

CFD-S20CP

SERVICE MANUAL

Ver 1.3 2004. 09

AEP Model
UK Model
E Model



CD Section	Model Name Using Similar Mechanism	CFD-S400L
	CD Mechanism Type	KSM-213RDP
	Optical Pick-up Name	KSS-213R
TC Section	Model Name Using Similar Mechanism	CFD-S400L
	Tape Transport Mechanism Type	MF-S200

SPECIFICATIONS

CD player section

System

Compact disc digital audio system

Laser diode properties

Material: GaAlAs

Wave length: 780 nm

Emission duration: Continuous

Laser output: Less than 44.6 μ W

(This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Spindle speed

200 r/min (rpm) to 500 r/min (rpm) (CLV)

Number of channels

2

Frequency response

20 - 20,000 Hz $\pm 1/-2$ dB

Wow and flutter

Below measurable limit

Radio section

Frequency range

FM: 87.5 - 108 MHz

MW: 531 - 1,611 kHz (9 kHz step)

530 - 1,610 kHz (10 kHz step)

LW: 153 - 279 kHz

IF

FM: 10.7 MHz

MW/LW: 450 kHz

Aerials

FM: Telescopic aerial

MW/LW: Built-in ferrite bar aerial

Cassette-corder section

Recording system

4-track 2 channel stereo

Fast winding time

Approx. 120 sec. with Sony cassette C-60

Frequency response

TYPE I (normal): 80 - 10,000 Hz

General

Speaker

Full range: 10 cm dia.,

3.2 ohms, cone type (2)

Outputs

Headphones jack (stereo minijack)

For 16 - 68 ohms impedance headphones

Maximum power output

4.6 W

Power requirements

For CD radio cassette-corder:

230 V AC, 50 Hz (Except Saudi Arabia model)

220 - 240 V AC, 50/60 Hz (Saudi Arabia model)

9 V DC, 6 size D (R20) batteries

For remote control:

3 V DC, 2 size AA (R6) batteries

— Continued on next page —

CD RADIO CASSETTE-CORDER

9-873-979-04

2004I04-1

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Sony Corporation

Personal Audio Company

Published by Sony Engineering Corporation

SONY®

CFD-S20CP

Battery life

For CD radio cassette-corder:

FM recording

Sony R20P: approx. 13.5 h

Sony alkaline LR20: approx. 20 h

Tape playback

Sony R20P: approx. 7.5 h

Sony alkaline LR20: approx. 15 h

CD playback

Sony R20P: approx. 2.5 h

Sony alkaline LR20: approx. 7 h

Dimensions

Approx. 386 × 166 × 252 mm (w/h/d)
(incl. projecting parts)

Mass

Approx. 3.3 kg (incl. batteries)

Supplied accessories

Main lead (1)

Remote control (1)

Design and specifications are subject to change without notice.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT mark is located at the bottom.

CAUTION

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

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.

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.

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown 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.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  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.

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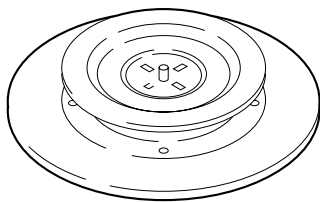
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SECTION 1 SERVICING NOTES

CHUCK PLATE JIG ON REPAIRING

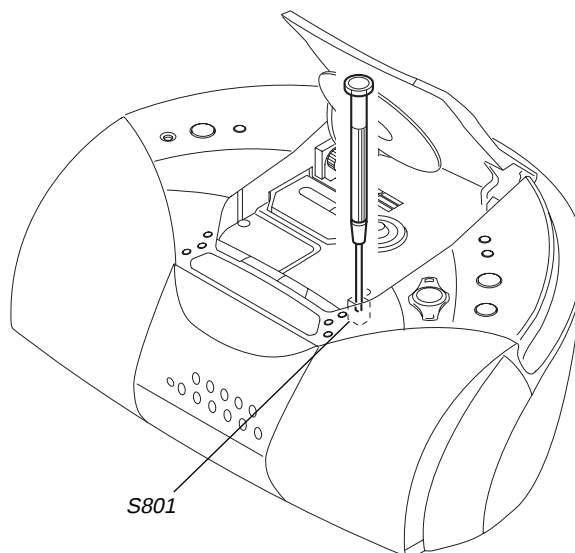
On repairing CD section, playing a disc without the lid (CD), use Chuck Plate Jig.

- Code number of Chuck Plate Jig: X-4918-255-1



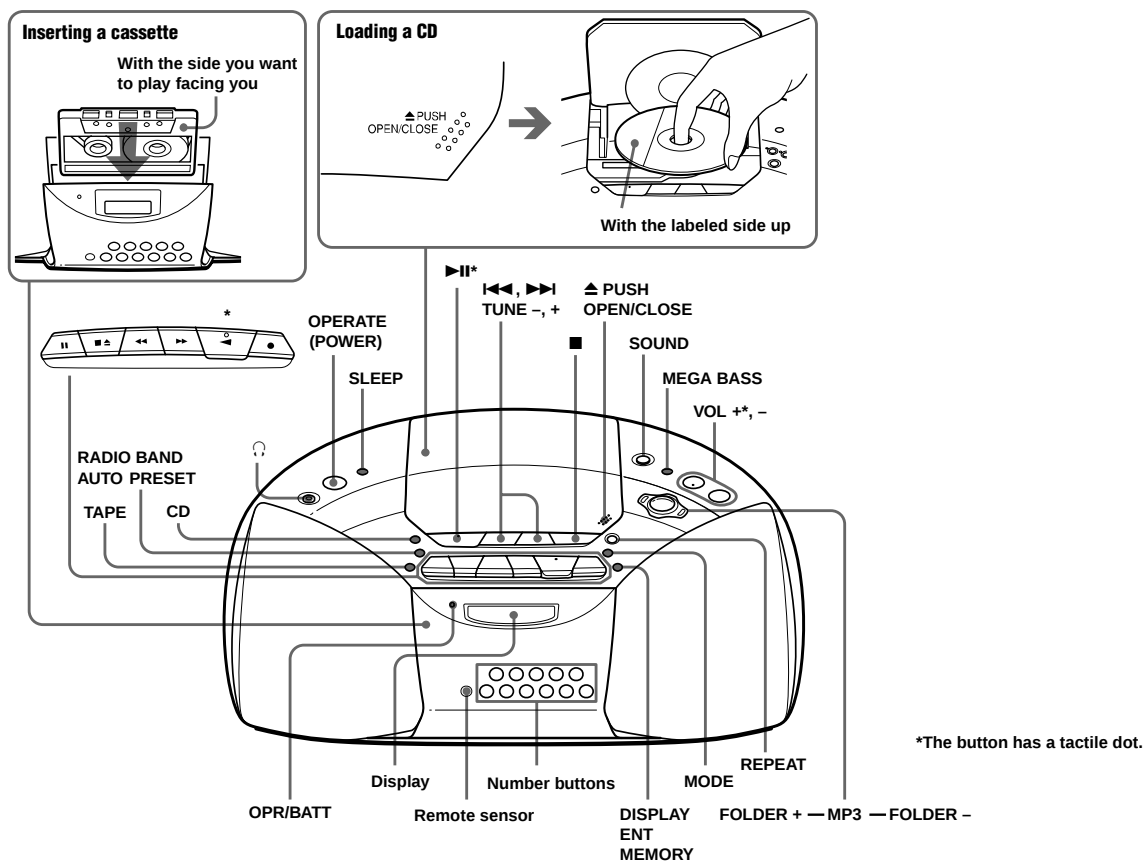
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Turn ON the **OPERATE** button and press **CD** button to CD position.
2. Open the CD lid.
3. Turn on S801 with screwdriver, etc. as following figure.
4. Press the **▶||** (CD) button.
5. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.
Objective lens moves up and down three times for focus search.



SECTION 2 GENERAL

Location of controls

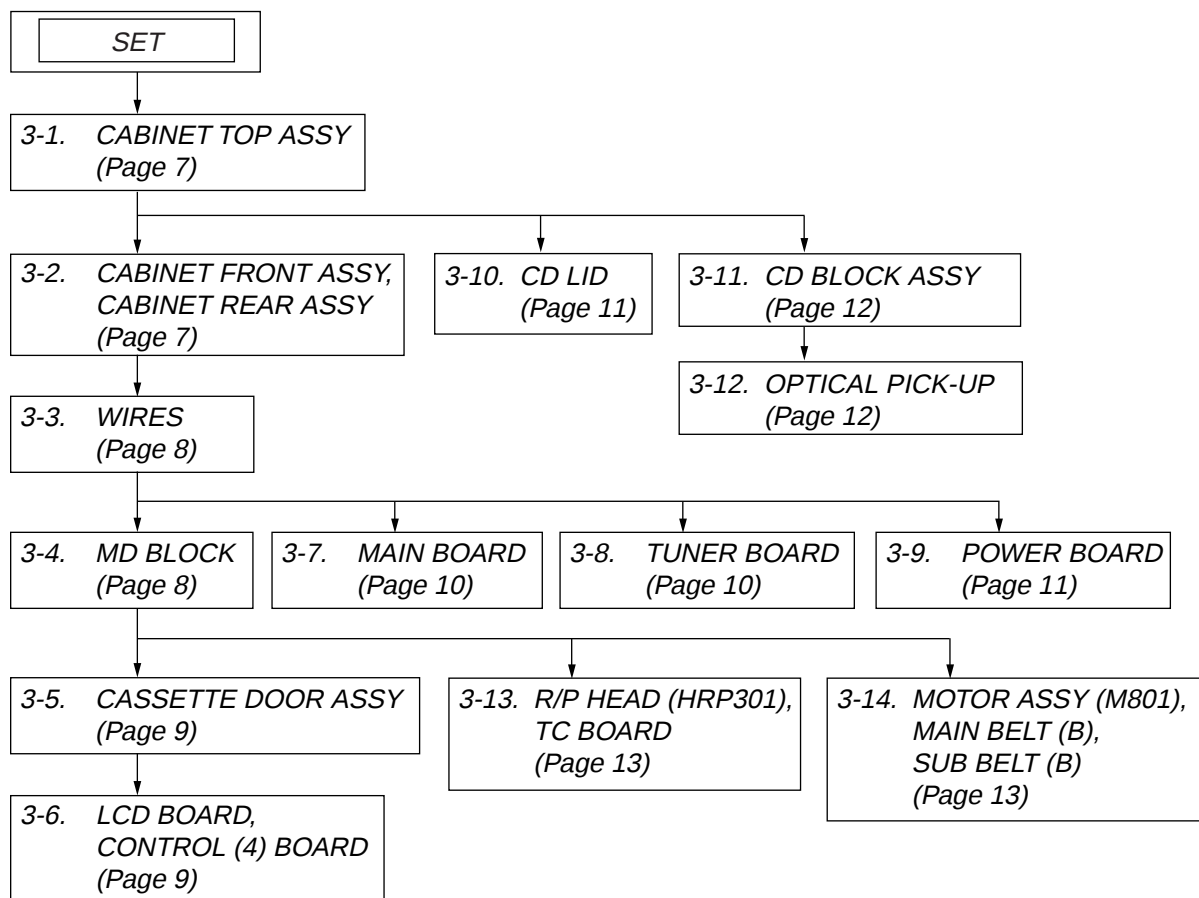


Display



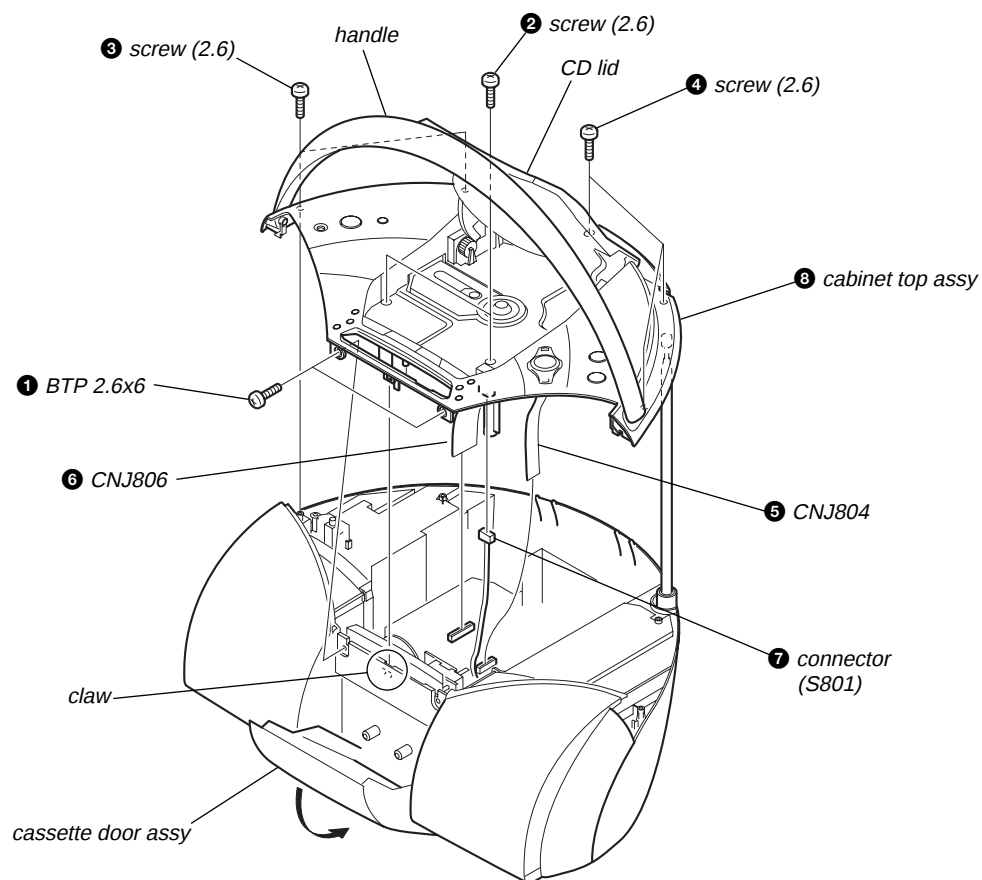
SECTION 3 DISASSEMBLY

- The equipment can be removed using the following procedure .

