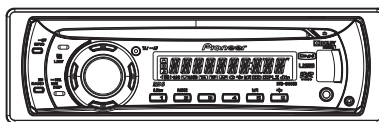


Pioneer

Service Manual



DVH-3100UB/XN/UW5

ORDER NO.
CRT4257

DVD RDS RECEIVER

DVH-3100UB_{/XN/UW5}

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3250	CRT4300	LS1	DVD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

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For details, refer to "Important Check Points for Good Servicing".

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SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

Where in a manufacturer's service documentation, for example in circuit diagrams or lists of components, a symbol is used to indicate that a specific component shall be replaced only by the component specified in that documentation for safety reasons, the following symbol shall be used:



● Safety Precautions for those who Service this Unit.

When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13 cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

CAUTION:

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

CAUTION

CLASS 1M INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

WARNING!

The AEL (accessible emission level) of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.
A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

Wave length:

DVD: 660 nm to 670 nm

CD: 780 nm to 800 nm

Focus lens on Maximum output:

CD: 6.26 mW (Emitting period : 9 sec.)

DVD: 1.27 mW (Emitting period : unlimited)

Additional Laser Caution

Transistors Q1103 and Q1104 in PCB drive the laser diodes for DVD and CD respectively. When Q1103 or Q1104 is shorted between their terminals, the laser diodes for DVD or CD will radiate beam. If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

CAUTION

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

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.
3. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
4. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" .
5. After replacing the pickup unit, be sure to skew adjustment.
6. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
7. ICs (IC1011, 1021) and the heat sink becomes hot areas. Be careful not be burn yourself.

1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit. Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
 - GYP1006 1.0 in dia.
 - GYP1007 0.6 in dia.
 - GYP1008 0.3 in dia.

2. SPECIFICATIONS

2.1 SPECIFICATIONS

A

General

Power source 14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system Negative type
Max. current consumption 10.0 A
Backup current 5.0 mA or less

B

Dimensions (W × H × D):
DIN
Chassis 178 mm × 50 mm × 163 mm
Nose 188 mm × 58 mm × 23 mm
D
Chassis 178 mm × 50 mm × 163 mm
Nose 170 mm × 48 mm × 23 mm
Weight 1.3 kg

C

Audio

Maximum power output 50 W × 4
Continuous power output ... 22 W × 4 (50 Hz to 15 000 Hz, 5 % THD, 4 Ω load, both channels driven)
Load impedance 4 Ω (4 Ω to 8 Ω allowable)
Preout max output level 2.0 V
Tone controls:
Bass
Frequency 100 Hz
Gain ±12 dB
Mid
Frequency 1 kHz
Gain ±12 dB
Treble
Frequency 10 kHz
Gain ±12 dB

D

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DVD Player

System DVD video, DVD-VR, Video CD, CD, WMA, MP3, AAC, DivX, JPEG system
Region number 5
Usable discs DVD video, Video CD, CD, CD-R/RW, DVD-R/RW/RDL
Frequency response 5 Hz to 44 000 Hz (with DVD, at sampling frequency 96 kHz)
Signal-to-noise ratio 96 dB (1 kHz) (IEC-A network) (RCA level)
Number of channels 2 (stereo)
MP3 decoding format MPEG-1 & 2 Audio Layer 3
WMA decoding format Ver. 7,7.1, 8, 9, 10, 11 (2ch audio) (Windows Media Player)

F

AAC decoding format MPEG-4 AAC (iTunes encoded only) (.m4a) (Ver. 8.0 and earlier)
DivX decoding format Home Theater Ver. 3, 4, 5.2 (.avi, .divx)

USB

USB standard specification USB 2.0 full speed
Maximum current supply 500 mA
File system FAT16, FAT32
MP3 decoding format MPEG-1 & 2 Audio Layer 3
WMA decoding format Ver. 7,7.1, 8, 9, 10, 11 (2ch audio) (Windows Media Player)
AAC decoding format MPEG-4 AAC (iTunes encoded only) (.m4a) (Ver. 8.0 and earlier)

FM tuner

Frequency range 87.5 MHz to 108.0 MHz
Usable sensitivity 9 dBf (0.8 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio 72 dB (IEC-A network)

MW tuner

Frequency range 531 kHz to 1 602 kHz (9 kHz)
Usable sensitivity 25 μV (S/N: 20 dB)
Signal-to-noise ratio 62 dB (IEC-A network)

LW tuner

Frequency range 153 kHz to 281 kHz
Usable sensitivity 28 μV (S/N: 20 dB)
Signal-to-noise ratio 62 dB (IEC-A network)



Note

Specifications and the design are subject to modifications without notice due to improvements. ■

Handling guideline of discs and player

- Use only discs featuring any of following logos.

DVD video



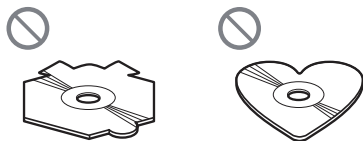
Video CD



CD



- Use only normal, round discs. If you insert irregular, non-round, shaped discs they may jam in the DVD player or not play properly.



- Check all discs for cracks, scratches or warping before playing. Discs that have cracks, scratches or are warped may not play properly. Do not use such discs.
- Avoid touching the recorded (non-printed) surface when handling the disc.
- Store discs in their cases when not in use.
- Keep discs out of direct sunlight and do not expose the discs to high temperatures.
- Do not attach labels, write on or apply chemicals to the surface of the discs.
- To clean a disc, wipe the disc with a soft cloth outward from the center.



- If the heater is used in cold weather, condensation may form on components inside the DVD player. Condensation may cause the DVD player to not operate properly. If you think that condensation is a problem turn off the DVD player for an hour or so to allow it to dry out and wipe any damp discs with a soft cloth to remove the moisture.
- Road shocks may interrupt disc playback. ■

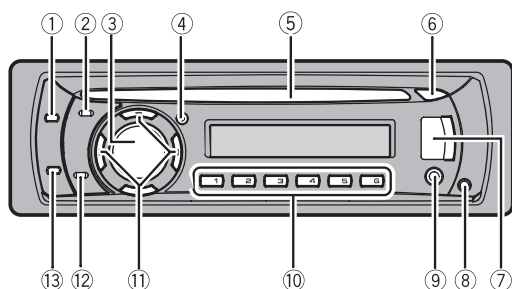


is a trademark of DVD Format/Logo Licensing Corporation.



What 's what

Head unit



① **SRC/OFF button**

This unit is turned on by selecting a source. Press to cycle through all the available sources.

② **LIST/≡ button**

Press to display the track title list, folder list or file list depending on the source.

- This button is not effective when tuner is selected as a source.

③ **MULTI-CONTROL**

Turn to increase or decrease the volume. Press to select a menu on the DVD menu. Also used for controlling functions.

④ **TA/AF button**

Press to turn TA function on or off. Press and hold to turn AF function on or off.

⑤ **Disc loading slot**

Insert a disc to play.

⑥ **▲ (eject) button**

Press to eject a disc.

⑦ **USB port**

Use to connect a USB audio player/USB memory.

- When connecting, open up the USB connector lid.
- Use a USB cable to connect the USB audio player/USB memory to the USB port. Since the USB audio player/USB memory is projected forward from the unit, it is dangerous to connect directly.

Pioneer CD-U50E USB cable is also available. For details, consult your dealer.

⑧ **🏠 (detach) button**

Press to remove the front panel from the head unit.

⑨ **AUX input jack (3.5 mm stereo jack)**

Use to connect an auxiliary device.

⑩ **1/S.Rtrv to 6/↺ buttons**

Press for preset tuning. Also used for controlling functions.

- **1/S.Rtrv**
— Press to control **S.RTRV** (advanced sound retriever).
- **2/PAUSE**
— Press to control **PAUSE** (pause).
- **5/🎲**
— Press to control **RANDOM** (random).
- **6/↺**
— Press to control **REPEAT** (repeat).

⑪ **▲/▼/◀/▶ buttons**

Press to perform manual seek tuning, fast forward, reverse and title/folder/chapter/track/file search controls.

Press to select a menu on the DVD menu. Also used for controlling functions.

- When operating menus
 - Pressing ▲ is the same function as turning **MULTI-CONTROL** right.
 - Pressing ▼ is the same function as turning **MULTI-CONTROL** left.
 - Pressing ◀ is the same function as pressing **DISP/BACK/SCRL**.
 - Pressing and holding ◀ is the same function as pressing and holding **DISP/BACK/SCRL**.
 - Pressing ▶ is the same function as pressing **MULTI-CONTROL**.
- When operating lists
 - Pressing ▲ is the same function as turning **MULTI-CONTROL** left.
 - Pressing ▼ is the same function as turning **MULTI-CONTROL** right.
 - Pressing ◀ is the same function as pressing **DISP/BACK/SCRL**.

A

- Pressing and holding ◀ is the same function as pressing and holding **DISP/BACK/SCRL**.
- Pressing ▶ is the same function as pressing **MULTI-CONTROL**.
- Pressing and holding ▶ is the same function as pressing and holding **MULTI-CONTROL**.

B

⑫ **DISP/BACK/SCRL button**

Press to select different displays.

Press and hold to scroll through the text information.

Press to return to the previous display when operating the menu.

Press and hold to return to the main menu when operating the menu.

C

⑬ **BAND/ESC button**

Press to select among two FM bands and MW/LW bands.

Press to return to the ordinary display when operating the menu.



Note

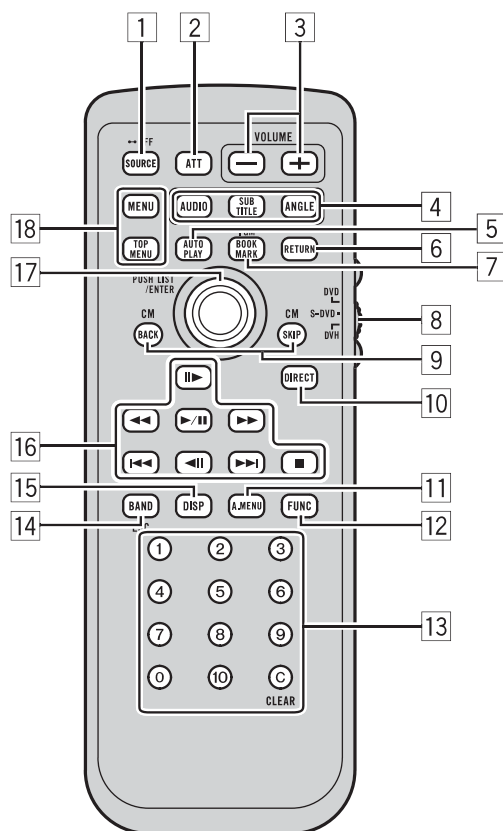
The function of **DISP/BACK/SCRL** is different depending on the setting of the display connection (refer to Setting the display connection on or off).

D

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Remote control



	Button names	DVH mode	DVD and S-DVD mode
1	SOURCE button	Press to cycle through all the available sources. Press and hold to turn the source off.	
2	ATT button	Press to quickly lower the volume level by about 90%. Press once more to return to the original volume level.	
3	VOLUME buttons	Press to increase or decrease the volume.	
4	AUDIO button	Press to change the audio language/audio system during DVD playback.	
	SUBTITLE button	Press to change the subtitle language during DVD playback.	
	ANGLE button	Press to change the viewing angle during DVD playback.	
5	AUTO PLAY button	Press to turn the DVD auto-playback function on or off.	
6	RETURN button	Press to display the PBC (playback control) menu during PBC playback.	
7	BOOKMARK button	Press to operate the preprogrammed functions for each source. (Refer to Using the PGM button.)	Press to turn the bookmark function on or off. For details, refer to Resume playback (Bookmark).
8	Remote control operation mode switch	Switch the operation mode between DVD , S-DVD and DVH modes. Normally, set to DVH . For details, refer to Using the remote control operation mode switch on the next page.	

A

9	CM BACK / CM SKIP buttons	Press to skip progressively backward/forward through the video playing.	
		Press to select channels directly.	Not used.
11	A.MENU button	Press to select various sound quality controls.	
12	FUNC button	Press to select functions.	
13	0 to 10 buttons, CLEAR button	Press 0 to 9 to input numbers. Buttons 1 to 6 can operate the preset tuning for the tuner or disc changing for multi-CD players. Press CLEAR to clear the input numbers.	Press to select a menu item on a video CD featuring PBC (playback control).
		Press to select among three FM bands and one AM band and to cancel control modes of functions.	Press to switch between media file types. (Refer to Switching the media file type.)
15	DISP button	Press to turn the information display on or off when the video is displayed. Depending on the selected source, pressing this button can switch the display indication.	
16	PLAY/PAUSE (▶/⏸) button	Press to switch sequentially between playback and pause.	
	REVERSE (◀◀) button	Press to perform fast reverse.	
	FORWARD (▶▶) button	Press to perform fast forward.	
	PREVIOUS (◀◀◀) button	Press to return to the previous track (chapter).	
	NEXT (▶▶▶) button	Press to go to the next track (chapter).	
	STEP (⏮/⏭) buttons	Press to move ahead one frame at a time during DVD/VideoCD playback. Press and hold for one second to activate slow playback. If a DVD-VR disc contains a still image, press ⏮ while displaying a still image to switch to the next image or video.	
	STOP (■) button	Not used.	Press to stop playback.
17	Move the thumb pad	Functions are the same as MULTI-CONTROL on the head unit. Move to operate fast forward, reverse and track search controls. Also used for controlling functions.	Move to select a menu on the DVD menu.
	Click the thumb pad	Click to display the track title list, folder list or file list depending on the source.	Click to select a menu on the DVD menu.
18	MENU button	Press to display the DVD menu during DVD playback.	
	TOP MENU button	Press to return to the top menu during DVD playback.	

D

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Using the remote control operation mode switch

There are three remote control operation modes on the remote control. If you want to operate this unit by remote control, turn the mode switch to **DVH** mode. In this case, both

the head unit's buttons and the remote control can control this unit.

DVH mode operation

When operating this unit by remote control, the mode is normally switched to **DVH**.

F

- The thumb pad on the remote control can perform the same operations as **MULTI-CONTROL** on the head unit.

DVD mode operation

If you switch the mode to **DVD**, the thumb pad and **0** to **10** operations are changed for the DVD player.

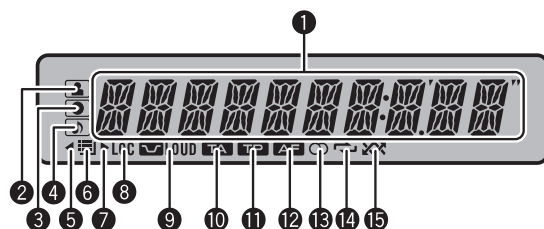
● When you want to operate the following functions, switch the mode to **DVD**:

- When operating the DVD menu by using the thumb pad. (Refer to Operating the DVD menu.)
- When operating the PBC menu by using **0** to **10**. (Refer to PBC playback.)
- When specifying title or track by using **0** to **10**. (Refer to Specifying title and Specifying track.)
- When operating the DVD setup menu by using the thumb pad. (Refer to Setting up the DVD player.)

S-DVD mode operation

When using the remote control with this unit, there is no need to switch to **S-DVD** mode.

Display indication



① Main display section

Displays band, frequency, elapsed playback time and other settings.

- Tuner
Band and frequency are displayed.
- RDS
Program service name, PTY information and other literal information are displayed.

- Built-in DVD player, USB
Elapsed playback time and literal information are displayed.

② (artist) indicator

Appears when the disc (track) artist name is displayed on the main display section.

③ (disc) indicator

Appears when the disc (album) name is displayed on the main display section.

④ (song) indicator

Appears when the track (song) name is displayed on the main display section.
Appears when playable file is displayed during viewing the file name list of disc and a USB storage device.

⑤ ◀ indicator

Appears when an upper tier of folder or menu exists.

⑥ ≡ (list) indicator

Appears when operating list function.

⑦ ▶ indicator

Appears when a lower tier of folder or menu exists.

⑧ LOC indicator

Appears when local seek tuning is on.

⑨ (LOUD) (loudness) indicator

Appears when loudness is on.

⑩ TA (TA) indicator

Appears when TA (traffic announcement standby) function is on.

⑪ TP (TP) indicator

Appears when a TP station is tuned in.

⑫ AF (AF) indicator

Appears when AF (alternative frequencies search) function is on.

⑬ (stereo) indicator

Appears when the selected frequency is being broadcast in stereo.

A

14 ↺ (repeat) indicator

Shows when track repeat is turned on.
Also, shows when folder repeat is on.

15 ⚡ (random) indicator

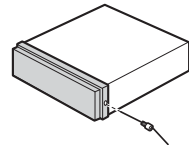
Shows when random play is on.

**Note**

When you set the display connection (refer to Setting the display connection on or off) to on, the indicators of ❷ to ❶ do not appear. ■

Fastening the front panel

If you do not plan to detach the front panel, the front panel can be fastened with supplied screw.



Screw
BPZ20P080FTC

B

C

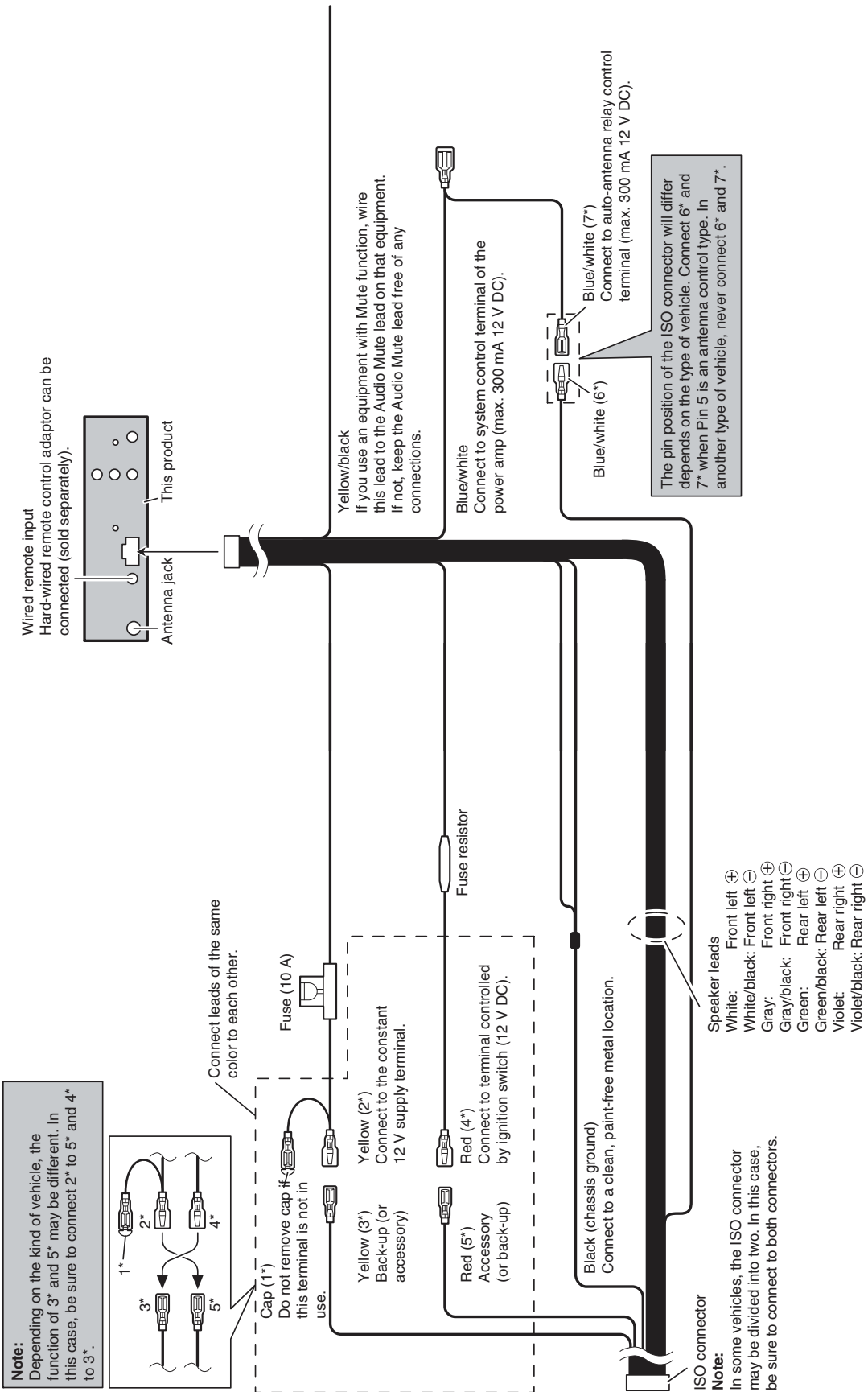
D

E

F

2.4 CONNECTION DIAGRAM

Power cable connection

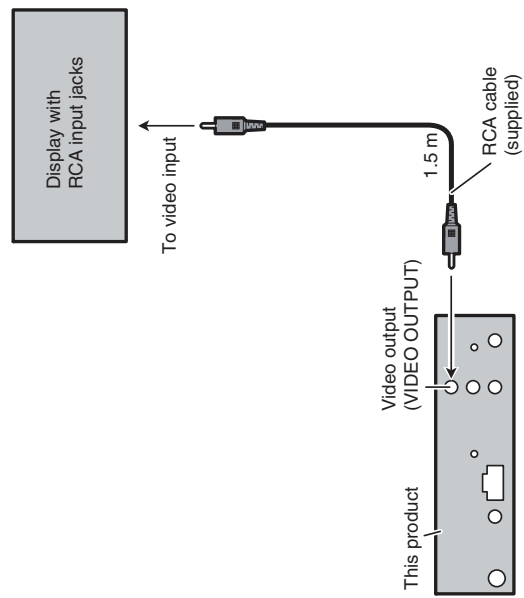


When using a display connected video outputs



WARNING

Never install the display in a location where it is visible to the driver while driving.



3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

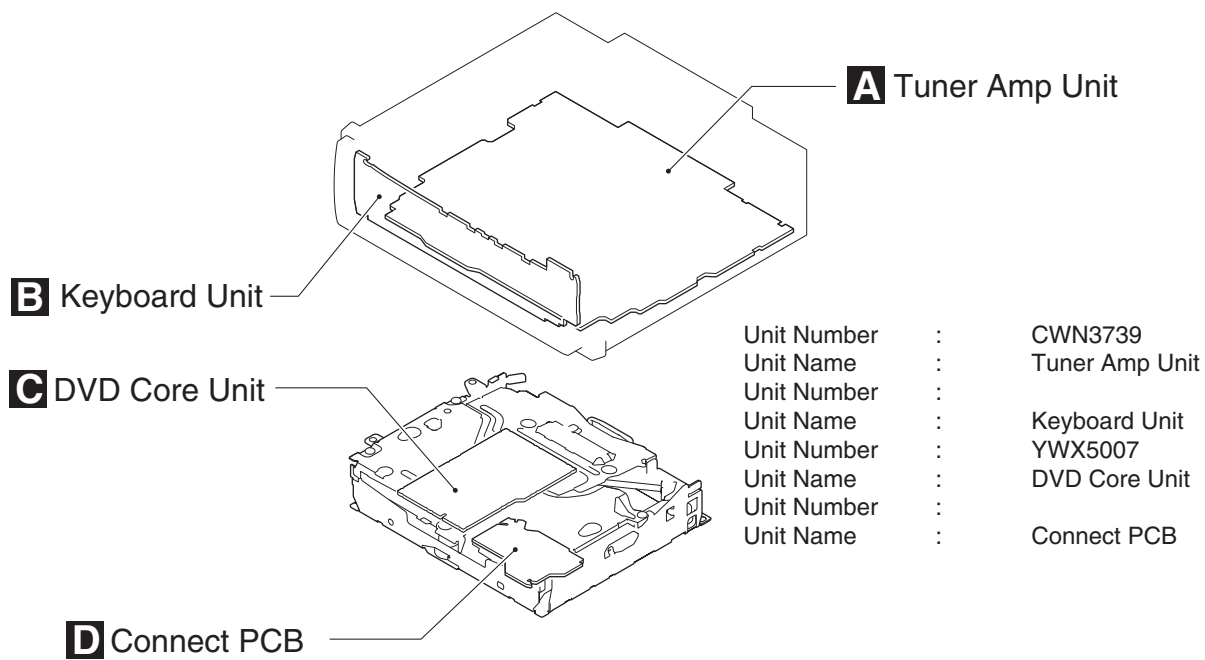
To keep the product quality after servicing, please confirm following check points.

No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, video, audio and operations must be normal.
2	DVD	Measure playback error rates at the innermost and outermost tracks by using the test mode with the following disc. DVD test disc (TDV-582)	Deterioration of mecha-drive can be checked. The error rate must be less than the threshold value. (Refer to the chapter of DIAGNOSIS for the threshold value.)
3	DVD	Play back a DVD. (Menu operation; Title/chapter search)	Display, video, audio and operations must be normal.
4	CD	Play back a CD. (Track search)	Display, audio and operations must be normal.
5	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
6		Check whether no disc is inside the product.	The media used for the operating check must be ejected.
7		Appearance check	No scratches or dirt on its appearance after receiving it for service.

For check items concerning image and voice, please refer to the followings:

Check items concerning image	Check items concerning voice
Block-noise	Distortion
Crosscut noise	Noise
Dot noise	Low volume
Distorted image (Image skip)	High volume
Low brightness	Changes in level
Too bright	Pause of sound
Color fading	
Partial discoloration	

3.2 PCB LOCATIONS



3.3 JIGS LIST

● Jigs List

Name	Jig No.	Remarks
Disc	TDV-582	Skew adjustment, Check points after servicing, Inspection method of Pickup Unit
Disc	TCD-782	Inspection method of Pickup Unit

● Grease List

Name	Jig No.	Remarks
Grease	GEM1024	DVD Mechanism Module
Grease	GEM1038	DVD Mechanism Module
Grease	GEM1045	DVD Mechanism Module
Locking agents	1401M	Skew adjustment (1401M:produced by THREE BOND)
Bond	GEM1033	Skew adjustment
Bond	1530	Skew adjustment (1530:produced by THREE BOND)

3.4 CLEANING

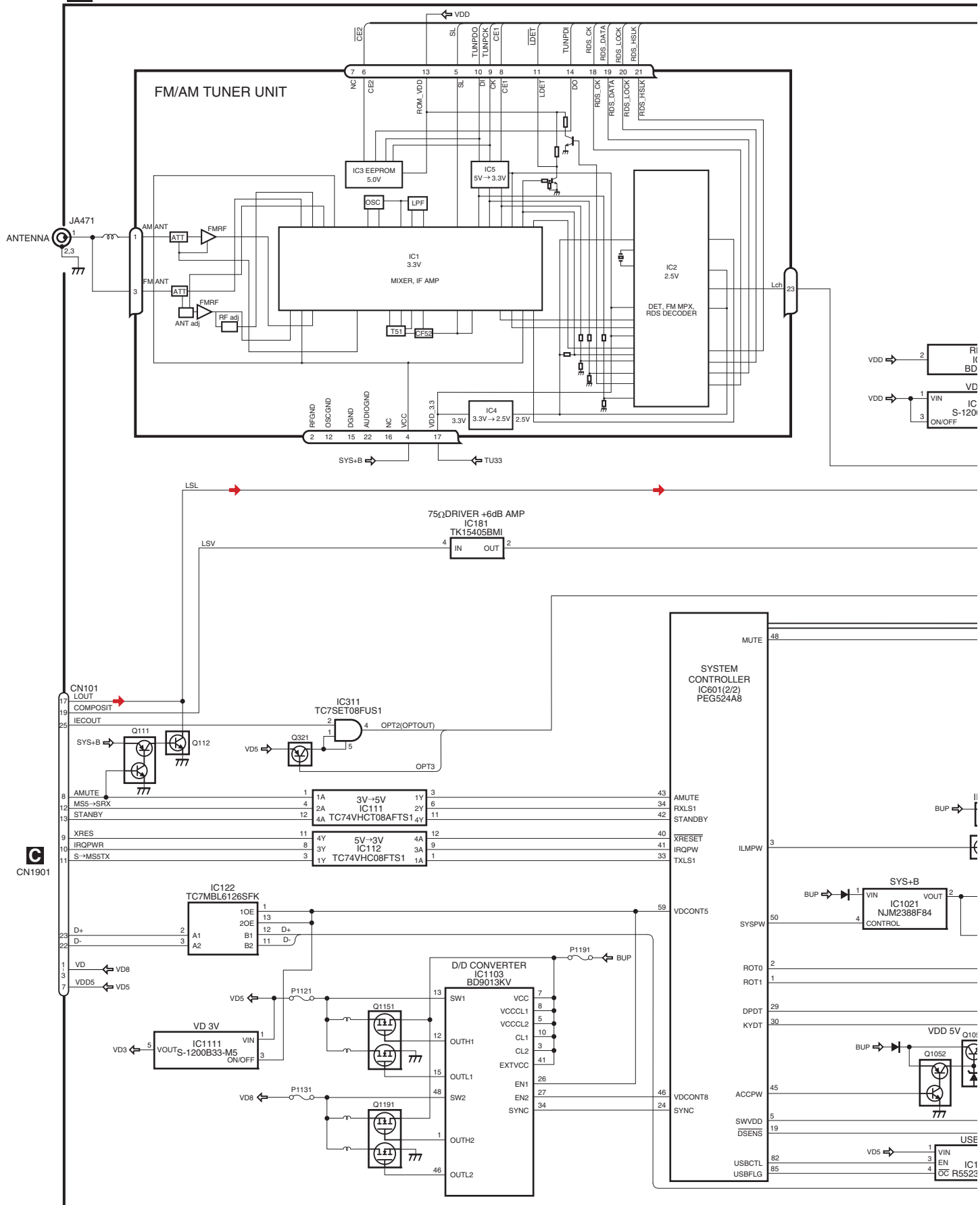


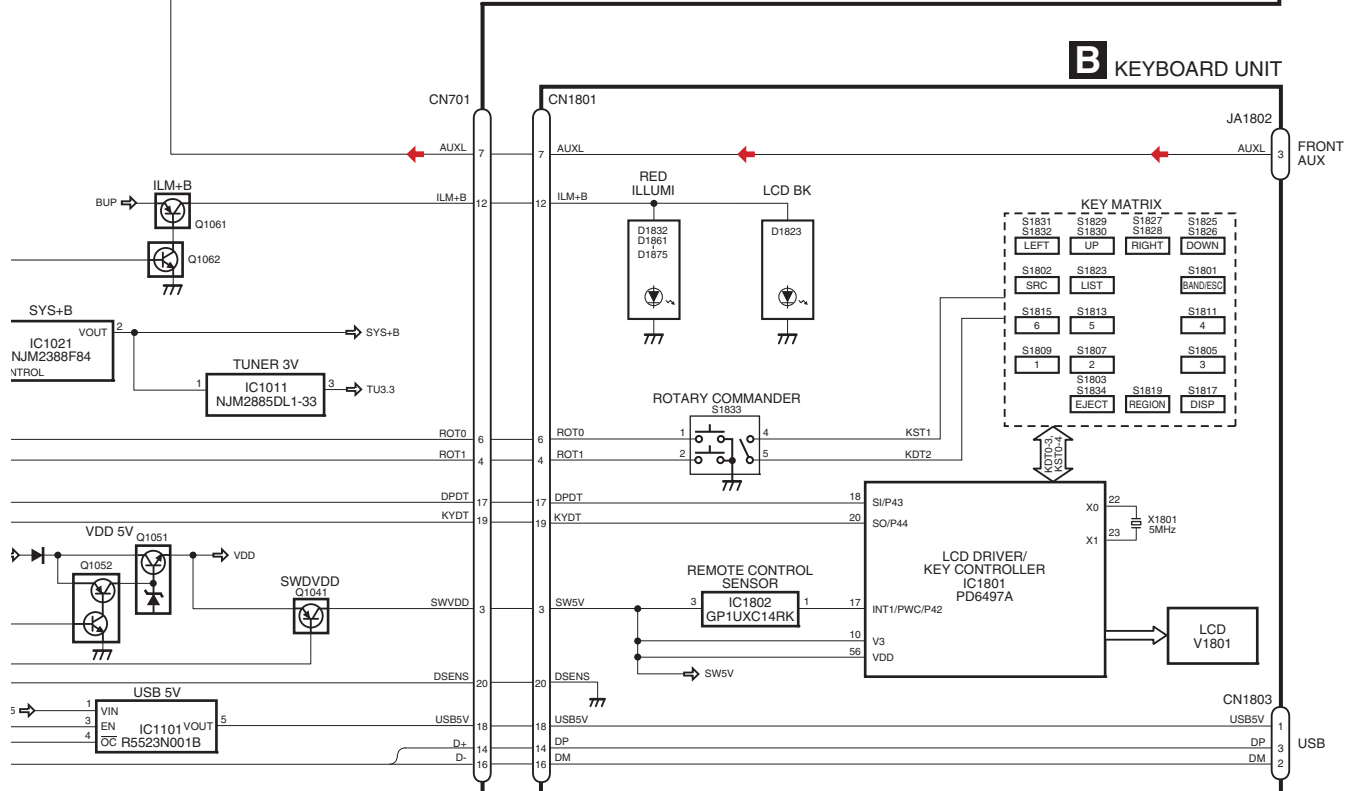
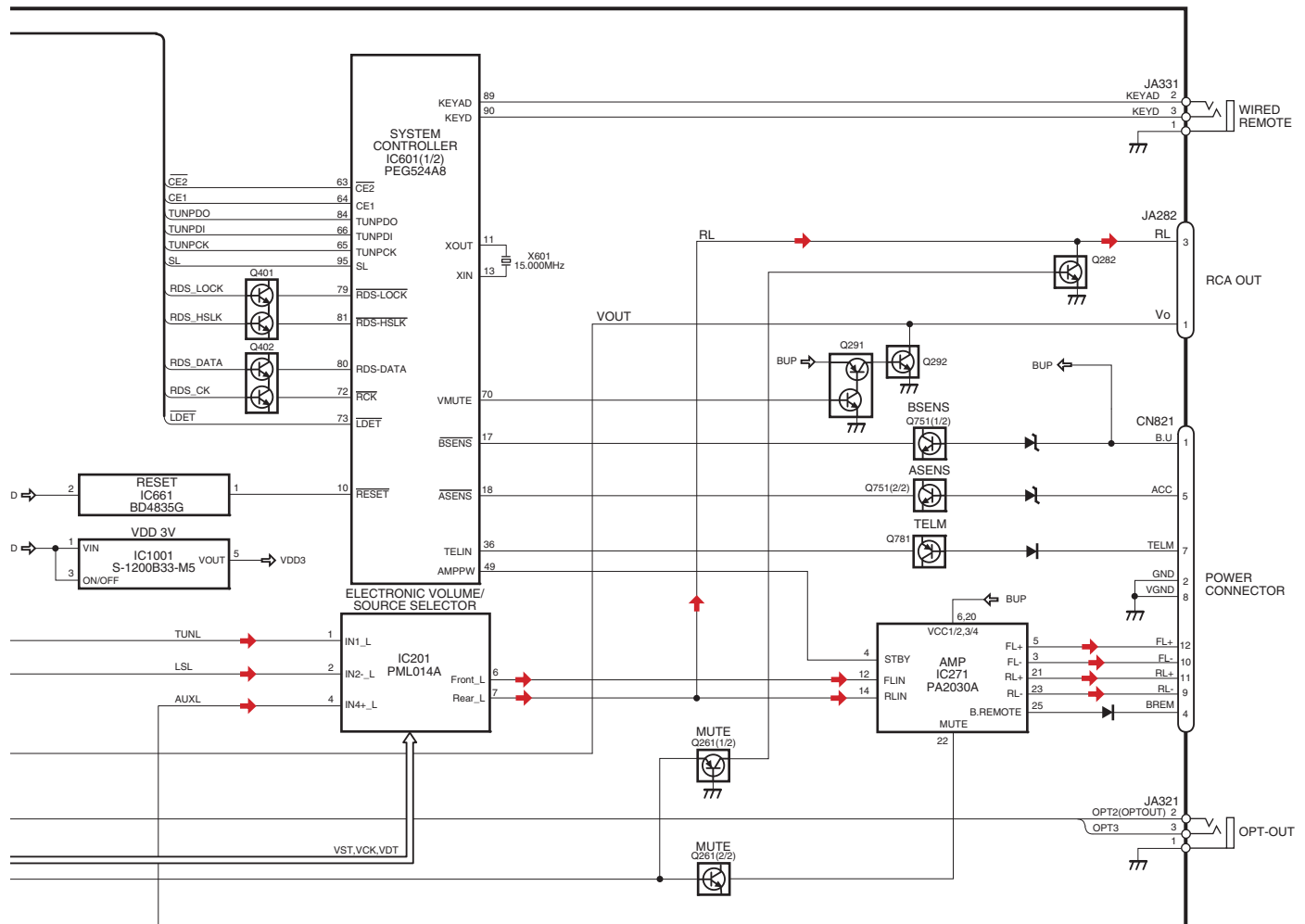
Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
DVD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

