DENON

Ver. 2

Please refer to the MODIFICATION NOTICE.

SERVICE MANUAL

MODEL	JP	E3	E2	EK	E2A	E1C	E1K	EUT
DCD-710AE			✓					

CD PLAYER

- For purposes of improvement, specifications and design are subject to change without notice.
- Please use this service manual with referring to the operating instructions without fail.
- Some illustrations using in this service manual are slightly different from the actual set.

DENON

D&M Holdings Inc.

S0009-0V02DM/DG0911

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WARNING: Violators will be prosecuted to he maximum extent possible.

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

LASER RADIATION

Do not stare into beam or view directly with optical instruments, class 3A laser product.

CAUTION **Please heed the points listed below during servicing and inspection.**

◎ Heed the cautions!

Spots requiring particular attention when servicing, such as the cabinet, parts, chassis, etc., have cautions indicated on labels or seals. Be sure to heed these cautions and the cautions indicated in the handling instructions.

◎ Caution concerning electric shock!

(1) An AC voltage is impressed on this set, so touching internal metal parts when the set is energized could cause electric shock. Take care to avoid electric shock, by for example using an isolating transformer and gloves when servicing while the set is energized, unplugging the power cord when replacing parts, etc.

(2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ Caution concerning disassembly and assembly!

Though great care is taken when manufacturing parts from sheet metal, there may in some rare cases be burrs on the edges of parts which could cause injury if fingers are moved across them. Use gloves to protect your hands.

◎ Only use designated parts!

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). For replacement parts, be sure to use parts which have the same properties. In particular, for the important safety parts that are marked ⚠ on wiring diagrams and parts lists, be sure to use the designated parts.

◎ Be sure to mount parts and arrange the wires as they were originally!

For safety reasons, some parts use tape, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards. Care is also taken with the positions of the wires inside and clamps are used to keep wires away from heating and high voltage parts, so be sure to set everything back as it was originally.

◎ Inspect for safety after servicing!

Check that all screws, parts and wires removed or disconnected for servicing have been put back in their original positions, inspect that no parts around the area that has been serviced have been negatively affected, conduct an insulation check on the external metal connectors and between the blades of the power plug, and otherwise check that safety is ensured.

(Insulation check procedure)
Unplug the power cord from the power outlet, disconnect the antenna, plugs, etc., and turn the power switch on. Using a 500V insulation resistance tester, check that the insulation resistance between the terminals of the power plug and the externally exposed metal parts (antenna terminal, headphones terminal, microphone terminal, input terminal, etc.) is 1MΩ or greater. If it is less, the set must be inspected and repaired.

CAUTION **Concerning important safety parts**

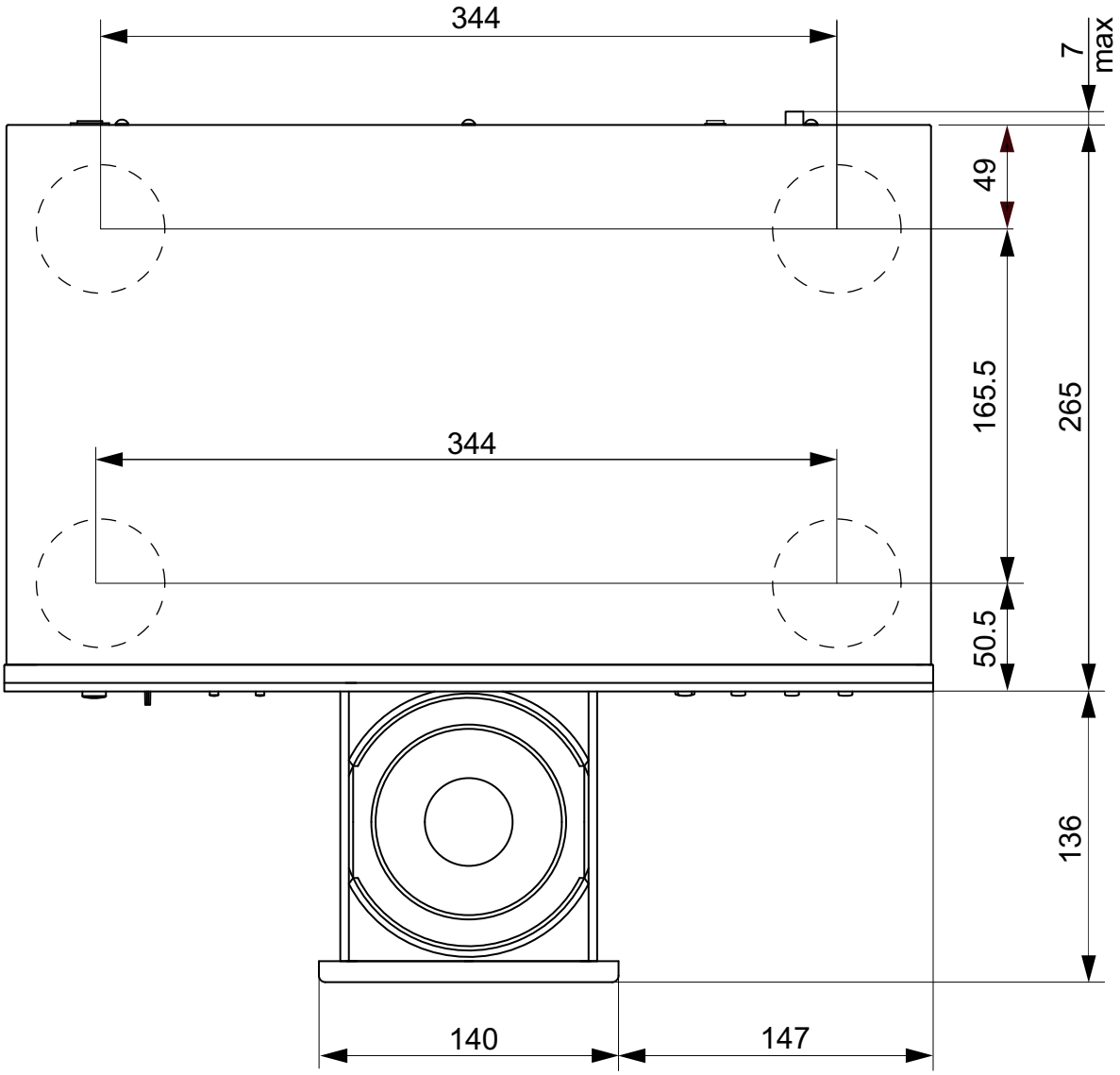
Many of the electric and structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and using replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and parts lists is this service manual. Be sure to replace them with parts with the designated part number.

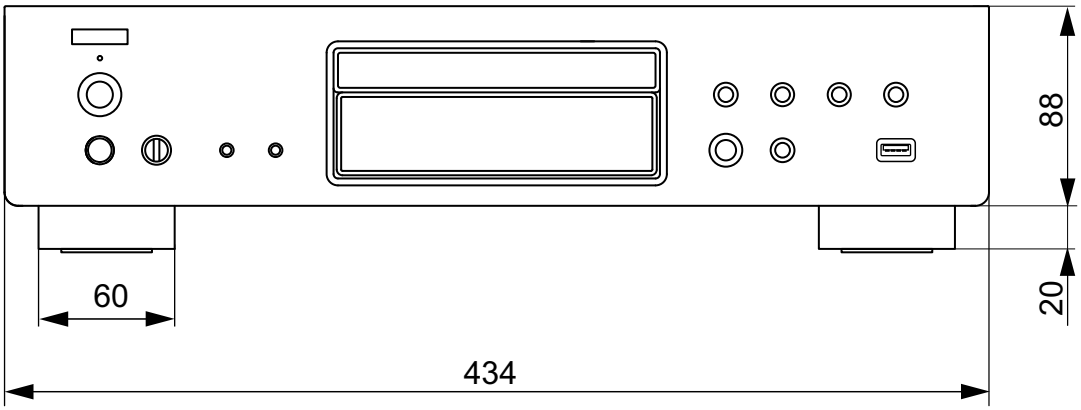
(1) Schematic diagrams ... Indicated by the ⚠ mark.

(2) Parts lists ... Indicated by the ⚠ mark.

Using parts other than the designated parts could result in electric shock, fires or other dangerous situations.

DIMENSION



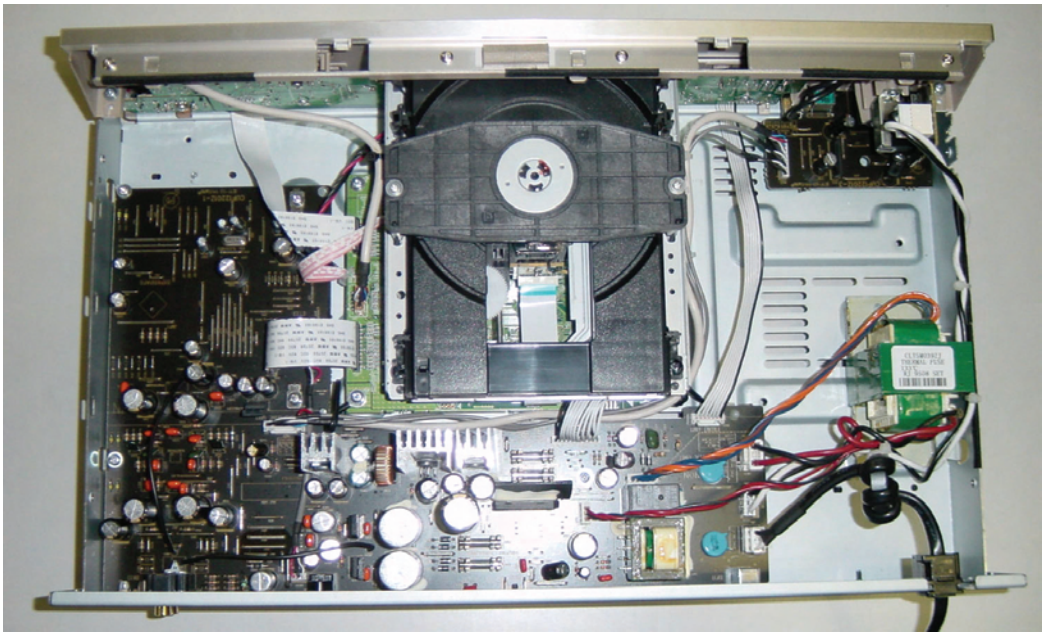


WIRE ARRANGEMENT

If wire bundles are untied or moved to perform adjustment or parts replacement etc.,be sure to rearrange them neatly as they were originally bundled or placed afterward.
Otherwise, incorrect arrangement can be a cause of noise generation.

Wire arrangement viewed from the top

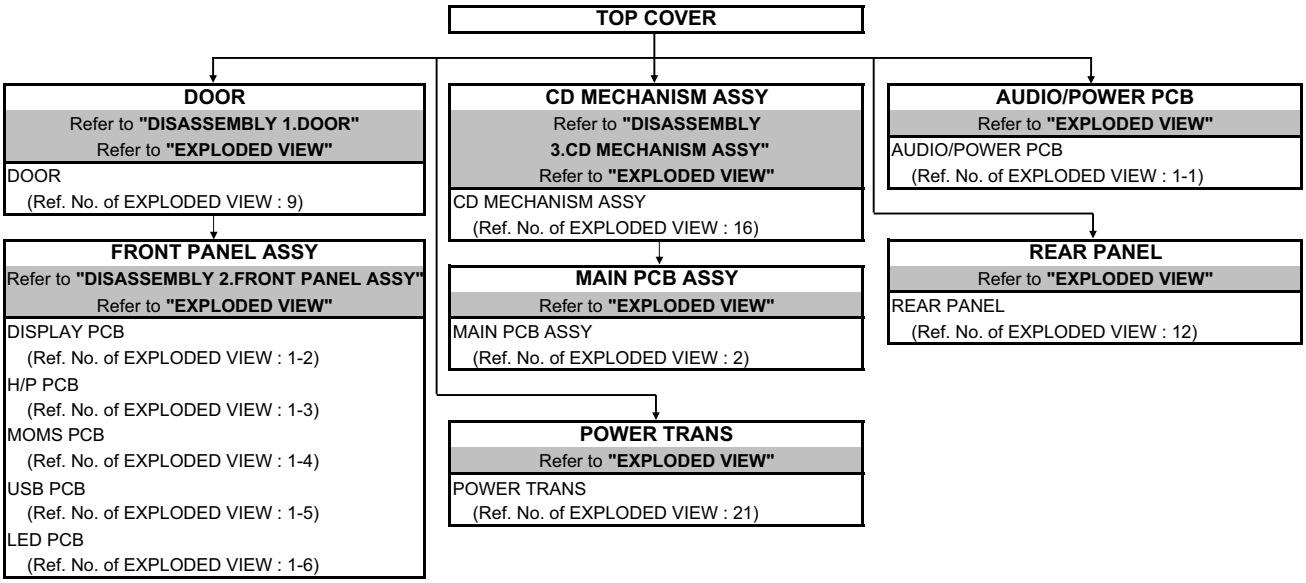
Front Panel side



Back Panel side

DISASSEMBLY

- Disassemble in order of the arrow of the figure of following flow.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling" it.

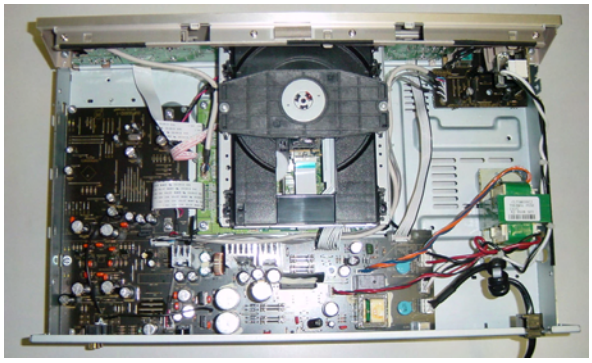


About the photos used for descriptions in the “DISASSEMBLY” section.

- The direction from which the photographs used herein were photographed is indicated at "Direction of photograph: ***" at the left of the respective photographs.
- Refer to the table below for a description of the direction in which the photos were taken.
- Photographs for which no direction is indicated were taken from above the product.

The viewpoint of each photograph (photography direction)

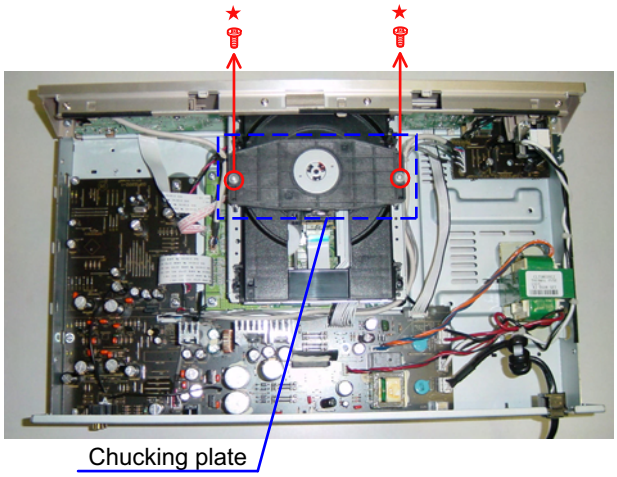
[View from above]



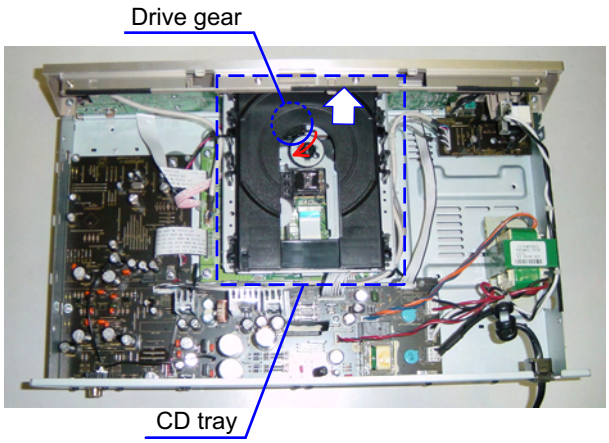
1. DOOR

Proceeding : TOP COVER → DOOR

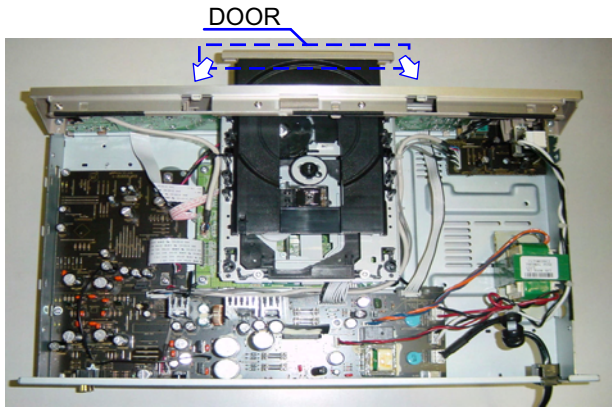
(1) Take off the Chucking plate after removing screws.



(2) Open the CD tray by turning the Drive gear clockwise.



(3) Detach the DOOR.

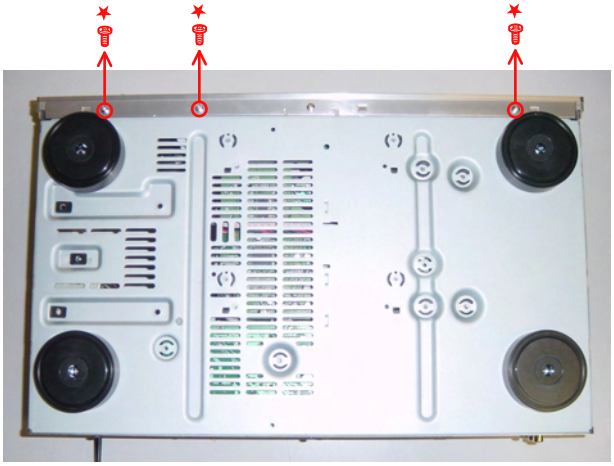


2. FRONT PANEL ASSY

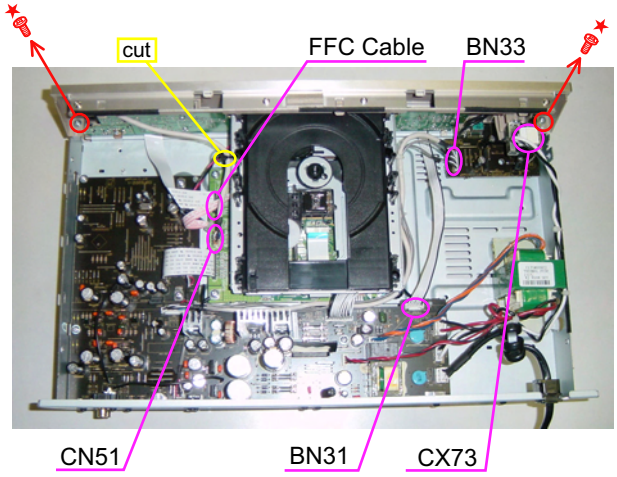
Proceeding : TOP COVER → DOOR → FRONT PANEL ASSY

(1) Remove the screws.

View from bottom



(2) Cut the clamp bands, disconnect the connector wires and FFC Cable Remove the screws..

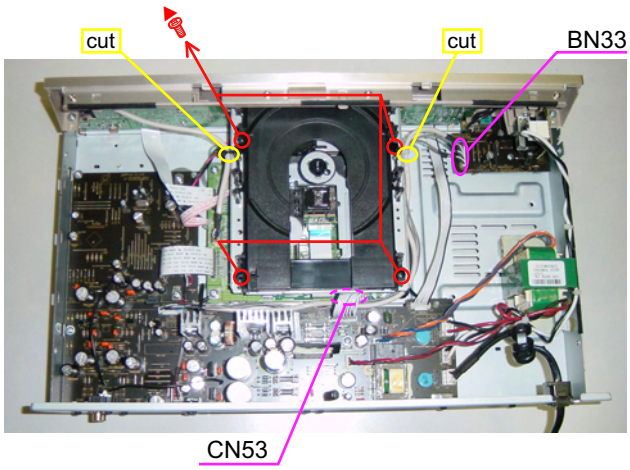


Please refer to **"EXPLODED VIEW"** for the disassembly method of each PCB included in FRONT PANEL ASSY.

3. CD MECHANISM ASSY

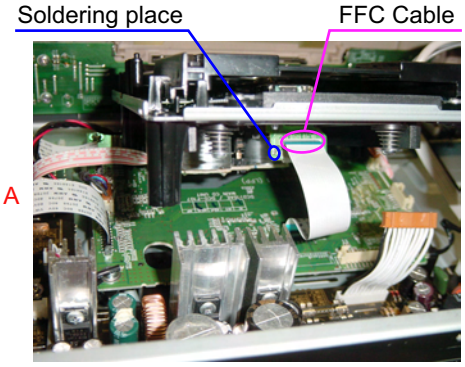
Proceeding : TOP COVER → DOOR → CD MECHANISM ASSY

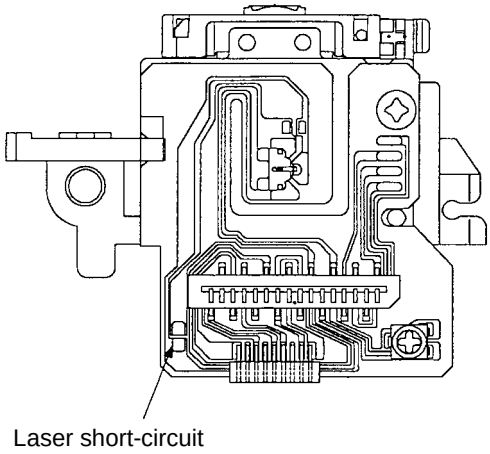
(1) Cut the clamp bands, disconnect the connector wires. Remove the screws.



(2) Laser short-circuit in Pick-up of CD MECHANISM, then disconnect the FFC Cable.

Direction of photograph: A





DISASSEMBLY OF MECHANIC

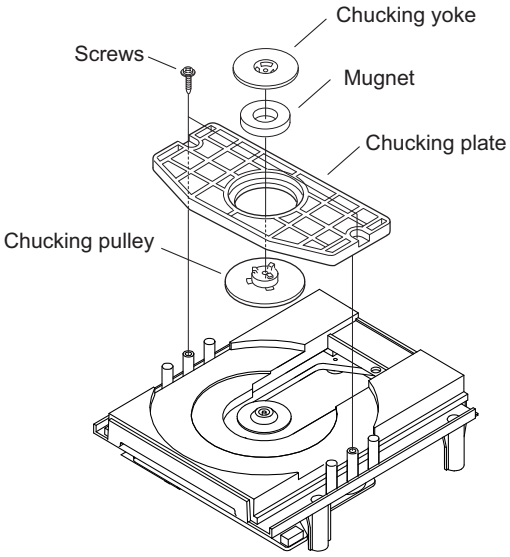
(Follow the procedure below in reverse order when reassembling.)

Caution : The optical pickup can damaged by sassily by static electricity charged on human body. Take necessary anti-static measures when repairing around the optical pickup.

1. Chucking plate

(1) Remove 2 top screws, then detach the Chucking plate.

(2) Detaching the Chucking pulley and chucking yoke by removing the 3 hooks, when abandoning CD MECHA ass'y.



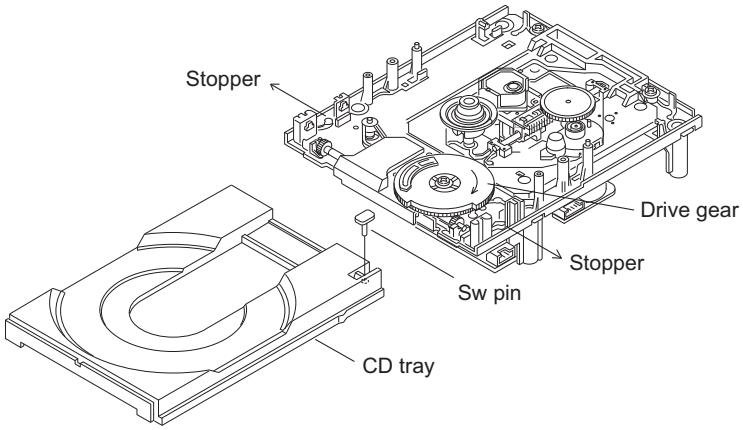
2. CD tray

When abandoning CD MECHA ass'y, please detach the CD tray.

(1) Detach the Sw pin on the CD tray.

(2) Open the CD tray by turning the Drive gear clockwise.

(3) Open the Stopper as shown in the fig., then detach CD tray.



Note Handling and Replacement of the Laser pick-up

1. Protection of the LD

Short a part of the LD circuit by soldering. After connection to a circuit, remove the short solder.

2. Precautions when handling the laser CD mechanism

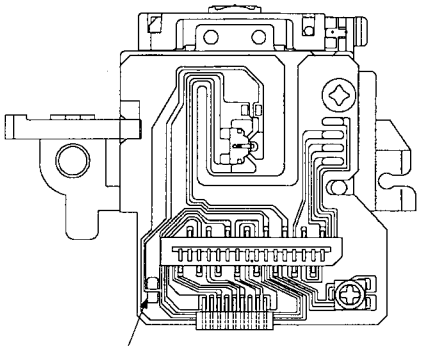
- Handle the laser pick-up so that it is not exposed to dust.
- Do not leave the laser pick-up bare. Be sure to cover it.
- If dust adheres on lens of the pick-up, blow it off with a blower brush.
- Do not shock the laser pick-up.
- Do not watch the light of the laser pick-up.

3. Cautions on assembling and adjustment

- Be sure that to the bench, jig, head of soldering iron (with ceramic) and measuring instruments are well grounded.
- Workers who handle the laser pick-up must be grounded.
- The finished mechanism (prior to anchoring in the set) should be protected against static electricity and dust. The mechanism must be stored that damaging outside forces are not received.
- When carrying the finished mechanism, hold it by the chassis body
- For proper operation, storage and operating environment should not contain corrosive gases. For example H_2S, SO_2, NO_2, CI_2 etc. In addition storage environment should not have materials that emit corrosive gases especially from silicic, cyanic, formalin and phenol group. I the mechanism or the set, existence of corrosive gases may cause no rotation in motor.

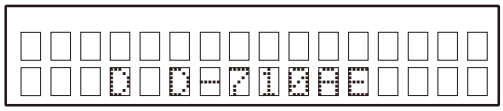
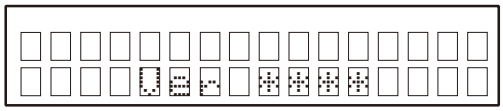
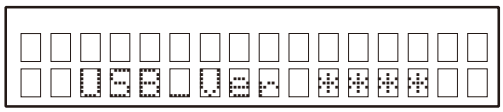
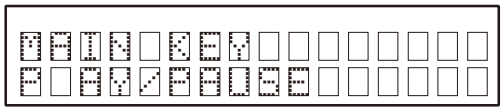
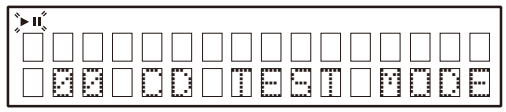
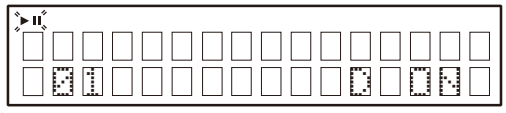
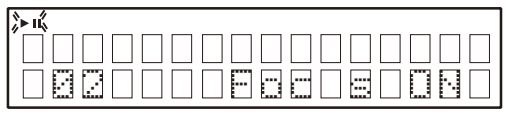
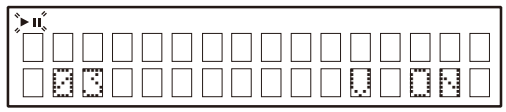
4. Determining whether the laser pick-up is defective

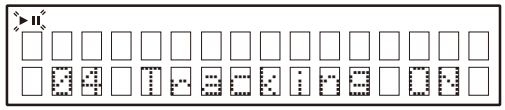
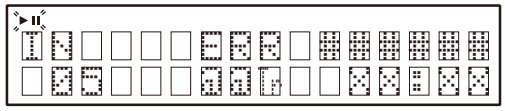
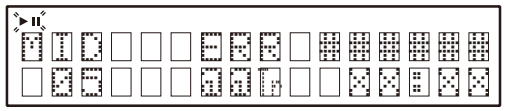
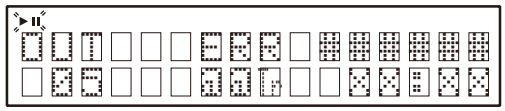
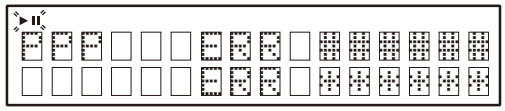
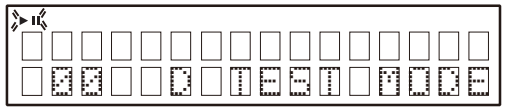
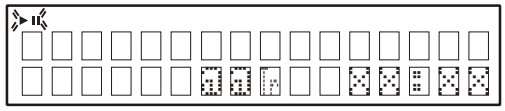
- Measure the waveform at RFO-VC on "MCU P.W.B. Unit ".
  (For measuring points and waveforms, see pages 21.)
- The laser pick-up is OK if the amplitude level of the measured RFO waveform is between 0.4 and 1.1 Vp-p, defective otherwise.

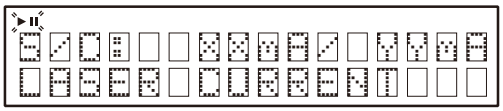
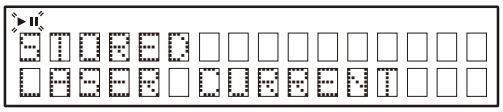
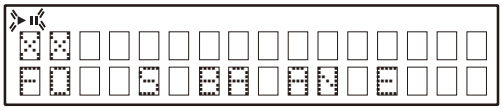
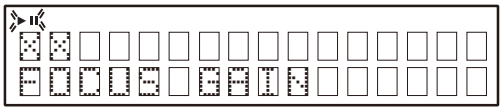
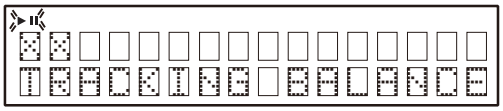
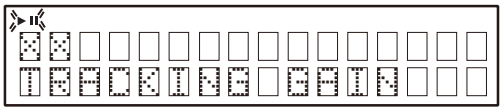
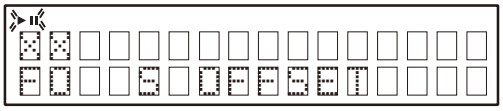
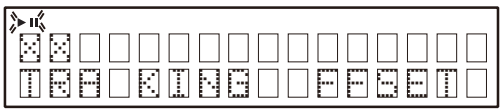


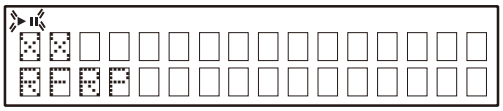
Protective soldering place for laser diode.

