TOSHIBA

SERVICE MANUAL

DVD VIDEO   CD COMPACT DIGITAL VIDEO   CD COMPACT DIGITAL AUDIO   DOLBY DIGITAL   dts Digital Out   DivX®
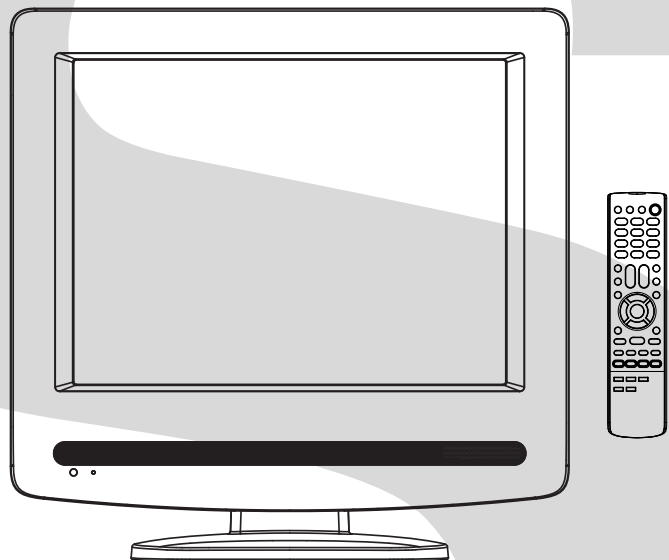
Combination 15 LCD TV and DVD Video Player TELETEXT

15SLDT2

The above model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

TOSHIBA

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Модель 15SLDT2   Руководство по эплуатации
MODEL 15SLDT2   USER GUIDE

РУССКИЙ
ENGLISH

DVD VIDEO   COMPACT DISC DIGITAL VIDEO   COMPACT DISC DIGITAL AUDIO   DOLBY DIGITAL   dts Digital Out   DivX

Только для дисков с регинальными кодами ⑤ / ALL
Region ⑤ / ALL discs only
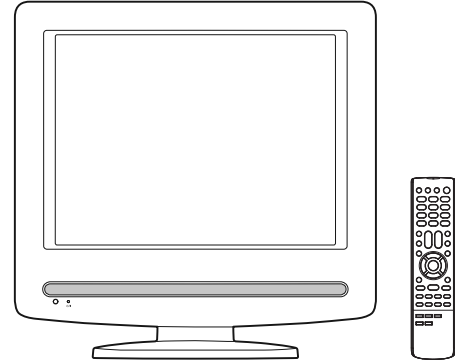
Совмещенный цветной жк телевизор с плоским 15" кинескопом DVD-проигрыватель
ТЕЛЕТЕКСТ

Combination 15 LCD TV and DVD Video Player TELETEXT

IMPORTANT
Unauthorized recording of copyright television programmes, films, video tapes and other materials may infringe on the rights of copyright owners and be contrary to copyright laws.

WARNING
To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

MAINS SUPPLY
This unit is designed to operate from AC 220V~240V 50Hz household mains supply.

CAUTION:
THIS UNIT IS A CLASS 1 LASER PRODUCT. HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE UNIT.

CLASS 1
LASER PRODUCT
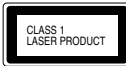
WHEN THIS UNIT IS PLUGGED INTO THE AC OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE DISC SLOT AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

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

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

Features

TV
- Auto Channel Memory
- On-Screen Programming
- Picture Control Adjustments
- Auto Power Shut Off
- On Screen 5 Language Display

DVD Player
- Digital Audio Jack (Coaxial)
- Multi-Language
- Multi-Angle
- Repeat Playback

- Memory/Random Playback
- ZOOM
- Adjustable Aspect Ratio
- Parental Control
- Digital output for Dolby Digital (AC-3) and DTS
- Playback DVD discs (Region 5 / Region All), Video CDs and Audio CDs
- MP3/JPEG/DivX® CD Playback
- PAL & NTSC DVDs playback
- A-B Repeat playback

ENGLISH

Contents

ENGLISH

NOTES ON MOISTURE CONDENSATION

Moisture condensation damages the unit. Please read the following carefully.

Moisture condensation occurs, for example, when you pour a cold drink into a glass on a warm day. Drops of water form on the outside of the glass. In the same way, moisture may condense on the head drum or the optical pick-up lens inside this unit, one of the most crucial internal parts of the unit.

■ **Moisture condensation occurs during the following cases.**
● When you bring the unit directly from a cold place to a warm place.
● When you use the unit in a room where you just turned on the heater, or a place where the cold wind from the air conditioner directly hits the unit.
● In summer, when you use the unit in a hot and humid place just after you move the unit from an air conditioned room.
● When you use the unit in a humid place.

■ **Do not use the unit when moisture condensation may occur.**
If you use the unit in such a situation, it may damage discs and internal parts. Remove the disc, connect the mains lead of the unit to the mains power outlet, turn on the unit, and leave it for two or three hours. After two or three hours, the unit will have warmed up and evaporated any moisture. Keep the unit connected to the mains power outlet and moisture condensation will seldom occur.

HEADPHONE WARNING

Loud music can damage your hearing irreversibly, therefore do not set the volume to a high level when listening through headphones, particularly for extended listening periods.

SOME DOS AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured. So, please read the points below for your own safety. They are of a general nature, intended to help you with all your electronic consumer products and some points may not apply to the goods you have just purchased.

****

DO read the operating instructions before you attempt to use the equipment.
DO ensure that all electrical connections (including the mains plug, extension leads and inter- connections between the pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug before making or changing connections.
DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.
DO be careful with glass panels or doors on equipment.
DO place the unit close to the AC outlet, and keep the mains plug within reach.

****

DON'T remove any fixed cover as this may expose dangerous voltages.
DON'T obstruct the ventilation openings of the equipment with items such as newspapers, tablecloths, curtains, etc. Overheating will cause damage and shorten the life of the equipment.
DON'T allow electrical equipment to be exposed to dripping or splashing, or objects filled with liquids, such as vases, to be placed on the equipment.
DON'T place hot objects or naked flame sources such as lighted candles or nightlights on, or close to equipment. High temperatures can melt plastic and lead to fires.
DON'T use makeshift stands and NEVER fix legs with wood screws - to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.
DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of traffic safety. It is illegal to watch television whilst driving.
DON'T listen to headphones at high volume, as such use can permanently damage your hearing.
DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a stand-by mode. Switch off using the switch on the equipment and make sure that your family know how to do this. Special arrangements may need to be made for infirm or handicapped people.
DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way -switch off, withdraw the mains plug and consult your dealer.

ABOVE ALL
---NEVER let anyone especially children push anything into holes, slots or any other opening in the case - this could result in a fatal electrical shock;
---NEVER guess or take chances with electrical equipment of any kind
---it is better to be safe than sorry! *************

ENGLISH

WHERE TO INSTALL

Locate the television away from direct sunlight and strong lights, soft, indirect lighting is recommended for comfortable viewing. Use curtains or blinds to prevent direct sunlight falling on the screen.

Place on a sturdy platform, the mounting surface should be flat and steady. It should then be secured to the wall with a sturdy tie using the clip on the back of the stand, or secured to the platform using the fixing strap located underneath the table top stand, this will prevent it from falling over.

The LCD display panels are manufactured using an extremely high level of precision technology, however sometimes some parts of the screen may be missing picture elements or have luminous spots. This is not a sign of a malfunction.

Make sure the television is located in a position where it cannot be pushed or hit by objects, as pressure will break or damage the screen, and that small items cannot be inserted into slots or openings in the case.

Sturdy tie (as short as possible)
Clip
Hooks
Screw hole
Screw
Band
Side View
Top View
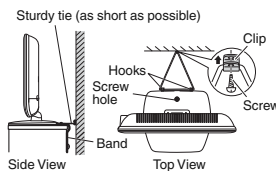
VENTILATION

The unit emits heat when in operation. Do not place any covers or blankets on the unit, this may cause overheating. Do not block ventilation holes, or set up near radiators. Do not place in direct sunshine. When placing on a shelf leave 10 cm (4 inches) free space around the entire unit.

10cm
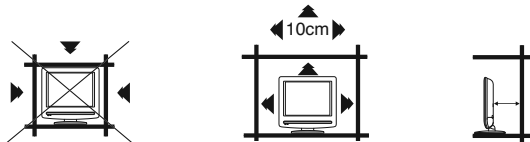
PLEASE TAKE NOTE

EXCLUSION CLAUSE

Toshiba shall under no circumstances be liable for loss and/or damage to the product caused by:
i) fire;
ii) earthquake;
iii) accidental damage;
iv) intentional misuse of the product;
v) use of the product in improper conditions;
vi) loss and/or damage caused to the product whilst in the possession of a third party;
vii) any damage or loss caused as a result of the owner's failure and/or neglect to follow the instructions set out in the owner's manual;
viii) any loss or damage caused directly as a result of misuse or malfunction of the product when used simultaneously with associated equipment;

Furthermore, under no circumstances shall Toshiba be liable for any consequential loss and/or damage including but not limited to the following, loss of profit, interruption of business, the loss of recorded data whether caused during normal operation or misuse of the product.

If stationary images generated by text services, channel identification logos, computer displays, video games, on screen menus, etc. are left on the television screen for any length of time they could become conspicuous, it is always advisable to reduce both the brightness and contrast settings.

Front

Speaker
Remote sensor
STANDBY indicator

Left side

Disc slot

⏏ (EJECT) button
◿ (Volume) +/– buttons
Ⓟ (Programme) /► (PLAY) button
Ⓟ (Programme) /■ (STOP) button
MENU button
⊙ (INPUT) button
⏻/| (On/Standby) button

Rear

AC INPUT cover

AC INPUT
HEAD PHONE jack
VIDEO/S-VIDEO/ AUDIO IN (L/R) jacks (AV2)
21 pin SCART/ PERITEL (AV1)
ANT. (antenna) jack
COAXIAL DIGITAL AUDIO OUT jack

ENGLISH

Remote control
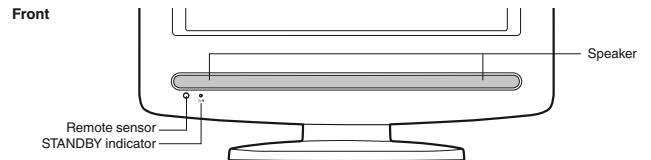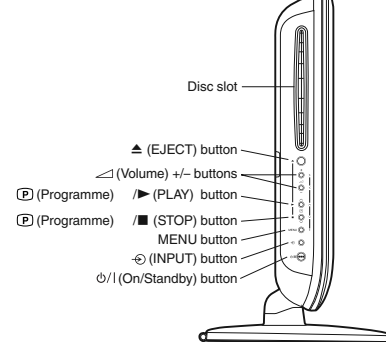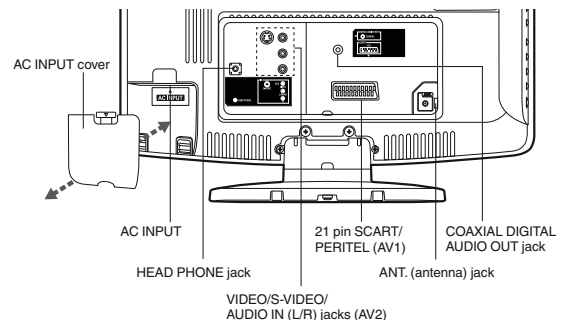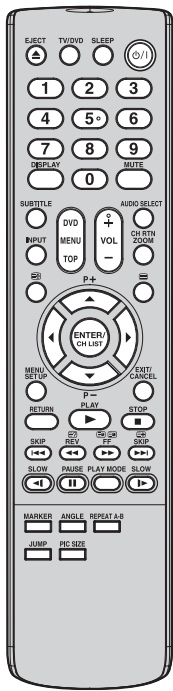
		PAGE
EJECT	Eject a disc	22
TV/DVD	Select to operate TV or DVD	12, 22
SLEEP	Sleep Timer	16
(On/Standby)	Sub Power on/off	12
0-9	Direct channel selection of TV	16
	Input setting	24, 27
	Enter a security code	39
DISPLAY	Display TV or DVD operation status	16, 30
MUTE	Mute	16
SUBTITLE	Set the Subtitle of a DVD disc	29
INPUT	Select an input source	9
DVD MENU	Select menu of a DVD disc	28
	Display JPEG thumbnail list	33
TOP MENU	Select title of a DVD disc	28
	Return to JPEG file browser	33
VOL +/–	Volume Up/Down	16
AUDIO SELECT	Change sound track language of DVD/VCD	18, 29
CH RTN	Channel return	16
ZOOM	Zoom	24
	Hold (Teletext)	17
	Teletext on/off	17
/ / /	Cursor buttons	11
P (Programme) +/–	Select channel of the TV	16
ENTER	Enter information in the menu/ Select option in the menu	12, 37
CH LIST	Display the channel list	16
MENU	Display menu of setup	12
SETUP		37
EXIT	Exit the menu screen	12
CANCEL	Cancel input data in the setting mode	24, 25, 27, 39
RETURN	Remove DVD setup menu	37, 40
PLAY	Playback	22
STOP	Stop	22
SKIP	Skip chapter/track to reverse direction	23
REV	Reverse search playback	23
	Reveal (Teletext)	17
FF	Forward search playback	23
	Sub page (Teletext)	17
SKIP	Skip chapter/track to forward direction	23
	Select text position when viewing Teletext	17
SLOW	Slow motion playback to reverse direction	23
PAUSE	Still picture	22
PLAY MODE	Select playback mode	27
SLOW	Slow motion playback to forward direction	23
Four coloured buttons (Red, Green, Yellow, Blue)	Access the Teletext	17
MARKER	Index for DVD/VCD	25
ANGLE	Change playback angle of a DVD disc	28
	Rotate JPEG picture	33
REPEAT A-B	Repeat playback between A and B	26
JUMP	Locating desired scene	24
PIC SIZE	Select picture format	19

6

Remote control

Battery installation

1 Slide the battery compartment cover in the direction of the arrow.

2 Install two "R03/AAA/UM-4" (penlight size) batteries, paying attention to the polarity diagram in the battery compartment.

3 Replace the compartment cover.
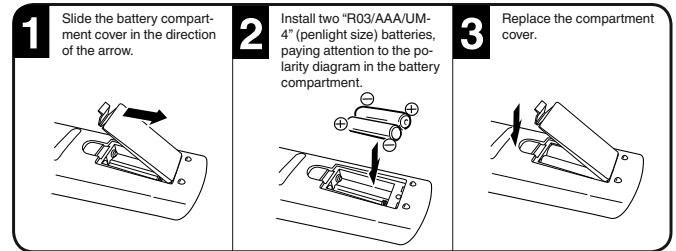
Battery cautions

- Use two "R03/AAA/UM-4" size penlight batteries for the remote control.
- If the remote control does not operate correctly, or if the operating range becomes reduced, replace batteries with new ones.
- Do not mix old and new batteries.
- Weak batteries can leak and severely damage the remote control transmitter. Always remove batteries if they become weak or if the remote control is not to be used for an extended period of time.
- Dispose of batteries in a designated disposal area. Never throw batteries into a fire.

Effective distance of the remote control transmitter

5M

30° 30°
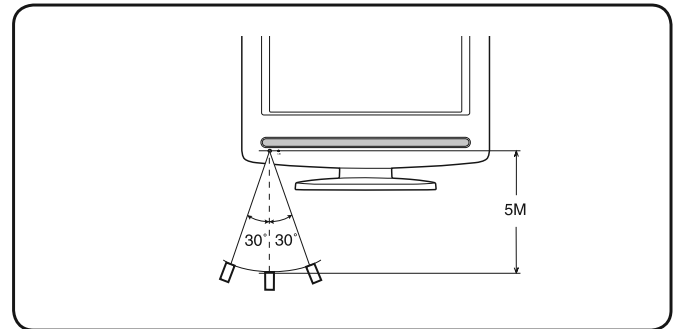
Note:
- When direct sunlight, an incandescent lamp, fluorescent lamp or any other strong light shines on the remote sensor, the remote operation may be unstable.
- When there is an obstacle between the unit and the transmitter, the remote control transmitter may not operate.

ENGLISH

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Antenna connection/Connection to Satellite Receiver

Recommended connection direction:
① Connect antenna cable first.
② Connect the SCART cable afterwards.
If the SCART cable is connected first, the connection of antenna cable becomes difficult.

Antenna connection
Connect an indoor or outdoor antenna to the antenna jack at the rear panel as shown below.
For all antenna circuit problems, please consult your local dealer.

External antenna
The type of antenna required depends on the position of your home, its distance from the transmitter and local interference. If you do not have an antenna and you are uncertain of what to buy, you should seek the advice of a local antenna contractor.

Rear of the unit

ANT. (Antenna) jack

To mains power outlet

Mains lead
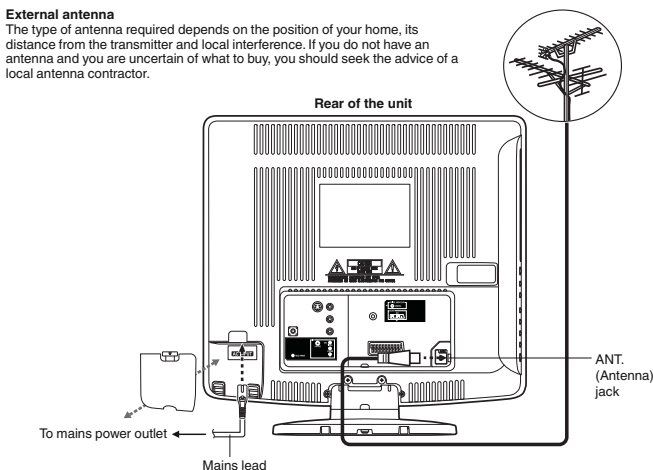
Connection to Satellite Receiver
Connect with Satellite receiver as shown below.
Select the TV-Program on the satellite receiver. To do this, use the remote control of the satellite receiver.
You cannot store the station again in the unit which already stored in satellite receiver.

Rear of the unit

Satellite Receiver

To AV1

Scart-cable (not supplied)

8
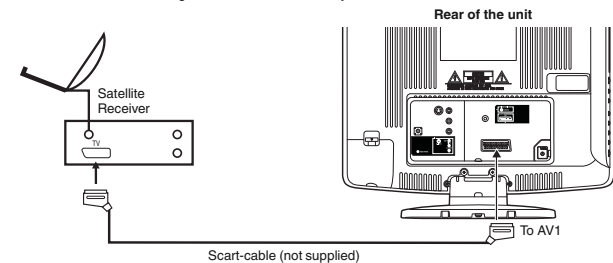
Connections to other equipment

Input Selection
Press **INPUT** to view a signal from another device connected to your unit, such as a VCR, camcorder or games console. You can select each input source depending on which input jacks you used to connect your devices.
To select the video input source, press / . Then press **ENTER** within 6 seconds.


```
INPUT SELECT
● TV
● AV1
● AV2
● DVD

EXIT : END
```
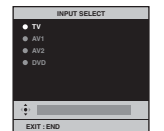
1. To connect the unit to a VCR
Select AV1 to use the TV as a monitor.

Rear of the unit

To Scart socket of VCR

Scart socket

Scart cable (not supplied)
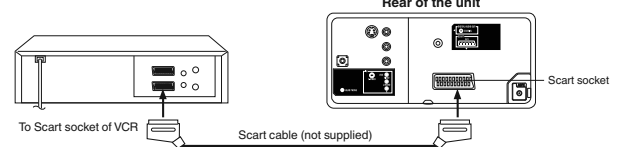
2. To connect the unit to a Video camera or a Games console

Rear of the unit

S-VIDEO cable (not supplied)

Video camera (example)

AV output

AV cable (not supplied)

To AV2
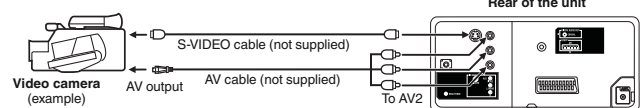
Connect the Video camera (or games console) to the TV unit using the appropriate RCA / Phono AV cables (or S-Video if applicable). Select AV2-input mode.

Note:
- If you have a camcorder with S-video, use an S-video cable instead of a standard video cable. Do not connect both a standard video cable and an S-video cable at the same time, or the picture performance will be unacceptable.
- When you input the PAL-M signal to AV2 input, select AV COLOUR setting to AUTO otherwise the monochrome images will be displayed.

3. To connect the unit to another TV set (ie. a widescreen set)
Connect this unit to the other TV set using the SCART connection.
You should select the external input setting on the other TV, eg. AV/EXT/etc.

4. Setting of Scart socket

1 Press **TV/DVD** to select the TV mode and then press **MENU**. The menu will appear on the screen. Press or to select (SETUP) menu. Press or to select AV1 OUTPUT, then press **ENTER**.

2 Press or to select TV or MONITOR.

TV: AV1 will output the channel position that the internal tuner is set to.
MONITOR: AV1 will output the picture currently displayed on the TV screen.


```
● AUTO TUNING
● MANUAL TUNING
● CH ALLOCATION
● LANGUAGE                ENGLISH
● AV1 OUTPUT              TV
● AV COLOUR               AUTO

TV

EXIT : END        MENU: RETURN
```

3 Press **EXIT** to return to the normal screen.

ENGLISH

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Connections to other equipment

The exact arrangement you use to interconnect various video and audio components to the unit is dependent on the model and features of each component. Check the Owner's Manual provided with each component for the location of video and audio inputs and outputs.

Using an AV Amplifier with built-in digital surround
If you are using an Amplifier with a built-in digital surround sound decoder (such as Dolby Digital / DTS / MPEG / etc.), you can connect it as shown below.

Rear of the unit

Coaxial Digital Audio Output
Coaxial digital cable (not supplied)
To Coaxial Digital Audio Input
AV Amplifier with built-in digital surround decoder as listed above

This unit
Front Speaker (Left)
Subwoofer
Front Speaker (Right)
Centre Speaker
Surround Speaker (Left)
Surround Speaker (Right)
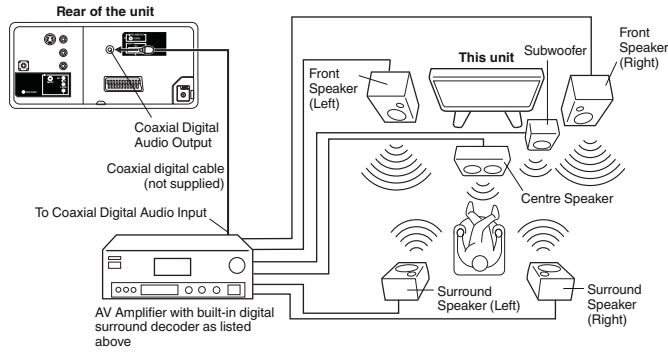
Note:
• When you make the connections above, make sure that the power of all units is switched off at the mains.
• Some DTS decoders which do not support DVD-DTS interface may not work properly with the unit.
• When playing DTS encoded material, the sound will only be available through the Coaxial Digital Audio Output jack.

Auto setup

Your unit has an Automatic installation which makes installation in your unit easy. When you turn on the unit for the first time, the Automatic installation routine is activated. Using this routine, you can select the on-screen language and automatically search for and store all available channels of suitable signal strength in the correct order.
The Automatic station presetting feature is for the set's built-in tuner only. If you have a device such as a digital decoder (eg. Satellite or Digital Terrestrial) connected (see page 8), you would need to tune it separately according to its own instructions.

Preparation:
Press ⏻/| (On/Standby) on the unit.

1 AUTO INSTALLATION menu will appear.
Press or to select LANGUAGE, then press ENTER.
Press or to select desired language. Then press ENTER.

2 Press or to select COUNTRY, then press ENTER.
Press or to select your country. Then press ENTER.

3 Press or to select AUTO TUNING, then press ENTER.

4 The confirmation messege will appear. Check the your antenna connection, then press ENTER.
Your TV will now automatically tune in all available channels.

Note:
• **Please be patient - the Auto Tuning process can take several minutes to complete.**

When the programme on the screen stops changing and the sound is heard, the search process is complete.

Note:
• To cancel the Auto Tuning, press MENU during the process.

THE AUTOMATIC TUNING PROCESS WILL ONLY START BY ITSELF THE FIRST TIME YOU SWITCH THE UNIT ON. TO RESTART AUTO TUNING, SEE PAGE 13.

ENGLISH
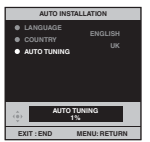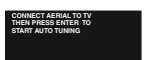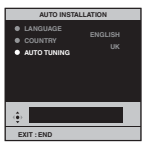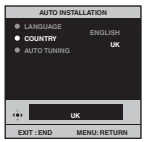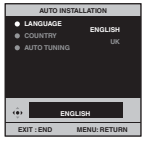
Guide to using the menu system/On-screen Language Selection

Make sure the antenna connection and mains supply are connected as per the description on page 8.

Preparation:
Turn on the unit with the ⏻/| (On/Standby) button on the unit. The ⏻/| (On/Standby) indicator will light up in green.

To change the unit to standby mode, press ⏻/| (On/Standby) on the remote control. ⏻/| (On/Standby) indicator will change from green to red. To turn on the unit from standby mode, press ⏻/| (On/Standby) on the remote control again.
In standby mode, you can also turn the unit on with Ⓟ (Programme) / on the unit or P +/– on the remote control. To turn off the unit completely, press ⏻/| (On/Standby) button on the unit and disconnect the mains power supply.

Note:
• If no buttons are pressed for more than approx. 60 seconds, the menu screen will disappear automatically.
• If you have already successfully selected your preferred language at the Auto Installation stage, you do not need to go through the procedure above.

Guide to using the menu system

1 Press TV/DVD to select the TV mode and then press MENU. The menu will appear on the screen.
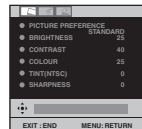
2 Press or to view the 3 menu options: (PICTURE), (AUDIO) or (SETUP).
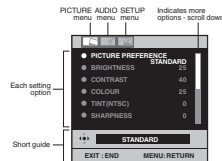
3 Press or to select whichever item you require.
The function will be activated by pressing ENTER.

Note:
• Some of the menus have more than one page of items - a scroll bar indicates that you can scroll down or up to select other items.

4 Press EXIT to return to the normal screen.

On-screen Language Selection
This unit has 5 different languages for menu set up which can be selected through the On-Screen Display: English (ENGLISH), German (DEUTSCH), Spanish (ESPAÑOL), Italian (ITALIANO) or Russian (   ).

1 Press TV/DVD to select the TV mode and then press MENU. The menu will appear on the screen.
Press or to select (SETUP) menu.

2 Press or to select LANGUAGE, then press ENTER.
Press or to select the desired language, then press ENTER.

3 Press EXIT to return to the normal screen.

Auto tuning

Perform this feature to search for and store new TV programmes after the Automatic installation (see page 11).

This unit has 18 different countries for menu set up which can be selected through the On-Screen Display: UK, Germany, France, Spain, Italy, Belgium, Netherlands, Switzerland, Austria, Portugal, Finland, Poland, Czech Republic, Hungary, Slovenia, Greece, Russia, Turkey or Other.

Preparation:
Please ensure that all the connections have been made correctly (see page 8).
If you need to restart the automatic tuning process, see the following procedure below.

1 Press TV/DVD to select the TV mode and then press MENU. The menu will appear on the screen.
Press or to select (SETUP) menu.

2 Press or to select AUTO TUNING, then press ENTER.

3 Press or to select COUNTRY, then press ENTER.
Press or to select your country, then press ENTER.

Note:
• When you select "UK", the automatic tuning will search for UHF broadcasts only.
• When you select "FRANCE", COLOUR SYSTEM is set as SECAM and SOUND SYSTEM is set as L/L' for all broadcasts.

4 Press or to select START, then press ENTER.
The automatic tuning will search for available broadcasts and store the channels in the correct order. During the search process, the sound is muted. When the auto tuning is finished, the normal TV screen will appear.

Note:
• After the automatic tuning process is finished, 48.20MHz will be set to the unused channel.

ENGLISH
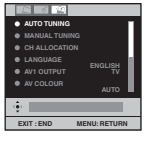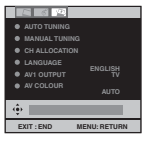
Changing the order of stored channels

The Automatic station presetting stores the stations found in a specific order. This will normally be the correct order. However, you can change the station position if you want.

1 Press **TV/DVD** to select the TV mode and then press **MENU**. The menu will appear on the screen. Press ⌃ or ⌄ to select ⊡ (SETUP) menu.

2 Press ⌃ or ⌄ to select CH ALLOCATION, then press **ENTER**.

3 Press ⌃ or ⌄ to select desired option, then press **ENTER**.

Description about each setting option:

SORT: Press ⌃ or ⌄ to select the channel that you want to move, then press **ENTER**. Press ⌃ or ⌄ to select the position that you want to move the channel to, then press **ENTER**.

ERASE PROGRAM: Press ⌃ or ⌄ to select the channel that you want to erase, then press **ENTER**.

SKIP: Press ⌃ or ⌄ to select the channel that you want to skip, then press **ENTER**. ✳ mark will appear.

CH LABEL: Press ⌃ or ⌄ to select channel that you want to rename, then press **ENTER**. Press ⌃ or ⌄ to select character, then press ◁ or ▷. The cursor will move to the next position. Press **ENTER** to set the channel label.

4 After setting each option, press **EXIT** to return to the normal screen.

Note:
• When allocating your channels, we recommend to start with CH 1 then continue with the other channels afterwards.

Manual tuning

The Auto Tuning usually stores all available stations in the reception area. If some stations have poor reception, they may not be stored - however, you can store these stations manually if you wish.

Example: Preset the ZDF on program position 2.
Preparation: Select program position 2.
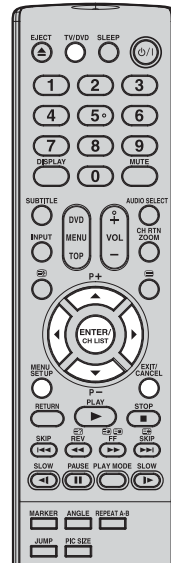
The Fine Tuning adjustment
Under a normal receiving condition, the station-search will stop automatically at the best receiving position. That picture will appear without disturbance. This receiving position will be memorized automatically. The Fine Tuning cannot be memorized additionally.
In rare case of bad receiving condition, the station-search might not stop at the best receiving position. That picture will appear with disturbance, e.g. waving lines.
Only in this rare case, use the Fine Tuning to tune the concerned station manually. Refer to step 6 on the right.

1 Press **TV/DVD** to select the TV mode and then press **MENU**. The menu will appear on the screen. Press ⌃ or ⌄ to select ⊡ (SETUP) menu.

2 Press ⌃ or ⌄ to select MANUAL TUNING, then press **ENTER**.

3 Press ⌃ or ⌄ to select COLOUR SYSTEM, then press **ENTER**. Press ⌃ or ⌄ to select AUTO, PAL or SECAM, then press **ENTER**. Please note that PAL should be selected for use in UK.

4 Press ⌃ or ⌄ to select SOUND SYSTEM, then press **ENTER**. Press ⌃ or ⌄ to select AUTO, B/G, I, D/K or L/L', then press **ENTER**.
Note:
• Select L/L' when you receive a SECAM broadcast. If you select AUTO, the broadcast cannot be received.
• Sometimes when AUTO is selected, no sound is output. If this happens, select an option other than AUTO.

5 Press ⌃ or ⌄ to select SEARCH, then press **ENTER**. Press ◁ (search for lower frequency) or ▷ (search for higher frequency). The auto search begins. It will stop at each station that has a good reception. Press ◁ or ▷ again until you receive a clear ZDF picture, then press **ENTER**.
• If you want to stop the search, press **ENTER**.

6 Press ⌃ or ⌄ to select FINE, then press **ENTER**. Press ◁ or ▷ to tune until the station is adjusted to the best position. Then press **ENTER**.

7 Repeat the steps 3 and 6 to preset other TV stations.

8 Press **EXIT** to return to the normal screen.

Basic Operation

Note:
• If the built-in tuner does not receive anything (e.g. if no antenna is connected) during TV-operation, then the unit will change to standby after approx. 15 minutes.
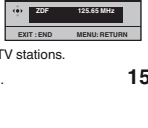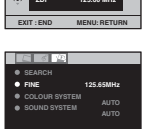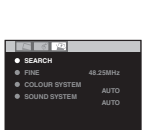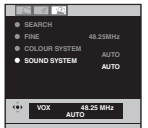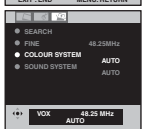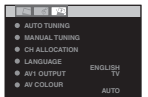
Channel selection
• With the **numbered buttons**.
Example:
No. 2: Press **0** and within 2 seconds, press **2**. The station, CH 2 will appear.
No. 29: Press **2** and within 2 seconds, press **9**. The station, CH 29 will appear.
• Press **P (Programme) +/–** to select a channel. This takes approx. 2 seconds.
If the auto search only stored 5 stations, only these 5 channels will appear. Skipped channels will not appear (see page 14).
• Press **CH LIST** to display CH LIST. Press ⌃ or ⌄ to select the desired program, then press **CH LIST** to display the selected program.

Note:
• In case that the channels exclude preset frequency in "COUNTRY" selected by "AUTO INSTALLATION" will be stored in CH LIST, those channel names are displayed as "– – – – –".

Channel return
CH RTN button allows you to go back to the last selected channel. Press this button again to return to the channel you were watching.

Volume adjusting
Press **VOL +/–** to adjust the volume. The volume level indicator disappears after 4 seconds.

MUTE
Press **MUTE**. The sound will be turned off completely. "MUTE" will appear for approx. 4 seconds. The muting can be released by pressing **MUTE** again or **VOL +/–**.

Information display
Press **DISPLAY**. Channel number and picture size setting will appear for approx. 4 seconds.

SLEEP TIMER
To set the sleep timer, press **SLEEP**. "SLEEP" and the minutes will appear. Each time you press **SLEEP**, the SLEEP time shown will change in the order of 120, 110, 100, 90, 80, 70, 60, 50, 40, 30, 20, 10, 0. After the sleep time is programmed, the display will disappear after approx. 4 seconds.
To confirm the sleep time setting, press **SLEEP** once and the remaining time will be momentarily displayed.

To cancel the sleep timer:
Press **SLEEP** repeatedly until "0" appears.

Teletext

Teletext is sent page by page. This unit is able to automatically store up to 256 pages, but they can only be accessed once they have been stored. This can take a few moments.

Fastext/TOPtext
The Fastext/TOPtext is teletext with a special directory. On the lower part of the screen there are four different coloured fields (red, green, yellow and blue). These fields lead directly to the pages shown within. The coloured buttons on the remote control correspond to the coloured fields. Press the appropriate coloured button in order to activate the desired colour field.

Switch on / off Teletext
Teletext is not transmitted to all channels. Select a channel that shows teletext. Press ▤. You will now see a teletext page. (If "100" is shown without any text information, it may mean that the channel you have selected does not support teletext.) Press ▤ again in order to switch off teletext.

TELETEXT

Note:
• You cannot select any other channels as long as teletext is switched on. Switch teletext off when you want to switch over to another channel.

Select Page
Press **P +** or **–** until the page you desire appears. Or ... enter the requested page number by using the **10 Number Buttons**.
And if you mistype something, just enter the complete 3-digit wrong page number then enter the desired number again. Or ... press one of the coloured teletext buttons so that a page from Fastext/TOPtext is shown.

Hold Pages
Some pages are divided up into subpages by the channel. Subpages are automatically shown in turn, as they are transmitted. In order to hold the page, press ▤. Press ▤ again in order to display the next subpage.

Directly Select Subpages
You can directly select the subpages if required.
Example:
Page 128 from Teletext comprises of 2 subpages. In the right upper corner you will, for example, see 1/2. That means that page one of 2 subpages is being shown at the moment.

```
128  128 ARD-Text  21.07.03  15:01:38
                                  1/2
```
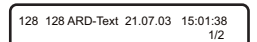
Press ▤ ▤ in order to select subpage 2. 4 dashes (– – – –) are shown. Enter **0 0 0 2**. It can take a minute before subpage 0002 appears.
Press ▤ ▤ again in order to switch off the subpage feature.
You can only select other teletext pages when the subpage feature is switched off.

Enlargement
In order to enlarge the display, press ▤. Either the upper or lower half of the screen is enlarged. Each time you press ▤ you switch between the display of the upper or lower half of the screen or the full picture.

Answering Quiz Questions
Some pages contain quiz questions with concealed answers. Press ▤ in order to show the answers.

Page 100
Press **ENTER** in order to show page 100.

Stereo reception with the built-in tuner

The built-in Tuner can detect and receive NICAM stereo broadcasts automatically.
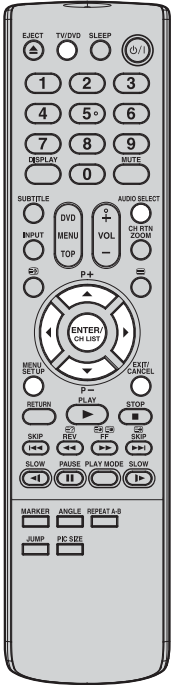
NICAM stereo sound reception:

1 Press **TV/DVD** to select the TV mode and then press **MENU**. The menu will appear on the screen.
Press or to select (AUDIO) menu.