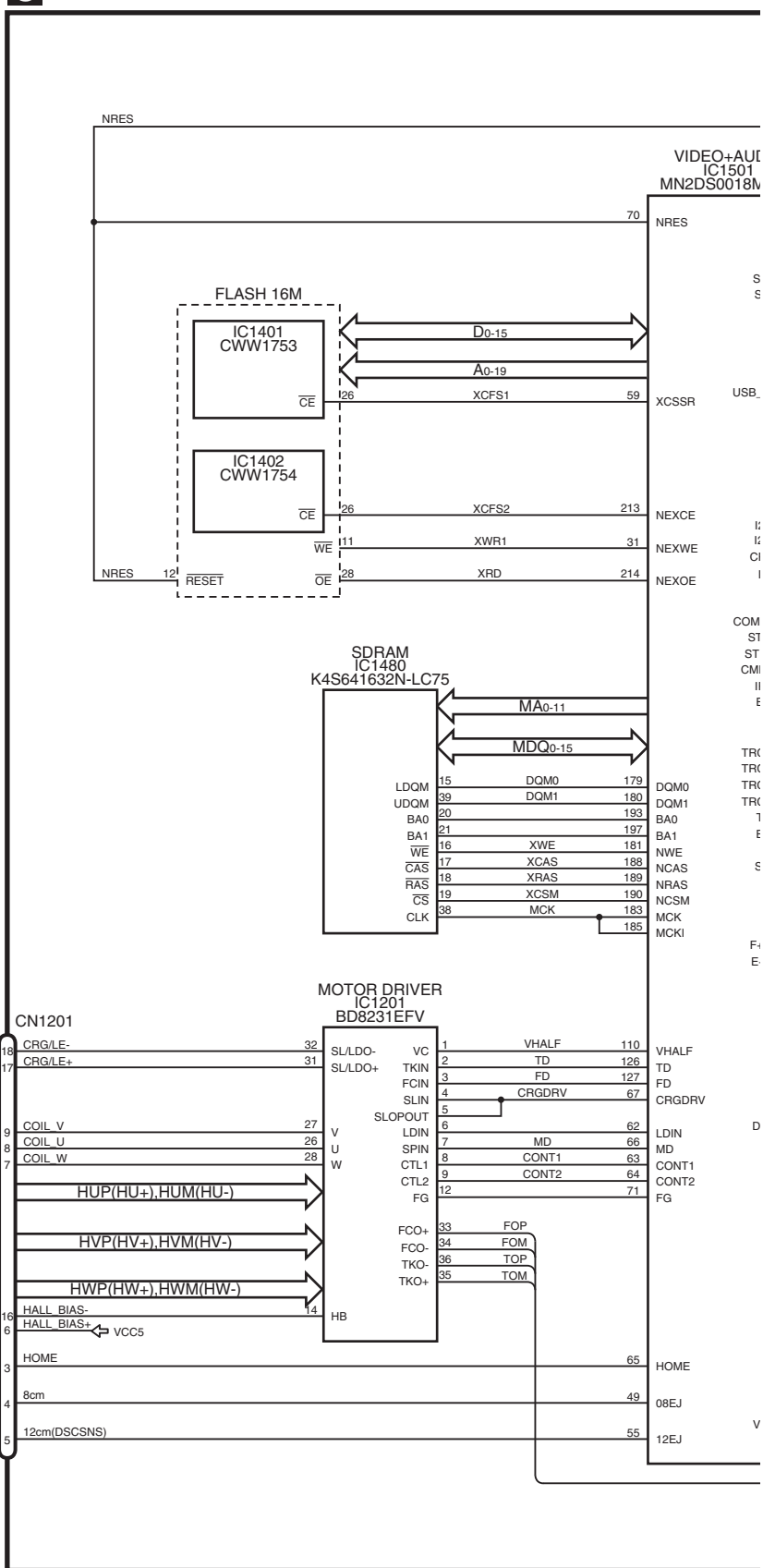
4. BLOCK DIAGRAM

A TUNER AMP UNIT

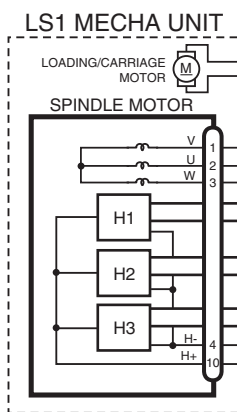


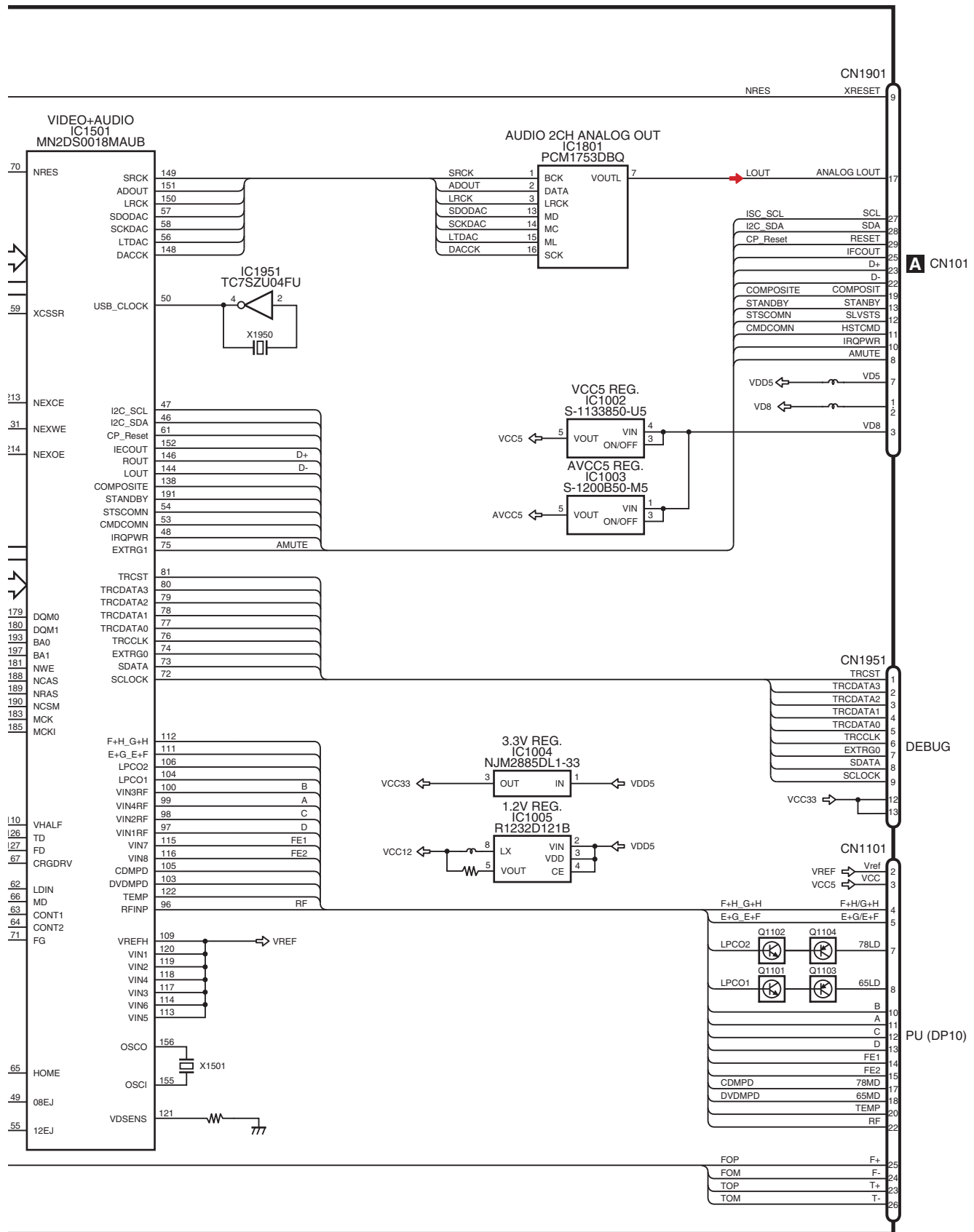


C DVD CORE UNIT



D CONNECT PCB





● CAW1964

A

B

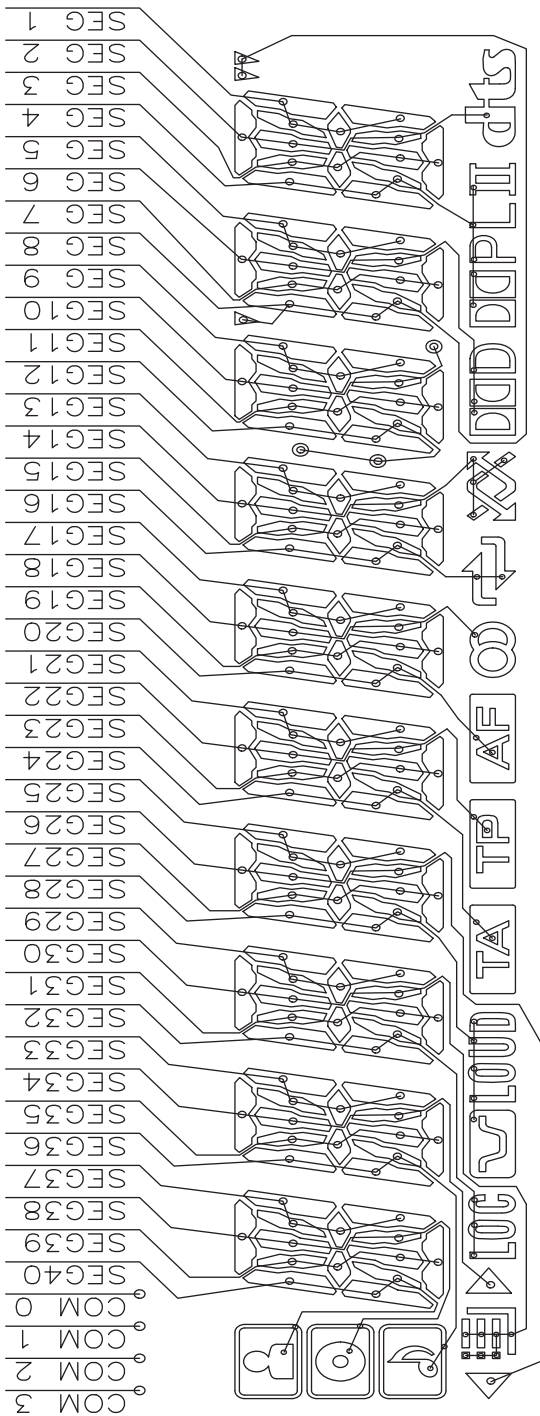
C

D

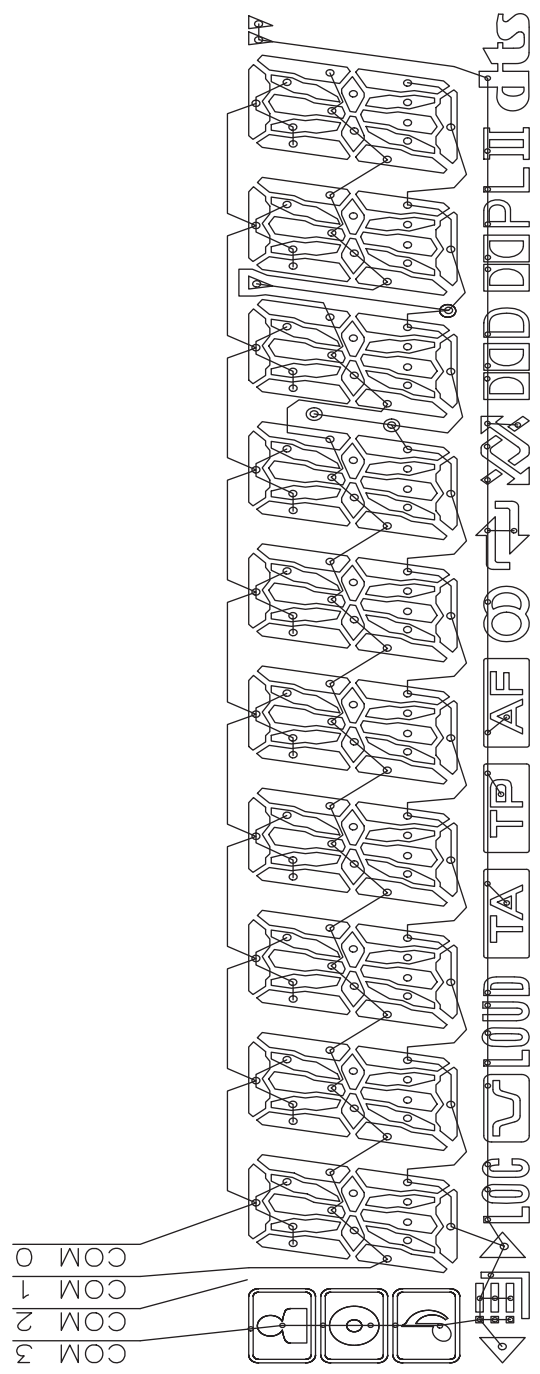
E

F

SEGMENT

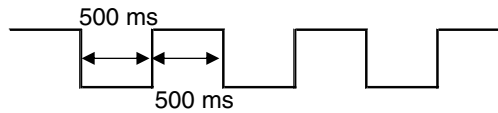
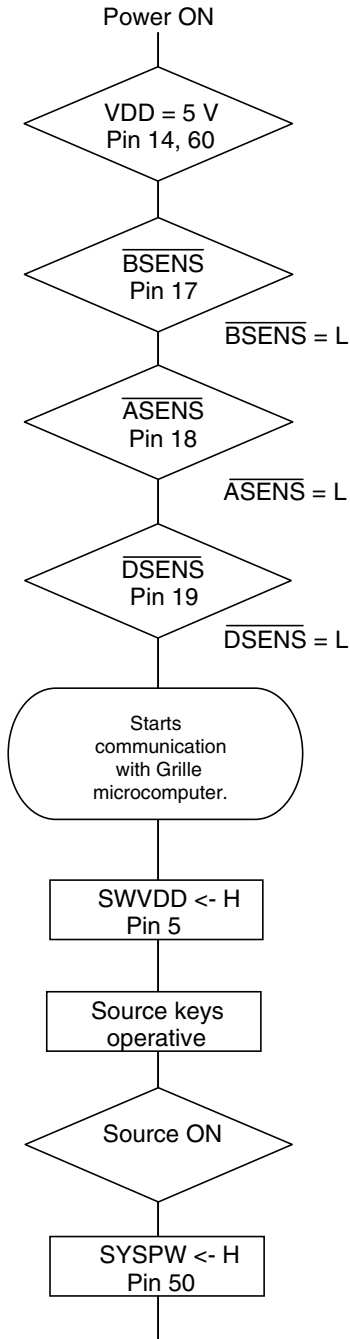


COMMON



5. DIAGNOSIS

5.1 OPERATIONAL FLOWCHART



In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 500 msec, the oscillator may be defective.

Completes power-on operation.
(After that, proceed to each source operation)

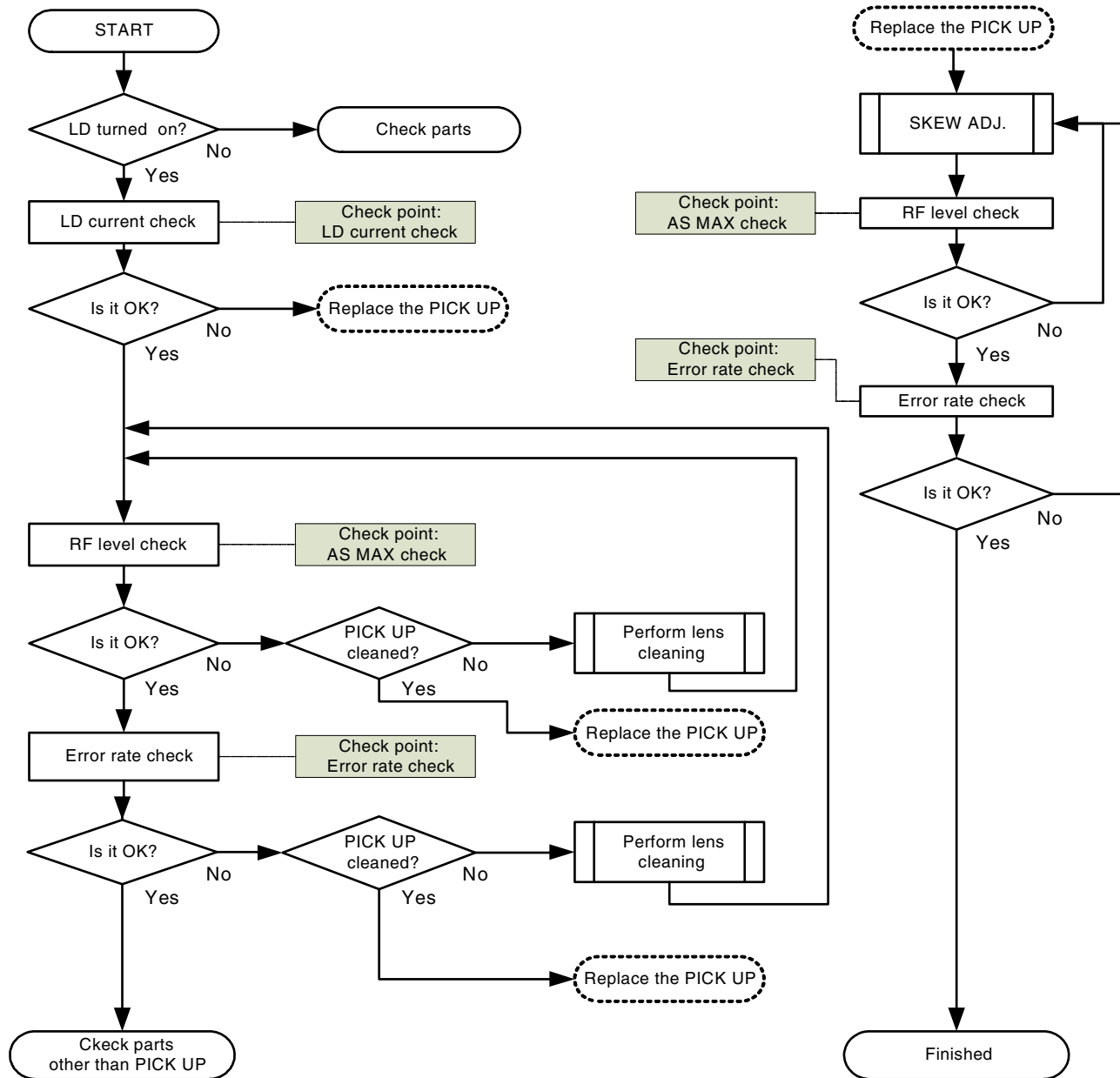
5.2 INSPECTION METHOD OF PICKUP UNIT

Disc to be used

CD-DA: TCD-782

DVD-Video: TDV-582

Execution method

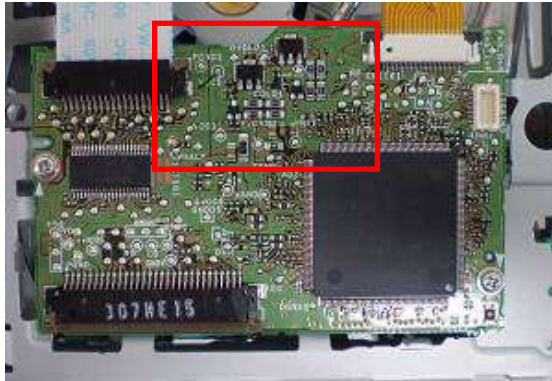


LD current check

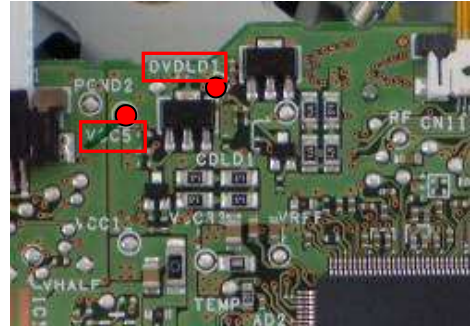
Check

Status: [Focus closed] of TEST MODE

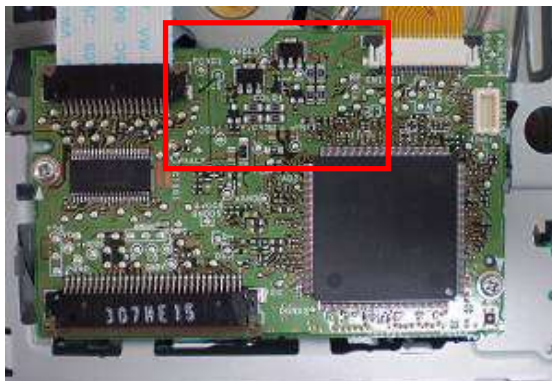
NO.	Disc	Check Point	Threshold	Remarks: LD current
1	GGV1025	DVDLD1-VCC5_3	60 - 390 (mV)	10 - 65 (mA)



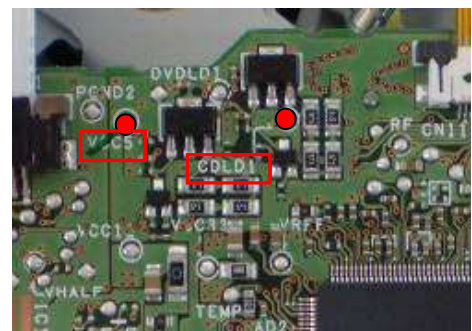
Expansion



NO.	Disc	Check Point	Threshold	Remarks: LD current
2	TCD-782	CDLD1-VCC5_3	60 - 360 (mV)	10 - 60 (mA)



Expansion



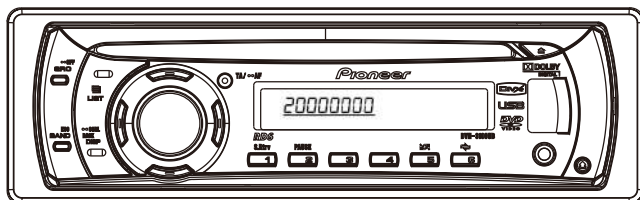
Notes: Please pay attention to the laser diode damage by static electricity.

ASMAX check

ASMAX value shows the value of RF level.

Status: [Focus closed] of TEST MODE

No.	Disc	Check Point	Threshold	Remarks:
1	GGV1025	8 digits value of ASMAX on display	more than 0000 0B00	Only four last digits are displayed according to the product.
2	TCD-782	8 digits value of ASMAX on display	more than 0000 0C00	Only four last digits is displayed according to the product.



In this case, the value is displayed for a split second. When you tried to perform [FOCUS CLOSE], the display will change automatically in the following order.

[1FFF0000]->[FEMAX]->[FE MIN]->[AS MAX]->

[ENV MAX]->[FE normal]->[Spindle gain]->

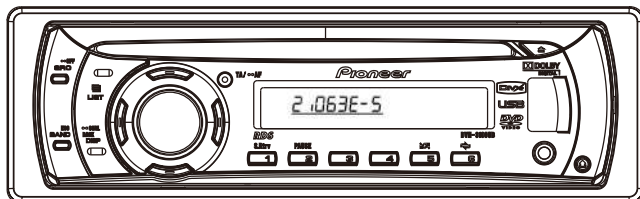
[TEMAX]->[TEMIN]->[20000000]

Watch carefully the value of ASMAX.

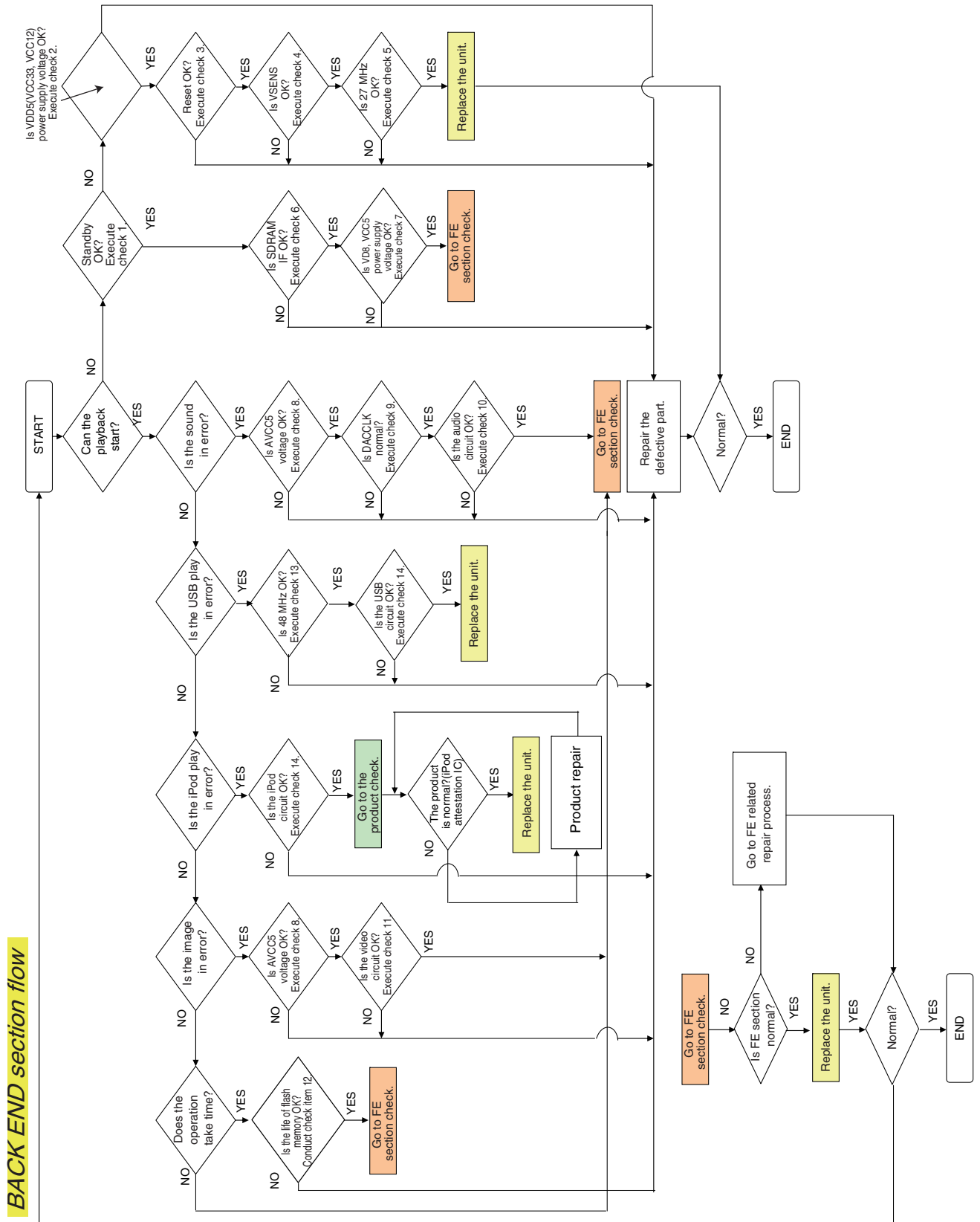
Error rate check

Status: [Tracking Closed] of TEST MODE

No.	Disc	Check Point	Threshold	Remarks:
1	GGV1025	ID: 40000	less than 1.000E-03	
2	GGV1025	ID: 200000	less than 1.000E-03	
3	TCD-782	ID: HOME Position	less than 2.500E-03	



5.3 DIAGNOSIS FLOWCHART



Check 1: Standby OK?

- A <Check> Check the voltage at the “STANBY” test point while the power is on.
Use the “DGND1” test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	STANBY-DGND1	ALL	VCC33 V- 0.6 V or more	V

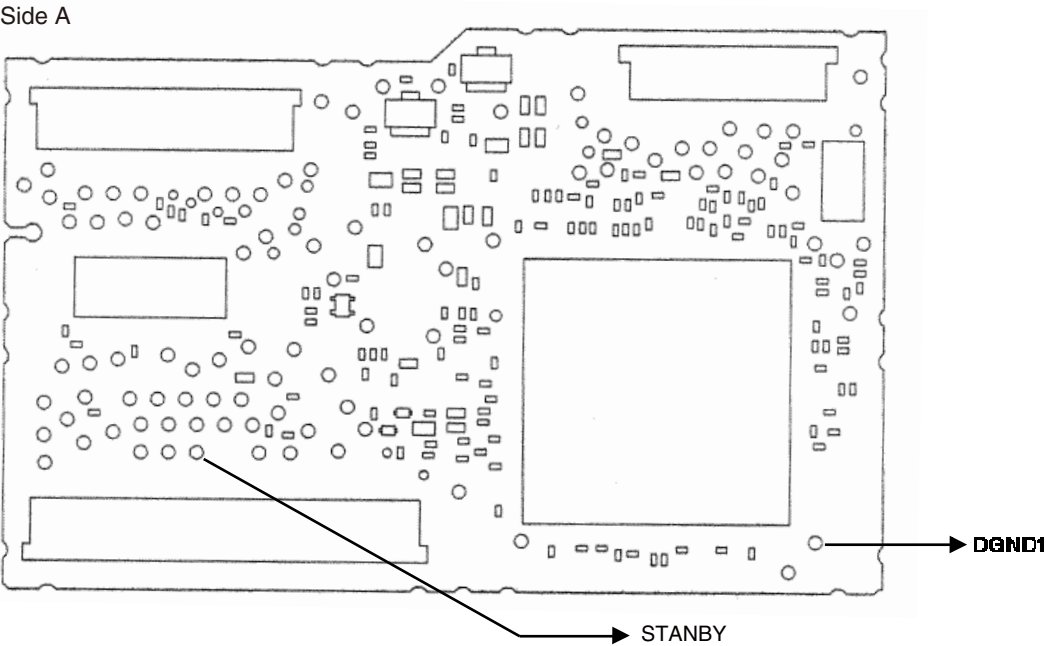


Fig 1.1: STANBY check point

Check 2: Is VDD5 (VCC33, VCC12) power supply voltage OK?

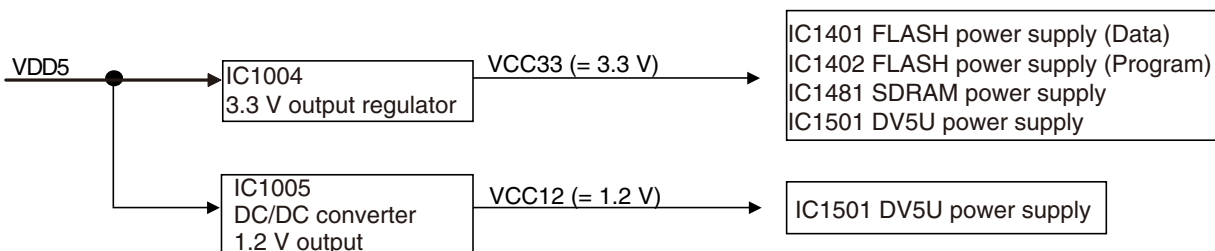


Fig 2.1: Power supply configuration

<Check> Check the voltage at the “VDD5_1, VCC33_1 and VCC12_1” test point while the power is on.
Use the “DGND1” test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VDD5_1 - DGND1	ALL	5.0 ± 0.4	V
2	VCC33_1 - DGND1	ALL	3.3 ± 0.15	V
3	VCC12_1 - DGND1	ALL	1.2 ± 0.12	V

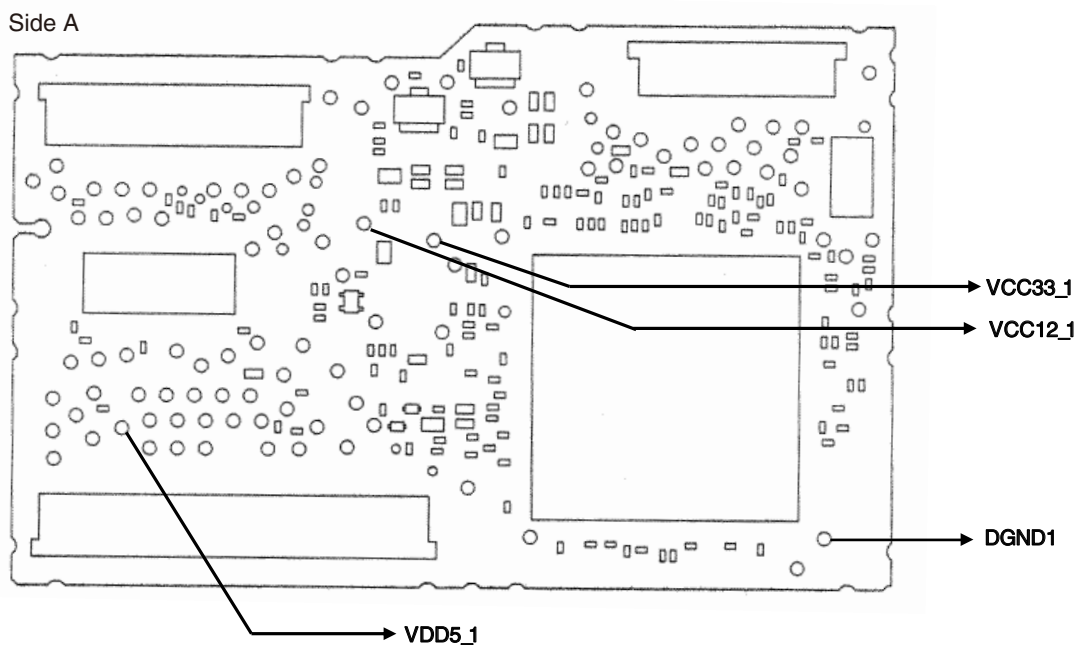


Fig 2.2: VDD5, VCC33, VCC12 voltage check points

Check 3: Reset OK?

A

<Check> Check the voltage at the “XRES” test point while the power is on.
Use the “DGND1” test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	XRES-DGND1	ALL	VCC33 × 0.7 or more	V

B

C

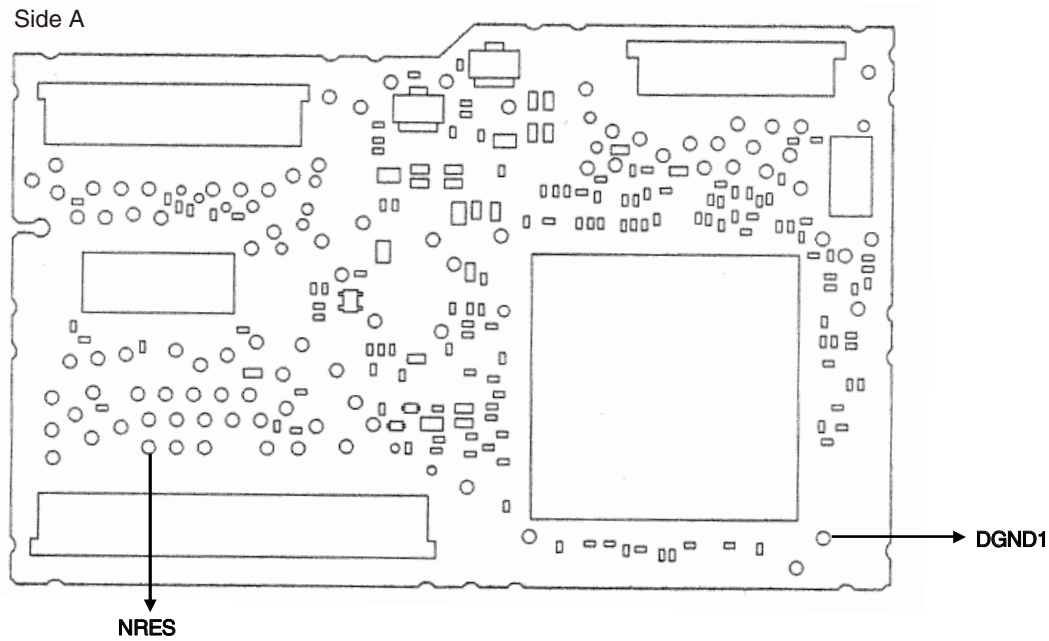


Fig 3.1: RESET check point

D

E

F

Check 4: Is VSENS OK?

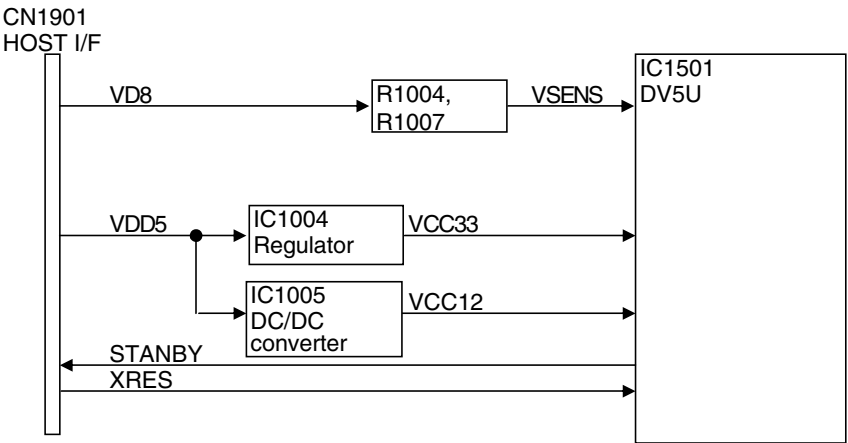


Fig 4.1: Power supply configuration and VSENS

<Check> Check the voltage at the “VSENS” test point while the power is on.
Use the “DGND1” test point at the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VSENS - DGND1	ALL	0.95 - 1.07	V

VD8 = 8.0 ± 0.4 V

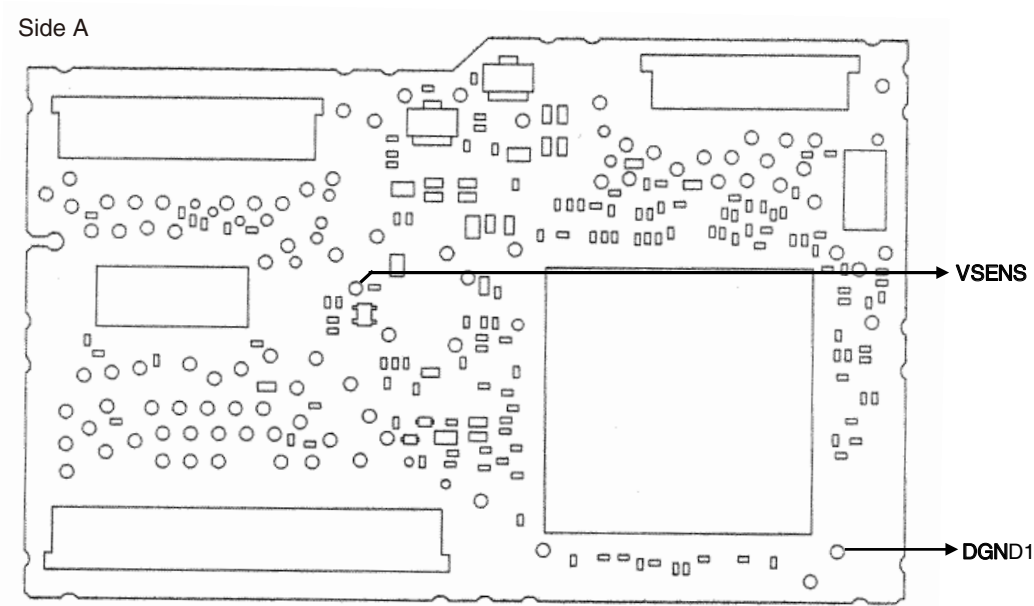


Fig 4.2: VSENS check point

Check 5: 27 MHz Normal?

<Outline> Each clock is created inside the IC1501 using the 27 MHz master crystal oscillator (X1501).

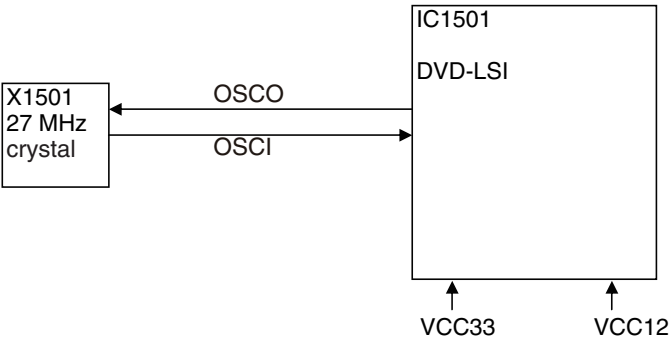
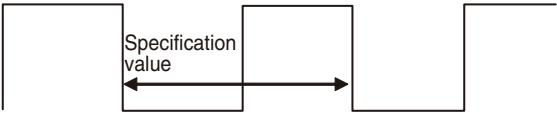


Fig 5.1: Clock configuration

<Check method> Turn the power on, and check with DGND being the reference.
In case of NG, check the applicable line, periphery of IC1501, soldering of the peripheral components and defective components.

NO.	Check point	Module No.	Specification value	Unit
2	IC1501 169pin	ALL	27 MHz ± 50 ppm	ppm



GND

Fig 5.2: Clock specification value

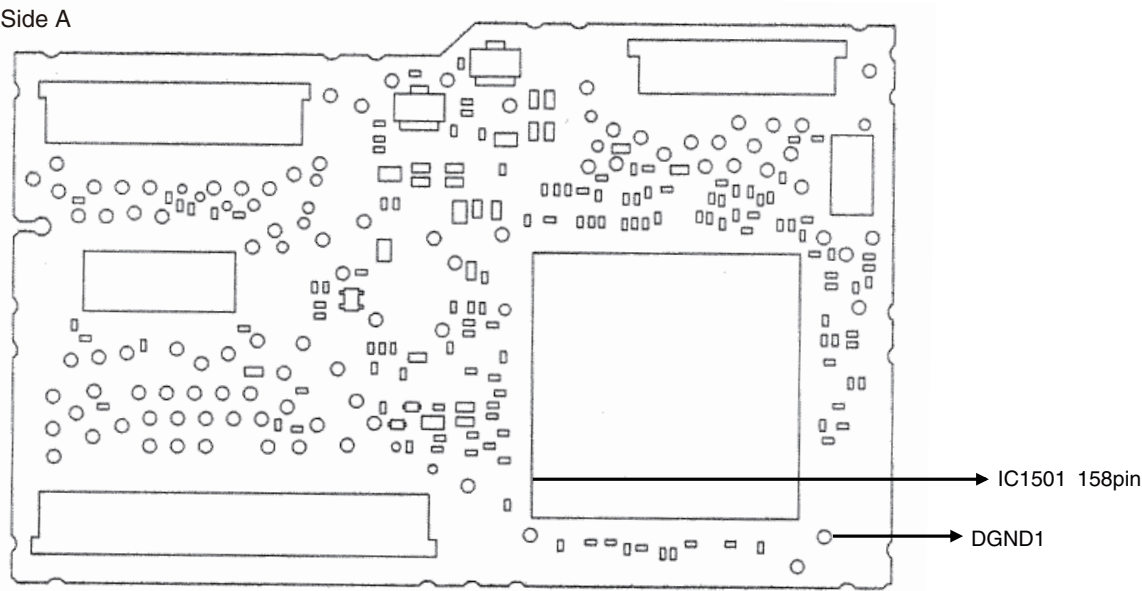


Fig 5.3: 27 MHz check point

Check 6: Is SDRAM I/F OK?

<Outline> In order to secure the MPEG stream data as the buffer,
the capacity of communication I/F SDRAM between the LSI and the memory is 64Mbit.
Be careful as XCSM, XWE, XCAS and XRAS of IC1480 are called differently in IC1501,
namely NCSM, NWE, NCAS, NRAS.

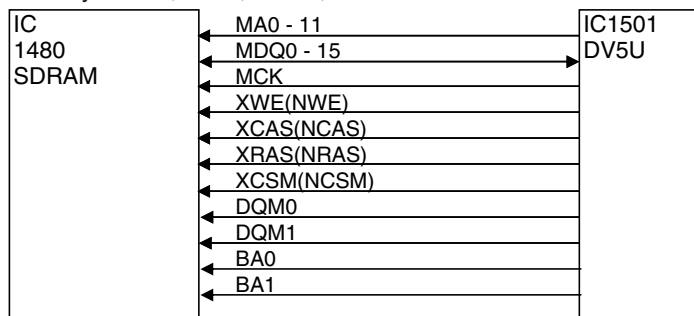


Fig 6.1: SDRAM I/F

<Check> Check the conductivity at “check point 1” and “check point 2” without power.
In case of NG, check the soldering and defective components throughout the
“output → input” of the applicable section.

A

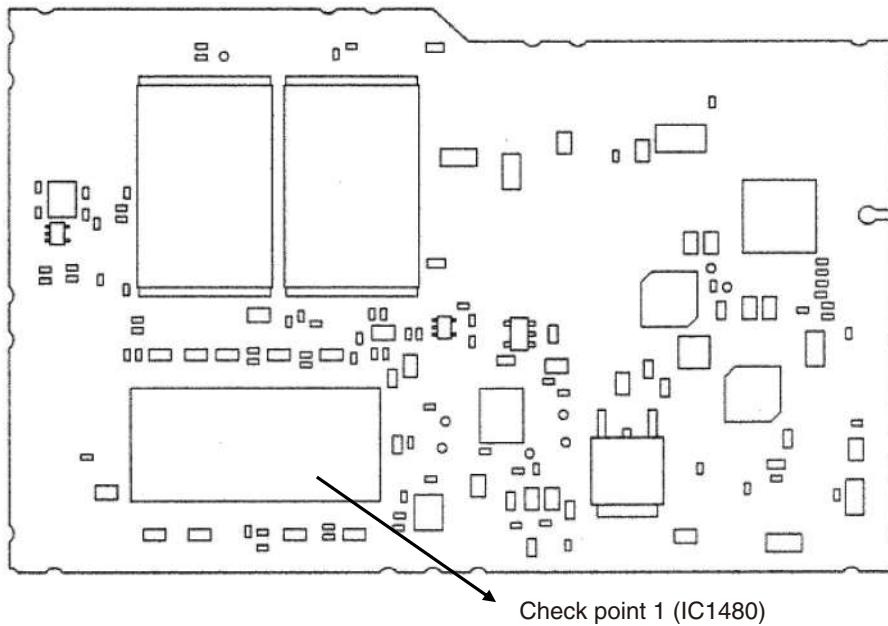
NO.	Signal name	Check point 1		Check point 2		Specification value
1	MA0	IC1480	23pin	IC1501	201pin	56 ohm ± 5 %
2	MA1	IC1480	24pin	IC1501	203pin	56 ohm ± 5 %
3	MA2	IC1480	25pin	IC1501	207pin	56 ohm ± 5 %
4	MA3	IC1480	29pin	IC1501	209pin	56 ohm ± 5 %
5	MA4	IC1480	30pin	IC1501	208pin	56 ohm ± 5 %
6	MA5	IC1480	31pin	IC1501	206pin	56 ohm ± 5 %
7	MA6	IC1480	32pin	IC1501	202pin	56 ohm ± 5 %
8	MA7	IC1480	33pin	IC1501	200pin	56 ohm ± 5 %
9	MA8	IC1480	34pin	IC1501	198pin	56 ohm ± 5 %
10	MA9	IC1480	33pin	IC1501	194pin	56 ohm ± 5 %
11	MA10	IC1480	22pin	IC1501	199pin	56 ohm ± 5 %
12	MA11	IC1480	35pin	IC1501	192pin	56 ohm ± 5 %
13	MDQ0	IC1480	2pin	IC1501	160pin	56 ohm ± 5 %
14	MDQ1	IC1480	4pin	IC1501	162pin	56 ohm ± 5 %
15	MDQ2	IC1480	5pin	IC1501	164pin	56 ohm ± 5 %
16	MDQ3	IC1480	7pin	IC1501	168pin	56 ohm ± 5 %
17	MDQ4	IC1480	8pin	IC1501	170pin	56 ohm ± 5 %
18	MDQ5	IC1480	10pin	IC1501	172pin	56 ohm ± 5 %
19	MDQ6	IC1480	11pin	IC1501	176pin	56 ohm ± 5 %
20	MDQ7	IC1480	13pin	IC1501	178pin	56 ohm ± 5 %
21	MDQ8	IC1480	42pin	IC1501	177pin	56 ohm ± 5 %
22	MDQ9	IC1480	44pin	IC1501	175pin	56 ohm ± 5 %
23	MDQ10	IC1480	45pin	IC1501	171pin	56 ohm ± 5 %
24	MDQ11	IC1480	47pin	IC1501	169pin	56 ohm ± 5 %
25	MDQ12	IC1480	48pin	IC1501	167pin	56 ohm ± 5 %
26	MDQ13	IC1480	50pin	IC1501	163pin	56 ohm ± 5 %
27	MDQ14	IC1480	51pin	IC1501	161pin	56 ohm ± 5 %
28	MDQ15	IC1480	53pin	IC1501	159pin	56 ohm ± 5 %
29	MCK	IC1480	38pin	IC1501	183pin	0.17 ohm or lower
30	XWE	IC1480	16pin	IC1501	181pin	56 ohm ± 5 %
31	XCAS	IC1480	17pin	IC1501	188pin	56 ohm ± 5 %
32	XRAS	IC1480	18pin	IC1501	189pin	56 ohm ± 5 %
33	XCSM	IC1480	19pin	IC1501	190pin	56 ohm ± 5 %
34	DQM0	IC1480	15pin	IC1501	179pin	56 ohm ± 5 %
35	DQM1	IC1480	39pin	IC1501	180pin	56 ohm ± 5 %
36	BA0	IC1480	20pin	IC1501	193pin	56 ohm ± 5 %
37	BA1	IC1480	21pin	IC1501	197pin	56 ohm ± 5 %

D

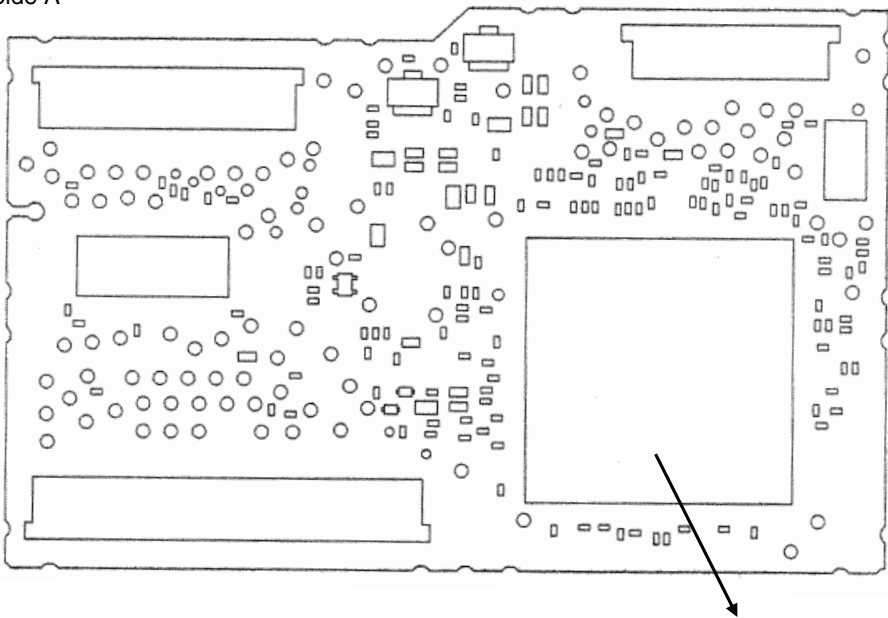
E

F

Side B



Side A



Check point 2 (IC1501)

Fig 6.2: SDRAM I/F check point

Check 7: Is VD8, VCC5 power supply voltage OK?