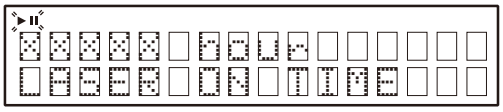
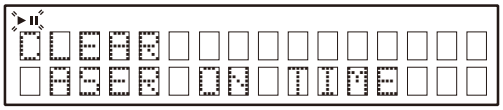
SPECIAL MODE

No	Key name	Function	Display
1	**Service mode**	• POWER switch is turned to on while pressing the ⏏ and ■ button same time on DCD-710AE.(Model name display)	
1.1	Version No. of main µ-com Display mode	• Press the ►►I button.	 "****" : Version number of main µ-com
1.2	Version No. of USB µ-com Display mode	• Press the ►►I button while version No. of main µ-com is displayed.	 "****" : Version number of USB µ-com
1.3	FLD check mode	• When display is version No. of USB µ-com and the ►►I button is pressed, turn on the entire display is flashing with an interval of about 1 second. • Press the ►►I button again in the turn on each grid of FLD. (Each grid is displayed at interval of 1 second.)	
1.4	Input button name Display mode	• When display is each grid of the FLD check mode and the ►►I button is pressed, display name of the pressing button. • Turn off the POWER switch to clear this mode.	
2	**CD test mode**	• POWER switch is turned to on while pressing the ⏏ and ■ button same time on DCD-710AE.(Entering the Service mode) • Press the ►/ II and ■ button same time while service mode.(CD TEST MODE display)	►II flashing 
2.1	Disc loading	• Press the ⏏ button to open the tray. • Set a disc on the tray, then press the ⏏ button again to close the tray.	
2.2	Servo check	• Press the ►/ II button. Execute the following steps. ① LD ON (with servo still stopped) ② FOCUS ON (disc rotation, tracking off) If no disc loaded, retry then stop. ③ CLV ON	• ►II flashing ①  ②  ③ 

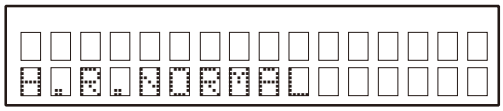
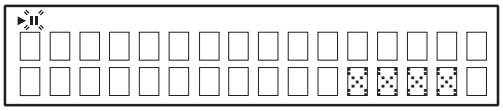
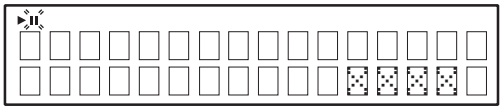
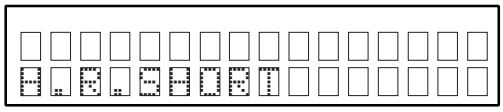
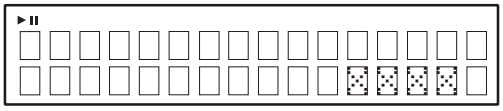
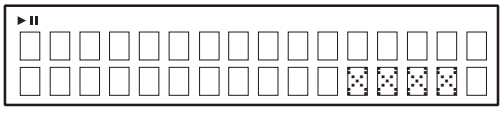
No	Key name	Function	Display
2.2	Servo check	④ TRACKING ON ⑤ SUB CODE readout (playback sound output) • The BER (Block Error Rate) generated in 1 second's time is displayed on the upper tier of the display. • The playback position (IN/MID/OUT) can be changed by pressing the I◄◄ or ►►I button. • The count of the errors that could not be corrected with the C1 error correction system is displayed. ⑥ When display is as in ⑤ and the ►/ II button is pressed, conduct BER (Block Error Rate) display for 2 seconds. • The BER (Block Error Rate) generated in 10 second's time is displayed of the display. ※Press ►/ II button continuously for over 1 second to switch directly to SUB CODE readout in step ⑤.	④  ⑤ [IN]  [MID]  [OUT]  ###### : B.E.R., @@ : T.No, XX:XX : Time ⑥  PPP : Playback position (IN/MID/OUT) ###### : 1 second's B.E.R., *****: 10 second's B.E.R.
2.3	Pickup movement	• In the stop mode, pickup moves in REV (inwards) or FWD (outwards) direction when I◄◄ or ►►I button pressed. • When I◄◄ button pressed, move to stop operation after detection that inner switch has turned on. • Pickup movement stops when button released. (Pickup moves while button is pressed.)	Continuous display of previous time
2.4	Stop	• When ■ button is pressed, play operation and servo stop. • After stopping, conduct reading of auto adjust values.	• ►II flashing 
2.5	All servo on	• When ■ and ⏏ button is pressed, all servos turn on, auto adjustment is performed and switch to playback operation. (Playback sound output) (NOTE)When the ■ button is pressed for over 1 second while the laser turns on and the laser current is measured.	• ►II flashing  @@ : T.No, XX:XX : Time

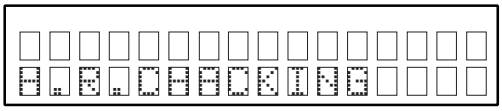
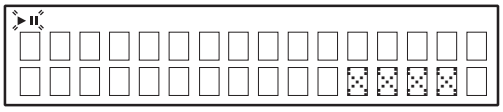
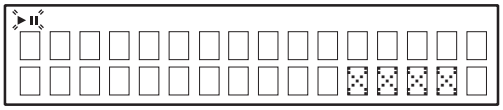
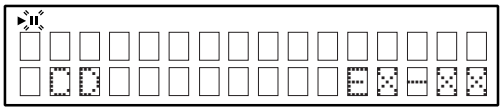
No	Key name	Function	Display
2.6	Laser current is display	• When the ■ button is pressed for over 1 second while the DCD-710AE is in the stop mode, the laser turns on and the laser current is measured. • The laser drive current undergoes A/D conversion for calculation. Decimal values are discarded. • The first current value is measured 3 seconds after the laser turns on. • The current value is updated every 3 seconds. • Press the ■ button, CD test mode display (2) reappears. • Stored data is not cleared, even when the DCD-710AE is reset. ① Overwriting the stored data • When the ►/❚❚ button is pressed for over 5 seconds while the laser current is displayed, the current value is stored in the EEPROM (overwriting the stored data). • Once rewriting is completed, the display in 2.6 reappears.	• ►❚❚ flashing  XX : Stored data : EEPROM Stored value YY : Current value ① 
2.7	Adjustment value display	• Press the ■ button after executing the servo auto adjustment. • When ►►I button is pressed, the adjustment values are displayed in the following order. ① FOCUS BALANCE ② FOCUS GAIN ③ TRACKING BALANCE ④ TRACKING GAIN ⑤FOCUS OFFSET ⑥ TRACKING OFFSET	• ►❚❚ flashing ①  XX : Adjustment value ②  XX : Adjustment value ③  XX : Adjustment value ④  XX : Adjustment value ⑤  XX : Adjustment value ⑥  XX : Adjustment value

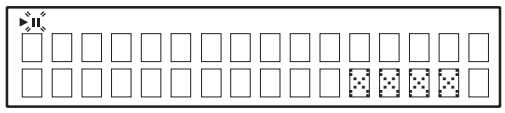
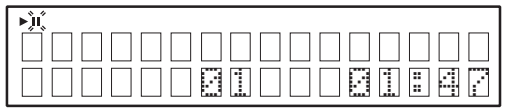
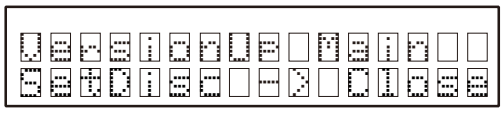
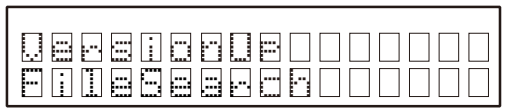
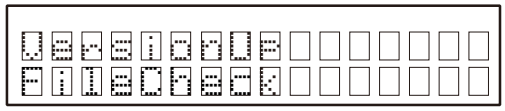
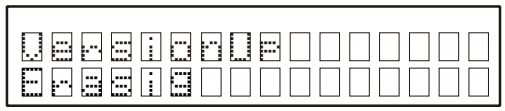
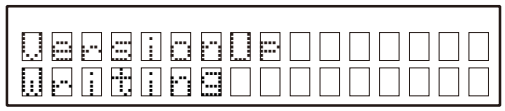
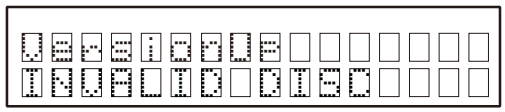
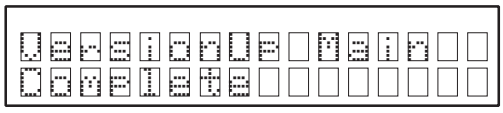
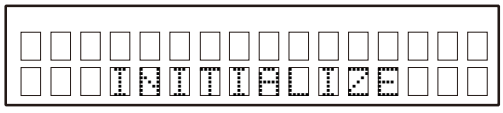
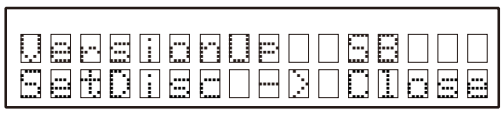
No	Key name	Function	Display
2.7	Adjustment value display	⑦ RFRP ⑧ Return to ①. (Note) If auto adjustment is not completed, proper values are not displayed.	⑦  XX : Adjustment value

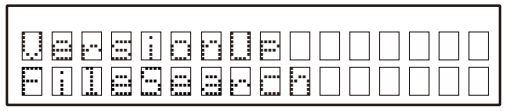
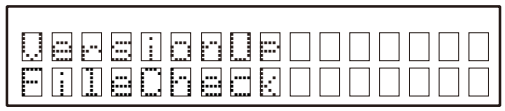
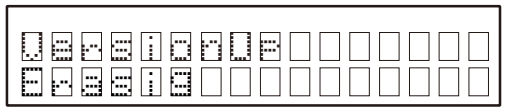
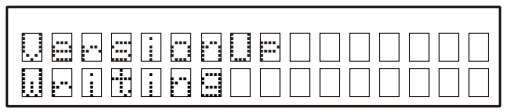
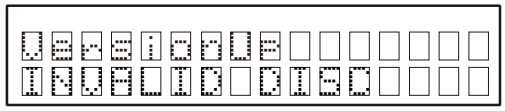
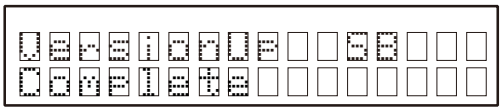
2.8	Accumulated laser on time display	• When the DISC/USB and ⏏ button is pressed while the DCD-710AE is in the stop mode, the accumulated laser on time is displayed.
		• The laser drive times are added and the result is displayed.
		• One count corresponds to 10 minutes. (Values under 10 minutes are discarded.)
		• Count values are stored in the EEPROM every 10 minutes.
		• The accumulated laser on time is displayed in hours.
		• Laser ON/OFF is monitored and counted.
		• Press the ■ button, CD test mode display (2) reappears.
		• The count values are not cleared, even when the set is reset.
		• Minimum display specification
		  • No. digits stored in EPROM: 4, 0xFFFF
		  • No. digits displayed: 5
		  • When the time exceeds 10922 hours, the stored data is not updated and the value is fixed to 0xFFFF.
		  (The display is fixed to 10922 hours.)
		
		① Count value is reset
		• When the ►/❚❚ button is pressed for over 5 seconds while the accumulated laser on time is displayed, the count value is reset.
		• After resetting is completed, the display in 2.8 (00000 hours on the top line) reappears, and after 5 seconds the model name display reappears.
		• Count value is reset upon shipment from the factory and when the mechanism is replaced.
			• ►❚❚ flashing
			 
			①
			 

3	**CD heat run mode**	•AC is turned on while pressing the ⏏ and ■ button same time on Main Unit. • Switches to mode according to button input. • Press a reverse button to switch the mode while displaying the version of the main μcom. (Normal heat run mode, Heat run short mode, Automatic mounting mode.) • If an error occurs, display the error and stop operation at that point. • Number of operations held. • While heat run, the operation of each button is not valid except the ON/STANDBY button and pressing the ⏏ and ■ button same time.	

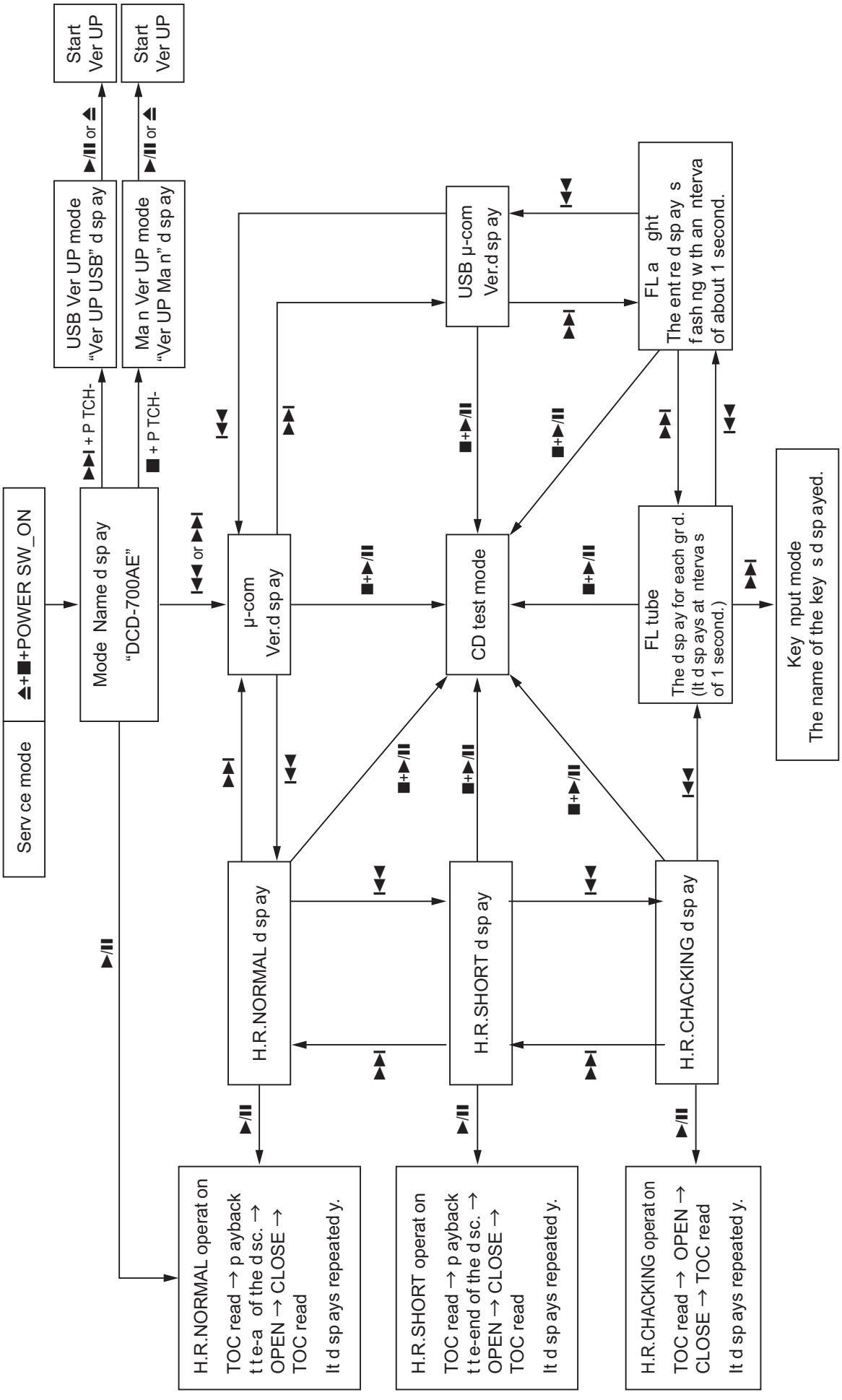
No	Key name	Function	Display
3.1	Normal heat run mode	• Press the ►/ ❚❚ button while name of the model is displayed or H.R.NORMAL is displayed. • Count this as the 0th heat run repetition. ① Play from the first to last track on disc. ② After disc playback has finished, move pickup to innermost position and open tray. ③ When loader open status detected, close tray again, re-read TOC and start playback from the first track on the disc. ④ The heat run repetition no. is incremented (increased by 1) when the tray is opened. ※ If the ■ and ≜ button is pressed while operating, number of heat run is displayed for 3 seconds. ⑤ Conduct ① to ③ repeatedly.	• Model Name display • H.R.NORMAL display  • Normal heat run mode Normal display except when ► light, ❚❚ flashing ① Normal display except when ► light, ❚❚ flashing ②  XXXX : No. of heat run repetitions ③ Normal display except when ► light, ❚❚ flashing ④  XXXX : No. of heat run repetitions
3.2	Heat run Short mode	• Press the ►/ ❚❚ button while name of the H.R.SHORT is displayed. • Count this as the 0th heat run repetition. ① Play the last track only on disc. ② After disc playback has finished, move pickup to innermost position and open tray. ③ When loader open status detected, close tray again, re-read TOC and start playback from the first track on the disc. ④ The heat run repetition no. is incremented (increased by 1) when the tray is opened. ※ If the ■ and ≜ button is pressed while operating, number of heat run is displayed for 3 seconds. ⑤ Conduct ① to ③ repeatedly.	• H.R.SHORT display  • Heat run Short mode Normal display except when ► light, ❚❚ light ① Normal display except when ► light, ❚❚ light ②  XXXX : No. of heat run repetitions ③ Normal display except when ► light, ❚❚ light ④  XXXX : No. of heat run repetitions

No	Key name	Function	Display
3.3	Automatic mounting mode	• Press the ►/❚❚ button while name of the H.R.CHACKING is displayed. • Count this as the 0th heat run repetition. ① Play the last track only on disc. ② The heat run repetition no. is incremented (increased by 1) when the tray is opened. ※ If the ■ and ⏏ button is pressed while operating, number of heat run is displayed for 3 seconds. ③ Conduct ① repeatedly.	• H.R.CHACKING display  • Heat run short mode Normal display except when ► flashing, ❚❚ flashing ①Number of heat run is display  XXXX : No. of heat run repetitions • READING, CLOSEdisplay Normal display except when ► flashing, ❚❚ flashing ②Number of heat run is display  XXXX : No. of heat run repetitions
3.4	Error display	E1-00 : Disc cannot be detected E1-01 : Tracking offset adjustment not poss ble E1-02 : Focus offset adjustment not possible E2-00 : Focus servo dropped during playback. E2-01 : Focus servo dropped during searching. E2-03 : Focus servo dropped during TOC reading. E2-05 : Focus servo dropped during manual search. E2-10 : Subcode can no longer be read during playback E2-11 : Subcode can no longer be read during searching E2-12 : Subcode can no longer be read during TOC reading E2-14 : Subcode cannot be read during pause E2-15 : Subcode cannot be read during manual search E3-00 : TOC could not be read within specified time E3-01 : PVD/SVD analysis could not be completed within specified time E4-04 : Search time out E4-05 : Error in communications with CD decoder E5-00 : Inner switch not on E6-00 : Inner switch not off E8-00 : Tray is not opened by the specified time. E8-01 : Tray is not closed by the specified time. E9-01 : Other error	• ►, ❚❚ with mode light or flashing  X-XX : Error cord

No	Key name	Function	Display
3.4	Error display	① Number of heat run is display • Press the ►►I button while the error is displayed. • No. heat runs is displayed for 5 seconds, the error display reappears. ② The track no. and time when the error occurred is displayed • Press the I◄◄ button while the error is displayed. • The track no. and time when the error occurred is displayed for 5 seconds, then error display reappears.	① ►, ▮▮ with mode light or flashing  XXXX : No. of heat run repetitions • Error display reappears after 5 seconds. See 3.4. ② ►, ▮▮ with mode light or flashing.  • Error display reappears after 5 seconds. See 3.4.
4	**Main µ-com Version up mode**	• POWER switch is turned to on while simultaneously pressing ≜ and ■ button. • While displaying model name, when ■ and the PITCH- button are pressed simultaneously, the tray opens.	
4.1	Start version up	• If an the ≜ or ►/ ▮▮ button is pushed and a tray is closed, a disc will be loaded and Version up will be started. • " INVALID DISC" is displayed when not found upgrade file and the tray is opened.	① During a file search  ② During a file check  ③ During deletion  ④ Writing  ⑤ When a file is not found 
4.2	End version up	• After Version UP is completed, a tray is opened and it stops in	
5	**Initialize**	• Press POWER SW while simultaneously pressing ≜ and ►►I button. • The system is reset, and once this is completed the unit is set to the normal mode. DIMMER : 100% PURE DIRECT : OFF DISC/USB : DISC REMOTE/BROWSE : REMOTE • The laser current initial value and laser accumulated on time is not cleared.	
6	**USB µ-com Version up mode**	• Press POWER SW while simultaneously pressing ≜ and ■ button. • While displaying model name, when ■ and the PITCH- button are pressed simultaneously, the tray opens.	

No	Key name	Function	Display
6.1	Start version up	• If an the ⏏ or ►/ ❚❚ button is pushed and a tray is closed, a disc will be loaded and Version up will be started. • " INVALID DISC" is displayed when not found upgrade file and the tray is opened.	① During a file search  ② During a file check  ③ During deletion  ④ Writing  ⑤ When a file is not found 
6.2	End version up	• After Version UP is completed, a tray is opened and it stops in	
7	**EEPROM TEST mode**	• Press POWER SW while simultaneously pressing PITCH- and DISC/US button. • POWER LED lights to the orange (TEST start). • MUTING ON • After EEPROM TEST, in the case of OK, LED lights to the green. • After EEPROM TEST, in the case of NG, LED lights to the red. • Mode is cancelled with POWER OFF.	

Special mode transition diagram



VERSION UPGRADE PROCEDURE OF FIRMWARE △2

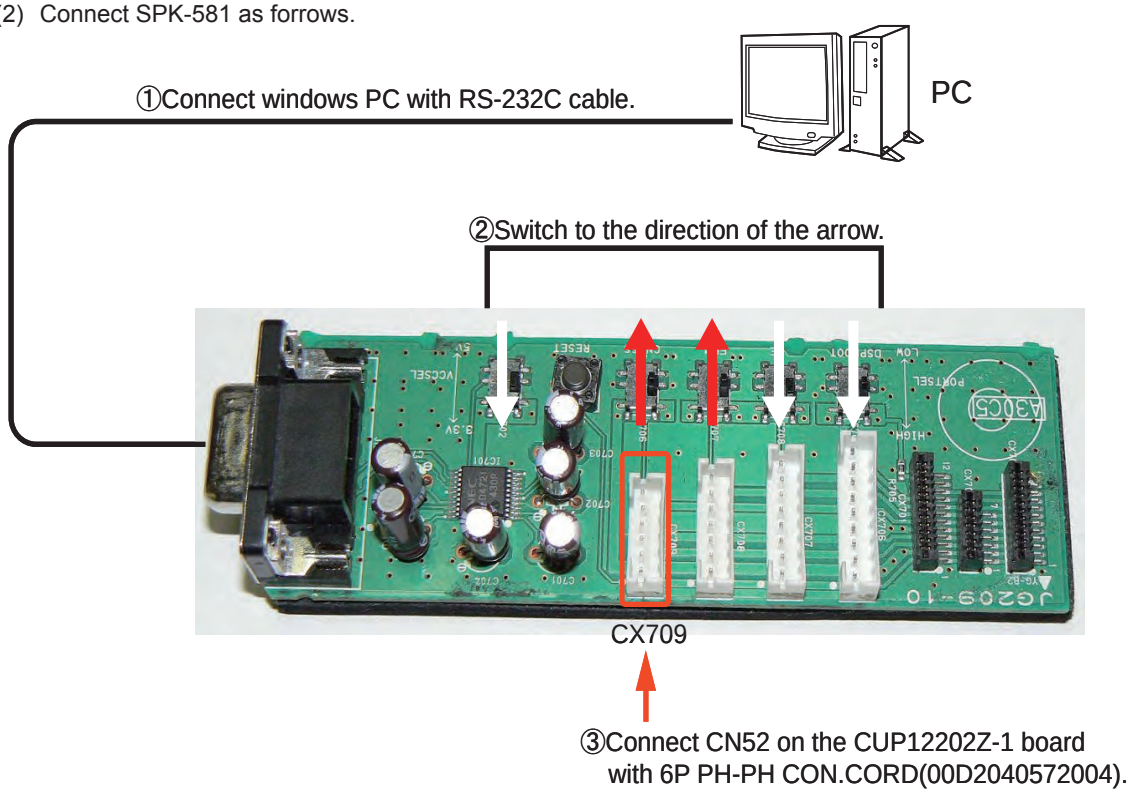
Initial Version No.of main µ-com and USB µ-com.

① Main µ-com Ver 0035
② USB µ-com USB Ver 0014
※ When update Firmware, please confirm a last version in SDI.

1. Update for IC15(TMP92FD28AFG)

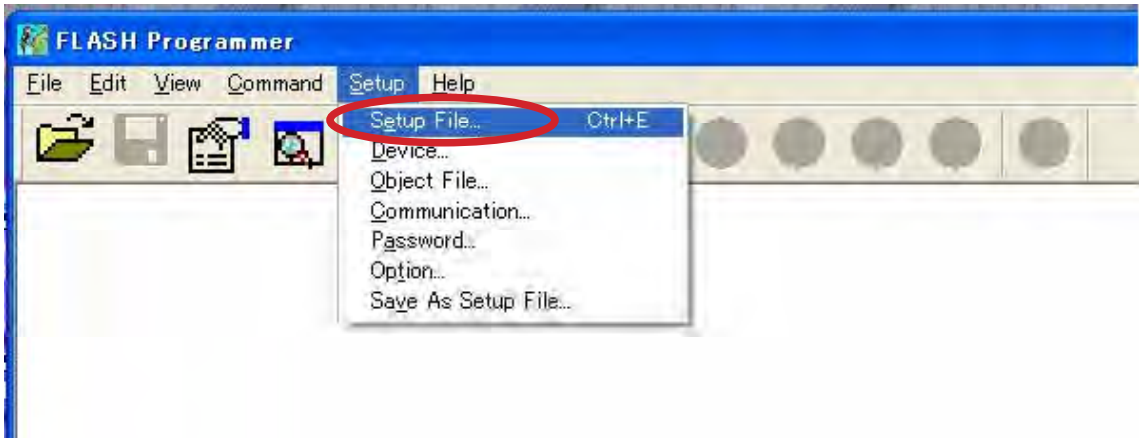
(1) Prepare the windows PC that installed the FlashProg.EXE.

(2) Connect SPK-581 as forrows.

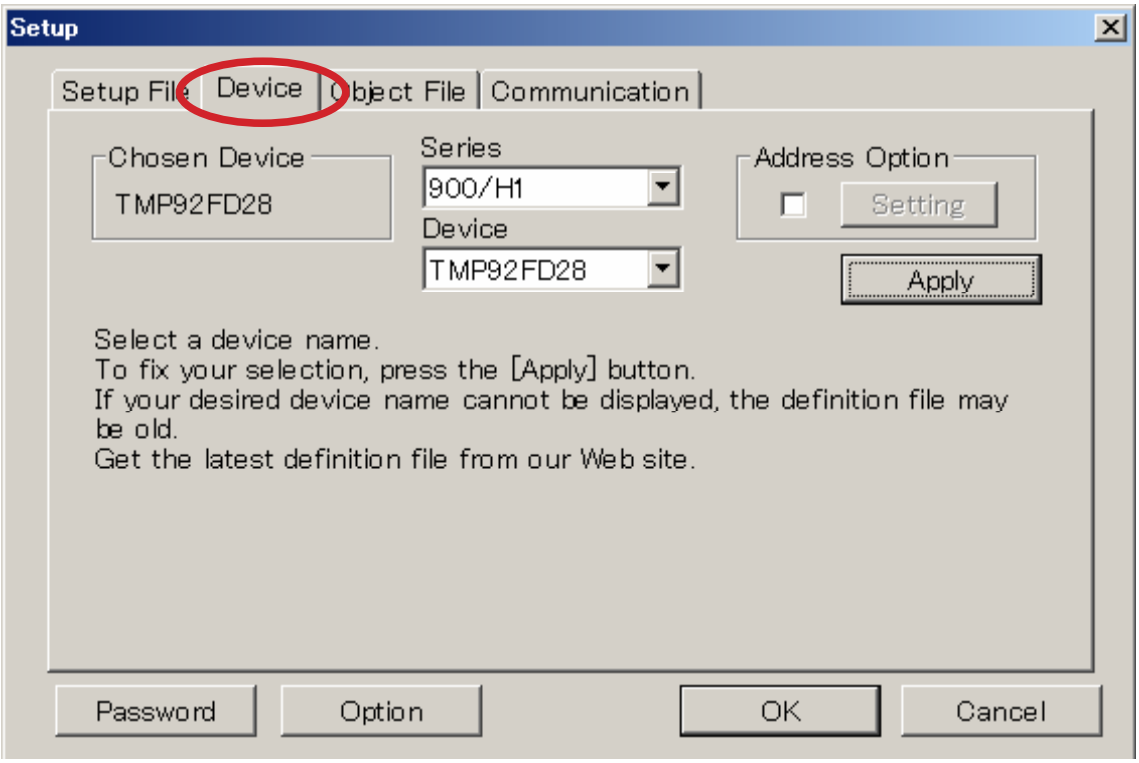


(3) Double click FlashProg.exe, and launch the FlashProgrammer.

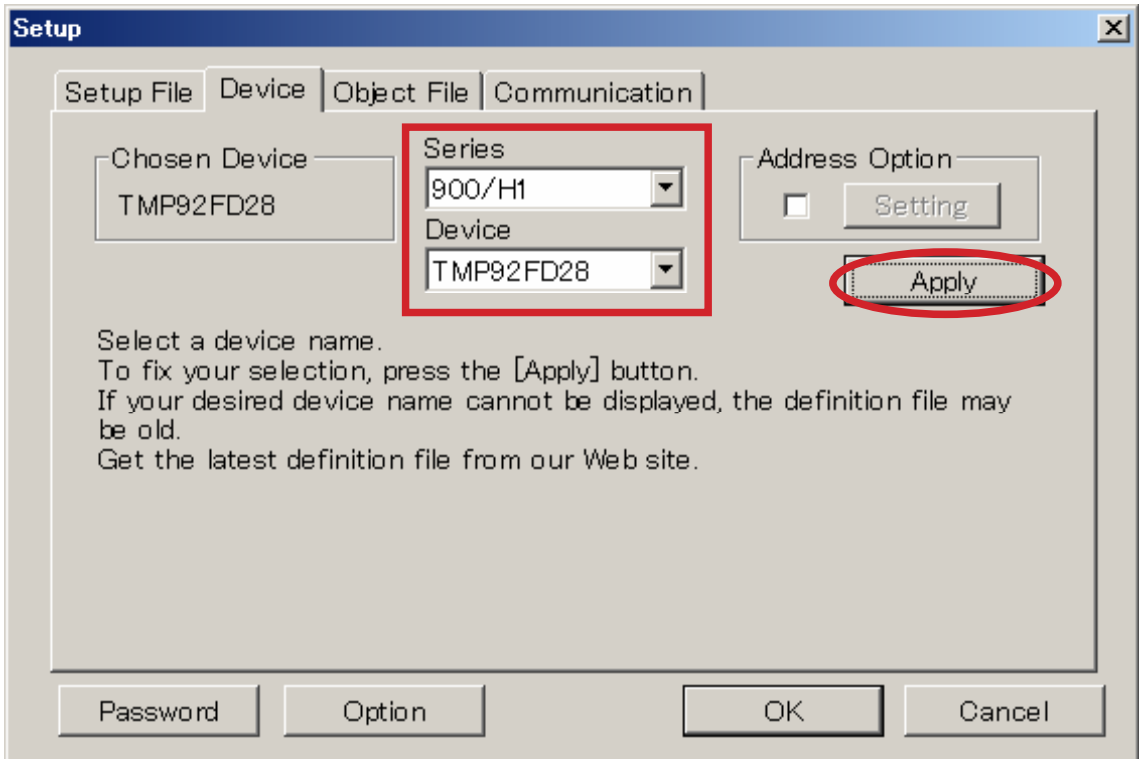
(4) Click the Setup in the menu bar and select the Setup File.



