

SCD-555ES

SERVICE MANUAL

AEP Model



Photo: Gold type

Model Name Using Similar Mechanism	CDP-D500
CD Mechanism Type	CDM19HN-DVBU4
Base Unit Name	DVBU4
Optical Pick-up Name	KHM-230AAA/J1NP

SPECIFICATIONS

When a super audio CD is played

Playing frequency range	2 Hz to 100 kHz
Frequency response	2 Hz to 50 kHz (−3 dB)
Dynamic range	105 dB or more
Total harmonic distortion rate	0.0012 % or less
Wow and flutter	Value of measurable limit (±0.001 % W. PEAK) or less

When a CD is played

Frequency response	2 Hz to 20 kHz
Dynamic range	100 dB or more
Total harmonic distortion rate	0.0017 % or less
Wow and flutter	Value of measurable limit (±0.001 % W. PEAK) or less

Output connector

Jack type		Output level	Load impedance
ANALOG OUT	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL (CD) OUT OPTICAL*	Square optical output connector	−18 dBm	(Light emitting wave length: 660 nm)
DIGITAL (CD) OUT COAXIAL*	Coaxial output connector	0.5 Vp-p	75 ohms
PHONES	Stereo phone jack	20 mW	32 ohms

*Output only the audio signals of the CD

General

Laser radiant power:	5.47 uW at 650 nm
*These output is the value measured at a distance of about 200mm from the objective lens surface on the optical pick-up.	
Power requirements	230 V AC, 50/60 Hz
Power consumption	26 W
Dimensions (w/h/d)	430 × 130 × 380 mm incl. projecting parts
Mass (approx.)	14.5 kg

Supplied accessories

- Audio connecting cord (phono jack × 2 ↔ phono jack × 2) (1)
- Mains lead (1)
- Remote commander (remote) RM-SX90 (1)
- R06 (size-AA) batteries (2)

Design and specifications are subject to change without notice.

SUPER AUDIO CD PLAYER

SONY®

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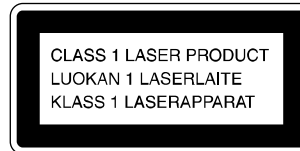
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CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.



The following caution label is located inside the unit.



Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 SERVICING NOTES (1)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

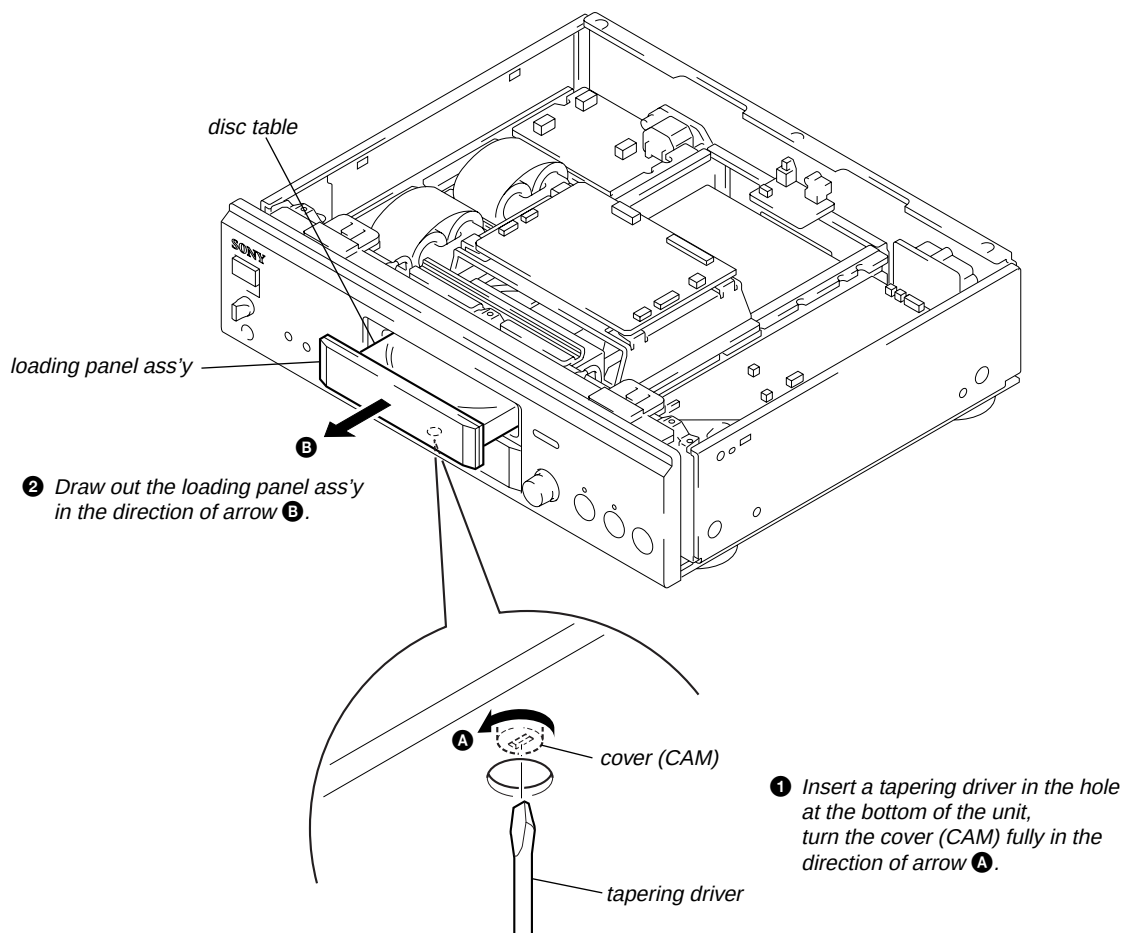
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

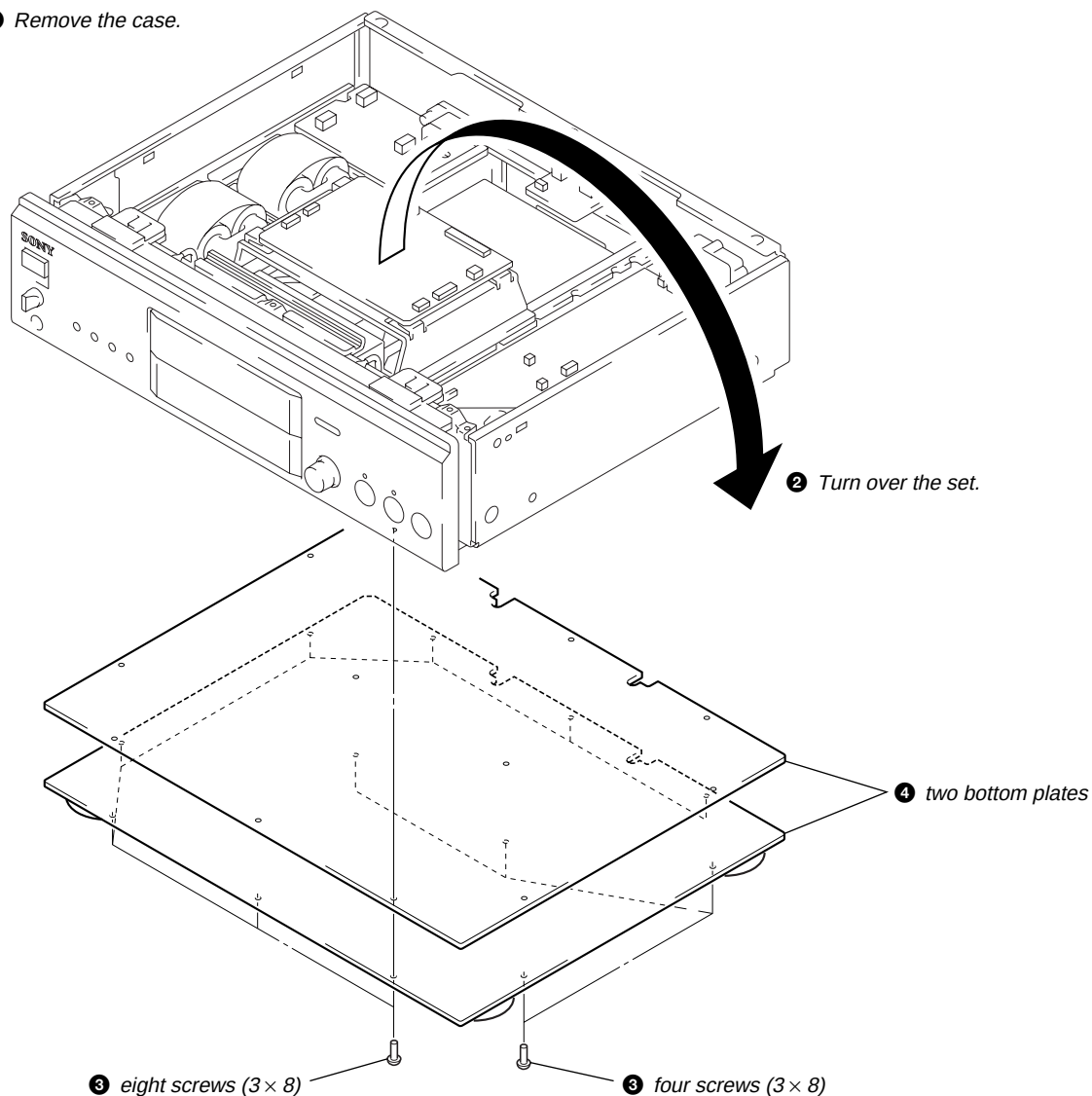
HOW TO OPEN THE DISC TABLE WHEN POWER SWITCH TURNS OFF



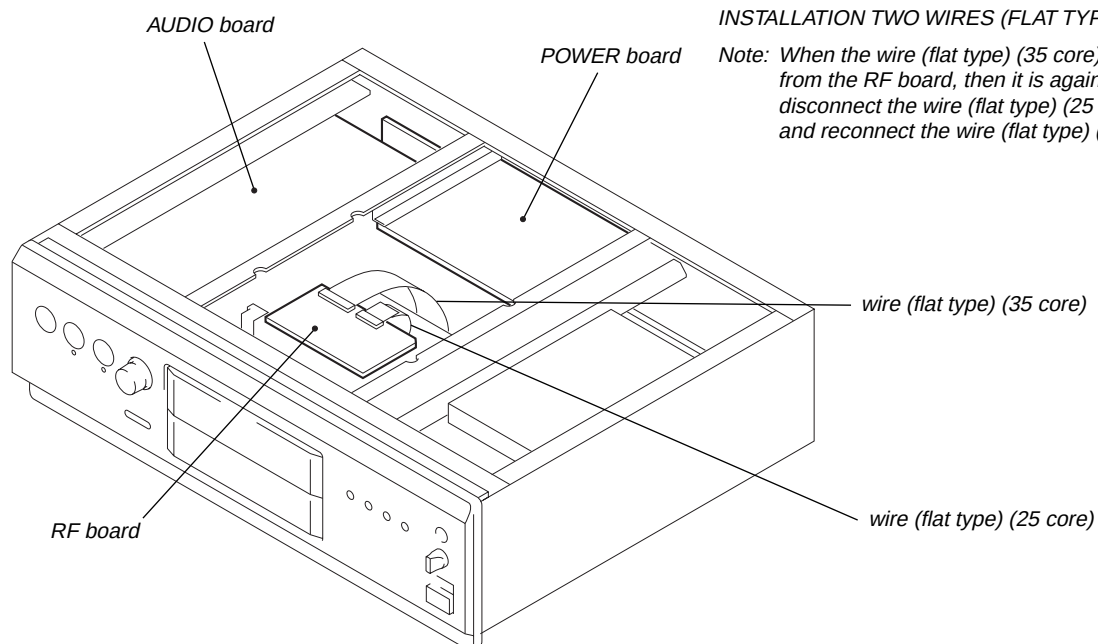
Note: Follow the disassembly procedure in the numerical order given.

AUDIO/POWER BOARDS AND RF BOARD SERVICE POSITION

- ① Remove the case.



– BOTTOM VIEW –

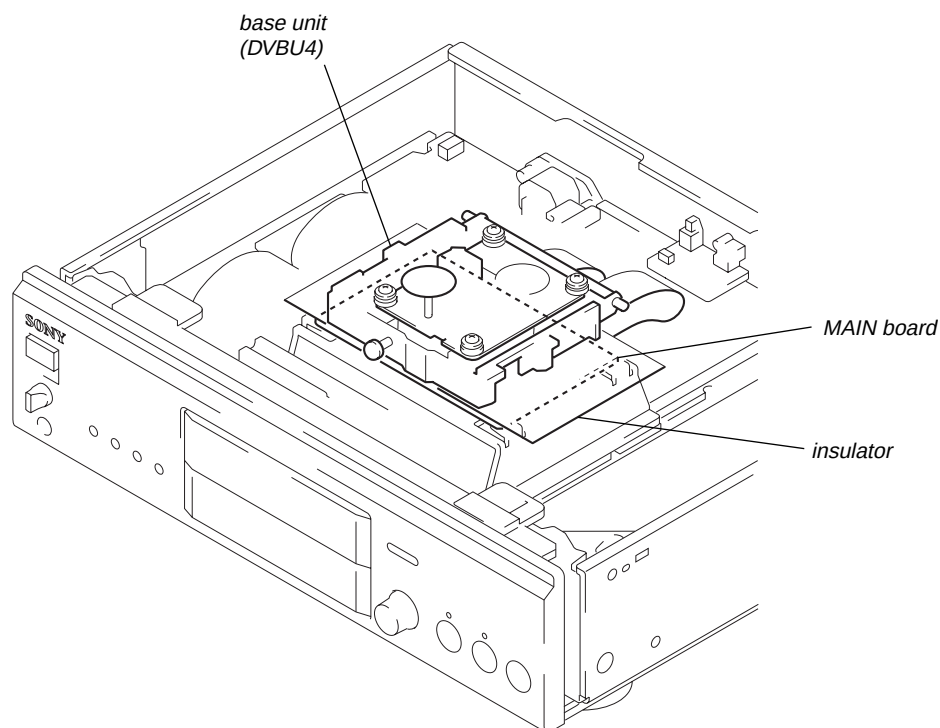


INSTALLATION TWO WIRES (FLAT TYPE) (25/35 CORE)

Note: When the wire (flat type) (35 core) is disconnected from the RF board, then it is again connected, disconnect the wire (flat type) (25 core) once, and reconnect the wire (flat type) (35 core) first.

OPTICAL PICK-UP SERVICE POSITION

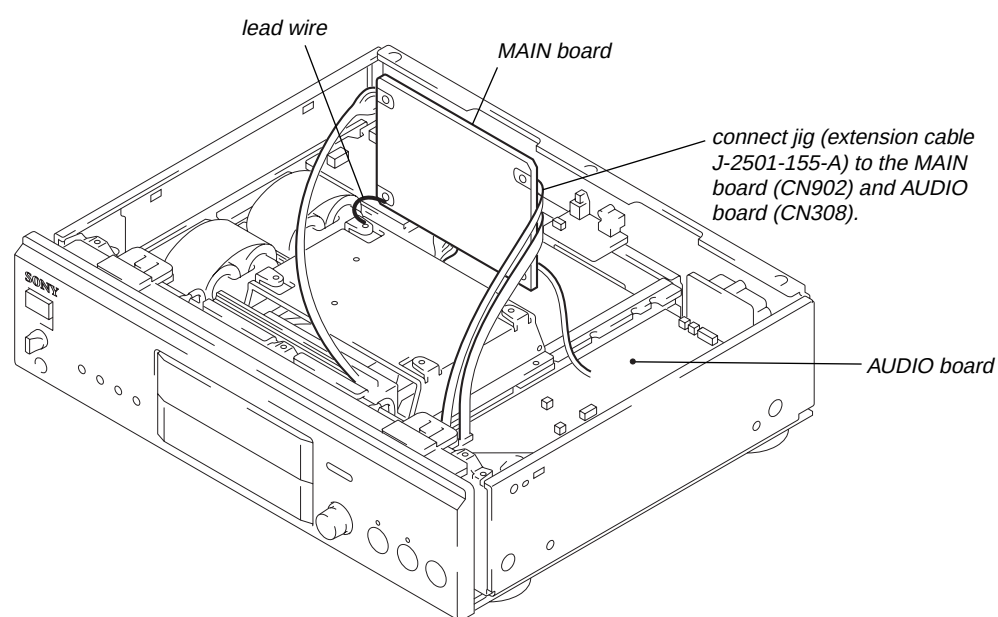
Place the insulator on the MAIN board, then install the base unit (DVBU4) on it as shown in the figure.



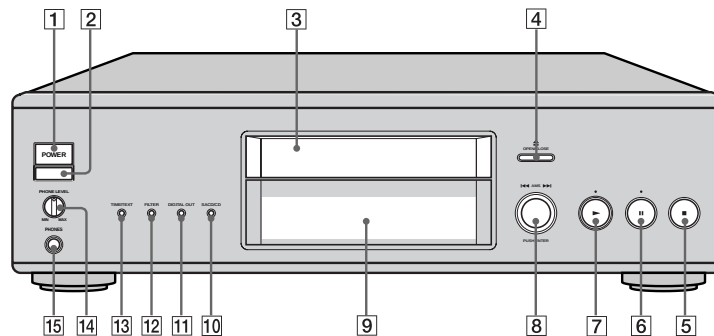
MAIN BOARD SERVICE POSITION

In checking the MAIN board, prepare jig (extension cable J-2501-155-A: 1.00 mm Pitch, 9 cores, Length 300 mm).

Note: Be sure to ground the MAIN board with a lead wire when checking it.

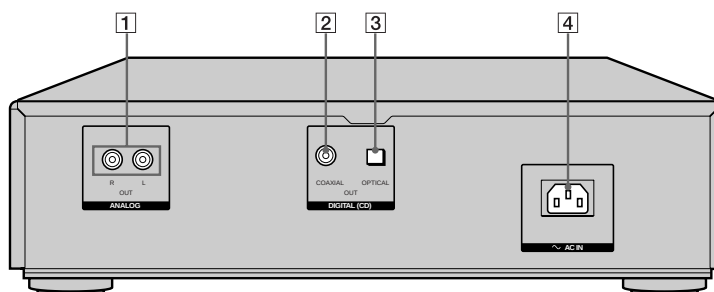


Front Panel Parts Descriptions



- 1 POWER switch (11)**
Press to turn on/off the player.
- 2 Remote sensor (4)**
- 3 Disc tray (11)**
Press $\triangle$ OPEN / CLOSE to open / close the disc tray.
- 4 $\triangle$ OPEN/CLOSE button (11)**
Press to open / close the disc tray.
- 5 ■ button (12)**
Press to stop play.
- 6 || button (12)**
Press to pause play.
|| indicator
Lights up during pause.
- 7 ► button (11)**
Press to start play.
► indicator
Lights up during playback.
- 8 $\ll\langle\langle\text{AMS}\rangle\rangle\gg$ dial (AMS: Automatic Music Sensor) (11)**
When you turn the $\ll\langle\langle\text{AMS}\rangle\rangle\gg$ dial counterclockwise by one click, you go back to the preceding track; when you turn the $\ll\langle\langle\text{AMS}\rangle\rangle\gg$ dial clockwise by one click, you go to the succeeding track.
- 9 Display window (12)**
Shows various information.
- 10 SACD/CD button (with an LED) (11)**
Each time you press the button while the Hybrid disc (page 11) is loaded, the layer changes between the HD layer (the LED turns on) and CD layer (the LED turns off).
- 11 DIGITAL OUT button (with an LED) (5)**
Press when a component is connected to the DIGITAL (CD) OUT connectors. Each time you press the button, the DIGITAL OUT mode changes between ON (the digital signals can be output / the LED turns on) and OFF (the digital signals cannot be output / the LED turns off). The digital signal can be output only when you play a CD.
- 12 FILTER button (18)**
Press to select a digital filter type when playing a CD.
- 13 TIME/TEXT button (12)**
Each time you press the button, the playing time of the track, the total remaining time on the disc, or TEXT information appears in the display.
- 14 PHONE LEVEL**
Adjust the headphones volume.
- 15 PHONES**
Connect the headphones.

Rear Panel Parts Descriptions



- 1 ANALOG OUT jacks (5)**
Connect to an audio component using the audio connecting cord.
- 2 DIGITAL (CD) OUT COAXIAL connector (5)**
Connect to an audio component using the coaxial digital cable.
- 3 DIGITAL (CD) OUT OPTICAL connector (5)**
Connect to an audio component using an optical digital cable.
- 4 AC IN terminal (5)**
Connect the mains lead.

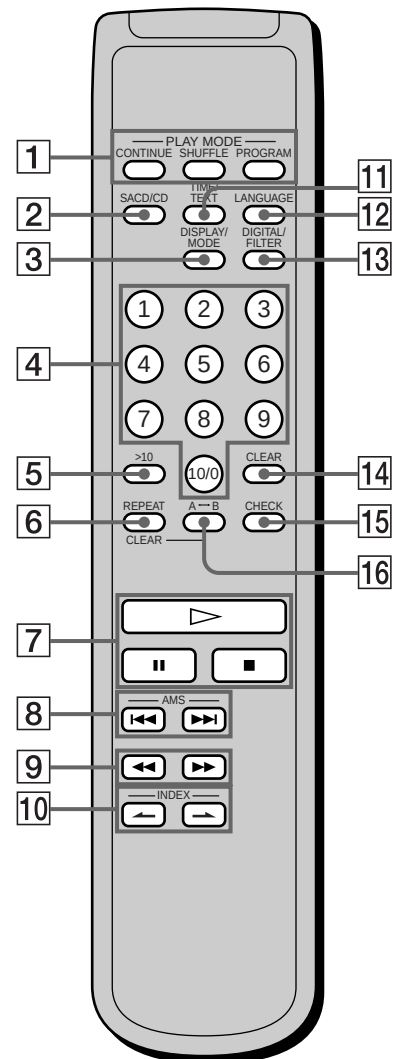
Note

Only the audio signals of the CD can be output from the DIGITAL (CD) OUT connectors shown in **2** and **3**. Those of the Super Audio CD cannot be output through DIGITAL (CD) OUT connectors.

Remote Parts Descriptions

- 1 CONTINUE button (17)**
Press to resume normal play from Shuffle Play or Programme Play.
- SHUFFLE button (17)**
Press to select Shuffle Play.
- PROGRAM button (17)**
Press to select Programme Play.
- 2 SACD/CD button (11)**
Each time you press the button while the Hybrid disc (page 11) is loaded, the layer changes between an HD layer (the SACD/CD LED turns on) and CD layer (the SACD/CD LED turns off).
- 3 DISPLAY MODE button (13)**
Press to turn off the information.
- 4 Number buttons (14)**
Press to enter the track numbers.
- 5 >10 button (14)**
Press to locate a track numbered over 10.
- 6 REPEAT button (16)**
Press repeatedly to play all tracks or only one track on the disc.
- 7 ▷ button (11)**
Press to start play.
- || button (12)**
Press to pause play.
- button (12)**
Press to stop play.
- 8 AMS ◀◀/▶▶ (AMS: Automatic Music Sensor) buttons (14)**
Press to locate a specific track.
- 9 ◀◀/▶▶ buttons (15)**
Press to locate a portion you want to play within a track.
- 10 INDEX ◀/▶ buttons (15)**
Press to locate a specific point marked with an index signal when you play a disc that has index signals.

- 11 TIME/TEXT button (12)**
Each time you press the button, the playing time of the track, the total remaining time on the disc, or TEXT information appears in the display.
- 12 LANGUAGE button (14)**
Press to change the displayed language if the TEXT disc has several languages.
- 13 DIGITAL FILTER button (18)**
Press to select a digital filter type when playing a CD.
- 14 CLEAR button (17)**
Press to delete a programmed track number.
- 15 CHECK button (18)**
Press to check the programmed order.
- 16 A↔B button (16)**
Press to select Repeat A-B Play.



Compatible Disc Types

You can play the following discs with this player. Depending on the type of disc to be played, select the appropriate indicator by pressing SACD/CD on the front panel of the player or on the remote (pages 11).

Super Audio CD (single layer disc)

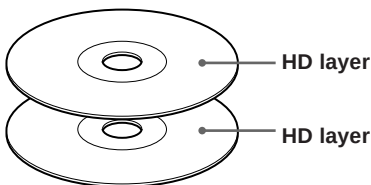
This disc consists of a single HD layer*. Press SACD/CD repeatedly so that "SUPER AUDIO CD" appears in the display (the SACD/CD LED turns on).

*High density signal layer for the Super Audio CD



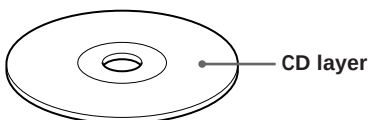
Super Audio CD (dual layer disc)

This disc consists of dual HD layers and is capable of extended play over long periods. Press SACD/CD repeatedly so that "SUPER AUDIO CD" appears in the display (the SACD/CD LED turns on). Also, as the dual layer disc consists of dual HD layers on one side only, it is not necessary to turn the disc over.



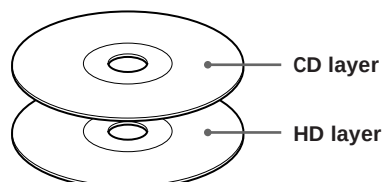
Conventional CD

This disc is the standard format. Press SACD/CD repeatedly so that "CD" appears in the display (the SACD/CD LED turns off).



Super Audio CD + CD (Hybrid disc)

This disc consists of an HD layer and a CD layer. Press SACD/CD to select the layer you want to listen to. Also, as the dual layers are on one side, it is not necessary to turn the disc over. You can play the CD layer using a conventional CD player.



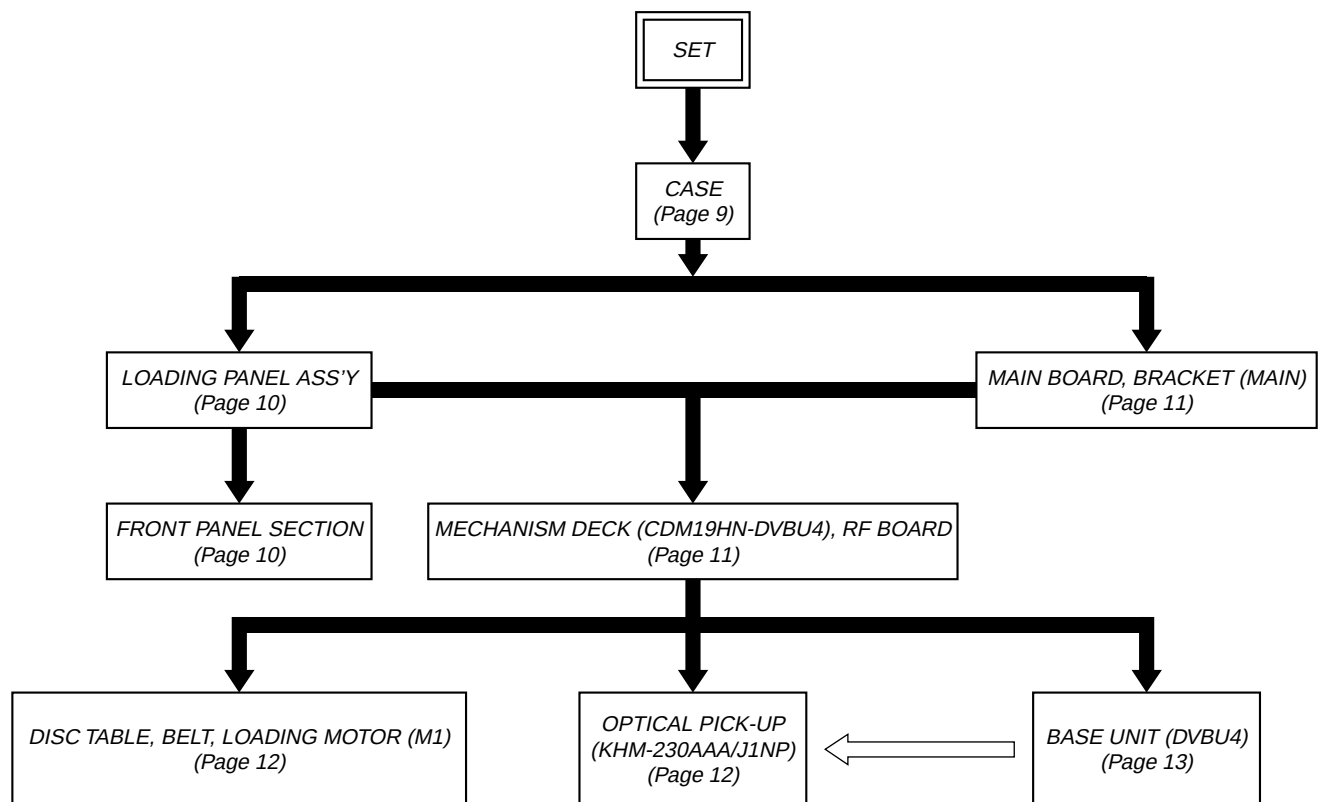
Incompatible Discs

This player cannot play the following discs. If you try to play them, the error message "TOC Error" or "NO DISC" will appear or there will be no sound.

- CD-ROM
- DVD, etc.

SECTION 3 DISASSEMBLY

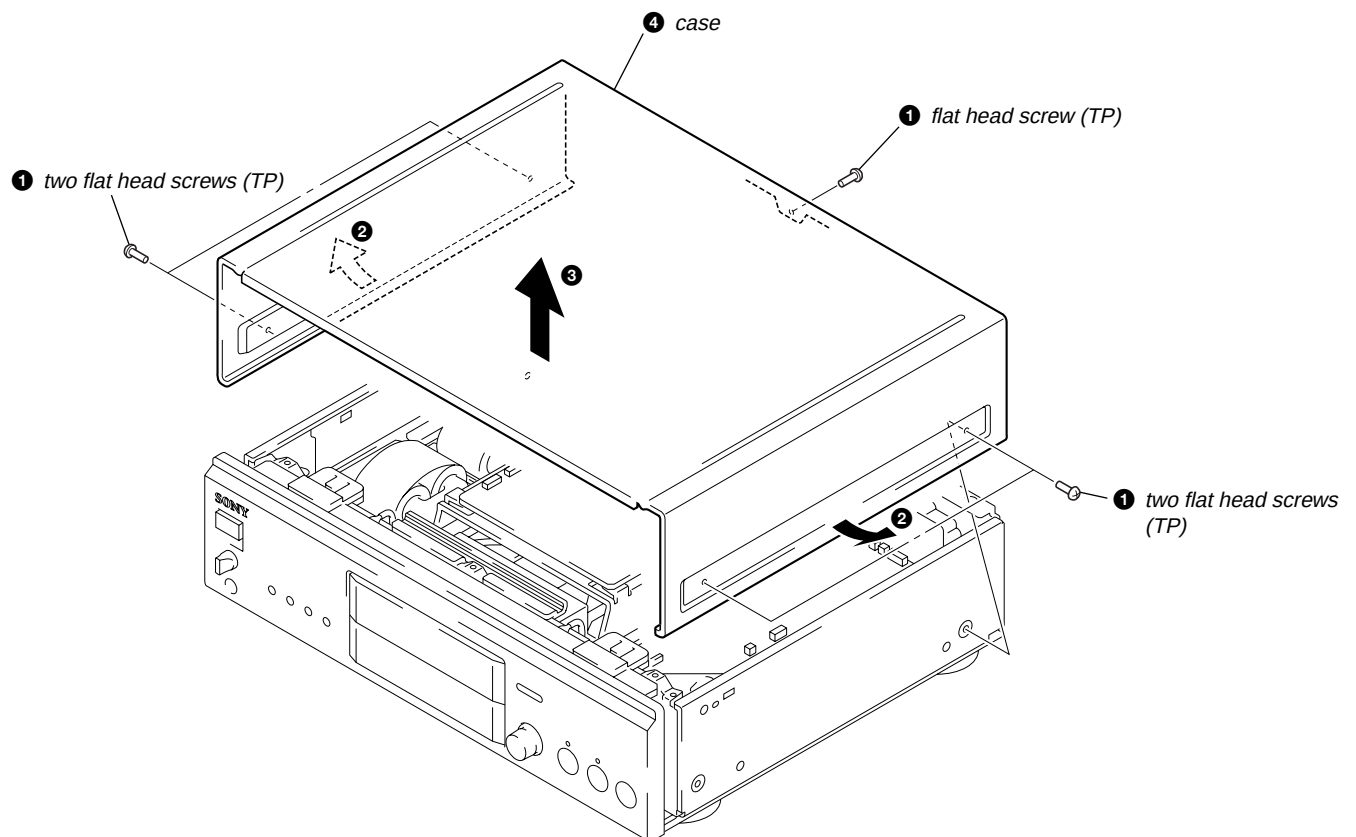
- This set can be disassembled in the order shown below.



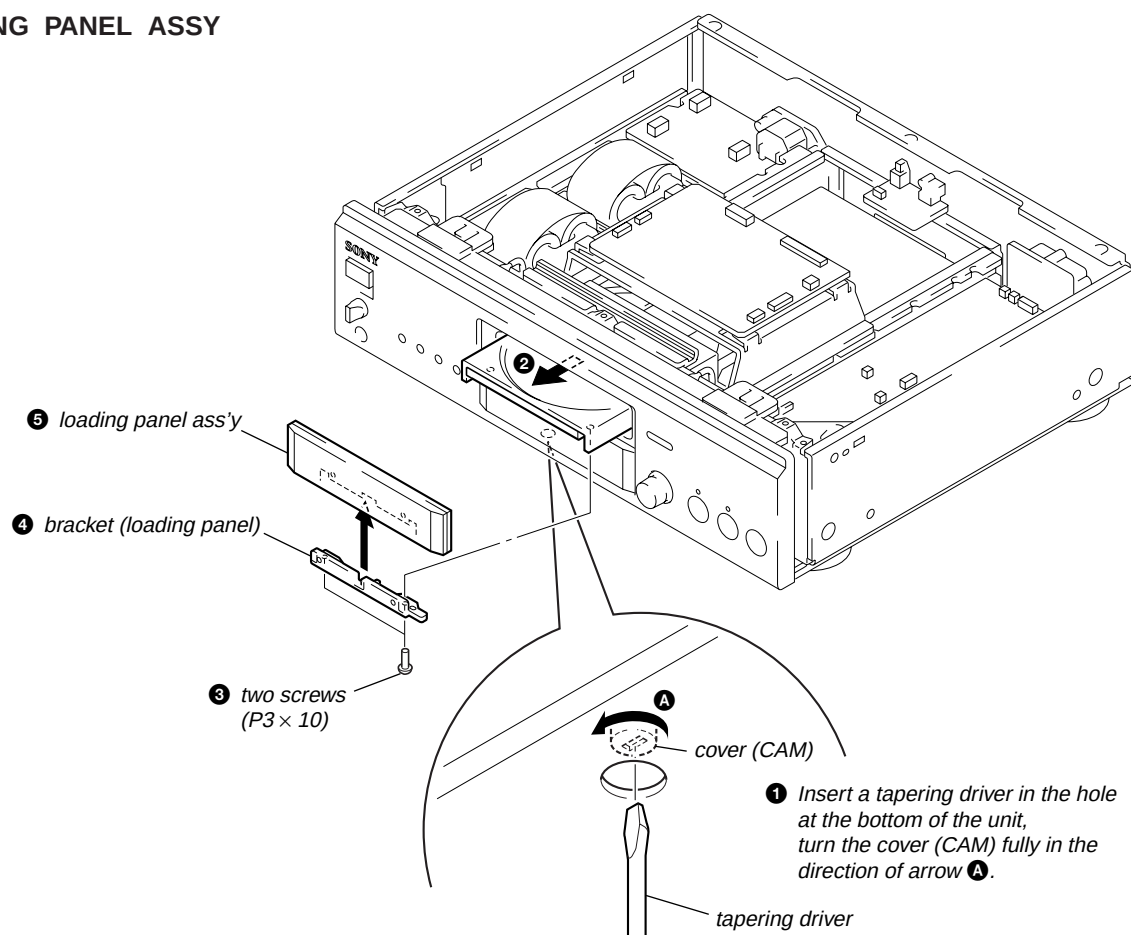
After removing the base unit (DVBU4), the optical pick-up (KHM-230AAA/J1NP) can be removed.

Note: Follow the disassembly procedure in the numerical order given.

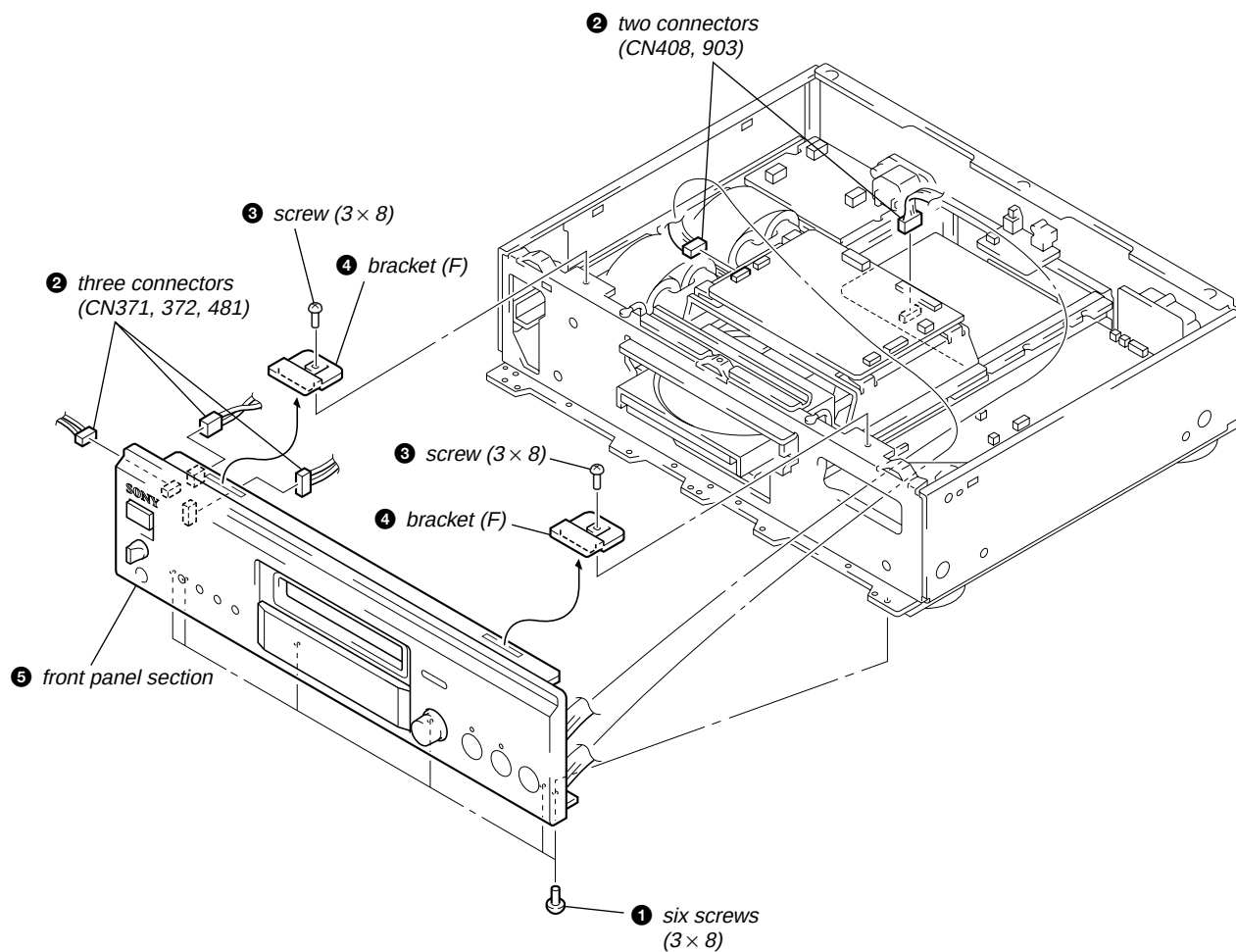
CASE



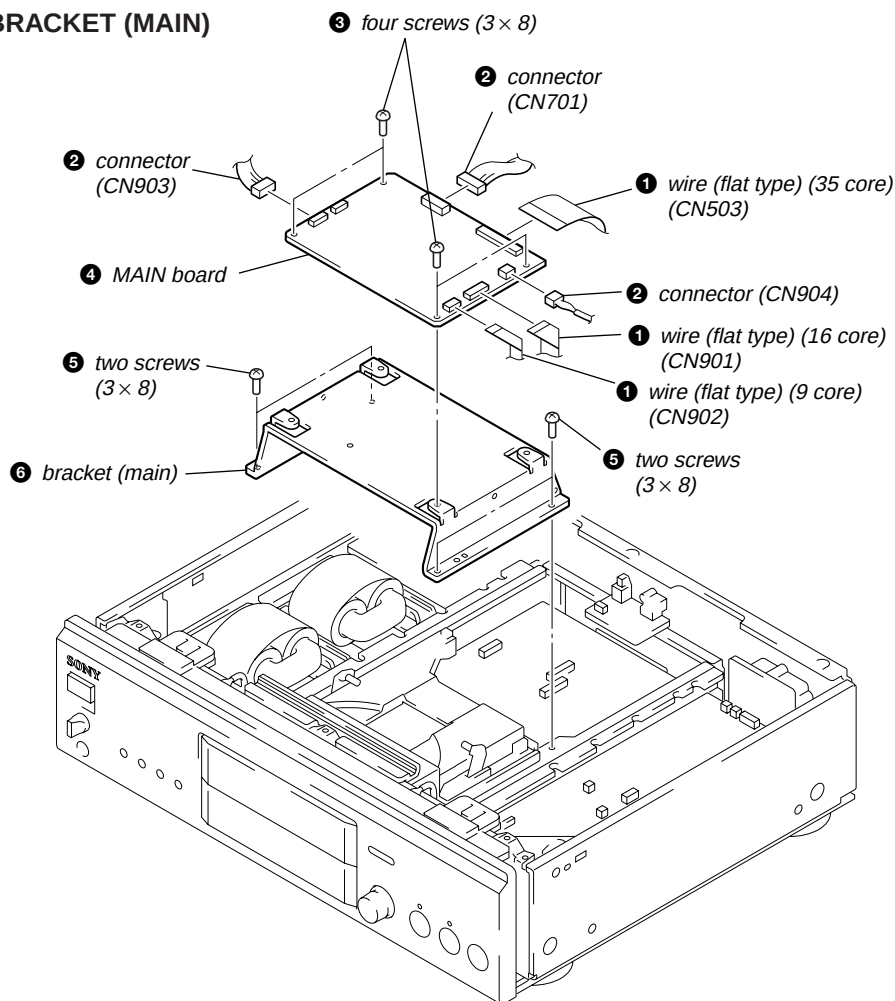
LOADING PANEL ASSY



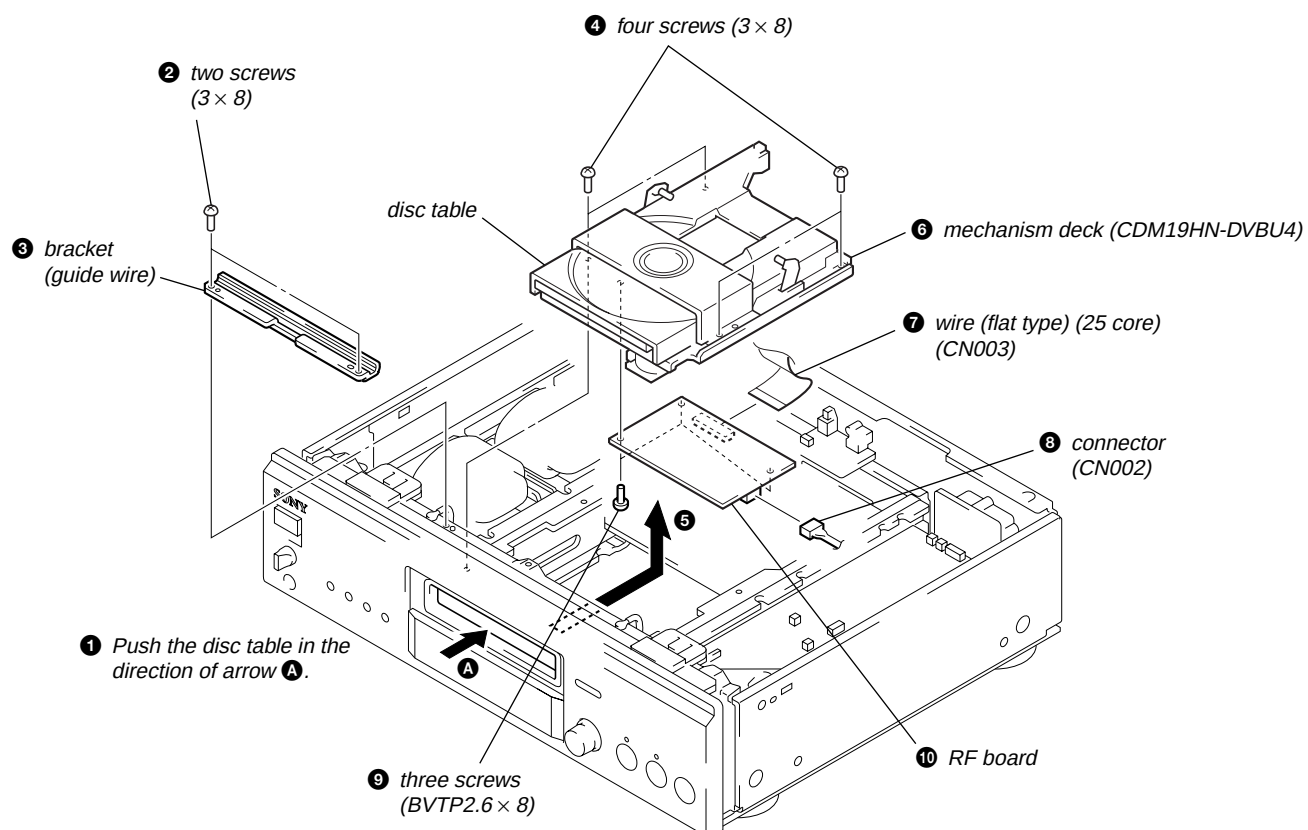
FRONT PANEL SECTION



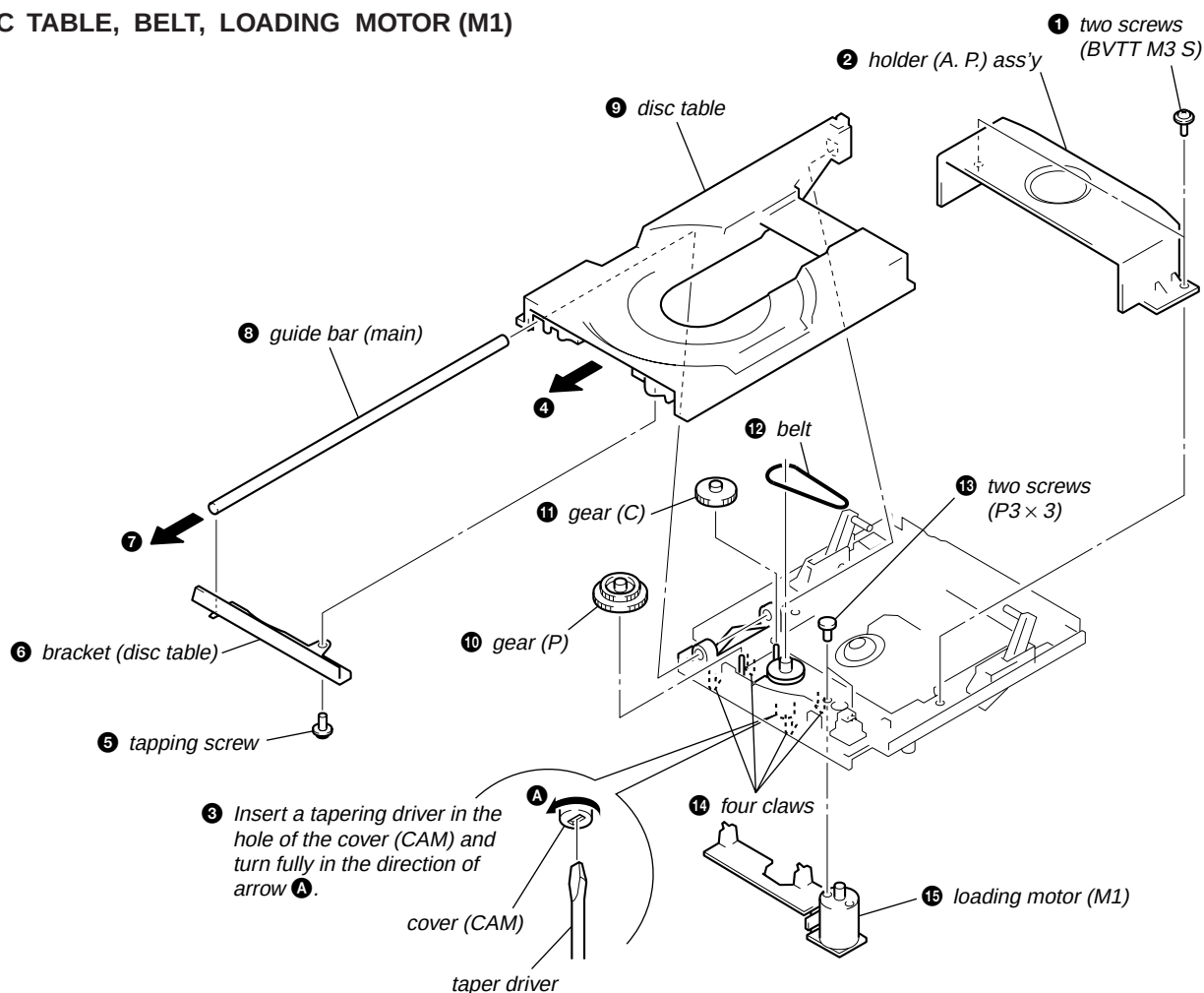
MAIN BOARD, BRACKET (MAIN)