2 Press or to select NICAM, then press **ENTER**.
Press or to select AUTO or OFF.
Select OFF if you want to revert to standard mono FM audio reception.

● NICAM	AUTO
● BASS	25
● TREBLE	25
● BALANCE	0
● RESET	

AUTO

EXIT : END   MENU: RETURN

3 Press **EXIT** to return to the normal screen.
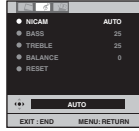
The following types of broadcast are possible with NICAM transmissions

"NICAM ST" illuminates for approx. 4 seconds when a NICAM STEREO broadcast signal is received.

NICAM ST

"NICAM M1" illuminates for approx. 4 seconds when a NICAM MONO A broadcast signal is received.

NICAM M1

"NICAM M1/M2" illuminates for approx. 4 seconds when a NICAM MONO A and MONO B broadcast signal is received.

NICAM M1 / M2

This will be displayed for approx. 4 seconds if a NICAM signal is received when the "NICAM OFF" option is selected.

NICAM OFF

Stereo reception in Germany

"STEREO" illuminates for approx. 4 seconds when a STEREO broadcast signal is received.

STEREO

When 2-channel sound reception is available, you can select your preferred audio with the AUDIO SELECT button.

Each time you press **AUDIO SELECT**, the sound channel will switch to the alternative channel available.

NICAM 2-channel sound reception (not available in Germany)

NICAM M1/M2 ⟷ NICAM M1/M2

2-channel sound reception in Germany

SOUND 1 / 2 ⟷ SOUND 1 / 2

Note:
• In case of bad reception, the stereo sound also can be disturbed.
• Sometimes if reception is poor, the NICAM stereo sound may not be received correctly. In case of 2 channel sound reception, you can select the desired sound with **AUDIO SELECT**.

Picture format/Adjusting the AV colour setting

The broadcaster may transmit a Wide Screen Signalling (WSS) signal which can determine the correct picture width and set it automatically when the AUTO setting is used. If you want to change this setting, you can select from the formats listed below.

The AV colour setting affects the AV inputs only - the TV's tuner is not affected. Please refer to page 9 for more information about connecting other equipment.
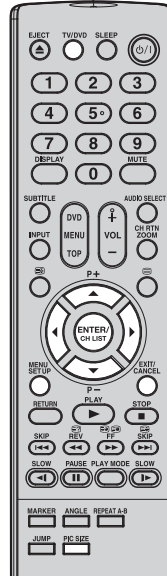
Note:
• Using the Picture format function to change the size of the displayed image (i.e. changing the height/width ratio) for the purposes of public display or commercial gain may infringe on copyright laws.

Picture format

AUTO
Press **PIC SIZE** repeatedly until AUTO appears.

Note:
• When the PICTURE SIZE is set to AUTO, the aspect ratio will automatically change according to the Wide Screen Signalling (WSS) signal, if it is available. This may be either transmitted by the broadcasting TV channel, or via a recording from a VCR etc. Any WSS signal received will only be effective in the AUTO mode - however, some DVD players / Digital Decoders etc. will automatically switch the aspect ratio via the SCART input (Pin 8 switching), even if AUTO is not selected.
In any case if you want to change to a different aspect ratio to the one selected automatically, you can change it by pressing **PIC SIZE**.

Manual format setting
Press **PIC SIZE** repeatedly to scroll through the following options.

4:3
This mode shows a 4:3 picture in its original size.

16:9
This mode is used with 16:9 signals from a Digital decoder, DVD player or other external source.
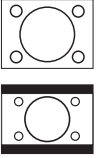
Adjusting the AV colour setting

1 Press **TV/DVD** to select the TV mode and then press **MENU**. The menu will appear on the screen.
Press or to select (SETUP) menu.

2 Press or to select AV COLOUR, then press **ENTER**.
Press or to select AUTO.

3 If AUTO option does not work, press or to select your desired colour system setting (e.g. NTSC 3.58).

● AUTO TUNING	
● MANUAL TUNING	
● CH ALLOCATION	
● LANGUAGE	ENGLISH
● AV1 OUTPUT	TV
● AV COLOUR	AUTO

AUTO

EXIT : END   MENU: RETURN

4 Press **EXIT** to return to the normal screen.

Note:
• PAL is the colour system used in Germany. NTSC 3.58 is used in the USA, PAL 60 used in Germany handled video recorders, which play NTSC video tape recording.

DVD players that play NTSC DVDs (i.e. multi-region/region code-free), can produce different signals according to each particular model - the following signals may be output from the player: PAL, SECAM, NTSC 3.58, NTSC4.43 and PAL60. If possible, select RGB on the DVD player as the output signal instead of any of these types, and connect the DVD player to TV with a SCART cable.

Other convenience functions

You can change the default settings to convenience use.

Icon	Selected Items		Setup hint
	PICTURE PREFERENCE	SPORTS	Bright and dynamic picture (factory-set)
		STANDARD	Standard picture quality (factory-set)
		MOVIE	Movie-like picture setting (factory-set)
		MEMORY	Your personal preferences
	BRIGHTNESS / CONTRAST / COLOUR / TINT(NTSC)/ SHARPNESS		You can adjust the picture to your preference. The "TINT(NTSC)" option can be selected if an NTSC 3.58MHz or NTSC 4.43MHz signal is input through one of the AV sockets, and NTSC or AUTO has been selected for the AV COLOUR option.
	COLOUR TEMPERATURE		Bluish (COOL) / Neutral (MEDIUM) / Reddish (WARM)
	BLUE BACK	ON / OFF	You can set the TV to automatically change to a blue screen and mute the sound if the signal is weak or absent.
	BACKLIGHT		You can use the Back light feature to adjust the screen brightness for improved picture clarity.
	RESET		Select "RESET" to reset PICTURE PREFERENCE, BRIGHTNESS, CONTRAST, COLOUR, TINT(NTSC), SHARPNESS, COLOUR TEMPERATURE and BACKLIGHT to the factory preset values.
	NICAM		See page 18.
	BASS / TREBLE / BALANCE		You can adjust the sound quality to your preference.
	RESET		Select "RESET" to reset BASS, TREBLE and BALANCE to the factory preset values.
	AUTO TUNING		See page 13.
	MANUAL TUNING		See page 15.
	CH ALLOCATION		See page 14.
	LANGUAGE		See page 12.
	AV1 OUTPUT		See page 9.
	AV COLOUR		See page 19.
	RESET TV SETTING		Press **ENTER** to enter the RESET TV SETTING screen. Press ▲ or ▼ to select "YES", then press **ENTER**. Reset the TV function will now begin, and this unit will automatically turn off.

Disc

The region number of this unit is 5. If region numbers, which stand for their playable area, are printed on your DVD video disc and you do not find or , disc playback will not be allowed by the player. (In this case, the unit will display an error message on-screen.)

Playable Discs
• The loaded Disc (DVD-Video, Video-CD, Audio-CD and MP3/JPEG/DivX®-CD) will be recognized automatically.
• The suitable Disc-formats are: DVD, DVD-R/RW (Video format only), CD, and CD-R/RW.
  Some DVD-R/RW and CD-R/RW discs may be incompatible.
• Do not play DVD-ROM, DVD-Audio, CDV, CD-G or Photo CD to prevent accidental erasure of pre-recorded material.
• This unit can play an 8cm disc. Please do not use a disc adapter. It may cause trouble.
• Please do not insert any disc of an irregular shape into the unit, as it may interfere with the function of the unit. You may not be able to remove it.
• Please do not use after market accessories, such as a ring protector, as this may cause trouble with the operation of the unit.
• Some DVDs are copy protected and forbid dubbing onto video tape. Picture distortion will occur. This is not a defect of this unit.

Title
When two or more movies are recorded on a disc, the disc is divided into two or more sections. Each section is called a "TITLE".
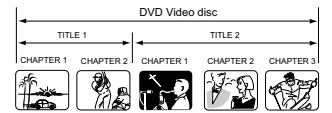
Chapter
The titles can be subdivided into many sections. Each section is called a "CHAPTER".

DVD Video disc

TITLE 1   TITLE 2

CHAPTER 1 CHAPTER 2 CHAPTER 1 CHAPTER 2 CHAPTER 3

Track
Video CD/audio CD can contain several items. These are assigned to tracks.

Video-CD/Audio-CD

TRACK 1 TRACK 2 TRACK 3 TRACK 4 TRACK 5

On handling Discs
• Do not touch the playback side of the disc.
• Do not attach paper or tape on the discs.

Removing Disc from Case
Be sure to hold the edge of disc. Do not touch the surface of the disc. Pick up the disc gently from the case.
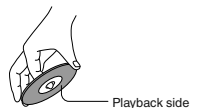
• Do not scratch the disc.
• Do not get dirt on the surface of the disc.
• Do not stick a label or adhesive tape on the disc.
• Do not drop or bend the disc.

On Storing Discs
• Store the disc in the case to avoid risk of scratches, dirt or damage.
• Do not leave disc exposed to direct sunlight or in hot or humid places.

On Cleaning Discs
Fingerprints and dust on the disc may cause picture and sound deterioration. Wipe the disc from the centre outwards with a soft cloth. Always keep the disc clean.
• If you cannot wipe off the dust with a soft cloth, wipe the disc lightly with a slightly moistened soft cloth and finish with a dry cloth.
• Do not use any type of solvent such as thinner, benzine, commercially available cleaners or antistatic spray for vinyl LPs. It may damage the disc.

Playback side

Playing a disc

This section shows you the basics on how to play a disc.
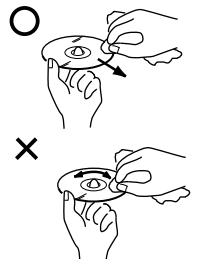
Basic playback (DVD/VCD/Audio CD)

Preparation:
When you want to enjoy the sound of discs from the audio system, turn on the audio system and select the input connected to the unit.

1 Press ⏻/| (On/Standby) to turn on the unit.
The STANDBY indicator on the front of the unit will light up in green.

2 Press TV/DVD on the remote control to select the DVD mode.
The DVD startup screen will appear on the screen.

3 Load a disc in the disc slot.
- Load the disc in the disc slot with the label side facing forward. (If the disc has a label.) Hold the disc without touching either of its surfaces, align it with the guides, and place it in position.
- If a disc is inserted during some modes other than DVD mode, it may switch to DVD mode and then playback may be begun automatically.
- Do not load a disc which is unplayable in this unit.

4 On the TV-screen, "⏏" changes to "Reading" and then playback commences.
- A menu screen will appear on the TV screen if the disc has a menu feature.
- Press ▲/▼/◄/► to select title, then press ENTER.
  Title is selected and play commences.

CAUTION
Keep your fingers well clear of the disc slot when disc is loading or unloading. Neglecting to do so may cause serious personal injury.

5 Press STOP to end playback.
- The unit records the stopped point, depending on the disc. "▶" appears on the screen. Press PLAY to resume playback (from the scene point).
- If you press STOP again (" ■ " appears on the screen.), the unit will clear the stopped point.

■ **To start playback in the stop mode**
Press PLAY.

■ **To pause playback (still mode)**
Press PAUSE during playback.
To resume normal playback, press PLAY.
- The sound is muted during still mode.

■ **To stop playback**
Press STOP.

■ **To remove the disc**
Press EJECT.
Remove the disc after the disc comes out.

Note:
- **If the unit does not operate properly:**
  Static electricity, etc., may affect the player's operation.
  Disconnect the mains lead once, then connect it again.

You can play discs at various speeds.

Playing in fast reverse or fast forward directions (DVD/VCD/Audio CD)

Press REV or FF during playback.

REV / FF
REV: Fast reverse playback
FF: Fast forward playback

- Each time you press REV or FF, the playback speed changes.
- **To resume normal playback**
  Press PLAY.

Note:
- The unit mutes sound during reverse and forward scan of DVD/VCD/Audio CD discs.
- The playback speed may differ depending on the disc.
- You can use fast reverse/fast forward playback for DivX® CD.

Playing frame by frame (DVD/VCD)

Press PAUSE during still playback.

PAUSE

- Each time you press PAUSE, the picture advances one frame.
- **To resume normal playback**
  Press PLAY.

Note:
- The sound is muted during frame by frame playback.
- You can use frame by frame playback for DivX® CD.

Playing in slow-motion (DVD/VCD)

Press SLOW ◄I (Reverse) or I► (Forward) during playback.

SLOW / SLOW

- Each time you press the button, the slow-motion speed changes.
- **To resume normal playback**
  Press PLAY.

Note:
- The sound is muted during slow-motion playback.
- You can use slow motion playback for DivX® CD.
- Reverse slow does not work on VCD.

Locating a chapter or track (DVD/VCD/Audio CD)

Press SKIP I◄◄ or ►►I repeatedly to display the chapter or track number you want.
Playback starts from the selected chapter or track.

SKIP ►►I — To locate succeeding chapters or tracks.

SKIP I◄◄ — Playback starts from the beginning of the current chapter or track. When you press twice in quick successions, playback starts from the beginning of the preceding chapter or track.

Note:
- If a non-compatible disc is loaded, "Incorrect Disc", "Region Code Error" or "Parental Error" will appear on the TV screen according to the type of loaded disc. In this case, check your disc again (see pages 21 and 39).
- Some discs may take a minute or so to start playback.
- When you set a single-faced disc label downwards (i.e. the wrong way up), "Reading" will appear on the display for a few minutes and then "Incorrect Disc" will continue to be displayed.
- Some discs may not work the resuming facility.
- Resuming cannot function when you play a PBC-featured Video CD while the PBC is on. To turn off the PBC, see page 30.
- Some playback operations of DVDs may be intentionally fixed by software producers. Since this unit plays DVDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs.
- Do not move the unit during playback. Doing so may damage the disc.
- Use the EJECT button to unload and eject the disc.
- Do not put any objects other than discs on the disc slot. Doing so may cause the unit to malfunctions.
- In many instances, a menu screen will appear after playback of a movie is completed. Prolonged display of an on-screen menu may damage your television set, permanently etching that image onto its screen. To avoid this, be sure to press ⏻/| (On/Standby) on the remote control once the movie is completed.
- There may be a slight delay between the button is pressed and the function activates.
- A prohibition symbol "✕" may appear at the upper right of the screen. This symbol means either the feature you tried is not available on the disc, or the unit cannot access the feature at this time. This does not indicate a problem with the unit.

■ **To obtain a higher quality picture**
Occasionally, some picture noise not usually visible on the TV screen during a normal broadcast may appear while playing a DVD video disc. It is due to high resolution pictures on these discs which include a lot of information. The amount of noise depends on the TV you use with this unit. You should generally reduce the sharpness adjustment on your TV when viewing DVD video discs.

ENGLISH

Zooming/Locating desired scene

Zooming (DVD/VCD)

This unit will allow you to zoom in on the frame image. You can then make selections by switching the position of the frame.

1 Press ZOOM during playback.
CH RTN ZOOM
The centre part of the image will be zoomed in.
Each press of ZOOM will change the ZOOM ⊕1 (x 1.3), ⊕2 (x 1.5) and ⊕3 (x 2.0).

2 Press ▲/▼/◄/► to view a different part of the frame.
You may move the frame from the centre position to UP, DOWN, LEFT or RIGHT direction.

3 In the zoom mode, press ZOOM repeatedly to return to a 1:1 view (⊕ Off).
CH RTN ZOOM

Note:
- You can select the Pause or Slow in the zoom mode.
- Some discs may not respond to zoom feature.
- Zoom function can be used for DivX® CD.

Locating desired scene (DVD/VCD/Audio CD)

Use the title, chapter and time recorded on the DVD disc to locate the desired point to playback. In the case of VCD/CD discs, time and track are used to locate the desired point to playback. To check the title/track, chapter and time, press DISPLAY.

1 Press JUMP during playback or resume stop mode.
JUMP

Jump
Title
Chapter
Time

2 Press ▲ or ▼ to select the "Title/Track", "Chapter" or "Time".

Jump
Title
Chapter
Time

3 Press Number buttons (0–9) to input the number.
1 2 3
4 5 6
7 8 9
0

Jump
Title
Chapter 12
Time

- If you input a wrong number, press CANCEL.
- Refer to the package supplied with the disc to check the numbers.

4 Press ENTER. Playback starts.
- When you change the title, playback starts from Chapter 1 of the selected title.
- Some discs may not work in the above operation.

Note:
- In case of the Audio CD and Video-CD, only Track and Time can be selected.
- In case of the Video-CD playback with PBC, the JUMP does not work. Turn off the PBC (see page 30).
- Only Time search function can be used for DivX® CD.

The unit stores the points that you want to watch again up to 3 points.
You can resume playback from each scene.

Marking the scenes (DVD/VCD/Audio CD)

1 Press MARKER during playback.
MARKER

Marker 1 —— : —— : ——
Marker 2 —— : —— : ——
Marker 3 —— : —— : ——

2 Select the blank Marker using ▲ or ▼. Then press ENTER at the desired scene.
- Repeat this procedure to set the other 2 scenes.

Marker 1 00 : 27 : 54
Marker 2 —— : —— : ——
Marker 3 —— : —— : ——

3 Press MARKER to clear this display.
MARKER

Note:
- Some discs may not work with the marking operation.
- The marking is cancelled when you eject the disc or turn the power off.
- Some subtitles recorded around the marker may fail to appear.
- In case of Video CD with PBC, Marker function is prohibited.
- Marker function does not work with MP3/JPEG/DivX® CD.

Returning to the scenes (DVD/VCD/Audio CD)

1 Press MARKER during playback or stop mode.
MARKER

Marker 1 00 : 27 : 54
Marker 2 01 : 16 : 25
Marker 3 02 : 08 : 31

2 Press ▲ or ▼ to select the Marker 1-3.

Marker 1 00 : 27 : 54
Marker 2 01 : 16 : 25
Marker 3 02 : 08 : 31

3 Press ENTER.
Playback starts from the marked scene.

■ **To cancel the Marker**
Follow the above steps 1~2, then press CANCEL.

ENGLISH

Repeat playback/A-B Repeat playback

Repeat playback (DVD/VCD)

1 Press **PLAY MODE** during playback or stop mode.

PLAY MODE

2 **[DVD]**
Press **ENTER** repeatedly to select "Chapter" or "Title".

Play Mode	
Repeat	: Off

The unit automatically starts repeat playback after finishing the current title or chapter.

[Video CD]
Press ▼ to select "Repeat".
Press **ENTER** repeatedly to select "Track" or "All".

Play Mode	
Mode	: Off
Repeat	: Off
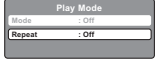
The unit automatically starts repeat playback after finishing the current track.

• If you set the repeat mode during stop mode, press **PLAY** to start Repeat playback.

3 Press **PLAY MODE** again to clear the screen.

■ **To resume normal playback**
Select Repeat : "Off" in step 2.

Note:
• Some discs may not work with the repeat operation.
• In case of Video CD with PBC, Repeat function is prohibited during playback.
• Chapter/Track repeat function is cancelled whenever **SKIP** |◄◄ or ►►| is pressed.

A-B Repeat playback (DVD/VCD/Audio CD)

A-B repeat playback allows you to repeat selection between two selected points.

1 Press **REPEAT A-B** during playback.

REPEAT A-B

The start point is selected.

🔲A-

2 Press **REPEAT A-B** again.

REPEAT A-B

The end point is selected. Playback starts at the point that you selected. Playback stops at the end point and returns to Point A automatically, then starts again.

🔲A-B

■ **To resume normal playback**
Press **REPEAT A-B** again.

REPEAT A-B   "🔲Off" appears on the screen.

Note:
• In A-B Repeat mode, subtitles near the A or B locations may not be displayed.
• You may not be able to set A-B Repeat for the scenes that include multiple angles.
• A-B Repeat playback does not work when Repeat playback is activated.
• You may not be able to set A-B Repeat during certain scenes of the DVD.
• A-B Repeat does not work with an interactive DVD and MP3/JPEG CDs.
• In case of Video CD with PBC, A-B Repeat is prohibited.

Program playback/Random playback

You can arrange the playback order of tracks on the disc and the unit can also select tracks at random and play them back. These features work for Video CD.

For Audio CD and MP3/JPEG/DivX® CD, please see "Random playback (Audio CD/MP3/JPEG/DivX®)" on page 35 and "Program playback (Audio CD/MP3/JPEG/DivX®)" on page 36.

Program playback (VCD)

1 Press **PLAY MODE** during stop mode.

PLAY MODE

Play Mode		
Mode	: Off	1 ----
Repeat	: Off	2 ----
Program Playback		3 ----

2 Press ▲/▼ to select "Mode", then press **ENTER** repeatedly to select "Program".

Play Mode		
Mode	: Program	1 ----
Repeat	: Off	2 ----
Program Playback		3 ----

3 Press ▲/▼/◄/► to select the programming position. Use Number buttons (0–9) to input the track numbers.

• If you input a wrong number, press **CANCEL.**

Play Mode		
Mode	: Program	1 9
Repeat	: Off	2 ----
Program Playback		3 ----

4 Press ◄/► to return to the left column, then press ▲/▼ to select the "Program Playback" and press **ENTER**.

The programs you selected will start to playback in order.

• To resume normal playback, select Mode: "Off" in step 2.

Play Mode		
Mode	: Program	1 9
Repeat	: Off	2 3
Program Playback		3 11

To change the program
1. Select Mode to "Program" (as step 2), press ◄/►/▲/▼ to select the track number you want to change, then press **CANCEL**.
2. Press **Number buttons (0–9)** to input the new track number.

To clear the program one by one
Select Mode to "Program", press ◄/►/▲/▼ to select the track number. Then press **CANCEL**.

To clear all the programs
At the left column, press ▲/▼ to select "Clear Program". Then press **ENTER**.

Note:
• In case of Video CD with PBC, you cannot set Program playback.
• The program is cancelled when you eject the disc or turn the power off.

Random playback (VCD)

1 Press **PLAY MODE** during playback or stop mode.

PLAY MODE

2 Press ▲/▼ to select "Mode", then press **ENTER** repeatedly to select "Random".

Play Mode		
Mode	: Random	1 ----
Repeat	: Off	2 ----
Program Playback		3 ----

3 Press **PLAY**.

PLAY ►   The Random Playback will start.

• If you set "Random" during playback mode, Random playback will begin after the track that is currently being played has ended.
• To resume normal playback, select Mode: "Off" in step 2.

Note:
• In case of Video CD with PBC, you cannot set Random function during playback.

Changing angles/Title selection/DVD menu

Changing angles (DVD)

When playing back a disc recorded with multi-angle facility, you can change the angle that you are viewing the scene from.

1 Press **ANGLE** during playback.

ANGLE

The current angle will appear.

🎥 1/2

2 Press **ANGLE** repeatedly until the desired angle is selected.

ANGLE

Note:
• Depending on the DVD, you may not be able to change the angle even if multi-angles are recorded on the DVD.

Title selection (DVD)

Two or more titles are recorded on some discs. If the title menu is recorded on the disc, you can select the desired title.

1 Press **TOP MENU** during playback.

DVD MENU TOP

Title menu appears on the screen.

2 Press ▲/▼/◄/► to select the desired title.

3 Press **ENTER** or **PLAY**.

The playback of the selected title will start.

PLAY ►

Note:
• Depending on the DVD, you may not be able to select the title. Depending on the DVD, a "title menu" may simply be called a "menu" or "title" in the instructions supplied with the disc.

DVD menu (DVD)

Some DVDs allow you to select the disc contents using the menu.
When you playback these DVDs, you can select the subtitle language, soundtrack language, etc, using the menu.

1 Press **DVD MENU** during playback.

DVD MENU TOP

The DVD menu appears on the screen.
• Press **DVD MENU** again to resume playback at the scene when you pressed **DVD MENU**.

2 Press ▲/▼/◄/► to select the desired item.

3 Press **ENTER**.

The menu continues to another screen. Repeat steps 2 and 3 to set the item completely.

Note:
• Depending on the DVD, you may not be able to resume playback from the scene point when you press **DVD MENU**.

Changing soundtrack language/Subtitles

Changing soundtrack language (DVD/VCD)

You can select the language when you play a multilingual disc.

1 Press **AUDIO SELECT** during playback.

AUDIO SELECT

The current soundtrack language will appear.

🔊 1/2 Eng Dolby Digital
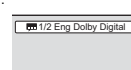
2 Press **AUDIO SELECT** repeatedly until the desired language is selected.

AUDIO SELECT

🔊 2/2 Fre Dolby Digital
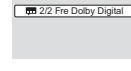
• The on screen display will disappear after a few seconds.

■ **In case of Video CD playback**
Audio type changes as follows each time you press **AUDIO SELECT**.

► LR ➡ ► L ➡ ► R

Note:
• If the desired language is not heard after pressing the button several times, the language is not recorded on the disc.
• The selected soundtrack language is cancelled when you eject the disc. The initial default language or available language will be heard if the disc is played back again.
• If you select DTS in playing DTS-encoded disc, no sound will be heard.

Subtitles (DVD)

When playing back a disc recorded with subtitles, you can select the subtitle language or turn the subtitle off.

1 Press **SUBTITLE** repeatedly during playback until the desired language is selected.

SUBTITLE

💬 1/5 Eng
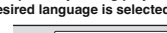
2 To turn off the subtitle, press **SUBTITLE** until "Off" appears.

SUBTITLE

💬 Off
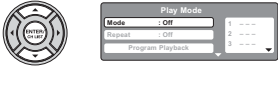
• The on screen display will disappear after a few seconds.

Note:
• Depending on the DVD, you may not be able to change subtitles, or to turn subtitles on or off.
• While playing a DVD, the subtitle may change when you loaded or eject the disc.
• In some cases, a selected subtitle language may not be changed immediately.

To turn off the PBC/Disc status

To turn off the PBC (VCD)

1 Press PLAY MODE in the stop mode.

PLAY MODE

2 Press ▲/▼ to select "Mode", then press ENTER repeatedly until "Off" appears.

ENTER

Play Mode		
Mode	: Off	1 ----
Repeat		2 ----
Program Playback		3 ----

3 Press PLAY MODE again to clear the screen.

■ **To turn on the PBC**
Follow the above steps 1~2, then press **ENTER** repeatedly until "PBC" appear.

Disc status (DVD/VCD)

With press of DISPLAY, the status of the disc will appear on the screen.
To cancel the display, press DISPLAY again.

DISPLAY

[DVD]

DISC OPERATION — ELAPSED TIME — TOTAL TIME

TITLE NO.

DVD   00:15:25 01:41:35
Title 1/3   Chapter 2/24
1/1 Eng Dolby Digital   1/2 Eng
1/1

— CHAPTER NO.

ANGLE NO.

SUBTITLE LANGUAGE

AUDIO LANGUAGE   A KIND OF AUDIO

[Video CD]

DISC OPERATION — ELAPSED TIME — TOTAL TIME

VCD   00:08:32 00:51:83
Track 3/15

TRACK NO.

30
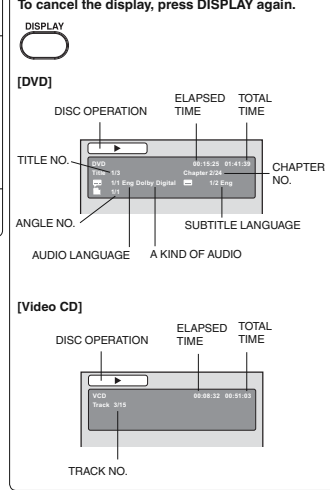
MP3/JPEG/DivX® and Audio CD operation

This unit can play back the MP3/JPEG/DivX®-data which has been recorded on CD-R or CD-RW. Audio CD also can be played back. To produce the MP3/JPEG/DivX®-data, you need a Windows-PC with CD-RW drive and a MP3/JPEG/DivX®-encoding Software (not supplied). The Apple-HFS-System cannot be played.

Note:
• This unit requires discs/recordings to meet certain technical standards in order to achieve optimal playback quality. Pre-recorded DVDs are automatically set to these standards. There are many different types of recordable disc formats (including CD-R containing MP3 files). Given the fact that technology in this area is still maturing, Toshiba cannot guarantee that all genre of recordable discs will produce optimal playback quality. The technical criteria set out in this owner's manual are meant as a guide only.
Please be advised that you must obtain permission from the applicable copyright owners to download copyrighted content, including music files, in any format, including the MP3 format, prior to the downloading thereof. Toshiba has no right to grant and does not grant permission to download any copyrighted content.

MP3/JPEG/DivX® CD data information

Limitations on MP3/JPEG/DivX® CD playback
• MP3/JPEG/DivX® CD is the disc that is standardized by ISO9660, its file name must include 3-digits extension letters, ".mp3", ".jpg", ".div", ".divx", ".avi".
• MP3/JPEG/DivX® CD must be corresponded to the ISO standardized files.
• This unit can read 2000 files per disc. If one disc has more than 2000 files, it reads up to 2000 files, the remaining files will be omitted.
• MP3/JPEG/DivX® CDs cannot be used for the purpose of recording.
• If the CD has both audio tracks and MP3/JPEG/DivX® files, only audio tracks are played.
• It may take more than one minute for this unit to read MP3/JPEG/DivX® files depending on its structure.
• Music recorded by "Joliet Recording Specification" can be played back, the file name is displayed (within 15 letters) on the screen. Long file names will be condensed.
• The music files recorded by "Hierarchical File System" (HFS) cannot be played.

Limitations on display
• The maximum number for display is 15 letters.
Available letters for display are the following:
capital or small alphabets of A through Z, numbers of 0 through 9, and _ (under score).
• Other letters than those above are replaced in hyphen.

To playback MP3/JPEG/DivX® CD in the recorded order
1. Use MP3/JPEG/DivX® software that records data alphabetically or numerically.
2. Name each file including two-digit or three-digit number (ex. "01" "02" or "001" "002").
3. Refrain from making too many sub-folders.

CAUTION:
• Some MP3/JPEG/DivX® CDs cannot be played back depending on the recording conditions.
• The CD-R/RW that has no music data or non MP3/JPEG/DivX® files cannot be played back.

Standard, sampling frequency and the bit rate:
MP3
  MPEG-1 Audio
  32kHz, 44.1kHz, 48kHz
  32kbps ~ 320kbps (constant bit rate or variable bit rate)
  The recommend recording setting for a high-quality sound is 44.1kHz of sampling frequency and 128kbps of constant bit rate.
DivX® video
  DivX® version: DivX® 3, 4, 5, and 6 (specifically 3.1.1, 4.1.2, 5.0.2, 5.0.5, 5.1.1, 5.2.1, 6.0 at Home Theater profile).
  Audio format: MPEG1 Layer2 (MP2), MPEG1 Layer3 (MP3)
  Sampling frequencies: 32kHz, 44.1kHz, 48kHz
  Bit rate: 32kbps ~ 320kbps
  Resolution: Max 720 x 576 (at 25fps), Max 720 x 480 (at 30fps)

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MP3/JPEG/DivX® and Audio CD operation

MP3 and Audio CD playback

1 Load an Audio CD or a disc on which MP3 files have been recorded in the disc slot.

2 A file browser screen will appear on the screen.

3 Press ▲/▼ to select file.

ENTER

• In case the current directory includes more than 8 files, press ▲ or ▼ to scroll in the file list.
• To see contents in folder, select the folder and then press **ENTER**. To return to the parent directory, select "⏏ Go Up ..." then press **ENTER**.
• When **PLAY** is pressed after the file browser displayed, playback begins automatically starting from the first file. In this case, if the first file is an MP3 file, only MP3 files are played back in order. If the first file is a JPEG file, the first JPEG file is played back. If the first file is a DivX® file, the first DivX® file is played back. If there is no file at a root directory, playback does not begin automatically.

4 Press ENTER.
The selected file starts playing back.

ENTER

5 Press STOP to end playback.

STOP

• The unit records the stopped point. "▶" appears on the screen. Press **PLAY** to resume playback (from the scene point).
• If you press **STOP** again or unload the disc, the unit will clear the stopped point.

About file browser

Operation status   Scroll indicator   Selected file name

3/15 00:00:00
/Folder-1/MP3-7.MP3

♪ MP3-5
♪ MP3-6
♪ MP3-7
♪ MP3-8
🖼 Picture-1
🖼 Picture-2
🎞 Movie-1
🎞 Movie-2

Select Files
Repeat   :Off
Mode   :Off

Music Playing

File list   Tool kit window

Cursor   Preview window

♪ : Indicates Music file (Audio CD/MP3)
🖼 : Indicates Picture file (JPEG)
🎞 : Indicates Movie file (DivX® video)
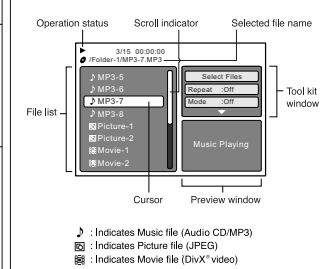
Note:
• In the case of a CD containing a mixture of MP3, JPEG and DivX® files, the files are played back by selecting them from the file browser.
• MP3 file on the Kodak Picture CD is not recognized on this unit.

Note:
• During MP3 playback, you cannot use Jump and A-B Repeat functions.
• You can use Repeat (Track or All), Random and Program playback for MP3 playback (see "Repeat, random and program playback using file browser" on pages 35 and 36).
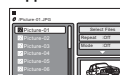
■ **Select Files**
The file type to make it display in the file browser can be chosen.
1. Press ◄ or ► to select "Select Files" at right column in the file browser.
2. Press **ENTER**, then press ▲ or ▼ to select file type from the list (Music, Picture or Movie).
3. Press **ENTER** to add/remove check mark. Checked file type will be displayed in the file browser.
4. Press **RETURN** to save the setting.

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MP3/JPEG/DivX® and Audio CD operation

JPEG playback

1 Load a JPEG disc in the disc slot.

2 A file browser screen will appear on the screen.

Picture-01.JPG

🖼 Picture-01   Select Files
🖼 Picture-02   Repeat   :Off
🖼 Picture-03   Mode   :Off
🖼 Picture-04
🖼 Picture-05
🖼 Picture-06
🖼 Picture-07
🖼 Picture-08

3 Press ▲/▼ to select the file.
To display a thumbnail list, press **DVD MENU**.
Press ◄/►/▲/▼ to select the desired file.
(To return to the file browser, press **TOP MENU**.)

ENTER   DVD MENU   TOP

• When **PLAY** is pressed after the file browser displayed, playback begins automatically starting from the first file. In this case, if the first file is a JPEG file, the first JPEG file is played back. If the first file is a DivX® file, the first DivX® file is played back. If the first file is an MP3 file, only MP3 files are played back in order. If there is no file at a root directory, playback does not begin automatically.

4 Press ENTER or PLAY. The selected picture appears on the screen.

ENTER   PLAY

Rotating an image
You can rotate an image by 90 degrees.
Press **ANGLE** during playback of the image.
"🔄→", "🔄", "←🔄" or "🔄" appears on the screen.

Zooming an image
Zoom function also can be used in viewing JPEG files. Press **ZOOM** (see "Zooming (DVD/VCD)" on page 24).

5 Press STOP to end playback.

STOP   The file browser appears on the screen. If you want to watch the other file, repeat steps 3 ~ 4.

Slide show playback
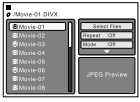
The slide show enables you to view pictures (files) one after another automatically.
Preparation:
Set "JPEG Interval" setting to "5 Seconds", "10 Seconds" or "15 Seconds" (see page 38).

1 Select your desired starting file for the slide show in step 3 on the left.

2 Press ENTER or PLAY to start slide show from the selected file.

ENTER   PLAY

• If you press **PAUSE** during the slide show, the slide show stops temporary. " ‖ " appears briefly on the screen.
Press **PLAY** or **SKIP** ►► again to resume the slide show.
• If the picture appears upside down or sideways, press **ANGLE** repeatedly until it's right side up.
"🔄→", "🔄", "←🔄" or "🔄" appears on the screen.
• When the slide show playback finished, the file list appears.
• To stop the slide show, press **STOP**.
The file browser appears.

Note:
• During JPEG playback, you cannot use Jump and A-B Repeat functions.
• When an image exceeds 5760 x 3840 pixels, the entire image (preview window or thumbnail list) may not be displayed on a screen.
• It may have a longer interval due to the size of data.

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MP3/JPEG/DivX® and Audio CD operation

DivX® playback

1 Load a disc on which DivX® files have been recorded in the disc slot.

2 A file browser screen will appear on the screen.

3 Press ▲/▼ to select file.

- When **PLAY** has been pressed after the file browser displayed, playback begins automatically starting from the first file. In this case, if the first file is a JPEG file, the first JPEG file is played back. If the first file is a DivX® file, the first DivX® file is played back. If the first file is an MP3 file, only MP3 files are played back in order. If there is no file at a root directory, playback does not begin automatically.

4 Press ENTER or PLAY. The selected DivX® movie will be played back on the screen.

5 Press STOP to end playback.

- The unit records the stopped point. "▶" appears on the screen. Press **PLAY** to resume playback (from the scene point).
- If you press **STOP** again or unload the disc, the unit will clear the stopped point. To watch the other file, repeat steps 3 ~ 4.

Note:
- This unit cannot playback DivX® file with WMA sound.

Playing DivX® VOD content

DivX® VOD content is protected by DRM (Digital Rights Management) system. This restricts playback of content to specific registered devices.