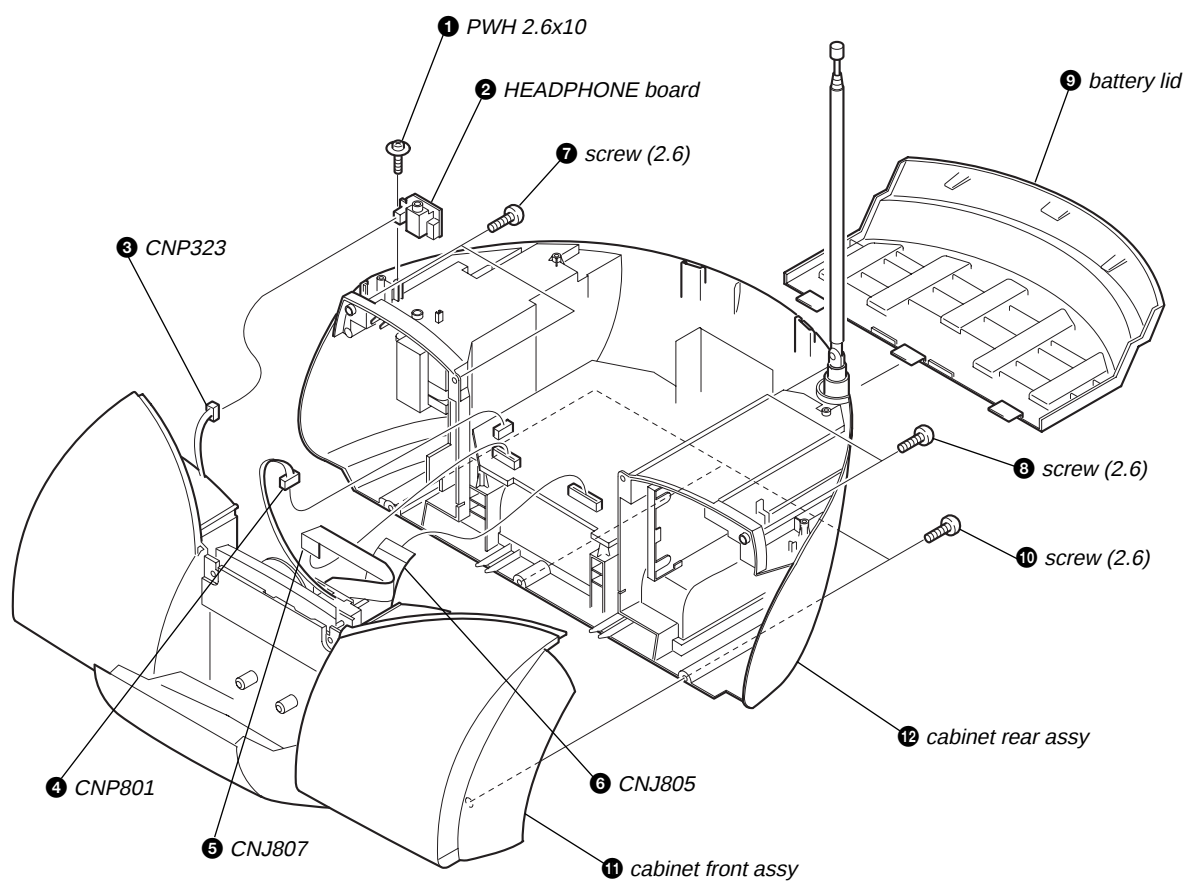


Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET TOP ASSY

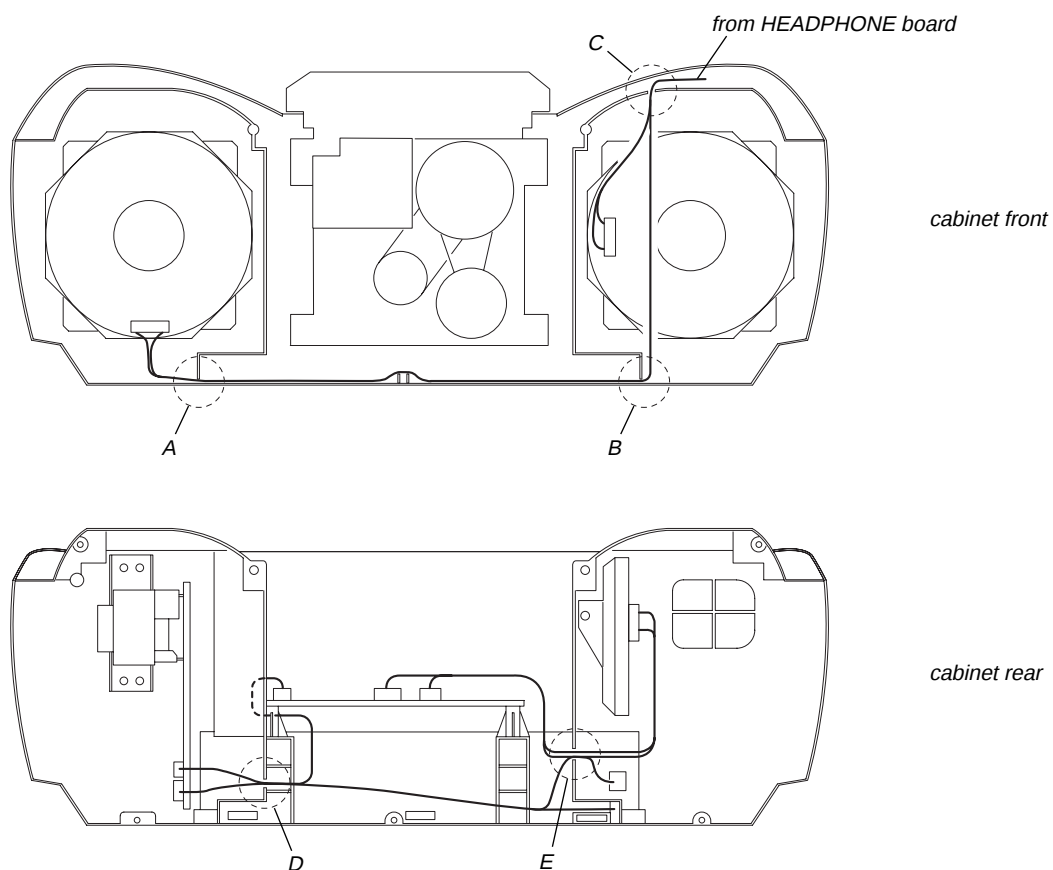


3-2. CABINET FRONT ASSY, CABINET REAR ASSY

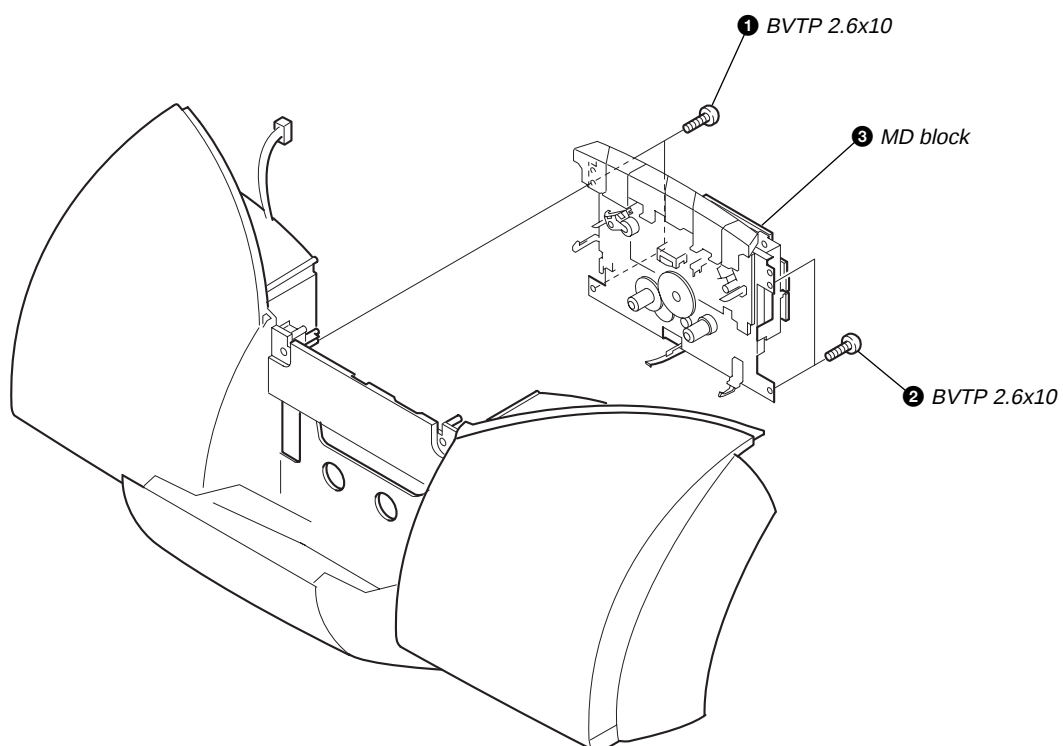


3-3. WIRES

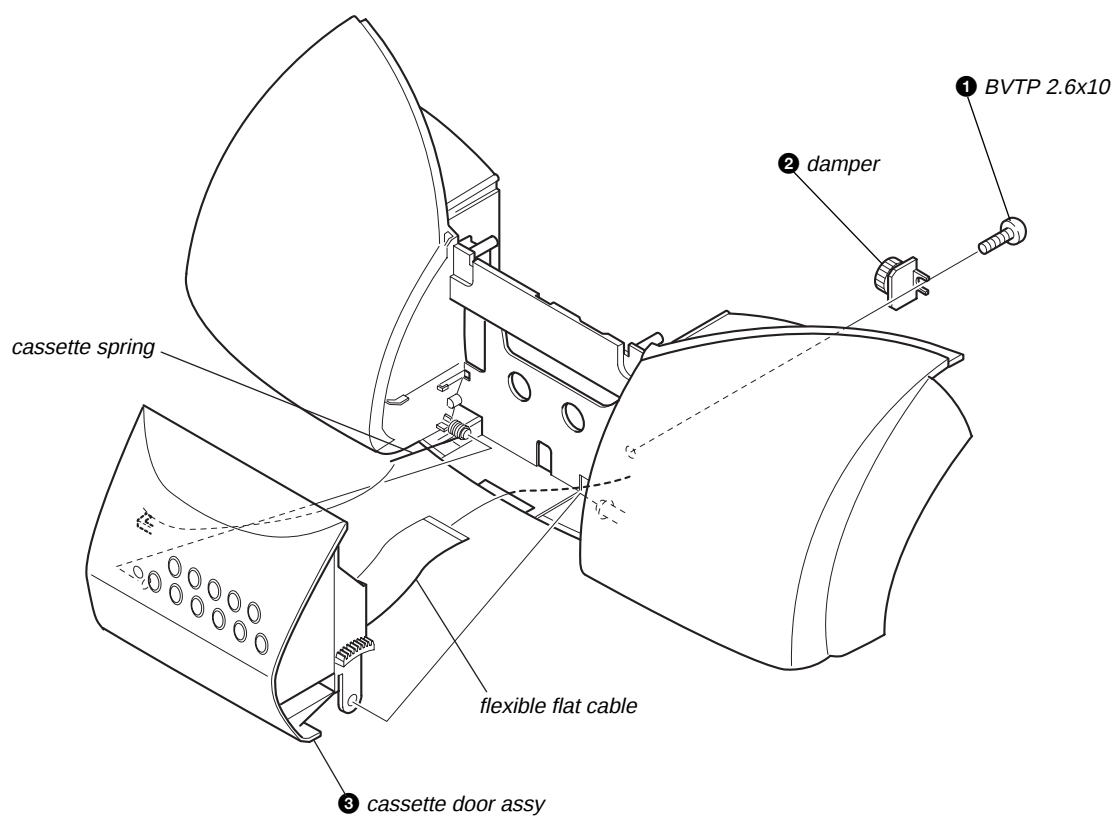
Put flat cable and wires between the cabinets and push them in the grooves located at A to E in the figure to prevent disconnection before assembling the set.