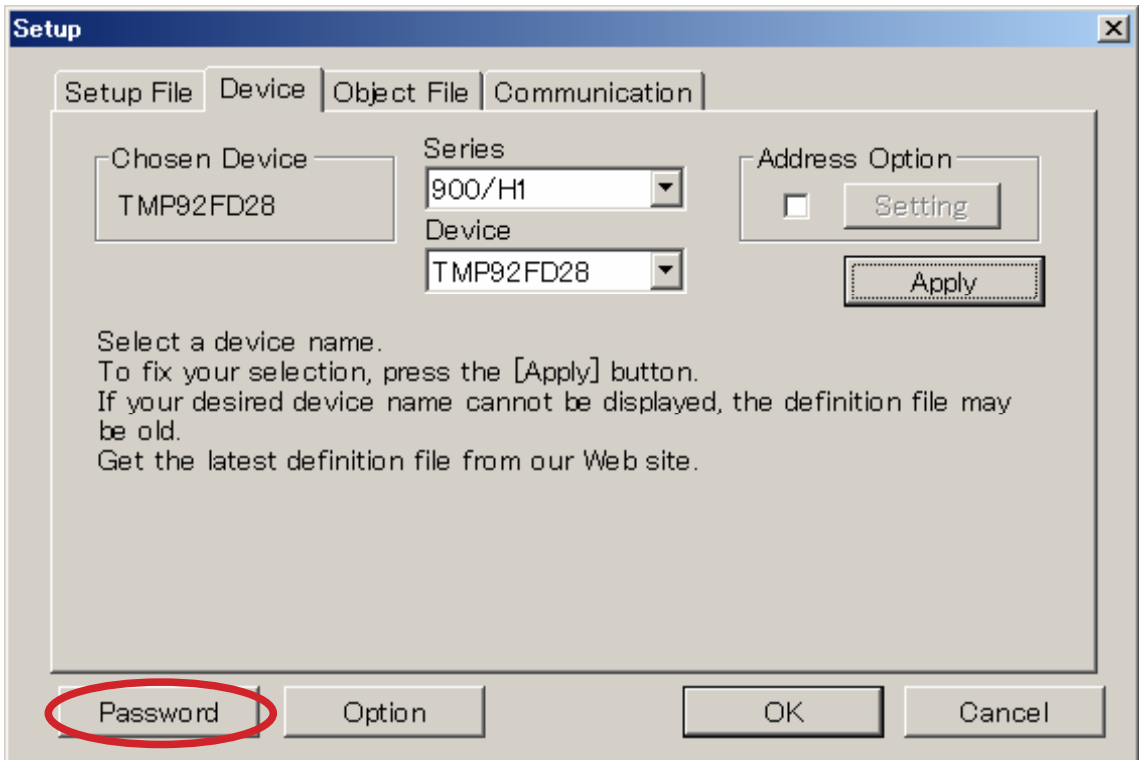
(5) Click Device tab.



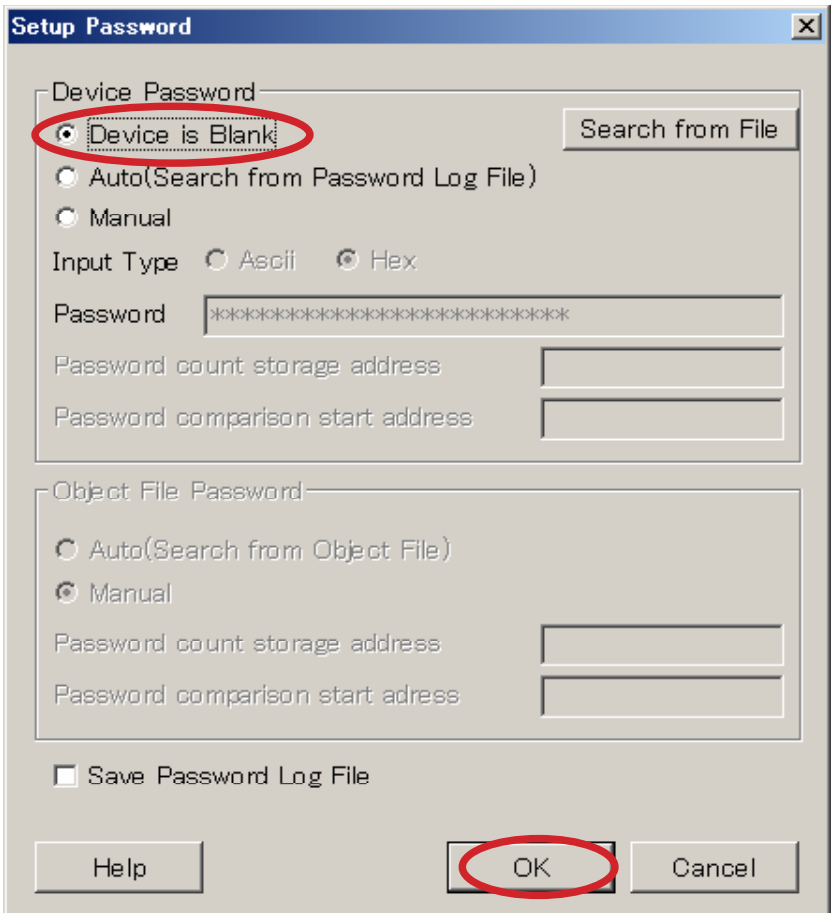
(6) Choose the TMP91FD28 in the Device, and choose the 900/H1 in the Series.
Click Apply, and display the chosen Dvice.



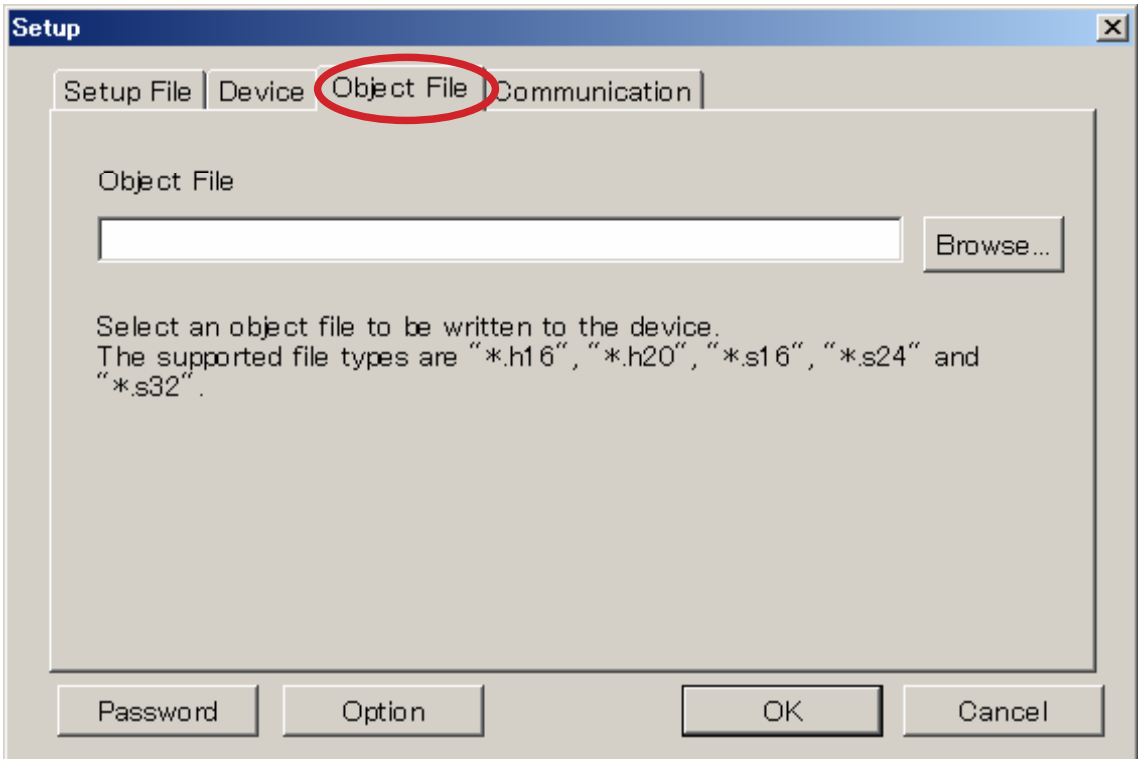
(7) Click Password.



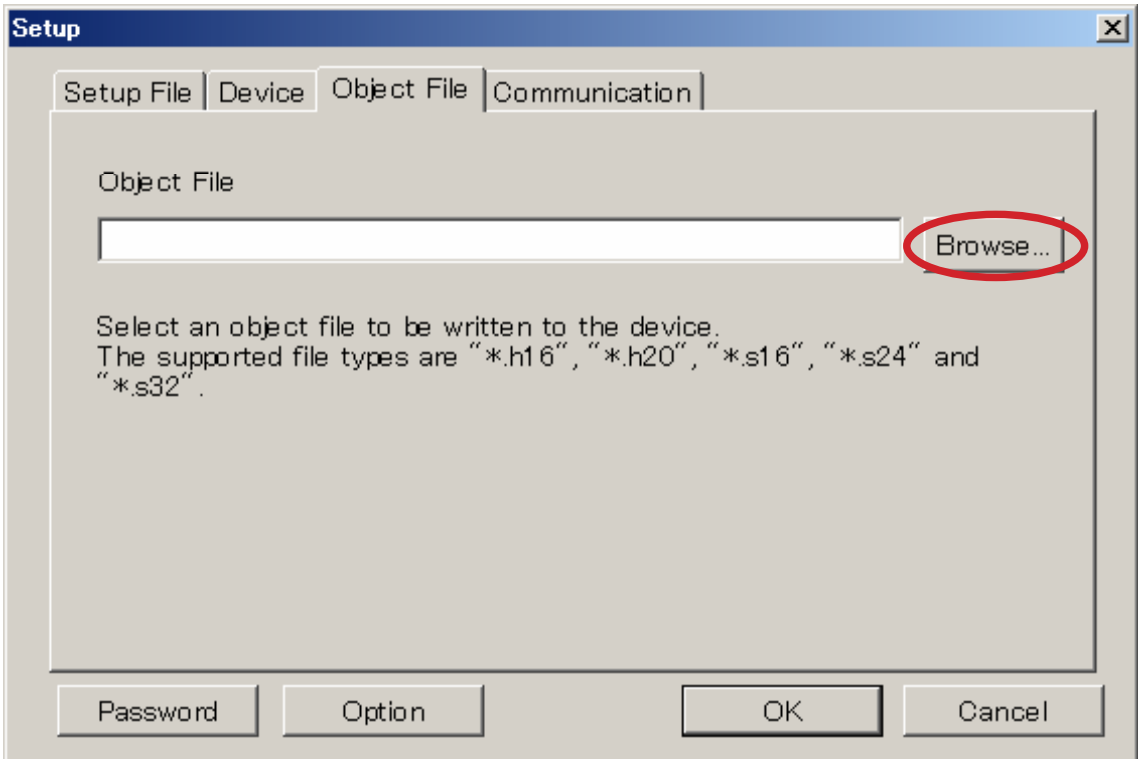
(8) Choose the Device is Blank.
And Click OK.



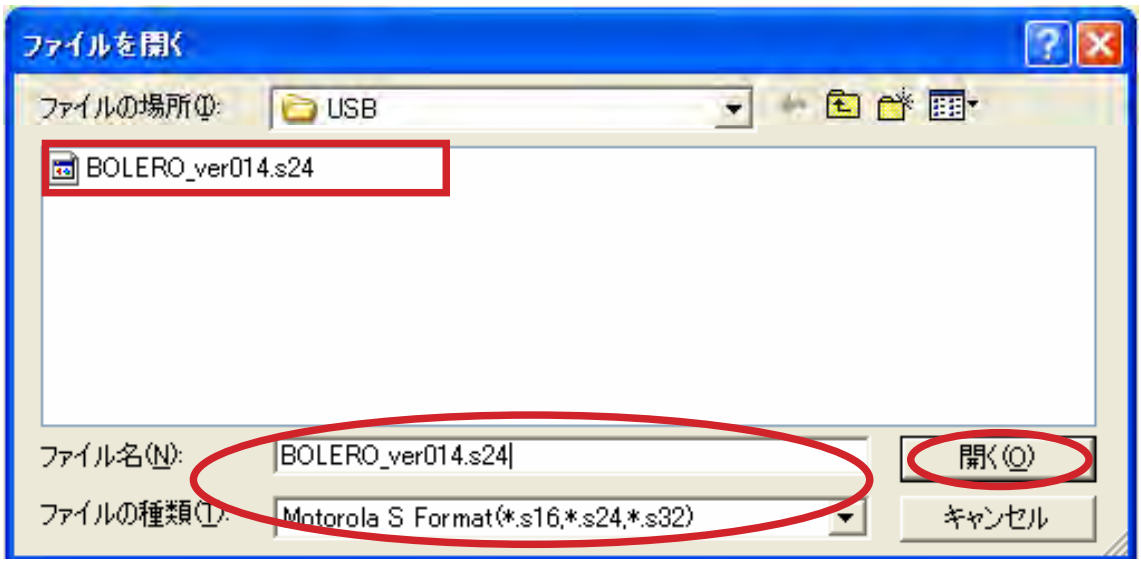
(9) Click Object File tab.



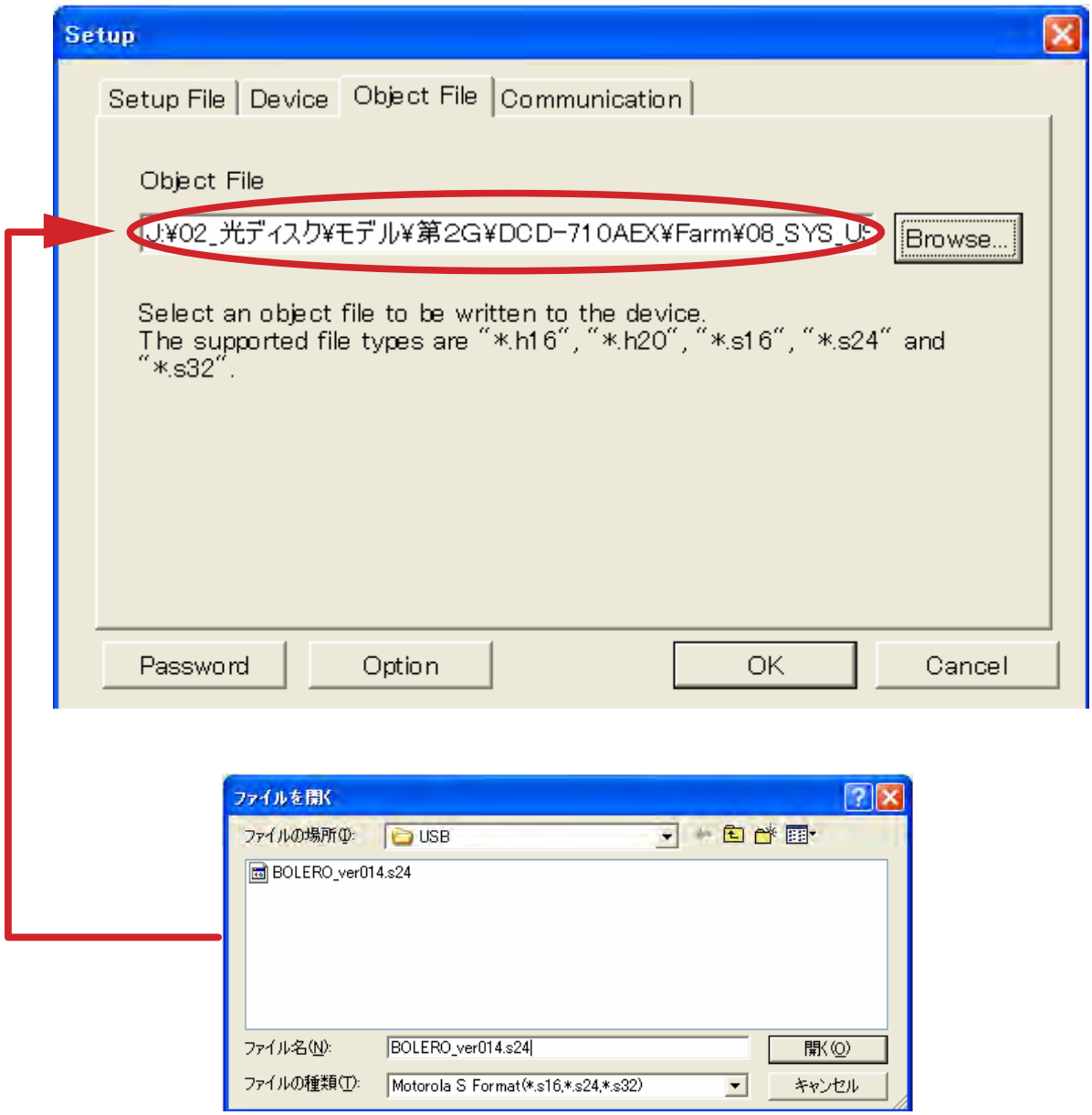
(10) Click Browse.



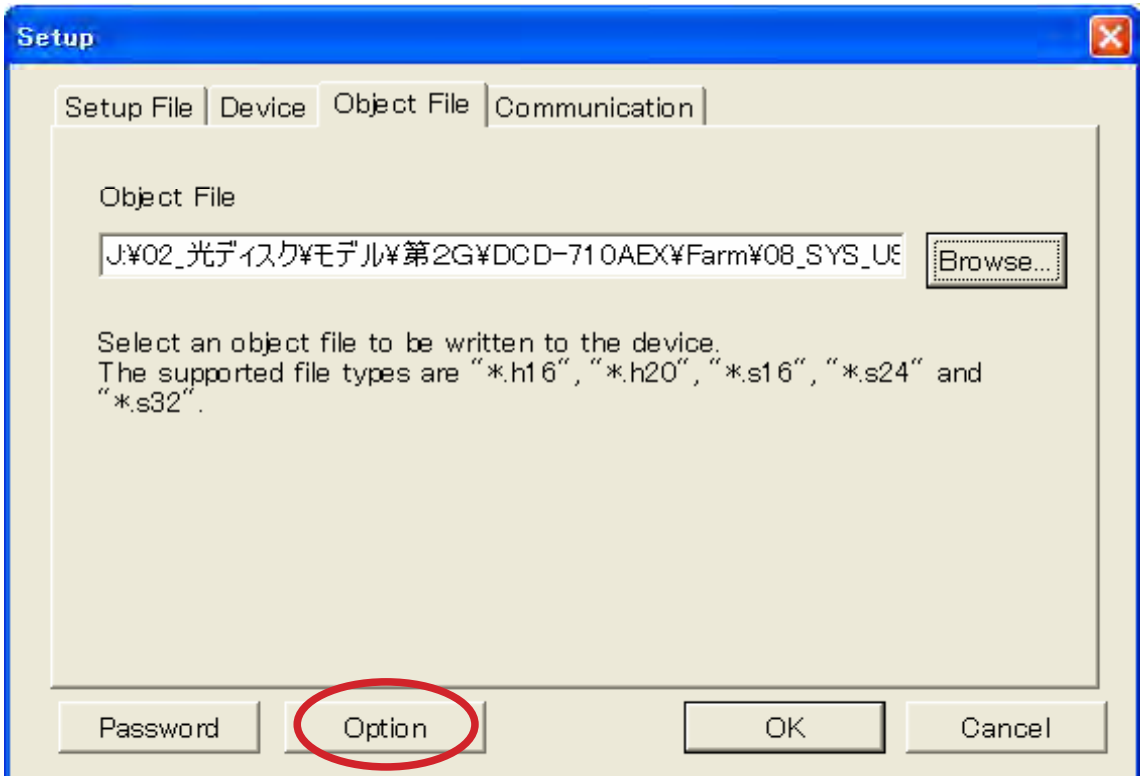
(11) Choose the Motorola S Format(*.s16,*.s24,*.s32) in Files of type.
Choose the BOLERO_ver014.s24, and click Open.



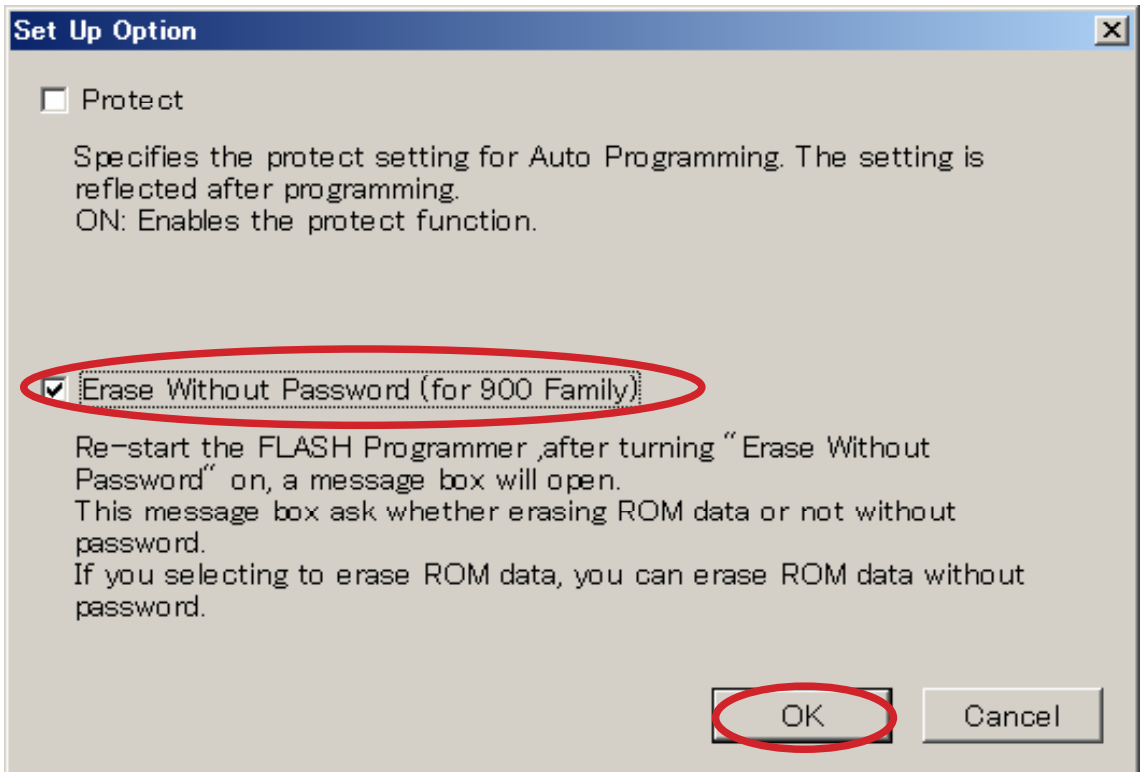
(12) The place of the file is displayed.



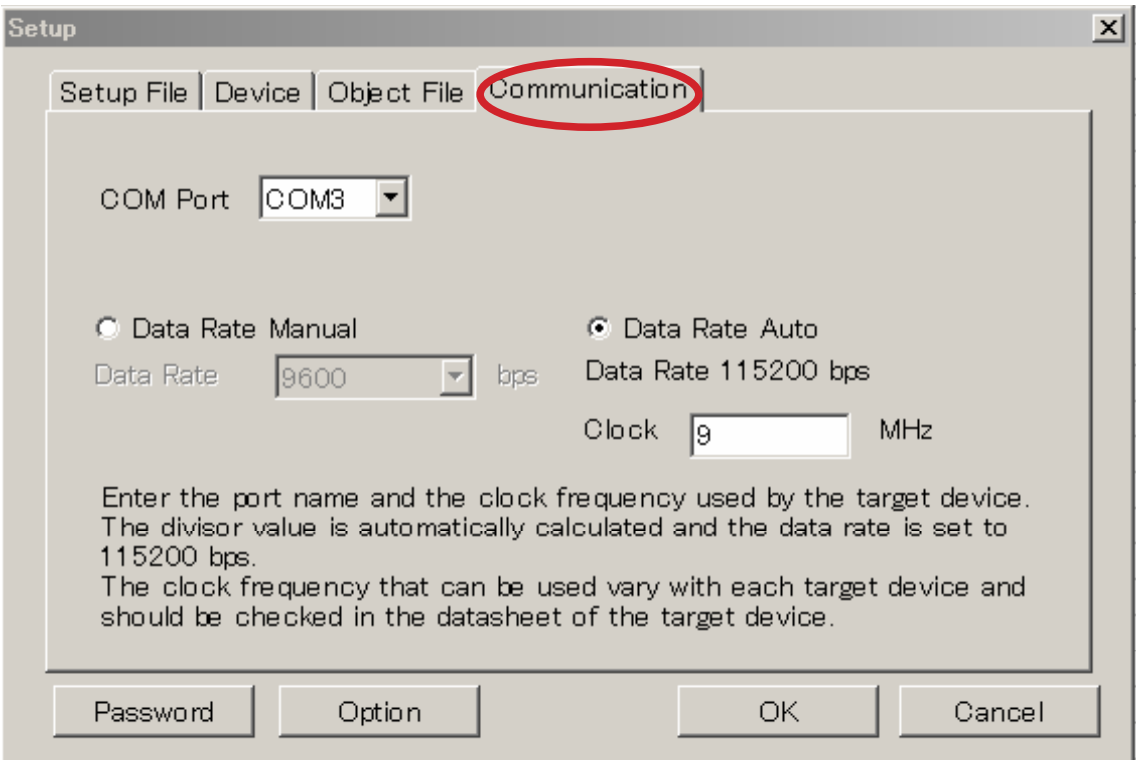
(13) Click Option.



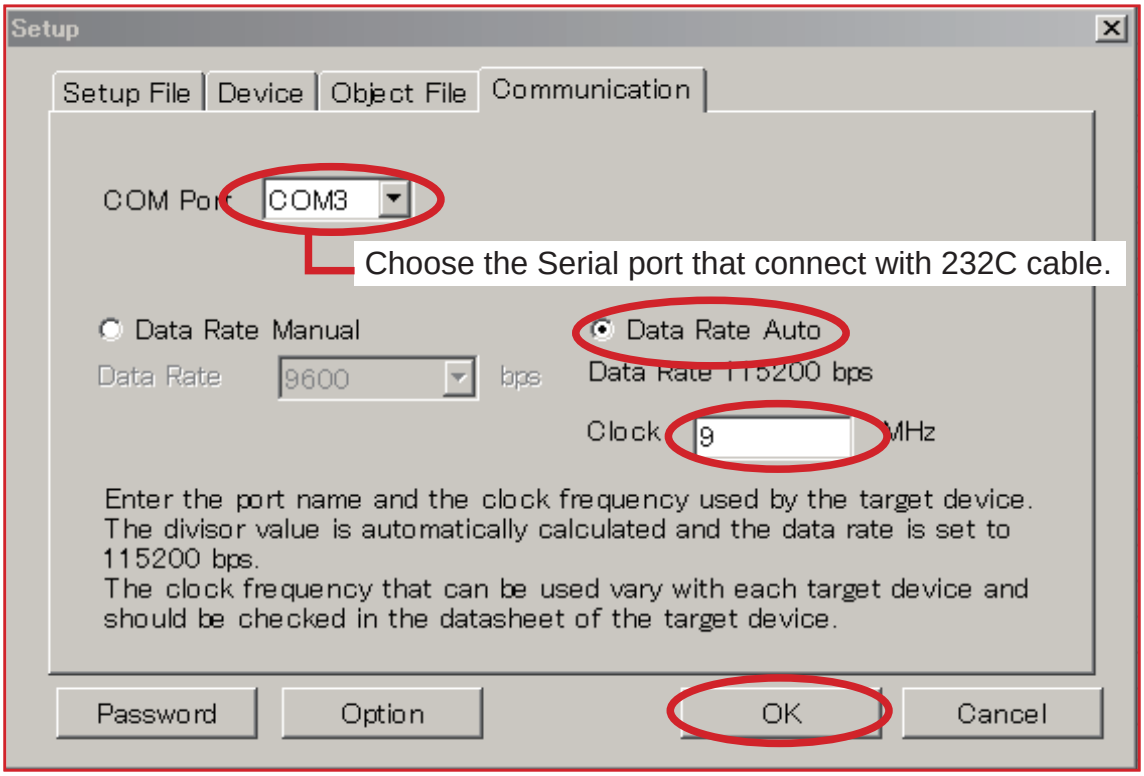
(14) Choose Erase Without Password (for 900 Family).
And Click OK.



(15) Click Communication tab.

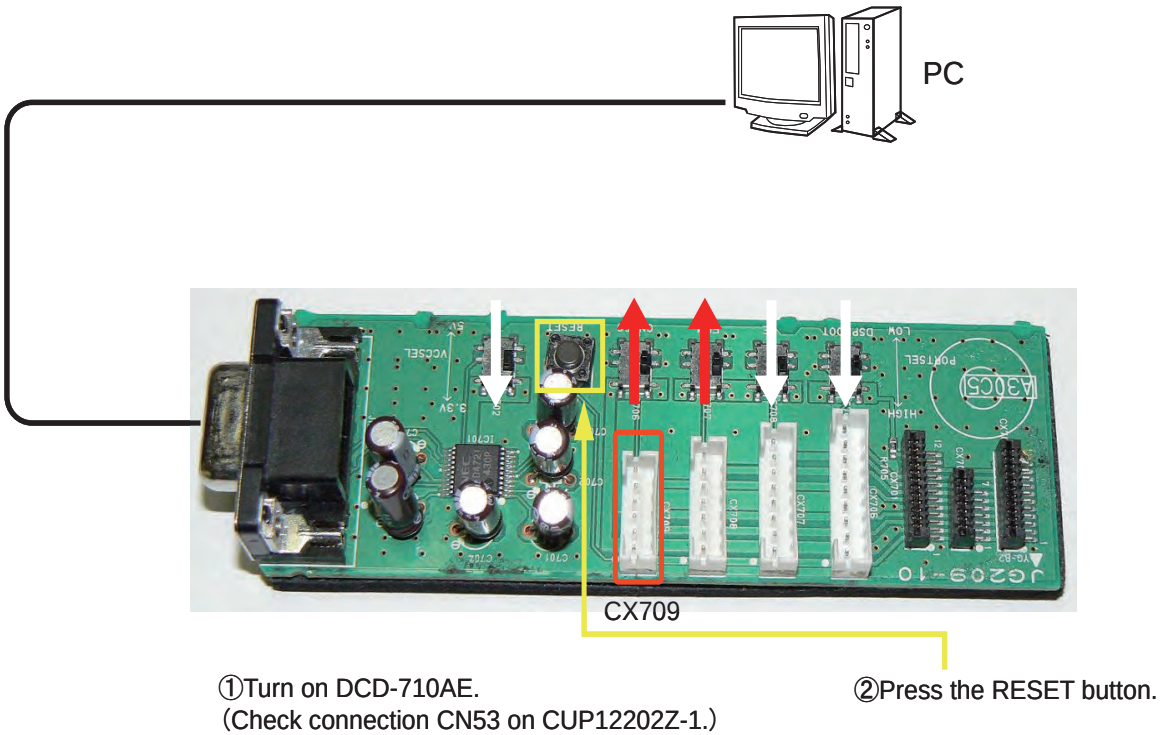


(16) Choose the Serial port number in the COM Port. Check the Data Rate Manual, and input 9 in the Clock. And Click OK.