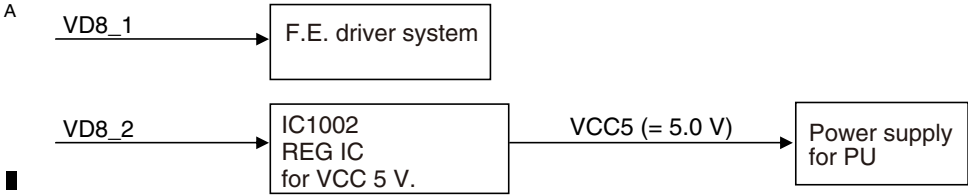


Fig 7.1: Power supply configuration

<Check> Check the voltage at the “VD8_1, VD and VCC5_1” test point while the power is on.
Use the “PGND3 and AGND1” test point at the reference.

B

NO.	Check point	Module No.	Specification value	Unit
1	VD8_1 - PGND3	ALL	8.0 ± 0.4	V
2	VD - PGND3	ALL	8.0 ± 0.4	V
3	VCC5_1- AGND1	ALL	5.0 ± 0.1	V

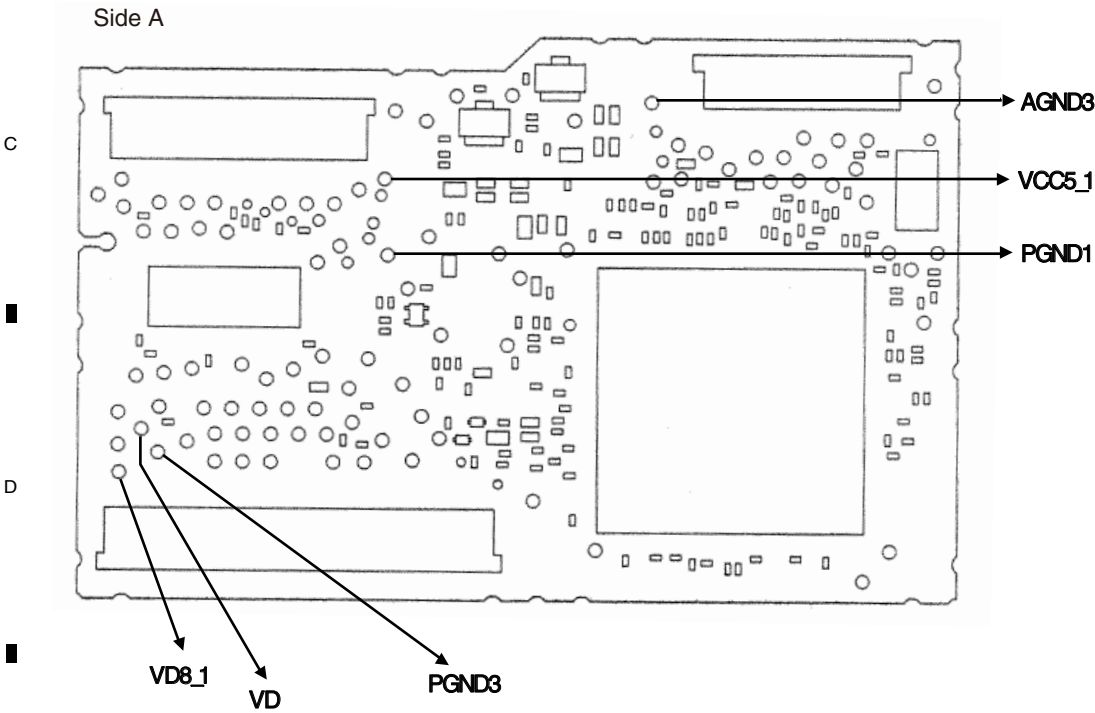


Fig 7.2: VD8, VCC5 voltage check points

Check 8: Is AVCC5 voltage OK?

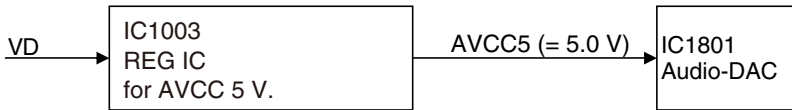


Fig 8.1: Power supply configuration

<Check> Playback DVD-REF-A1 TITLE 1 and check the voltage at the stylus.
Check with PGND and GNDAU being the reference.

NO.	Check point	Module No.	Specification value	Unit
1	VD - PGND_3	ALL	8.0 ± 0.4	V
2	AVCC5 - GNDAU1	ALL	5.0 ± 0.1	V

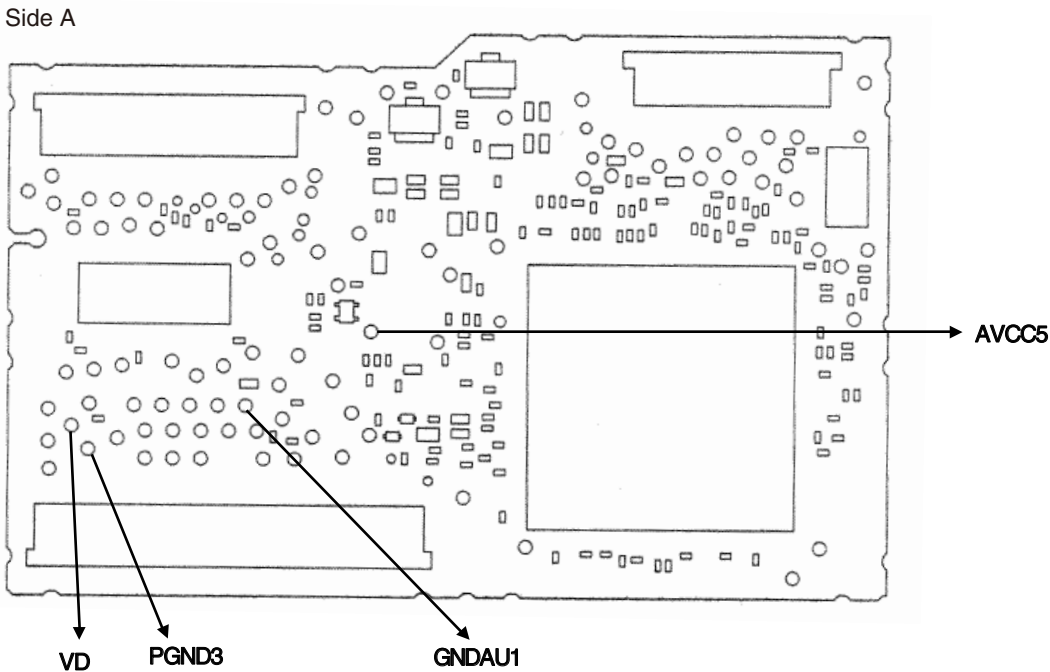


Fig 8.2: VD8, AVCC5 voltage check points

Check 9: Is DACCLK normal?

<Outline> DACCLK for Audio-DAC is created by IC1501 using the 27 MHz master crystal oscillator (X1501).

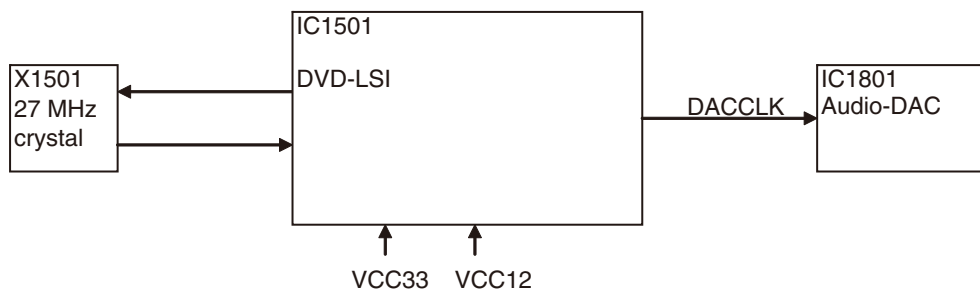


Fig 9.1: Clock configuration

<Check method>

DVD: DVD-REF-A1 TITLE 1

CD: Playback a normal CDDA.

Common to all DVD-V compatible modules.

Check with DGND being the reference.

In case of NG, check the applicable line, the periphery of IC1501, soldering of the peripheral components and defective components.

NO.	Check point 1 (stylus)	Media	Specification value 1	Specification value 2	Specification value 3
1	DACCK	DVD	2.0 V~VCC33 V	DGND~0.8 V	36.864 0 MHz $\pm$ 300 ppm
2	DACCK	CD	2.0 V~VCC33 V	DGND~0.8 V	33.868 8 MHz $\pm$ 300 ppm

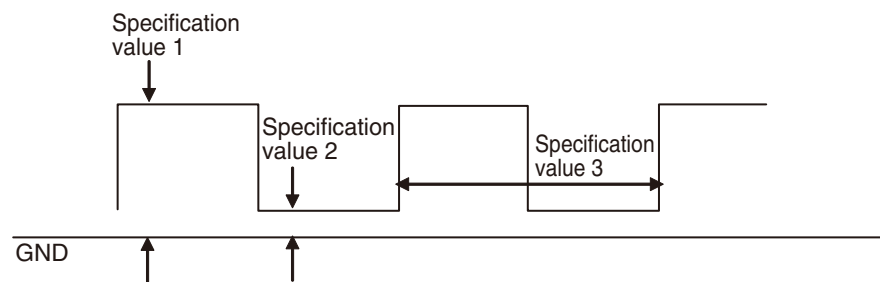
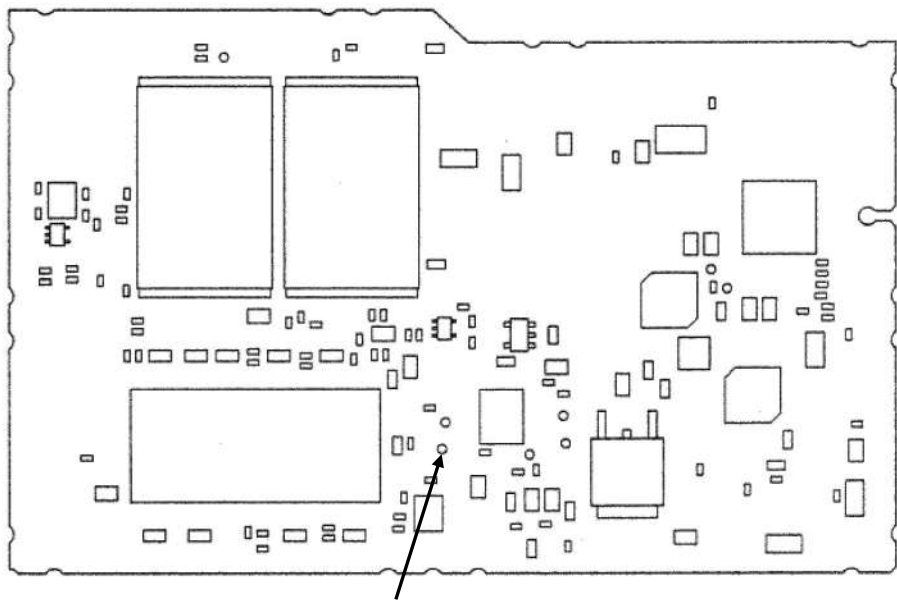


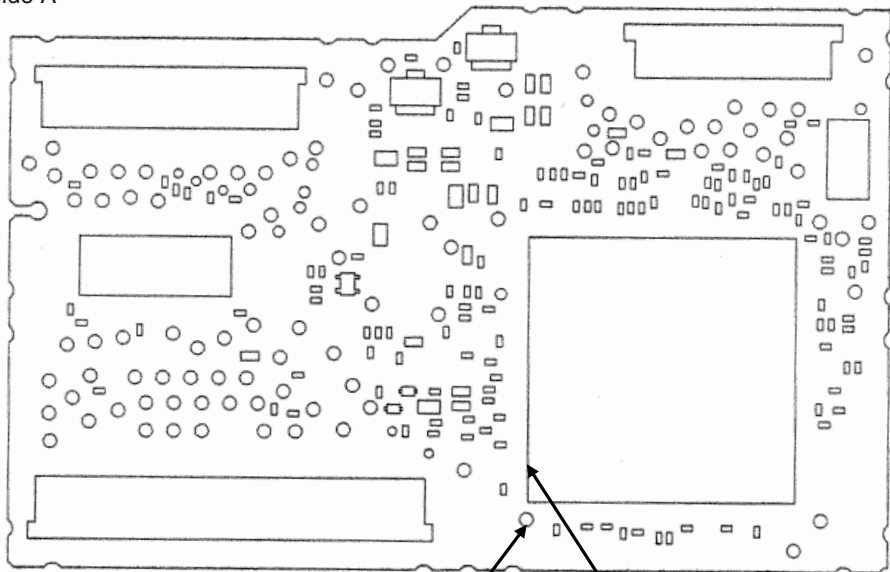
Fig 9.2: Clock specification value

Side B



Check point 1 (DACCK stylus)

Side A



Check point 2 (IC1501 148 pin)

DGND2

Fig 9.3: 27 MHz, DACCLK check point

Check 10: Is the audio circuit OK?

<Outline> The serial 3 lines digital output + DACCLK, output from DVD-LSI (IC1501), are converted to analog audio signal at Audio-DAC (IC1801) and are output from the HOST I/F (CN1901). Simultaneously, the analog MUTE signal is also output from DVD-LSI (IC1501) via the HOST I/F. The digital audio signal (IECOUT), output from DVD-LSI (IC1501).

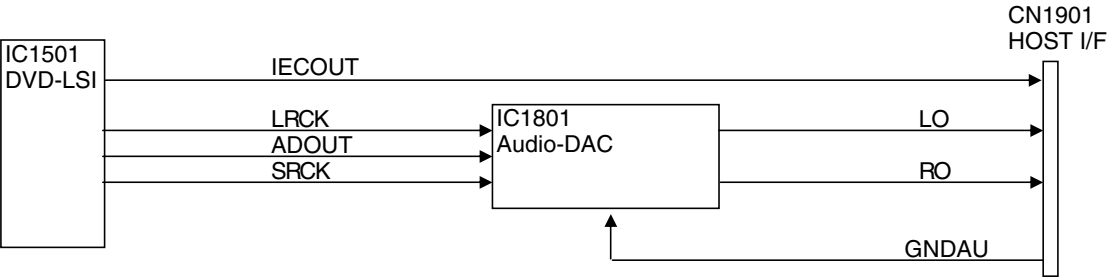


Fig 10.1: Audio circuit

<Check method> Playback DVD-REF-A1 TITLE 2 CHAPTER 1 (48 k/16 bit 1 kHz 0 dB), and check with DGND being the reference. In case of NG, check the applicable line, periphery of major components as described in the above drawing, soldering of the peripheral components and defective components.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2	Reference waveform
1	ADOUT3	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 1
2	SRCK	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 2
3	LRCK	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 3

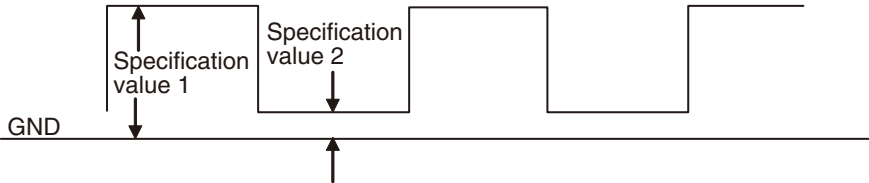
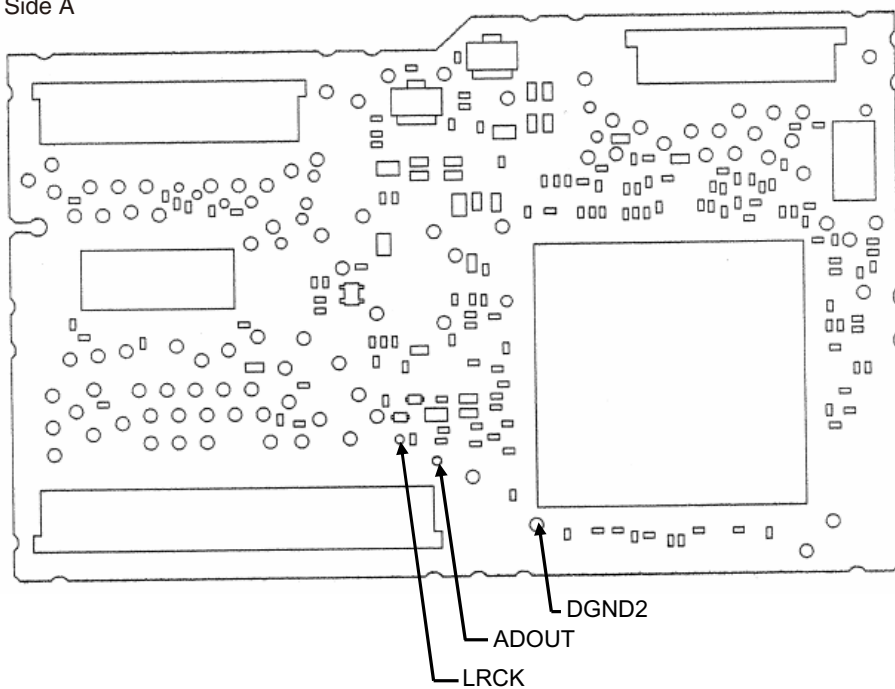


Fig 10.2: Serial 3 lines specification value

Side A



Side B

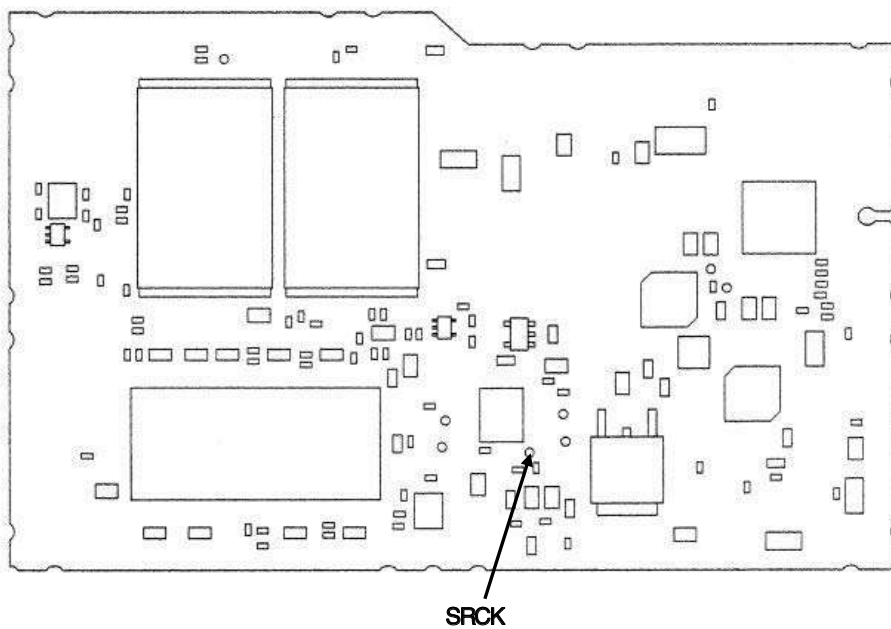
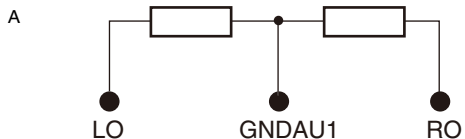


Fig 10.3: Serial 3 lines check points

The following checks shall be conducted using the following measurement circuits with GNDAU1 being the reference.



NO.	Check point 1 (stylus)	Specification value (rms)	Reference waveform
4	LO	$1\,400 \pm 150\text{ mV}$	Waveform 4
5	RO	$1\,400 \pm 150\text{ mV}$	Waveform 4

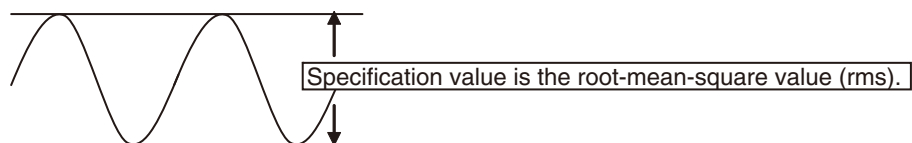


Fig 10.4: Analog audio out (LO, RO) specification value.

Side A

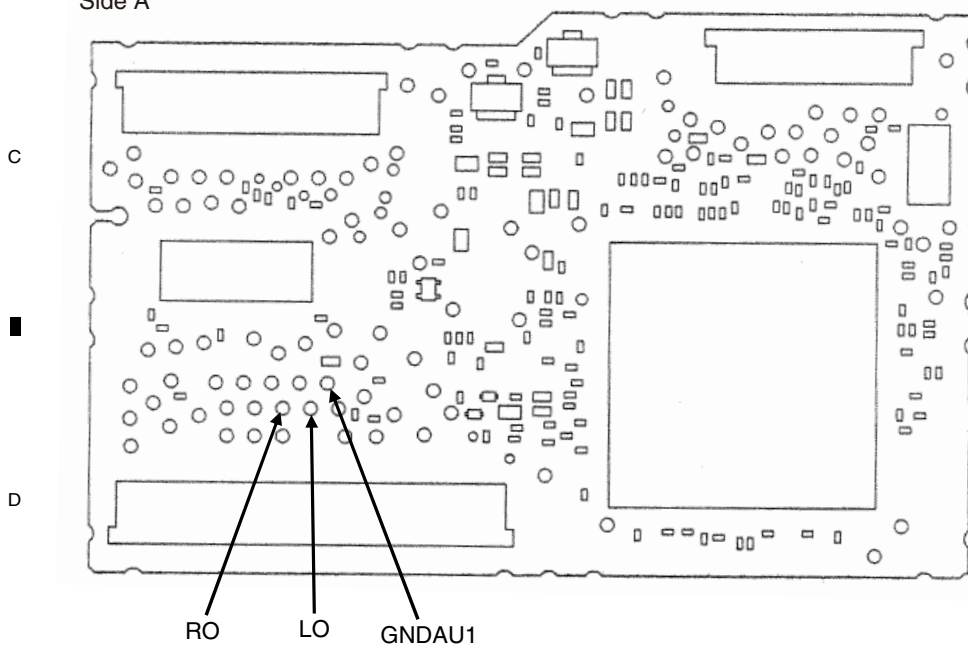


Fig 10.5: Analog audio out check point

E Check with DGND being the reference.

NO.	Check point 1 (stylus)	Specification value 1	Specification value 2	Reference waveform
6	IEC	VCC33 V-0.6 V or higher	0.4 V or lower	Waveform 5

F

Side A

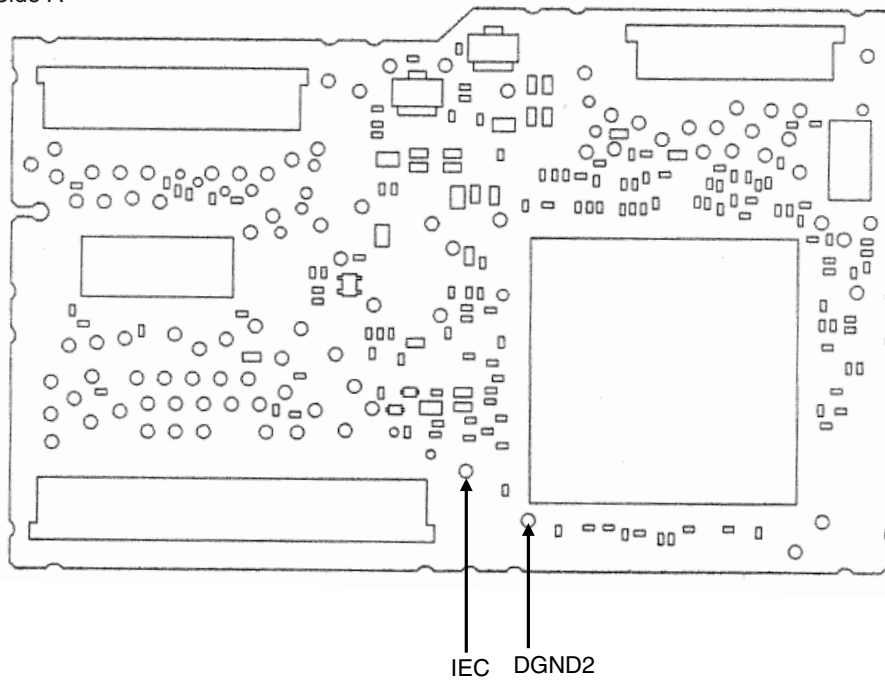


Fig 10.6: Digital audio signal (IECOUT) check point

Check 11: Is the video circuit OK?

<Outline> Composite signal and component signal are output from DVD-LSI (IC1501), and are output from the HOST I/F (CN1901) via a buffer circuit.

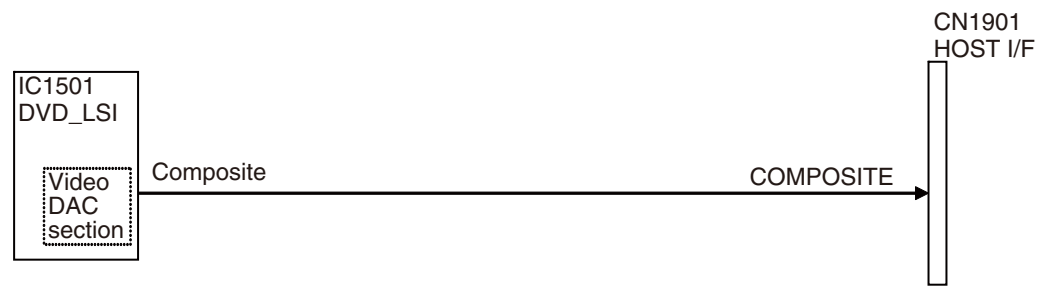


Fig 11.1: Video circuit

<Checking method> Playback DVD-REF-A1 TITLE2 CHAPTER5 (WHITE 100%), and monitor COMPOSITE signal with an oscilloscope with GNDV1 (stylus) being the reference. Set the trigger mode to “TV trigger” and the trigger line to “150 line”.

Check point 1 (stylus)

NO.		Specification value	Reference waveform
1	COMPOSITE	1 000 mVpp ± 5 %	Waveform 6

In case of NG, check the applicable line, the periphery of the major components in the drawing above, soldering of the peripheral components and defective components.

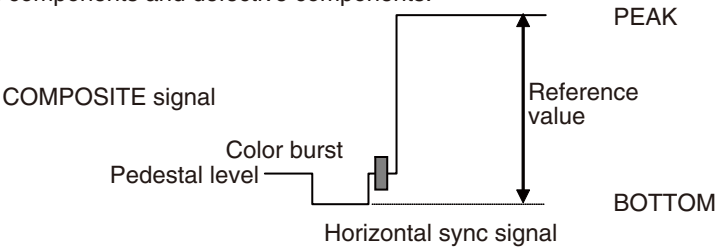


Fig 11.2: Waveform for the case of composite white 100% output

Side A

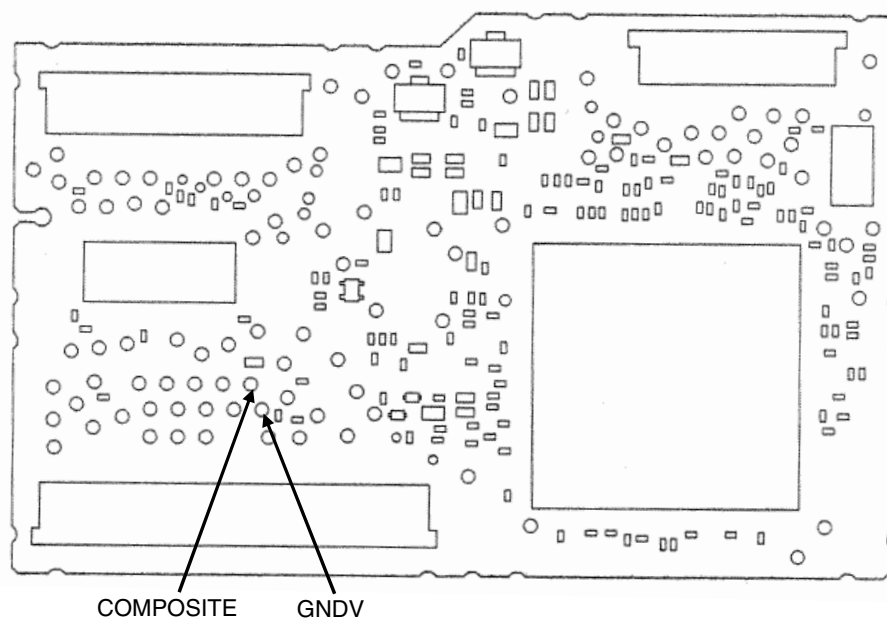


Fig 11.3: VIDEO signal check point

Check 12:How to judge whether the flash memory has reached its life or not.

A

If the reaction to user operation is slow or operation is slow in general, there is a possibility that the flash memory has reached its life.

Make judgment regarding the flash memory life by looking at the display of the LD energizing time.

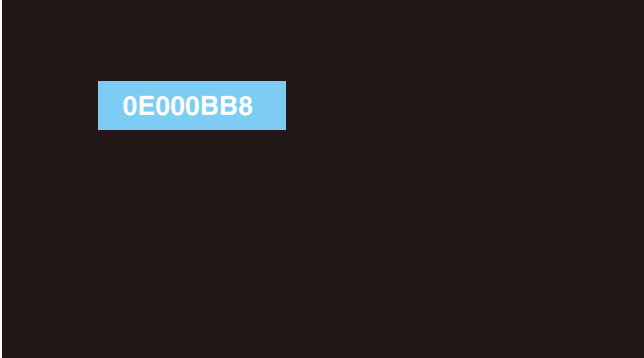
1.Let the LD energizing time displayed.

(Refer to the FE test mode for the method of displaying the LD energizing time.)

2.If the second digit from the left of the energizing time display is showing E,
such as “*E * * * * ”, it means that the flash memory has reached its life.

Example:

B



C

D

E

F

Check 13: 48 MHz Normal?

<Outline> Each clock is created inside the IC1501 using the 48 MHz master crystal oscillator (X1501).

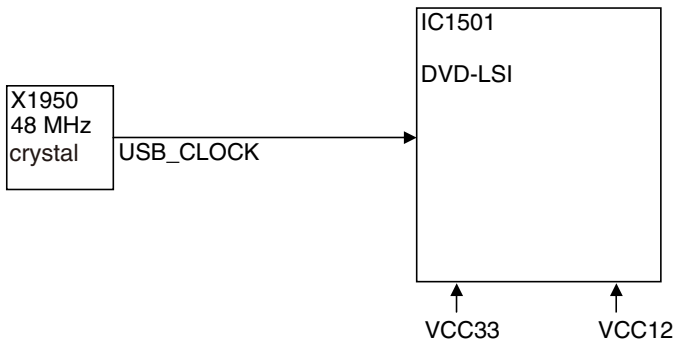


Fig 13.1: Clock configuration

<Check method> Turn the power on, and check with DGND1 being the reference.
In case of NG, check the applicable line, periphery of IC1501,
soldering of the peripheral components and defective components.

NO.	Check point	Module No.	Specification value	Unit
2	IC1501 50pin-DGND1	ALL	48 MHz ± 50 ppm	ppm

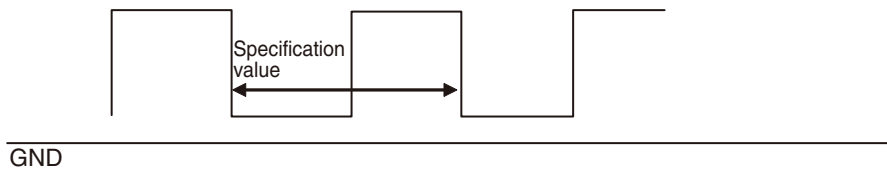


Fig 13.2: Clock specification value

Side A

A

B

C

D

E

F

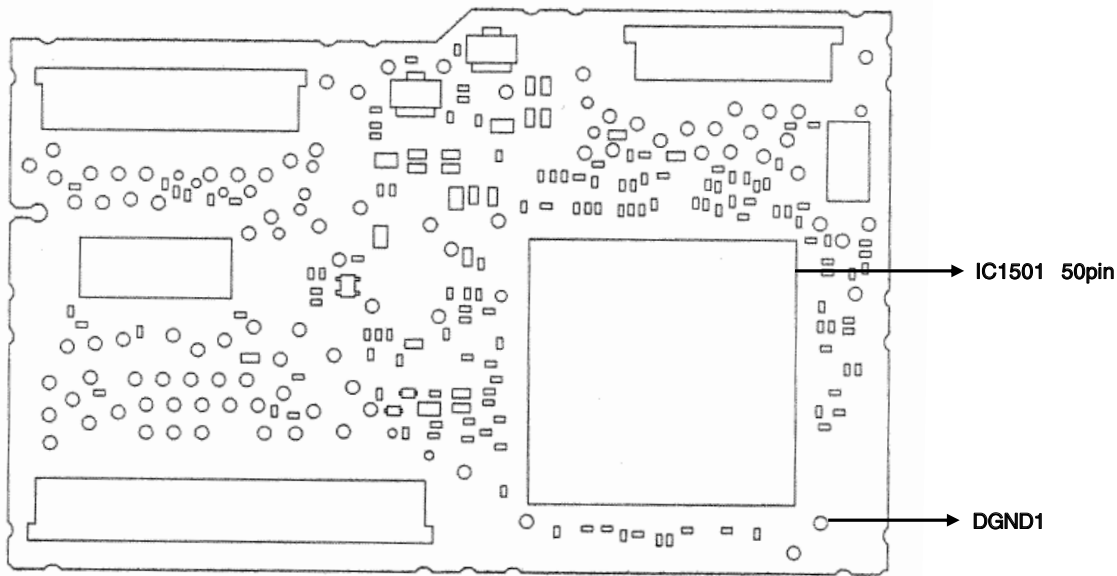


Fig 13.3: 48 MHz check point

Check 14: Is USB Circuit OK?

<Outline>

The data is transmitted through D+, D- and SDA of HOST I/F while playing USB/IPOD.

USB memory uses only D+ and D-, but IPOD uses SDA (DATA) and SCL (CLOCK) in addition to D+ and D-.

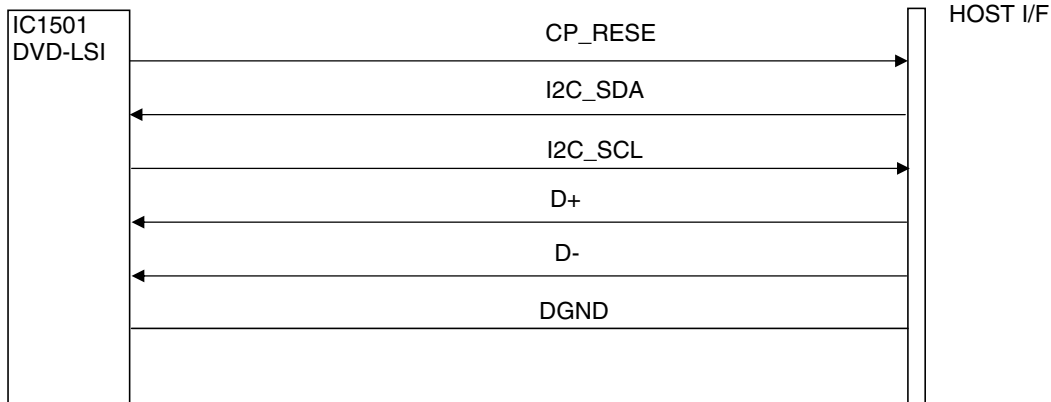


Fig. 14-1: USB Circuit

<Check Method>

1. USB Memory: Play a song from USB memory and check D+ and D- with the DGND standards.

2. iPod: Connect iPod and check CP_RESET, SDA and SCL with the DGND standards until the pioneer log appears. Play a song from iPod and check D+/D- with the DGND standards.

When it does not conform to the standards, check appropriate line, main parts shown in the above figure, soldering of peripheral parts and malfunctions in parts.