If the incorrect DRM file is loaded, "Authorization Error This player is not authorized to play this video." will appear on the screen.
When you attempt to play DivX® VOD, the number of plays is limited and the right message will appear on the screen. If you wish to play it, select "Yes".
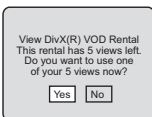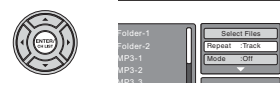
> View DivX(R) VOD Rental
> This rental has 5 views left.
> Do you want to use one of your 5 views now?
> Yes   No

- If the number of plays goes over the limit, then "Rental Expired" will be displayed. In this case, the file will not be played.

Note:
- In order to play DivX® VOD content on this unit, you first need to register the unit with registration code. See page 40.

Repeat, random and program playback using file browser

Repeat playback (Audio CD/MP3/JPEG/DivX®)

1 In the file browser, press ◄/►/▲/▼ to select "Repeat" in stop mode.

2 Press ENTER repeatedly to select "Track" or "All".

3 Press PLAY.
The unit automatically starts repeat playback after finishing the current track.

■ **To resume normal playback**
Select Repeat : "Off" in step 2.

Note:
- The repeat function is cancelled when you eject the disc or turn the power off.
- Track repeat function is cancelled whenever **SKIP** |◄◄ or ►►| is pressed.
- The function of A-B Repeat can be used for DivX® CD. See "A-B Repeat playback (DVD/VCD/Audio CD)" on pege 26.

Random playback (Audio CD/MP3/JPEG/DivX®)

1 In the file browser, press ◄/►/▲/▼ to select "Mode" in stop mode.

2 Press ENTER to select "Random".

3 Press PLAY.
The random playback will start.

■ **To resume normal playback**
Select Mode : "Off" in step 2.

Note:
- The random function is cancelled when you eject the disc or turn the power off.

Repeat, random and program playback using file browser

Program playback (Audio CD/MP3/JPEG/DivX®)
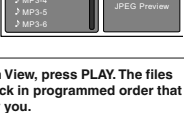
1 In the file browser, press ◄/►/▲/▼ to select "Edit Mode" in stop mode, then press ENTER.

When "Edit Mode" is in black colour, you can mark the files which you want to add into Program list.

2 Press ◄/►/▲/▼ to select the file you want to add into the program list.

Press **ENTER**. Selected file was marked.
Repeat this procedure to select the other files.

3 Press ◄/►/▲/▼ to select "Add To Program". Then press ENTER. All marked files are added into the program list.

When you finish storing the files you want into the Program list, select "Edit Mode" again and press **ENTER** to release edit mode.

4 Press ▲/▼ to select "Program View", then press ENTER. Program View shows only the programmed files that you have added in step 2.

Program View
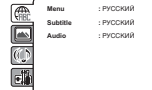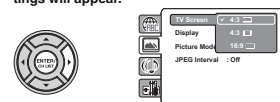
Browser View

5 In the Program View, press PLAY. The files start to playback in programmed order that were added by you.

■ **To remove file from program list in stop mode**
In the Edit Mode, switch to Program View.
Select the files you want to remove in stop mode, then press **ENTER**. Select "Clear Program" and press **ENTER**.
Marked file is removed from program list.

Note:
- The program function is cancelled when you eject the disc or turn the power off.

Customizing the function settings

You can change the default settings to customize performance to your preference.

Setting procedure

1 Press SETUP in stop mode.
The following on-screen display appears.

Menu	: РУССКИЙ
Subtitle	: РУССКИЙ
Audio	: РУССКИЙ

2 Press ▲ or ▼ to select the desired section, then press ► or ENTER.

TV Screen	: 4:3
Display	: On
Picture Mode	: Auto
JPEG Interval	: Off

3 First option will be highlighted. Press ▲ or ▼ to select the desired option.

TV Screen	: 4:3
Display	: On
Picture Mode	: Auto
JPEG Interval	: Off

4 Then press ► or ENTER. The selectable settings will appear.

TV Screen	: 4:3
Display	: 4:3
Picture Mode	: 16:9
JPEG Interval	: Off

5 Change the selection using ▲ or ▼, by referring to the corresponding pages 38 ~ 40. Press ENTER to save the setting.

- Repeat steps 3 and 5 to change other option.
- To select another section, go back to step 2 by pressing ◄ repeatedly.

6 To clear SETUP screen, press SETUP or RETURN.

Setting details

Section	Option	Details	Page
ABL	Menu Subtitle Audio	To select the language of "Menu", "Subtitle" and "Audio" if more than one language is available on the disc.	38
	TV Screen	To select a picture size according to the aspect ratio of your TV.	
	Display	To turn On or Off the operational status display on the screen.	
	Picture Mode	To select a preferred picture mode from "Video", "Film" or "Auto".	
	JPEG Interval	To select a preferred setting for the slide show playback.	
	Night Mode	To select On or Off for Night Mode.	39
	Digital Out	To select a digital output sound format corresponding to your system connection.	
	Parental	To select a preferred parental level for the parental setting.	
	Password	To change the password.	
	DivX(R) VOD	To display your 8-character registration code.	40
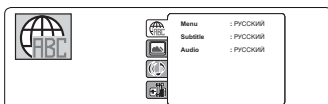
Setting details

■ Menu, Subtitle, Audio

Menu : РУССКИЙ
Subtitle : РУССКИЙ
Audio : РУССКИЙ

You can select the language of "Menu", "Subtitle" and "Audio" if more than one language is recorded onto the disc.

English, Deutsch, РУССКИЙ, Italiano, Espanol:
The selected language will be heard or seen.

Other:
Other languages can be selected (see "Language code list" on page 41).

Off (Subtitle):
Subtitles do not appear.

Original (Audio):
The unit will select the first priority language of each disc.

Note:
• If the selected language is not recorded on the disc, the first-priority language is selected.
• If you want to change the OSD language, you can perform it by TV MENU (see page 12).

TV Screen : 4:3
Display : On
Picture Mode : Auto
JPEG Interval : Off

■ TV Screen

You have the following screen sizes to choose from:

4:3 (Letter box):
When playing back a wide screen-DVD disc, it displays the wide picture with black bands at the top and bottom of screen.

4:3 (Pan scan):
It displays the wide picture on the whole screen with left and right edges automatically cut off.

16:9 (Wide):
Select this mode when connecting to a wide-screen TV. A wide screen picture is displayed full size.

Note:
• If the DVD disc is not formatted in the pan & scan style, it displays 4:3 style.

■ Display

On screen display can be switched on or off when you press any buttons.

Off: On screen displays do not appear when you press any buttons.

On: On screen displays appear when you press the buttons (factory setting).

■ Picture Mode

There are two types of source content in pictures recorded in DVD video discs: film content (pictures recorded from films at 24 frames per second) and video content (video signals recorded at 30 frames per second). Make this selection according to the type of content being viewed.

Auto: Select this position normally. The DVD player automatically detects source content, film or video of playback source, and converts that signal in an appropriate method.

Film: The DVD player converts film content pictures appropriately. Suitable for playback of film content pictures.

Video: The DVD player filters video signal, and converts appropriately. Suitable for playback of video content pictures.

Note:
• Depending on the disc, pictures may be cut off or doubled. In this case, select "Video".

■ JPEG Interval

You can continuously playback all JPEG files automatically.
After the selection below, the disc will start playback on JPEG files which have been recorded.

Off:
Plays back one file at a time.

5 Seconds:
Plays back images in the form of a slide show at 5 second intervals.

10 Seconds:
Plays back images in the form of a slide show at 10 second intervals.

15 Seconds:
Plays back images in the form of a slide show at 15 second intervals.

Night Mode : Off
Digital Out : Bitstream
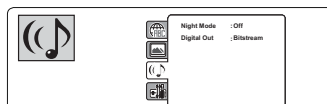
■ Night Mode

Night Mode enables you to control the dynamic range so as to achieve a suitable sound for your equipment.

Off: It plays back at the recording level on the disc.

On: Loud sound such as explosion is toned down slightly when played back. This is suitable when it is connected to a stereo.

Note:
• This function works only when the disc recorded with Dolby Digital is played back.
• The level of Night Mode may differ depending on DVD video disc.

■ Digital Out

You can select the digital output sound format corresponding to your system connection.

Off:
There is no sound output from COAXIAL DIGITAL AUDIO OUT jack.

PCM:
Change Dolby Digital to PCM for the output. Select when connected to a 2 channel digital stereo amplifier.

Bitstream:
Disc audio bitstream data will be output.

Note:
• Even if you select "Bitstream", MPEG Audio will be output in PCM format.

Parental : Off
Password : Change
DivX(R) VOD : Display
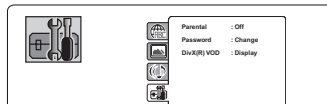
■ Parental control setting

Some discs are specified as not suitable for children. Such discs can be limited not to playback with the unit.

1) Press ▲ or ▼ to select "Parental", then press **ENTER**. "Enter Password" screen will appear.
2) Press "0000" using **Number buttons (0–9)**. (Please note, this is pre-setting password of this unit.) Then press **ENTER**. The parental level list will appear.
   • **Level Off:** The parental control setting does not function.
   • **Level 8:** Virtually all DVD software can be played back.
   • **Level 1:** DVD software for adults cannot be played back.
3) Press ▲ or ▼ to select from the level 1 to level 8. The limitation will be more severe as the level number is lower. Then press **ENTER**.

Note:
• Depending on the discs, the unit cannot limit playback.
• Some discs may not be encoded with specific rating level information though its disc jacket says "adult". For those discs, the age restriction will not work.
• The password is required every time when you change the parental level.
• If you input a wrong number, press **CANCEL**.

■ Set the new password

1) Press ▲ or ▼ to select "Password", then press **ENTER**. "Enter Current Password" screen will appear.
2) Press **Number buttons (0–9)** to input the current password (If the password has not been set yet after you purchase this unit, it is "0000").
3) Then press **ENTER**. "Enter New Password" screen will appear. Press **Number buttons (0–9)** to input the new password.
4) Press **ENTER**. Now your new password has been set. Be sure to remember this number!

If you forget the password.

1) Press **EJECT** to remove the disc.
2) While holding **7** down on the remote control and at the same time press **STOP** on the side panel. "Password Clear" appears on the screen. Now the password has been returned to the initial value ("0000").

ENGLISH

Setting details

■ DivX(R) VOD

In order to play DivX® VOD (Video On Demand) content on this unit, you first need to register the unit with your DivX® VOD content provider. You do this by generating a DivX® VOD registration code, which you submit to your provider.

Press ▲ or ▼ to select "DivX(R) VOD". Then press **ENTER**. Your 8-character registration code is displayed. Make a note of the code as you will need it when you register with a DivX® VOD provider. Then press **ENTER**.

Note:
• If each setup (pages 38–40) has been completed, the unit can always work under the same condition (especially with DVD discs).
• Each setup will be retained in the memory even if you turn the power off.

Temporary cancel the rating level by DVD disc

Depending on the DVD disc, the disc may try to temporarily cancel the rating level that you have set.
It is up to you to decide whether to cancel the rating level or not.

1 Load a DVD disc.

2 If the DVD disc has been designed to temporarily cancel the Rating level, the screen which follows the "Reading" screen will change, depending on which disc is played. If you select "YES" with the ENTER key, password input screen will then appear.
• If "NO" is selected, press EJECT to remove the disc.

3 Enter the password with Number buttons (0–9). Then press ENTER.
To exit from the entry, press **RETURN**.

Enter Password

4 Playback will commence if the entered password is correct.

Note:
• This temporary cancellation of rating level will be kept until the disc is ejected.
• When the disc is ejected, the original rating level will be set again automatically.

Enter the appropriate code number for the initial settings "Menu", "Subtitle" and/or "Audio" (see page 38).

Language Name	Code	Language Name	Code	Language Name	Code	Language Name	Code
Abkhazian	1112	Fiji	1620	Lingala	2224	Singhalese	2919
Afar	1111	Finnish	1619	Lithuanian	2230	Slovak	2921
Afrikaans	1116	French	1628	Macedonian	2321	Slovenian	2922
Albanian	2927	Frisian	1635	Malagasy	2317	Somali	2925
Amharic	1123	Galician	1722	Malay	2329	Spanish	1529
Arabic	1128	Georgian	2111	Malayalam	2322	Sundanese	2931
Armenian	1835	German	1415	Maltese	2330	Swahili	2933
Assamese	1129	Greek	1522	Maori	2319	Swedish	2932
Aymara	1135	Greenlandic	2122	Marathi	2328	Tagalog	3022
Azerbaijani	1136	Guarani	1724	Moldavian	2325	Tajik	3017
Bashkir	1211	Gujarati	1731	Mongolian	2324	Tamil	3011
Basque	1531	Hausa	1811	Nauru	2411	Tatar	3030
Bengali; Bangla	1224	Hebrew	1933	Nepali	2415	Telugu	3015
Bhutani	1436	Hindi	1819	Norwegian	2425	Thai	3018
Bihari	1218	Hungarian	1831	Oriya	2528	Tibetan	1225
Breton	1228	Icelandic	1929	Panjabi	2611	Tigrinya	3019
Bulgarian	1217	Indonesian	1924	Pashto, Pushto	2629	Tonga	3025
Burmese	2335	Interlingua	1911	Persian	1611	Turkish	3028
Byelorussian	1215	Irish	1711	Polish	2622	Turkmen	3021
Cambodian	2123	Italian	1930	Portuguese	2630	Twi	3033
Catalan	1311	Japanese	2011	Quechua	2731	Ukrainian	3121
Chinese	3618	Javanese	2033	Rhaeto-Romance	2823	Urdu	3128
Corsican	1325	Kannada	2124	Romanian	2825	Uzbek	3136
Croatian	1828	Kashmiri	2129	Russian	2831	Vietnamese	3219
Czech	1329	Kazakh	2121	Samoan	2923	Volapük	3225
Danish	1411	Kirghiz	2135	Sanskrit	2911	Welsh	1335
Dutch	2422	Korean	2125	Scots Gaelic	1714	Wolof	3325
English	1524	Kurdish	2131	Serbian	2928	Xhosa	3418
Esperanto	1525	Laothian	2225	Serbo-Croatian	2918	Yiddish	2019
Estonian	1530	Latin	2211	Shona	2924	Yoruba	3525
Faroese	1625	Latvian, Lettish	2232	Sindhi	2914	Zulu	3631

ENGLISH

Understanding the Power Return feature

If the power is cut off while you are viewing the TV/DVD and the power is resupplied, the Power Return feature will turn the TV/DVD on automatically. If the power is going to be off for a long time or you are going to be away from the TV/DVD for a long time, unplug the power cord from the wall outlet to prevent the TV/DVD from turning on in your absence.

Problems and troubleshooting

Use the following check list for troubleshooting when you have problems with your unit.
Be sure all connections are properly made when using with other units.

SYMPTOMS	POSSIBLE SOLUTIONS	PAGE
TELEVISION		
No picture, no sound	• Switch on the unit. • Check that the mains power outlet is properly connected. • Select appropriate input mode.	12 8 9
No reception	• Have you tuned in the TV stations? • Press **1** on the remote control. • Connect the antenna. • Make sure the unit is ON and not in Standby mode.	11 – 8 12
The TV switches off with no antenna input signal	• Connect the antenna and preset the channels.	8, 13
In ☐ (SETUP) menu, the TUNING option cannot be selected.	• The unit is set to AV mode. Press **1** on the remote control.	–
Wrong colours	• Colour and Brightness errors can occur when the viewing angle / ambient air temperature (see technical specifications) are exceeded.	–
DVD		
Display is not shown in your language.	• Select proper language in the menu options.	38
Playback doesn't start.	• No disc is inserted. • The disc may be dirty. Clean up the disc. • The unit cannot play DVD-ROMs, etc.	22 21 21
Stopping playback, slow-motion play, repeat play, or memory play, etc. cannot be performed.	• Some discs may not do some of the functions.	–
No on-screen display.	• Set Display to On.	38
The unit or remote operation key is not functioning.	• Turn off the unit and unplug the AC mains lead for several minutes, then replug it.	22
Playback does not start when the title is selected.	• Check the Parental control setting.	39
Audio soundtrack and/or subtitle language is not changed when you playback a DVD.	• Multilingual language is not recorded on the DVD disc.	38
No subtitle.	• Some discs have no subtitles. • Subtitles are cleared. Press **SUBTITLE**.	– 29
Angle cannot be changed.	• Multi-angles are not recorded on the DVD disc.	28
"✕" appears on the screen.	• The function is prohibited with the unit or the disc.	23

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Reception disturbance

Most types of television interference can be remedied by adjusting the height and position of the antenna. Outdoor antennas are recommended for best results.
The most common types of television interference are as foll

IGNITION — Black spots or horizontal streaks may appear, picture may flutter or drift. Usually caused by interference from car ignition systems, neon lamps, electrical drills and other electrical appliances.

SNOW — If your receiver is located in the fringe area of a television station where the signal is weak, your picture may be marred by the appearance of small dots. When the signal is extremely weak, it may be necessary to install a special antenna to improve the picture.

GHOST — Ghosts are caused by the television signal following two paths. One is the direct path and the other is reflected from tall buildings, hills or some other object. Changing the direction or position of the antenna may improve the reception.

RADIO FREQUENCY INTERFERENCE — The interference produces moving ripples or diagonal streaks, and in some cases, causes loss of contrast in the picture. Changing the direction and position of the antenna or installing an RFI filter may improve the picture.

Specifications

TELEVISION	
System:	PAL UK, IR, CCIR, FRENCH System, B/G, D/K, I/I, L AV Input receivable: NTSC 3.58, NTSC 4.43/PAL 60
Preset channels:	99 channels
Frequency Range:	IreE2~E4, X~Z+2, S1~S10, E5~E12, S11~S41, E21~E69
LCD:	15" TYPE (380.1 mm visible) TFT low-glass Active Matrix Colour LCD, 1024 x 768 pixels
Antenna Input:	VHF/UHF 75 ohm unbalanced
Audio Output Power:	1.0 W+1.0 W (max)
Speaker:	(3.8 x 6.9 cm 8 ohm) x 2
DVD	
Signal system:	PAL, NTSC
Applicable disc:	DVD (12 cm, 8 cm), CD (12 cm, 8 cm)
Audio characteristics frequency response:	DVD: 4Hz - 22kHz CD: 4Hz - 20kHz
S/N Ratio:	85 dB
Harmonic distortion:	0.02%
Output:	SCART-socket: VIDEO: 1 Vp-p, 75 ohm AUDIO: –12.0 dBm, 1 kohm Digital Audio: 0.5Vp-p, 75 ohm
Pickup:	CD: Wavelength: 775 - 805 nm Maximum output power: 0.5 mW DVD: Wavelength: 640 - 660 nm Maximum output power: 1.0 mW
GENERAL	
Power Source:	AC 220~240V, 50Hz
Power Consumption: Operation: Stand by:	approx. 45W approx. 1W
Weight:	4.0 kg
Dimensions:	394 (W) x 392 (H) x 207 (D) mm
Operating Temperature:	5°C to 40°C
REMOTE CONTROL UNIT	
Power Supply:	DC 3V (Two batteries, AAA/ R03/ UM-4)
ACCESSORIES	Remote Control unit, 2 Batteries (AAA/ R03/ UM-4), AC mains lead, RF-Cable

• **This model complies with the above specifications.**
• **Design and specifications are subject to change without notice.**
• **This model may not be compatible with feature and/or specifications that may be added in the future.**

43

Memo

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SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Headphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)
1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease.
(Old grease may cause damage to the IC and Transistor).

WHEN REPLACING DVD DECK

[When removing the DVD Deck]

Before removing Pick Up PCB and DVD MT PCB connector, the short circuit the position shown in **Fig. 1** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[When installing the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

NOTE

• Before your operation, please read "PREPARATION OF SERVICING".
• Use the Lead Free solder.
• Manual soldering conditions
 • Soldering temperature: 320 ± 20°C
 • Soldering time: Within 3 seconds
 • Soldering combination: Sn-3.0Ag-0.5Cu
• When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to keep the Flux smoke away from it.

Pick Up PCB

Short circuit using a soldering iron.
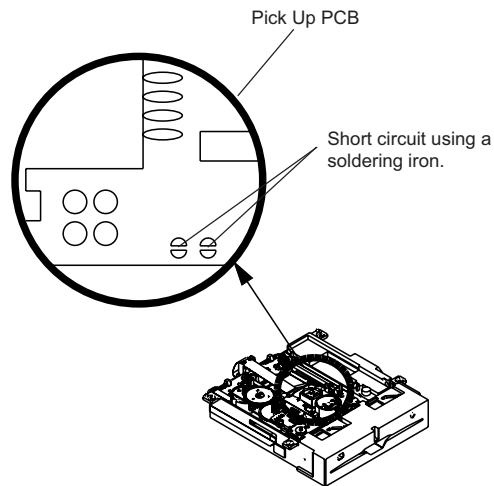
Fig. 1

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and Angle Deck. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Slide the Belt Loading toward the arrow direction by hand to release the lock. **(Refer to Fig. 1)**
3. Take out the Disc from the DVD Deck. Be careful not to scratch on the Disc.

DVD Deck

Belt Loading
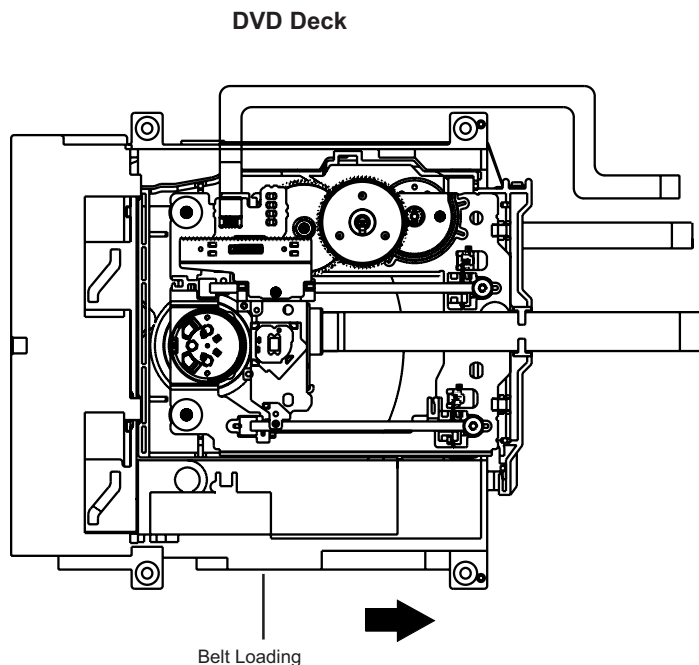
Fig. 1

PARENTAL CONTROL - RATING LEVEL
4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Check that "No disc" is displayed on the screen.
4. Press and hold the "STOP" button on the side panel.
5. Simultaneously press and hold the "7" key on the remote control unit.
6. Hold both keys for more than 2 seconds.
7. The On Screen Display message "PASSWORD CLEAR" will appear.
8. The 4 digit password has now been cleared.

TRAY LOCK

The disk cannot be taken out by setting the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press it in order of "SETUP", "SUBTITLE", "3", "AUDIO SELECT" and "0" key of a remote control unit.
4. The On Screen Display message "⌂" will appear.
5. The Tray Lock has now been set up.

To unlock the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press it in order of "SETUP", "SUBTITLE", "3", "AUDIO SELECT" and "0" key of a remote control unit.
4. The On Screen Display message "⌂" will appear.
5. The Tray Lock has now been cleared.

REMOTE CONTROL KEY CODE

NEC Format
Custom Code : 40-BF H, 44-BB H, 45-BA H, 45-BC H
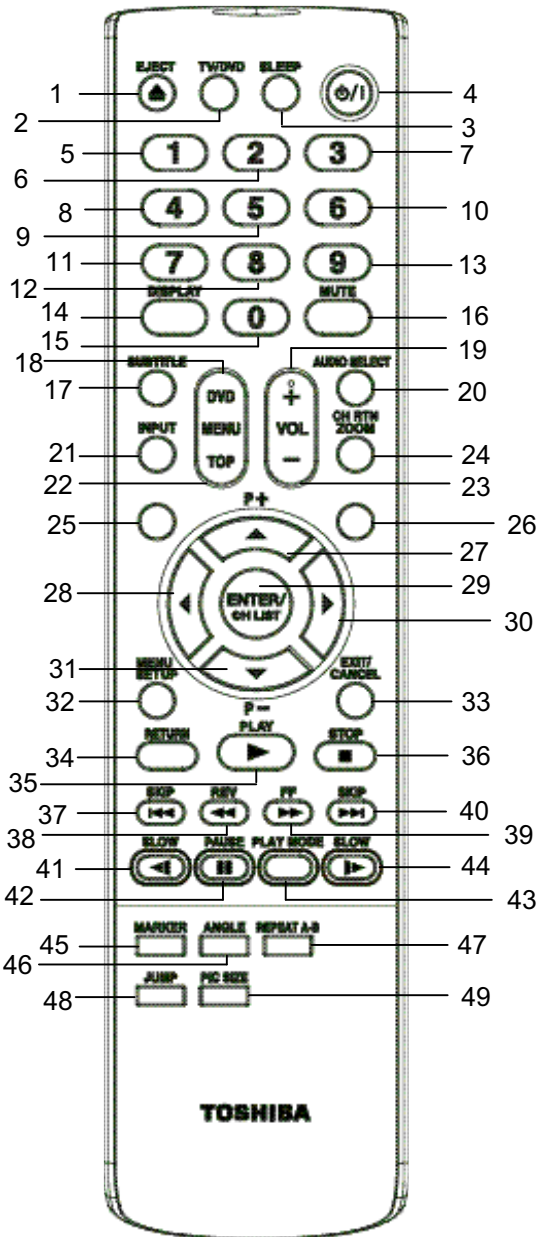
No.	Key Name	Custom Code	Key Code
1	EJECT	45 BA	F5
2	TV/DVD	45 BC	B3
3	SLEEP	40 BF	15
4	POWER	40 BF	12
5	1	40 BF	01
6	2	40 BF	02
7	3	40 BF	03
8	4	40 BF	04
9	5	40 BF	05
10	6	40 BF	06
11	7	40 BF	07
12	8	40 BF	08
13	9	40 BF	09
14	DISPLAY	40 BF	1C
15	0	40 BF	00
16	MUTE	40 BF	10
17	SUBTITLE	44 BB	87
18	DVD MENU	40 BF	19
19	VOLUME +	40 BF	1A
20	AUDIO SELECT	44 BB	53
21	INPUT	40 BF	0F
22	TOP MENU	44 BB	DF
23	VOLUME -	40 BF	1E
24	CH RTN/ZOOM	45 BA	40
25	HOLD	40 BF	53
26	TEXT/TV	45 BA	79
27	CH/PAGE↑ /↑	40 BF	3E
28	LEFT	44 BB	51
29	ENTER/CHANNEL LIST	40 BF	3D
30	RIGHT	44 BB	4D
31	CH/PAGE↓ /↓	40 BF	3F
32	MENU/SETUP	40 BF	0E
33	EXIT/CANCEL	44 BB	EF
34	RETURN	44 BB	5D
35	PLAY	44 BB	15
36	STOP	44 BB	14
37	SKIP-	45 BA	23
38	REVEAL / SEARCH-	45 BA	19
39	SUB PAGE / SEARCH+	45 BA	13
40	F/T/B / SKIP+	45 BA	24
41	RED / SLOW-	45 BA	0E
42	GREEN / PAUSE	45 BA	15
43	YELLOW / PLAY MODE	45 BA	E0
44	BLUE / SLOW+	45 BA	0D
45	MARKER	45 BA	EC
46	ANGLE	44 BB	96
47	REPEAT A-B	44 BB	5C
48	JUMP	44 BB	9B
49	PICTURE SIZE	40 BF	59

TABLE OF CONTENTS

• GREEN PRODUCT PROCUREMENT
• LEAD-FREE SOLDER
• OWNER'S MANUAL

GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size		15.0 inch / 380.1 mmV
			LCD Type		Color TFT LCD
			Number of Pixels		1024(H) x 768(V)
			View Range	Left/Right	70/70 degree
				Up/Down	65/60 degree
			Bright Dot		n $\leqq$ 0 (Sorted Products)
			Zero Bright Dot Ratio		---
		Color System			PAL / SECAM
		Speaker			2 Speaker
			Position		Front
			Size		1.5 x 2.7 inch
			Impedance		8 ohm
		Sound Output	MAX		1.0W + 1.0W
			10%(Typical)		---
		NTSC3.58+4.43 /PAL60Hz			Yes
G-2	DVD System	Color System			NTSC, PAL
		Disc			DVD,
		Disc Diameter			120 mm , 80 mm
		Drive			DSM-2
		Search speed	Fwd		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
			Rev		4 step
				Actual	2-45 times (DVD/Video CD)
					4-40 times (CD)
		Slow speed	Fwd		1/7 -1/2 times
				Actual	--
			Rev		1/7 -1/2 times
				Actual	--
G-3	Tuning System	Broadcasting System	Analog		U.K., I.R., CCIR, FRENCH System B/G, D/K, I/I, L
			Digital		--
		Tuner and Receive CH	System		1Tuner (Analog)
			Destination		UK, I.R., CCIR Hyper+France CATV
		CH Coverage	Analog		IreE2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69
			Digital		--
		Intermediate Analog Frequency			BG / II / DK, L / L' (SECAM VL)
			Picture(FP)		38.9 / 38.9 / 38.9 / 33.9MHz
			Sound(FS)		33.4 / 32.9 / 32.4 / 40.4MHz
			FP-FS		5.5 / 6.0 / 6.5 / 6.5MHz
		Digital			--
		Auto Tuning Method			ALL Band (Not C.C.I.R. CH Plan)
		Preset CH	Analog		99
			Digital		--
		Stereo/Dual TV Sound			Nicam/A2 Dual
		Tuner Sound Muting			Yes
G-4	Signal	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		65dB
			Horizontal Resolution at DVD Mode		400 Lines
		RGB Signal	Output Level		--
		Audio Signal	Input Level		-8.0dBm/50k ohm
			Output Level	at DVD	-12.0dBm/1k ohm (-20dBFs 0dBFs=2.0Vrms)
				at TV	-8 dBm/1k ohm (0dBm=0.775Vrms)
			Digital Output Level		0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)		85dB
			Harmonic Distortion		0.02% (1KHz)
			Frequency Response :	at DVD	4Hz - 22kHz
				at Video CD	4Hz - 20kHz
				at SVCD	--
				at CD	4Hz - 20kHz
G-5	Power	Power Source	AC		220-240V AC 50Hz
			DC		---
		Power Consumption		at AC	45 W at AC 230 V 50 Hz
				at DC	--
		Stand by (at AC)	w/ EPG Timer		--
			w/o EPG Timer		1 W at 230V 50Hz
			Per Year		-- kWh/Year
		Protector	Power Fuse		Yes
G-6	Regulation		Safety		CE(EN60065:02), GOST
			Radiation		CE, GOST
			X-Radiation		---
G-7	Temperature		Operation		+5°C ~ +40°C
			Storage		-20°C ~ +60°C
			Space Around Unit		100 mm(4inch)
G-8	Operating Humidity				Less than 80% RH

GENERAL SPECIFICATIONS

G-9	OSD Language		(TV)		English, Spanish, German, Russian, Italian
			(DVD)		English, Spanish, German, Russian, Italian
G-10	Clock and Timer	Sleep Timer	Max Time		120 Min
			Step		10 Min
		On/Off Timer	Program(On Timer / Off Timer)		-- Program
		Wake Up Timer			No
		Timer Back-up (at Power Off Mode)	more than		-- Min Sec
G-11	Remote Control	Unit			RC-PT
		Glow in Dark Remocon			No
		Remocon Format			TOSHIBA
		Format			TOSHIBA
		Custom Code			40-BF h ,44-BB h ,45-BA h ,45-BC h
		Power Source	Voltage(D.C)		3V
			UM size x pcs		UM-4 x 2 pcs
		Total Keys			49 Keys
		Keys	Power (Stand By)	Yes	
			Display / (Status)	Yes	
			Menu / Setup	Yes	
			Digital Menu		No
			Input Select	Yes	
			TV/DVB-T		No
			Guide/EPG		No
			Picture Size	Yes	
			1	Yes	
			2	Yes	
			3	Yes	
			4	Yes	
			5	Yes	
			6	Yes	
			7	Yes	
			8	Yes	
			9	Yes	
			0	Yes	
			Sleep	Yes	
			Mute	Yes	
			Volume Up /→		No
			Volume Down ←|		No
			Volume Up	Yes	
			Volume Down	Yes	
			CH Down		No
			CH Up		No
			Menu		No
			↑		No
			↓		No
			←	Yes	
			→	Yes	
			Enter / CH List	Yes	
			Exit / Cancel	Yes	
			Freeze frame		No
			TV/Radio		No
			Subtitle	Yes	
			Play	Yes	
			Stop	Yes	
			Eject	Yes	
			TV / DVD	Yes	
			Return	Yes	
			DVD Menu	Yes	
			Top Menu	Yes	
			Repeat A-B	Yes	
			Jump	Yes	
			CH RTN/Zoom	Yes	

		T'TEXT Keys	TEXT / TV	Yes	
			Reveal / Skip		No
			Sub Page / Search+	Yes	
			Reveal / Search-	Yes	
			Reveal		No
			Display Cancel		No
			HOLD	Yes	
			Angle	Yes	
			Marker	Yes	
			F.T.B / Skip+	Yes	
			Skip-	Yes	
			Slow+ / Blue	Yes	
			Slow- / Red	Yes	
			Play Mode/Yellow	Yes	
			Green/Pause	Yes	
			Normal		No
			F/T/B(Expand)		No
			F/T/B(Expand) / Normal		No
			Quick View		No
			Sub Page / Quick View		No
			Up/CH Up		No
			↑ / CH Up / Page Up	Yes	
			CH Up / Page Up		No
			Down / CH Down		No
			↓ / CH Down / Page Down	Yes	
			CH Down / Page Down		No
			Reset		No
			Audio	Yes	
			Reset / Audio 1/2		No
G-12	Features	Power On Memory		Yes	
		Auto Shut Off		Yes	
		Just Clock Function			No
		Game Position			No
		DNR			No
				--	
		Comb Filter		Yes	
				3D	
		Auto Set Up (Fast installation)	Auto tuning (Analog tuner)	Yes	
			CH sort	Yes	
			ATS	Yes	
			Auto clock (Analog tuner)		No
			Plug in start	Yes	
		Picture Setting(TV)	Picture Preference	Yes	
			Brightness , Contrast , Color	Yes	
			Tint	Yes	
			Sharpness	Yes	
			DNR		No
			Color Temperature	Yes	
			Blue Back	Yes	
			Backlight Control	Yes	
			Film Mode		No
		Audio	Nicam	Yes	
			Tone Control (Bass/Treble/Balance)	Yes	
			Surround		No
			BBE		No
			SRS WOW (SRS 3D/Focus/Tru Bass)		No
			Variable Audio Out		No
		Tuning	Auto Tuning	Yes	
			Manual Tuning	Yes	
			CH Allocation	Yes	
		Lock (Analog)	Panel Lock		No
			Channel Lock		No
			Hotel Lock		No
		Screen Saver	Inversion		No
			Full White		No
			Screen Saver		No
			Static Image		No
		Black Side Panel			No
		CH Label		Yes	
		T'Text		Yes	
			Text type	Fastext / Toptext	
			Text Language	English , French, Swedish, Hungarian Turkish, German, Portuguese, Spanish, Italian, Greek, Slovakian, Russian, Polish, Czech, Rumanian, Estonian, Lettish, Lithuanian, Ukrainian, Croatian, Slovenian, Latvian	

GENERAL SPECIFICATIONS

		Wide Mode (AUTO/4:3/16:9)		Yes
		Reset TV Setting		Yes
		HD Zoom		No
		Picture Scroll (Vertical Position)		No
		PFC(Power Factor circuit)		No
		Freeze frame		No
		HD-Ready		No
		Plug and Play		No
		Scart Spec	Scart1	AV in	Yes
				AV out	Yes (Tuner/Monitor)
				S-Video in	No
				RGB in	Yes
			Scart2	AV in	No
				AV out	No
				S-Video in	No
				RGB in	No
		PC Monitor Input		No
		HDMI Input		No
		Component Input		No
		Wall Mount	Size W x H(mm)	No
			Screw Size	No
	Features (DVD)	Tray Lock		Yes
		WMA		No
		JPEG		Yes
		Video CD Playback		Yes
		SVCD Playback		No
		MP3 Playback		Yes
		Divx Playback		Yes
			DMF Support	No
		Digital Out	(Dolby Digital)	Yes
			(MPEG)	Yes
			(PCM)	Yes
			(DTS)	Yes
		Down Mix Out	(Dolby Digital)	Yes
			(DTS)	No
		3D Surround		No
		Closed Caption		No
		Screen Saver		No
		Audio DAC		192kHz / 24bit
G-13	Accessories	Owner's Manual	Language	English / Russian
			w/Guarantee Card	No
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	-
			Terminal	-
		Loop Antenna (W/ Antenna Change Plug)		No
			Terminal	-
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		Yes
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safeguard		No
		Dew/AHC Caution Sheet		No
		Quick Set-up Sheet		Yes
		My Movie stream (Free DVD redemption voucher)		No
		Carbon Neutral Certificate		No
		Battery		Yes
			UM size x pcs	UM-4 x 2 pcs
			OEM Brand	No
		AC Adapter		No
		AC Cord (for AC Adapter)		No
		AC Cord		Yes
		AV Cord (2Pin-1Pin)		No
		RF Cable		Yes
		HDMI-DVI Cable		No
		Helpline Sheet		No
		300 ohm to 75 ohm Antenna Adapter		No
		Sheet Information (GOST)		Yes(ONLY MAY ORDER)

GENERAL SPECIFICATIONS

G-14	Interface	Switch	Top	Power (Tact)	Yes	
				System Select		No
				Main Power SW		No
				Channel Up/Menu Up/Play	Yes	
				Channel Down/Menu Down/Stop	Yes	
				Volume Up/Menu >	Yes	
				Volume Down/Menu <	Yes	
				Play		No (CH+ Alternative)
				Eject	Yes	
				Skip+, Search+		No
				Skip-, Search-		No
				Stop		No (CH- Alternative)
				Input Select / Enter	Yes	
				Menu	Yes	
		Indicator		Power/Stand-by/EPG Timer	Yes(GREEN / RED / --)	
				On Timer		No
		Terminals	Side	CI Card Slot		No
			Rear	Video Input 1	RCA x 1	
				Audio Input 1	RCA x 2(L/MONO, R)	
				S- Input 1	Yes	
				Video Input 2		No
				Audio Input 2		No
				S- Input 2		No
				Video Output		No
				Audio Output		No
				Digital Audio Out (Coaxial)	Yes	
				Component In		No
				Audio Input (Component In use)		No
				Sub Woofer Output		No
				Diversity		No
				Ext Speaker		No
				DC Jack 12V(Center +)		No
				Other Terminal	Headphone	
				VHF/UHF Antenna Input	DIN Type	
				AC Inlet	Yes	
				Euro Scart (21Pin)	1Scart	
				PC Monitor Input (D-Sub)		No
				Audio Input		No
				HDMI Input 1		No
				Audio Input (HDMI/DVI In use)		No
				HDMI Input 2		No
				Audio Input (HDMI/DVI In use)		No
G-15	Set Size			Approx. W x D x H (mm)	394 x 207 x 392	
				w/o Stand,Handle Approx. W x D x H (mm)	394 x 64 x 355	
G-16	Weight			Net Approx.	4.0kg (8.8 lbs)	
				Net w/o Stand,Handle Approx.	3.3kg (7.3 lbs)	
				Gross Approx.	5.6kg (12.3 lbs)	
G-17	Carton		Master Carton			No
				Content	---- Sets	
				Material	-- /--	
				Dimensions W x D x H(mm)	-- x -- x --	
				Description of Origin		No
			Gift Box		Yes	
				Material	Single/White	
				Dimensions W x D x H(mm)	485 x 275 x 470	
				W/Color Photo Label		No
				Description of Origin	Yes	
			Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces	
				Height (cm)	80	
			Container Stuffing		1006 Sets/40' container	
			w/Pallet			No
			w/Wrapping			No
G-18	Material		Cabinet	Cabinet Front	PC+ABS 94V0 NON-HALOGEN	
				Cabinet Rear	PS 94V0 NON-DECABROM	
			PCB	Non-Halogen		No
				Eyelet	Yes	
G-19	Environment			Environmental standard requirement	Green procurement of TOSHIBA	
				Pb- Free	Phase3(PHASE3A)	
				Measures for Whisker	Yes	
			WEEE		Yes	

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

CAUTION
Be careful not to remove the FFC cable forcibly, because the FFC cable may be damaged.