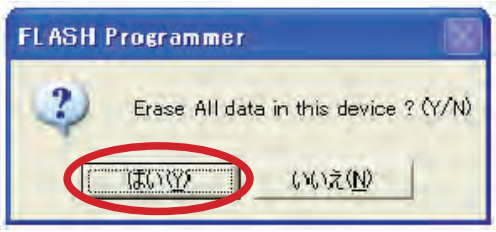


The setting is completed.

(17) Turn on DCD-710AE, and press the RESET button.

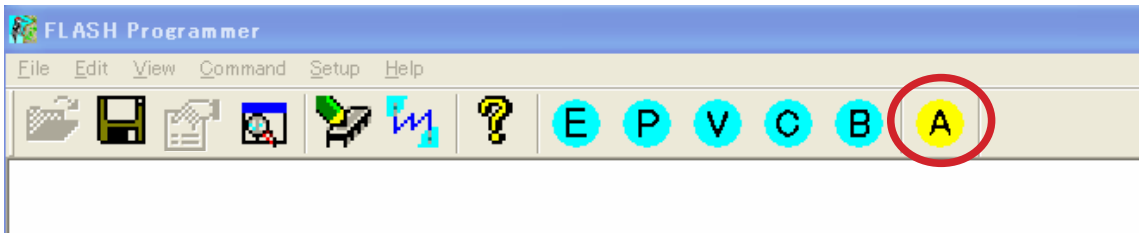


(18) If the connection with the Flash Programmer is successfully made, a dialogue box saying "Erase All data in this devise? (Y/N)" appears automatically. If the connection fails, error message will appear. (Ex.: E000)



Click Yes.

(19) Click A (Auto Programing) to start writing.



(20) Turn off DCD-710AE.

(21) Remove the SPK-581 from DCD-710AE.

TROUBLE SHOOTING

FLOW CHART NO.1

The power cannot be turned on.

↓

Is Power LED lit? →No: Check if there is any leak or short-circuiting rectifier circuit of SUB Power transformer, and service it if defective. (T801, D818, D819, D820, D821,D822,D823,IC86,Q805,Q806)

↓ Yes

Is the +3.3V_NSW line voltage normal? →No: Check if there is any leak or short-circuiting rectifier circuit of SUB Power transformer, and service it if defective. (T801, D818, D819, D820, D821,D822,D823,IC86,Q805,Q806)

↓ Yes

Is the fuse normal? →No: See FLOW CHART No.2 <The fuse blows out.>

↓ Yes

Is normal state restored when once unplugged power cord is plugged again after several seconds? →No: Check if there is any leak or short-circuiting on rectifier circuit of MAIN Power transformer, and service it if defective. (MAIN TRANS,D807,IC84)

↓ Yes

Is the ST+5V line voltage normal? →No: Check if there is any leak or short-circuiting on rectifier circuit of MAIN Power transformer, and service it if defective. (MAIN TRANS,D807,IC84)

↓ Yes

Check each voltage regulator circuit and service it if defective.

FLOW CHART NO.2

The fuse blows out.

↓

Check if there is any leak or short-circuiting on rectifier circuit of MAIN Power transformer, and service it if defective. (D807,IC84,IC83,D801,D802,D803,D804,IC81,IC82)

↓

After servicing, replace the fuse.

FLOW CHART NO.3

+3.3V_D is not outputted.

↓

Is +5V_D voltage supplied to Pin(1) of IC85? →No: Check IC84 and the periphery circuit, and service it if defective.

↓ Yes

Check IC85 and the periphery circuit, and service it if defective.

FLOW CHART NO.4

The fluorescent display tube does not light up.

↓

Is +3.3V_D. voltage supplied to Pins(37) of F701? →No: Check the +3.3V_D. line and service it if defective.

↓ Yes

Is the voltage of approximately +42V supplied to Pin(38) of F701? →No: Check the +42V line and service it if defective.

↓ Yes

Is the voltage of approximately +7V supplied to Pin(1),(43) of F701? →No: Check the FL1/FL2 line and service it if defective.

↓ Yes

Check the fluorescent display tube control signal of a microcomputer. (FL_RST,FL_CS,FL_CLK,FL_MDT)

FLOW CHART NO.5

+42V is not outputted.

↓

Is approximately +42V voltage supplied to the kathode of D812? →No: Check D812, D813 and periphery circuit, and service it if defective.

↓ Yes

Check if there is any leak or short-circuit on the loaded circuit, and service it if defective.

FLOW CHART NO.6

The key operation is not functioning.

↓

Are the contact point and the installation state of the key switches (S701-708) normal? →No: Re-install the switches (S701-708) correctly or replace the poor switch.

↓ Yes

When pressing each switches (S701-708), do the voltage of pin (5),(6),(99),(100) of IC11 decrease? →No: Check the switches (S701-708) and their periphery, and service it if detective.

↓ Yes

Replace IC11.

FLOW CHART NO.7

No operation is possible from the remote control unit.

↓

Is +3.3V_NSW voltage supplied to Pin(3) terminal of the infrared remote control receiver (IC71)? →No Check +3.3V_NSW line and service it if defective.

↓ Yes

Is the "L" pulse sent out Pin(1) terminal of receiver (IC71) when the infrared remote control is activated? →No Replace the infrared remote control receiver (IC71) or replace the remote control unit.

↓ Yes

Is the "L" pulse supplied to the Pin(4) of IC11? →No Check the line between Pin(1) terminal of receiver(IC71) and Pin(4) of IC11, and service it if defective.

↓ Yes

Replace IC11

FLOW CHART NO.8

The disc tray cannot be opened and closed. (It can be done using the remote control unit.)

↓

Is the normal control voltage inputted to Pin(6) of IC11? Refer to "FLOW CHART NO.6" <The key operation is not functioning.> →No Replace the "OP/CL" button (S707).

↓ Yes

Refer to "FLOW CHART NO.9" <The disc tray cannot be opened and closed.>

FLOW CHART NO.9

The disc tray cannot be opened and closed.

↓

Check the line between CN23 and IC14, and service it if defective.

FLOW CHART NO.10

Audio is not outputted normally.

↓

Set the disc on the disc tray, and playback.

↓

Are the analog audio signals outputted to IC41Pin(1) or IC41Pin(7)

→No

Check AUDIO+V(+12V) and AUDIO-V(-12V) line and service it if defective.

↓ Yes

IC41Pin(1) : AUDIO (L)
IC41Pin(7) : AUDIO (R)

DSP (IC31)Check the DAC(IC39) digital audio data signal of a DSP (IC31). (BCK,LRCK,DATA_S1L,DATA_S1R)

↓ Yes

↓ Yes

Is the "H" level MUTE line to Pins(1) of CY11?

Check the DAC(IC39) control signal of a microcomputer (IC11). (DAC_CS,MCK_DAC,MDT_DAC)

↓ Yes

↓ Yes

Check A_MUTE line and service it if defective.

IC44 Pin(25) A_MUTE L : mute / H : play

Check DAC(IC39)_Vcc(+5V) line and service it if defective.

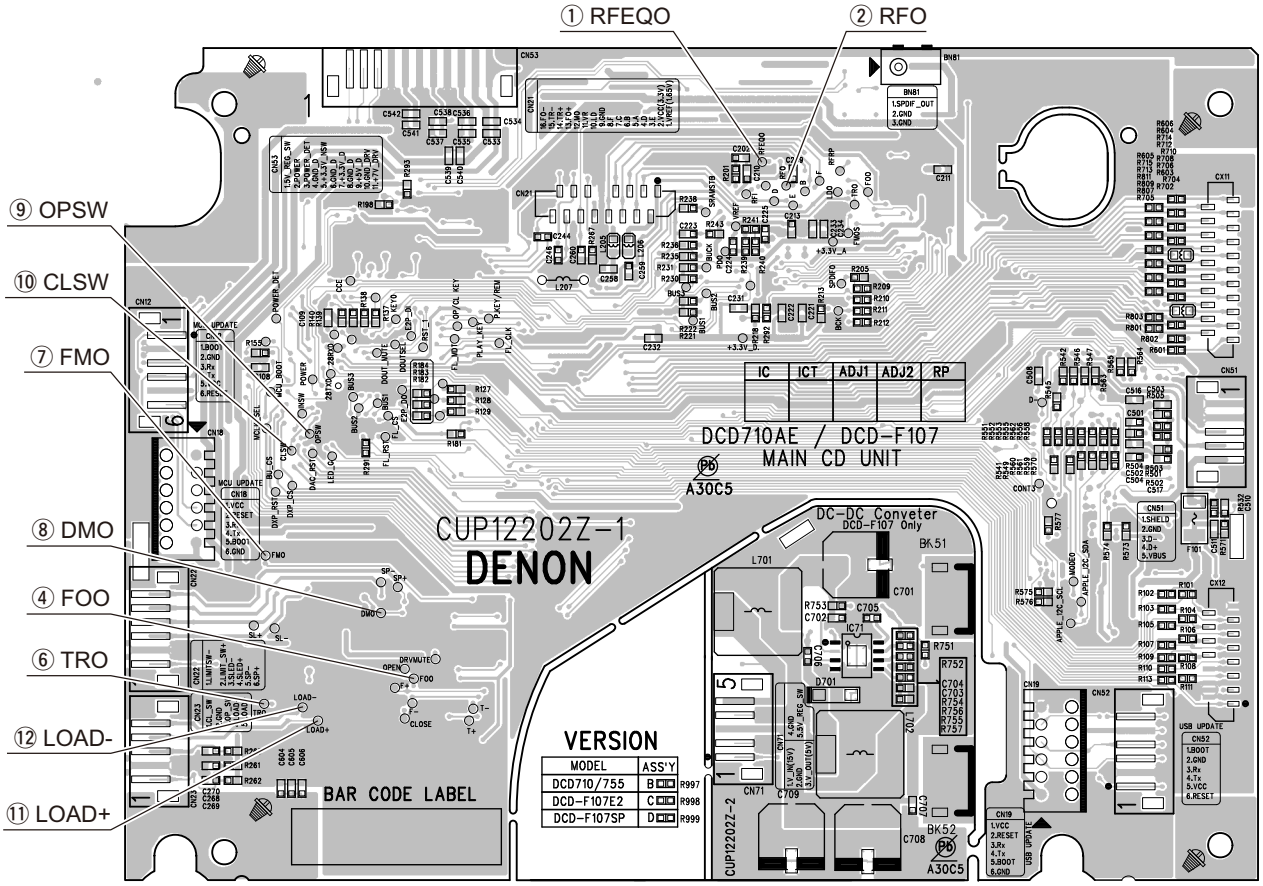
↓ Yes

Replace IC39.

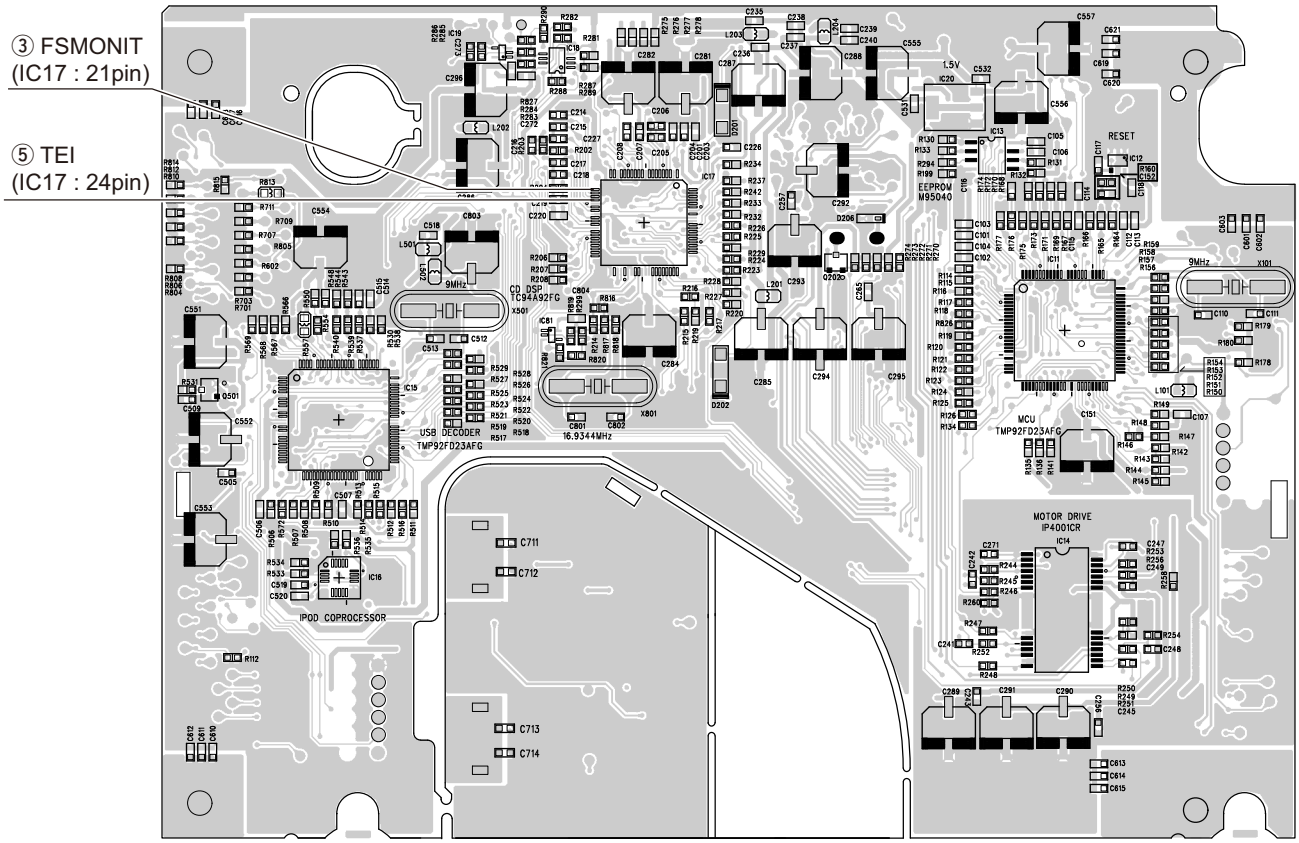
MEASURING POINT AND WAVEFORMS

MEASURING POINT

CUP12202 MAIN PCB ASSY (Component side)



CUP12202 MAIN PCB ASSY (Foil side)

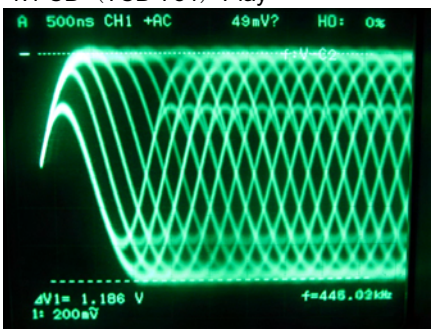


WAVEFORMS

1. DISC PLAY RF WAVEFORM（EYE-PATTERN）

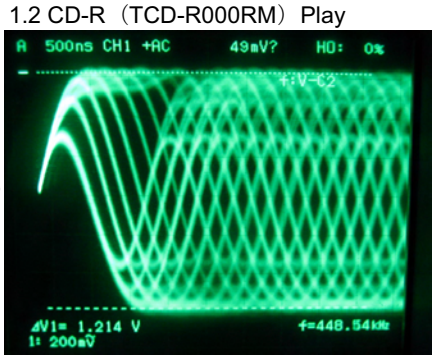
1.1 CD（TCD-784）Play

①RFEQO



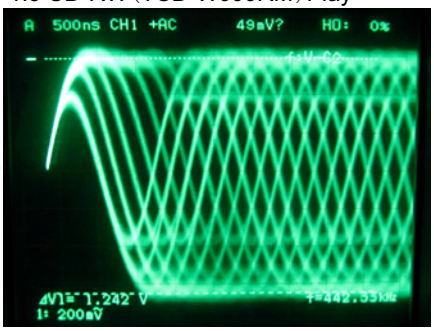
1.2 CD-R（TCD-R000RM）Play

①RFEQO



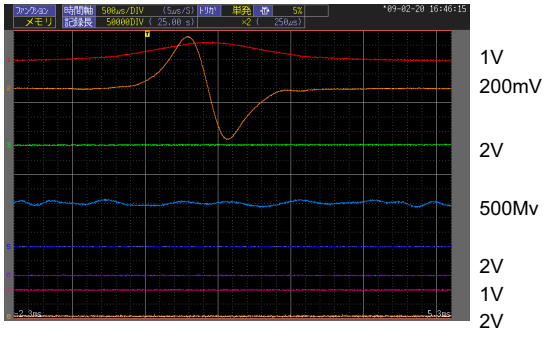
1.3 CD-RW（TCD-W000RM）Play

①RFEQO

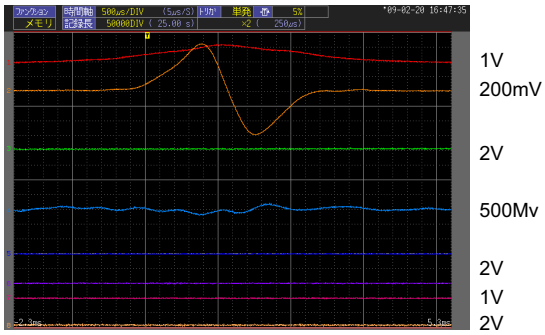


2. DISC DETECTION

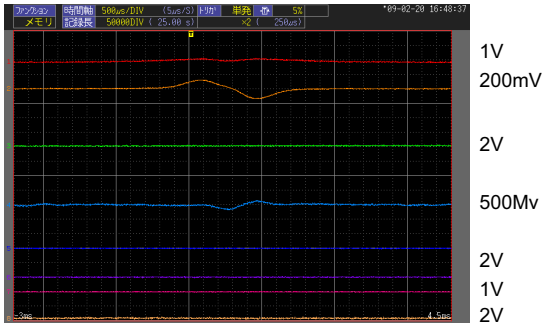
2.1 CD（TCD-784）DISC DETECTION



2.2 CD-R（TCD-R000RM）DISC DETECT

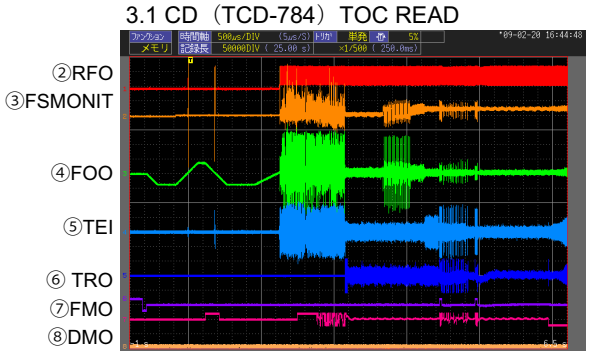


2.3 CD-RW（TCD-W000RM）DISC DETECTION

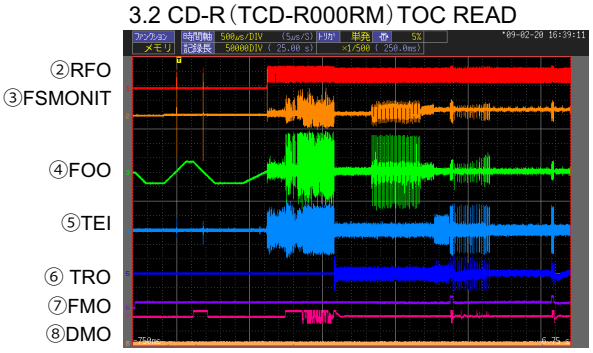


3. TOC READ

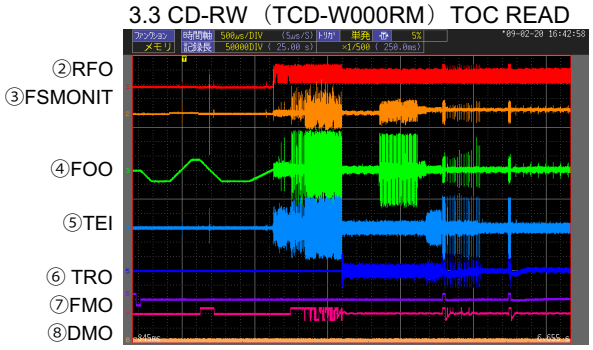
3.1 CD（TCD-784）TOC READ



3.2 CD-R（TCD-R000RM）TOC READ

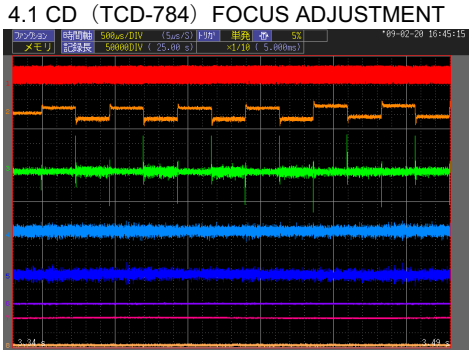


3.3 CD-RW （TCD-W000RM） TOC READ

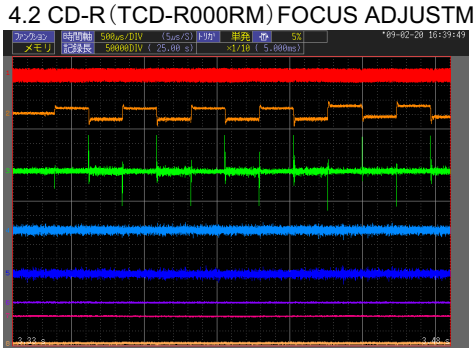


4. FOCUS ADJUSTMENT

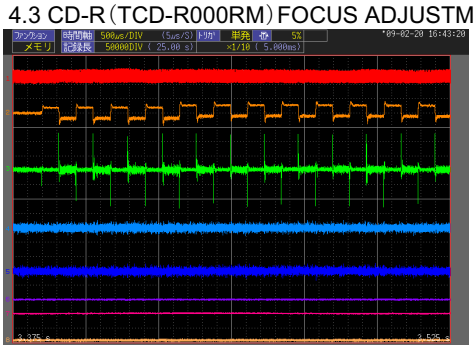
4.1 CD（TCD-784）FOCUS ADJUSTMENT



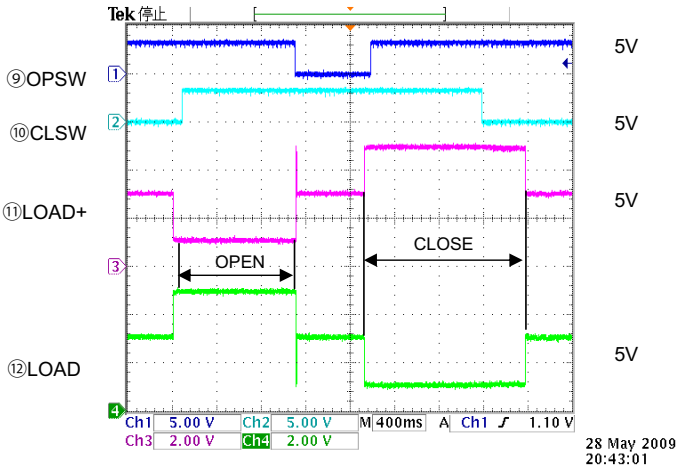
4.2 CD-R（TCD-R000RM）FOCUS ADJUSTMENT



4.3 CD-R（TCD-R000RM）FOCUS ADJUSTMENT



5. LOADER OPEN-CLOSE

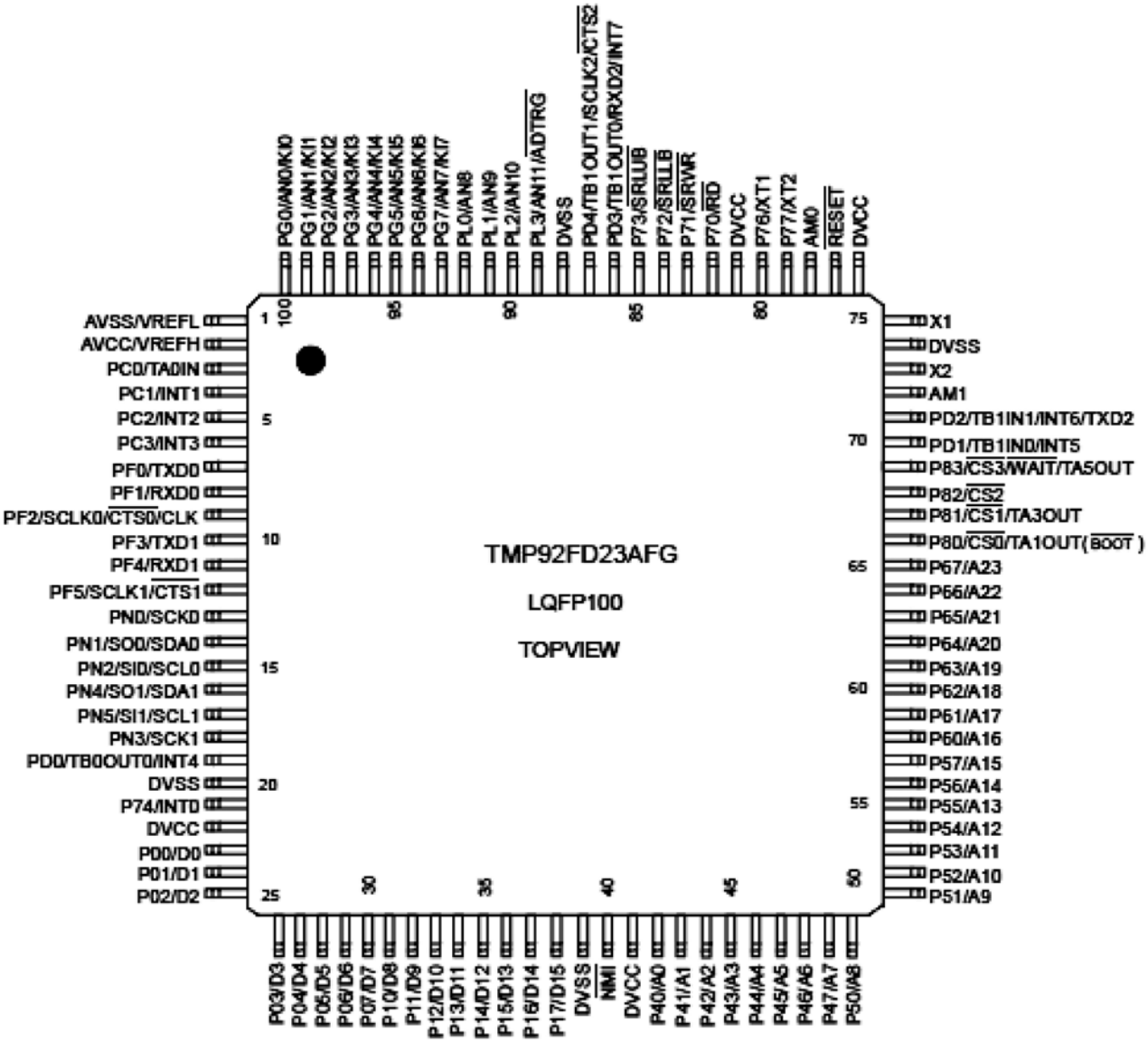


SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

TMP92FD23AFG (IC11)



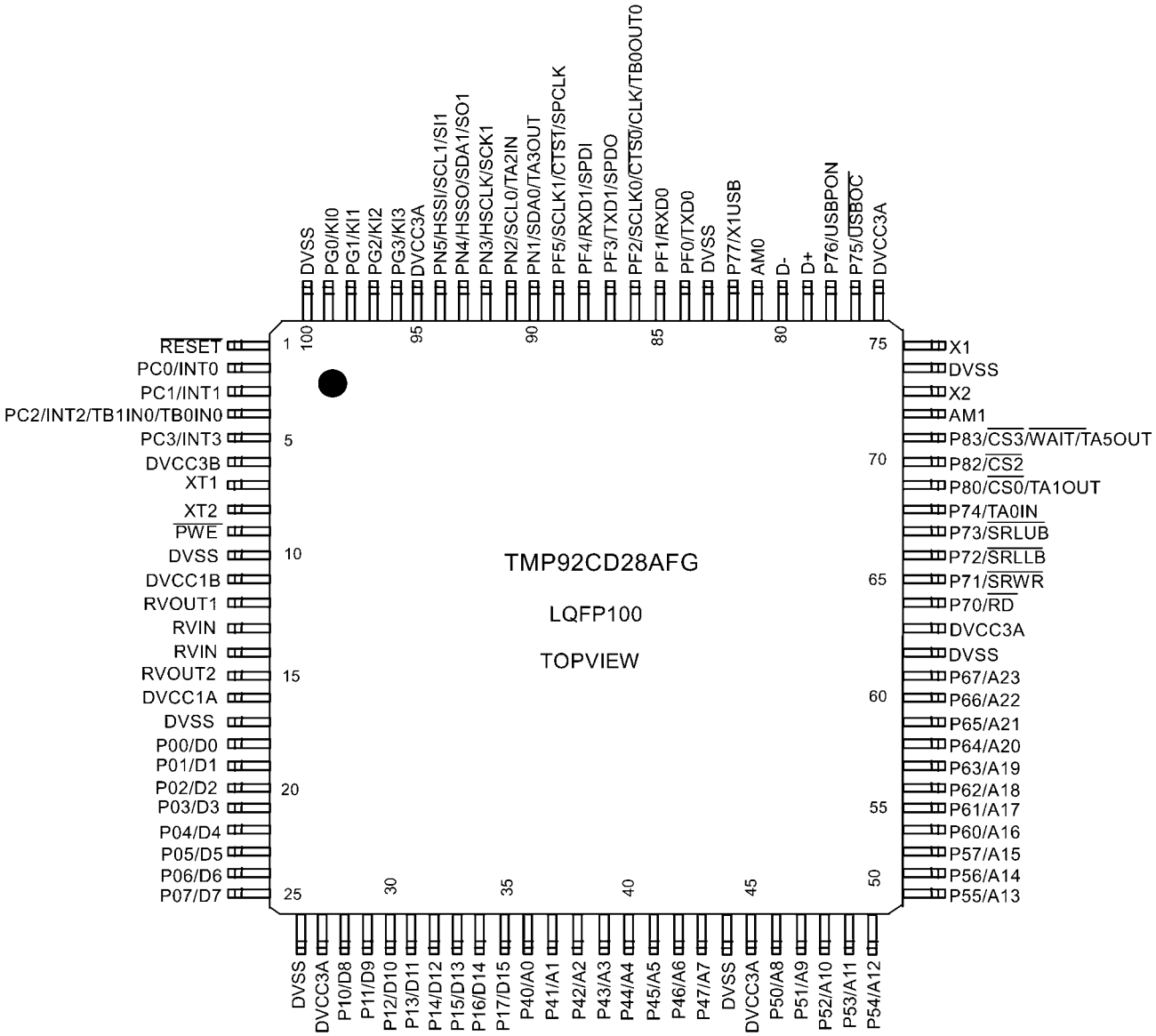
TMP92FD23AFG Terminal Function

Pin No	IC Terminal ame	Terminal name	I/O setting	Terminal function	Remarks
1	AVSS/VREFL	Power supply(GND)	P	Power supply (GND)	
2	AVCC/VREFH	Power supply(+3.3V)	P	Power supply (+3.3V)	
3	PC0/TA0IN	Non(PU)	I	Non(PU)	Port only for input (Schmitt)
4	PC1/INT1	Non(PU)	I	POWER KEY (F107 only)	Port only for input (Schmitt)
5	PC2/INT2	PLAY KEY	I	PLAY KEY	Port only for input (Schmitt)
6	PC3/INT3	OP/CL KEY	I	OP/CL KEY	Port only for input (Schmitt)
7	PF0/TXD0	FL_MDT	O	FL tube communication line (data)	(Schmitt I input)
8	PF1/RXD0	OPEN	O	Non (NC)	(Schmitt I input)
9	PF2/SCLK0/CTS0/CLK	FL_CLK	O	FL tube communication line (clock)	(Schmitt I input)
10	PF3/TXD1/HSSO	[TXD]	O	DENON BUS [Communication lines for writing](F107 only)	(Schmitt I input)
11	PF4/RXD1/HSSI	[RXD]	I	DENON BUS [Communication lines for writing](F107 only)	(Schmitt I input)