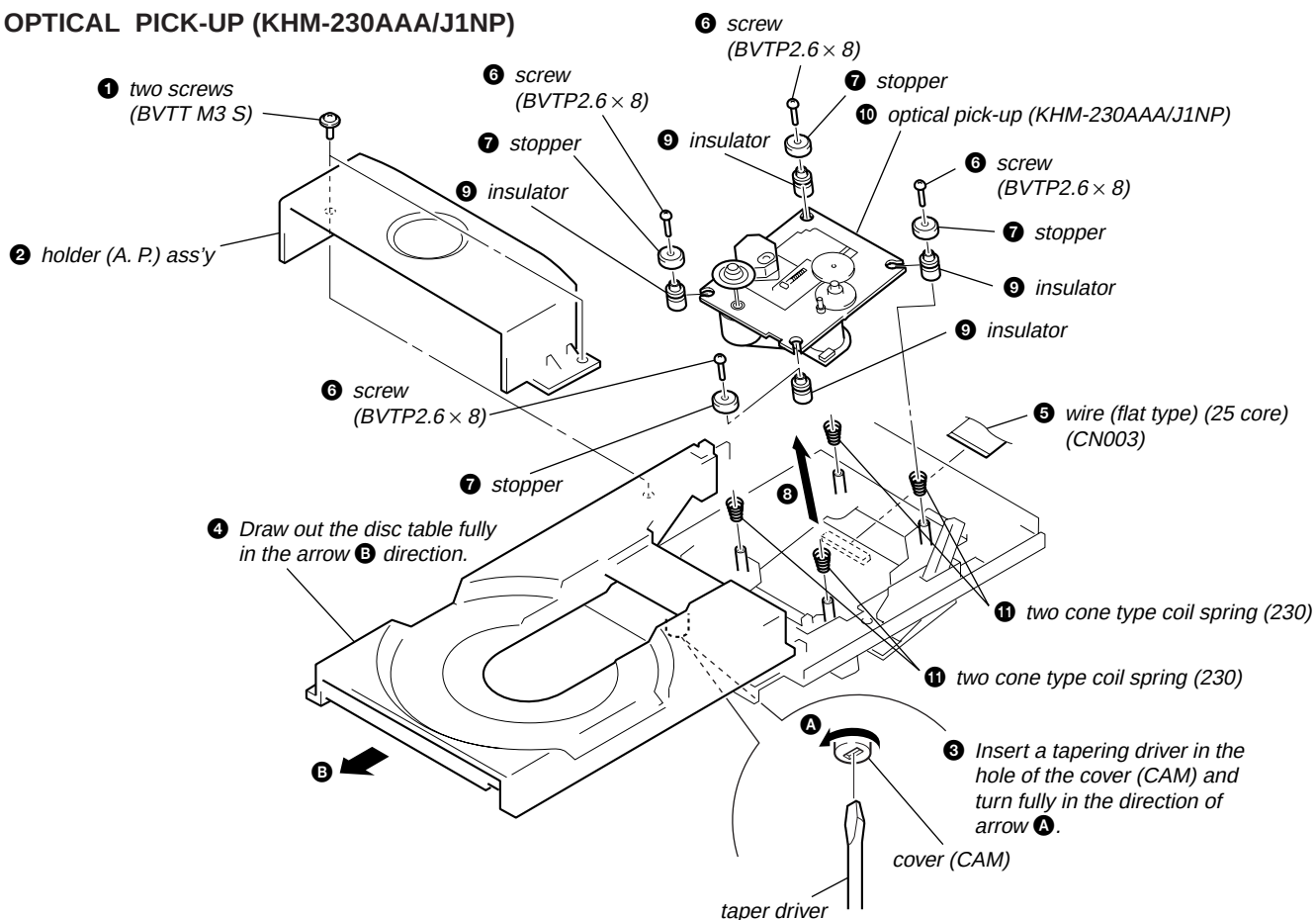
MECHANISM DECK (CDM19HN-DVBU4), RF BOARD



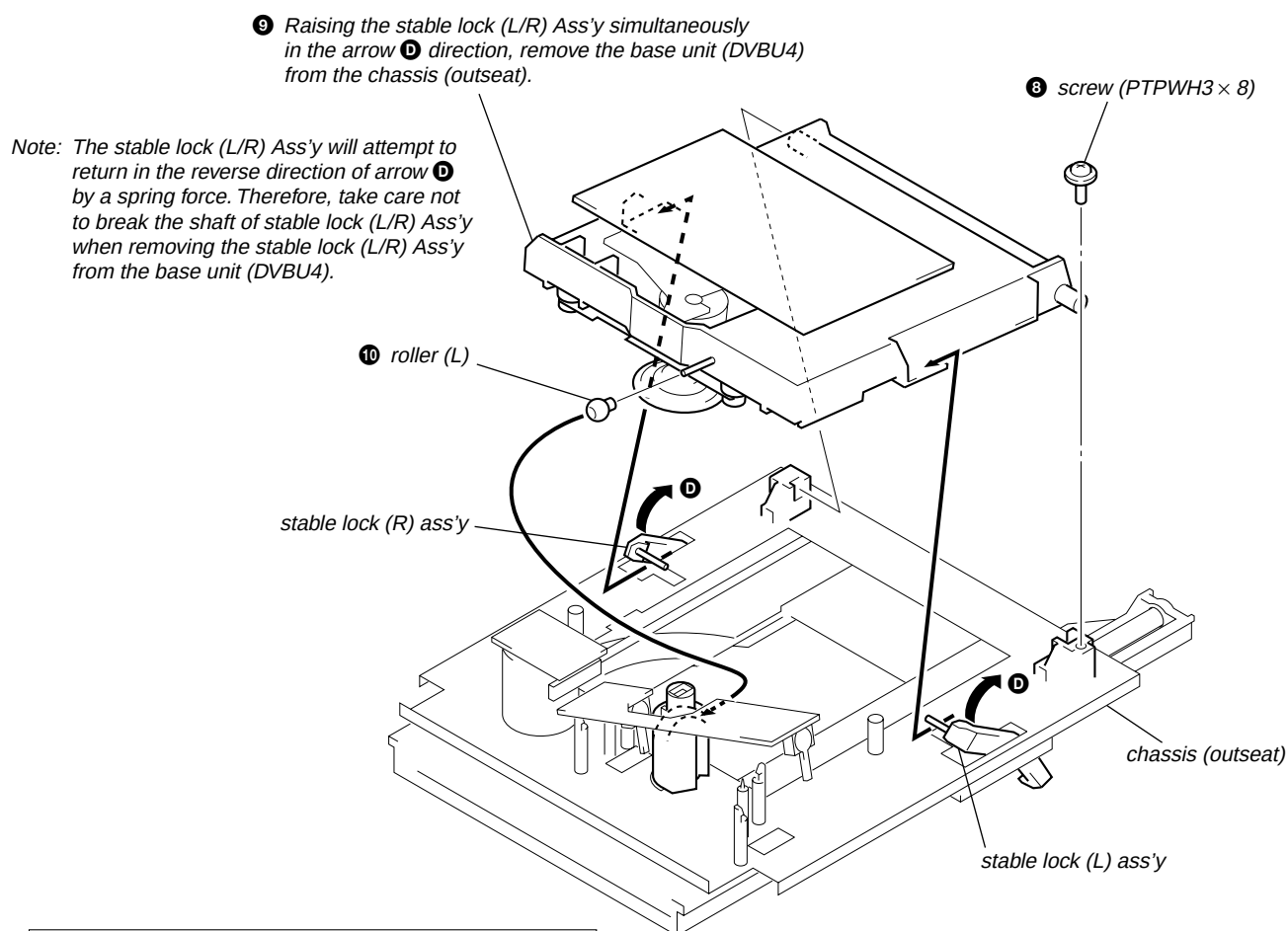
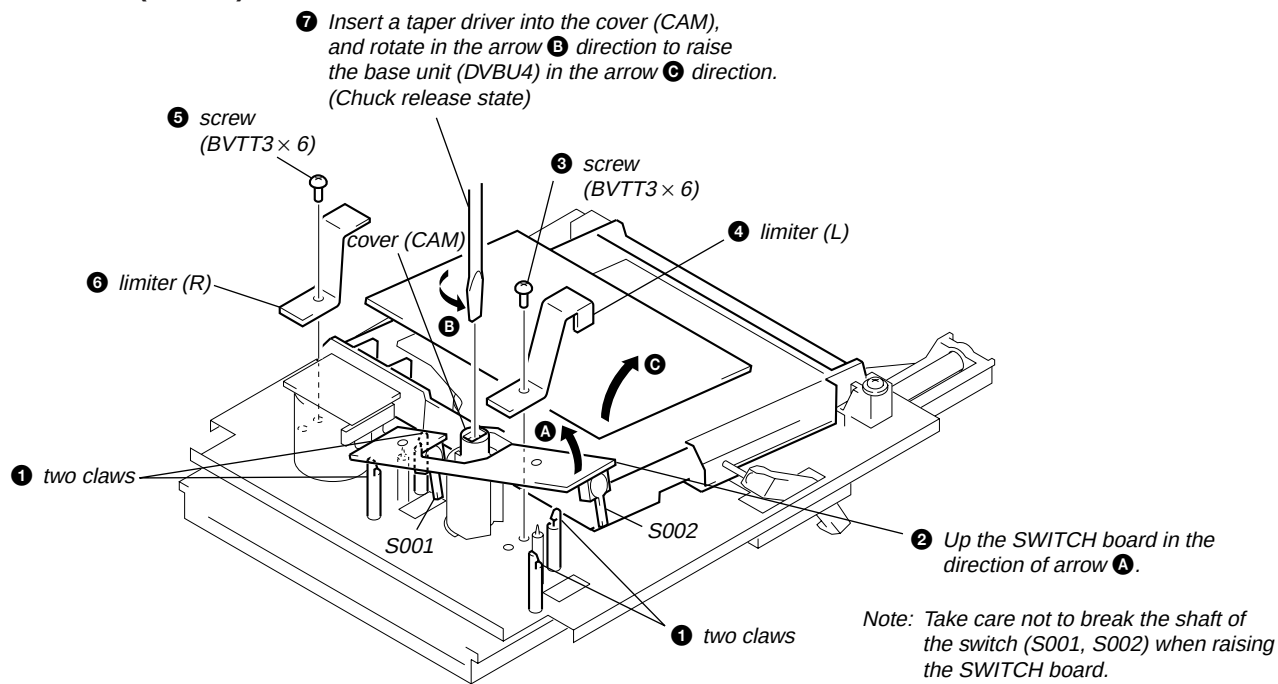
DISC TABLE, BELT, LOADING MOTOR (M1)



OPTICAL PICK-UP (KHM-230AAA/J1NP)



BASE UNIT (DVBU4)



In removing the optical pick-up (KHM-230AAA/J1NP) after removing the base unit (DVBU4), perform the optical pick-up (KHM-230AAA/J1NP) removal procedure after step 5 on page 12.

MEMO

SECTION 4
DIAGRAMS

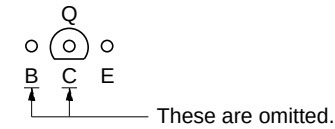
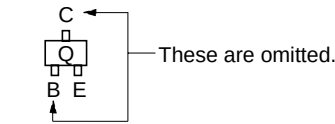
4-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - ▨ : Pattern from the side which enables seeing.
- (The other layers' patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Conductor Side)
Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Component Side)

- Main board is multi-layer printed board. However, the patterns of intermediate-layer have not been included in diagram.
- Indication of transistor



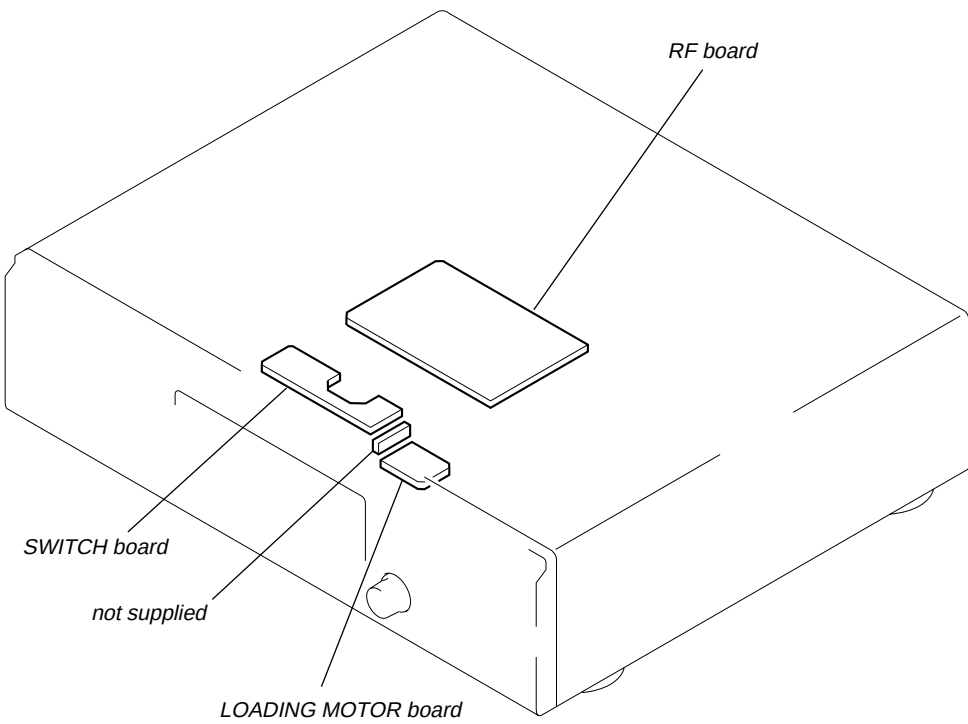
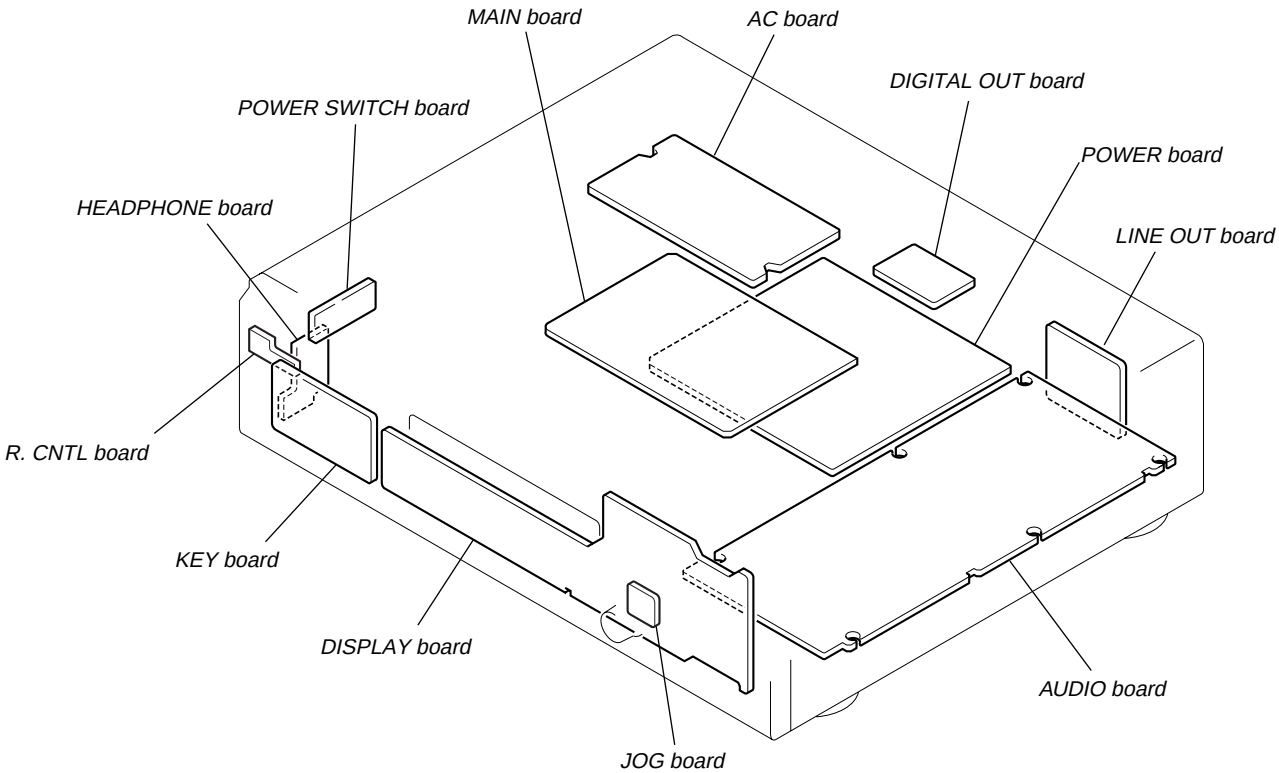
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- $\text{---}\text{---}\text{---}$: fusible resistor.
- $\text{---}\text{---}\text{---}$: panel designation.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- B+ : B+ Line.
- B- : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : CD PLAY (ANALOG OUT)
() : SACD PLAY
<< >> : CD PLAY (DIGITAL OUT)
- Voltages are taken with a VOM (Input impedance 10 $\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 $\text{---}\text{---}\text{---}$: SACD PLAY
 $\text{---}\text{---}\text{---}$: CD PLAY (ANALOG OUT)
 $\text{---}\text{---}\text{---}$: CD PLAY (DIGITAL OUT)

• Circuit Boards Location



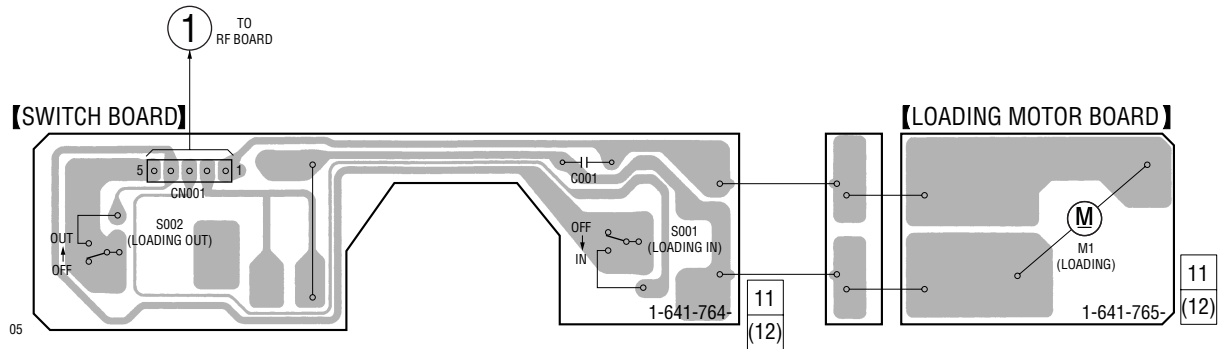
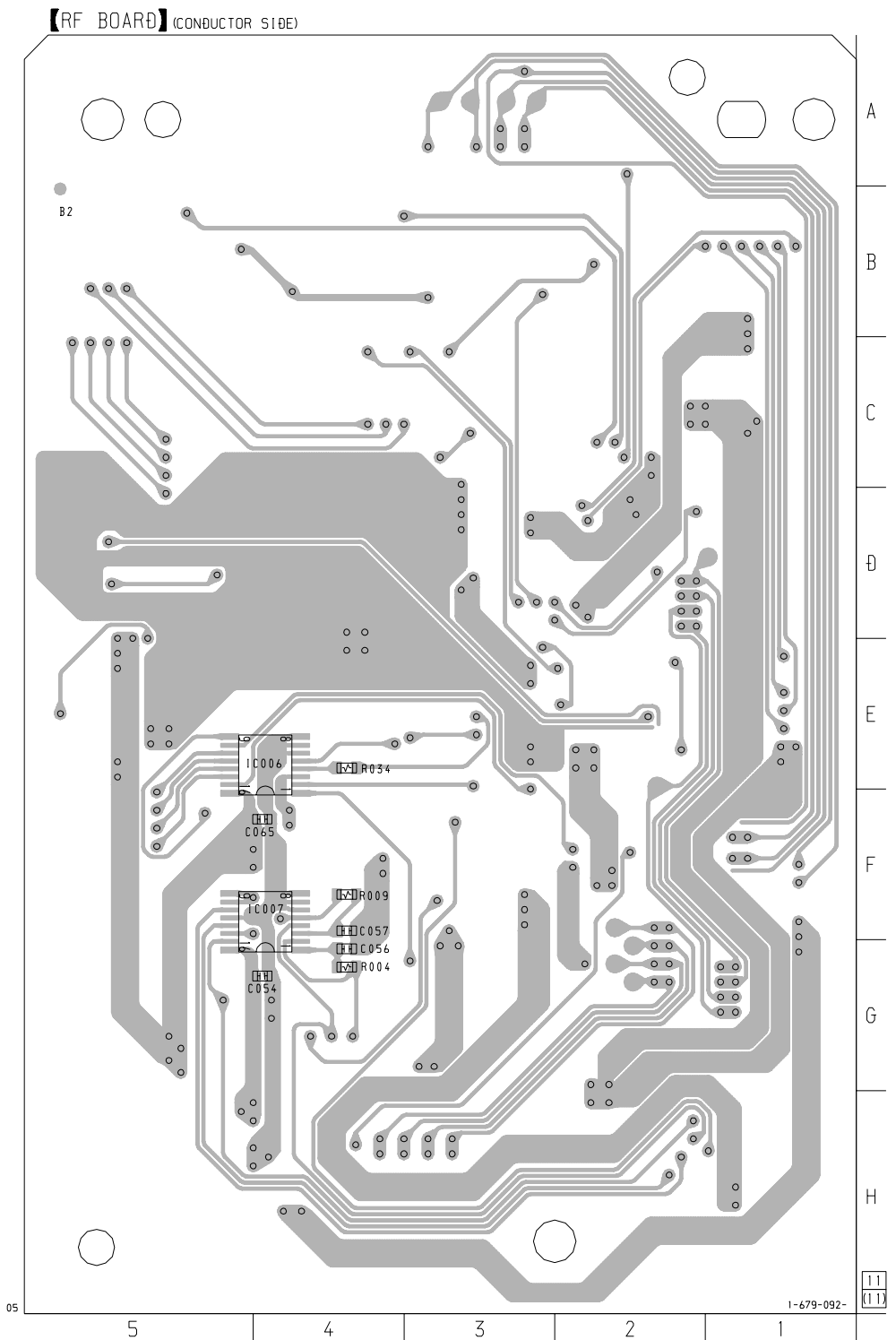
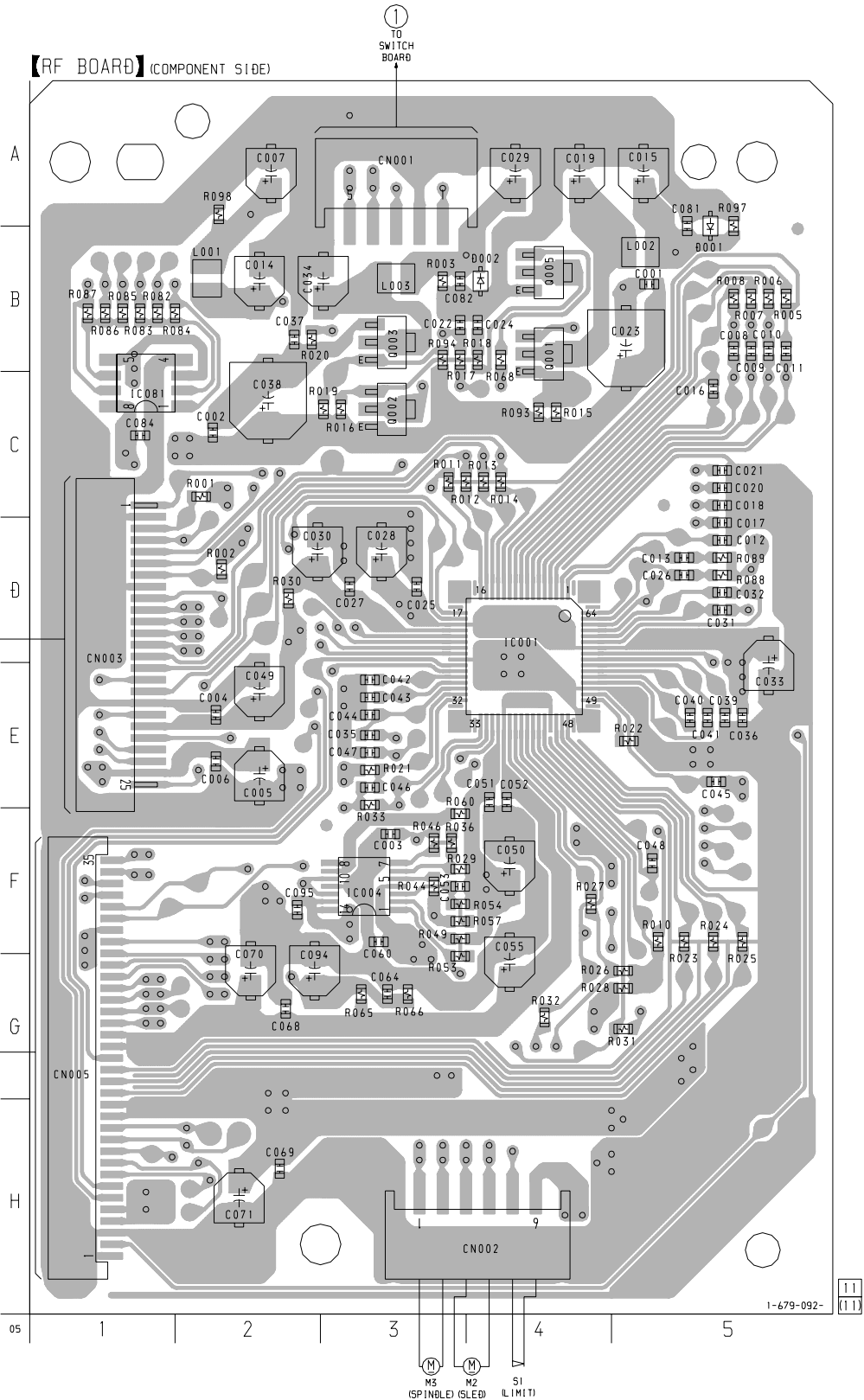
4-2. PRINTED WIRING BOARDS – RF/SWITCH/LOADING MOTOR Boards – • See page 15 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D001	B-5
D002	B-4
IC001	D-4
IC004	F-3
IC081	C-1
Q001	B-4
Q002	C-3
Q003	B-3
Q005	B-4

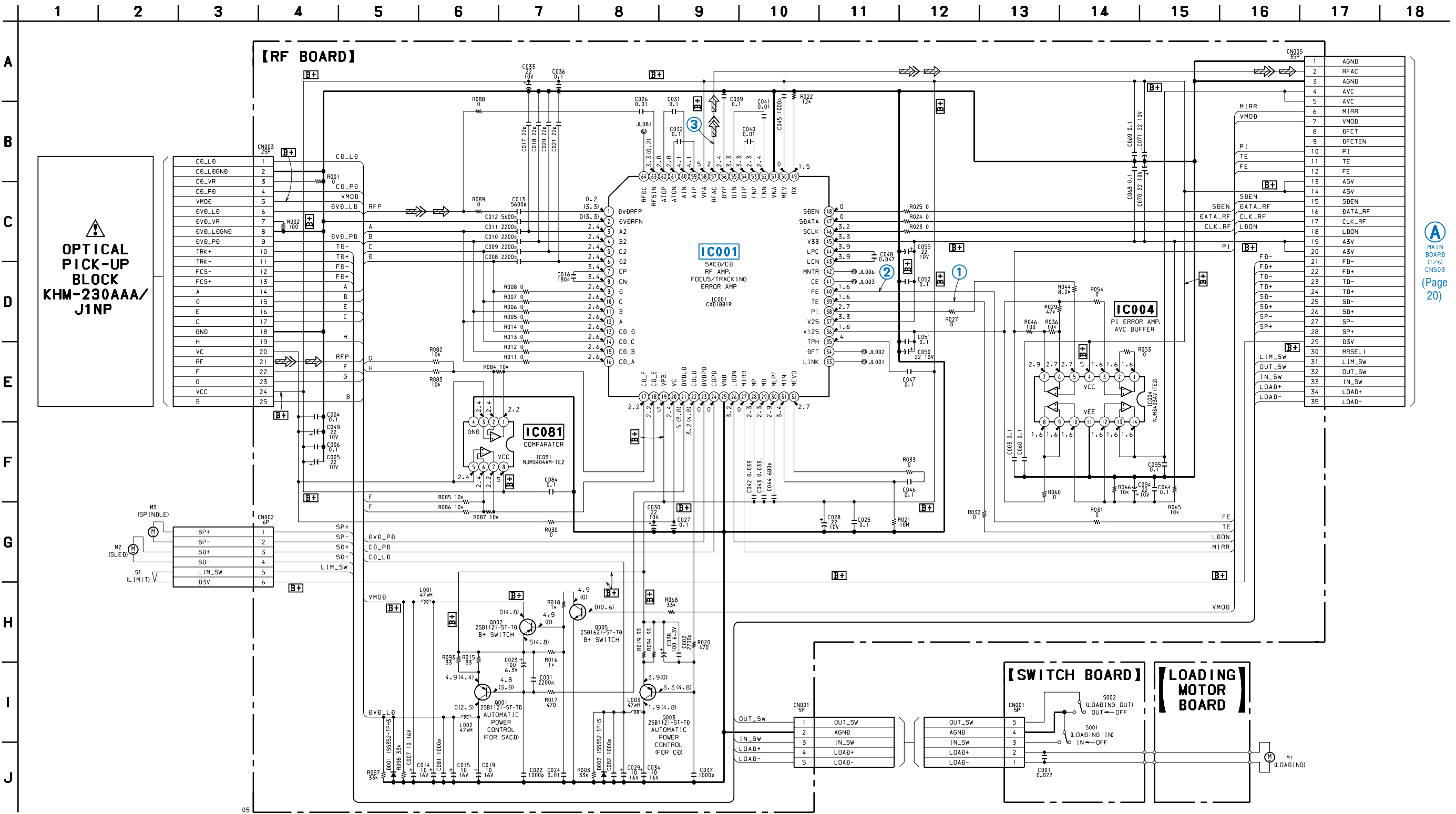
OPTICAL PICK-UP BLOCK
KHM-230AAA/
JINP

② MAIN BOARD
CN503
(Page 18)



There are a few cases that the part isn't mounted in model is printed on diagrams.

4-3. SCHEMATIC DIAGRAM – RF/SWITCH/LOADING MOTOR Boards – • See page 38 for Waveforms. • See page 40 for IC Block Diagram.

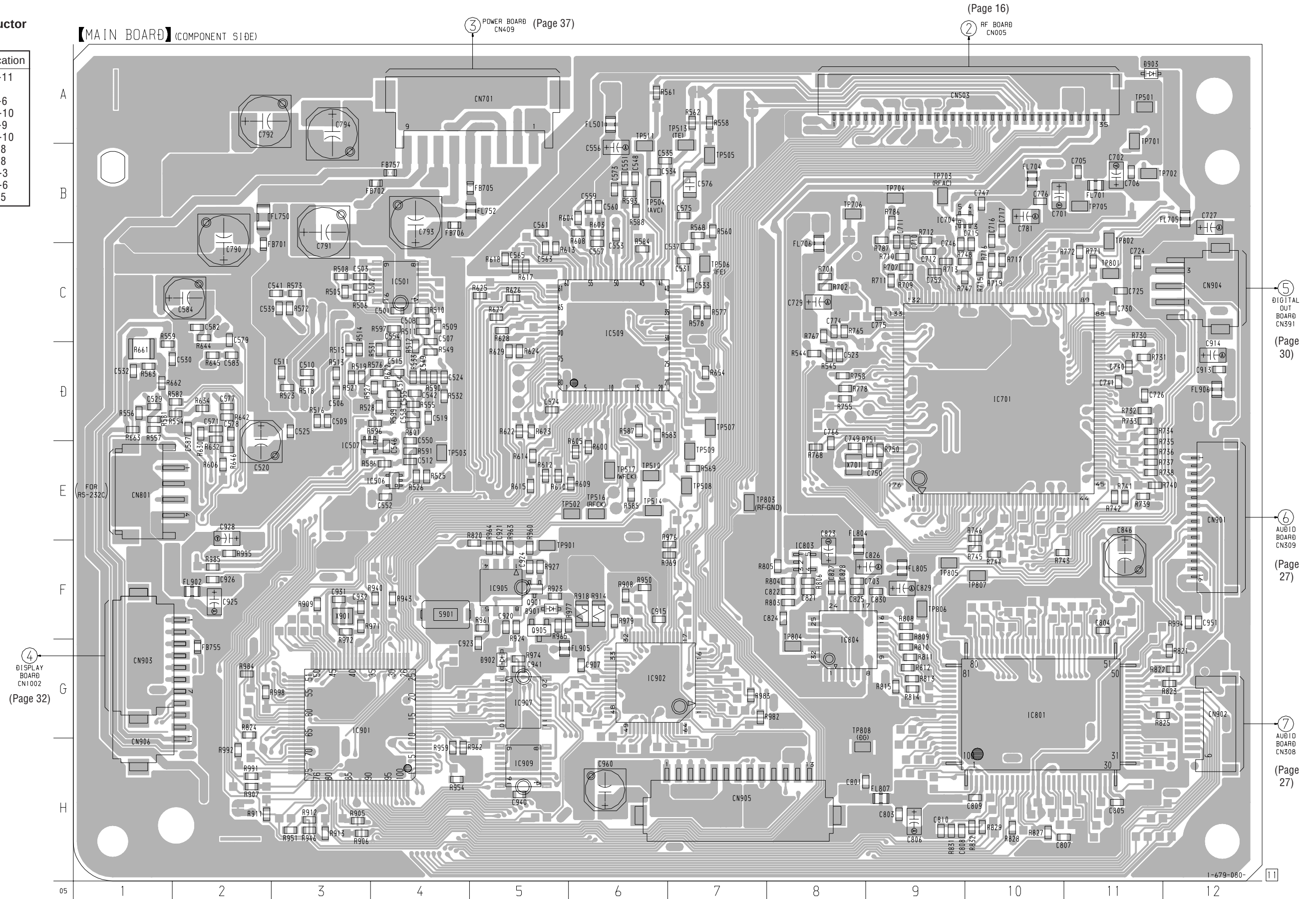


The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

4-4. PRINTED WIRING BOARD – MAIN Board (Component Side) – • See page 15 for Circuit Boards Location.

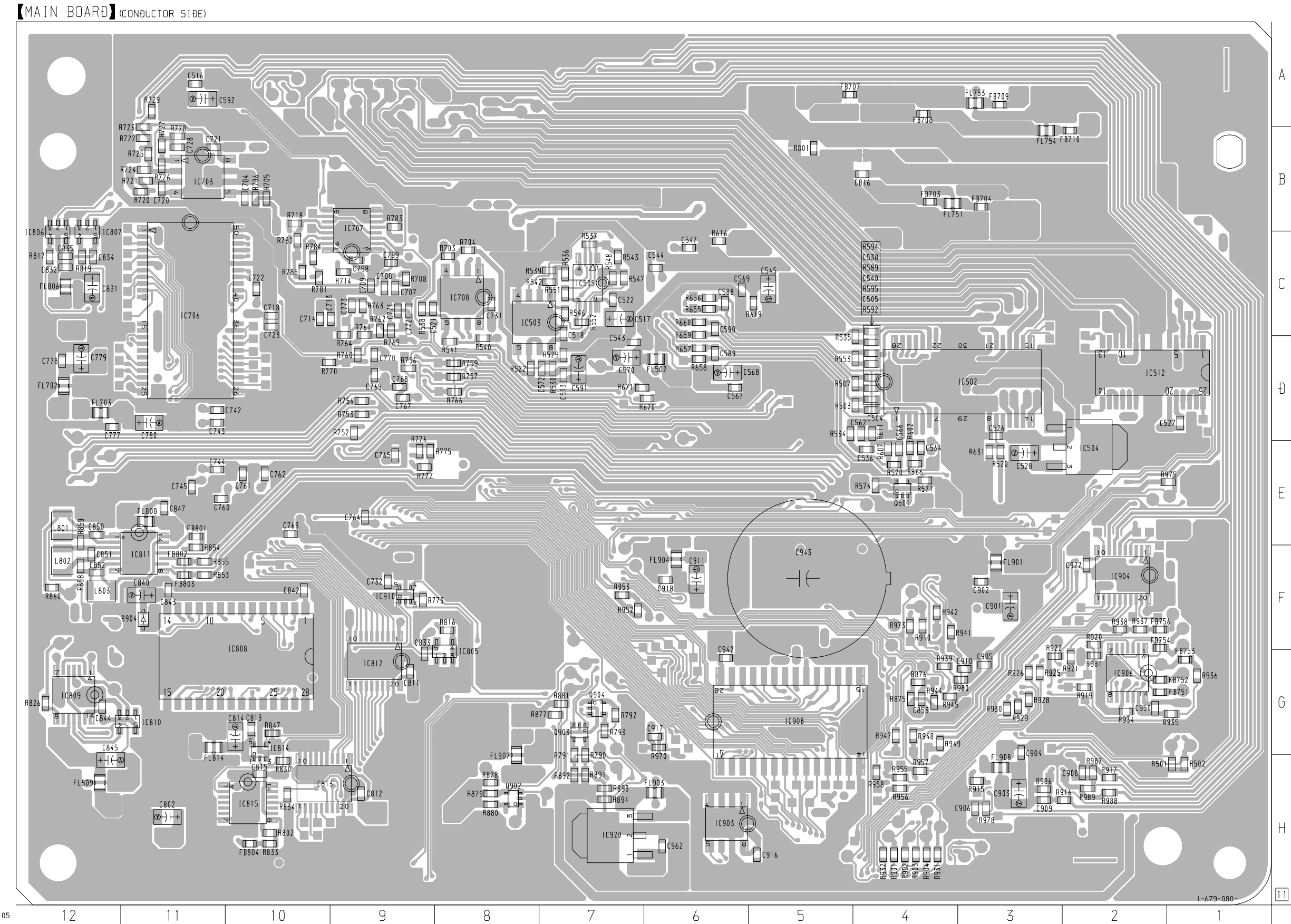
- **Semiconductor Location**

Ref. No.	Location
D903	A-11
IC509	C-6
IC701	D-10
IC704	B-9
IC801	G-10
IC803	F-8
IC804	F-8
IC901	G-3
IC902	G-6
IC905	F-5



There are a few cases that the part isn't mounted in model is printed on diagrams.

4-5. PRINTED WIRING BOARD – MAIN Board (Conductor Side) – • See page 15 for Circuit Boards Location.

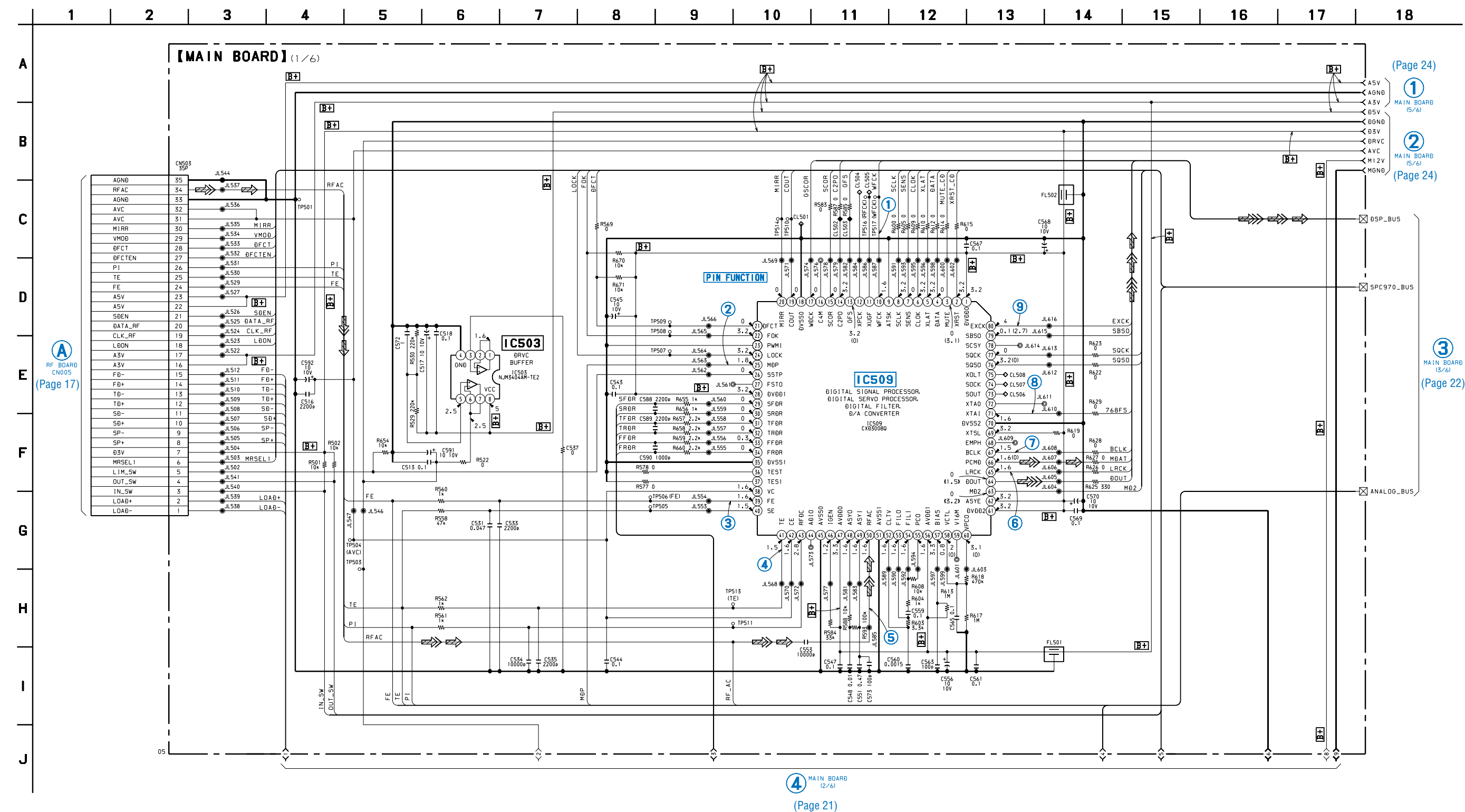


• Semiconductor Location

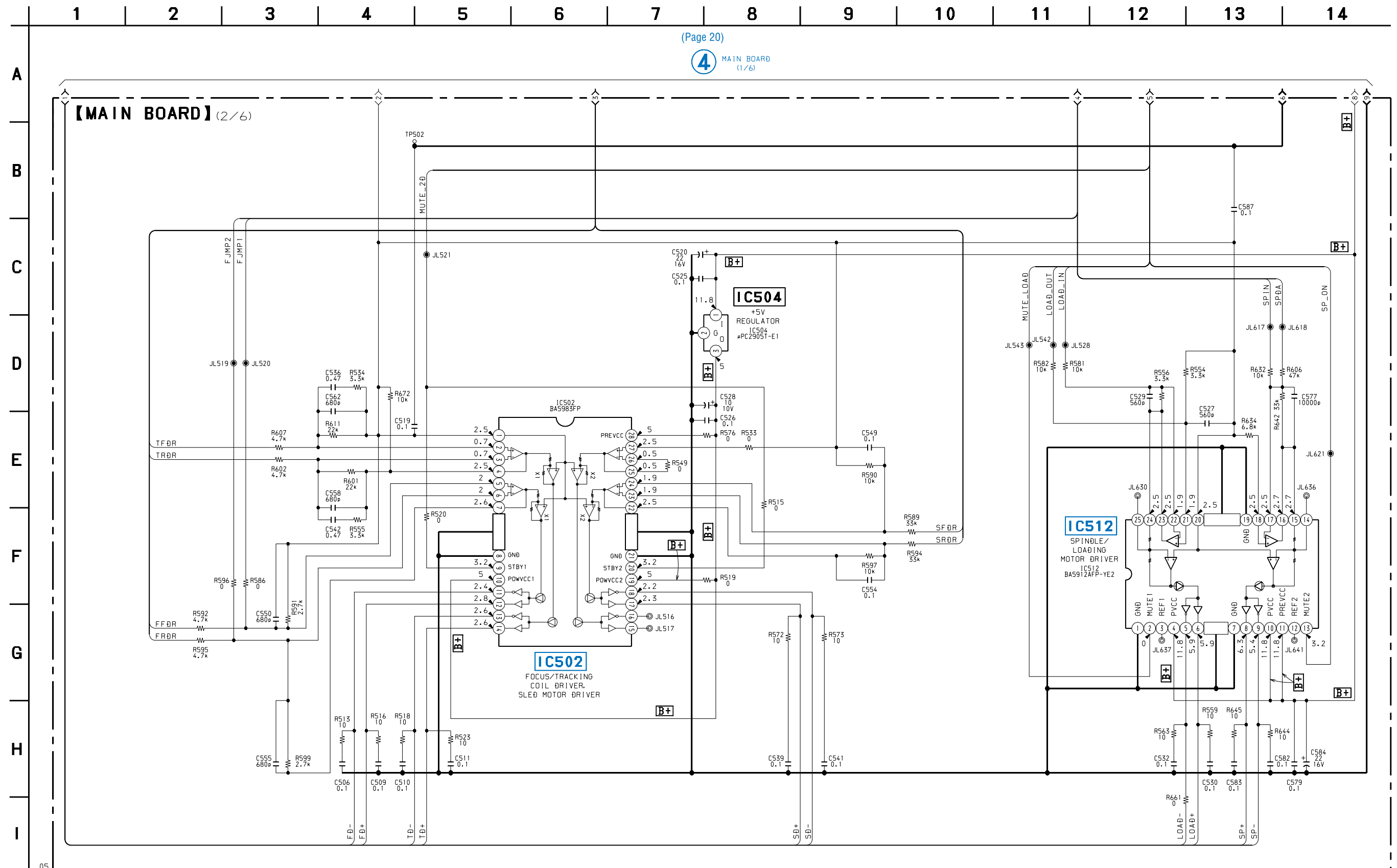
Ref. No.	Location
D904	F-11
IC502	D-3
IC503	C-8
IC504	E-2
IC512	D-2
IC703	B-11
IC706	C-11
IC708	C-8
IC805	G-8
IC806	C-12
IC807	C-12
IC808	G-10
IC809	G-12
IC810	G-11
IC811	F-11
IC812	G-9
IC813	H-10
IC814	G-10
IC815	H-10
IC903	H-6
IC904	F-2
IC906	G-2
IC910	F-9

There are a few cases that the part isn't mounted in model is printed on diagrams.

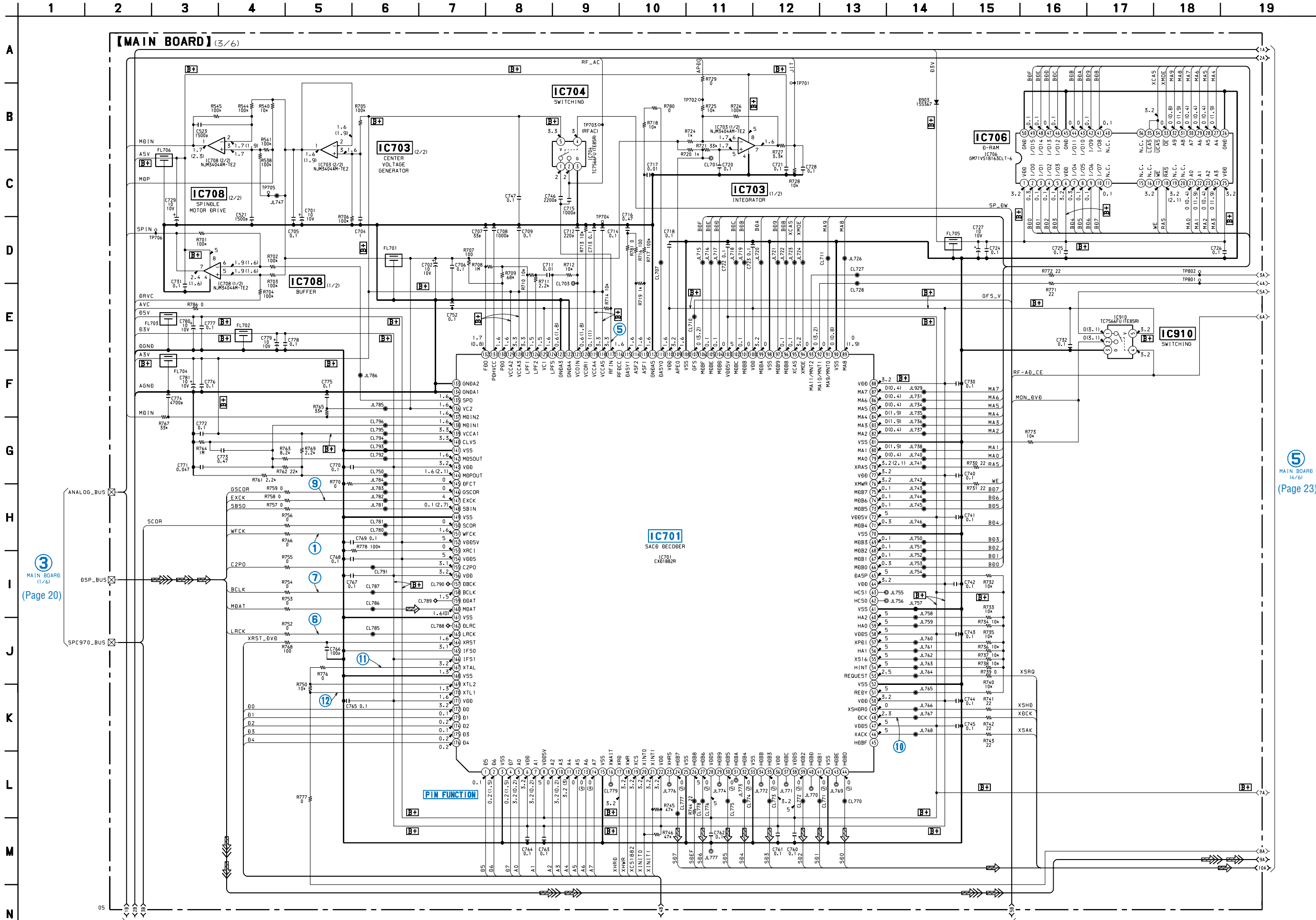
4-6. SCHEMATIC DIAGRAM – MAIN Board (1/6) – • See page 38 for Waveforms. • See page 40 for IC Block Diagram.



4-7. SCHEMATIC DIAGRAM – MAIN Board (2/6) – • See page 40 for IC Block Diagrams.



4-8. SCHEMATIC DIAGRAM – MAIN Board (3/6) – • See page 38 for Waveforms. • See page 40 for IC Block Diagram.