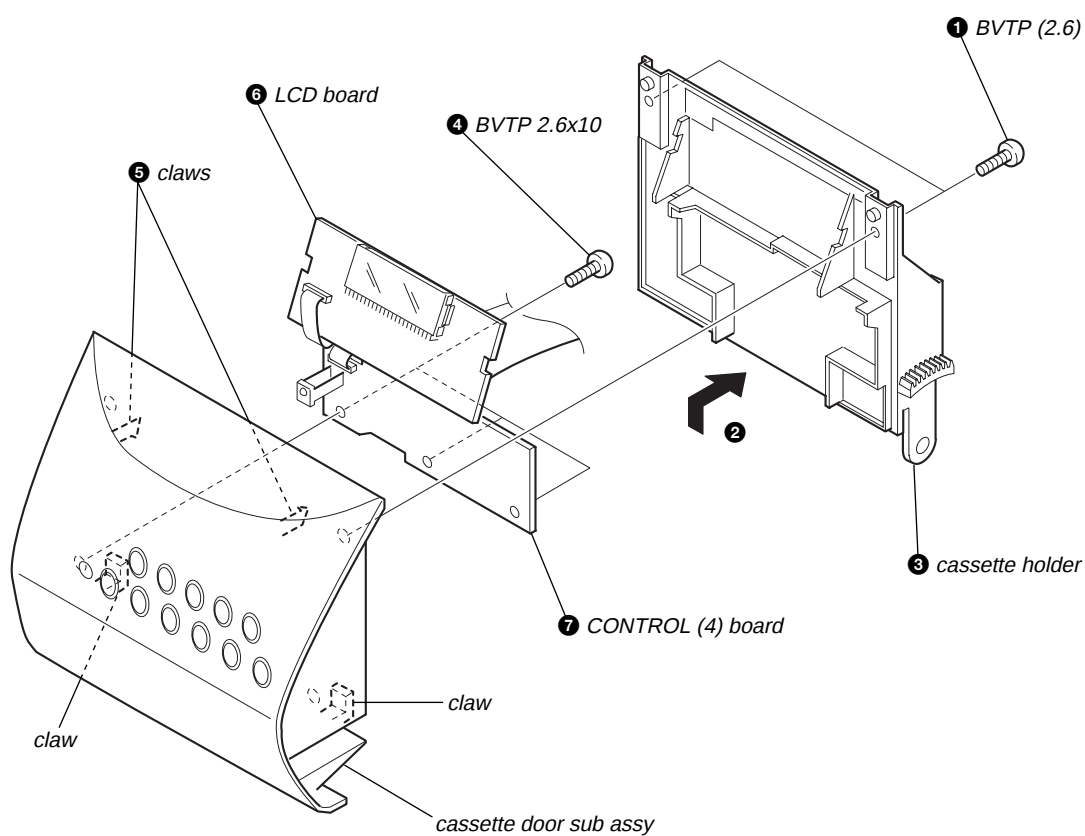
3-4. MD BLOCK



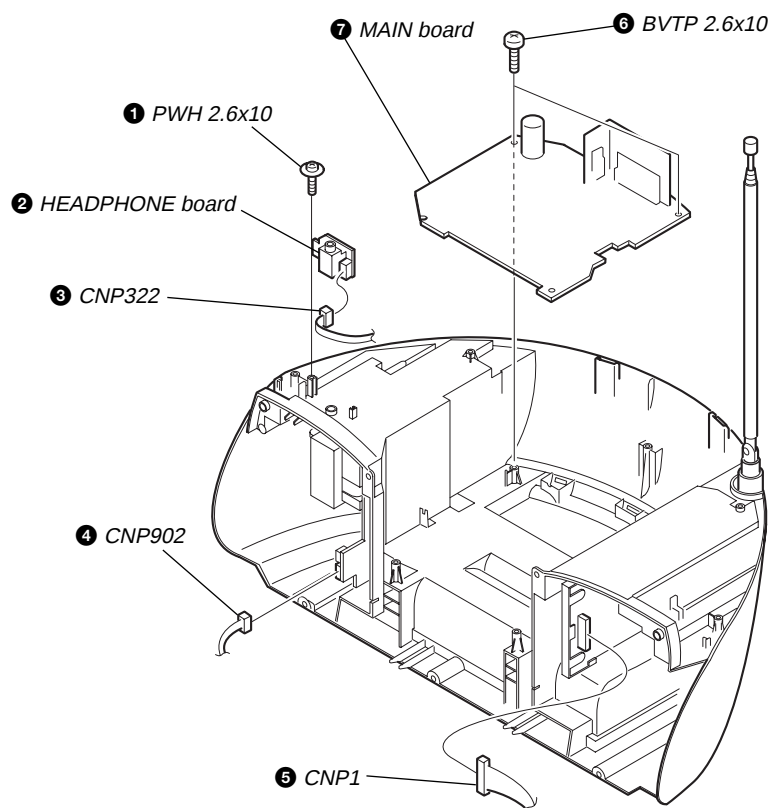
3-5. CASSETTE DOOR ASSY



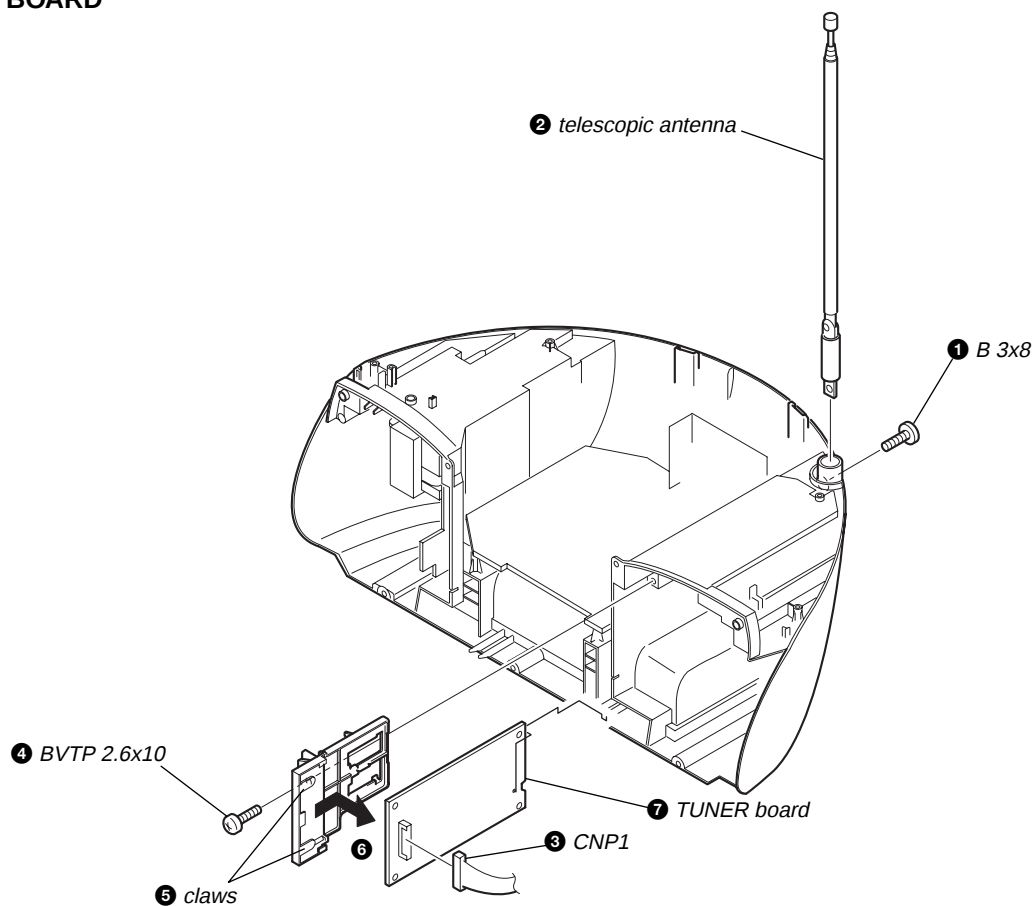
3-6. LCD BOARD, CONTROL (4) BOARD



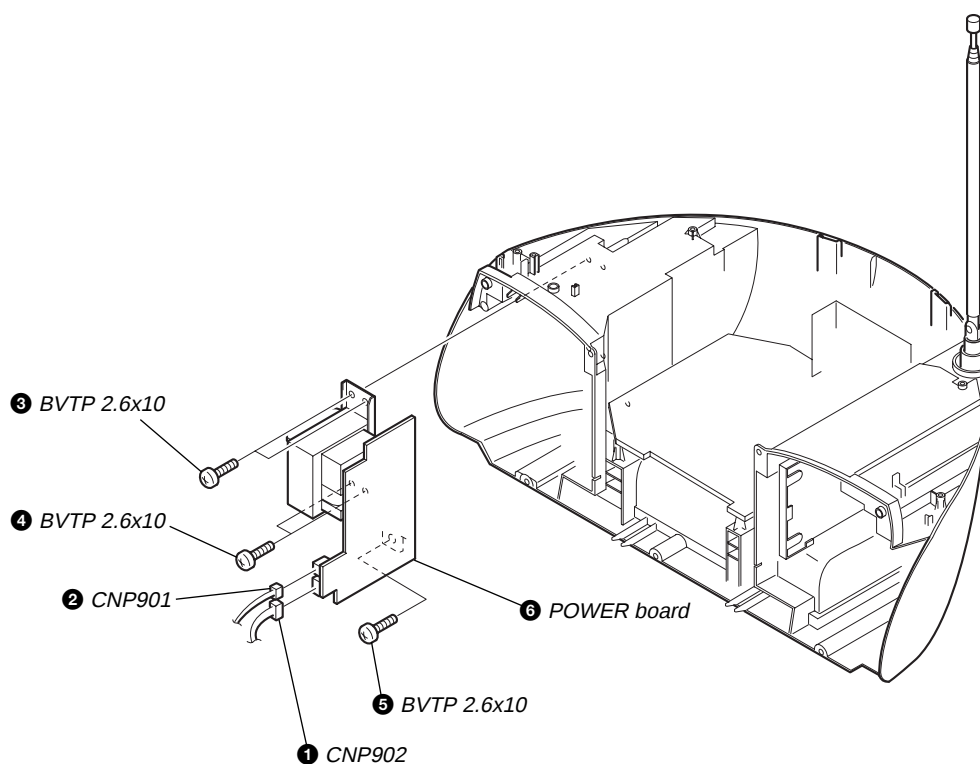
3-7. MAIN BOARD



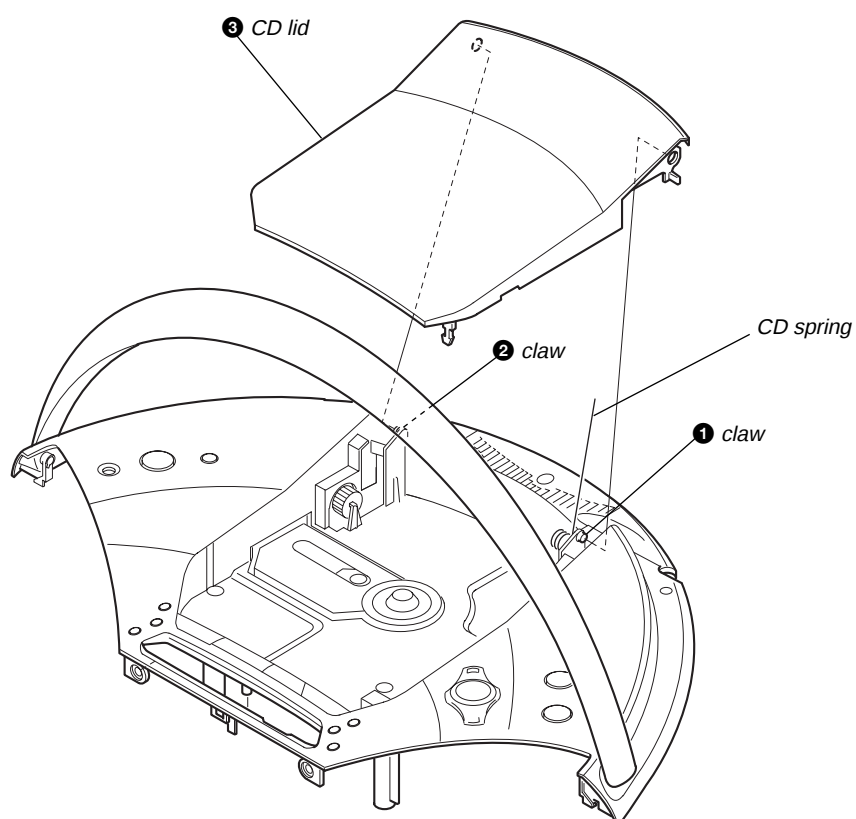
3-8. TUNER BOARD



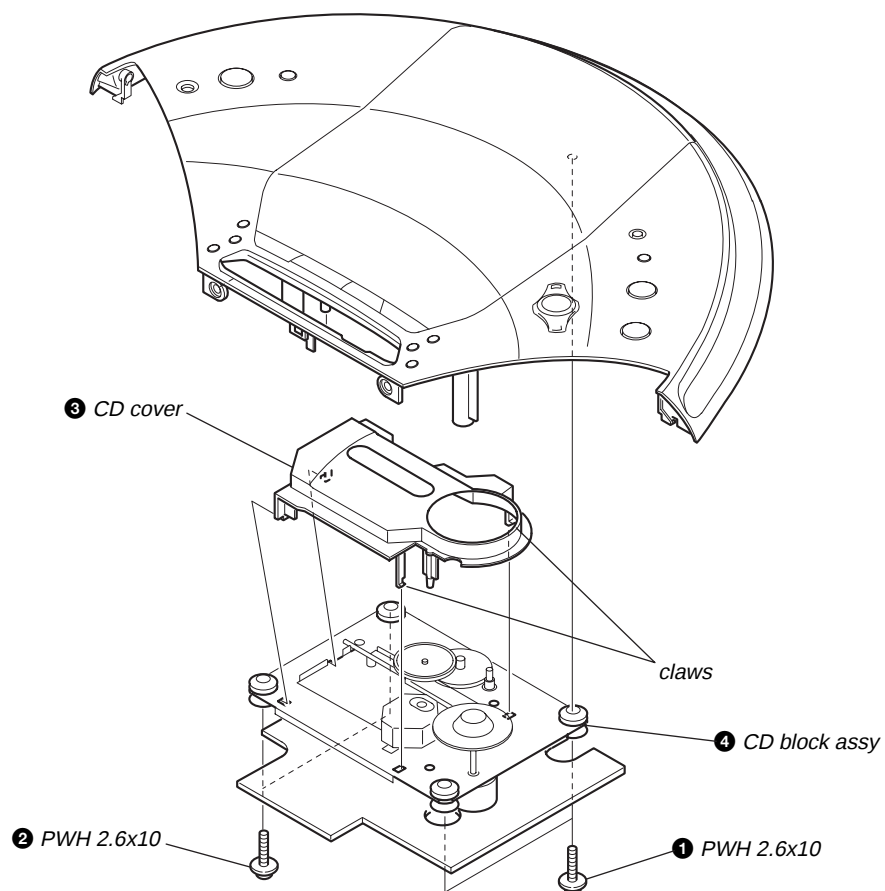
3-9. POWER BOARD



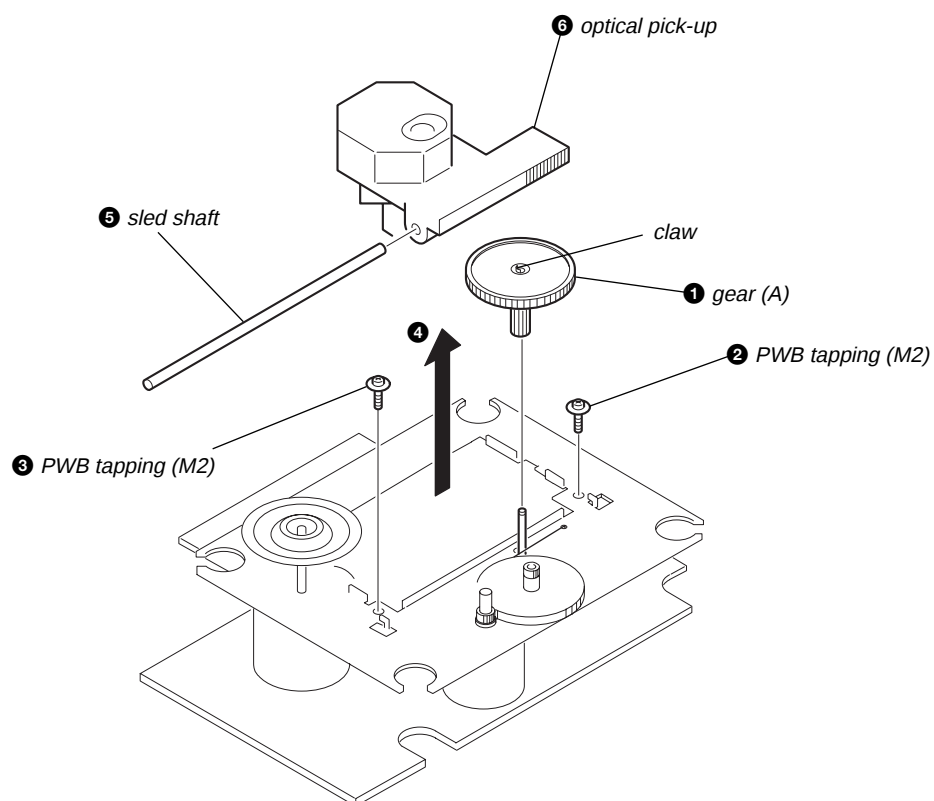
3-10. CD LID

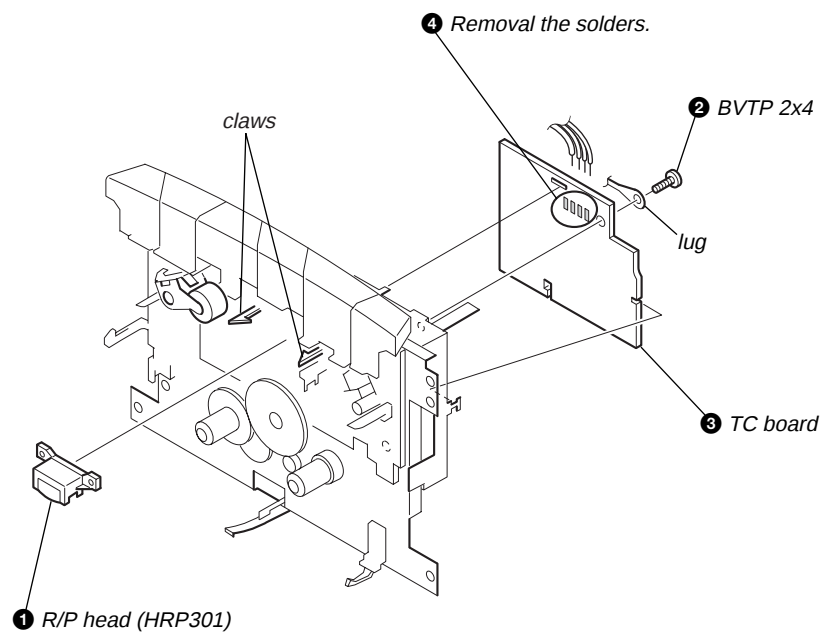
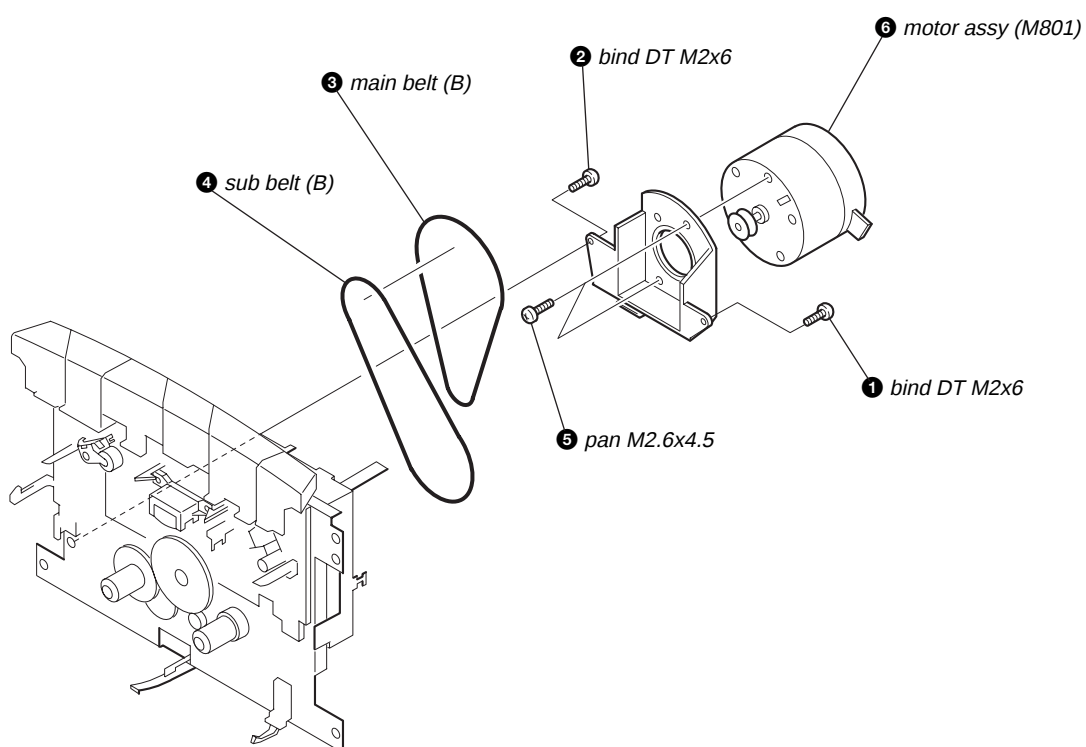


3-11. CD BLOCK ASSY



3-12. OPTICAL PICK-UP



3-13. R/P HEAD (HRP301), TC BOARD**3-14. MOTOR ASSY (M801), MAIN BELT (B), SUB BELT (B)**

SECTION 4 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head magnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- The adjustments should be performed with the rated power supply voltage (9V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	2.95 – 6.86 mN • m (30 – 70 g • cm) (0.42 – 0.97 oz • inch)
FWD Back Tension	CQ-102C	0.15 – 0.53 mN • m (1.5 – 5.5 g • cm) (0.021 – 0.076 oz • inch)
FF	CQ-201B	more than 5.88 mN • m (more than 60 g • cm) (more than 0.83 oz • inch)
REW	CQ-201B	more than 5.88 mN • m (more than 60 g • cm) (more than 0.83 oz • inch)

Tape Tension Measurement

Mode	Tension meter	Meter Reading
FWD	CQ-403A	more than 100 g (more than 3.53 oz)

SECTION 5 ELECTRICAL ADJUSTMENTS

TAPE SECTION	0 dB = 0.775 V
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• Standard Output Level

Output terminal	HP OUT
load impedance	32 Ω
output signal level	0.25 V (–10 dB)

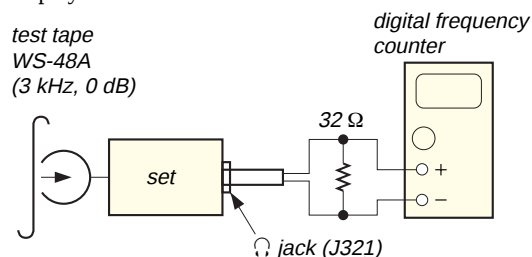
• Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode: playback



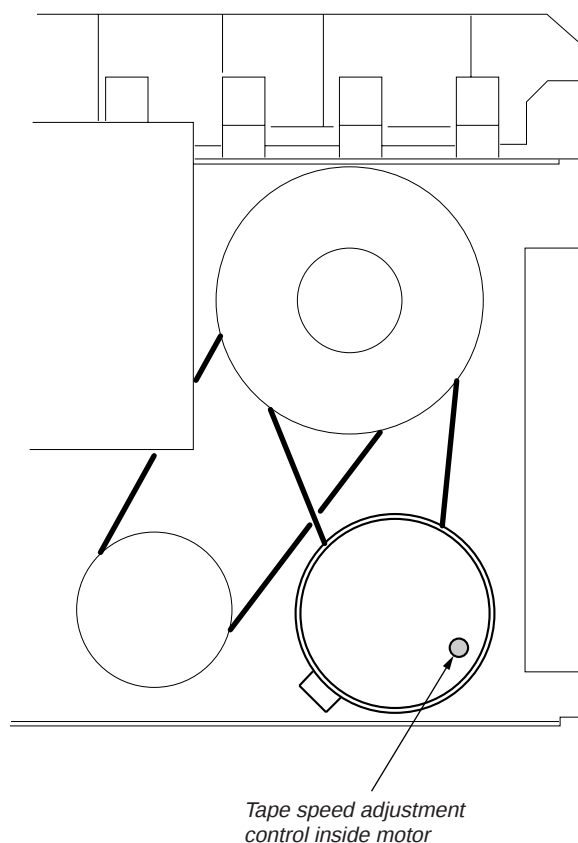
Adjust so that the value on the digital frequency counter is 3,000 Hz.

Specification Value:

Digital frequency counter
2,940 to 3,060 Hz

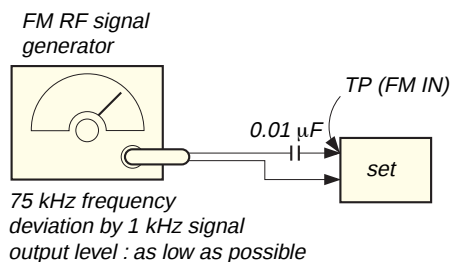
Adjust so that the frequency at the beginning and that at the end of tape winding are between 2,970 to 3,030 Hz.