1-1: FRONT CABINET ASS'Y, STAND ASS'Y AND COVER BACK (Refer to Fig. 1-1)

1. Unlock the support (1).
2. Remove the Cover Back in the direction of arrow (A).
3. Remove the 2 screws (2).
4. Remove the Stand Ass'y in the direction of arrow (B).
5. Remove the 7 screws (3).
6. Remove the Front Cabinet Ass'y in the direction of arrow (C).

Fig. 1-1
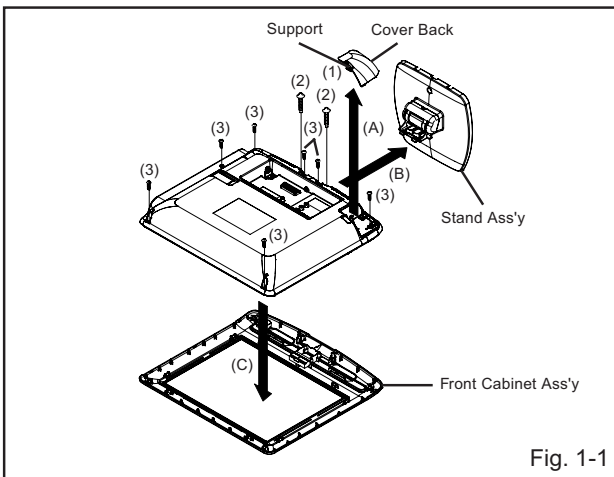
1-2: LCD PANEL AND REMOCON PCB (Refer to Fig. 1-2)

1. Disconnect the following connector:
   (CD7005, CD7006 and CP7200).
2. Remove the 2 screws (1).
3. Remove the 3 screws (2).
4. Remove the Angle LCD-R and Angle LCD-L in the direction of arrow (A).
5. Remove the LCD PANEL in the direction of arrow (B).
6. Disconnect the following connector: **(CP7601)**.
7. Remove the screw (3).
8. Remove the Remocon PCB in the direction of arrow (C).

Fig. 1-2
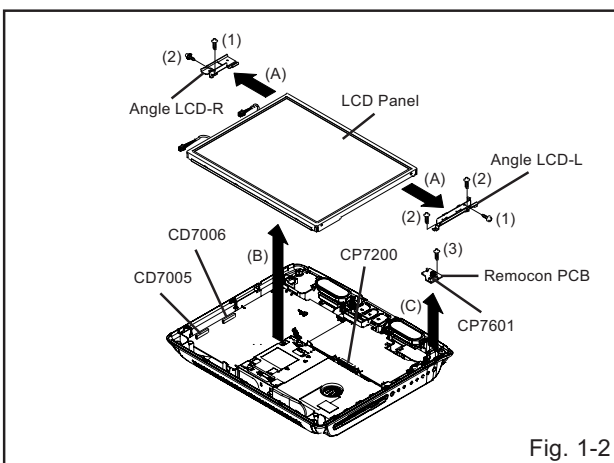
1-3: POWER PCB AND TUER PCB (Refer to Fig. 1-3)

1. Disconnect the following connector:
   (CP501 and CP8101).
2. Remove the 6 screws (1).
3. Remove the Power PCB in the direction of arrow (A).
4. Remove the screw (2).
5. Remove the Tuner PCB in the direction of arrow (B).

Fig. 1-3
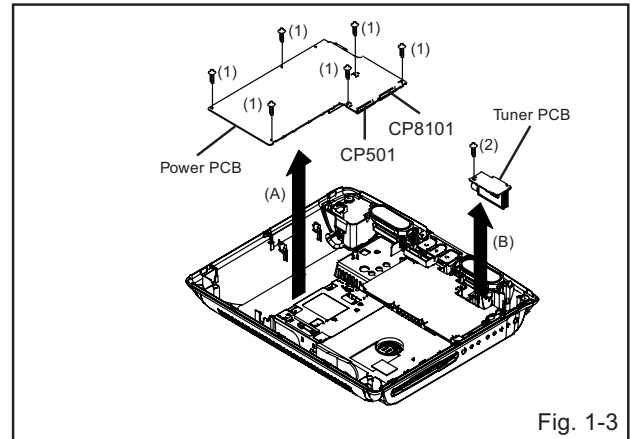
1-4: MAIN PCB AND OPERATION PCB (Refer to Fig. 1-4)

1. Disconnect the following connector:
   (CP6501 and CP2201).
2. Remove the 5 screws (1).
3. Remove the Main PCB in the direction of arrow (A).
4. Remove the 3 screws (2).
5. Remove the Operation PCB in the direction of arrow (B).

Fig. 1-4
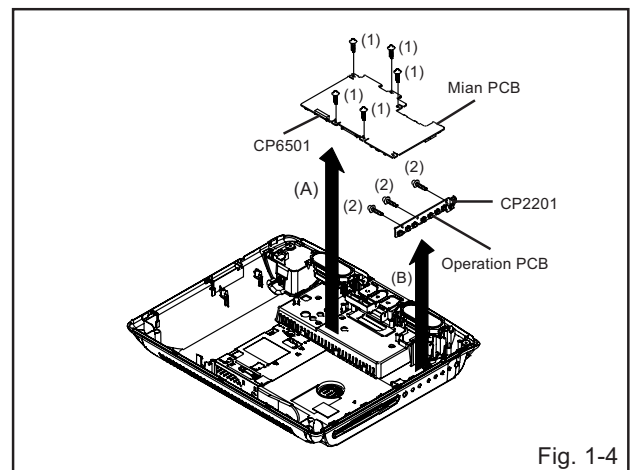
DISASSEMBLY INSTRUCTIONS

1-5: DVD DECK (Refer to Fig. 1-5)

1. Short circuit the position shown in **Fig. 1-5** using a soldering iron. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Remove the 4 screws (1).
3. Remove the DVD Deck in the direction of arrow (A).
4. Disconnect the following connectors:
   (CP2301, CP2302 and CP2303).
5. Remove the 2 screws (2).
6. Remove the Angle Mpeg in the direction of arrow (B).
7. Remove the 4 screws (3).
8. Remove the DVD MT PCB in the direction of arrow (C).

Fig. 1-5
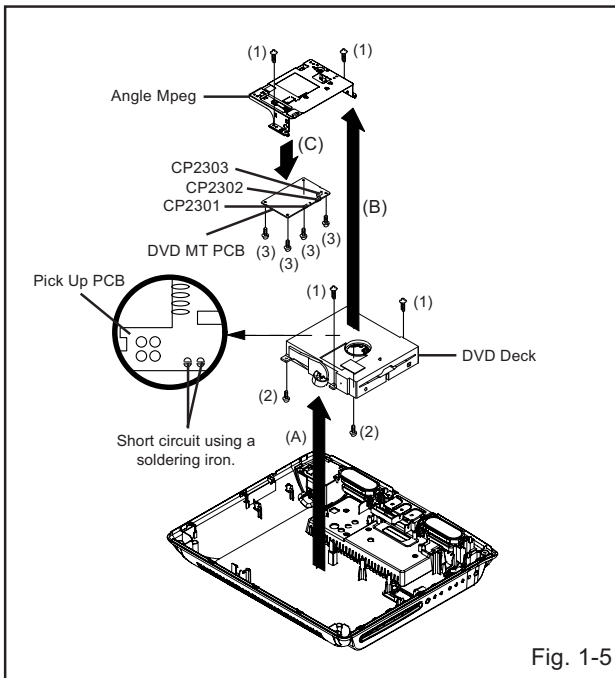
NOTE

1. Before your operation, please read "PREPARATION OF SERVICING"
2. Use the Lead Free solder.
3. Manual soldering conditions
   • Soldering temperature: 320 ± 20°C
   • Soldering time: Within 3 seconds
   • Soldering combination: Sn-3.0Ag-0.5Cu
4. When Soldering/Removing of solder, use the drawing equipment over the Pick Up Unit to keep the Flux smoke away from it.
5. When installing the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD MT PCB connector.

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DVD DECK PARTS

NOTE

1. Disassemble only the DVD DECK PARTS parts listed here. Minute adjustments are needed if the disassembly is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAVERSE ASS'Y (Refer to Fig. 2-1-A)

1. Remove the 3 screws (1).
2. Unlock the 2 supports (2).
3. Remove the Insulator (R) from the Loader Sub Ass'y.
4. Remove the Traverse Ass'y.

Fig. 2-1-A

- Screw Torque: 2.0 ± 0.3kgf•cm
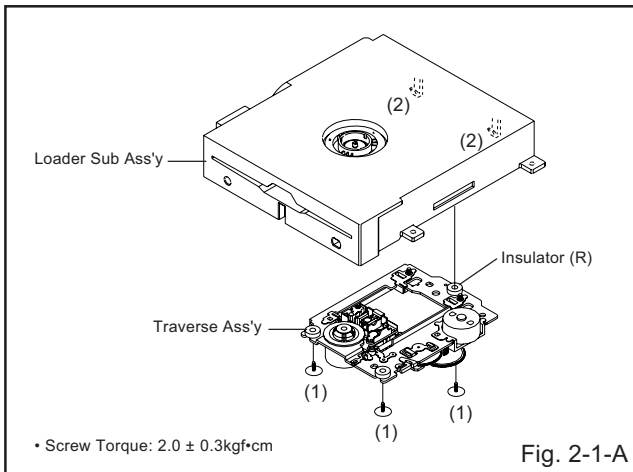
NOTE

1. In case of the Traverse Ass'y installation, hook the wire on the Loader Ass'y as shown Fig. 2-1-B to Fig. 2-1-C.

Fig. 2-1-B

Fig. 2-1-C

Fig. 2-1-D
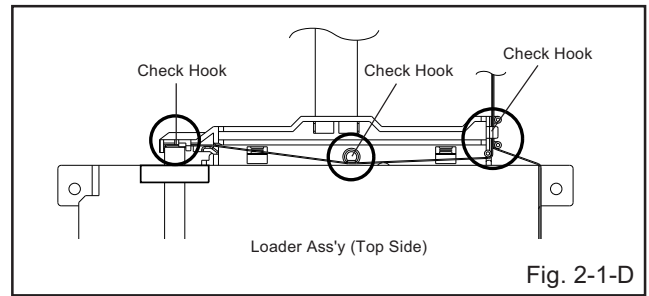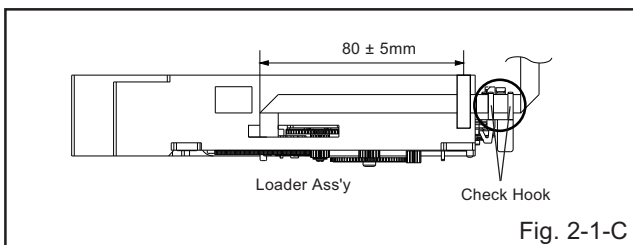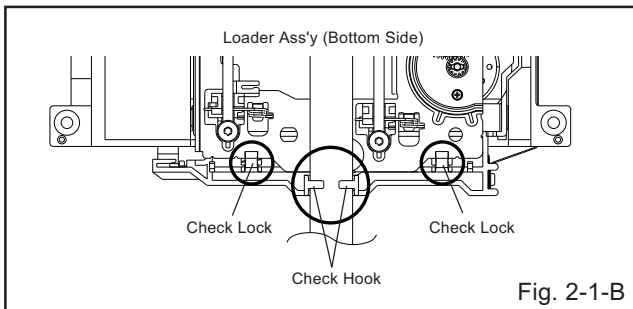
2-2: SWITCH PCB ASS'Y/GEAR MIDDLE/GEAR FEED/RACK FEED ASS'Y/FEED MOTOR (Refer to Fig. 2-2-A)

1. Remove the Insulator (F).
2. Remove the Insulator (R).
3. Unlock the support (1).
4. Remove the Gear Middle.
5. Remove the screw (2).
6. Remove the Rack Feed Ass'y.
7. Remove the screw (3).
8. Remove the Switch PCB Ass'y.
9. Remove the screw (4).
10. Remove the Gear Feed.
11. Remove the 2 screws (5).
12. Remove the Feed Motor.
13. Remove the Gear Motor.

- Screw Torque: 1.3 ± 0.3kgf•cm (Screw 2)
- Screw Torque: 3.0 ± 0.3kgf•cm (Screw 3)
- Screw Torque: 1.0 ± 0.3kgf•cm (Screw 4, 5)
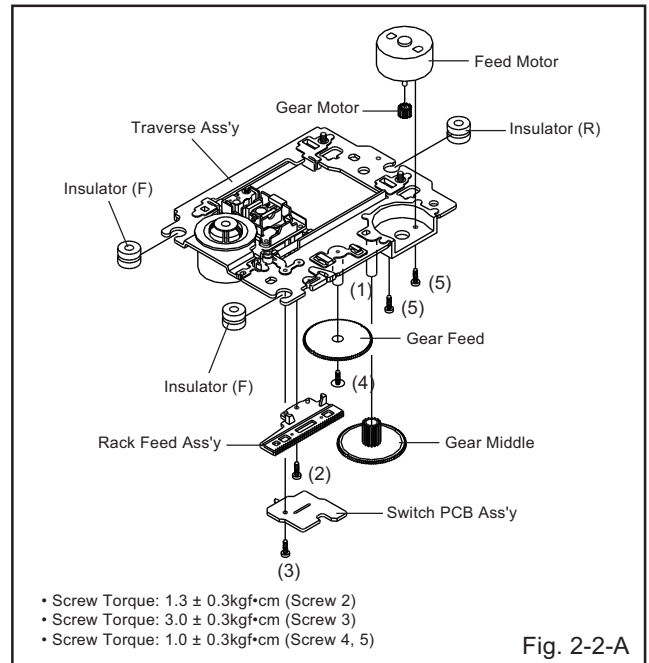
Fig. 2-2-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When installing the Rack Feed Ass'y, push both ends to align the teeth as shown Fig. 2-2-B. Then install it.
2. In case of the Gear Motor installation, check if the value of the Fig. 2-2-C is correct.
3. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 2-2-D.
   Manual soldering conditions
   • Soldering temperature: 320 ± 20°C
   • Soldering time: Within 3 seconds
   • Soldering combination: Sn-3.0Ag-0.5Cu
4. After the assembly of the Traverse Ass'y, hook the wire on the Traverse Ass'y as shown Fig. 2-2-E.

Rack Feed Ass'y

Push → ← Push

[OK] [NG]

Fig. 2-2-B

Gear Motor

8.0 ± 0.2mm

Feed Motor

Safety surface for pressing of the insert.

Fig. 2-2-C

Switch PCB Ass'y

~ FEED MOTOR ~
WHITE (4)
BROWN (3)

• Install wire from (1) to (4) in order.

~ SPINDLE MOTOR ~
YELLOW (2)
GREEN (1)

Fig. 2-2-D

Traverse Ass'y

Check Hook

Check Hook

Check Hook

Check Hook

• Loosen the wire in the direction of the arrow.
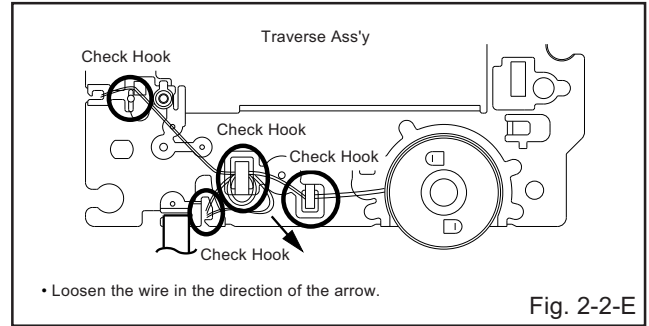
Fig. 2-2-E

2-3: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 2-3-A to Fig. 2-3-B.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.

[24 pin FFC]

Fold it by 90û

To Pick Up PCB   Printing Surface

20 ± 1mm

30 ± 1mm

Fig. 2-3-A

[6 pin FFC]

40 ± 1mm

Fold

Printing Surface
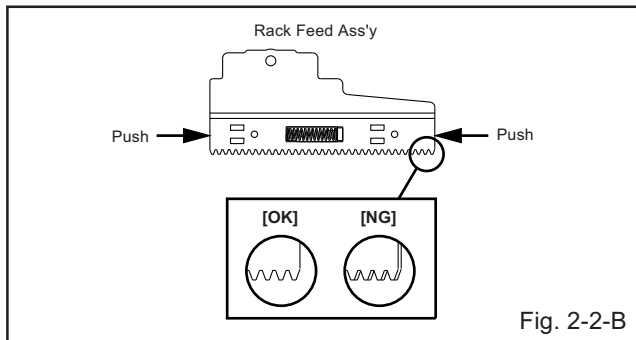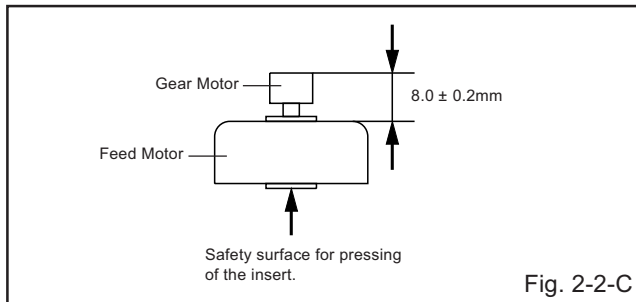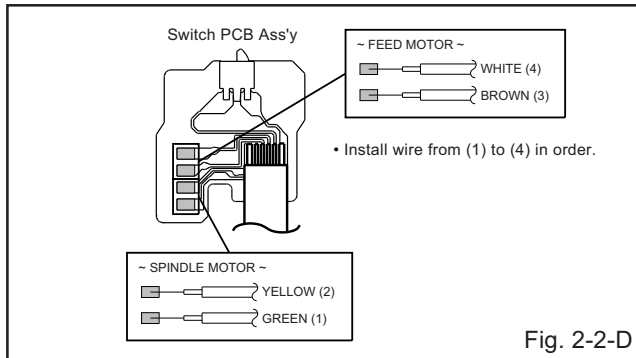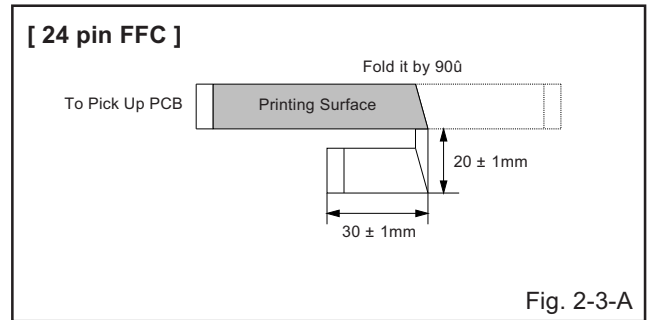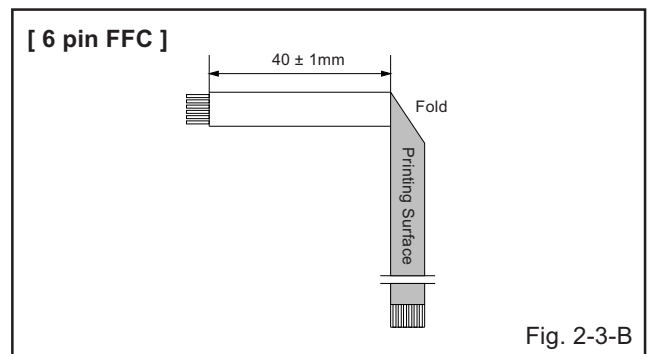
Fig. 2-3-B

DISASSEMBLY INSTRUCTIONS

3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 3-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

Masking Tape (Cotton Tape)

IC

Fig. 3-1
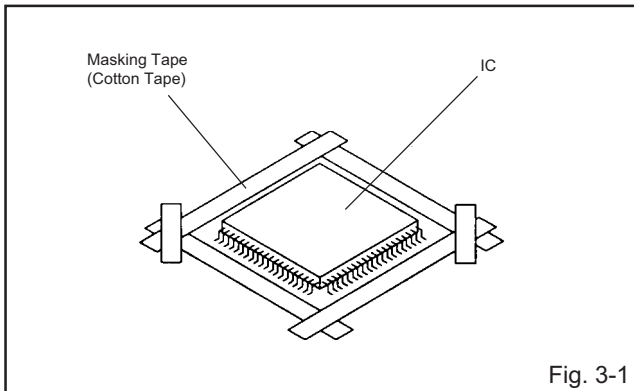
2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 3-2.)**

   NOTE

   Do not rotate or move the IC back and forth , until IC can move back and forth easily after desoldering the leads completely.

Blower type IC desoldering machine

IC

Fig. 3-2
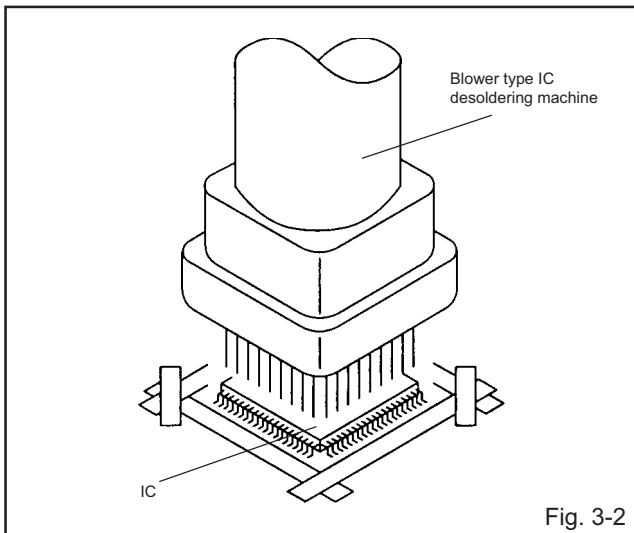
3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 3-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

Blower type IC desoldering machine

Tweezers

IC

Fig. 3-3
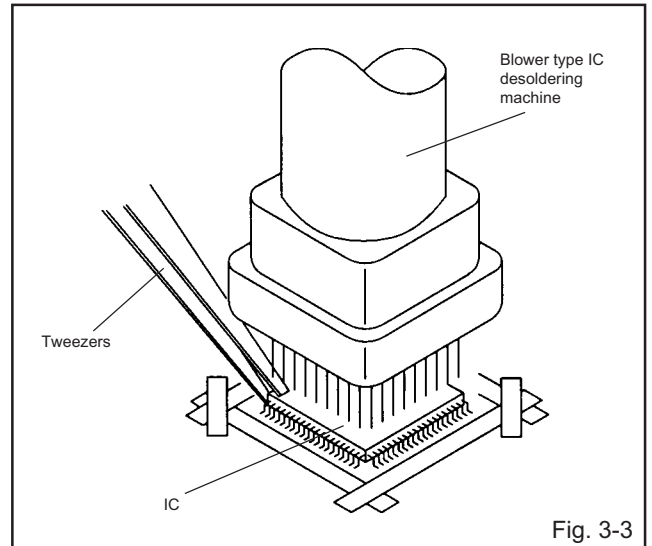
4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 3-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

Braided Shield Wire

Soldering Iron

IC pattern

Fig. 3-4
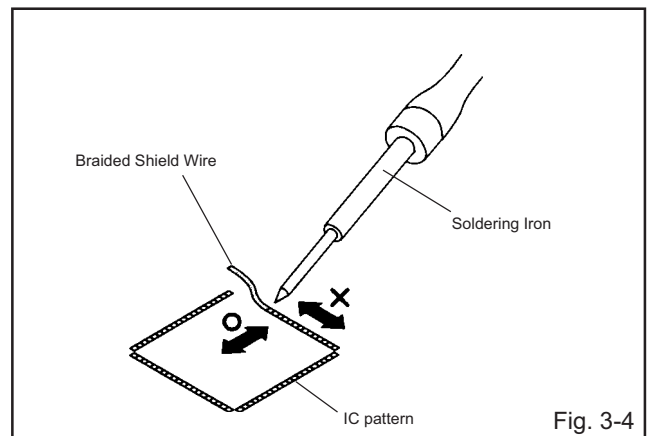
DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**

Fig. 3-5
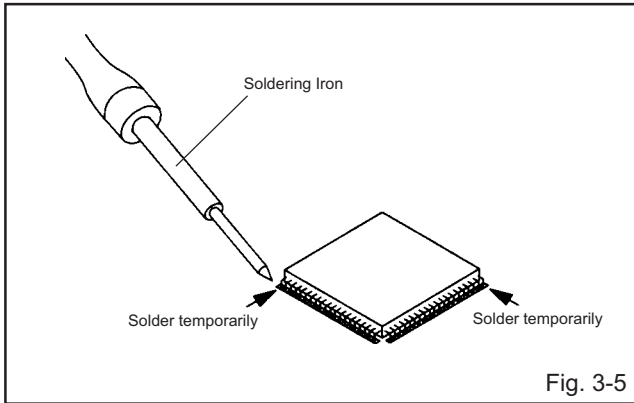
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**

Fig. 3-6
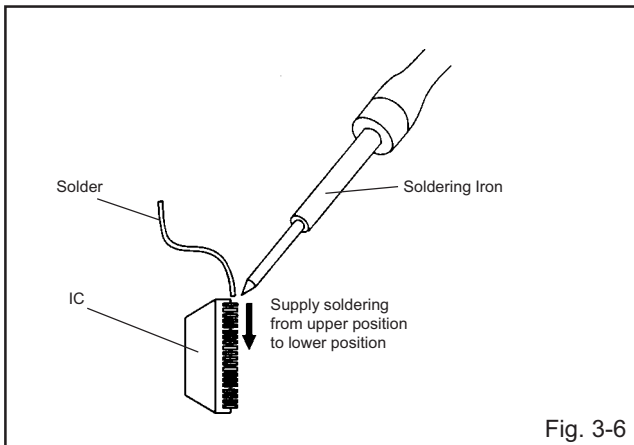
3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

   NOTE

   Do not absorb the solder to excess.

Fig. 3-7
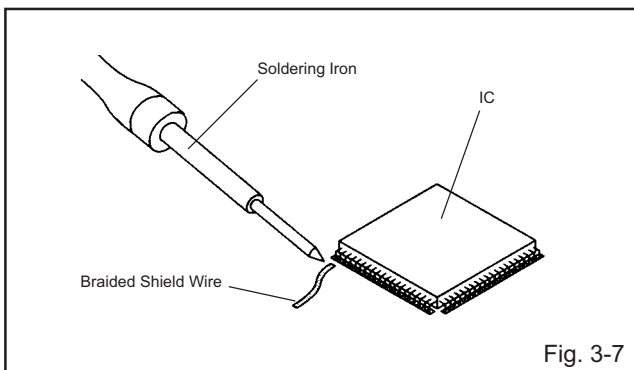
4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**

Fig. 3-8
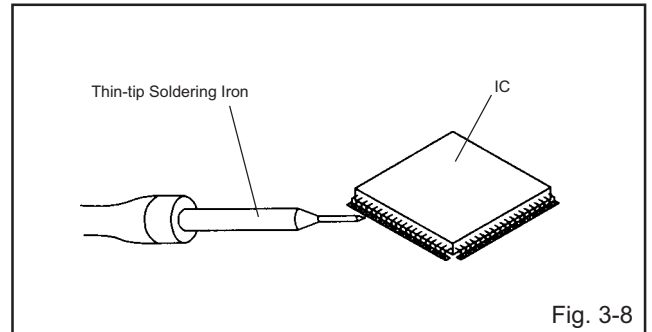
5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
TV mode	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
TV mode	VOL. DOWN (Minimum)	2	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
DVD mode (No disc)	VOL. DOWN (Minimum)	4	2 sec.	Initialization of factory DVD data.
DVD mode (No disc)	VOL. DOWN (Minimum)	5	2 sec.	DVD Write mode. Refer to the "RE-WRITE FOR DVD FIRMWARE".
TV mode	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hours are displayed on the screen. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
DVD mode (No disc)	STOP	1	2 sec.	Region setting. Refer to the "RE-WRITE FOR DVD FIRMWARE".
DVD mode (No disc)	STOP	7	2 sec.	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL".

Method	
Press the following remocon keys continuously. SETUP → SUBTITLE → 3 → AUDIO SELECT → 0	The disk cannot be taken out. Refer to the "TRAY LOCK".

SERVICING FIXTURES AND TOOLS
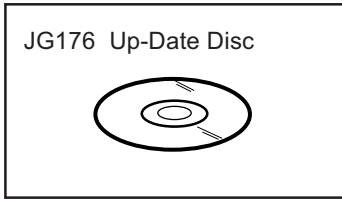
	Ref. No.	Part No.	Parts Name	Remarks
JG176 Up-Date Disc	JG176	APJG176142	Up-Date Disc	Up-Date of the Firmware

RE-WRITE FOR DVD FIRMWARE

1. Turn on the power, and set the DVD mode.

2. Confirm that the "No Disc" will be appeared on the screen.

3. Press both VOL. DOWN button on the set and Channel button **(5)** on the remote control for more than 2 seconds.

4. Press VOL. UP/DOWN button on the unit to check if all the keys on the unit do not function.
   NOTE: To check if DVD Write mode is set.
   When inserting Up-Date Disc at Non DVD Write mode, the read error will happen.

5. Insert the Up-Date Disc. **(Refer to SERVICING FIXTURE AND TOOLS)**

6. Automatic read will start and "Firmware upgrade Please Wait" will be displayed on the screen.
   At this time, the horizontal noise lines may appear. But no problem.
   NOTE: Do not turn off the unit on the way or operate the keys on the unit and remocon.
   Up-Date error will happen and can not be done with the Up-Date of Up-Date Disc.

7. After the Up-Date, Logo screen will appear.

8. Unplug the AC cord, then plug it in.

   After the write, set to the initializing of shipping.
9. Turn on the power, and set the DVD mode.
10. Press both VOL. DOWN button on the set and Channel button **(4)** on the remote control for more than 2 seconds.
    The "INITIALIZE 5 ---> COMPLETE" will appear on the screen.

11. Then unplug the AC cord, and plug it in.

    CHECK FOR THE FIRMWARE VERSION
12. Turn on the power, and set the DVD mode.
13. Press both Channel button **(1)** on the remote control and the STOP button on the set for more than 2 seconds.
    Firmware version will be displayed on the top left of the screen.

```
F/W Ver. ADLSX8327A ————           A  D  L  S  X  8  3  2  7  A
Initialize: Complete

Laser drive time
DVD LD: 0Hour                          Fixed           Released times on the same date
CD LD : 0Hour
                                             Release date (Example: 2008.3.27)
```
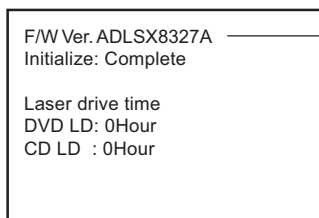
When the changed version displays, the Re-write will be completed.

A = October
B = November
C = December

14. Turn off the power

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSIONcan be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(2)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, turn off the power.

NOTE: The each item value might be different according to each set.

Initial setting data check sum. —— INIT : 5BFB
SCALER data check sum. —— VCT-P : 2D59   LCD ON : 0000 —— POWER ON total hours.
EEPROM version. —— EEPROM : W51C01BM00   = (16 x 16 x 16 x thousands digit value)
Main Micon check sum. —— ANALOG M : DB180_80424A   + (16 x 16 x hundreds digit value)
Sub Micon check sum. —— ANALOG S : DB0F0_70821B   + (16 x tens digit value)
    + (ones digit value)
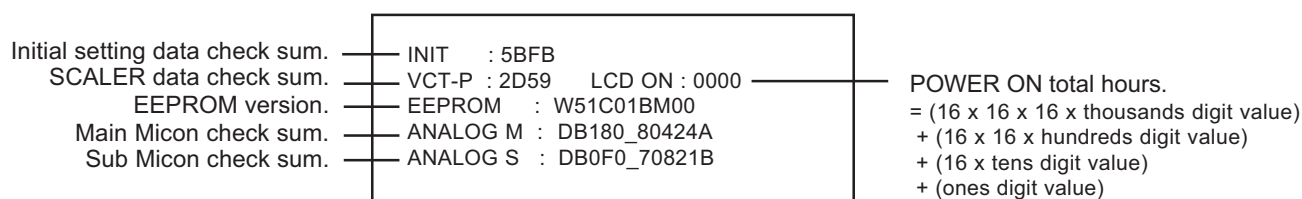
FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 2.