A
B
C
D
E
F
G
H
I
J
K
L
M
N

[MAIN BOARD] (4/6)

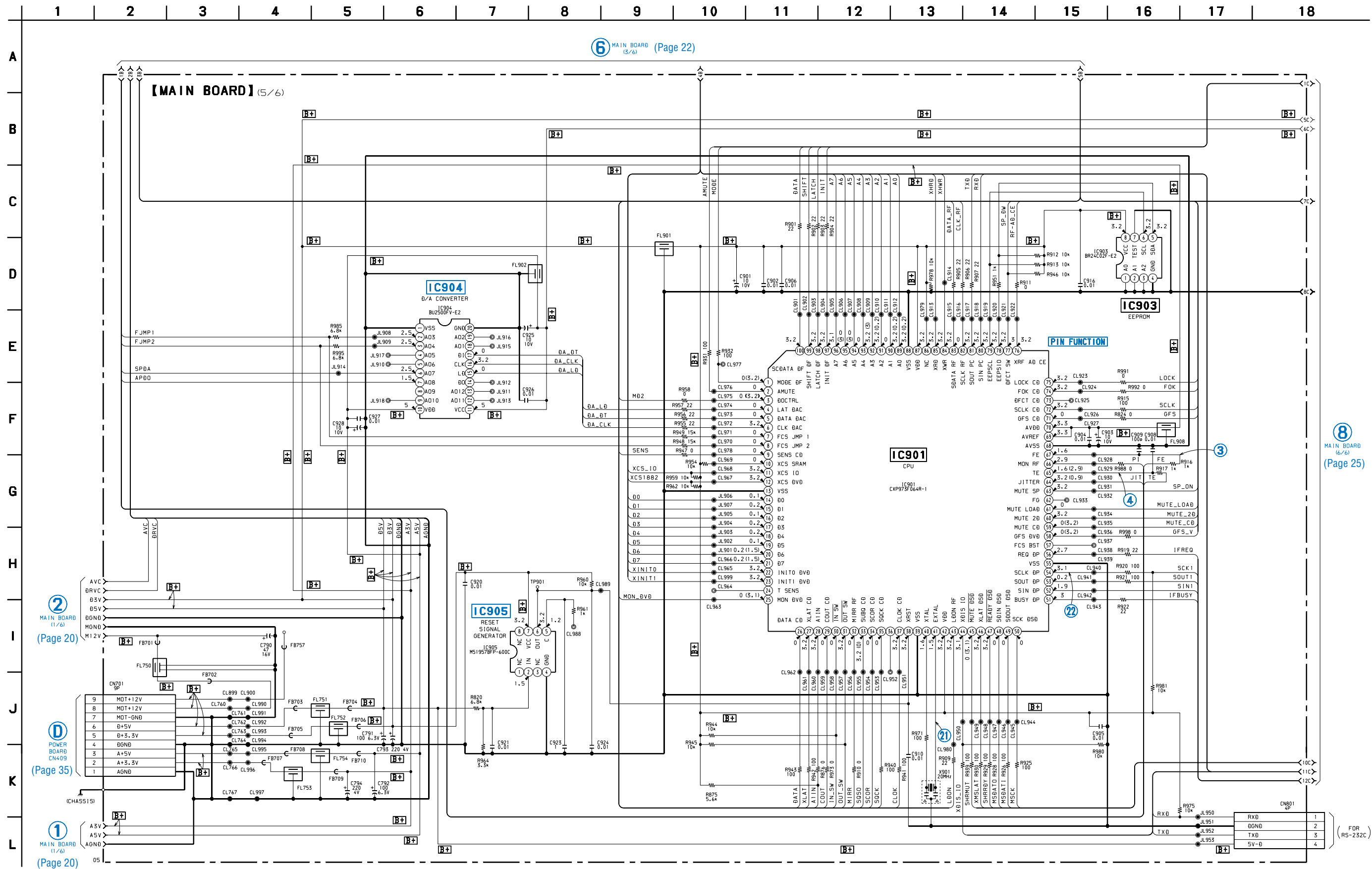
PIN FUNCTION

Pin	Signal	Pin	Signal
1	WDRF0	17	WDRF0
2	WDRF1	18	WDRF1
3	WDRF2	19	WDRF2
4	WDRF3	20	WDRF3
5	WDRF4	21	WDRF4
6	WDRF5	22	WDRF5
7	WDRF6	23	WDRF6
8	WDRF7	24	WDRF7
9	WDRF8	25	WDRF8
10	WDRF9	26	WDRF9
11	WDRF10	27	WDRF10
12	WDRF11	28	WDRF11
13	WDRF12	29	WDRF12
14	WDRF13	30	WDRF13
15	WDRF14	31	WDRF14
16	WDRF15	32	WDRF15

COMPONENTS

- IC805: CLOCK BUFFER
- IC806: SWITCHING
- IC807: BUFFER
- IC808: D-RAM
- IC809: TIMING CONTROLLER
- IC810: CLOCK BUFFER
- IC811: CLOCK BUFFER
- IC812: BUFFER
- IC813: BUFFER
- IC814: BUFFER
- IC815: SHIFT REGISTER
- IC801: DSD DECODER
- IC803: RF BUFFER
- IC804: A/D CONVERTER

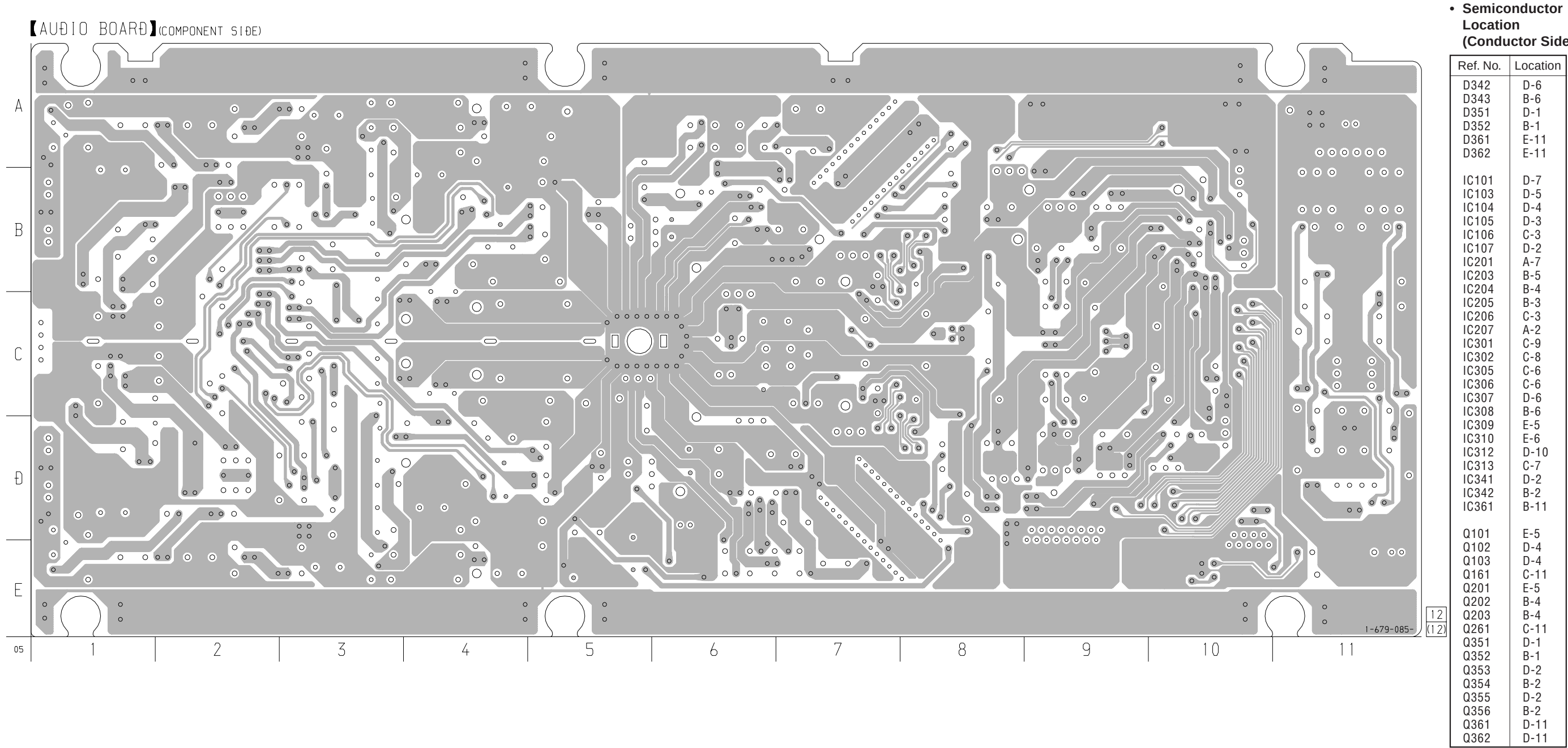
4-10. SCHEMATIC DIAGRAM – MAIN Board (5/6) – • See page 38 for Waveforms. • See page 40 for IC Block Diagrams.

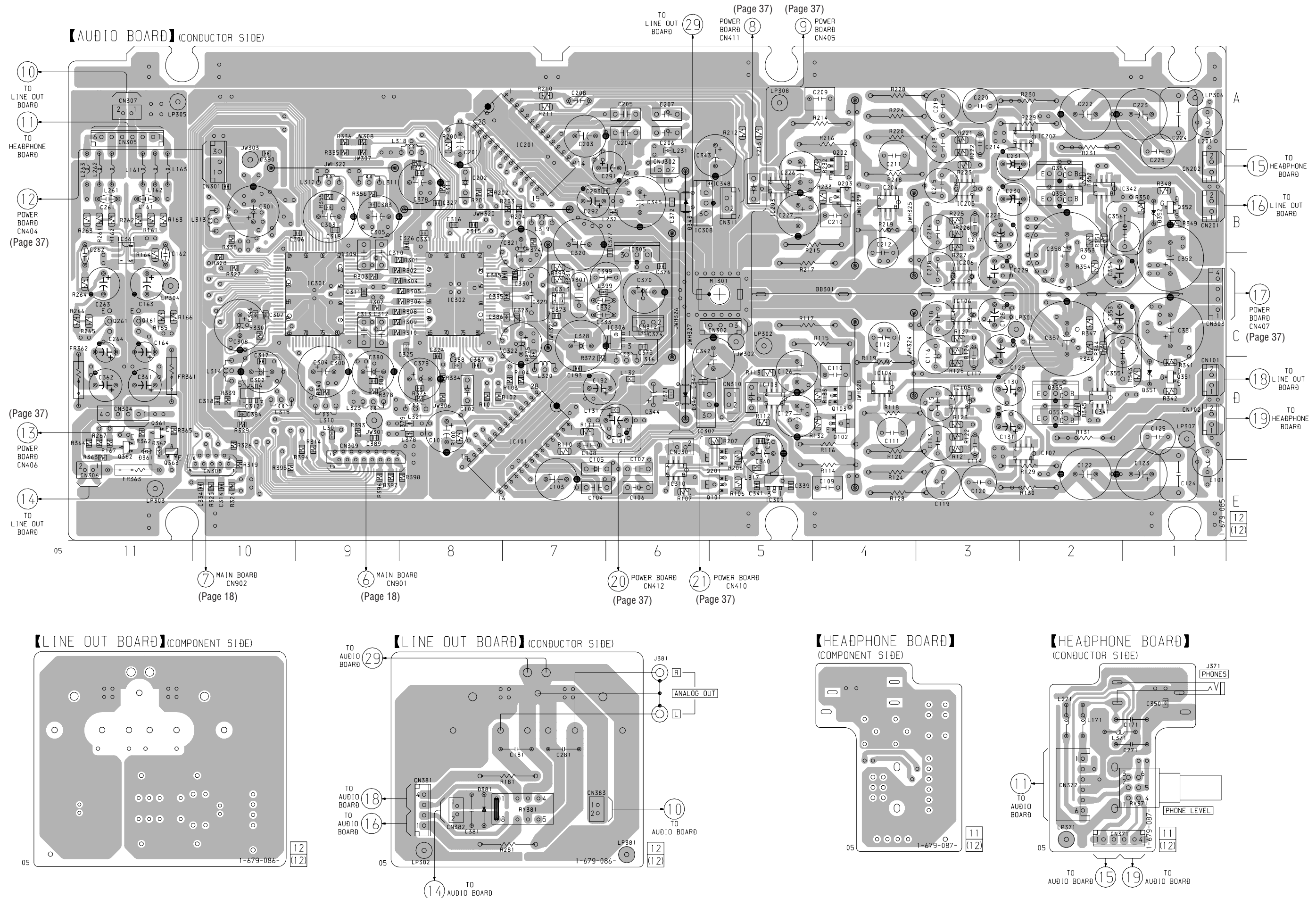


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SPLAY
OARD
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ge 33)



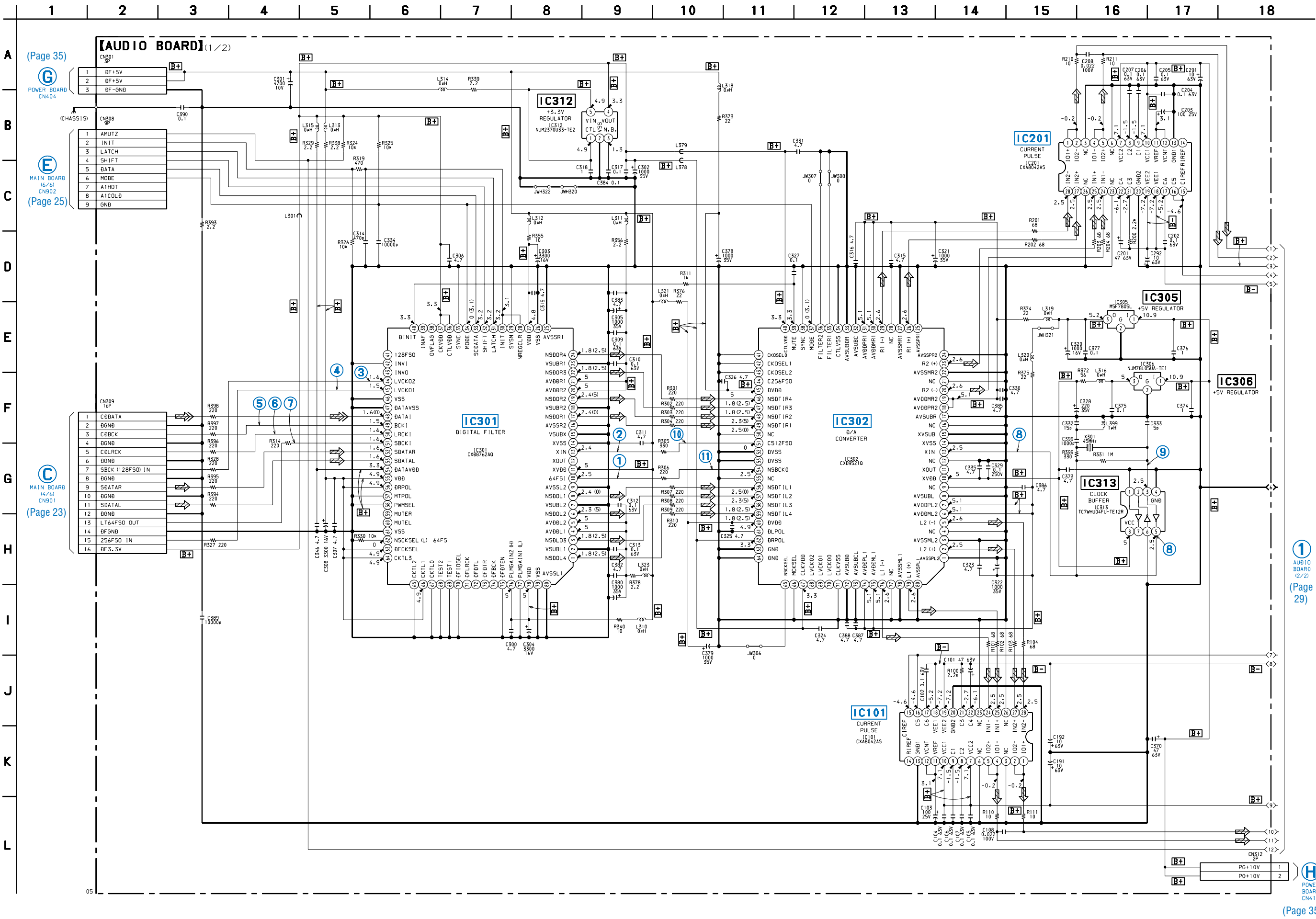
4-12. PRINTED WIRING BOARD – AUDIO Board (Component Side) – • See page 15 for Circuit Boards Location.



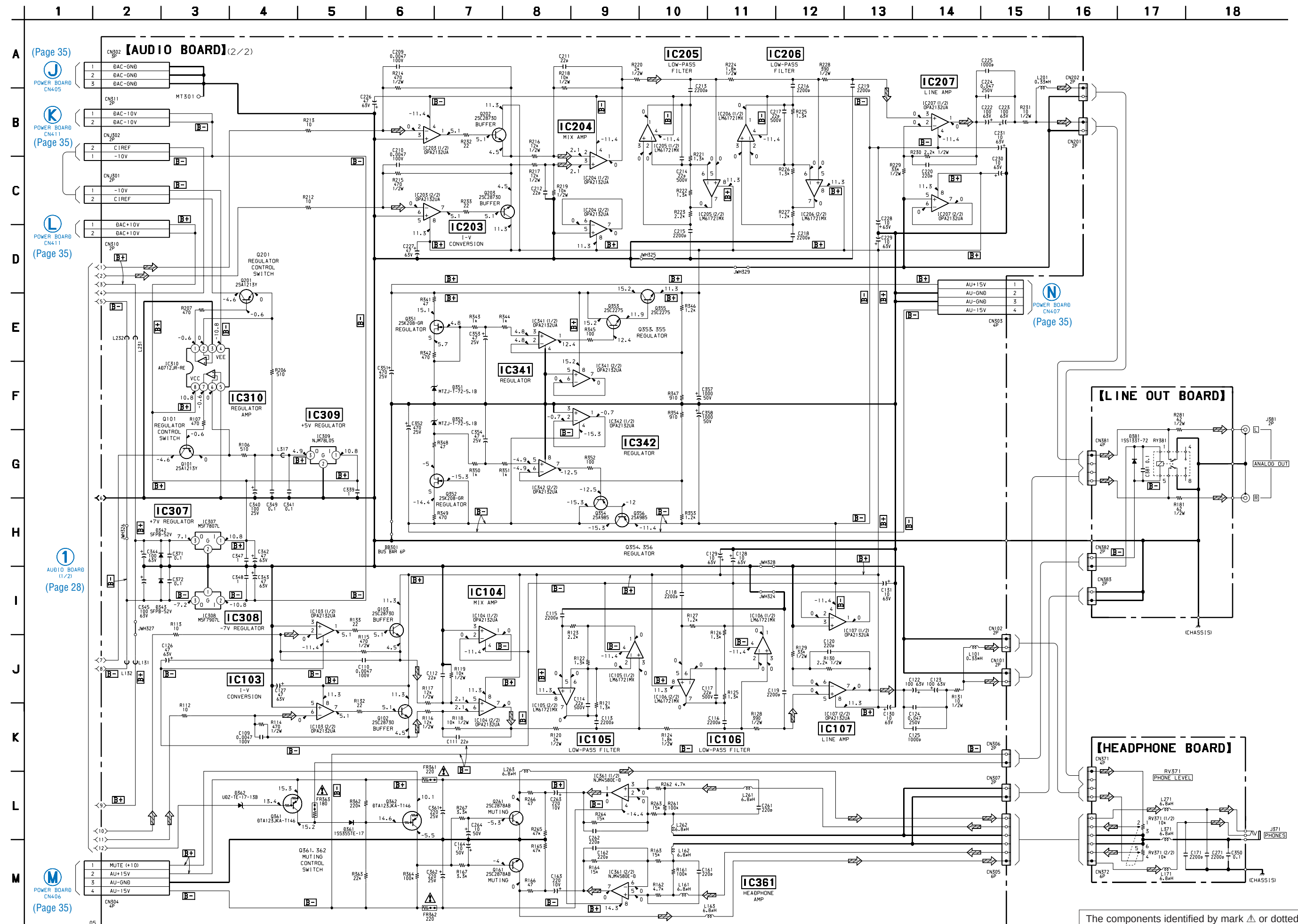
4-13. PRINTED WIRING BOARDS – AUDIO (Conductor Side)/LINE OUT/HEADPHONE Boards – • See page 15 for Circuit Boards Location.


There are a few cases that the part isn't mounted in model is printed on diagrams.

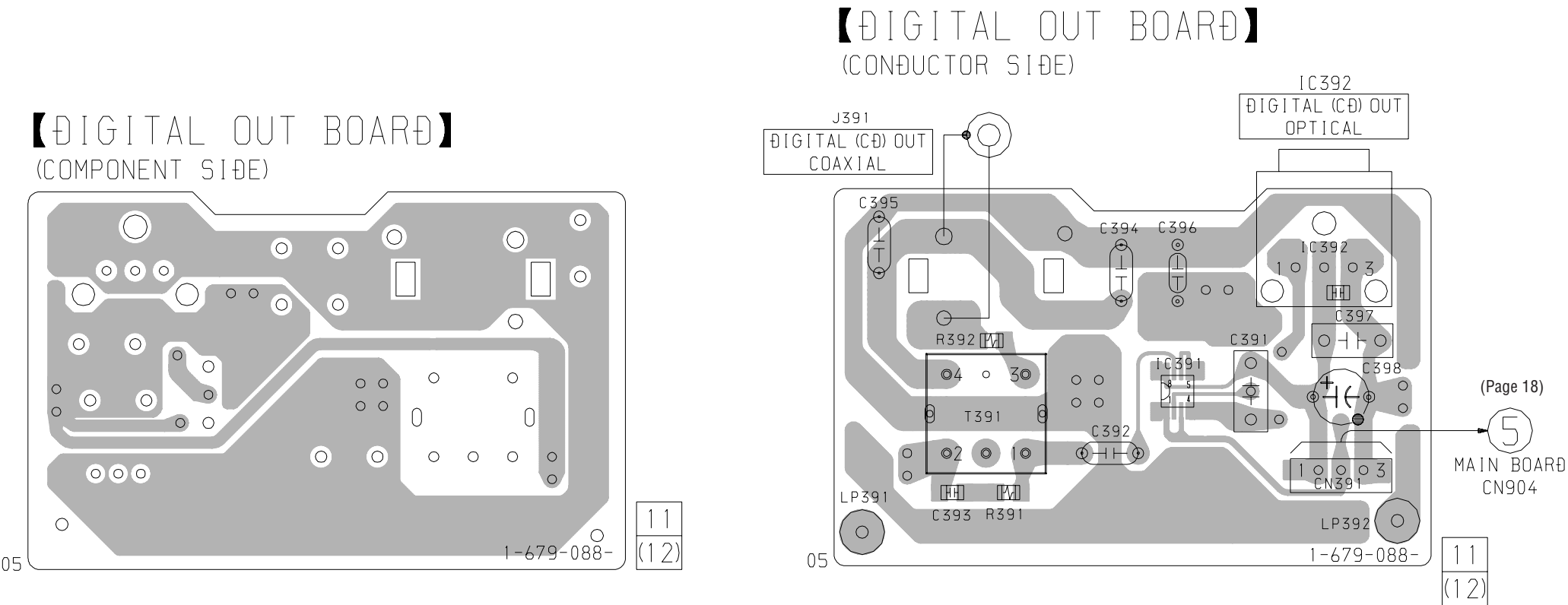
4-14. SCHEMATIC DIAGRAM – AUDIO Board (1/2) – • See page 38 for Waveforms. • See page 40 for IC Block Diagrams.



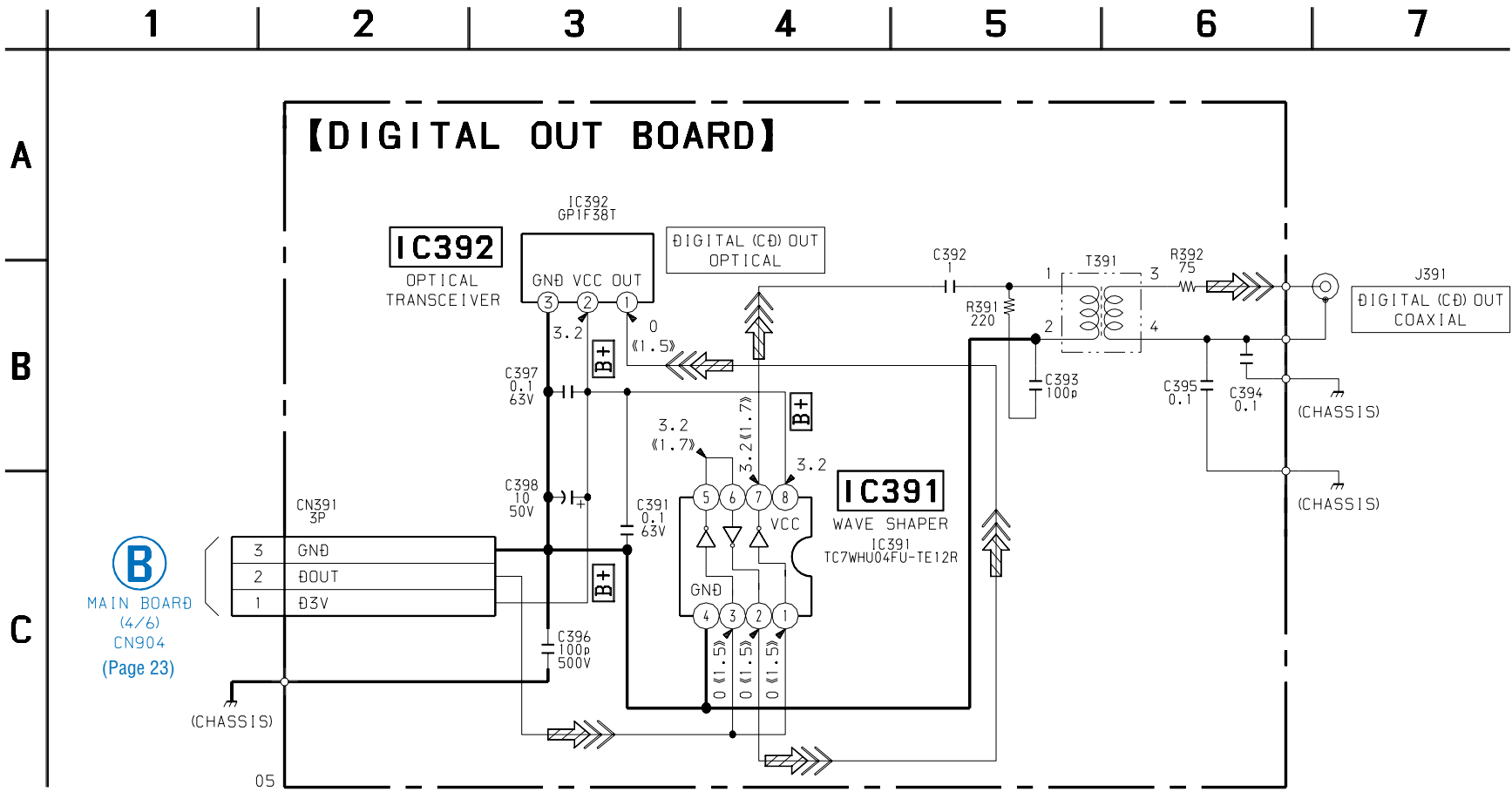
4-15. SCHEMATIC DIAGRAM – AUDIO (2/2)/LINE OUT/HEADPHONE Boards –



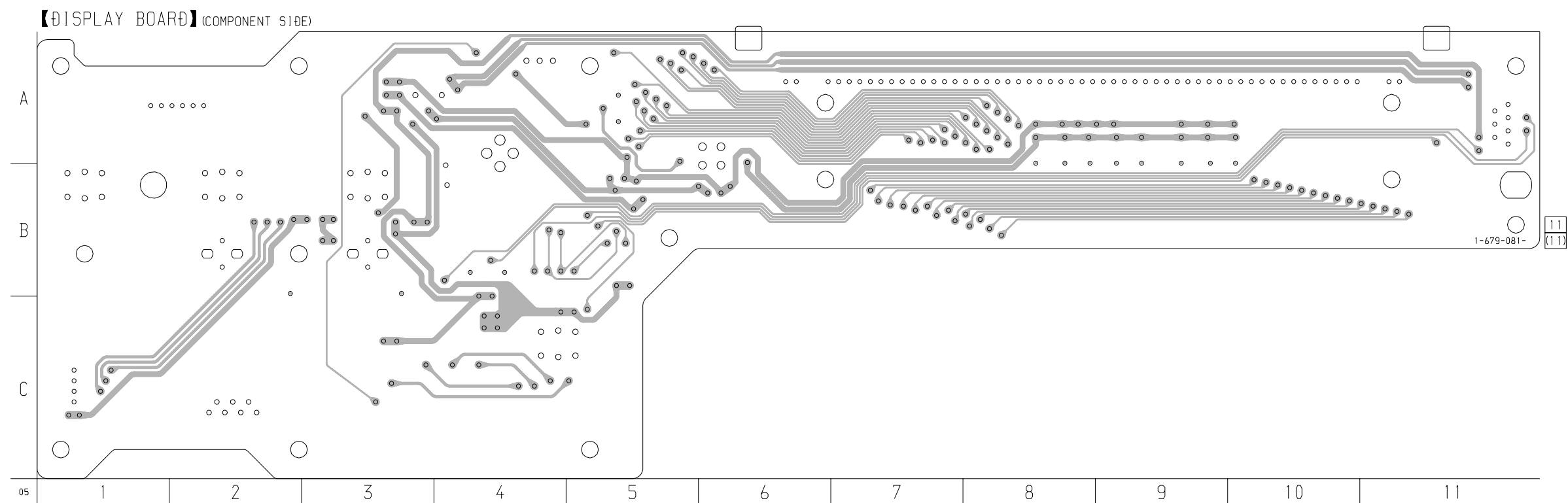
4-16. PRINTED WIRING BOARD – DIGITAL OUT Board – • See page 15 for Circuit Boards Location.



4-17. SCHEMATIC DIAGRAM – DIGITAL OUT Board –

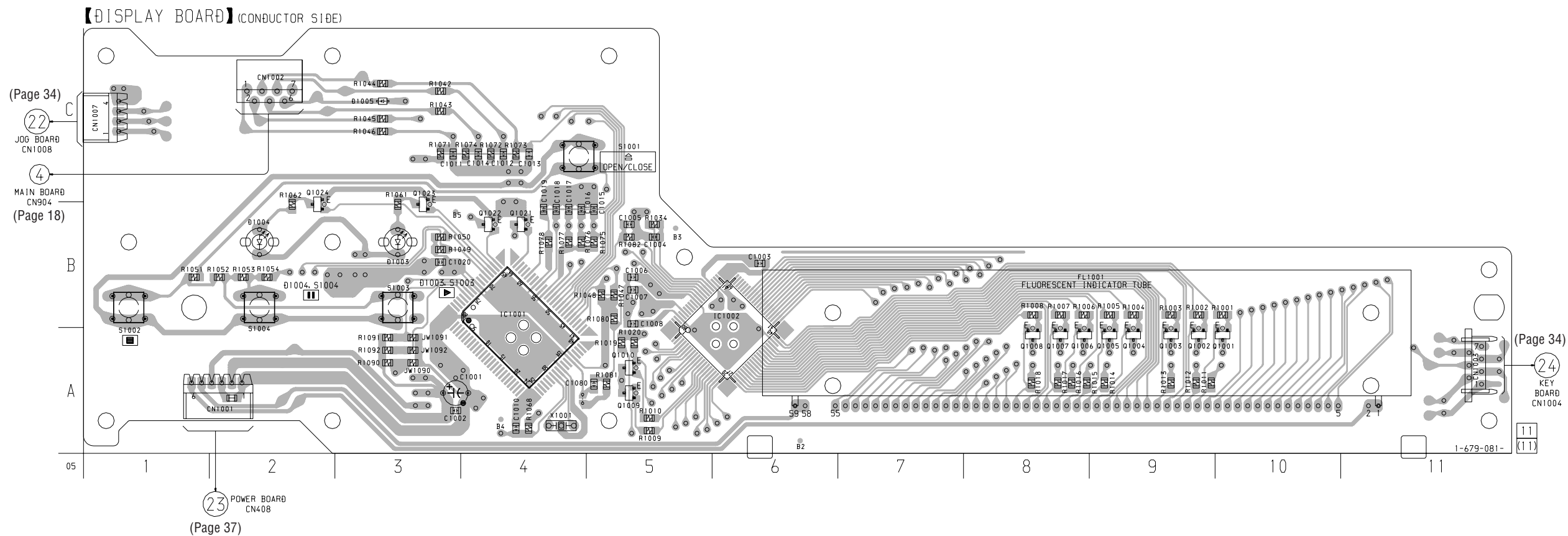


4-18. PRINTED WIRING BOARD – DISPLAY Board – • See page 15 for Circuit Boards Location.



- **Semiconductor Location**

Ref. No.	Location
D1003	B-3
D1004	B-2
D1005	C-3
IC1001	B-4
IC1002	B-6
Q1001	A-10
Q1002	A-9
Q1003	A-9
Q1004	A-9
Q1005	A-9
Q1006	A-8
Q1007	A-8
Q1008	A-8
Q1009	A-5
Q1010	A-5
Q1021	B-4
Q1022	B-4
Q1023	B-3
Q1024	B-2

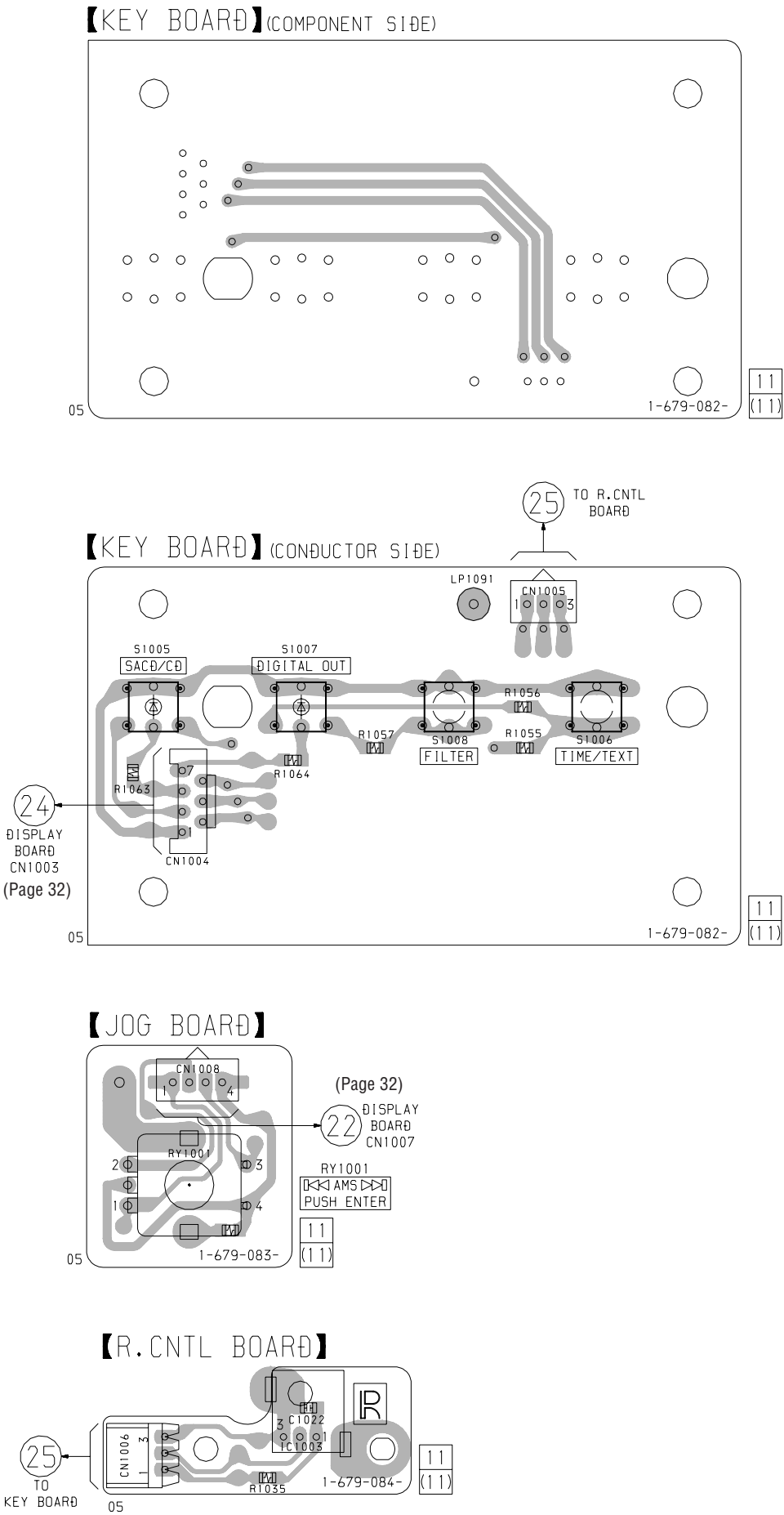


There are a few cases that the part isn't mounted in model is printed on diagrams.

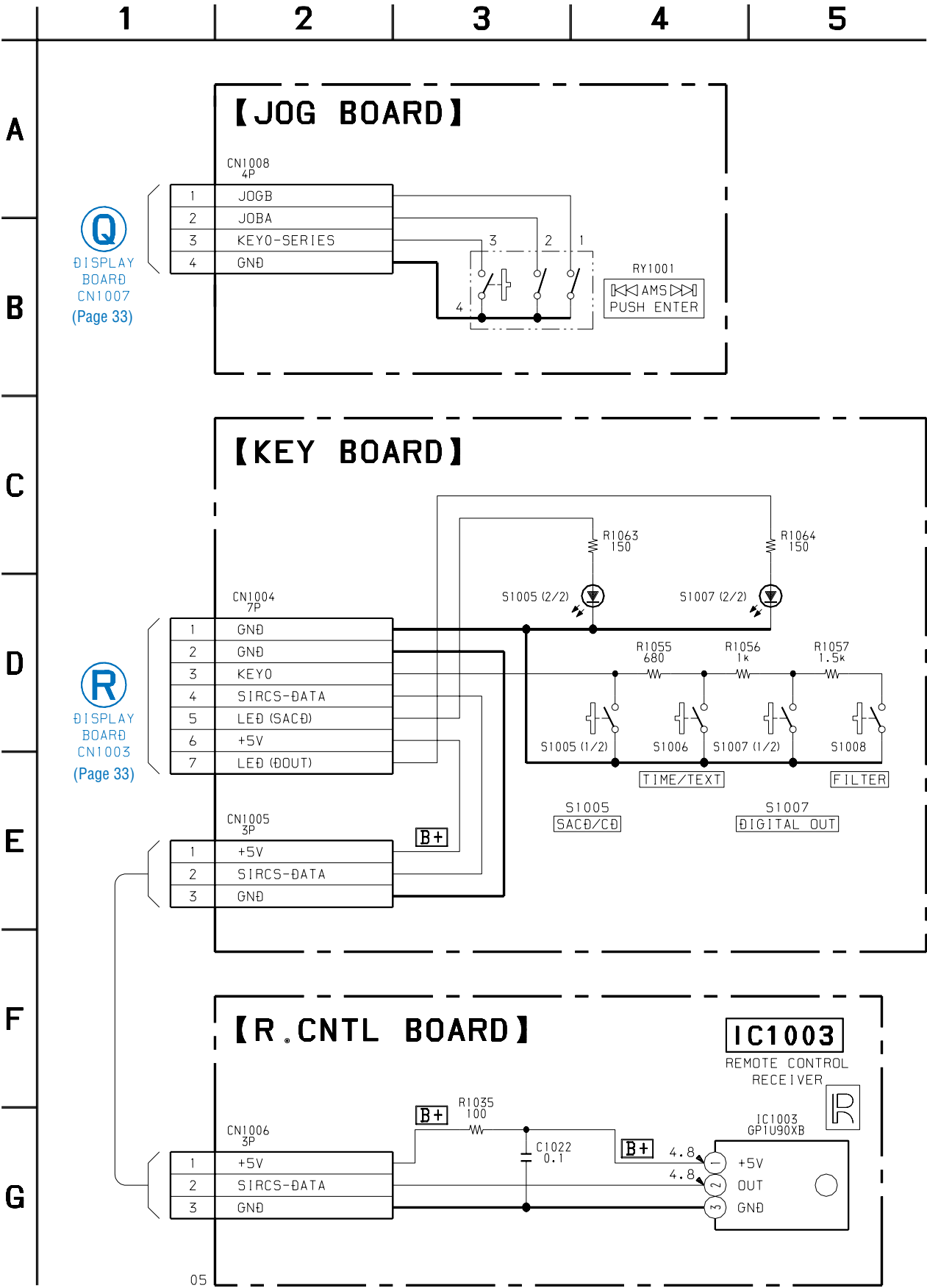
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----



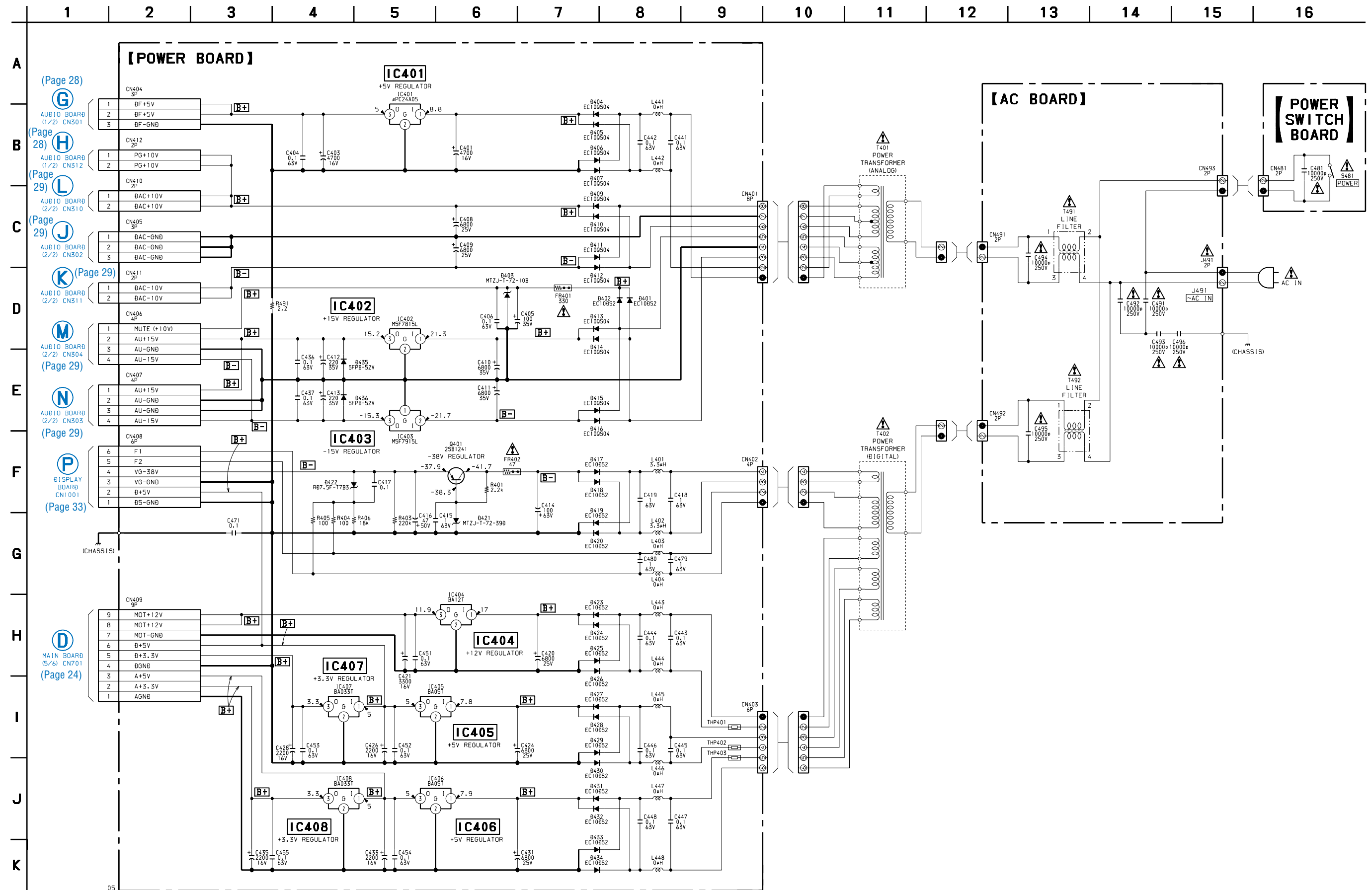
4-20. PRINTED WIRING BOARDS – JOG/KEY/R. CNTL Boards – • See page 15 for Circuit Boards Location.



4-21. SCHEMATIC DIAGRAM – JOG/KEY/R. CNTL Boards –

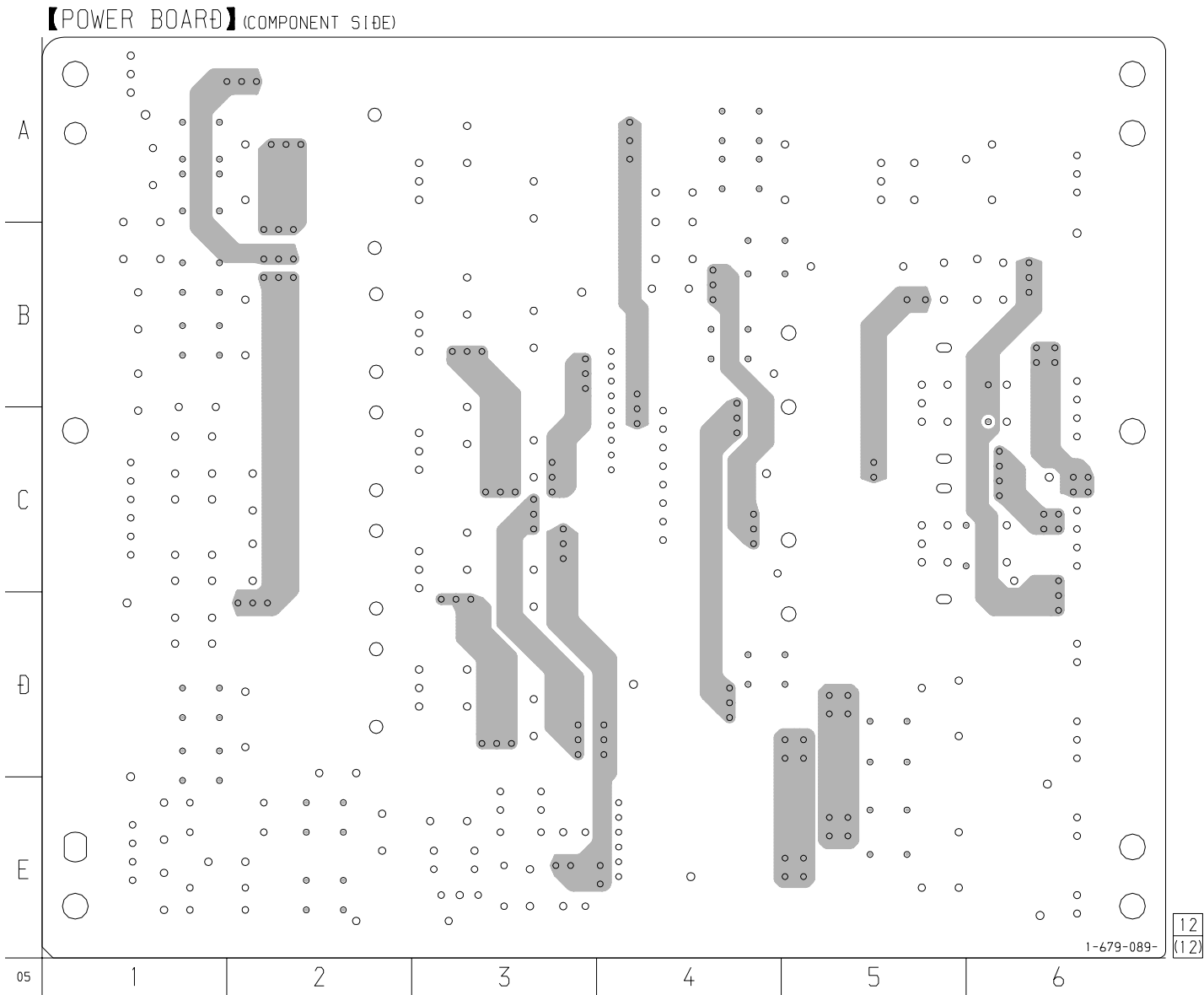


4-22. SCHEMATIC DIAGRAM – POWER/AC/POWER SWITCH Boards –



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

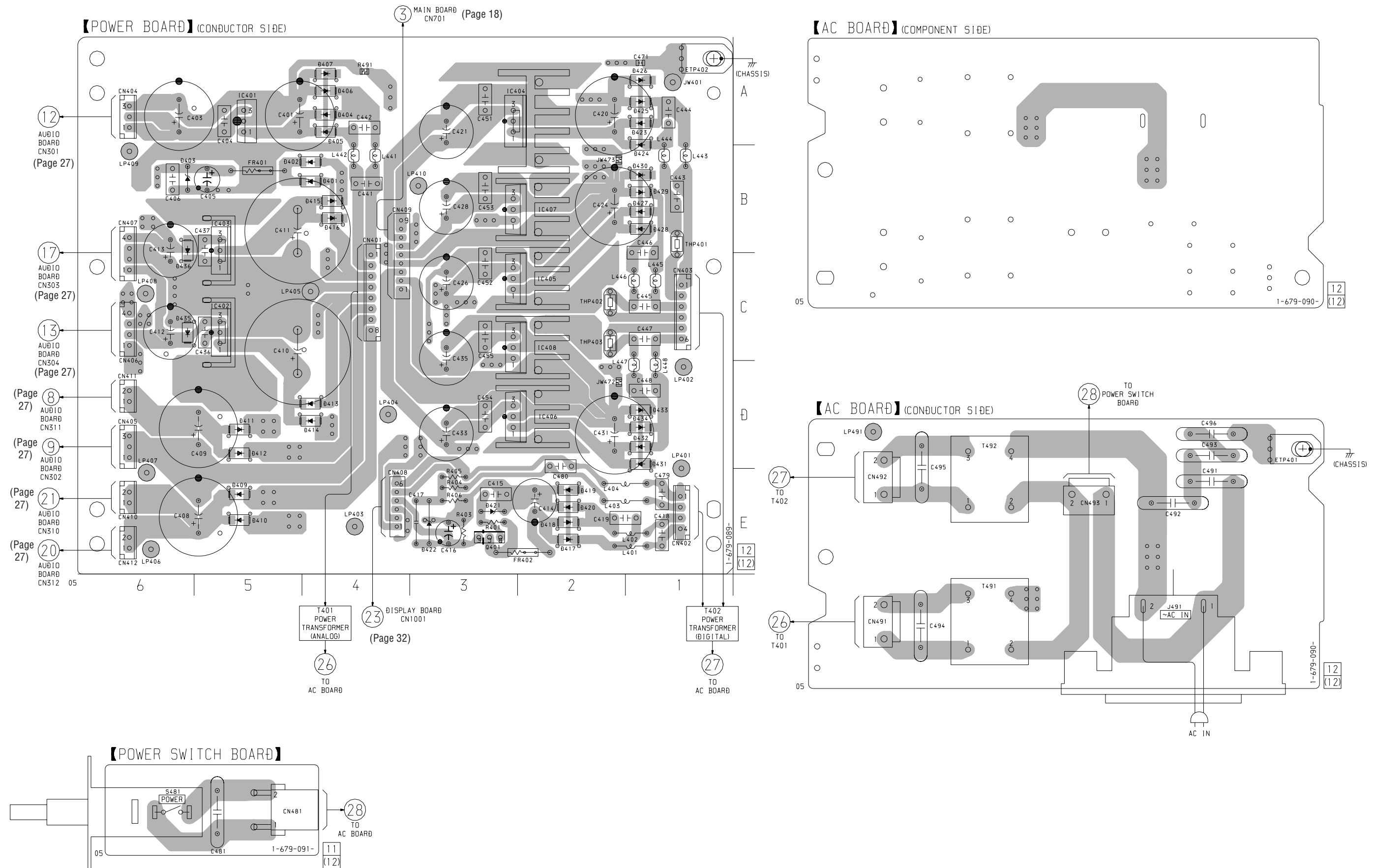
4-23. PRINTED WIRING BOARD – POWER Board (Component Side) – • See page 15 for Circuit Boards Location.



