		MA14	152	MA14	20	A13

IC6001 / AV DEC&MAIN CPU				IC50002 / SDRAM				IC3501 / RTCSC				IC3502 / SDRAM					
TC	Port Name	Pin No	SIGNAL NAME	Pin No	Port Name	TC	Port Name	Pin No	SIGNAL NAME	TC	Port Name	Pin No	Port Name				
9	MDQM17	296	DO16	4	DO1	11	MDQ01	281	TR MADQ0B1	4	DO1	12	MDQ01	281	TR MADQ0B1	4	DO1
	MDQM18	297	DO17	5	DO2		MDQ02	280	TR MADQ0B2	5	DO2		MDQ02	280	TR MADQ0B2	5	DO2
	MDQM19	298	DO18	6	DO3		MDQ03	279	TR MADQ0B3	6	DO3		MDQ03	279	TR MADQ0B3	6	DO3
	MDQM20	302	DO20	8	DO4		MDQ04	278	TR MADQ0B4	8	DO4		MDQ04	278	TR MADQ0B4	8	DO4
	MDQM21	303	DO21	10	DO5		MDQ05	274	TR MADQ0B5	10	DO5		MDQ05	274	TR MADQ0B5	10	DO5
	MDQM22	302	DO22	11	DO6		MDQ06	273	TR MADQ0B6	11	DO6		MDQ06	273	TR MADQ0B6	11	DO6
	MDQM23	310	DO23	13	DO7		MDQ07	272	TR MADQ0B7	13	DO7		MDQ07	272	TR MADQ0B7	13	DO7
	MDQM24	309	DO24	42	DO8		MDQ08	270	TR MADQ0B8	42	DO8		MDQ08	270	TR MADQ0B8	42	DO8
	MDQM25	305	DO25	44	DO9		MDQ09	269	TR MADQ0B9	44	DO9		MDQ09	269	TR MADQ0B9	44	DO9
	MDQM26	305	DO26	45	DO10		MDQ10	268	TR MADQ0B10	45	DO10		MDQ10	268	TR MADQ0B10	45	DO10
	MDQM27	301	DO27	47	DO11		MDQ11	268	TR MADQ0B11	47	DO11		MDQ11	268	TR MADQ0B11	47	DO11
	MDQM28	298	DO28	48	DO12		MDQ12	265	TR MADQ0B12	48	DO12		MDQ12	265	TR MADQ0B12	48	DO12
	MDQM29	298	DO29	50	DO13		MDQ13	264	TR MADQ0B13	50	DO13		MDQ13	264	TR MADQ0B13	50	DO13
	MDQM30	293	DO30	51	DO14		MDQ14	264	TR MADQ0B14	51	DO14		MDQ14	264	TR MADQ0B14	51	DO14
	MAM01	291	DO31	53	DO15		MDQ15	262	TR MADQ0B15	53	DO15		MDQ15	262	TR MADQ0B15	53	DO15
10	MAM0	317	A0	23	A0	12	MADR0	10	TR MAB0	23	A0	13	MADR0	10	TR MAB0	23	A0
	MAM1	320	A1	24	A1		MADR1	8	TR MAB1	24	A1		MADR1	8	TR MAB1	24	A1
	MAM2	322	A2	25	A2		MADR2	8	TR MAB2	25	A2		MADR2	8	TR MAB2	25	A2
	MAM3	328	A3	26	A3		MADR3	5	TR MAB3	26	A3		MADR3	5	TR MAB3	26	A3
	MAM4	330	A4	29	A4		MADR4	5	TR MAB4	29	A4		MADR4	5	TR MAB4	29	A4
	MAM5	332	A5	30	A5		MADR5	3	TR MAB5	30	A5		MADR5	3	TR MAB5	30	A5
	MAM6	331	A6	31	A6		MADR6	3	TR MAB6	31	A6		MADR6	3	TR MAB6	31	A6
	MAM7	325	A7	32	A7		MADR7	2	TR MAB7	32	A7		MADR7	2	TR MAB7	32	A7
	MAM8	323	A8	33	A8		MADR8	300	TR MAB8	33	A8		MADR8	300	TR MAB8	33	A8
	MAM9	321	A9	34	A9		MADR9	300	TR MAB9	34	A9		MADR9	300	TR MAB9	34	A9
	MAM10	318	A10	22	A10		MADR10	299	TR MAB10	22	A10		MADR10	299	TR MAB10	22	A10
	MAM11	316	A11	35	A11		MADR11	298	TR MAB11	35	A11		MADR11	298	TR MAB11	35	A11
							MADR12	293	TR MAB12	36	NC		MADR12	293	TR MAB12	36	NC

SA0 - SA25 ADDRESS BUS LINE (TC13, TC14-1, TC15-1, TC17, TC18-1, TC20)

TC	13		14-1		15-1		17		18-1		20	
SIGNAL NAME	IC3404 / AVENC		IC6701 / GLUE		IC6001 / AVDEC&MAIN CPU		IC6004 / BUFFER		IC6003 / LOADER		IC3501 / RTSC	
	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name
SA0	-	-	-	-	28	SA0	-	-	-	-	-	-
SA1	-	-	-	-	27	SA1	2	1A1	25	A0	-	-
SA2	-	-	-	-	26	SA2	4	1A2	24	A1	-	-
SA3	-	-	-	-	25	SA3	6	1A3	23	A2	-	-
SA4	-	-	-	-	24	SA4	8	1A4	22	A3	-	-
SA5	186	HA4	163	ADRL5	22	SA5	-	-	21	A4	75	HADR5
SA6	187	HA5	170	ADRL6	20	SA6	-	-	20	A5	76	HADR6
SA7	188	HA6	168	ADRL7	19	SA7	-	-	19	A6	77	HADR7
SA8	189	HA7	-	-	18	SA8	-	-	18	A7	78	HADR8
SA9	191	HA8	-	-	17	SA9	-	-	8	A8	79	HADR9
SA10	192	HA9	-	-	16	SA10	-	-	7	A9	80	HADR10
SA11	194	HA10	-	-	15	SA11	-	-	6	A10	81	HADR11
SA12	195	HA11	-	-	14	SA12	-	-	5	A11	82	HADR12
SA13	-	-	-	-	12	SA13	-	-	4	A12	85	HADR13
SA14	-	-	-	-	11	SA14	-	-	3	A13	86	HADR14
SA15	-	-	-	-	10	SA15	-	-	2	A14	87	HADR15
SA16	-	-	-	-	9	SA16	-	-	1	A15	89	HADR16
SA17	-	-	-	-	8	SA17	-	-	48	A16	90	HADR17
SA18	-	-	-	-	7	SA18	-	-	17	A17	92	HADR18
SA19	-	-	-	-	6	SA19	-	-	16	A18	93	HADR19
SA20	-	-	-	-	3	SA20	-	-	-	-	94	HADR20
SA21	-	-	-	-	2	SA21	-	-	-	-	95	HADR21
SA22	-	-	174	ADR22	1	SA22	-	-	-	-	-	-
SA23	-	-	171	ADR10	363	SA23	-	-	-	-	-	-
SA24	-	-	172	ADR11	362	SA24	-	-	-	-	-	-
SA25	-	-	173	ADR12	361	SA25	-	-	-	-	-	-

SD16 - SD31 DATA BUS LINE (TC14-2, TC15-2, TC18-2)

TC	14-2		15-2		18-2	
SIGNAL NAME	IC6701 / GLUE		IC6001 / AVDEC&MAIN CPU		IC6003 / LOADER	
	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name
SD16	201	LDT10	67	SD16	29	IO0
SD17	200	LDT11	66	SD17	31	IO1
SD18	199	LDT12	65	SD18	33	IO2
SD19	202	LDT13	64	SD19	35	IO3
SD20	197	LDT14	63	SD20	38	IO4
SD21	196	LDT15	62	SD21	40	IO5
SD22	198	LDT16	61	SD22	42	IO6
SD23	195	LDT17	59	SD23	44	IO7
SD24	194	LDT18	58	SD24	30	IO8
SD25	192	LDT19	57	SD25	32	IO9
SD26	191	LDT110	56	SD26	34	IO10
SD27	189	LDT111	55	SD27	36	IO11
SD28	190	LDT112	54	SD28	39	IO12
SD29	188	LDT113	53	SD29	41	IO13
SD30	187	LDT114	51	SD30	43	IO14
SD31	185	LDT115	50	SD31	45	IO15

MSD16 - MSD31 DATA BUS LINE (TC19-1, TC21-1,TC22-1)

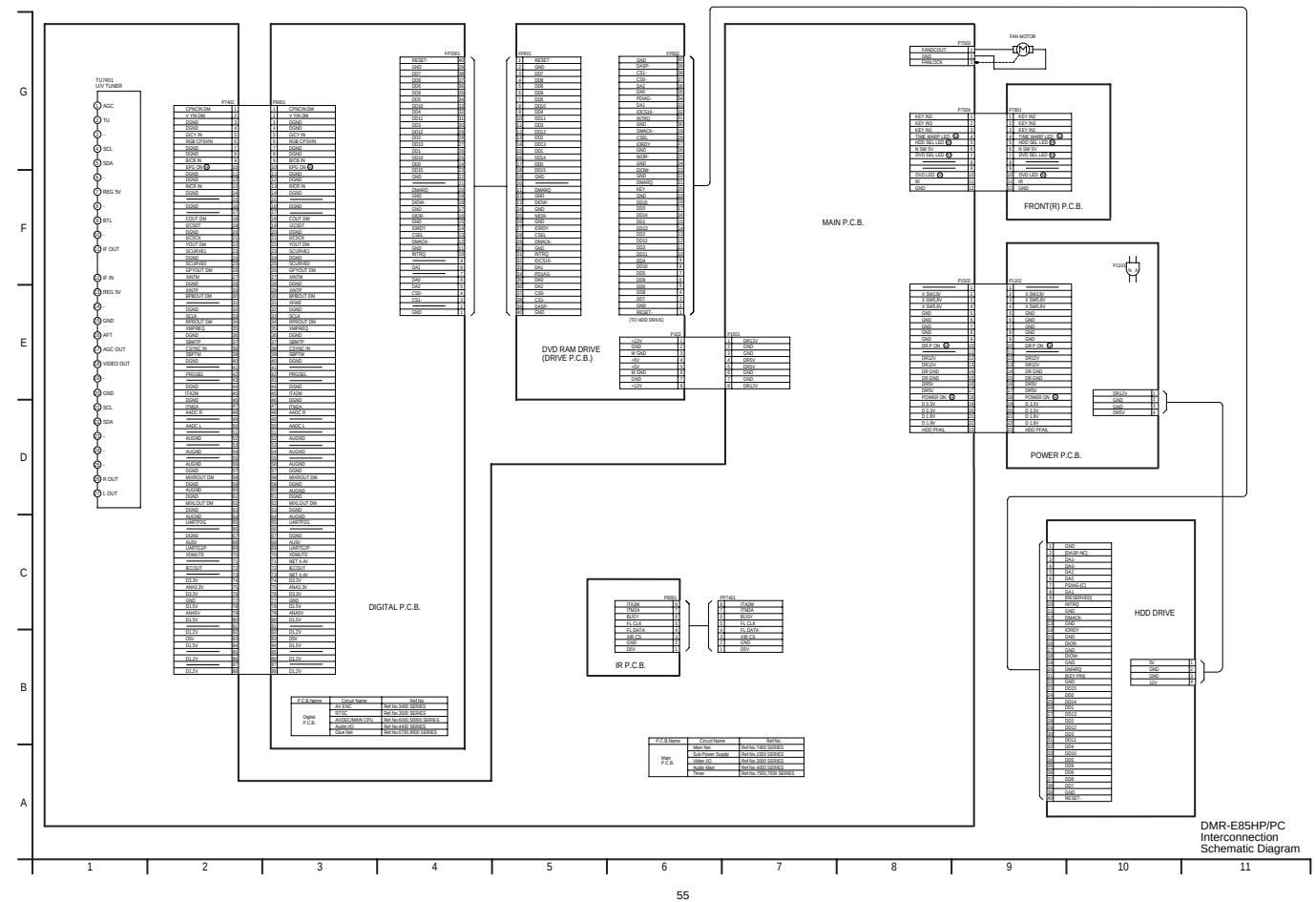
TC	19-1		21-1		22-1	
SIGNAL NAME	IC3404 / AVENC&RTSC		IC3501 / RTSC		IC6701 / GLUE	
	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name
MSD16	203	HD0	118	HDAT0	12	LDEV0
MSD17	204	HD1	117	HDAT1	13	LDEV1
MSD18	206	HD2	115	HDAT2	11	LDEV2
MSD19	207	HD3	114	HDAT3	10	LDEV3
MSD20	209	HD4	113	HDAT4	7	LDEV4
MSD21	210	HD5	111	HDAT5	8	LDEV5
MSD22	212	HD6	110	HDAT6	9	LDEV6
MSD23	213	HD7	109	HDAT7	14	LDEV7
MSD24	215	HD8	107	HDAT8	2	LDEV8
MSD25	216	HD9	106	HDAT9	4	LDEV9
MSD26	217	HD10	104	HDAT10	3	LDEV10
MSD27	218	HD11	102	HDAT11	208	LDEV11
MSD28	220	HD12	101	HDAT12	207	LDEV12
MSD29	221	HD13	100	HDAT13	6	LDEV13
MSD30	223	HD14	98	HDAT14	205	LDEV14
MSD31	224	HD15	97	HDAT15	203	LDEV15

MSA1 - MSA4 ADDRESS BUS LINE (TC16, TC19-2, TC21-2, TC22-2)

TC	16		19-2		21-2		22-2	
SIGNAL NAME	IC6004/BUFFER		IC3404/AVENC		IC3501/RTSC		IC6701/GLUE	
	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name	Pin No	Port Name
MSA1	18	1Y1	181	HA0	68	HADR1	167	ADRL1
MSA2	16	1Y2	182	HA1	69	HADR2	164	ADRL2
MSA3	14	1Y3	183	HA2	70	HADR3	165	ADRL3
MSA4	12	1Y4	184	HA3	71	HADR4	166	ADRL4