NOTE: No need to set data other position than 0D00~0E3F and 1900~7FFF

ADDRESS   DATA

INIT   0000   00
LCD ON   0000
ANALOG M : DB180_80424A
ANALOG S : DB0F0_70821B

FIG. 2

4. ADDRESS is now selected and should "blink". Using the UP/DOWN buton on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
7. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 6 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.
10. Turn on the POWER.
11. Set the VOLUME to minimum.
12. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
13. After the finishing of the initializing of shipping, the unit will turn off automatically.
The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

• Use an isolation transformer when performing any service on this chassis.
• When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
• When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 1-1**.

```
┌─────────────────────────────────────┐
│  ┌──────────────────────────────┐   │
│  ▯ PAL            TUNER       ▯   │
│  ▯                 4:3        ▯   │
│  ▯                            ▯   │
│  ▯                            ▯   │
│  ▯                            ▯   │
│  ▯                            ▯   │
│  ▯                            ▯   │
│  ▯ 01 OSD H POSI       130    ▯   │
│  ▯                            ▯   │
│  └──────────────────────────────┘   │
│      Function          Step No.      │
│                          Fig. 1-1    │
└─────────────────────────────────────┘
```
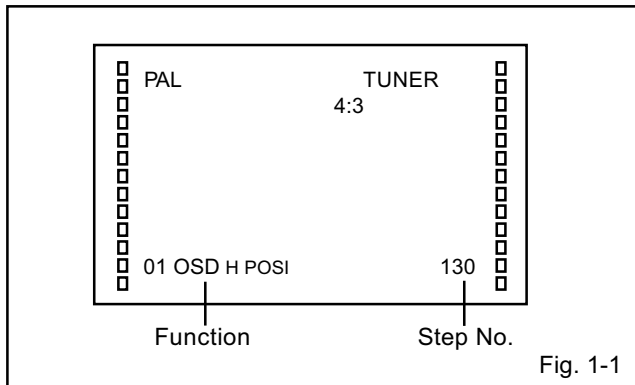
3. Use the PAGE UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for TUNER, AV and DVD mode, press the INPUT button on the remote control to set to the TUNER, AV and DVD mode.
6. Press the VOL.DOWN button on the set and the channel **(9)** on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
01	OSD H POSI	24	V POSI
02	OSD V POSI	25	V POSI MAX
03	R DRIVE(N)	26	V POSI MIN
04	R CUTOFF(N)	27	BACKLIGHT CENTER
05	G DRIVE(N)	28	BACKLIGHT MAX
06	G CUTOFF(N)	29	BACKLIGHT MIN
07	B DRIVE(N)	30	BRIGHT CENTER
08	B CUTOFF(N)	31	BRIGHT MAX
09	R DRIVE(C)	32	BRIGHT MIN
10	R CUTOFF(C)	33	TINT CENTER
11	G DRIVE(C)	34	CONTRAST CENTER
12	G CUTOFF(C)	35	CONTRAST MAX
13	B DRIVE(C)	36	CONTRAST MIN
14	B CUTOFF(C)	37	CONTRAST 40
15	R DRIVE(W)	38	COLOR CENTER
16	R CUTOFF(W)	39	COLOR MAX
17	G DRIVE(W)	40	COLOR MIN
18	G CUTOFF(W)	41	TEXT H POSI
19	B DRIVE(W)	42	TEXT V POSI
20	B CUTOFF(W)	43	FLICKER ADJ
21	H POSI		
22	H POSI MAX		
23	H POSI MIN		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the INPUT button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE(N)".
6. Press the PAGE UP/DOWN button on the remote control to select the "R DRIVE(N)", "R CUTOFF(N)", "B DRIVE(N)", "B CUTOFF(N)", "R DRIVE(C)", "R CUTOFF(C)", "B DRIVE(C)", "B CUTOFF(C)", "R DRIVE(W)", "R CUTOFF(W)", "B DRIVE(W)" or "B CUTOFF(W)".
7. Adjust the LEFT/RIGHT button on the remote control to whiten the R DRIVE(N), R CUTOFF(N), B DRIVE(N), B CUTOFF(N), R DRIVE(C), R CUTOFF(C), B DRIVE(C), B CUTOFF(C), R DRIVE(W), R CUTOFF(W), B DRIVE(W) and B CUTOFF(W) at each step tone sections equally.
8. Perform the above adjustments 6 and 7 until the white achieved.

ELECTRICAL ADJUSTMENTS

2-2: CONTRAST MAX

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "CONTRAST MAX".
4. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "48"
5. Check if the picture is normal.
6. Receive the monoscope pattern. (VIDEO Input)
7. Press the INPUT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness and contrast to normal position.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "CONTRAST MAX".
10. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "42".
11. Check if the picture is normal.
12. Playback the DVD(480i) disc.
13. Press the INPUT button on the remote control to set to the DVD mode.
14. Using the remote control, set the brightness and contrast to normal position.
15. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select "CONTRAST MAX".
16. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "41".
17. Check if the picture is normal.

ELECTRICAL ADJUSTMENTS

2-3: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each of the adjustment item is set correctly referring below. **(TUNER/AV/DVD)**

NO.	FUNCTION	TUNER	AV CVBS	AV S(Y/C)	AV RGB	DVD
				STEP NO.		
1	OSD H POSI	140	140	140	140	75
2	OSD V POSI	7	7	7	7	31
3	R DRIVE(N)	*	*	*	*	*
4	R CUT OFF(N)	*	*	*	*	*
5	G DRIVE(N)	890	890	890	890	890
6	G CUT OFF(N)	0	0	0	0	0
7	B DRIVE(N)	*	*	*	*	*
8	B CUTOFF(N)	*	*	*	*	*
9	R DRIVE(C)	*	*	*	*	*
10	R CUT OFF(C)	*	*	*	*	*
11	G DRIVE(C)	890	890	890	890	890
12	G CUT OFF(C)	0	0	0	0	0
13	B DRIVE(C)	*	*	*	*	*
14	B CUTOFF(C)	*	*	*	*	*
15	R DRIVE(W)	*	*	*	*	*
16	R CUT OFF(W)	*	*	*	*	*
17	G DRIVE(W)	890	890	890	890	890
18	G CUT OFF(W)	0	0	0	0	0
19	B DRIVE(W)	*	*	*	*	*
20	B CUTOFF(W)	*	*	*	*	*
21	H POSI 50Hz 4:3/14:9/Full_S	634	634	634	642	646
	H POSI 50Hz 4:3/14:9/Full_S SECAM	638	638	638	642	-
	H POSI 50Hz 16:9	704	704	704	712	710
	H POSI 50Hz 16:9 SECAM	708	708	708	710	-
	H POSI 50Hz CINEMA	766	766	766	772	772
	H POSI 50Hz CINEMA SECAM	768	768	768	770	-
	H POSI 60Hz 4:3/14:9/Full_S	580	580	580	572	570
	H POSI 60Hz 16:9	650	650	650	642	642
	H POSI 60Hz CINEMA	706	706	706	700	692
	H POSI PC 4:3	-	-	-	-	-
	H POSI PC 16:9	-	-	-	-	-
22	H POSI MAX (PC)	-	-	-	-	-
23	H POSI MIN (PC)	-	-	-	-	-
24	V POSI 50Hz 4:3/16:9	27	27	27	25	27
	V POSI 50Hz FULL SCREEN	27	27	27	25	26
	V POSI 50Hz Cinema	61	61	61	59	60
	V POSI 50Hz 14:9	45	45	45	43	44
	V POSI 60Hz 4:3/16:9	20	20	20	16	18
	V POSI 60Hz FULL SCREEN	20	20	20	16	18
	V POSI 60Hz Cinema	50	50	50	31	48
	V POSI 60Hz 14:9	36	36	36	31	35
	V POSI PC	-	-	-	-	-
25	V POSI MAX 50Hz CINEMA	-	-	-	-	-
	V POSI MAX 60Hz CINEMA	-	-	-	-	-
	V POSI MAX PC	-	-	-	-	-
26	V POSI MIN 50Hz CINEMA	-	-	-	-	-
	V POSI MIN 60Hz CINEMA	-	-	-	-	-
	V POSI MIN PC	-	-	-	-	-
27	BACKLIGHT CENTER	100	100	100	100	100
28	BACKLIGHT MAX	155	155	155	155	155
29	BACKLIGHT MIN	40	40	40	40	40
30	BRIGHT CENTER	+	+	+	+	-5
31	BRIGHT MAX	+	+	+	+	70
32	BRIGHT MIN	+	+	+	+	-64
33	TINT CENTER	+	+	+	+	-9
34	CONTRAST CENTER	+	+	+	+	*
35	CONTRAST MAX	+	+	+	+	*
36	CONTRAST MIN	+	+	+	+	18
37	CONTRAST 40	+	+	+	+	*
38	COLOR CENTER	+	+	+	+	38
39	COLOR MAX	+	+	+	+	63
40	COLOR MIN	+	+	+	+	0
41	TEXT H POSI	0	0	0	0	190
42	TEXT V POSI	0	0	0	0	7

NOTE: For the step no. with * mark, please adjust it according to the situation of the set.

NOTE: For the step no. with + mark, please adjust it according to the 2-4.

D-3

ELECTRICAL ADJUSTMENTS

2-4: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each of the adjustment item is set correctly referring below. **(TUNER/AV)**

NO.	FUNCTION	TUNER			AV1(SCART1) CVBS					AV2(RCA) CVBS					AV2(RCA) S(Y/C)					AV1(SCART1) RGB				
		576i			576i			480i		576i			480i		576i			480i		576i			480i	
		PAL50	PAL60	SECAM	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43	PAL50	PAL60	SECAM	NTSC3.58	NTSC4.43
		STEP No.																						
30	BRIGHT CENTER	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
31	BRIGHT MAX	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
32	BRIGHT MIN	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80
33	TINT CENTER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	CONTRAST CENTER	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	CONTRAST MAX	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
36	CONTRAST MIN	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
37	CONTRAST 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
38	COLOR CENTER	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
39	COLOR MAX	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
40	COLOR MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTE: For the step no. with * mark, please adjust it according to the situation of the set.

ELECTRICAL ADJUSTMENTS

3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

LCD PANEL

DVD MT PCB

DVD DECK

CP2301 — CD2001

CP8501

CP2302

CP8502

CP2303

CD2301

POWER PCB

OPERATION PCB

CP2201

CD7005

REMOCON PCB

CP7601

OS7601

CD7006

CD6501

CD7204

CP5901

CP3801

CP6501

CP7200

CD4301

CD4302

J8101

CP8101

CP4300

CP5802

J301

J8104

J4206

J501

CD301

CP5803

AC IN
CD501

SPEAKER

TU5801

MAIN PCB

TUNER PCB

TROUBLESHOOTING GUIDE

(LCD SECTION)

```
┌─────────────────────────────┐
│  POWER DOES NOT TURN ON      │
└─────────────────────────────┘
              │
              ▼
        ╱─────────────╲          Yes      ┌──────────────────────────┐
       ╱ Is F501 broken? ╲───────────────▶│       Change F501.        │
        ╲─────────────╱                    └──────────────────────────┘
              │ No
              ▼
        ╱───────────────────╲    No       ┌──────────────────────────┐
       ╱ Is there voltage at   ╲─────────▶│ Check IC501 and peripheral│
       ╲ pin 6 of IC501 21V?   ╱          │ circuit.                  │
        ╲───────────────────╱             └──────────────────────────┘
              │ Yes
              ▼
        ╱─────────────╲          Yes      ┌──────────────────────────┐
       ╱ Is R510 broken? ╲──────────────▶│       Change R510.        │
        ╲─────────────╱                    └──────────────────────────┘
              │ No
              ▼
┌─────────────────────────────┐
│     Change MAIN PCB.         │
└─────────────────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────────┐
│ THE PICTURE APPEARS,        │
│ BUT THE AUDIO DOES NOT       │
│ APPEARS. (AT RF MODE)        │
└─────────────────────────────┘
              │
              ▼
       ◇ Is CD301 connected? ◇ ──No──▶  ┌──────────────────┐
              │                          │ Connect CD301.    │
             Yes                         └──────────────────┘
              │
              ▼
  ◇ Is there signal at pins
    1 and 4 of CD301? ◇ ──Yes──▶  ┌──────────────────────────┐
              │                    │ Change SP301 and SP302.   │
             No                    └──────────────────────────┘
              │
              ▼
  ◇ Is there signal at pins 2
    and 4 of IC301? ◇ ──Yes──▶  ┌──────────────────────────┐
              │                  │ Check IC301 and peripheral │
             No                  │ circuit.                   │
              │                  └──────────────────────────┘
              ▼
  ◇ Is there signal at
    pin14 of TU5801? ◇ ──Yes──▶  ┌──────────────────────────┐
              │                   │ Check IC803 and peripheral │
             No                   │ circuit.                   │
              │                   └──────────────────────────┘
              ▼
┌──────────────────┐
│ Change TU5801.    │
└──────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────┐
│ THE PICTURE DOES NOT    │
│ APPEAR                  │
└─────────────────────────┘
            │
            ▼
    ◇ Does backlight shine? ◇ ──No──► ◇ Is CD7005,CD7006 connected ? ◇ ──No──► ┌──────────────────────────┐
            │                                    │                             │ Connected CD7005,CD7006  │
           Yes                                  Yes                            └──────────────────────────┘
            │                                    │
            │                                    ▼
            │                          ◇ Is the signal pin 16 and18 of IC7001 ? ◇ ──No──► ┌──────────────────────────┐
            │                                    │                                        │ Check IC7001 and         │
            │                                   Yes                                       │ peripheral circuit.      │
            │                                    │                                        └──────────────────────────┘
            │                                    ▼
            │                          ◇ Is the voltage at pin 20 of IC7001 12V ? ◇ ──No──► ┌──────────────┐
            │                                    │                                          │ Check F7001. │
            │                                   Yes                                         └──────────────┘
            ▼
    ◇ Is CD7204 connected? ◇ ──No──► ┌──────────────────────┐
            │                        │ Connected CD7204.    │
           Yes                       └──────────────────────┘
            │
            ▼
    ◇ Is there voltage at pins 1,2 and 16 of CP2804 5V? ◇ ──No──► ┌──────────────────────────┐
            │                                                      │ Check IC3803 and         │
           Yes                                                     │ peripheral circuit.      │
            │                                                      └──────────────────────────┘
            ▼
    ◇ Is there signal at pins 5,6, 7,8,10,11,19,20,21,23, 24,25 of CP7200 ◇ ──Yes──► ┌──────────────────────────┐
            │                                                                        │ Change V7201(PANEL).     │
           No                                                                        └──────────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Change MAIN PCB.     │
└──────────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────┐
│ THE COLOR DOES NOT      │
│ APPEAR                  │
└─────────────────────────┘
            │
            ▼
      ◇─────────────◇      No
     ╱ Is setting of ╲ ─────────────────────────────►  ┌──────────────────────┐
     ╲ color normal?  ╱                                 │   Adjust the color.  │
      ◇─────────────◇                                   └──────────────────────┘
            │ Yes
            ▼
      ◇─────────────◇      No
     ╱ Is the color  ╲ ─────────────────────────────►  ┌──────────────────────┐
     ╲ signal        ╱                                  │ Receive the color    │
      ◇ received?  ──◇                                  │ signal.              │
            │ Yes                                       └──────────────────────┘
            ▼
┌─────────────────────────┐
│ Change MAIN PCB.        │
└─────────────────────────┘
```

TROUBLESHOOTING GUIDE

(DVD SECTION)

```
┌─────────────────────────┐
│ DOES NOT DISPLAY DVD     │
│ PICTURE                  │
└─────────────────────────┘
             │
             ▼
      ╱───────────╲           Yes     ┌──────────────────────┐
     ╱ Does this    ╲ ───────────────▶│ Check the disc.      │
     ╲ display       ╱                └──────────────────────┘
      ╲ logo picture?╱
             │ No
             ▼
      ╱───────────────╲       Yes     ┌──────────────────────────┐
     ╱ Is there signal  ╲ ───────────▶│ Check pins 8 and 10 of   │
     ╲ at pins 149 and   ╱            │ CP8501 and peripheral     │
      ╲ 151 of IC4001?  ╱             │ circuit.                  │
             │ No                     └──────────────────────────┘
             ▼
      ╱───────────────╲       Yes     ┌──────────────────────────┐
     ╱ Does IC4001 gets ╲ ───────────▶│ Change IC4001.           │
     ╲ P.CON+3.3V and    ╱            └──────────────────────────┘
      ╲ P.CON+1.8V?     ╱
             │ No
             ▼
┌─────────────────────────┐
│ Check P.CON+3.3V and    │
│ P.CON+1.8V line.        │
└─────────────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────────┐
│  DISC DOES NOT EJECT         │
└─────────────────────────────┘
              │
              ▼
    ╱─────────────────╲         No      ╱─────────────────╲    Yes   ┌─────────────────────────┐
   ╱  Does OSD appear   ╲ ──────────→  ╱  Is remote key set  ╲ ─────→ │ Check pins 138 and 139  │
   ╲  on the screen?    ╱              ╲  effectively?       ╱        │ of IC4001 and peripheral│
    ╲─────────────────╱                 ╲─────────────────╱          │ circuit.                │
              │ Yes                                                   └─────────────────────────┘
              ▼
    ╱─────────────────╲      No        ╱─────────────────╲    No    ┌─────────────────────────┐
   ╱ Does this eject disc at ╲ ──────→ ╱ Is there signal at pins 4 ╲─→│ Check IC4001 and        │
   ╲ change DVD DECK?      ╱           ╲ and 5 of CP2302?        ╱   │ peripheral circuit.     │
    ╲─────────────────╱                 ╲─────────────────╱          └─────────────────────────┘
              │ Yes                              │ Yes
              ▼                                  ▼
┌─────────────────────┐          ╱─────────────────╲    No    ┌─────────────────────────┐
│  Change DVD DECK.   │         ╱ Is there signal at pins 1 ╲─→│ Change IC2301.          │
└─────────────────────┘         ╲ and 2 of CP2302?        ╱   └─────────────────────────┘
                                 ╲─────────────────╱
                                          │ Yes
                                          ▼
                              ┌─────────────────────┐
                              │  Change IC4001.     │
                              └─────────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────┐
│   DOES NOT PLAY DVD      │
└─────────────────────────┘
             │
             ▼
    ╱─────────────────╲      Yes      ╱─────────────────╲      Yes      ╱─────────────────╲
   ╱ Does this display  ╲────────────╱ Does CD2001 connect ╲────────────╱ Is the voltage between╲
   ╲ "INCORRECT DISC"?  ╱            ╲ with CP2301 correctly?╱            ╲ JG017 and JG018 less ╱
    ╲─────────────────╱              ╲─────────────────╱            ╲ than 0.6V?       ╱
             │ No                            │ No                       ╲─────────────────╱
             ▼                               ▼                                │ Yes
                                    ┌─────────────────┐
                                    │ Connect CD2301. │
                                    └─────────────────┘
```

Change DVD DECK.
No

```
    ╱─────────────────╲      No       ┌─────────────────┐
   ╱ Does this display  ╲────────────▶│ Change IC4001.  │
   ╲ reading mark?      ╱             └─────────────────┘
    ╲─────────────────╱
             │ Yes
             ▼
    ╱─────────────────╲      No       ┌─────────────────┐
   ╱ Does disc rotate?  ╲────────────▶│ Change DVD DECK.│
    ╲─────────────────╱             └─────────────────┘
             │ Yes
             ▼
┌─────────────────┐
│ Change IC4001.  │◀──────────────────────────────────
└─────────────────┘
```

TROUBLESHOOTING GUIDE

```
┌─────────────────────────┐
│    DOES NOT PLAY CD      │
└─────────────────────────┘
              │
              ▼
      Does this display        Yes      Does CD2001 connect     Yes      Is the voltage between
      "INCORRECT DISC"?  ────────────►   with CP2301 correctly? ────────► JG019 and JG018 less
                                                                          than 0.6V?
              │ No                               │ No                          │
              │                                  ▼                             │
              │                         ┌──────────────────┐                  │
              │                         │  Connect CD2301.  │                  │
              │                         └──────────────────┘                  │
              ▼
      Does this display        No      ┌──────────────────┐
      reading mark?      ────────────► │  Change IC4001.   │
                                       └──────────────────┘
              │ Yes
              ▼
      Does disc rotate?        No      ┌──────────────────┐
                         ────────────► │ Change DVD DECK.  │
                                       └──────────────────┘
              │ Yes
              ▼
┌──────────────────┐
│  Change IC4001.   │ ◄──────────────────
└──────────────────┘
```

Change DVD DECK.

No

Yes

E-8

TROUBLESHOOTING GUIDE

NO SOUND DVD/CD ANALOG AUDIO

Is there signal at pins 113, 114, 115 and 116 of IC4001? — No → Change IC4001.

Yes

Is there signal at pins 1 and 7 of IC8501? — No → Check pins 1 and 7 of IC8501 and peripheral circuit.

Yes

Does CD8501 connected? — No → Connected CD8501.

Yes

Change MAIN PCB.

NO SOUND DVD/CD DIGITAL AUDIO

Is there signal at pin1 of CP8501? — Yes → Change MAIN PCB.

No

Is there signal at pin122 of IC4001? — Yes → Check line circuit IC4001 to CP8501.

No

Change IC4001.

DVD BLOCK DIAGRAM

DVD LOADER
DSM2

LCD BLOCK

OPU

SPINDLE/
STEPING/
SLED
MOTOR

MPEG/MICON/DSP/RF_AMP
IC4001
ZR36966ELCG-D-G

Motor Drive
IC2301
LA6565VR-TLM-E

AUDIO AMP
IC8501
NJM4565M(TE1)

FLASH 16M
IC4007
SST39VF1601-70-4C-EKE

64M SDRAM
IC4005
M12L64164A-7TG

MD_DVD, MD_CD

RF, A, B, C, D, E, F

DVD_CD, DVD_LD, CD_LD

TR+/-, FO+/-,
MOT_LD+/-,
MOT_SLED+/-
MOT_SPDL+/-

SPINDLE/SLED/
FOCUS/TRACK_PWM,
TRAY_CLOSE/OPEN

SPDL_SENS+/-

HOME, TIN_SW, TOUT_SW

HA0~A19,
HD0~D15,
MEMCS0, RD, WR

SD_A0~A11

SD_D0~D15

RAMDQM, CLK, CKE, WE#,
CAS#, CS0#, CS1#, RAS#
SD_BA0, DQM

DUPRD1 — TX

DUPTD1 — RX

TIN_SW — START_SW

SPDIF — SPDIF-134

DAC_VIDEO_C/D — C_VIDEO

DAC_VIDEO_A — Y_VIDEO

RESET — DVD RESET

SYS_MUTE — ZERO

APWM_L+/-,
APWM_R+/-

DVD_AUDIO_L — DVD_A_OUT_L

DVD_AUDIO_R — DVD_A_OUT_R

POWER BLOCK DIAGRAM

21PIN/TUNER /SOUND AMP BLOCK DIAGRAM

J4206

SCART 1			
R_OUT	1	←	SC1_A_OUT_R
L_OUT	3	←	SC1_A_OUT_L
L_IN	2	→	SC1_A_IN_L
R_IN	6	→	SC1_A_IN_R
21-B_IN	7		SCART1_R/C1
21-G_IN	11	→	SCART1_G
21-R_IN (21-C_IN)	15		SCART1_B
21-Y_IN	16	→	SCART1_Y_IN
FOR_VCR	8	←	SCART1_SW
TUNER OUT	19	←	SC1_CVBS_OUT
VIDEO IN	20	→	SCART1_V_IN

SCALER/SUB MICON/
DVD_INTERFACE/
AV_SWITCH

TU5801 TUNER

AGC	4	→	RF_AGC
SCL	9	←	F_SCL
SDA	10		F_SDA
SIF	14	→	SIF
CVBS	15	→	SW_CVBS_(TU/D_TU)

S-VIDEO-IN
J8101

→ S_JACK_Y

→ S_JACK_C

CVBS_AV_IN
J8104

→ CVBS_IN

→ VIDEO_A_L

→ VIDEO_A_R

SP_AUDIO_OUT_L
SP_AUDIO_OUT_R

SPEAKER   CD301   SOUND AMP IC301 LA42052-E

SP_L+/-   2 ←

SP_R+/-   4 ←

ZERO_MUTE

REGULATOR BLOCK DIAGRAM

SCALER/SUB MICON/DVD_INTERFACE/AV_SWITCH BLOCK DIAGRAM

CP7200

LCD PANEL

V7201

REGULATOR { LCD+B

LCD_TXOUT0-/+~3,LCD_TXCLKOUT-/+

X801
20.250MHz

CD4302   REMOCON_PCB

SIF
SW_CVBS(TU/D_TU
SC1_A_OUT_R
SC1_A_OUT_L

24 23 191 31   128~141   79 78

REMOCON   89
EPG_LED   100
STANDBY_LED 117

21PIN/TUNER/
SOUND AMP

SCART1_Y_IN   175
SCART1_R/C   178
SCART1_G   177
SCART1_B   176
SC1_A_IN_R   11
SC1_A_IN_L   12
SCART1_V_IN   189
SC1_CVBS_OUT   195

EJECT
CH DOWN
POWER
MENU
CH UP
VOL UP
VOL
INPUT

KEY-A 159
KEY-B 160

IC802 RESET PST3229NR

8   1

AUDIO_DVD/VIDEO_L
IC6501 MM1501XNRE

VIDEO_A_L

4   2
6

13

AUDIO_DVD/VIDEO_R
IC6502 MM1501XNRE

VIDEO_A_R
ZERO_MUTE

4   2
6

14

161

MICON/SCALER
IC803
VCT6973G-FA-B3-000

EEP ROM 256K
IC801 AT24C256BN-10SU-1.8

84   5 SDA
83   6 SCL

CP6501

ZERO   2
DVD_A_OUT_R   13
DVD_A_OUT_L   14
START_SW   6
P.CON+3.3V   9
Y_VIDEO   15
P.CON+3.3V   19
C_VIDEO   16
P.CON+12V   20
P.CON+A5V   21
P.CON+6V   11
DVD_RESET   4
TX   7
RX   18
SPDIF-134   1

P.CON+3.3V

P.CON+3.3V

P.CON+12V
P.CON+A5V
P.CON+6V

YC/DVD SW
IC6503 MM1501XNRE

6   2
4

184

YC/DVD SW
IC6504 MM1501XNRE

6   2
4

183

190   CVBS_IN

27   SP_AUDIO_OUT_R
28   SP_AUDIO_OUT_L

21PIN/TUNER/
SOUND AMP

J4301

2

X101 16MHz

9   11

Q101/
Q102

21PIN/TUNER/
SOUND AMP { S_JACK_C
           S_JACK_Y

SUB MICON
IC101
R5F21244SNFP

F.SDA   4
F.SCL   2

F.SDA
F.SCL

20

24   42   SCART1_SW
41   RF AGC

23

IC105 RESET PST3229NR

8

F-9   F-10

PRINTED CIRCUIT BOARDS

DVD MT (TOP SIDE)

DVD MT (BOTTOM SIDE)

PRINTED CIRCUIT BOARDS
MAIN/TUNER (TOP SIDE)

CEG367A

CMG130A
PAL

PRINTED CIRCUIT BOARDS

POWER/OPERATION/REMOCON (INSERTED PARTS)
SOLDER SIDE

SW
SOLDER SIDE

AS MARKED.
- REPLACE
RISK OF FIRE

CEG373A

CEG375A

CEG374A

PRINTED CIRCUIT BOARDS
POWER/OPERATION/REMOCON (CHIP MOUNTED PARTS)
SOLDER SIDE
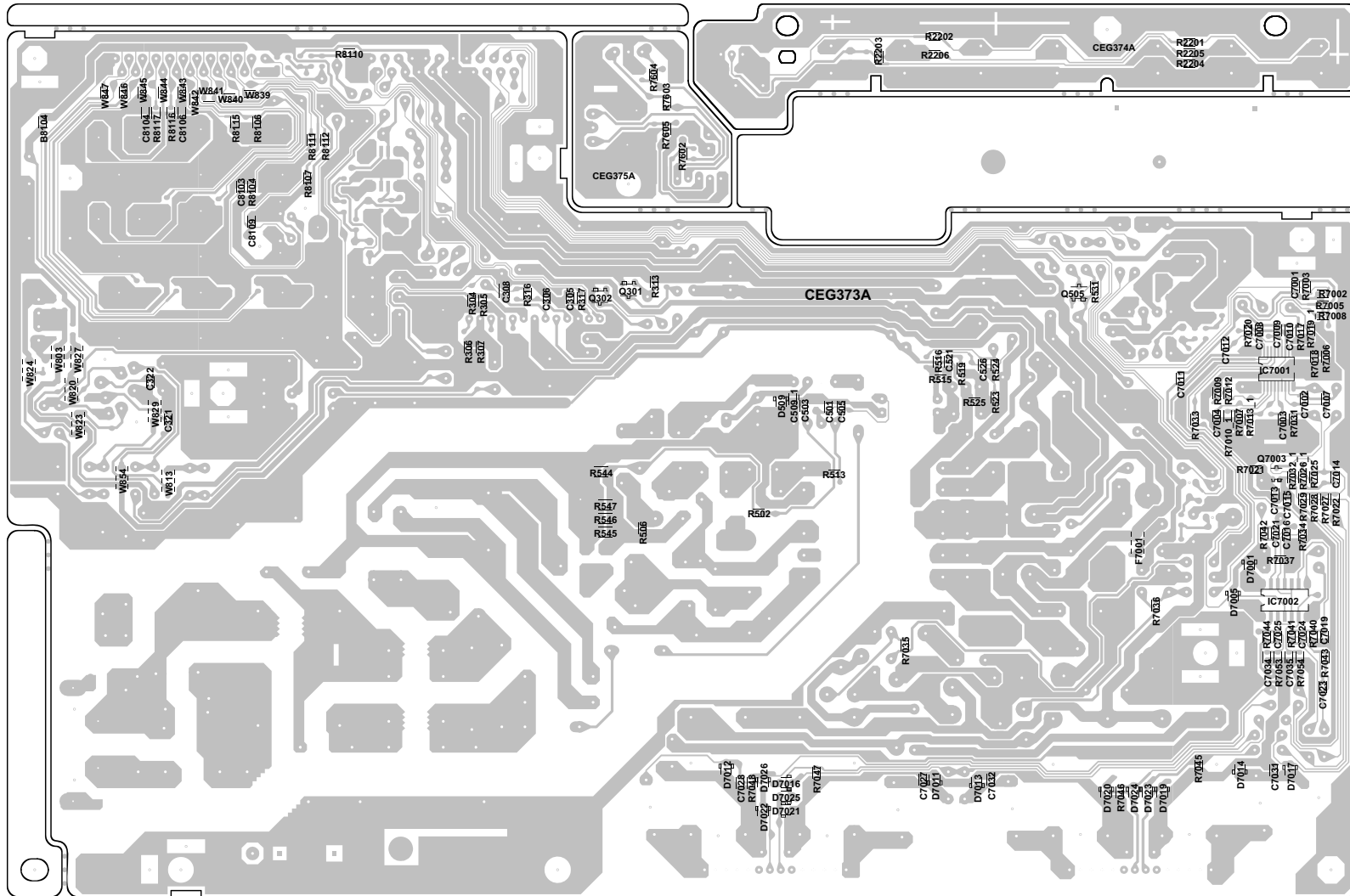
MPEG/MICON/DSP/RF_AMP SCHEMATIC DIAGRAM
(DVD MT PCB)
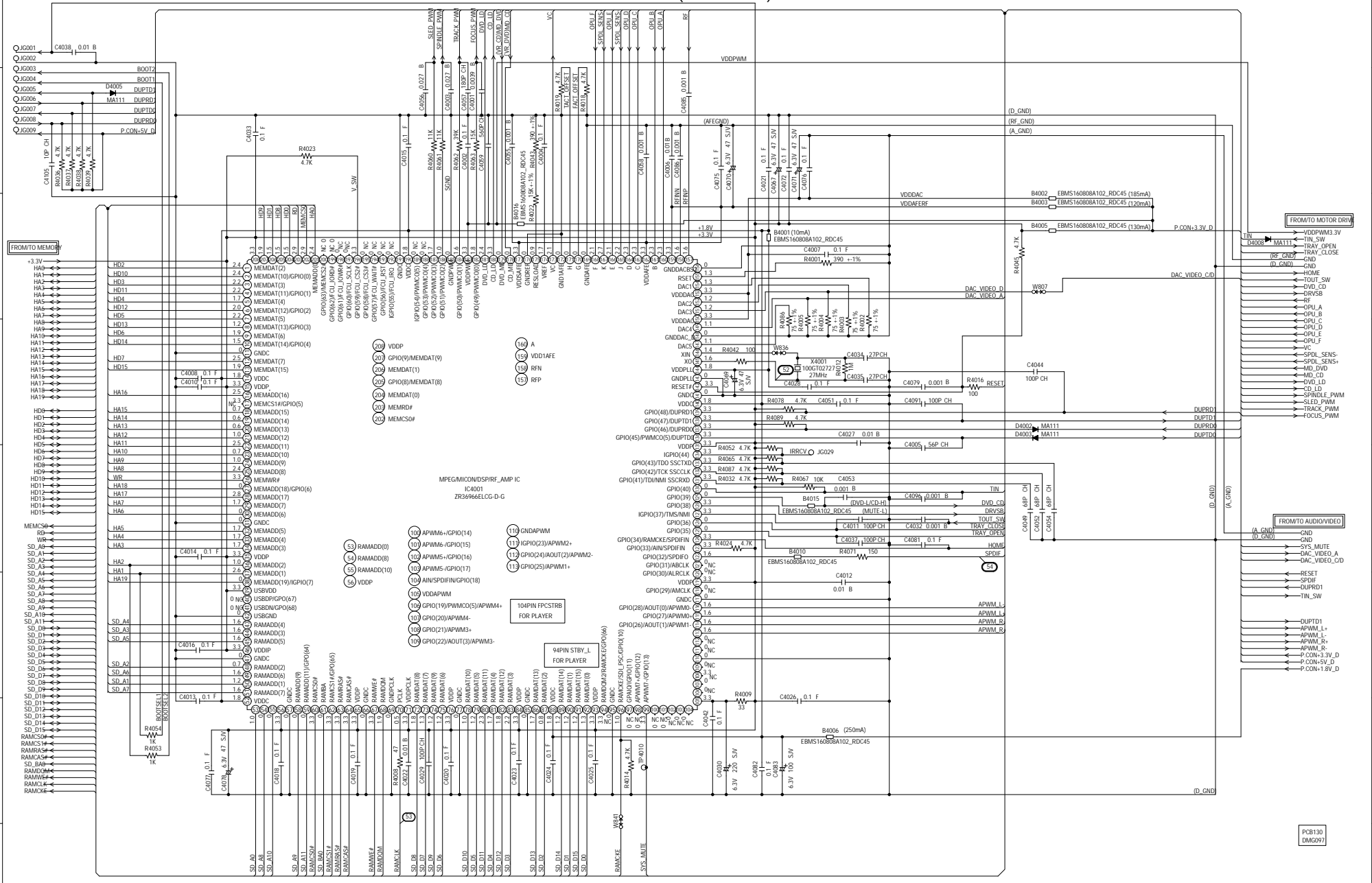
MPEG/MICON/DSP/RF_AMP IC
IC4001
ZR36966ELCG-D-G

104PIN FPCSTRB
FOR PLAYER

94PIN STBY_L
FOR PLAYER

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

FROM/TO MEMORY

FROM/TO MOTOR DRIVE

FROM/TO AUDIO/VIDEO

PCB130
DMG097

H-1

H-2

MEMORY SCHEMATIC DIAGRAM
(DVD MT PCB)

FROM/TO MPEG/MICON/DSP/RF_AMP

FLASH IC   16M
IC4007   SST39VF1601-70-4C-EKE

64M SDRAM IC
IC4005   M12L64164A-7TG

FROM AUDIO/VIDEO

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

PCB130
DMG097

H-3   H-4

MOTOR DRIVE SCHEMATIC DIAGRAM
(DVD MT PCB)

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY。

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB130
DMG097

H-5   H-6

AUDIO/VIDEO SCHEMATIC DIAGRAM

(DVD MT PCB)

FROM/TO DVD_INTERFACE/AV_SWITCH

CP8502 (CP6501)
A2001WV2-8P

GND(M)	8
P.CON+6V	7
P.CON+A5V	6
GND	5
P.CON+12V	4
P.CON+3.3V	3
P.CON+3.3V	2
GND	1

FROM/TO MPEG/MICON/DSP/RF_AMP

DAC_VIDEO_C/D
DAC_VIDEO_A
RESET
SYS_MUTE
DUPRD1
SPDIF
DUPTD1
APWM_L
APWM_L
APWM_R
APWM_R
P.CON+1.8V_D
P.CON+3.3V_D
P.CON+5V_D
GND (A_GND)
GND (D_GND)

TO MEMORY
RESET
P.CON+3.3V_D
GND (D_GND)

TO MOTOR DRIVE
P.CON+A5V_D
P.CON+3.3V_D
P.CON+6V_D
M_GND
GND (D_GND)

B8501 BLM18PG121SN1D
C8515 0.1 B
C8517 16V 100 SJV
C8518 0.001 B
B8504 EBMS160808A102_RDC45
C8521 0.1 B
C8539 0.001 B

M_GND
P.CON+5V_D
P.CON+A5V_D
L8501 2.2uHNLV25
B8502 EBMS160808A102_RDC45
C8502 1 F
C8503 0.1 B
C8519 0.001 B
C8520 2.2 B
C8538 0.001 B

DAC_VIDEO_C/D
C8505 12P CH
L8502 1uHNLV25
C8504 150P CH
C8506 150P CH
DAC_C[U]C_VIDEO

P.CON+3.3V_D
B8503 BLM18PG121SN1D

⚠ 1.8V REG IC
IC8502 LM1117S-ADJ
ADJ 1 0.6
OUT 2 1.8
IN 3 3.2
P.CON+1.8V_D
C8501 1 F
R8507 1K ±1%
R8508 2.2K ±1%
R8509 68 ±1%
C8516 6.3V 100 SJV

DAC_VIDEO_A
C8511 12P CH
L8504 1uHNLV25
C8510 150P CH
C8512 150P CH
DAC_A[Y]_VIDEO

FROM/TO DVD_INTERFACE/AV_SWITCH

CP8501 (CP6501)
A2001WR-14A

SSCRXD/TX	14
SSCTXD/RX	13
GND	12
START_SW	11
[U]C_VIDEO	10
[V]_VIDEO	9
[Y]_VIDEO	8
DVD RESET	7
DVD_A_OUT_L	6
GND	5
DVD_A_OUT_R	4
ZERO	3
GND	2
SPDIF-134	1