No.	Checking spot (stylus)	Standard value 1	Standard value 2
1	CP_RESET	VCC33*0.7 or more	
2	SDATA	VCC33*0.7 or more	VCC33*0.2 or less
3	SCLOCK	VCC33*0.7 or more	VCC33*0.2 or less
4	D+	VCC33*0.7 or more	VCC33*0.3 or less
5	D-	VCC33*0.7 or more	VCC33*0.3 or less

*Until the pioneer log appears after connecting the iPod

*Until the pioneer log appears after connecting the iPod

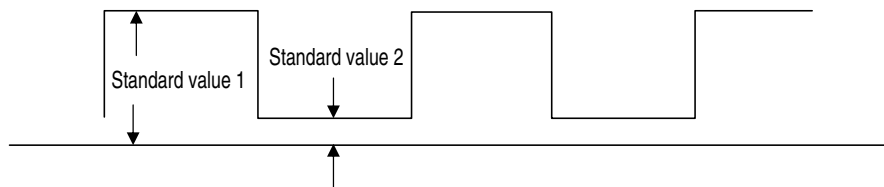


Fig. 14.2: USB Circuit Communication Wave

Side A

A

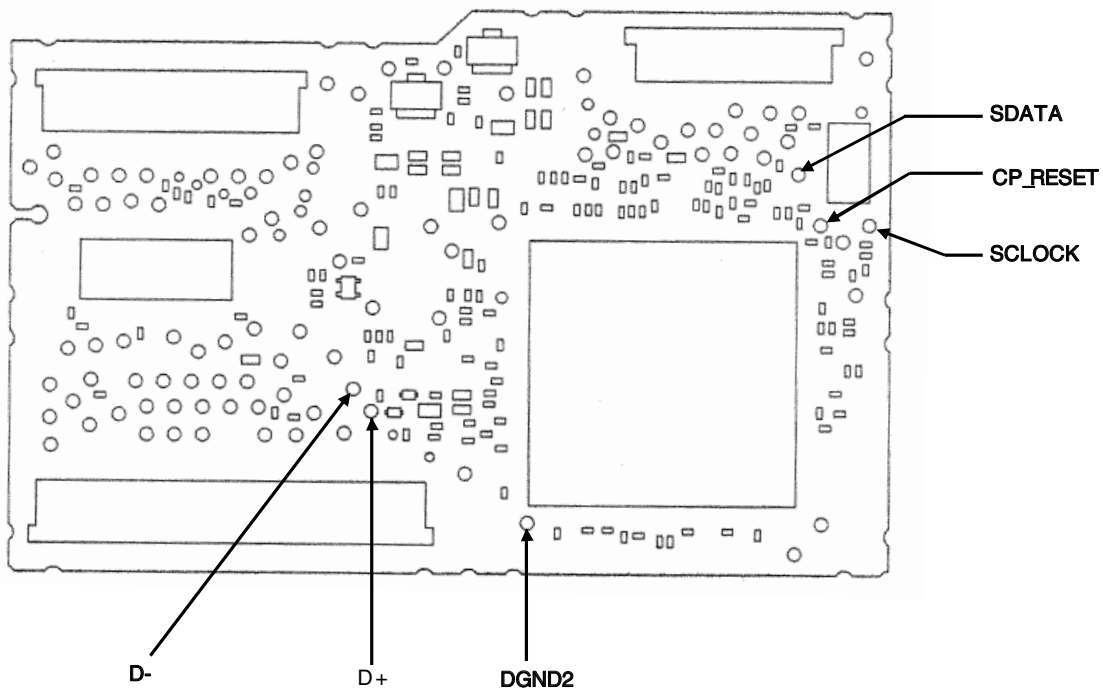
B

C

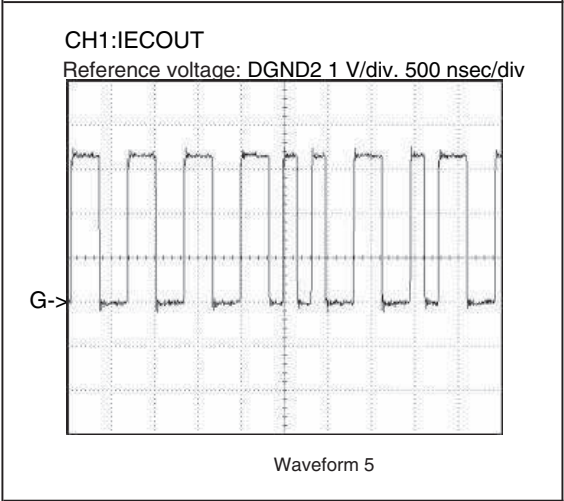
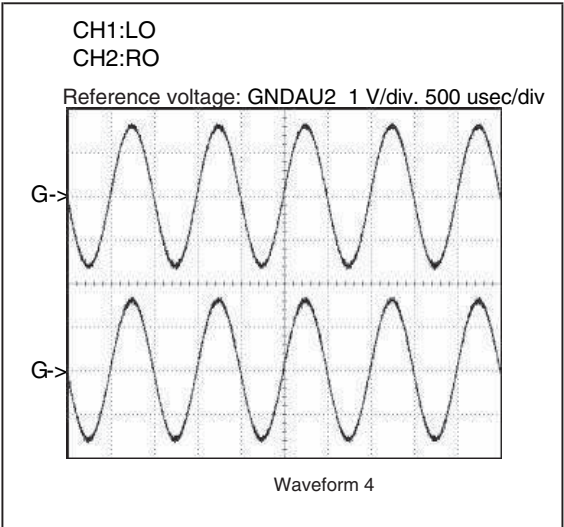
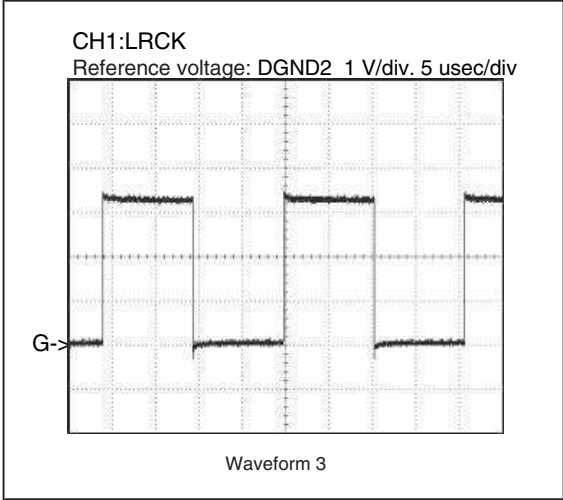
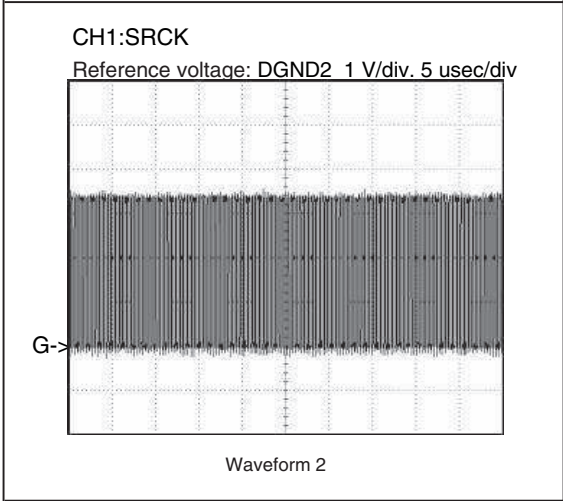
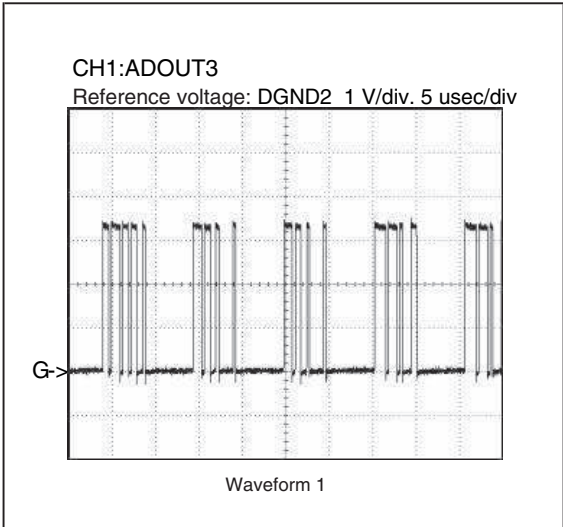
D

E

F



AUDIO



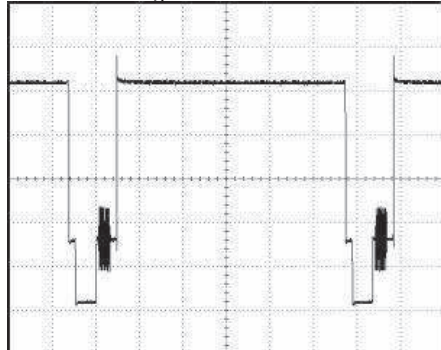
VIDEO

A

[WHITE 100IRE]

CH1:COMPO

Reference voltage: GNDV1 200 mV/div. 10 usec/div



Waveform 6

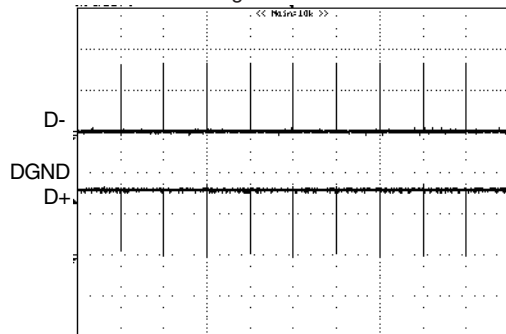
B

USB memory

C

USB memory

Reference voltage:DGND 1 ms/div 2 V/div

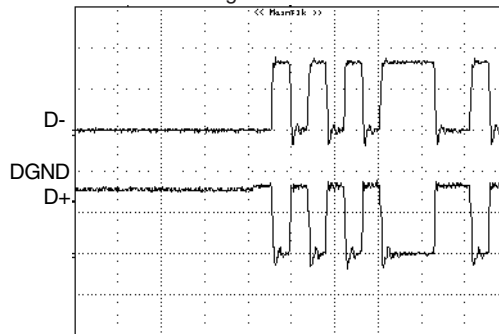


Waveform 7

D

USB memory

Reference voltage:DGND 200 ns/div 2 V/div

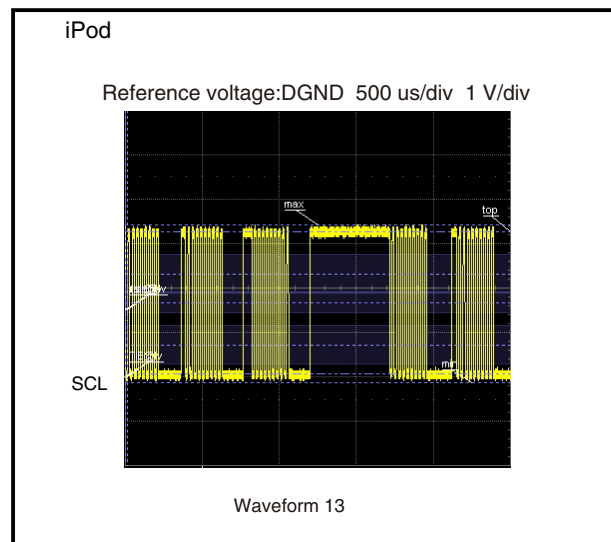
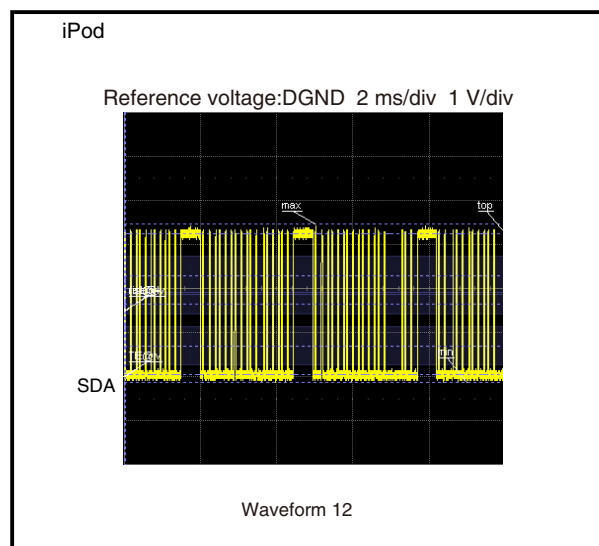
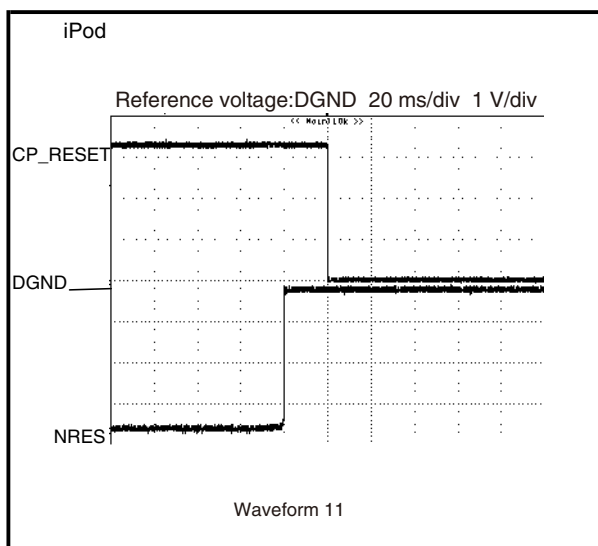
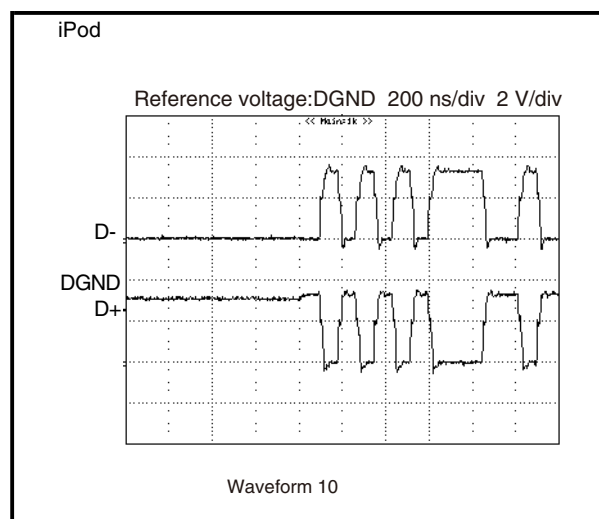
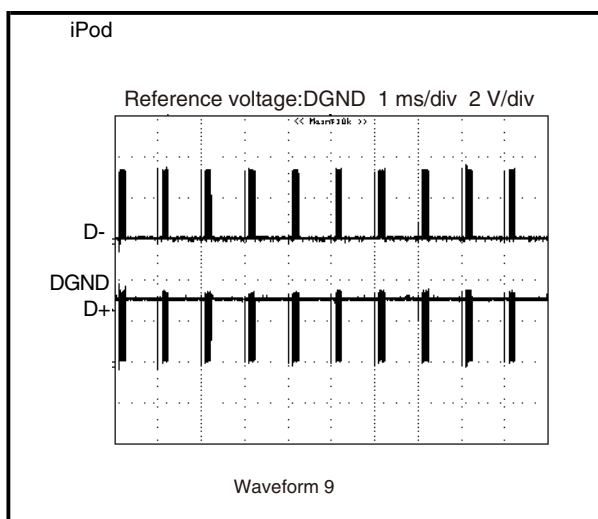


Waveform 8

E

F

iPod



5.4 ERROR CODE LIST

A

Error status	OSD *1	UART *2	Meaning	Generation source			Method of reset			
				Disc	USB (MSC)	USB (iPod)	ACC Off/On	Source Off/On	Eject	Play Key
Media Error	NON-PLAYABLE DISC	00h	A disc containing the unplayable Format only	X	-	-	X	X	X	-
	INCOMPATIBLE DEVICE	00h	USB device that doesn't correspond	-	X	X	X	X	-	-
	UNPLAYABLE FILE	00h	USB device of format alone that cannot be reproduced	-	X	-	X	X	-	-
Open	(No display)	10h	Door open error	X	-	-	*	*	*	*
Read Error	ERROR-02-99	20h	Transfer start error	X	-	-	X	X	X	X
Focus Error(Focus Error in mechanism set up)	ERROR-02-90	21h	Focus error	X	-	-	X	X	X	X
Surface Error	ERROR-02-9E	22h	Focus error during set up (A focus has never been achieved with that disc.)	X	-	-	X	X	X	X
Address not found(Invalid Track)	ERROR-02-80	23h	Address not found.	X	-	-	X	X	X	X
Spindle Lock	ERROR-02-91	24h	Spindle lock NG (the disc cannot rotate)	X	-	-	X	X	X	X
Carriage HOME	ERROR-02-92	25h	Carriage home NG (The pick up tries to return to carriage home, but it cannot go back and stopped.)	X	-	-	X	X	X	X
ID/SUBCODE Read Error	ERROR-02-94	26h	ID/SUBCODE Read Error (ID/SUBCODE cannot be read due to scratch or stain.)	X	-	-	X	X	X	X
AV CHIP decode Error	ERROR-02-9A	2Ah	AV CHIP decode NG (AV chip cannot be decoded.)	X	X	-	X	X	X	X
AV CHIP Recovery NG	ERROR-02-9B	2Bh	AV CHIP recovery NG	X	X	X	X	X	X	X
Error of PLAY BACK Mode Status	ERROR-02-9C	2Ch	Playback state error (An error due to software bug.)	X	X	-	X	X	X	X
Disc Data Error	ERROR-02-9D	2Dh	Disc Data NG	X	-	-	X	X	X	X
Temp Error (In Case of High Temperature)	THERMAL PROTECTION IN MOTION	30h	High temperature (Playback is stopped because the pick up temperature is 89. C or higher.)	X	-	-	X	-	-	-
No Disc (including Disc loading and ejecting)	(No display)	40h	Disc has not been inserted. (Including Load in process or Eject in process.)	X	-	-	*	*	*	*
Loading_Mecha Error	(No display)	50h	Loading mechanism error (The disc cannot be clamped.)	X	X	X	X	-	X	-
Communication fault attesting iPod	ERROR-02-60	60h	Communication fault attesting iPod	X	-	X	-	-	X	-
iPod authentication data is abnormal	ERROR-02-61	61h	iPod authentication data is abnormal	X	-	X	-	-	X	-
iPod attestation retrying failure	ERROR-02-62	62h	iPod attestation retrying failure	X	-	X	-	-	X	-
iPod attestation time out	ERROR-02-63	63h	iPod attestation time out	X	-	X	-	-	X	-
Error when iPod is connected/ It is generated STALL by the USB communication	ERROR-02-64	64h	Error when iPod is connected/ It is generated STALL by the USB communication	-	-	X	-	-	X	-
Error setting iPod	ERROR-02-65	65h	Error setting iPod	-	-	X	-	-	X	-
Demand timeout when initial is communicated	ERROR-02-66	66h	Demand timeout when initial is communicated	-	-	X	-	-	X	-
Protocol version non-correspondence	ERROR-02-67	67h	Protocol version non-correspondence	-	-	X	-	-	X	-
Timeout when protocol version is judged	ERROR-02-68	68h	Timeout when protocol version is judged	-	-	X	-	-	X	-
No songs error	(No display)	69h	No songs error	-	-	X	-	-	X	-
iPod control forwarding/ Intarapta forwarding error	ERROR-02-6A	6Ah	iPod control forwarding/ Intarapta forwarding error	-	-	X	-	-	X	-
Demand timeout iPod's reproducing	ERROR-02-6B	6Bh	Demand timeout iPod's reproducing	-	-	X	-	-	X	-
Remote switch error	ERROR-02-6C	6Ch	Remote switch error	-	-	X	-	-	X	-
Remote switch demand timeout	ERROR-02-6D	6Dh	Remote switch demand timeout	-	-	X	-	-	X	-
DRM Error	PROTECTED DISC	70h	DRM error (All music cannot be played back due to DRM.)	X	-	-	-	-	X	-
	NO ACCESSIBLE DATA AVAILABL	70h	DRM error (All music cannot be played back due to DRM.)	-	X	-	-	-	-	-
Region code Error NG	DIFFERENT REGION DISC	90h	Region code NG (Unable to be played back due to incorrect mechanism region.)	X	-	-	-	-	X	-
CPRM*7 Key Error *8	NON-PLAYABLE DISC	93h	Key Error for playback	X	-	-	-	-	X	-
REQUEST error	ERROR-02-A0	A0h	REQUEST error	X	-	-	X	X	X	X
Failure in issuing read command (chip dependent)	ERROR-02-A1	A1h	Failure in issuing the read command	X	-	-	X	X	X	X
Adjustment of L0 is NG.	ERROR-02-A2	A2h	L0 adjustment is NG.	X	-	-	X	X	X	X
Adjustment of L1 is NG.	ERROR-02-A3	A3h	L1 adjustment is NG	X	-	-	X	X	X	X
LD system NG	ERROR-02-A4	A4h	LD system NG	X	-	-	X	X	X	X
Gain adjustment system NG.	ERROR-02-A5	A5h	Gain adjustment system NG.	X	-	-	X	X	X	X
Gain determining system NG.	ERROR-02-A6	A6h	Gain determining system NG.	X	-	-	X	X	X	X
Servo initial setting related items NG.	ERROR-02-A7	A7h	Servo initial setting related items NG.	X	-	-	X	X	X	X
Disc is not clamped yet.	ERROR-02-A8	A8h	Disc is not clamped yet.	X	-	-	X	X	X	X
Tracking system NG.	ERROR-02-A9	A9h	Tracking system NG	X	-	-	X	X	X	X
Media setting system NG.	ERROR-02-AA	AAh	Media setting system NG	X	-	-	X	X	X	X
Focus Error	ERROR-02-AB	ABh	JUMP over layers NG	X	-	-	X	X	X	X
Error of PLAY BAC K Mode Status	ERROR-02-B0	B0h	Navigation command error	X	-	-	X	X	X	X
Error of PLAY BAC K Mode Status	ERROR-02-B1	B1h	Retry over	X	-	-	X	X	X	X
Audio Property Timeout Error *9	ERROR-02-C0	C0h	Audio property timeout error	X	-	-	X	X	X	-
Error when MCS is connected/ It is generated STALL by the USB communication	ERROR-02-D0	D0h	Error when MCS is connected/ It is generated STALL by the USB communication	-	X	-	-	-	X	-
CBW and CSW forwarding error	ERROR-02-D1	D1h	CBW and CSW forwarding error	-	X	-	-	-	X	-
Audio class band securing failure	ERROR-02-D8	D8h	Audio class band securing failure	-	-	X	-	-	X	-
Audio class FS setting failure	ERROR-02-D9	D9h	Audio class FS setting failure	-	-	X	-	-	X	-
Undefined Error	ERROR-FF-FF	FFh	Undefined error	X	-	-	X	X	X	X

F

X: Cancel the error by operation. -: Error is not cancelled by operation. *: No setting

*1 A content displayed on OSD. As for the items having multiple display patterns, the upper row is for the Japanese version Full GUI, and the lower row is for the Touch Panel model and Full GUI (English version).

*2 A parameter of UART command, such as "receipt error notice", that the DVD mechanism transmits.

*3 CPPM(Content Protection for Prerecorded Media) : A copyright protection technique used in DVD-A. The protection is realized by using the keys recorded on the media and the device key held by the player.

*4 DVD-A compatible model only.

When an error has occurred, only the audio output will be muted but playback operation will continue. Furthermore, acceptance of the user operation will be the same as usual.

*5 AWM (Audio WaterMark): Electronic watermark. Information on the copyright owner or CCI (copy control information) are recorded so that illegally copied discs can be identified.

*6 Notice as an error status will not be given

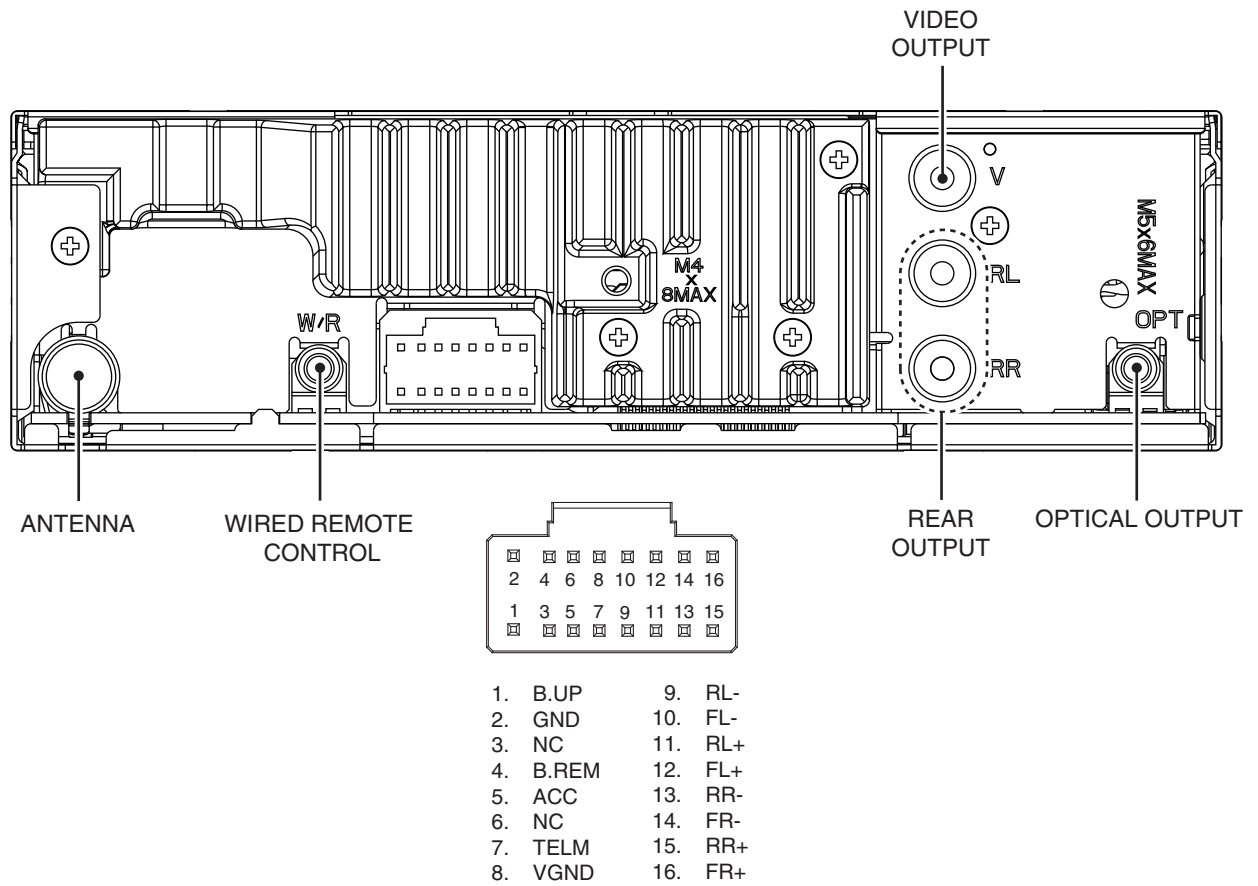
*7 CPRM(Content Protection for Recordable Media) : A copyright protection technique for digital contents used for re-writable DVD or memory card. (DVD-VR model only)

USB audio player/USB memory

Message	Cause	Action
NON-PLAY (UNPLAYABLE FILE)	No songs	Transfer the audio files to the USB portable audio player/USB memory and connect.
	USB memory with security enabled is connected	Follow the USB memory instructions to disable the security.
	This type of file cannot be played by this unit.	Select the playable file.
SKIPPED (FILE SKIPPED)	The connected USB portable audio player/USB memory contains WMA files that are protected by Windows Media™ DRM 9/10	Play an audio file not protected by Windows Media DRM 9/10.
PROTECT (NO ACCESSIBLE DATA AVAILABLE)	All the files on the connected USB portable audio player/USB memory are protected by Windows Media DRM 9/10	Transfer audio files not protected by Windows Media DRM 9/10 to the USB portable audio player/USB memory and connect.
N/A USB (INCOMPATIBLE DEVICE)	The USB device connected to is not supported by this unit.	Connect a USB portable audio player or USB memory that is USB Mass Storage Class compliant.
	USB device is not formatted with FAT16 or FAT32	USB device should be formatted with FAT16 or FAT32.
CHECK USB	The USB connector or USB cable is short-circuited.	Confirm that the USB connector or USB cable is not caught in something or damaged.
	The connected USB portable audio player/USB memory consumes more than 500 mA (maximum allowable current).	Disconnect the USB portable audio player/USB memory and do not use it. Turn the ignition switch to OFF, then to ACC or ON and then connect the compliant USB portable audio player/USB memory.
ERROR-02-DX	Communication failure	Perform one of the following operations. –Turn the ignition switch OFF and back ON. –Disconnect the USB portable audio player/USB memory. –Change to a different source. Then, return to the USB portable audio player/USB memory.



5.5 CONNECTOR FUNCTION DESCRIPTION



6. SERVICE MODE

6.1 DISPLAY TEST MODE

A

Restarted pushing reset while pushing the 1 + 3 key

Key	Processing
2	Move to the next display test contents (A)
1	Move to the next display test contents (B)

B

Contents (A)	Contents (B)
Lighting of display	All lighting of display
	Pattern(1) lighting
	Pattern(2) lighting
	All lights out of display
System version display	CWW number is displayed
	PEG number is displayed
	System microcomputer version is displayed
	LS1 mechanism version is displayed
Normal display	The same contents as the left
Display STOP	The same contents as the left
ROM Correction version display	The same contents as the left

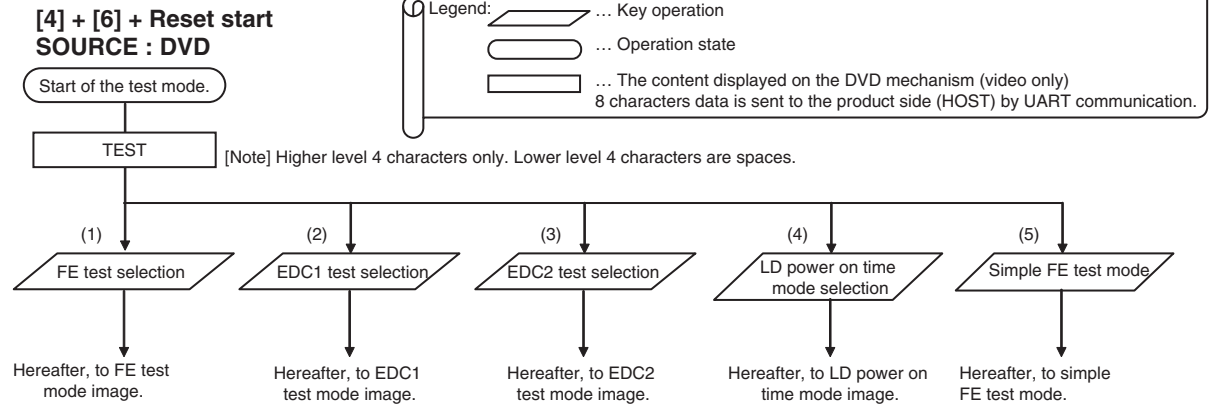
C

D

E

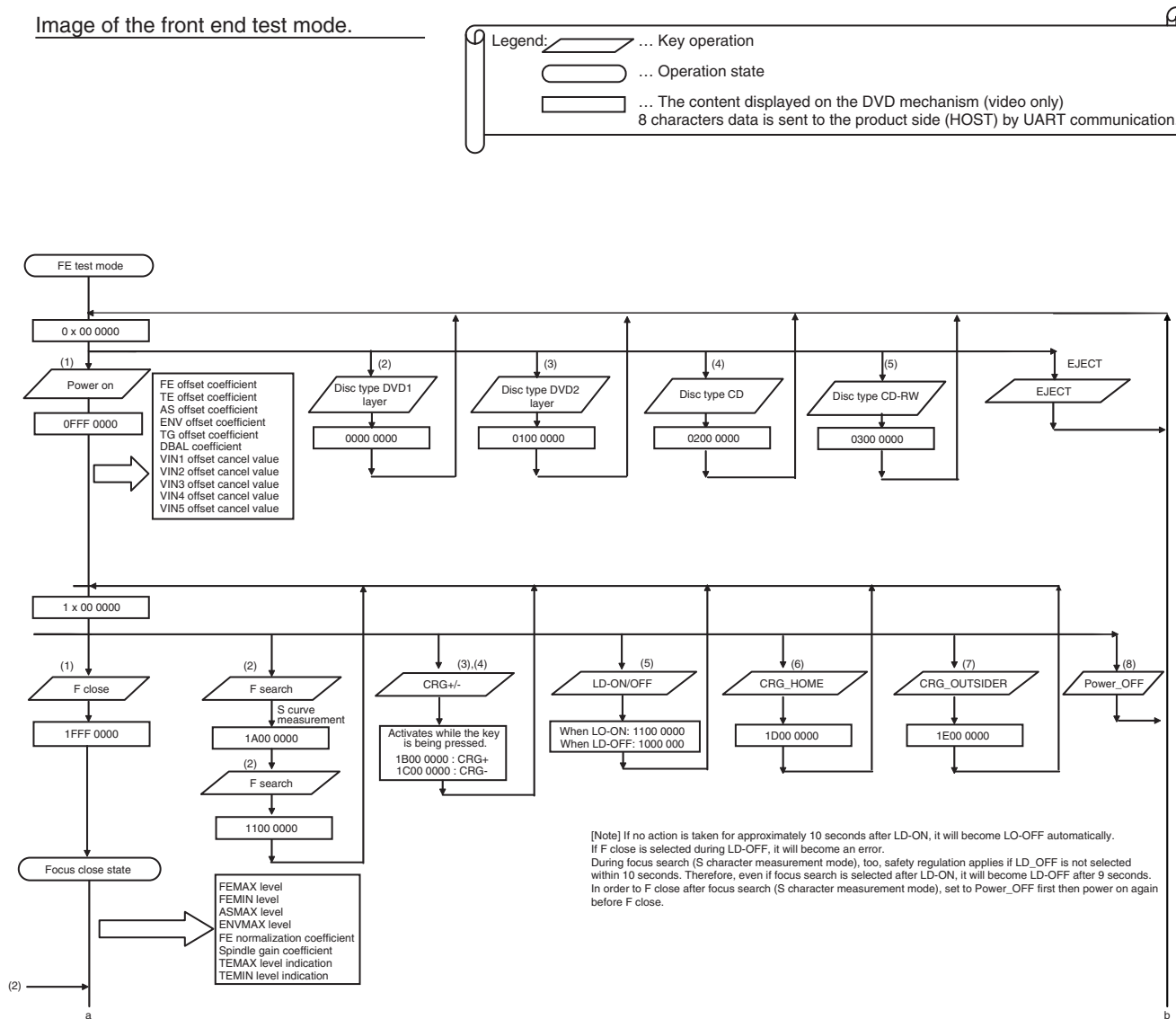
F

Image of the test mode.



[Note] In order to move on to another test after selecting a test (FE/EDC1/EDC2), it is necessary to restart the DVD mechanism in the test mode.

Image of the front end test mode.





EDC. Image of the test mode

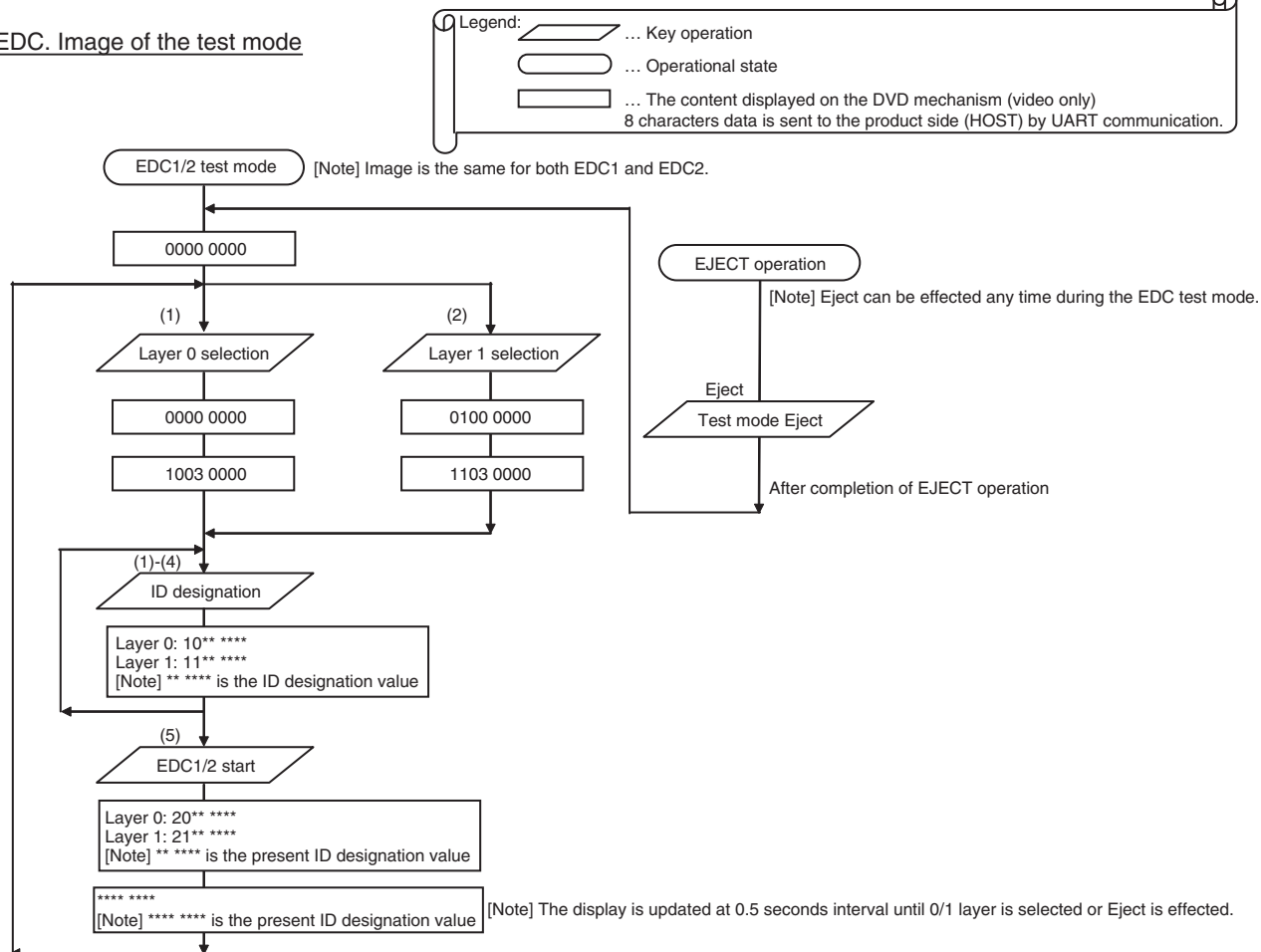
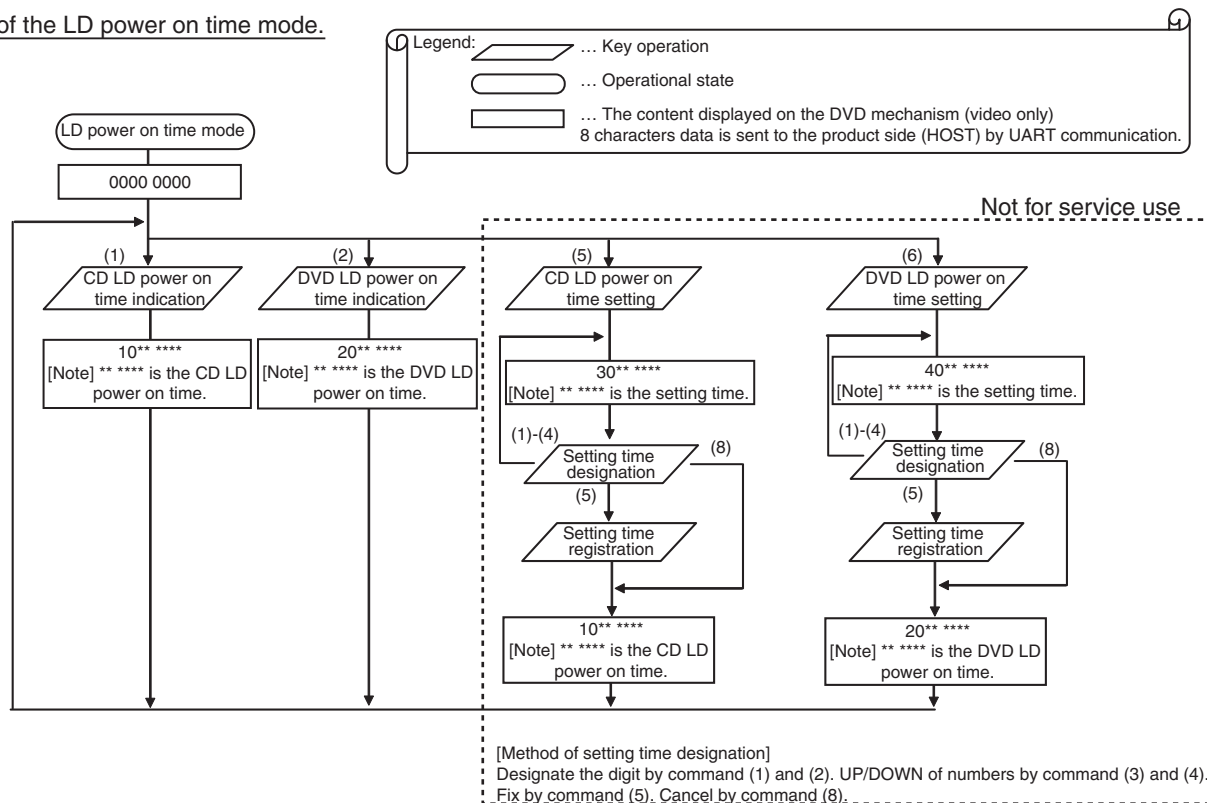


Image of the LD power on time mode.



[Note] If the power on time is 999999 hours or more, it is always reported as 999999 hours.

[Note] If the power on time is "E*****", the value may not be correct due to the life of the flash memory.

7. DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the DVD Mechanism Module (Fig.1)

- 1 Release the three latches and then remove the Panel Assy.
- 2 Remove the four screws.

Disconnect the connector and then remove the DVD Mechanism Module.

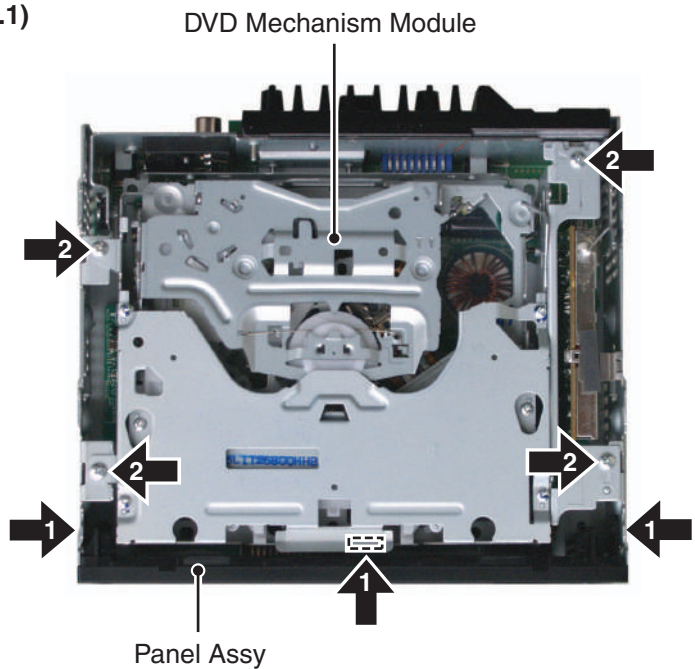


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

- 1 Remove the screw.
- 2 Remove the screw.
- 3 Remove the two screws.
- 4 Straighten the tabs at three locations indicated and then remove the Tuner Amp Unit.

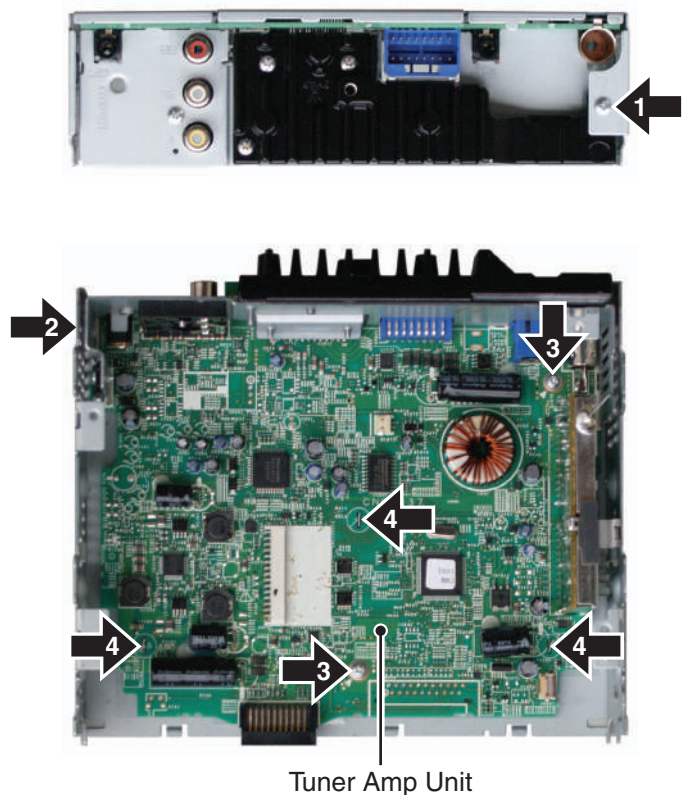


Fig.2

* Don't recycle the sheet removed, and exchange it for a new sheet.

● Removing the Sheet (Fig.3, 4)

➔ 1 Disconnect the FFC from the Connector. (Fig.3)

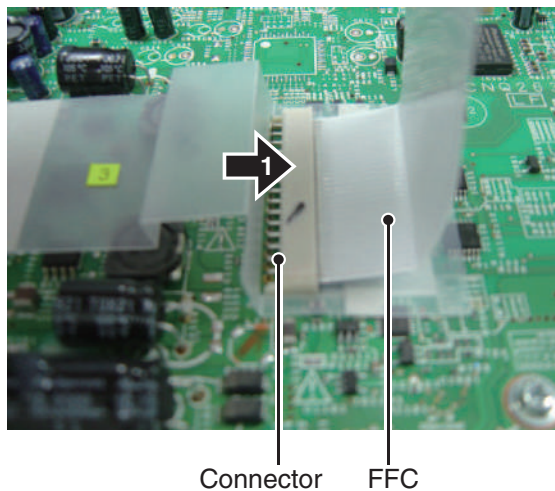


Fig.3

➔ 2 The two seals is removed, and then removed the Sheet. (Fig.4)

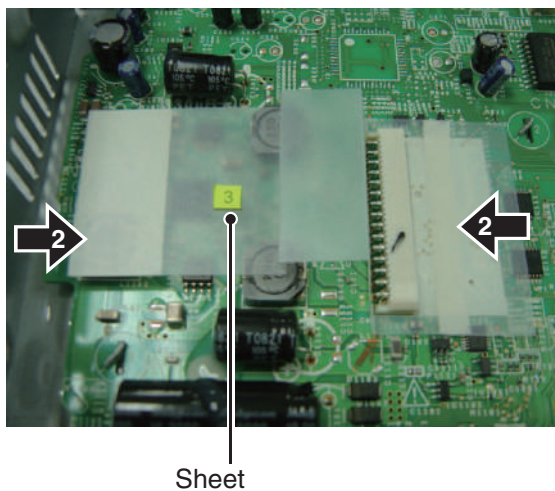


Fig.4

● How to put the Sheet (Fig.5)

➔ 1 The Sheet is put on two places.