19 Schematic Diagram

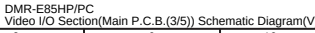
19.1. Interconnection Schematic Diagram





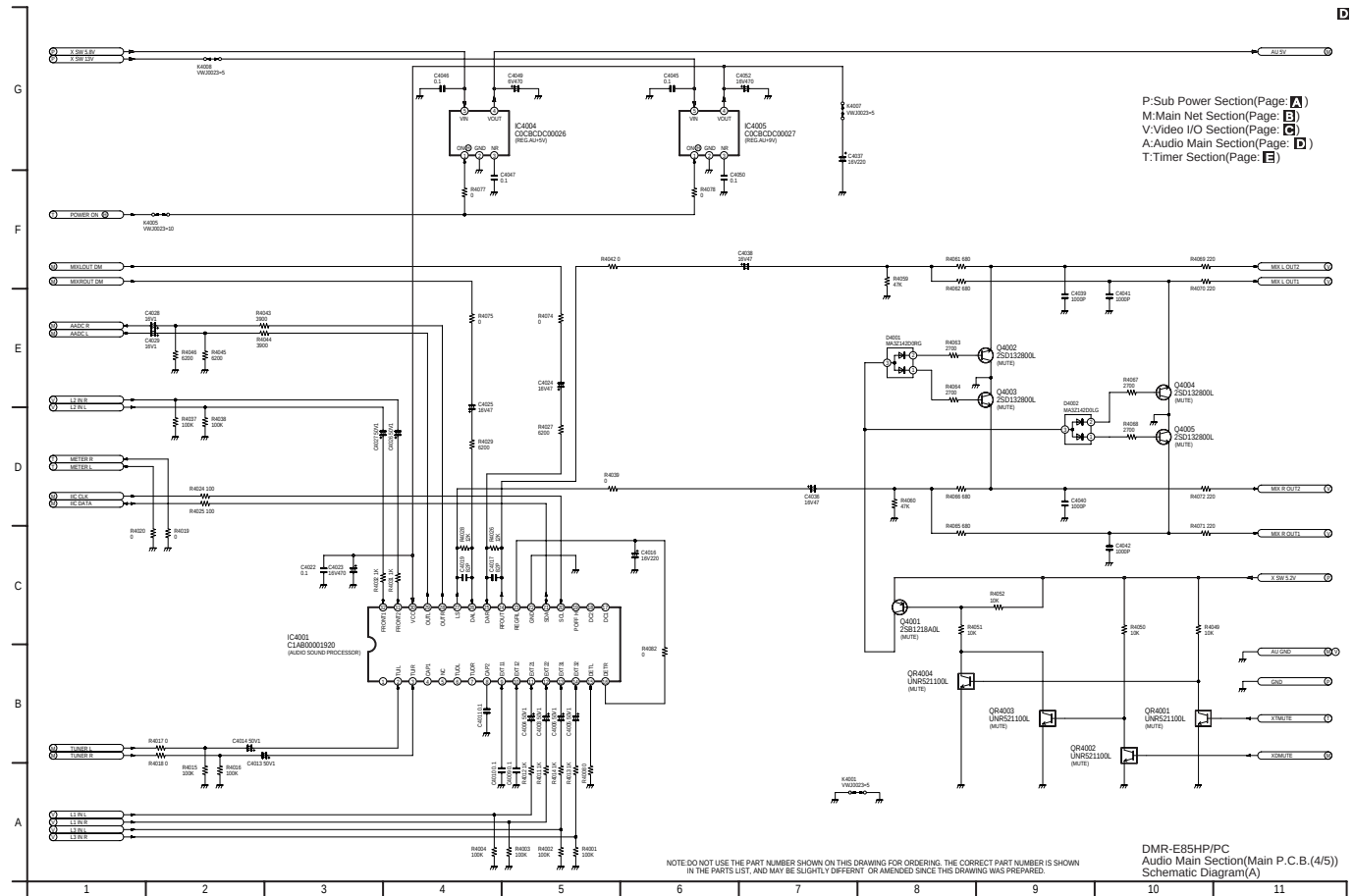


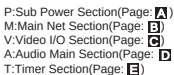
A — B — C — D — E — F

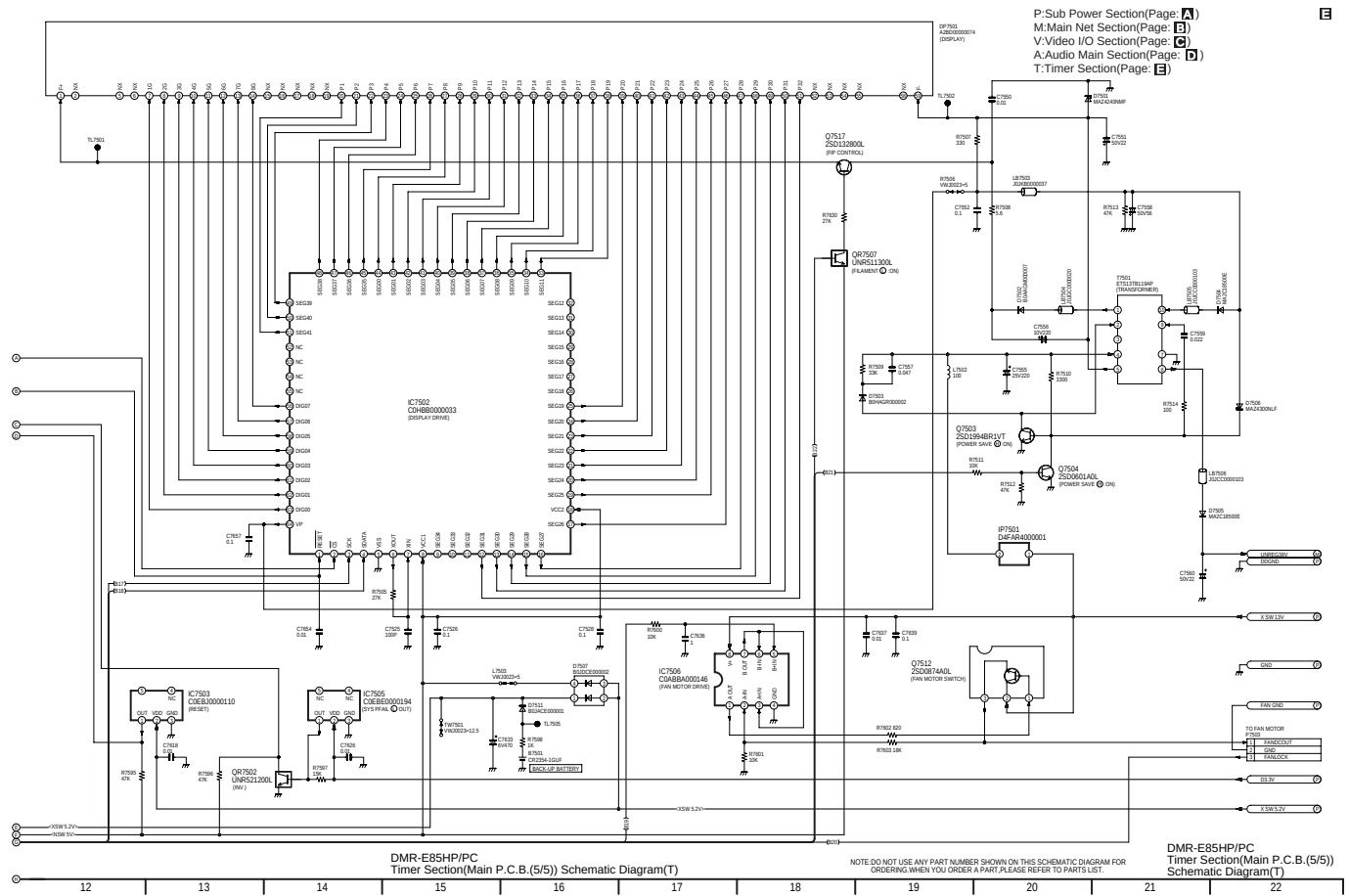




19.6. Audio Main Section (Main P.C.B. (4/5)) Schematic Diagram (A)

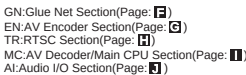


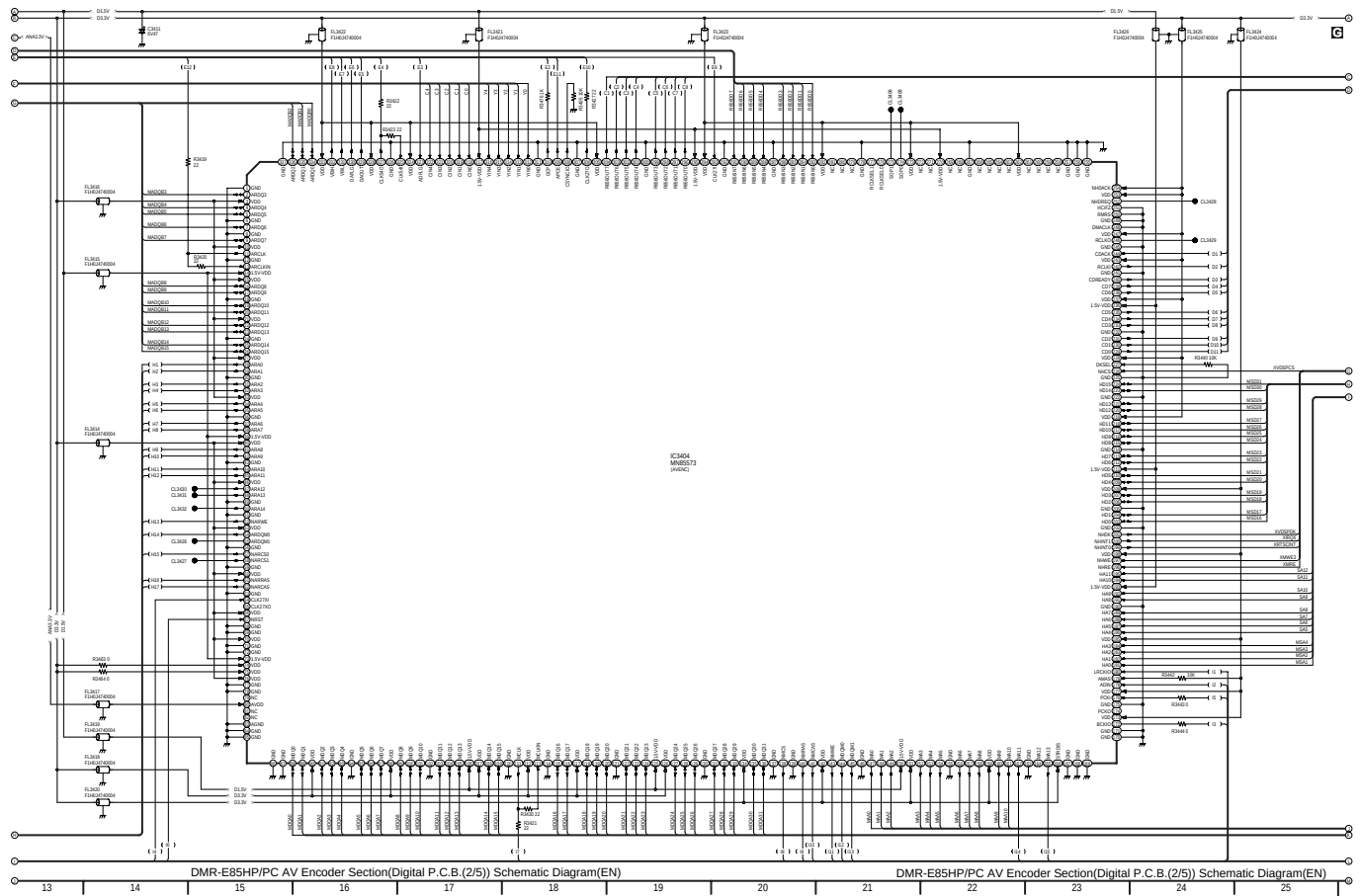


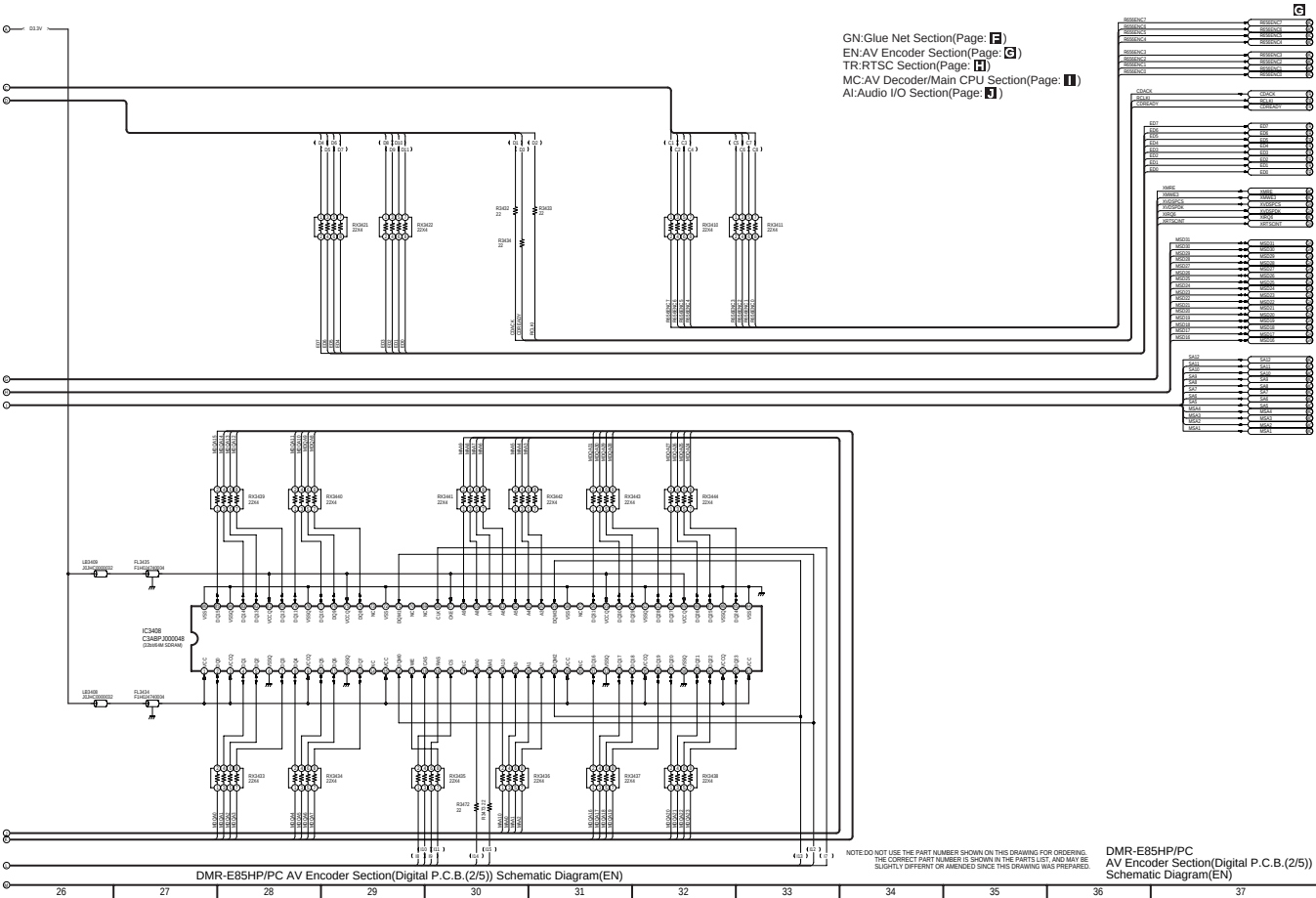






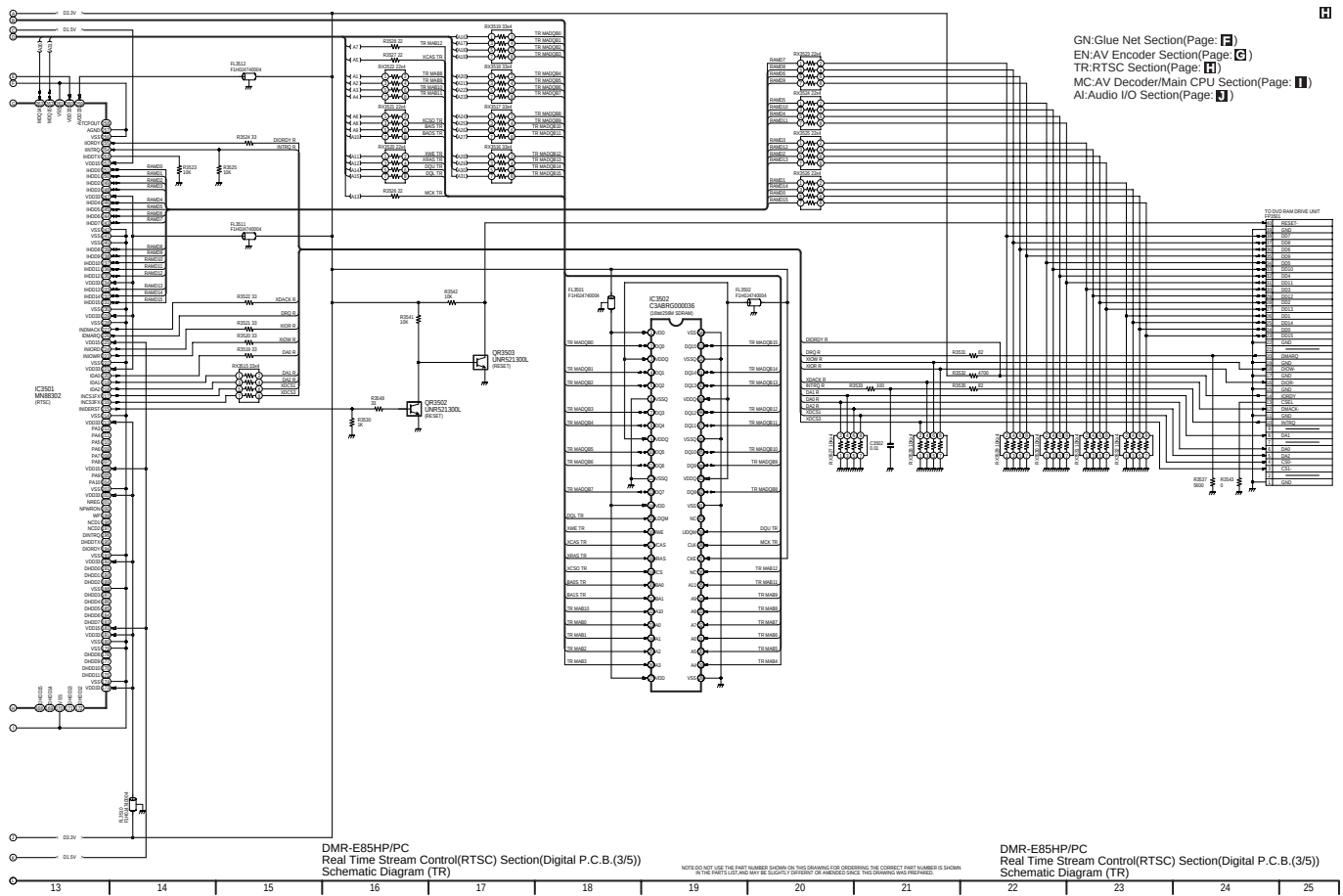






GN:Glue Net Section(Page: 13)
EN:AV Encoder Section(Page: 6)
TR:RTSC Section(Page: 11)
MC:AV Decoder/Main CPU Section(Page: 11)
AI:Audio I/O Section(Page: 11)