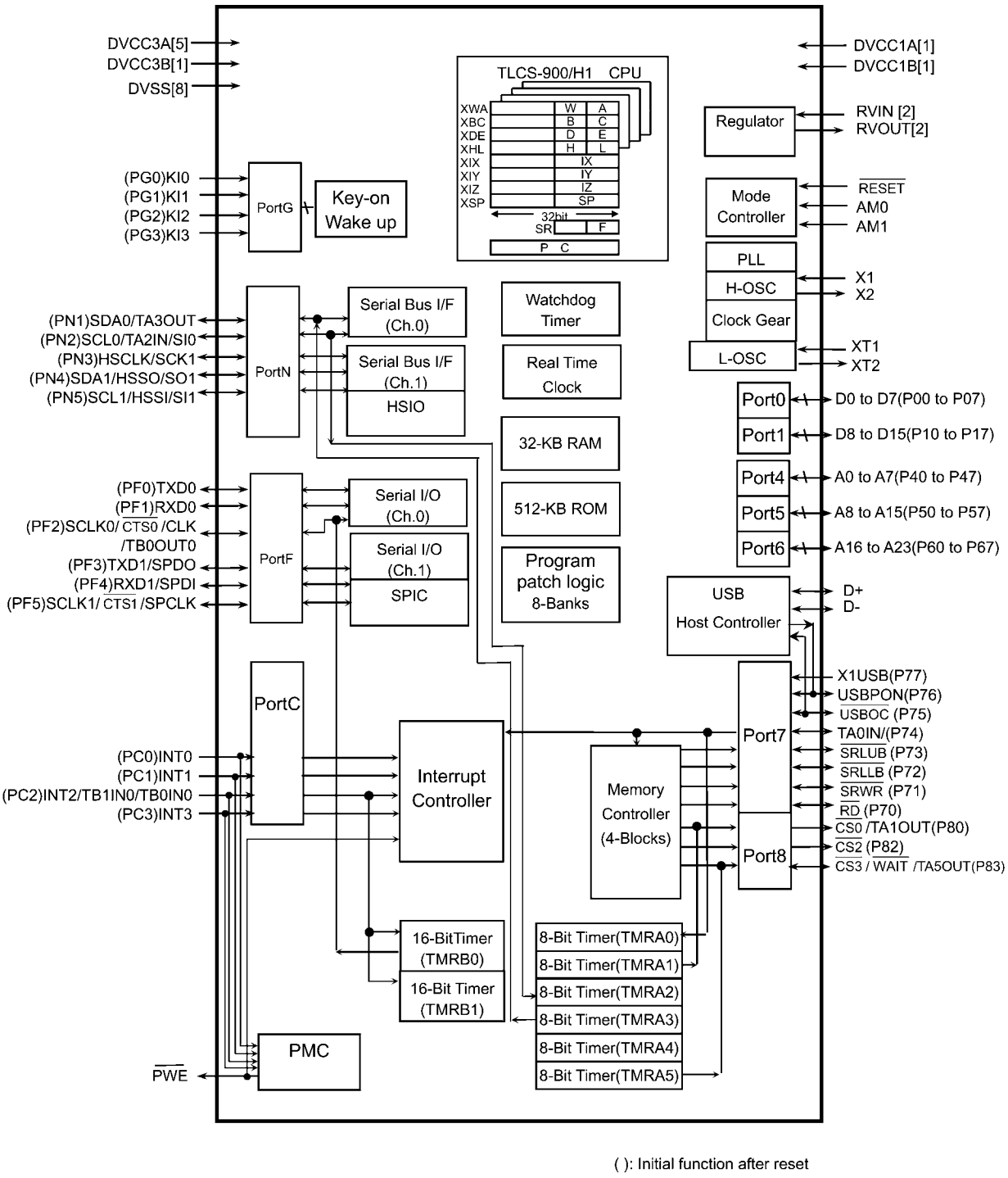
Pin No	IC Terminal ame	Terminal name	I/O setting	Terminal function	Remarks
12	PF5/SCLK1/CTS1/ HSCLK	100KΩ/PD	I	DENON BUS(F107 only)	(Schmitt I input)
13	PN0/SCK0	CONT1	O	Reserved	(Schmitt I input), When resetting it, it becomes output latch 1.
14	PN1/SO0/SDA0	CONT2	I	Reserved	(Schmitt I input and open drain output), When resetting it, it becomes output latch 1.
15	PN2/SI0/SCL0	CONT3	O	Reserved	(Schmitt I input and open drain output), When resetting it, it becomes output latch 1.
16	PN4/SO1/SDA1	E2P_DI	O	Cereal data output for E2PROM	(Schmitt I input and open drain output), When resetting it, it becomes output latch 1.
17	PN5/SI1/SCL1	E2P_DO	I	Cereal data input for E2PROM	(Schmitt I input and open drain output), When resetting it, it becomes output latch 1.
18	PN3/SCK1	E2P_CLK	O	Serial clock output for E2PROM	(Schmitt I input)§When resetting it, it becomes output latch 1.
19	PD0/TB0OUT0/INT4	PU	I	DENON BUS (F107 only)	(Schmitt I input)
20	DVSS	Power supply (GND)	P	Power supply (GND)	
21	P74/INT0	REMOCON	I	Remote control input (710only)	Port only for input (Schmitt)
22	DVCC	Power supply (+3.3V)	P	Power supply(+3.3V)	
23	P00/D0	OPEN_F	O	Tray OPEN control	P0x : Setting is possible by 1bit unit
24	P01/D1	CLSE_F	O	Tray CLOSE control	
25	P02/D2	A_Mute	O	DAC output audio mute	L; Mute, H; Mute cancel
26	P03/D3	DRVMUTE	O	CD drive mute output	L; Mute, H; Mute cancel (Cancels above 3V)
27	P04/D4	INSW	I	CD drive limit SW input	
28	P05/D5	CLSW	I	CD drive close SW input	
29	P06/D6	OPSW	I	CD drive opening SW input	
30	P07/D7	(USB_DET) PU	I	Reserved	
31	P10/D8	FL_RST	O	FL tube communication line (reset)	P1x : Setting is possible by 1bit unit
32	P11/D9	FL_CS	O	FL tube communication line (chip selection)	
33	P12/D10	E2P_CS	O	Chip selection for E2PROM (Act:H)	
34	P13/D11	MODEL SEL	I	Model select H : 710AE / L : F107	
35	P14/D12	14BUS0 (DSP)	O	*TC94A92FG bus control	
36	P15/D13	14BUS1 (DSP)	O	*TC94A92FG bus control	
37	P16/D14	BUS2 (DSP)	O	*TC94A92FG bus control	
38	P17/D15	92BUS3 (DSP)	O	*TC94A92FG bus control	
39	DVSS	Power supply (GND)	P	Power supply (GND)	
40	NMI	PULL DOWN (0Ω)	I	NMI	BaseModel is PULL DOWN(0Ω).
41	DVCC	Power supply (+3.3V)	P	Power supply(+3.3V)	
42	P40/A0	MODE0	I	Select destination	P4x : Setting is possible by 1bit unit
43	P41/A1	MODE1	I	Select destination	00 : E2, 01 : E3, 10 : JP, 11 : E1C
44	P42/A2	LED_R	O	STB is red LED	H;ON L;OFF
45	P43/A3	LED_G	O	P.ON is green LED	H;ON L;OFF
46	P44/A4	DAC_CS	O	DAC1796 CS	
47	P45/A5	(DAC_MDO)	I	(DAC1796 MDO) No control	
48	P46/A6	DAC_RST	O	DAC1796 RST	710; PD in 1M
49	P47/A7	MDT_DAC/DXP/ BU	O	DAC1796 MDI	
50	P50/A8	MCK_DAC/DXP/ BU	O	DAC1796 MCK	P5x : Setting is possible by 1bit unit
51	P51/A9	DXP_CS	O	Chip selector for DXP6000	
52	P52/A10	DXP_RST	O	Reset for DXP6000	
53	P53/A11	BU_CS	O	Chip selector for BU2630	
54	P54/A12	MCK_SEL	O	MCLK selector	
55	P55/A13	POWER	O	MainTRANS on / off	
56	P56/A14	USBRST(DSP)	O	Reset for TMP92FD28FG	
57	P57/A15	DECRST	O	Reset for TC94A92FG	RESET in OR of D305 and D306 → RESET in +3.3V_D
58	P60/A16	OPEN	O	Non	P6x : Setting is possible by 1bit unit

Pin No	IC Terminal ame	Terminal name	I/O setting	Terminal function	Remarks
59	P61/A17	(SRAMSTB)	I	Reserved	
60	P62/A18	PWR_DET	I	"AC power OFF detection input (When it is unplugged AC : L)"	
61	P63/A19	DOUT_MUTE	O	Mute output of digital data	
62	P64/A20	DOUT_SEL	O	Digital data output selection	
63	P65/A21	92SBSY	I	OASIS system busy input	Connection with Borelo (4) pin.
64	P66/A22	28INT0	O	Reserved	
65	P67/A23	BOOT_CONT	I	Reserved	
66	P80/CS0/ TA1OUT[BOOT]	BOOT	O	BOOT (for farm writing)	Only the output port
67	P81/CS1/TA3OUT	OPEN	O	Non	Only the output port
68	P82/CS2	5V_REG_SW	O	Reserved	Only the output port
69	P83/CS3/WAIT/ TA5OUT	92BUCK(DSP)	O	*TC94A92FG bus control	Schmitt input
70	PD1/TB1IN0/INT5	92DREQ(MP3)	I	OASIS DREQ input	(Schmitt I input) only for input
71	PD2/TB1IN1/INT6/ TXD2	28TXD	O	For TMP92FD28FG communication	(Schmitt I input)
72	AM1	PULL UP(0Ω)	I	AM1 Pull UP	Fixed H
73	X2	Oscillator connection pin	O	Oscillator connection pin	
74	DVSS	Power supply (GND)	P	Power supply (GND)	
75	X1	Oscillator connection pin	I	Oscillator connection pin	
76	DVCC	Power supply (+3.3V)	P	Power supply (+3.3V)	
77	RESET	RESET	I	Reset input of μ-com	
78	AM0	PULL UP(0Ω)	I	AM0 Pull UP	Fixed H
79	P77/XT2	PULL UP(47kΩ)	O	Non	Open drain output
80	P76/XT1	92CCE(DSP)	O	*TC94A92FG bus control	Open drain output R644(OPEN);GND
81	DVCC	Power supply (+3.3V)	P	Power supply (+3.3V)	
82	P70/RD	CHECKIN(100KΩ/ PD)	I	P.W.B. check mode	Schmitt input and with PU resistance
83	P71/SRWR	CHECK1(100KΩ/ PD)	I	P.W.B. check mode	Schmitt input and with PU resistance
84	P72/SRLLB	CHECK2(100KΩ/ PD)	I	P.W.B. check mode	Schmitt input and with PU resistance
85	P73/SRLUB	CHECK3(100KΩ/ PD)	I	P.W.B. check mode	Schmitt input
86	PD3/TB1OUT0/RXD2/ INT7	28RXD	I	For TMP92FD28FG communication	(Schmitt I input)
87	PD4/TB1OUT1/SCLK2/ CTS2	OPEN	O	Non	(Schmitt I input)
88	DVSS	Power supply(GND)	P	Power supply(GND)	
89	PL3/AN11/ADTRG	100KΩPD	I	Non	Port only for input(Schmitt)
90	PL2/AN10	100KΩ/PD	I	Non	Port only for input(Schmitt)
91	PL1/AN9	100KΩ/PD	I	Non	Port only for input(Schmitt)
92	PL0/AN8	100KΩ/PD	I	Non	Port only for input(Schmitt)
93	PG7/AN7/KI7	100KΩ/PD	I	Non	Port only for input(Schmitt)/Key on W.UP
94	PG6/AN6/KI6	100KΩ/PD	I	Non	Port only for input(Schmitt)/Key on W.UP
95	PG5/AN5/KI5	100KΩ/PD	I	Non	Port only for input(Schmitt)/Key on W.UP
96	PG4/AN4/KI4	100KΩ/PD	I	Non	Port only for input(Schmitt)/Key on W.UP
97	PG3/AN3/KI3	100KΩ/PD	I	Non	Port only for input(Schmitt)/Key on W.UP
98	PG2/AN2/KI2	LD_CHCK	I	Input for LD check	Port only for input(Schmitt)/Key on W.UP
99	PG1/AN1/KI1	KEY1	I	KEY input 1	Port only for input(Schmitt)/Key on W.UP
100	PG0/AN0/KI0	KEY0	I	KEY input 10	Port only for input(Schmitt)/Key on W.UP

TMP92CD28AFG (IC15)



TMP92CD28AFG Block Diagram



( ): Initial function after reset

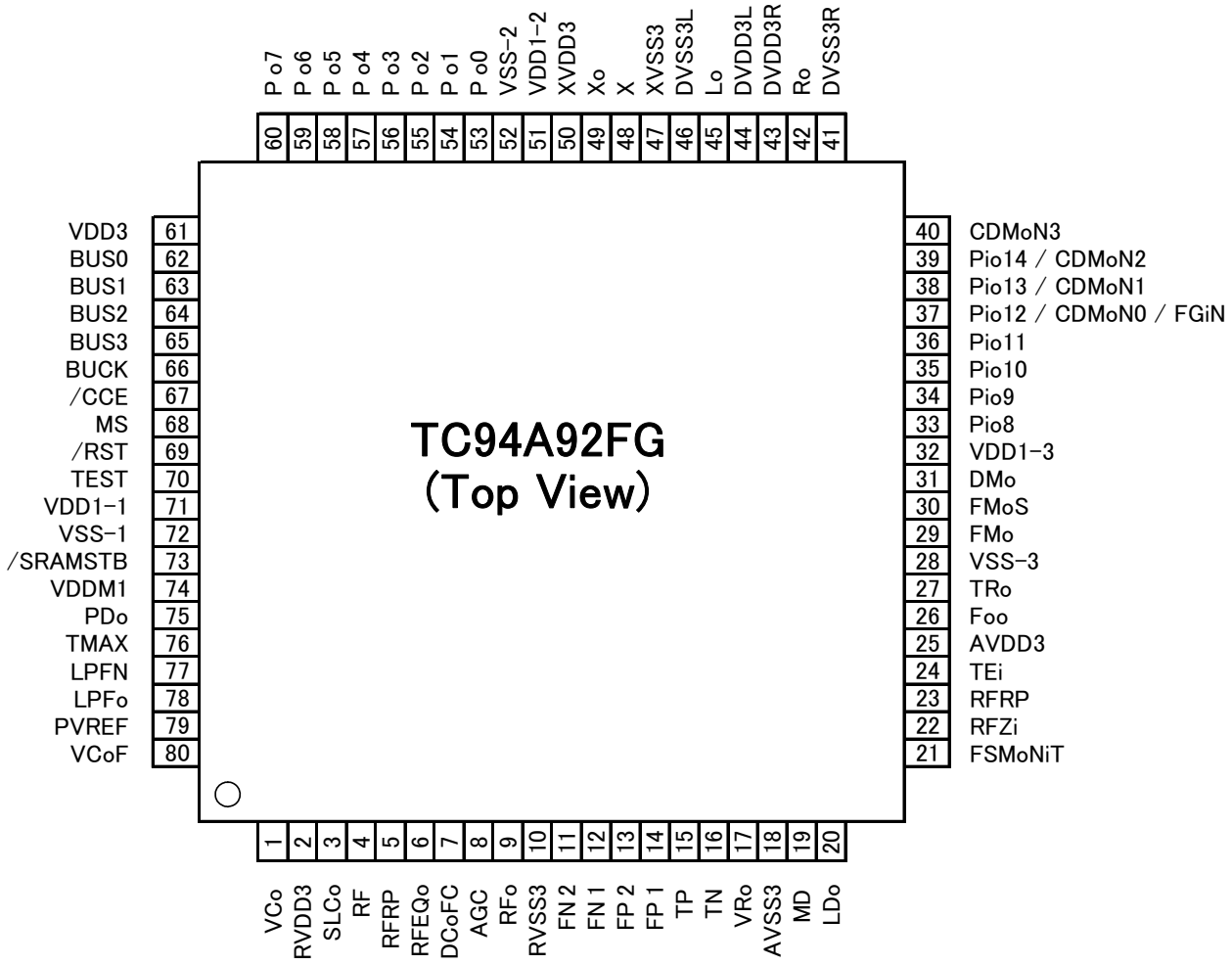
TMP92CD28AFG Terminal Function

Pin No	IC Terminal name	DCD-710AE/755SE Terminal name	I/O	RST	INIT	STB	Pull U/D	Port function
1	/RESET	RESETTerminal	I	I	I	-	PU	Port only for input (Schmitt input and PU resistance)
2	PC0/INT0	Reserved	I	-	I	-	PD	Port only for input (with Schmidt input)
3	PC1/INT1	Non (PD)	I	-	I	-	PD	Port only for input (with Schmidt input)
4	PC2/INT2/TB1IN0/ TB0IN0	SYSTEM BUSY input	I	-	I	-		Port only for input (with Schmidt input)
5	PC3/INT3	STREQ input	I	-	I	-		Port only for input (with Schmidt input)
6	DVCC3B	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
7	XT1	Non (NC)	I	I	I	-	-	Input port
8	XT2	Non (NC)	O	O	I	-	-	Output port

Pin No	IC Terminal name	DCD-710AE/755SE Terminal name	I/O	RST	INIT	STB	Pull U/D	Port function
9	PWE	Non (NC)	O	-	O	-	-	Output port
10	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
11	DVCC1B	Power supply (+1.5V)	P	P	P	P	-	Power supply (+1.5V)
12	RVOUT1	Built-in +1.5V Regulator output	O	-	O	-	-	Voltage output is not in the Flash version
13	RVIN	Built-in +1.5V Regulator input	I	-	I	-	-	Flash version is a terminal Power supply
14	RVIN	Built-in +1.5V Regulator input	I	-	I	-	-	Flash version is a terminal Power supply
15	RVOUT2	Built-in +1.5V Regulator output	O	-	O	-	-	Voltage output is not in the Flash version
16	DVCC1A	Power supply (+1.5V)	P	P	P	P	-	Power supply(+1.5V)
17	DVSS	Power supply (GND)	P	P	P	P	-	Power supply(GND)
18	P00/D0	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
19	P01/D1	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
20	P02/D2	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
21	P03/D3	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
22	P04/D4	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
23	P05/D5	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
24	P06/D6	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
25	P07/D7	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
26	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
27	DVCC3A	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
28	P10/D8	Non (NC)	O	-	O(L)	-	PD	P1x : Setting is poss ble by 1bit unit
29	P11/D9	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
30	P12/D10	Non (NC)	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
31	P13/D11	MODEL ID L ; F107 H ;7 10AE	I	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
32	P14/D12	CHECK IN 100k PD	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
33	P15/D13	CHECK 1 100k PD	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
34	P16/D14	CHECK 2 100k PD	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
35	P17/D15	CHECK 3 100k PD	O	-	O(L)	-	-	P0x : Setting is poss ble by 1bit unit
36	P40/A0	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
37	P41/A1	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
38	P42/A2	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
39	P43/A3	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
40	P44/A4	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
41	P45/A5	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
42	P46/A6	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
43	P47/A7	Non (NC)	O	-	O(L)	-	-	P4x : Setting is poss ble by 1bit unit
44	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
45	DVCC3A	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
46	P50/A8	Non (NC)	O	-	O(L)	-	-	P5x : Setting is poss ble by 1bit unit
47	P51/A9	Non (NC)	O	-	O(L)	-	-	P5x : Setting is poss ble by 1bit unit
48	P52/A10	Non (NC)	O	-	O(L)	-	-	P5x : Setting is poss ble by 1bit unit
49	P53/A11	Non (NC)	O	-	O(L)	-	-	P5x : Setting is poss ble by 1bit unit
50	P54/A12	Non (NC)	O	-	O(L)	-	-	P5x : Setting is poss ble by 1bit unit
51	P55/A13	Reserved	I	-	I	-	PU	P5x : Setting is poss ble by 1bit unit
52	P56/A14	Reserved	O	-	O(L)	-	PU	P5x : Setting is poss ble by 1bit unit
53	P57/A15	Reserved	I	-	I	-	PU	P5x : Setting is poss ble by 1bit unit
54	P60/A16	Non (NC)	O	-	O(L)	-	-	P6x : Setting is poss ble by 1bit unit
55	P61/A17	Non (PD)	O	-	O(L)	-	PD	P6x : Setting is poss ble by 1bit unit
56	P62/A18	CCE	O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
57	P63/A19	BUCK	O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
58	P64/A20	BUS0	I/O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
59	P65/A21	BUS1	I/O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
60	P66/A22	BUS2	I/O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
61	P67/A23	BUS3	I/O	-	I	-	PU	P6x : Setting is poss ble by 1bit unit
62	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
63	DVCC3A	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
64	P70/RD	Non (NC)	O	-	O(L)	-	-	Port only for input (Schmitt input and PU resistance)
65	P71/SRWR	Non (NC)	O	-	O(L)	-	-	Port only for input (Schmitt input and PU resistance)
66	P72/SRLLB	Non (PD)	O	-	O(L)	-	PD	Port only for input (Schmitt input and PU resistance)

Pin No	IC Terminal name	DCD-710AE/755SE Terminal name	I/O	RST	INIT	STB	Pull U/D	Port function
67	P73/SRLUB	Non (NC)	O	-	O(L)	-	-	Port only for input (Schmitt input and PU resistance)
68	P74/TA0IN	RESET output for TC94A92FG	O	-	O(H)	-	-	I/O port (Schmitt input)
69	P80/CS0/TA1OUT/ BOOT	Flash writing BOOT	O	I	O(H)	-	PU	Port only for input
70	P82/CS2	Reserved	O	-	O(H)	-	-	Port only for input
71	P83/CS3/WAIT/ TA5OUT	TC94A92FG communication LRCK	O	-	O(H)	-	-	I/O port
72	AM1	Operational mode (PU)	I	-	I	-	PU	Port only for input (Fixed H)
73	X2	Oscillator connection terminal (9.000MHz)	O	-	O	-	-	Output port
74	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
75	X1	Oscillator connection terminal (9.000MHz)	I	-	I	-	-	Input port
76	DVCC3A	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
77	P75/USBOC	USB OC (overcurrent detection Act L) input	I	-	I	-	-	I/O port (Schmitt input)
78	P76/USBPON	Non (NC)	O	-	O(H)	-	-	I/O port (Schmitt input)
79	D+	USB connection terminal	I/O	-	I/O	-	-	I/O port
80	D-	USB connection terminal	I/O	-	I/O	-	-	I/O port
81	AM0	Operation mode (PU)	I	-	I	-	PU	Port only for input (Fixed H)
82	P77/X1USB	Non (PD)	O	-	O(H)	-	-	I/O port (Schmitt input)
83	DVSS	Power supply (GND)	P	P	P	P	-	Power supply (GND)
84	PF0/TXD0	Reserved	I	-	I	-	PD	I/O port (Schmitt input)
85	PF1/RXD0	Reserved	I	-	I	-	PD	I/O port Schmitt input)
86	PF2/SCLK0/CTS0/ CLK/TB0OUT0	Non (PD)	I	-	I	-	PD	I/O port (Schmitt input)
87	PF3/TXD1/SPDO	SYS μ-com communication line TXD/Flash writing TXD	O	-	O	-	PU	I/O port (Schmitt input)
88	PF4/RXD1/SPDI	SYS μ-com communication line TXD/Flash writing TXD	I	-	I	-	PU	I/O port
89	PF5/SCLK1/CTS1/ SPCLK	Co-PRO RESET	O	-	O	-	PU	I/O port
90	PN1/SDA0/TA3OUT	Co-PRO communication line I2C_SDA	I/O	-	I/O	-	PU	I/O port (Schmitt input, open drain)
91	PN2/SCL0/TA2IN	Co-PRO communication line I2C_SCL	O	-	O	-	PU	I/O port (Schmitt input, open drain)
92	PN3/HSCLK/SCK1	TC94A92FG communication BCK	O	-	O	-	-	I/O port (Schmitt input)
93	PN4/HSSO/SDA1/ SO1	TC94A92FG communication DATA	O	-	O	-	-	I/O port Schmitt input, open drain)
94	PN5/HSSI/SCL1/SI1	TC94A92FG communication GATE	O	-	O	-	-	I/O port (Schmitt input, open drain)
95	DVCC3A	Power supply (+3.3V)	P	P	P	P	-	Power supply (+3.3V)
96	PG3/KI3	Non (PD)	I	-	I	-	PD	Port only for input (Schmitt)/Key on W.UP
97	PG2/KI2	Non (PD)	I	-	I	-	PD	Port only for input (Schmitt)/Key on W.UP
98	PG1/KI1	Non (PD)	I	-	I	-	PD	Port only for input (Schmitt)/Key on W.UP
99	PG0/KI0	TC94A92FG DREQ input	I	-	I	-	PD	Port only for input (Schmitt)/Key on W.UP
100	DVSS	Power supply (GND)	P	P	P	P	-	Power supply(GND)

TC94A92FG (IC17)



TC94A92FG Terminal Function

Pin No.	Symbol	I/O	Description	Default	Remarks
1	VCoi	O 3AI/F	DSP VCO EFM and PLCK Phase difference signal output pin. (DSP VCO control voltage inputr pin.)	O	3 state output
2	RVDD3		CD DSP Power supply for 3.3V RF amplifier core and PLL circuit		
3	SLCo	O 3AI/F	EFM slice level output pin	O	Connect capacitor according with se rvo frequency band.
4	RFi	I 3AI/F	RF signal input pin	I	Selectable Zin 20/10 kΩ
5	RFRPi	I 3AI/F	RF ripple signal input pin	I	
6	RFEQo	O 3AI/F	RF equalizer circuit output pin.	O	Connect to RFRPi by 0.1uF, to RFi by 4700pF.
7	DCoFC	O 3AI/F	RFEQo offset compensation LPF output	O	Connect to Vro by more than 0.015uF
8	AGCi	I 3AI/F	RF signal AGC amplifier input pin	I	
9	RFo	O 3AI/F	RF signal generation amplifier output pin	O	
10	RVSS3		Grounding pin for 3.3 RF amplifier core and PLL circuit		
11	FNI2	I 3AI/F	Main beam signal input pin. To be connected to PIN diode C.	I	
12	FNI1	I 3AI/F	Main beam signal input pin. To be connected to PIN diode A.	I	
13	FPI2	I 3AI/F	Main beam signal input pin. To be connected to PIN diode D.	I	
14	FPI1	I 3AI/F	Main beam signal input pin. To be connected to PIN diode B.	I	
15	TPi	I 3AI/F	Sub beam signal input pin. To be connected to PIN diode F.	I	
16	TNi	I 3AI/F	Sub beam signal input pin. To be connected to PIN diode E.	I	
17	VRo	O 3AI/F	1.65 V reference voltage output pin.	O	Connected to PVREF, And connect to GNG by 0.1uF+100uF.
18	AVSS3		Grounding pin for 3.3V CD analog circuits.		
19	MDi	I 3AI/F	Monitor photodiode amplifier input pin.	I	Reference Voltage=178mVtyp.
20	LDo	O 3AI/F	Laser diode amplifier output pin	O	

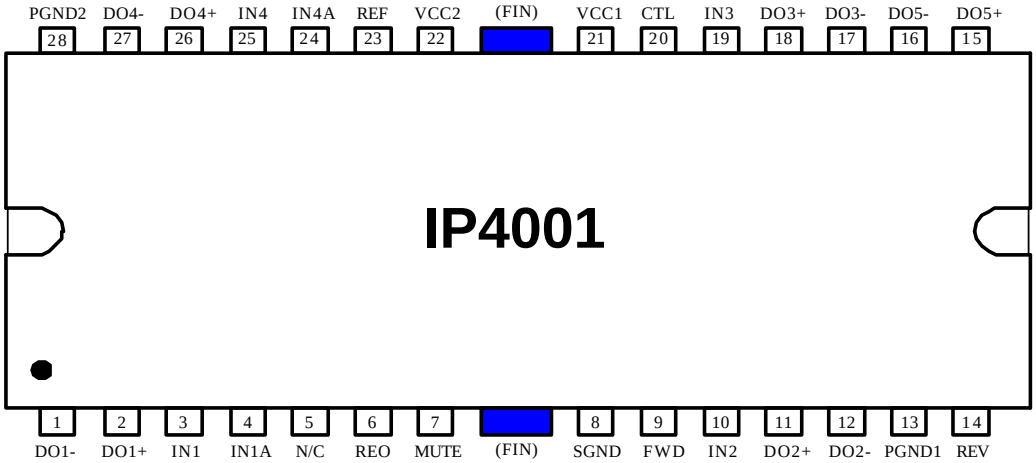
Pin No.	Symbol	I/O	Description	Default	Remarks
21	FSMoNiT	O 3AI/F	Focus Error signal / Sub beam add signal output pin(monitor pin/GND)	O	
22	RFZi	I 3AI/F	RF ripple zero cross signal Input pin	I	
23	RFRP	O 3AI/F	RF ripple signal output pin.	O	
24	TEi	O 3AI/F	Tracking error signal output pin.	O	Bulit in serises R=500Ω. Connect to VRo by capacitor.
25	AVDD3		Power supply pin for 3.3 V CD analog circuits.		
26	FOo	O 3AI/F	Focus servo equalizer output pin.	O	Bulit in serises R=3.3 kΩ
27	TRo	O 3AI/F	Tracking servo equalizer output pin.	O	Bulit in output R=3.3 kΩ
28	VSS 3		Grounding pin for 1.5V Decoder DSP CD circuit		
29	FMo	O 3AI/F	Feed servo equalizer output pin.	O	Bulit in output R=3.3 kΩ
30	FMoS	O 3AI/F	Feed servo equalizer output pin. （Stepper motor application）	O	Bulit in output R=3.3 kΩ
31	DMo	O 3AI/F	Disc servo equalizer output pin	O	Bulit in output R=3.3 kΩ
32	VDD1 3	I/O 3I/F	Power supply pin for 1.5V Decoder DSP /CD circuit		
33	Pio8	I/O 3I/F	Port 8（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
34	Pio9	I/O 3I/F	Port 9（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
35	Pio10	I/O 3I/F	Port 10（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
36	Pio11	I/O 3I/F	Port 11（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
37	Pio12/ CDMoN0/ FGiN	I/O 3I/F	Port 12（General Input/Output Port ） / CD Monitor 0 / FG signal input	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
38	Pio13/ CDMoN1	I/O 3I/F	Port 13（General Input/Output Port ） / CD Monitor1	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
39	Pio14/ CDMoN2	I/O 3I/F	Port 14（General Input/Output Port ） / CD Monitor 2	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
40	CDMoN3	O 3I/F	CD Monitor3 (Default output : SBSY)	O	CMOS Port Refer to [1.2 Pin Assinment Table]

Pin No.	Symbol	I/O	Description	Default	Remarks
41	DVSS3R		Grounding pin for 3.3V Muiti Bit DAC circuit		
42	Ro	O 3AI/F	R channel audio output pin of Audio DAC.	O	
43	DVDD3R		Power supply pin for 3.3V Audio DAC circuit.		
44	DVDD3L		Power supply pin for 3.3V Audio DAC circuit.		
45	Lo	O 3AI/F	L channel audio output pin of Audio DAC	O	
46	DVSS3L		Grounding pin for 3.3V Muiti Bit DAC Circuit		
47	XVSS3		Grounding pin for 3.3V clock oscillator circuit		
48	Xi	I 3AI/F	System clock Input pin	I	Xtal oscillation circuit. Connect feedback resistor 1 MΩ between Xo and Xi
49	Xo	O 3AI/F	System clock Output pin	O	
50	XVDD3		Power Supply pin for 3.3V clock oscillator circuit		
51	VDD1 2		Power Supply pin for 1.5V Digital circuit		
52	VSS 2		Grounding pin for 1.5V digital circuit		
53	Pio0	I/O 3I/F	Port 0（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
54	Pio1	I/O 3I/F	Port 1（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
55	Pio2	I/O 3I/F	Port 2（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
56	Pio3	I/O 3I/F	Port 3（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
57	Pio4	I/O 3I/F	Port 4（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
58	Pio5	I/O 3I/F	Port 5（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
59	Pio6	I/O 3I/F	Port 6（General Input/Output Port）	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
60	Pio7	I/O 3I/F	Port 7（General Input/Output Port ）	I	CMOS Port Schmitt input Refer to [1 2 Pin Assinment Table]

Pin No.	Symbol	I/O	Description	Default	Remarks
61	VDD3		Power Supply pin for 3.3V Digital circuit		
62	BUS0	I/O 3I/F	Microprocessor I/F data input/output pin 0	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
63	BUS1	I/O 3I/F	Microprocessor I/F data input/output pin 1	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
64	BUS2	I/O 3I/F	Microprocessor I/F data input/output pin 2	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
65	BUS3	I/O 3I/F	Microprocessor I/F data input/output pin 3	I	CMOS Port Schmitt input Refer to [1.2 Pin Assinment Table]
66	BUCK	I 3I/F	Microprocessor I/F BUS clock Input pin	I	Schmitt input Refer to [1.2 Pin Assinment Table]
67	/CCE	I 3I/F	Microprocessor I/F chip enable input pin	I	Schmitt input Refer to [1.2 Pin Assinment Table]
68	MS	I 3I/F	Microprocessor I/F mode selection pin. “H”: Parallel I/F, “L”: Serial I/F	I	Refer to [1.2 Pin Assinment Table]
69	/RST	I 3I/F	Reset Input pin	I	Schmitt input
70	Test	I 3I/F	Test pin（”L” fixed）	I	Connect to GND for normal operation
71	VDD1 1		Power Supply pin for 1.5V Digital circuit		
72	VSS 1		Grounding pin for 1.5V Digital circuit		
73	/SRAMSTB	I 3I/F	1Mbit SRAM stand by pin(/SRAMSTB="L")	I	
74	VDDM1		Power Supply for 1.5V 1Mbit SRAM circuit		
75	PDo	O 3AI/F	EFM and PLCK Phase difference signal output pin.	O	4 state output (RVDD3, RVSS3,PVREF, Hiz)
76	TMAX	O 3AI/F	TMAX detection result output pin	O	3 state output (RVDD3, RVSS3, Hiz)
77	LPFN	I 3AI/F	PLL circuit LPF amplifier inversion input pin	I	
78	LPFo	O 3AI/F	PLL circuit LPF amplifier Output pin	O	
79	PVREF		PLL circuit 1.65 V reference voltage pin.		Connected to VRO. Connect to GND by 0.1uF and 100uF.
80	VCoF	O 3AI/F	VCO filter pin	O	Connect to GND by 0.01uF

3A I/F : 3 V analog circuit input/output pin.
1.5 I/F : 1.5Vdigital input/output pin.
3 I/F : 3 V digital input/output pin.