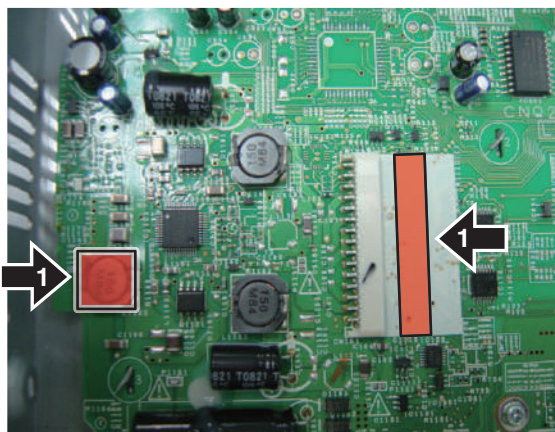
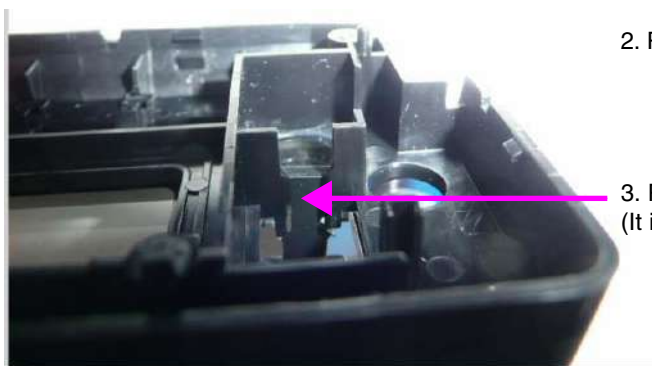


Fig.5

● Removing the Cap



1. Because there is a concavity, scratch by nail and pull it.



2. Reverse the Grille.

3. Pull down the Cap to the position of the figure.
(It is not necessary to lower to the position of figure.)



4. The Cap is twisted in the arrow direction, it comes off from the Grille.

● Attach the Cap

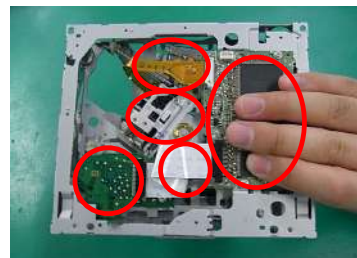


When attach the Cap, install it in reverse procedure, but when it isn't pulled to the arrow direction after assembling a head of the Cap into the Grille, can't attach perfectly the Cap.

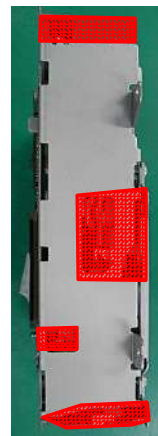
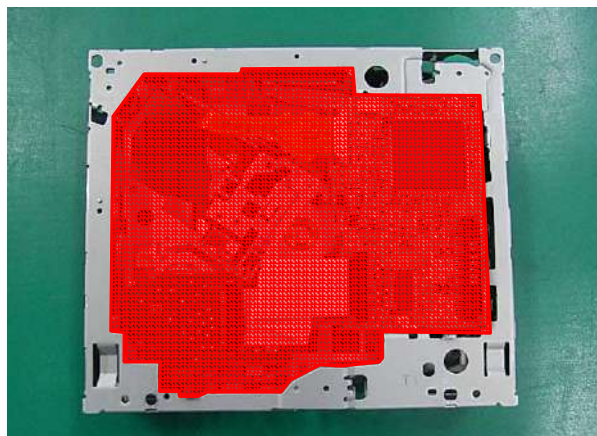
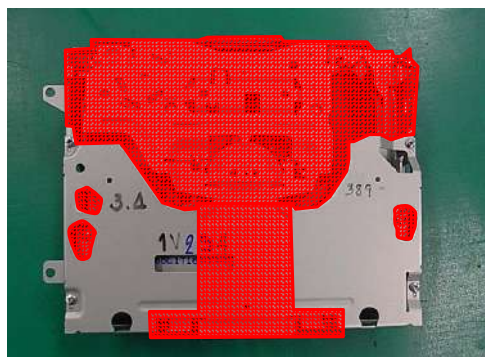
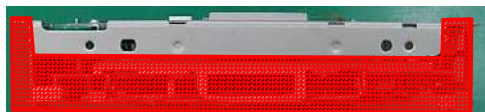
How to have it

1. Have a specified part.

Handling OK



Handling NG



Mecha Module_Bringing into the Clamp State with No Disc Loaded

1. Remove the relay FFC from the connector on the module PCB side (Fig. 1).

(Precaution) When it is difficult to apply 4V to the motor in procedure 2 below, remove the connector on the relay PCB side, then remove the FFC, and remove the solder of the CRG motor lead and apply voltage to the lead.

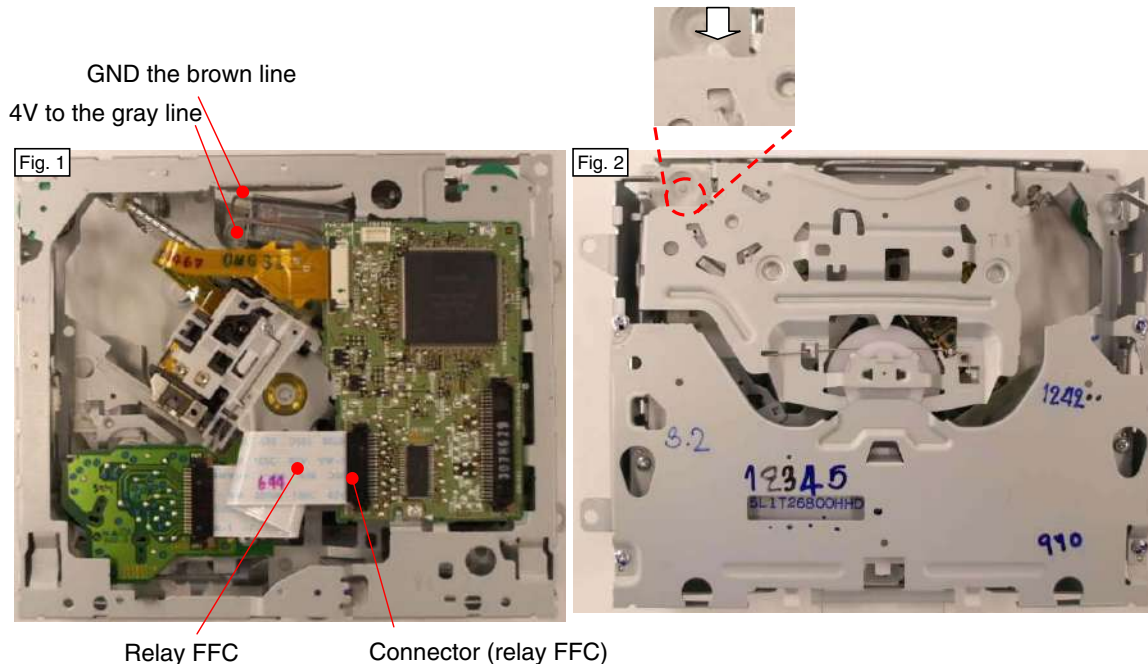
2. Push the Disc detection arm while applying 4V to the CRG motor (Fig. 2)

By this action, the mecha moves to the clamp state and the PU moves to the outer periphery.

3. Stop the motor when the PU comes to the vicinity of the intermediate periphery.

(Precaution) If the PU goes to the outer most periphery, it idles.

It is not a problem, but please try not to let it idle as much as possible.



CRG Mecha_Bringing into the Clamp State with No Disc Loaded

1.Remove the T-case washer and then remove the drive gear. (Fig. 1)

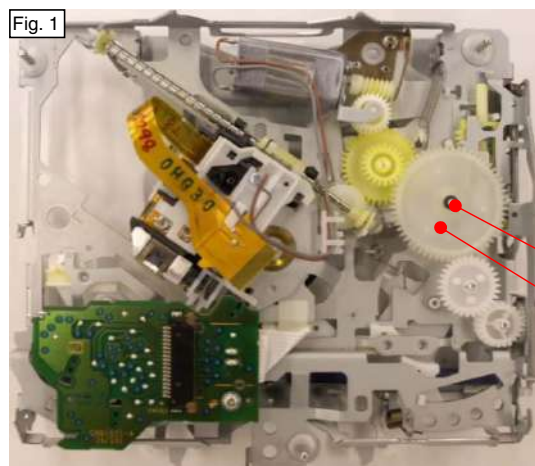
2.Lift the clamp arm assy until it is in the state shown in Fig. 2_b (open-lock state).

3.Put your finger on the area A of Fig. 2_c and then slide it to the direction of the arrow (the direction of the playing state).

4.Push down the clamp arm.

(Precaution) When bringing the CRG mecha into the ejecting state again, install the drive gear after sliding the drive lever and bringing it to the ejecting state, in order to prevent the cog of the pinion in the drive gear from chipping at the time of its installation.

Fig. 1



T-case washer

Drive gear

Fig. 2

a.Ejecting state



There is a space

b.Open-lock state



There is no space

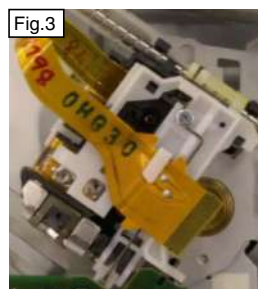
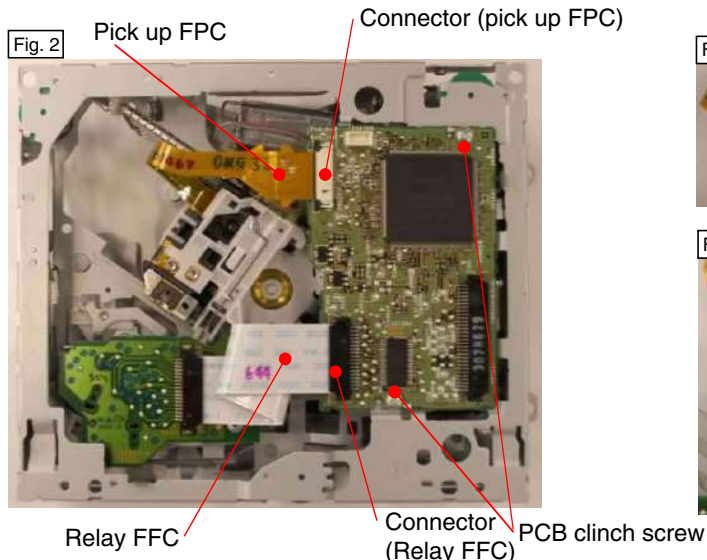
c.Clamp state with no disc loaded



A

Removing the Module PCB

1. Short-circuit two spots on the land of the pick up FPC. (Fig. 1)
2. Remove the pick up FPC and the relay FFC from the connector. (Fig. 2)
3. Temporarily attach the pick up FPC to the pick up rack. (Fig. 3)
(in order to prevent the damage to the pick up FPC)
4. Remove the two PCB clinch screws and then remove the module PCB. (Fig. 2)



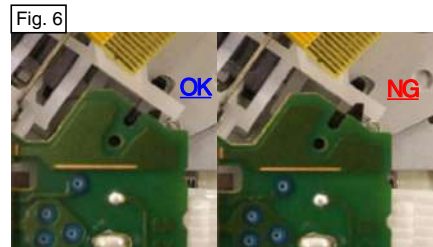
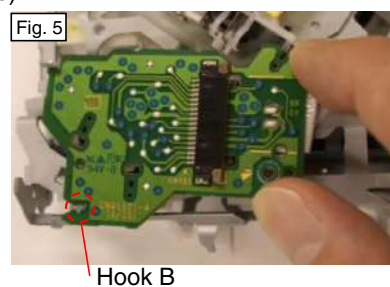
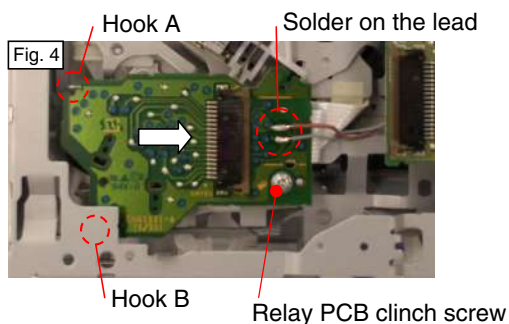
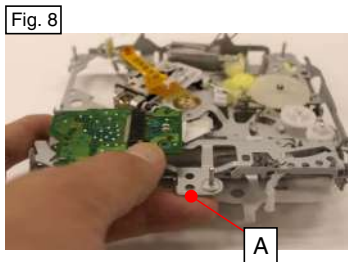
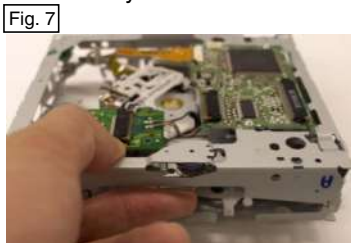
Removing/Installing the Relay PCB

Removing)

1. Remove the relay FFC from the connector (remove both sides so that the entire FFC will be removed). (Fig. 2)
2. Remove the solder on the lead for the CRG motor. (Fig. 4)
3. Remove the one relay PCB clinch screw. (Fig. 4)
4. Slide the relay PCB to the direction of the arrow and then remove the relay PCB from the hook A and the hook B. (Fig. 4)
5. Turn the relay PCB over and then remove the SPDL motor FFC from the connector.

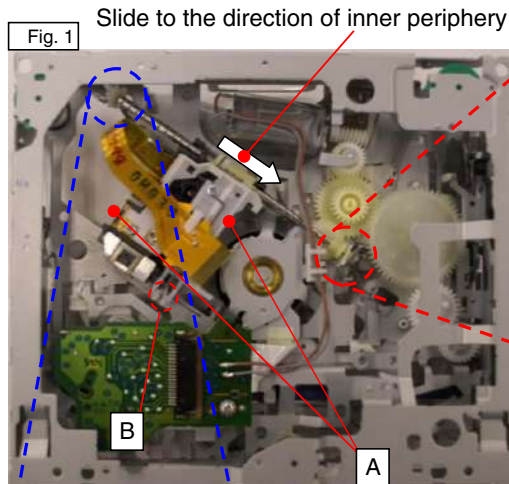
Installing)

1. Check the mecha is in the ejecting state (disc-load suspended state). When it is not in the ejecting state, apply 4V to the lead (motor) and then bring it to the ejecting state (4V to the brown line and GND the gray line).
2. Fit the SPDL motor FFC to the connector (back of the relay PCB).
3. Hold the relay PCB so that it does not touch the SW knob as in Fig. 5.
4. Insert it into the hook B as it is a little off to the clockwise direction. (Precaution) This is to prevent the SW knob from getting into the NG position as in Fig. 6.
5. Push down the relay PCB lightly and then rotate it to the counterclockwise direction. It sets the relay PCB in the hook A and the positioning dowel. (Precaution) Pay attention so the SW knob will not get onto the PU rack. (Fig. 6)
6. As in the Figures, while supporting the location A with your fingers, screw the relay PCB. (Fig. 7 / Fig. 8)
7. Solder the lead for the CRG motor.
8. Fit the relay FFC to the connector.

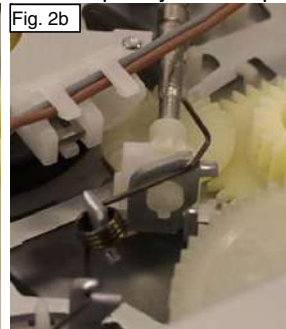
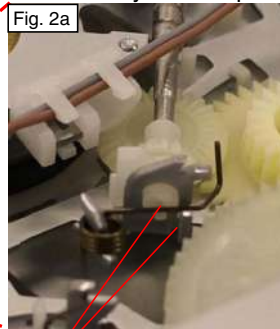


Removing the PU Unit

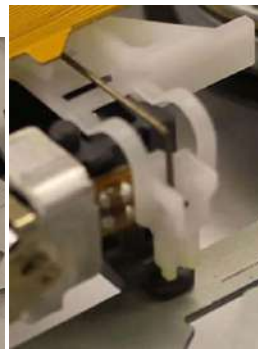
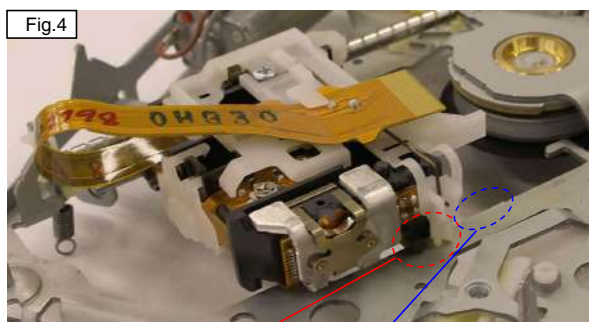
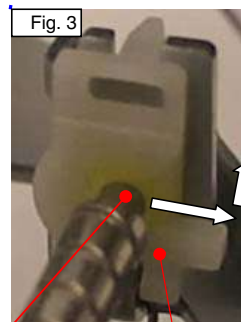
1. Hook the feed screw biasing spring on the temporary hook (Fig. 2b). Be careful not to get injured by the tip of the spring.
 2. Hold the PU at the location A in Fig. 1 and slide and scoot it to the direction of the inner periphery.
 3. As in Fig. 3, shift the back end of the feed screw to the side and then to above and remove it from the outside holder.
 4. Remove the tucking joint for the chassis at the location B and the PU unit by lifting them up without changing their position and then remove the PU unit.
- (Precaution) When installing the PU again, make sure to tuck the chassis in B and the PU unit (Fig. 4) first. Moreover, do not forget to permanently hook the feed screw biasing spring (Fig. 2a). Adjustments to the PU after its installation should be made according to the service manual.



Permanently hooked position Temporary hooked position



The spring is installed under the resin flange and inside the bended metal plate.



[Installation NG]
The chassis is not tucked between the PU case and the PU rack.

Sending the PU to the outer periphery

1. Bring to the clamp state with no disc loaded according to the "Mecha Module_Bringing into the Clamp State with No Disc Loaded" manual.
 2. Apply 1.5V to the CRG motor and then transfer the PU to the outer periphery.
- (Precaution) The relay FFC must be removed for certainty in order to prevent the IC damage.
- (Precaution) Do not forget to reinstall the relay FFC after sending the PU to the outer periphery and take the necessary measures.

8. EACH SETTING AND ADJUSTMENT

8.1 DVD ADJUSTMENT



1) Precautions

This product uses 5 V and 3.3 V as standard voltages. The electrical potential that is the reference for signals, is not GND, but VREF (approximately 2.2 V) and VHALF (approximately 1.65 V) .

During product adjustments, if the reference voltage is mistakenly taken as GND, and a grounding contact is made, not only would it be impossible to measure the accurate electrical potential, but also the servo motor would malfunction, resulting in the application of a strong impact on the pick up. The following precautionary measures should be strictly adhered to, in order to avoid such problems.

The reference voltage and GND should not be confused when using the minus probe of a measurement device. When an oscilloscope is being used special care should be taken to make sure that the reference voltage is not connected to the probe of ch1 (on the minus side), while the probe of ch2 (on the minus side), is connected to GND. Further, since the body frame of most measurement devices have the same electrical potential as the minus side of the probe, the body frame of the measurement device should be set to floating ground.

If the reference voltage is connected to GND by mistake, turn the regulator OFF immediately, or turn the power OFF.

- Remove the filters and wires used for measurements only after the regulator has been turned OFF.
- After the power supply is turned on, regulator ON the following adjustment and measurement are promptly done.
- Whenever the product is in the test mode, the software will not take any protective action. For this reason, special care should be taken to make sure that no mechanical or electrical shock could be applied to the product when taking measurements in the test mode.
- Whenever the EJECT key is pressed to eject the disk, no other keys, other than the EJECT key, should be pressed until the disk eject action has been completed.
- Press the EJECT key only after the disk has stopped completely.
- If the product hangs up turn the power OFF immediately.
- Laser diodes may be damaged, if the volume switch for the laser power adjustment of the pick up unit, is turned.

● SKEW adjustment

When one of the following replacements has taken place, SKEW adjustment for the pick up will be required.

- (1) Replacement of the pick up unit
- (2) Replacement of the spindle motor
- (3) Replacement of the carriage chassis
- (4) Replacement of the main shaft of the pick up unit

Measurement equipment and tools/jigs: Oscilloscope

Driver for SKEW adjustment -> Driver

Bond for fixing the SKEW -> GEM1033

Bond for resonance -> 1530 (1530 : produced by THREE BOND)

Bond for locking the screw -> 1401M (1401M : produced by THREE BOND)

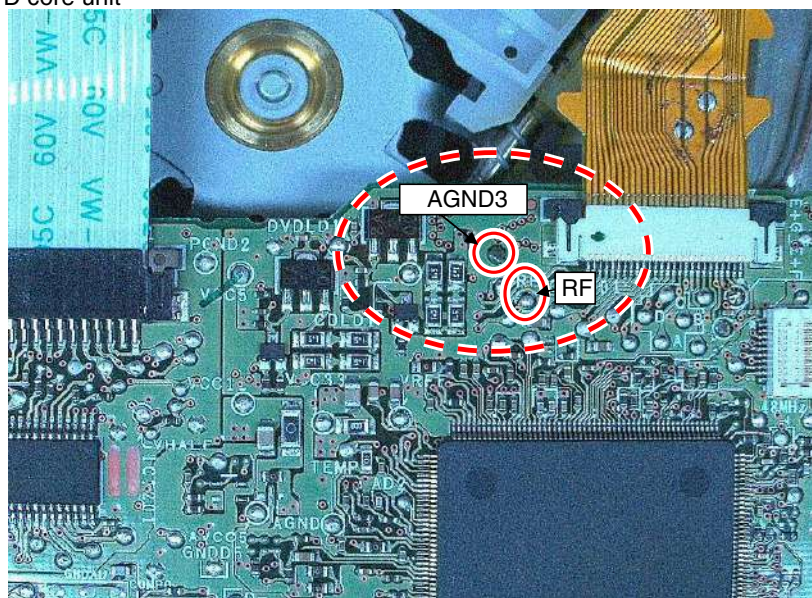
Disc used:TDV-582

Measurement reference: AGND3

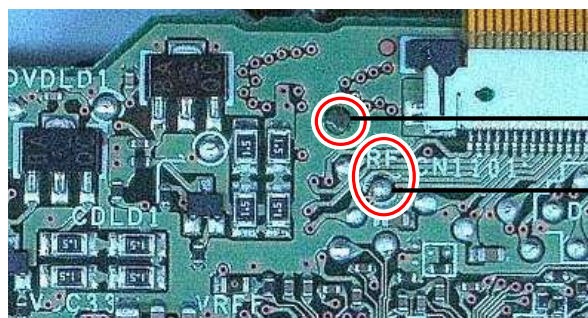
Measurement point: RF

Connection drawing

DVD core unit



Expansion



Oscilloscope

Symptom in case the adjustment is not adequate: Worsening of the error rate 10^{-3}
(Normally 10^{-4} or less.)

Large RF jitter

RF waveform distortion

Tracking drawing/Unstable servo

* Caution: Do not look into the laser light during adjustment.

There are two methods of making adjustment: a method of making adjustment through monitoring RF waves by the oscilloscope (method 1) and a method of making adjustment through checking the numerical value of the RF level by OSD (method 2).

Adjusting procedure is shown below, but regarding how to start the test mode and the operating procedure, please refer to the clause on the service test mode.

Adjusting Procedure:

1. Install the pickup

(Refer to the removal of the pickup from the mecha unit.)

When handling the pickup, refer to the precautions on how to handle the PU listed below.

2. Method 1:

Connect the oscilloscope according to the AGND3 standards with reference to the connection diagram so that the RF signals can be monitored.

Method 2:

The device does not need to be set. Proceed to the procedure 3.

3. Turn ON the power of the product.

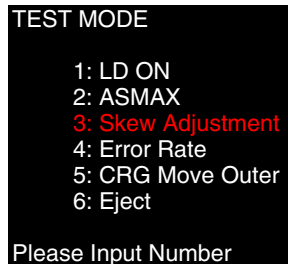
4. Start the simplified FE test mode.

(Regarding how to start the test mode and the operating procedure, refer to the clause on the service test mode.)

5. Load the disc for adjustment (TDV582).

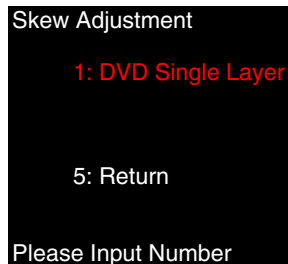
6. TEST MODE

Select "3: Skew Adjustment."



Skew Adjustment

Select "1: DVD Single Layer."



Adjust the Skew using a driver while checking the RF value.

Refer to the following pages concerning the locations to make SKEW adjustment.

Method 1:

Slightly turn the skew adjusting screw A while checking the RF wave level by the oscilloscope and make adjustment so the wave level would reach its maximum.

Next, slightly turn the skew adjusting screw B so the wave level would reach its maximum.

Slightly turn the skew adjusting screw A again so the wave level would reach its maximum.

(Make adjustment in the order of A->B->A and in the end complete adjustment by turning each screw in the clockwise direction.)

Method 2:

Slightly turn the skew adjusting screw A while checking the value of the RF level through the OSD display so the wave level would reach its maximum.

Next, slightly turn the skew adjusting screw B so the level would reach its maximum.

Slightly turn the skew adjusting screw A again so the level would reach its maximum.

(Make adjustment in the order of A->B->A and in the end complete adjustment by turning each screw in the clockwise direction.)

Skew Adjustment

1: Power OFF

RF Level : 000000

Please Input Number

9. Skew Adjustment
Select "1: Power OFF."

Skew Adjustment

1: Power OFF

RF Level : 000000

Please Input Number

10. TEST MODE

Select "6: Eject."

TEST MODE

1: LD ON
2: ASMAX
3: Skew Adjustment
4: Error Rate
5: CRG Move Outer
6: Eject

Please Input Number

11. TEST MODE

Select "5: CRG Move Outer."

TEST MODE

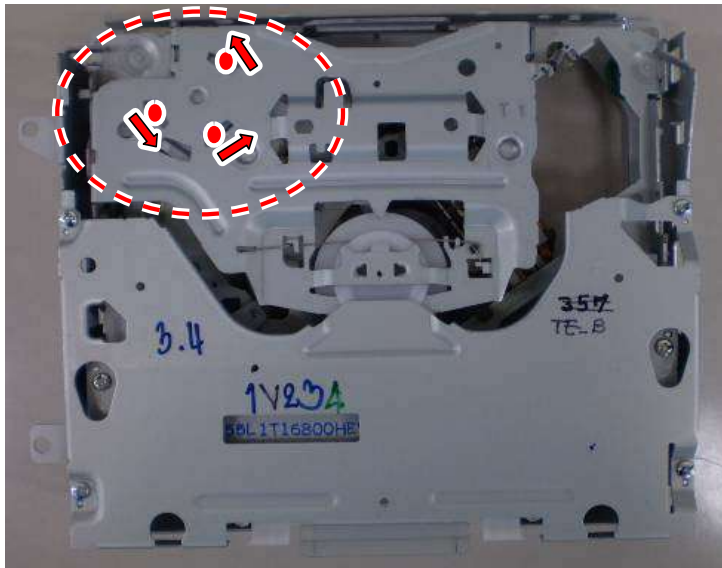
1: LD ON
2: ASMAX
3: Skew Adjustment
4: Error Rate
5: CRG Move Outer
6: Eject

Please Input Number

12. In order to produce the clamping state with no disc loaded, slightly move the disc detection arm in the counterclockwise direction while moving the switch arms outward.



Switch arms



Disc Detection Arm

13. CRG Move Outer

Select "1: DVD Single Layer."

CRG Move Outer

- 1: DVD Single Layer
- 2: DVD Dual Layer
- 3: CD
- 4: CD-RW
- 5: Return

Please Input Number

The pickup moves to the outer periphery.

Apply the adhesive to fix the skew, the resonance adhesive and the screw lock.

Refer to the next page regarding the locations of adhesive joining.

14. CRG Move Outer

1: Power OFF

CRG Move Outer

- 1: Power OFF

Please Input Number

15. TEST MODE

Select "6: Eject."

TEST MODE

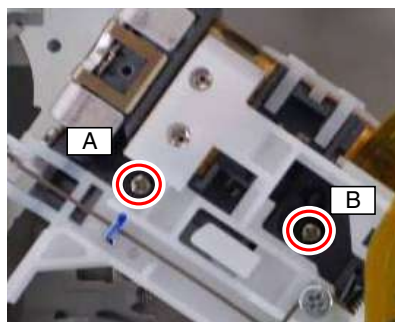
- 1: LD ON
- 2: ASMAX
- 3: Skew Adjustment
- 4: Error Rate
- 5: CRG Move Outer
- 6: Eject

Please Input Number

Locations to make SKEW adjustment

A

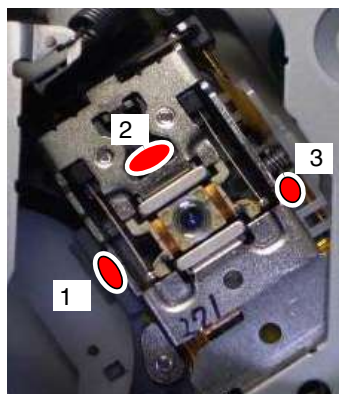
B



Locations to adhere the SKEW 1,2,3: BOND QUICK MENDER

C

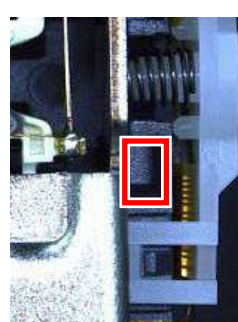
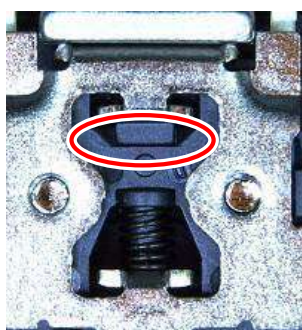
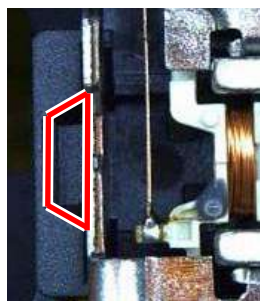
D



1

2

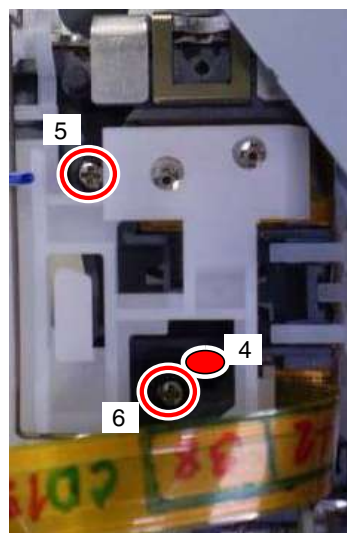
3



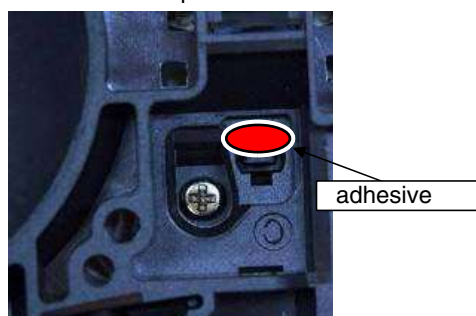
E

F

Bond for resonance 4:Three Bond 1530

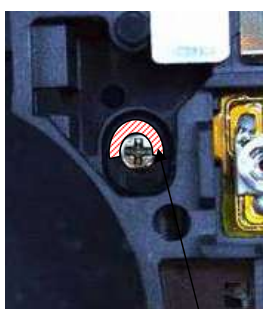


4



Bond for locking the screw 5,6 : Three Bond 1401M

5



6



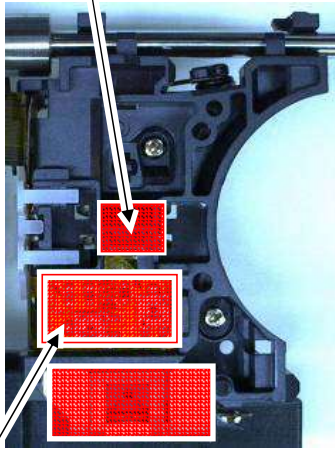
Bond for locking the screw

Precautions on handling the PU

*Precaution: Do not touch those shaded areas in the following figures.

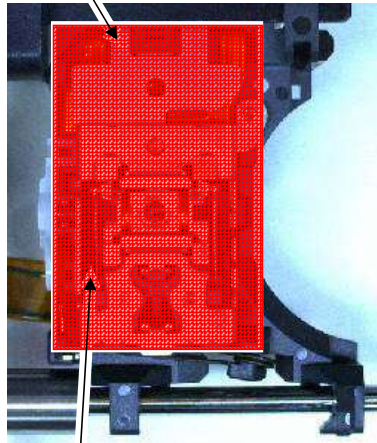
A

Do not touch the optical part



RF level adjusting part

Hologram (Beware of the static)



Do not touch the spring

C

D

E

F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

■

7

■

8

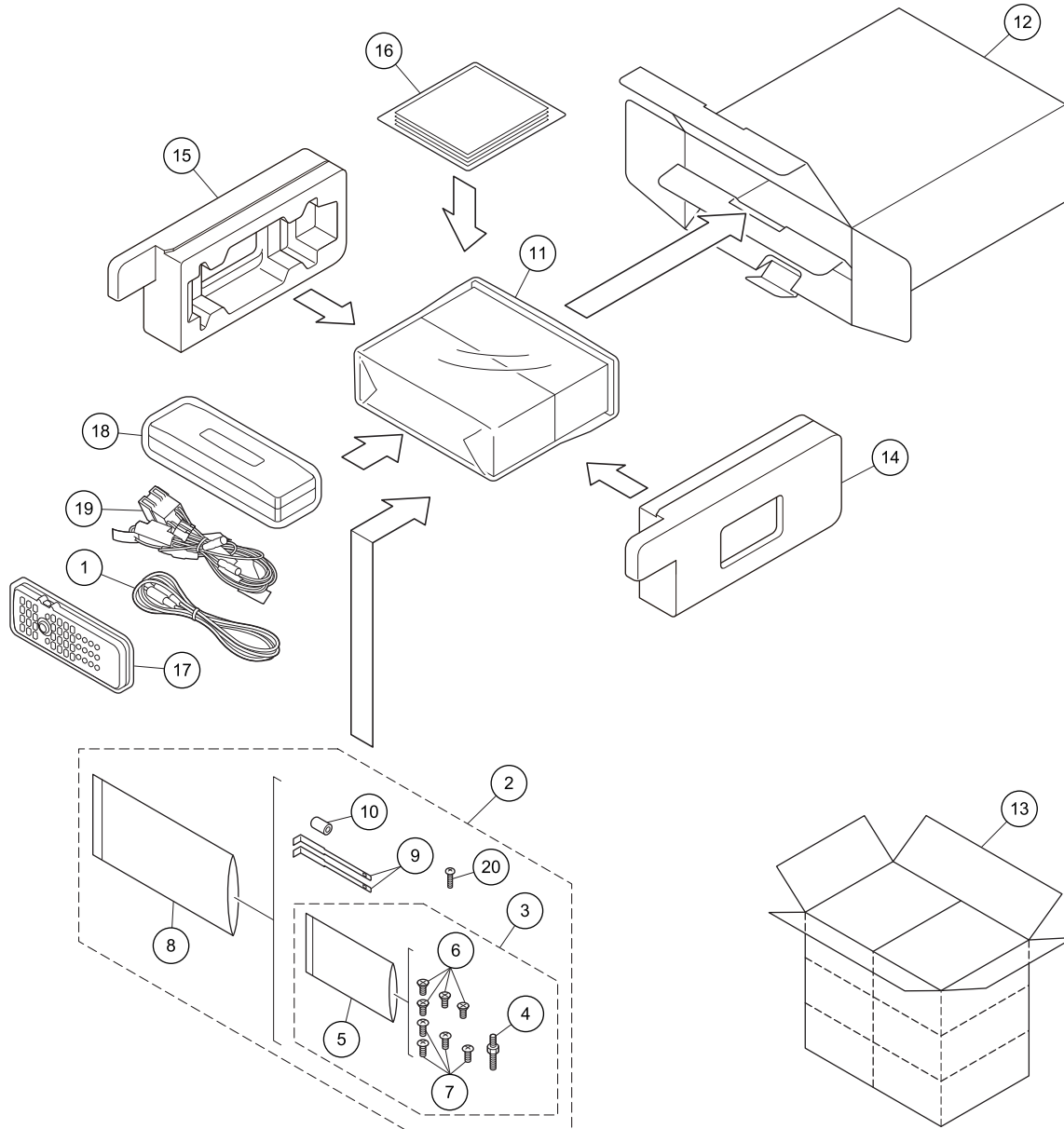
■

9. EXPLODED VIEWS AND PARTS LIST

NOTES :

- Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screw adjacent to  mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

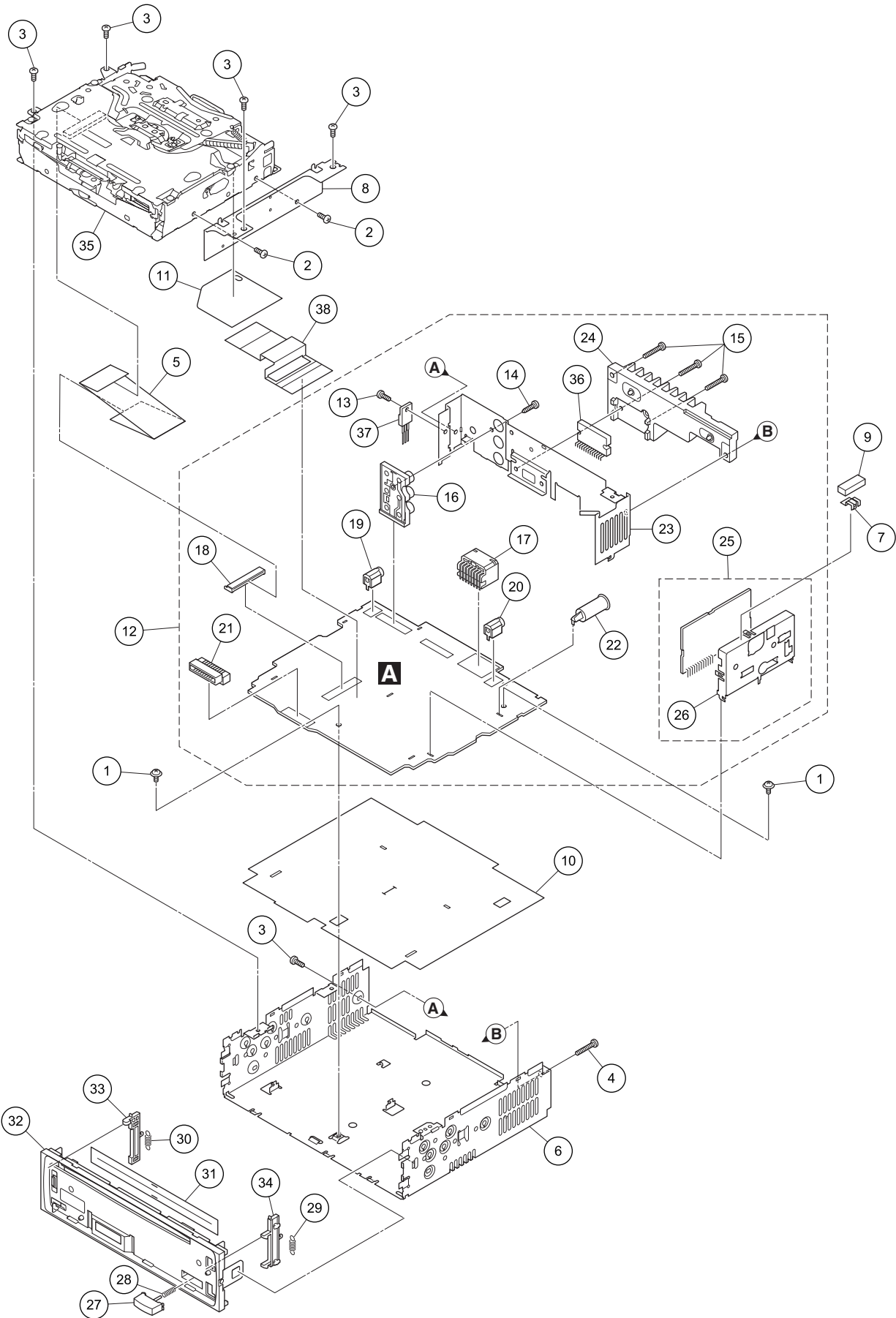
9.1 PACKING



PACKING SECTION PARTS LIST

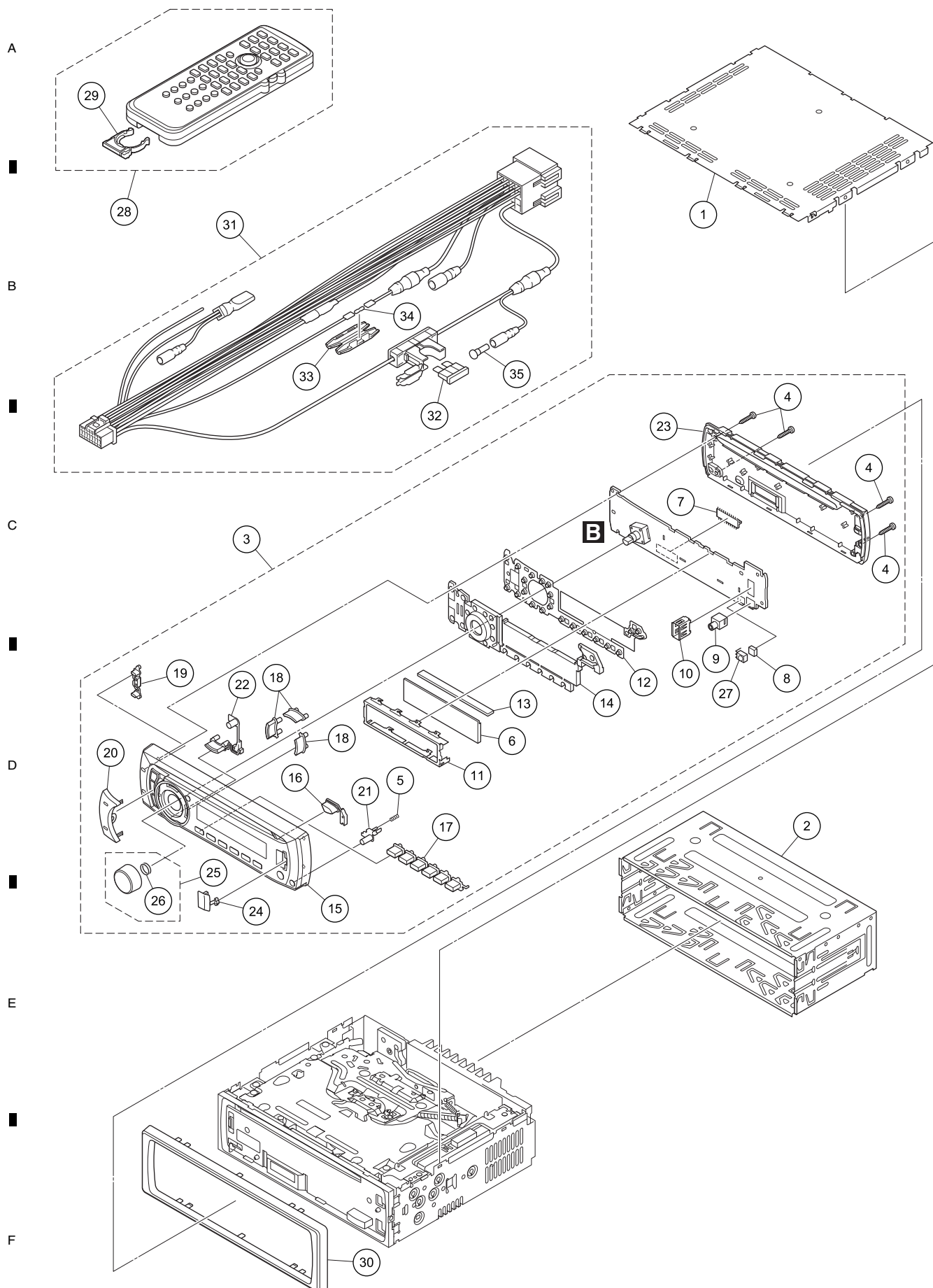
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Cord	CDE6765	
2	Accessory Assy	CEA6707	A
3	Screw Assy	CEA3849	
4	Screw	CBA1650	
* 5	Polyethylene Bag	CEG-127	
6	Screw	CRZ50P090FTC	
7	Screw	TRZ50P080FTC	
8	Polyethylene Bag	CEG1160	
9	Handle	CND3707	
10	Bush	CNV3930	
11	Polyethylene Bag	CEG-162	B
12	Unit Box	CHG6752	
13	Contain Box	CHL6752	
14	Protector	CHP3684	
15	Protector	CHP3685	
16-1	Owner's Manual	CRB2939(English)	
16-2	Owner's Manual	CRB2940(Russian)	
16-3	Installation Manual	CRD4387(English, Russian)	
* 16-4	Warranty Card	CRY1279	
17	Remote Control Unit	CXE1474	C
18	Case Assy	YXB5009	
19	Cord Assy	CDP1183	
20	Screw	BPZ20P080FTC	