DUPTD1 W825
DUPRD1 W824
TIN_SW
RESET W818
SYS_MUTE D8510 MA111
SPDIF

APWM_L-
R8517 47K
R8530 2.2K
C8532 47P CH
R8534 15K
R8532 47K
C8530 0.0012 B

APWM_L+
R8521 47K
R8506 220
C8513 16V 47 SJV

C8534 16V 10 SJV
R8539 1K
R8537 10K

AUDIO AMP IC IC8501 NJM4565M(TE1)
A_GND
R8510 24K
C8525 16V 47 SJV
C8514 0.1 B
R8538 47K
C8528 150P CH
R8516 10K
R8527 47K
C8527 150P CH
VCC
C8526 0.1 B

APWM_R+
R8522 47K
C8529 0.0012 B
C8533 16V 10 SJV
R8536 1K
R8535 10K

APWM_R-
R8523 47K
R8529 2.2K
C8531 47P CH
R8533 15K
R8531 47K

C8542 0.01 B
C8537 560P CH
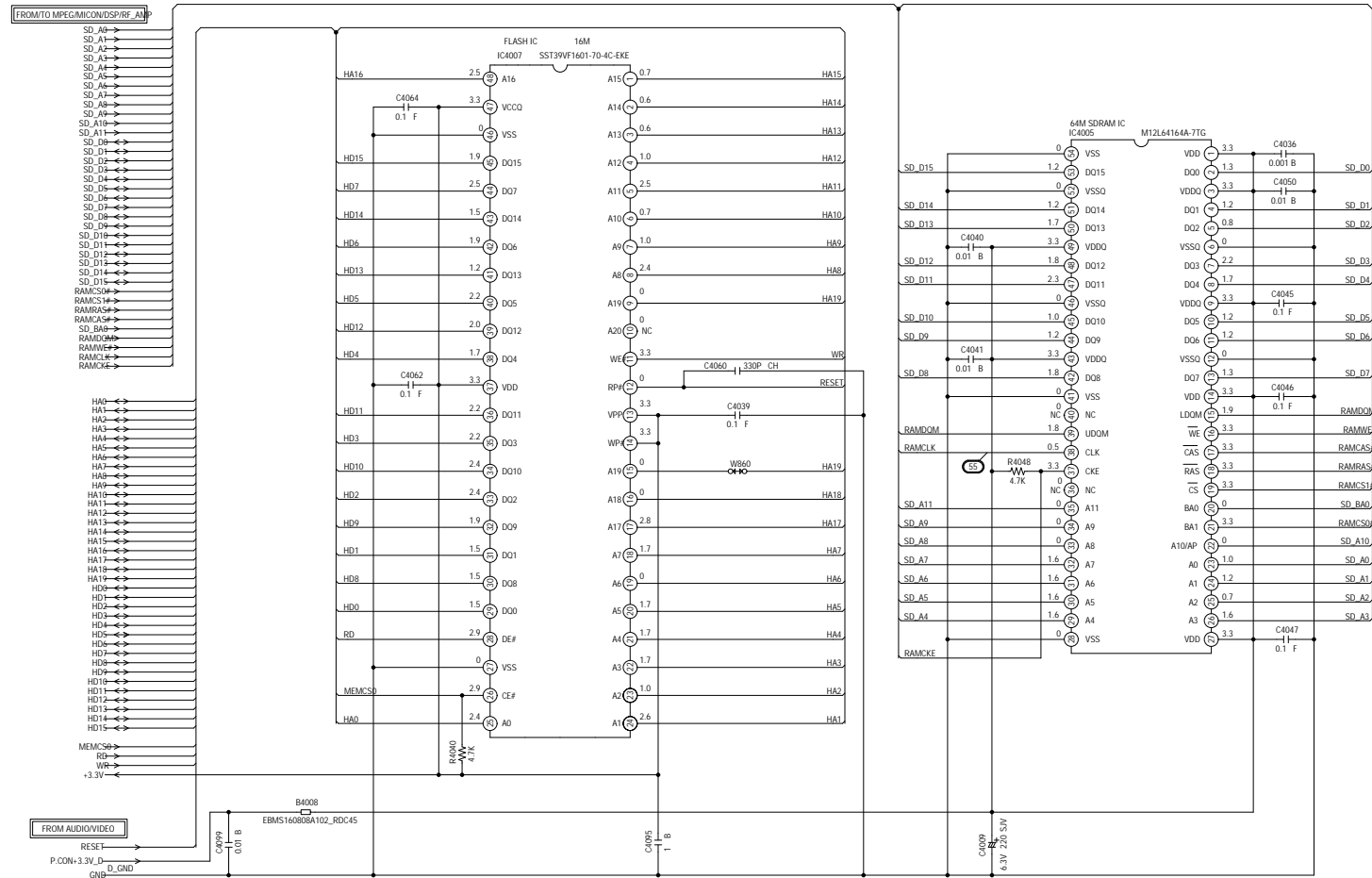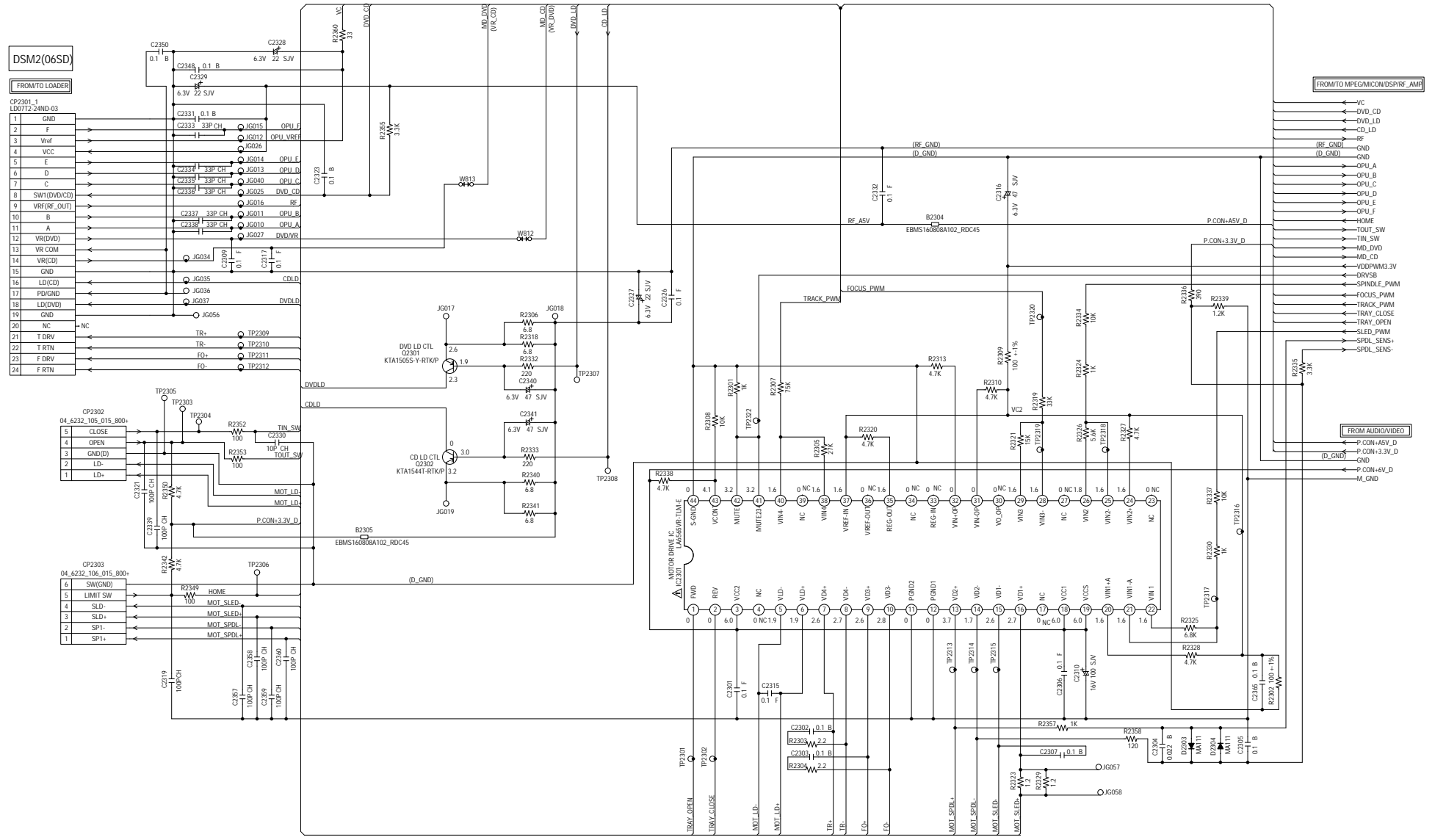C8536 560P CH
C8543 0.01 B
C8541 0.01 B
C8544 0.01 B

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

PCB130 DMG097

21PIN SCHEMATIC DIAGRAM
(MAIN PCB)

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR
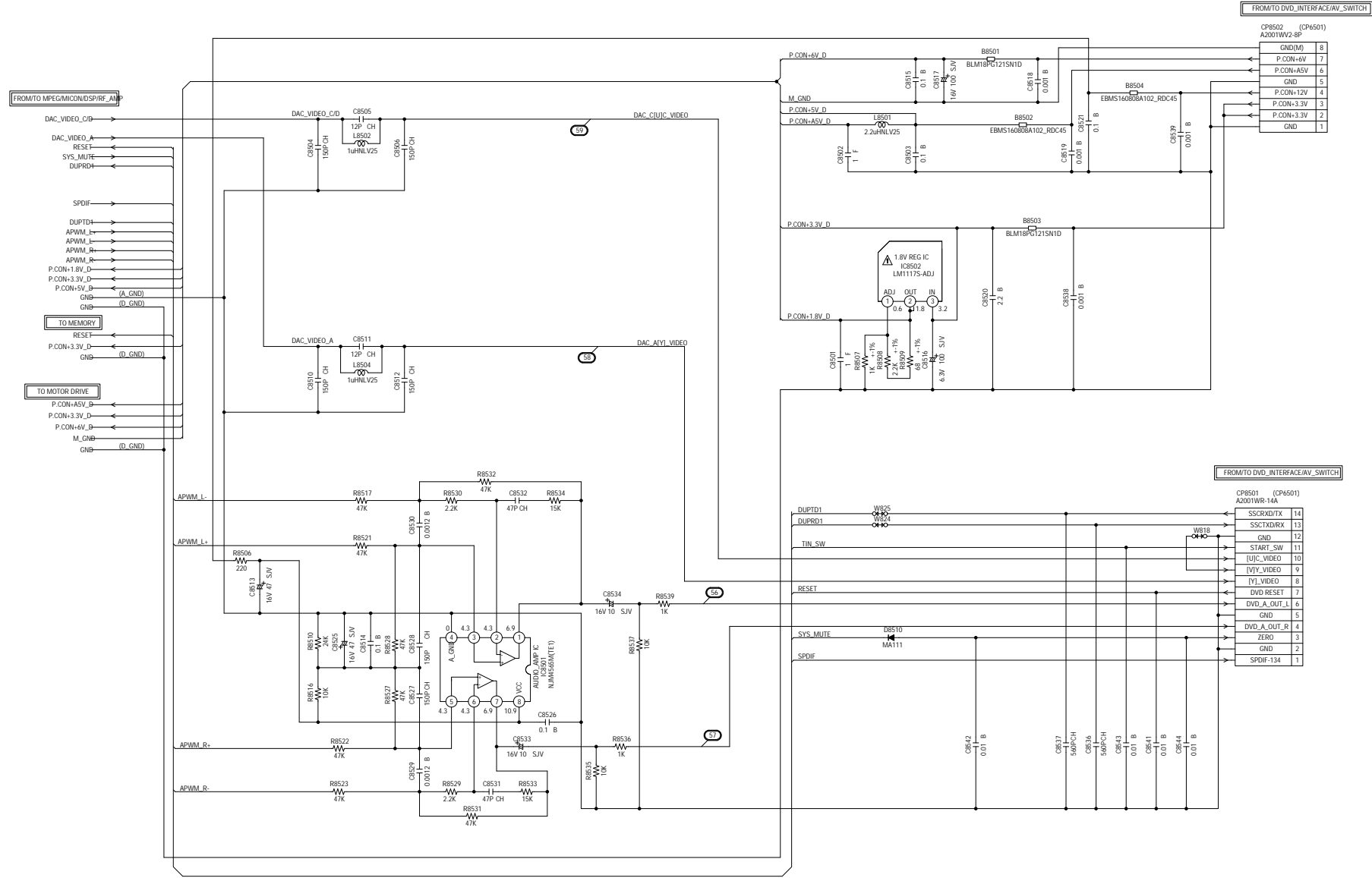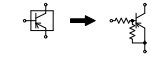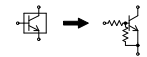
REGULATOR SCHEMATIC DIAGRAM
(MAIN PCB)

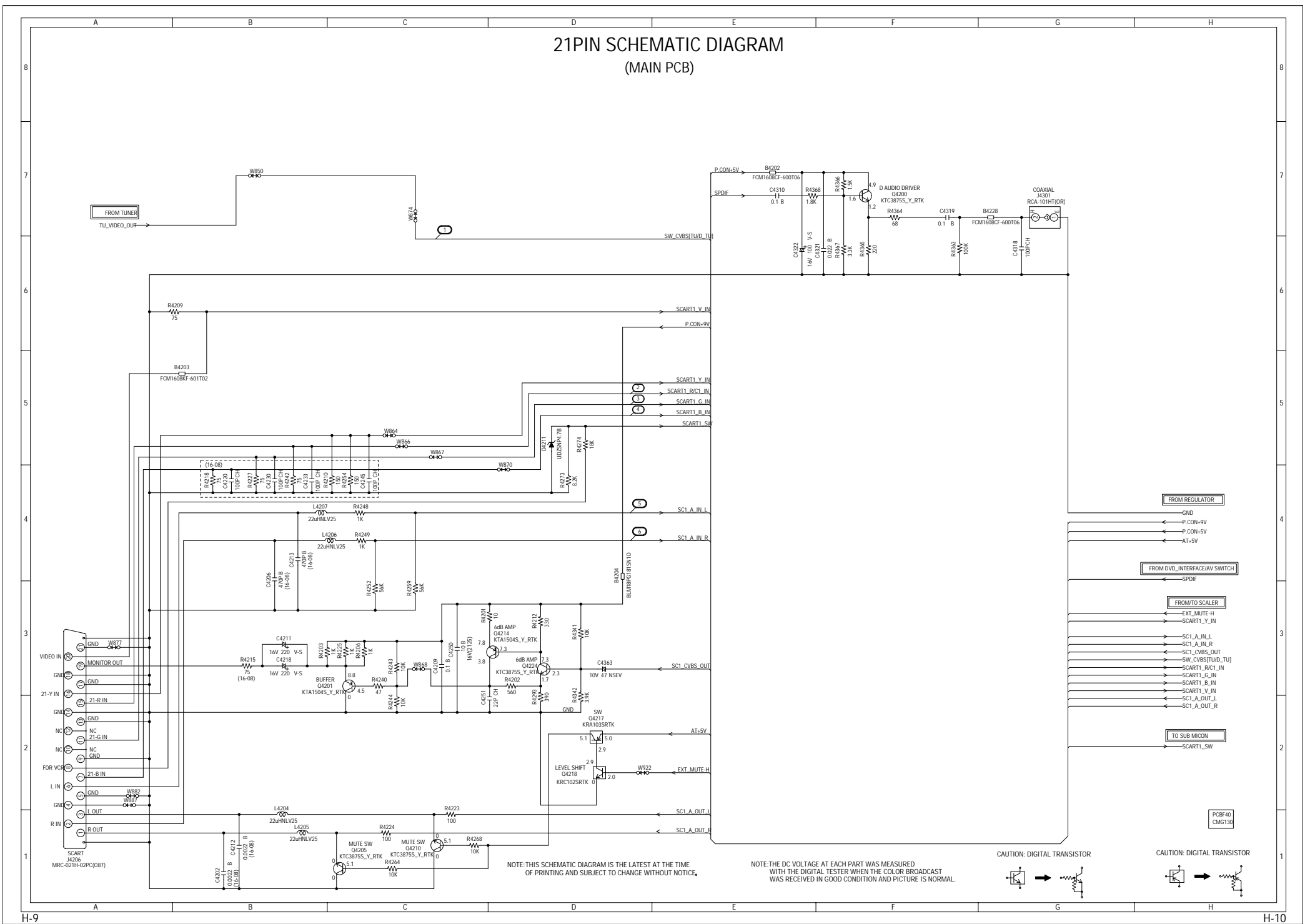NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY。

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N:UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

H-11

H-12
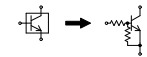
REGULATOR2 SCHEMATIC DIAGRAM
(MAIN PCB)

FROM/TO REGULATOR

AT+3.3V
AT.5.8V
GND
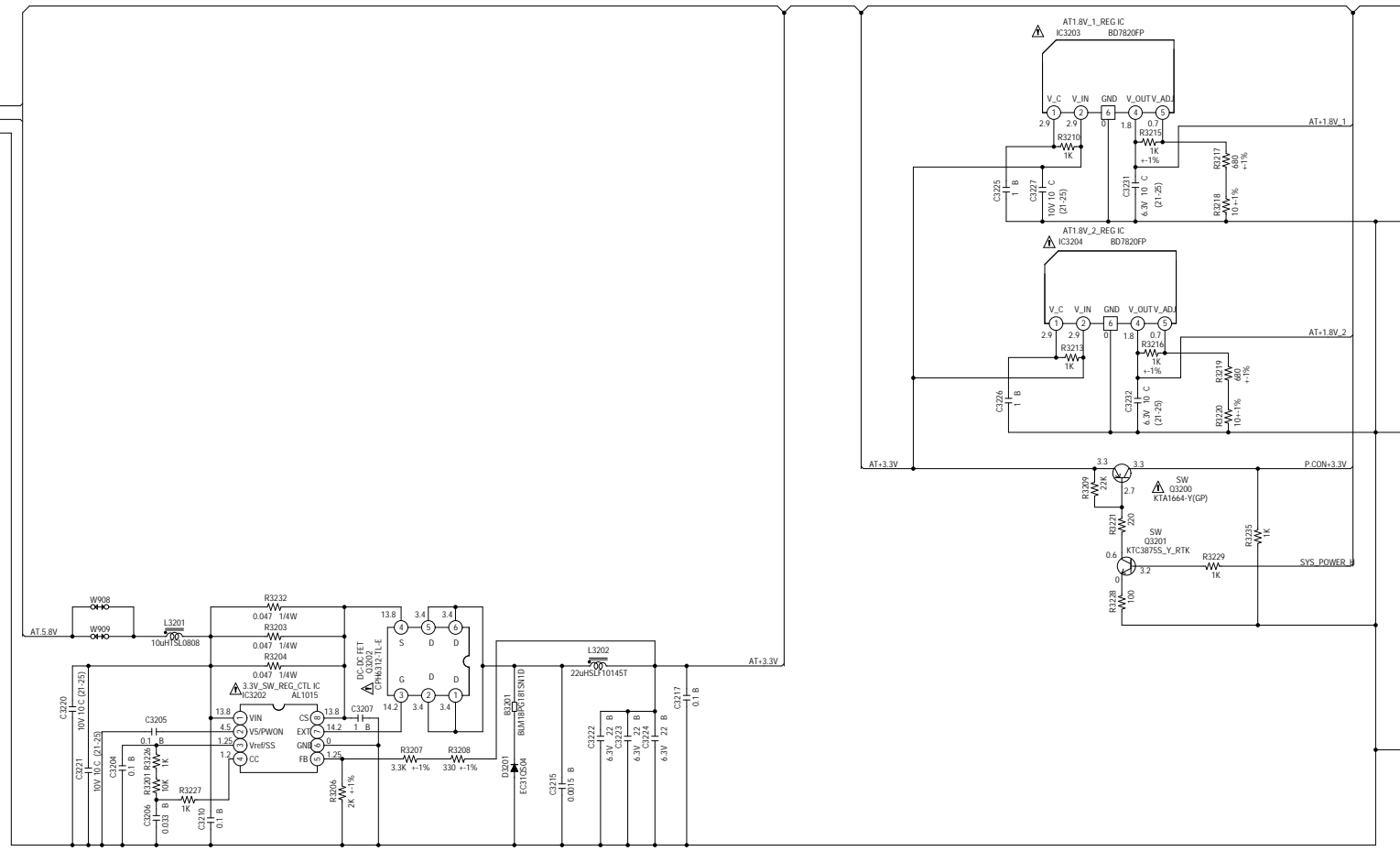
FROM/TO SCALER
GND
AT+1.8V_1
AT+1.8V_2
AT+3.3V
SYS_POWER_H

FROM/TO JACK
GND

AT+1.8V_1_REG IC
IC3203   BD7820FP

V_C V_IN GND V_OUT V_ADJ
1   2   6   4   5
2.9 2.9 0   1.8 0.7

R3210
1K
R3215
1K
+-1%
R3217
680
+-1%
R3218
10+-1%

C3225
1 B
C3227
10V 10 C
(21-25)
C3231
6.3V 10 C
(21-25)

AT+1.8V_1

AT1.8V_2_REG IC
IC3204   BD7820FP

V_C V_IN GND V_OUT V_ADJ
1   2   6   4   5
2.9 2.9 0   1.8 0.7

R3213
1K
R3216
1K
+-1%
R3219
680
+-1%
R3220
10+-1%

C3226
1 B
C3222
6.3V 10 C
(21-25)

AT+1.8V_2

AT+3.3V

3.3   3.3
R3209
2.7K
2.7
SW
Q3200
KTA1664-Y(GP)

R3221
220
SW
Q3201
KTC3875S_Y_RTK
0.6
R3229
1K
SYS_POWER_H

R3235
1K
P.CON+3.3V

R3228
100
3.2

TO SOUND AMP MUTE
P.CON+3.3V
AT+3.3V

TO TUNER
P.CON+3.3V

TO SUB MICON
P.CON+3.3V
GND

AT.5.8V

W908
W909
L3201
10uHTSL0808

R3232
0.047 1/4W
R3203
0.047 1/4W
R3204
0.047 1/4W

3.3V_SW_REG_CTL IC
IC3202   AL1015

DC-DC FET
Q3202
CPH6312-TL-E

13.8 3.4 3.4
S 4 5 6 D
G 3 2 1 D
14.2 3.4 3.4 D

L3202
22uHSLF10145T
AT+3.3V

13.8   VIN   CS 13.8
4.5   V5/PWON EXT
1.25   Vref/SS GNB
1.2   CC   FB 1.25

C3207
1 B

R3207
3.3K +-1%
R3208
330 +-1%

C3220
10V 10 C (21-25)
C3221
10V 10 C (21-25)
C3205
0.1 B
C3204
0.1 B
R3201 R3226
10K 1K
C3206
0.033 B
R3227
1K
C3210
0.1 B
R3206
2K +-1%

R3201
BLM18PG181SN1D
D3201
EC31QS04

C3215
0.0015 B
C3222
6.3V 22 B
C3223
6.3V 22 B
C3224
6.3V 22 B
C3217
0.1 B

PCBF40
CMG130

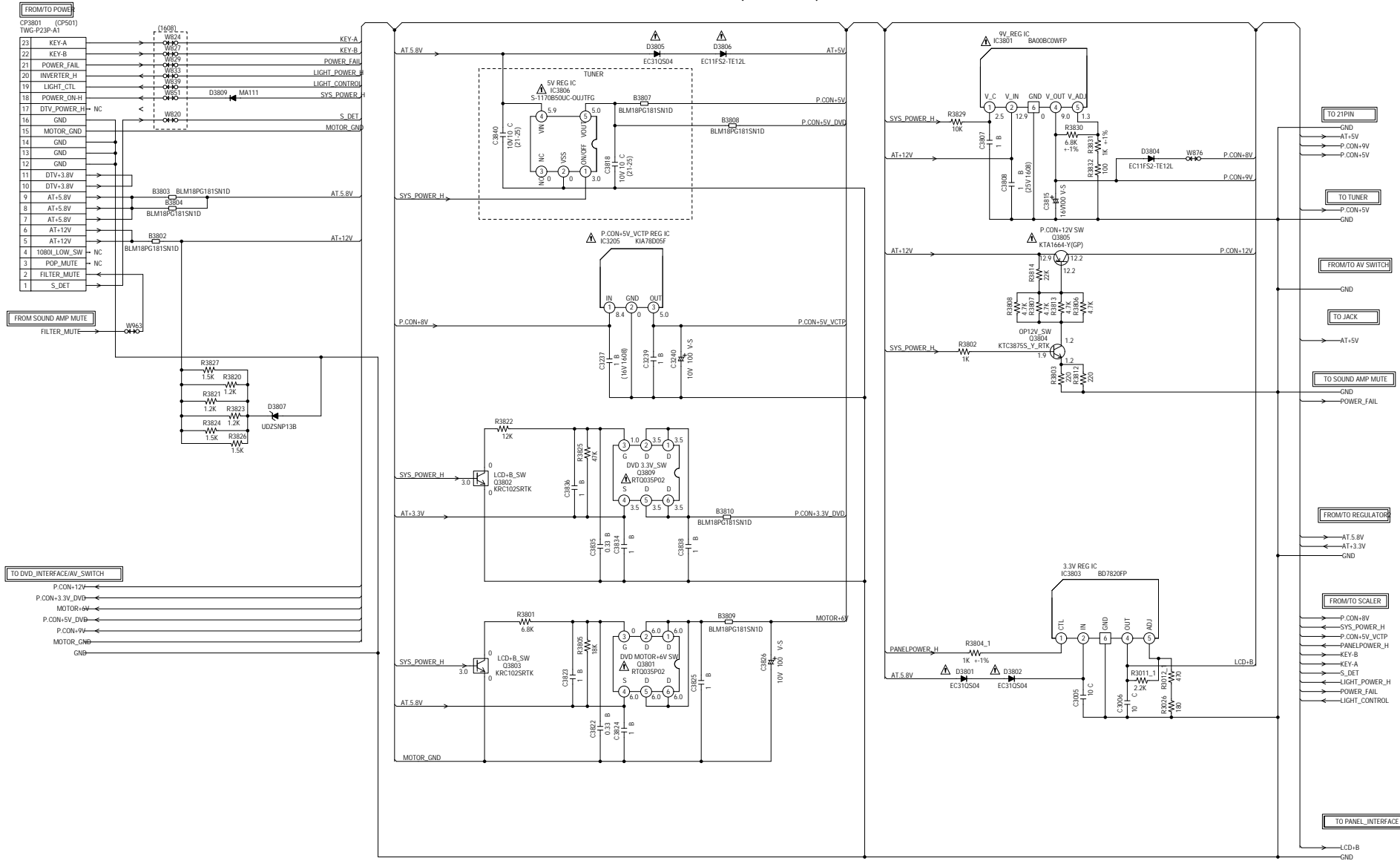NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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AV SWITCH SCHEMATIC DIAGRAM

(MAIN PCB)

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SOUND AMP MUTE SCHEMATIC DIAGRAM

(MAIN PCB)

FROM SCALER
SP_AUDIO_OUT_R
SP_AUDIO_OUT_L

C1004
4.7 B
(16V 21-25)

C1007
4.7 B
(16V 21-25)

W918
W919

20
21

TO REGULATOR
FILTER_MUTE

TO AV SWITCH
AUDIO_ROUT
AUDIO_LOUT
POWER_GND

R1006
820

MUTE_SW
Q1000
KTC3875S_Y_RTK

R1008
10K

MUTE
Q1002
KTC3875S_Y_RTK

R1011
22K

AUDIO_MUTE
W911
R1005
47K

R1009
10K

MUTE
Q1003
KTC3875S_Y_RTK

R1012
22K

W889
1608

FROM SUB MICON
SW_SPDIF

D1002
BAT54WS

FROM REGULATOR2
P.CON+3.3V
AT+3.3V

D1001
BAT54WS

R1020

DVD MUTE SW
Q1006
KTC3875S_Y_RTK

SW
Q1001
KRA102SRTK

FROM DVD_INTERFACE/AV_SWITCH
ZERO_MUTE

R1023
4.7K

C1016
1 B

DVD MUTE SW
Q1005
KRA101SRTK

C1013
10V 100 V-S

FROM REGULATOR
POWER_FAIL
GND

R1004
1K

SW
Q1004
KTA1504S_Y_RTK

PCBF40
CMG130

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
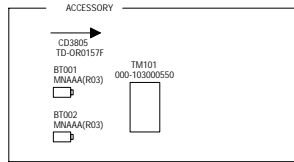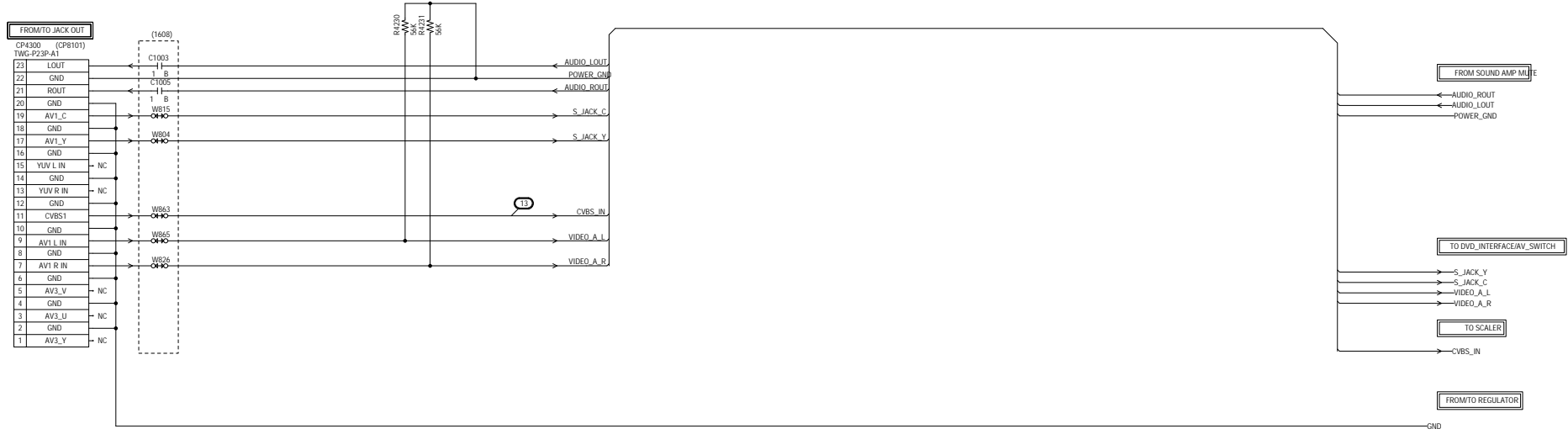OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

H-17
H-18

TUNER SCHEMATIC DIAGRAM

(MAIN PCB)

(TUNER PCB)

TO 21PIN
TU_VIDEO_OUT

FROM REGULATOR
GND

P.CON+5V

FROM/TO SCALER
1080I_LOW_SW
SIF

FROM/TO SUB MICON
RF_AGS

F_SCL
F_SDA

FROM/TO REGULATOR
P.CON+3.3V

LEVEL SHIFT
Q5801
2SK3019_TL

LEVEL SHIFT
Q5802
2SK3019_TL

TU_SDA

TU_SCL

P.CON+3.3V

W894

W898

R5812 100

R5816 100

R5817 5.6K

R5819 5.6K

R5814 100

R5803 BU61BPS33QSN1D

R5815 1.5K

R5809 82K

R5801 100

B5801 FCM1608RT-601T02

VW25

VW47

W844

W847

C5806 16V 470

C5807 100P CH

C5814 50V 1 V-S

TU5801 TDTG-S489D

B1	B2	B3(Vcc)	AGC	NC	Vbu	GND	AS	SCL	SDA	IF	GND	NC	2ndSIF	CVBS	AUDIO	NC	IF AGC	DIF1	DIF2
NC	5.0	5.0	1.6	NC	0	0	0	5.0	5.0	NC	0	NC	0	0.7	0	NC	0	0.1	0.1

PCBF40 CMG130

PCB290 CEG367

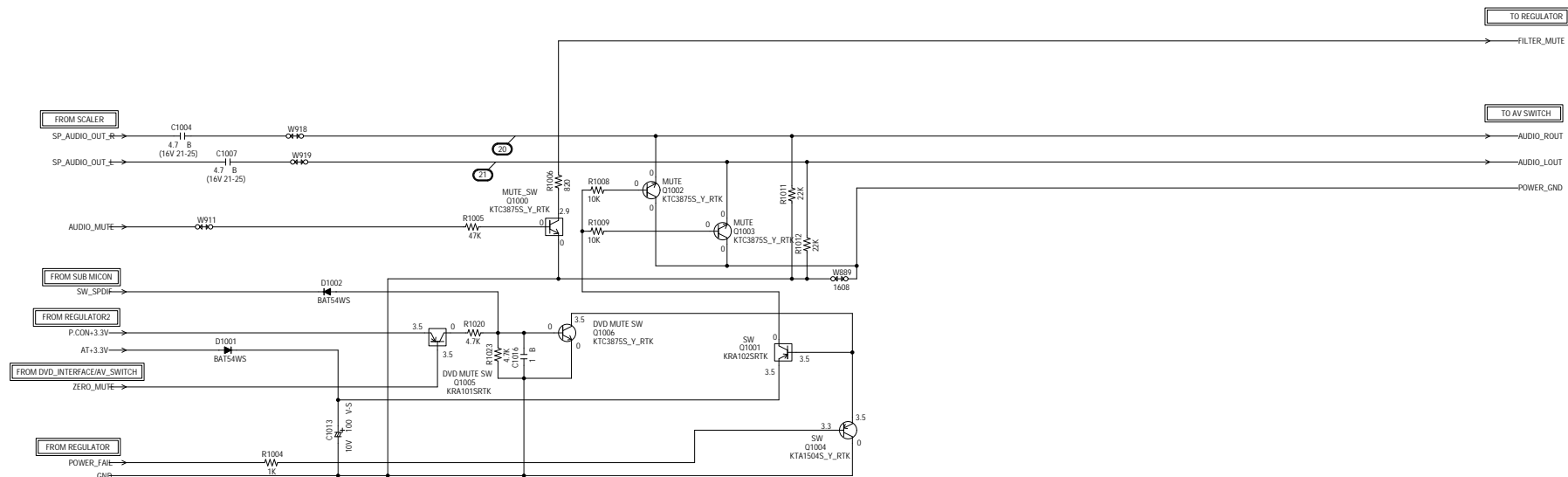NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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SCALER SCHEMATIC DIAGRAM
(MAIN PCB)

SCALER IC
IC803
VCT6973G-FA-B3-000
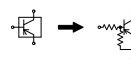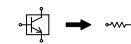
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SUB MICON SCHEMATIC DIAGRAM
(MAIN PCB)
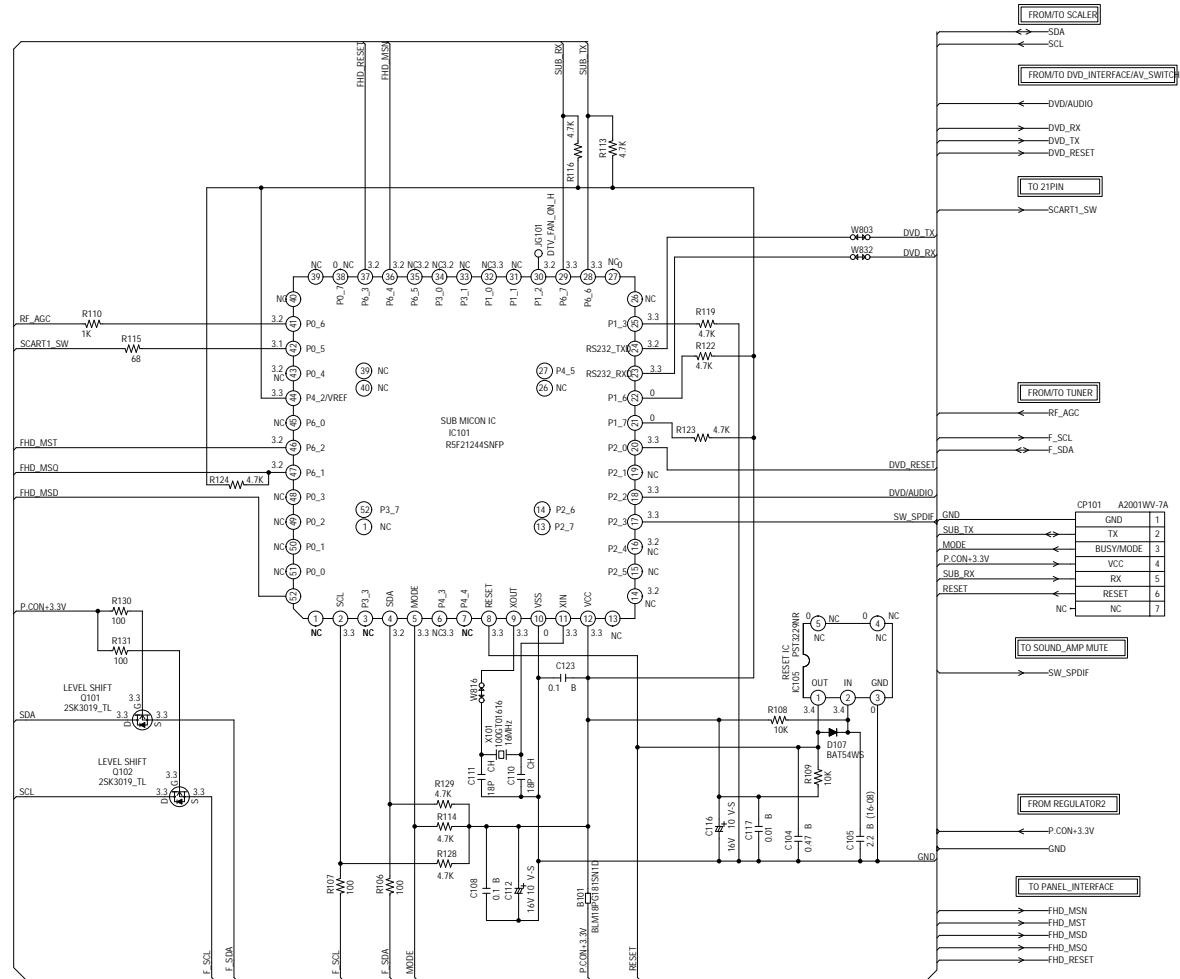
SUB MICON IC
IC101
R5F21244SNFP