• Semiconductor
Location
(Conductor Side)

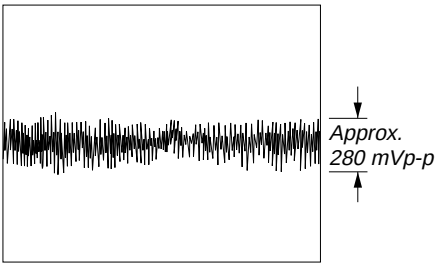
Ref. No.	Location
D401	B-4
D402	B-4
D403	B-6
D404	A-4
D405	A-4
D406	A-4
D407	A-4
D409	E-5
D410	E-5
D411	D-5
D412	D-5
D413	D-4
D414	D-4
D415	B-4
D416	B-4
D417	E-2
D418	E-2
D419	E-2
D420	E-2
D421	E-3
D422	E-3
D423	A-1
D424	B-1
D425	A-1
D426	A-1
D427	B-1
D428	B-1
D429	B-1
D430	B-1
D431	D-1
D432	D-1
D433	D-1
D434	D-1
D435	C-6
D436	B-6
IC401	A-5
IC402	C-5
IC403	B-5
IC404	A-3
IC405	C-3
IC406	D-3
IC407	B-3
IC408	C-3
Q401	E-3

4-24. PRINTED WIRING BOARDS – POWER (Conductor Side)/AC/POWER SWITCH Boards – • See page 15 for Circuit Boards Location.

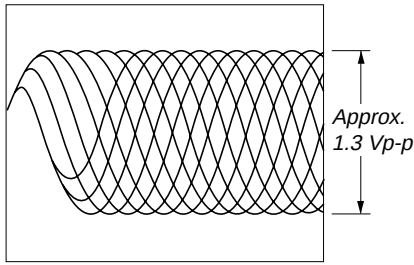


• Waveforms
– RF Board –

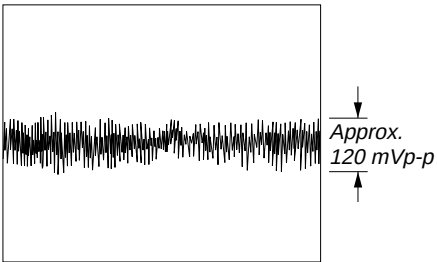
1 IC001 39 (TE) (CD PLAY)



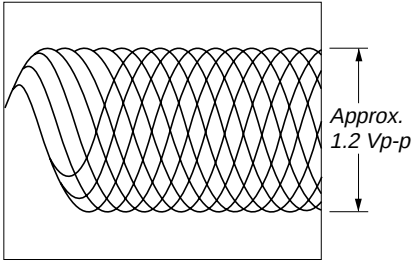
3 IC001 57 (RFAC) (CD PLAY)



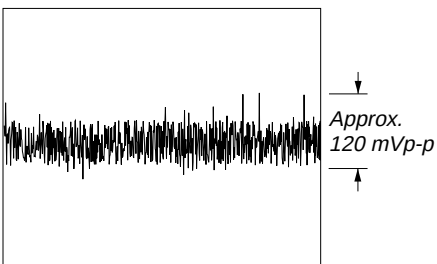
1 IC001 39 (TE) (SACD PLAY)



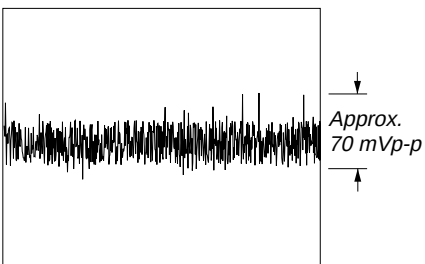
3 IC001 57 (RFAC) (SACD PLAY)



2 IC001 40 (FE) (CD PLAY)

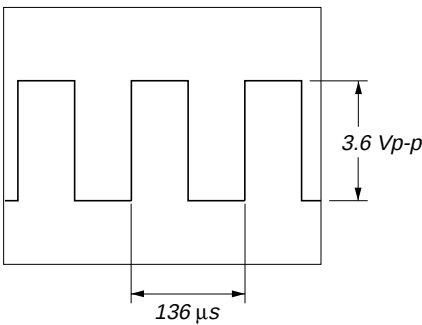


2 IC001 40 (FE) (SACD PLAY)

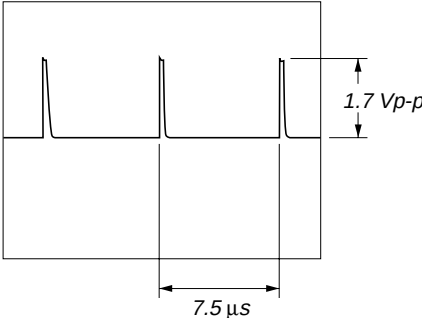


– MAIN Board –

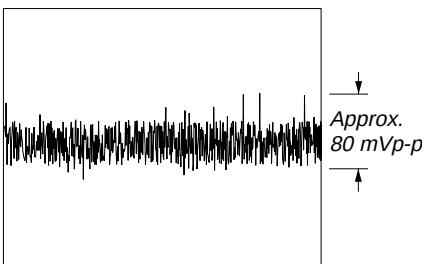
1 IC509 10 (WFCK), IC701 15 (WFCK)



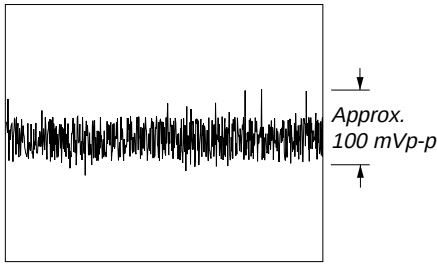
2 IC509 25 (MDP) (CD PLAY)



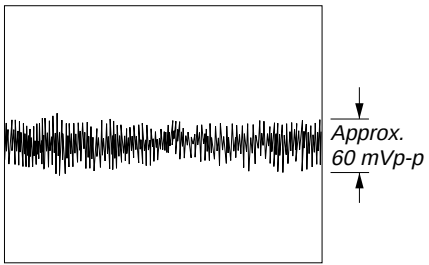
3 IC509 39 (FE), IC901 67 (FE) (CD PLAY)



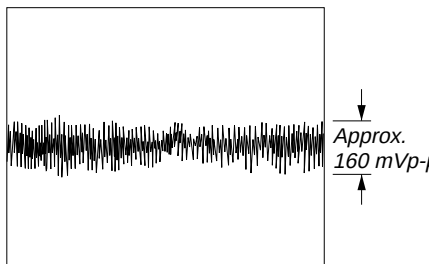
3 IC509 39 (FE), IC901 67 (FE) (SACD PLAY)



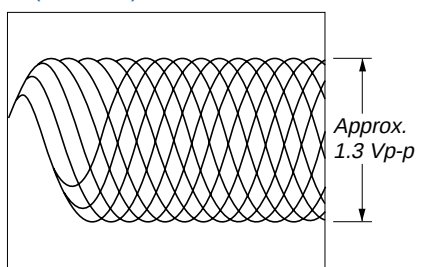
4 IC509 41 (TE), IC901 65 (TE) (CD PLAY)



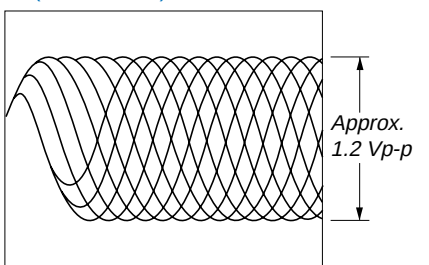
4 IC509 41 (TE), IC901 65 (TE) (SACD PLAY)



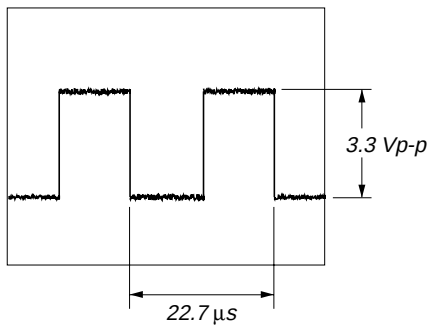
5 IC509 50 (RFAC), IC701 11 (RFIN) (CD PLAY)



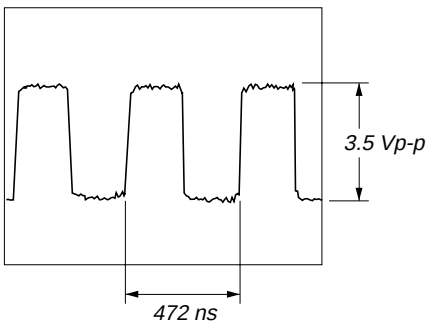
5 IC509 50 (RFAC), IC701 11 (RFIN) (SACD PLAY)



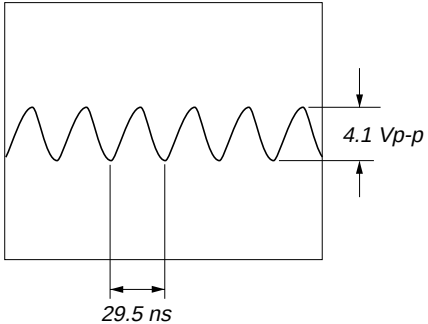
6 IC509 65 (LRCK), IC701 16 (LRCK)



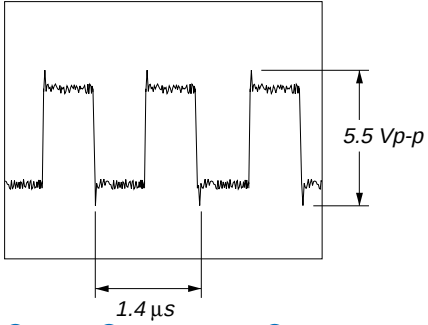
7 IC509 67 (BCLK), IC701 15 (BCLK)



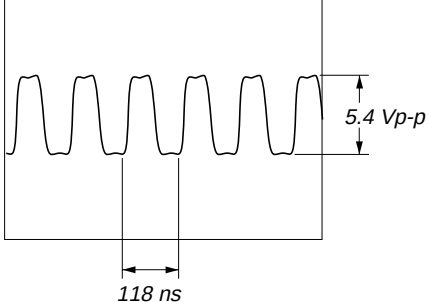
8 IC509 71 (XTAL), IC811 6



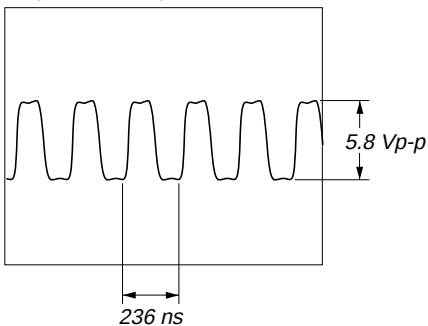
9 IC509 80 (EXCK), IC701 14 (EXCK) (CD mode)



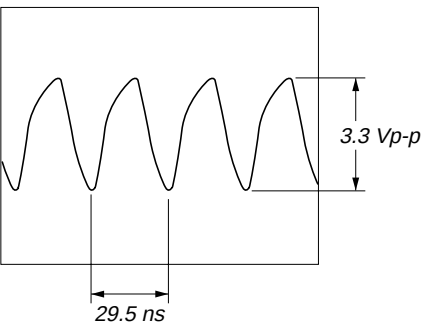
10 IC701 48 (DCK), IC815 2 (B) (CD mode)



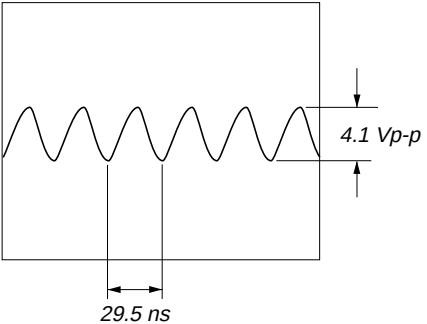
10 IC701 48 (DCK), IC815 2 (B) (SACD mode)



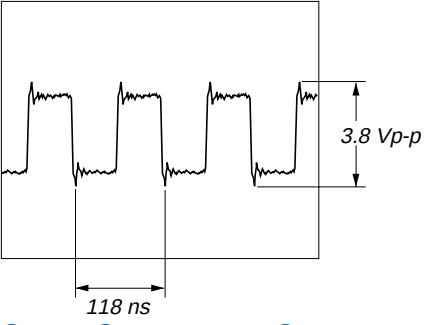
11 IC701 16 (XTAL)



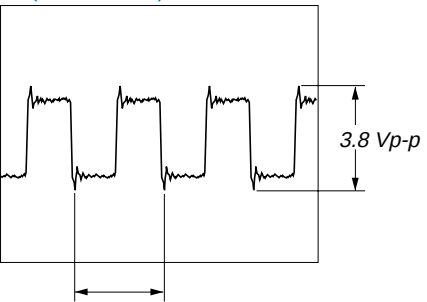
12 IC701 17 (XTL1), IC811 10



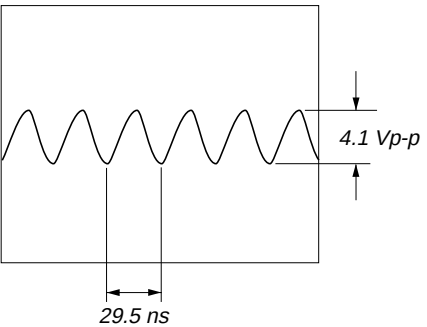
13 IC801 5 (SDCK), IC815 11 (QF) (CD mode)



13 IC801 5 (SDCK), IC815 11 (QF) (SACD mode)

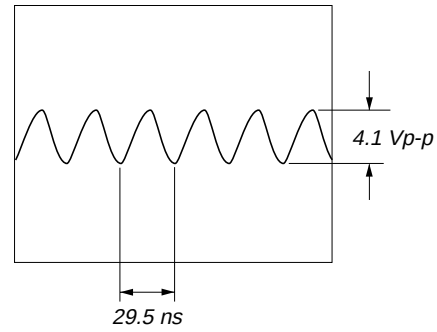


14 IC801 14 (MCKI), IC811 12

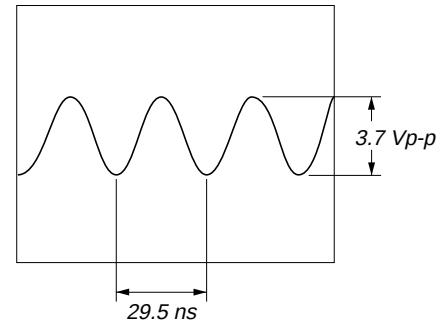


– AUDIO Board –

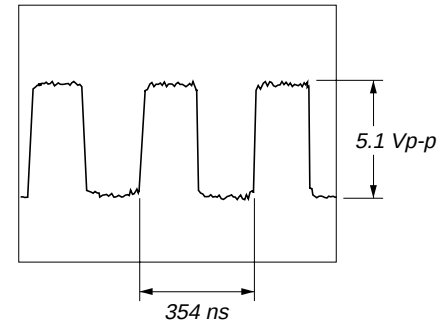
15 IC801 ⑰ (EXCK01), IC815 ⑧ (CK)



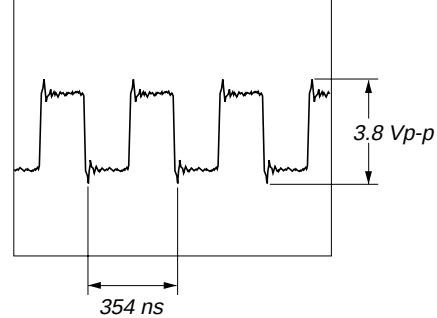
20 IC811 ⑥



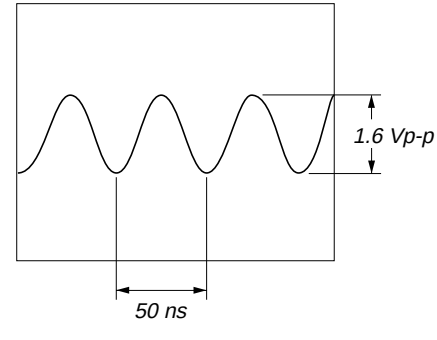
1 IC301 ⑩ (64FSI)



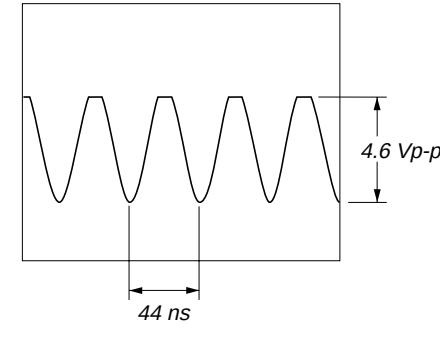
16 IC801 ⑫ (BCKD), IC809 ⑤ (1Q), ⑨ (X2Q), ⑫ (2D)



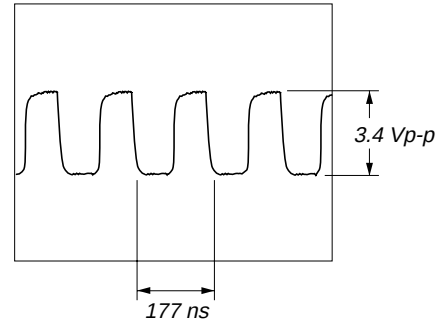
21 IC901 ④① (EXTAL)



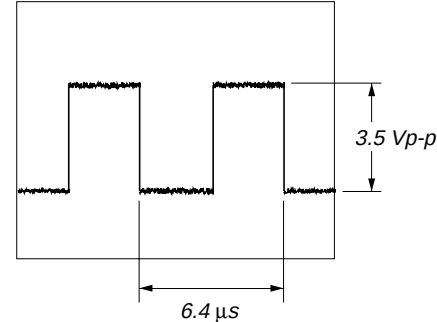
2 IC301 ⑬ (XIN)



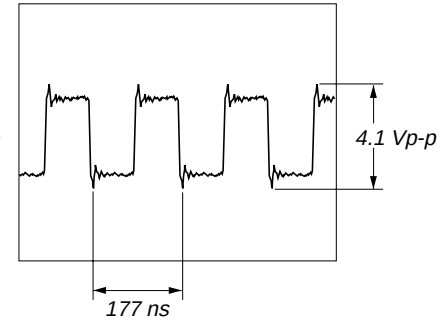
17 IC801 ④⑥ (BCKA), IC809 ③ (1CK)



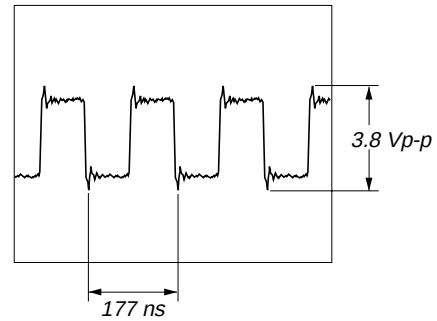
22 IC901 ⑤④ (SCLK DP)



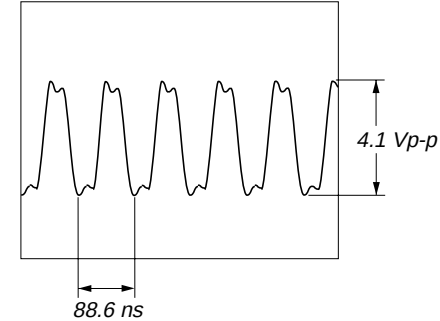
3 IC301 ④④ (LVCKO2)



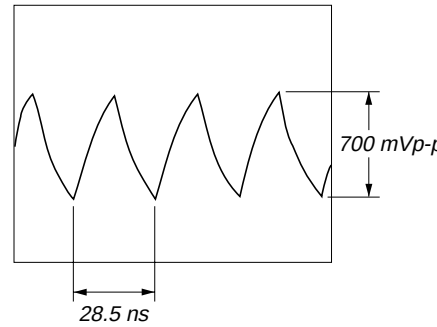
18 IC809 ①① (2CK)



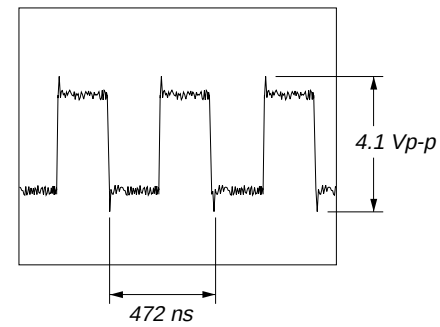
4 IC301 ④⑤ (LVCKO1)



19 IC811 ①

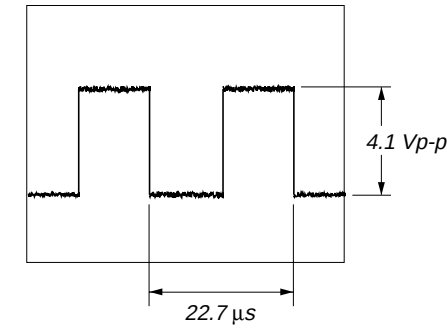


5 IC301 ④⑨ (BCKI)

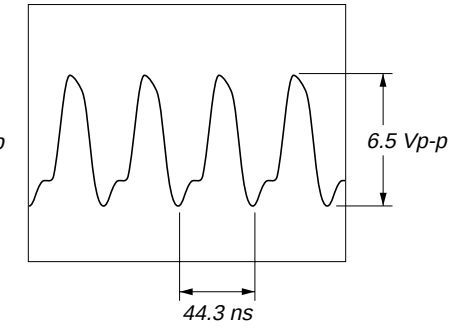


– DISPLAY Board –

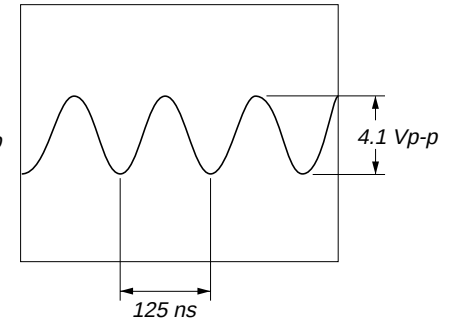
6 IC301 ⑤⑩ (LRCKI)



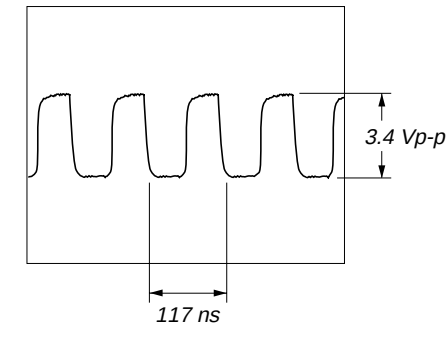
10 IC302 ⑤① (C512FSO)



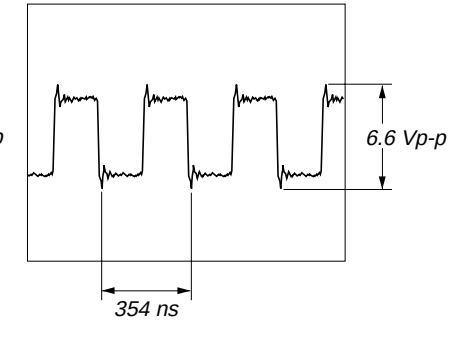
1 IC1001 ③① (EXTAL)



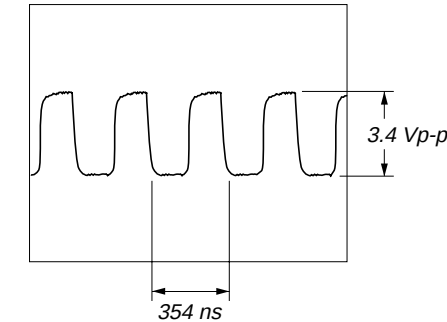
7 IC301 ⑤① (SBCKI) (CD mode)



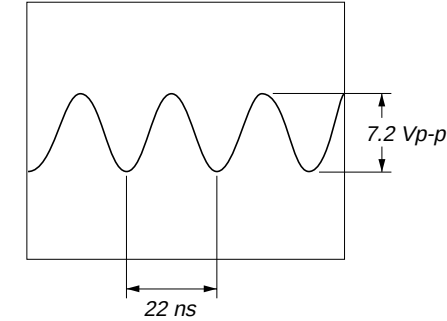
11 IC302 ⑤④ (NSBCKO)



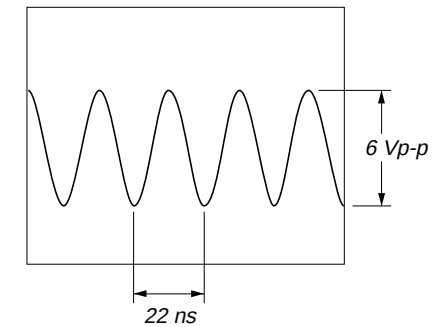
7 IC301 ⑤① (SBCKI) (SACD mode)



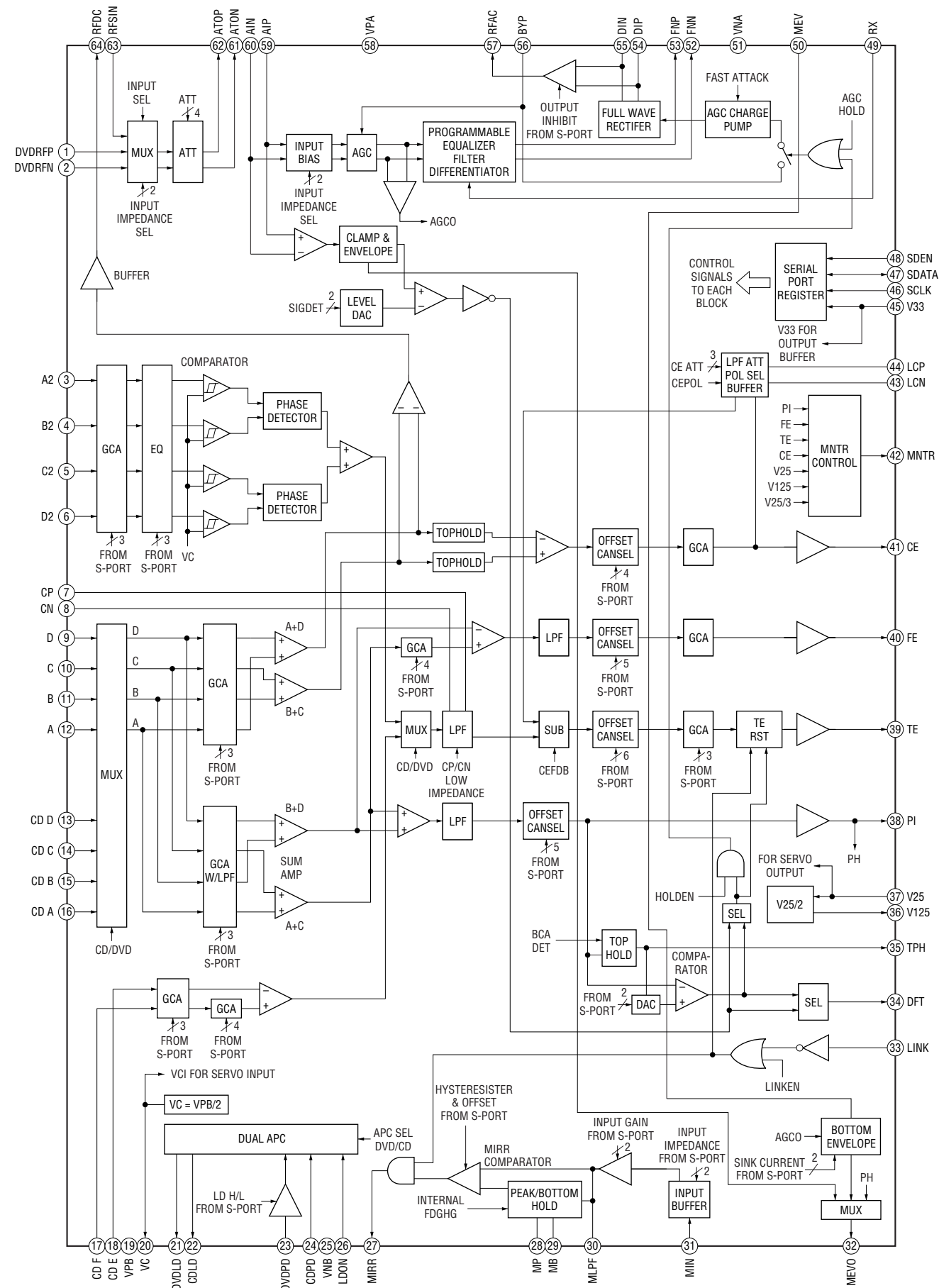
8 IC302 ①③ (XIN), IC313 ⑤



9 IC313 ③

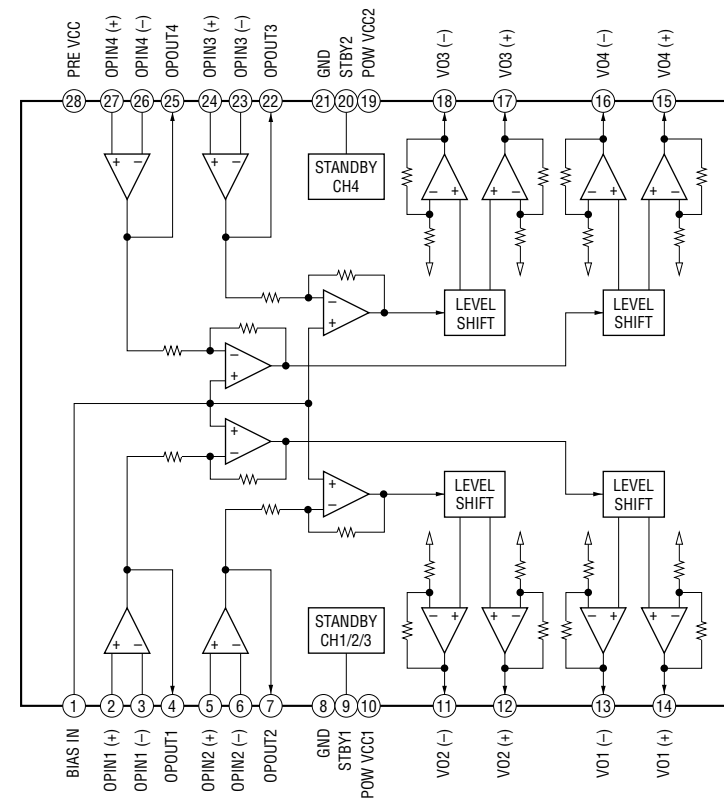


IC001 CXD1881R

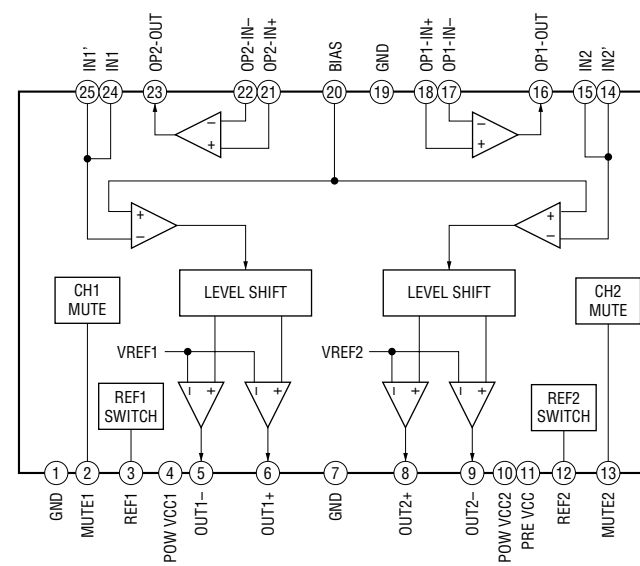


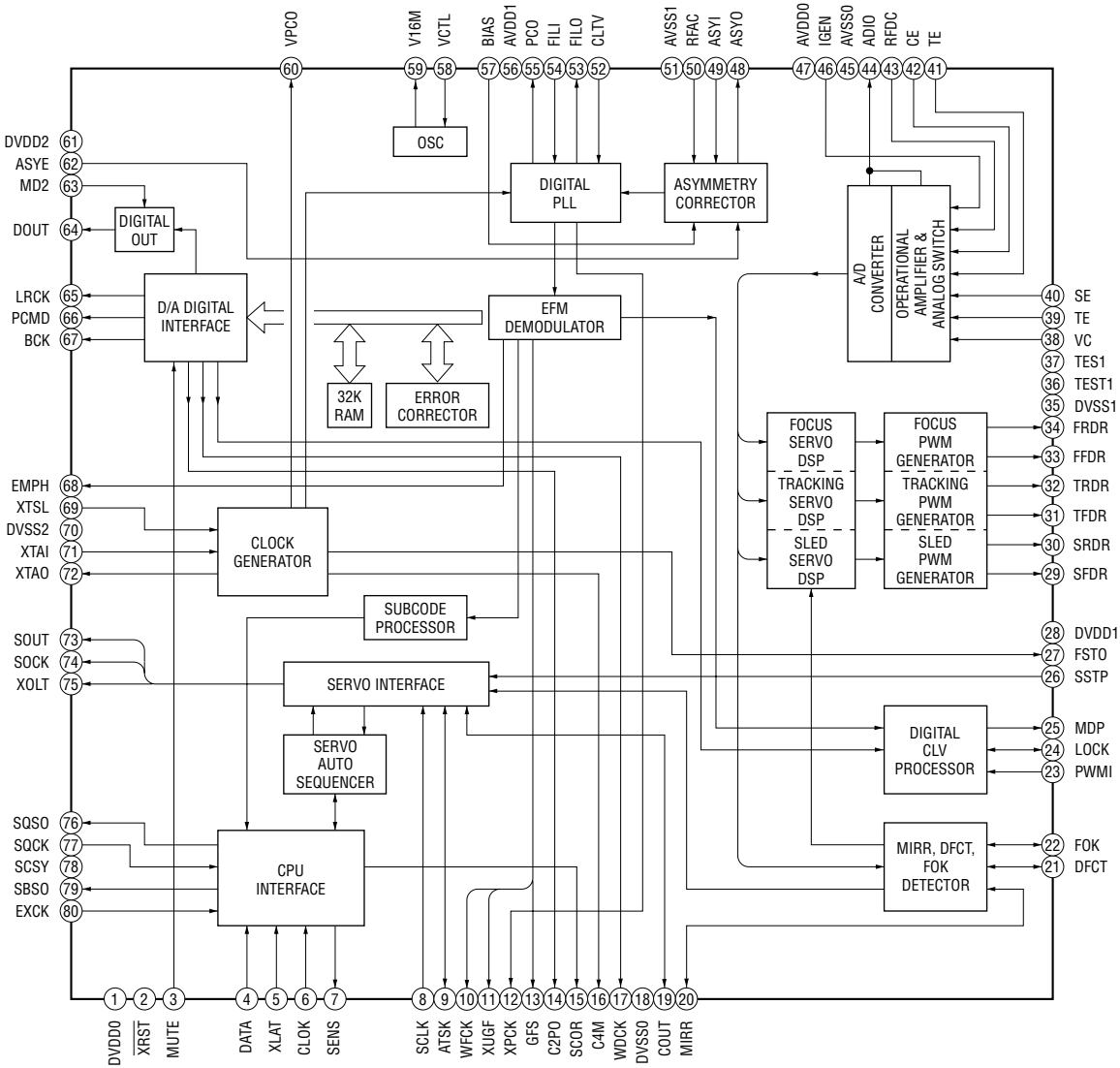
– MAIN Board –

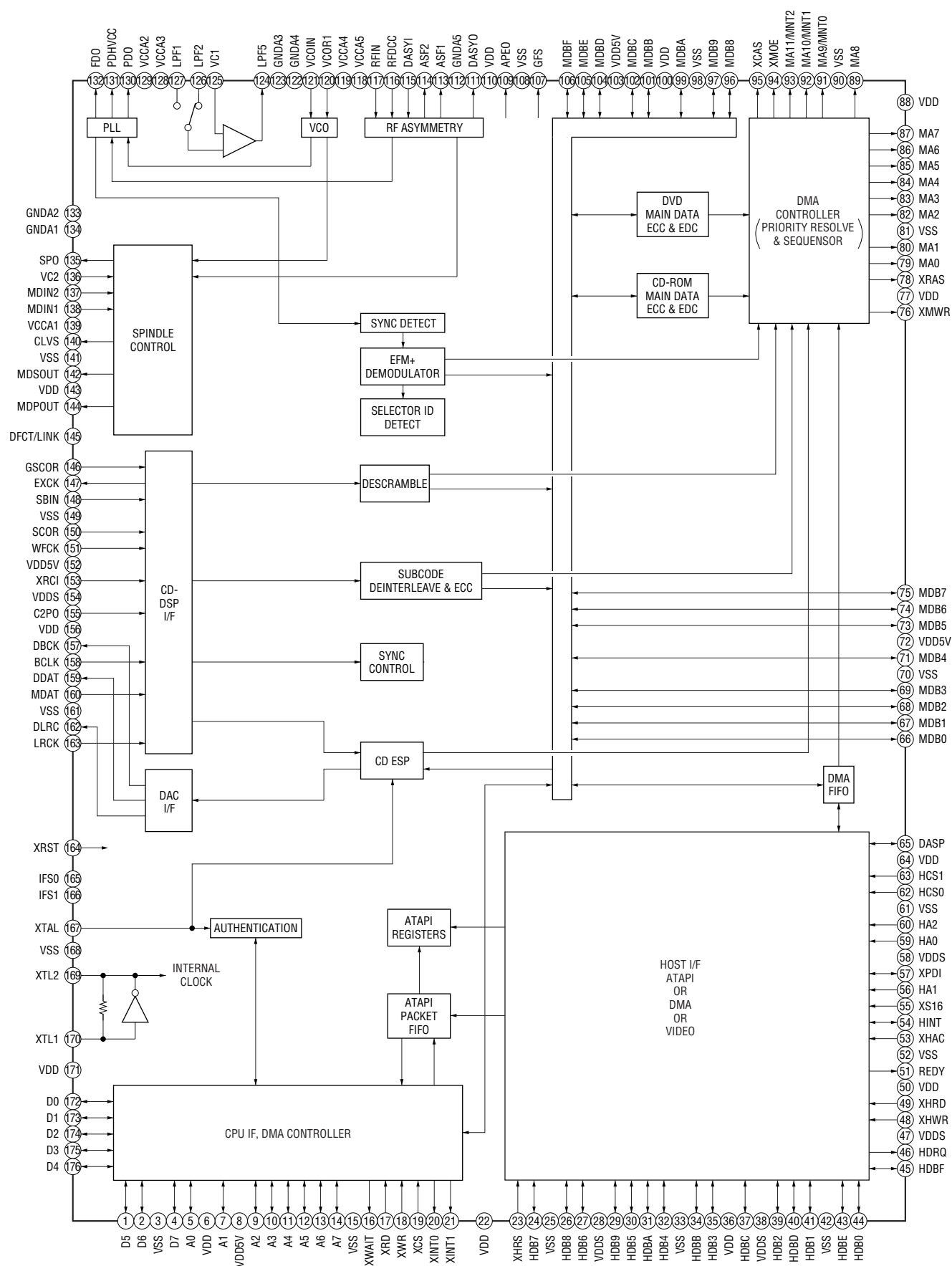
IC502 BA5983FP-E2



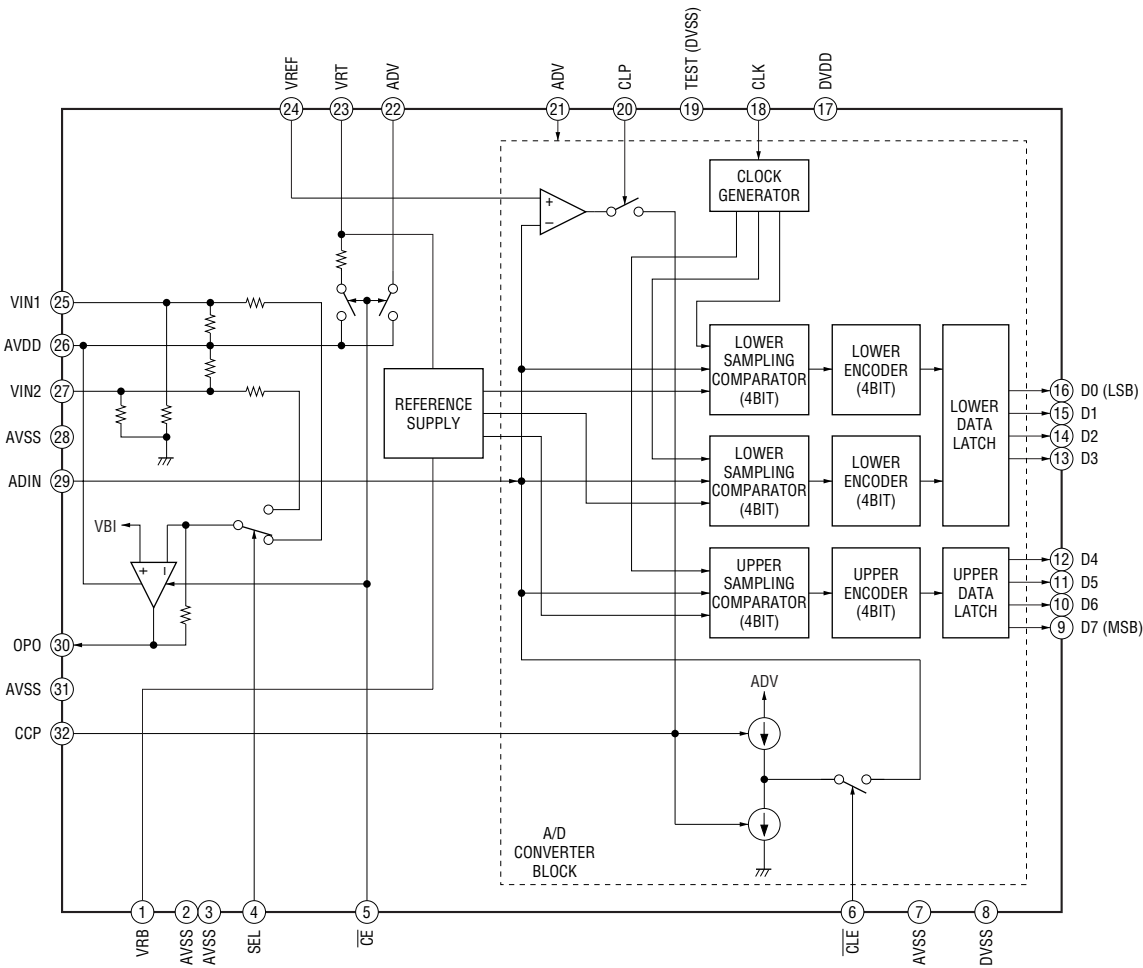
IC512 BA5912AFP-YE2



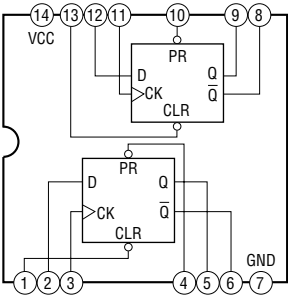




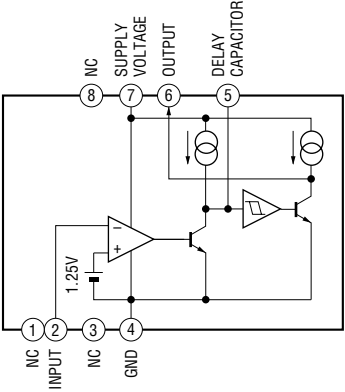
IC804 CXD2301Q



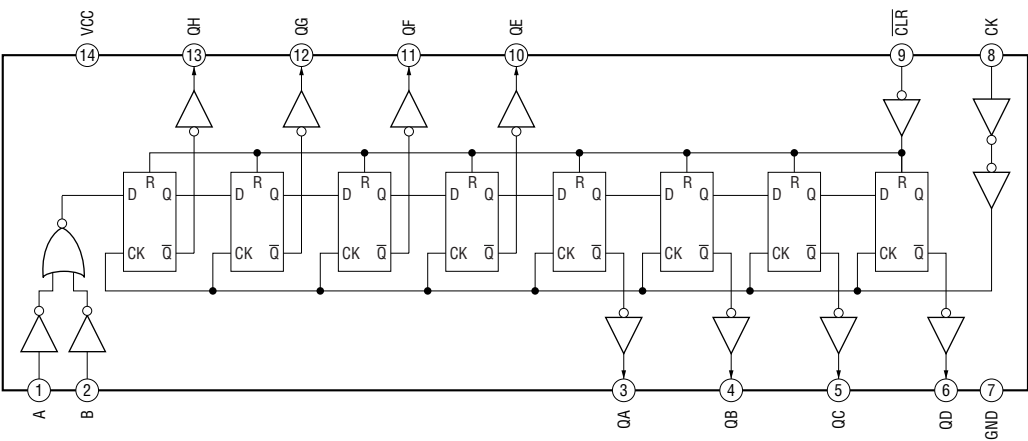
IC809 SN74LV74APWR



IC905 M51957BFP-600C

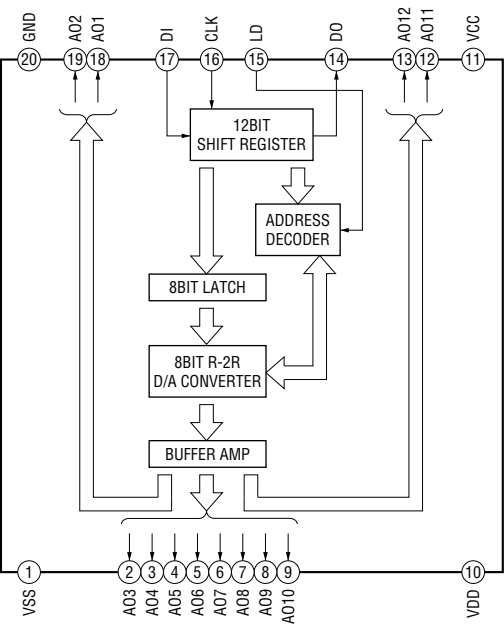


IC815 TC74VHC164FT (EL)