9.2 EXTERIOR(1)



<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Screw	ASZ26P050FTC	
2	Screw	BMZ25P040FTB	A
3	Screw	BSZ26P060FTC	
4	Screw	BSZ26P160FTC	
5	Cable	CDE8742	
6	Chassis	CNA3099	
7	Earth Plate	CNC8915	
8	Holder	CND4748	
9	Cushion	CNM9126	
10	Insulator	CNN2593	
11	Insulator	CNN2764	B
12	Tuner Amp Unit	CWN3739	
13	Screw	BSZ26P060FTC	
14	Screw	BPZ26P080FTC	
15	Screw	BSZ26P160FTC	
16	Pin Jack(JA282)	CKB1093	
17	Plug(CN821)	CKM1370	
18	Connector(CN101)	CKS3844	
19	Connector(JA321)	CKS4124	
20	Connector(JA331)	CKS4124	C
21	Connector(CN701)	CKS6050	
22	Antenna Jack(JA471)	CKX1070	
23	Holder	CND4760	
24	Heat Sink	CNR1976	
25	FM/AM Tuner Unit	CWE2136	
26	Holder	CND4324	
27	Button	CAC4836	
28	Spring	CBH2367	
29	Spring(Silver)	CBH2961	D
30	Spring	CBH2962	
31	Cover	CNN1665	
32	Panel	CNS9662	
33	Arm	CNV9312	
34	Arm	CNW1439	
35	DVD Mechanism Module(LS1)	CXK6800	
36	IC(IC271)	PA2030A	
37	IC(IC1021)	NJM2388F84	
38	Sheet	CNN3039	E

9.3 EXTERIOR(2)



EXTERIOR(2) SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Case	CNB3542	
2	Holder	CND3598	A
3	Grille Assy	CXC9978	
4	Screw	BPZ20P100FTC	
5	Spring	CBH2210	
6	LCD	CAW1964	
7	Connector(CN1801)	CKS6049	
8	Spacer	CNN2527	
9	Jack(JA1802)	YKN5001	
10	Connector(CN1803)	YKS5032	
11	Holder	YNC5061	B
12	Rubber Contact	YNV5169	
13	Connector	YNV5170	
14	Lighting Conductor	YNV5171	
15	Grille Unit	CXE1253	
16	Button(EJECT)	YAC5341	
17	Button(1-6)	YAC5342	
18	Button(LEFT, UP, RIGHT)	YAC5344	
19	Button(SRC/BAND)	YAC5345	
20	Button(LIST/DISP)	YAC5346	C
21	Button(DETACH)	YAC5347	
22	Button(TA/AF, DOWN)	YAC5378	
23	Cover	YNS5405	
24	Grip(USB)	YNV5176	
25	Knob Unit	YXC5102	
26	Spring	YBL5010	
27	Remote IC(IC1802)	GP1UXC14RK	
28	Remote Control Unit	CXE1474	
29	Cover	CZN7062	D
30	Panel	YNS5406	
31	Cord Assy	CDP1183	
⚠ 32	Fuse(10 A)	CEK1136	
33	Cap	CNS1472	
34	Resistor	RS1/2PMF102J	
35	Terminal Cover	CKX-003	

9.4 DVD MECHANISM MODULE

A

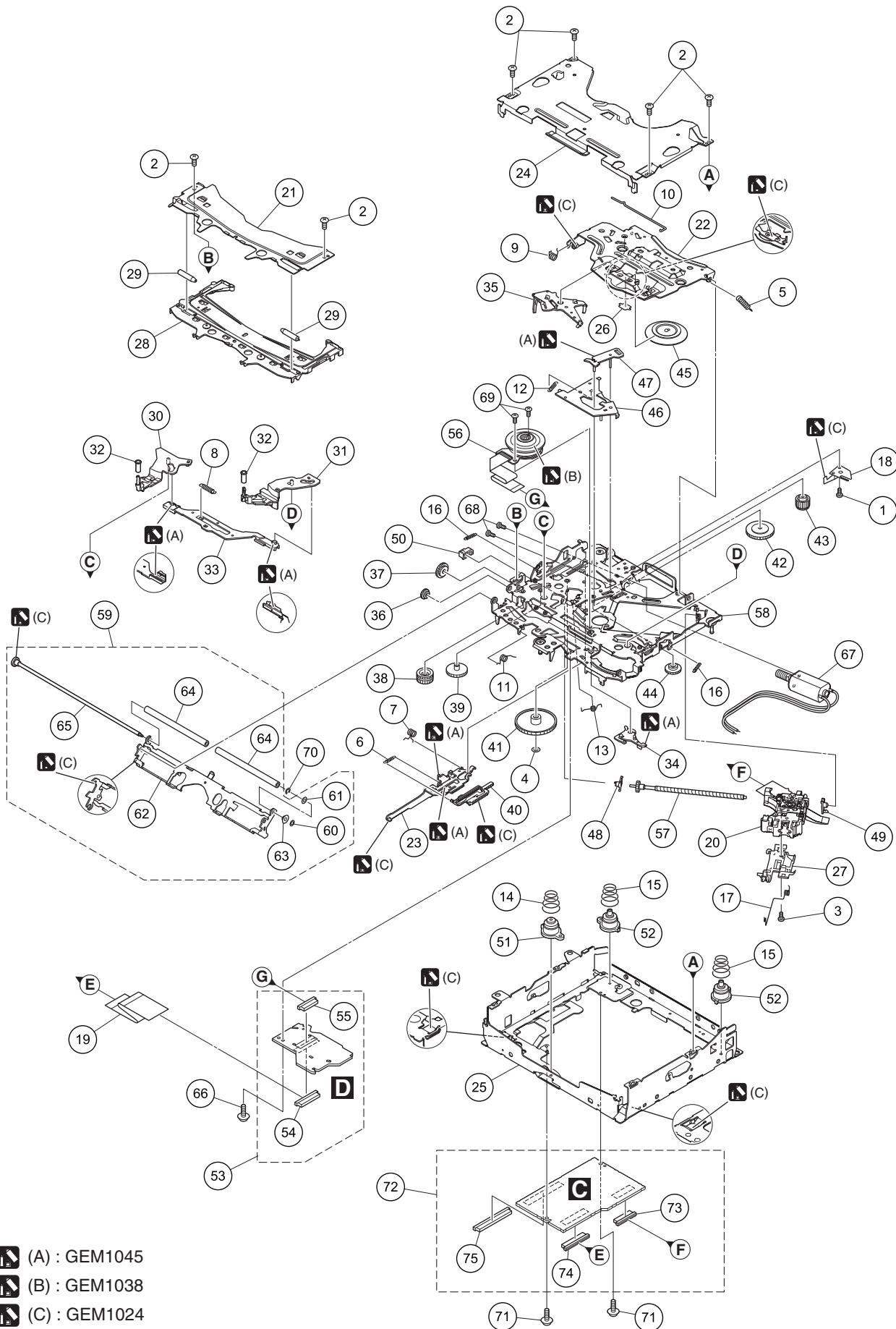
B

C

D

E

F



-  (A) : GEM1045
-  (B) : GEM1038
-  (C) : GEM1024

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Screw	BMZ20P020FTC	50	Holder	CNW1195	
2	Screw	BSZ20P040FTC				
3	Screw(M2 x 4)	CBA1835	51	Damper	CNW1197	A
4	Washer	CBF1038	52	Damper	CNW1198	
5	Spring	CBH2860	*	53	Connect PCB Unit	CWX3618
			54	Connector(CN701)	CKS6003	
6	Spring	CBH3010	55	Connector(CN101)	CKS6063	
7	Spring	CBH3011				
8	Spring	CBH3012	56	Motor Unit	CXC4026	
9	Spring	CBH3013	57	Screw Unit	CXC8894	
10	Spring	CBH3014	58	Chassis Unit	CXC8895	
			59	Arm Assy	CXC8896	
11	Spring	CBH3015	60	Washer	CBF1037	B
12	Spring	CBH3016				
13	Spring	CBH3017	61	Washer	CBF1038	
14	Spring	CBH3018	62	Arm	CND4554	
15	Spring	CBH3019	63	Collar	CNV6906	
			64	Roller	CNW1196	
16	Spring	CBH3020	65	Gear Unit	CXC8893	
17	Spring	CBH3030				
18	Plate Spring	CBL1797	66	Screw(M2 x 5)	EBA1028	
19	Cable	CDE8631	67	Motor	EXM1050	
20	Service PU Unit	CXX2398	68	Screw	JFZ20P025FTC	C
			69	Screw	JGZ17P022FTC	
21	Bracket	CND4553	70	Washer	YE15FTC	
22	Arm	CND4555				
23	Lever	CND4556	71	Screw	IMS20P030FTC	
24	Frame	CND4557	72	DVD Core Unit	YWX5007	
25	Frame	CND4558	73	Connector(CN1101)	CKS5775	
			74	Connector(CN1201)	CKS6003	
26	Sheet	CNN2280	75	Connector(CN1901)	CKS6025	
27	Rack	CNW1170				
28	Guide	CNW1171				
29	Roller	CNW1172				D
30	Arm	CNW1173				
31	Arm	CNW1174				
32	Roller	CNW1175				
33	Lever	CNW1176				
34	Arm	CNW1177				
35	Arm	CNW1178				
36	Gear	CNW1180				
37	Gear	CNW1181				
38	Gear	CNW1182				E
39	Gear	CNW1183				
40	Rack	CNW1184				
41	Gear	CNW1185				
42	Gear	CNW1186				
43	Gear	CNW1187				
44	Gear	CNW1188				
45	Clamper	CNW1190				
46	Arm	CNW1191				
47	Arm	CNW1192				F
48	Holder	CNW1193				
49	Holder	CNW1194				

A

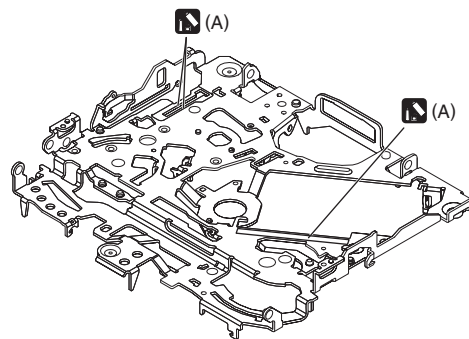
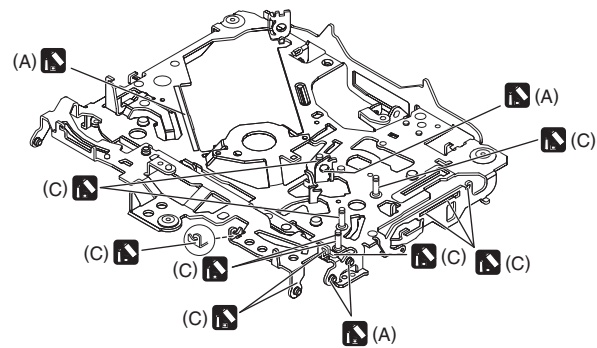
B

C

D

E

F



(A) : GEM1045

(B) : GEM1038

(C) : GEM1024

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A

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B

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C

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D

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E

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F

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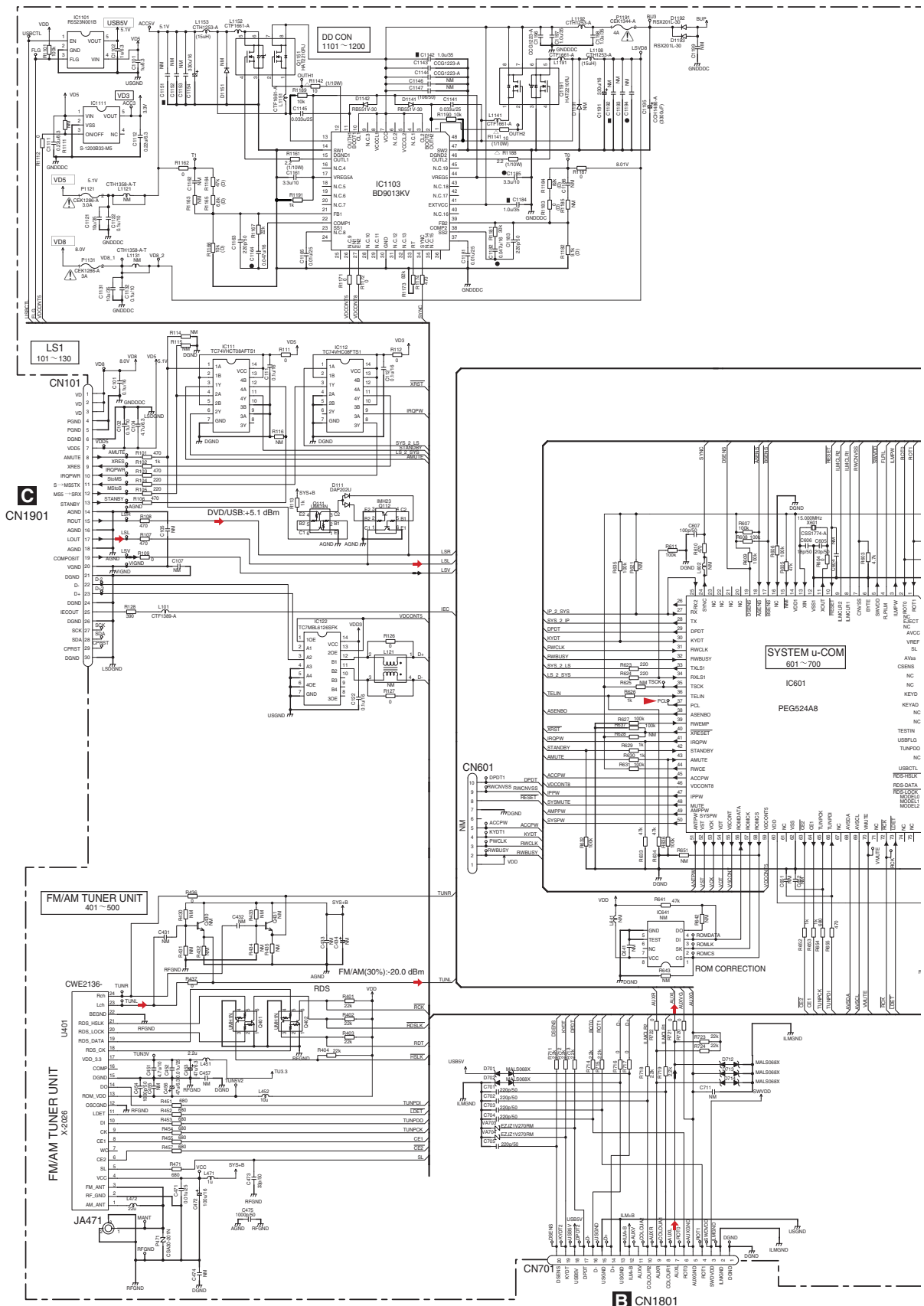
■

10. SCHEMATIC DIAGRAM

10.1 TUNER AMP UNIT(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



DVH-3100UB/XN/UW5

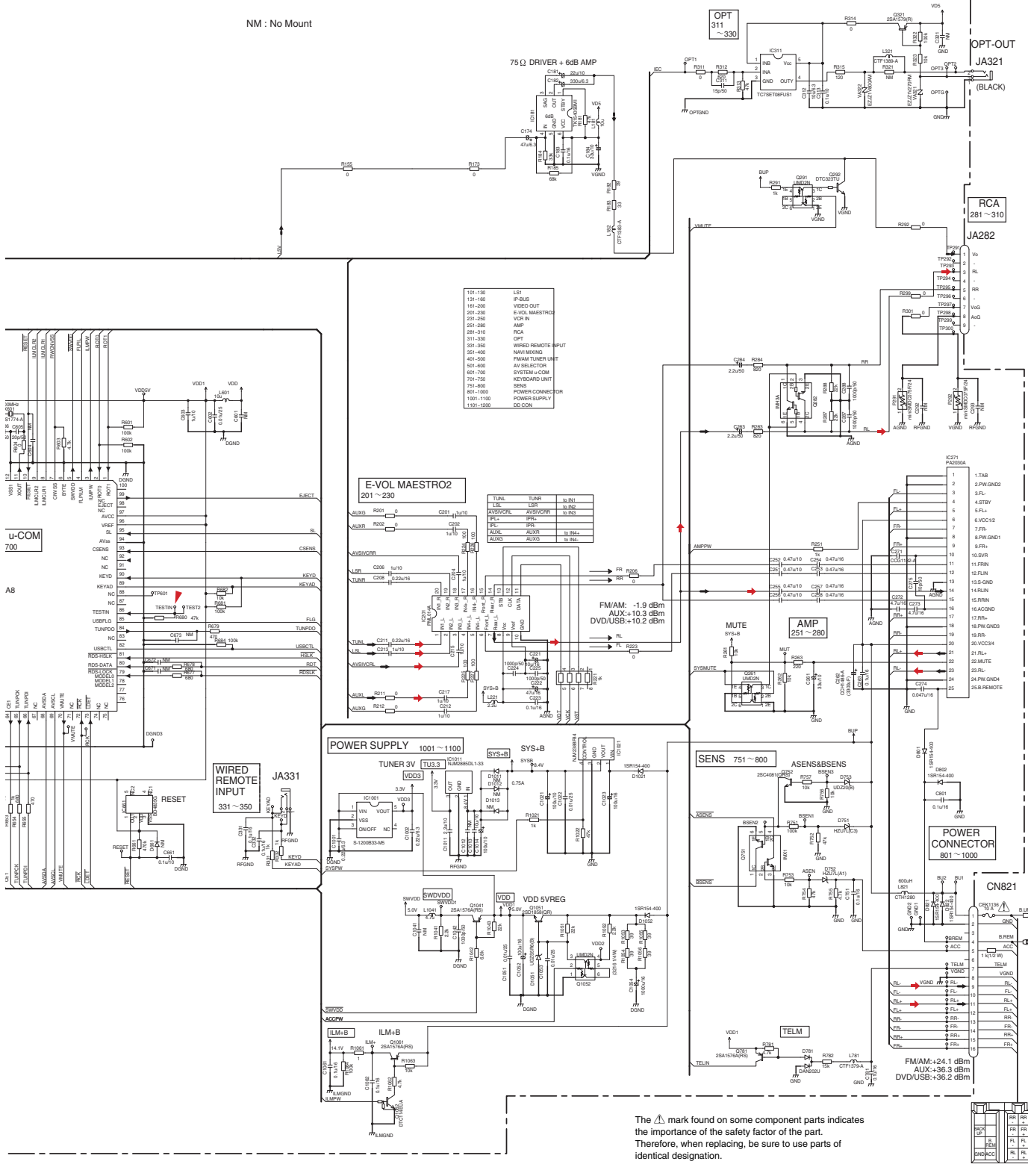
A-b

NOTE :

- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
- |— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

NM : No Mount

A TUNER AMP UNIT



The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A-b

A-a	A-b
1. $\frac{1}{2}$ of the population is homozygous for the dominant allele (AA). 2. $\frac{1}{4}$ of the population is heterozygous (Aa). 3. $\frac{1}{4}$ of the population is homozygous for the recessive allele (aa).	1. $\frac{1}{4}$ of the population is homozygous for the dominant allele (AA). 2. $\frac{1}{2}$ of the population is heterozygous (Aa). 3. $\frac{1}{4}$ of the population is homozygous for the recessive allele (aa).

A TUNER AMP UNIT

NOTE :

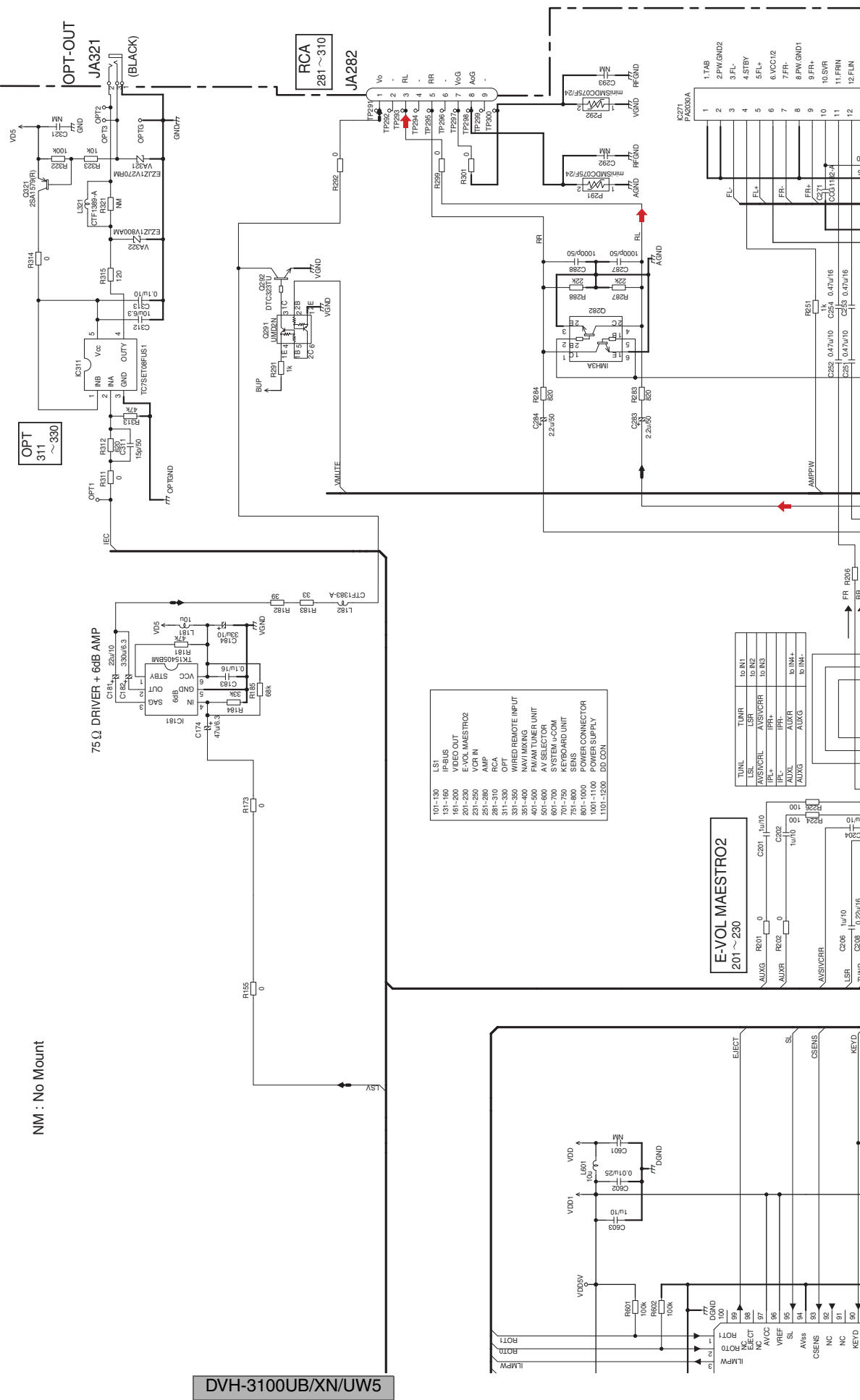
 Symbol indicates a resistor.

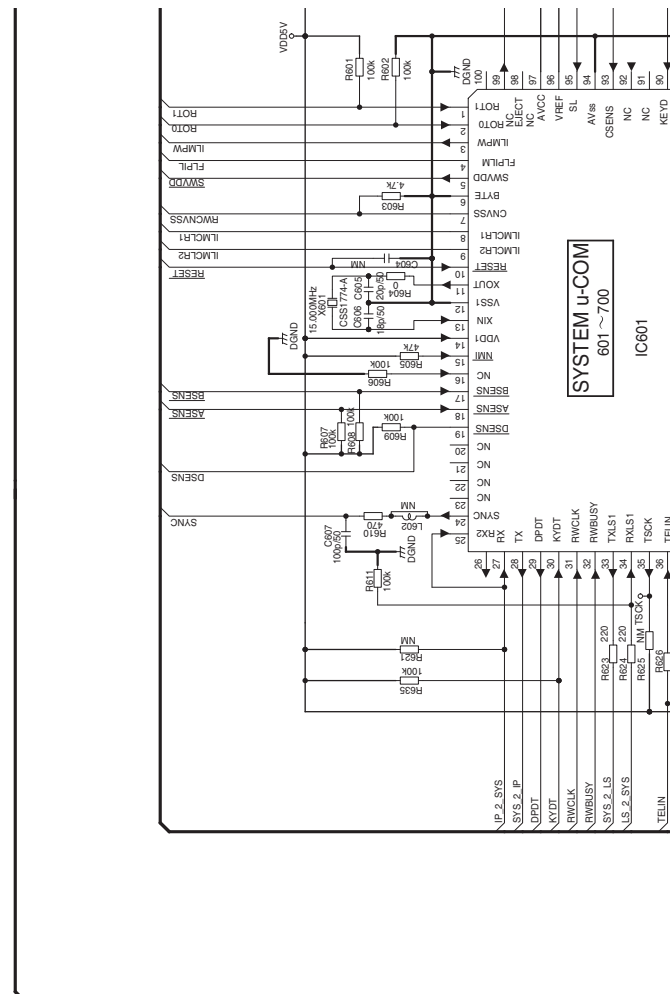
No differentiation is made between chip resistors and discrete resistors.

—||— Symbol indicates a capacitor.

No differentiation is made between chip capacitors and discrete capacitors.

NM : No Mount



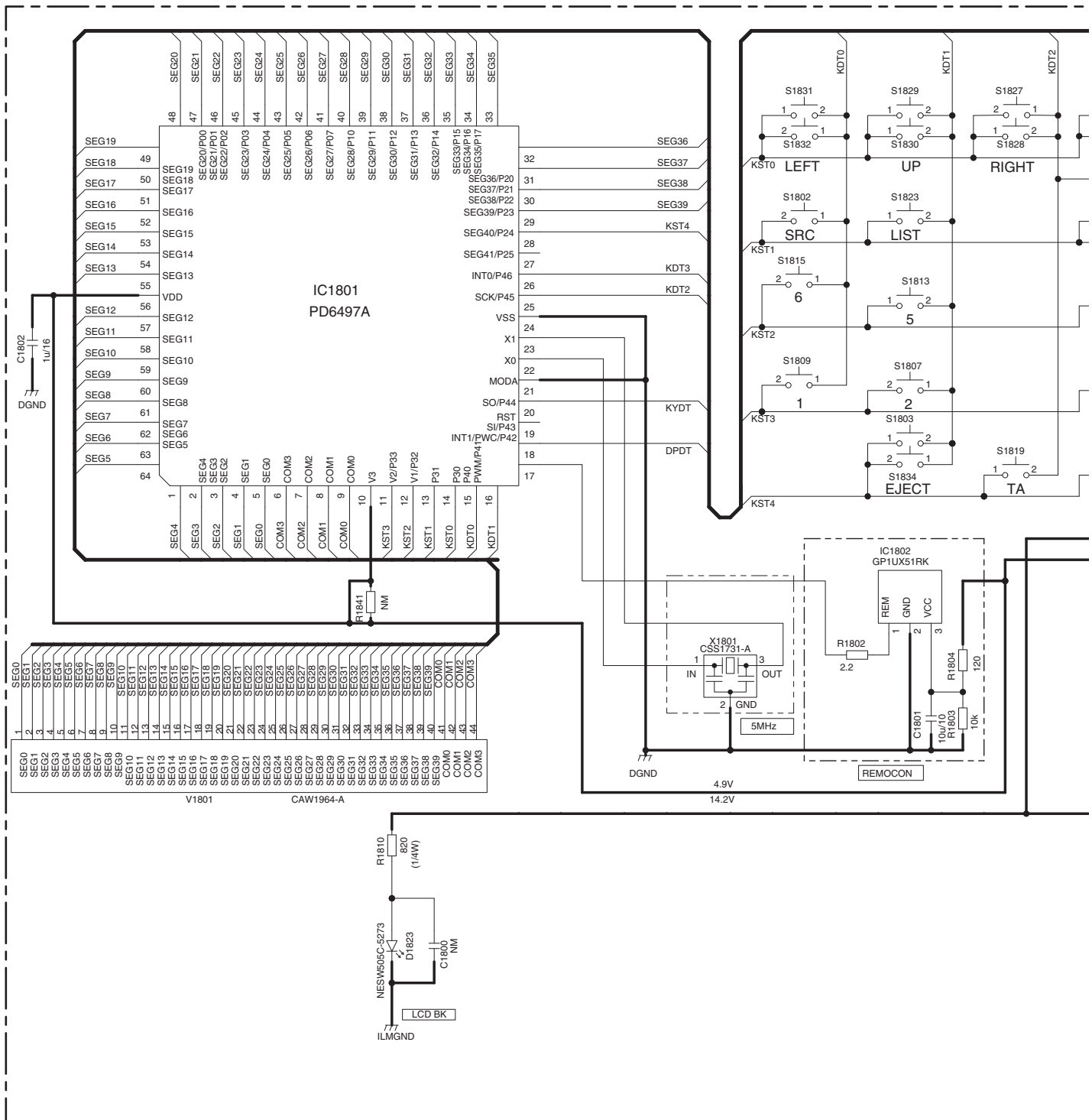


SYSTEM u-COM

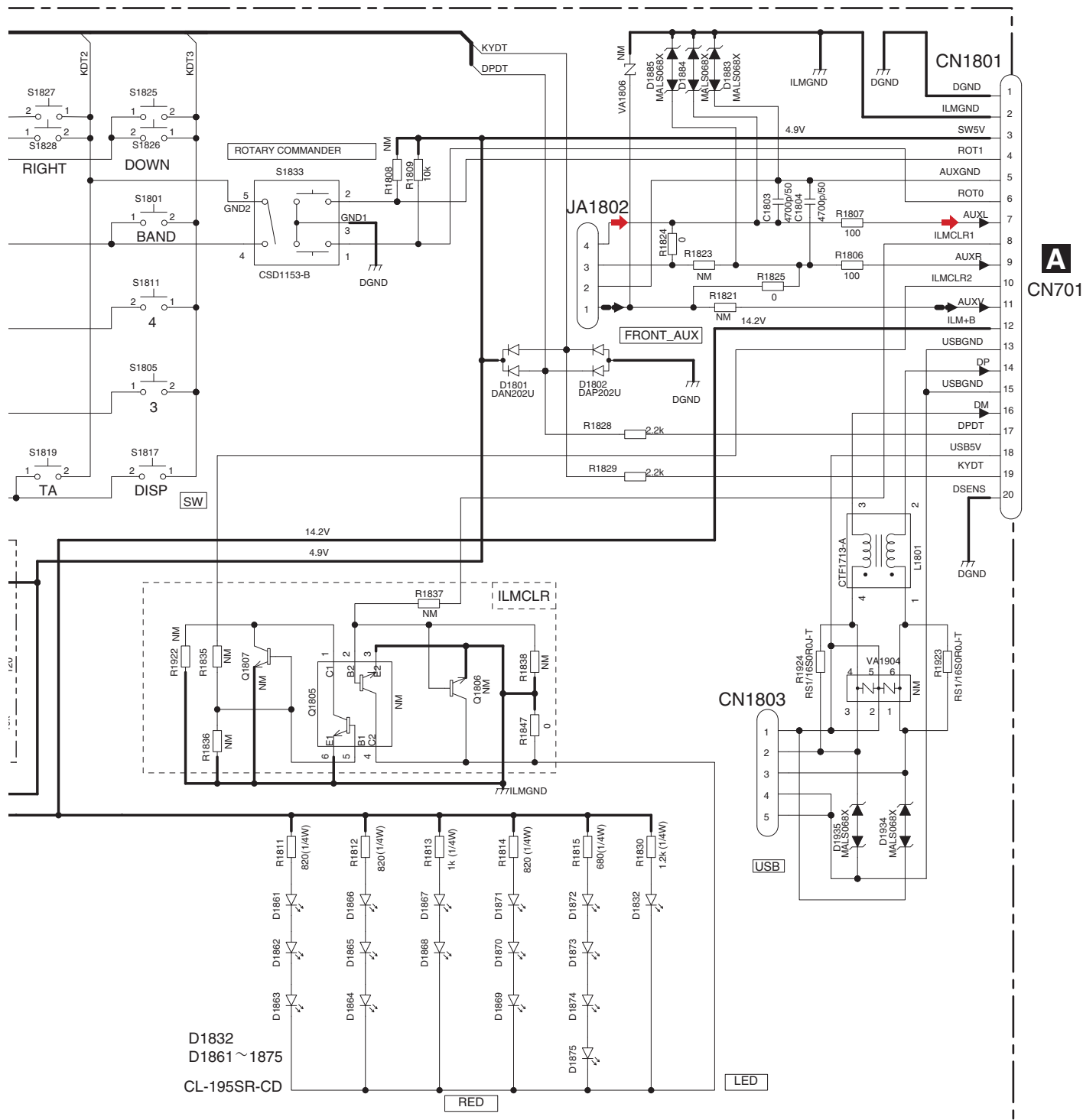
IC601

CN1901

10.2 KEYBOARD UNIT

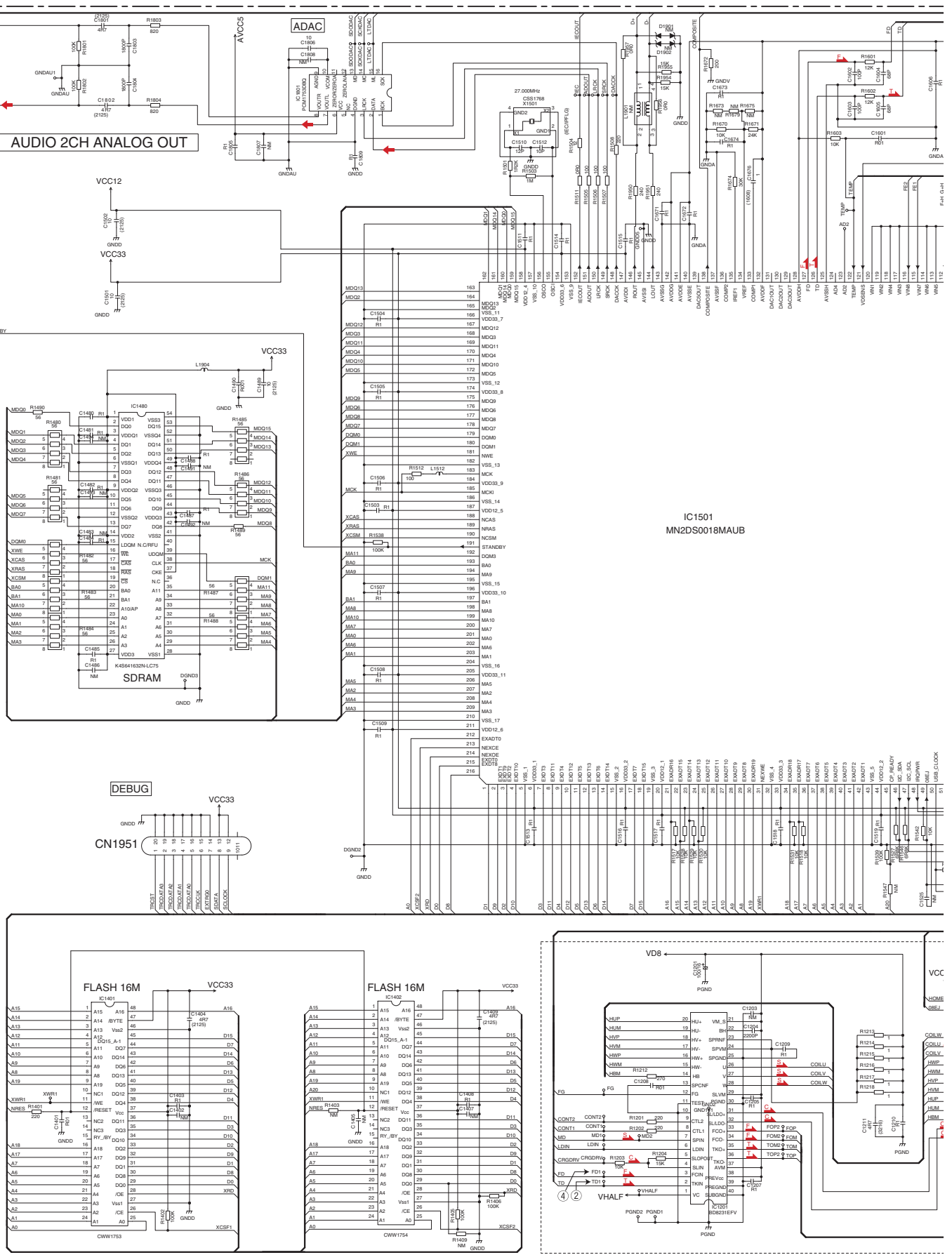


B KEYBOARD UNIT



10.3 DVD CORE UNIT(GUIDE PAGE)

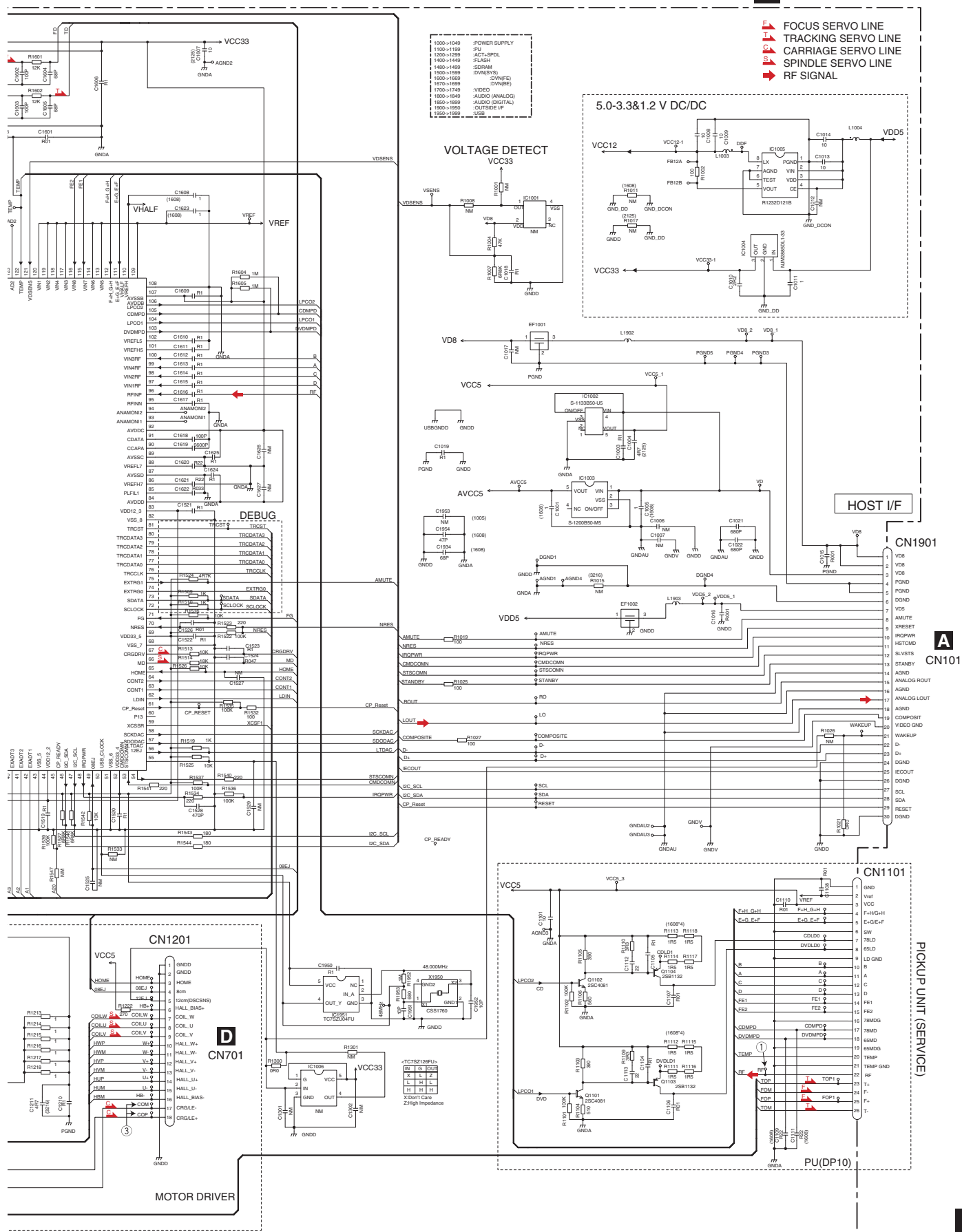
C-a



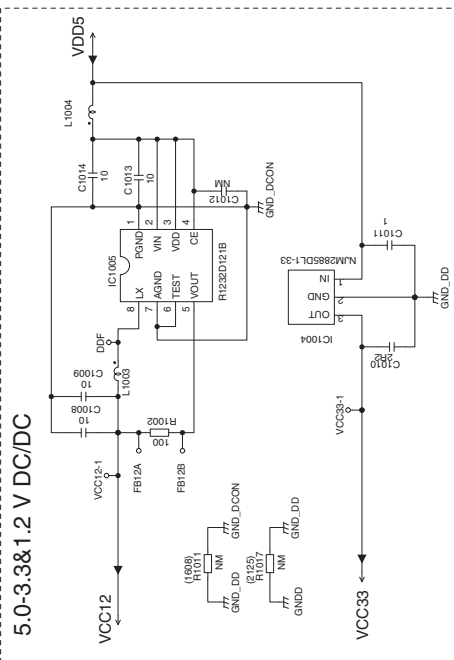
DVH-3100UB/XN/UW5

C-b

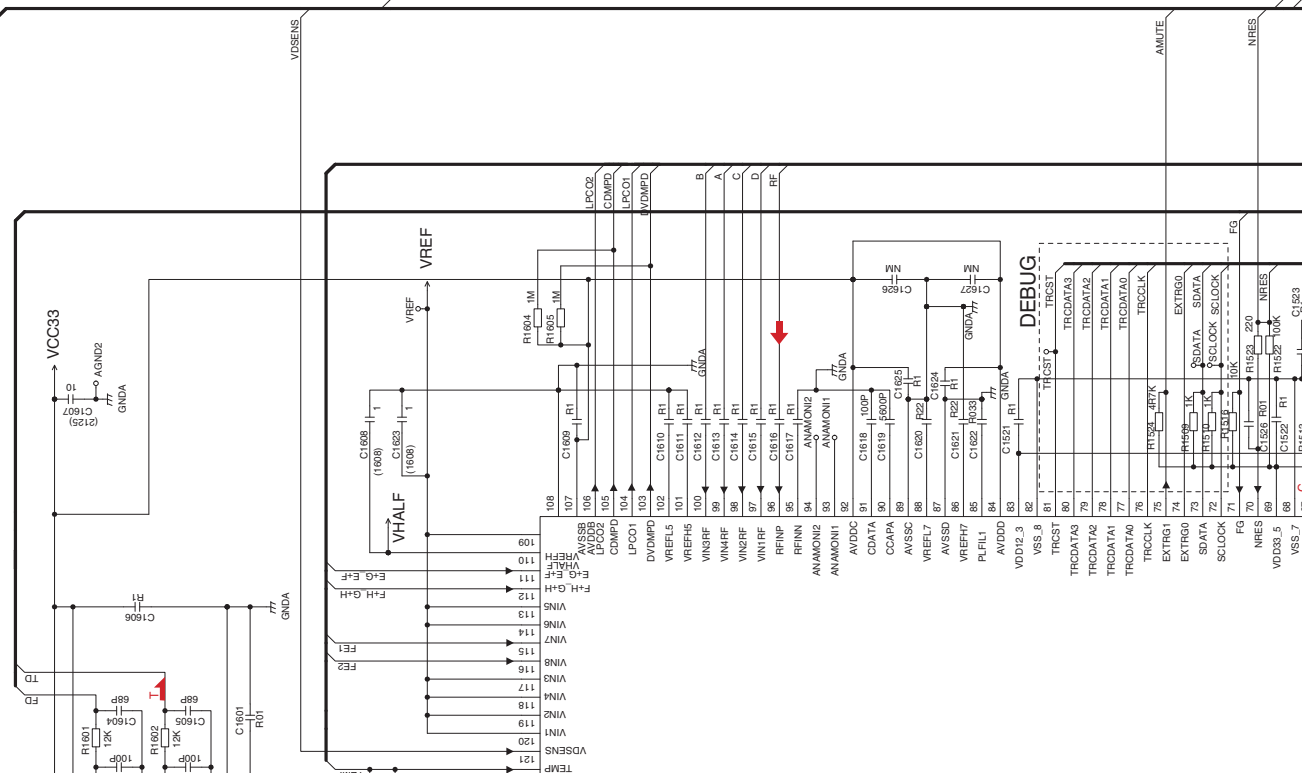
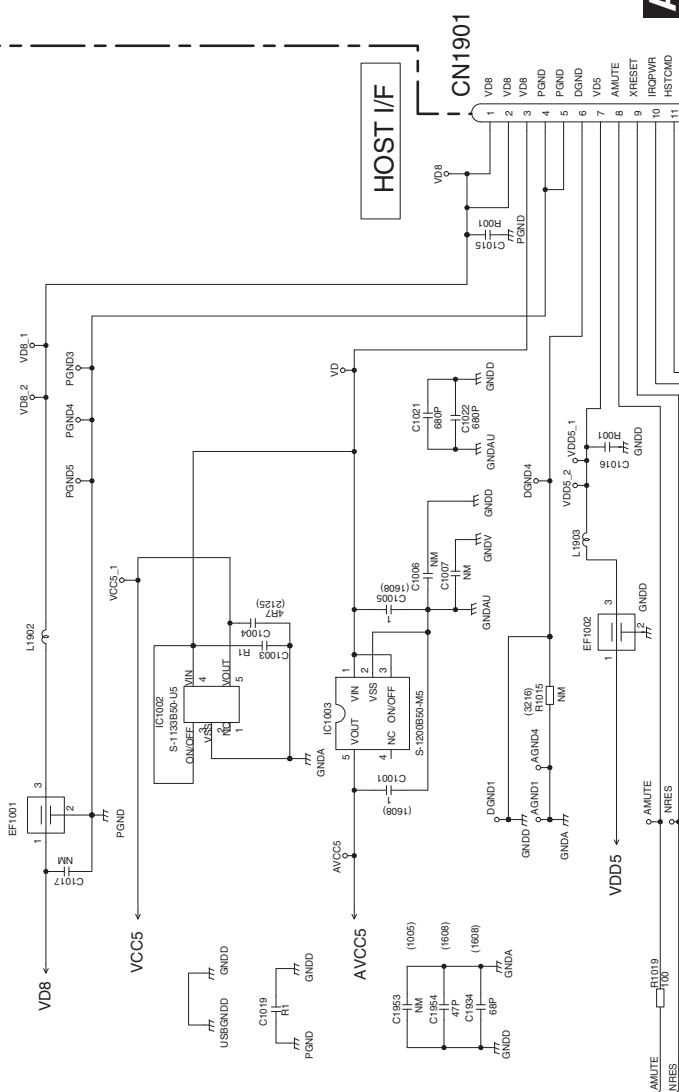
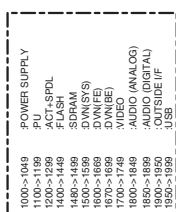
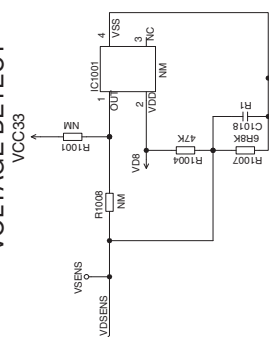
C DVD CORE UNIT



FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
RF SIGNAL



VOLTAGE DETECT



1

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A

C-b

B

C

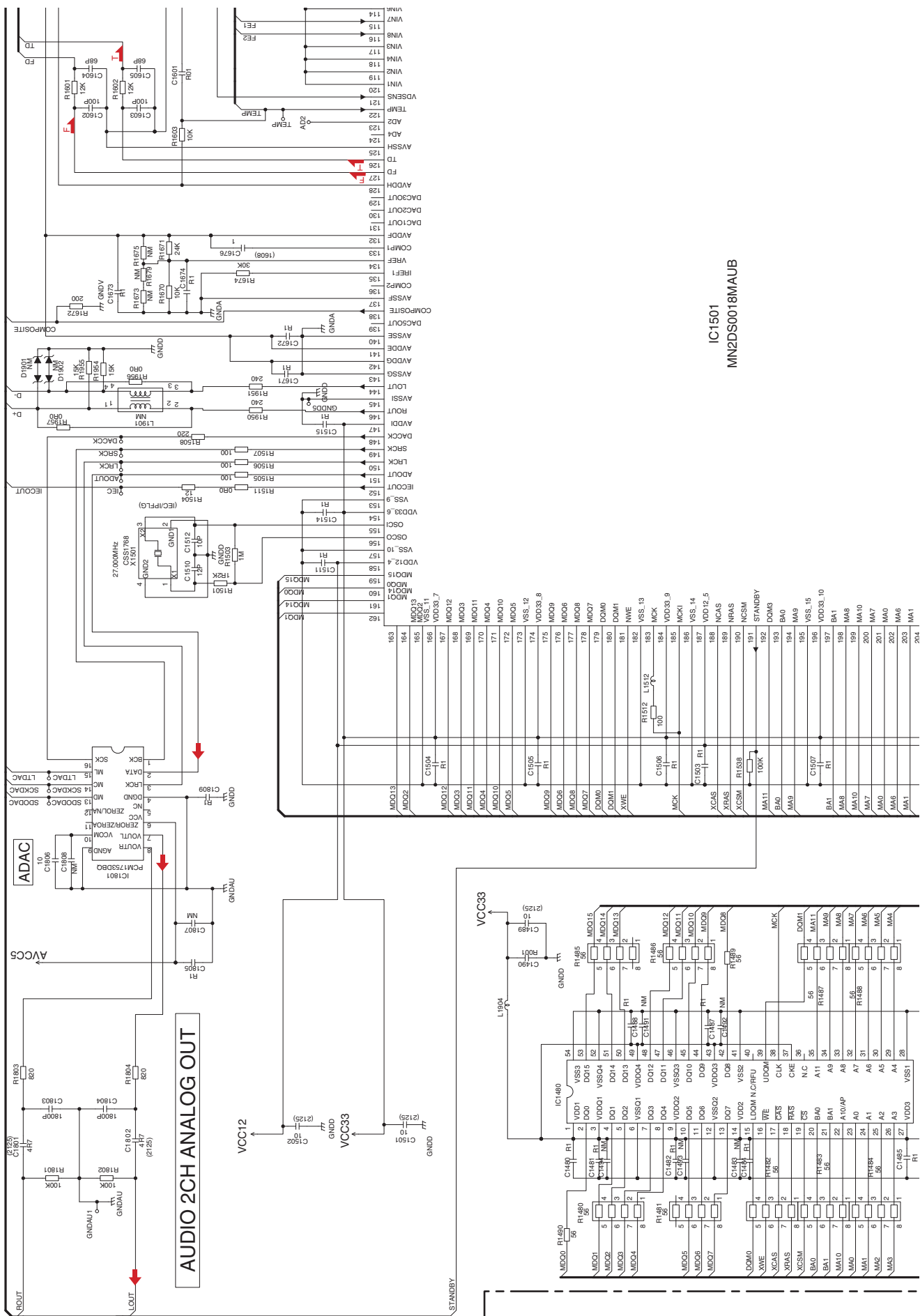
D

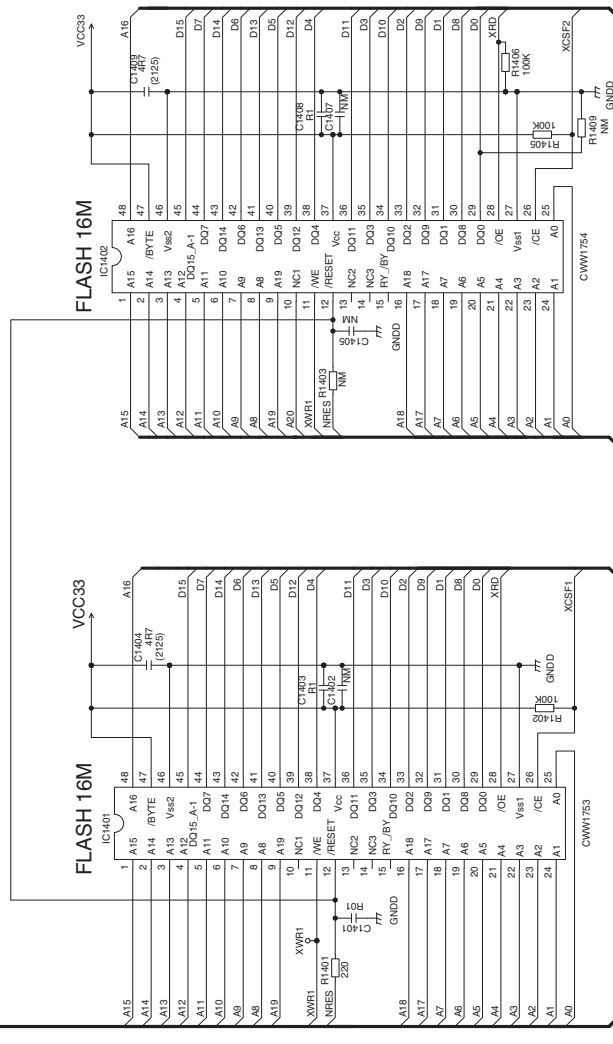
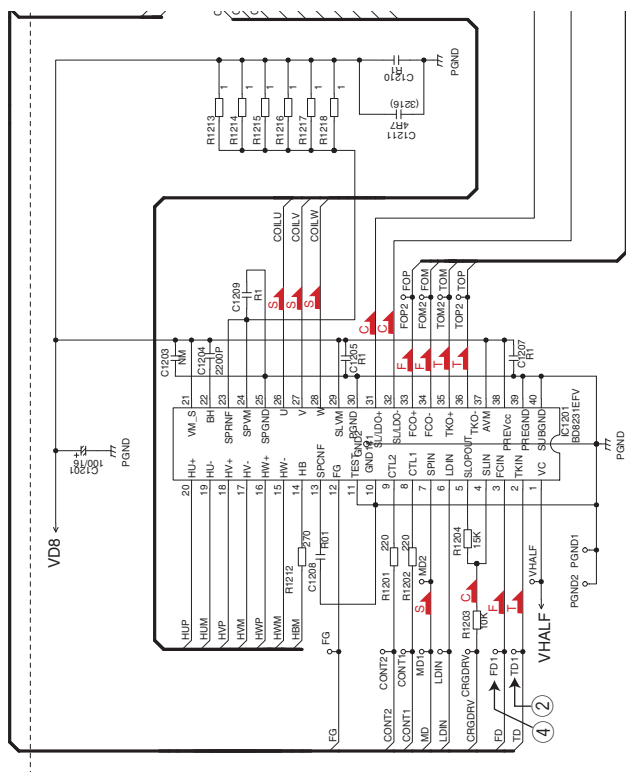
E

F

C-a

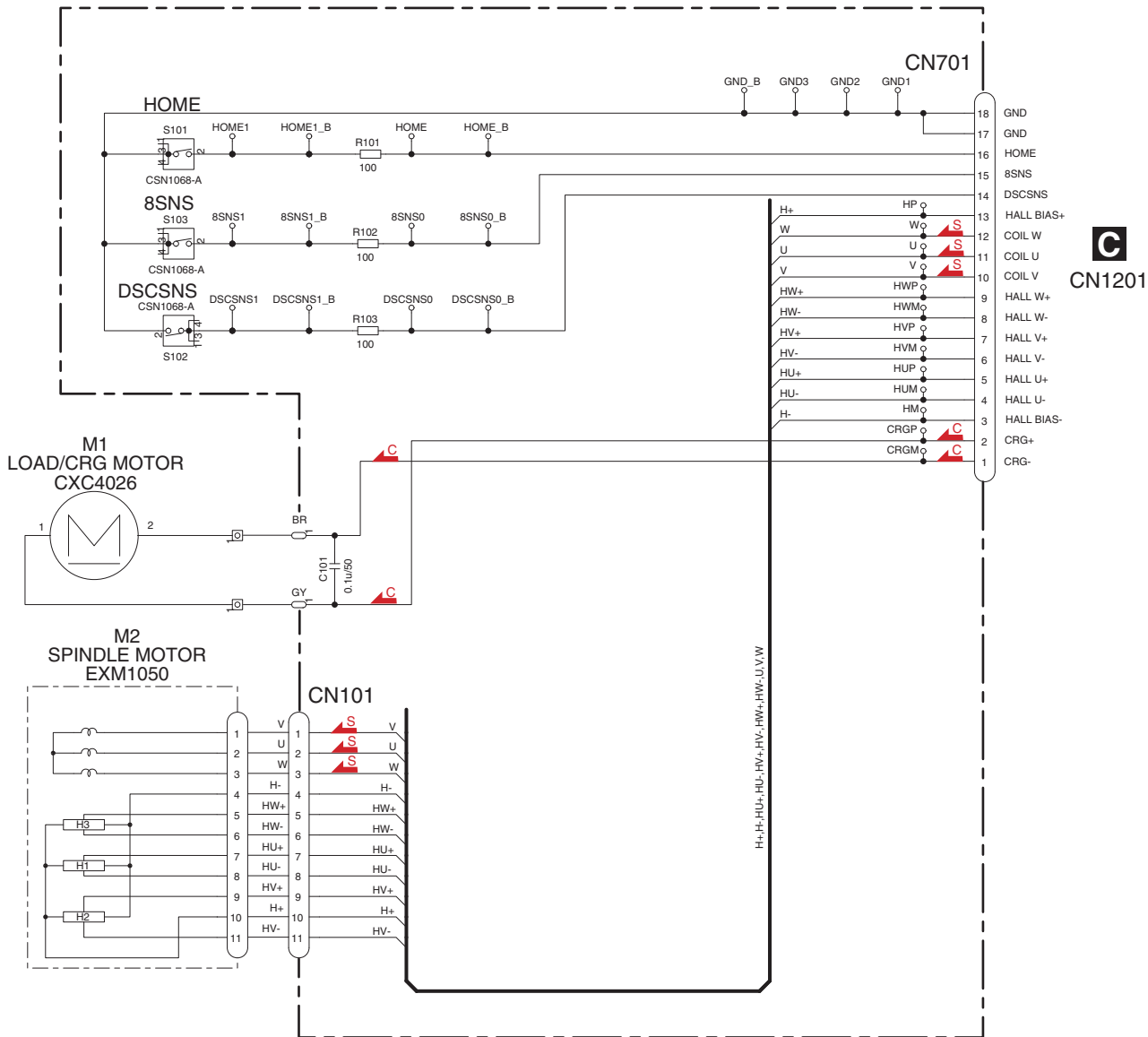
C-a





10.4 CONNECT PCB

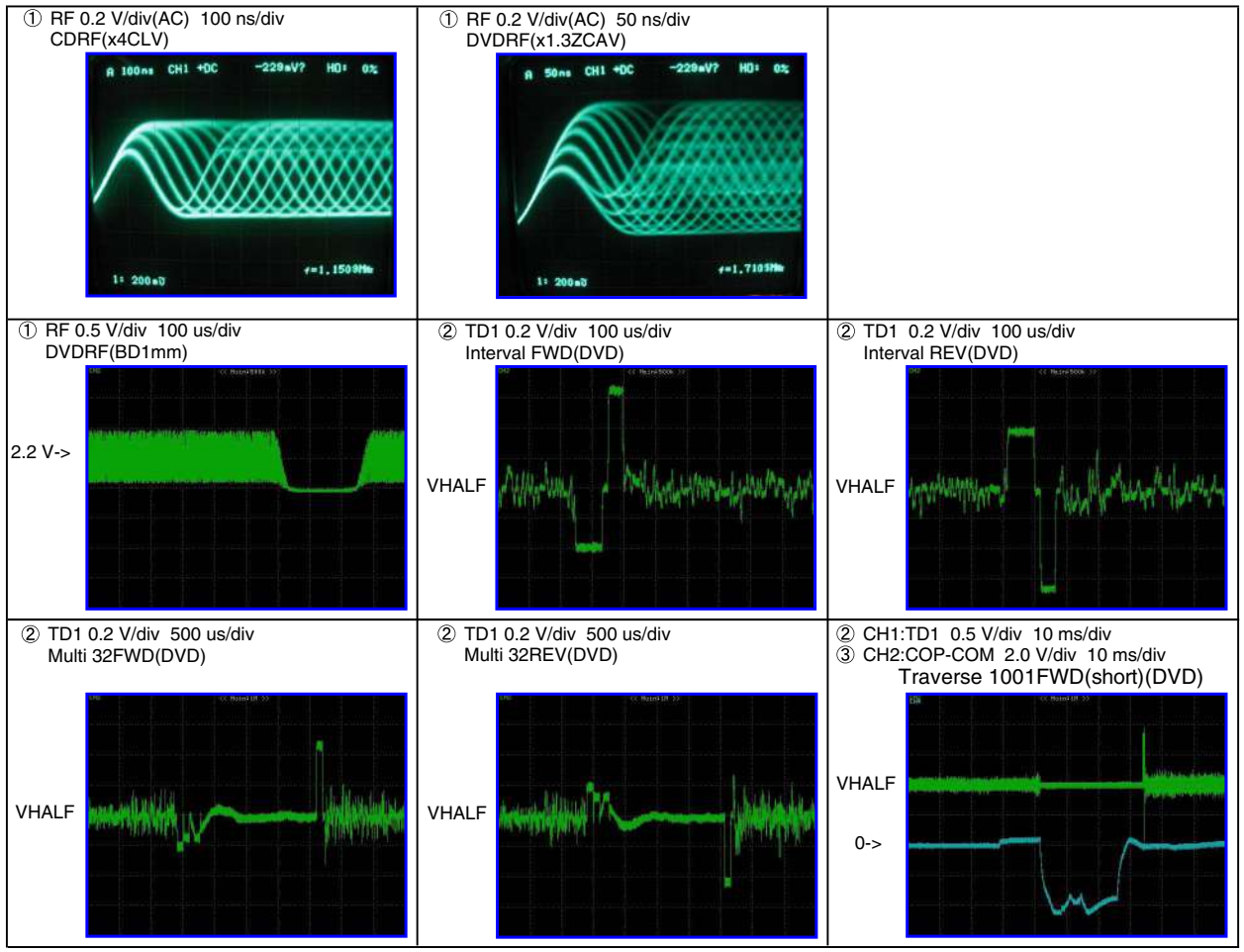
D CONNECT PCB



● DVD CORE UNIT

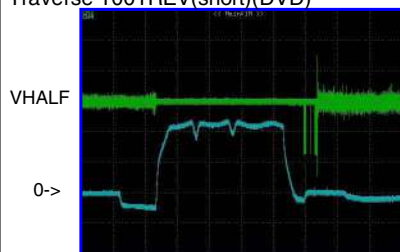
- Note:1. The encircled number denote measuring points in the circuit diagram.
2. Reference voltage: 1.65 V(TD1,FD1)(=VHALF)
2.2 V(RF)(=VREF)

In the waveform, it is seeing on the GND standard.
Offset of 1.65 V or 2.2 V is put in.



A

② CH1:TD1 0.5 V/div 10 ms/div
③ CH2:COP-COM 2.0 V/div 10 ms/div
Traverse 1001REV(short)(DVD)



② CH1:TD1 0.5 V/div 20 ms/div
③ CH2:COP-COM 2.0 V/div 20 ms/div
Traverse 5001FWD(long)(DVD)

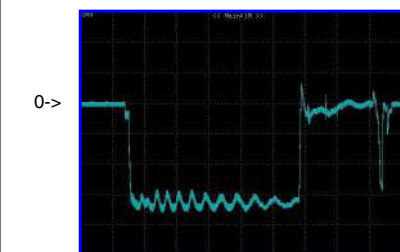


② CH1:TD1 0.5 V/div 20 ms/div
③ CH2:COP-COM 2.0 V/div 20 ms/div
Traverse 5001REV(long)(DVD)

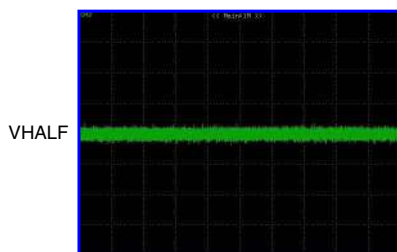


B

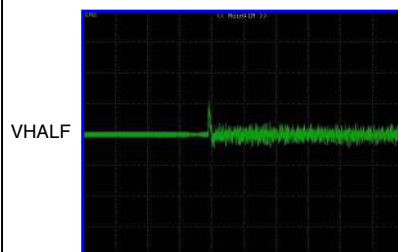
③ CH2:COP-COM 2.0 V/div 100 ms/div
ID search Inside -> Outside(DVD)



② TD1 0.5 V/div 100 ms/div
Play TD (DVD)

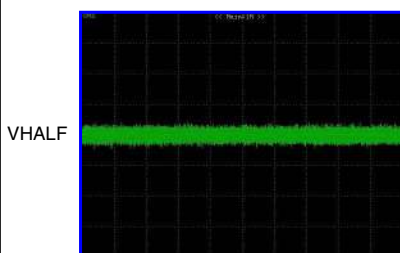


④ FD1 0.5 V/div 1 ms/div
Focus Close (DVD)

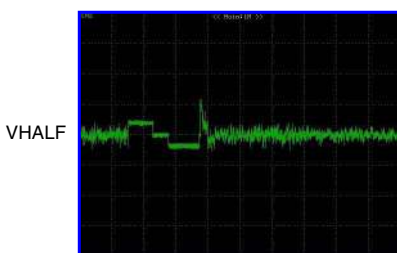


C

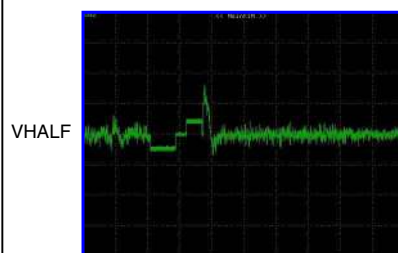
④ FD1 0.5 V/div 20 ms/div
Play FD(DVD)



④ FD1 0.5 V/div 500 us/div
Focus Jump L0 -> L1



④ FD1 0.5 V/div 500 us/div
Focus Jump L1 -> L0



D

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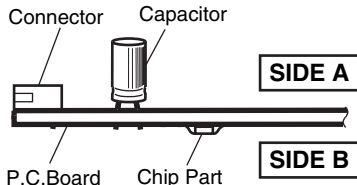
11. PCB CONNECTION DIAGRAM

11.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

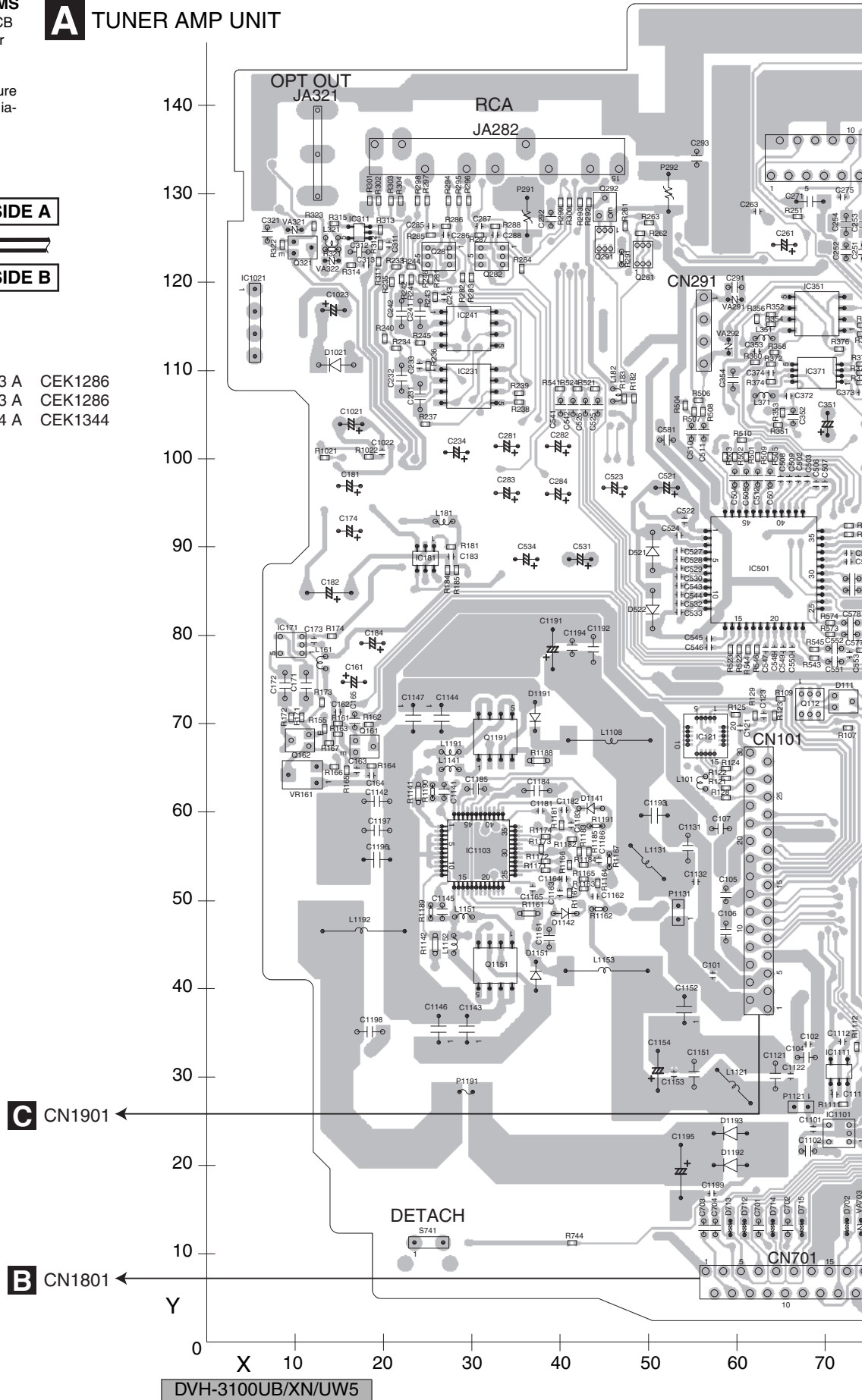
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams

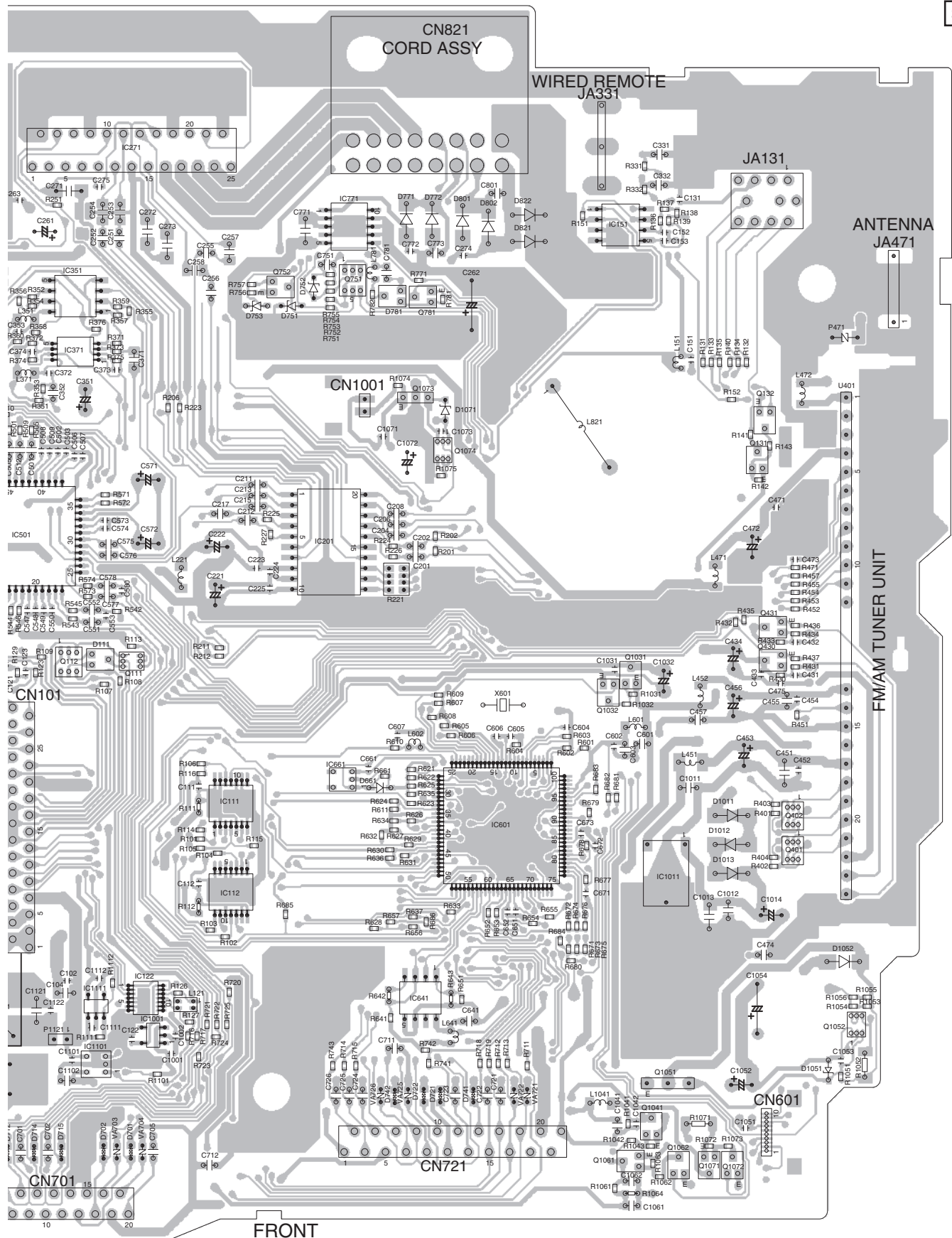


- ⚠ P 1121 (A,68,26) Fuse 3 A CEK1286
- ⚠ P 1131 (A,54,48) Fuse 3 A CEK1286
- ⚠ P 1191 (A,30,28) Fuse 4 A CEK1344

A TUNER AMP UNIT



SIDE A



A

A TUNER AMP UNIT

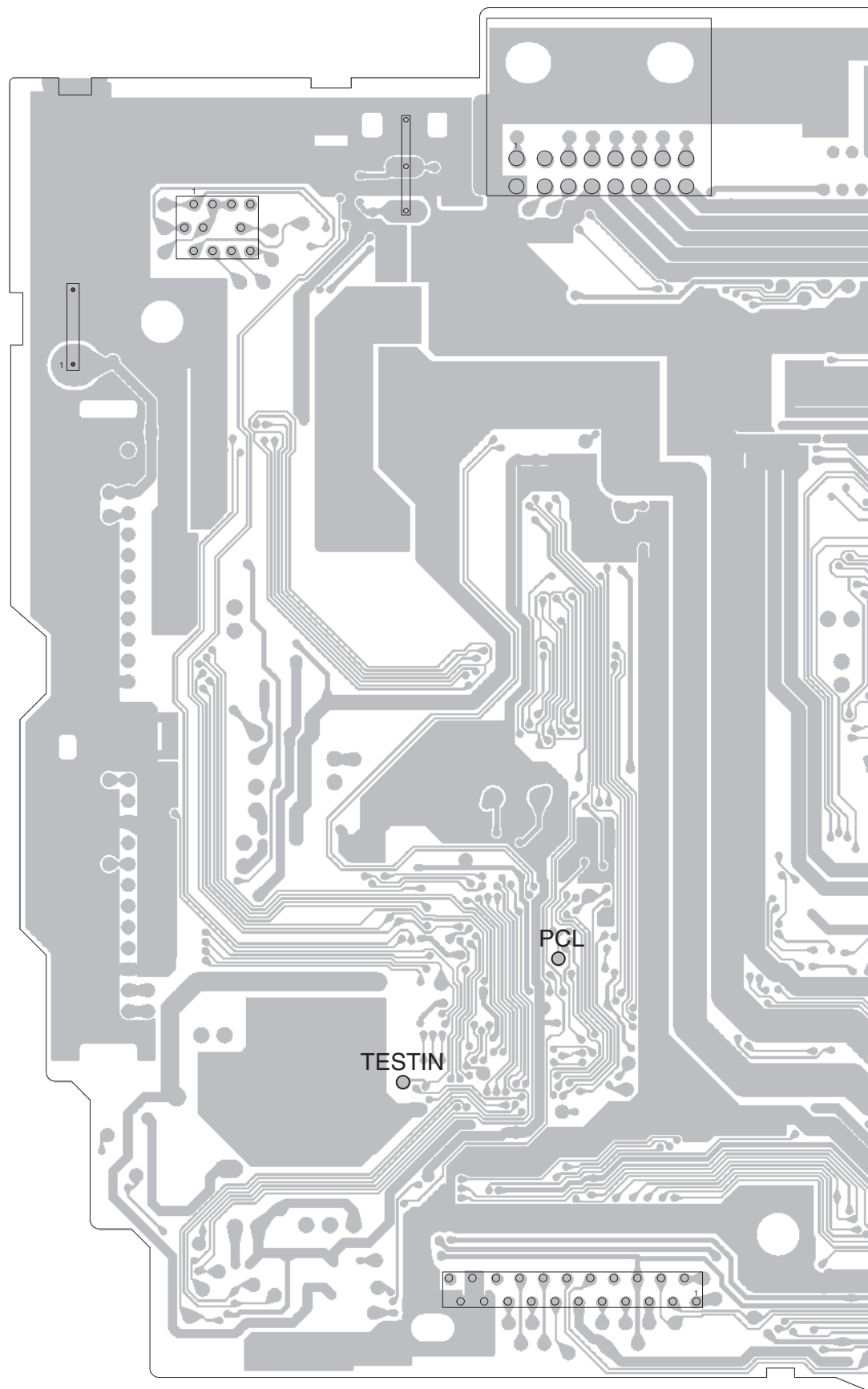
B

C

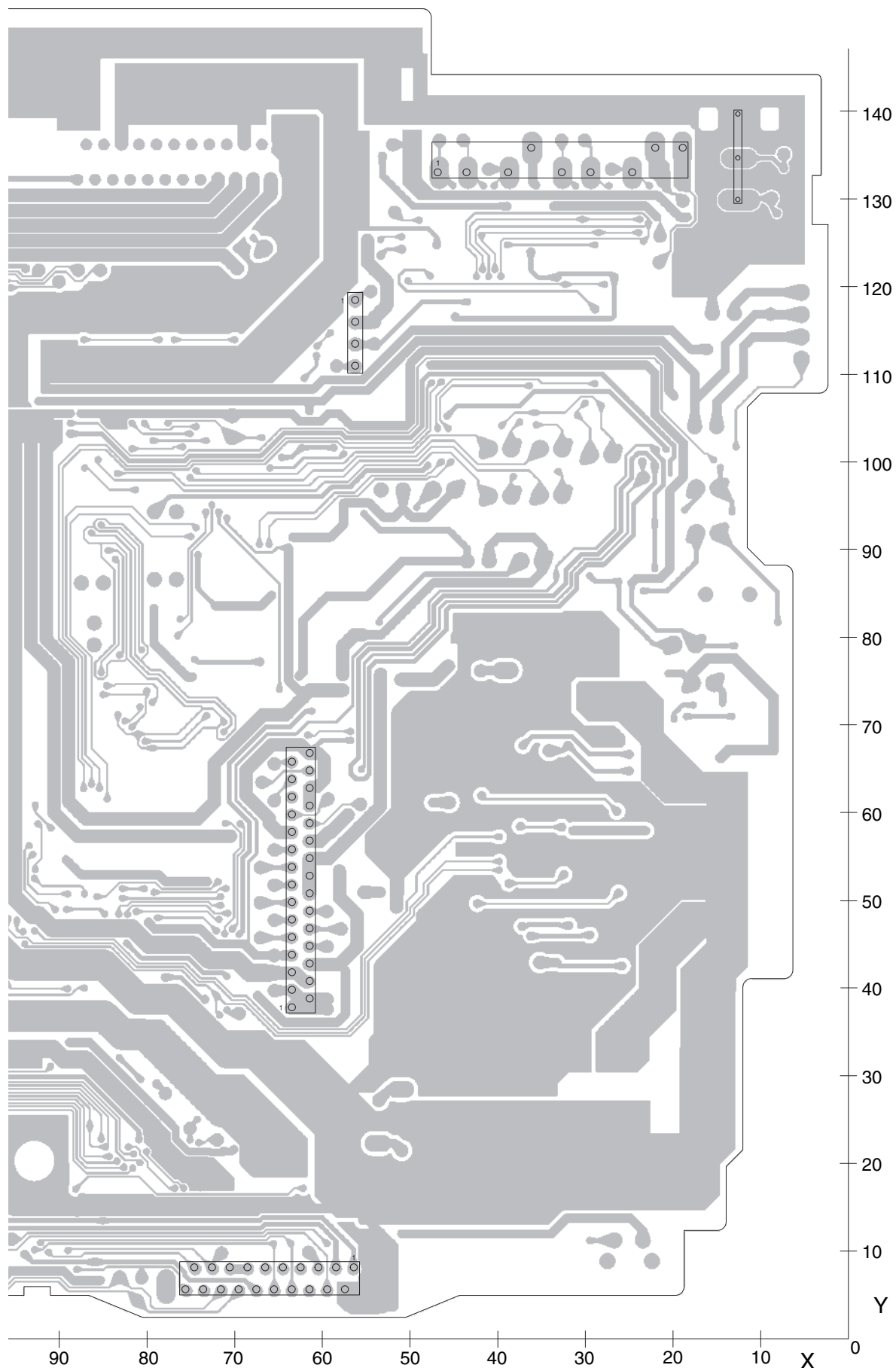
D

E

F

**A**

SIDE B



DVH-3100UB/XN/UW5

A

F

E

D

C

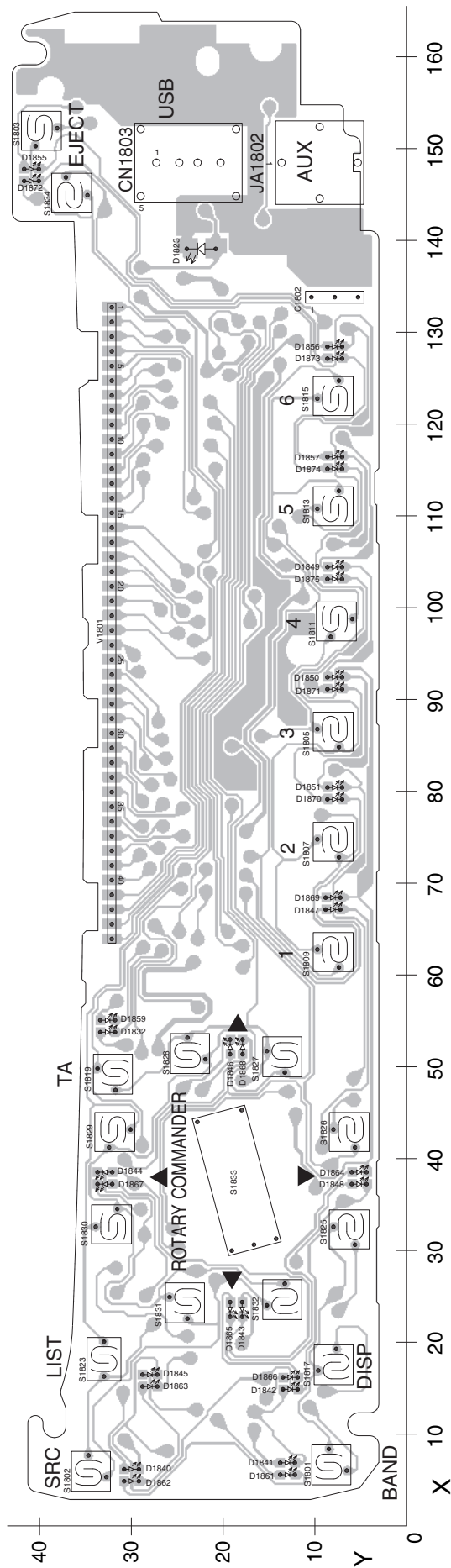
B

A

11.2 KEYBOARD UNIT

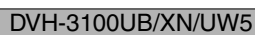
B KEYBOARD UNIT

SIDE A



DVH-3100UB/XN/UW5

115



C DVD CORE UNIT

PICKUP UNIT (SERVICE)