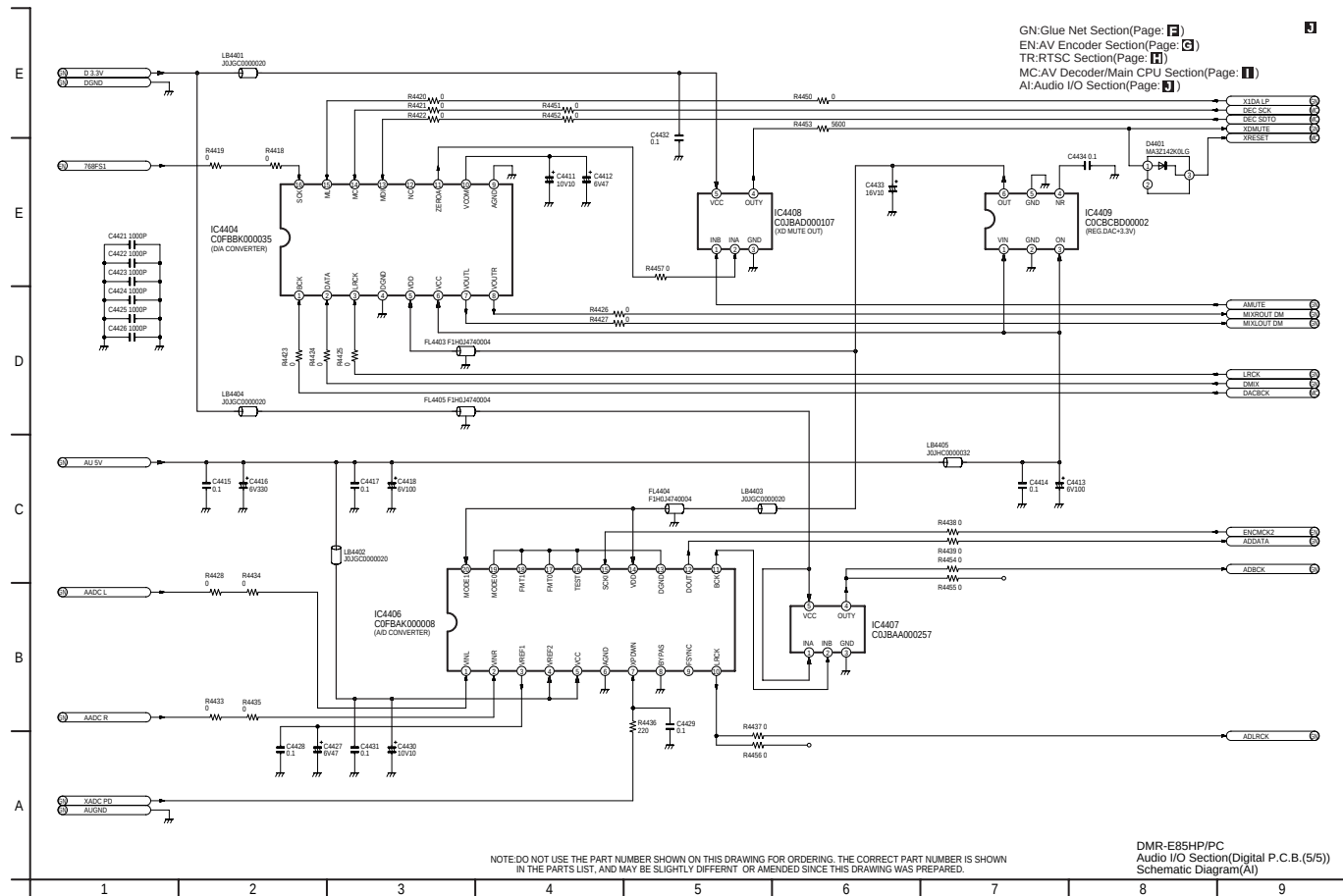






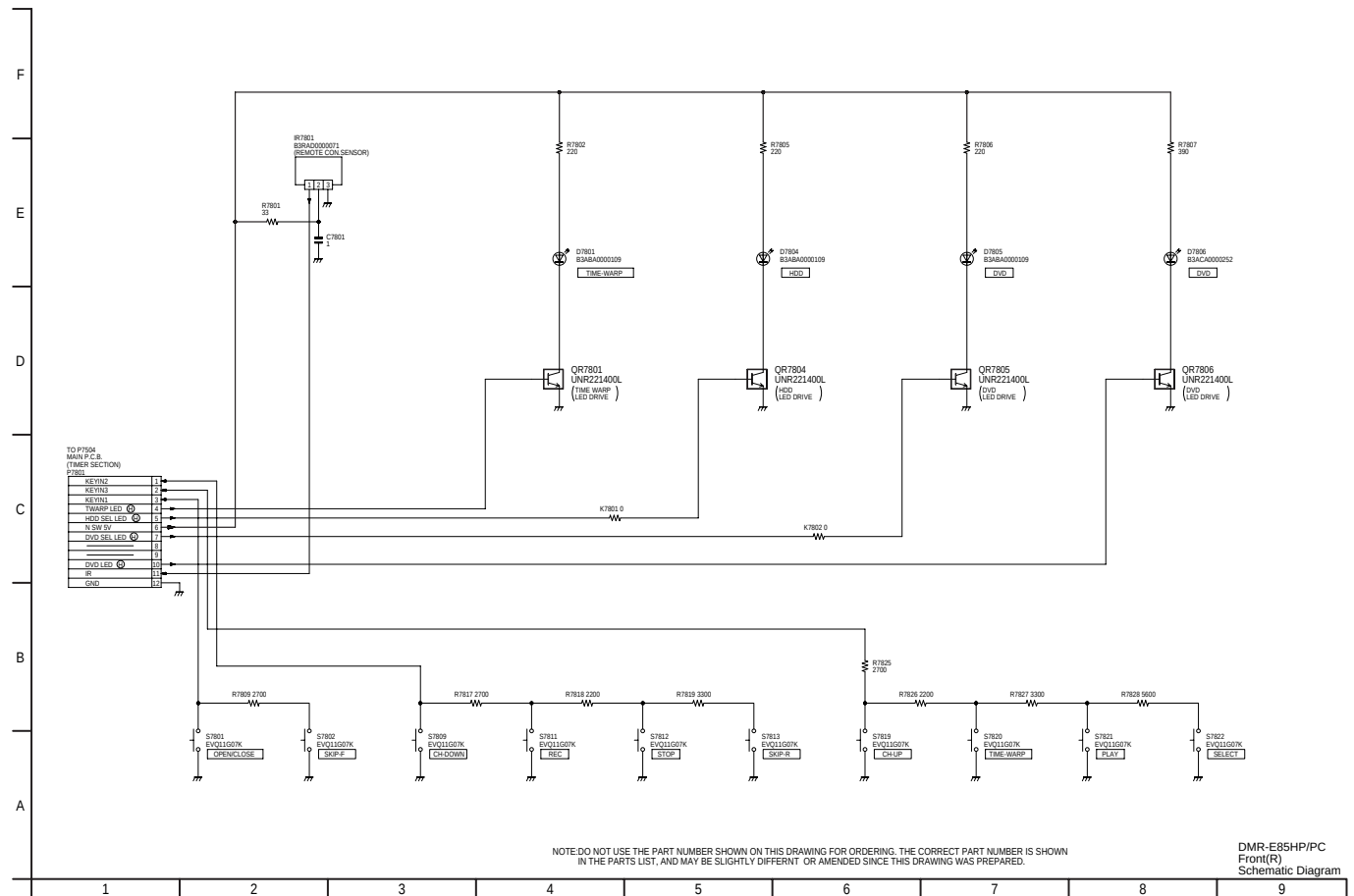


19.12. Audio I/O Section (Digital P.C.B. (5/5)) Schematic Diagram (AI)



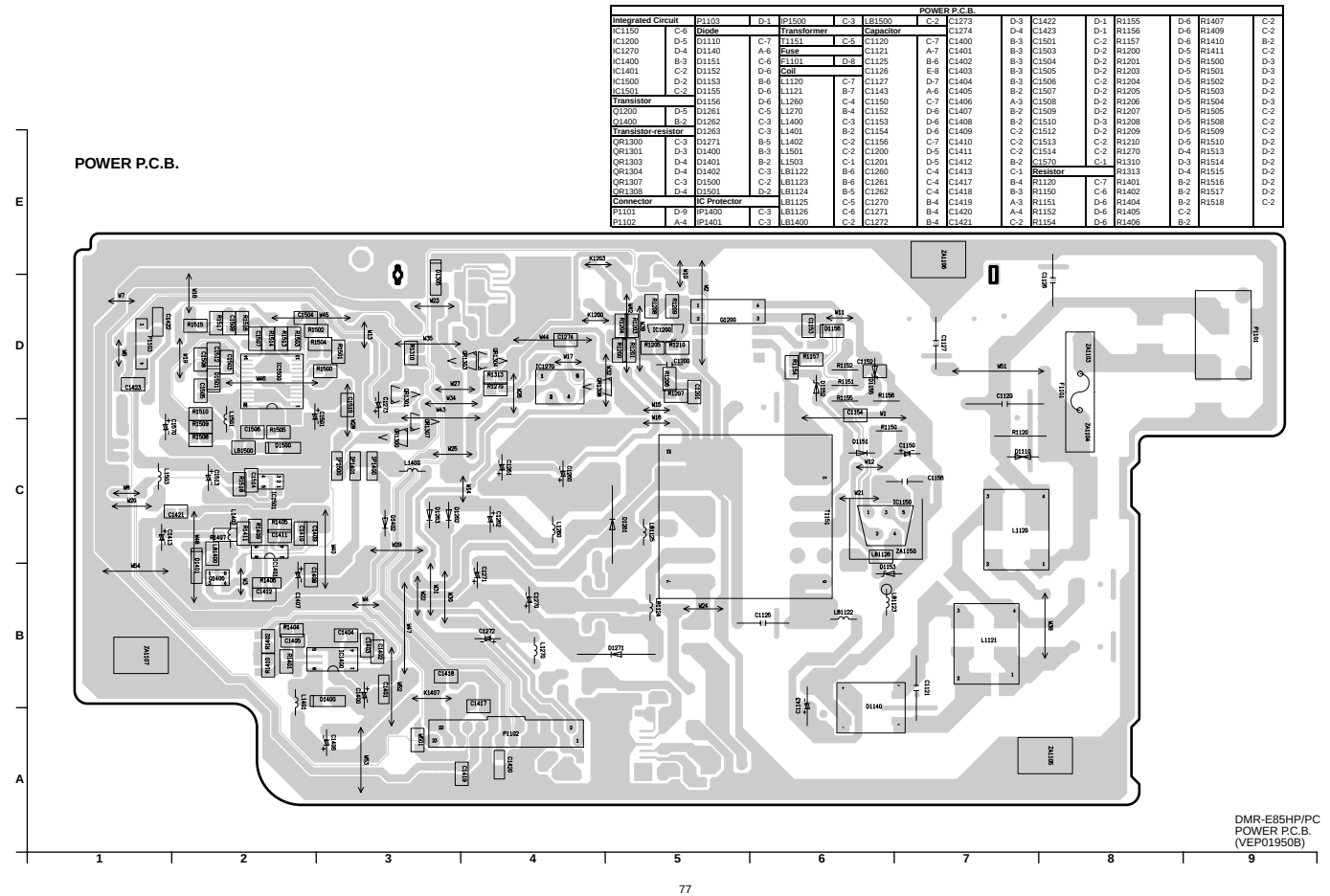


19.14. Front (R) Schematic Diagram



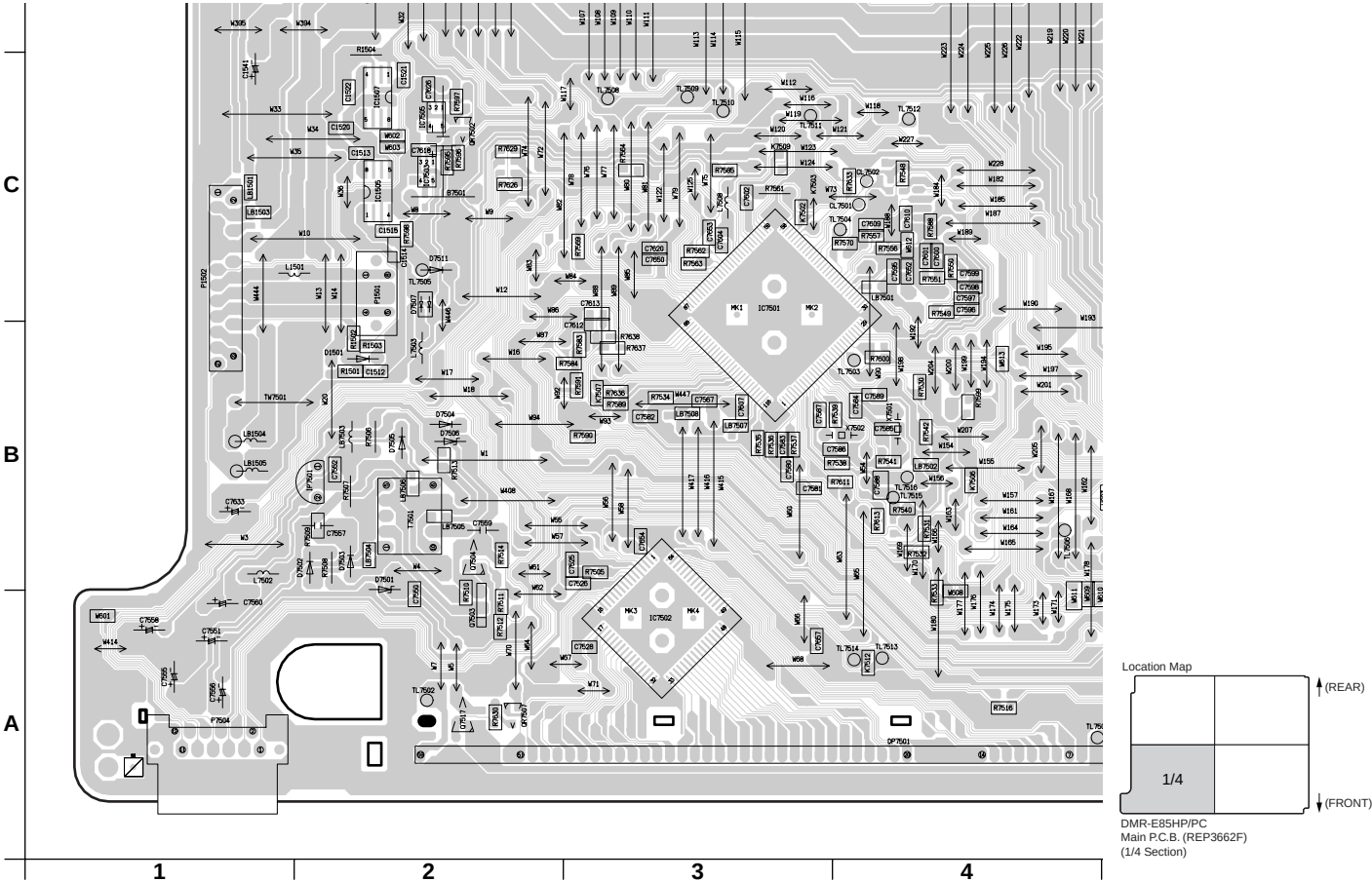
20 Print Circuit Board

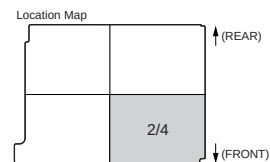
20.1. Power P.C.B.



20.2. Main P.C.B.

20.2.1. Main P.C.B. (1/4 Section)

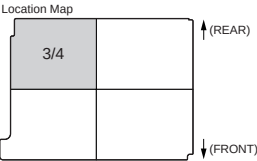
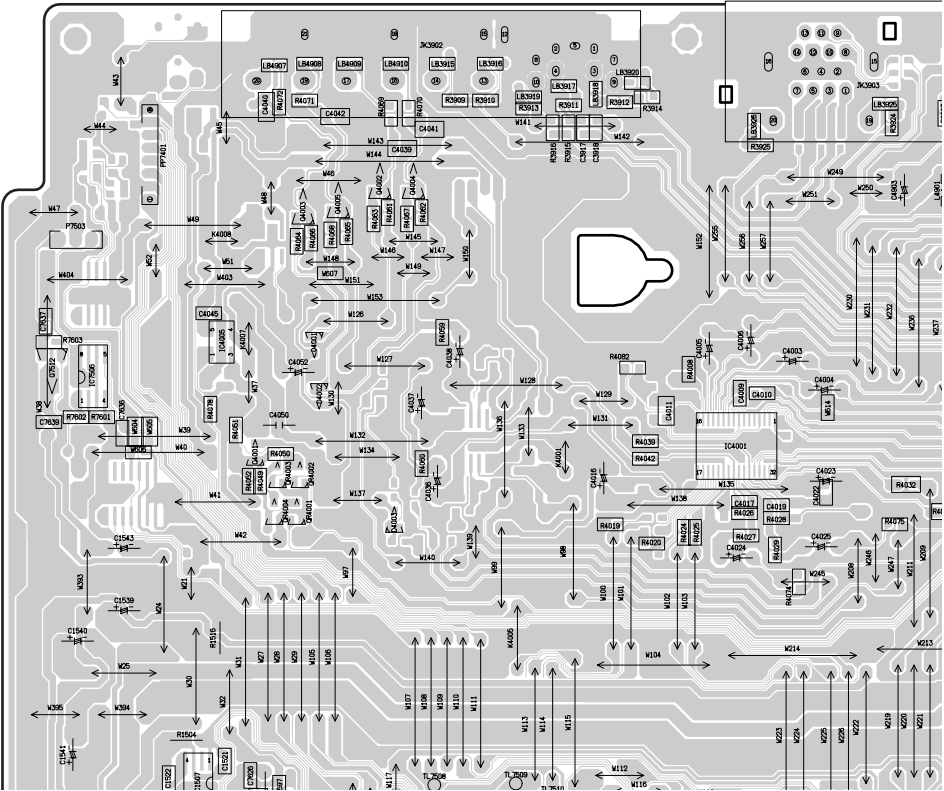




DMR-E85HP/PC
Main P.C.B. (REP3662F)
(2/4 Section)

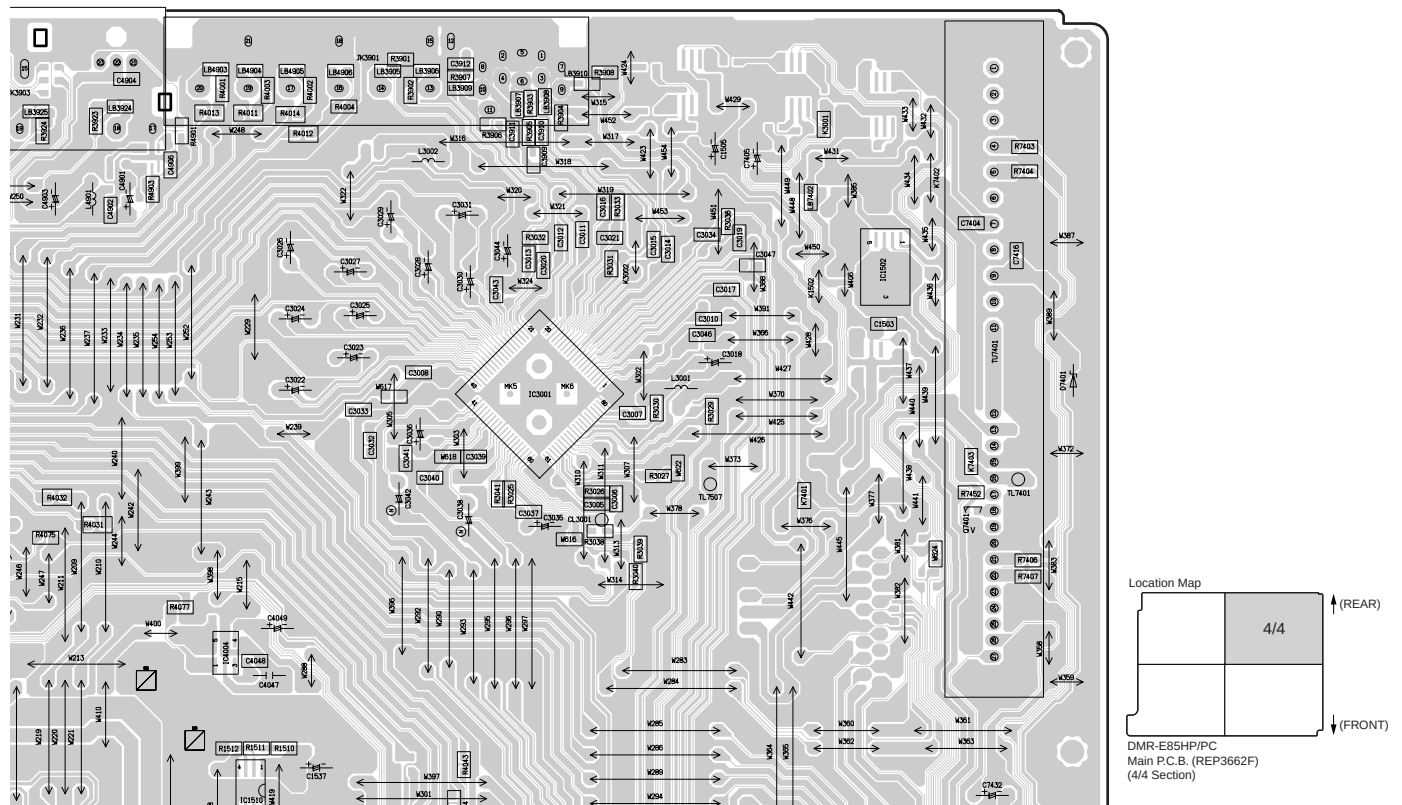
20.2.3. Main P.C.B. (3/4 Section)

MAIN P.C.B.



DMR-E85HP/PC
Main P.C.B. (REP3662F)
(3/4 Section)