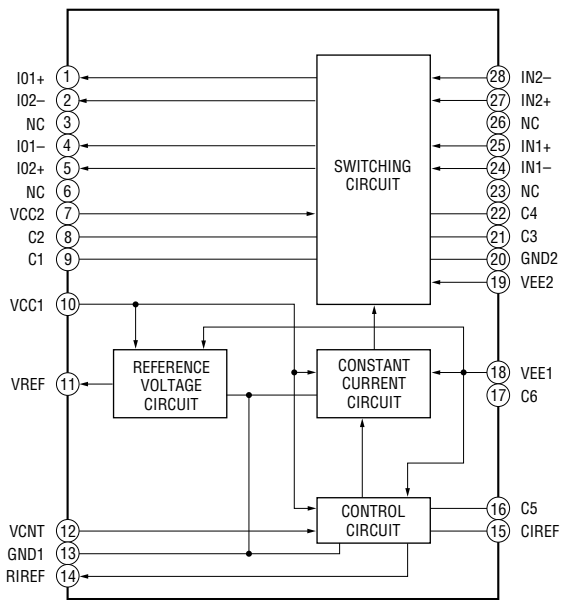


- AUDIO Board -

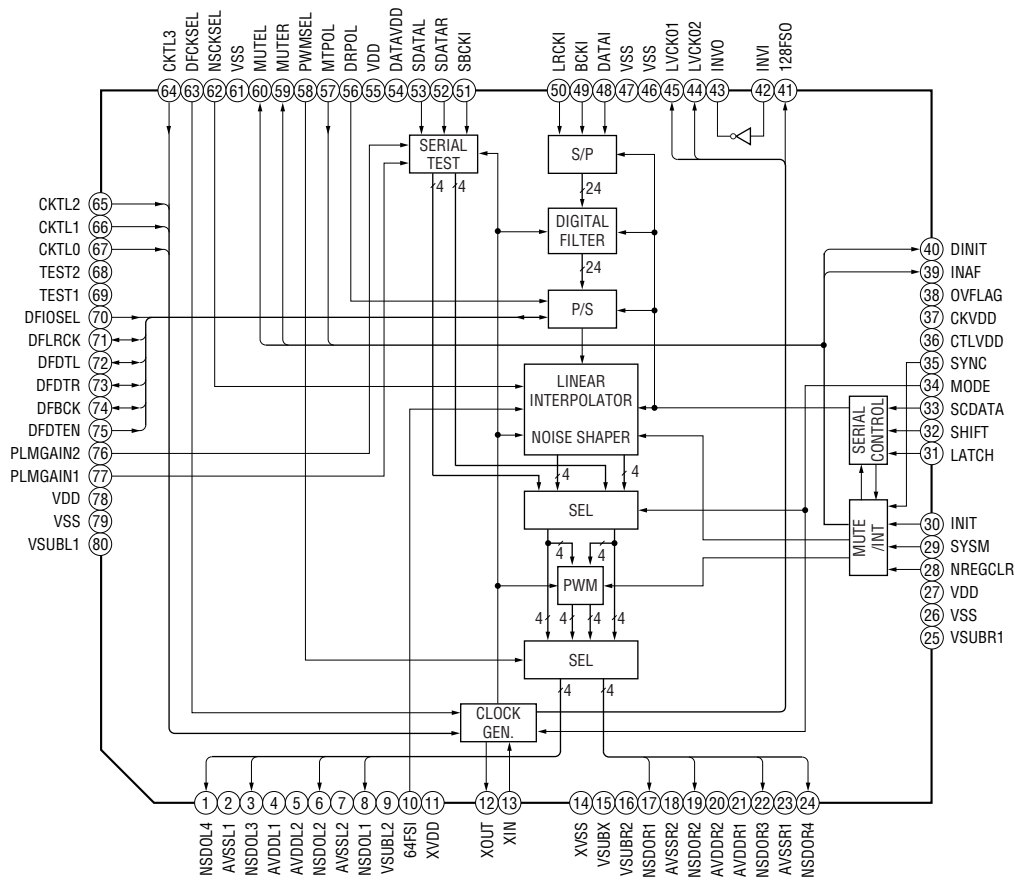
IC904 BU2500FV-E2



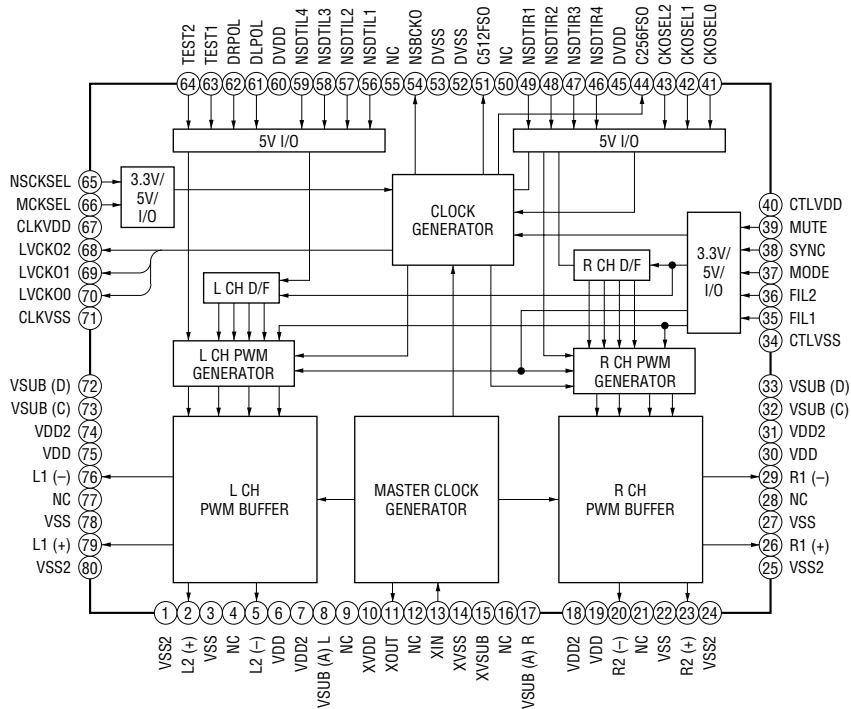
IC101, 201 CXA8042AS



IC301 CXD8762AQ

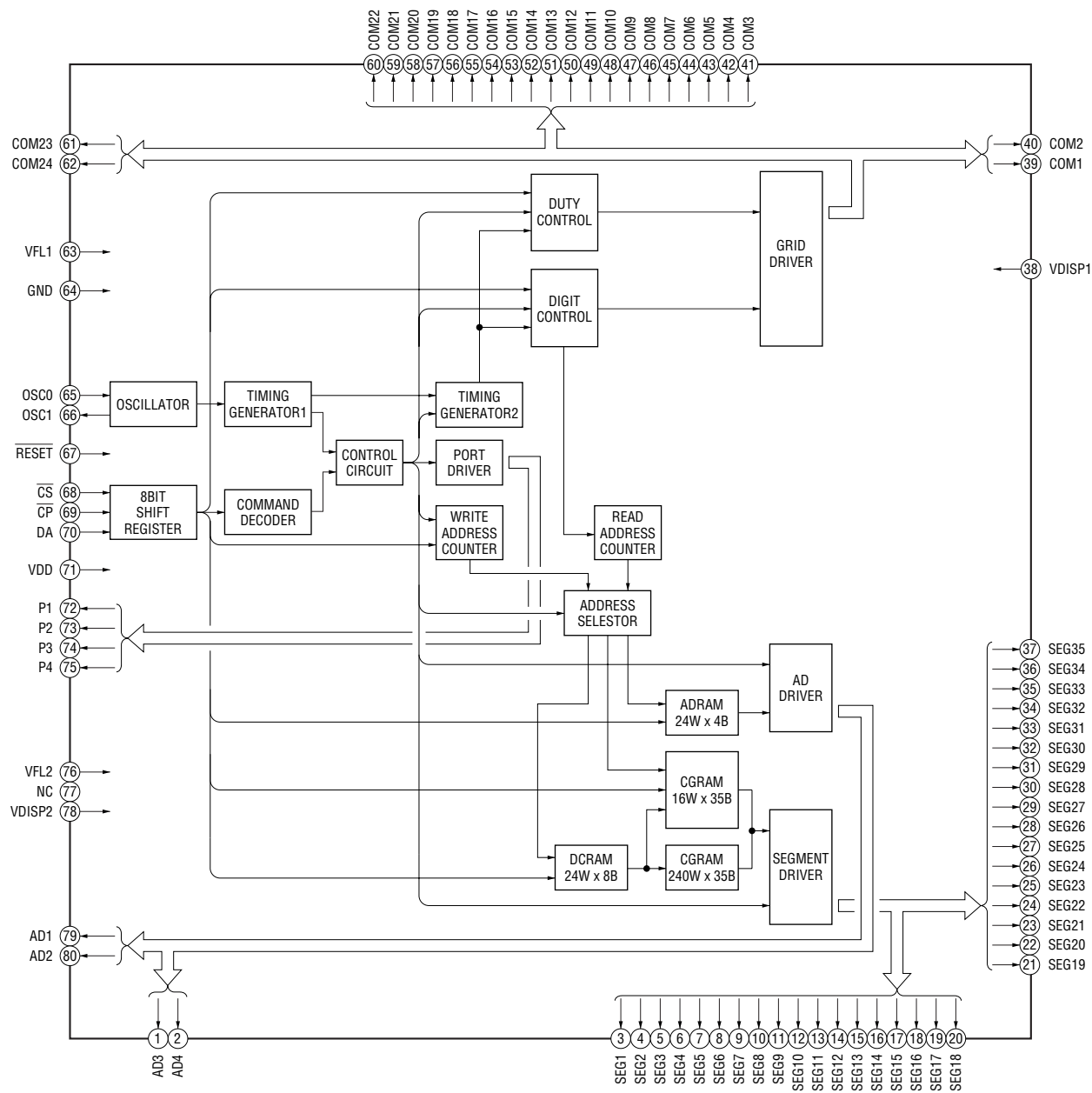


IC302 CXD9521Q



– DISPLAY Board –

IC1002 MSM9201-03GS-K



4-25. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC509 CXD3008Q

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, DIGITAL FILTER, D/A CONVERTER)

Pin No.	Pin Name	I/O	Description
1	DVDD0	—	Power supply terminal (+5V) (digital system)
2	XRST	I	Reset signal input from the expander (IC902) “L”: reset
3	MUTE	I	Muting control signal input from the CPU (IC901) “H”: muting
4	DATA	I	Serial data input from the CPU (IC901)
5	XLAT	I	Latch signal input from the CPU (IC901)
6	CLOK	I	Clock signal input from the CPU (IC901)
7	SENS	O	Internal status (SENSE) signal output to the CPU (IC901)
8	SCLK	I	Serial data transfer clock input from the CPU (IC901)
9	ATSK	I	Input pin for anti-shock (fixed at “L”)
10	WFCK	O	Write frame clock signal output to the SACD decoder (IC701)
11	XUGF	O	XUGF signal output terminal Not used (open)
12	XPCK	O	XPCK signal output terminal Not used (open)
13	GFS	O	Guard frame sync signal output to the CPU (IC901)
14	C2PO	O	C2 pointer signal output to the SACD decoder (IC701)
15	SCOR	O	Subcode sync OR signal output to the SACD decoder (IC701) and the CPU (IC901)
16	C4M	O	4.2336 MHz clock signal output terminal Not used (open)
17	WDCK	O	Guard subcode sync OR signal output to the SACD decoder (IC701)
18	DVSS0	—	Ground terminal (digital system)
19	COUT	O	Numbers of track counted signal output to the CPU (IC901)
20	MIRR	O	Mirror signal output to the CPU (IC901)
21	DFCT	O	Defect signal output terminal Not used (pull up)
22	FOK	O	Focus OK signal output to the CPU (IC901)
23	PWMI	I	Not used (fixed at “L”)
24	LOCK	O	GFS is sampled by 460 Hz “H” output when GFS is “H”
25	MDP	O	Spindle motor (M3) servo drive signal output to the SACD decoder (IC701)
26	SSTP	I	Detection signal input from limit switch (S1) The optical pick-up is inner position when “H”
27	FSTO	O	2/3 divider output terminal Not used (open)
28	DVDD1	—	Power supply terminal (+5V) (digital system)
29	SFDR	O	Sled servo drive PWM signal (+) output to the BA5938FP (IC502)
30	SRDR	O	Sled servo drive PWM signal (–) output to the BA5938FP (IC502)
31	TFDR	O	Tracking servo drive PWM signal (+) output to the BA5938FP (IC502)
32	TRDR	O	Tracking servo drive PWM signal (–) output to the BA5938FP (IC502)
33	FFDR	O	Focus servo drive PWM signal (+) output to the BA5938FP (IC502)
34	FRDR	O	Focus servo drive PWM signal (–) output to the BA5938FP (IC502)
35	DVSS1	—	Ground terminal (digital system)
36	TEST	I	Input terminal for the test (fixed at “L”)
37	TES1	I	Input terminal for the test (fixed at “L”)
38	VC	I	Middle point voltage (+1.65V) input from the NJM3403AV (IC009)
39	FE	I	Focus error signal input from the CXD1881R (IC001)
40	SE	I	Sled error signal input from the CXD1881R (IC001)
41	TE	I	Tracking error signal input from the CXD1881R (IC001)
42	CE	I	Chip enable signal input from the CXD1881R (IC001)
43	RFDC	I	RF signal (DC level) input from the CXD1881R (IC001)
44	ADIO	O	Output terminal for the A/D converter Not used (open)

Pin No.	Pin Name	I/O	Description
45	AVSS0	—	Ground terminal (analog system)
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	—	Power supply terminal (+5V) (analog system)
48	ASYO	O	Playback EFM full-swing output terminal
49	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
50	RFAC	I	EFM RF signal (AC level) input from the CXD1881R (IC001)
51	AVSS1	—	Ground terminal (analog system)
52	CLTV	I	Internal VCO control voltage input of the EFM playback master PLL
53	FILO	O	Filter output for master clock of the playback EFM master PLL
54	FILI	I	Filter input for master clock of the playback EFM master PLL
55	PCO	O	Phase comparison output for master clock of the playback EFM master PLL
56	AVDD1	—	Power supply terminal (+5V) (analog system)
57	BIAS	I	Playback EFM asymmetry circuit constant current input terminal
58	VCTL	I	Control voltage input terminal for the variable pitch Not used (fixed at “L”)
59	V16M	O	16.9344 MHz clock signal output Not used (open)
60	VPCO	O	PLL charge pump output terminal for the variable pitch Not used (fixed at “L”)
61	DVDD2	—	Power supply terminal (+5V) (digital system)
62	ASYE	I	Playback EFM asymmetry circuit on/off selection signal input terminal Not used (fixed at “H”)
63	MD2	I	Digital out on/off control signal input from the CPU (IC901) “L”: digital out on, “H”: digital out off
64	DOUT	O	Digital audio signal output to the DIGITAL (CD) OUT OPTICAL (IC392)
65	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the digital filter (IC301) and SACD decoder (IC701)
66	PCMD	O	Serial data output to the digital filter (IC301) and SACD decoder (IC701)
67	BCLK	O	Bit clock signal (2.8224 MHz) output to the digital filter (IC301) and SACD decoder (IC701)
68	EMPH	O	Playback disc output terminal in emphasis mode Not used (open)
69	XTSL	I	Input terminal for the system clock frequency setting Fixed at “H” in this set
70	DVSS2	—	Ground terminal (digital system)
71	XTAI	I	System clock input terminal (33.86688 MHz)
72	XTAO	O	System clock output terminal (33.86688 MHz) Not used (open)
73	SOUT	O	Not used (open)
74	SOCK	O	Not used (open)
75	XOLT	I	Not used (open)
76	SQSO	O	Subcode Q data output to the CPU (IC901)
77	SQCK	I	Subcode Q data reading clock signal input from the CPU (IC901)
78	SCOR	O	Not used (open)
79	SBSO	O	Subcode serial data output to the SACD decoder (IC701)
80	EXCK	I	Subcode serial data reading clock signal input to the SACD decoder (IC701)

• MAIN BOARD IC701 CXD1882R (SACD DECODER)

Pin No.	Pin Name	I/O	Description
1, 2	D5, D6	I/O	Two-way data bus with the CPU (IC901) and expander (IC902)
3	VSS	—	Ground terminal (digital system)
4	D7	I/O	Two-way data bus with the CPU (IC901) and expander (IC902)
5	A0	I	Address signal input from the CPU (IC901)
6	VDD	—	Power supply terminal (+3.3V) (digital system)
7	A1	I	Address signal input from the CPU (IC901)
8	VDD5V	—	Power supply terminal (+5V)
9 to 14	A2 to A7	I	Address signal input from the CPU (IC901)
15	VSS	—	Ground terminal (digital system)
16	XWAIT	O	Wait signal output terminal Not used (open)
17	XRD	I	Read strobe signal input from the CPU (IC901)
18	XWR	I	Write strobe signal input from the CPU (IC901)
19	XCS	I	Chip select signal input from the CPU (IC901)
20, 21	XINT0, XINT1	O	Interrupt signal output to the CPU (IC901)
22	VDD	—	Power supply terminal (+3.3V) (digital system)
23	XHRS	I	Not used (open)
24	HDB7	O	Stream data signal output to the DSD decoder (IC801)
25	VSS	—	Ground terminal (digital system)
26	HDB8	O	Error flag signal output to the DSD decoder (IC801)
27	HDB6	O	Stream data signal output to the DSD decoder (IC801)
28	VDDS	—	Power supply terminal (+5V) (digital system)
29	HDB9	O	Not used (open)
30	HDB5	O	Stream data signal output to the DSD decoder (IC801)
31	HDBA	O	Not used (open)
32	HDB4	O	Stream data signal output to the DSD decoder (IC801)
33	VSS	—	Ground terminal (digital system)
34	HDBB	O	Not used (open)
35	HDB3	O	Stream data signal output to the DSD decoder (IC801)
36	VDD	—	Power supply terminal (+3.3V) (digital system)
37	HDBC	O	Not used (open)
38	VDDS	—	Power supply terminal (+5V) (digital system)
39	HDB2	O	Stream data signal output to the DSD decoder (IC801)
40	HDBD	O	Not used (open)
41	HDB1	O	Stream data signal output to the DSD decoder (IC801)
42	VSS	—	Ground terminal (digital system)
43	HDBE	O	Not used (open)
44	HDB0	O	Stream data signal output to the DSD decoder (IC801)
45	HDBF	O	Not used (open)
46	XACK	O	Serial data transfer acknowledge signal output to the DSD decoder (IC801)
47	VDDS	—	Power supply terminal (+5V) (digital system)
48	DCK	O	Serial data transfer clock signal output to the DSD decoder (IC801)
49	XSHDR0	O	Header flag signal output to the DSD decoder (IC801)
50	VDD	—	Power supply terminal (+3.3V) (digital system)
51	REDY	O	Not used (pull up)
52	VSS	—	Ground terminal (digital system)
53	REQUEST	I	Serial data transfer request signal input from the DSD decoder (IC801)

Pin No.	Pin Name	I/O	Description
54	HINT	O	Not used (pull up)
55	XS16	O	Not used (pull up)
56	HA1	I	Not used (fixed at “H”)
57	XPDI	I/O	Not used (pull up)
58	VDDS	—	Power supply terminal (+5V) (digital system)
59, 60	HA0, HA2	I	Not used (fixed at “H”)
61	VSS	—	Ground terminal (digital system)
62, 63	HCS0, HCS1	I	Not used (open)
64	VDD	—	Power supply terminal (+3.3V) (digital system)
65	DASP	I/O	Not used (pull up)
66 to 69	MDB0 to MDB3	I/O	Two-way data bus with the D-RAM (IC706)
70	VSS	—	Ground terminal (digital system)
71	MDB4	I/O	Two-way data bus with the D-RAM (IC706)
72	VDD5V	—	Power supply terminal (+5V)
73 to 75	MDB5 to MDB7	I/O	Two-way data bus with the D-RAM (IC706)
76	XMWR	O	Write enable signal output to the D-RAM (IC706)
77	VDD	—	Power supply terminal (+3.3V) (digital system)
78	XRAS	O	Row address strobe signal output to the D-RAM (IC706)
79, 80	MA0, MA1	O	Address signal output to the D-RAM (IC706)
81	VSS	—	Ground terminal (digital system)
82 to 87	MA2 to MA7	O	Address signal output to the D-RAM (IC706)
88	VDD	—	Power supply terminal (+3.3V) (digital system)
89	MA8	O	Address signal output to the D-RAM (IC706)
90	VSS	—	Ground terminal (digital system)
91	MA9/MNT0	O	Address signal output to the D-RAM (IC706)
92	MA10/MNT1	O	RF data signal output terminal for disc mark detection
93	MA11/MNT2	O	Clock signal output terminal for disc mark detection Monitor signal output to the CPU (IC901)
94	XMOE	O	Output enable signal output to the D-RAM (IC706)
95	XCAS	O	Column address strobe signal output to the D-RAM (IC706)
96, 97	MDB8, MDB9	I/O	Two-way data bus with the D-RAM (IC706)
98	VSS	—	Ground terminal (digital system)
99	MDBA	I/O	Two-way data bus with the D-RAM (IC706)
100	VDD	—	Power supply terminal (+3.3V) (digital system)
101, 102	MDBB, MDBC	I/O	Two-way data bus with the D-RAM (IC706)
103	VDD5V	—	Power supply terminal (+5V)
104 to 106	MDBD to MDBF	I/O	Two-way data bus with the D-RAM (IC706)
107	GFS	O	Guard frame sync signal output to the CPU (IC901)
108	VSS	—	Ground terminal (digital system)
109	APEO	O	Absolute phase error signal output
110	VDD	—	Power supply terminal (+3.3V) (digital system)
111	DASYO	O	RF binary signal output
112	GNDA5	—	Ground terminal (analog system)
113, 114	ASF1, AFS2	—	Filter connected terminal for selection the constant asymmetry compensation
115	DASYI	I	Analog signal input after integrated from the RF binary signal
116	RFDCC	I	Input terminal for adjusting DC cut high-pass filter for RF signal
117	RF IN	I	RF signal input from the CXD1881R (IC001)

Pin No.	Pin Name	I/O	Description
118, 119	VCCA5, VCCA4	—	Power supply terminal (+3.3V) (analog system)
120	VCOR1	—	VCO oscillating range setting resistor connected terminal
121	VCoin	I	VCO input terminal
122, 123	GND4, GND3	—	Ground terminal (analog system)
124	LPF5	O	Signal output from the operation amplifier from PLL loop filter
125	VC1	I	Middle point voltage (+1.65V) input terminal
126, 127	LPF2, LPF1	I	Inverted signal input to the operation amplifier from PLL loop filter
128, 129	VCCA3, VCCA2	—	Power supply terminal (+3.3V) (analog system)
130	PDO	O	Signal output from the charge pump for phase comparator
131	PDHVCC	I	Middle point voltage input terminal for RF PLL
132	FDO	O	Signal output from the charge pump for frequency comparator
133, 134	GND2, GND1	—	Ground terminal (analog system)
135	SPO	O	Spindle motor (M3) control signal output to the BA5912AFP (IC512)
136	VC2	I	Middle point voltage (+1.65V) input terminal
137	MDIN2	I	Spindle motor (M3) control signal input from the CXD3008Q (IC509)
138	MDIN1	I	MDP input terminal
139	VCCA1	—	Power supply terminal (+3.3V) (analog system)
140	CLVS	O	Control signal output for selection the spindle control filter at CLVS
141	VSS	—	Ground terminal (digital system)
142	MDSOUT	O	Frequency error output terminal of internal CLV circuit
143	VDD	—	Power supply terminal (+3.3V) (digital system)
144	MDPOUT	O	Phase error output terminal of internal CLV circuit
145	DEFECT	I	Defect signal input terminal Not used (fixed at “L”)
146	GSCOR	I	Guard subcode sync OR signal input from the CXD3008Q (IC509)
147	EXCK	O	Subcode serial data reading clock signal output to the CXD3008Q (IC509)
148	SBIN	I	Subcode serial data input from the CXD3008Q (IC509)
149	VSS	—	Ground terminal (digital system)
150	SCOR	I	Subcode sync OR signal input from the CXD3008Q (IC509)
151	WFCK	I	Write frame clock signal input from the CXD3008Q (IC509)
152	VDD5V	—	Power supply terminal (+5V)
153	XRCI	I	RAM overflow signal input terminal Not used (fixed at “L”)
154	VDDS	—	Power supply terminal (+5V) (digital system)
155	C2PO	I	C2 pointer signal input from the CXD3008Q (IC509)
156	VDD	—	Power supply terminal (+3.3V) (digital system)
157	DBCK	O	Bit clock signal (2.8224 MHz) output terminal Not used (open)
158	BCLK	I	Bit clock signal (2.8224 MHz) input from the CXD3008Q (IC509)
159	DDAT	O	PCM data output terminal Not used (open)
160	MDAT	I	Serial data input from the CXD3008Q (IC509)
161	VSS	—	Ground terminal (digital system)
162	DLRC	O	L/R sampling clock signal (44.1 kHz) output terminal Not used (open)
163	LRCK	I	L/R sampling clock signal (44.1 kHz) input from the CXD3008Q (IC509)
164	XRST	I	Reset signal input from the expander (IC902) “L”: reset
165	IFS0	I	Interface select signal input terminal Fixed at “L” in this set
166	IFS1	I	Interface select signal input terminal Fixed at “H” in this set
167	XTAL	I	33.86688 MHz clock signal input terminal
168	VSS	—	Ground terminal (digital system)
169	XTA2	O	System clock output terminal (33.86688 MHz)

Pin No.	Pin Name	I/O	Description
170	XTA1	I	System clock input terminal (33.86688 MHz)
171	VDD	—	Power supply terminal (+3.3V) (digital system)
172 to 176	D0 to D4	I/O	Two-way data bus with the CPU (IC901) and expander (IC902)

• MAIN BOARD IC801 CXD2751Q (DSD DECODER)

Pin No.	Pin Name	I/O	Description
1	XSRQ	O	Serial data transfer request signal output to the SACD decoder (IC701)
2	XSHD	I	Header flag signal input from the SACD decoder (IC701)
3	VDD	—	Power supply terminal (+3.3V) (digital system)
4	VSS	—	Ground terminal (digital system)
5	SDCK	I	Serial data transfer clock signal input from the SACD decoder (IC701)
6	SMUTE	I	Muting signal input from the CPU (IC901) “L”: muting
7	XMSLAT	I	Latch signal input from the CPU (IC901)
8	MSCK	I	Serial data transfer clock signal input from the CPU (IC901)
9	MSDATI	I	Serial data input from the CPU (IC901)
10	MSDATO	O	Serial data output to the CPU (IC901)
11	MSREDY	I	Ready signal input from the CPU (IC901) “L”: ready
12	XMSDOE	O	Data enable signal output terminal Not used (open)
13	XRST	I	Reset signal input from the expander (IC902) “L”: reset
14	MCKI	I	Master clock signal input terminal
15	VSS	—	Ground terminal (digital system)
16	CK75S	I	Master clock selection signal input terminal “L”: 512fs, “H”: 768fs (fixed at “H” in this set)
17	EXCKO1	O	External clock 1 signal output terminal
18	EXCKO2	O	External clock 2 signal output terminal Not used (open)
19	LRCK	I/O	L/R sampling clock signal (44.1kHz) input/output terminal Not used (open)
20	UBIT	—	Not used (open)
21	MNT2	O	Monitor 2 signal output terminal Not used (open)
22	TRST	I	Reset signal input terminal “L”: reset Not used (fixed at “L”)
23	TCK	I	Clock signal input terminal for test (normally: fixed at “L”)
24	TDI	I	Serial data input terminal for test (normally: open)
25	TENA1	I	Enable signal input terminal for test (normally: open)
26	TDO	O	Serial data output terminal for test (normally: open)
27	VST	—	Ground terminal for test (digital system)
28	VDD	—	Power supply terminal (+3.3V) (digital system)
29	VSS	—	Ground terminal (digital system)
30	MNT1	O	Monitor 1 signal output terminal Not used (open)
31	MNT0	O	Monitor 0 signal output terminal Not used (open)
32	XBIT	O	Bit clock signal (2.8224 MHz) output terminal Not used (open)
33	F75HZ	O	Clock signal (75 Hz) output terminal Not used (open)
34	SUPDAT	O	Serial data output terminal Not used (open)
35	SUPAK	O	Acknowledge signal output terminal Not used (open)
36	SUPEN	O	Enable signal output terminal Not used (open)
37	TEST1	I	Test 1 signal input terminal for test (normally: fixed at “L”)
38	VSS	—	Ground terminal (digital system)
39	TEST2	I	Test 2 signal input terminal for test (normally: fixed at “L”)
40, 41	VSS	—	Ground terminal (digital system)
42	BCKD	I	Shift clock signal input from the digital filter (IC301)
43	DSDL	—	Not used (open)
44	DSDR	—	Not used (open)
45	MUDAT	—	Not used (open)
46	BCKA	I	Shift clock signal input from the digital filter (IC301)
47	DSAL	O	DSD data (Lch) output to the digital filter (IC301)

Pin No.	Pin Name	I/O	Description
48	DSAR	O	DSD data (Rch) output to the digital filter (IC301)
49	ZDFLGL	O	Data (Lch) flag detection signal output terminal Not used (open)
50	ZDFLGR	O	Data (Rch) flag detection signal output terminal Not used (open)
51, 52	A0, A1	O	Address signal output to the D-RAM (IC808)
53	VDD	—	Power supply terminal (+3.3V) (digital system)
54	VSS	—	Ground terminal (digital system)
55 to 63	A2 to A10	O	Address signal output to the D-RAM (IC808)
64	NC	—	Not used (open)
65	VSS	—	Ground terminal (digital system)
66	XWE	O	Write enable signal output to the D-RAM (IC808)
67	XCAS	O	Column address strobe signal output to the D-RAM (IC808)
68	XRAS	O	Row address strobe signal output to the D-RAM (IC808)
69	XOE	O	Output enable signal output to the D-RAM (IC808)
70 to 77	DQ0 to DQ7	I/O	Two-way data bus with the D-RAM (IC808)
78	VDD	—	Power supply terminal (+3.3V) (digital system)
79	VSS	—	Ground terminal (digital system)
80	WCK	I	Clock signal input terminal for disc mark detection
81	WRFD	I	RF data signal input terminal for disc mark detection
82 to 89	WAD0 to WAD7	I	A/D data signal input from the A/D converter (IC804) for disc mark detection
90	VSS	—	Ground terminal (digital system)
91 to 98	SD7 to SD0	I	Stream data signal input from the SACD decoder (IC701)
99	SDEF	I	Error flag signal input from the SACD decoder (IC701)
100	XSAK	I	Serial data transfer acknowledge signal input from the SACD decoder (IC701)

• MAIN BOARD IC901 CXP973F064R-1 (CPU)

Pin No.	Pin Name	I/O	Description
1	MODE DF	O	SACD/CD mode selection signal output to the digital filter (IC301) and D/A converter (IC302) “L”: CD mode, “H”: SACD mode
2	AMUTE	O	Muting signal output to the analog line circuit “H”: muting
3	DOCTRL	O	Digital out on/off control signal output to the CXD3008Q (IC509) “L”: digital out off, “H”: digital out on
4	LAT DAC	O	Latch signal output to the D/A converter (IC904)
5	DATA DAC	O	Serial data output to the D/A converter (IC904)
6	CLK DAC	O	Clock signal output to the D/A converter (IC904)
7	FCS JMP 1	O	Focus jump 1 signal output to the BA5983FP (IC502)
8	FCS JMP 2	O	Focus jump 2 signal output to the BA5983FP (IC502)
9	SENS CD	I	Internal status (SENSE) signal input from the CXD3008Q (IC509)
10	XCS DRAM	O	Chip select signal output terminal Not used (pull up)
11	XCS IO	O	Chip select signal output to the expander (IC902)
12	XCS DVD	O	Chip select signal output to the SACD decoder (IC701)
13	VSS	—	Ground terminal (digital system)
14 to 21	D0 to D7	I/O	Two-way data bus with the SACD decoder (IC701) and expander (IC902)
22	INT0 DVD	I	Interrupt signal input from the SACD decoder (IC701)
23	INT1 DVD	I	Interrupt signal input from the SACD decoder (IC701)
24	T SENS	I	Disc tray status detection signal input terminal Not used (open)
25	MON DVD	I	Monitor signal input from the SACD decoder (IC701)
26	DATA CD	O	Serial data output to the CXD3008Q (IC509)
27	XLAT CD	O	Latch signal output to the CXD3008Q (IC509)
28	A1IN	I	Control A1 signal input terminal Not used (fixed at “H”)
29	CONT CD	I	Numbers of track counted signal input from the CXD3008Q (IC509)
30	IN SW	I	Loading in switch (S001) input terminal “L”: loading in
31	OUT SW	I	Loading out switch (S002) input terminal “L”: loading out
32	MIRR RF	I	Mirror signal input from the CXD3008Q (IC509)
33	SUBQ CD	I	Subcode Q data input from the CXD3008Q (IC509)
34	SCOR CD	I	Subcode sync OR signal input from the CXD3008Q (IC509)
35	SQCLK CD	O	Subcode Q data reading clock signal output to the CXD3008Q (IC509)
36	—	—	Not used (open)
37	CLOK CD	O	Clock signal output to the CXD3008Q (IC509)
38	XRST	I	System reset signal input from the reset signal generator (IC905) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
39	VSS	—	Ground terminal (digital system)
40	XTAL	I	System clock input terminal (20 MHz)
41	EXTAL	O	System clock output terminal (20 MHz)
42	VDD	—	Power supply terminal (+3.3V) (digital system)
43	LDON RF	O	Laser diode on/off control signal output to the CXD1881R (IC001) “L”: laser diode off, “H”: laser diode on
44	XDIS IO	O	Reset signal output to the expander (IC902) “L”: reset
45	MUTE DSD	O	Muting signal output to the DSD decoder (IC801) “L”: muting
46	XLAT DSD	O	Latch signal output to the DSD decoder (IC801)
47	READY DSD	O	Ready signal output to the DSD decoder (IC801) “L”: ready
48	SDIN DSD	I	Serial data input from the DSD decoder (IC801)
49	SOUT DSD	O	Serial data output to the DSD decoder (IC801)

Pin No.	Pin Name	I/O	Description
50	SCK DSD	O	Serial data transfer clock signal output to the DSD decoder (IC801)
51	BUSY DP	I	Busy signal input from the CXP84120 (IC1001)
52	SIN DP	I	Serial data input from the CXP84120 (IC1001)
53	SOUT DP	O	Serial data output to the CXP84120 (IC1001)
54	SCLK DP	O	Serial data transfer clock signal output to the CXP84120 (IC1001)
55	VSS	—	Ground terminal (digital system)
56	REQ DP	O	Request signal output to the CXP84120 (IC1001)
57	FCS BST	O	Focus boost signal output terminal Not used (open)
58	GFS DVD	I	Guard frame sync signal input from the SACD decoder (IC701)
59	MUTE CD	O	Muting signal output to the CXD3008Q (IC509) “H”: muting
60	MUTE 2D	O	Muting signal output to the BA5938FP (IC502)
61	MUTE LOAD	O	Muting signal output to the BA5912AFP (IC512)
62	FG	I	FG signal input terminal Not used (open)
63	MUTE SP	O	Muting signal output to the BA5912AFP (IC512)
64	JITTER	I	Jitter signal input terminal
65	TE	I	Tracking error signal input from the CXD1881R (IC001)
66	MON RF	I	Monitor signal input from the CXD1881R (IC001)
67	FE	I	Focus error signal input from the CXD1881R (IC001)
68	AVSS	—	Ground terminal (for A/D converter)
69	AVREF	I	Reference voltage input terminal (for A/D converter)
70	AVDD	—	Power supply terminal (+3.3V) (for A/D converter)
71	GFS CD	I	Guard frame sync signal input from the CXD3008Q (IC509)
72	SCLK CD	O	Serial data transfer clock signal output to the CXD3008Q (IC509)
73	DFCT CD	I	Defect signal input terminal Not used (open)
74	FOK CD	I	Focus OK signal input from the CXD3008Q (IC509)
75	LOCK CD	I	GFS sampled by 460 Hz “H” input when GFS is “H”
76	XRF AD CE	O	Chip enable signal output to the A/D converter (IC804)
77	DFCT SW	O	Defect selection signal output terminal
78	EEPSIO	I/O	Two-way data bus with the EEPROM (IC903)
79	EEPSCL	O	Clock signal output to the EEPROM (IC903)
80	SIN PC	I	Serial data input from the RS-232C (for check)
81	SOUT PC	O	Serial data output to the RS-232C (for check)
82	SCLK RF	I	Clock signal input from the CXD1881R (IC001)
83	SDATA RF	I/O	Two-way data bus with the CXD1881R (IC001)
84	XWR	O	Write strobe signal output to the SACD decoder (IC701) and expander (IC902)
85	XRD	O	Read strobe signal output to the SACD decoder (IC701) and expander (IC902)
86	NC	—	Not used (fixed at “H”)
87	VDD	—	Power supply terminal (+3.3V) (digital system)
88	VSS	—	Ground terminal (digital system)
89 to 91	A0 to A2	O	Address signal output to the SACD decoder (IC701) and expander (IC902)
92 to 96	A3 to A7	O	Address signal output to the SACD decoder (IC701)
97	INIT DF	O	Initial signal output to the digital filter (IC301)
98	LATCH DF	O	Latch signal output to the digital filter (IC301)
99	SHIFT DF	O	Shift signal output to the digital filter (IC301)
100	SCDATA DF	O	Serial data output to the digital filter (IC301)

• MAIN BOARD IC902 CXD1095BR (EXPANDER)

Pin No.	Pin Name	I/O	Description
1	LIM SW	I	Detection signal input terminal from limit switch Not used (open)
2	(WISE)	I	Not used (open)
3	F COMPL	I	Focus jump low level signal input terminal Not used (open)
4, 5	SPCNTL1, SPTNCL0	O	Spindle motor control signal output terminal Not used (open)
6	TBLL	O	Table motor drive signal (counterclockwise direction) output terminal Not used (open)
7	TBLR	O	Table motor drive signal (clockwise direction) output terminal Not used (open)
8	VSS	—	Ground terminal (digital system)
9	REMCODE	I	Remote category signal output terminal Not used (open)
10	D SENS	I	Disc status detection signal input terminal Not used (open)
11, 12	S1, S2	I	Disc tray position detection signal input terminal Not used (open)
13	LOAD OUT	O	Loading motor drive signal (loading out direction) output terminal Not used (open)
14	SDCNTL	O	Sled motor control signal output terminal Not used (open)
15	LOAD IN	O	Loading motor drive signal (loading in direction) output terminal Not used (open)
16	A1OUT	O	Control A1 signal output terminal Not used (open)
17	NC	—	Not used (open)
18	<u>RST DSD</u>	O	Reset signal output to the DSD decoder (IC801) “L”: reset
19	<u>RST DP</u>	O	Reset signal output to the CXP84120 (IC1001) “L”: reset
20	<u>RST DVD</u>	O	Reset signal output to the SACD decoder (IC701) “L”: reset
21	<u>RST CD</u>	O	Reset signal output to the CXD30008Q (IC509) “L”: reset
22	VMOD	O	Power on/off control signal output for modulation circuit on optical pick-up block “L”: power off, “H”: power on
23	VSS	—	Ground terminal (digital system)
24	VDD	—	Power supply terminal (+3.3V)
25	MULTI	O	Multi/2ch selection signal output terminal “L”: 2ch, “H”: multi Not used (open)
26	SDEN	O	Serial enable signal output to CXD1881R (IC001)
27	ISBTEST	O	Output terminal for disc inspection mode Not used (open)
28 to 30	D0 to D2	I/O	Two-way data bus with the SACD decoder (IC701) and the CPU (IC901)
31, 32	NC	—	Not used (open)
33 to 37	D3 to D7	I/O	Two-way data bus with the SACD decoder (IC701) and the CPU (IC901)
38	XCLR	I	Clear signal input terminal Not used (fixed at “H”)
39	XDIS	I	Reset signal input from the CPU (IC901) “L”: reset
40	VSS	—	Ground terminal (digital system)
41	XWR	I	Write strobe signal input from the CPU (IC901)
42	XRD	I	Read strobe signal input from the CPU (IC901)
43	XCS	I	Chip select signal input from the CPU (IC901)
44 to 46	A0 to A2	I	Address signal input from the CPU (IC901)
47, 48	PE0, PE1	—	Not used (open)
49	NC	—	Not used (open)
50	TRKFIL	O	Tracking filter signal output terminal Not used (open)
51	PE3	—	Not used (open)
52	12V ON	O	Control signal output terminal for low-energy mode Not used (fixed at “H”)
53	PA1	—	Not used (open)
54	CD SACD	O	SACD/CD mode selection signal output terminal Not used (open)
55	VSS	—	Ground terminal (digital system)
56	VDD	—	Power supply terminal (+3.3V) (digital system)

Pin No.	Pin Name	I/O	Description
57	AGING ERR	O	Debug flag signal output terminal Not used (open)
58	PA4	—	Not used (open)
59	OUT SW	I	Disc tray out detection signal input terminal Not used (open)
60, 61	PA6, PA7	—	Not used (open)
62	F COMPH	I	Focus jump high level signal input terminal Not used (open)
63, 64	NC	—	Not used (open)

SECTION 5

SERVICING NOTES (2)

Cleaning of Optical Pick-up Lens

In cleaning the lens of optical pick-up, use the air blower.

Never use a cotton swab for cleaning the lens of optical pick-up, which otherwise causes a trouble.

Resetting Operation at Power ON

If the power is turned on with a disc loaded in the set, a sequence of operation as shown below will be performed.

(The operation varies depending on the type of disc) Condition: continue mode

(1) CD

1. Sled reverse move (sled in)
2. Disc detect
3. IC setting for CD
4. Servo error signal offset auto adjustment
5. Spindle kick for LD on
6. LD on
7. Focus search
8. Focus servo on
9. Spindle kick
10. Spindle servo on
11. E-F balance auto adjustment
12. Tracking & sled servo on
13. Focus bias auto adjustment
14. Focus servo gain auto adjustment
15. Tracking servo gain auto adjustment
16. Jump to lead-in area
17. Read TOC
18. Auto play (track No.1)

(2) SACD (single layer)

1. Sled reverse move (sled in)
2. Disc detect
3. IC setting for SACD
4. Servo error signal offset auto adjustment
5. Spindle kick for LD on
6. LD on
7. Focus search
8. Focus servo on
9. Spindle kick
10. Spindle servo on
11. E-F balance auto adjustment
12. Tracking & sled servo on
13. Focus bias auto adjustment
14. Focus servo gain auto adjustment
15. Tracking servo gain auto adjustment
16. Jump to lead-in area
17. Read TOC
18. Auto play (track No.1)

(3) SACD (dual layer)

1. Sled reverse move (sled in)
2. Disc detect
3. IC setting for SACD
4. Servo error signal offset auto adjustment
5. Spindle kick for LD on
6. LD on
7. Focus search
8. Focus servo on (layer 0)
9. Spindle kick
10. Spindle servo on
11. E-F balance auto adjustment (layer 0)
12. Tracking & sled servo on (layer 0)
13. Focus bias auto adjustment (layer 0)
14. Focus servo gain auto adjustment (layer 0)
15. Tracking servo gain auto adjustment (layer 0)
16. Jump to lead-in area
17. Read TOC
18. Focus jump (layer 0→layer 1)
19. E-F balance auto adjustment (layer 1)
20. Tracking & sled servo on (layer 1)
21. Focus bias auto adjustment (layer 1)
22. Focus servo gain auto adjustment (layer 1)
23. Tracking servo gain auto adjustment (layer 1)
24. Focus Jump (layer 1→layer 0)
25. Auto play (track No.1)

SECTION 6 TEST MODE

This set automatically executes self-diagnosis and various checks by entering the test mode.

Note: This set automatically makes various adjustments according to the type of disc, thereby not requiring adjustment of the set when parts were replaced. However, be sure to execute 6-1. IC AND FLUORESCENT DISPLAY TUBE CHECK, 6-2. AUTO CHECK and 6-7. WAVEFORMS CHECK.

Disc for Test Mode

Various checks of this set require the following discs.

Model	Type *1	Category	Application
SATD-04 (J-2501-184-A)	SL	12 cm disc Reference disc	Adjusted value check, Operation check, Optical waveform check
Not specified	DL	12 cm disc	Operation check
PATD-012 (4-225-203-01) YEDS-18 (3-702-101-01)	CD	12 cm disc Reference disc	Adjusted value check, Operation check, Optical waveform check
Not specified	HYBRID	12 cm disc	Operation check

*1 SL: Single Layer
DL: Dual Layer

Test Mode Command List

The contents of test mode are as follows.

Note: Wrong operation in the test mode causes a trouble, thus requiring extreme care.

LINE command (1X): Use mainly for a manufacturing line.

No.	Name	Description	Remarks
05	DSP MON1	XUGF, XPCK, C2PO outputted from IC509 (CD DSP)	Not used for the servicing
06	DSP MON2	MNT0, MNT1, MNT2, MNT3 outputted from IC509 (CD DSP)	Not used for the servicing
07	DSP MON3	RFCK, XPCK, XROF, GTOP outputted from IC509 (CD DSP)	Electrical measurement, CD CLV jitter measurement

STANDARD command (1X): Use when the servo is applied by manual operation.

No.	Name	Description	Remarks
12	LD ON/OFF	The laser diode is turned on or off	On or off are switched alternately
13	SPIN ON/OFF	The spindle motor is rotated with the regulated voltage	On or off are switched alternately
14	FSRV ON/OFF	The focus servo is turned on or off	On or off are switched alternately
15	TSRV ON/OFF	The tracking servo is turned on or off	On or off are switched alternately
16	CLV ON/OFF	The spindle SLV servo is turned on or off Focus and tracking servos must be already turned on	On or off are switched alternately
17	SSRV ON/OFF	The sled servo is turned on or off Focus, tracking and spindle servos must be already turned on	On or off are switched alternately
18	ALL SRV ON	All servos are turned on	
19	ALL SRV OFF	All servos are turned off	Stop command in the test mode

FOCUS command (2X): Focus related. (All servos must be already turned on (except command 21))

No.	Name	Description	Remarks
21	FSRCH ON/OFF	The continuous vertical motion of the optical pick-up lens is turned on or off	Avoid a long-time use
22	F-BIAS UP	Increase focus bias	Focus bias value
23	F-BIAS DOWN	Decrease focus bias	Focus bias value
24	ADJ FCSBIAS	The focus bias is adjusted automatically Both + and - directions are searched to search for best jitter point	
25	FGAIN UP/DW	The focus servo gain is switched between normal and down	Normal or down are switched alternately
26	FJMP UP/DWN	Focus jump is executed UP: layer 0→1, DOWN: layer 1→0	Valid only for DL
27	FOCUS AGC	The focus servo gain is adjusted automatically	
28	DISP FBdata	The focus bias adjusted value is displayed	Hexadecimal display 9 bit data

Note: On or off and up or down are switched alternately

Setting Method of Test Mode

Turn the **POWER** switch on while pressing the **◀◀AMS▶▶** dial and the **TIME/TEXT** button. Release the **TIME/TEXT** button and the **◀◀AMS▶▶** dial in this order when “TEST MODE Menu” is displayed on the fluorescent display tube. (If the **◀◀AMS▶▶** dial is released first, the test mode becomes active but “TEST MODE Menu” is not displayed)

Releasing Method of Test Mode

To release the test mode, turn the **POWER** switch off.

Selection/Entry of Test Mode

To select and enter the “TEST MODE Menu”, operate as follows.

1. Rotate the **◀◀AMS▶▶** dial to select the menu, and press the **◀◀AMS▶▶** dial to enter.
2. The test is switched on or off alternately each time the **◀◀AMS▶▶** dial is pressed.
3. To return to the previous step, rotate the **◀◀AMS▶▶** dial to select the desired item, and press the **◀◀AMS▶▶** dial to enter.

OFFSET (PI, FE, TE) command (3X): Adjusts the offset of PI, FE and TE signals.

No.	Name	Description	Remarks
31	PI/FE OFFSET	Adjusts the offset of PI, FE and TE signals This adjustment must be executed after 61 DISC DETECT	TE offset adjustment is executed for the CD only

TRACKING command (4X): Tracking servo related.

No.	Name	Description	Remarks
41	TGAIN NM/UP	The tracking servo gain is switched between normal and up	Normal or up are switched alternately
44	ADJ TRK DSP	The traverse AGC and E-F balance adjustment is performed	
45	TRACKING AGC	The tracking servo gain is adjusted automatically	

SEARCH command (5X): Track search related.(Not used for the servicing)

No.	Name	Description	Remarks
51	1-TRCK JUMP	One-track jump is performed	
52	M-TRCK MOVE	M-track movement is performed	
53	FINE SEARCH	Fine search is performed	

DISC DETECT command (6X): Disc type check related.

No.	Name	Description	Remarks
61	DISC DETECT	Disc type check is executed Display after judgment DSKMOD CD: Judged as CD DSKMOD SL: Judged as SACD (SL) DSKMOD DL: Judged as SACD (DL) DSKMOD HLHD: Judged as HYBRID HD DSKMOD CDRW: Judged as CD-RW	Refer to how to apply servo by manual operation (62 page)
62	SET DISC CD	Enter disc type CD setting	CD forced setting
63	SET DISC SL	Enter disc type SL setting	SL forced setting
64	SET DISC DD	Enter disc type DD setting	DD forced setting
65	SET DISC HH	Enter disc type HYBRID HD setting	HD forced setting
66	SET DISC HC	Enter disc type HYBRID CD setting	CD forced setting

TOOLS command (8X): Performs aging, reads adjusting parameters, etc.