D CN701

CN1201

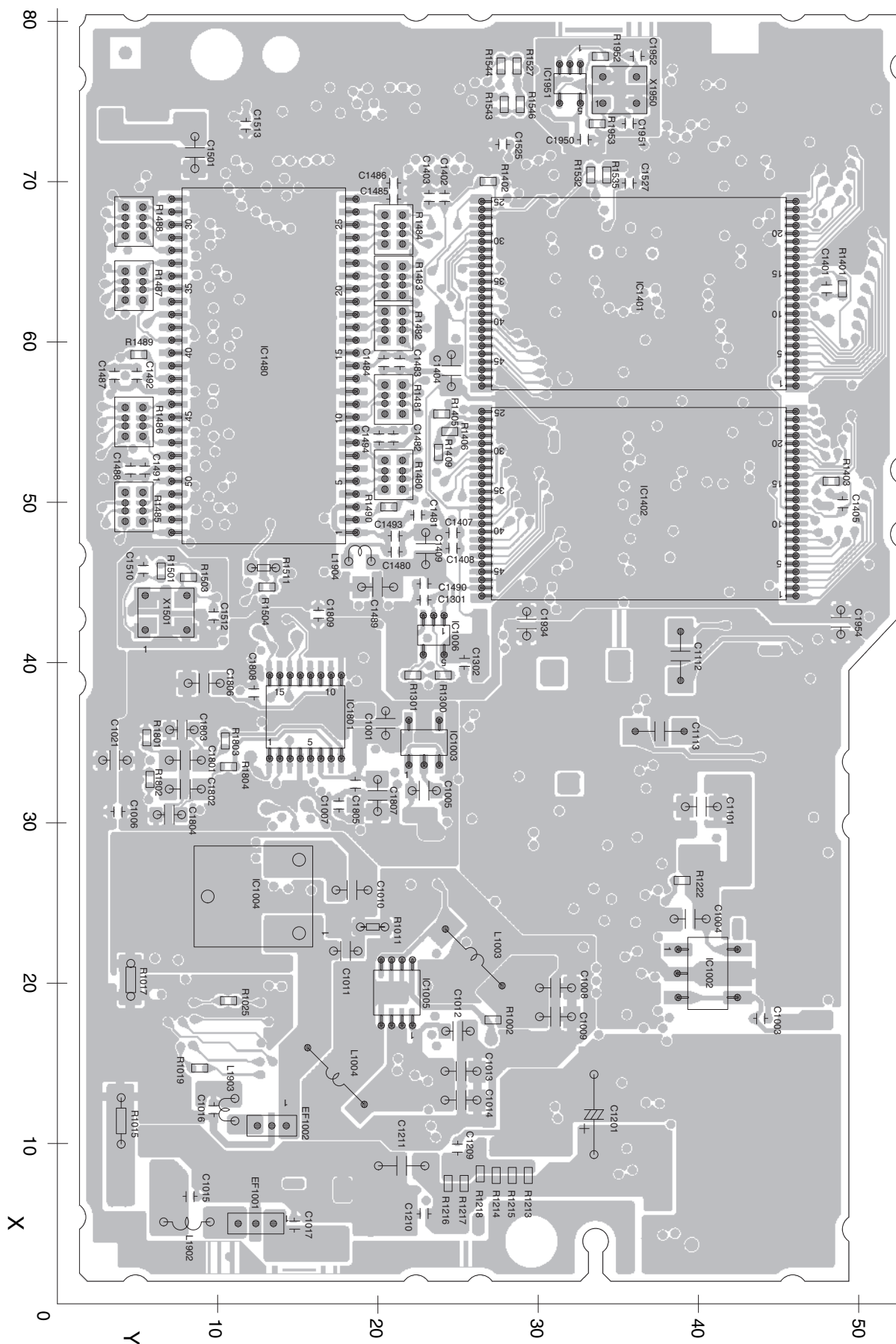
CN1901

A CN101

X

>

DVH-3100UB/XN/UW5



11.4 CONNECT PCB

D CONNECT PCB

SIDE A

A

B

C

D

E

F

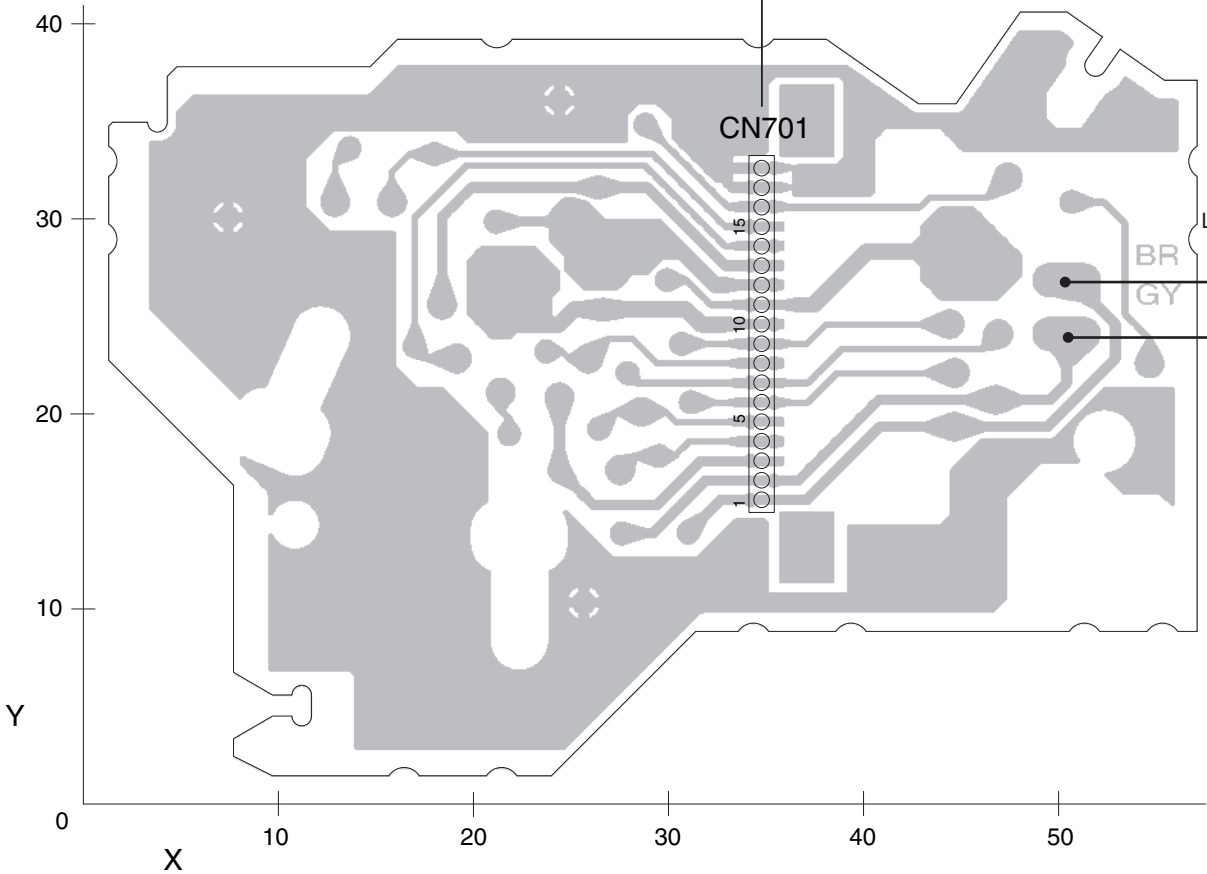
C CN1201

CN701

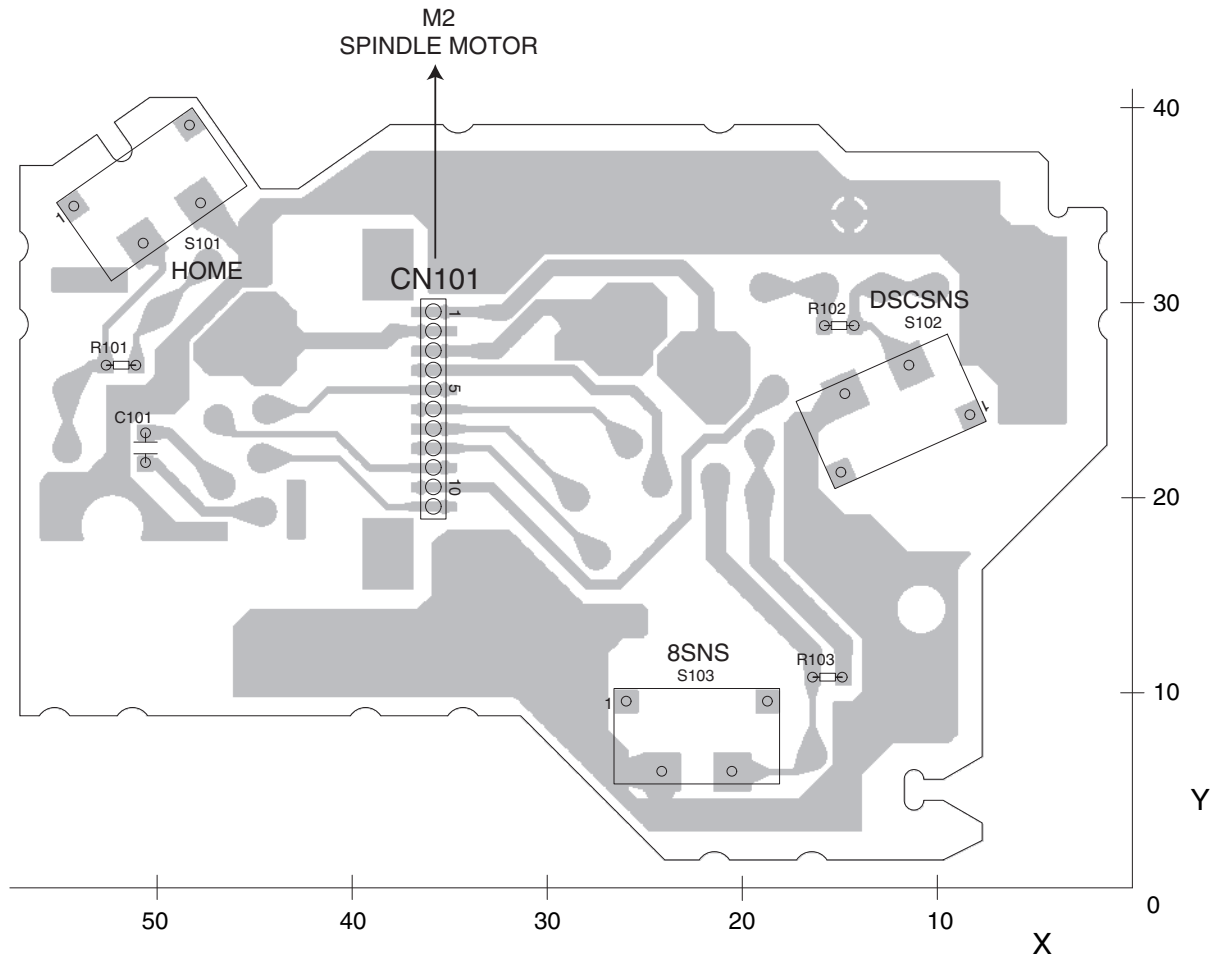
M1
LOAD/CRG
MOTOR

BR
GY

M



D



12. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○○○○○J, RS1/○○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

- The expression of the unit in this manual is shown by u instead of μ . Please do not make a mistake.

Circuit Symbol and No.

Part No.

Circuit Symbol and No.

Part No.

Unit Number: CWN3739

Unit Name : Tuner Amp Unit

Unit Number:

Unit Name : Keyboard Unit

Unit Number: YWX5007

Unit Name : DVD Core Unit

Unit Number:

Unit Name : Connect PCB

Q 292	(A,46,128) Transistor	DTC323TU
Q 321	(A,11,124) Transistor	2SA1579
Q 401	(A,156,49) Transistor	UMH1N
Q 402	(A,156,53) Transistor	UMH1N
Q 751	(A,103,118) Transistor	IMX1

Q 781	(A,112,116) Chip Transistor	2SA1576A
Q 1041	(A,139,16) Chip Transistor	2SA1576A
Q 1051	(A,141,21) Transistor	2SD1858
Q 1052	(A,164,28) Transistor	UMD2N
Q 1061	(A,137,12) Chip Transistor	2SA1576A

Q 1062	(A,142,11) Chip Transistor	DTC114EUA
Q 1151	(A,33,42) FET	HAT2210RJ
Q 1191	(A,33,68) FET	HAT2210RJ
D 111	(A,73,72) Diode	DAP202U
D 701	(A,76,13) Diode	MALS068X

D 702	(A,73,13) Diode	MALS068X
D 712	(A,61,13) Diode	MALS068X
D 713	(A,60,13) Diode	MALS068X
D 714	(A,65,13) Diode	MALS068X
D 751	(A,96,115) Diode	HZU7L(C3)

D 752	(A,98,117) Diode	HZU7L(A1)
D 781	(A,108,116) Diode	DAN202U
D 801	(A,116,125) Diode	1SR154-400
D 802	(A,119,125) Diode	1SR154-400
D 821	(A,124,123) Diode	1SR154-400

D 822	(A,124,126) Diode	1SR154-400
D 1021	(A,15,110) Diode	1SR154-400
D 1051	(A,161,23) Diode	UDZS5R6(B)
D 1052	(A,162,36) Diode	1SR154-400
D 1141	(A,44,60) Diode	RB551V-30

D 1142	(A,41,48) Diode	RB551V-30
D 1192	(A,60,20) Diode	RSX201L-30
D 1193	(A,60,23) Diode	RSX201L-30
L 101	(A,57,63) Inductor	CTF1389
L 181	(A,27,93) Inductor	LCYC100K2125

L 182	(A,46,107) Inductor	CTF1383
L 221	(A,82,82) Inductor	LCTAW2R2J2520
L 321	(A,15,125) Inductor	CTF1389
L 451	(A,144,60) Inductor	LCTAW2R2J3225
L 452	(A,145,68) Chip Coil	LCTAW100J2520

A

Unit Number: CWN3739

Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 111	(A,88,55) IC	TC74VHCT08AFTS1
IC 112	(A,88,44) IC	TC74VHC08FTS1
IC 122	(A,78,31) IC	TC7MBL6126SFK
IC 181	(A,25,89) IC	TK15405BMI
IC 201	(A,100,87) IC	PML014A

IC 271	(A,76,138) IC	PA2030A
IC 311	(A,18,125) L-MOS And Gate	TC7SET08FUS1
IC 601	(A,121,52) IC	PEG524A8
IC 661	(A,102,58) IC	BD4835G
IC 1001	(A,79,27) IC	S-1200B33-M5

IC 1011	(A,141,45) IC	NJM2885DL1-33
IC 1021	(A,6,119) IC	NJM2388F84
IC 1101	(A,72,23) IC	R5523N001B
IC 1103	(A,31,55) IC	BD9013KV
IC 1111	(A,72,30) IC	S-1200B33-M5

Q 111	(A,76,72) Transistor	UMD3N
Q 112	(A,69,72) Transistor	IMH23
Q 261	(A,50,123) Transistor	UMD2N
Q 282	(A,33,123) Transistor	IMH3A
Q 291	(A,46,125) Transistor	UMD2N

5			6			7			8		
<u>Circuit Symbol and No.</u>			<u>Part No.</u>			<u>Circuit Symbol and No.</u>			<u>Part No.</u>		
L 471	(A,147,82)	Chip Coil	LCTAW1R0J2520			R 251	(A,67,127)		RS1/16SS102J		
L 472	(A,157,104)	Inductor	LCTAW220J2520			R 261	(A,48,126)		RS1/16SS103J		
L 601	(A,137,64)	Chip Coil	LCTAW100J2520			R 262	(A,50,125)		RS1/16SS103J		A
L 781	(A,106,119)	Inductor	CTF1379			R 263	(A,51,127)		RS1/16SS221J		
L 821	(A,135,95)	Choke Coil 600 uH	CTH1280			R 283	(A,30,120)		RS1/16SS821J		
						R 284	(A,36,121)		RS1/16SS821J		
L 1041	(A,133,19)	Chip Coil	LCTAW4R7J2520			R 287	(A,31,125)		RS1/16SS223J		
L 1108	(A,46,68)	Inductor	CTH1253								
L 1141	(A,28,65)	Inductor	CTF1661			R 288	(A,33,126)		RS1/16SS223J		
L 1151	(A,30,48)	Inductor	CTF1661			R 291	(A,47,123)		RS1/16S102J		
L 1152	(A,28,45)	Inductor	CTF1661			R 292	(A,44,129)		RS1/16SS0R0J		
						R 299	(A,41,129)		RS1/16SS0R0J		
L 1153	(A,46,42)	Inductor	CTH1253			R 301	(A,19,129)		RS1/16SS0R0J		
L 1191	(A,28,67)	Inductor	CTF1661								
L 1192	(A,18,46)	Inductor	CTH1253			R 311	(A,20,122)		RS1/16SS0R0J		
X 601	(A,121,67)	Crystal Resonator 15,000 MHz	CSS1774			R 312	(A,20,124)		RS1/16SS621J		B
P 291	(A,37,127)	Poly Switch	MINISMDC075F/24			R 313	(A,20,126)		RS1/16SS473J		
						R 314	(A,17,122)		RS1/16SS0R0J		
P 292	(A,53,130)	Poly Switch	MINISMDC075F/24			R 315	(A,15,126)		RS1/16SS121J		
P 471	(A,163,111)	Surge Protector	CSA30-201N								
△P1121	(A,68,26)	Fuse 3 A	CEK1286			R 322	(A,9,124)		RS1/16SS104J		
△P1131	(A,54,48)	Fuse 3 A	CEK1286			R 323	(A,13,126)		RS1/16SS103J		
△P1191	(A,30,28)	Fuse 4 A	CEK1344			R 331	(A,138,132)		RS1/16SS102J		
						R 332	(A,138,129)		RS1/16SS102J		
VA321	(A,10,126)	Varistor	EZJZ1V270RM			R 401	(A,154,54)		RS1/16SS223J		
VA322	(A,15,122)	Varistor	EZJZ1V800AM								
VA703	(A,75,13)	Varistor	EZJZ1V270RM			R 402	(A,154,47)		RS1/16SS223J		
VA704	(A,78,13)	Varistor	EZJZ1V270RM			R 403	(A,154,55)		RS1/16SS223J		
						R 404	(A,154,48)		RS1/16SS223J		C
						R 436	(A,157,76)		RS1/16SS0R0J		
						R 437	(A,157,72)		RS1/16SS0R0J		
RESISTORS											
R 101	(A,85,51)		RS1/16SS471J			R 451	(A,157,66)		RS1/16SS681J		
R 102	(A,88,39)		RS1/16SS102J			R 452	(A,157,78)		RS1/16SS681J		
R 103	(A,86,40)		RS1/16SS471J			R 453	(A,157,79)		RS1/16SS681J		
R 104	(A,87,49)		RS1/16SS221J			R 454	(A,157,80)		RS1/16SS681J		
R 105	(A,85,50)		RS1/16SS221J			R 455	(A,157,81)		RS1/16SS681J		
R 106	(A,85,60)		RS1/16SS471J			R 457	(A,157,82)		RS1/16SS681J		
R 107	(A,73,69)		RS1/16SS471J			R 471	(A,157,83)		RS1/16SS681J		
R 108	(A,75,70)		RS1/16SS471J			R 601	(A,131,62)		RS1/16SS104J		
R 109	(A,65,73)		RS1/16SS0R0J			R 602	(A,129,62)		RS1/16SS104J		D
R 111	(A,84,55)		RS1/16S0R0J			R 603	(A,129,63)		RS1/16SS472J		
R 112	(A,84,42)		RS1/16S0R0J			R 604	(A,123,62)		RS1/16SS0R0J		
R 113	(A,76,74)		RS1/16SS102J			R 605	(A,114,64)		RS1/16SS473J		
R 126	(A,82,32)		RS1/16SS0R0J			R 606	(A,115,63)		RS1/16SS104J		
R 127	(A,83,29)		RS1/16SS0R0J			R 607	(A,113,67)		RS1/16SS104J		
R 128	(A,59,61)		RS1/16SS391J			R 608	(A,113,65)		RS1/16SS104J		
R 155	(A,14,69)		RS1/16SS0R0J			R 609	(A,113,68)		RS1/16SS104J		
R 173	(A,14,72)		RS1/16SS0R0J			R 610	(A,108,62)		RS1/16SS471J		
R 181	(A,28,90)		RS1/16SS473J			R 611	(A,108,54)		RS1/16SS104J		
R 182	(A,49,107)		RS1/16SS390J			R 623	(A,110,55)		RS1/16SS221J		
R 183	(A,48,107)		RS1/16SS330J			R 624	(A,108,55)		RS1/16SS221J		E
R 184	(A,28,87)		RS1/16SS3302D			R 626	(A,110,53)		RS1/16SS102J		
R 185	(A,29,87)		RS1/16SS6802D			R 627	(A,108,52)		RS1/16SS104J		
R 201	(A,113,85)		RS1/16SS0R0J			R 629	(A,110,50)		RS1/16SS102J		
R 202	(A,113,87)		RS1/16SS0R0J			R 630	(A,108,49)		RS1/16SS102J		
R 206	(A,81,103)		RS1/16SS0R0J			R 631	(A,109,49)		RS1/16SS104J		
R 211	(A,87,74)		RS1/16SS0R0J			R 632	(A,107,51)		RS1/16SS104J		
R 212	(A,87,73)		RS1/16SS0R0J			R 633	(A,115,42)		RS1/16SS473J		
R 221	(A,108,82)		RAB4C102J			R 634	(A,108,53)		RS1/16SS473J		
R 223	(A,82,103)		RS1/16SS0R0J			R 635	(A,110,56)		RS1/16SS104J		
R 224	(A,108,86)		RS1/16SS101J			R 636	(A,108,48)		RS1/16SS104J		F
R 225	(A,93,89)		RS1/16SS101J			R 637	(A,110,41)		RS1/16SS104J		
R 226	(A,108,85)		RS1/16SS101J			R 641	(A,108,29)		RS1/16SS473J		
R 227	(A,93,87)		RS1/16SS101J			R 652	(A,119,42)		RS1/16SS102J		

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Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

R 653 (A,120,42) RS1/16SS102J
R 654 (A,125,40) RS1/16SS681J

R 1174 (A,39,57)
R 1181 (A,41,58)

RS1/16SS471J
RS1/16SS303J

A

R 655 (A,127,41) RS1/16SS471J
R 661 (A,107,58) RS1/16SS474J
R 677 (A,131,46) RS1/16SS681J
R 678 (A,131,50) RS1/16SS681J
R 679 (A,132,54) RS1/16SS471J

R 1182 (A,42,57)
R 1183 (A,43,55)
R 1184 (A,43,54)
R 1187 (A,46,54)
R 1188 (A,38,66)

RS1/16SS9101D
RS1/16SS0R0J
RS1/16SS8202D
RS1/16S0R0J
RS1/10S2R2J

R 680 (A,129,36) RS1/16SS473J
R 681 (A,135,56) RS1/16SS104J
R 682 (A,134,56) RS1/16SS103J
R 684 (A,128,38) RS1/16SS104J
R 711 (A,124,23) RS1/16SS222J

R 1189 (A,25,49)
R 1190 (A,26,62)
R 1191 (A,44,58)

RS1/10SR103J
RS1/10SR103J
RS1/16S102J

CAPACITORS

B

R 712 (A,121,24) RS1/16SS222J
R 713 (A,122,24) RS1/16SS222J
R 714 (A,102,23) RS1/16SS222J
R 715 (A,103,23) RS1/16SS222J
R 716 (A,83,27) RS1/16SS0R0J

C 101 (A,58,41)
C 102 (A,69,34)
C 104 (A,68,32)
C 111 (A,84,57)
C 112 (A,84,45)

CKSSYB104K16
CKSSYB104K10
CKSQYB475K6R3
CKSSYB104K16
CKSSYB104K16

■

R 717 (A,84,27) RS1/16SS0R0J
R 718 (A,118,24) RS1/16SS222J
R 719 (A,120,24) RS1/16SS222J
R 720 (A,88,32) RS1/16SS0R0J
R 721 (A,85,28) RS1/16SS0R0J

C 122 (A,76,26)
C 174 (A,17,92)
C 181 (A,17,97)
C 182 (A,14,85)
C 183 (A,28,89)

CKSSYB104K16
CEJQ470M6R3
CEJQ220M10
CEJQ331M6R3
CKSSYB104K16

C

R 722 (A,87,28) RS1/16SS0R0J
R 723 (A,84,24) RS1/16SS223J
R 724 (A,87,27) RS1/16SS223J
R 751 (A,100,115) RS1/16SS104J
R 752 (A,100,116) RS1/16SS473J

C 184 (A,19,79)
C 201 (A,111,85)
C 202 (A,111,86)
C 204 (A,108,87)
C 206 (A,108,89)

CEJQ330M10
CKSRYB105K10
CKSRYB105K10
CKSRYB105K10
CKSRYB105K10

■

R 753 (A,100,117) RS1/16SS103J
R 754 (A,100,118) RS1/16SS473J
R 755 (A,100,119) RS1/16SS472J
R 781 (A,114,116) RS1/16SS472J
R 782 (A,105,116) RS1/16SS153J

C 208 (A,108,90)
C 211 (A,92,93)
C 212 (A,90,89)
C 213 (A,92,92)
C 215 (A,92,91)

CKSRYB224K16
CKSRYB224K16
CKSRYB105K10
CKSRYB105K10
CKSRYB105K10

D

R 1021 (A,14,100) RS1/16SS102J
R 1022 (A,19,100) RS1/16SS473J
R 1041 (A,136,16) RS1/16SS222J
R 1042 (A,137,14) RS1/16SS682J
R 1043 (A,139,14) RS1/16SS223J

C 217 (A,87,90)
C 221 (A,86,80)
C 222 (A,87,86)
C 223 (A,91,83)
C 251 (A,75,123)

CKSRYB105K10
CEJQ100M16
CEJQ470M16
CKSSYB104K16
CKSRYB474K10

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R 1051 (A,162,22) RS1/16SS223J
R 1052 (A,165,23) RS1/4SA222J
R 1053 (A,165,30) RS1/16SS390J
R 1054 (A,164,30) RS1/16SS390J
R 1055 (A,165,32) RS1/16SS390J

C 252 (A,73,123)
C 253 (A,75,126)
C 254 (A,73,126)
C 255 (A,85,121)
C 256 (A,86,117)

CKSRYB474K10
CKSQYB474K16
CKSQYB474K16
CKSRYB474K10
CKSRYB474K10

E

R 1056 (A,164,32) RS1/16SS390J
R 1061 (A,135,8) RS1/16SS1R0J
R 1062 (A,140,10) RS1/16SS472J
R 1063 (A,139,11) RS1/16SS103J
R 1064 (A,137,8) RS1/16S104J

C 257 (A,88,122)
C 258 (A,84,119)
C 261 (A,66,124)
C 262 (A,117,115)
C 263 (A,63,128)

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CKSQYB474K16
CKSQYB474K16
CEJQ330M10
CCH1486
CKSSYB104K16

■

R 1101 (A,79,22) RS1/16SS104J
R 1112 (A,74,33) RS1/16SS0R0J
R 1141 (A,26,62) RS1/10S100J
R 1142 (A,26,45) RS1/10S100J
R 1161 (A,37,48) RS1/10S2R2J

C 271 (A,69,129)
C 272 (A,78,124)
C 273 (A,81,122)
C 274 (A,116,121)
C 283 (A,34,96)

10 uF

CCG1182
CKSYB475K16
CKSYB475K16
CKSSYB473K16
CEJQ2R2M50

F

R 1162 (A,45,49) RS1/16S0R0J
R 1164 (A,45,52) RS1/16SS4702D
R 1165 (A,43,52) RS1/16SS6801D
R 1166 (A,42,54) RS1/16SS1002F
R 1167 (A,42,51) RS1/16SS223J

C 284 (A,40,96)
C 287 (A,31,126)
C 288 (A,33,125)
C 311 (A,21,124)
C 312 (A,18,123)

CEJQ2R2M50
CKSSYB102K50
CKSSYB102K50
CCSSCH150J50
CKSQYB106K6R3

R 1171 (A,39,53) RS1/16SS0R0J
R 1172 (A,39,54) RS1/16SS0R0J
R 1173 (A,38,56) RS1/16SS823J

C 313 (A,19,122)
C 331 (A,140,133)

CKSSYB104K10
CKSRYB104K16

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Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

R 1829 (B,83,13)
R 1830 (B,48,31)
R 1847 (B,19,11)
R 1923 (B,137,19)
R 1924 (B,138,22)

RS1/16S222J
RS1/4SA122J
RS1/16S0R0J
RS1/16S0R0J
RS1/16S0R0J

R 1111 (A,38,39)
R 1112 (A,38,38)
R 1113 (A,49,46)
R 1114 (A,48,46)
R 1115 (A,41,38)

RS1/10SR1R5J
RS1/10SR1R5J
RS1/10SR1R5J
RS1/10SR1R5J
RS1/10SR1R5J

CAPACITORS

C 1801 (B,126,6)
C 1802 (B,99,10)
C 1803 (B,138,9)
C 1804 (B,141,12)

CKSYF106Z10
CKSRYB105K16
CKSRYB472K50
CKSRYB472K50

R 1116 (A,41,39)
R 1117 (A,48,43)
R 1118 (A,49,43)
R 1201 (A,16,36)
R 1202 (A,17,35)

R 1203 (A,22,35)
R 1204 (A,19,35)
R 1212 (A,7,36)
R 1213 (B,8,29)
R 1214 (B,8,27)

RS1/10SR1R5J
RS1/10SR1R5J
RS1/10SR1R5J
RS1/16SS221J
RS1/16SS221J

RS1/16SS103J
RS1/16SS153J
RS1/16SS271J
RS1/16SS1R0J
RS1/16SS1R0J

C**Unit Number : YWX5007****Unit Name : DVD Core Unit****MISCELLANEOUS**

IC 1002 (B,21,41) Regulator IC S-1133B50-U5
IC 1003 (B,35,23) IC S-1200B50-M5
IC 1004 (B,25,11) IC NJM2885DL1-33
IC 1005 (B,19,21) IC R1232D121B
IC 1201 (A,15,29) IC BD8231EFV

*IC1401 (B,63,36) Flash ROM Unit CWW1753
*IC1402 (B,50,36) Flash ROM Unit CWW1754
IC 1480 (B,59,13) SDRAM(64M) K4S641632N-LC75
IC 1501 (A,60,20) IC MN2DS0018MAUB
IC 1801 (B,37,16) D/A Converter PCM1753DBQ

IC 1951 (B,76,32) Logic IC TC7SZU04FU
Q 1101 (A,35,39) Transistor 2SC4081
Q 1102 (A,46,42) Transistor 2SC4081
Q 1103 (A,38,45) Transistor 2SB1132
Q 1104 (A,45,49) Transistor 2SB1132

L 1003 (B,22,26) Inductor CTF1677
L 1004 (B,14,17) Inductor CTF1678
L 1512 (A,57,5) Inductor CTF1743
L 1902 (B,5,8) Inductor CTF1487
L 1903 (B,12,11) Inductor CTF1558

L 1904 (B,46,19) Inductor CTF1473
X 1501 (B,43,7) Oscillator 27.000 MHz CSS1768
X 1950 (B,76,35) Oscillator 48.000 MHz CSS1760
EF1001 (B,5,12) Chip EMI Filter DTF1106
EF1002 (B,11,13) Chip EMI Filter DTL1106

RESISTORS

R 1002 (B,18,27) RS1/16SS101J
R 1004 (A,29,27) RS1/16SS4702D
R 1007 (A,29,26) RS1/16SS6801D
R 1019 (B,15,9) RS1/16SS101J
R 1021 (A,27,15) RS1/16SS0R0J

R 1025 (B,19,11) RS1/16SS101J
R 1027 (A,27,19) RS1/16SS101J
R 1101 (A,35,36) RS1/16SS104J
R 1102 (A,43,42) RS1/16SS104J
R 1103 (A,34,41) RS1/16SS391J

R 1104 (A,36,36) RS1/16SS511J
R 1105 (A,42,44) RS1/16SS391J
R 1106 (A,45,39) RS1/16SS561J
R 1109 (A,34,43) RS1/16SS3R3J
R 1110 (A,41,43) RS1/16SS3R3J

R 1215 (B,8,28)
R 1216 (B,8,24)
R 1217 (B,8,25)
R 1218 (B,8,26)
R 1222 (B,26,39)

R 1300 (B,39,24)
R 1401 (B,63,49)
R 1402 (B,70,27)
R 1405 (B,56,24)
R 1406 (B,54,25)

R 1480 (B,52,21)
R 1481 (B,56,21)
R 1482 (B,61,21)
R 1483 (B,64,21)
R 1484 (B,67,21)

R 1485 (B,50,5)
R 1486 (B,55,5)
R 1487 (B,64,5)
R 1488 (B,68,5)
R 1489 (B,59,5)

R 1490 (B,50,21)
R 1501 (B,46,7)
R 1503 (B,45,8)
R 1504 (B,45,13)
R 1505 (A,43,13)

R 1506 (A,37,14)
R 1507 (A,44,14)
R 1508 (A,43,15)
R 1509 (A,63,35)
R 1510 (A,64,35)

R 1511 (B,46,13)
R 1512 (A,58,5)
R 1513 (A,66,35)
R 1514 (A,68,35)
R 1516 (A,65,36)

R 1517 (A,76,16)
R 1518 (A,74,24)
R 1519 (A,70,34)
R 1522 (A,65,38)
R 1523 (A,66,37)

R 1524 (A,64,37)
R 1525 (A,71,34)
R 1526 (A,67,34)
R 1527 (B,77,29)
R 1528 (A,78,20)

RS1/16SS1R0J
RS1/16SS1R0J
RS1/16SS1R0J
RS1/16SS1R0J
RS1/16SS271J

RS1/16SS0R0J
RS1/16SS221J
RS1/16SS104J
RS1/16SS104J
RS1/16SS104J

RAB4CQ560J
RAB4CQ560J
RAB4CQ560J
RAB4CQ560J
RAB4CQ560J

RAB4CQ560J
RAB4CQ560J
RAB4CQ560J
RAB4CQ560J
RS1/16SS560J

RS1/16SS560J
RS1/16SS122J
RS1/16SS105J
RS1/16SS120J
RS1/16SS101J

RS1/16SS101J
RS1/16SS101J
RS1/16SS221J
RS1/16SS102J
RS1/16SS102J

RS1/16S0R0J
RS1/16SS101J
RS1/16SS103J
RS1/16SS183J
RS1/16SS103J

RS1/16SS103J
RS1/16SS103J
RS1/16SS102J
RS1/16SS104J
RS1/16SS221J

RS1/16SS472J
RS1/16SS103J
RS1/16SS103J
RS1/16SS682J
RS1/16SS103J

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 1529	(A,76,18)	RS1/16SS103J		C 1107	(A,41,49)	CKSSYB103K16	A
R 1530	(A,77,20)	RS1/16SS103J		C 1108	(A,74,42)	CKSSYB103K16	
R 1531	(A,75,24)	RS1/16SS103J		C 1109	(A,56,41)	CKSRYB224K10	
R 1532	(B,70,33)	RS1/16SS101J		C 1110	(A,71,42)	CKSSYB103K16	
R 1534	(A,78,30)	RS1/16SS221J		C 1111	(A,61,39)	CKSRYB224K10	
R 1535	(B,70,34)	RS1/16SS104J		C 1112	(B,40,39) 22 uF	CCG1178	
R 1536	(A,78,31)	RS1/16SS104J		C 1113	(B,36,38) 22 uF	CCG1178	
R 1537	(A,73,35)	RS1/16SS104J		C 1201	(B,12,34)	CEVW101M16	
R 1538	(A,61,4)	RS1/16SS104J		C 1204	(A,8,24)	CKSSYB222K50	
R 1539	(A,77,23)	RS1/16SS104J		C 1205	(A,13,23)	CKSSYB104K16	
R 1540	(A,73,32)	RS1/16SS221J		C 1207	(A,22,25)	CKSSYB104K16	B
R 1541	(A,75,32)	RS1/16SS221J		C 1208	(A,15,36)	CKSSYB103K16	
R 1542	(A,77,29)	RS1/16SS103J		C 1209	(B,10,25)	CKSSYB104K16	
R 1543	(B,75,28)	RS1/16SS181J		C 1210	(B,6,23)	CKSSYB104K16	
R 1544	(B,77,28)	RS1/16SS181J		C 1211	(B,9,22)	CKSYB475K16	
R 1546	(B,75,29)	RS1/16SS682J		C 1401	(B,63,48)	CKSSYB103K16	
R 1601	(A,42,25)	RS1/16SS123J		C 1403	(B,69,23)	CKSSYB104K10	
R 1602	(A,44,25)	RS1/16SS123J		C 1404	(B,58,25)	CKSQYB475K6R3	
R 1603	(A,43,30)	RN1/16SE1002D		C 1408	(B,47,25)	CKSSYB104K10	
R 1604	(A,50,35)	RS1/16SS105J		C 1409	(B,47,23)	CKSQYB475K6R3	
R 1605	(A,49,37)	RS1/16SS105J		C 1480	(B,47,21)	CKSSYB104K10	C
R 1670	(A,34,21)	RS1/16SS1002D		C 1481	(B,49,23)	CKSSYB104K10	
R 1671	(A,36,21)	RS1/16SS2402D		C 1482	(B,54,21)	CKSSYB104K10	
R 1672	(A,45,19)	RS1/16SS2000D		C 1484	(B,59,20)	CKSSYB104K10	
R 1674	(A,45,20)	RS1/16SS3002D		C 1485	(B,69,21)	CKSSYB104K10	
R 1801	(B,35,6)	RS1/16SS104J		C 1487	(B,58,4)	CKSSYB104K10	
R 1802	(B,33,6)	RS1/16SS104J		C 1488	(B,52,5)	CKSSYB104K10	
R 1803	(B,35,11)	RS1/16SS821J		C 1489	(B,45,20)	CKSQYB106K6R3	
R 1804	(B,34,11)	RS1/16SS821J		C 1490	(B,45,23)	CKSSYB102K50	
R 1950	(A,42,16)	RS1/16S24R0F		C 1501	(B,72,9)	CKSQYB106K6R3	
R 1951	(A,42,18)	RS1/16S24R0F		C 1502	(A,35,32)	CKSQYB106K6R3	D
R 1952	(B,78,34)	RS1/16SS105J		C 1503	(A,60,4)	CKSSYB104K10	
R 1953	(B,74,34)	RS1/16SS681J		C 1504	(A,51,5)	CKSSYB104K10	
R 1954	(A,35,17)	RS1/16SS153J		C 1505	(A,53,5)	CKSSYB104K10	
R 1955	(A,40,14)	RS1/16SS153J		C 1506	(A,55,5)	CKSSYB104K10	
R 1956	(A,40,18)	RS1/16SS0R0J		C 1507	(A,62,5)	CKSSYB104K10	
R 1957	(A,40,15)	RS1/16SS0R0J		C 1508	(A,66,5)	CKSSYB104K10	
<u>CAPACITORS</u>				C 1509	(A,69,5)	CKSSYB104K10	
C 1001	(B,36,21)	CKSRYB105K10		C 1510	(B,46,5)	CCSSCH120J50	
C 1003	(B,18,44)	CKSSYB104K16		C 1511	(A,46,9)	CKSSYB104K10	
C 1004	(B,24,40)	CKSQYB475K10		C 1512	(B,43,10)	CCSSCH100D50	E
C 1005	(B,32,23)	CKSRYB105K16		C 1513	(B,74,12)	CKSSYB104K10	
C 1008	(B,20,31) 10 uF	DCH1201		C 1514	(A,46,13)	CKSSYB104K10	
C 1009	(B,18,31) 10 uF	DCH1201		C 1515	(A,45,15)	CKSSYB104K10	
C 1010	(B,26,18)	CKSQYB225K10		C 1516	(A,75,15)	CKSSYB104K10	
C 1011	(B,22,18)	CKSRYB105K10		C 1517	(A,74,16)	CKSSYB104K10	F
C 1013	(B,15,25) 10 uF	DCH1201		C 1518	(A,75,22)	CKSSYB104K10	
C 1014	(B,13,25) 10 uF	DCH1201		C 1519	(A,74,26)	CKSSYB104K10	
C 1015	(B,7,8)	CKSSYB102K50		C 1520	(A,75,30)	CKSSYB104K10	
C 1016	(B,12,10)	CKSSYB102K50		C 1521	(A,60,37)	CKSSYB104K10	
C 1018	(A,28,28)	CKSSYB104K10		C 1522	(A,65,34)	CKSSYB104K10	
C 1019	(A,10,17)	CKSSYB104K10		C 1523	(A,68,37)	CKSSYB104K10	
C 1021	(B,34,4)	CCSRCH681J50		C 1524	(A,69,37)	CKSSYB473K10	
C 1022	(A,23,21)	CCSRCH681J50		C 1526	(A,68,37)	CKSSYB103K16	
C 1101	(B,31,40) 10 uF	DCH1201		C 1528	(A,78,29)	CCSSCH471J16	
C 1104	(A,34,42)	CKSSYB104K10		C 1601	(A,44,29)	CKSSYB103K16	
C 1105	(A,42,45)	CKSSYB104K10		C 1602	(A,42,24)	CCSSCH101J50	
C 1106	(A,37,48)	CKSSYB103K16		C 1603	(A,44,27)	CCSSCH101J50	
				C 1604	(A,41,27)	CCSSCH680J50	
				C 1605	(A,43,27)	CCSSCH680J50	

Circuit Symbol and No.**Part No.**

A	C 1606	(A,41,23)	CKSSYB104K10
	C 1607	(A,41,35)	CKSQYB106K6R3
	C 1608	(A,43,36)	CKSRYB105K10
	C 1609	(A,48,35)	CKSSYB104K10
	C 1610	(A,50,37)	CKSSYB104K10
	C 1611	(A,51,37)	CKSSYB104K10
	C 1612	(A,52,34)	CKSSYB104K10
	C 1613	(A,52,37)	CKSSYB104K10
	C 1614	(A,53,34)	CKSSYB104K10
	C 1615	(A,54,34)	CKSSYB104K10
B	C 1616	(A,54,37)	CKSSYB104K10
	C 1617	(A,54,38)	CKSSYB104K10
	C 1618	(A,56,34)	CCSSCH101J50
	C 1619	(A,57,34)	CKSSYB562K25
	C 1620	(A,58,34)	CKSSYB224K6R3
	C 1621	(A,57,37)	CKSSYB224K6R3
	C 1622	(A,59,35)	CKSSYB333K16
	C 1623	(A,45,35)	CKSRYB105K10
	C 1624	(A,58,37)	CKSSYB104K10
	C 1625	(A,56,37)	CKSSYB104K10
C	C 1671	(A,44,17)	CKSSYB104K10
	C 1672	(A,45,18)	CKSSYB104K10
	C 1673	(A,45,22)	CKSSYB104K10
	C 1674	(A,43,21)	CKSSYB104K10
	C 1676	(A,38,22)	CKSRYB105K10
	C 1801	(B,34,8)	CKSQYB475K6R3
	C 1802	(B,32,8)	CKSQYB475K6R3
	C 1803	(B,36,8)	CCSRCH182J50
	C 1804	(B,31,7)	CCSRCH182J50
	C 1805	(B,32,19)	CKSSYB104K10
D	C 1806	(B,39,9) 10 uF	DCH1201
	C 1809	(B,43,16)	CKSSYB104K10
	C 1934	(B,42,29)	CCSRCH680J50
	C 1950	(B,73,33)	CKSSYB104K10
	C 1951	(B,74,36)	CCSSCH100D50
	C 1952	(B,78,36)	CCSSCH100D50
	C 1954	(B,43,49)	CCSRCH470J50

D**Unit Number :****Unit Name : Connect PCB****MISCELLANEOUS**

E	S 101	(B,51,37) Switch(HOME)	CSN1068
	S 102	(B,12,23) Switch(DSCSNS)	CSN1068
	S 103	(B,22,10) Switch(8SNS)	CSN1068
	R 101	(B,52,27)	RS1/16S101J
	R 102	(B,15,29)	RS1/16S101J
	R 103	(B,16,11)	RS1/16S101J
	C 101	(B,51,23)	CKSRYB104K50

Miscellaneous Parts List

F	M 1	Pickup Unit(Service)	CXX2398
	M 2	Motor Unit(LOAD/CRG)	CXC4026
	M 2	Motor(SPINDLE)	EXM1050