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

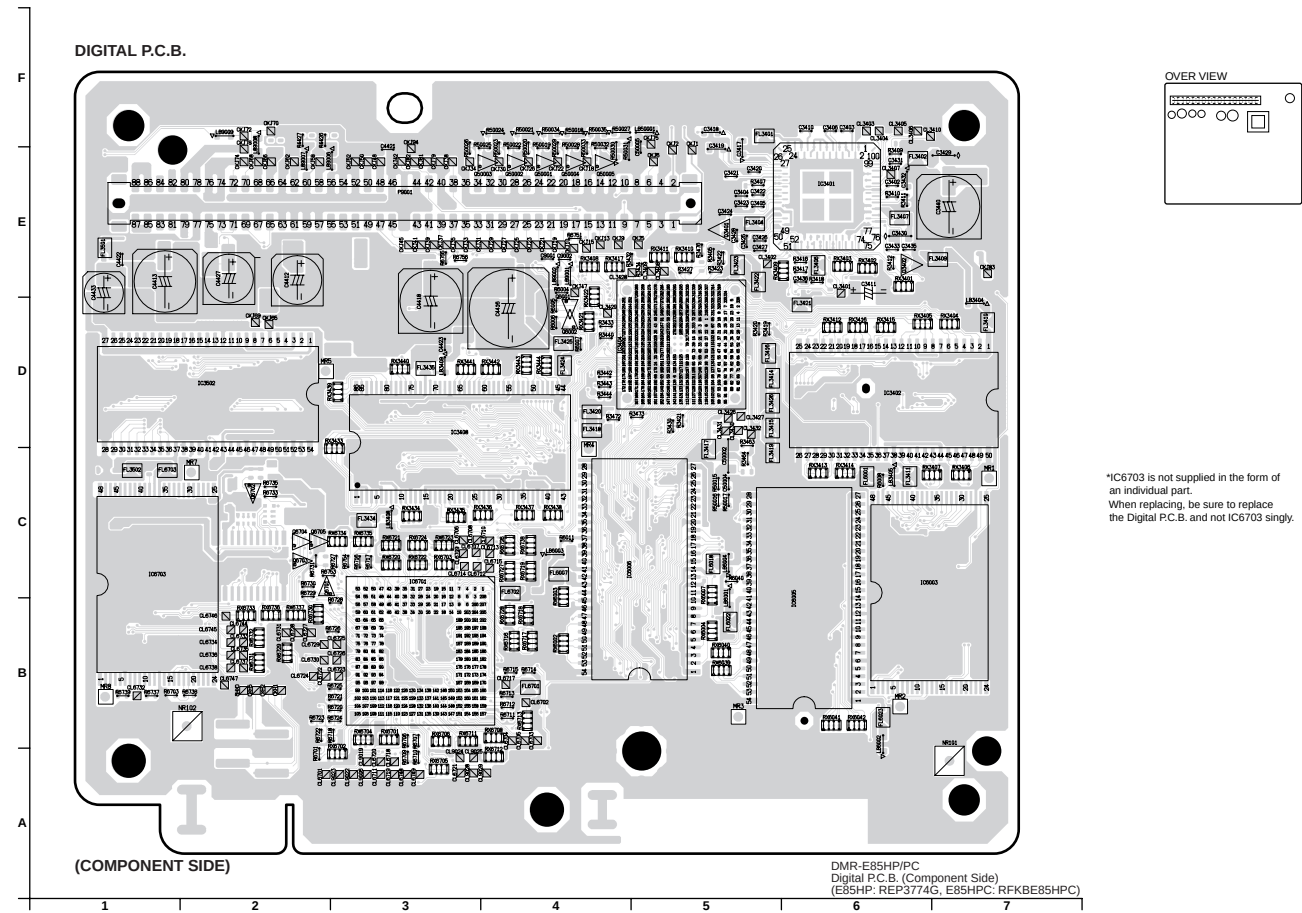


20.2.5. Main P.C.B. Address Information

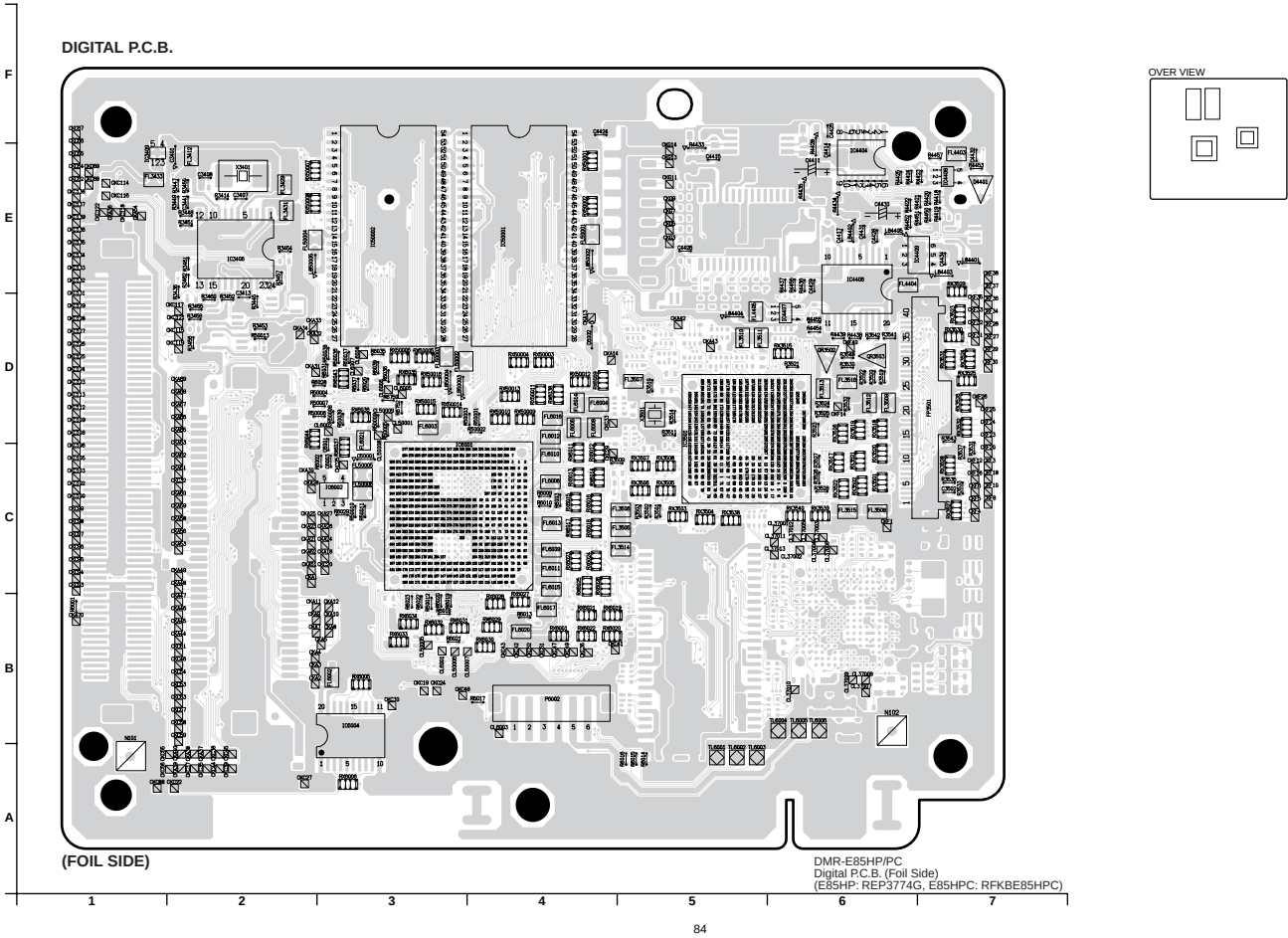
MAIN P.C.B.														
Integrated Circuit	P1502	C-1	LB7412	B-6	C3039	E-6	C7551	A-1	R3031	E-6	R4062	E-3	R7564	C-3
IC1502	E-7	P1402	B-6	LB7413	B-5	C3040	D-6	C7552	B-2	R3032	E-6	R4063	E-2	R7569
IC1505	C-2	P7503	E-1	LB7501	C-4	C3041	E-6	C7555	A-1	R3033	E-6	R4064	E-2	R7570
IC1506	B-6	P7504	A-1	LB7502	B-4	C3042	D-6	C7556	A-1	R3036	E-7	R4065	E-2	R7583
IC1507	C-2	P77401	F-2	LB7503	B-2	C3043	E-6	C7557	B-2	R3038	D-6	R4066	E-2	R7584
IC1508	B-5	Diode		LB7504	B-2	C3044	E-6	C7558	A-1	R3039	D-6	R4067	E-3	R7585
IC1509	C-5	D1501	B-2	LB7505	B-2	C3046	E-7	C7559	B-2	R3040	D-6	R4068	E-2	R7588
IC1510	C-5	D4001	E-2	LB7506	B-2	C3047	E-7	C7560	A-1	R3041	D-6	R4069	F-2	R7589
IC3001	E-6	D4002	E-2	LB7507	B-3	C3901	A-7	C7565	A-7	R3901	F-6	R4070	F-3	R7590
IC4001	E-4	D7401	E-8	LB7508	B-3	C3902	A-7	C7566	A-7	R3902	F-6	R4071	F-2	R7591
IC4004	D-5	D7501	A-2	Capacitor	B-3	C3909	F-6	C7567	B-3	R3903	F-6	R4072	F-2	R7595
IC4005	E-2	D7502	B-2	C1503	E-7	C3910	F-6	C7569	A-7	R3904	F-6	R4074	D-4	R7596
IC7404	B-8	D7503	B-2	C1505	F-7	C3911	F-6	C7580	B-3	R3905	F-6	R4075	D-4	R7597
IC7501	B-3	D7504	B-2	C1512	B-2	C3912	F-6	C7581	B-3	R3906	F-6	R4077	D-5	R7598
IC7502	A-3	D7505	B-2	C1513	C-2	C3917	F-3	C7582	B-3	R3907	F-6	R4078	E-2	R7599
IC7503	C-2	D7506	B-2	C1514	C-2	C3918	F-3	C7583	B-3	R3908	F-6	R4082	E-3	R7600
IC7505	C-2	D7507	C-2	C1515	C-2	C4003	E-4	C7584	B-4	R3909	F-3	R4901	F-5	R7601
IC7506	E-1	D7511	C-2	C1516	B-6	C4004	E-4	C7585	B-4	R3910	F-3	R4903	F-6	R7602
Transistor	D7512	A-5	C1518	B-6	C4005	E-4	C7586	B-4	R3911	F-3	R7403	F-8	R7603	E-1
Q4001	E-2	Crystal Oscillator	C1519	B-6	C4006	E-4	C7587	B-3	R3912	F-3	R7404	F-8	R7604	A-8
Q4002	F-2	X7501	B-4	C1520	C-2	C4009	E-4	C7588	B-4	R3913	F-3	R7406	D-8	R7611
Q4003	E-2	X7502	B-4	C1521	C-2	C4010	E-4	C7589	B-4	R3914	F-3	R7407	D-8	R7613
Q4004	F-3	IC Protector	C1522	C-2	C4011	E-3	C7595	C-4	R3915	F-3	R7418	C-8	R7617	A-5
Q4005	E-2	P7501	B-2	C1523	B-5	C4013	C-7	C7596	C-4	R3916	F-3	R7419	C-8	R7626
Q7401	D-8	Coil	C1524	D-5	C4014	C-7	C7597	C-4	R3923	F-5	R7442	B-6	R7629	C-2
A2	A-2	L1501	C-1	C1527	C-5	C4016	D-3	C7598	C-4	R3924	F-4	R7443	B-8	R7630
Q7504	B-2	L3001	E-7	C1528	C-5	C4017	D-4	C7599	C-4	R3925	F-4	R7444	B-8	R7633
Q7507	A-7	L3002	F-6	C1531	C-5	C4019	D-4	C7600	C-4	R3926	A-7	R7445	B-8	R7636
Q7508	A-6	L4901	E-5	C1533	C-5	C4022	D-4	C7601	C-4	R3927	A-7	R7446	B-8	R7637
E12	E-1	L7401	C-5	C1534	C-5	C4023	D-4	C7602	C-3	R3928	A-7	R7452	D-8	R7638
A2	A-2	L7502	B-1	C1537	C-5	C4024	D-4	C7604	C-3	R3929	A-7	R7454	C-7	R7644
Q7520	A-6	L7503	B-2	C1539	D-2	C4025	D-4	C7607	B-3	R4001	F-5	R7505	B-3	R7645
Transistor-resistor			C-3	C1540	D-1	C4026	B-6	C7609	C-4	R4002	F-6	R7506	B-2	Transformer
QR4001	D-2	LB1501	C-1	C1541	C-1	C4027	B-6	C7610	C-4	R4003	F-5	R7507	B-2	B-2
QR4002	D-2	LB1503	C-1	C1543	D-2	C4028	C-6	C7611	A-8	R4004	F-5	R7508	B-2	Backup Battery
QR4003	D-2	LB1504	B-1	C2001	A-7	C4029	C-6	C7612	B-3	R4008	E-4	R7509	B-2	B7501
QR4004	D-2	LB1505	B-1	C3005	D-6	C4036	D-3	C7613	C-3	R4011	F-5	R7510	A-2	C-2
QR7502	C-2	LB3905	F-6	C3006	D-6	C4037	E-3	C7618	C-2	R4012	F-5	R7511	A-2	
QR7507	A-2	LB3906	F-6	C3007	E-6	C4038	E-3	C7620	C-3	R4013	F-5	R7512	A-2	
Test Point			LB3907	F-6	C3008	E-6	C4039	F-3	C7626	C-2	R4014	F-5	R7513	B-2
CL3001	D-6	LB3908	F-6	C3010	E-7	C4040	F-2	C7633	B-1	R4015	C-7	R7514	B-2	
CL7406	C-6	LB3909	F-6	C3011	E-6	C4041	F-3	C7636	E-2	R4016	C-7	R7516	A-4	
CL7407	C-6	LB3910	F-6	C3012	E-6	C4042	F-2	C7637	E-1	R4017	C-7	R7519	A-7	
CL7501	C-4	LB3915	F-3	C3013	E-6	C4045	E-2	C7639	E-1	R4018	C-7	R7520	A-7	
CL7502	C-4	LB3916	F-3	C3014	E-7	C4046	D-5	C7650	C-3	R4019	D-3	R7521	A-6	
TL7401	D-8	LB3917	F-3	C3015	E-7	C4047	D-5	C7652	C-4	R4020	D-3	R7522	A-6	
A4	A-4	LB3918	F-3	C3016	E-6	C4049	D-5	C7653	C-3	R4024	D-4	R7523	A-7	
TL7502	A-2	LB3919	F-3	C3017	E-7	C4050	E-2	C7654	B-3	R4025	D-4	R7530	B-4	
TL7503	B-4	LB3920	F-3	C3018	E-7	C4052	E-2	C7657	A-3	R4026	D-4	R7531	B-4	
TL7504	C-4	LB3924	F-5	C3019	E-7	C4901	E-5	Resistor		R4027	D-4	R7532	B-4	
TL7505	C-2	LB3925	F-4	C3020	E-6	C4902	E-5	R1501	B-2	R4028	D-4	R7533	A-4	
TL7506	B-4	LB3926	F-4	C3021	E-6	C4903	E-4	R1502	B-2	R4029	D-4	R7534	B-3	
TL7507	D-7	LB3927	A-7	C3022	E-5	C4904	F-5	R1503	B-2	R4031	D-5	R7535	B-3	
C1506	C-2	LB3928	A-7	C3023	E-5	C4906	F-5	R1504	C-2	R4032	D-4	R7536	B-3	
TL7509	C-3	LB3929	A-7	C3024	E-5	C7401	B-6	R1506	B-6	R4037	A-6	R7537	B-3	
TL7510	C-3	LB4903	F-5	C3025	E-5	C7404	E-8	R1507	C-5	R4038	A-6	R7538	B-4	
TL7511	C-3	LB4904	F-5	C3026	E-5	C7405	E-5	R1508	C-5	R4039	E-3	R7539	B-4	
TL7512	C-4	LB4905	F-5	C3027	E-5	C7406	B-6	R1509	C-5	R4042	E-3	R7540	B-4	
TL7513	A-4	LB4906	F-6	C3028	E-6	C7407	B-6	R1510	D-5	R4043	C-6	R7541	B-4	
TL7514	A-4	LB4907	F-2	C3029	E-6	C7416	E-8	R1511	D-5	R4044	C-6	R7542	B-4	
TL7515	B-4	LB4908	F-2	C3030	E-6	C7417	C-8	R1512	D-5	R4045	C-6	R7548	C-4	
TL7516	B-4	LB4909	F-2	C3031	C-6	C7432	C-8	R1515	C-6	R4046	C-6	R7549	C-4	
TVW7501	B-1	LB4910	F-3	C3032	E-6	C7433	C-8	R1516	D-2	R4049	D-2	R7550	C-4	
Connector			LB4911	A-6	C3033	E-6	C7436	B-8	R3025	D-6	R4050	D-2	R7551	C-4
JK3001	F-6	LB4912	A-6	C3034	E-7	C7437	B-8	R3026	D-6	R4051	E-2	R7556	C-4	
JK3002	F-3	LB7402	E-7	C3035	D-6	C7525	B-3	R3027	D-7	R4052	D-2	R7557	C-4	
JK3003	F-4	LB7409	B-6	C3036	E-6	C7526	A-3	R3028	A-7	R4059	D-3	R7561	C-3	
JK3004	A-7	LB7410	B-6	C3037	D-6	C7528	A-3	R3029	E-7	R4060	D-3	R7562	C-3	
P1501	C-2	LB7411	B-6	C3038	D-6	C7550	A-2	R3030	E-7	R4061	E-2	R7563	C-3	