No.	Name	Description	Remarks
81	VERSION	Firmware version is displayed	Example: Ver 1.00
83	TRAY AGING	Tray open-close aging is performed Not used for the servicing	Number of times and eccentricity measurement
84	JITTER	Jitter measurement	Not used for the servicing
85	ERROR RATE	Error rate measurement CD: C1, C2 SACD: PO, PI1, PI2	Error rate Not used for the servicing
86	ALL SRV ON	Apply all servos Full automatic measurement including PI, FE and TE offset adjustment is performed	Use when applying the servo by manual operation Refer to STANDARD command (60 page)
87	DISP ADJ DT	Automatic adjusting parameters are displayed The offset adjusted values are scroll-displayed in order of RF, VC, FE and TE	Refer to auto check items (65 page) Refer to auto check items (65 page)
88	(DISP ADJ DT)	Automatic adjusting parameters are displayed The set values of adjusting registers are scroll-displayed in order of PIOR, CCR and TRCR	Refer to auto check items (65 page)
89	(DISP ADJ DT)	Automatic adjusting parameters are displayed The adjusted values are scroll-displayed in order of FGAIN, TGAIN, FBIAS and TRVSC	Refer to auto check items (65 page)
8d	Set Up Init	Set to factory shipping mode PLAY, REPEAT, DIGIFIL, etc. are initialized	Set when repair completed Refer to 6-6. SHIPPING MODE (69 page)
8F	49 TRCK JIT	Used for jitter measurement of 49th music on SACD-S4	For manufacturing line Not used for the servicing

QA command (9X)

No.	Name	Description	Remarks
92	SET CHECK	The set is checked	Refer to 6-2 AUTO CHECK (65 page)
94	SET AGING	The set aging is performed Repeat by the specified number of times or until an error occurred	Refer to 6-5 AGING MODE (69 page)
95	DISPLAY ERROR	The content of error recorded to the set is read and displayed (Error recording) Only one item is recorded	
96	D-OUT OnOff	Digital out of CD is turned on or off	
98	APDO JITTER		Not used for the servicing
9C	BU DENCHO	The content of error recorded to the set is read, and then the S curve waveform, traverse waveform, and RF waveform can be checked successively	Refer to 6-7WAVEFORMS CHECK (71 page)
9D	P-ON HOUR	Approximate cumulative power supplying time is displayed (Initialized by 8d command)	In unit of 1 hour
9E	RFD OUT	RFD output is turned on or off SACD jitter measuring mode	Not used for the servicing

How to Apply Servo by Manual Operation

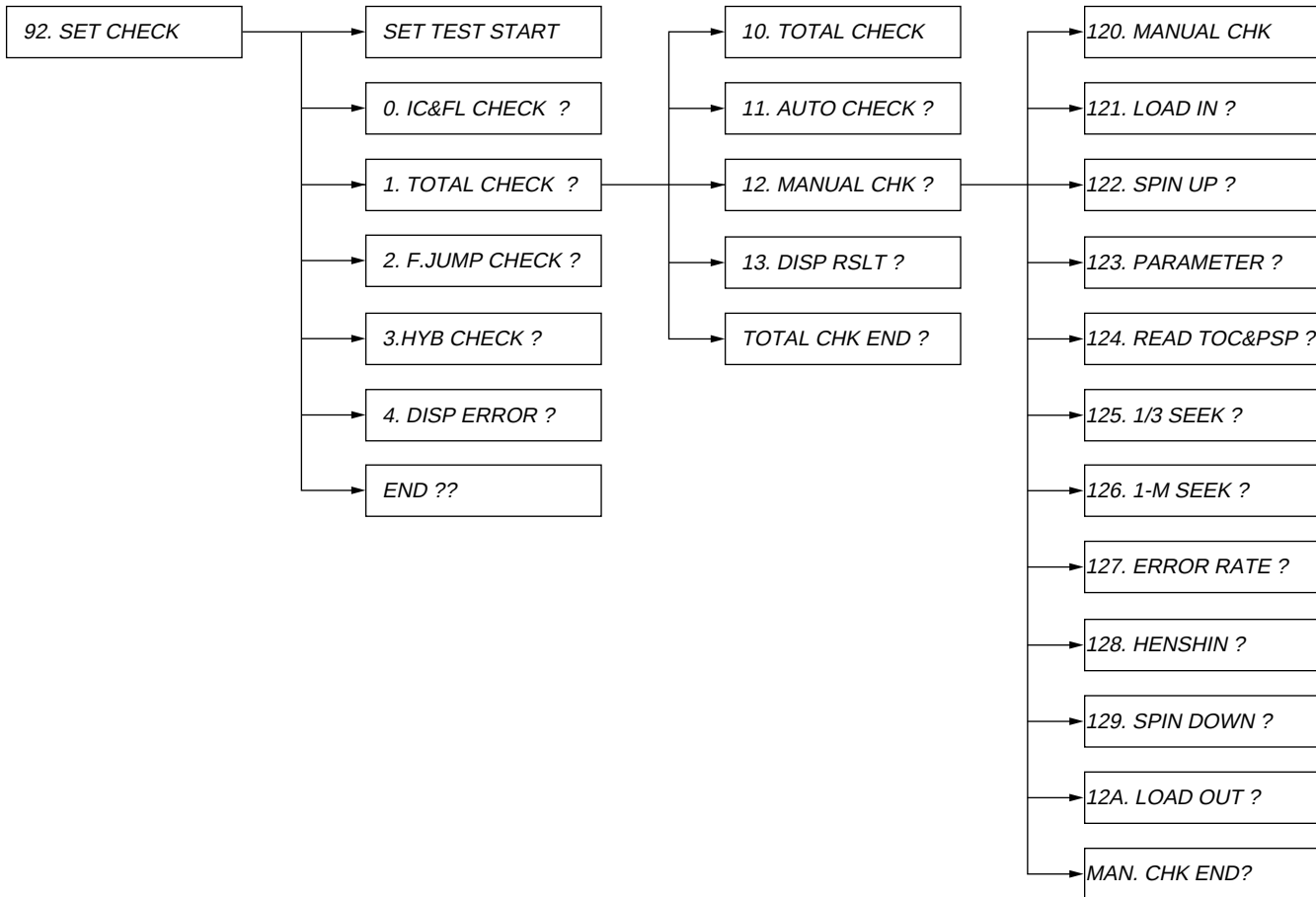
In analyzing failures of the set, the servo may be applied by manual operation. To apply servo in the test mode, use the following method.

- After setting the test mode, rotate the **AMS** dial to select a command, and press the **AMS** dial to enter.
- "61 DISC DETECT" (Disc type check)→"86 ALL SRV ON" (All servos on + auto adjustment)
- If applying servo while checking the condition one by one, "61 DISC DETECT" (Disc type check)→"31 PI/FE OFFSET" (Offset automatic adjustment)→"14 FSRV ON/OFF" (Focus servo on)→"16 CLV ON/OFF" (CLV servo on)→"44 ADJ TRK DSP" (E-F balance adjustment)→"15 TSRV ON/OFF" (Tracking servo on)→"17 SSRV ON/OFF" (Sled servo on)→"24 ADJ FCSBIAS" (Focus bias adjustment)→"27 FOCUS AGC" (Focus auto gain adjustment)→"45 TRACKING AGC" (Tracking auto gain adjustment).

Note: 1. On and off are alternately switched in the same command.

- For a stop, select "19 ALL SRV OFF" and press the **AMS** dial.

Set Check



Press the **AMS** dial when No.□□□□□□□□*1 is displayed, and a checking for that display will start or the lower layer will be selected. For the selection on the same layer, rotate the **AMS** dial. It is looped on the same layer, and when "END?" is displayed, press the **AMS** dial to return to the upper layer.

*1 □ denotes a displayed character.

Manual Check Method

In the “12. MANUAL CHK”, individual checks (121. LOAD IN to 12A. LOAD OUT) are possible.

Example: If 124. READ TOC of 12. MANUAL CHECK is to be checked.

Setting Method:

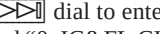
1. After setting the test mode, rotate the  dial to select “92. SET CHECK” and press the  dial to enter.
2. When “SET TEST START” is displayed, rotate the  dial clockwise by 2 clicks to select “1. TOTAL CHECK?” and press the  dial to enter.
3. When “10. TOTAL CHECK” is displayed, rotate the  dial clockwise by 2 clicks to select “12. MANUAL CHK?” and press the  dial to enter.
4. When “120. MANUAL CHK” is displayed, rotate the  dial clockwise by 4 clicks to select “124. READ TOC&PSP?” and press the  dial to enter.
5. A checking will start automatically.

Note: In making a check, the disc must be loaded. Immediately when a check started, the tray is drawn into the set. Also, the tray can be opened/closed even during the set check mode.

6-1. IC AND FLUORESCENT DISPLAY TUBE CHECK (SELF-DIAGNOSIS)

The communication between microcomputer and main ICs (self-diagnosis) and the fluorescent display tube all lit are checked.

Checking Method:

1. After setting the test mode, rotate the  dial to select "92. SET CHECK" and press the  dial to enter.
2. When "SET TEST START" is displayed, rotate the  dial clockwise by 1 click to select "0. IC&FL CHECK?" and press the  dial to enter.
3. A checking will start automatically, and "0. IC&FL CHECK" will be displayed. (Checking time is about 3 seconds)
4. After IC communication check, all segments of fluorescent display tube will be lit. At this time, check visually for a skipped character.
5. At successful completion of check, "0. IC CHECK OK" is displayed. In this case, no error exists in the IC interface. Proceed to 6-2. AUTO CHECK.

Note: The check mentioned above tests the communication from microcomputer to main ICs. Even if the check successfully finished, the IC to be checked is not always normal. Consider it for reference only.

6. In case of an IC communication error, the following display will be given during the checking. Possible causes of error are as listed below.

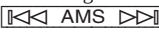
Error display	Causes (typical example)
DVD DEC. ERROR	1. IC701 (SACD decoder) is faulty 2. IC701 pin ⑩ (XRST) does not go "H" • IC901 pin ④④ (XDIS) does not go "H" • IC902 (expander) is faulty 3. 768fs (33.86688 MHz) is not present to IC701 pin ⑩ (XTAL) • IC811 (3-multiplying circuit) is faulty • Clock signal 256fs is not sent from AUDIO board (CN901 pin ⑩) • CN901 pin ⑩ (DFGND) and pin ⑭ (DF3V) are open or shorted • CN901 pin ⑩ (DFGND) and pin ⑭ (DF3V) are open or shorted • CN901 and FFC connection is loose, or FFC is disconnected
DVD DRAM ERR	1. IC706 (D-RAM) is faulty 2. IC701 pin ⑩ (XRST) does not go "H" • IC901 pin ④④ (XDIS) does not go "H" • IC902 (expander) is faulty 3. Faulty communication line between IC701 and IC706 • Data line, address line, WE, etc. 4. D903 (1SS367) is faulty
CD DSP ERROR	1. IC509 (CD DSP) is faulty 2. 768fs (33.86688 MHz) is not present to IC509 pin ⑦ (XTAL) Same as cause 3 of DVD DEC. ERROR 3. IC509 pin ② (XRST) does not go "H" • IC901 pin ④④ (XDIS) does not go "H" • IC902 (expander) is faulty
D/A ERROR	1. IC904 (D/A converter) is faulty 2. Faulty IC703 (jitter amplifier) peripheral circuits 3. IC901 pin ⑥④ (JIT) is faulty
EEPROM ERROR	1. IC903 (EEPROM) is faulty

Error display	Causes (typical example)
PRAWN DRAM ERR *1	1. IC808 (D-RAM) is faulty 2. IC801 (DSD decoder) is faulty 3. 768fs (33.86688 MHz) is not present to IC801 pin ⑭ (MCKI) Same as cause 3 of DVD DEC. ERROR 4. IC801 pin ⑬ (XRST) does not go "H" • IC901 pin ④④ (XDIS) does not go "H" • IC902 (expander) is faulty 5. Faulty communication line between IC801 and IC808 • Data line, address line, WE, etc. 6. D903 (1SS367) is faulty D+3.3V is not present to IC808
RF AMP ERROR	1. IC001 (RF AMP) is faulty 2. Loose connection between CN503 on MAIN board and CN001 on RF board, or FFC disconnection CN503 pin ⑩ (CLK RF), pin ⑪ (DATA RF) and pin ⑫ (SDEN) must be checked

*1 DSD decoder is also checked.

Causes Common to Each IC:

1. Faulty communication line between microcomputer and each IC.
Disconnected patterns, floating series resistors, bridge, etc.
2. Faulty IC supply voltage.
Particularly, check D+3.3V voltage. (D+5V for display microcomputer)
3. Faulty microcomputer communication port to each IC

Note: In case of more than two errors, the error display is switched over one after another, thus making the reading difficult.
In such a case, press again the  dial to make a recheck for error reading.

6-2. AUTO CHECK (AUTOMATIC VARIOUS MEASUREMENTS)

The auto check is performed to check if the set operates stably. Though a checking is made automatically, whether the measured data are within the specification is evaluated by the service person. The auto check results in NG immediately, if the check itself causes an error.

Setting Method of Auto Check Mode:

1. After setting the test mode, rotate the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial to select "92. SET CHECK" and press the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial to enter.
2. When "SET TEST START" is displayed, rotate the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial clockwise by 2 clicks to select "1. TOTAL CHECK?" and press the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial to enter.
3. When "10. TOTAL CHECK" is displayed, rotate the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial clockwise by 1 click to select "11. AUTO CHECK" and press the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial to enter.

CD and SACD (SL) Disc Operation Check

Checking method:

1. Press the OPEN/CLOSE button to open the tray and place the test disc *1.
2. Press the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial, and the following check will be performed automatically.
3. Finally, the test disc will be ejected and the auto check will finish.
4. "AUTO CHECK OK" will be displayed at successful completion of auto check.
5. Recheck is enabled if the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial is pressed in step 4. (Also, use this operation when exchanging the test disc)
6. In case of an error during the checking, the check is interrupted automatically and the error is displayed. (Error display example: "LOAD IN ERROR") After error display, "CONT?STOP (J/S)" is displayed. In this case, if the $\llcorner \llcorner \text{AMS} \gg \gg \lrcorner$ dial is pressed, the check where the error occurred is skipped and you can proceed to the next check. Also, if $\blacksquare$ button is pressed, the check finishes and "AUTO CHECK NG" is displayed when even one NG item exists.

*1 Use PATD-012 or YEDS-18 for CD, and SATD-S4 for SACD (SL). Using another disc will result in a checking failure.

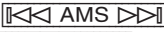
Check Items:

Items	Description	Remarks
LOAD IN TIME (msec)	Time until a disc is chucked from the state where loading tray is out	Loading in switch H→L
SPIN UP TIME (msec)	Time from spindle kick to PLL lock	Lock signal L→H
RF/VC/FE/TE (ORG)	Offset values before RF (PI), VC, FE, TE signal offset adjustment RF (8 bit data in hex notation) VC, FE, TE (9 bit data in hex notation)	At offset 0 RF: A0h VC, FE, TE: 00h
RF/VC/FE/TE (ADJ)	Offset values after RF (PI), VC, FE, TE signal offset adjustment (Less than ORG value if offset correction is normal) RF (8 bit data in hex notation) VC, FE, TE (9 bit data in hex notation)	VC offset is not adjusted (Measurement only) Also, for SACD, the TE offset is not measured and adjusted
PI/TRVS PP (ORG/ADJ)	PI (ORG): PI value at disc type check (decimal data) PI (ADJ): PI value after PI offset adjustment (read value at microcomputer A/D) (decimal data) TRVS PP (ORG): Traverse level before level correction (AGC) (decimal data) TRVS PP (ADJ): Traverse level after level correction (AGC) (decimal data)	PI level conversion Read value × 12.9mV Traverse level conversion Read value × 12.9mV 12.9mV=3.3V ÷ 256 (8 bit)
PIOR/CCR/TRCR	PIOR: Set value of PI offset coarse adjusting register CCR: Set value of FE offset coarse adjusting register TRCR: Set value of TE offset coarse adjusting register	Registers in RF amplifier
FOCUS/TRK GAIN	Auto gain adjusted values of focus and tracking servos (8 bit data in hex notation)	Reference: 30h
FBIAS/TRVSC/TRCR2/CFR	FBIAS: Focus bias set value (9 bit data in hex notation) TRVSC: Traverse center value (9 bit data in hex notation) TRCR2: Set value of E-F balance coarse adjusting register CFR: Set value of traverse level adjusting register	TRCR2 adjusts the E-F gain balance and used for CD only (Fixed to 06 for SACD) TRCR2 and CFR are registers in RF amplifier
MIN JITTER AT F.BIAS	Minimum jitter value in focus bias adjustment (CD only)	Correlative with RF jitter
READ TOC TIME (msec)	Time required for TOC reading	
PSP AMPLITUDE		SACD only
1/3 SEEK TIME F) AVE/MIN/MAX (msec): R) AVE/MIN/MAX (msec):	Seek time between 1/3LBA and 2/3LBA of the disc 1/3LBA→2/3LBA average/minimum/maximum 2/3LBA→1/3LBA average/minimum/maximum	LBA: Absolute address
1/MAX SEEK TIME F) AVE/MIN/MAX (msec): R) AVE/MIN/MAX (msec):	Seek time between most inward track (0LBA) and most outward track max LBA most inward→most outward average/minimum/maximum most outwar→most inward average/minimum/maximum	
ERROR RATE	Error rate measurement For CD: Average value/Maximum value of C1 and C2 For SACD: Average value/Maximum value of PO, PI1 and PI2	Measure for 10 sec at track No.5 For the SACD, 160 block data except the data under tracking jump

Items	Description	Remarks
HENSIN	Eccentricity measurement Eccentricity (actual eccentric amount) of disc, disc pulley total	For the CD only are measured • Read by dividing by 10 • 0 may be displayed if eccentricity is small (10um or less) (Due to measurement reason)
SPIN DOWN TIME (msec)	Time from spindle brake application to rotation stop	For CD: Over 64 monitoring For SCD: VCO1D monitoring
LOAD OUT TIME (msec)	Time until loading table comes out from the state where a disc is in chuck	Loading out switch H→L

Measured Data Reading Method:

To judge the check result, the measured data must be read.

- When "AUTO CHECK OK" is displayed, rotate the  dial clockwise by 2 clicks.
- When "13. DISP RSLT?" is displayed, press the  dial to enter.
- "PLEASE WAIT" will be displayed and in several seconds, "13. DISP RESULT" will be displayed.
- Rotate the  dial clockwise by 1 click, and the "LOAD IN" will be displayed.
- Press the  dial to enter. The LOAD IN TIME measured value will be displayed.
- Compare the displayed value with the following specified value.
- Hence, repeat step 4 to 6 (display is variable) and read the measured data respectively.
- Compare the measured data with the specified value to check for NG item.

Note: Blank display of measured value means that an error occurred during the checking or no measurement was taken place.

Specified Value:

(1) SACD (Use the test disc SATD-S4)

Note: Measured values in check items are typical ones.

Check items	Specified value
LOAD IN TIME (msec) : 2126	3000 msec or less
SPIN UP TIME (msec) : 1652	2000 msec or less
RF/VC/FE/TE AVR (ORG) : 98, C, 1DE, 0	RF: 80-9B, VC: 1F1-10, FE: 1d8-42, TE: 1BB-5C
RF/VC/FE/TE AVR (ADJ) : 9E, C, 4, 0	RF: 98-A5, VC : 1F1-10, FE: 1F1-10, TE: 1F1-10
PI/TRVS PP (ORG/ADJ) : 81, 131, 78, 105	PI ORG: 70-8A, PI ADJ: 122-135
PIOR/CCR/TRCR : 1A, 31, 1F	No specified value given
FOCUS/TRK GAIN : 2E, 24	FOCUS: 1C-45, TRK: 1C-45
FBIAS/TRVSC/TRCR2/CFR : 2,13, 6, 60	F.BIAS: 1D0-4F, TRVSC: 1D0-35 TRCR2, CFR: no specified value given
READ TOC TIME (msec) : 1283	2500 msec or less
PSP AMPLITUDE : 1666	1200 msec or above
1/3 SEEK TIME	
F) AVE/MIN/MAX (msec) : 967, 928, 990	AVE: 1200 msec or less, MAX: 1500 msec or less
R) AVE/MIN/MAX (msec) : 974, 933, 993	AVE: 1200 msec or less, MAX: 1500 msec or less
1/MAX SEEK TIME	
F) AVE/MIN/MAX (msec) : 1958, 1938, 1968	AVE: 2500 msec or less, MAX: 3000 msec or less
R) AVE/MIN/MAX (msec) : 1915, 1909, 1935	AVE: 2500 msec or less, MAX: 3000 msec or less
ERROR RATE	
PO MAX/AVE FRAME : 0, 0	No specified value given
PO MAX/AVE NUM : 160, 3	MAX: 1000 msec or less, AVE: 200 msec or less
PI1 MAX/AVE FRAME : 0, 0	No specified value given
PI1 MAX/AVE NUM : 242, 17	MAX: 1000 msec or less, AVE: 200 msec or less
PI2 MAX/AVE FRAME : 0, 0	No specified value given
PI2 MAX/AVE NUM : 128, 2	MAX: 1000 msec or less, AVE: 200 msec or less
SPIN DOWN TIME (msec) : 1342	2000 msec or less
LOAD OUT TIME (msec) : 1983	3000 msec or less

(2) CD (Use the test disc PATD-012 or YEDS-18)

Note: Measured values in check items are typical ones.

Check items	Specified value
LOAD IN TIME (msec) : 2141	3000 msec or less
SPIN UP TIME (msec) : 1372	1700 msec or less
RF/VC/FE/TE AVRG (ORG) : 98, C, 1D6, 4	RF: 80-9B, VC: 1F1-10, FE: 1d8-42, TE: 1BB-5C
RF/VC/FE/TE AVRG (ADJ) : 9F, A, 1FF, 4	RF: 98-A5, VC: 1F1-10, FE: 1F1-10, TE: 1F1-10
PI/TRVS PP(ORG/ADJ) : 81, 131, 95, 92	PI ORG: 70-8A, PI ADJ: 122-135
PIOR/CCR/TRCR : 1A, 11, 1F	No specified value given
FOCUS/TRK GAIN : 2E, 2D	FOCUS: 1C-45, TRK: 1C-45
FBIAS/TRVSC/TRCR2/CFR : 0, 10, 5, A0	F.BIAS: 1E0-30, TRVSC: 1F0-10 TRCR2, CFR: no specified value given
MIN JITTER AT F.BIAS : 94	180 or less
READ TOC TIME (msec) : 1410	2500 msec or less
1/3 SEEK TIME	
F) AVE/MIN/MAX (msec) : 824, 804, 850	AVE: 1100 msec or less, MAX: 1400 msec or less
R) AVE/MIN/MAX (msec) : 850, 833, 860	AVE: 1100 msec or less, MAX: 1400 msec or less
1/MAX SEEK TIME	
F) AVE/MIN/MAX (msec) : 2086, 1999, 2151	AVE: 2400 msec or less, MAX: 2800 msec or less
R) AVE/MIN/MAX (msec) : 1805, 1793, 1835	AVE: 2400 msec or less, MAX: 2800 msec or less
ERROR RATE	
C1 MAX/AVE : 3, 0	C1 MAX: 30 or less
C2 MAX/AVE : 0, 0	C2 MAX: 0
HENSHIN RYOU (1/10um) : 89	1000 or less (100 um or less)
SPIN DOWN TIME (msec) : 1272	1700 msec or less
LOAD OUT TIME (msec) : 2013	3000 msec or less

Note: RF, VC, FE, TE, FBIAS and TRVSC measured values are hexadecimal data with positive and negative signs. When comparing the measured value with the specified value, refer to the following.

Hexadecimal (hex) display 9 bit data

FF	01111111 (+255)
FE	01111110 (+254)
	⋮
01	00000001 (+1)
00	00000000 (0)
1FF	11111111 (-1)
	⋮
101	10000001 (-255)
100	10000000 (-256)

MAX

(+) Side

0

(-) Side

MIN

Hexadecimal (hex) display 8 bit data

7F	01111111 (+127)
7E	01111110 (+126)
	⋮
02	00000010 (+2)
01	00000001 (+1)
00	00000000 (0)
FF	11111111 (-1)
FE	11111110 (-2)
	⋮
81	10000001 (-127)
80	10000000 (-128)

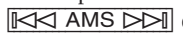
6-3. SACD (DL) DISC OPERATION CHECK

(• Perform as necessary)

The stability of the set can be checked by repeating the combined operation of focus jump (layer 0→1, layer 1→0) and access to the most inward track↔most outward track by the set number of times or until an error occurs using the dual layer HD disc, DL disc.

A set of operation including an access to the layer 0 (most inward track)→layer 0 (most outward track)→focus jump (layer 0→1)→layer 1 (most outward track)→layer 1 (most inward track)→focus jump (layer 1→0) is carried out repeatedly by the set number of times.

Checking Method:

1. After setting the test mode, rotate the  dial to select “92. SET CHECK” and press the  dial to enter.
2. When “SET TEST START” is displayed, rotate the  dial clockwise by 3 clicks to display “2. F.JMP CHECK?”.
3. Press the **OPEN/CLOSE** button to open the tray, and place the DL disc.
4. Press the  dial to load the tray into the set.
5. “NOW SET UP” will be displayed and the DL disc setup will start. (It takes about ten and several seconds to set up the disc as two layers of layer 0 and layer 1 are adjusted)
6. At the completion of setup, “F.JUMP TIMES” will be displayed.
7. Rotate the  dial clockwise by 5 clicks to display “5”. (If 5 sets of operation is executed *1)
8. Press the  dial, and the check will start.

9. Immediately when the check finished, “UP MAX □□□□”→“UP AVE □□□□”→“DW MAX □□□□”→“DW AVE □□□□”→“F.JMP OK [TIMES]” will be displayed repeatedly. (□ denotes the measured value in msec)

UP MAX: Max time required for layer 0 (most inward track)→layer 0 (most outward track)→focus jump (layer 0→1)

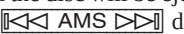
UP AVE: Average time required for layer 0 (most inward track)→layer 0 (most outward track)→focus jump (layer 0→1)

DW MAX: Max time required for layer 1 (most outward track)→layer 1 (most inward track)→focus jump (layer 1→0)

DW AVE: Average time required for layer 1 (most outward track)→layer 1 (most inward track)→focus jump (layer 1→0)

Specified value: 7000 msec or less (if no error occurred)

If an error occurred due to defocusing during the checking, refer to the following error list. (69 page)

10. Press the **OPEN/CLOSE** button, and the disc will be ejected and the check will finish. Also, if the  dial is pressed in step 9, “2. F.JUMP CHK OK” will be displayed. Then, if the  dial is again pressed, “2. F.JMP CHECK” will be displayed instantaneously and a recheck is enabled from the step 5 in the same manner.

*1 Setting arbitrary number of times instead of 5 allows the checking to be repeated by the set number of times. Also, setting 0 (zero) allows the aging check to be repeated until an error occurs.

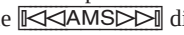
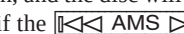
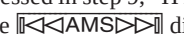
6-4. HYBRID DISC OPERATION CHECK

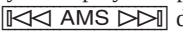
(• Perform as necessary)

This test checks the auto adjustment time required when the disc is switched between HD (SACD) layer and CD layer. This test is conducted to check the stability in switching from CD to SACD, or SACD to CD in the HYBRID disc.

A set of operation including CD layer stop state→HD layer auto adjustment→HD layer TOC reading→HD layer stop state→CD layer auto adjustment→CD layer TOC reading→CD layer stop state is repeated by the set number of times.

Checking Method:

1. After setting the test mode, rotate the  dial to select “92. SET CHECK” and press the  dial to enter.
2. When “SET TEST START” is displayed, rotate the  dial clockwise by 4 clicks to display “3. HYB CHECK?”.
3. Press the **OPEN/CLOSE** button to open the tray, and place the HYBRID disc.
4. Press the  dial to load the tray into the set.
5. “NOW SET UP” will be displayed and the HYBRID disc setup will start. (It takes about several seconds to set up the disc *1)
6. At the completion of setup, “CHANGE TIMES?” will be displayed.
7. Rotate the  dial clockwise by 5 clicks to display “5” (if 5 sets of operation is executed *2)
8. Press the  dial, and “START” will be displayed and the check will start. During the check, the following will be displayed.
“CD→HD” display: Time from switching from CD layer to HD layer up to start of play is measured.
“HD→CD” display: Time from switching from HD layer to CD layer up to start of play is measured.
9. Immediately when the check finished, “CD MAX □□□□”→“CD AVE □□□□”→“HD MAX □□□□”→“HD AVE □□□□” will be displayed repeatedly. (□ denotes the measured value in msec)
Specified value: 10000 msec or less (if no error occurred)
If an error occurred due to defocusing during the checking, refer to the following error list. (69 page)
10. Press the **OPEN/CLOSE** button, and the disc will be ejected and the check will finish. Also, if the  dial is pressed in step 9, “HYB CHK OK” will be displayed. Then, if the  dial is again pressed, “HYBRID CHECK” will be displayed instantaneously and a recheck is enabled from the step 5 in the same manner.

*1 “NOW SET UP” display may continue for several minutes and an error may be displayed depending on the discs. In this case, press the  dial again.

*2 Setting arbitrary number of times instead of 5 allows the checking to be repeated by the set number of times. Also, setting 0 (zero) allows the aging check to be repeated until an error occurs

6-5. AGING MODE

(• Perform as necessary)

The aging can be performed to the set in the test mode. The aging can be continued by the set number of times or until an error occurs.

In the aging, the following operations are repeated.

Load in→Disc detect→Servo on→Auto adjustment→TOC reading→Play of first track for 5 second→Play of last track for 5 second→Play of first track for 5 second→Load out

Setting Method:

1. After setting the test mode, rotate the **AMS** dial to select "94. SET AGING" and press the **AMS** dial to enter.
2. When "AGING TIMES" is displayed, rotate the **AMS** dial to set the number of aging times. (For the number of times, every 10 times can be set. Setting 0 (zero) eliminates the count limitation where the aging is repeated until an error occurs)
Note: Do not perform unmanned overnight aging..
3. Press the **AMS** dial, and "AGING START" will be displayed instantaneously, then "DISC IN & JOG ON" will be displayed and the tray will come out automatically.

4. Place a disc (CD or SACD SL disc) on the tray, and press the **AMS** dial to start the aging.
5. At the completion of aging by the set number of times, the tray will come out automatically and the check will stop. Typical time required for aging About 1 hour/100 times "AGING SUCCESS!" will be displayed if no error occurred in the aging, or the error will be displayed if an error occurred. (Refer to the following error list)

6-6. SHIPPING MODE

The repaired set must be initialized, and for this purpose the set should be set to the shipping mode.

Setting Method:

1. After setting the test mode, rotate the **AMS** dial to select "8d Set Up Init" and press the **AMS** dial to enter.
2. "8D 00000000 00" will be displayed, and if the scroll starts in the left direction, the set initialization has completed
3. Press the **POWER** button to turn the power off.

Note: Take care not to leave the test disc in the set.

Error List

An error occurring during the check in the aging mode of the test mode is displayed automatically (scroll display) immediately when the error occurred.

Error display is as follows.

Error name, Disc type, IN SW (Sled in switch state), FOK (FOK signal state), LOCK (LOCK signal state), From (Displayed if effective), To (Displayed if effective), Aging times (Displayed in aging mode only)

Display example

ACCESS MOVE ERROR : SACDSL : IN SW 1 FOK 0 LOCK 0 : FROM 205663 : TO 2461601 : TIMES 5

(Error name) (Disc type) (Sled in switch, FOK, LOCK signal state) (Relative address) (Relative address)(Aging times)

Display Items List:

Display items	Description	Remarks
Error name	→Refer to the error display list	
IN SW	Sled in switch state when an error occurred 0: switch off Not limit in 1: switch on Limit in (Optical pick-up is at most inward track)	
FOK	FOK signal state when an error occurred FOK signal Is focus on? 0: FOK L (Focus off), 1: FOK H (Focus on)	
LOCK	LOCK signal state when an error occurred. LOCK signal Is PLL lock? 0: LOCK L Not lock, 1: LOCK H Lock	
From	Displayed if effective in the error item →Refer to the error display list	Disc PSN (relative address) is displayed in case of access error
To	Displayed if effective in the error item →Refer to the error display list	Disc PSN (relative address) is displayed in case of access error

Error Display List:

Error display	Error description	Main causes of errors
LOAD IN ERROR	Tray loading in time out	CDM mechanism, loading in switch or loading driver IC is faulty
LOAD OUT ERROR	Tray loading out time out	CDM mechanism, loading out switch or loading driver IC is faulty
DISC DETECT ERROR	Disc type error MIRR measured time is displayed in From:	Optical pick-up, RF amplifier or CD DSP IC is faulty
OFFSET ADJUST ERROR	Offset adjustment error	Optical pick-up, RF amplifier or CD DSP IC is faulty
FCS SRV ON ERROR	Focus servo error An error code is displayed in From:	From:1 means focus search failed From:2 means defocusing
CLV SRV ON ERROR	CLV servo error	Defocusing
E-F BALANCE ERROR	E-F balance adjustment error	Defocusing
TRK SRV ON ERROR	Tracking servo error	Tracking servo on time out Optical pick-up, RF amplifier or CD DSP IC is faulty
SLD SRV ON ERROR	Sled servo error	Sled servo on time out
FOCUS BIAS ERROR	Focus bias adjustment failed An error code is displayed in From:	Defocusing during adjustment Description of display An error code is displayed in From From:1 means retry failed 3 times From:2 means abnormal value Optical pick-up, RF amplifier or CD DSP IC is faulty
FCS AGC ERROR	Error at focus gain automatic adjustment	Defocusing during adjustment Optical pick-up, RF amplifier or CD DSP IC is faulty
TRK AGC ERROR	Error at tracking gain automatic adjustment	Defocusing during adjustment Optical pick-up, RF amplifier or CD DSP IC is faulty
ACCESS 1TJ ERROR	Access Error at one-track jump Effective addresses (PSN) are displayed in From: and To:	Access failed Defocusing at access, etc
ACCESS FINE ERROR	Access Error at fine search Effective addresses (PSN) are displayed in From: and To:	Access failed Defocusing at access, etc
ACCESS MOVE ERROR	Access Error at M-track MOVE Effective addresses (PSN) are displayed in From: and To:	Access failed Defocusing at access, etc
WHILE PLAYING ERROR	Error during disc playing	Defocusing Focusing retry failed
FCS JUMP ERROR	Time out error at focus jump	Defocusing Focusing retry failed

System errors are as follows.

Note: This error is not saved in the set.

Display	Description
Toc Error *	Error during the time from auto adjustment to TOC reading, Different type of disc (Such as a DVD disc), Disc is dirty
Toc Error ****	Illegal SACD (Such as a pirated version)
Read Error	Music data read error (Error during disc playing)

6-7. WAVEFORMS CHECK

This set performs automatic adjustment for each disc, and therefore the set need not be adjusted when parts are replaced, but it requires checking following the description in this section, 6-1. IC AND FLUORESCENT DISPLAY TUBE CHECK and 6-2. AUTO CHECK.

For the check, the test mode is used. Wrong setting causes a trouble, thus requiring extreme care.

BU Electrical Adjustment Mode

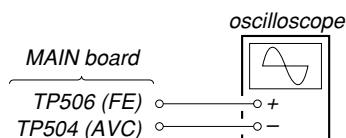
The BU electrical adjustment mode is used to check the S curve waveform, traverse waveform and RF waveform. After a disc is placed on the tray, each time the **AMS** dial is pressed, the check mode is switched in order for S curve waveform→traverse waveform→RF waveform.

Setting Method:

After setting the test mode, rotate the **AMS** dial to select "9C BU DENCHO" and press the **AMS** dial to enter. "BU MEASURE" will be displayed if the BU electrical adjustment mode becomes active.

S Curve Check

Connection:



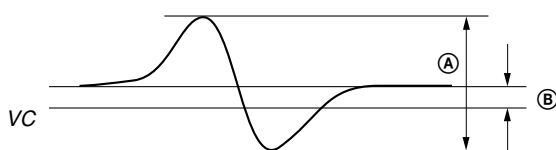
Checking Method:

- After setting the BU electrical adjustment, place the test disc (PATD-012 or SATD-S4) on the tray and close the tray, then press the **AMS** dial.
- At the completion of disc type check, "CD DETECT" will be displayed (for PATD-012 or YEDS-18).
Note: For the SATD-S4, "SACD DETECT" is displayed.
- Press again the **AMS** dial, and the S curve waveform check mode will become active and "S-J1 MODE" will be displayed.
- Connect an oscilloscope to the TP506 (FE) and TP504 (AVC) on the MAIN board.
- Check that the level **A** and **B** of waveform on the oscilloscope satisfy the specification.

Specified Value:

Disc	A	B
SATD-04	0.7 to 1.7 Vp-p	- 0.1 to +0.1V
PATD-012 or		
YEDS-18		

S curve waveform

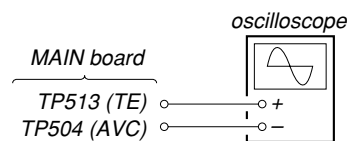


Note: For easier observation of this waveform, extend the sweep time and raise the brightness.

Checking and Connecting Location : See page 73.

Traverse Check

Connection:



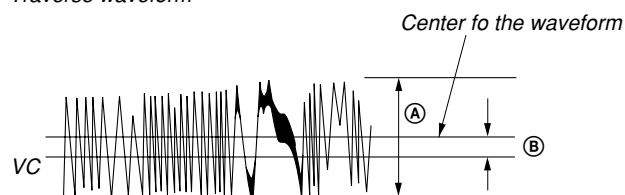
Checking Method:

- Under the condition of S curve waveform check mode in step 5, press the **AMS** dial.
- After "WAIT" is displayed, the traverse waveform check mode will become active and "TRAVERSE MODE" will be displayed.
- Connect an oscilloscope to the TP513 (TE) and TP504 (AVC) on the MAIN board.
- Check that the level **A** and **B** of waveform on the oscilloscope satisfy the specification.

Specified Value:

Disc	A	B
SATD-04	0.9 to 1.5 Vp-p	- 0.1 to +0.1V
PATD-012 or		
YEDS-18		

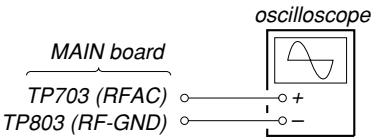
Traverse waveform



Checking and Connecting Location : See page 73.

RF Level Check

Connection:



Checking Method:

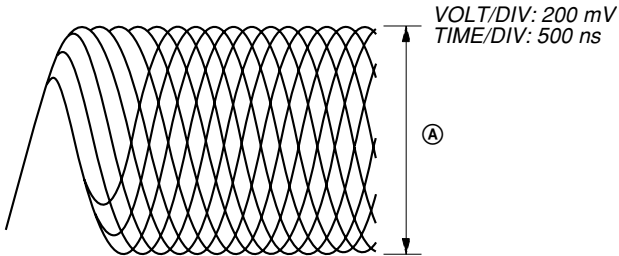
- Under the condition of traverse waveform check mode in step 4, press the **◀◀AMS▶▶** dial.
- Connect an oscilloscope to the TP703 (RFAC) and TP803 (RF-GND) on the MAIN board.
- After “WAIT” is displayed, the RF waveform check mode will become active and “PLAY 5th” will be displayed, and the 5th music on the disc will be played.
- Check that the RF waveform is clear and the level satisfies the specification.
- Press the **◀◀AMS▶▶** dial, and “GAISHU” will be displayed and the outward track of the disc will be played.
- Check that the RF waveform is clear and the level satisfies the specification.
- Press the **◀◀AMS▶▶** dial, and “NAISHU” will be displayed and the inward track of the disc will be played.
- Check that the RF waveform is clear and the level satisfies the specification.
- After checking, press the **◀◀AMS▶▶** dial, and the test is over when “BU MEASURE” is displayed.
- Press the **OPEN/CLOSE** button to open the tray, and remove the test disc.
- Using each type of disc, repeat from step 1 of S curve waveform check up to step 10 of RF level check.
- When the check is over, press the **POWER** button to turn the power off.

Note: Take care not to leave the test disc in the set.

Specified Value:

Disc	Ⓐ
SATD-S4	0.9 to 1.5 Vp-p
PATD-012 or	
YEDS-18	

RF signal waveform

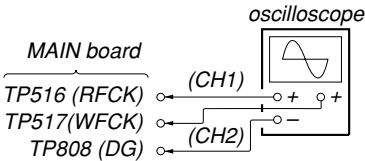


Note: Clear RF waveform refers to the waveform where ◇ shapes should be distinctively observed in the center.

Checking and Connecting Location : See page 73.

CLV Jitter Check

Connection:



Checking Method:

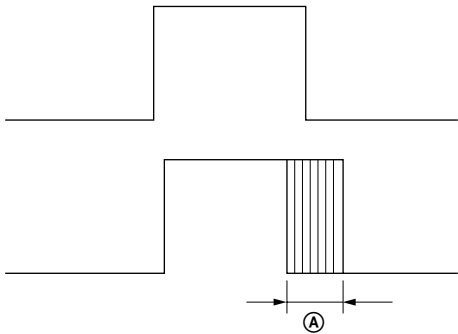
- Set the test mode.
- Connect an oscilloscope to the TP516 (RFCK) (CH1), TP517 (WFCK) (CH2) and TP808 (DG) (GND) on the MAIN board.
- Place the test disc PATD-012 or YEDS-18 on the tray, and close the tray.
- Rotate the **◀◀AMS▶▶** dial to select “61 DISC DETECT”, and press the **◀◀AMS▶▶** dial to enter. Then, the disc type will be judged.
- Check that the disc type has been judged.
(For the PATD-012, “DSKMOD CD” will be displayed. Refer to the test mode, DISC DETECT command (page 61))
- Rotate the **◀◀AMS▶▶** dial to select “86 ALL SRV ON”, and press the **◀◀AMS▶▶** dial. Then, the disc will rotate, automatic adjustment will be carried out, and all servos will be turned on.
- Rotate the **◀◀AMS▶▶** dial to select “07 DSP MON3”, and press the **◀◀AMS▶▶** dial to enter.
- Check that the value Ⓐ of waveform on the oscilloscope satisfies the specification.
- Rotate the **◀◀AMS▶▶** dial to select “19 ALL SRV OFF”, and press the **◀◀AMS▶▶** dial. Then, all servos will be turned off and the disc rotation will stop.
- Press the **OPEN/CLOSE** button to open the tray, and remove the test disc.
- Press the **POWER** button to turn the power off.

Note: Take care not to leave the test disc in the set.

Specified Value:

Disc	Ⓐ
PATD-012 or YEDS-18	50 μsec or less

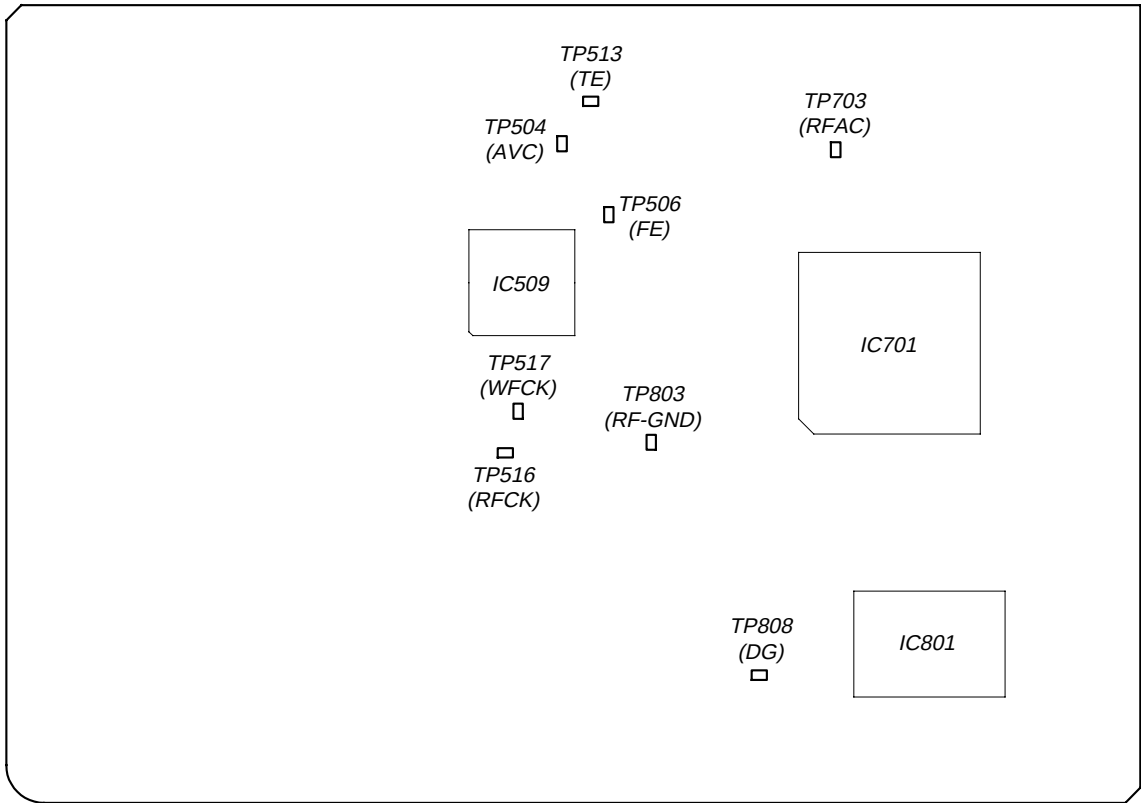
CLV jitter waveform



Checking and Connecting Location : See page 73.