Adjustment Location:

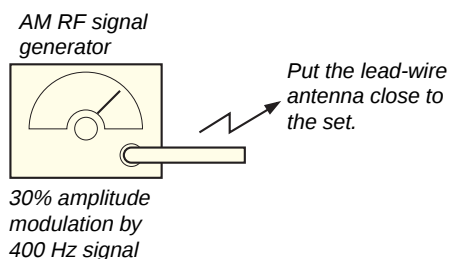
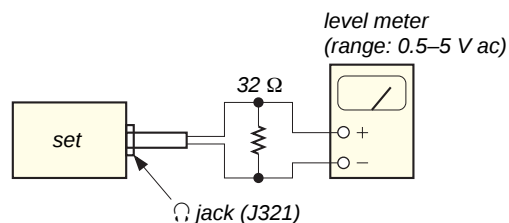
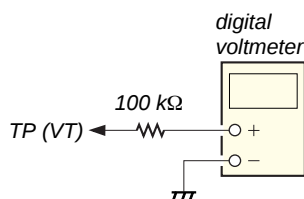


TUNER SECTION **0 dB = 1 μ V**
• FM Section
Setting:

RADIO BAND•AUTO PRESET button: FM


• AM Section
Setting:

RADIO BAND•AUTO PRESET button: MW or LW


• Connecting Level Meter (FM, MW and LW)

• Connecting Digital Voltmeter (FM, MW and LW)


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM IF ADJUSTMENT

Adjust for a maximum reading on level meter.

T2

10.7 MHz

FM FREQUENCY COVERAGE ADJUSTMENT

Frequency Display	87.5 MHz	108 MHz
Reading on Digital voltmeter	1.3 ± 0.3 V	3.0 ± 0.2 V
Adjustment Part	<confirmation>	L2

FM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L1

CT1

87.5 MHz

108 MHz

MW IF ADJUSTMENT

Adjust for a maximum reading on level meter.

T1

450 kHz

MW FREQUENCY COVERAGE CHECK

Frequency Display	531 kHz	1,611 kHz
Reading on Digital voltmeter	1.0 ± 0.5 V	5.2 ± 0.6 V
Adjustment Part	<confirmation>	<confirmation>

MW TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L3-1

CT3

621 kHz

1,404 kHz

LW FREQUENCY COVERAGE ADJUSTMENT

Frequency Display	153 kHz	279 kHz
Reading on Digital voltmeter	0.6 ± 0.3 V	5.0 ± 0.1 V
Adjustment Part	<confirmation>	L4

LW TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L3-2

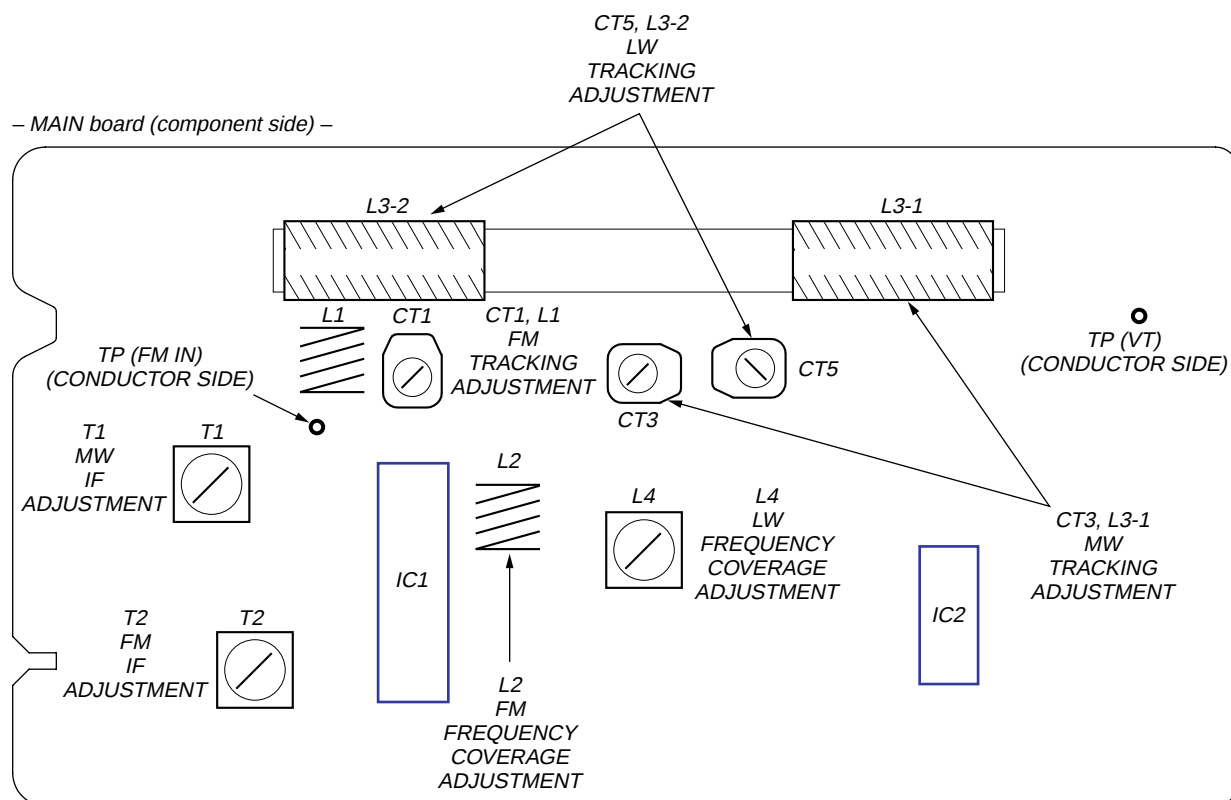
CT5

162 kHz

261 kHz

Adjustment Location: See page 16.

Adjustment Location:



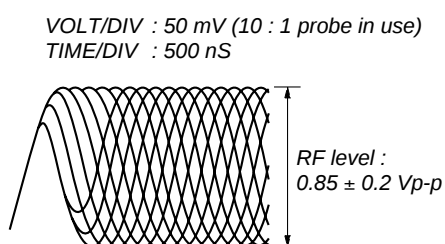
CD SECTION

CD section adjustments are done automatically in this set.
In case of operation check, confirm that focus bias.

FOCUS BIAS CHECK

1. Connect the oscilloscope between IC701 pin ④ and pin ⑪ (or TP (RF) and TP (VREF)).
2. Insert the disc (YEDS-18). (Part No. : 3-702-101-01)
3. Press the ► || (CD) button.
4. Confirm that the oscilloscope waveform is as shown in the figure below. (eye pattern)
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

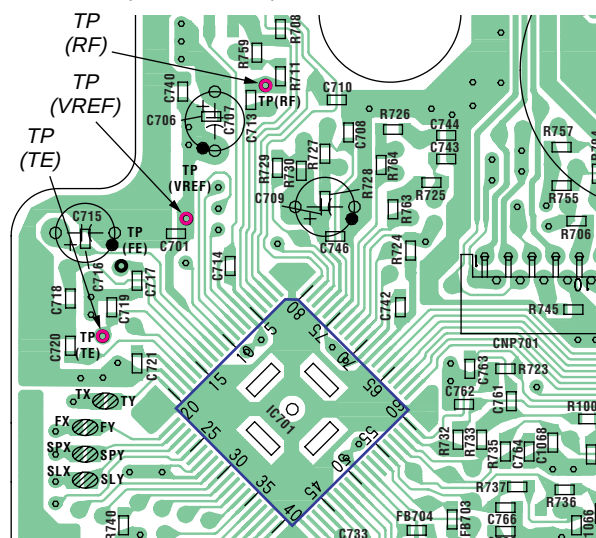
- RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Test Point:

– CD board (conductor side) –



SECTION 6

DIAGRAMS

6-1. IC PIN DESCRIPTIONS

• IC1001 LC78683E-US-E (MP3 DECODER, CD-ROM DECODER, ANTI-SHOCK CONTROLLER) (CD BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	LRSY	I	CD L/R clock input
2	ADDATA	O	Audio data output
3	ADBCK	O	Audio bit clock output
4	ADLRCK	O	Audio L/R clock output
5	C2FIN	I	CD C2 error flag input
6	VSS	—	Ground
7	CKIN	I	System clock (16.9344 MHz) input
8	VSS	—	Ground
9	CKOUT	O	Clock (384Fs) output for external DF/DAC.
10	VSS	—	Ground
11	DVDD1	—	Digital power supply pin for I/O.
12	PW	I	CD subcode data serial input
13	SBSY	I	CD subcode block synchronized signal input
14	SFSY	I	CD subcode frame synchronized signal input
15	SBCK	O	Serial clock output for CD subcode transfer. (Not used. (Open))
16	AVDD	—	Analog (PLL) power supply pin
17	VPRFR	—	VCO oscillation range setting pin
18	VCOC	I	VCO control voltage input
19	VPDO	O	VCO charge pump output
20	AVSS	—	Analog ground
21	DVDD2	—	Power supply pin for internal logic.
22	VSS	—	Ground
23 to 30	MDATA0 to 7	I/O	DRAM data bus 0 to 7
31	DVDD3	—	Digital power supply pin for I/O.
32	VSS	—	Ground
33 to 40	MDATA8 to 15	I/O	DRAM data bus 8 to 15
41	RASB	O	Row Address Strobe signal output (L: active)
42	WEB	O	Data Write Enable signal output (L: active)
43	CASLB	O	Column Address Strobe signal output (for lower byte, L: active)
44	CASUB	O	Column Address Strobe signal output (for upper byte, L: active)
45	OEB	O	Output enable signal output (L: active)
46 to 49	MADRS12 to 9	O	DRAM address output 12 to 9 (Not used. (Open))
50	MADRS8	O	DRAM address output 8
51	DVDD4	—	Digital power supply pin for I/O.
52	VSS	—	Ground
53 to 60	MADRS7 to 0	O	DRAM address output 7 to 0
61	DVDD5	—	Power supply pin for internal logic.
62	VSS	—	Ground
63	STREQ	I/O	MP3 data request flag output (H: active)/DRAM data request flag input (H: active) (Not used. (Open))
64	STCK	I/O	MP3 data transfer clock input/DRAM data transfer clock output (Not used. (Open))
65	STDAT	I/O	MP3 data serial input/DRAM data serial output (Not used. (Open))
66	FSYNC	O	MP3 frame synchronized signal input (H: active) (Not used. (Open))
67	CRCF	O	CDROM-CRC flag output (H: active)/DRAM data output enable signal output (H: active) (Not used. (Open))
68	DVDD6	—	Power supply pin for internal logic.
69	VSS	—	Ground
70	WOK	I	DRAM write OK input (at CD-DA, H: active)/DRAM data request flag input (at CD-ROM, H: active)

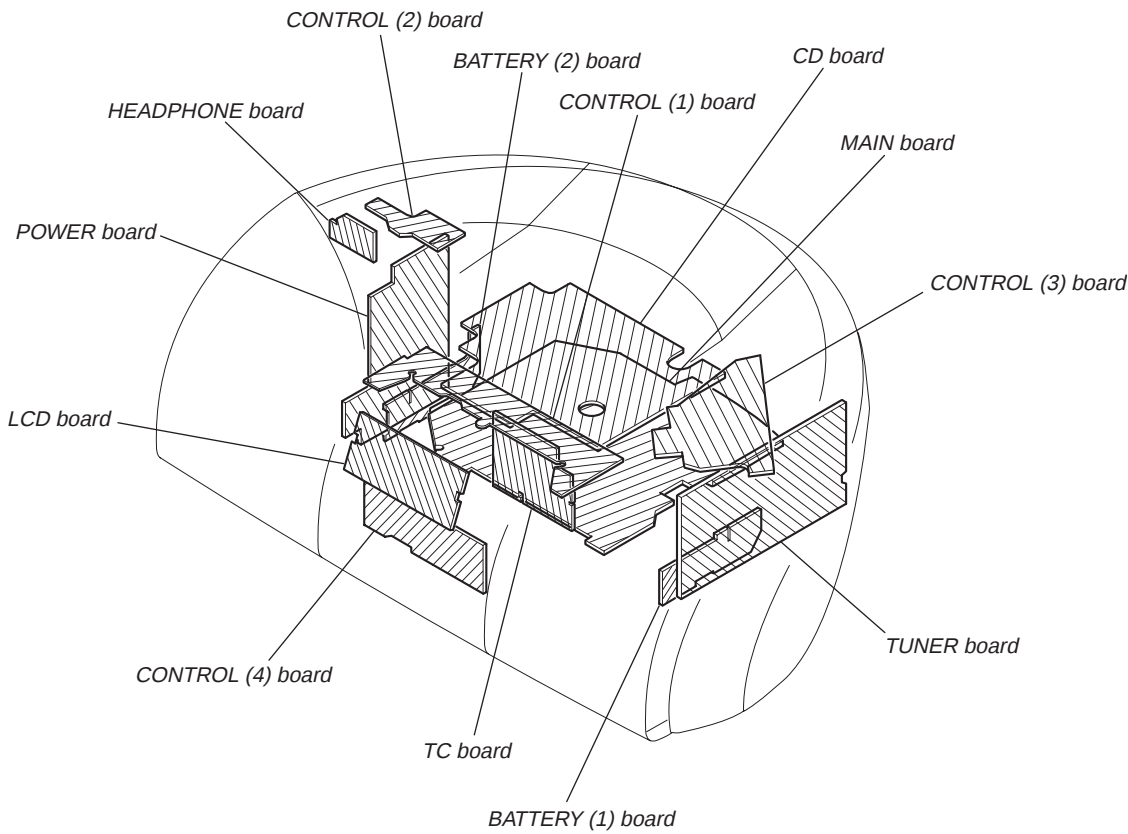
Pin No.	Pin Name	I/O	Pin Description
71	CNTOK	O	Data connecting point detection completion flag output (at CD-DA, H: active)/DRAM data serial output (at CD-ROM, H: active) (Not used. (Open))
72	OVF	O	DRAM write discontinue flag output (at CD-DA, H: active)/DRAM data transfer clock output (at CD-ROM, H: active) (Not used. (Open))
73	CMDOUT	O	Command serial data output (Nch open drain output pin)
74	CMDIN	I	Command serial data input
75	CL	I	Command serial clock input
76	CE	I	Command enable input (H: active)
77	INTB	O	Interrupt signal output (L: active)
78	RESB	I	System reset input (L: active)
79	DATAIN	I	CD serial data input
80	DATAACK	I	CD bit clock input

• IC801 μPD784216AGF-527-3BA (SYSTEM CONTROLLER) (MAIN BOARD)

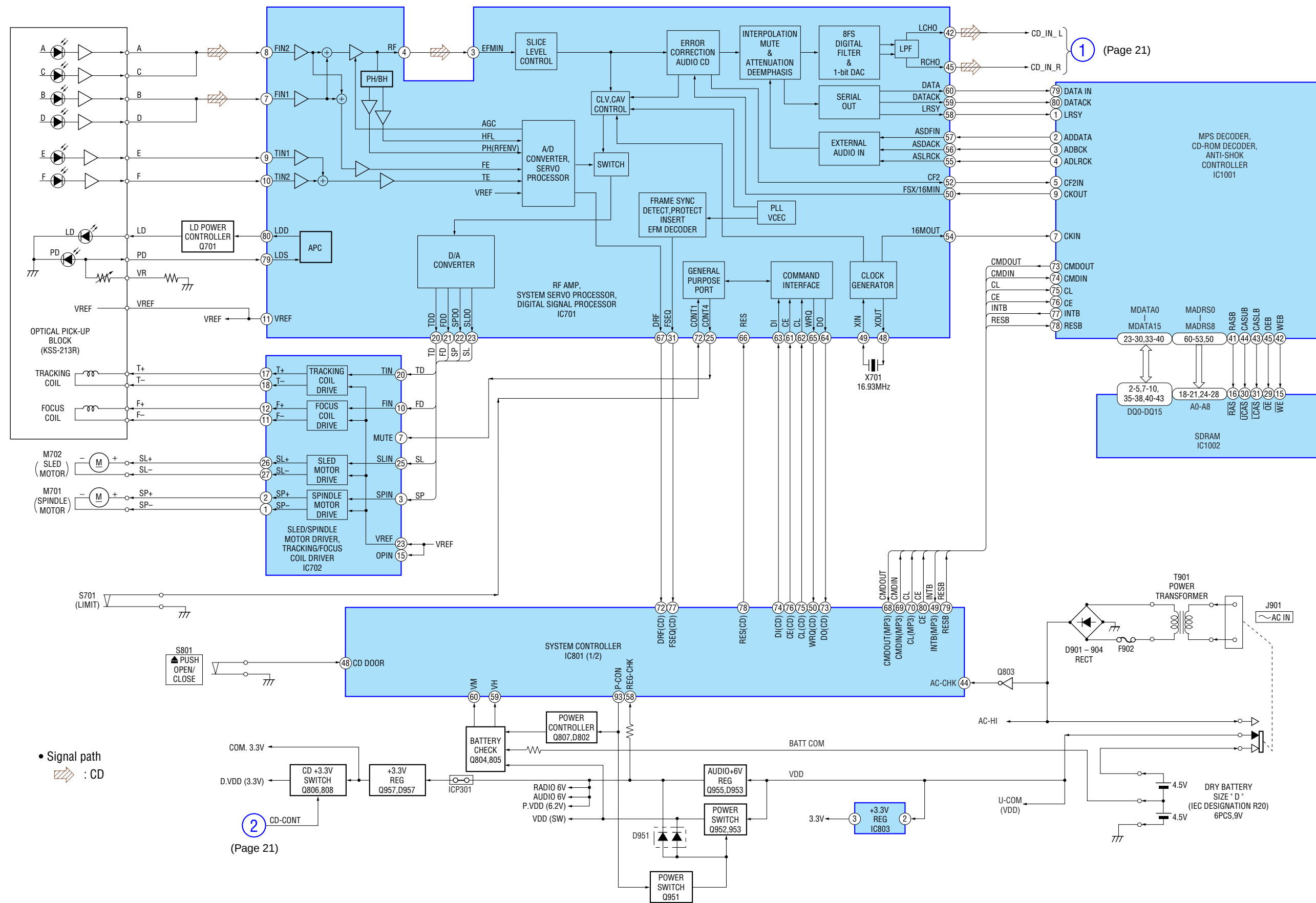
Pin No.	Pin Name	I/O	Pin Description
1	TU-CE	O	PLL chip enable output
2	TU-DATA	O	PLL serial data output
3	TU-CLK	O	PLL serial data transfer clock output
4	TU-COUNT	I	PLL serial count data input
5	TU-MUTE	O	Tuner muting ON/OFF control signal output (L: muting ON)
6	DEST1	I	Destination setting input (Fixed at L)
7	DEST2	I	Destination setting input (Fixed at H)
8	TEST-B	O	Fixed at L in this set.
9	VDD	—	Power supply pin (+3.3 V)
10	TEST-A	I	Fixed at L in this set.
11	EEPROM-SCL	O	Serial clock output for EEPROM IC (IC802).
12	EEPROM-SDA	I/O	Serial data bus input from/output for EEPROM IC (IC802).
13 to 16	N.C	—	Not used. (Open)
17, 18	ISS1, 2	O	ISS1, 2 output
19	TU-ON	O	Tuner power ON/OFF control signal output (L: power ON)
20	TAPE-ON	O	Tape power ON/OFF control signal output (L: power ON)
21	CD-ON	O	CD power ON/OFF control signal output (L: power ON)
22	TEST/VPP	I	Fixed at L.
23 to 27	N.C	—	Not used. (Open)
28	MP3-LED	O	MP3 LED drive signal output (L: active)
29	LCD-RST	O	LCD system reset signal output (L: reset)
30	LCD-C/D	O	LCD command data output
31	LCD-CS	O	LCD chip select data output
32	LCD-DATA	O	LCD serial data output
33	LCD-CLK	O	LCD clock output
34	N.C	—	Not used. (Open)
35	FM/AM SHIFT	O	Shift point output for oscillation frequency change.
36	N.C	—	Not used. (Open)
37	VDD	—	Power supply pin (+3.3 V)
38	X2	O	System clock output (5 MHz)
39	X1	I	System clock input (5 MHz)
40	VSS	—	Ground
41	XT2	O	Sub clock output (Not used. (Open))
42	XT1	I	Sub clock input (Not used. (Connect to VSS))
43	RESET	I	System reset signal input (L: reset)
44	AC-CHK	I	AC power supply detection signal input (L: AC in)
45	RMC IN	I	Sircs receiver data input
46	WAKE-UP	I	Wake up signal input
47	N.C	—	Not used. (Open)
48	CD-DOOR	I	CD lid open/close detection switch input (L: close)
49	INTB (MP3)	I	Interrupt request signal input (L: active)
50	WRQ (CD)	I	CD interruption signal input
51	AVDD	—	Power supply pin (+3.3 V)
52	AVREF0	—	Connect to VDD.
53 to 57	KEY1 to 5	I	Key input 1 to 5
58	REG-CHK	I	REG-CHK detection signal input
59	VH	I	High voltage (+9 V) detection signal input for battery check.
60	VM	I	Middle voltage (+4.5 V) detection signal input for battery check.
61	AVSS	—	Analog ground
62, 63	N.C	—	Not used. (Open)
64	AVREF1	—	Connect to VDD.
65 to 67	N.C	—	Not used. (Open)