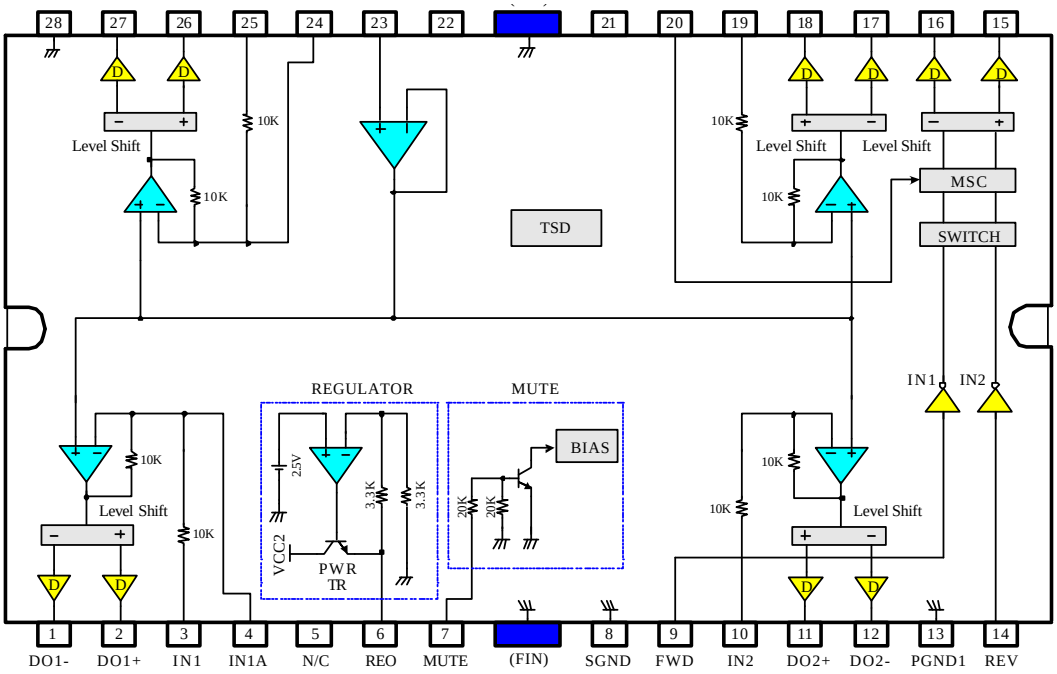
IP4001 (IC14)



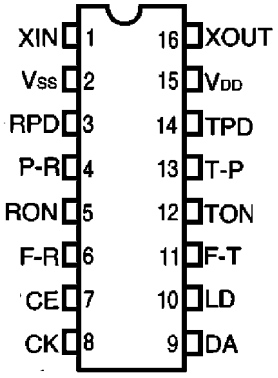
Pin Discriptions

NO	SYMBOL	I/O	DESCRIPTION	NO	SYMBOL	I/O	DESCRIPTION
1	DO1-	O	CH1 OUTPUT (-)	15	DO5+	O	CH5 OUTPUT (+)
2	DO1+	O	CH1 OUTPUT (+)	16	DO5-	O	CH5 OUTPUT (-)
3	IN1	I	CH1 INPUT 1	17	DO3-	O	CH3 OUTPUT (-)
4	IN1A	I	CH1 INPUT 2	18	DO3+	O	CH3 OUTPUT (+)
5	N / C	-	NO-CONNECTION	19	IN3	I	CH3 INPUT
6	REO	O	REGULATOR OUTPUT	20	CTL	I	CH5 MOTOR SPEED CONTROL
7	MUTE	I	MUTE INPUT	21	VCC1	I	SUPPLY VOLTAGE 1 (CH2,CH3,CH5)
8	SGND	-	SIGNAL GROUND	22	VCC2	I	SUPPLY VOLTAGE 2 (CH1,CH4,SIGNAL,REG)
9	FWD	I	CH5 INPUT 1	23	REF	I	CH BIAS INPUT
10	IN2	I	CH2 INPUT	24	IN4A	I	CH4 INPUT 1
11	DO2+	O	CH2 OUTPUT (+)	25	IN4	I	CH4 INPUT 2
12	DO2-	O	CH2 OUTPUT (-)	26	DO4+	O	CH4 OUTPUT (+)
13	PGND1	-	POWER GROUND 1	27	DO4-	O	CH4 OUTPUT (-)
14	REV	I	CH5 INPUT 2	28	PGND2	-	POWER GROUND 2

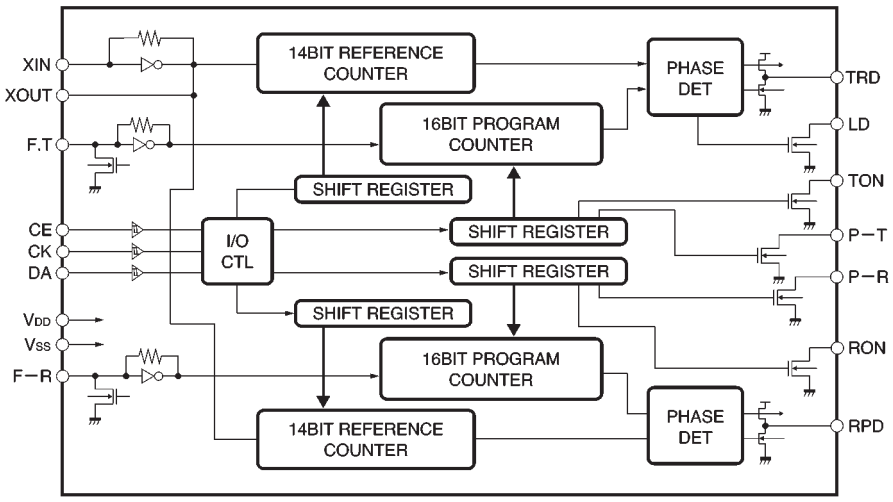
Block Diagram



BU2630FV (IC36)



Block Diagram

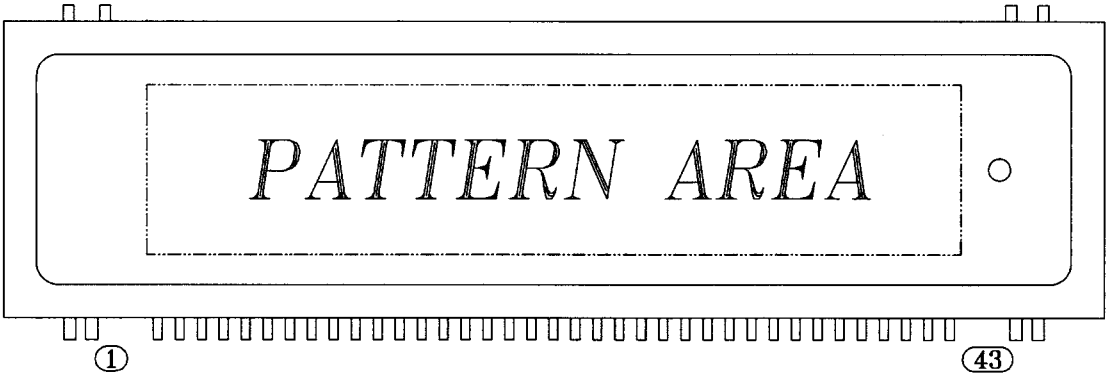


Pin Discriptions

Pin No.	Pin name	Name	Function	I/O cuircuit
16	XOUT	Crystal resonator	For reference frequency	TYPE A
1	XIN			
2	V_{SS}			
3	RPD	Phase comparator output	This is LO if the locally divided value is higher than the reference frequency, HI if it is lower, and Z if it matches.	TYPE E
4	P−R	Output port	This is controlled by the input data.	TYPE D
5	RON			
6	F−R	VCO input	Local input for reception	TYPE F
7	CE	Chip enable clock signal serial data	When CE is HIGH, the DA synchronized to the rise of CK is read into the internal shift register, and is latched at the timing of the CE fall.	TYPE B
8	CK			
9	DA			
10	LD	Unlock output	This goes ON when the PLL is unlocked on the transmission side	TYPE D
11	F−T	VCO input	Local input for transmission	TYPE F
12	TON	Output port	This is controlled by the input data	TYPE D
13	P−T			
14	TPD	Phase comparator output	This is LO if the locally divided value is higher than the reference frequency, HI if it is lower, and Z if it matches.	TYPE E
15	V_{DD}	Power supply	2.5~5.5V	

2. FL DISPLAY

VFD (HCA-18MS03T) (F701)

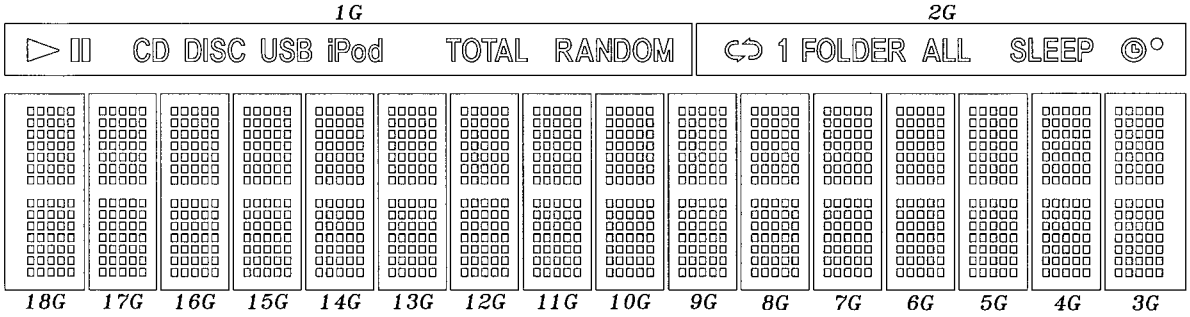


PIN CONNECTION

PIN NO.	1	2	3	4~14	15~29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
CONNECTION	F1	NP	NP	NC	NX	TEST	DO	DA	CP	$\overline{CS}$	$\overline{RESET}$	OSCO	VDD	VDISP	D-GND	L-GND	NP	NP	F2

◎ Note ◎
1) Fn : Filament pin
2) NP : No pin
3) NX : No extended pin
4) NC : No connection. NC pin should be electrically open on the PC board.

GRID ASSIGNMENT



(18G~3G)

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40
41	42	43	44	45
46	47	48	49	50
51	52	53	54	55
56	57	58	59	60
61	62	63	64	65
66	67	68	69	70

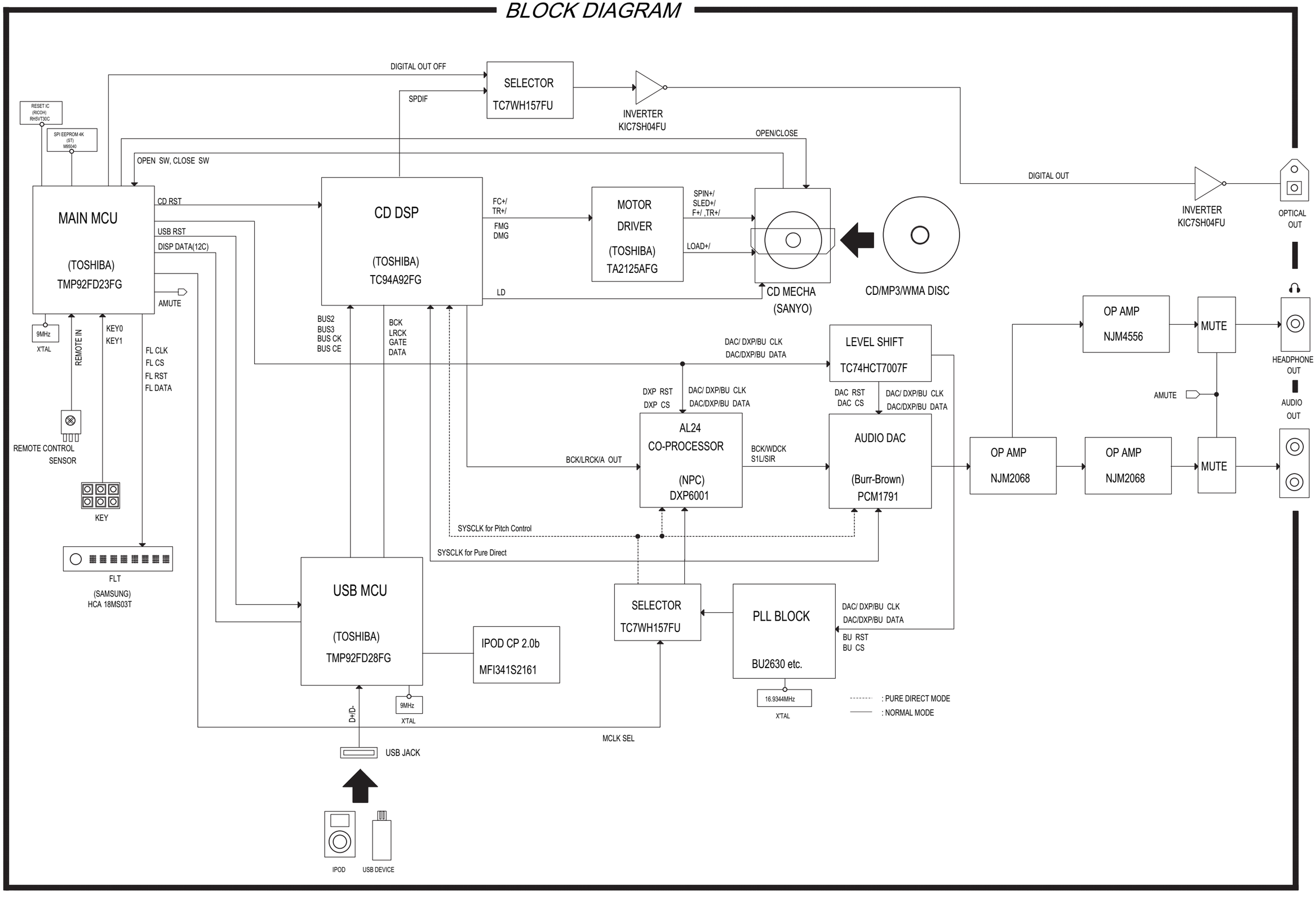
ANODE CONNECTION

	COM18--COM3	COM2	COM1
	18G--3G	2G	1G
SEGB 1	1	○	RANDOM
SEGB 2	2	◷	TOTAL
SEGB 3	3	SLEEP	iPod
SEGB 4	4	ALL	USB
SEGB 5	5	FOLDER	DISC
SEGB 6	6	1	CD
SEGB 7	7	⟲	⏸
SEGB 8	8		▷
SEGB 9	9		
SEGB10	10		
SEGB11	11		
SEGB12	12		
SEGB13	13		
SEGB14	14		
SEGB15	15		
SEGB16	16		
SEGB17	17		
SEGB18	18		
SEGB19	19		
SEGB20	20		
SEGB21	21		
SEGB22	22		
SEGB23	23		
SEGB24	24		
SEGB25	25		
SEGB26	26		
SEGB27	27		
SEGB28	28		
SEGB29	29		
SEGB30	30		
SEGB31	31		
SEGB32	32		
SEGB33	33		
SEGB34	34		
SEGB35	35		

	COM18--COM3	COM2	COM1
	18G--3G	2G	1G
SEGA 1	36		
SEGA 2	37		
SEGA 3	38		
SEGA 4	39		
SEGA 5	40		
SEGA 6	41		
SEGA 7	42		
SEGA 8	43		
SEGA 9	44		
SEGA10	45		
SEGA11	46		
SEGA12	47		
SEGA13	48		
SEGA14	49		
SEGA15	50		
SEGA16	51		
SEGA17	52		
SEGA18	53		
SEGA19	54		
SEGA20	55		
SEGA21	56		
SEGA22	57		
SEGA23	58		
SEGA24	59		
SEGA25	60		
SEGA26	61		
SEGA27	62		
SEGA28	63		
SEGA29	64		
SEGA30	65		
SEGA31	66		
SEGA32	67		
SEGA33	68		
SEGA34	69		
SEGA35	70		

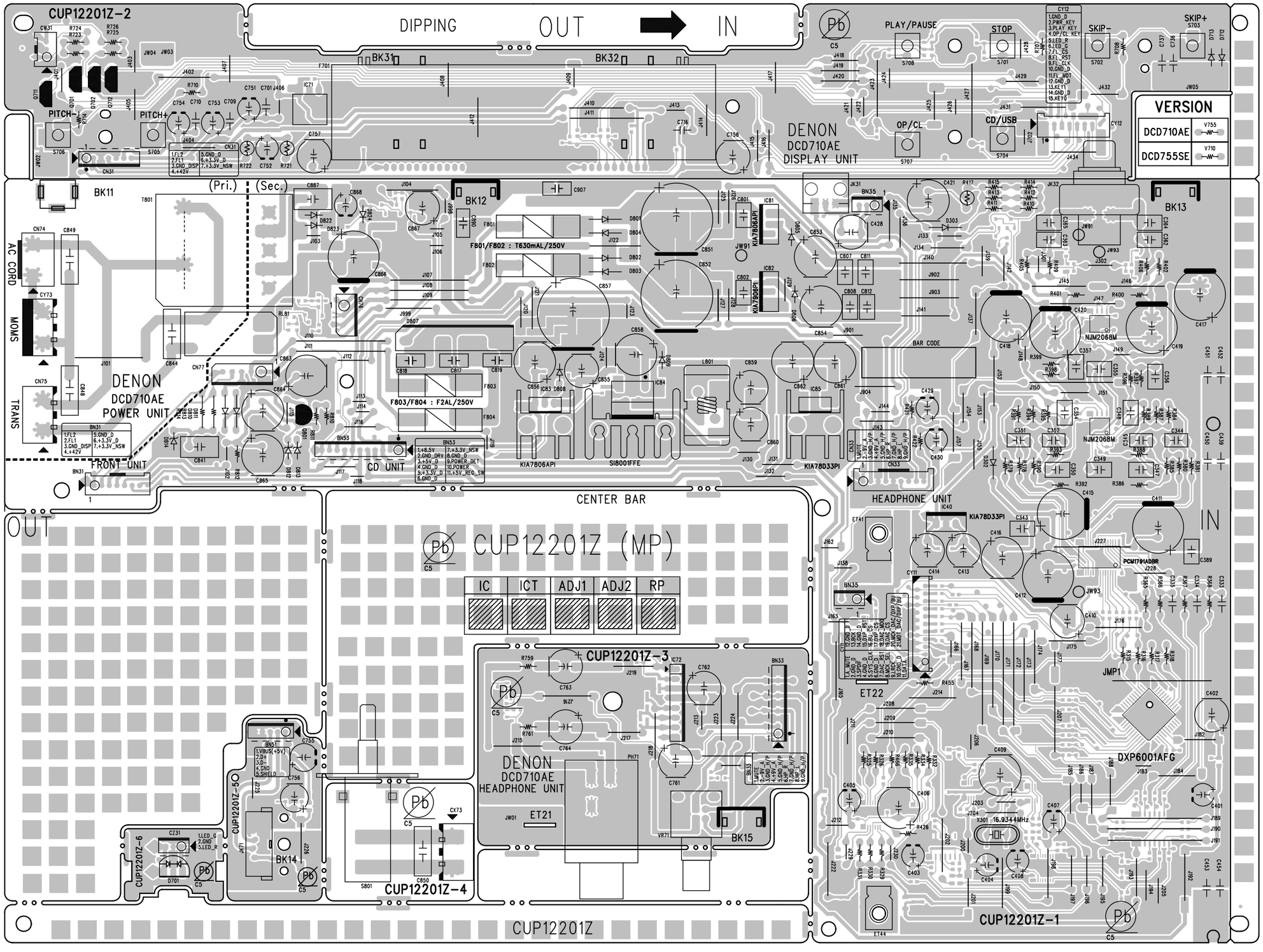
--MEMO--

BLOCK DIAGRAM



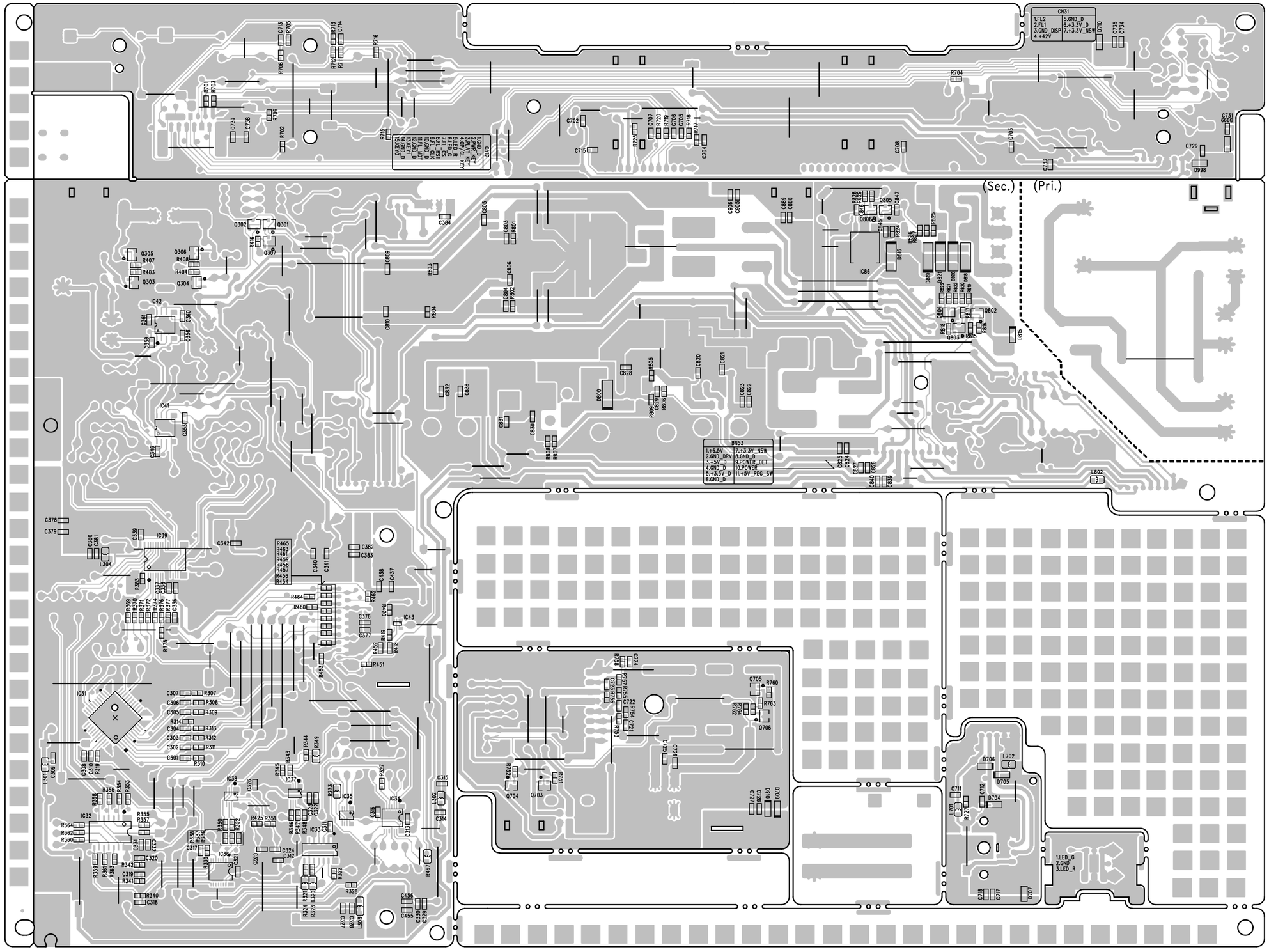
PRINTED WIRING BOARDS

AUDIO/POWER PCB ASSY (1/2)



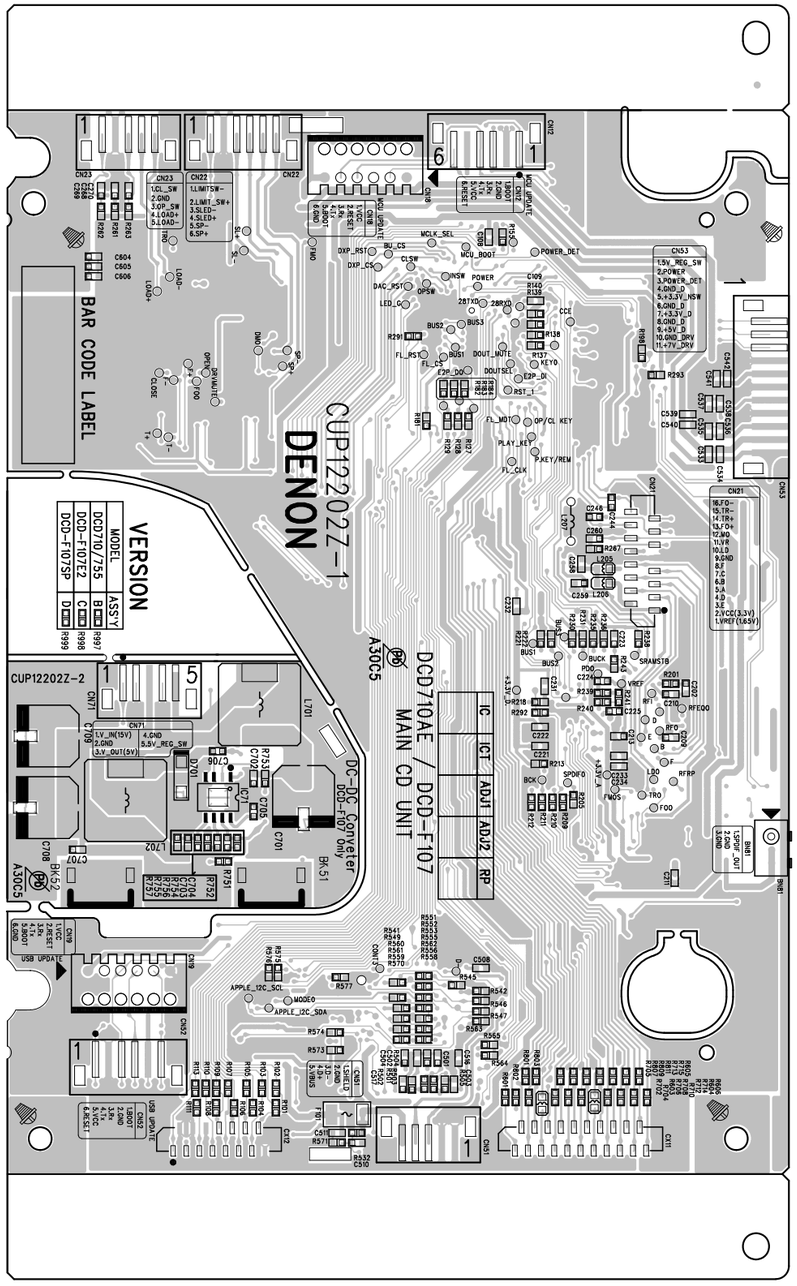
COMPONENT SIDE

AUDIO/POWER PCB ASSY (2/2)

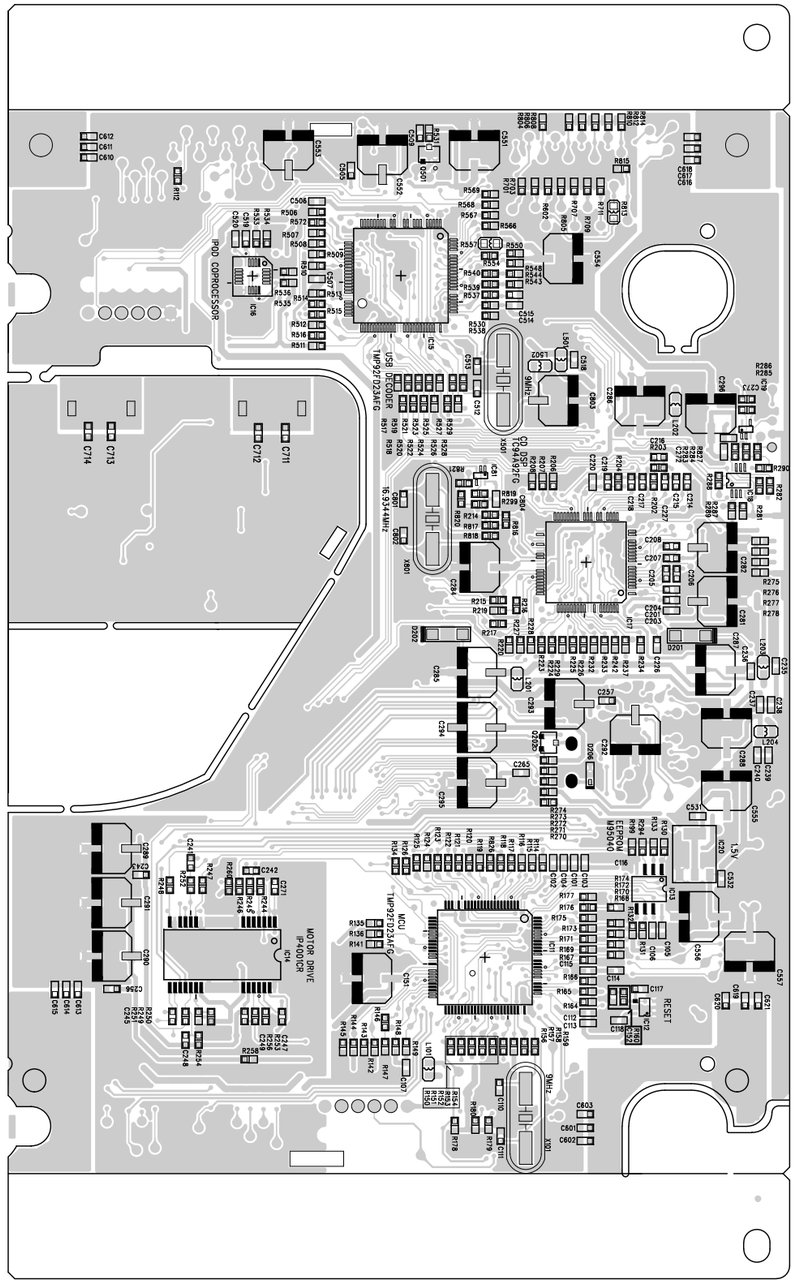


FOIL SIDE

MAIN PCB ASSY



COMPONENT SIDE



FOIL SIDE

NOTE FOR PARTS LIST

1. Parts for which "nsp" is indicated on this table cannot be supplied.
2. When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
3. Ordering part without stating its part number can not be supplied.
4. Part indicated with the mark "★" is not illustrated in the exploded view.
5. Not including General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
6. Not including General-purpose Carbon Chip Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.:

RN	14K	2E	182	G	FR
Type	Shape and per-formance	Power	Resist-ance	Allowable error	Others

RD : Carbon	2B : 1/8 W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4 W	G : ±2%	NL : Low noise type
RS : Metal oxide film	2H : 1/2 W	J : ±5%	NB : Non-burning type
RW: winding	3A : 1 W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2 W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3 W		
	3H : 5 W		

＊ Resistance

1 8 2 ⇨ 1800ohm=1.8kohm
- 2: Indicates number of zeros after effective number.
- 18: 2-digit effective number.