Checking and Connecting Location:

– MAIN Board (Component Side) –



SECTION 7

EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

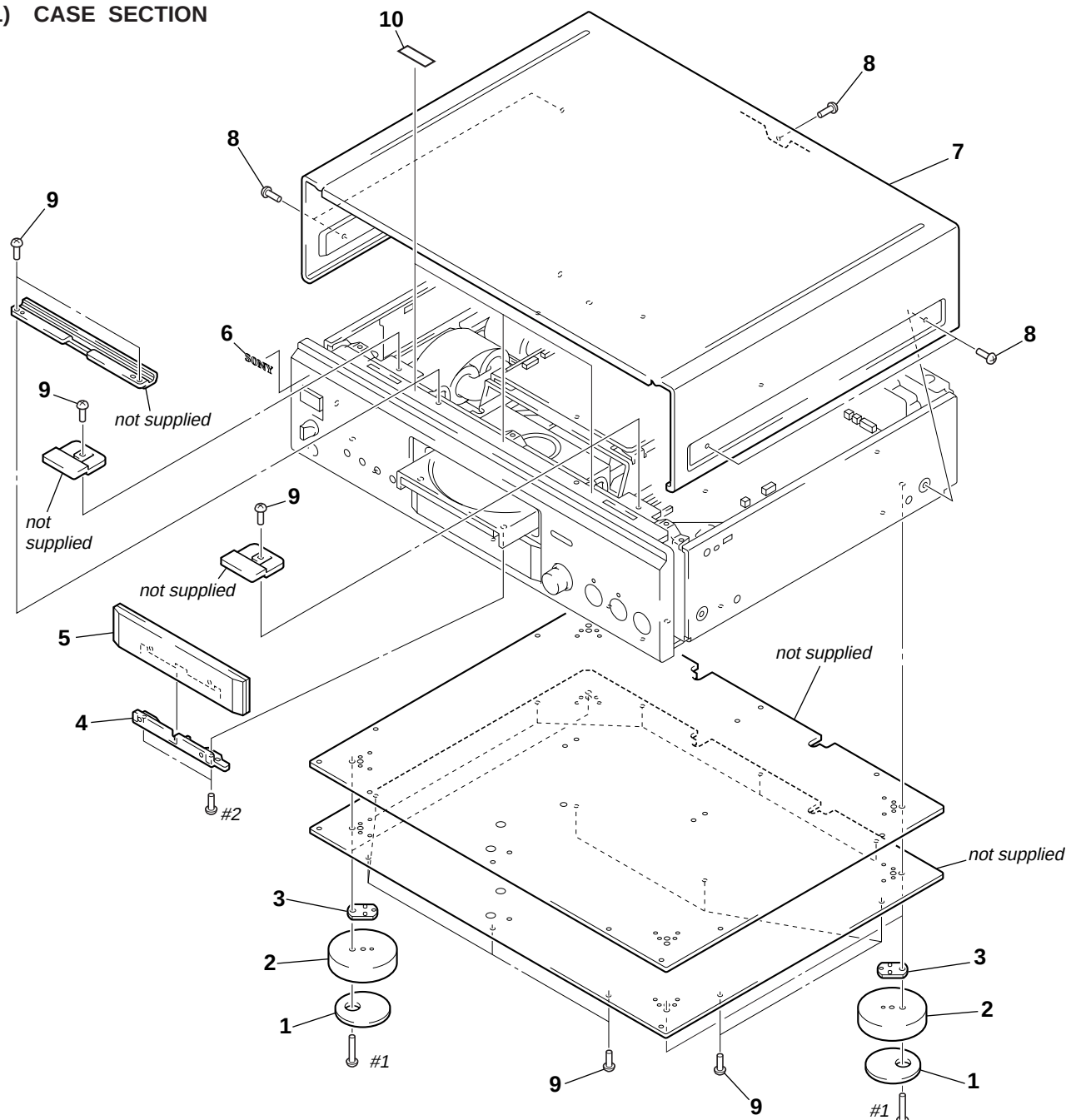
↑
Parts Color

↑
Cabinet's Color

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

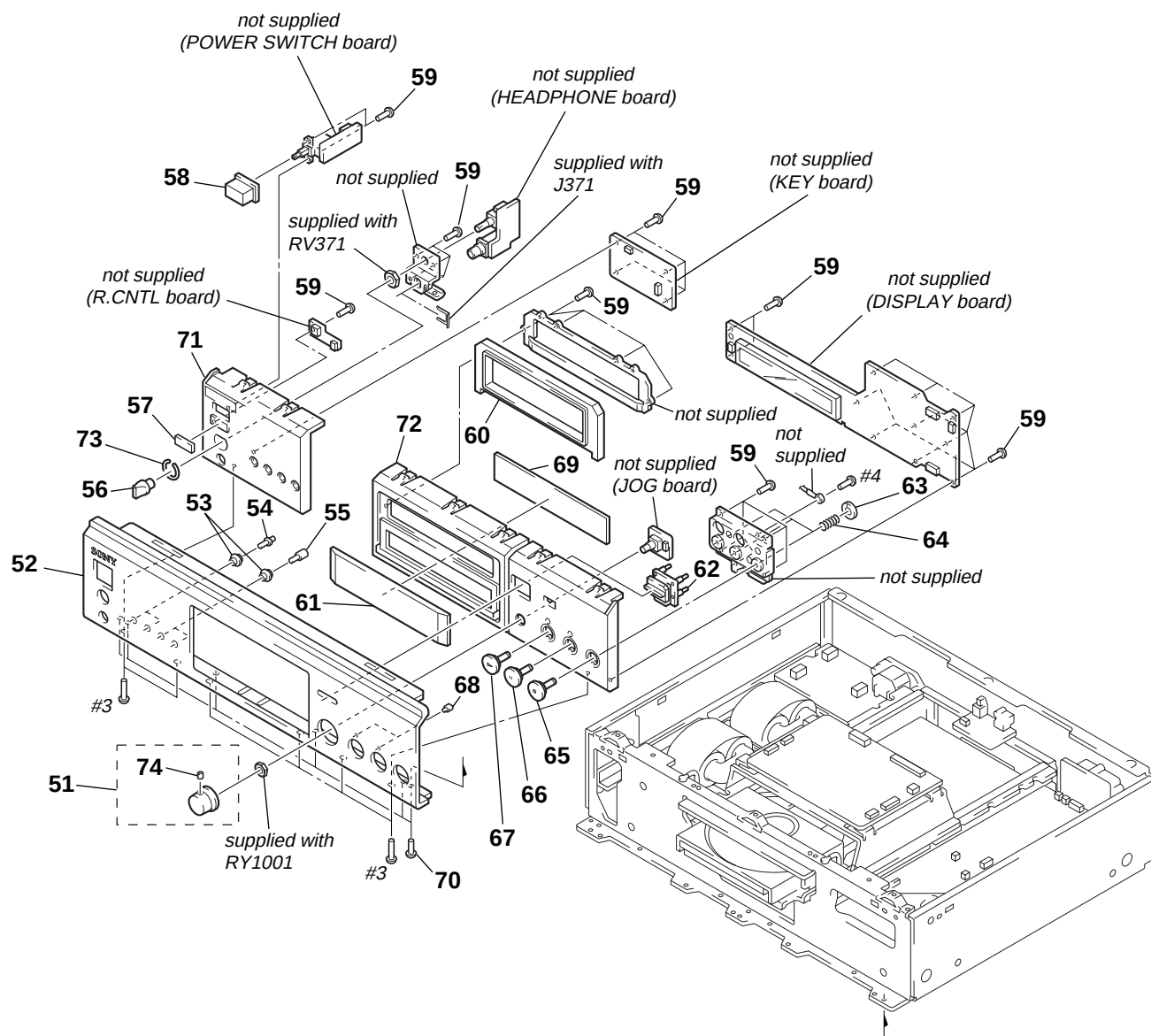
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(1) CASE SECTION



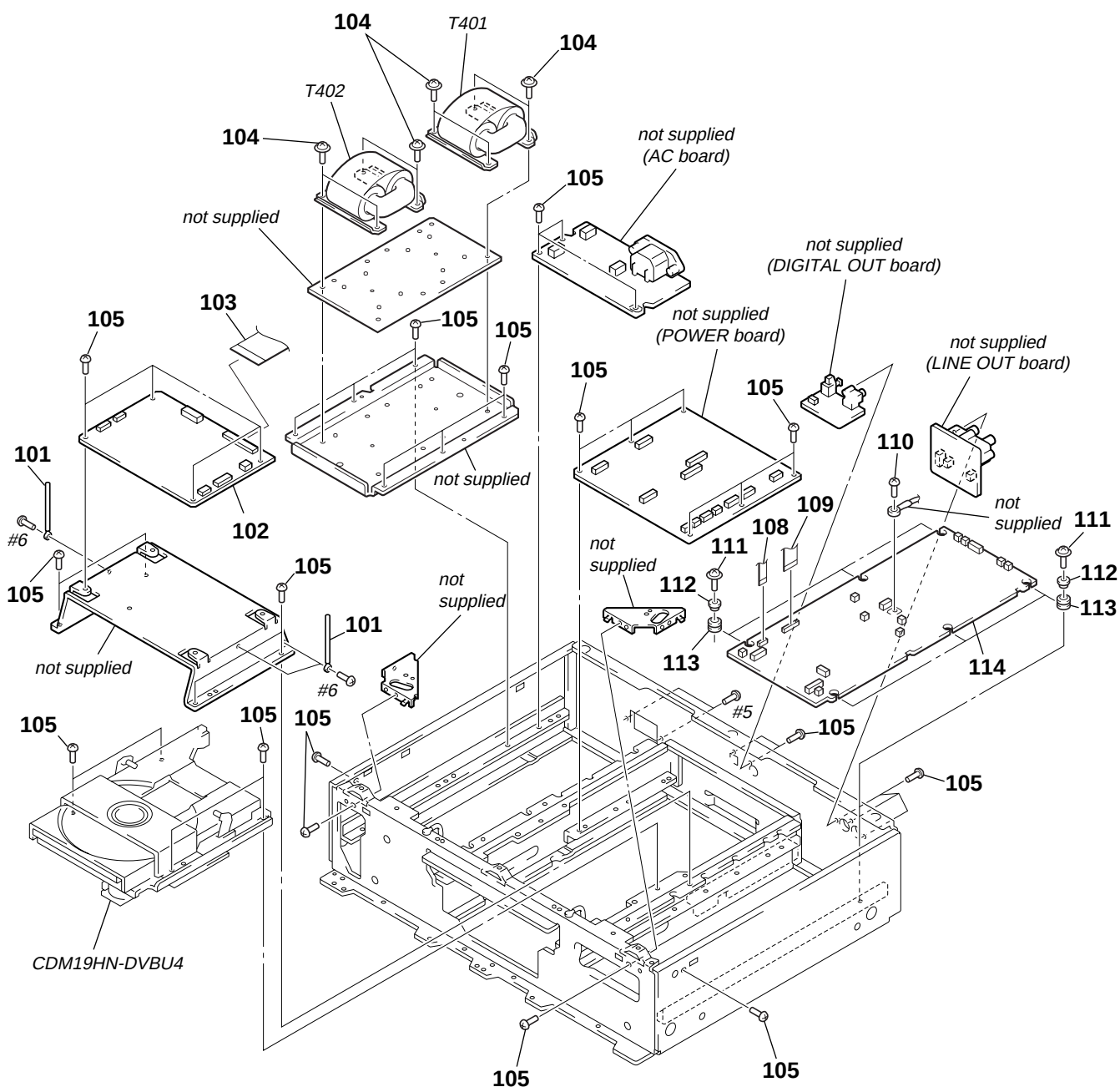
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-970-124-11	CUSHION (F50180S)		7	4-220-301-01	CASE (GOLD)	
2	4-970-487-01	FOOT (F50180S)		7	4-220-301-11	CASE (BLACK)	
3	4-970-488-01	SPACER (F50180S)		8	4-227-843-01	SCREW (TP), FLAT HEAD (BLACK)	
4	4-230-613-01	BRACKET (LOADING PANEL)		8	4-227-843-11	SCREW (TP), FLAT HEAD (SILVER)...(GOLD)	
5	X-4953-186-1	PANEL ASSY, LOADING (GOLD)		9	4-929-074-01	SCREW (3X8)	
5	X-4953-187-1	PANEL ASSY, LOADING (BLACK)		10	4-615-354-01	SPACER	
6	4-942-568-41	EMBLEM (NO.5), SONY (BLACK)					

(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-230-637-01	KNOB (AMS) (GOLD)		63	4-862-338-00	RING, STOPPER	
51	4-230-637-11	KNOB (AMS) (BLACK)		64	4-230-644-01	SPRING (BUTTON PLAY)	
52	4-230-614-01	PANEL, FRONT (GOLD)		65	X-4953-211-1	BUTTON (STOP) ASSY (■) (GOLD)	
52	4-230-614-11	PANEL, FRONT (BLACK)		65	X-4953-212-1	BUTTON (STOP) ASSY (■) (BLACK)	
53	4-220-711-01	INDICATOR (FILTER)		66	X-4953-209-1	BUTTON (PAUSE) ASSY (■) (GOLD)	
54	4-220-317-01	BUTTON (FILTER)		66	X-4953-210-1	BUTTON (PAUSE) ASSY (■) (BLACK)	
55	4-230-635-01	BUTTON (PLAY MODE)		67	X-4953-183-1	BUTTON (PLAY) ASSY (▶) (GOLD)	
56	4-221-262-01	KNOB (VOL) (GOLD)		67	X-4953-184-1	BUTTON (PLAY) ASSY (▶) (BLACK)	
56	4-221-262-11	KNOB (VOL) (BLACK)		68	4-230-638-01	INDICATOR (BUTTON PLAY)	
57	4-230-636-01	PLATE (REMOTE), INDICATION (GOLD)		69	4-230-643-01	FILTER (DISPLAY)	
57	4-230-636-11	PLATE (REMOTE), INDICATION (BLACK)		70	4-929-074-01	SCREW (3X8)	
58	4-923-520-51	KNOB, POWER (BLACK)		71	4-230-627-01	BASE (L), PANEL (GOLD)	
58	4-923-520-61	KNOB, POWER (GOLD)		71	4-230-627-11	BASE (L), PANEL (BLACK)	
59	4-951-620-01	SCREW (2.6X8), +BVTP		72	4-230-628-01	BASE (R), PANEL (GOLD)	
60	4-230-641-01	PACKING (LOADING)		72	4-230-628-11	BASE (R), PANEL (BLACK)	
61	4-230-631-01	PLATE, INDICATION (GOLD)		73	3-354-981-01	SPRING (SUS), RING	
61	4-230-631-11	PLATE, INDICATION (BLACK)		74	3-701-506-01	SET SCREW, DOUBLE POINT 3X4	
62	X-4953-185-1	BUTTON (OPN/CLS) ASSY					

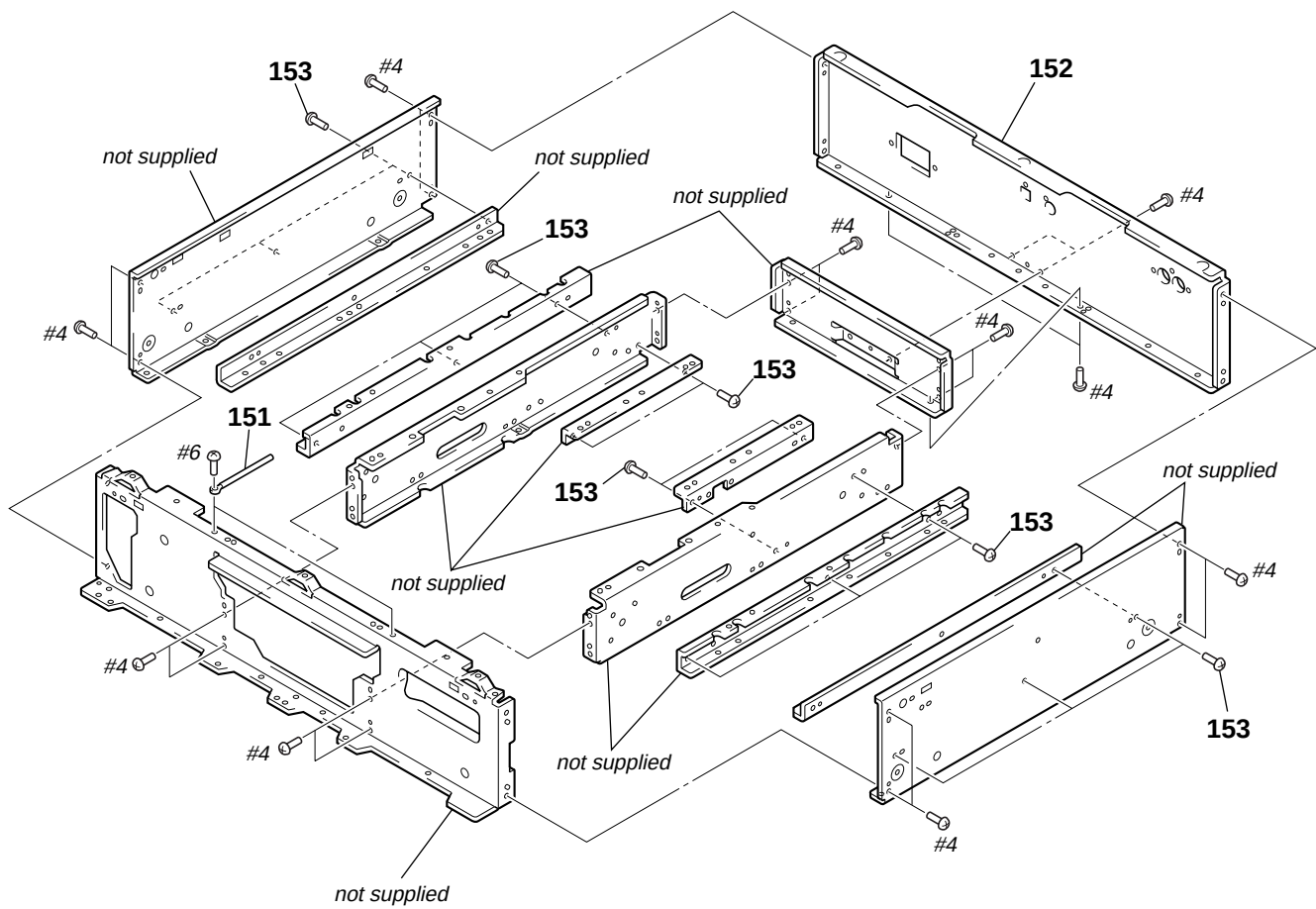
(3) MAIN BOARD SECTION



The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

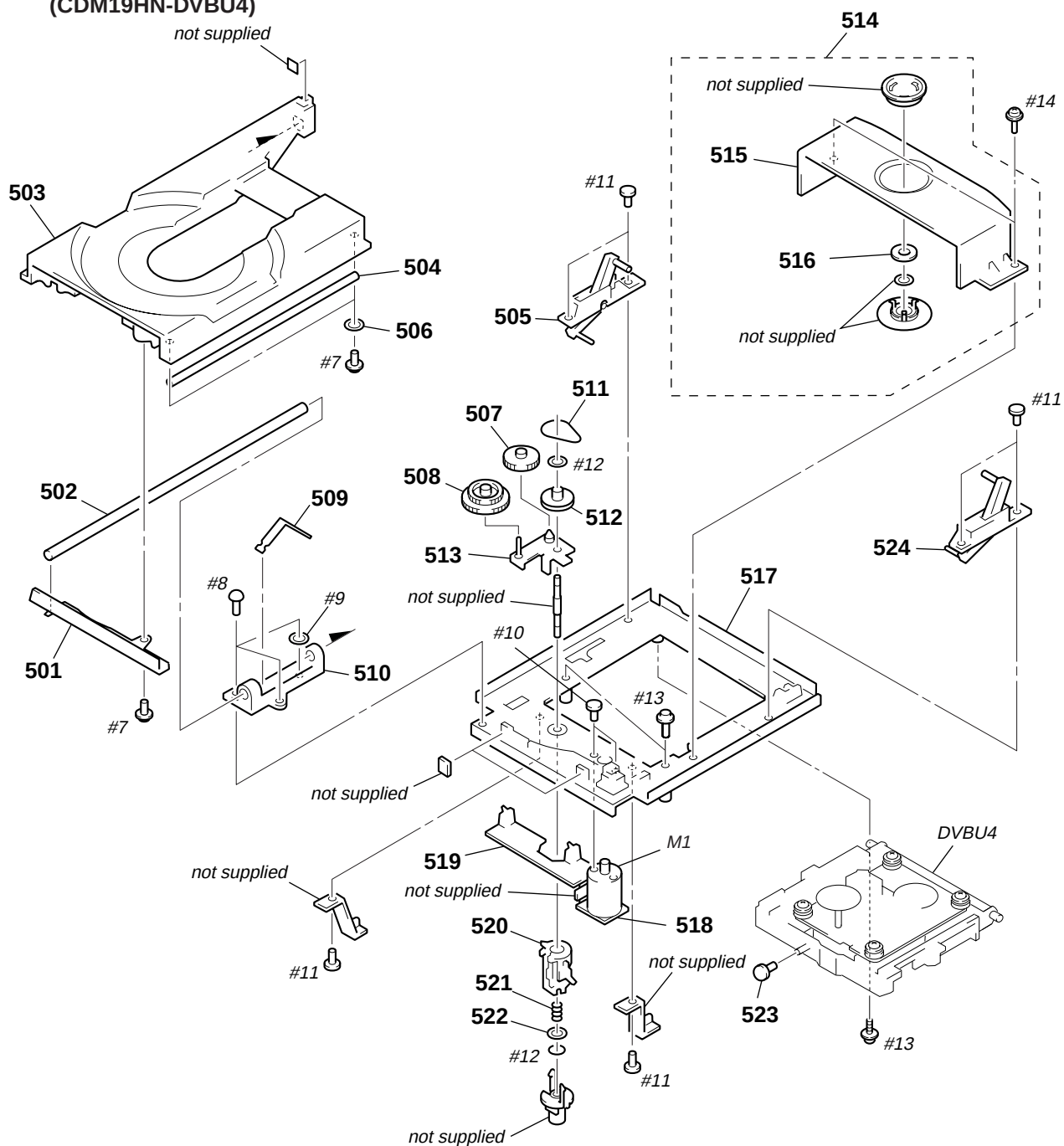
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-701-822-01	HOLDER, WIRE		* 110	4-931-964-01	SCREW (M4)	
102	A-4725-362-A	MAIN BOARD, COMPLETE		111	3-905-609-11	SCREW (TRANSISTOR)	
103	1-757-098-11	WIRE (FLAT TYPE) (35 CORE)		112	4-928-032-01	COLLAR (A)	
104	3-703-249-21	SCREW, S TIGHT, +PTTWH (M3X8)		* 113	4-888-798-00	BUSHING, RUBBER	
105	4-929-074-01	SCREW (3X8)		114	A-4725-539-A	AUDIO BOARD, COMPLETE	
108	1-757-095-11	WIRE (FLAT TYPE) (9 CORE)		Δ T401	1-435-706-11	TRANSFORMER, POWER (ANALOG)	
109	1-757-096-11	WIRE (FLAT TYPE) (16 CORE)		Δ T402	1-435-707-11	TRANSFORMER, POWER (DIGITAL)	

(4) CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-701-822-01	HOLDER, WIRE		153	4-929-074-01	SCREW (3X8)	
152	4-230-617-11	PANEL, BACK					

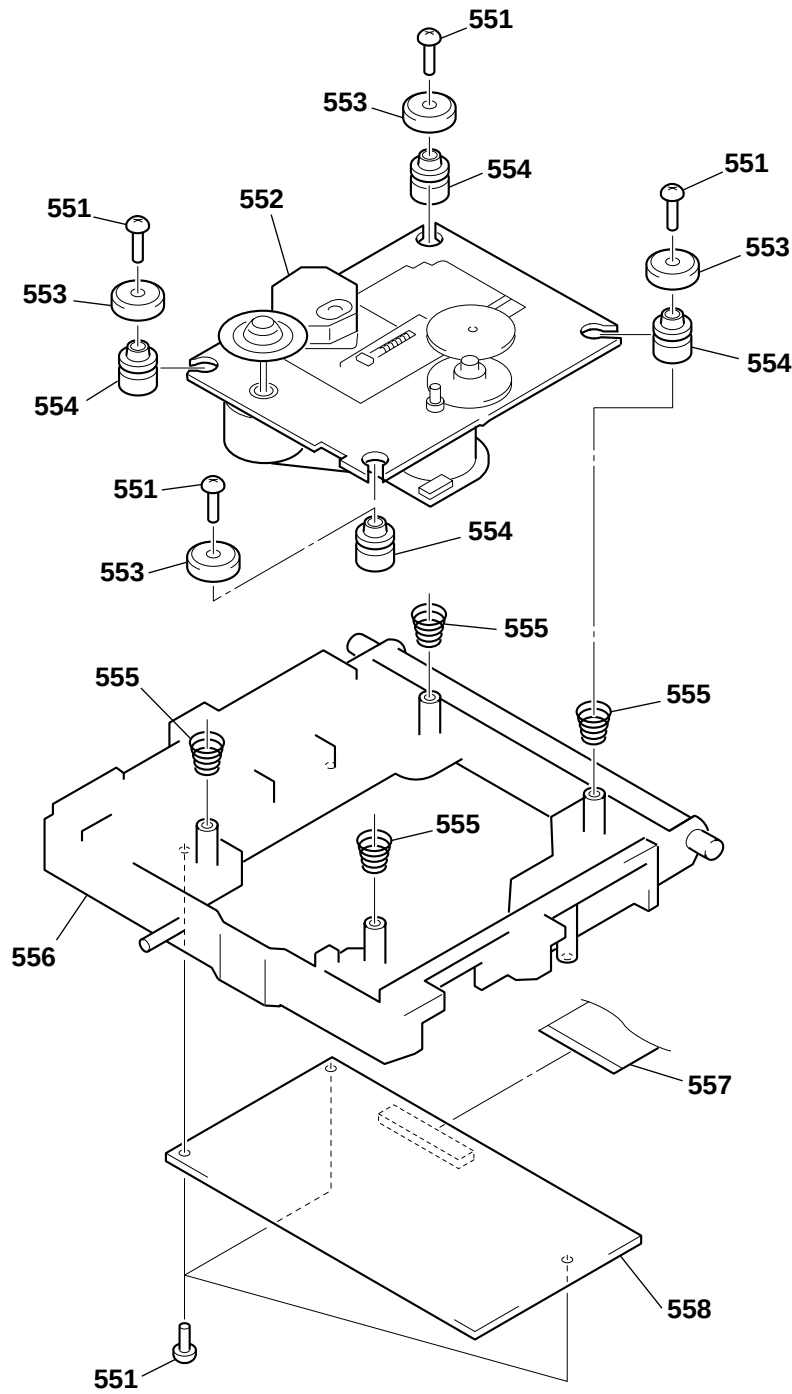
(5) MECHANISM DECK SECTION
(CDM19HN-DVBU4)



Ref. No.	Part No.	Description	Remark
501	4-228-673-01	BRACKET (DISC TABLE)	
* 502	4-948-368-01	BAR (MAIN), GUIDE	
503	4-948-353-18	TABLE, DISC	
* 504	4-948-369-01	BAR (SUB), GUIDE	
505	A-4604-913-A	LOCK (L) ASSY, STABLE	
506	4-927-318-01	WASHER	
507	4-967-268-01	GEAR (C)	
508	4-927-620-01	GEAR (P)	
* 509	4-927-648-01	SLIDER (GROUND)	
* 510	4-948-360-01	BEARING, LOADING	
511	4-927-649-01	BELT	
512	4-929-724-01	PULLEY (B)	
513	X-4927-608-1	ARM ASSY, SWING	

Ref. No.	Part No.	Description	Remark
514	A-4672-991-A	HOLDER (A.P.) ASSY	
* 515	4-948-356-03	HOLDER (A.P.)	
516	3-053-844-01	YOKE	
* 517	4-948-355-05	CHASSIS (OUTSERT)	
* 518	1-641-765-11	LOADING MOTOR BOARD	
* 519	1-641-764-11	SWITCH BOARD	
* 520	4-948-371-01	CAM (BU)	
521	3-659-338-00	SPRING, COMPRESSION	
522	4-927-654-01	WASHER (LIMITER)	
523	4-927-631-01	ROLLER (L)	
524	A-4604-914-A	LOCK (R) ASSY, STABLE	
M1	A-4604-347-A	MOTOR (L) ASSY (LOADING)	

(6) BASE UNIT SECTION
(DVBU4)



The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
551	4-951-620-01	SCREW (2.6X8), +BVTP		555	4-231-449-01	SPRING (230), CONE TYPE COIL	
$\triangle$ 552	8-820-132-03	OPTICAL PICK-UP (KHM-230AAA/J1RP)		556	4-228-669-01	HOLDER (KHM230)	
553	4-231-925-01	STOPPER		557	1-757-097-11	WIRE (FLAT TYPE) (25 CORE)	
554	4-227-549-11	INSULATOR		558	A-4725-382-A	RF BOARD, COMPLETE	

SECTION 8 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
		AC BOARD									

		< CAPACITOR >									
Δ C491	1-113-927-11	CERAMIC	10000PF	20%	250V	C110	1-136-818-11	FILM	0.0047uF	5%	100V
Δ C492	1-113-927-11	CERAMIC	10000PF	20%	250V	C111	1-128-655-21	FILM	22PF	10%	50V
Δ C493	1-113-927-11	CERAMIC	10000PF	20%	250V	C112	1-128-655-21	FILM	22PF	10%	50V
Δ C494	1-113-927-11	CERAMIC	10000PF	20%	250V	C113	1-128-654-21	FILM	2200PF	5%	50V
Δ C495	1-113-927-11	CERAMIC	10000PF	20%	250V	C114	1-107-597-11	CAPACITOR	22PF	5%	500V
						C115	1-128-654-21	FILM	2200PF	5%	50V
Δ C496	1-113-927-11	CERAMIC	10000PF	20%	250V	C116	1-128-654-21	FILM	2200PF	5%	50V
		< CONNECTOR >				C117	1-107-597-11	CAPACITOR	22PF	5%	500V
CN491	1-770-128-11	PIN, CONNECTOR 2P				C118	1-128-654-21	FILM	2200PF	5%	50V
* CN492	1-564-321-21	PIN, CONNECTOR 2P				C119	1-128-654-21	FILM	2200PF	5%	50V
CN493	1-564-321-00	PIN, CONNECTOR 2P				C120	1-125-850-21	FILM	220PF	5%	50V
		< GROUND TERMINAL >				C122	1-128-201-11	ELECT	100uF	20%	63V
ETP401	1-537-770-21	TERMINAL BOARD, GROUND				C123	1-128-201-11	ELECT	100uF	20%	63V
		< JACK >				C124	1-127-741-41	FILM	0.047uF	10%	250V
Δ J491	1-251-234-11	INLET, AC ($\sim$ AC IN)				C125	1-125-859-21	FILM	0.001uF	5%	50V
		< LINE FILTER >				C126	1-109-857-11	ELECT	47uF	20%	63V
Δ T491	1-421-915-11	COIL, LINE FILTER				C127	1-109-857-11	ELECT	47uF	20%	63V
Δ T492	1-421-915-11	COIL, LINE FILTER				C128	1-128-197-11	ELECT	10uF	20%	63V
*****						C129	1-128-197-11	ELECT	10uF	20%	63V
		A-4725-539-A AUDIO BOARD, COMPLETE				C130	1-128-197-11	ELECT	10uF	20%	63V
		*****				C131	1-128-197-11	ELECT	10uF	20%	63V
		< BUS BAR >				C161	1-102-978-00	CERAMIC	220PF	5%	50V
BB301	1-560-242-71	BUS BAR 6P				C162	1-102-978-00	CERAMIC	220PF	5%	50V
		< CAPACITOR >				C163	1-119-779-11	ELECT	220uF	20%	10V
C101	1-109-857-11	ELECT	47uF	20%	63V	C164	1-135-743-11	ELECT	10uF		50V
C102	1-136-850-11	MYLAR	0.1uF	5%	63V	C191	1-128-197-11	ELECT	10uF	20%	63V
C103	1-115-197-11	ELECT	100uF	20%	25V	C192	1-128-197-11	ELECT	10uF	20%	63V
C104	1-136-850-11	MYLAR	0.1uF	5%	63V	C201	1-109-857-11	ELECT	47uF	20%	63V
C105	1-136-850-11	MYLAR	0.1uF	5%	63V	C202	1-136-850-11	MYLAR	0.1uF	5%	63V
C106	1-136-850-11	MYLAR	0.1uF	5%	63V	C203	1-115-197-11	ELECT	100uF	20%	25V
C107	1-136-850-11	MYLAR	0.1uF	5%	63V	C204	1-136-850-11	MYLAR	0.1uF	5%	63V
C108	1-130-973-00	FILM	0.022uF	5%	100V	C205	1-136-850-11	MYLAR	0.1uF	5%	63V
C109	1-136-818-11	FILM	0.0047uF	5%	100V	C206	1-136-850-11	MYLAR	0.1uF	5%	63V
						C207	1-136-850-11	MYLAR	0.1uF	5%	63V
						C208	1-130-973-00	FILM	0.022uF	5%	100V
						C209	1-136-818-11	FILM	0.0047uF	5%	100V
						C210	1-136-818-11	FILM	0.0047uF	5%	100V
						C211	1-128-655-21	FILM	22PF	10%	50V
						C212	1-128-655-21	FILM	22PF	10%	50V
						C213	1-128-654-21	FILM	2200PF	5%	50V
						C214	1-107-597-11	CAPACITOR	22PF	5%	500V
						C215	1-128-654-21	FILM	2200PF	5%	50V
						C216	1-128-654-21	FILM	2200PF	5%	50V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C217	1-107-597-11	CAPACITOR	22PF	5%	500V	C341	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C218	1-128-654-21	FILM	2200PF	5%	50V	C342	1-109-857-11	ELECT	47uF	20%	63V
C219	1-128-654-21	FILM	2200PF	5%	50V	C343	1-109-857-11	ELECT	47uF	20%	63V
C220	1-125-850-21	FILM	220PF	5%	50V	C344	1-128-201-11	ELECT	100uF	20%	63V
C222	1-128-201-11	ELECT	100uF	20%	63V	C345	1-128-201-11	ELECT	100uF	20%	63V
C223	1-128-201-11	ELECT	100uF	20%	63V	C346	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C224	1-127-741-41	FILM	0.047uF	10%	250V	C347	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C225	1-125-859-21	FILM	0.001uF	5%	50V	C348	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C226	1-109-857-11	ELECT	47uF	20%	63V	C349	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C227	1-109-857-11	ELECT	47uF	20%	63V	C351	1-115-198-11	ELECT	470uF	20%	25V
C228	1-128-197-11	ELECT	10uF	20%	63V	C352	1-115-198-11	ELECT	470uF	20%	25V
C229	1-128-197-11	ELECT	10uF	20%	63V	C353	1-127-694-91	ELECT	47uF	20%	25V
C230	1-128-197-11	ELECT	10uF	20%	63V	C354	1-127-694-91	ELECT	47uF	20%	25V
C231	1-128-197-11	ELECT	10uF	20%	63V	C357	1-128-091-11	ELECT	1000uF	20%	50V
C261	1-102-978-00	CERAMIC	220PF	5%	50V	C358	1-128-091-11	ELECT	1000uF	20%	50V
C262	1-102-978-00	CERAMIC	220PF	5%	50V	C361	1-135-682-11	ELECT	220uF		25V
C263	1-119-779-11	ELECT	220uF	20%	10V	C362	1-135-682-11	ELECT	220uF		25V
C264	1-135-743-11	ELECT	10uF		50V	C370	1-109-857-11	ELECT	47uF	20%	63V
C291	1-128-197-11	ELECT	10uF	20%	63V	C371	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C292	1-128-197-11	ELECT	10uF	20%	63V	C372	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C300	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C373	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C301	1-135-673-11	ELECT	4700uF		10V	C374	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C302	1-135-835-11	ELECT	1000uF		35V	C375	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C303	1-135-695-11	ELECT	3300uF		16V	C376	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C304	1-135-695-11	ELECT	3300uF		16V	C377	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C305	1-135-835-11	ELECT	1000uF		35V	C378	1-135-835-11	ELECT	1000uF		35V
C306	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C379	1-135-835-11	ELECT	1000uF		35V
C307	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C380	1-135-835-11	ELECT	1000uF		35V
C308	1-135-695-11	ELECT	3300uF		16V	C382	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C309	1-136-850-11	MYLAR	0.1uF	5%	63V	C383	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C310	1-136-850-11	MYLAR	0.1uF	5%	63V	C384	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C385	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C312	1-136-850-11	MYLAR	0.1uF	5%	63V	C386	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C313	1-136-850-11	MYLAR	0.1uF	5%	63V	C387	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C314	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	C388	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C315	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C389	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C316	1-117-720-11	CERAMIC CHIP	4.7uF		10V	C390	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C317	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	C399	1-125-859-21	FILM	0.001uF	5%	50V
C318	1-127-573-11	CERAMIC CHIP	1uF	10%	16V	< CONNECTOR >					
C319	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN101	1-564-505-11	PLUG, CONNECTOR 2P			
C320	1-119-793-11	ELECT	1000uF	20%	16V	CN102	1-564-505-21	PLUG, CONNECTOR 2P			
C321	1-135-835-11	ELECT	1000uF		35V	CN201	1-564-505-31	PLUG, CONNECTOR 2P			
C322	1-135-835-11	ELECT	1000uF		35V	CN202	1-564-505-41	PLUG, CONNECTOR 2P			
C323	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN301	1-564-506-21	PLUG, CONNECTOR 3P			
C324	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN302	1-564-506-11	PLUG, CONNECTOR 3P			
C325	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN303	1-564-507-41	PLUG, CONNECTOR 4P			
C326	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN304	1-564-507-11	PLUG, CONNECTOR 4P			
C327	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	CN305	1-564-509-11	PLUG, CONNECTOR 6P			
C328	1-125-781-21	ELECT	220uF	20%	35V	CN306	1-568-951-11	PIN, CONNECTOR 2P			
C329	1-117-775-31	FILM	0.1uF	10%	250V	CN307	1-568-951-21	PIN, CONNECTOR 2P			
C330	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN308	1-770-640-11	CONNECTOR, FFC/FPC 9P			
C331	1-117-720-11	CERAMIC CHIP	4.7uF		10V	CN309	1-770-646-11	CONNECTOR, FFC/FPC 16P			
C332	1-102-951-00	CERAMIC	15PF	5%	50V	CN310	1-564-505-31	PLUG, CONNECTOR 2P			
C333	1-102-942-00	CERAMIC	5.0PF	0.5PF	50V	CN311	1-564-505-41	PLUG, CONNECTOR 2P			
C334	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V	CN312	1-564-505-11	PLUG, CONNECTOR 2P			
C335	1-117-720-11	CERAMIC CHIP	4.7uF		10V						
C339	1-127-573-11	CERAMIC CHIP	1uF	10%	16V						
C340	1-115-197-11	ELECT	100uF	20%	25V						

AUDIO

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark				
< DIODE >							L263	1-414-512-21	INDUCTOR CHIP	6.8uH				
D342	8-719-313-73	DIODE SFPB-52					L301	1-414-234-22	FERRITE BEAD	0uH				
D343	8-719-313-73	DIODE SFPB-52					L310	1-424-090-11	COIL, LINE FILTER					
D351	8-719-109-85	DIODE RD5.1ESB2					L311	1-424-090-11	COIL, LINE FILTER					
D352	8-719-109-85	DIODE RD5.1ESB2					L312	1-424-090-11	COIL, LINE FILTER					
D361	8-719-988-61	DIODE 1SS355TE-17					L313	1-424-090-11	COIL, LINE FILTER					
D362	8-719-977-40	DIODE DTZ13B					L314	1-424-090-11	COIL, LINE FILTER					
< RESISTOR >							L315	1-424-090-11	COIL, LINE FILTER					
△FR361	1-212-889-00	FUSIBLE	220	5%	1/4W	F	L316	1-424-090-11	COIL, LINE FILTER					
△FR362	1-212-889-00	FUSIBLE	220	5%	1/4W	F	L317	1-414-234-22	FERRITE BEAD	0uH				
△FR363	1-212-887-11	FUSIBLE	180	5%	1/4W	F	L318	1-424-090-11	COIL, LINE FILTER					
< IC >							L319	1-424-090-11	COIL, LINE FILTER					
IC101	8-759-371-51	IC CXA8042AS					L320	1-424-090-11	COIL, LINE FILTER					
IC103	8-759-566-39	IC OPA2132UA/2K5					L321	1-424-090-11	COIL, LINE FILTER					
IC104	8-759-566-39	IC OPA2132UA/2K5					L323	1-424-090-11	COIL, LINE FILTER					
IC105	8-759-585-00	IC LM6172IMX					L378	1-414-234-22	FERRITE BEAD	0uH				
IC106	8-759-585-00	IC LM6172IMX					L379	1-414-234-22	FERRITE BEAD	0uH				
< TRANSISTOR >							L399	1-410-993-42	INDUCTOR CHIP	1uH				
IC107	8-759-566-39	IC OPA2132UA/2K5					Q101	8-729-209-74	TRANSISTOR	2SA1213Y-TE12R				
IC201	8-759-371-51	IC CXA8042AS					Q102	8-729-202-05	TRANSISTOR	2SC28730-0				
IC203	8-759-566-39	IC OPA2132UA/2K5					Q103	8-729-202-05	TRANSISTOR	2SC28730-0				
IC204	8-759-566-39	IC OPA2132UA/2K5					Q161	8-729-231-55	TRANSISTOR	2SC2878-AB				
IC205	8-759-585-00	IC LM6172IMX					Q201	8-729-209-74	TRANSISTOR	2SA1213Y-TE12R				
IC206	8-759-585-00	IC LM6172IMX					Q202	8-729-202-05	TRANSISTOR	2SC28730-0				
IC207	8-759-566-39	IC OPA2132UA/2K5					Q203	8-729-202-05	TRANSISTOR	2SC28730-0				
IC301	8-759-573-17	IC CXD8762AQ					Q261	8-729-231-55	TRANSISTOR	2SC2878-AB				
IC302	8-759-596-81	IC CXD9521Q					Q351	8-729-036-56	FET	2SK208-GR-TE85L				
IC305	8-759-231-53	IC TA7805S					Q352	8-729-036-56	FET	2SK208-GR-TE85L				
IC306	8-759-711-59	IC NJM78L05UA-TE1					Q353	8-729-107-53	TRANSISTOR	2SC2275A				
IC307	8-759-604-86	IC M5F7807L					Q354	8-729-141-10	TRANSISTOR	2SA985A-QP				
IC308	8-759-604-90	IC M5F7907L					Q355	8-729-107-53	TRANSISTOR	2SC2275A				
IC309	8-759-711-59	IC NJM78L05UA-TE1					Q356	8-729-141-10	TRANSISTOR	2SA985A-QP				
IC310	8-759-296-74	IC AD712JR-REEL					Q361	8-729-027-29	TRANSISTOR	DTA123JKA-T146				
IC312	8-759-486-55	IC NJM2370U33-TE2					Q362	8-729-027-29	TRANSISTOR	DTA123JKA-T146				
IC313	8-759-591-61	IC TC7WHU04FU (TE12R)					< RESISTOR >							
IC341	8-759-566-39	IC OPA2132UA/2K5					R100	1-259-999-11	CARBON MELF	2.2K	2%	1/8W		
IC342	8-759-566-39	IC OPA2132UA/2K5					R101	1-216-021-00	METAL CHIP	68	5%	1/10W		
IC361	8-759-711-85	IC NJM4580E-D					R102	1-216-021-00	METAL CHIP	68	5%	1/10W		
< SHORT >							R103	1-216-021-00	METAL CHIP	68	5%	1/10W		
JW306	1-216-295-11	SHORT	0					R104	1-216-021-00	METAL CHIP	68	5%	1/10W	
JW307	1-216-295-11	SHORT	0					R106	1-259-919-11	CARBON MELF	510	2%	1/8W	
JW308	1-216-295-11	SHORT	0					R107	1-259-991-11	CARBON MELF	470	2%	1/8W	
< COIL >							R110	1-259-971-11	CARBON MELF	10	2%	1/8W		
L101	1-410-757-21	INDUCTOR CHIP	0.33mH					R111	1-259-971-11	CARBON MELF	10	2%	1/8W	
L131	1-414-234-22	FERRITE BEAD	0uH					R112	1-259-971-11	CARBON MELF	10	2%	1/8W	
L132	1-414-234-22	FERRITE BEAD	0uH					R113	1-259-971-11	CARBON MELF	10	2%	1/8W	
L161	1-414-512-21	INDUCTOR CHIP	6.8uH					R114	1-259-547-11	CARBON	470	1%	1/2W	
L162	1-414-512-21	INDUCTOR CHIP	6.8uH					R115	1-259-547-11	CARBON	470	1%	1/2W	
L163	1-414-512-21	INDUCTOR CHIP	6.8uH					R116	1-259-581-11	CARBON	12K	1%	1/2W	
L201	1-410-757-21	INDUCTOR CHIP	0.33mH					R117	1-259-581-11	CARBON	12K	1%	1/2W	
L231	1-414-234-22	FERRITE BEAD	0uH					R118	1-259-579-11	CARBON	10K	1%	1/2W	
L232	1-414-234-22	FERRITE BEAD	0uH					R119	1-259-579-11	CARBON	10K	1%	1/2W	
L261	1-414-512-21	INDUCTOR CHIP	6.8uH					R120	1-259-562-11	CARBON	2K	1%	1/2W	
L262	1-414-512-21	INDUCTOR CHIP	6.8uH					R121	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	
								R122	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R123	1-259-999-11	CARBON MELF	2.2K	2%	1/8W	R302	1-216-033-00	METAL CHIP	220	5%	1/10W
R124	1-259-561-11	CARBON	1.8K	1%	1/2W	R303	1-216-033-00	METAL CHIP	220	5%	1/10W
R125	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R304	1-216-033-00	METAL CHIP	220	5%	1/10W
R126	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R305	1-216-037-00	METAL CHIP	330	5%	1/10W
R127	1-259-996-11	CARBON MELF	1.2K	2%	1/8W	R306	1-216-033-00	METAL CHIP	220	5%	1/10W
R128	1-259-545-91	CARBON	390	1%	1/2W	R307	1-216-033-00	METAL CHIP	220	5%	1/10W
R129	1-259-591-11	CARBON	33K	1%	1/2W	R308	1-216-033-00	METAL CHIP	220	5%	1/10W
R130	1-259-563-11	CARBON	2.2K	1%	1/2W	R309	1-216-033-00	METAL CHIP	220	5%	1/10W
R131	1-259-507-11	CARBON	10	1%	1/2W	R310	1-216-033-00	METAL CHIP	220	5%	1/10W
R132	1-259-975-11	CARBON MELF	22	2%	1/8W	R311	1-216-049-11	RES-CHIP	1K	5%	1/10W
R133	1-259-975-11	CARBON MELF	22	2%	1/8W	R314	1-216-033-00	METAL CHIP	220	5%	1/10W
R161	1-260-020-11	CARBON MELF	100K	2%	1/8W	R319	1-216-041-00	METAL CHIP	470	5%	1/10W
R162	1-260-004-11	CARBON MELF	4.7K	2%	1/8W	R324	1-216-073-00	METAL CHIP	10K	5%	1/10W
R163	1-260-010-11	CARBON MELF	15K	2%	1/8W	R325	1-216-073-00	METAL CHIP	10K	5%	1/10W
R164	1-260-010-11	CARBON MELF	15K	2%	1/8W	R326	1-216-073-00	METAL CHIP	10K	5%	1/10W
R165	1-260-016-11	CARBON MELF	47K	2%	1/8W	R327	1-216-033-00	METAL CHIP	220	5%	1/10W
R166	1-259-979-11	CARBON MELF	47	2%	1/8W	R328	1-216-033-00	METAL CHIP	220	5%	1/10W
R167	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R329	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R200	1-259-999-11	CARBON MELF	2.2K	2%	1/8W	R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R201	1-216-021-00	METAL CHIP	68	5%	1/10W	R331	1-260-032-11	CARBON MELF	1M	2%	1/8W
R202	1-216-021-00	METAL CHIP	68	5%	1/10W	R338	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R203	1-216-021-00	METAL CHIP	68	5%	1/10W	R339	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R204	1-216-021-00	METAL CHIP	68	5%	1/10W	R340	1-216-001-00	METAL CHIP	10	5%	1/10W
R206	1-259-919-11	CARBON MELF	510	2%	1/8W	R341	1-259-979-11	CARBON MELF	47	2%	1/8W
R207	1-259-991-11	CARBON MELF	470	2%	1/8W	R342	1-259-991-11	CARBON MELF	470	2%	1/8W
R210	1-259-971-11	CARBON MELF	10	2%	1/8W	R343	1-259-995-11	CARBON MELF	1K	2%	1/8W
R211	1-259-971-11	CARBON MELF	10	2%	1/8W	R344	1-259-995-11	CARBON MELF	1K	2%	1/8W
R212	1-259-971-11	CARBON MELF	10	2%	1/8W	R345	1-259-983-11	CARBON MELF	100	2%	1/8W
R213	1-259-971-11	CARBON MELF	10	2%	1/8W	R346	1-259-996-11	CARBON MELF	1.2K	2%	1/8W
R214	1-259-547-11	CARBON	470	1%	1/2W	R347	1-259-922-11	CARBON MELF	910	2%	1/8W
R215	1-259-547-11	CARBON	470	1%	1/2W	R348	1-259-979-11	CARBON MELF	47	2%	1/8W
R216	1-259-581-11	CARBON	12K	1%	1/2W	R349	1-259-991-11	CARBON MELF	470	2%	1/8W
R217	1-259-581-11	CARBON	12K	1%	1/2W	R350	1-259-995-11	CARBON MELF	1K	2%	1/8W
R218	1-259-579-11	CARBON	10K	1%	1/2W	R351	1-259-995-11	CARBON MELF	1K	2%	1/8W
R219	1-259-579-11	CARBON	10K	1%	1/2W	R352	1-259-983-11	CARBON MELF	100	2%	1/8W
R220	1-259-562-11	CARBON	2K	1%	1/2W	R353	1-259-996-11	CARBON MELF	1.2K	2%	1/8W
R221	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R354	1-259-922-11	CARBON MELF	910	2%	1/8W
R222	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R355	1-216-001-00	METAL CHIP	10	5%	1/10W
R223	1-259-999-11	CARBON MELF	2.2K	2%	1/8W	R356	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R224	1-259-561-11	CARBON	1.8K	1%	1/2W	R362	1-216-105-00	RES-CHIP	220K	5%	1/10W
R225	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R363	1-216-081-00	METAL CHIP	22K	5%	1/10W
R226	1-259-924-11	CARBON MELF	1.3K	2%	1/8W	R364	1-216-097-11	RES-CHIP	100K	5%	1/10W
R227	1-259-996-11	CARBON MELF	1.2K	2%	1/8W	R372	1-216-019-00	METAL CHIP	56	5%	1/10W
R228	1-259-545-91	CARBON	390	1%	1/2W	R373	1-216-009-00	RES-CHIP	22	5%	1/10W
R229	1-259-591-11	CARBON	33K	1%	1/2W	R374	1-216-009-00	RES-CHIP	22	5%	1/10W
R230	1-259-563-11	CARBON	2.2K	1%	1/2W	R375	1-216-009-00	RES-CHIP	22	5%	1/10W
R231	1-259-507-11	CARBON	10	1%	1/2W	R376	1-216-009-00	RES-CHIP	22	5%	1/10W
R232	1-259-975-11	CARBON MELF	22	2%	1/8W	R378	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R233	1-259-975-11	CARBON MELF	22	2%	1/8W	R393	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R261	1-260-020-11	CARBON MELF	100K	2%	1/8W	R394	1-216-033-00	METAL CHIP	220	5%	1/10W
R262	1-260-004-11	CARBON MELF	4.7K	2%	1/8W	R395	1-216-033-00	METAL CHIP	220	5%	1/10W
R263	1-260-010-11	CARBON MELF	15K	2%	1/8W	R396	1-216-033-00	METAL CHIP	220	5%	1/10W
R264	1-260-010-11	CARBON MELF	15K	2%	1/8W	R397	1-216-033-00	METAL CHIP	220	5%	1/10W
R265	1-260-016-11	CARBON MELF	47K	2%	1/8W	R398	1-216-033-00	METAL CHIP	220	5%	1/10W
R266	1-259-979-11	CARBON MELF	47	2%	1/8W	R399	1-259-989-11	CARBON MELF	330	2%	1/8W
R267	1-216-061-00	METAL CHIP	3.3K	5%	1/10W						
R301	1-216-033-00	METAL CHIP	220	5%	1/10W						

AUDIO

DIGITAL OUT

DISPLAY

Ref. No.	Part No.	Description	Remark			
< VIBRATOR >						
X301	1-781-998-11	VIBRATOR, CRYSTAL (45MHz)				

DIGITAL OUT BOARD						

< CAPACITOR >						
C391	1-136-850-11	MYLAR	0.1uF	5%	63V	
C392	1-104-645-11	CERAMIC	1uF	20%	50V	
C393	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C394	1-164-732-11	CERAMIC	0.1uF	20%	50V	
C395	1-164-732-11	CERAMIC	0.1uF	20%	50V	
C396	1-107-611-11	CAPACITOR	100PF	5%	500V	
C397	1-136-850-11	MYLAR	0.1uF	5%	63V	
C398	1-135-743-11	ELECT	10uF		50V	
< CONNECTOR >						
CN391	1-506-468-11	PIN, CONNECTOR 3P				
< IC >						
IC391	8-759-591-61	IC TC7WHU04FU (TE12R)				
IC392	8-749-012-69	IC GP1F38T (DIGITAL (CD) OUT OPTICAL)				
< JACK >						
J391	1-770-905-21	JACK, PIN 1P (DIGITAL (CD) OUT COAXIAL)				
< RESISTOR >						
R391	1-216-033-00	METAL CHIP	220	5%	1/10W	
R392	1-216-022-00	METAL CHIP	75	5%	1/10W	
< COIL >						
T391	1-416-701-11	COIL (WITH CORE)				

DISPLAY BOARD						

*	3-362-478-01	HOLDER (T) , LED				
*	4-945-292-01	HOLDER, INDICATION TUBE				
< CAPACITOR >						
C1001	1-126-177-11	ELECT	100uF	20%	10V	
C1002	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	
C1003	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	
C1004	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C1005	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1006	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	
C1007	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	
C1008	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V	
C1010	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1011	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1012	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1013	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1014	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1015	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C1016	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	

Ref. No.	Part No.	Description	Remark		
C1017	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C1018	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C1019	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C1020	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C1080	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
< CONNECTOR >					
* CN1001	1-568-944-11	PIN, CONNECTOR 6P			
CN1002	1-794-706-11	PIN, CONNECTOR 7P			
CN1003	1-793-673-11	CONNECTOR, BOARD TO BOARD 7P			
* CN1007	1-568-942-11	PIN, CONNECTOR 4P			
< DIODE >					
D1003	8-719-301-44	LED SEL2410E-D (▶)			
D1004	8-719-301-60	LED SEL2910A-C (■)			
D1005	8-719-988-61	DIODE 1SS355TE-17			
< FLUORESCENT INDICATOR TUBE >					
FL1001	1-518-709-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC1001	8-752-908-75	IC CXP84120-088Q			
IC1002	8-759-583-23	IC MSM9201-03GS-K			
< TRANSISTOR >					
Q1001	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1002	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1003	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1004	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1005	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1006	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1007	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1008	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1009	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1010	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1021	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1022	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1023	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1024	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
< RESISTOR >					
R1001	1-216-025-11	RES-CHIP	100	5%	1/10W
R1002	1-216-025-11	RES-CHIP	100	5%	1/10W
R1003	1-216-025-11	RES-CHIP	100	5%	1/10W
R1004	1-216-025-11	RES-CHIP	100	5%	1/10W
R1005	1-216-025-11	RES-CHIP	100	5%	1/10W
R1006	1-216-025-11	RES-CHIP	100	5%	1/10W
R1007	1-216-025-11	RES-CHIP	100	5%	1/10W
R1008	1-216-025-11	RES-CHIP	100	5%	1/10W
R1009	1-216-025-11	RES-CHIP	100	5%	1/10W
R1010	1-216-025-11	RES-CHIP	100	5%	1/10W
R1011	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1012	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1013	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1014	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1015	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1016	1-216-089-11	RES-CHIP	47K	5%	1/10W
R1017	1-216-089-11	RES-CHIP	47K	5%	1/10W

DISPLAY

HEADPHONE

JOG

KEY

LINE OUT

Ref. No.	Part No.	Description	Remark
R1018	1-216-089-11	RES-CHIP 47K 5%	1/10W
R1019	1-216-089-11	RES-CHIP 47K 5%	1/10W
R1020	1-216-089-11	RES-CHIP 47K 5%	1/10W
R1034	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R1042	1-216-025-11	RES-CHIP 100 5%	1/10W
R1043	1-216-025-11	RES-CHIP 100 5%	1/10W
R1044	1-216-025-11	RES-CHIP 100 5%	1/10W
R1045	1-216-025-11	RES-CHIP 100 5%	1/10W
R1046	1-216-025-11	RES-CHIP 100 5%	1/10W
R1047	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R1048	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R1049	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1050	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1051	1-216-045-00	METAL CHIP 680 5%	1/10W
R1052	1-216-049-11	RES-CHIP 1K 5%	1/10W
R1053	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R1054	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R1061	1-216-025-11	RES-CHIP 100 5%	1/10W
R1062	1-216-025-11	RES-CHIP 100 5%	1/10W
R1068	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1071	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1072	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1073	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1074	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1075	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1076	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1077	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1078	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1080	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1081	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1082	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1090	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1091	1-216-073-00	METAL CHIP 10K 5%	1/10W
R1092	1-216-073-00	METAL CHIP 10K 5%	1/10W
< SWITCH >			
S1001	1-554-303-21	SWITCH, TACTILE (≡ OPEN/CLOSE)	
S1002	1-554-303-21	SWITCH, TACTILE (■)	
S1003	1-554-303-21	SWITCH, TACTILE (▶)	
S1004	1-554-303-21	SWITCH, TACTILE (■)	
< VIBRATOR >			
X1001	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	