Pin No.	Pin Name	I/O	Pin Description
68	CMDOUT (MP3)	O	Command serial data output
69	CMDIN (MP3)	I	Command serial data input
70	CL (MP3)	O	Command serial clock output
71	N.C	—	Not used. (Open)
72	DRF (CD)	I	CD focus ON/OFF detection signal input
73	DO (CD)	O	CD data output
74	DI (CD)	I	CD data input
75	CL (CD)	O	CD data transfer clock output
76	CE (CD)	O	CD chip enable output
77	FSEQ (CD)	I	CD synchronized signal detection input
78	RES (CD)	O	CD system reset signal output (L: reset)
79	RESB (MP3)	O	MP3 system reset signal output (L: reset)
80	CE (MP3)	O	MP3 chip enable output
81 to 90	N.C	—	Not used. (Open)
91	A-MUTE	O	Audio muting ON/OFF control signal output
92	MEGA BASS	O	MEGA BASS ON/OFF control signal output
93	P-CON	O	System power control output (H: active)
94	V-DATA	O	Volume data output
95	V-CLOCK	O	Volume clock output
96	N.C	—	Not used. (Open)
97	TAPE PLAY	I	Tape playback switch input (L: playback)
98	REC-IN	I	Tape record signal input (H: record)
99	N.C	—	Not used. (Open)
100	VSS	—	Ground

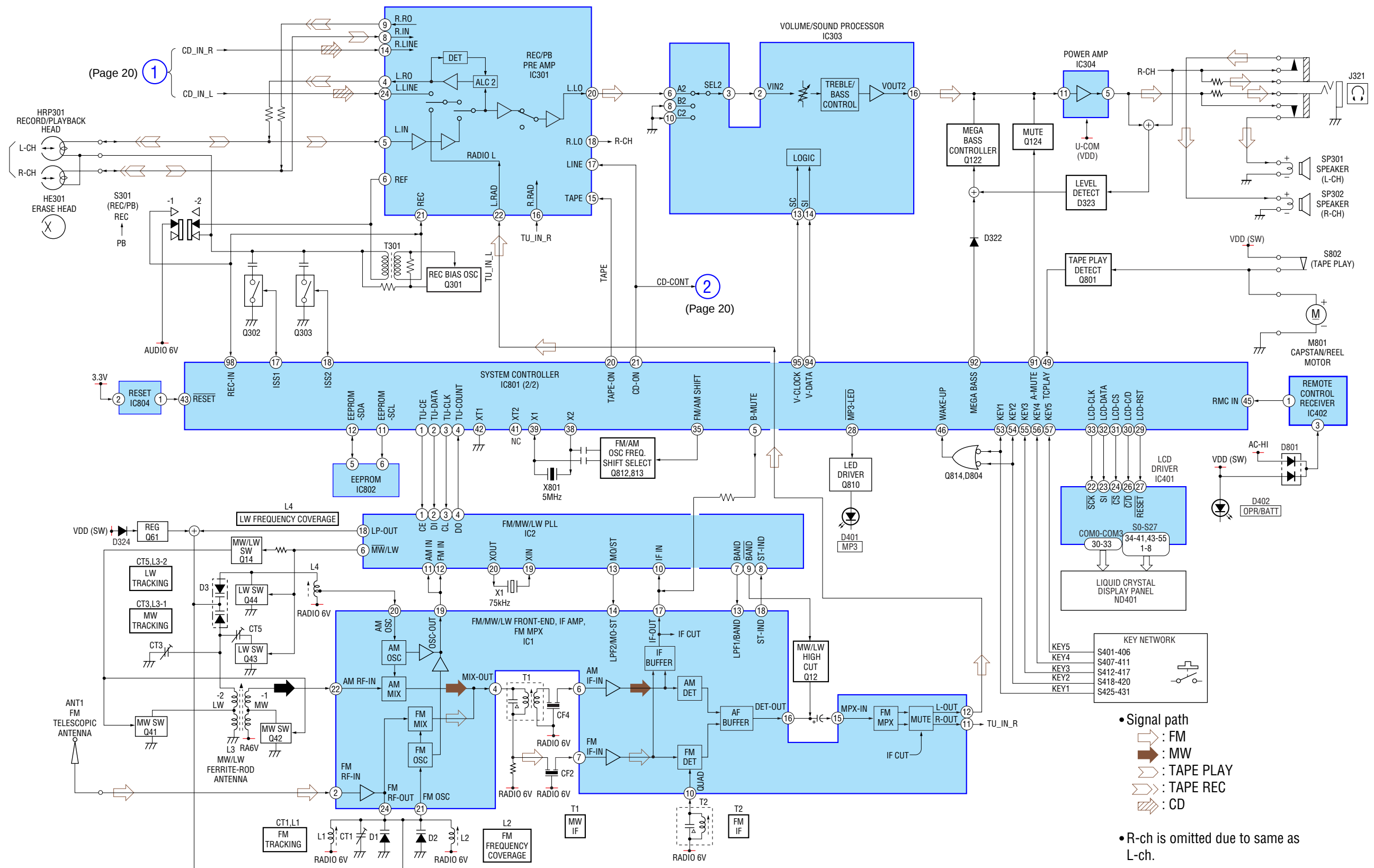
6-2. CIRCUIT BOARDS LOCATION



6-3. BLOCK DIAGRAM — CD SECTION —



6-4. BLOCK DIAGRAM — MAIN SECTION —



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Common Note on Schematic Diagrams:

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$
- 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.
- $\triangle$: internal component.
- : panel designation.

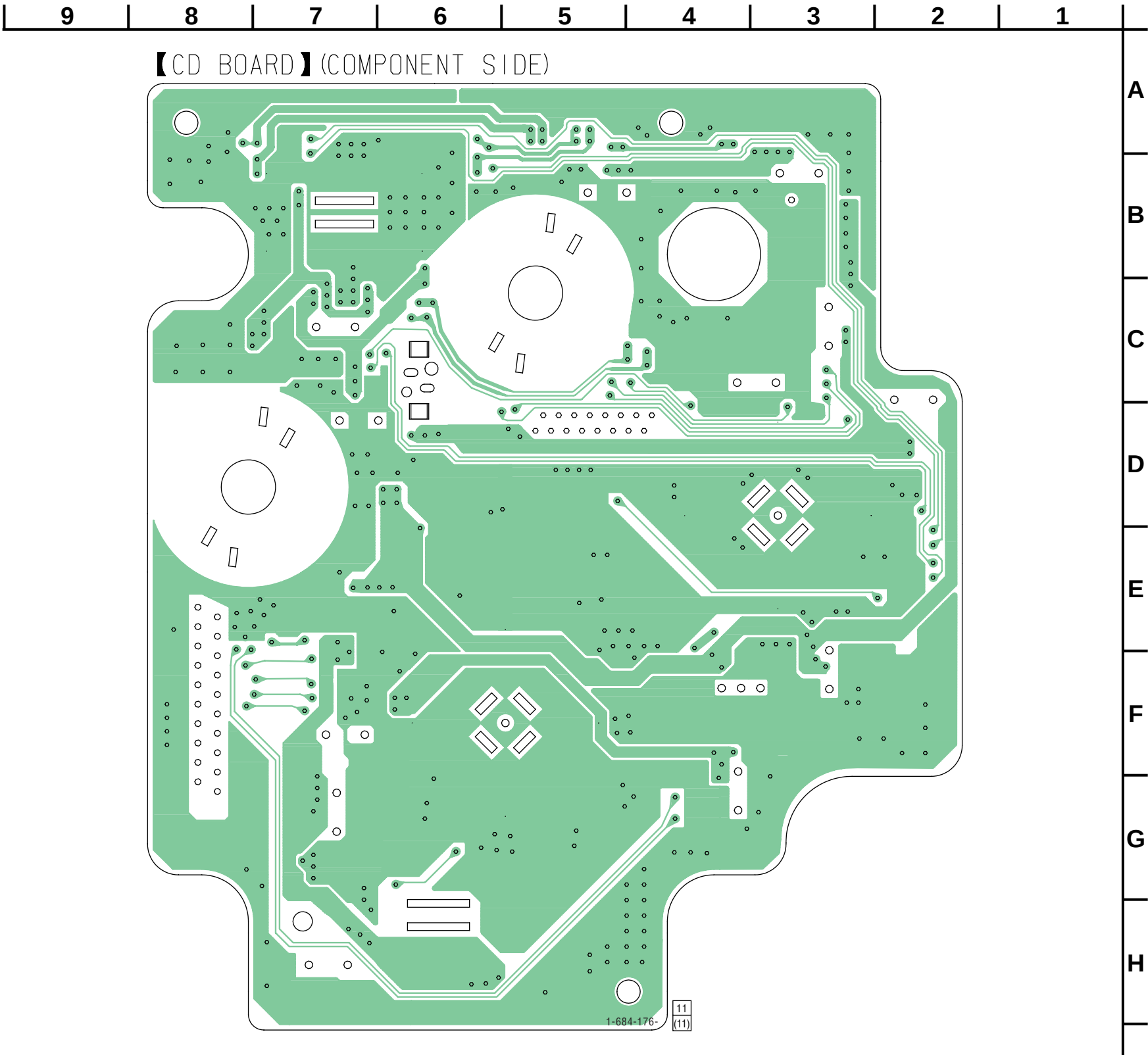
Note: The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

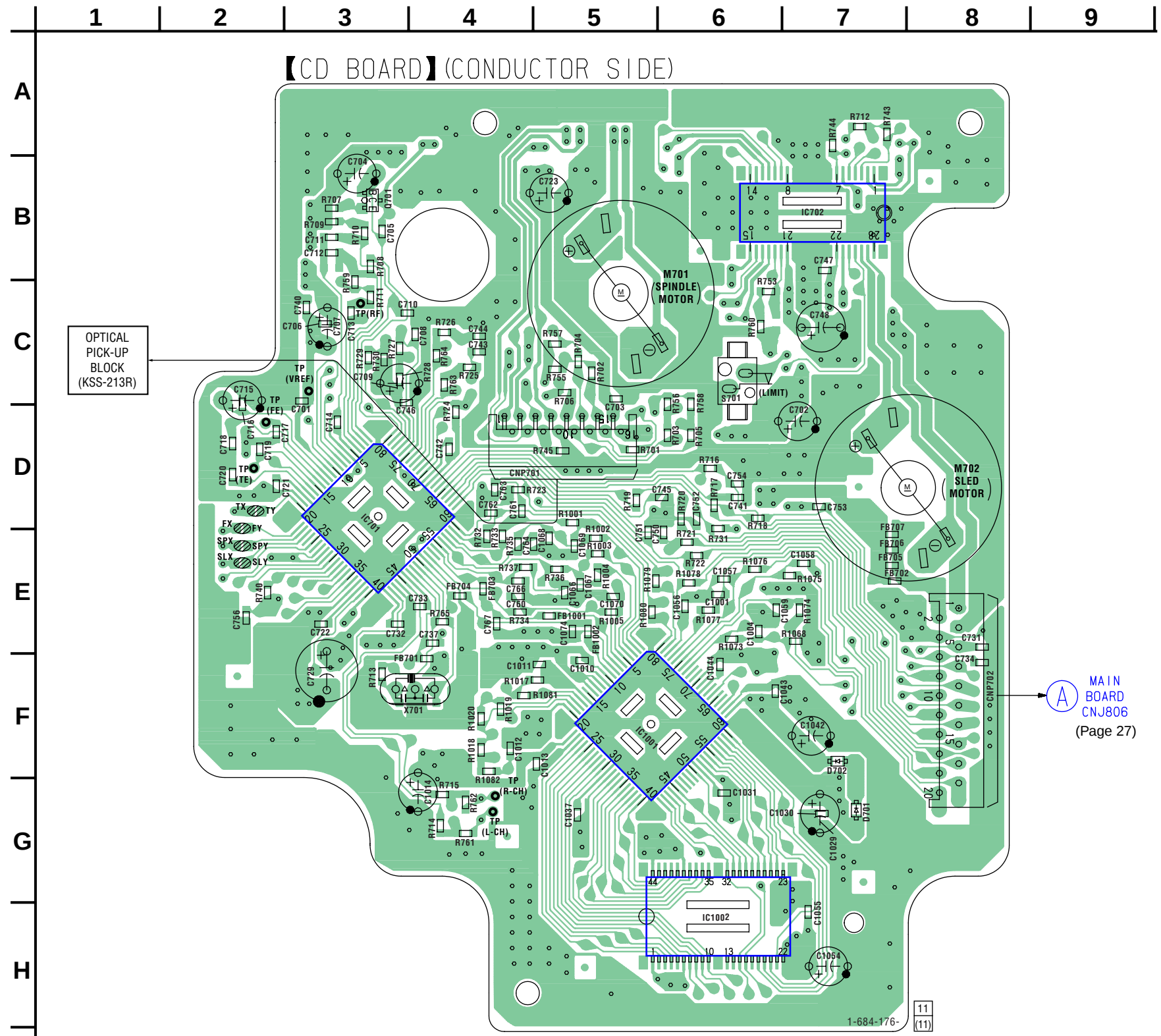
- — : B+ Line.
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are taken with a VOM (Input impedance 10 M Ω).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ⇨ : FM
- ⇨ : MW
- ⇨ : PB
- ⇨ : REC
- ⇨ : CD
- Abbreviation
- EA : Saudi Arabia model.
- SP : Singapore model.

Common Note on Printed Wiring Boards:

- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- $\triangle$: internal component.
- : Pattern from the side which enables seeing.

6-5. PRINTED WIRING BOARD — CD SECTION — • Refer to page 19 for Circuit Boards Location.