20.3. Digital P.C.B.

20.3.1. Digital P.C.B. (Component Side)



20.3.2. Digital P.C.B. (Foil Side)



20.3.3. Digital P.C.B. Address Information

Integrated Circuit			DIGITAL P.C.B.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
IC3401	E-6	IC3401	E-6	IC3402	E-6	IC3403	E-6	IC3404	E-6	IC3405	E-6	IC3406	E-6	IC3407	E-6	IC3408	E-6	IC3409	E-6	IC3410	E-6	IC3411	E-6	IC3412	E-6	IC3413	E-6	IC3414	E-6	IC3415	E-6	IC3416	E-6	IC3417	E-6	IC3418	E-6	IC3419	E-6	IC3420	E-6	IC3421	E-6	IC3422	E-6	IC3423	E-6	IC3424	E-6	IC3425	E-6	IC3426	E-6	IC3427	E-6	IC3428	E-6	IC3429	E-6	IC3430	E-6	IC3431	E-6	IC3432	E-6	IC3433	E-6	IC3434	E-6	IC3435	E-6	IC3436	E-6	IC3437	E-6	IC3438	E-6	IC3439	E-6	IC3440	E-6	IC3441	E-6	IC3442	E-6	IC3443	E-6	IC3444	E-6	IC3445	E-6	IC3446	E-6	IC3447	E-6	IC3448	E-6	IC3449	E-6	IC3450	E-6	IC3451	E-6	IC3452	E-6	IC3453	E-6	IC3454	E-6	IC3455	E-6	IC3456	E-6	IC3457	E-6	IC3458	E-6	IC3459	E-6	IC3460	E-6	IC3461	E-6	IC3462	E-6	IC3463	E-6	IC3464	E-6	IC3465	E-6	IC3466	E-6	IC3467	E-6	IC3468	E-6	IC3469	E-6	IC3470	E-6	IC3471	E-6	IC3472	E-6	IC3473	E-6	IC3474	E-6	IC3475	E-6	IC3476	E-6	IC3477	E-6	IC3478	E-6	IC3479	E-6	IC3480	E-6	IC3481	E-6	IC3482	E-6	IC3483	E-6	IC3484	E-6	IC3485	E-6	IC3486	E-6	IC3487	E-6	IC3488	E-6	IC3489	E-6	IC3490	E-6	IC3491	E-6	IC3492	E-6	IC3493	E-6	IC3494	E-6	IC3495	E-6	IC3496	E-6	IC3497	E-6	IC3498	E-6	IC3499	E-6	IC3500	E-6	IC3501	E-6	IC3502	E-6	IC3503	E-6	IC3504	E-6	IC3505	E-6	IC3506	E-6	IC3507	E-6	IC3508	E-6	IC3509	E-6	IC3510	E-6	IC3511	E-6	IC3512	E-6	IC3513	E-6	IC3514	E-6	IC3515	E-6	IC3516	E-6	IC3517	E-6	IC3518	E-6	IC3519	E-6	IC3520	E-6	IC3521	E-6	IC3522	E-6	IC3523	E-6	IC3524	E-6	IC3525	E-6	IC3526	E-6	IC3527	E-6	IC3528	E-6	IC3529	E-6	IC3530	E-6	IC3531	E-6	IC3532	E-6	IC3533	E-6	IC3534	E-6	IC3535	E-6	IC3536	E-6	IC3537	E-6	IC3538	E-6	IC3539	E-6	IC3540	E-6	IC3541	E-6	IC3542	E-6	IC3543	E-6	IC3544	E-6	IC3545	E-6	IC3546	E-6	IC3547	E-6	IC3548	E-6	IC3549	E-6	IC3550	E-6	IC3551	E-6	IC3552	E-6	IC3553	E-6	IC3554	E-6	IC3555	E-6	IC3556	E-6	IC3557	E-6	IC3558	E-6	IC3559	E-6	IC3560	E-6	IC3561	E-6	IC3562	E-6	IC3563	E-6	IC3564	E-6	IC3565	E-6	IC3566	E-6	IC3567	E-6	IC3568	E-6	IC3569	E-6	IC3570	E-6	IC3571	E-6	IC3572	E-6	IC3573	E-6	IC3574	E-6	IC3575	E-6	IC3576	E-6	IC3577	E-6	IC3578	E-6	IC3579	E-6	IC3580	E-6	IC3581	E-6	IC3582	E-6	IC3583	E-6	IC3584	E-6	IC3585	E-6	IC3586	E-6	IC3587	E-6	IC3588	E-6	IC3589	E-6	IC3590	E-6	IC3591	E-6	IC3592	E-6	IC3593	E-6	IC3594	E-6	IC3595	E-6	IC3596	E-6	IC3597	E-6	IC3598	E-6	IC3599	E-6	IC3600	E-6	IC3601	E-6	IC3602	E-6	IC3603	E-6	IC3604	E-6	IC3605	E-6	IC3606	E-6	IC3607	E-6	IC3608	E-6	IC3609	E-6	IC3610	E-6	IC3611	E-6	IC3612	E-6	IC3613	E-6	IC3614	E-6	IC3615	E-6	IC3616	E-6	IC3617	E-6	IC3618	E-6	IC3619	E-6	IC3620	E-6	IC3621	E-6	IC3622	E-6	IC3623	E-6	IC3624	E-6	IC3625	E-6	IC3626	E-6	IC3627	E-6	IC3628	E-6	IC3629	E-6	IC3630	E-6	IC3631	E-6	IC3632	E-6	IC3633	E-6	IC3634	E-6	IC3635	E-6	IC3636	E-6	IC3637	E-6	IC3638	E-6	IC3639	E-6	IC3640	E-6	IC3641	E-6	IC3642	E-6	IC3643	E-6	IC3644	E-6	IC3645	E-6	IC3646	E-6	IC3647	E-6	IC3648	E-6	IC3649	E-6	IC3650	E-6	IC3651	E-6	IC3652	E-6	IC3653	E-6	IC3654	E-6	IC3655	E-6	IC3656	E-6	IC3657	E-6	IC3658	E-6	IC3659	E-6	IC3660	E-6	IC3661	E-6	IC3662	E-6	IC3663	E-6	IC3664	E-6	IC3665	E-6	IC3666	E-6	IC3667	E-6	IC3668	E-6	IC3669	E-6	IC3670	E-6	IC3671	E-6	IC3672	E-6	IC3673	E-6	IC3674	E-6	IC3675	E-6	IC3676	E-6	IC3677	E-6	IC3678	E-6	IC3679	E-6	IC3680	E-6	IC3681	E-6	IC3682	E-6	IC3683	E-6	IC3684	E-6	IC3685	E-6	IC3686	E-6	IC3687	E-6	IC3688	E-6	IC3689	E-6	IC3690	E-6	IC3691	E-6	IC3692	E-6	IC3693	E-6	IC3694	E-6	IC3695	E-6	IC3696	E-6	IC3697	E-6	IC3698	E-6	IC3699	E-6	IC3700	E-6	IC3701	E-6	IC3702	E-6	IC3703	E-6	IC3704	E-6	IC3705	E-6	IC3706	E-6	IC3707	E-6	IC3708	E-6	IC3709	E-6	IC3710	E-6	IC3711	E-6	IC3712	E-6	IC3713	E-6	IC3714	E-6	IC3715	E-6	IC3716	E-6	IC3717	E-6	IC3718	E-6	IC3719	E-6	IC3720	E-6	IC3721	E-6	IC3722	E-6	IC3723	E-6	IC3724	E-6	IC3725	E-6	IC3726	E-6	IC3727	E-6	IC3728	E-6	IC3729	E-6	IC3730	E-6	IC3731	E-6	IC3732	E-6	IC3733	E-6	IC3734	E-6	IC3735	E-6	IC3736	E-6	IC3737	E-6	IC3738	E-6	IC3739	E-6	IC3740	E-6	IC3741	E-6	IC3742	E-6	IC3743	E-6	IC3744	E-6	IC3745	E-6	IC3746	E-6	IC3747	E-6	IC3748	E-6	IC3749	E-6	IC3750	E-6	IC3751	E-6	IC3752	E-6	IC3753	E-6	IC3754	E-6	IC3755	E-6	IC3756	E-6	IC3757	E-6	IC3758	E-6	IC3759	E-6	IC3760	E-6	IC3761	E-6	IC3762	E-6	IC3763	E-6	IC3764	E-6	IC3765	E-6	IC3766	E-6	IC3767	E-6	IC3768	E-6	IC3769	E-6	IC3770	E-6	IC3771	E-6	IC3772	E-6	IC3773	E-6	IC3774	E-6	IC3775	E-6	IC3776	E-6	IC3777	E-6	IC3778	E-6	IC3779	E-6	IC3780	E-6	IC3781	E-6	IC3782	E-6	IC3783	E-6	IC3784	E-6	IC3785	E-6	IC3786	E-6	IC3787	E-6	IC3788	E-6	IC3789	E-6	IC3790	E-6	IC3791	E-6	IC3792	E-6	IC3793	E-6	IC3794	E-6	IC3795	E-6	IC3796	E-6	IC3797	E-6	IC3798	E-6	IC3799	E-6	IC3800	E-6	IC3801	E-6	IC3802	E-6	IC3803	E-6	IC3804	E-6	IC3805	E-6	IC3806	E-6	IC3807	E-6	IC3808	E-6	IC3809	E-6	IC3810	E-6	IC3811	E-6	IC3812	E-6	IC3813	E-6	IC3814	E-6	IC3815	E-6	IC3816	E-6	IC3817	E-6	IC3818	E-6	IC3819	E-6	IC3820	E-6	IC3821	E-6	IC3822	E-6	IC3823	E-6	IC3824	E-6	IC3825	E-6	IC3826	E-6	IC3827	E-6	IC3828	E-6	IC3829	E-6	IC3830	E-6	IC3831	E-6	IC3832	E-6	IC3833	E-6	IC3834	E-6	IC3835	E-6	IC3836	E-6	IC3837	E-6	IC3838	E-6	IC3839	E-6	IC3840	E-6	IC3841	E-6	IC3842	E-6	IC3843	E-6	IC3844	E-6	IC3845	E-6	IC3846	E-6	IC3847	E-6	IC3848	E-6	IC3849	E-6	IC3850	E-6	IC3851	E-6	IC3852	E-6	IC3853	E-6	IC3854	E-6	IC3855	E-6	IC3856	E-6	IC3857	E-6	IC3858	E-6	IC3859	E-6	IC3860	E-6	IC3861	E-6	IC3862	E-6	IC3863	E-6	IC3864	E-6	IC3865	E-6	IC3866	E-6	IC3867	E-6	IC3868	E-6	IC3869	E-6	IC3870	E-6	IC3871	E-6	IC3872	E-6	IC3873	E-6	IC3874	E-6	IC3875	E-6	IC3876	E-6	IC3877	E-6	IC3878	E-6	IC3879	E-6	IC3880	E-6	IC3881	E-6	IC3882	E-6	IC3883	E-6	IC3884	E-6	IC3885	E-6	IC3886	E-6	IC3887	E-6	IC3888	E-6	IC3889	E-6	IC3890	E-6	IC3891	E-6	IC3892	E-6	IC3893	E-6	IC3894	E-6	IC3895	E-6	IC3896	E-6	IC3897	E-6	IC3898	E-6	IC3899	E-6	IC3900	E-6	IC3901	E-6	IC3902	E-6	IC3903	E-6	IC3904	E-6	IC3905	E-6	IC3906	E-6	IC3907	E-6	IC3908	E-6	IC3909	E-6	IC3910	E-6	IC3911	E-6	IC3912	E-6	IC3913	E-6	IC3914	E-6	IC3915	E-6	IC3916	E-6	IC3917	E-6	IC3918	E-6	IC3919	E-6	IC3920	E-6	IC3921	E-6	IC3922	E-6	IC3923	E-6	IC3924	E-6	IC3925	E-6	IC3926	E-6	IC3927	E-6	IC3928	E-6	IC3929	E-6	IC3930	E-6	IC3931	E-6	IC3932	E-6	IC3933	E-6	IC3934	E-6	IC3935	E-6	IC3936	E-6	IC3937	E-6	IC3938	E-6	IC3939	E-6	IC3940	E-6	IC3941	E-6	IC3942	E-6	IC3943	E-6	IC3944	E-6	IC3945	E-6	IC3946	E-6	IC3947	E-6	IC3948	E-6	IC3949	E-6	IC3950	E-6	IC3951	E-6	IC3952	E-6	IC3953	E-6	IC3954	E-6	IC3955	E-6	IC3956	E-6	IC3957	E-6	IC3958	E-6	IC3959	E-6	IC3960	E-6	IC3961	E-6	IC3962	E-6	IC3963	E-6	IC3964	E-6	IC3965	E-6	IC3966	E-6	IC3967	E-6	IC3968	E-6	IC3969	E-6	IC3970	E-6	IC3971	E-6	IC3972	E-6	IC3973	E-6	IC3974	E-6	IC3975	E-6	IC3976	E-6	IC3977	E-6	IC3978	E-6	IC3979	E-6	IC3980	E-6	IC3981	E-6	IC3982	E-6	IC3983	E-6	IC3984	E-6	IC3985	E-6	IC3986	E-6	IC3987	E-6	IC3988	E-6	IC3989	E-6	IC3990	E-6	IC3991	E-6	IC3992	E-6	IC3993	E-6	IC3994	E-6	IC3995	E-6	IC3996	E-6	IC3997	E-6	IC3998	E-6	IC3999	E-6	IC4000	E-6	IC4001	E-6	IC4002	E-6	IC4003	E-6	IC4004	E-6	IC4005	E-6	IC4006	E-6	IC4007	E-6	IC4008	E-6	IC4009	E-6	IC4010	E-6	IC4011	E-6	IC4012	E-6	IC4013	E-6	IC4014	E-6	IC4015	E-6	IC4016	E-6	IC4017	E-6	IC4018	E-6	IC4019	E-6	IC4020	E-6	IC4021	E-6	IC4022	E-6	IC4023	E-6	IC4024	E-6	IC4025	E-6	IC4026	E-6	IC4027	E-6	IC4028	E-6	IC4029	E-6	IC4030	E-6	IC4031	E-6	IC4032	E-6	IC4033	E-6	IC4034	E-6	IC4035	E-6	IC4036	E-6	IC4037	E-6	IC4038	E-6	IC4039	E-6	IC4040	E-6	IC4041	E-6	IC4042	E-6	IC4043	E-6	IC4044	E-6	IC4045	E-6	IC4046	E-6	IC4047	E-6	IC4048	E-6	IC4049	E-6	IC4050	E-6	IC4051	E-6	IC4052	E-6	IC4053	E-6	IC4054	E-6	IC4055	E-6	IC4056	E-6	IC4057	E-6	IC4058	E-6	IC4059	E-6	IC4060	E-6	IC4061	E-6	IC4062	E-6	IC4063	E-6	IC4064	E-6	IC4065	E-6	IC4066	E-6	IC4067	E-6	IC4068	E-6	IC4069	E-6	IC4070	E-6	IC4071	E-6	IC4072	E-6	IC4073	E-6	IC4074	E-6	IC4075	E-6	IC4076	E-6	IC4077	E-6	IC4078	E-6	IC4079	E-6	IC4080	E-6	IC4081	E-6	IC4082	E-6	IC4083	E-6	IC4084	E-6	IC4085	E-6	IC4086	E-6	IC4087	E-6	IC4088	E-6	IC4089	E-6	IC4090	E-6	IC4091	E-6	IC4092	E-6	IC4093	E-6	IC4094	E-6	IC4095	E-6	IC4096	E-6	IC4097	E-6	IC4098	E-6	IC4099	E-6	IC4100	E-6	IC4101	E-6	IC4102	E-6	IC4103	E-6	IC4104	E-6	IC4105	E-6	IC4106	E-6	IC4107	E-6	IC4108	E-6	IC4109	E-6	IC4110	E-6	IC4111	E-6	IC4112	E-6	IC4113	E-6	IC4114	E-6	IC4115	E-6	IC4116	E-6	IC4117	E-6	IC4118	E-6	IC4119	E-6	IC4120	E-6	IC4121	E-6	IC4122	E-6	IC4123	E-6	IC4124	E-6	IC4125	E-6	IC4126

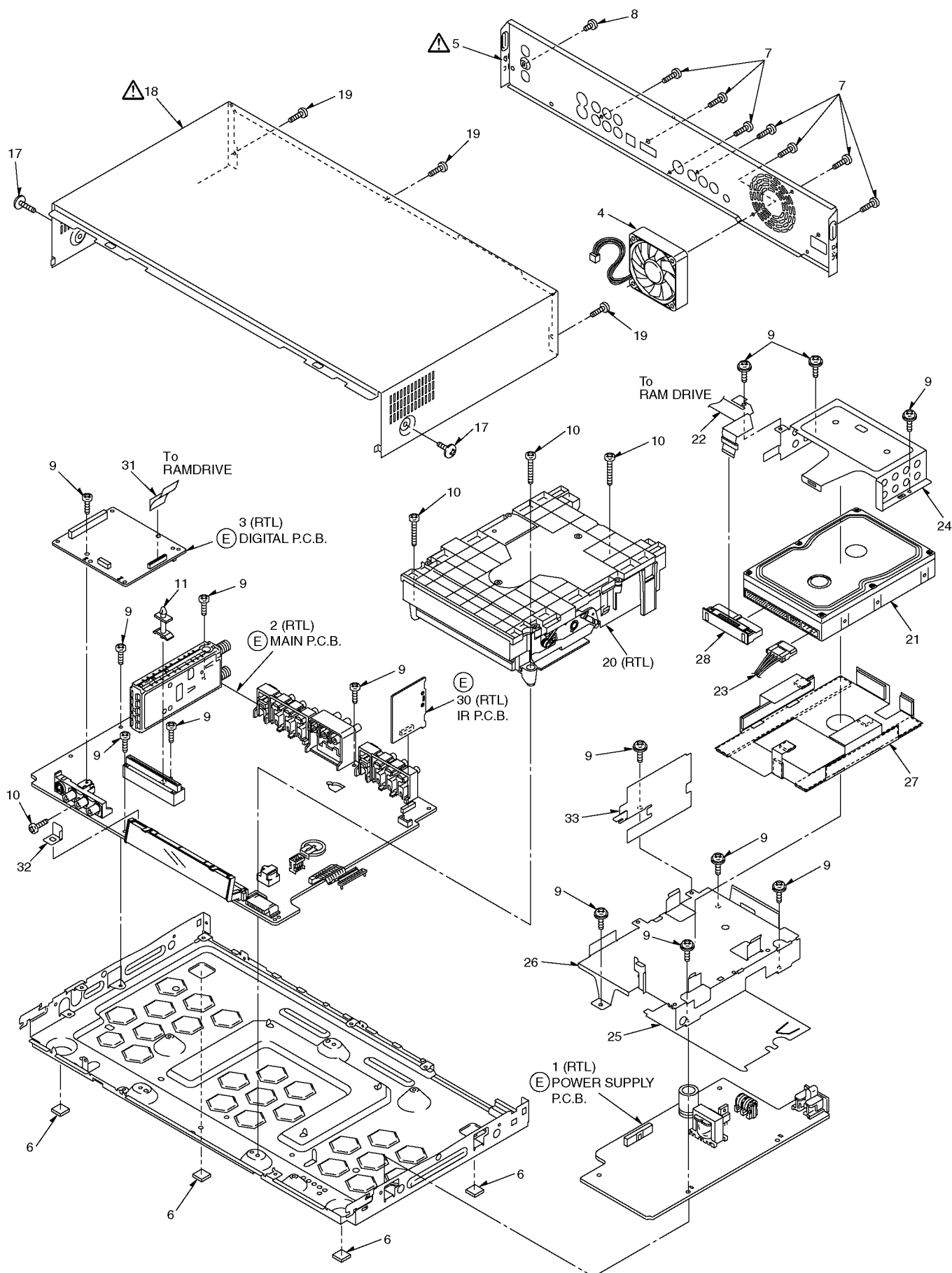
ADDRESS INFORMATION
C.....COMPONENT SIDE
F.....FOIL SIDE



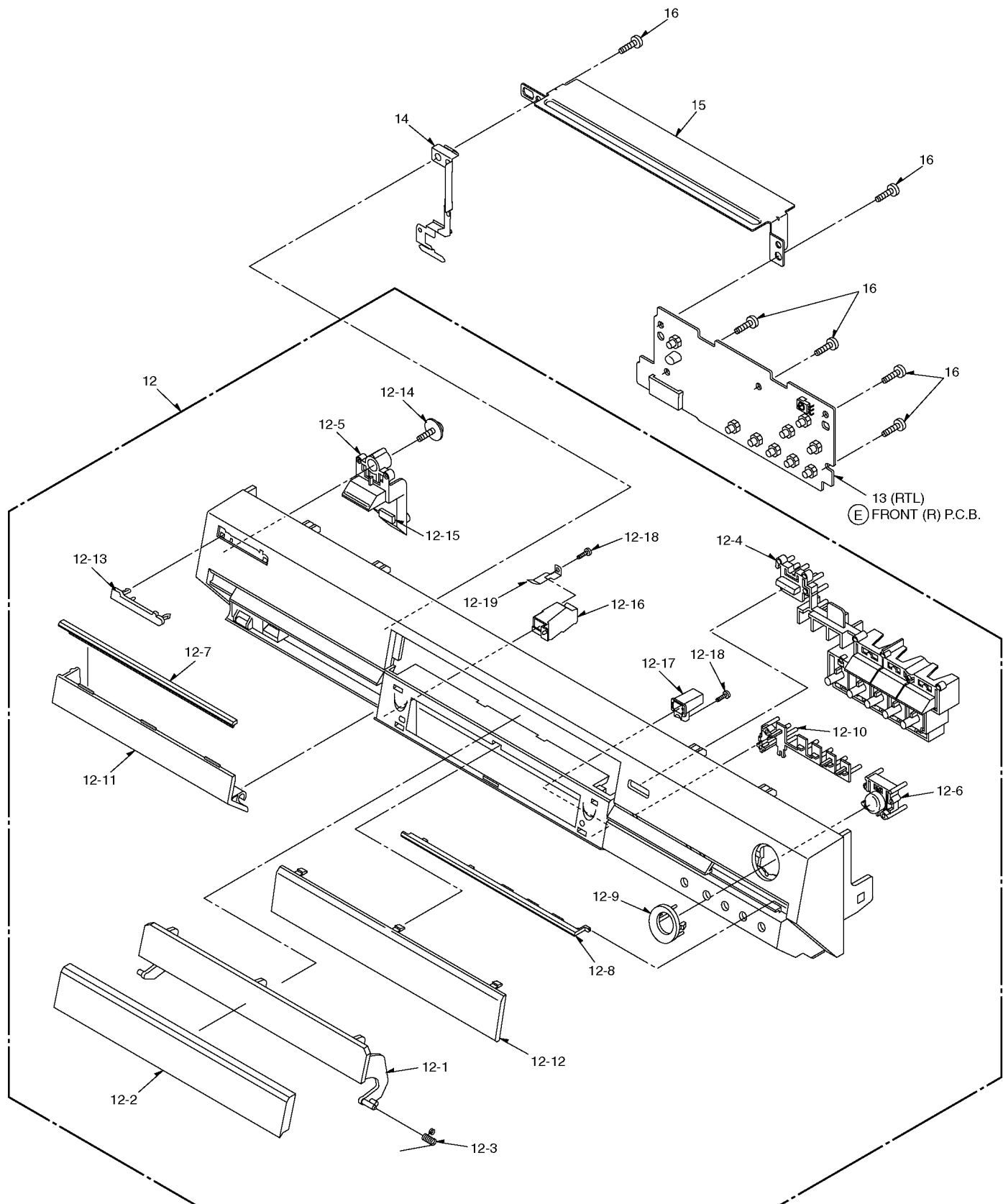


21 Exploded Views

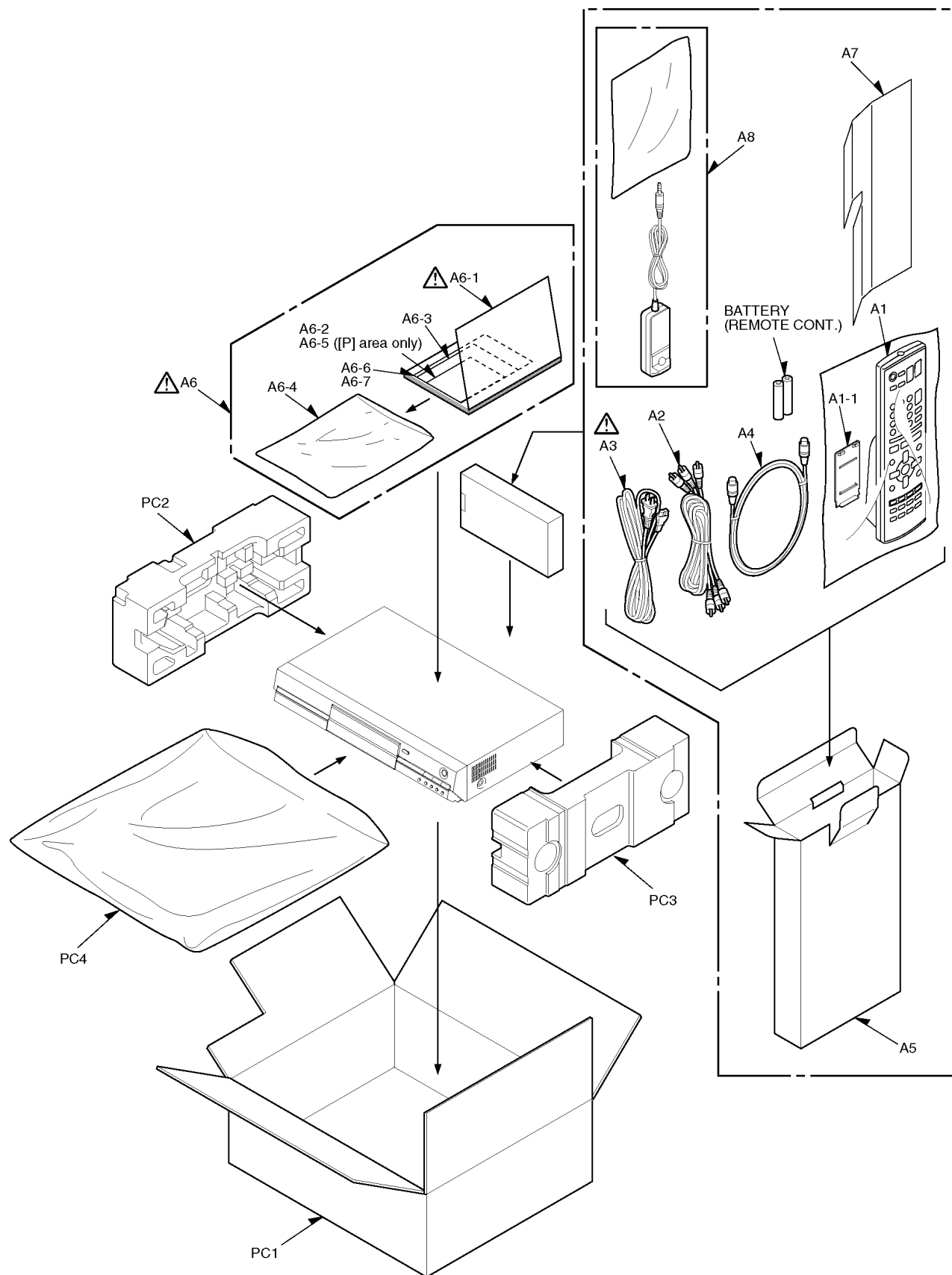
21.1. Casing Parts & Mechanism Section 1



21.2. Casing Parts & Mechanism Section 2



21.3. Packing & Accessories Section



22 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>"-"<IB>", marks in Remarks indicate languages of instruction manuals. [<IA>: English, <IB>: Canadian French] All parts are supplied by S.P.C..