FROM/TO SCALER
- SDA
- SCL

FROM/TO DVD_INTERFACE/AV_SWITCH
- DVD/AUDIO
- DVD_RX
- DVD_TX
- DVD_RESET

TO 21PIN
- SCART1_SW

FROM/TO TUNER
- RF_AGC
- F_SCL
- F_SDA

TO SOUND_AMP MUTE
- SW_SPDIF

FROM REGULATOR2
- P.CON+3.3V
- GND

TO PANEL_INTERFACE
- FHD_MSN
- FHD_MST
- FHD_MSD
- FHD_MSQ
- FHD_RESET

CP101 A2001WV-7A

GND	GND	1
SUB_TX	TX	2
MODE	BUSY/MODE	3
P.CON+3.3V	VCC	4
SUB_RX	RX	5
RESET	RESET	6
NC	NC	7

LEVEL SHIFT
Q101
2SK3019_TL

LEVEL SHIFT
Q102
2SK3019_TL

RESET IC
IC105
PST3229NR

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
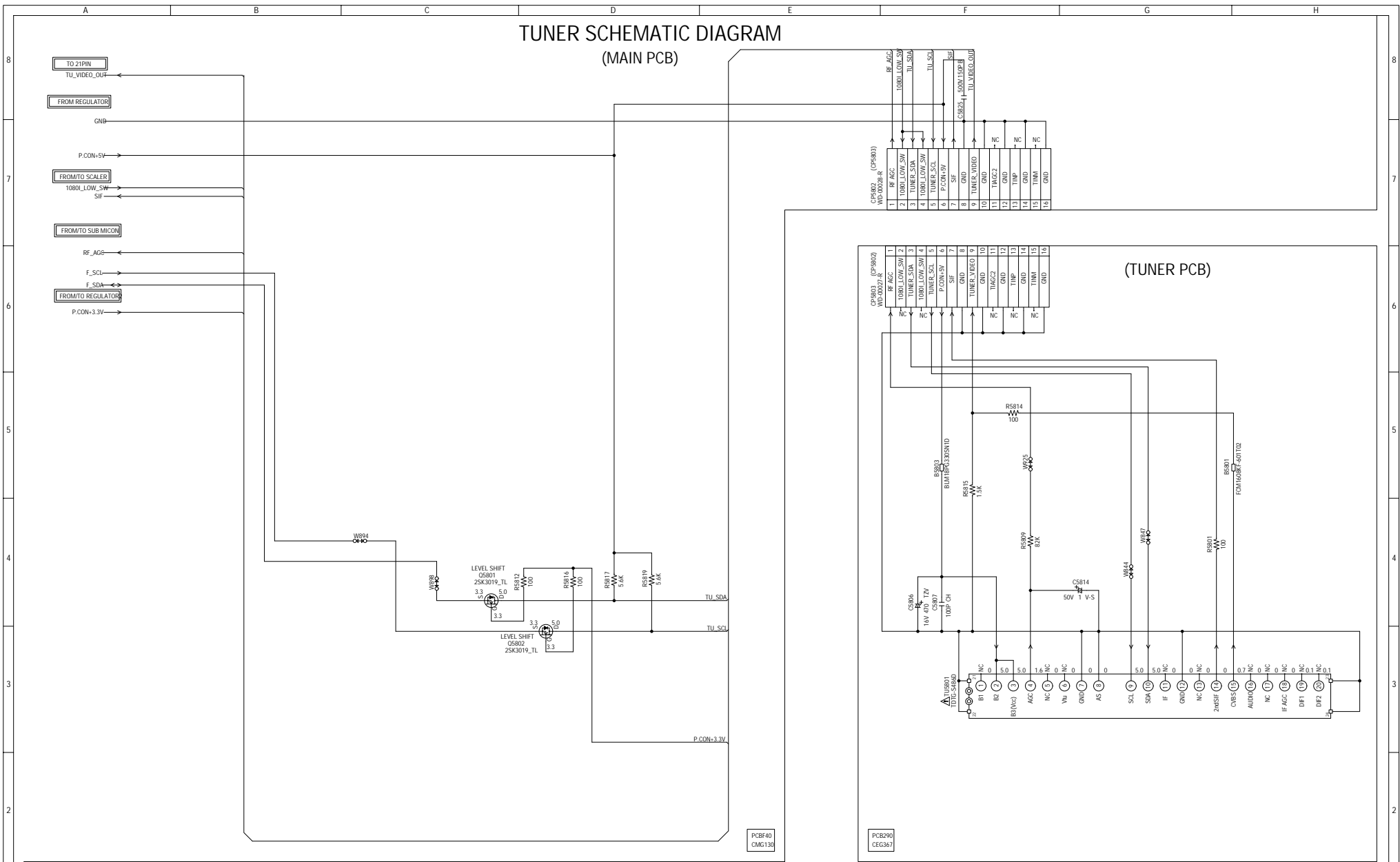WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

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PCBF40
CMG130

H-23

H-24

JACK SCHEMATIC DIAGRAM
(MAIN PCB)
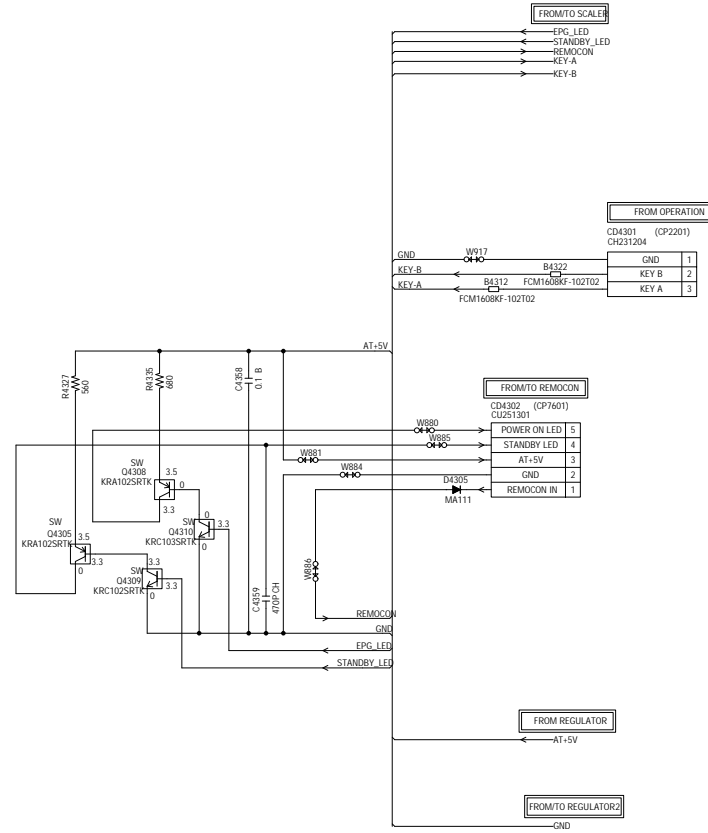
FROM/TO SCALER

EPG_LED
STANDBY_LED
REMOCON
KEY-A
KEY-B

FROM OPERATION

CD4301 (CP2201)
CH231204

GND	1
KEY B	2
KEY A	3

GND — W917
KEY-B — B4322 — FCM1608KF-102T02
KEY-A — B4312 — FCM1608KF-102T02

AT+5V

R4327 560
R4135 680
C4358 0.1 B

FROM/TO REMOCON

CD4302 (CP7601)
CU251301

POWER ON LED	5
STANDBY LED	4
AT+5V	3
GND	2
REMOCON IN	1

W880
W885
W881
W884
D4305
MA111

SW
Q4308
KRA102SRTK
3.5
0
3.3
0

SW
Q4305
KRA102SRTK
3.5
0
3.3

SW
Q4310
KRC103SRTK
3.3
0
0

SW
Q4309
KRC102SRTK
3.3
0
3.3

C4359 470P CH
W886

REMOCON
GND
EPG_LED
STANDBY_LED

FROM REGULATOR

AT+5V

FROM/TO REGULATOR2
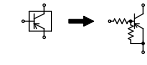
GND

PCBF40
CMG130

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CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

H-25

H-26

DVD_INTERFACE/AV_SWITCH SCHEMATIC DIAGRAM
(MAIN PCB)

FROM/TO REGULATOR

GND
P.CON+9V
MOTOR_GND
P.CON+12V
P.CON+5V_DVD
MOTOR+6V
P.CON+3.3V_DVD

DVD_SPDIF   W811

R6501
100

SPDIF

FROM/TO AUDIO/VIDEO

CP6501 (CP8501,CP8502)
A2006WV0-2X11P

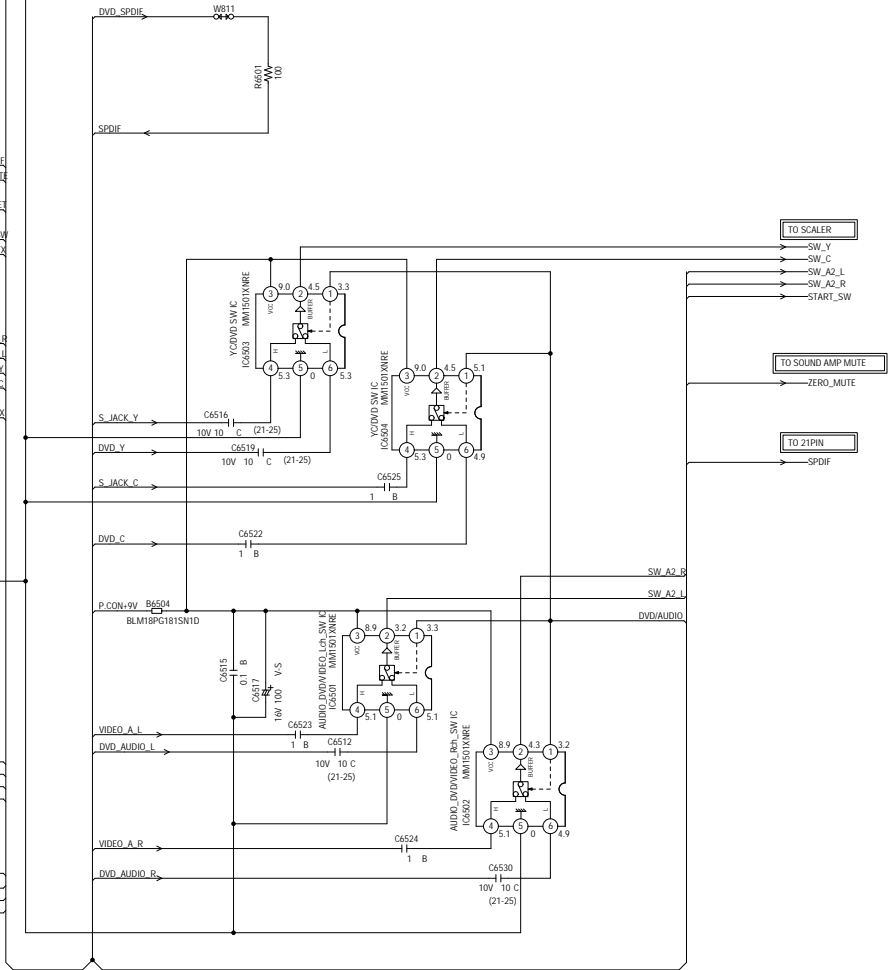| 1 | SPDIF-134 |
2	ZERO
3	GND
4	DVD_RESET
5	GND
6	START_SW
7	TX
8	GND
9	P.CON+3.3V
10	GND
11	P.CON+6V
12	GND
13	DVD_A_OUT_R
14	DVD_A_OUT_L
15	[V]Y_VIDEO
16	[U]C_VIDEO
17	GND
18	RX
19	P.CON+3.3V
20	P.CON+12V
21	P.CON+A5V
22	GND(M)

W892   DVD_SPDIF
W899   ZERO_MUTE

W910   DVD_RESET

W914   START_SW
W927   DVD_TX

(1608)
W931   DVD_AUDIO_R
W932   DVD_AUDIO_L
W941   DVD_Y
W942   DVD_C

W933   DVD_RX
B6501
FCM1608KF-102T02
B6502
BLM18PG181SN1D

CD6501_1
E82M1601

R6602
68

R6603
68

TO SCALER
SW_Y
SW_C
SW_A2_L
SW_A2_R
START_SW

TO SOUND AMP MUTE
ZERO_MUTE

TO 21PIN
SPDIF

YC/DVD SW IC
MM1501XNRE
IC6503
3 9.0 2 4.5 1 3.3
VCC   BUFFER
4 5.3 5 0 6 5.3

YC/DVD SW IC
MM1501XNRE
IC6504
3 9.0 2 4.5 1 5.1
VCC   BUFFER
4 5.3 5 0 6 4.9

S_JACK_Y
C6516
10V 10 C (21-25)

DVD_Y
C6519
10V 10 C (21-25)

S_JACK_C
C6525
1 B

DVD_C
C6522
1 B

SW_A2_R
SW_A2_L
DVD/AUDIO

P.CON+9V B6504
BLM18PG181SN1D

AUDIO_DVD/VIDEO_Lch_SW IC
MM1501XNRE
IC6501
3 8.9 2 3.2 1 3.3
VCC   BUFFER
4 5.1 5 0 6 5.1

C6515
0.1 B
C6517
16V 100 V-S

AUDIO_DVD/VIDEO_Rch_SW IC
MM1501XNRE
IC6502
3 8.9 2 4.3 1 3.2
VCC   BUFFER
4 5.1 5 0 6 4.9

FROM AV SWITCH

VIDEO_A_L
VIDEO_A_R
S_JACK_C
S_JACK_Y

VIDEO_A_L
DVD_AUDIO_L
C6523
1 B
C6512
10V 10 C
(21-25)

VIDEO_A_R
C6524
1 B

DVD_AUDIO_R
C6530
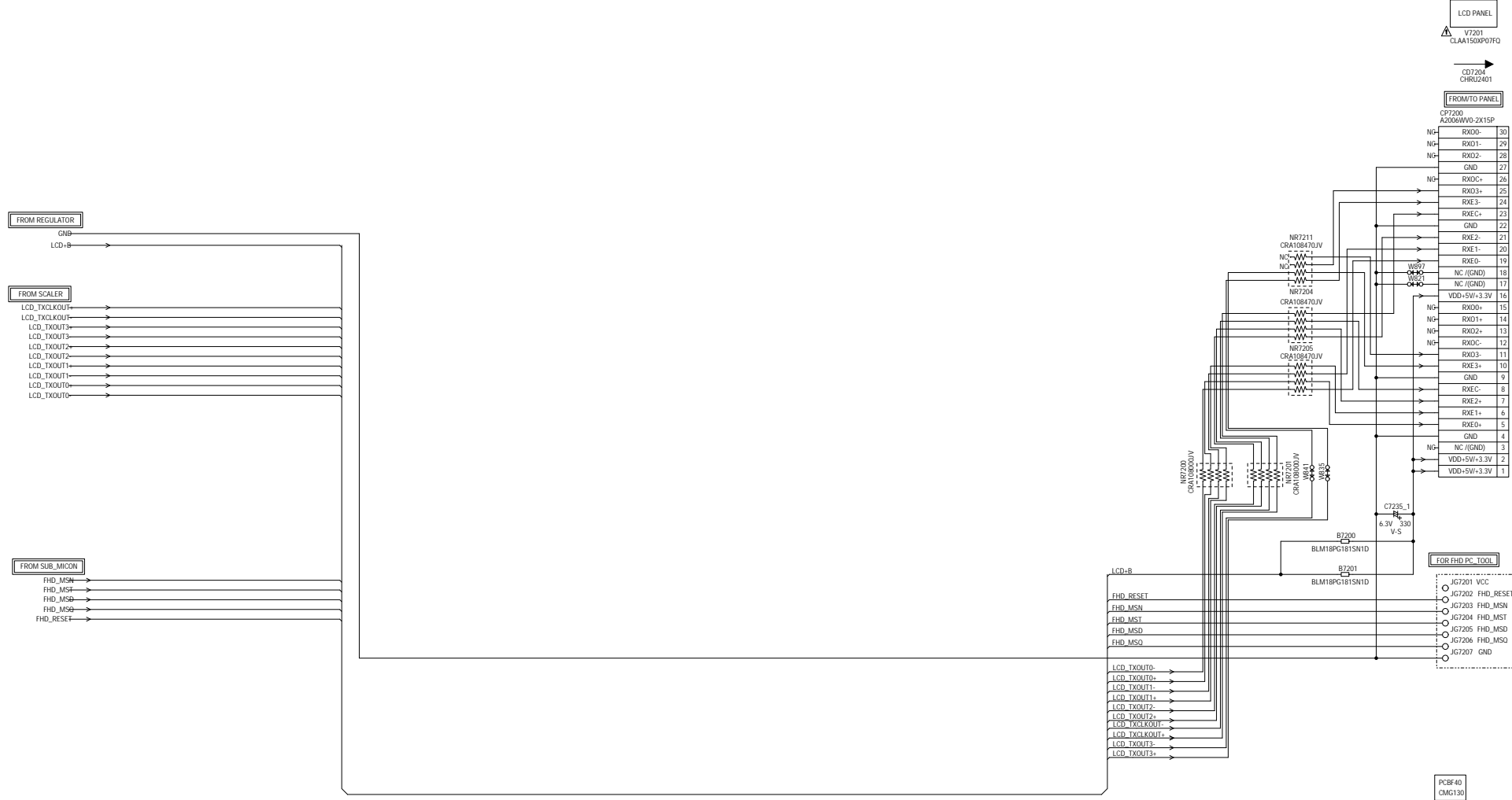10V 10 C
(21-25)

FROM SUB MICON

DVD/AUDIO
DVD_RESET
DVD_RX
DVD_TX

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
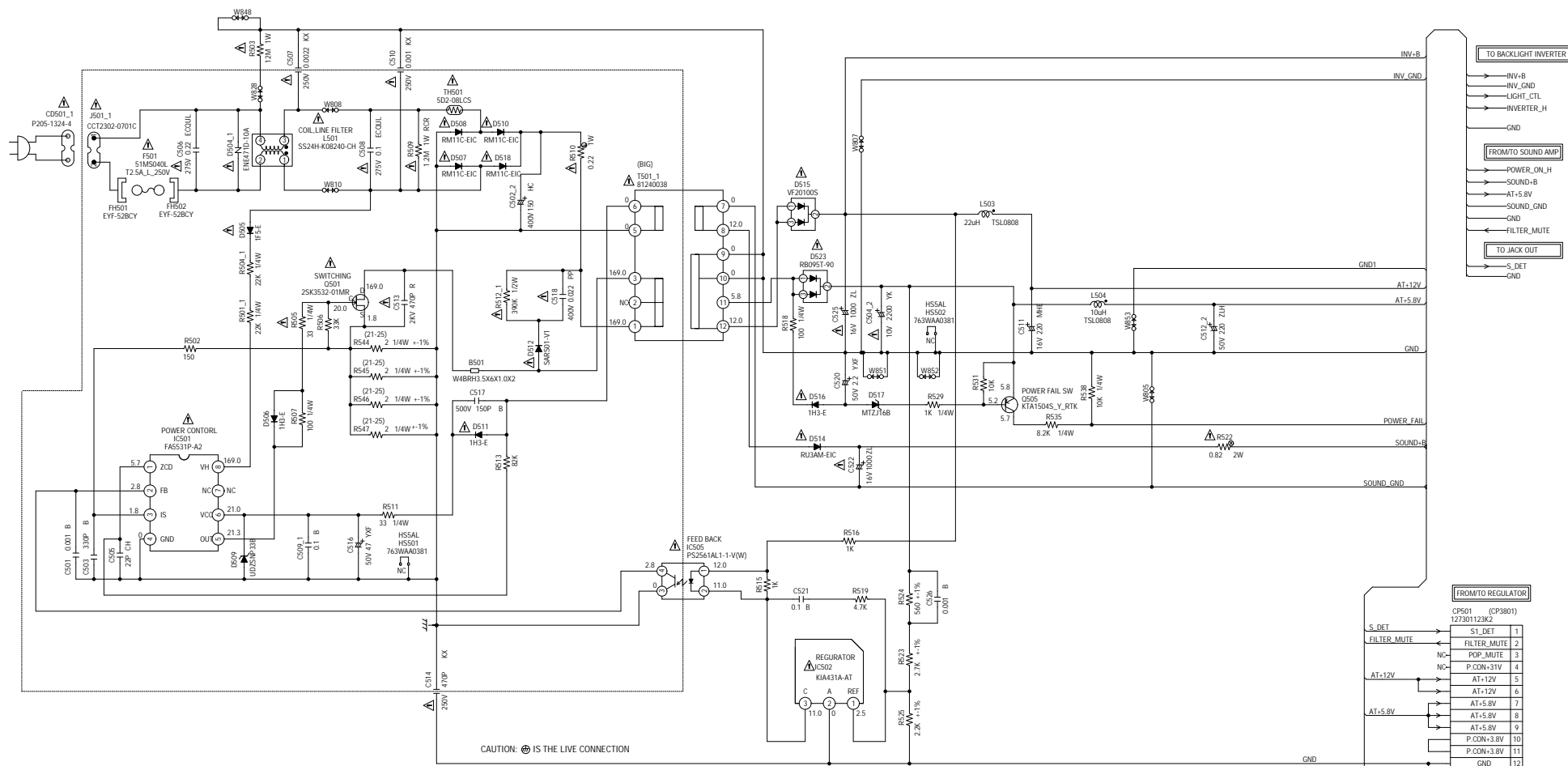OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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PCBF40
CMG130

PANEL_INTERFACE SCHEMATIC DIAGRAM
(MAIN PCB)

LCD PANEL

V7201
CLAA150XP07FQ

CD7204
CHRU2401

FROM/TO PANEL

CP7200
A2006WV0-2X15P

Pin	Signal
30	RX00-
29	RX01-
28	RXO2-
27	GND
26	RXOC+
25	RXO3+
24	RXE3-
23	RXEC+
22	GND
21	RXE2-
20	RXE1-
19	RXE0-
18	NC /(GND)
17	NC /(GND)
16	VDD+5V/+3.3V
15	RXO0+
14	RXO1+
13	RXO2+
12	RXOC-
11	RXO3-
10	RXE3+
9	GND
8	RXEC-
7	RXE2+
6	RXE1+
5	RXE0+
4	GND
3	NC /(GND)
2	VDD+5V/+3.3V
1	VDD+5V/+3.3V

FROM REGULATOR

GND
LCD+B

FROM SCALER

LCD_TXCLKOUT-
LCD_TXCLKOUT+
LCD_TXOUT3-
LCD_TXOUT3+
LCD_TXOUT2-
LCD_TXOUT2+
LCD_TXOUT1-
LCD_TXOUT1+
GND
LCD_TXOUT0-
LCD_TXOUT0+

NC /(GND)

FROM SUB_MICON

FHD_MSN
FHD_MST
FHD_MSD
FHD_MSQ
FHD_RESET

NR7211
CRA108470JV

NR7204
CRA108470JV

NR7205
CRA108470JV

W897
W821

NR7200
CRA108000JV
W841

NR7201
CRA108000JV
W835

C7235_1
6.3V 330
V-S

B7200
BLM18PG181SN1D

B7201
BLM18PG181SN1D

FOR FHD PC_TOOL

JG7201 VCC
JG7202 FHD_RESET
JG7203 FHD_MSN
JG7204 FHD_MST
JG7205 FHD_MSD
JG7206 FHD_MSQ
JG7207 GND

LCD+B

FHD_RESET
FHD_MSN
FHD_MST
FHD_MSD
FHD_MSQ

LCD_TXOUT0-
LCD_TXOUT0+
LCD_TXOUT1-
LCD_TXOUT1+
LCD_TXOUT2-
LCD_TXOUT2+
LCD_TXCLKOUT-
LCD_TXCLKOUT+
LCD_TXOUT3-
LCD_TXOUT3+

PCBF40
CMG130

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CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE
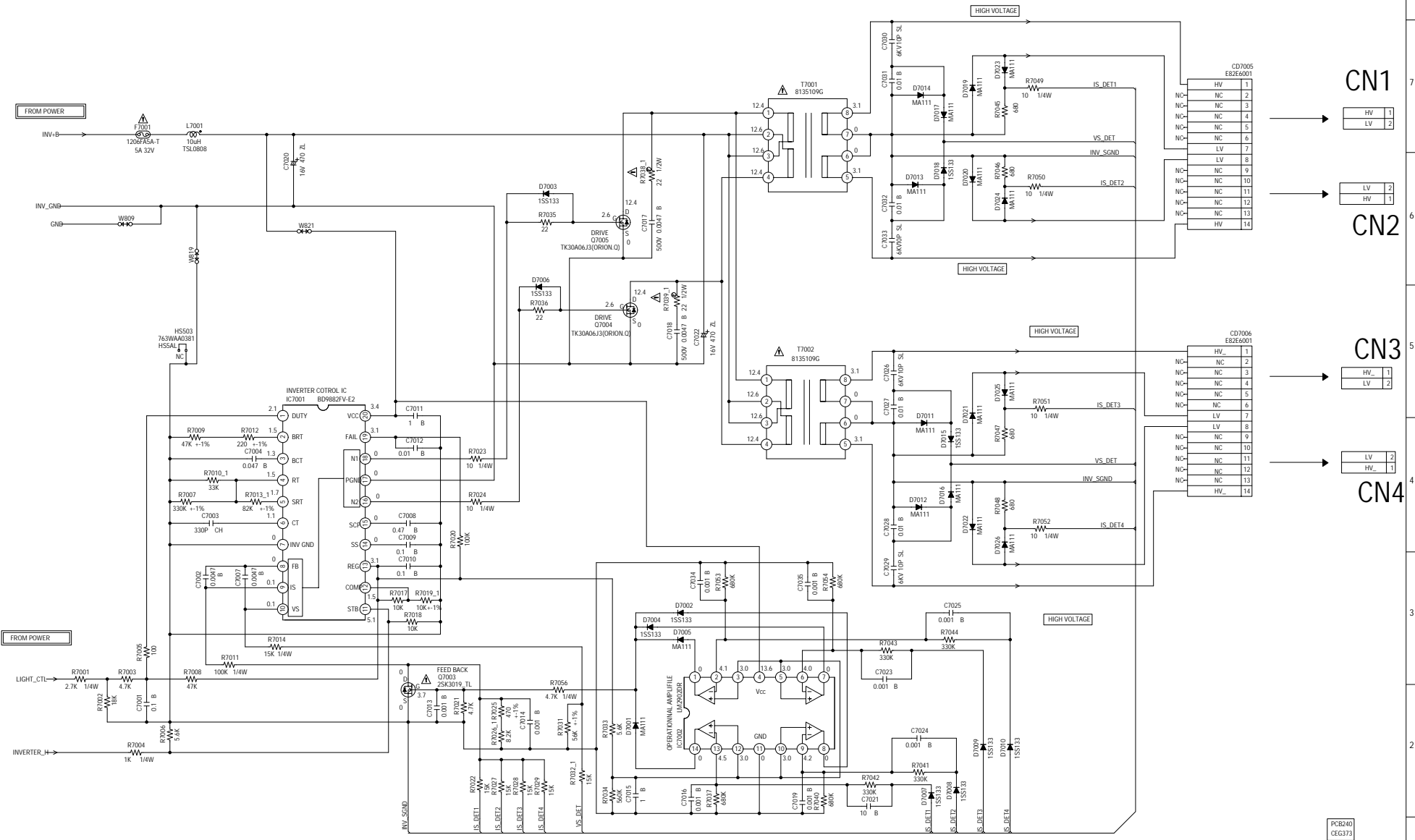CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY .

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N:UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

POWER SCHEMATIC DIAGRAM
(POWER PCB)

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

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CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: ⊕ IS THE LIVE CONNECTION

TO BACKLIGHT INVERTER
INV+B
INV_GND
LIGHT_CTL
INVERTER_H
GND

FROM/TO SOUND AMP
POWER_ON_H
SOUND+B
AT+5.8V
SOUND_GND
GND
FILTER_MUTE

TO JACK OUT
S_DET
GND

FROM/TO REGULATOR
CP501 (CP3801)
127301123K2

S1_DET	1
FILTER_MUTE	2
POP_MUTE	3
P.CON+31V	4
AT+12V	5
AT+12V	6
AT+5.8V	7
AT+5.8V	8
AT+5.8V	9
P.CON+3.8V	10
P.CON+3.8V	11
GND	12
GND	13
GND	14
GND	15
GND	16
DTV POWER ON_H	17
POWER_ON-H	18
LIGHT_CTL	19
INVERTER_H	20
POWER_FAIL	21
NC	22
NC	23

PCB240
CEG373

BACKLIGHT INVERTER SCHEMATIC DIAGRAM
(POWER PCB)

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WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
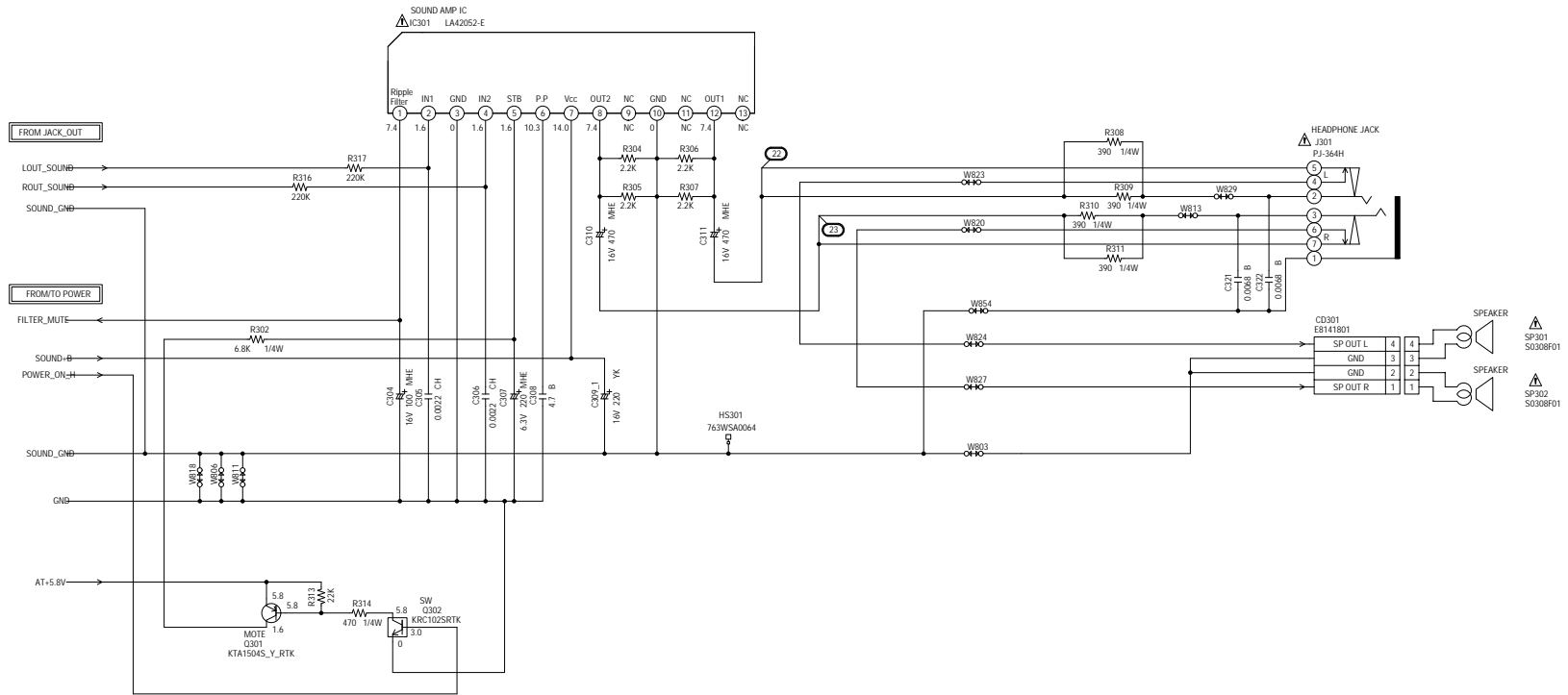OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP
IS NON POLAR ONE.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.
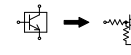
H-33

H-34

SOUND AMP SCHEMATIC DIAGRAM
(POWER PCB)

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY,USE ONES
DESCRIBED IN PARTS LIST ONLY .