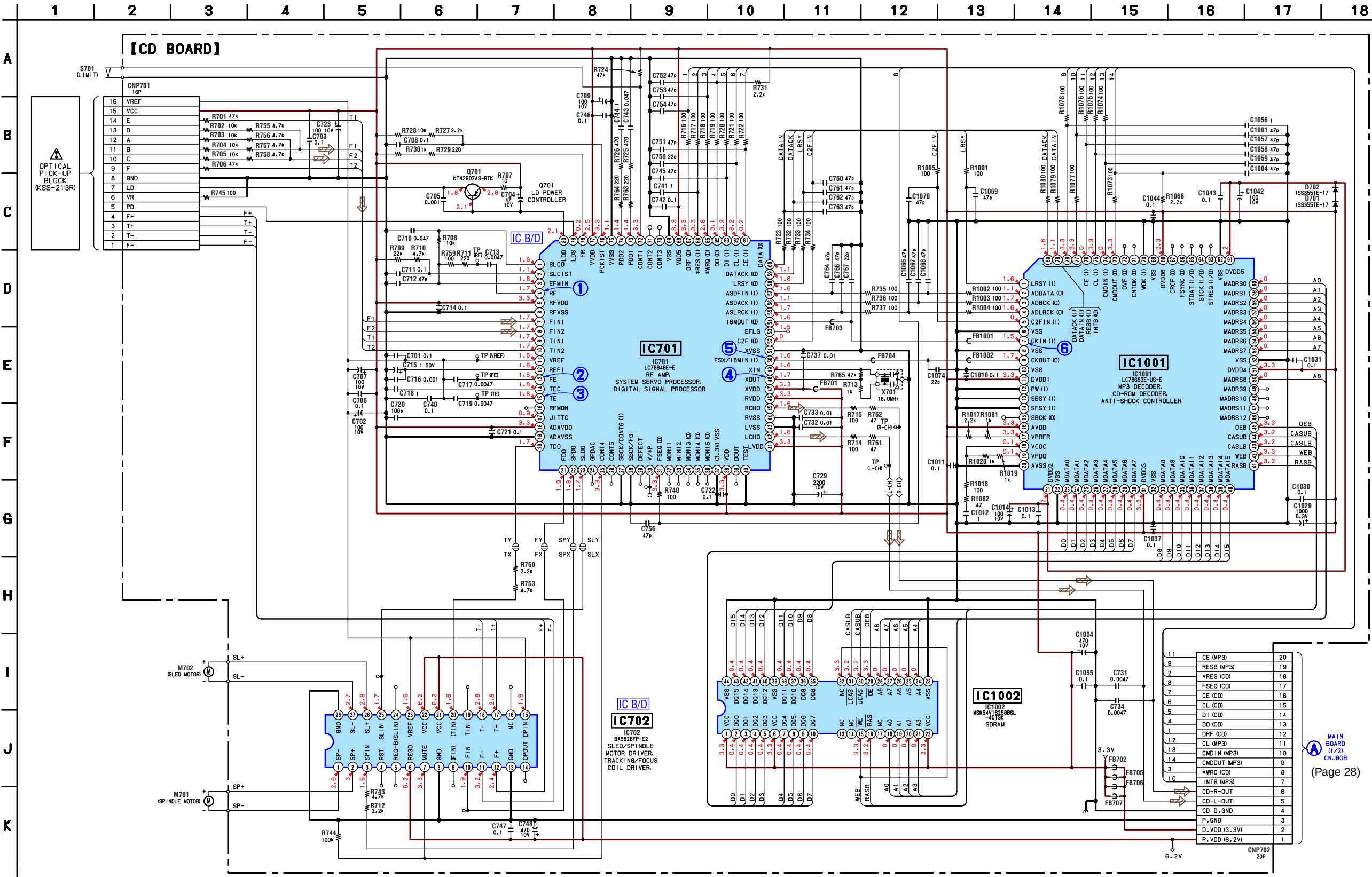




• Semiconductor Location

Ref. No.	Location
D701	G-7
D702	F-7
IC701	D-3
IC702	B-7
IC1001	F-5
IC1002	H-6
Q701	B-3

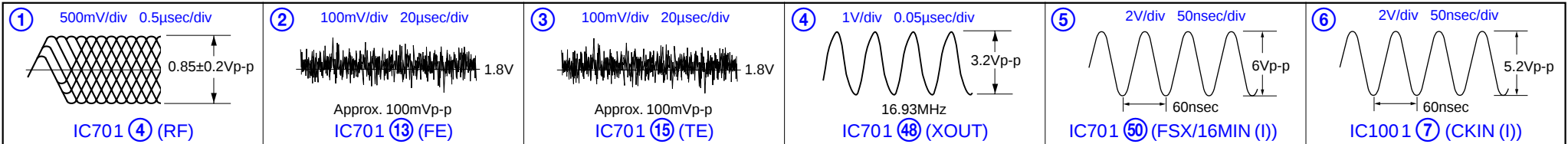
6-6. SCHEMATIC DIAGRAM — CD SECTION — • Refer to page 22 for Common Note on Schematic Diagrams and page 38 for IC Block Diagrams.



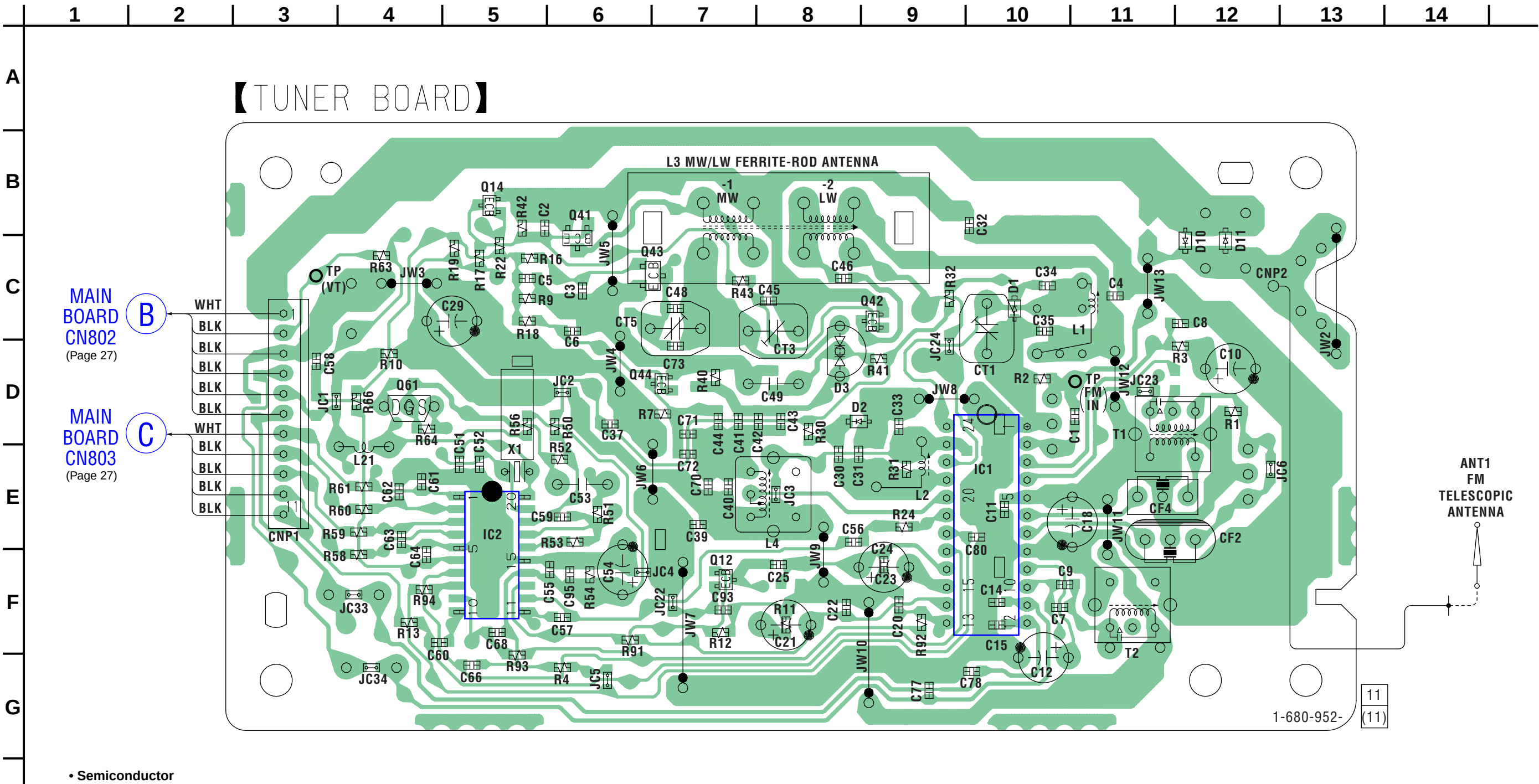
MAIN BOARD (1/2) CNJ806 (Page 28)

• Waveforms (Mode: PLAY)

• Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : CD PLAY



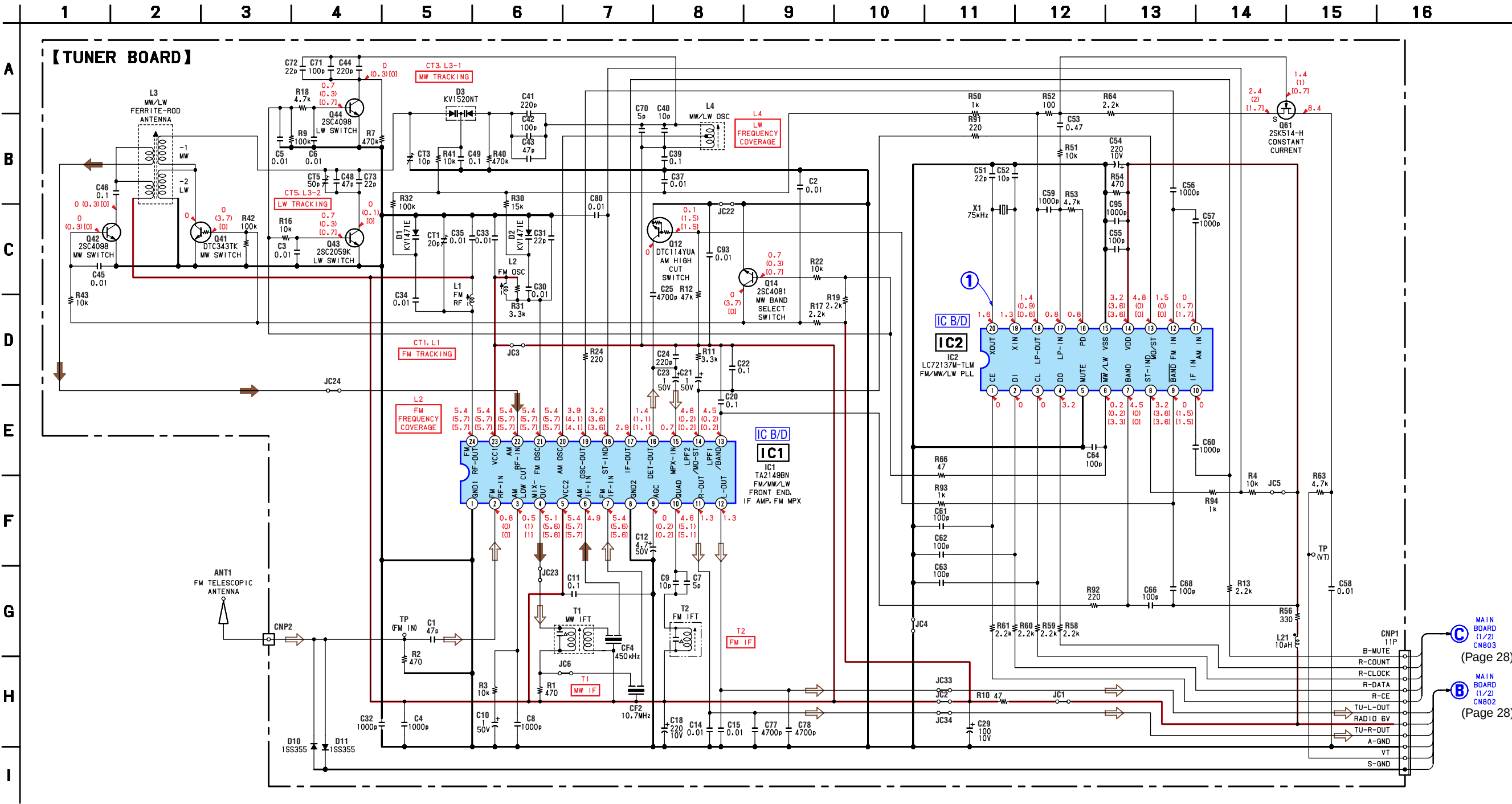
6-7. PRINTED WIRING BOARD — TUNER SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.



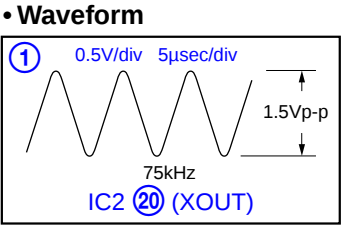
• Semiconductor Location

Ref. No.	Location
D1	C-10
D2	D-8
D3	D-8
D10	B-12
D11	B-12
IC1	E-10
IC2	E-5
Q12	F-7
Q14	B-5
Q41	C-6
Q42	C-9
Q43	C-6
Q44	D-6
Q61	D-4

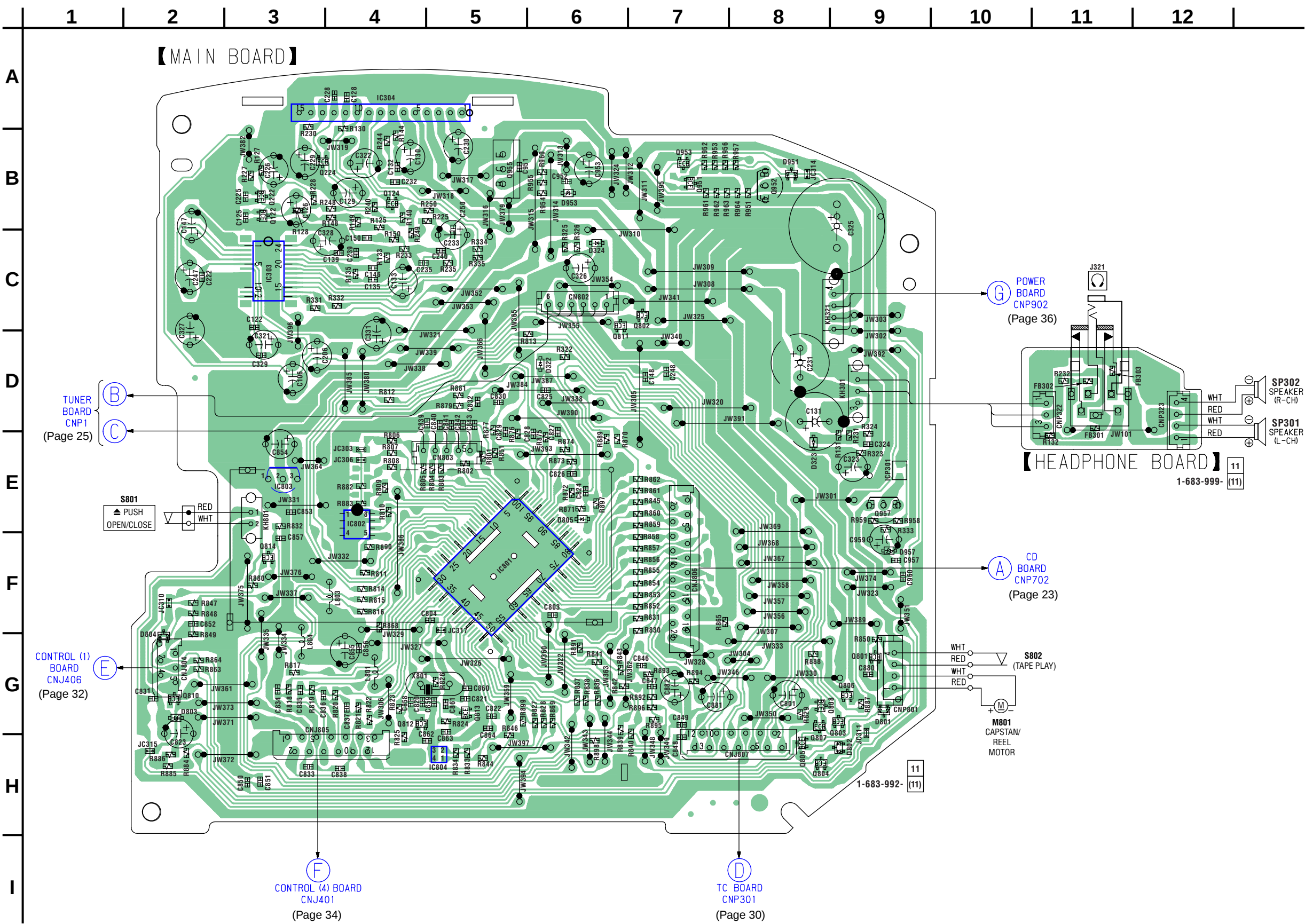
6-8. SCHEMATIC DIAGRAM —TUNER SECTION — • Refer to page 22 for Common Note on Schematic Diagrams and page 38 for IC Block Diagrams.



• Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : MW
[] : LW



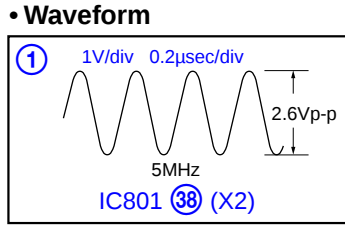
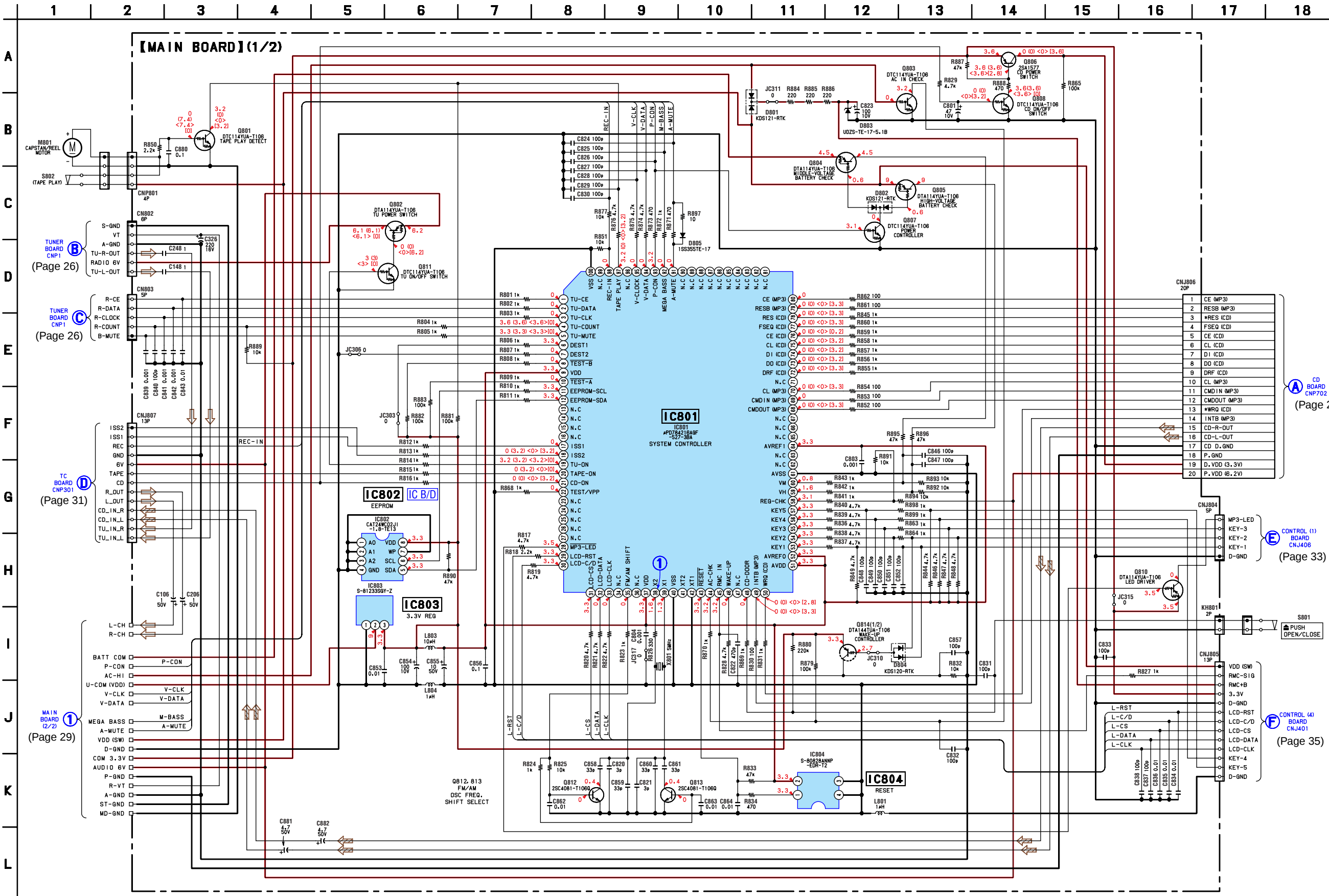
6-9. PRINTED WIRING BOARDS — MAIN SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.



• Semiconductor Location

Ref. No.	Location
D322	D-6
D323	E-8
D324	C-6
D801	G-9
D802	H-9
D803	G-2
D804	G-2
D805	E-6
D951	B-8
D953	B-6
D957	F-9
IC303	C-3
IC304	A-4
IC801	F-5
IC802	E-4
IC803	E-3
IC804	H-5
Q122	B-3
Q124	B-4
Q222	B-3
Q224	B-3
Q801	G-9
Q802	C-7
Q803	G-9
Q804	H-8
Q805	H-8
Q806	G-9
Q807	G-8
Q808	G-8
Q810	G-2
Q811	C-6
Q812	G-4
Q813	G-5
Q814	F-3
Q951	B-7
Q952	B-8
Q953	B-7
Q955	B-5
Q957	E-9

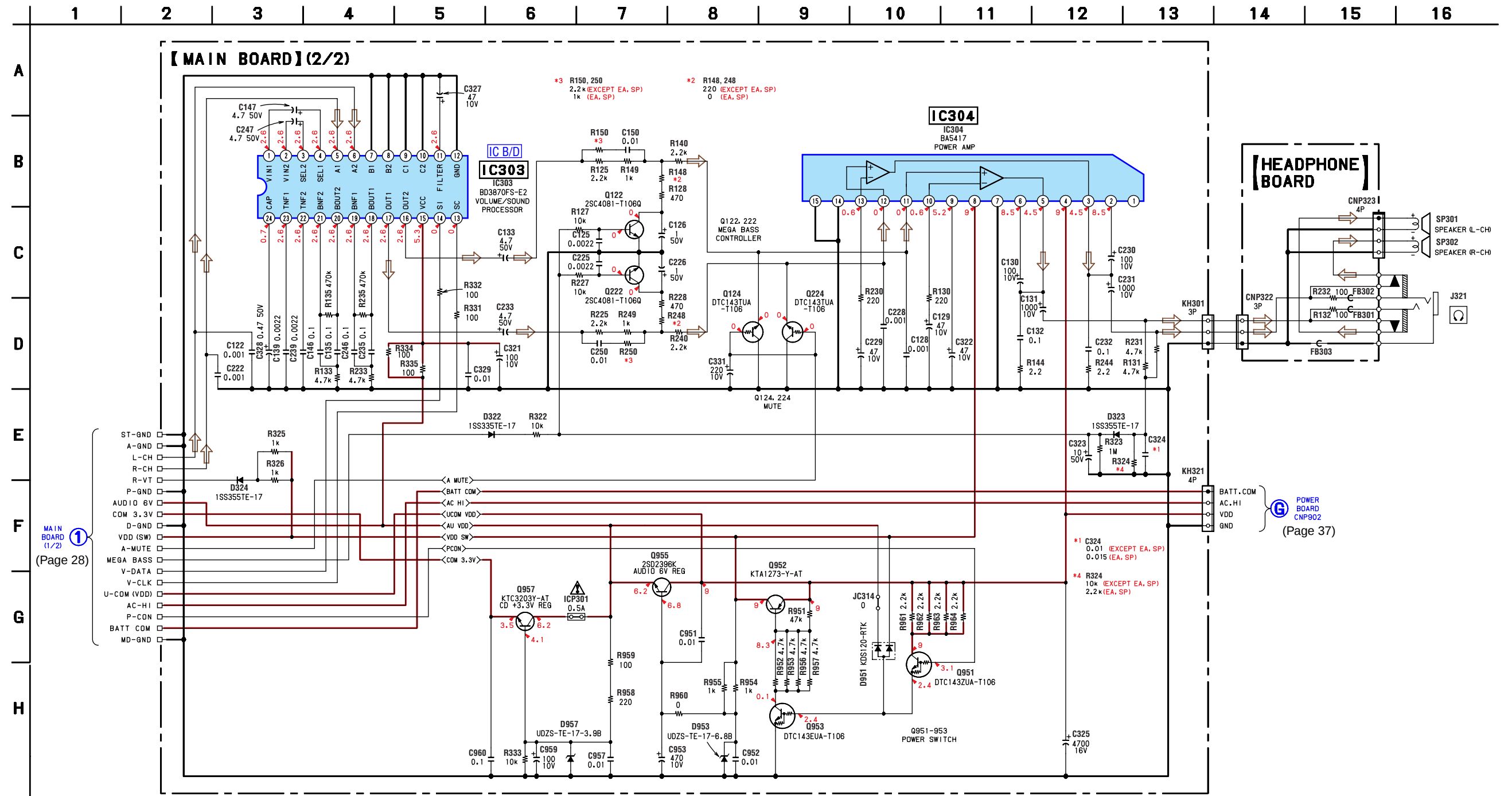
6-10. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 22 for Common Note on Schematic Diagrams and page 39 for IC Block Diagrams.



• Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.

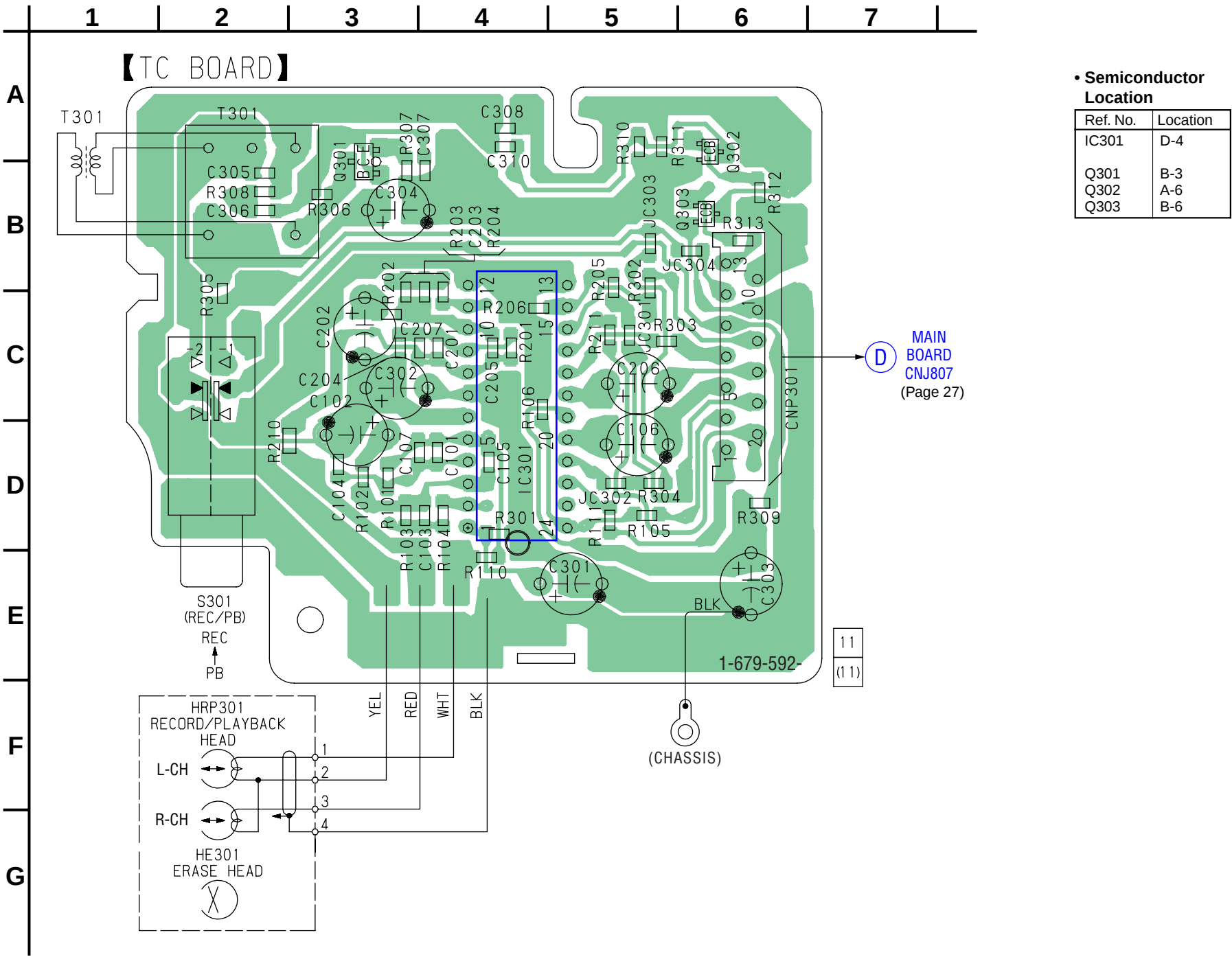
no mark : FM
() : PB
< > : REC
[] : CD PLAY

6-11. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 22 for Common Note on Schematic Diagrams and page 39 for IC Block Diagrams.

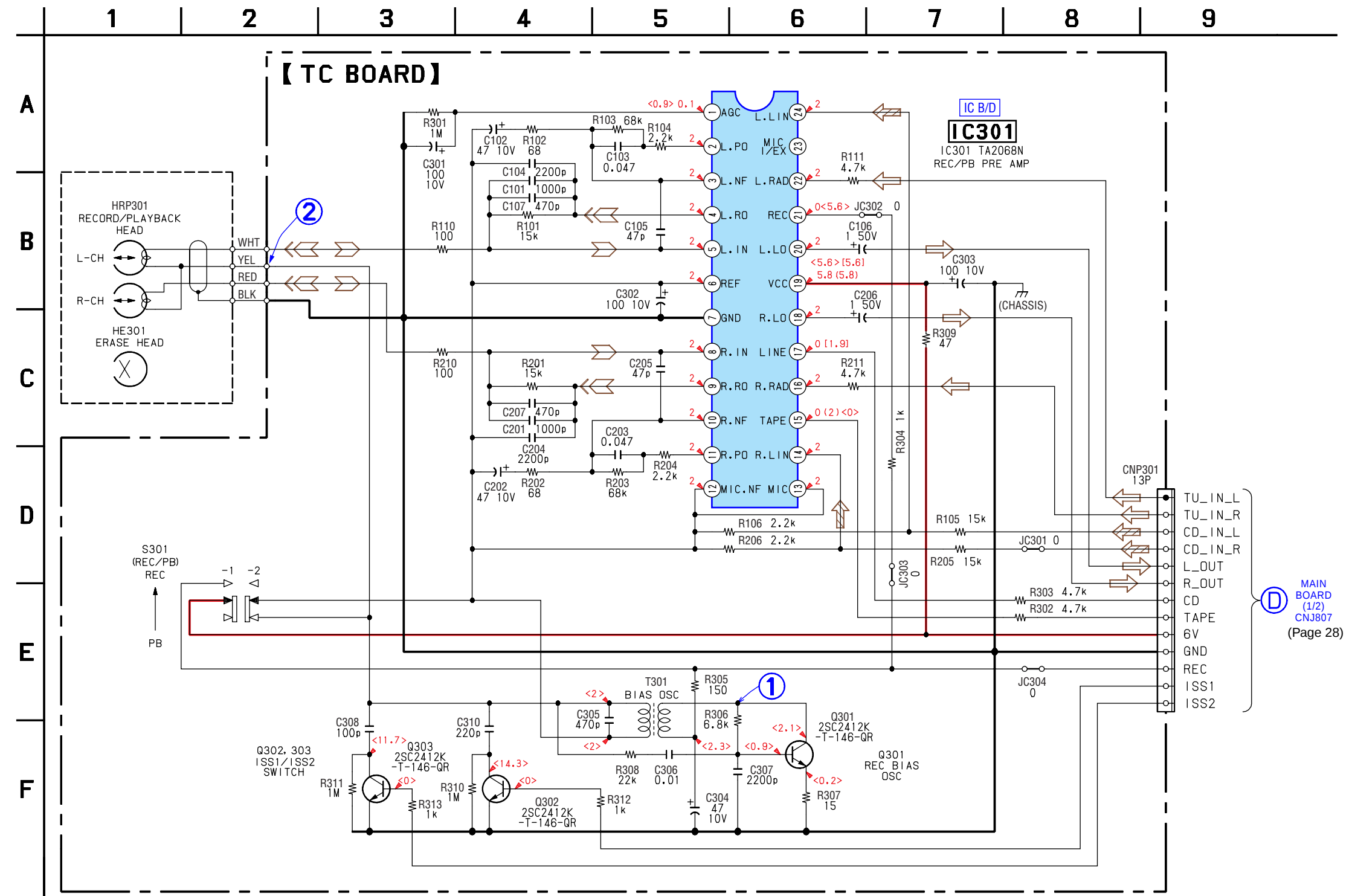


• Voltage is dc with respect to ground under no-signal (detuned) condition.
no mark : FM
() : PB
< > : REC
[] : CD PLAY

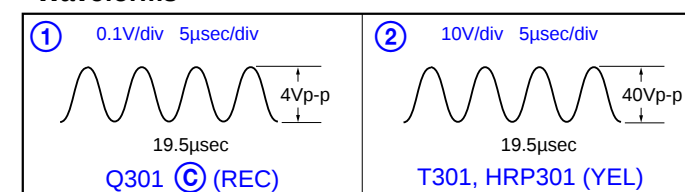
6-12. PRINTED WIRING BOARD — TC SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.



6-13. SCHEMATIC DIAGRAM — TC SECTION — • Refer to page 22 for Common Note on Schematic Diagrams and page 39 for IC Block Diagrams.