*Supply of CD-ROM, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	01	CASING/ACCESSORY/PACKING		
1	VEP01950B	POWER SUPPLY P.C.B.	1	(RTL)
2	REP3662F	MAIN P.C.B.	1	(RTL)
3	REP3774G	DIGITAL P.C.B.	1	(P)
3	RFKBE85HPC	DIGITAL P.C.B.	1	(PC)
4	L6FAKCE0002	FAN MOTOR	1	
5	RGR0350E-C	REAR PANEL	1	(P) $\triangle$
5	RGR0350E-D	REAR PANEL	1	(PC) $\triangle$
6	RKA0144-K	FOOT RUBBER	4	
7	VHD0690	SCREW	7	
8	XSN3+4FZ	SCREW	1	
9	RHD30111	SCREW	14	
10	RHD30115	SCREW	4	
11	RMX0298	PCB SPACER	1	
12	RYP1243A-S	FRONT PANEL ASS'Y	1	
12-1	RKF0700-S	TRAY DOOR	1	
12-2	RGK1810-S	TRAY ORNAMENT	1	
12-3	VMB3410	SPRING	1	
12-4	RGU2318A-S	OPERATION BUTTON	1	
12-5	RGU2289-S	POWER BUTTON	1	
12-6	RGU2291A-Q	REC BUTTON	1	
12-7	RGK1774-S	FRONT ORNAMENT(L)	1	
12-8	RGK1775-S	FRONT ORNAMENT(R)	1	
12-9	RGK1773-S	REC BUTTON RING	1	
12-10	RGL0663-Q	PANEL LIGHT	1	
12-11	RKF0689G-S	PANEL DOOR	1	
12-12	RGK1811-S	FL ORNAMENT	1	
12-13	VGB0560	PANASONIC BADGE	1	
12-14	RHD26016	SCREW	1	
12-15	RMX0299	DAMPER SHEET	1	
12-16	RMR1637-W	REFLECTOR DVD	1	
12-17	RMR1638-W	REFLECTOR HDD	1	
12-18	XTN2+66	SCREW	2	
12-19	RMR1655-W	REFLECTOR COVER	1	
13	REP3713B	FRONT(R) P.C.B.	1	(RTL)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
14	RMC0595	EARTH PLATE	1	
15	RMA1778	FRONT ANGLE	1	
16	XTBS26+10J	SCREW	6	
17	RHD30113	SCREW	2	
18	RKM0508-S	TOP COVER	1	$\triangle$
19	VHD0690	SCREW	3	
20	VXY1814	RAM DRIVE UNIT	1	(RTL)
21	RFKV0031HDK	HDD 120GB	1	
22	VEK0675	FFC(42P)	1	
23	VEE0241	WIRE WITH CONNECTOR	1	
24	RMA1835	HDD HOLDER	1	
25	RMZ0747	INSULATED SHEET	1	
26	RMA1834	HDD BRACKET	1	
27	RXQ1208	SUPER SHEET UNIT	1	
28	K1MZ40Z00002	HDD CONNECTOR	1	
30	REP3763A	IR P.C.B.	1	(RTL)
31	VWJ1731	FFC(42P)	1	
32	RMR1656-W	LED COVER	1	
33	RMV0282	BARRIER	1	
A1	EUR7721KG0	REMOTE CONTROL ASS'Y	1	
A1-1	UR77EC2003A	BATTERY COVER	1	
A2	K2KA6CA00001	AV CORD	1	
A3	K2CB2CB00006	AC CORD	1	$\triangle$
A4	VJA1125	RF COAXIAL CABLE	1	K2KZ2BA00001
A5	RPQF0250	ACCESSORY CASE	1	
A6	RQF5607	FAN BAG ASS'Y	1	(P) $\triangle$
A6	RQF5608	FAN BAG ASS'Y	1	(PC) $\triangle$
A6-1	RQT7398-C	OPERATING INSTRUCTIONS	1	<IA>(PC) $\triangle$
A6-1	RQT7305-P	OPERATING INSTRUCTIONS	1	<IB>(P) $\triangle$
A6-2	RQCB0833	CCP SHEET	1	(P)
A6-3	RQCA1004	DISC CAUTION SHEET	1	
A6-4	RPF0378	POLYETHYLENE BAG(F.B.)	1	
A6-5	RQCC2431	DVD MEDIA SHEET	1	(P)
A6-6	RQCA1119	HDD CAUTION SHEET	1	
A6-7	RQCA1253	EPG SETTING SHEET	1	
A6-7	RQCA1254	EPG SETTING SHEET	1	(PC)
A7	RPQ1594	PAD	1	
A8	K2ZZ04C00001	IR BLUSTER	1	
PC1	RP67127	PACKING CASE	1	(P)
PC1	RP67128	PACKING CASE	1	(PC)
PC2	RPN1706A	CUSHION(A)	1	
PC3	RPN1706B	CUSHION(B)	1	
PC4	VPF0505	POLYETHYLENE BAG(UNIT)	1	
	02	REP3774G/RFKBE85HPC		(DIGITAL P.C.B.)
C3401	ECJ1VB0J105K	6.3V 1U	1	
C3402	ECJ0EC1H220J	50V 22P	1	
C3403	ECJ0EB1A104K	10V 0.1U	1	
C3404, 05	ECJ0EC1H220J	50V 22P	2	
C3406	ECJ0EB1A104K	10V 0.1U	1	
C3407, 08	ECJ0EC1H100D	50V 10P	2	
C3410	ECJ0EB1C103K	16V 0.01U	1	
C3411	ECST0JX476R	6.3V 47U	1	
C3413	ECJ0EB1A104K	10V 0.1U	1	
C3417-19	ECJ1VB0J105K	6.3V 1U	3	
C3420	ECJ0EB1C103K	16V 0.01U	1	
C3421	ECJ0EB1A104K	10V 0.1U	1	
C3422	ECJ0EB1C103K	16V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3423-28	ECJ0EB1A104K	10V 0.1U	6	
C3429, 30	ECJ2FB0J106K	6.3V 10U	2	F1J0J106A013
C3431	ECJ0EB1A104K	10V 0.1U	1	
C3432	ECJ1VB0J105K	6.3V 1U	1	
C3433	ECJ0EB1A104K	10V 0.1U	1	
C3435, 36	ECJ0EB1A104K	10V 0.1U	2	
C3440	EEH0B0J101P	6.3V 100P	1	
C3441	ECJ0EB1A104K	10V 0.1U	1	
C3502	ECJ0EB1C103K	16V 0.01U	1	
C4411	ECST1AY106R	10V 10U	1	
C4412	EEH0B0J470R	6.3V 47P	1	
C4413	EEH0B0J101P	6.3V 100P	1	
C4414, 15	ECJ0EF1C104Z	16V 0.1U	2	
C4416	F2H0J331A016	6.3V 330U	1	
C4417	ECJ0EF1C104Z	16V 0.1U	1	
C4418	EEH0B0J101P	6.3V 100P	1	
C4421-26	ECJ0EB1E102K	25V 1000P	6	
C4427	EEH0B0J470R	6.3V 47P	1	
C4428	ECJ0EF1C104Z	16V 0.1U	1	
C4429	ECJ0EB1A104K	10V 0.1U	1	
C4430	ECST1AY106R	10V 10U	1	
C4431, 32	ECJ0EF1C104Z	16V 0.1U	2	
C4433	EEH0B1C100R	16V 10P	1	
C4434	ECJ0EF1C104Z	16V 0.1U	1	
C6001	ECJ0EF1C104Z	16V 0.1U	1	
C6002	ECJ2FB0J106K	6.3V 10U	1	F1J0J106A013
C6003	ECJ0EB1C103K	16V 0.01U	1	
C9001, 02	ECJ0EC1H470J	50V 47P	2	
C50001	ECJ1VB0J105K	6.3V 1U	1	
C50002	F1K0J226A004	6.3V 22U	1	
C50004, 05	ECJ0EB1A104K	10V 0.1U	2	
D3401, 02	MA3S132E0L	DIODE	2	
D4401	MA3Z142K0LG	DIODE	1	
FL3401, 02	F1H0J4740004	FILTER	2	
FL3404	F1H0J4740004	FILTER	1	
FL3406, 07	F1H0J4740004	FILTER	2	
FL3409-12	F1H0J4740004	FILTER	4	
FL3414-26	F1H0J4740004	FILTER	13	
FL3429	F1H0J4740004	FILTER	1	
FL3431	F1H0J4740004	FILTER	1	
FL3433-35	F1H0J4740004	FILTER	3	
FL3501, 02	F1H0J4740004	FILTER	2	
FL3505-16	F1H0J4740004	FILTER	12	
FL4403-05	F1H0J4740004	FILTER	3	
FL6001-18	F1H0J4740004	FILTER	18	
FL6020-23	F1H0J4740004	FILTER	4	
FL6701-03	F1H0J4740004	FILTER	3	
FL50001-06	F1H0J4740004	FILTER	6	
FP3501	K1MN40A00022	CONNECTOR(40P)	1	
IC3401	AN13310B-VB	IC	1	
IC3402	C3ABMG000092	IC	1	
IC3404	MN85573R	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC3406	C1DB00001110	IC	1	
IC3408	C3ABPJ000048	IC	1	
IC3409	C0DBZGC00066	IC	1	
IC3501	MN88302R	IC	1	
IC3502	C3ABRG000036	IC	1	
IC4404	C0FBBK000035	IC	1	
IC4406	C0FBAK000008	IC	1	
IC4407	C0JBAA000257	IC	1	
IC4408	C0JBAD000107	IC	1	
IC4409	C0CBCBD00002	IC	1	
IC6001	MN2DS0011-HR	IC	1	
IC6002	C0EBE0000130	IC	1	
IC6003	C3CBLD000091	IC	1	
IC6004	74LVC244APWL	IC	1	C0JBAZ001466
IC6005, 06	C3ABRG000036	IC	2	
IC6701	C1ZBZ0002433	IC	1	
IC6703	REP3774G	DIGITAL P.C.B.	1	(P)
IC6703	RFKBE85HPC	DIGITAL P.C.B.	1	(PC)
IC50001, 02	C3ABPG000133	IC	2	
LB3404, 05	J0JHC0000032	COIL	2	
LB3408, 09	J0JHC0000032	COIL	2	
LB4401-04	J0JGC0000020	COIL	4	
LB4405	J0JHC0000032	COIL	1	
LB6001-04	J0JHC0000032	COIL	4	
LB9001, 02	J0JHC0000032	COIL	2	
LB9006, 07	J0JCC0000103	COIL	2	
LB9008	J0JHC0000045	COIL	1	
LB9009	J0JHC0000046	COIL	1	
LB50001-05	J0JHC0000032	COIL	5	
P6002	K1KA06A000394	CONNECTOR(6P)	1	
P9001	K1KB88A00002	CONNECTOR(88P)	1	
Q6001, 02	B1ABCF000114	TRANSISTOR	2	
Q6701-05	B1ABCF000114	TRANSISTOR	5	
Q50001-05	B1ADCF000081	TRANSISTOR	5	
QR3502, 03	UN5213TX	TRANSISTOR	2	UNR521300L
R3405	ERJ2GEJ103	1/16W 10K	1	
R3407	ERJ2GE0R00X	1/16W 0	1	
R3409	ERJ2GE0R00X	1/16W 0	1	
R3410, 11	ERJ2GEJ101	1/16W 100	2	
R3412	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3414	ERJ2GEJ330X	1/16W 33	1	
R3416	ERJ2GEJ472X	1/16W 4.7K	1	ERJ2RMJ472X
R3417, 18	ERJ2GEJ103	1/16W 10K	2	
R3419-23	ERJ2GEJ220X	1/16W 22	5	ERJ2RMJ220X
R3427	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3430	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3432-34	ERJ2GEJ220X	1/16W 22	3	ERJ2RMJ220X
R3436	ERJ2GEJ470	1/16W 47	1	
R3440	ERJ2GEJ103	1/16W 10K	1	
R3442	ERJ2GEJ103	1/16W 10K	1	
R3443-45	ERJ2GE0R00X	1/16W 0	3	
R3447	ERJ2RHD682	1/16W 6.8K	1	
R3448	ERJ2GEJ562X	1/16W 5.6K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3449	ERJ2RHD682	1/16W 6.8K	1	
R3450	ERJ2GEJ104	1/16W 100K	1	
R3451	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3452	ERJ2GE0R00X	1/16W 0	1	
R3453	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3454	ERJ2GEJ390X	1/16W 39	1	ERJ2RMJ390X
R3455	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3456	ERJ2GEJ470	1/16W 47	1	
R3457	ERJ2GE0R00X	1/16W 0	1	
R3458	ERJ2GEJ220X	1/16W 22	1	ERJ2RMJ220X
R3460-62	ERJ2GEJ470	1/16W 47	3	
R3463, 64	ERJ2GE0R00X	1/16W 0	2	
R3472, 73	ERJ2GEJ220X	1/16W 22	2	ERJ2RMJ220X
R3476	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R3501-03	ERJ2GEJ220X	1/16W 22	3	ERJ2RMJ220X
R3509	ERJ2GEJ330X	1/16W 33	1	
R3510, 11	ERJ2GEJ103	1/16W 10K	2	
R3514	ERJ2GEJ105	1/16W 1M	1	
R3519-22	ERJ2GEJ330X	1/16W 33	4	
R3523	ERJ2GEJ103	1/16W 10K	1	
R3524	ERJ2GEJ330X	1/16W 33	1	
R3525	ERJ2GEJ103	1/16W 10K	1	
R3526-28	ERJ2GEJ220X	1/16W 22	3	ERJ2RMJ220X
R3530	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R3531	ERJ2GEJ820X	1/16W 82	1	
R3532	ERJ2GEJ472X	1/16W 4.7K	1	ERJ2RMJ472X
R3533	ERJ2GEJ101	1/16W 100	1	
R3535	ERJ2GEJ820X	1/16W 82	1	
R3537	ERJ2GEJ562X	1/16W 5.6K	1	
R3541, 42	ERJ2GEJ103	1/16W 10K	2	
R3543	ERJ2GE0R00X	1/16W 0	1	
R3548	ERJ2GEJ330X	1/16W 33	1	
R4418-27	ERJ2GE0R00X	1/16W 0	10	
R4428	ERJ3GEY0R00V	1/10W 0	1	
R4433-35	ERJ3GEY0R00V	1/10W 0	3	
R4436	ERJ2GEJ221	1/16W 220	1	
R4437-39	ERJ2GE0R00X	1/16W 0	3	
R4450-52	ERJ2GE0R00X	1/16W 0	3	
R4453	ERJ2GEJ562X	1/16W 5.6K	1	
R4454-57	ERJ2GE0R00X	1/16W 0	4	
R6001	ERJ2GEJ333X	1/16W 33K	1	ERJ2RMJ333X
R6002	ERJ2GEJ332X	1/16W 3.3K	1	ERJ2RMJ332X
R6003	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R6004	ERJ2GEJ472X	1/16W 4.7K	1	ERJ2RMJ472X
R6005	ERJ2GEJ103	1/16W 10K	1	
R6006	ERJ2GEJ153	1/16W 15K	1	
R6007	ERJ2GEJ472X	1/16W 4.7K	1	ERJ2RMJ472X
R6008	ERJ2GEJ103	1/16W 10K	1	
R6009, 10	ERJ2GEJ330X	1/16W 33	2	
R6011	ERJ2GEJ332X	1/16W 3.3K	1	ERJ2RMJ332X
R6013	ERJ2GEJ103	1/16W 10K	1	
R6014-17	ERJ2GEJ104	1/16W 100K	4	
R6018, 19	ERJ2GEJ220X	1/16W 22	2	ERJ2RMJ220X
R6020	ERJ2GE0R00X	1/16W 0	1	
R6021, 22	ERJ2GEJ470	1/16W 47	2	
R6023	ERJ2GEJ332X	1/16W 3.3K	1	ERJ2RMJ332X
R6025	ERJ2GEJ103	1/16W 10K	1	
R6028	ERJ2GEJ470	1/16W 47	1	
R6029	ERJ2GEJ103	1/16W 10K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6031	ERJ2GEJ470	1/16W 47	1	
R6035	ERJ2GEJ470	1/16W 47	1	
R6036	ERJ2GEJ332X	1/16W 3.3K	1	ERJ2RMJ332X
R6037	ERJ2GEJ333X	1/16W 33K	1	ERJ2RMJ333X
R6039	ERJ2GEJ103	1/16W 10K	1	
R6040	ERJ2GEJ332X	1/16W 3.3K	1	ERJ2RMJ332X
R6701	ERJ2GEJ104	1/16W 100K	1	
R6703	ERJ2GEJ103	1/16W 10K	1	
R6706, 07	ERJ2GEJ470	1/16W 47	2	
R6709, 10	ERJ2GEJ332X	1/16W 3.3K	2	ERJ2RMJ332X
R6711, 12	ERJ2GEJ470	1/16W 47	2	
R6713	ERJ2GEJ103	1/16W 10K	1	
R6714	ERJ2GEJ333X	1/16W 33K	1	ERJ2RMJ333X
R6715	ERJ2GEJ470	1/16W 47	1	
R6716, 17	ERJ2GEJ333X	1/16W 33K	2	ERJ2RMJ333X
R6718	ERJ2GE0R00X	1/16W 0	1	
R6720-28	ERJ2GEJ470	1/16W 47	9	
R6729	ERJ2GEJ104	1/16W 100K	1	
R6730	ERJ2GEJ103	1/16W 10K	1	
R6731	ERJ2GEJ222X	1/16W 22K	1	ERJ2RMJ222X
R6733	ERJ2GEJ103	1/16W 10K	1	
R6735	ERJ2GEJ472X	1/16W 4.7K	1	ERJ2RMJ472X
R6737, 38	ERJ2GEJ470	1/16W 47	2	
R6739	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R6750, 51	ERJ2GEJ470	1/16W 47	2	
R6752	ERJ2GEJ101	1/16W 100	1	
R6753-56	ERJ2GEJ470	1/16W 47	4	
R50001	ERJ2GEJ390X	1/16W 39	1	ERJ2RMJ390X
R50002	ERJ2GE0R00X	1/16W 0	1	
R50003	ERJ2GEJ390X	1/16W 39	1	ERJ2RMJ390X
R50004	ERJ2GE0R00X	1/16W 0	1	
R50005	ERJ2GEJ330X	1/16W 33	1	
R50006, 07	ERJ2GEJ470	1/16W 47	2	
R50008	ERJ2GEJ100	1/16W 10	1	
R50009	ERJ2GEJ103	1/16W 10K	1	
R50010	ERJ2RHD332	1/16W 3.3K	1	
R50011	ERJ2RHD223X	1/16W 22K	1	
R50012, 13	ERJ2GE0R00X	1/16W 0	2	
R50015	ERJ2RHD333	1/16W 33K	1	
R50016	ERJ2RHD152	1/16W 1.5K	1	
R50017	ERJ2RHD153	1/16W 15K	1	
R50018	ERJ3RBD151	1/16W 150	1	
R50019	ERJ2GEJ330X	1/16W 33	1	
R50020	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R50021	ERJ3RED820	1/16W 82	1	
R50022	ERJ2GEJ330X	1/16W 33	1	
R50023	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R50024	ERJ3RED820	1/16W 82	1	
R50025	ERJ2GEJ330X	1/16W 33	1	
R50026	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R50027	ERJ3RBD151	1/16W 150	1	
R50028	ERJ2GEJ330X	1/16W 33	1	
R50029	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R50030	ERJ3RED330	1/16W 33	1	
R50031	ERJ3RBD151	1/16W 150	1	
R50032	ERJ2GEJ330X	1/16W 33	1	
R50033	ERJ2GEJ102X	1/16W 1K	1	ERJ2RMJ102X
R50034, 35	ERJ3RED220	1/16W 22	2	
R50036-38	ERJ2GEJ470	1/16W 47	3	
R50039	ERJ2GEJ820X	1/16W 82	1	