1 R 2 ⇨ 1.2ohm
- 2: 1-digit effective number.
- 1R: 2-digit effective number, decimal point indicated by R.

: Units: ohm

● Capacitors

Ex.:

CE	04W	1H	3R2	M	BP
Type	Shape and per-formance	Dielectric strength	Capacity	Allowable error	Others

CE : Aluminum foil electrolytic	0J : 6.3 V	F : ±1%	HS : High stability type
CA : Aluminium solid electrolytic	1A : 10 V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolytic	1C : 16 V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25 V	K : ±10%	DL : For change and discharge
CK : Ceramic	1V : 35 V	M : ±20%	HF : For assuring high requency
CC : Ceramic	1H : 50 V	Z : ±80%	U : UL part
CP : Oil	2A : 100 V	: - 20%	C : CSA part
CM: Mica	2B : 125 V	P : +100%	W : UL-CSA part
CF : Metallized	2C : 160 V	C : ±0.25pF	F : Lead wire forming
CH : Metallized	2D : 200 V	D : ±0.5pF	
	2E : 250 V	= : Others	
	2H : 500 V		
	2J : 630 V		

＊ Capacity (electrolyte only)

2 2 2 ⇨ 2200 μF
- 2: Indicates number of zeros after effective number.
- 22: 2-digit effective number.

・Units: μF.

2 R 2 ⇨ 2.2 μF
- 2: 1-digit effective number.
- 2R: 2-digit effective number, decimal point indicated by R

・Units: μF.

＊ Capacity (except electrolyte)

2 2 2 ⇨ 2200pF=0.0022 μF
- 2: Indicates number of zeros after efective number. (More than 2)
- 22: 2-digit effective number.

・Units:pF

2 2 1 ⇨ 220pF
- 1: Indicates number of zeros after effective numver. (0 or 1)
- 22: 2-digit effective number.

・Units:pF

・ When the dielectric strength is indicated in AC,"AC" is included after the dieelectric strength value.

PARTS LIST OF P.W.B. UNIT

* Parts for which "nsp" is indicated on this table cannot be supplied.

* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate he following destinations.
E2 : Europe model E1C : China model

AUDIO/POWER PCB ASSY

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
SEMICONDUCTORS GROUP							
	IC31	00D2623629002	IC AL24 PROCESSING DSP		CVI00D2623629002-DM		
	IC32	00D2622376903	IC		HVITC74HCT7007F		
	IC33	90M-HC700560R	IC VCO		HVITC74LS628		
	IC34	00D2623077900	IC HEX INVERTER		HVITC74VHCU04FT		
	IC35	00D2623601907	IC 2CH MULTIPLXER		HVITC7WH157FU		
	IC36	00MHC1022521Z	IC DUAL PLL SYNTHESIZER		BVIBU2630FV-E2		
	IC37	00D2623199901	IC D FLIP FLOP		CVITC7WH74FU		
	IC38	00D2623489909	IC INVERTER(CMOS)		CVITC7WHU04FU		
	IC39	00D2623332904	IC D/A CONVERTER		HVIPCM1791ADBR		
	IC40	00D2631243001	I.C REGULATOR		CVIKIA78D33PI		
	IC41,42	00D2630896909	IC OP AMP		HVINJM2068MDTE1		
	IC43	943239006810S	IC SIGNAL INVERTER (USV)		CVIKIC7SH04FU		
	IC71	00D9430194706	REMOCON SENSOR		CRVKSM603TH2E		
	IC72	00MHC10200090	I.C HEADPHONE		HVINJM4556AL		
	IC81	00D2631100018	I.C REGULATOR +6V		HVIKIA7806API		
	IC82	00MHC3990699F	I.C -6V REGULATOR (TO220IS)		CVIKIA7906PI		
	IC83	00D2631100018	I.C REGULATOR +6V		HVIKIA7806API		
	IC84	00D2631285001	IC REGULATOR		CVISI8001FFE		
	IC85	00D2631243001	IC REGULATOR		CVIKIA78D33PI		
	IC86	00D2622944946	IC REGULATOR (3.3V SMD)		BVIBA33BC0FP		
	Q301,302	00D2730477901	CHIP TR		HVTKRA107S		
	Q303,304	00D2730460905	CHIP TR		HVTKTC2875B		
	Q307	00D9630121606	TR KRC107S		HVTKRC107S		
	Q701,702	00D2690184907	CHIP TR		HVTKRA102S		
	Q703-706	00M-HX900010R	CHIP TR (MUTE)		HVTKTD1304T		
	Q711,712	00D2690192902	CHIP TR		HVTKRC102S		
⚠	Q801	943219006820S	TR		CVTKTC1027YT		
⚠	Q802	00D2730464901	CHIP TR		HVTKTC3875SYRTK		
	Q805,806	00D2730464901	CHIP TR		HVTKTC3875SYRTK		
	D302,303	00D9430182502	DIODE 1N4003		CVD1N4003T		
	D701	00D9430198100	LED SML1216W		HVDSML1216W		
	D704-706	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D707	943209006830S	DIODE ESD PROTECTION USC		CVDPG05GBUSCRTKP		
	D708	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D709	943209006830S	DIODE ESD PROTECTION USC		CVDPG05GBUSCRTKP		
	D710	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D712	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D713	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D800	943204006840S	DIODE , SCHOTTKY (40V,3A, DO-214AC)		CVDSS34SR		
	D801-804	00D9430182502	DIODE 1N4003		CVD1N4003T		
	D805,806	00D9430086404	DIODE 1SS133T-77		HVD1SS133MT		
⚠	D807	90M-HE200390R	BRIDGE DIODE		HVDGBJ1006		
	D808,809	00D9430086404	DIODE 1SS133T-77		HVD1SS133MT		
	D810,811	00D9430182502	DIODE 1N4003		CVD1N4003T		
	D812	00D9430087102	DIODE MTZJ20B 1/2W		HVDMTZJ20BT		
	D813	00D2760762916	DIODE MTZJ27B 1/2W		HVDMTZJ27BT		
	D814	00D2760760905	DIODE MTZJ3.6B 1/2W		HVDMTZJ3.6BT		
	D815	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D816	943204006850S	DIODE , SCHOTTKEY BARRIER HK		HVDRB160L60TE25		
	D818-821	943204006850S	DIODE , SCHOTTKEY BARRIER HK		HVDRB160L60TE25		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	D822-824	00D9430086404	DIODE 1SS133T-77		HVD1SS133MT		
	D910	00D2760717903	DIODE 1SS355T		HVD1SS355T		
	D998,999	943209006830S	DIODE , ESD PROTECTION USC		CVDPG05GBUSCRTKP		
RESISTORS GROUP							
	R417	00D2442051961	METAL OXIDE RES 100 ohm 1W J		KRG1SANJ101RT		
	R721,722	00D9430092906	FUSE RES 10 ohm (5%)		KRQ12AJ100RT		
	R808	nsp	CHIP RES 1%		CRJ10DF2002T		
	R809	nsp	CHIP RES 1% 820 ohm		CRJ10DF8200T		
	VR71	00D9430196908	VARIABLE RES		CVV2J02B103Z		
CAPACITORS GROUP							
	C301-303	nsp	CHIP CAP		CCUS1H101JA		
	C304	nsp	CHIP CAP		CCUS1H104KC		
	C308	nsp	CHIP CAP		CCUS1H102KC		
	C309	nsp	CHIP CAP		CCUS1H103KC		
	C310	nsp	CHIP CAP		CCUS1H104KC		
	C311	nsp	CHIP CAP		CCUS1H220JA		
	C312-316	nsp	CHIP CAP		CCUS1H104KC		
	C317	nsp	CHIP CAP		CCUS1H103KC		
	C321	nsp	CHIP CAP		CCUS1H104KC		
	C322	nsp	CHIP CAP		CCUS1H103KC		
	C323	nsp	CHIP CAP		CCUS1H104KC		
	C324,325	nsp	CHIP CAP		CCUS1H100JA		
	C326	nsp	CHIP CAP		CCUS1H104KC		
	C327	nsp	CHIP CAP		CCUS1H103KC		
	C328,329	nsp	CHIP CAP		CCUS1H104KC		
	C330,331	nsp	CHIP CAP		CCUS1H103KC		
	C332	nsp	CHIP CAP		CCUS1H104KC		
	C336,337	nsp	CHIP CAP		CCUS1H104KC		
	C338	nsp	CHIP CAP		CCUS1H103KC		
	C339	nsp	CHIP CAP		CCUS1H104KC		
	C340-342	nsp	CHIP CAP		CCUS1H103KC		
	C343	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C344	nsp	MYLAR CAP		HCQI1H182JZT		
	C345	nsp	MYLAR CAP		HCQI1H272JZT		
	C347,348	nsp	PP CAP (100V/680pF)		CCMP2A681JN09T		
	C349	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C350	nsp	PP CAP (100V/680pF)		CCMP2A681JN09T		
	C351	nsp	MYLAR CAP		HCQI1H182JZT		
	C352	nsp	MYLAR CAP		HCQI1H272JZT		
	C354	nsp	PP CAP (100V/680pF)		CCMP2A681JN09T		
	C355	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C356,357	nsp	PP CAP (100V/2700pF)		CCMP2A272JN09T		
	C358	nsp	CHIP CAP		CCUS1H103KC		
	C361	nsp	CHIP CAP		CCUS1H103KC		
	C376	nsp	CHIP CAP		CCUS1H103KC		
	C377	nsp	CHIP CAP		CCUS1H104KC		
	C378	nsp	CHIP CAP		CCUS1H103KC		
	C379	nsp	CHIP CAP		CCUS1H104KC		
	C380	nsp	CHIP CAP		CCUS1H103KC		
	C381	nsp	CHIP CAP		CCUS1H104KC		
	C382,383	nsp	CHIP CAP		CCUS1H103KC		
	C384	nsp	CHIP CAP		CCUS1H104KC		
	C389	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C401	00D9430185402	ELECT CAP (ELNA RFO 100uF/25V)		CCEA1ERFO101T		
	C402	00D2544693939	ELEC CAP ELNA RFO 100uF/50V		CCEA1HRFO101T		
	C403-405	nsp	ELECT CAP		CCEA1CH101T		
	C406	00MOA227016R0	EIECT CAP (220uF/16V, ROA)		CCEA1CROA221E		
	C407	nsp	ELECT CAP		CCEA1HH1R0T		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C408	nsp	ELECT CAP		CCEA1CH101T		
	C409	00MOA227016R0	EIECT CAP (220uF/16V, ROA)		CCEA1CROA221E		
	C410	00D2544693939	ELEC CAP ELNA RFO 100uF/50V		CCEA1HRFO101T		
	C411	00D2544750704	ELECT CAP (470uF/50V, RFO, 12.5X20)		CCEA1HRFO471E		
	C412	943134006940S	ELECT CAP (47uF/50V, ROA, 10X16)		CCEA1HROA470T		
	C413,414	00D2544693939	ELEC CAP ELNA RFO 100uF/50V		CCEA1HRFO101T		
	C415	943134005080S	ELECT CAP (ELNA ROA 50V/100uF)		CCEA1HROA101E		
	C416	00D2544695937	ELECT CAP (470uF/6.3V,RFO)		CCEA0JRFO471T		
	C417,418	943134006940S	ELECT CAP (47uF/50V, ROA, 10X16)		CCEA1HROA470T		
	C419,420	943134005080S	ELECT CAP (ELNA ROA 50V/100uF)		CCEA1HROA101E		
	C421	943134005040S	ELECT CAP (ELNA RFOII 50V/220uF)		CCEA1HRFOII221E		
	C428	00D2544693939	ELEC CAP ELNA RFO SERIES 100uF/50V		CCEA1HRFO101T		
	C429,430	00D2544693926	ELECT CAP (ELNA, RFO, 50V/47UF)		CCEA1HRFO470T		
	C437	nsp	CHIP CAP		CCUS1H104KC		
	C438	nsp	CHIP CAP		CCUS1H103KC		
	C439	nsp	CERAMIC CAP		CCBS1H103ZFT		
	C450	nsp	CERAMIC CAP		CCBS1H104ZFT		
	C451	nsp	CERAMIC CAP		CCBS1H103ZFT		
	C452	nsp	CERAMIC CAP		CCBS1H104ZFT		
	C453	nsp	CERAMIC CAP		CCBS1H103ZFT		
	C454	nsp	CERAMIC CAP		CCBS1H104ZFT		
	C455	nsp	CHIP CAP		CCUS1H103KC		
	C456	nsp	CHIP CAP		CCUS1H104KC		
	C701-703	nsp	CHIP CAP		CCUS1H104KC		
	C704-406	nsp	CHIP CAP		CCUS1H101JA		
	C707-714	nsp	CHIP CAP		CCUS1H104KC		
	C715	nsp	CHIP CAP		CCUS1H150JA		
	C716	nsp	CERAMIC CAP		CCBS1H104ZFT		
	C717	nsp	CHIP CAP		CCUS1H104KC		
	C718	nsp	CHIP CAP		CCUS1H103KC		
	C721	nsp	CHIP CAP		CCUS1H151JA		
	C722,723	nsp	CHIP CAP		CCUS1H181JA		
	C724	nsp	CHIP CAP		CCUS1H151JA		
	C725,726	nsp	CHIP CAP		CCUS1H181JA		
	C727	nsp	CHIP CAP		CCUS1H104KC		
	C728	nsp	CHIP CAP		CCUS1H103KC		
	C729	nsp	CHIP CAP		CCUS1H104KC		
	C733,734	nsp	CHIP CAP		CCUS1H104KC		
	C735	nsp	CHIP CAP		CCUS1H103KC		
	C736	nsp	CERAMIC CAP		CCBS1H104ZFT		
	C737	nsp	CERAMIC CAP		CCBS1H103ZFT		
	C738	nsp	CHIP CAP		CCUS1H104KC		
	C739	nsp	CHIP CAP		CCUS1H103KC		
	C751	nsp	ELECT CAP		CCEA1CKS470T		
	C752	nsp	ELECT CAP		CCEA1HKS100T		
	C753,754	nsp	ELECT CAP		CCEA1CKS470T		
	C755	nsp	ELECT CAP		CCEA1HKS100T		
	C756	nsp	ELECT CAP		CCEA1CKS101T		
	C761-764	00D2544693939	CAP , ELEC ELNA RFO 100uF/50V		CCEA1HRFO101T		
	C801,802	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C803-806	nsp	CHIP CAP		CCUS1H104KC		
	C807,808	nsp	PP CAP (100V/0.01uF)		CCMP2A103JN09T		
	C809,810	nsp	CHIP CAP		CCUS1H103KC		
	C817-819	nsp	CAP , METALLIZED FILM		CCME2A104JXT		
	C820,821	nsp	CHIP CAP		CCUS1H104KC		
	C822	nsp	CHIP CAP		CCUS1H103KC		
	C823,824	nsp	CHIP CAP		CCUS1H104KC		
	C825	nsp	CHIP CAP		CCUS1H103KC		
	C826	nsp	CHIP CAP		CCUS1H104KC		
	C827	nsp	CHIP CAP		CCUS1H103KC		
	C828-830	nsp	CHIP CAP		CCUS1H104KC		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C831	nsp	CHIP CAP		CCUS1H102KC		
	C832	nsp	CHIP CAP		CCUS1H104KC		
	C838	nsp	CHIP CAP		CCUS1H104KC		
	C839	nsp	CHIP CAP		CCUS1H103KC		
	C840	nsp	CHIP CAP		CCUS1H104KC		
	C841	nsp	CAP , MYLAR		HCQI1H104JZT		
	C844	nsp	CAP , CERAMIC(X1/Y2/SC)		KCKDKS472ME		
	C845,846	nsp	CHIP CAP		CCUS1H104KC		
	C847	nsp	CHIP CAP		CCUS1H102KC		
⚠	C848,849	nsp	CAP , CERAMIC(X1/Y2/SC)		KCKDKS472ME		
	C851,852	943134006950S	ELECT CAP (3300uF/35V, RFA)		CCEA1VRFA332E		
	C853,854	134050059238S	CAP , ELECT (ELNA RFG, 50V/220uF, 85'C, 10X16)		CCEA1HRFY221E		
	C855	00D2544574922	EIECT CAP (220uF/50V, RA3)		CCEA1HRA3221E		
	C856	00D2544579707	CAP, ELECT (1000uF/35V, RA3, 12.5X20)		CCEA1VRA3102E		
	C857	00D2544763704	CAP , ELECT (ELNA RFO 35V/3300uF)		CCEA1VRFO332E		
	C858	943134006960S	CAP , ELECT(470uF/35V, RJH, 10X20)		CCEA1VRJH471E		
	C859,860	nsp	ELECT , CAP (1000uF/6.3V, 10*20, KJH)		CCEA0JKJH102ES		
	C861,862	00D2544694912	EIECT CAP (220uF/25V, RFO)		CCEA1ERFO221T		
	C863	00D2544692943	ELECT , CAP (1000uF/6.3V, 10*20, KJH)		CCEA0JKJH102ES		
	C864	00D2544574922	EIECT CAP (100uF/63V, RA3)		CCEA1JRA3101T		
	C865	00D2544692943	CAP , ELECT(100uF/63V, RFO, 10X12.5)		CCEA1JRFO101E		
	C866	00D2544749715	CAP , ELECT(1000uF/25V, RFO, 12.5X20)		CCEA1ERFO102E		
	C867	00D2544693939	CAP , ELEC ELNA RFO 100uF/50V		CCEA1HRFO101T		
	C868	nsp	CAP , ELECT		CCEA1HH4R7T		
	C887	nsp	CAP , METALLIZED FILM		CCME2A104JXT		
	C888	nsp	CHIP CAP		CCUS1H104KC		
	C889	nsp	CHIP CAP		CCUS1H103KC		
	C890	nsp	CAP , METALLIZED FILM		CCME2A104JXT		
	C905	nsp	CHIP CAP		CCUS1H104KC		
	C906	nsp	CHIP CAP		CCUS1H103KC		
	C907	nsp	CAP , METALLIZED FILM		CCME2A104JXT		
OTHERS PARTS GROUP							
	BK11	nsp	PCB BRACKET (A)		CMD1A188		
	BK12	nsp	PCB BRACKET		CMD1A569		
	BK13	nsp	PCB BRACKET		CMD1A569		
	BK15	nsp	PCB BRACKET		CMD1A629		
	BK31	nsp	FLT BRACKET		CMD1A468		
	BK32	nsp	FLT BRACKET		CMD1A468		
	BN31	nsp	WAFER 7PIN		CJP07GI236ZW		
	BN33	nsp	WIRE ASS'Y(9P, 2.0MM, 400MM, SHIELD)		CWB1C909400EN001		
	BN35	nsp	WIRE ASS'Y(3P, 2.0MM, 120MM, SHIELD)		CWB1C203120EE001		
	BN51	nsp	WIRE ASS'Y(5P, 2.0MM, 250MM, SHIELD)		CWB1C205250EG001		
	BN53	nsp	WIRE ASSY(11P, 2.0MM, 50MM)		CWB1C911050EG		
	CN31	nsp	WIRE ASS'Y (7P,2.0MM,200MM)		CWB1C90720047		
	CN33	nsp	WAFER 9PIN		CJP09GA19ZY		
	CN74	nsp	WAFER 2PIN		CJP02KA060ZY		
	CN75	nsp	WAFER 2PIN		CJP02GA89ZY		
	CN76	nsp	WAFER 3PIN		CJP03GA01ZY		
	CN77	nsp	WAFER 5PIN		CJP05GA01ZY		
	CW31	nsp	WAFER 3PIN		CJP03GI236ZW		
	CX73	nsp	WAFER 2PIN		CJP02GA89ZY		
	CY11	nsp	WAFER CARD CABLE		CJP21GA117XY		
	CY12	nsp	WAFER 15PIN		CJP15GB113ZY		
	CY73	nsp	WIRE ASSY(2P, 350MM)		CWB4D932350UZ		
	CZ31	nsp	WIRE ASSY(3P, 2.0MM, 80MM)		CWB1C90308047		

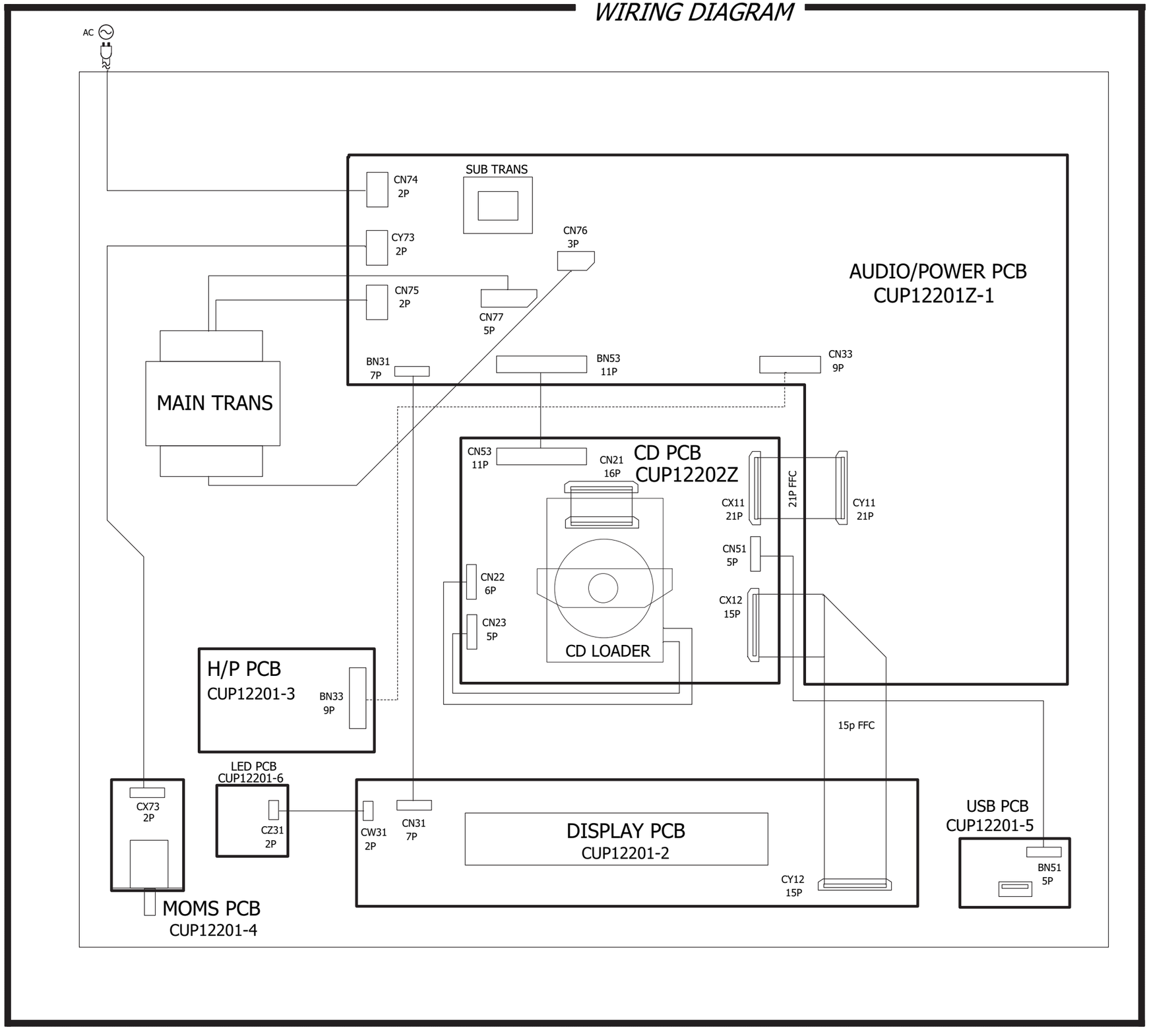
	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	ET21,22	nsp	EARTH PLATE		CMC1A111		
	ET41	nsp	EARTH PLATE		HJT1A025		
	ET44	nsp	EARTH PLATE		HJT1A025		
	F701	943172006990D	VFD HCA-18MS03T		CFLHCA-18MS03T		
	F801-804	nsp	FUSE HOLDER		KJCFC5S		
	JK31	00D9430183103	OPTICAL MODULE (TX)		HJSTOTX177L		
	JK32	90M-YT004410R	JACK (2P GOLD)		CJJ4N067Z		
	JK71	943643001320S	JACK USB STRAIGHT(BLACK)		CJJ9X006Z		
	JW02	nsp	WIRE ASS'Y		CWE8202150RV		
	JW03	nsp	WIRE ASS'Y		CWE8202150RV		
	JW91	nsp	WIRE 1P BLACK(120MM)		CWE8202120AA		
	JW93	nsp	WIRE 1P BLACK(120MM)		CWE8202120AA		
	L301-303	nsp	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	L701,702	nsp	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	L802	nsp	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	L801	943111006890S	TOROIDAL COIL 100uH		CLZ9Z100Z		
	PH71	00D9430181600	JACK		CJJ2E020Z		
	RL81	943682006880S	RELAY , DC5V, 0.15W, DLS5D1-0.15W		CSL1C004ZE		
	S701-708	00D9430004402	TACT SW		CST1A012ZT		
⚠	S801	00D9430140609	CSH1A010ZV(SDL1P-B)		CSH1A010ZV		
⚠	T801	943101006870D	SUB TRANS 5V (EUR) DCD710AE2/E1C		CLT5I013ZE		
	X301	943141003500S	CRYSTAL		HOX16934E120C		
⚠	F901	00D9430199109	FUSE 2.5A 250V	E2	KBA2C2500TLEY		
⚠	F901	00D9430199109	FUSE 2.5A 250V	E1C	KBA2C2500TLEY		
⚠	F902	00D9430199109	FUSE 2.5A 250V	E2	KBA2C2500TLEY		
	F902	-	OPEN	E1C			