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
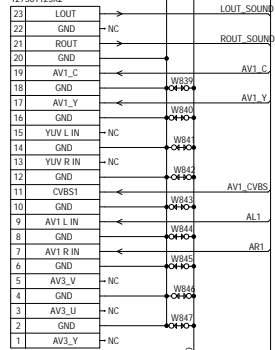DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR

JACK_OUT SCHEMATIC DIAGRAM
(POWER PCB)

FROM/TO AV SWITCH

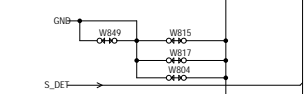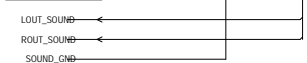CP8101   (CP4300)
127301123K2

23	LOUT	LOUT_SOUND
22	GND	NC
21	ROUT	ROUT_SOUND
20	GND	
19	AV1_C	AV1_C
18	GND	W839
17	AV1_Y	AV1_Y
16	GND	W840
15	YUV L IN	NC
14	GND	W841
13	YUV R IN	NC
12	GND	W842
11	CVBS1	AV1_CVBS
10	GND	W843
9	AV1 L IN	AL1
8	GND	W844
7	AV1 R IN	AR1
6	GND	W845
5	AV3_V	NC
4	GND	W846
3	AV3_U	NC
2	GND	W847
1	AV3_Y	NC

FROM POWER

GND — W849 — W815 — W817
S_DET — W804

FROM/TO SOUND AMP

LOUT_SOUND
ROUT_SOUND
SOUND_GND

(OPERATION PCB)

FROM JACK

CP2201 (CD4301)
A2001WR2-3P

3	KEY_A	
2	KEY_B	
1	GND	

R2201 1K   R2202 820   R2203 10K   R2204 3.9K   R2205 5.6K   R2206 820

EJECT SW2201   EV02150SR
CH DOWN/STOP SW2202   EV02150SR
POWER SW2203   EV02150SR
INPUT SW2204   EV02150SR
VOL DOWN SW2205   EV02150SR
VOL UP SW2206   EV02150SR
CH UP/PLAY SW2207   EV02150SR
MENU SW2208   EV02150SR

PCB270
CEG374

(REMOCON PCB)

Vout ①
GND ②
B+ ③

OS7601
ROM-S038TA0

C7602
6.3V 100 KA

STAND BY POWER D7601
LTL-1BEFJ-002A

R7603 390

R7602 47
R7604 390
R7605 100

FROM/TO JACK

CP7601_1   (CD4302)
A2001WV-5A

1	REMOCON IN	
2	GND	
3	AT+5V	
4	STANDBY	
5	POWER ON LED	

PCBDA0
CEG375

S_DET   R8110 1K   R8111 100   W822
AV1_Y
AV1_C   R8112 100

C8103 100P CH   R8104 75
C8109 100P CH   R8107 75

S-VIDEO-IN
J8101
DIN-417HA-01

S-DET

CVBS_AV_IN
J8104
RCA-341H(2)NI-06

AV1_CVBS   R8115 100
AL1   R8116 1K
AR1   R8117 1K

C8104 470P CH   C8106 470P CH   R8106 75
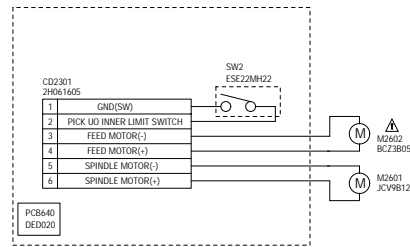
PCB240
CEG373

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SW SCHEMATIC DIAGRAM

(SW PCB)

CD2301
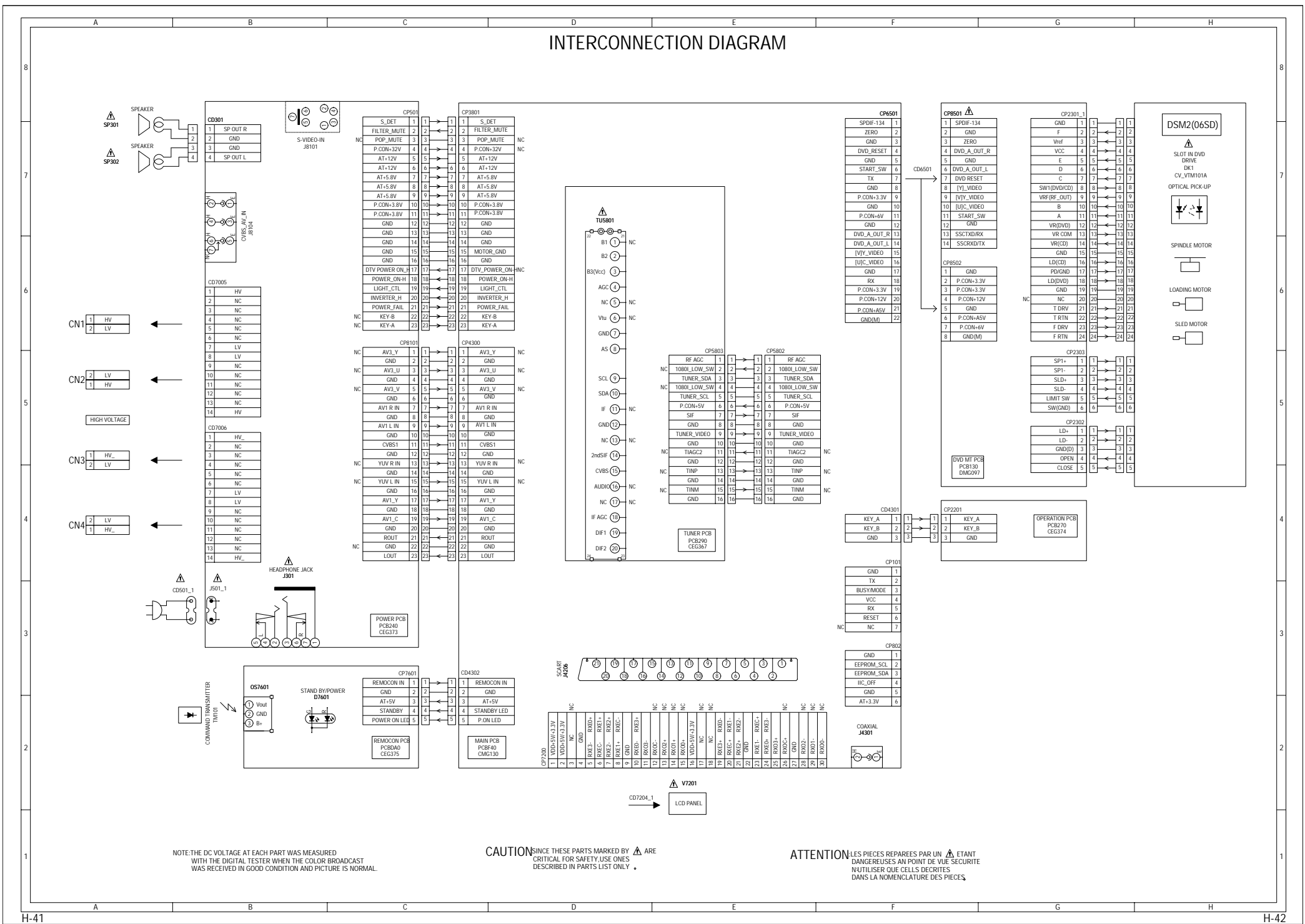2H061605

1	GND(SW)
2	PICK UO INNER LIMIT SWITCH
3	FEED MOTOR(-)
4	FEED MOTOR(+)
5	SPINDLE MOTOR(-)
6	SPINDLE MOTOR(+)

SW2
ESE22MH22

M2602
BCZ3B05

M2601
JCV9B12

PCB640
DED020

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .
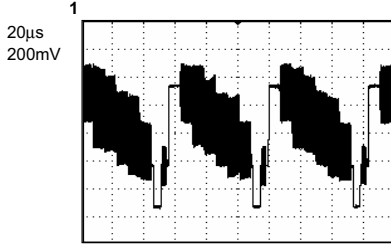
INTERCONNECTION DIAGRAM

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
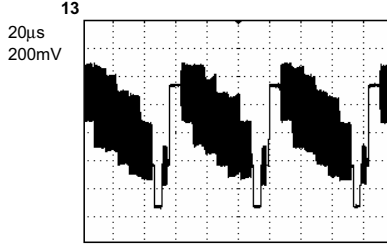CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
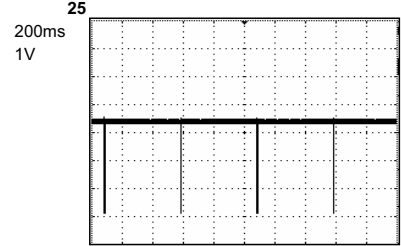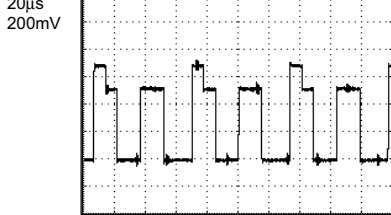N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

DSM2(06SD)

SLOT IN DVD DRIVE
DK1
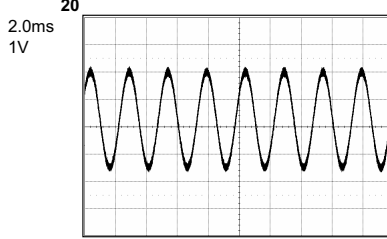CV_VTM101A
OPTICAL PICK-UP

SPINDLE MOTOR
LOADING MOTOR
SLED MOTOR

WAVEFORMS

21PIN

1
20µs
200mV

2
20µs
200mV

3
20µs
200mV

4
20µs
200mV

5
2ms
500mV

6
2ms
500mV

AV SWITCH

13
20µs
200mV

SOUND AMP MUTE

20
2.0ms
1V

21
2.0ms
1V

SOUND AMP

22
2.0ms
2V

23
2.0ms
2V

SCALER

24
10ns
0.5V

SCALER

25
200ms
1V

26
200ms
1V

MPEG/MICON/DSP/RF_AMP

52
10ns
500mV

53
100µs
500mV

54
200ns
1.0V

MEMORY

55
100µs
500mV

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

I-1

WAVEFORMS

AUDIO/VIDEO

56
200µs
1.0V

57
200µs
1.0V

58
10µs
200mV

59
10µs
100mV

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW

104B 104A 104C
104
104D

PCB270
(OPERATION PCB ASS'Y)

210
202
202

210
211
210

108
110 109 106
107
210
210
102C
102C
102D
114
102A 102D
202 102B
102
202
202

207 207
204 204

202

PCBDA0
(REMOCON PCB ASS'Y)
202

PCB130
(DVD MT PCB ASS'Y)

PCBF40
(MAIN PCB ASS'Y)

PCB240
(POWER PCB ASS'Y)

208 208

105
117
202 202
120 204
122

209
118
202 202
113
202
202
116
115
121 115
202
112
202 209
119
202 202
115
202

PCB290
(TUNER PCB ASS'Y)

205 204 103G
205 103E 103F 206
205 203 103E
103F
103E 205
103E 203
205

103C
103B 103D 103E
103A 103

101C
201
101F
101F
101E
101B
101D

101F

101F
111
101A
101

J1-1
J1-2

MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)

125

128, 129, 130, 131, CD501, CD3805,
BT001, BT002, TM101

125

124

123

126

127

126

123

DVD DECK EXPLODED VIEW

600

608

601

608

CD2001

M2602

603

606

703

605

703

702

605

AA

702

703

607

701

602

604

SW2

704

PCB640
(SW PCB ASS'Y)

705

CD2301
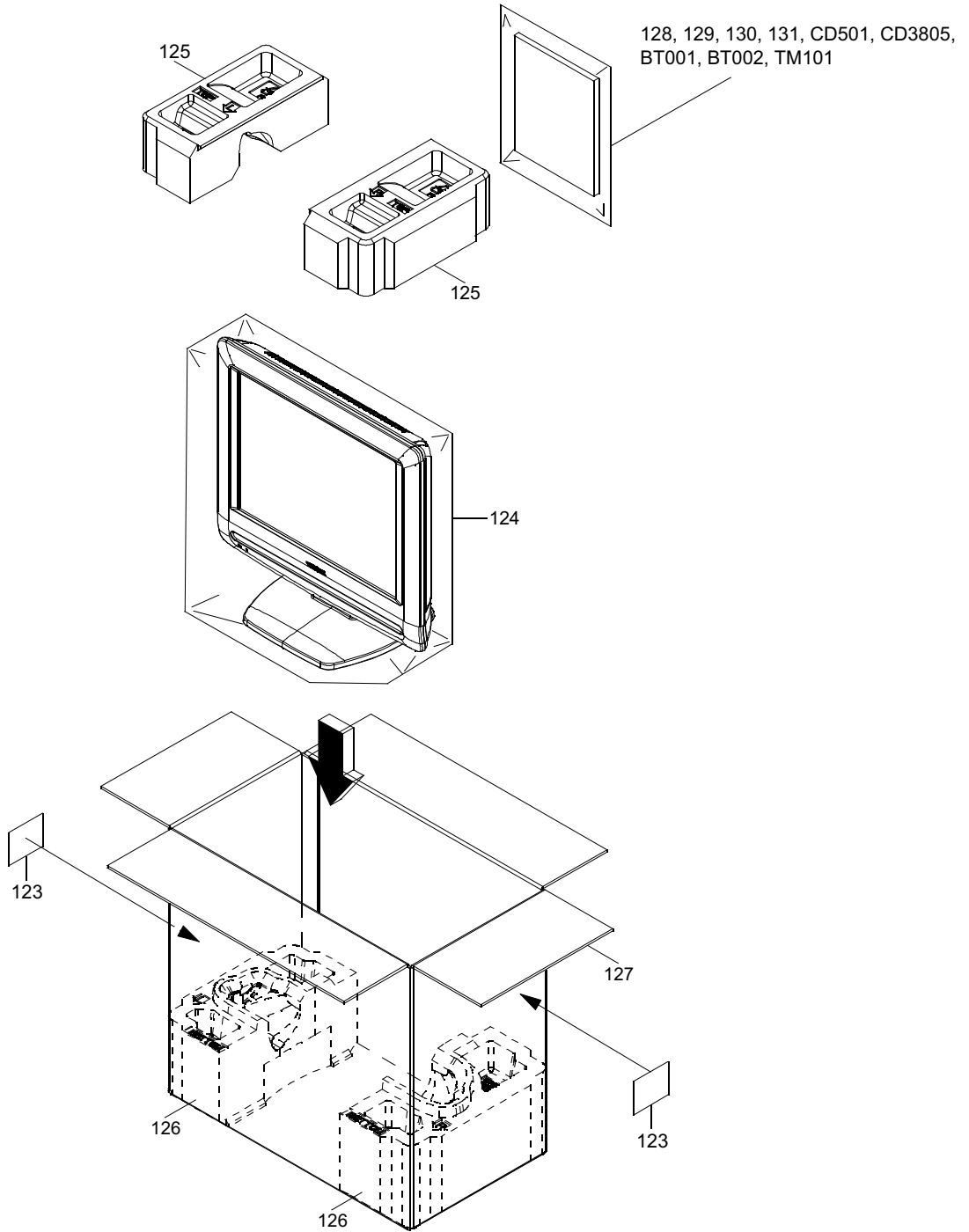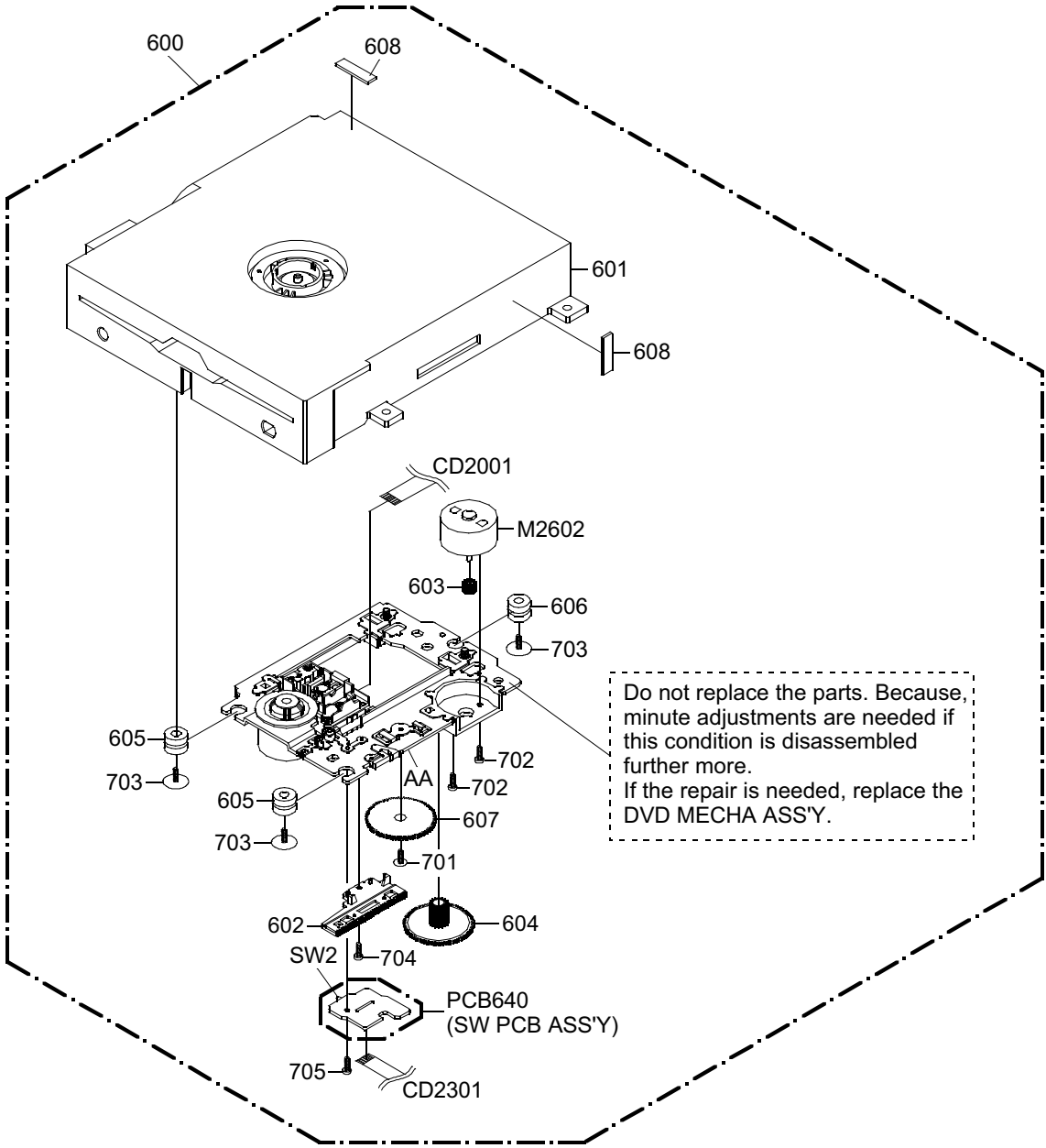
Do not replace the parts. Because,
minute adjustments are needed if
this condition is disassembled
further more.
If the repair is needed, replace the
DVD MECHA ASS'Y.

CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section.
Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description
101	AE009750	7A708A009A	FRONT CABI ASS'Y
101A	AE009751	702WNAA007	SHEET SPEAKER
101B	AE009752	708WPDA008	CABINET FRONT
101C	AE009571	713WPAA280	GLASS LED
101D	AE007694	7235490068	BADGE BRAND
101E	AE009572	761WPAA177	COVER STAND
101F	AE009671	800WQ0A073	FELT SHEET
102	AE009753	7A702A545A	BACK CABI ASS'Y
102A	AE009754	702WPAB214	CABINET BACK
102B	AE009577	761WSAA102	ANGLE HINGE
102C	75003893	800WQ0A080	FELT SHEET
102D	AE007708	800WQ00095	FELT SHEET
103	AE009755	7A704A087A	STAND ASS'Y
103A	AE009585	704WPAA066	STAND
103B	AE009586	761WPAA181	COVER HINGE
103C	AE009756	761WSAA116	FRAME STAND
103D	AE009587	761WSBA014	ANGLE STAND
103E	AE009624	800SRA0002	CUSHION LEG VEB1349-A
103F	AE008947	899NAGCL14	CABLE CLAMP
103G	AE007710	89900FB118	BAND
104	AE009757	7A711A071A	PANEL SIDE ASS'Y
104A	AE009758	711WPDA781	PANEL SIDE
104B	AE009581	711WPEA001	SLOT DVD
104C	AE009582	735WPAB101	BUTTON FRAME
104D	AE008459	800WQ00105	FELT SHEET
105	AE009589	761WSA0628	ANGLE MPEG
106	AE009759	702WPAB215	COVER BACK
107	75006982	706WPAA007	COVER CONNECTOR
108	AE009760	722549A727	SHEET RATING
109	AE009761	723000D845	SHEET JACK-1
110	AE009762	723000D846	SHEET JACK-2
111	AE009814	723549A092	POP LABEL
112	AE009745	724WNAA034	SHEET PC
113	AE009815	724WNAA036	SHEET PC
114	AE008287	726000A139	SHEET CAUTION
115	AE009597	744WUA0029	SPRING EARTH-2
116	AE009763	744WUA0035	SPRING EARTH TUNER
117	AE009816	753WUAA017	SPRING EARTH
118	AE009764	761WSAA120	ANGLE LCD-L
119	AE009765	761WSAA121	ANGLE LCD-R
120	AE009817	800WFAA042	CUSHION 30*15*T4
121	AE009625	8900P3545B	RIVET
122	AE009627	899RFPC25V	HOLDER CORD
123	AE009766	723000D923	SHEET BARCODE
124	AE009767	791WHAA223	LAMIFILM BAG
125	AE009768	792WHAA254	PACKAGE TOP
126	AE009769	792WHAA255	PACKAGE BOTTOM
127	AE009770	793WCDD680	GIFT BOX
128	AE009818	JB5KD000	POLYBAG,INSTRUCTION(RED CAUTION)
129	AE009315	J2K20402A	WARRANTY CARD(TOSHIBA)
130	AE009712	J51C0107A	QUICK SET-UP SHEET
131	AE009771	J51C0121A	INSTRUCTION BOOK(R/E)
201	AE005475	8110K30A0U	SCREW TAP TITE(P) LAMI HEAD 3*10 CH
202	AE004849	8109230A0U	SCREW TAP TITE(B) BIND 3*10 CH
203	AE005140	810A14080U	SCREW WASHER(A) M4*8 CH
204	AE005675	810923060U	SCREW TAP TITE(B) BIND 3*6 CH
205	AE009612	8110K3080U	SCREW TAP TITE(P) LAMI HEAD 3*8 CH
206	AE007747	814623080U	SCREW TAP TITE(B) BIND 3*5.7+4*2.3 CH
207	AE003526	810923080U	SCREW TAP TITE(B) BIND 3*8 CH
208	AE003524	8109I30A0U	SCREW TAP TITE(B) WH7 3*10 CH
209	AE007896	810A13060U	SCREW WASHER(A) M3*6 CH
210	AE009613	8109230A0S	SCREW TAP TITE(B) BIND 3*10 BK
211	72784031	8117540A6S	SCREW TAPPING(B0) TRUSS 4*16 BK

DVD DECK REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
⚠ 600	AE009615	A50N01P650	DVD MECHA ASS'Y	A50N01P650
601	AE008499	92SBB0033A	LOADER SUB ASS'Y	DLM1D29-31
602	AE005815	92AAA0017A	FEED RACK ASS'Y	
603	AE003551	92P100088A	GEAR,MOTOR	
604	AE005805	92P100117A	GEAR,MIDDLE	
605	AE008500	92P200017A	INSULATOR, F	
606	AE008501	92P200018A	INSULATOR, R	
607	AE005816	92P100116A	GEAR,FEED	
608	BZ710149	800WFAA008	CUSHION C	
701	AE005817	92P700007A	SCREW,GEAR FEED	
702	AE003554	814011723U	SCREW,PAN M1.7*2.3 P3 CH	
703	AE003555	816112080U	SEMS.TAP TITE(P) PAN W10 2*8 CH	
704	AE005006	813381750U	SCREW,T-TITE(B)CAMERA PAN M1.7*5.0 P3 CH	
705	AE003557	811022080U	SCREW,TAP TITE(P) BIND 2*8 CH	
CD2001	AE009434	12C14O1602	CORD JUMPER	FFC05241600408T1-A04
CD2301	AE003558	122H062102	CORD JUMPER	2H062102
M2602	AE009616	1515T98006	MOTOR	WRF-300CA-10460A
PCB640	AE008503	A5X002C640	SW PCB ASS'Y	DED020A
SW2	AE001158	0500101036	PUSH SWITCH	ESE22MH22

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			RESISTORS	
⚠ R503	75006901	RC31X1126J	RC	12M OHM 1W
⚠ R505	AE003984	R002T4330J	RC	33 OHM 1/4W
⚠ R509	AE009486	RC31X1125J	RC	1.2M OHM 1W
⚠ R510	AE005735	R63881R22J	R,FUSE	0.22 OHM 1W
⚠ R512	AE009709	R002T2394J	RC	390K OHM 1/2W
⚠ R522	AE009710	R3K78AR82J	R,METAL OXIDE	0.82 OHM 2W
⚠ R7038	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
⚠ R7039	AE009711	R63882220J	R,FUSE	22 OHM 1/2W
			CAPACITORS	
C502	AE009713	E718HH151D	CE	150 UF 400V
⚠ C504	AE009067	E7EPF1222M	CE	2200 UF 10V
⚠ C506	BZ110025	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠ C507	BZ110222	CD39E0MH3M	CC	0.0022UF 250V
⚠ C508	BZ110035	P2122B104M	CMP	0.1 UF 275V ECQUL
⚠ C510	AD301026	CD39E0M13M	CC	0.001 UF 250V
C512	AE009714	E8E175221M	CE	220 UF 50V
⚠ C513	BZ110176	C03L0R7Q2K	CC	470 PF 2KV R
⚠ C514	AE009491	CD39E0MQ2K	CC	470 PF 250V
⚠ C518	AE009492	P332E4223J	CPP	0.022 UF 400V
⚠ C522	AE008913	E7EYF2102M	CE	1000 UF 16V
⚠ C525	AE008913	E7EYF2102M	CE	1000 UF 16V
C5825	AE003825	C0JTB05E2K	CC	150 PF 500V B
C7026	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7029	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7030	AE009700	C234SLB11J	CC	10 PF 6KV SL
C7033	AE009700	C234SLB11J	CC	10 PF 6KV SL
			DIODES	
D107	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
⚠ D504	AE009461	D6C047110A	DIODE VARISTA	ENE471D-10A
⚠ D505	AE008372	D2LT001F50	DIODE SILICON	1F5-E
D506	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠ D507	BZ410062	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D508	BZ410062	D2WTRM11C0	DIODE SILICON	RM11C-EIC
D509	AE009494	DE7RB3302B	DIODE ZENER	UDZSNP33B TE-17
⚠ D510	BZ410062	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D511	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
⚠ D512	AE002133	D2BXARS010	DIODE SILICON	SARS01-V1
⚠ D514	BZ410126	D2WXRU3AM0	DIODE SILICON	RU3AM-EIC
⚠ D515	AE009715	D4LA0100S0	DIODE SCHOTTKY BARRIER	VF20100S
⚠ D516	AE008319	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D517	BZ410065	D97U01601B	DIODE ZENER	MTZJ16B T-77
⚠ D518	BZ410062	D2WTRM11C0	DIODE SILICON	RM11C-EIC
⚠ D523	AE009495	D27A95T900	DIODE SCHOTTKY BARRIER	RB095T-90
D804	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D805	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1001	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D1002	AE009498	DGJRT54WS0	DIODE SCHOTTKY BARRIER	BAT54WS
D2303	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D2304	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D3201	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
⚠ D3801	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
⚠ D3802	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
D3804	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
⚠ D3805	AE004643	D28R1QS040	DIODE	EC31QS04-TE12L
⚠ D3806	AE008906	D28R11FS20	DIODE	EC11FS2-TE12L
D3807	AE009716	DE7RB1302B	DIODE ZENER	UDZSNP13B TE-17
D3809	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4002	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4003	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4005	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4008	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D4211	AE008091	DE7RB4R72B	DIODE ZENER	UDZSNP4.7B TE-17
D4305	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7001	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7002	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7003	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7004	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7005	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7006	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7007	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7008	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7009	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7010	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7011	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7012	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7013	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7014	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7015	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7016	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7017	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7018	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
DIODES				
D7019	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7020	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7021	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7022	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7023	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7024	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7025	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7026	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
D7601	AE000288	0021E9Q010	LED	LTL-1BEFJ-002A
D8510	AE009006	DGERMA1110	DIODE SILICON	MA111-(TX)
ICS				
IC101	AE009717	S50Y01TM01	MEMORY DATA 52PIN FLASH MICOM ROM 16K	R5F21244SNFP
IC105	79097849	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
⚠ IC301	AE008430	I03SP20520	SOUND AMP 5W 2CH	LA42052-E
⚠ IC501	AE009499	ICAD055310	LOW STANDBY POWER IC CONTROL	FA5531P-A2
⚠ IC502	AD302211	I1KJ9A431A	VARIABLE SHUNT REGULATOR TAPE	KIA431A-AT
⚠ IC505	AE002809	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC801	AE009739	S51C01BE01	MEMORY DATA EEPROM 256K 12C	AT24C256BN-10SU-1.8
IC802	79097849	I9UF032290	RESET IC 2.9V TYPE	PST3229NR
IC803	AE009718	S51C01BM01	MEMORY DATA SCALER	VCT6973G-FA-B3-000
⚠ IC2301	AE008194	I03FV65650	5CH MOTOR DRIVER IC	LA6565VR-TLM-E
⚠ IC3202	AE008435	I1LF010150	DC-DC CONVERTER CONTROLLER	AL1015
⚠ IC3203	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
⚠ IC3204	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
⚠ IC3205	AE004653	I1KF98D050	REGULATOR 5V	KIA78D05F
⚠ IC3801	AE007825	I07F0C0WF0	1A REGULATOR	BA00BC0WFP-E2
IC3803	AE008431	I07F078200	VARIABLE REG LOW INPUT IO=1A	BD7820FP-E2
⚠ IC3806	AE009719	I5HJ950UC0	REGULATOR VO=5.0V IO=800MA	S-1170B50UC-OUJTFG
IC4001	AE009720	ICQK06966A	VADDIS9 MPEG/MICON/DSP/RF-AMP	ZR36966ELCG-D-G
IC4005	AE008324	IF9J0164AG	1M*16*4BANK(64M) 143MHZ SDRAM	M12L64164A-7TG
IC4007	AE009721	S51C01BF01	MEMORY DATA NOR FLASH 16M B00T	SST39VF1601-70-4C-EKE
IC6501	AD301988	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6502	AD301988	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6503	AD301988	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC6504	AD301988	I0UF015010	A/V SW 2INPUT 1OUTPUT	MM1501XNRE
IC7001	AE009512	I07F098820	19WLCD INVERTER IC	BD9882FV-E2
IC7002	AE009513	I0CF0902D0	QUAND OPERATIONNAL AMPLIFILE	LM2902DR
IC8501	AE009365	I0QF045650	DUAL OPEAMP	NJM4565M(TE1)
⚠ IC8502	AE008223	I1TF911170	VO=ADJ IO=1A TAPING	LM1117S-ADJ
TRANSISTORS				
Q101	AE009515	T27T030190	FET	2SK3019_TL
Q102	AE009515	T27T030190	FET	2SK3019_TL
Q301	BZ510108	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q302	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
⚠ Q501	AE009722	T41GK35320	FET	2SK3532-01MR
Q505	BZ510108	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1000	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1001	BZ510090	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q1002	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1003	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q1004	BZ510108	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q1005	BZ510107	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK
Q1006	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q2301	AE008330	TAAA1505SY	TRANSISTOR SILICON	KTA1505S-Y-RTK/P
Q2302	AE008331	TAAA1544T0	TRANSISTOR SILICON	KTA1544T-RTK/P
⚠ Q3200	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
Q3201	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
⚠ Q3202	AE004665	TS3M000044	COMPOUND TRANSISTOR	CPH6312-TL-E
⚠ Q3801	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q3802	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3803	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3804	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
⚠ Q3805	AE009621	TL4A01664Y	TRANSISTOR SILICON	KTA1664-Y(GP)
⚠ Q3809	AE009514	TJ7T35P020	FET	RTQ035P02-TR
Q4200	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4201	BZ510108	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4205	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4210	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4214	BZ510108	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4217	BZ510072	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q4218	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4224	BZ510109	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4305	BZ510090	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4308	BZ510090	TPAAB05001	COMPOUND TRANSISTOR	KRA102SRTK
Q4309	BZ510071	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4310	BZ510067	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q5801	AE009515	T27T030190	FET	2SK3019_TL
Q5802	AE009515	T27T030190	FET	2SK3019_TL
⚠ Q7003	AE009515	T27T030190	FET	2SK3019_TL
Q7004	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)
Q7005	AE009516	T250A06J30	FET	TK30A06J3(ORION.Q)

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			COILS &TRANSFORMERS	
⚠ L501	AE009366	029X000121	COIL,LINE FILTER	SS24H-K08240-CH
L503	BZ310150	02167E220K	COIL	22 UH
L504	AD301785	02167E100K	COIL	10 UH
L3201	AD301785	02167E100K	COIL	10 UH
L3202	AE009723	0216MG220M	COIL	22 UH
L4204	72784092	0216SD220J	COIL	22 UH
L4205	72784092	0216SD220J	COIL	22 UH
L4206	72784092	0216SD220J	COIL	22 UH
L4207	72784092	0216SD220J	COIL	22 UH
L7001	AD301785	02167E100K	COIL	10 UH
L8501	AE008874	0216SD2R2J	COIL	2.2 UH
L8502	AE006570	0216SD1R0J	COIL	1 UH
L8504	AE006570	0216SD1R0J	COIL	1 UH
⚠ T501	AE009724	0481240038	TRANSFORMER,SWITCHING	81240038
⚠ T7001	AE009521	048135109G	TRANSFORMER,SWITCHING	8135109G
⚠ T7002	AE009521	048135109G	TRANSFORMER,SWITCHING	8135109G
			JACKS	
⚠ J301	AE009522	060R131024	HEADPHONE JACK	PJ-364H
⚠ J501	AE009725	064Q1A0011	JACK,AC	CCT2302-0701C
J4206	AE009726	063D100067	SOCKET,21PIN	MRC-021H-02PC(O87)
J4301	AE009524	060R401140	RCA JACK	RCA-101HT(OR)
J8101	AE009526	062R750007	PLUG	DIN-417HA-01
J8104	AE009529	060R431040	RCA JACK	RCA-341H(2)NI-06
			SWITCHES	
SW2201	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2205	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2207	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2208	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
			P.C.BOARD ASSEMBLIES	
PCB130	AE009727	A51C01B130	DVD MT PCB ASS'Y	DMG097A
PCB240	AE009728	A51C01B240	POWER PCB ASS'Y	CEG373A
PCB270	AE009729	A51C01B270	OPERATION PCB ASS'Y	CEG374A
PCB290	AE009730	A51C01B290	TUNER PCB ASS'Y	CEG367A
PCBDA0	AE009731	A51C01BDA0	REMOCON PCB ASS'Y	CEG375A
PCBF40	AE009732	A51C01BF40	MAIN PCB ASS'Y	CMG130A
			MISCELLANEOUS	
B101	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B501	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B801	72783734	024AC5330J	CORE,BEADS	BLM18PG330SN1D
B802	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B803	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B804	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B805	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B806	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B807	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B808	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B809	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B810	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B811	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B812	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B813	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B818	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B819	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B820	AE009773	024AC8102T	CORE,BEADS	BLM15AG102SN1D
B821	AE009773	024AC8102T	CORE,BEADS	BLM15AG102SN1D
B2304	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B2305	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B3201	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3802	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3803	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3804	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3807	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3808	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3809	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B3810	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B4001	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4002	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4003	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4005	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4006	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4008	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4010	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4015	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4016	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4202	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4203	AE008879	024HC56013	CORE,BEADS	FCM1608KF-601T02

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			MISCELLANEOUS	
B4204	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B4228	AE008395	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4312	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B4322	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B5801	AE008879	024HC56013	CORE,BEADS	FCM1608KF-601T02
B5803	72783734	024AC5330J	CORE,BEADS	BLM18PG330SN1D
B6501	AE008609	024HC51023	CORE,BEADS	FCM1608KF-102T02
B6502	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B6504	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B7200	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B7201	AE007761	024AC5181J	CORE,BEADS	BLM18PG181SN1D
B8104	AE008610	024HC51513	CORE,BEADS	FCM1608KF-151T06
B8501	AE008394	024BC5121J	CORE,BEADS	BLM18PG121SN1D
B8502	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B8503	AE008394	024BC5121J	CORE,BEADS	BLM18PG121SN1D
B8504	AE008552	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
BT001	AE008217	141U004016	BATTERY,MANGAN	MNAAA(R03)
BT002	AE008217	141U004016	BATTERY,MANGAN	MNAAA(R03)
CD301	AE009733	06E8141801	CORD CONNECTOR	E8141801
⚠ CD501	AE009734	120Q155804	CORD AC	P205-1324-4
CP101	AE009735	06GG270029	CONNECTOR PCB SIDE	A2001WV-7A
CP501	AE008882	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP802	AE009736	06GG260029	CONNECTOR PCB SIDE	A2001WV-6A
CD3805	AE006481	06CPL02011	CABLE,PAL	TD-OR0157F
CD4301	AE009541	06CH231204	CORD CONNECTOR	CH231204
CD4302	AE009542	06CU251301	CORD CONNECTOR	CU251301
CD6501	AE009737	06E82M1601	CORD CONNECTOR	E82M1601
CD7005	AE009738	06E82E6001	CORD CONNECTOR	E82E6001
CD7006	AE009738	06E82E6001	CORD CONNECTOR	E82E6001
CD7204	AE009740	06CHRU2401	CORD CONNECTOR	CHRU2401
CP2201	AD301795	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
CP2301	AE008156	069KYOT159	CONNECTOR PCB SIDE	LD07T2-24ND-03
CP2302	AE009544	069EV5T060	CONNECTOR PCB SIDE	04_6232_105_015_800+
CP2303	AE009545	069EV6T060	CONNECTOR PCB SIDE	04_6232_106_015_800+
CP3801	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4300	AE008886	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP5802	AE009741	06GF2G0020	CONNECTOR PCB SIDE	WD-00028-R
CP5803	AE009742	06GF2G0010	CONNECTOR PCB SIDE	WD-00027-R
CP6501	AE009549	069S2M0079	CONNECTOR PCB SIDE	A2006WV0-2X11P
CP7200	AE009548	069S2U0739	CONNECTOR PCB SIDE	A2006WV0-2X15P
CP7601	AE009743	06GG250029	CONNECTOR PCB SIDE	A2001WV-5A
CP8101	AE008882	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP8501	AE009553	06GG2E0019	CONNECTOR PCB SIDE	A2001WR-14A
CP8502	AD301796	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CUS151	BZ710279	800WFAA006	CUSHION A	
CUSF41	BZ710279	800WFAA006	CUSHION A	
EL2401	BZ614043	124116281A	EYE LET	XRY16X28BD
EL2402	BZ614044	124120301A	EYE LET	XRY20X30BD
⚠ F501	AE002112	080NT2R504	FUSE	50T025H
⚠ F7001	AE004626	083LA05007	FUSE	1206FA5A-T
FH501	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
NR7200	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7201	AE009744	11074000M7	R,NETWORK	CRA108000JV
NR7204	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7205	AE009557	11074470M7	R,NETWORK	CRA108470JV
NR7211	AE009557	11074470M7	R,NETWORK	CRA108470JV
OS7601	AE009746	077A038005	REMOTE RECEIVER	ROM-S038TAO
⚠ SP301	AE009558	070Y433004	SPEAKER	S0308F01
⚠ SP302	AE009558	070Y433004	SPEAKER	S0308F01
⚠ TH501	AE009559	DSQDNE5R0L	THERMISTOR	5D2-08LCS
TM101	AE009747	076D0PT010	TRANSMITTER	000-103000550
⚠ TU5801	AE009748	0163Y03011	RF UNIT	TDTG-S486D
⚠ V7201	AE009749	09EK115007	LCD	CLAA150XP07FQ
X101	AE009387	100GT01616	CRYSTAL	B16000E011
X801	AE009388	100DT02007	CRYSTAL	DSX840GA
X4001	AE009566	100GT02727	CRYSTAL	SMD-49 C27000J029

RESISTOR

RC.................CARBON RESISTOR

CAPACITORS

CC.................CERAMIC CAPACITOR
CE.................ALUMI ELECTROLYTIC CAPACITOR
CP.................POLYESTER CAPACITOR
CPP..............POLYPROPYLENE CAPACITOR
CPL..............PLASTIC CAPACITOR
CMP.............METAL POLYESTER CAPACITOR
CMPL...........METAL PLASTIC CAPACITOR
CMPP..........METAL POLYPROPYLENE CAPACITOR