RX3401-17	D1H82204A024	RESISTOR-RESISTOR	17	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
RX3421, 22	D1H82204A024	RESISTOR-RESISTOR	2	
RX3433-44	D1H82204A024	RESISTOR-RESISTOR	12	
RX3501-04	D1H82204A024	RESISTOR-RESISTOR	4	
RX3505-08	D1H83304A024	RESISTOR-RESISTOR	4	
RX3515-19	D1H83304A024	RESISTOR-RESISTOR	5	
RX3520-26	D1H82204A024	RESISTOR-RESISTOR	7	
RX3527-32	D1H81034A024	RESISTOR-RESISTOR	6	
RX3538-40	D1H84734A024	RESISTOR-RESISTOR	3	
RX6001	D1H81034A024	RESISTOR-RESISTOR	1	
RX6002-04	D1H84704A024	RESISTOR-RESISTOR	3	
RX6005, 06	D1H83304A024	RESISTOR-RESISTOR	2	
RX6007	D1H84704A024	RESISTOR-RESISTOR	1	
RX6009-26	D1H83304A024	RESISTOR-RESISTOR	18	
RX6027-32	D1H84704A024	RESISTOR-RESISTOR	6	
RX6033, 34	D1H83324A013	RESISTOR-RESISTOR	2	
RX6035, 36	D1H83334A024	RESISTOR-RESISTOR	2	
RX6037	D1H81034A024	RESISTOR-RESISTOR	1	
RX6038	D1H83304A024	RESISTOR-RESISTOR	1	
RX6039-42	D1H84704A024	RESISTOR-RESISTOR	4	
RX6043	D1H81034A024	RESISTOR-RESISTOR	1	
RX6044	D1H83334A024	RESISTOR-RESISTOR	1	
RX6701, 02	D1H81034A024	RESISTOR-RESISTOR	2	
RX6703-06	D1H84704A024	RESISTOR-RESISTOR	4	
RX6708	D1H84704A024	RESISTOR-RESISTOR	1	
RX6711-13	D1H83324A013	RESISTOR-RESISTOR	3	
RX6716	D1H84704A024	RESISTOR-RESISTOR	1	
RX6717-19	D1H83334A024	RESISTOR-RESISTOR	3	
RX6720-23	D1H83324A013	RESISTOR-RESISTOR	4	
RX6724	D1H84704A024	RESISTOR-RESISTOR	1	
RX6726-28	D1H84704A024	RESISTOR-RESISTOR	3	
RX6729, 30	D1H81034A024	RESISTOR-RESISTOR	2	
RX6731-34	D1H84704A024	RESISTOR-RESISTOR	4	
RX6735	D1H82224A024	RESISTOR-RESISTOR	1	
RX6736	D1H81034A024	RESISTOR-RESISTOR	1	
RX6737	D1H84724A024	RESISTOR-RESISTOR	1	
RX6738	D1H83334A024	RESISTOR-RESISTOR	1	
RX50001-16	D1H84704A024	RESISTOR-RESISTOR	16	
X3401	H0J270500069	CRYSTAL OSCILLATOR	1	
X3501	H2D330500001	CRYSTAL OSCILLATOR	1	
■	03	REP3662F		(MAIN P.C.B.)
B7501	CR2354-1GUF	LITHIUM BATTERY	1	
C1503	ECJ1VB1A105K	10V 1U	1	F1H1A105A028
C1505	F2A1A470A388	10V 47U	1	
C1512	ECJ1VB0J105K	6.3V 1U	1	
C1513	ECJ1VB1A105K	10V 1U	1	F1H1A105A028
C1514	ECJ1VB0J105K	6.3V 1U	1	
C1515	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C1516	ECJ1VB1A105K	10V 1U	1	F1H1A105A028
C1518	F2A1A470A388	10V 47U	1	
C1519	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1520	ECJ1VB1A105K	10V 1U	1	F1H1A105A028
C1521	ECJ1VB0J105K	6.3V 1U	1	
C1522	ECJ1VC1H331J	50V 330P	1	
C1523	ECJ1VB1A105K	10V 1U	1	F1H1A105A028
C1524	F2A1A470A388	10V 47U	1	
C1527, 28	ECJ1VB0J105K	6.3V 1U	2	
C1531	F2A1A470A388	10V 47U	1	
C1533, 34	ECJ1VB0J105K	6.3V 1U	2	
C1537	EEUFC1E101S	25V 100U	1	
C1539	F2A0J102A256	6.3V 1000U	1	
C1540	F2A1E4700048	25V 47U	1	
C1541	F2A1A471A211	10V 470U	1	
C1543	F2A1E221A210	25V 220U	1	
C3001	ECJ1VC1H561J	50V 560P	1	
C3005	ECJ1VB1C333K	16V 0.033U	1	
C3006-08	ECJ1XB1C104K	16V 0.1U	3	ECJ1VB1C104K
C3010-17	ECJ1VB1H103K	50V 0.01U	8	
C3018	F2A1E4700048	25V 47U	1	
C3019-21	ECJ1VB1H103K	50V 0.01U	3	
C3022	F2A0J1020045	6.3V 1000U	1	
C3023	F2A1A1010072	10V 100U	1	
C3024	F2A0J1020045	6.3V 1000U	1	
C3025	F2A1A1010072	10V 100U	1	
C3026	F2A0J1020045	6.3V 1000U	1	
C3027, 28	F2A1A1010072	10V 100U	2	
C3029	F2A0J1020045	6.3V 1000U	1	
C3030	F2A1A1010072	10V 100U	1	
C3031	F2A0J1020045	6.3V 1000U	1	
C3032, 33	ECJ1VB0J105K	6.3V 1U	2	
C3034	ECJ1VB1H103K	50V 0.01U	1	
C3035, 36	F2A1H2200032	50V 22U	2	
C3037	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C3038	F2J1C4700005	16V 47U	1	
C3039	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C3040	ECJ1VB1H103K	50V 0.01U	1	
C3041	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C3042	F2J1C4700005	16V 47U	1	
C3043	ECJ1VB1H103K	50V 0.01U	1	
C3044	F2A1E4700048	25V 47U	1	
C3046, 47	ECJ1VB1H103K	50V 0.01U	2	
C3901	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C3902	ECJ1VB1H103K	50V 0.01U	1	
C3909	ECJ1VB1H103K	50V 0.01U	1	
C3910, 11	ECJ1XB1C104K	16V 0.1U	2	ECJ1VB1C104K
C3912	ECJ1VB1H103K	50V 0.01U	1	
C3917, 18	ECJ1VB1H103K	50V 0.01U	2	
C4003-06	F2A1H1R0A494	50V 1U	4	
C4009, 10	ECJ1VF1C104Z	16V 0.1U	2	
C4011	ECJ2VB1E104K	25V 0.1U	1	
C4013, 14	F2A1H1R0A494	50V 1U	2	
C4016	F2A1C221A497	16V 220U	1	
C4017	ECJ1XC1H820J	50V 82P	1	ECJ1VC1H820J
C4019	ECJ1XC1H820J	50V 82P	1	ECJ1VC1H820J
C4022	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C4023	F2A1C471A498	16V 470U	1	
C4024, 25	F2A1C470A494	16V 47U	2	
C4026, 27	F2A1H1R0A494	50V 1U	2	
C4028, 29	F2A1C100A494	16V 10U	2	
C4036	F2A1C470A494	16V 47U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4037	F2A1C221A497	16V 220U	1	
C4038	F2A1C470A494	16V 47U	1	
C4039-42	ECJ2VC1H102J	50V 1000P	4	
C4045, 46	ECJ1VF1C104Z	16V 0.1U	2	
C4047	ECQV1H104JL	50V 0.1U	1	
C4049	F2A0J471A497	6.3V 470U	1	
C4050	ECQV1H104JL	50V 0.1U	1	
C4052	F2A1C471A498	16V 470U	1	
C4901	F2A0J470A179	6.3V 47U	1	
C4902	ECJ1VF1C104Z	16V 0.1U	1	
C4903	F2A0J470A179	6.3V 47U	1	
C4904	ECJ1VF1C104Z	16V 0.1U	1	
C4906	ECJ1VC1H220J	50V 22P	1	
C7401	ECJ1VC1H030C	50V 3P	1	
C7404	ECJ1VB1H103K	50V 0.01U	1	
C7405	F2A0J470A012	6.3V 47U	1	
C7406, 07	ECJ1XB1C104K	16V 0.1U	2	ECJ1VB1C104K
C7416	ECJ1VB1H103K	50V 0.01U	1	
C7417	F2A1H1R00071	50V 1U	1	
C7432, 33	F2A1C100A494	16V 10U	2	
C7436	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C7437	F2A0J470A012	6.3V 47U	1	
C7525	ECJ1VC1H101J	50V 100P	1	
C7526	ECJ1VF1C104Z	16V 0.1U	1	
C7528	ECJ1VF1C104Z	16V 0.1U	1	
C7550	ECJ1VB1H103K	50V 0.01U	1	
C7551	F2A1H2200032	50V 22U	1	
C7552	ECJ1VF1H104Z	50V 0.1U	1	
C7555	F2A1E2210050	25V 220U	1	
C7556	ECA1AHG221	10V 220U	1	
C7557	ECQB1H473KF	50V 0.047U	1	
C7558	F2A1H5600009	50V 56U	1	
C7559	ECQB1H223KF3	50V 0.022U	1	
C7560	F2A1H2200032	50V 22U	1	
C7565	ECJ2YB0J475K	6.3V 4.7U	1	F1J0J475A008
C7566, 67	ECJ1XB1C104K	16V 0.1U	2	ECJ1VB1C104K
C7569	ECJ1VF1C104Z	16V 0.1U	1	
C7580-83	ECJ1VC1H101J	50V 100P	4	
C7584, 85	ECJ1VC1H180J	50V 18P	2	
C7586	ECJ1VC1H220J	50V 22P	1	
C7587	ECJ1VC1H150J	50V 15P	1	
C7588	ECJ2YB0J475K	6.3V 4.7U	1	F1J0J475A008
C7589	ECJ1VF1C104Z	16V 0.1U	1	
C7595	ECJ1VF1C104Z	16V 0.1U	1	
C7596	ECJ1VC1H470J	50V 47P	1	
C7597	ECJ1VB1H103K	50V 0.01U	1	
C7598	ECJ1VC1H470J	50V 47P	1	
C7599	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C7600	ECJ1VC1H470J	50V 47P	1	
C7601	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C7602	ECJ1VB1H103K	50V 0.01U	1	
C7604	ECJ1VF1C104Z	16V 0.1U	1	
C7607	ECJ1VF1C104Z	16V 0.1U	1	
C7609, 10	ECJ1VC1H100C	50V 10P	2	
C7611-13	ECJ1VB1H103K	50V 0.01U	3	
C7618	ECJ1VB1H103K	50V 0.01U	1	
C7620	ECJ1VB1H103K	50V 0.01U	1	
C7626	ECJ1VB1H103K	50V 0.01U	1	
C7633	F2A0J471A280	6.3V 470U	1	
C7636	ECJ1VF1A105Z	10V 1U	1	
C7637	ECJ1VB1H103K	50V 0.01U	1	
C7639	ECJ1VF1C104Z	16V 0.1U	1	
C7650	ECJ1VB1H103K	50V 0.01U	1	
C7652	ECJ1VF1A105Z	10V 1U	1	
C7653	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C7654	ECJ1VB1H103K	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7657	ECJ1VF1H104Z	50V 0.1U	1	
D1501	MA165TA5	DIODE	1	MA2C165001VT
D4001, 02	MA3Z142D0RG	DIODE	2	MA3Z142D0LG
D7401	MA4300N-M	DIODE	1	MAZ4300NM
D7501	MAZ4240NMF	DIODE	1	
D7502	B0AAGM000003	DIODE	1	B0AAGM000007
D7503	VSD0002	DIODE	1	B0HAGR000005
D7504, 05	MA2C18500E	DIODE	2	
D7506	MAZ4300NLF	DIODE	1	
D7507	B0JDC0000002	DIODE	1	
D7511	B0JACE000001	DIODE	1	
D7512	B3AEA0000049	DIODE	1	
DP7501	A2BD00000074	FL DISPLAY TUBE	1	
IC1502	C0DBAHG00013	IC	1	
IC1505	C0CBCDD00008	IC	1	
IC1506	C0CBCDD00002	IC	1	
IC1507	C0CBCDD00006	IC	1	
IC1508	C0DBEGD00002	IC	1	
IC1509	C0DBEFG00003	IC	1	
IC1510	C0DBEGG00003	IC	1	
IC3001	C1AB00001979	IC	1	
IC4001	C1AB00001920	IC	1	
IC4004	C0CBCDC00026	IC	1	
IC4005	C0CBCDC00027	IC	1	
IC7404	C0BBB0000006	IC	1	
IC7501	C2CBJG000443	IC	1	
IC7502	C0HBB0000033	IC	1	
IC7503	C0EBJ0000110	IC	1	
IC7505	C0EBE0000194	IC	1	
IC7506	C0ABBA000146	IC	1	
IP7501	ICP-N10T104	IC PROTECTOR	1	B1ZAZ0000035 △
JK3901	K1U822B00003	JACK, L1, L3	1	
JK3902	K1U820B00003	JACK, TV	1	
JK3903	K1U407B00003	JACK, AV OUT, OPTICAL OUT	1	
JK3904	K1U415B00001	JACK, L2	1	
K3001	ERJ3GEY0R00V	1/10W 0	1	
K7401	ERJ3GEY0R00V	1/10W 0	1	
K7403, 04	ERJ3GEY0R00V	1/10W 0	2	
K7502	ERJ3GEY0R00V	1/10W 0	1	
K7506-10	ERJ3GEY0R00V	1/10W 0	5	
K7512	ERJ3GEY0R00V	1/10W 0	1	
L1501	G0A220G00018	COIL 22UH	1	
L3001, 02	ELEXH220JBV	COIL 22UH	2	
L4901	ELESE220KA	COIL 22UH	1	
L7401	G0A220G00018	COIL 22UH	1	
L7502	ELESE101K	COIL 100UH	1	
LB1501	J0JHC0000032	COIL	1	
LB1503	J0JHC0000032	COIL	1	
LB1504, 05	J0JKB0000003	COIL	2	
LB3905-10	J0JCC0000103	COIL	6	
LB3915-20	J0JCC0000103	COIL	6	
LB3924-29	J0JCC0000103	COIL	6	
LB4903-12	J0JCC0000103	COIL	10	
LB7402	J0JHC0000032	COIL	1	
LB7409, 10	J0JHC0000032	COIL	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB7411, 12	ERJ3GEY0R00V	1/10W 0	2	
LB7413	J0JHC0000032	COIL	1	
LB7501	VLP0175	COIL	1	J0JCC0000060
LB7502	ERJ3GEY0R00V	1/10W 0	1	
LB7503	J0JKB0000037	COIL	1	
LB7504	J0JGC0000020	COIL	1	
LB7505, 06	J0JCC0000103	COIL	2	
LB7507, 08	ERJ3GEY0R00V	1/10W 0	2	
P1501	K1KA08A00427	CONNECTOR(8P)	1	
P1502	K1KA23A00004	CONNECTOR(23P)	1	
P7402	K1KA88A00002	CONNECTOR(88P)	1	
P7503	K1KA03A00173	CONNECTOR(3P)	1	
P7504	K1KB12B00049	CONNECTOR(12P)	1	
PP7401	VJP3042G008W	CONNECTOR(8P)	1	K1KA08A00163
Q4001	2SB1218A	TRANSISTOR	1	
Q4002-05	2SD132800L	TRANSISTOR	4	
Q7401	2SB1218A	TRANSISTOR	1	
Q7503	2SD1994B	TRANSISTOR	1	
Q7504	2SD0601A	TRANSISTOR	1	
Q7507	2SB0709ARL	TRANSISTOR	1	
Q7508	2SD1819AWL	TRANSISTOR	1	
Q7512	2SD0874A0L	TRANSISTOR	1	
Q7517	2SD132800L	TRANSISTOR	1	
Q7520	2SD0601A	TRANSISTOR	1	
QR4001-04	UN5211	TRANSISTOR	4	UNR5211
QR7502	UN5212TX	TRANSISTOR	1	UNR521200L
QR7507	UN5113TW	TRANSISTOR	1	
R1501	ERJ3GEYJ822V	1/10W 8.2K	1	D0GB822JA002
R1502	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R1503	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R1504	ERDS2FJ271	1/4W 270	1	
R1506	ERDS2FJ271	1/4W 270	1	
R1507	ERJ3RED330	1/16W 33	1	
R1508	ERJ3RBD201	1/16W 200	1	
R1509	ERJ3RBD102V	1/16W 1K	1	
R1510	ERJ3RED220	1/16W 22	1	
R1511	ERJ3RBD182V	1/16W 1.8K	1	
R1512	ERJ3RBD202	1/16W 2K	1	
R1515, 16	ERDS2FJ271	1/4W 270	2	
R3025	ERJ3RBD153	1/16W 15K	1	
R3026	ERJ3GEYJ105V	1/10W 1M	1	
R3027	ERJ3GEY0R00V	1/10W 0	1	
R3028	ERJ3GEYJ471V	1/10W 470	1	
R3029	ERJ3GEY0R00V	1/10W 0	1	
R3030	ERJ3EKF75R0	1/10W 75	1	
R3031	ERJ3GEY0R00V	1/10W 0	1	
R3032, 33	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R3036	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R3038	ERJ3GEYJ330V	1/10W 33	1	D0GB330JA002
R3039, 40	ERJ3GEYJ221V	1/10W 220	2	
R3041	ERJ3RBD104	1/16W 100K	1	
R3901, 02	ERJ3EKF75R0	1/10W 75	2	
R3903	ERJ3GEYJ102V	1/10W 1K	1	
R3904, 05	ERJ3EKF75R0	1/10W 75	2	
R3906	ERJ3GEYJ102V	1/10W 1K	1	
R3907-14	ERJ3EKF75R0	1/10W 75	8	
R3915, 16	ERJ3GEYJ912V	1/10W 9.1K	2	
R3923-25	ERJ3EKF75R0	1/10W 75	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3926	ERJ3GEYJ102V	1/10W 1K	1	
R3927-29	ERJ3EKF75R0	1/10W 75	3	
R4001-04	ERJ3GEYJ104	1/10W 100K	4	
R4008	ERJ3GEY0R00V	1/10W 0	1	
R4011-14	ERJ6GEYJ102V	1/8W 1K	4	
R4015, 16	ERJ3GEYJ104	1/10W 100K	2	
R4017-20	ERJ3GEY0R00V	1/10W 0	4	
R4024, 25	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R4026	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R4027	D0HB622ZA002	1/16W 6.2K	1	
R4028	JAR0816P123D	1/16W 12K	1	D0HB123ZA002
R4029	D0HB622ZA002	1/16W 6.2K	1	
R4031, 32	ERJ6GEYJ102V	1/8W 1K	2	
R4037, 38	ERJ3GEYJ104	1/10W 100K	2	
R4039	ERJ3GEY0R00V	1/10W 0	1	