MAIN PCB ASSY

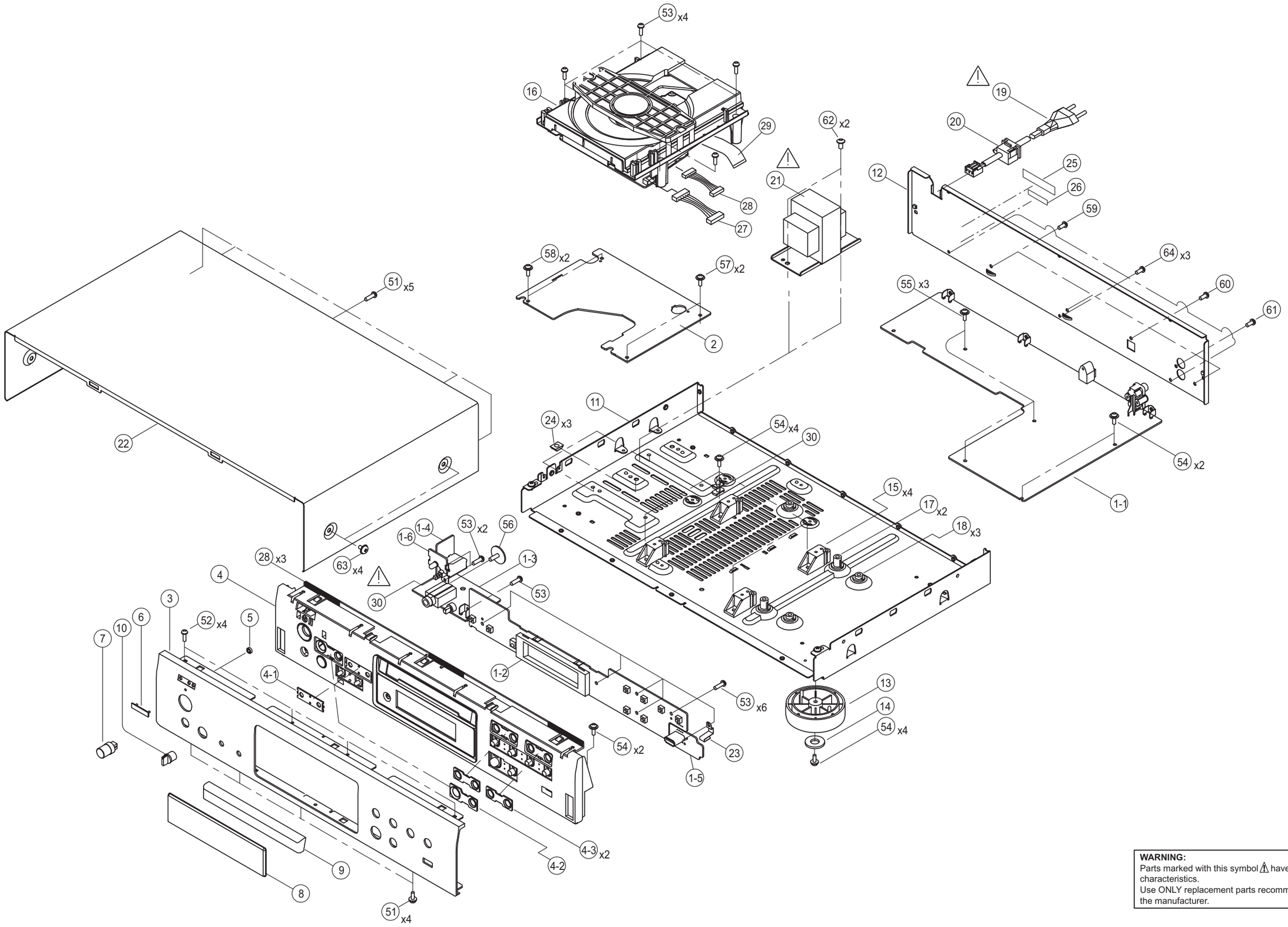
	Ref No.	Part No.	Part Name	Remark		Q'ty	New
SEMICONDUCTOR GROUP							
	IC11	943243006920D	MCU IC(512K,LQFP-100P)		CVIANAM1494C		*
	IC13	943249006970S	EEPROM (4K,SO8-8P)		CVIM95040-WMN6TP		
	IC14	943239006900S	5-CH MOTOR DRIVE IC (WITH REG,SSOP-28P)		CVIIP4001CRLTF		
	IC15	943243006930D	USB DECODER FLASH IC(100PIN, QFP)		CVIANAM1495C		*
	IC16	236710022502S	CP CHIP IC(MF134IS2161,20P,FROM MARANTZ)		CVI236710022502S_M		
	IC17	943245006980S	CD DSP IC(SERVO,AMPLIFIER,DSP,LQFP-80P)		CVITC94A92FG		*
	IC18	00D2623601907	2CH MULTIPLXER IC		HVITC7WH157FU		
	IC19	943239006810S	SIGNAL INVERTER IC(USV)		CVIKIC7SH04FU		
	IC20	90M-HC900160R	IC LM1117S15 REG. (SOT-223)		CVIKIA1117S15		
	Q202	00D9430058908	CHIP TR		HVTKTA1504SYRTK		
	D201	00D9430060404	SCHOTTKEY BARRIER DIODE		HVDRB160L60TE25		
	D202	00D9430060404	SCHOTTKEY BARRIER DIODE		HVDRB160L60TE25		
	D206	943209001080S	CHIP DIODE		CVD1SS355T		
CAPACITORS GROUP							
	C101,102	nsp	CHIP CAP		CCUS1H104KC		
	C103-105	nsp	CHIP CAP		CCUS1H103KC		
	C106	nsp	CHIP CAP		CCUS1H102KC		
	C107,108	nsp	CHIP CAP		CCUS1H104KC		
	C109	nsp	CHIP CAP		CCUS1H103KC		
	C110	nsp	CHIP CAP		CCUS1H180JA		
	C111	nsp	CHIP CAP		CCUS1H220JA		
	C112	nsp	CHIP CAP		CCUS1H104KC		
	C113,114	nsp	CHIP CAP		CCUS1H103KC		
	C115-117	nsp	CHIP CAP		CCUS1H104KC		
	C118	nsp	CHIP CAP		CCUS1A105KC		
	C151	nsp	CHIP ELECT CAP		HCEC0JRV2101T		
	C201	nsp	CHIP CAP		CCUS1H222KC		
	C202,203	nsp	CHIP CAP		CCUS1H104KC		
	C204	nsp	CHIP CAP		CCUS1H103KC		
	C205	nsp	CHIP CAP		CCUS1H472KC		
	C206	nsp	CHIP CAP		CCUS1H104KC		
	C207	nsp	CHIP CAP		CCUS1H153KC		
	C208	nsp	CHIP CAP		CCUS1H104KC		
	C210,211	nsp	CHIP CAP		CCUS1H104KC		
	C213	nsp	CHIP CAP		CCUS1H104KC		
	C214	nsp	CHIP CAP		CCUS1H333KC		
	C215	nsp	CHIP CAP		CCUS1H562KC		
	C216	nsp	CHIP CAP		CCUS1H471JA		
	C217	nsp	CHIP CAP		CCUS1H473KC		
	C219	nsp	CHIP CAP		CCUS1H473KC		
	C220-222	nsp	CHIP CAP		CCUS1H104KC		
	C223	nsp	CHIP CAP		CCUS1H103KC		
	C224	nsp	CHIP CAP		CCUS1H470JA		
	C225	nsp	CHIP CAP		CCUS1H153KC		
	C226	nsp	CHIP CAP		CCUS1H103KC		
	C227	nsp	CHIP CAP		CCUS1H471JA		
	C231	nsp	CHIP CAP		CCUS1H102KC		
	C232,233	nsp	CHIP CAP		CCUS1H104KC		
	C234	nsp	CHIP CAP		CCUS1H102KC		
	C235	nsp	CHIP CAP		CCUS1H104KC		
	C236	nsp	CHIP CAP		CCUS1H102KC		
	C237	nsp	CHIP CAP		CCUS1H104KC		
	C238	nsp	CHIP CAP		CCUS1H102KC		
	C239	nsp	CHIP CAP		CCUS1H103KC		
	C240	nsp	CHIP CAP		CCUS1H104KC		
	C243-247	nsp	CHIP CAP		CCUS1H104KC		

	Ref No.	Part No.	Part Name	Remark		Q'ty	New
	C256-260	nsp	CHIP CAP		CCUS1H104KC		
	C265	nsp	CHIP CAP		CCUS1H104KC		
	C268-273	nsp	CHIP CAP		CCUS1H104KC		
	C281,282	nsp	CHIP CAP		HCEC0JRV2101T		
	C284-289	nsp	CHIP CAP		HCEC0JRV2101T		
	C290-296	nsp	CHIP ELECT CAP		HCEC1CRV2101T		
	C501-508	nsp	CHIP CAP		CCUS1H104KC		
	C510,511	nsp	CHIP CAP		CCUS1H104KC		
	C512	nsp	CHIP CAP		CCUS1H220JA		
	C513	nsp	CHIP CAP		CCUS1H180JA		
	C514-520	nsp	CHIP CAP		CCUS1H104KC		
	C531-533	nsp	CHIP CAP		CCUS1H104KC		
	C534	nsp	CHIP CAP		CCUS1H103KC		
	C535	nsp	CHIP CAP		CCUS1H104KC		
	C536	nsp	CHIP CAP		CCUS1H103KC		
	C537	nsp	CHIP CAP		CCUS1H104KC		
	C538	nsp	CHIP CAP		CCUS1H103KC		
	C539	nsp	CHIP CAP		CCUS1H104KC		
	C540,541	nsp	CHIP CAP		CCUS1H103KC		
	C542	nsp	CHIP CAP		CCUS1H104KC		
	C551-557	nsp	CHIP ELECT CAP		HCEC0JRV2101T		
	C601	nsp	CHIP CAP		CCUS1H103KC		
	C602	nsp	CHIP CAP		CCUS1H104KC		
	C603	nsp	CHIP CAP		CCUS1H102KC		
	C604	nsp	CHIP CAP		CCUS1H103KC		
	C605	nsp	CHIP CAP		CCUS1H104KC		
	C606	nsp	CHIP CAP		CCUS1H102KC		
	C610	nsp	CHIP CAP		CCUS1H103KC		
	C611	nsp	CHIP CAP		CCUS1H104KC		
	C612	nsp	CHIP CAP		CCUS1H102KC		
	C613	nsp	CHIP CAP		CCUS1H103KC		
	C614	nsp	CHIP CAP		CCUS1H104KC		
	C615	nsp	CHIP CAP		CCUS1H102KC		
	C616	nsp	CHIP CAP		CCUS1H103KC		
	C617	nsp	CHIP CAP		CCUS1H104KC		
	C618	nsp	CHIP CAP		CCUS1H102KC		
	C619	nsp	CHIP CAP		CCUS1H103KC		
	C620	nsp	CHIP CAP		CCUS1H104KC		
	C621	nsp	CHIP CAP		CCUS1H102KC		
OTHERS PARTS GROUP							
	CN12	nsp	WAFER		CJP06GA208ZY		
	CN21	nsp	WAFER CARD CABLE		CJP16GA193ZY		
	CN22	nsp	WAFER		CJP06GA208ZY		
	CN23	nsp	WAFER		CJP05GA208ZY		
	CN51	nsp	WAFER		CJP05GA208ZY		
	CN52	nsp	WAFER		CJP06GA208ZY		
	CN53	nsp	WAFER		CJP11GA208ZY		
	CX11	nsp	WAFER		CJP21GA193ZY		
	CX12	nsp	WAFER CARD CABLE		CJP15GA193ZY		
⚠	F101	943661006910S	POLY SWITCH (1.6A, 8V)		CBA5H1600PSUYT		
	L101	943119005010S	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	L201-206	943119005010S	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	L207	nsp	AXAIL COIL		HLQ02C101JT		
	L501	943119005010S	CHIP FERRITE BEAD(60ohm, 2012)		CLZ9R001Z		
	X101	943141001200S	CRYSTAL , SMD(9MHZ, HC-49/SMD, 5PF)		COX09000E150S		
	X501	943141001200S	CRYSTAL , SMD(9MHZ, HC-49/SMD, 5PF)		COX09000E150S		

WIRING DIAGRAM



EXPLODED VIEW



WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

PARTS LIST OF EXPLODED VIEW

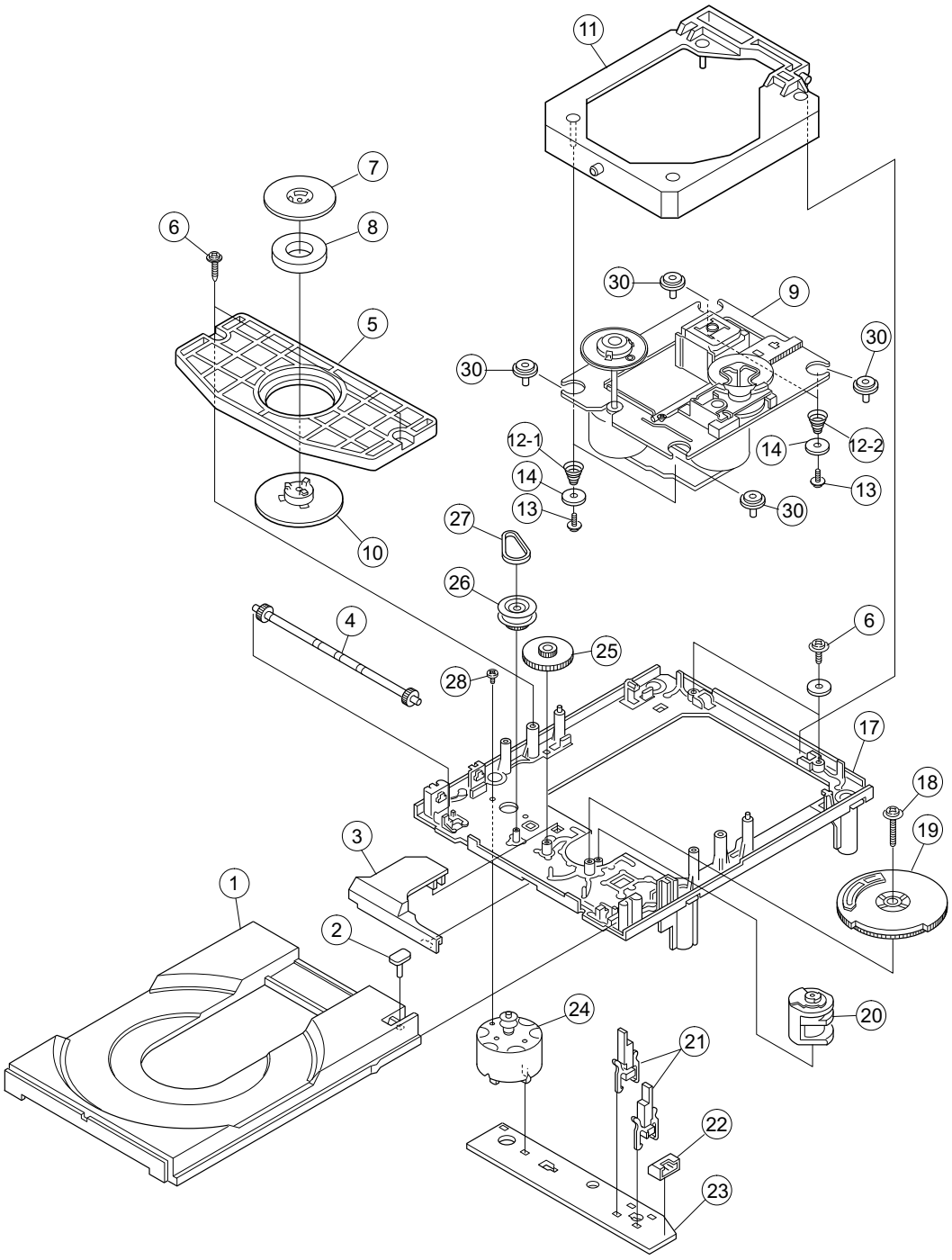
* Parts for which "nsp" is indicated on this table cannot be supplied.
* P.W.B. ASS'Y for which "nsp" is indicated on this table cannot be supplied. When repairing the P.W.B. ASS'Y, check the board parts table and order replacement parts.
* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate he following destinations.
E2 : Europe model E1C : China model
BK : (Black model SP : (Premium Silver model

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
	1	nsp	AUDIO/POWER PCB ASSY		CUP12201B	1	*
	1-1	-	AUDIO/POWER PCB				
	1-2	-	DISPLAY PCB				
	1-3	-	H/P PCB				
	1-4	-	MOMS PCB				
	1-5	-	USB PCB				
	1-6	-	LED PCB				
	2	nsp	MAIN PCB ASSY		CUP12202B	1	*
	3	943402006350D	FRONT PANEL	BKE2	CKM1A213YC45	1	*
	3	943402006360D	FRONT PANEL	SPE2/SPE1C	CKM1A213ZC62	1	*
	4	943443006390D	INNER PANEL	BKE2	CGW1A480B28	1	*
	4	943443006400D	INNER PANEL	SPE2/SPE1C	CGW1A480RGG45	1	*
	4-1	-	KNOB GUIDE		CGW1A480-1	1	
	4-2	-	KNOB GUIDE		CGW1A480-2	1	
	4-3	-	KNOB GUIDE		CGW1A480-3	1	
	5	00D9430189903	LENS		CGL1A254	1	
	6	00D1310158049	DENON BADGE	BKE2	CGB1A140U	1	
	6	00D1310158052	DENON BADGE	SPE2/SPE1C	CGB1A140T	1	
	7	00D9430179502	POWER KNOB	BKE2	CGK1A124ZA	1	
	7	00D9430179609	POWER KNOB	SPE2/SPE1C	CGK1A124YA	1	
	8	943416006410D	FIP WINDOW		CGU1A397Y	1	*
	9	00D9430180708	DOOR	BKE2	CGR2A404WB28	1	
	9	00D9430180805	DOOR	SPE2/SPE1C	CGR2A404RGYG45	1	
	10	00D9430180902	LEVEL KNOB	BKE2	CBC1A157B28	1	
	10	00D9430181008	LEVEL KNOB	SPE2/SPE1C	CBC1A157RGG45	1	
	11	nsp	BOTTOM CHASSIS		CUA5A269	1	*
	12	943406006670D	REAR PANEL	E2	CKF3A316Z	1	*
	12	943406006680D	REAR PANEL	E1C	CKF3A316X	1	*
	13	nsp	FOOT		CKL1A093	4	
	14	nsp	FOOT CUSHION		CHG2A289	4	
	15	nsp	MECHA SUPPORT		CMH2A259	4	
	16	943302000090D	CD MECHANISM ASSY		CJDWSL11TCNA	1	
	17	nsp	PCB HOLDER		CHE170	2	
	18	nsp	PCB HOLDER		CHE2A030	3	
	19	00D9430180407	AC CORD	E2	CJA2B043ZA	1	
	19	943611006700S	AC CORD	E1C	CJA2N047ZA	1	
	20	00D9430095505	AC CORD BUSHING		KHR1A028	1	
	21	943101006510D	POWER TRANSFORMER		CLT5M039ZE	1	*
	22	00D9430181105	TOP COVER	BKE2	CKC1A175S56	1	
	22	00D9430181202	TOP COVER	SPE2/SPE1C	CKC1A175S55	1	
	23	nsp	EARTH PLATE		CMC1A369	1	*
	24	nsp	RUBBER		CHG1A113	3	
	25	nsp	SERIAL NO LABEL		CQB1A622	1	
	27	00D9430201000	FERRITE CORE		CLZ9W003Z	1	
	28	nsp	HEMELON TAPE		CHS1A032	5	
	29	nsp	CLAMPER		CHR301	5	
⚠	30	00D9430140609	CSH1A010ZV(SDL1P-B)		CSH1A010ZV	1	

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
SCREWS							
	51	nsp	DOT SCREW 3X8	BK	CTBD3+8JFZR	9	
	51	nsp	DOT SCREW 3X8	SP	CTBD3+8JFN	9	
	52	nsp	SCREW 3X8	BK	CTB3+8JFZR	4	
	52	nsp	SCREW 3X8	SP	CTB3+8GFN	4	
	53	nsp	SCREW 3X10		CTB3+10JR	13	
	54	nsp	SCREW 3X6		CTW3+6JR	12	
	55	nsp	SCREW 3X12		CTB3+12JR	3	
	56	nsp	SCREW 3X10		CTWS3+10GR	1	
	57	nsp	SCREW 3X18		CTW3+18JR	2	
	58	nsp	SCREW 3X22		CTW3+22JR	2	
	59	nsp	SCREW 3X6		CTB3+6FFZR	3	
	60	nsp	SCREW 3X8		CTB3+8JFZR	1	
	61	nsp	SCREW 3X10		CTB3+10JFZR	1	
	62	nsp	SCREW 4X6		CTB4+8FR	2	
	63	nsp	SCREW 4X6	BK	CTWD4+6FFZR	4	
	63	nsp	SCREW 4X6	SP	CTWD4+6FFN	4	
	64	nsp	SCREW 3X8		CTBD3+8JFZR	3	

EXPLODED VIEW OF CD MECHANISM UNIT



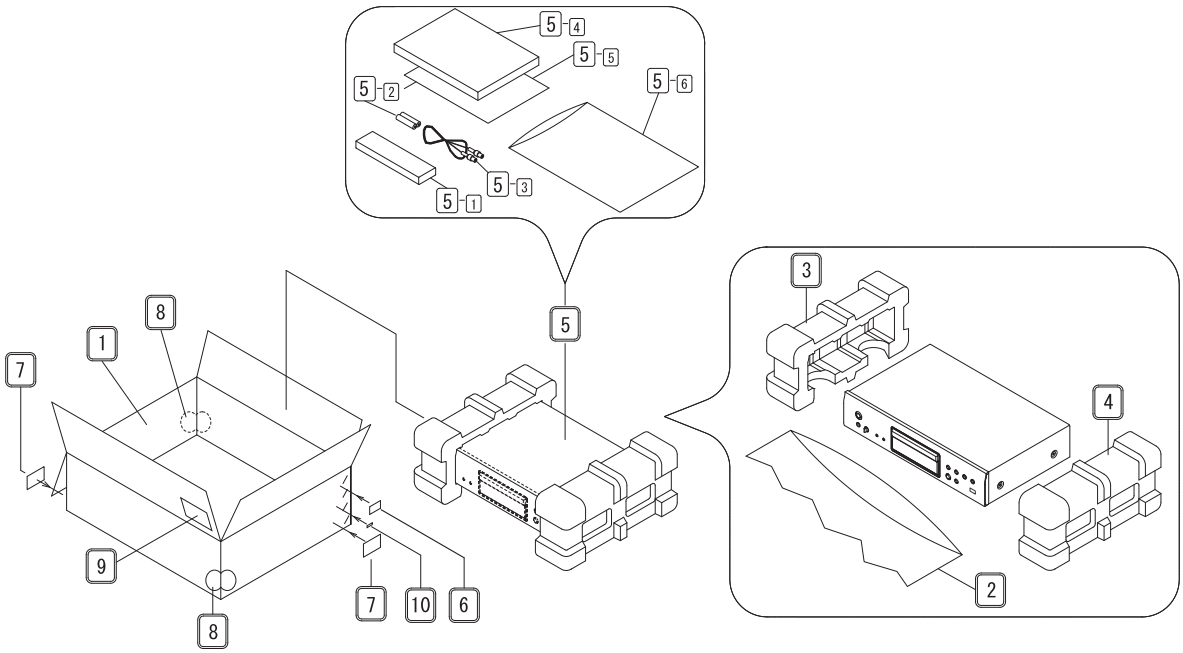
PARTS LIST OF CD MECHANISM UNIT

* Parts for which "nsp" is indicated on this table cannot be supplied.\

* The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

	Ref. No.	Part No.	Part Name	Remarks	Q'ty	New
	1	00DS264629001	Tray (C)		1	
	2	-	-	This part (No.2)doesn't belong to the tray. Take it down from old tray and use again when changing the tray.		
	3	00DS262554401	Gear cover(S)		1	
	4	00DS262553501	Tray gear(S)		1	
	5	00DS262554601	Chucking plate		1	
	6	nsp	Screw 2.6 x 7 +PTPWH		4	
	7	nsp	Chucking yoke		1	
	8	nsp	Magnet		1	
	9	00D9640011007	MECHA DA11T3CN		1	
	10	nsp	Chucking pulley		1	
	11	nsp	Sub chassis Ass'y		1	
	12-1	00DS262723601	Coil spring(front)		2	
	12-2	00DS262723501	Coil spring(back)		2	
	13	nsp	Screw 2.6 x 10 +P	No slit type2	4	
	14	nsp	Washer 2130		4	
	17	nsp	Outsert main chassis(S)		1	
	18	nsp	Screw 2.6 x 16 +PTPWH		1	
	19	00DS262554701	Drive gear(S)		1	
	20	00DS262554504	Contorol cam(S)		1	
	21	00DS169266711	Leaf switch		2	
	22	nsp	5P connector		1	
	23	nsp	Loading P.W.B		1	
	24	00DSX26251171	Loading motor Ass'Y		1	
	25	00DS262553402	Middle gear		1	
	26	00DS262553602	Loading pulley		1	
	27	00DS365338700	LM belt		1	
	28	nsp	Screw 2.6 x 2.5 +B		1	
	30	00DS262723401	Insulator		4	

PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

＊ Parts for which "nsp" is indicated on this table cannot be supplied.

＊ The parts listed below are for maintenance only, might differ from the parts used in the unit in appearances or dimensions.

Note: The symbols in the column "Remarks" indicate he following destinations.

E2 : Europe model E1C : China model

BK : (Black model SP : (Premium Silver model

	Ref No.	Part No.	Part Name	Remarks		Q'ty	New
	1	943531006720D	CARTON BOX	E2	CPG2A819U	1	*
	1	943531006730D	CARTON BOX	E1C	CPG2A819S	1	*
	2	nsp	POLY BAG(Set)		CPB1A013Y	1	
	3	00D9430177902	SNOW PAD		CPS1A748	1	
	4	00D9430178008	SNOW PAD		CPS1A749	1	
	5-1	943307006790D	REMOCON	BKE2	CARTDCD710AEBK	1	*
	5-1	943307006800D	REMOCON	SPE2/SPE1C	CARTDCD710AESP	1	*
	5-2	nsp	BATTERY (SIZE 'AAA')		CABR03PPB	2	
	5-3	nsp	PIN CORD		CJS4N014Z		
	5-4	943541006760D	INSTRUCTION MANUAL	E2	CQX1A1445Z	1	*
	5-4	943541006770D	INSTRUCTION MANUAL	E1C	CQX1A1447Z	1	*
	5-5	nsp	S.S.LIST(EX)		CQE1A226Q	1	
	5-6	nsp	POLY BAG		CPB1061W	1	
	6	nsp	POS LABEL	BKE2	CQB1A772S	1	*
	6	nsp	POS LABEL	SPE2	CQB1A772T	1	*
	6	nsp	POS LABEL	SPE1C	CQB1A772P	1	*
	7	nsp	CONTROL LABEL		CQB1A627	2	*
	8	00D9430194804	COLOR LABEL	SPE2/SPE1C	CQB1A676	2	
	9	nsp	DATE LABEL	E1C	CQB1A622	1	
	10	nsp	CARTON LABEL(C)	E1C	CQB1A940Z	1	*

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

WARNING:

DO NOT return the unit to the customer until the problem is located and corrected.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM
M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD.
P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

SHEET 01
MAIN UNIT

HOST MCU PARTS

HOST MCU
TMP92FD23AFG

IC11
TMP92FD23AFG
HOST MCU

CD DSP PARTS

CD DSP
TC94A92FG

IC17
CVITC94A92FG

USB PARTS

IC13
M95010

IC15
USB DECODER
TMP92FD28AFG

MOTOR DRIVE PARTS

IC14
CVIIP4001TF

POWER PARTS

RESET IC 3V

IC12
HVIS+80130ALMC

ALL VERSION ' L / L '

VERSION SEL		
42PIN	43PIN	MODE
L	L	E2
L	H	E3
H	L	JP
H	H	E1C

BOLERO VERSION

MODEL	R573	R574
DCD710AE	10K	N.C
DCD-F107	N.C	10K

D_OUT SEL

SEL	/ST	IN	MODE
L	L	A	NORMAL
H	L	B	GND
L	H	-	D-OFF
H	H	-	D-OFF

DCD710AE : R101 0 ohm
DCD-F107 : R102 0 ohm

for DCD710AE
DCD-F107 : N.C

* Version Option
R701~R715 for DCD710AE
R801~R815 for DCD-F107AE

	DCD-710AE	DCDF107
21	MDT_DAC/DXP/BU	DAC_MDT
20	MCK_DAC/DXP/BU	DAC_MCK
19	DAC_CS	DAC_CS
18	DAC_MD0	GND_D
17	DXP_CS	GND_D
16	BU_CS	SCLK_A
15	DXP_RST	GND_D
14	GND_D	BCK_A
13	BCK	GND_D
12	GND_D	DATA_A
11	DATA	GND_D
10	GND_D	LRCK_A
9	LRCK	GND_D
8	MCK_SEL	GND_D
7	DAC_RST	DAC_RST
6	GND_D	GND_D
5	SYS_CLK	GND_D
4	GND_D	DBCLK
3	SPDIF	DBTXD
2	GND_D	DBRXD
1	A_MUTE	A_MUTE

TO DISPLAY UNIT SHEET 04
MCU UPDATE FOR ANAM
MCU UPDATE FOR DENON
TO MECHANISM SHEET 04
TO MECHANISM SHEET 04
USB UPDATE FOR ANAM
USB UPDATE FOR DENON
TO POWER UNIT SHEET 03
TO USB UNIT SHEET 04

Digital out SIGNAL LINE
CD SIGNAL LINE
USB SIGNAL LINE

SCHEMATIC DIAGRAMS (1/4)
CUP12202 MAIN UNIT

DCD-710AE

SHEET 02
AUDIO UNIT

21	MDT_DAC/DXP/BU
20	MCK_DAC/DXP/BU
19	DAC_CS
18	DAC_MOD
17	DXP_CS
16	BU_CS
15	DXP_RST
14	GND_D
13	BCK
12	GND_D
11	DATA
10	GND_D
9	LRCK
8	MCK_SEL
7	DAC_RST
6	GND_D
5	SYS_CLK
4	GND_D
3	SPDIF
2	GND_D
1	A_MUTE

DCD-710AE

DSP PARTS

AUDIO DSP
DXP6001AF

LEVEL SHIFT
TC74HCT7007F
3.3V -> 5V

AUDIO DAC
PCM1791ADBR

AUDIO OUT PARTS

OP AMP
NJM2068MDTE1

OP AMP
BA15218F

OP AMP
NJM4556AL

HEADPHONE PARTS

HEX INVERTER
TC74VHCU04

V.C.O
TC74LS628

TO CX11

2CH MUX
TC7W157

DUAL PLL FREQ. SYNTHESIZER
BU2630FV

D FLIP FLOP
TC7WH74

TRIPLE INVERTER
TC7WHU04

PITCH CONTROL PARTS

SPDIF OUT

MUTE

A_MUTE

PCB
VERSION CHECK

DCD710AE : 10 V755

DCD755SE : 10 V710

Digital out SIGNAL LINE

CD SIGNAL LINE

SCHEMATIC DIAGRAMS (2/4)

CUP12201-1 AUDIO UNIT
CPU12001-2 H/P UNIT

DCD-710AE

SHEET 03
POWER UNIT

+6V_A
-6V_A
+9V_A
-9V_A
+7V_DRV(6.5V)
+5V_D
+3.3V_D
+42V_DISP
+3.3V_NSW
+4.5V
S1
S2
S3
S4
MAIN TRANS PARTS
SUB TRANS PARTS
MAIN TRANS
M.O.M.S S/W
POWER CORD
GND
EUR/CHINA OPEN
JPN OPEN

FUSE LIST

REF.	VALUE
F801	T630mAL/250V
F802	T630mAL/250V
F803	F2AL/250V
F804	F2AL/250V

SCHEMATIC DIAGRAMS (3/4)
CUP12201-1 POWER UNIT
CPU12001-4 MOMS UNIT

DCD-710AE

SHEET 04
DISPLAY UNIT

DISPLAY PARTS

KEY MATRIX

FROM POWER UNIT
SHEET 03

REMOCON SENSOR

LED PARTS

USB PARTS

USB JACK

SCHEMATIC DIAGRAMS (4/4)
CUP12201-2 DISPLAY UNIT
CPU12001-5 USB UNIT
CPU12001-6 LED UNIT

DCD-710AE