HEADPHONE BOARD			

< CAPACITOR >			
C171	1-162-302-11	CERAMIC 0.0022uF 30%	16V
C271	1-162-302-11	CERAMIC 0.0022uF 30%	16V
C350	1-107-725-11	CERAMIC CHIP 0.1uF 10%	16V
< CONNECTOR >			
CN371	1-564-507-11	PLUG, CONNECTOR 4P	
CN372	1-564-521-11	PLUG, CONNECTOR 6P	

Ref. No.	Part No.	Description	Remark
< JACK >			
J371	1-770-307-11	JACK (LARGE TYPE) (PHONES)	
< COIL >			
L171	1-414-512-21	INDUCTOR CHIP 6.8uH	
L271	1-414-512-21	INDUCTOR CHIP 6.8uH	
L371	1-414-512-21	INDUCTOR CHIP 6.8uH	
< VARIABLE RESISTOR >			
RV371	1-227-227-11	RES, VAR 10K/10K (PHONE LEVEL)	

JOG BOARD			

< ROTARY ENCODER >			
RY1001	1-475-006-11	ENCODER, ROTARY	
(I<<IAMS>>I, PUSH ENTER)			

KEY BOARD			

< CONNECTOR >			
CN1004	1-793-674-21	CONNECTOR, BOARD TO BOARD 7P	
< RESISTOR >			
R1055	1-216-045-00	METAL CHIP 680 5%	1/10W
R1056	1-216-049-11	RES-CHIP 1K 5%	1/10W
R1057	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R1063	1-216-029-00	METAL CHIP 150 5%	1/10W
R1064	1-216-029-00	METAL CHIP 150 5%	1/10W
< SWITCH >			
S1005	1-570-101-51	SWITCH, KEY BOARD (SACD/CD)	
S1006	1-554-303-21	SWITCH, TACTILE (TIME/TEXT)	
S1007	1-570-101-51	SWITCH, KEY BOARD (DIGITAL OUT)	
S1008	1-554-303-21	SWITCH, TACTILE (FILTER)	

LINE OUT BOARD			

< CAPACITOR >			
C381	1-164-159-11	CERAMIC 0.1uF	50V
< CONNECTOR >			
CN381	1-564-507-11	PLUG, CONNECTOR 4P	
CN382	1-568-951-11	PIN, CONNECTOR 2P	
CN383	1-568-951-21	PIN, CONNECTOR 2P	
< DIODE >			
D381	8-719-911-19	DIODE 1SS119-25	
< JACK >			
J381	1-794-705-11	JACK, PIN 2P (ANALOG OUT)	

LINE OUT	LOADING MOTOR	MAIN
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Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R181	1-259-526-91	CARBON	62	1%	1/2W
R281	1-259-526-91	CARBON	62	1%	1/2W
< RELAY >					
RY381	1-755-295-11	RELAY			

*	1-641-765-11	LOADING MOTOR BOARD			

A-4725-362-A	MAIN BOARD, COMPLETE				

< CAPACITOR/RESISTOR >					
C506	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C509	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C510	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C516	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C517	1-125-822-11	TANTALUM CHIP	10uF	20%	10V
C518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C520	1-126-395-11	ELECT CHIP	22uF	20%	16V
C521	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C523	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C525	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C526	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C527	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C528	1-125-822-11	TANTALUM CHIP	10uF	20%	10V
C529	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C530	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C531	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C532	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C533	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C535	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C536	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C537	1-216-864-11	METAL CHIP	0	5%	1/16W
C539	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C541	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C542	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C543	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C544	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C545	1-125-822-11	TANTALUM CHIP	10uF	20%	10V
C547	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C548	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C549	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C550	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C551	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C553	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C554	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C555	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C556	1-125-822-11	TANTALUM CHIP	10uF	20%	10V
C558	1-162-963-11	CERAMIC CHIP	680PF	10%	50V

Ref. No.	Part No.	Description	Remark		
C559	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C560	1-162-965-11	CERAMIC CHIP 0.0015uF	10%	50V	
C561	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C562	1-162-963-11	CERAMIC CHIP 680PF	10%	50V	
C563	1-162-927-11	CERAMIC CHIP 100PF	5%	50V	
C565	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C567	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C568	1-125-822-11	TANTALUM 10uF	20%	10V	
C569	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C570	1-125-822-11	TANTALUM 10uF	20%	10V	
C572	1-115-156-11	CERAMIC CHIP 1uF		10V	
C573	1-162-927-11	CERAMIC CHIP 100PF	5%	50V	
C577	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C579	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C582	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C583	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C584	1-126-395-11	ELECT 22uF	20%	16V	
C587	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C588	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	
C589	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	
C590	1-162-964-11	CERAMIC CHIP 0.001uF	10%	50V	
C591	1-125-822-11	TANTALUM 10uF	20%	10V	
C592	1-125-822-11	TANTALUM 10uF	20%	10V	
C701	1-125-822-11	TANTALUM 10uF	20%	10V	
C702	1-125-822-11	TANTALUM 10uF	20%	10V	
C703	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C704	1-115-156-11	CERAMIC CHIP 1uF		10V	
C705	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C706	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C707	1-162-921-11	CERAMIC CHIP 33PF	5%	50V	
C708	1-162-964-11	CERAMIC CHIP 0.001uF	10%	50V	
C709	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C711	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C712	1-164-230-11	CERAMIC CHIP 220PF	5%	50V	
C713	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C714	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C715	1-162-964-11	CERAMIC CHIP 0.001uF	10%	50V	
C716	1-125-891-11	CERAMIC CHIP 0.47uF	10%	10V	
C717	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C718	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C720	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C721	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C722	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C723	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C724	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C725	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C726	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C727	1-125-822-11	TANTALUM 10uF	20%	10V	
C728	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C729	1-125-822-11	TANTALUM 10uF	20%	10V	
C730	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C731	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V	
C732	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C740	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C741	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C742	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C743	1-164-156-11	CERAMIC CHIP 0.1uF		25V	
C744	1-164-156-11	CERAMIC CHIP 0.1uF		25V	

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark	
C745	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C834	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
							C835	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C746	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		C840	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C747	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C842	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C752	1-164-156-11	CERAMIC CHIP	0.1uF		25V									
C760	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C843	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C761	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C844	1-115-156-11	CERAMIC CHIP	1uF		10V		
							C845	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C762	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C846	1-128-994-21	ELECT CHIP	47uF	20%	10V		
C763	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C847	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		
C764	1-164-156-11	CERAMIC CHIP	0.1uF		25V									
C765	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C850	1-162-945-11	CERAMIC CHIP	22PF	5%	50V		
C766	1-162-927-11	CERAMIC CHIP	100PF	5%	50V		C851	1-162-945-11	CERAMIC CHIP	22PF	5%	50V		
							C852	1-162-945-11	CERAMIC CHIP	22PF	5%	50V		
C767	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C901	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C768	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C769	1-164-156-11	CERAMIC CHIP	0.1uF		25V									
C770	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C903	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C771	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		C904	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
							C905	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C772	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C906	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C773	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V		C907	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C774	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V									
C775	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C908	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C776	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C909	1-162-927-11	CERAMIC CHIP	100PF	5%	50V		
							C910	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C777	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C911	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C778	1-164-156-11	CERAMIC CHIP	0.1uF		25V		C913	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C779	1-125-822-11	TANTALUM CHIP	10uF	20%	10V									
C780	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		C914	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C781	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		C915	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
							C916	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C790	1-126-204-11	ELECT CHIP	47uF	20%	16V		C917	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C791	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		C918	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C792	1-126-206-11	ELECT CHIP	100uF	20%	6.3V									
C793	1-126-246-11	ELECT CHIP	220uF	20%	4V		C920	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C794	1-126-246-11	ELECT CHIP	220uF	20%	4V		C921	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
							C923	1-115-156-11	CERAMIC CHIP	1uF		10V		
C801	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C924	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C802	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		C925	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C803	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V									
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C926	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C805	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C927	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
							C928	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		
C806	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		C950	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		
C807	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		C951	1-164-156-11	CERAMIC CHIP	0.1uF		25V		
C808	1-162-927-11	CERAMIC CHIP	100PF	5%	50V									
C809	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V				< CONNECTOR >					
C810	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V									
							CN503	1-784-883-21	CONNECTOR, FFC (LIF (NON-ZIF)) 35P					
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		CN701	1-794-606-41	PIN, CONNECTOR (PC BPARD 9P					
C812	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		* CN801	1-750-005-11	PIN, CONNECTOR (PC BOARD) 4P					
C813	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		CN901	1-784-868-21	CONNECTOR, FFC (LIF (NON-ZIF)) 16P					
C814	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		CN902	1-784-861-21	CONNECTOR, FFC (LIF (NON-ZIF)) 9P					
C815	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V									
							CN903	1-794-708-11	PIN, CONNECTOR 7P					
C823	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		CN904	1-774-653-41	PIN, CONNECTOR (PC BOARD) 3P					
C824	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V									
C825	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V				< DIODE >					
C826	1-125-822-11	TANTALUM CHIP	10uF	20%	10V									
C827	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		D903	8-719-049-09	DIODE	1SS367-T3SONY				
							D904	8-719-049-09	DIODE	1SS367-T3SONY				
C828	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V									
C829	1-125-822-11	TANTALUM CHIP	10uF	20%	10V				< FERRITE BEAD >					
C830	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V									
C831	1-125-822-11	TANTALUM CHIP	10uF	20%	10V		FB701	1-469-835-21	FERRITE	0uH				
C832	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		FB702	1-469-835-21	FERRITE	0uH				
							FB703	1-500-283-11	FERRITE	0uH				
C833	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		FB704	1-500-283-11	FERRITE	0uH				

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
FB705	1-469-835-21	FERRITE	OuH	IC803	8-759-449-58	IC LM7131BCM5X	
FB706	1-469-835-21	FERRITE	OuH	IC804	8-752-356-45	IC CXD2301Q	
FB707	1-500-283-11	FERRITE	OuH	IC805	8-759-585-52	IC SN74AHC1GU04DBVR	
FB708	1-500-283-11	FERRITE	OuH	IC806	8-759-585-51	IC SN74AHC1G32DBVR	
FB709	1-500-283-11	FERRITE	OuH	IC807	8-759-585-52	IC SN74AHC1GU04DBVR	
FB710	1-500-283-11	FERRITE	OuH	IC808	8-759-676-10	IC MSM51V17805B-60TS-K	
FB751	1-500-283-11	FERRITE	OuH	IC809	8-759-549-23	IC SN74LV74APWR	
FB752	1-500-283-11	FERRITE	OuH	IC810	8-759-585-52	IC SN74AHC1GU04DBVR	
FB753	1-500-283-11	FERRITE	OuH	IC811	8-759-549-25	IC SN74LVU04APWR	
FB754	1-500-283-11	FERRITE	OuH	IC812	8-759-549-15	IC SN74LV245APWR	
FB755	1-500-283-11	FERRITE	OuH	IC813	8-759-549-15	IC SN74LV245APWR	
FB756	1-500-283-11	FERRITE	OuH	IC814	8-759-649-33	IC SN74AHCT1G08DCKR	
FB757	1-500-283-11	FERRITE	OuH	IC815	8-759-524-19	IC TC74VHC164FT (EL)	
FB801	1-500-283-11	FERRITE	OuH	IC901	8-752-906-71	IC CXP973F064R-1	
FB802	1-500-283-11	FERRITE	OuH	IC902	8-752-392-03	IC CXD1095BR	
FB803	1-500-283-11	FERRITE	OuH	IC903	8-759-487-04	IC S-24C02AFJA-TB-01	
FB804	1-500-283-11	FERRITE	OuH	IC904	8-759-685-33	IC BU2500FV-E2	
< FILTER >				IC905	8-759-636-64	IC M51957BFP-600C	
FL501	1-234-177-21	FILTER, CHIP EMI		IC906	8-759-645-76	IC TC74VHCT32AFT	
FL502	1-234-177-21	FILTER, CHIP EMI		IC910	8-759-082-60	IC TC7S66FU	
FL701	1-234-177-21	FILTER, CHIP EMI		< COIL >			
FL702	1-234-177-21	FILTER, CHIP EMI		L801	1-410-369-11	INDUCTOR CHIP	1uH
FL703	1-234-177-21	FILTER, CHIP EMI		L802	1-410-369-11	INDUCTOR CHIP	1uH
FL704	1-234-177-21	FILTER, CHIP EMI		L803	1-410-369-11	INDUCTOR CHIP	1uH
FL705	1-234-177-21	FILTER, CHIP EMI		< RESISTOR >			
FL706	1-234-177-21	FILTER, CHIP EMI		R501	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL750	1-233-893-21	FILTER, CHIP EMI		R502	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL751	1-234-177-21	FILTER, CHIP EMI		R513	1-216-797-11	METAL CHIP	10 5% 1/16W
FL752	1-234-177-21	FILTER, CHIP EMI		R515	1-216-864-11	METAL CHIP	0 5% 1/16W
FL753	1-234-177-21	FILTER, CHIP EMI		R516	1-216-797-11	METAL CHIP	10 5% 1/16W
FL754	1-234-177-21	FILTER, CHIP EMI		R518	1-216-797-11	METAL CHIP	10 5% 1/16W
FL804	1-234-177-21	FILTER, CHIP EMI		R519	1-216-864-11	METAL CHIP	0 5% 1/16W
FL805	1-234-177-21	FILTER, CHIP EMI		R520	1-216-864-11	METAL CHIP	0 5% 1/16W
FL806	1-234-177-21	FILTER, CHIP EMI		R522	1-216-864-11	METAL CHIP	0 5% 1/16W
FL807	1-234-177-21	FILTER, CHIP EMI		R523	1-216-797-11	METAL CHIP	10 5% 1/16W
FL808	1-234-177-21	FILTER, CHIP EMI		R529	1-218-748-11	METAL CHIP	220K 0.5% 1/16W
FL809	1-234-177-21	FILTER, CHIP EMI		R530	1-218-748-11	METAL CHIP	220K 0.5% 1/16W
FL814	1-234-177-21	FILTER, CHIP EMI		R533	1-216-864-11	METAL CHIP	0 5% 1/16W
FL901	1-234-177-21	FILTER, CHIP EMI		R534	1-218-704-11	METAL CHIP	3.3K 0.5% 1/16W
FL902	1-234-177-21	FILTER, CHIP EMI		R538	1-218-740-11	METAL CHIP	100K 0.5% 1/16W
FL904	1-234-177-21	FILTER, CHIP EMI		R540	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL906	1-234-177-21	FILTER, CHIP EMI		R541	1-218-740-11	METAL CHIP	100K 0.5% 1/16W
FL908	1-234-177-21	FILTER, CHIP EMI		R544	1-218-740-11	METAL CHIP	100K 0.5% 1/16W
< IC >				R545	1-218-740-11	METAL CHIP	100K 0.5% 1/16W
IC502	8-759-567-26	IC BA5983FP-E2		R549	1-216-864-11	METAL CHIP	0 5% 1/16W
IC503	8-759-701-40	IC NJM3404AM-T1		R554	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
IC504	8-759-473-95	IC uPC2905T-E1		R555	1-218-704-11	METAL CHIP	3.3K 0.5% 1/16W
IC509	8-752-397-42	IC CXD3008Q		R556	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
IC512	8-759-490-71	IC BA5912AFP-YE2		R558	1-216-841-11	METAL CHIP	47K 5% 1/16W
IC701	8-752-409-10	IC CXD1882R		R559	1-216-797-11	METAL CHIP	10 5% 1/16W
IC703	8-759-701-40	IC NJM3404AM-T1		R560	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC704	8-759-082-60	IC TC7S66FU		R561	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC706	8-759-543-83	IC KM416V1204CT-L6		R562	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC708	8-759-701-40	IC NJM3404AM-T1		R563	1-216-797-11	METAL CHIP	10 5% 1/16W
IC801	8-752-400-60	IC CXD2751Q		R569	1-216-864-11	METAL CHIP	0 5% 1/16W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R572	1-216-797-11	METAL CHIP	10	5%	1/16W	R658	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R573	1-216-797-11	METAL CHIP	10	5%	1/16W	R659	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R576	1-216-864-11	METAL CHIP	0	5%	1/16W						
R577	1-216-864-11	METAL CHIP	0	5%	1/16W	R660	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R578	1-216-864-11	METAL CHIP	0	5%	1/16W	R661	1-216-296-00	SHORT	0		
						R670	1-216-833-11	METAL CHIP	10K	5%	1/16W
R581	1-216-833-11	METAL CHIP	10K	5%	1/16W	R671	1-216-833-11	METAL CHIP	10K	5%	1/16W
R582	1-216-833-11	METAL CHIP	10K	5%	1/16W	R672	1-216-833-11	METAL CHIP	10K	5%	1/16W
R583	1-216-864-11	METAL CHIP	0	5%	1/16W						
R584	1-218-728-11	METAL CHIP	33K	0.5%	1/16W	R701	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R585	1-216-864-11	METAL CHIP	0	5%	1/16W	R702	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
						R703	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R586	1-216-864-11	METAL CHIP	0	5%	1/16W	R704	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R587	1-216-864-11	METAL CHIP	0	5%	1/16W	R705	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R588	1-218-716-11	METAL CHIP	10K	0.5%	1/16W						
R589	1-218-728-11	METAL CHIP	33K	0.5%	1/16W	R706	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R590	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	R707	1-218-668-11	METAL CHIP	100	0.5%	1/16W
						R708	1-216-857-11	METAL CHIP	1M	5%	1/16W
R591	1-218-702-11	METAL CHIP	2.7K	0.5%	1/16W	R709	1-218-736-11	METAL CHIP	68K	0.5%	1/16W
R592	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W	R710	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R593	1-218-740-11	METAL CHIP	100K	0.5%	1/16W						
R594	1-218-728-11	METAL CHIP	33K	0.5%	1/16W	R711	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R595	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W	R712	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
						R713	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R596	1-216-864-11	METAL CHIP	0	5%	1/16W	R714	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R597	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	R716	1-218-668-11	METAL CHIP	100	0.5%	1/16W
R599	1-218-702-11	METAL CHIP	2.7K	0.5%	1/16W						
R600	1-216-864-11	METAL CHIP	0	5%	1/16W	R717	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R601	1-218-724-11	METAL CHIP	22K	0.5%	1/16W	R718	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
						R719	1-218-692-11	METAL CHIP	1K	0.5%	1/16W
R602	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W	R720	1-216-821-11	METAL CHIP	1K	5%	1/16W
R603	1-218-704-11	METAL CHIP	3.3K	0.5%	1/16W	R721	1-218-728-11	METAL CHIP	33K	0.5%	1/16W
R604	1-218-692-11	METAL CHIP	1K	0.5%	1/16W						
R605	1-216-864-11	METAL CHIP	0	5%	1/16W	R724	1-218-692-11	METAL CHIP	1K	0.5%	1/16W
R606	1-216-841-11	METAL CHIP	47K	5%	1/16W	R725	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
						R726	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R607	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W	R727	1-218-704-11	METAL CHIP	3.3K	0.5%	1/16W
R608	1-218-716-11	METAL CHIP	10K	0.5%	1/16W	R728	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R609	1-216-864-11	METAL CHIP	0	5%	1/16W						
R610	1-216-864-11	METAL CHIP	0	5%	1/16W	R729	1-216-864-11	METAL CHIP	0	5%	1/16W
R611	1-218-724-11	METAL CHIP	22K	0.5%	1/16W	R730	1-216-801-11	METAL CHIP	22	5%	1/16W
						R731	1-216-801-11	METAL CHIP	22	5%	1/16W
R612	1-216-864-11	METAL CHIP	0	5%	1/16W	R732	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-857-11	METAL CHIP	1M	5%	1/16W	R733	1-216-833-11	METAL CHIP	10K	5%	1/16W
R614	1-216-864-11	METAL CHIP	0	5%	1/16W						
R615	1-216-864-11	METAL CHIP	0	5%	1/16W	R734	1-216-833-11	METAL CHIP	10K	5%	1/16W
R617	1-216-857-11	METAL CHIP	1M	5%	1/16W	R735	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R736	1-216-833-11	METAL CHIP	10K	5%	1/16W
R618	1-218-911-11	METAL CHIP	470K	0.5%	1/16W	R737	1-216-833-11	METAL CHIP	10K	5%	1/16W
R619	1-216-864-11	METAL CHIP	0	5%	1/16W	R738	1-216-833-11	METAL CHIP	10K	5%	1/16W
R622	1-216-864-11	METAL CHIP	0	5%	1/16W						
R623	1-216-864-11	METAL CHIP	0	5%	1/16W	R739	1-216-864-11	METAL CHIP	0	5%	1/16W
R625	1-216-815-11	METAL CHIP	330	5%	1/16W	R740	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R741	1-216-801-11	METAL CHIP	22	5%	1/16W
R626	1-216-864-11	METAL CHIP	0	5%	1/16W	R742	1-216-801-11	METAL CHIP	22	5%	1/16W
R627	1-216-864-11	METAL CHIP	0	5%	1/16W	R743	1-216-801-11	METAL CHIP	22	5%	1/16W
R628	1-216-864-11	METAL CHIP	0	5%	1/16W						
R629	1-216-864-11	METAL CHIP	0	5%	1/16W	R744	1-216-801-11	METAL CHIP	22	5%	1/16W
R632	1-216-833-11	METAL CHIP	10K	5%	1/16W	R745	1-216-841-11	METAL CHIP	47K	5%	1/16W
						R746	1-216-841-11	METAL CHIP	47K	5%	1/16W
R634	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	R750	1-216-833-11	METAL CHIP	10K	5%	1/16W
R642	1-216-839-11	METAL CHIP	33K	5%	1/16W	R752	1-216-864-11	METAL CHIP	0	5%	1/16W
R644	1-216-797-11	METAL CHIP	10	5%	1/16W						
R645	1-216-797-11	METAL CHIP	10	5%	1/16W	R753	1-216-864-11	METAL CHIP	0	5%	1/16W
R654	1-216-833-11	METAL CHIP	10K	5%	1/16W	R754	1-216-864-11	METAL CHIP	0	5%	1/16W
						R755	1-216-864-11	METAL CHIP	0	5%	1/16W
R655	1-216-821-11	METAL CHIP	1K	5%	1/16W	R756	1-216-864-11	METAL CHIP	0	5%	1/16W
R656	1-216-821-11	METAL CHIP	1K	5%	1/16W	R757	1-216-864-11	METAL CHIP	0	5%	1/16W
R657	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W						

MAIN

Ref. No.	Part No.	Description	Remark		
R758	1-216-864-11	METAL CHIP	0	5%	1/16W
R759	1-216-864-11	METAL CHIP	0	5%	1/16W
R761	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R762	1-218-724-11	METAL CHIP	22K	0.5%	1/16W
R763	1-218-714-11	METAL CHIP	8.2K	0.5%	1/16W
R764	1-216-857-11	METAL CHIP	1M	5%	1/16W
R765	1-218-728-11	METAL CHIP	33K	0.5%	1/16W
R766	1-216-864-11	METAL CHIP	0	5%	1/16W
R767	1-218-728-11	METAL CHIP	33K	0.5%	1/16W
R768	1-216-809-11	METAL CHIP	100	5%	1/16W
R769	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R770	1-216-864-11	METAL CHIP	0	5%	1/16W
R771	1-216-801-11	METAL CHIP	22	5%	1/16W
R772	1-216-801-11	METAL CHIP	22	5%	1/16W
R773	1-216-833-11	METAL CHIP	10K	5%	1/16W
R776	1-216-864-11	METAL CHIP	0	5%	1/16W
R777	1-216-864-11	METAL CHIP	0	5%	1/16W
R778	1-218-740-11	METAL CHIP	100K	0.5%	1/16W
R780	1-216-864-11	METAL CHIP	0	5%	1/16W
R781	1-216-864-11	METAL CHIP	0	5%	1/16W
R786	1-216-864-11	METAL CHIP	0	5%	1/16W
R803	1-216-803-11	METAL CHIP	33	5%	1/16W
R804	1-218-724-11	METAL CHIP	22K	0.5%	1/16W
R805	1-218-716-11	METAL CHIP	10K	0.5%	1/16W
R806	1-216-864-11	METAL CHIP	0	5%	1/16W
R808	1-216-801-11	METAL CHIP	22	5%	1/16W
R809	1-216-801-11	METAL CHIP	22	5%	1/16W
R810	1-216-801-11	METAL CHIP	22	5%	1/16W
R811	1-216-801-11	METAL CHIP	22	5%	1/16W
R812	1-216-801-11	METAL CHIP	22	5%	1/16W
R813	1-216-801-11	METAL CHIP	22	5%	1/16W
R814	1-216-801-11	METAL CHIP	22	5%	1/16W
R815	1-216-801-11	METAL CHIP	22	5%	1/16W
R816	1-216-809-11	METAL CHIP	100	5%	1/16W
R817	1-216-809-11	METAL CHIP	100	5%	1/16W
R819	1-216-809-11	METAL CHIP	100	5%	1/16W
R820	1-218-712-11	METAL CHIP	6.8K	0.5%	1/16W
R821	1-216-801-11	METAL CHIP	22	5%	1/16W
R822	1-216-801-11	METAL CHIP	22	5%	1/16W
R823	1-216-801-11	METAL CHIP	22	5%	1/16W
R824	1-216-864-11	METAL CHIP	0	5%	1/16W
R825	1-216-805-11	METAL CHIP	47	5%	1/16W
R826	1-216-805-11	METAL CHIP	47	5%	1/16W
R827	1-216-809-11	METAL CHIP	100	5%	1/16W
R828	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R829	1-216-809-11	METAL CHIP	100	5%	1/16W
R830	1-216-801-11	METAL CHIP	22	5%	1/16W
R831	1-216-845-11	METAL CHIP	100K	5%	1/16W
R832	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R833	1-216-809-11	METAL CHIP	100	5%	1/16W
R834	1-216-809-11	METAL CHIP	100	5%	1/16W
R847	1-216-801-11	METAL CHIP	22	5%	1/16W
R853	1-216-813-11	METAL CHIP	220	5%	1/16W
R854	1-216-813-11	METAL CHIP	220	5%	1/16W
R855	1-216-813-11	METAL CHIP	220	5%	1/16W
R858	1-216-819-11	METAL CHIP	680	5%	1/16W
R859	1-216-819-11	METAL CHIP	680	5%	1/16W
R860	1-216-813-11	METAL CHIP	220	5%	1/16W

Ref. No.	Part No.	Description	Remark		
R875	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R876	1-216-864-11	METAL CHIP	0	5%	1/16W
R901	1-216-801-11	METAL CHIP	22	5%	1/16W
R902	1-216-801-11	METAL CHIP	22	5%	1/16W
R903	1-216-801-11	METAL CHIP	22	5%	1/16W
R904	1-216-801-11	METAL CHIP	22	5%	1/16W
R905	1-216-801-11	METAL CHIP	22	5%	1/16W
R906	1-216-801-11	METAL CHIP	22	5%	1/16W
R907	1-216-801-11	METAL CHIP	22	5%	1/16W
R908	1-216-801-11	METAL CHIP	22	5%	1/16W
R909	1-216-801-11	METAL CHIP	22	5%	1/16W
R910	1-216-864-11	METAL CHIP	0	5%	1/16W
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R912	1-216-833-11	METAL CHIP	10K	5%	1/16W
R913	1-216-833-11	METAL CHIP	10K	5%	1/16W
R915	1-216-809-11	METAL CHIP	100	5%	1/16W
R916	1-216-821-11	METAL CHIP	1K	5%	1/16W
R917	1-216-821-11	METAL CHIP	1K	5%	1/16W
R919	1-216-801-11	METAL CHIP	22	5%	1/16W
R920	1-216-809-11	METAL CHIP	100	5%	1/16W
R921	1-216-809-11	METAL CHIP	100	5%	1/16W
R922	1-216-801-11	METAL CHIP	22	5%	1/16W
R925	1-216-809-11	METAL CHIP	100	5%	1/16W
R926	1-216-809-11	METAL CHIP	100	5%	1/16W
R928	1-216-809-11	METAL CHIP	100	5%	1/16W
R929	1-216-809-11	METAL CHIP	100	5%	1/16W
R930	1-216-809-11	METAL CHIP	100	5%	1/16W
R931	1-216-809-11	METAL CHIP	100	5%	1/16W
R932	1-216-809-11	METAL CHIP	100	5%	1/16W
R934	1-216-833-11	METAL CHIP	10K	5%	1/16W
R935	1-216-833-11	METAL CHIP	10K	5%	1/16W
R936	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R937	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R938	1-216-833-11	METAL CHIP	10K	5%	1/16W
R939	1-216-809-11	METAL CHIP	100	5%	1/16W
R940	1-216-809-11	METAL CHIP	100	5%	1/16W
R941	1-216-809-11	METAL CHIP	100	5%	1/16W
R942	1-216-809-11	METAL CHIP	100	5%	1/16W
R943	1-216-809-11	METAL CHIP	100	5%	1/16W
R944	1-216-833-11	METAL CHIP	10K	5%	1/16W
R945	1-216-833-11	METAL CHIP	10K	5%	1/16W
R946	1-216-833-11	METAL CHIP	10K	5%	1/16W
R947	1-216-864-11	METAL CHIP	0	5%	1/16W
R948	1-218-720-11	METAL CHIP	15K	0.5%	1/16W
R949	1-218-720-11	METAL CHIP	15K	0.5%	1/16W
R950	1-216-833-11	METAL CHIP	10K	5%	1/16W
R951	1-216-821-11	METAL CHIP	1K	5%	1/16W
R952	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R953	1-216-833-11	METAL CHIP	10K	5%	1/16W
R954	1-216-833-11	METAL CHIP	10K	5%	1/16W
R955	1-216-801-11	METAL CHIP	22	5%	1/16W
R956	1-216-801-11	METAL CHIP	22	5%	1/16W
R957	1-216-801-11	METAL CHIP	22	5%	1/16W
R958	1-216-864-11	METAL CHIP	0	5%	1/16W
R959	1-216-833-11	METAL CHIP	10K	5%	1/16W
R960	1-216-833-11	METAL CHIP	10K	5%	1/16W
R961	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R962	1-216-833-11	METAL CHIP	10K	5%	1/16W						
R964	1-218-704-11	METAL CHIP	3.3K	0.5%	1/16W	C436	1-136-850-11	MYLAR	0.1uF	5%	63V
R969	1-216-833-11	METAL CHIP	10K	5%	1/16W	C437	1-136-850-11	MYLAR	0.1uF	5%	63V
R970	1-216-833-11	METAL CHIP	10K	5%	1/16W	C441	1-136-850-11	MYLAR	0.1uF	5%	63V
R971	1-216-809-11	METAL CHIP	100	5%	1/16W	C442	1-136-850-11	MYLAR	0.1uF	5%	63V
						C443	1-136-850-11	MYLAR	0.1uF	5%	63V
R973	1-216-864-11	METAL CHIP	0	5%	1/16W						
R975	1-216-833-11	METAL CHIP	10K	5%	1/16W	C444	1-136-850-11	MYLAR	0.1uF	5%	63V
R976	1-216-833-11	METAL CHIP	10K	5%	1/16W	C445	1-136-850-11	MYLAR	0.1uF	5%	63V
R978	1-216-833-11	METAL CHIP	10K	5%	1/16W	C446	1-136-850-11	MYLAR	0.1uF	5%	63V
R979	1-216-833-11	METAL CHIP	10K	5%	1/16W	C447	1-136-850-11	MYLAR	0.1uF	5%	63V
						C448	1-136-850-11	MYLAR	0.1uF	5%	63V
R980	1-216-833-11	METAL CHIP	10K	5%	1/16W						
R981	1-216-833-11	METAL CHIP	10K	5%	1/16W	C451	1-136-850-11	MYLAR	0.1uF	5%	63V
R982	1-216-864-11	METAL CHIP	0	5%	1/16W	C452	1-136-850-11	MYLAR	0.1uF	5%	63V
R983	1-216-864-11	METAL CHIP	0	5%	1/16W	C453	1-136-850-11	MYLAR	0.1uF	5%	63V
R985	1-218-712-11	METAL CHIP	6.8K	0.5%	1/16W	C454	1-136-850-11	MYLAR	0.1uF	5%	63V
						C455	1-136-850-11	MYLAR	0.1uF	5%	63V
R988	1-216-864-11	METAL CHIP	0	5%	1/16W						
R991	1-216-864-11	METAL CHIP	0	5%	1/16W	C471	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
R992	1-216-864-11	METAL CHIP	0	5%	1/16W	C479	1-128-652-21	MYLAR	1uF		63V
R994	1-216-789-11	METAL CHIP	2.2	5%	1/16W	C480	1-128-652-21	MYLAR	1uF		63V
R995	1-218-712-11	METAL CHIP	6.8K	0.5%	1/16W						
								< CONNECTOR >			
R998	1-216-864-11	METAL CHIP	0	5%	1/16W						
		< VIBRATOR >				CN401	1-564-511-31	PLUG, CONNECTOR 8P			
						CN402	1-564-507-31	PLUG, CONNECTOR 4P			
X901	1-781-945-21	VIBRATOR, CERAMIC (20MHz)				CN403	1-564-509-31	PLUG, CONNECTOR 6P			
*****						CN404	1-564-506-21	PLUG, CONNECTOR 3P			
						CN405	1-564-506-11	PLUG, CONNECTOR 3P			
		POWER BOARD									
		*****				CN406	1-564-507-11	PLUG, CONNECTOR 4P			
						CN407	1-564-507-41	PLUG, CONNECTOR 4P			
	2-259-121-01	SCREW, TR				CN408	1-568-955-11	PIN, CONNECTOR 6P			
*	4-931-401-01	HEAT SINK, V.OUT				CN409	1-568-936-21	PIN, CONNECTOR 9P			
*	4-941-237-01	HEAT SINK				CN410	1-564-505-31	PLUG, CONNECTOR 2P			
		< CAPACITOR >									
C401	1-135-696-11	ELECT	4700uF		16V			< DIODE >			
C403	1-135-696-11	ELECT	4700uF		16V						
C404	1-136-850-11	MYLAR	0.1uF	5%	63V	D401	8-719-210-33	DIODE EC10DS2			
C405	1-135-776-11	ELECT	100uF		35V	D402	8-719-210-33	DIODE EC10DS2			
C406	1-136-850-11	MYLAR	0.1uF	5%	63V	D403	8-719-072-28	DIODE MTZJ-T-72-10B			
						D404	8-719-210-39	DIODE EC10QS-04			
C408	1-135-689-11	ELECT	6800uF		25V	D405	8-719-210-39	DIODE EC10QS-04			
C409	1-135-689-11	ELECT	6800uF		25V						
C410	1-137-626-11	ELECT	6800uF	20%	35V	D406	8-719-210-39	DIODE EC10QS-04			
C411	1-137-626-11	ELECT	6800uF	20%	35V	D407	8-719-210-39	DIODE EC10QS-04			
C412	1-125-781-21	ELECT	220uF	20%	35V	D409	8-719-210-39	DIODE EC10QS-04			
						D410	8-719-210-39	DIODE EC10QS-04			
C413	1-125-781-21	ELECT	220uF	20%	35V	D411	8-719-210-39	DIODE EC10QS-04			
C414	1-135-771-11	ELECT	100uF		63V						
C415	1-128-652-21	MYLAR	1uF		63V	D412	8-719-210-39	DIODE EC10QS-04			
C416	1-135-746-11	ELECT	47uF		50V	D413	8-719-210-39	DIODE EC10QS-04			
C417	1-164-159-11	CERAMIC	0.1uF		50V	D414	8-719-210-39	DIODE EC10QS-04			
						D415	8-719-210-39	DIODE EC10QS-04			
C418	1-128-652-21	MYLAR	1uF		63V	D416	8-719-210-39	DIODE EC10QS-04			
C419	1-128-652-21	MYLAR	1uF		63V						
C420	1-135-689-11	ELECT	6800uF		25V	D417	8-719-210-33	DIODE EC10DS2			
C421	1-135-695-11	ELECT	3300uF		16V	D418	8-719-210-33	DIODE EC10DS2			
C424	1-135-689-11	ELECT	6800uF		25V	D419	8-719-210-33	DIODE EC10DS2			
						D420	8-719-210-33	DIODE EC10DS2			
C426	1-135-836-11	ELECT	2200uF		16V	D421	8-719-983-99	DIODE MTZJ-T-72-39D			
C428	1-135-836-11	ELECT	2200uF		16V						
C431	1-135-689-11	ELECT	6800uF		25V	D422	8-719-175-88	DIODE RD7.5F-B			
C433	1-135-836-11	ELECT	2200uF		16V	D423	8-719-210-33	DIODE EC10DS2			
C435	1-135-836-11	ELECT	2200uF		16V	D424	8-719-210-33	DIODE EC10DS2			

POWER

POWER SWITCH

R. CNTL

RF

Ref. No.	Part No.	Description	Remark		
D425	8-719-210-33	DIODE EC10DS2			
D426	8-719-210-33	DIODE EC10DS2			
D427	8-719-210-33	DIODE EC10DS2			
D428	8-719-210-33	DIODE EC10DS2			
D429	8-719-210-33	DIODE EC10DS2			
D430	8-719-210-33	DIODE EC10DS2			
D431	8-719-210-33	DIODE EC10DS2			
D432	8-719-210-33	DIODE EC10DS2			
D433	8-719-210-33	DIODE EC10DS2			
D434	8-719-210-33	DIODE EC10DS2			
D435	8-719-313-73	DIODE SFPB-52			
D436	8-719-313-73	DIODE SFPB-52			
< RESISTOR >					
△FR401	1-212-893-00	FUSIBLE	330	5%	1/4W F
△FR402	1-212-873-11	FUSIBLE	47	5%	1/4W F
< IC >					
IC401	8-759-593-62	IC uPC24A05AHF			
IC402	8-759-231-59	IC TA7815S			
IC403	8-759-245-87	IC TA7915S			
IC404	8-759-394-35	IC BA12T			
IC405	8-759-450-47	IC BA05T			
IC406	8-759-450-47	IC BA05T			
IC407	8-759-445-59	IC BA033T			
IC408	8-759-445-59	IC BA033T			
< COIL >					
L401	1-414-510-21	INDUCTOR CHIP	3.3uH		
L402	1-414-510-21	INDUCTOR CHIP	3.3uH		
L403	1-412-473-21	INDUCTOR CHIP	0uH		
L404	1-412-473-21	INDUCTOR CHIP	0uH		
L441	1-424-122-11	FILTER, NOISE			
L442	1-424-122-11	FILTER, NOISE			
L443	1-424-122-11	FILTER, NOISE			
L444	1-424-122-11	FILTER, NOISE			
L445	1-424-122-11	FILTER, NOISE			
L446	1-424-122-11	FILTER, NOISE			
L447	1-424-122-11	FILTER, NOISE			
L448	1-424-122-11	FILTER, NOISE			
< TRANSISTOR >					
Q401	8-729-041-38	TRANSISTOR	2SB1241TV2Q		
< RESISTOR >					
R401	1-249-421-11	CARBON	2.2K	5%	1/4W
R403	1-247-887-00	CARBON	220K	5%	1/4W
R404	1-247-807-31	CARBON	100	5%	1/4W
R405	1-247-807-31	CARBON	100	5%	1/4W
R406	1-249-432-11	CARBON	18K	5%	1/4W
R491	1-216-298-00	METAL CHIP	2.2	5%	1/10W
< THERMISTOR (POSITIVE) >					
THP401	1-801-578-11	THERMISTOR, POSITIVE			
THP402	1-801-578-11	THERMISTOR, POSITIVE			
THP403	1-801-578-11	THERMISTOR, POSITIVE			

Ref. No.	Part No.	Description	Remark		
POWER SWITCH BOARD					

< CAPACITOR >					
△C481	1-113-927-11	CERAMIC	10000PF	20%	250V
< CONNECTOR >					
* CN481	1-568-226-11	PIN, CONNECTOR 2P			
< SWITCH >					
△S481	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY)			
(POWER)					

R.CNTL BOARD					

< CAPACITOR >					
C1022	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
< CONNECTOR >					
* CN1006	1-568-941-11	PIN, CONNECTOR 3P			
< IC >					
IC1003	8-749-923-80	IC GP1U90XB	(REMOTE CONTROL RECEIVER)		
< RESISTOR >					
R1035	1-216-025-11	RES-CHIP	100	5%	1/10W

A-4725-382-A RF BOARD, COMPLETE					

< CAPACITOR >					
C001	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C002	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C003	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C004	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C005	1-128-993-21	ELECT CHIP	22uF	20%	10V
C006	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C007	1-124-779-00	ELECT CHIP	10uF	20%	16V
C008	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C009	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C010	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C011	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C012	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C013	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C014	1-124-779-00	ELECT CHIP	10uF	20%	16V
C015	1-124-779-00	ELECT CHIP	10uF	20%	16V
C016	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C017	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C018	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C019	1-124-779-00	ELECT CHIP	10uF	20%	16V
C020	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C021	1-162-919-11	CERAMIC CHIP	22PF	5%	50V

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C022	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V				< COIL >				
C023	1-126-206-11	ELECT CHIP	100uF	20%	6.3V								
C024	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		L001	1-412-031-11	INDUCTOR CHIP	47uH			
C025	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		L002	1-412-031-11	INDUCTOR CHIP	47uH			
							L003	1-412-031-11	INDUCTOR CHIP	47uH			
C026	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C027	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V				< TRANSISTOR >				
C028	1-128-993-21	ELECT CHIP	22uF	20%	10V								
C029	1-124-779-00	ELECT CHIP	10uF	20%	16V		Q001	8-729-805-25	TRANSISTOR	2SB1121-S			
C030	1-128-993-21	ELECT CHIP	22uF	20%	10V		Q002	8-729-805-25	TRANSISTOR	2SB1121-S			
							Q003	8-729-805-25	TRANSISTOR	2SB1121-S			
C031	1-107-826-11	CERAMIC CHIP	0.1uF	10%	25V		Q005	8-729-820-90	TRANSISTOR	2SD1621-ST			
C032	1-107-826-11	CERAMIC CHIP	0.1uF	10%	25V								
C033	1-128-993-21	ELECT CHIP	22uF	20%	10V				< RESISTOR >				
C034	1-124-779-00	ELECT CHIP	10uF	20%	16V								
C036	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R001	1-216-864-11	METAL CHIP	0	5%		1/16W
							R002	1-218-668-11	METAL CHIP	100	0.5%		1/16W
C037	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V		R003	1-216-839-11	METAL CHIP	33K	5%		1/16W
C038	1-126-206-11	ELECT CHIP	100uF	20%	6.3V		R005	1-216-864-11	METAL CHIP	0	5%		1/16W
C039	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R006	1-216-864-11	METAL CHIP	0	5%		1/16W
C040	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C041	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V		R007	1-216-864-11	METAL CHIP	0	5%		1/16W
							R008	1-216-864-11	METAL CHIP	0	5%		1/16W
C042	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V		R011	1-216-864-11	METAL CHIP	0	5%		1/16W
C043	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V		R012	1-216-864-11	METAL CHIP	0	5%		1/16W
C044	1-162-963-11	CERAMIC CHIP	680PF	10%	50V		R013	1-216-864-11	METAL CHIP	0	5%		1/16W
C045	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V								
C046	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R014	1-216-864-11	METAL CHIP	0	5%		1/16W
							R015	1-216-803-11	METAL CHIP	33	5%		1/16W
C047	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R016	1-216-821-11	METAL CHIP	1K	5%		1/16W
C048	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R017	1-216-841-11	METAL CHIP	470	5%		1/16W
C049	1-128-993-21	ELECT CHIP	22uF	20%	10V		R018	1-216-821-11	METAL CHIP	1K	5%		1/16W
C050	1-128-993-21	ELECT CHIP	22uF	20%	10V								
C051	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R019	1-216-803-11	METAL CHIP	33	5%		1/16W
							R020	1-216-817-11	METAL CHIP	470	5%		1/16W
C052	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R021	1-219-570-11	RES-CHIP	10M	5%		1/16W
C055	1-128-993-21	ELECT CHIP	22uF	20%	10V		R022	1-218-718-11	METAL CHIP	12K	0.5%		1/16W
C060	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R023	1-216-864-11	METAL CHIP	0	5%		1/16W
C064	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C068	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R024	1-216-864-11	METAL CHIP	0	5%		1/16W
							R025	1-216-864-11	METAL CHIP	0	5%		1/16W
C069	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R027	1-216-864-11	METAL CHIP	0	5%		1/16W
C070	1-128-993-21	ELECT CHIP	22uF	20%	10V		R029	1-216-864-11	METAL CHIP	47K	5%		1/16W
C071	1-128-993-21	ELECT CHIP	22uF	20%	10V		R030	1-216-864-11	METAL CHIP	0	5%		1/16W
C081	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V								
C082	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V		R031	1-216-864-11	METAL CHIP	0	5%		1/16W
							R032	1-216-864-11	METAL CHIP	0	5%		1/16W
C084	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R033	1-216-864-11	METAL CHIP	0	5%		1/16W
C094	1-128-993-21	ELECT CHIP	22uF	20%	10V		R036	1-216-833-11	METAL CHIP	10K	5%		1/16W
C095	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V		R044	1-216-832-11	METAL CHIP	8.2K	5%		1/16W
		< CONNECTOR >					R046	1-218-668-11	METAL CHIP	100	0.5%		1/16W
							R053	1-216-864-11	METAL CHIP	0	5%		1/16W
CN001	1-774-731-21	PIN, CONNECTOR (PC BOARD) 5P					R054	1-216-864-11	METAL CHIP	0	5%		1/16W
CN002	1-770-161-21	PIN, CONNECTOR (PC BOARD) 6P					R060	1-216-864-11	METAL CHIP	0	5%		1/16W
CN003	1-794-707-11	CONNECTOR, FFC/FPC 25P					R065	1-218-716-11	METAL CHIP	10K	0.5%		1/16W
CN005	1-784-883-21	CONNECTOR, FFC (LIF (NON-ZIF)) 35P					R066	1-218-716-11	METAL CHIP	10K	0.5%		1/16W
		< DIODE >					R068	1-216-839-11	METAL CHIP	33K	5%		1/16W
							R082	1-216-833-11	METAL CHIP	10K	5%		1/16W
D001	8-719-016-74	DIODE 1SS352					R083	1-216-833-11	METAL CHIP	10K	5%		1/16W
D002	8-719-016-74	DIODE 1SS352					R084	1-216-833-11	METAL CHIP	10K	5%		1/16W
		< IC >					R085	1-216-833-11	METAL CHIP	10K	5%		1/16W
							R086	1-216-833-11	METAL CHIP	10K	5%		1/16W
IC001	8-752-403-50	IC CXD1881R					R087	1-216-833-11	METAL CHIP	10K	5%		1/16W
IC004	8-759-058-45	IC NJM3403AV					R088	1-216-864-11	METAL CHIP	0	5%		1/16W
IC081	8-759-701-40	IC NJM3404AM-T1					R089	1-216-864-11	METAL CHIP	0	5%		1/16W

RF

SWITCH

Ref. No.	Part No.	Description	Remark		
R093	1-216-803-11	METAL CHIP	33	5%	1/16W
R094	1-216-803-11	METAL CHIP	33	5%	1/16W
R097	1-216-839-11	METAL CHIP	33K	5%	1/16W
R098	1-216-839-11	METAL CHIP	33K	5%	1/16W

* 1-641-764-11 SWITCH BOARD

< CAPACITOR >

C001 1-161-494-00 CERAMIC 0.022uF 25V

< SWITCH >

S001 1-571-300-11 SWITCH, ROTARY (LOADING IN)
S002 1-571-300-11 SWITCH, ROTARY (LOADING OUT)

MISCELLANEOUS

103 1-757-098-11 WIRE (FLAT TYPE) (35 CORE)
108 1-757-095-11 WIRE (FLAT TYPE) (9 CORE)
109 1-757-096-11 WIRE (FLAT TYPE) (16 CORE)
△ 552 8-820-132-03 OPTICAL PICK-UP (KHM-230AAA/J1RP)
557 1-757-097-11 WIRE (FLAT TYPE) (25 CORE)

M1 A-4604-347-A MOTOR (L) ASSY (LOADING)
△ T401 1-435-706-11 TRANSFORMER, POWER (ANALOG)
△ T402 1-435-707-11 TRANSFORMER, POWER (DIGITAL)

HARDWARE LIST

#1 7-685-887-09 SCREW +BVTT 4X25 (S)
#2 7-685-647-79 SCREW +P 3X10 TYPE2 SLIT
#3 7-685-548-19 SCREW +BTP 3X12 TYPE2 N-S
#4 7-682-548-09 SCREW (3X8)
#5 7-685-659-79 SCREW +BVTP 4X8 TYPE2 N-S

#6 7-685-871-01 SCREW +BVTT 3X6 (S)
#7 7-685-646-79 SCREW, TAPPING
#8 7-685-872-09 SCREW +BVTT 3X8 (S)
#9 7-688-003-12 W 3, MIDDLE
#10 7-682-544-04 SCREW +P 3X3

#11 7-685-871-09 SCREW +BVTT 3X6 (S)
#12 7-624-105-04 STOP RING 2.3, TYPE -E
#13 7-685-903-21 SCREW +PTPWH 3X8 (TYPE2)
#14 7-682-547-04 SCREW (+BVTT M3 S)

ACCESSORIES & PACKING MATERIALS

△ 1-418-994-11 REMOTE COMMANDER (RM-SX90)
1-551-631-22 CORD, POWER
1-791-732-11 CORD, CONNECTION
4-230-645-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH,
SPANISH, PORTUGUESE)
4-230-645-21 MANUAL, INSTRUCTION (GERMAN, ITALIAN,
DUTCH, SWEDISH)

4-983-956-01 COVER, BATTERY (for RM-SX90)

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.