R4042	ERJ3GEY0R00V	1/10W 0	1	
R4043, 44	JAR0816P392D	1/16W 3900	2	D0HB392ZA002
R4045, 46	D0HB622ZA002	1/16W 6.2K	2	
R4049-52	ERJ3GEYJ103V	1/10W 10K	4	D0GB103JA002
R4059, 60	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R4061, 62	ERJ3GEYJ681V	1/10W 680	2	D0GB681JA002
R4063, 64	ERJ3GEYJ272V	1/10W 2.7K	2	
R4065, 66	ERJ3GEYJ681V	1/10W 680	2	D0GB681JA002
R4067, 68	ERJ3GEYJ272V	1/10W 2.7K	2	
R4069-72	ERJ3GEYJ221V	1/10W 220	4	
R4074, 75	ERJ3GEY0R00V	1/10W 0	2	
R4077, 78	ERJ3GEY0R00V	1/10W 0	2	
R4082	ERJ3GEY0R00V	1/10W 0	1	
R4901	ERJ3GEY0R00V	1/10W 0	1	
R4903	ERJ3GEY0R00V	1/10W 0	1	
R7403, 04	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R7406, 07	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R7418, 19	ERG2SJ471E	2W 470	2	
R7442	ERJ3RBD222V	1/16W 2.2K	1	
R7443	ERJ3RBD102V	1/16W 1K	1	
R7444	ERJ3RBD153	1/16W 15K	1	
R7445	ERJ3RBD222V	1/16W 2.2K	1	
R7446	ERJ3RBD133V	1/16W 13K	1	
R7452	ERJ3GEYJ681V	1/10W 680	1	D0GB681JA002
R7454	ERJ3GEY0R00V	1/10W 0	1	
R7505	ERJ3RBD273V	1/16W 27K	1	
R7507	ERDS2FJ331	1/4W 330	1	
R7508	ERDS2FJ5R6	1/4W 5.6	1	
R7509	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R7510	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R7511	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R7512, 13	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R7514	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7516	ERJ3GEY0R00V	1/10W 0	1	
R7519	ERJ3GEYJ102V	1/10W 1K	1	
R7520	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R7521	ERJ3GEYG152	1/10W 1.5K	1	
R7522	ERJ3GEYG562V	1/10W 5.6K	1	
R7523	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7530-33	ERJ3GEYJ473V	1/10W 47K	4	D0GB473JA002
R7534-37	ERJ3GEYJ101	1/10W 100	4	D0GB101JA002
R7538	ERJ3GEYJ472V	1/10W 4.7K	1	
R7539	ERJ3GEY0R00V	1/10W 0	1	
R7540	ERJ3GEYD274V	1/10W 270K	1	ERA3YKD274V
R7541	ERJ3GEY0R00V	1/10W 0	1	
R7542	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R7548	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R7549	ERJ3GEYJ511	1/10W 510	1	
R7550, 51	ERJ3GEYJ202V	1/10W 2K	2	
R7556, 57	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R7561	ERDS2TJ392	1/4W 3.9K	1	
R7562-64	ERJ3GEYJ101	1/10W 100	3	D0GB101JA002
R7569	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7570	ERJ3GEYJ104	1/10W 100K	1	
R7583, 84	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R7585	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R7588	ERJ3GEYJ472V	1/10W 4.7K	1	
R7589-91	ERJ3RBD822	1/10W 8.2K	3	
R7595, 96	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R7597	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R7598	ERJ3GEYJ102V	1/10W 1K	1	
R7599	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R7600, 01	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R7602	ERJ3GEYJ821V	1/10W 820	1	
R7603	ERJ3GEYJ183V	1/10W 18K	1	D0GB183JA002
R7604	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R7611	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7613	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7617	ERDS2FJ750	1/4W 75	1	
R7626	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7629	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R7630	ERJ3GEYJ273V	1/10W 27K	1	D0GB273JA002
R7633	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R7636-38	ERJ3GEYJ101	1/10W 100	3	D0GB101JA002
R7644	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R7645	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
S7501	K0F111B00044	SWITCH	1	
T7501	ETS13TB119AP	TRANSFORMER	1	
TU7401	ENG6201DR	TV TUNER	1	△
W601-03	ERJ3GEY0R00V	1/10W 0	3	
W604, 05	ERJ6GEY0R00V	1/8W 0	2	
W606-10	ERJ3GEY0R00V	1/10W 0	5	
W611	ERJ6GEY0R00V	1/8W 0	1	
W612-18	ERJ3GEY0R00V	1/10W 0	7	
W622-24	ERJ3GEY0R00V	1/10W 0	3	
X7501	H0D100500016	CRYSTAL OSCILLATOR	1	
X7502	H0A327200026	OSCILLATOR	1	
ZJ7407, 08	VJR0978	EARTH ANGLE	2	K9ZZ00000424
■	04	VEP01950B		(POWER SUPPLY P.C.B.)
C1120	ECQU2A104MLA	0.1U	1	△
C1121	ECQU2A223MLC	0.022U	1	△
C1125-27	ECKWNA102MEV	1000P	3	△
C1143	EETHC2E151HY	250V 150U	1	
C1150	F2A1V5600013	35V 56U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1152	ECJ2XC1H101J	16V 100P	1	
C1153	ECUM1H183KBX	50V 0.018U	1	
C1154	ECJ2XB1H102K	50V 1000P	1	ECJ2VB1H102K
C1156	ECKW3A472KRP	1KV 4700P	1	
C1200	ECQV1H104JL	50V 0.1U	1	
C1201	ECJ2VB1E473K	25V 0.047U	1	
C1260, 61	F2A1A6810017	10V 680U	2	
C1262	ECA1AHG221	10V 220U	1	
C1270, 71	F2A1C6810023	16V 680U	2	
C1272, 73	F2A1E2210050	25V 220U	2	
C1274	ECJ2VB1E104K	25V 0.1U	1	
C1400	EEUFM1E221	25V 220U	1	
C1401	F1K1C3350002	16V 3.3U	1	
C1402	ECJ2VB1H103K	50V 0.01U	1	
C1403	ECJ2XC1H331J	16V 330P	1	
C1404	ECJ2VB1H472K	50V 4700P	1	
C1405	ECUX1H681JCX	50V 680P	1	ECJ2VC1H681J
C1406	EEUFM1A681	10V 680U	1	
C1407	EEUFM1E221	25V 220U	1	
C1408, 09	ECJ2VB1E104K	25V 0.1U	2	
C1410	ECJ2VB1H103K	50V 0.01U	1	
C1411	ECJ2VC1H680J	50V 68P	1	
C1412	ECJ2VB1H472K	50V 4700P	1	
C1413	F2A0J1520007	6.3V 1500U	1	
C1417-19	ECJ2FB0J106K	6.3V 10U	3	F1J0J106A014
C1420	F1K1C106A062	16V 10U	1	
C1421	ECJ2VB1E104K	25V 0.1U	1	
C1422	F1K1C106A062	16V 10U	1	
C1423	ECJ2FB0J106K	6.3V 10U	1	F1J0J106A014
C1501	EEUFM1C471L	16V 470U	1	
C1503	ECJ2VB1E104K	25V 0.1U	1	
C1504	ECJ2XC1H221J	50V 220P	1	ECJ2VC1H221J
C1505	ECJ2VB1E104K	25V 0.1U	1	
C1506	ECJ2XB1H102K	50V 1000P	1	ECJ2VB1H102K
C1507	ECJ2VB1E473K	25V 0.047U	1	
C1508	ECJ2XB1H102K	50V 1000P	1	ECJ2VB1H102K
C1509	ECJ2VB1H223K	50V 0.023U	1	
C1510	ECJ2VB1E104K	25V 0.1U	1	
C1512	ECJ2VB1H103K	50V 0.01U	1	
C1513	F2A1A4710038	10V 470U	1	
C1514	ECJ2VB1H103K	50V 0.01U	1	
C1570	EEUFM1A102	10V 1000U	1	
D1110	ERZVGAD471	VARISTOR	1	△
D1140	B0EDKT000002	DIODE	1	
D1151	B0HAGM000006	DIODE	1	
D1152	MAZ4091NMF	DIODE	1	
D1153	MAZ4270NMF	DIODE	1	
D1155	MAZ73000BC	DIODE	1	
D1156	MA2J11100L	DIODE	1	
D1261	B0JAQE000004	DIODE	1	
D1262, 63	B0JAME000025	DIODE	2	△
D1271	B0JAQ6000005	DIODE	1	
D1400, 01	MA2Q73800L	DIODE	2	
D1402	ERA15-02	DIODE	1	B0EAKM000016
D1500	MA2Q73800L	DIODE	1	
D1501	MA2J11100L	DIODE	1	
F1101	K5D162BK0005	FUSE	1	△
IC1150	C0DACZH00004	IC	1	
IC1200	C0DAAMA00002	IC	1	
IC1270	C0DAZJH00003	IC	1	
IC1400	C0DAAJG00007	IC	1	
IC1401	C0DBAKG00005	IC	1	
IC1500	C0DBAZH00012	IC	1	
IC1501	C0EBJ0000143	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IP1400	K5H2022A0013	IC PROTECTOR	1	△
IP1401	K5H3022A0013	IC PROTECTOR	1	△
IP1500	K5H3022A0013	IC PROTECTOR	1	△
L1120, 21	G0B100E00002	COIL 10UH	2	△
L1260	G0A100H00014	COIL 10UH	1	
L1270	G0A100H00014	COIL 10UH	1	
L1400	G0A220G00018	COIL 22UH	1	
L1401	G0A330G00010	COIL 33UH	1	
L1402	G0A330ZA0030	COIL 33UH	1	
L1501	G0A220ZA0030	COIL 22UH	1	
L1503	G0A100H00014	COIL 10UH	1	
LB1123	J0JKB0000003	COIL	1	
LB1126	J0JHC0000012	COIL	1	
LB1400	J0JHC0000012	COIL	1	
LB1500	J0JHC0000012	COIL	1	
P1101	K2AB2H000004	AC INLET	1	△
P1102	K1KB23A00002	CONNECTOR(FEMALE) 23P	1	
P1103	K1KA04A00192	CONNECTOR(4P)	1	
Q1200	PC123ZY2	TRANSISTOR	1	B3PBA0000078 △
Q1400	B1DHDD000022	TRANSISTOR	1	
QR1300, 01	UNR221300L	TRANSISTOR	2	
QR1303, 04	UNR221300L	TRANSISTOR	2	
QR1307, 08	UNR221300L	TRANSISTOR	2	
R1120	ERDS1TJ474	1W 470K	1	
R1150	ERDS2FJ6R8	1/4W 6.8	1	
R1151	ERDS2FJ223	1/4W 22K	1	
R1152	ERDS2FJ103	1/4W 10K	1	
R1154	ERJ6RBD112	1/10W 1.1K	1	
R1156	ER0S2CHF1802	1/4W 18K	1	
R1157	ERJ6RED470	1/10W 47	1	
R1200	ERJ6GEYF473	1/8W 47K	1	
R1201	ERJ6ENF3001V	1/8W 3K	1	
R1203, 04	ERJ6GEY6912	1/8W 9.1K	2	
R1205	ERJ6GEYF473	1/8W 47K	1	
R1206	ERJ6GEY6242	1/8W 2.4K	1	
R1207	ERJ6GEYJ103V	1/8W 10K	1	
R1208	ERJ6GEY6241	1/8W 240	1	
R1209	ERJ6GEYJ102V	1/8W 1K	1	
R1210	ERJ6GEY6103V	1/8W 47K	1	D06D103GA005
R1270	ERJ6GEYJ472V	1/8W 4.7K	1	
R1310	ERJ6GEY0R00V	1/8W 0	1	
R1313	ERJ6GEYJ103V	1/8W 10K	1	
R1401	ERJ6GEYJ104V	1/8W 100K	1	
R1402	ERJ6RBD302	1/10W 3K	1	
R1404	ERJ6RBD102	1/10W 1K	1	
R1405	ERJ6GEYJ513V	1/8W 51K	1	
R1406	D1BFR039A010	1/10W 39	1	
R1407	ERJ6GEY0R00V	1/8W 0	1	
R1409	ERJ6RBD123	1/10W 12K	1	
R1410	ERJ6ENF3300	1/8W 3.3K	1	ERJ6RBD331V
R1411	ERJ6RBD822V	1/10W 8.2K	1	
R1500	ERJ6GEYJ470V	1/8W 47	1	
R1501	ERJ6RED394	1/10W 390K	1	
R1502	ERJ6GEYJ474V	1/8W 470K	1	
R1503	ERJ6ENF3303	1/8W 330K	1	
R1504	ERJ6RBD163	1/10W 16K	1	
R1505	ERJ6GEYJ3R3V	1/8W 3.3	1	D06D3R3JA003
R1508-10	D1BDR1800001	1/10W 18	3	
R1513	ERJ6GEYJ103V	1/8W 10K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1514, 15	ERJ6RBD102	1/10W 1K	2	
R1516	ERJ6RED470	1/10W 47	1	
R1517	ERJ6RBD103V	1/10W 10K	1	
R1518	ERJ6GEYF473	1/8W 47K	1	
T1151	G4D2A0000179	TRANSFORMER	1	△
W501	ERJ6GEY0R00V	1/8W 0	1	
ZA1103, 04	K3GD9BB00001	FUSE HOLDER	2	
ZA1105-07	VJR0978	EARTH ANGLE	3	K9ZZ00000424
ZA1150	VSC5606	HEAT CINK	1	
ZA1151	XTN3+8G	SCREW	1	
05		REP3763A		(IR P.C.B.)
C8001, 02	ECJ1VC1H120J	50V 12P	2	
C8003	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
C8004	ECJ1VC1H101J	50V 100P	1	
C8005	EEH0B0J470R	6.3V 47P	1	
C8006-08	ECJ1XB1C104K	16V 0.1U	3	ECJ1VB1C104K
C8010	ECJ1VC1H101J	50V 100P	1	
C8012	ECJ1XB1C104K	16V 0.1U	1	ECJ1VB1C104K
IC8001	C2CBJH000144	IC	1	
IC8002	C0EBJ0000319	IC	1	
JK8001	K2HC104B0028	JACK	1	
LB8001	J0JHC0000032	COIL	1	
P8001	VJS3042F008W	CONNECTOR(8P)	1	K1KB08B00028
Q8001-03	2SD0601A	TRANSISTOR	3	
Q8004	2SD132800L	TRANSISTOR	1	
Q8005	2SB071000L	TRANSISTOR	1	
R8001	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8002-05	ERJ3GEYJ101	1/10W 100	4	D0GB101JA002
R8006	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8009	ERJ3GEYD274V	1/10W 270K	1	ERA3YKD274V
R8010	ERJ3GEYJ752V	1/10W 7.5K	1	
R8012	ERJ3GEYJ102V	1/10W 1K	1	
R8013	ERJ3GEYJ472V	1/10W 4.7K	1	
R8016	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8017	ERJ6GEYJ241V	1/8W 240	1	
R8018	ERJ3GEYJ220V	1/10W 22	1	
R8019	ERJ3GEYJ752V	1/10W 7.5K	1	
R8021	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8023	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R8024	ERJ3GEYJ752V	1/10W 7.5K	1	
R8028	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8029	ERJ6GEYJ241V	1/8W 240	1	
R8030, 31	ERJ3GEYJ221V	1/10W 220	2	
R8035	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8036	ERJ3GEY0R00V	1/10W 0	1	
R8041	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
X8001	H0J160500027	OSCILLATOR	1	
ZJ8001	VMC1359	EARTH SPRING	1	△
06		REP3713B		(FRONT(R) P.C.B.)
C7801	ECJ1VF1A105Z	10V 1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D7801	SLR-325MG	DIODE	1	B3ABA0000109
D7804, 05	SLR-325MG	DIODE	2	B3ABA0000109
D7806	B3ACA0000252	DIODE	1	
IR7801	B3RAD0000071	REMOTE SENSOR	1	
K7801, 02	ERJ3GEY0R00V	1/10W 0	2	
P7801	K1KA12B00136	CONNECTOR(12P)	1	
QR7801	UN2214	TRANSISTOR	1	UNR2214
QR7804-06	UN2214	TRANSISTOR	3	UNR2214
R7801	ERDS2FJ330	1/4W 33	1	
R7802	ERJ3GEYJ221V	1/10W 220	1	
R7805, 06	ERJ3GEYJ221V	1/10W 220	2	
R7807	ERJ3GEYJ391V	1/10W 390	1	
R7809	ERJ3RBD272	1/16W 2.7K	1	
R7817	ERJ3RBD272	1/16W 2.7K	1	
R7818	ERJ3RBD222V	1/16W 2.2K	1	
R7819	ERA3YED332	1/16W 3.3K	1	
R7825	ERJ3RBD272	1/16W 2.7K	1	
R7826	ERJ3RBD222V	1/16W 2.2K	1	
R7827	ERA3YED332	1/16W 3.3K	1	
R7828	ERJ3RBD562V	1/16W 5.6K	1	
S7801	EVQ11G07K	SWITCH, OPEN/CLOSE	1	
S7802	EVQ11G07K	SWITCH, SKIP-F	1	
S7809	EVQ11G07K	SWITCH, CH-DOWN	1	
S7811	EVQ11G07K	SWITCH, REC	1	
S7812	EVQ11G07K	SWITCH, STOP	1	
S7813	EVQ11G07K	SWITCH, SKIP-R	1	
S7819	EVQ11G07K	SWITCH, CH-UP	1	
S7820	EVQ11G07K	SWITCH, TIME WARP	1	
S7821	EVQ11G07K	SWITCH, PLAY	1	
S7822	EVQ11G07K	SWITCH, SELECT	1	