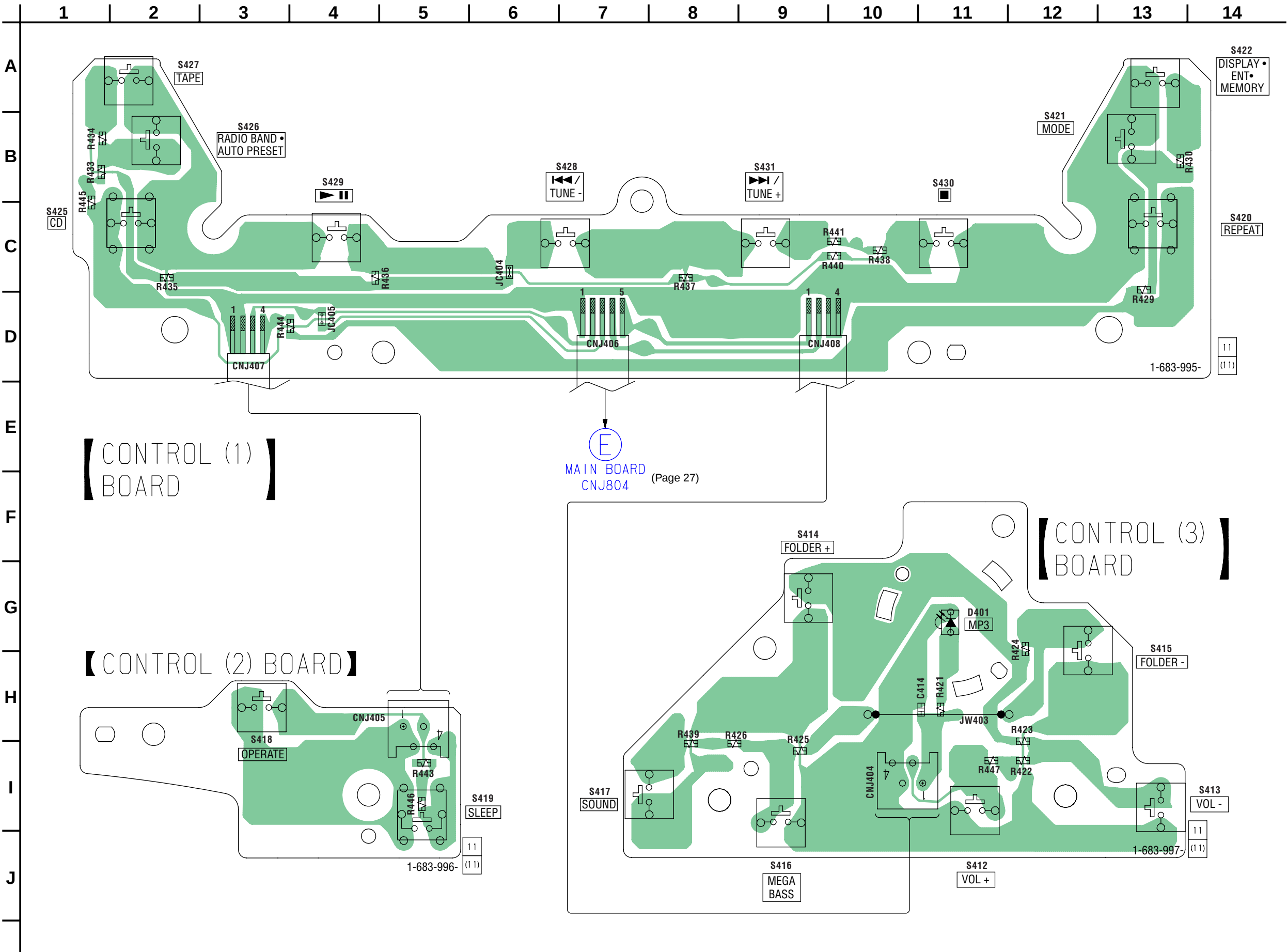
- **Waveforms**



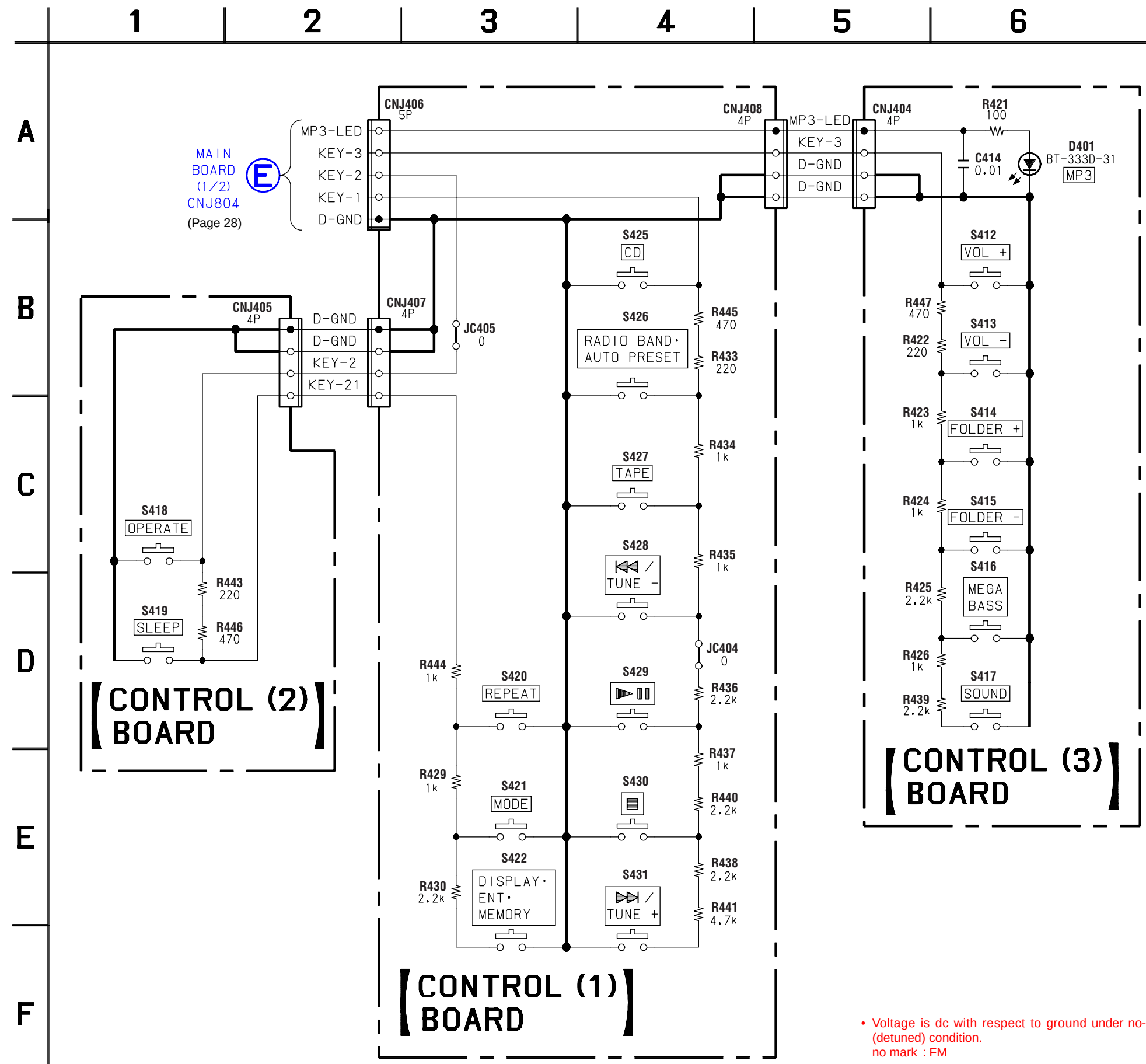
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.

no mark : FM
 () : PB
 < > : REC
 [] : CD PLAY

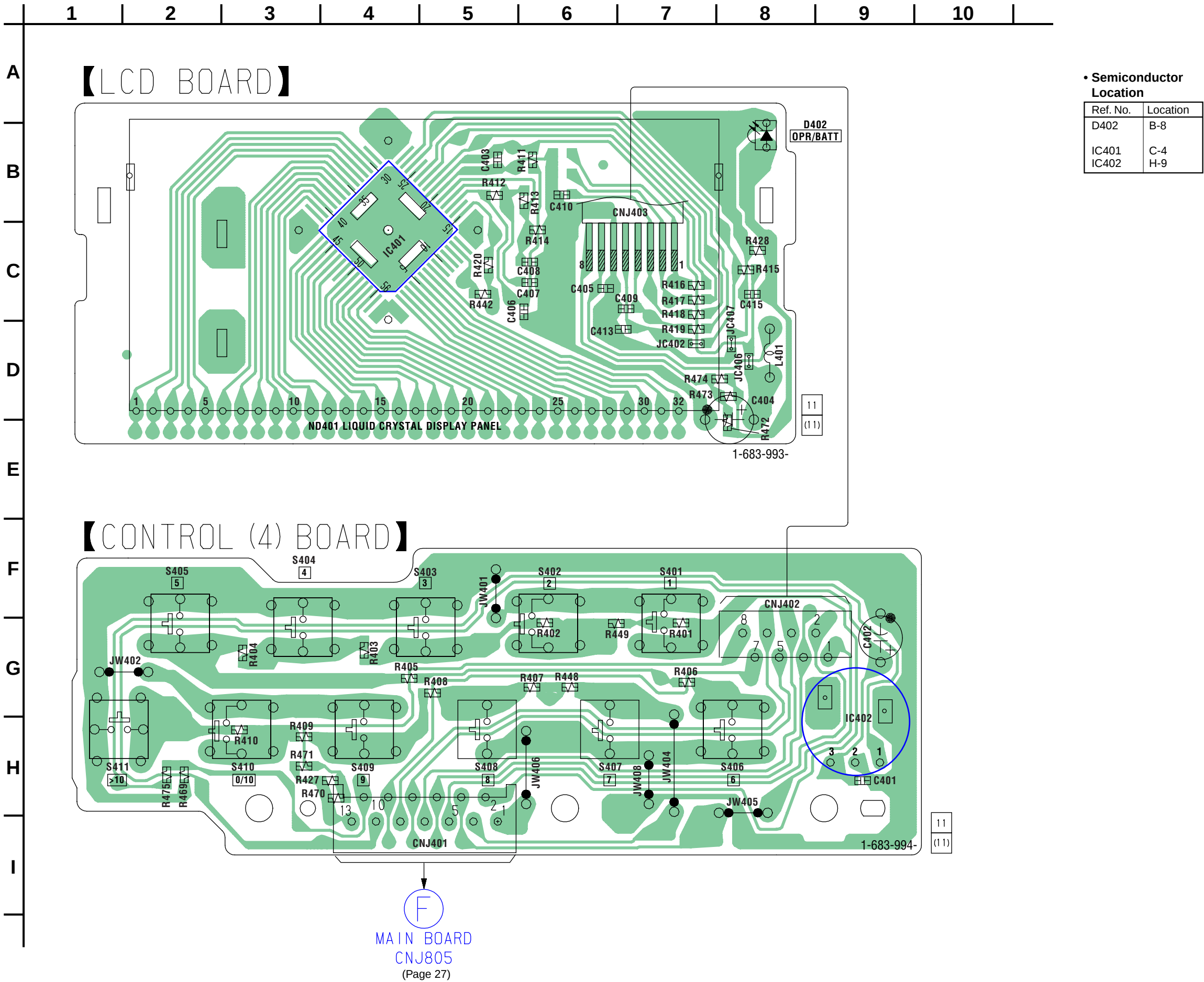
6-14. PRINTED WIRING BOARDS — CONTROL SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.



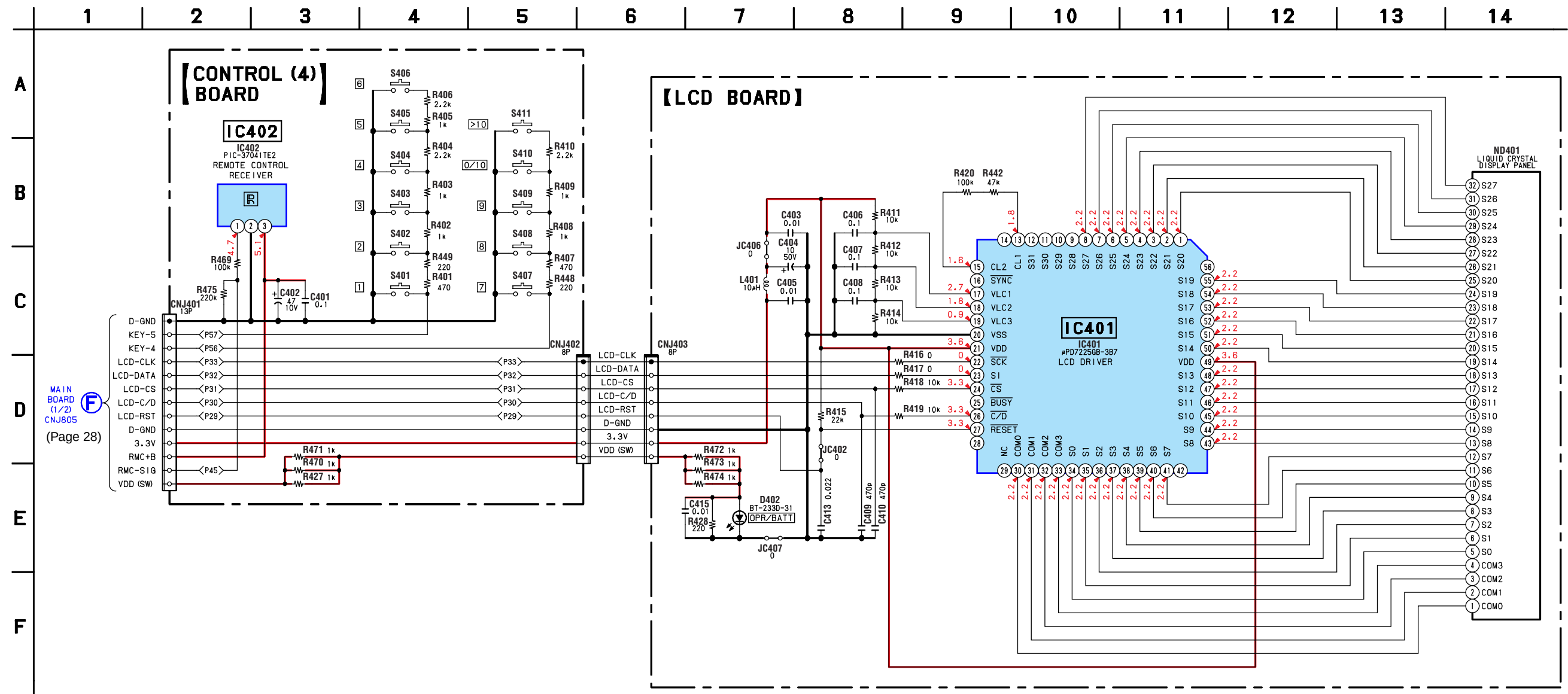
6-15. SCHEMATIC DIAGRAM — CONTROL SECTION — • Refer to page 22 for Common Note on Schematic Diagrams.



6-16. PRINTED WIRING BOARDS — DISPLAY SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.

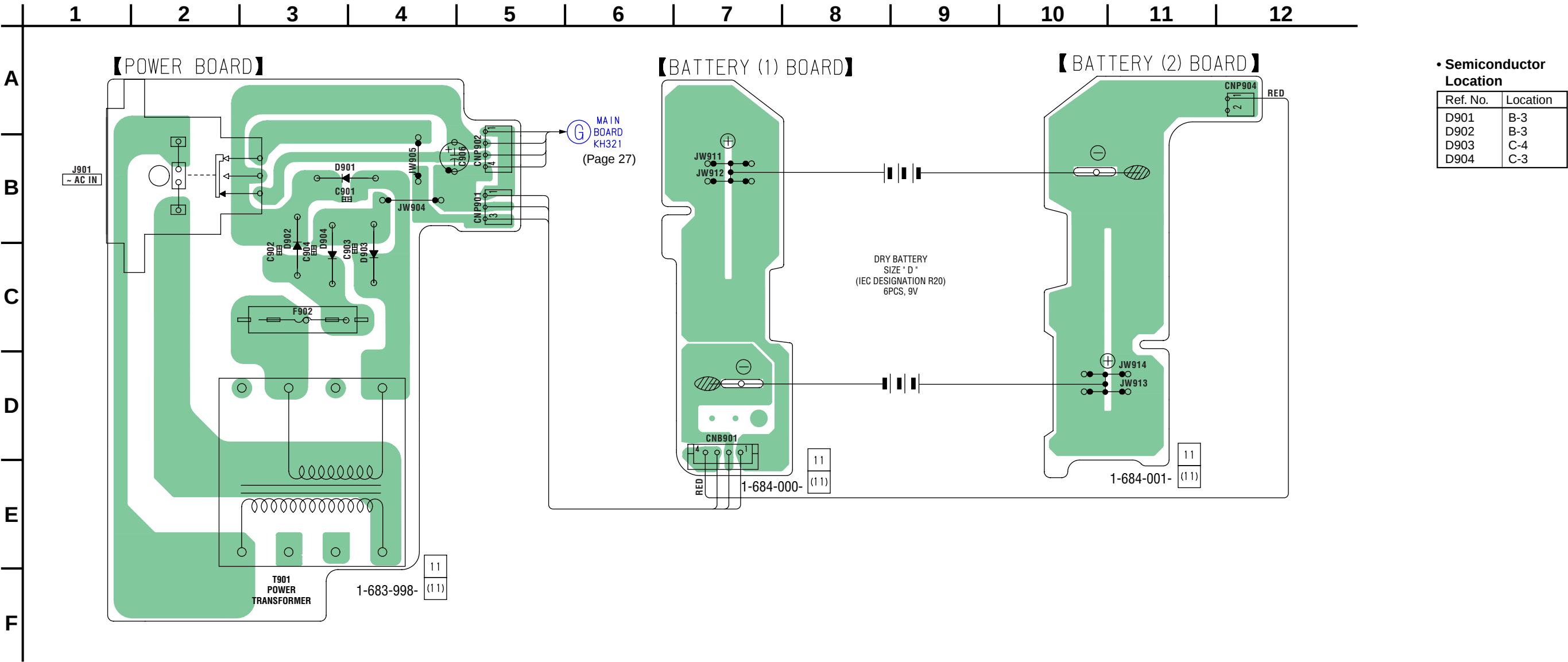


6-17. SCHEMATIC DIAGRAM — DISPLAY SECTION — • Refer to page 22 for Common Note on Schematic Diagrams.

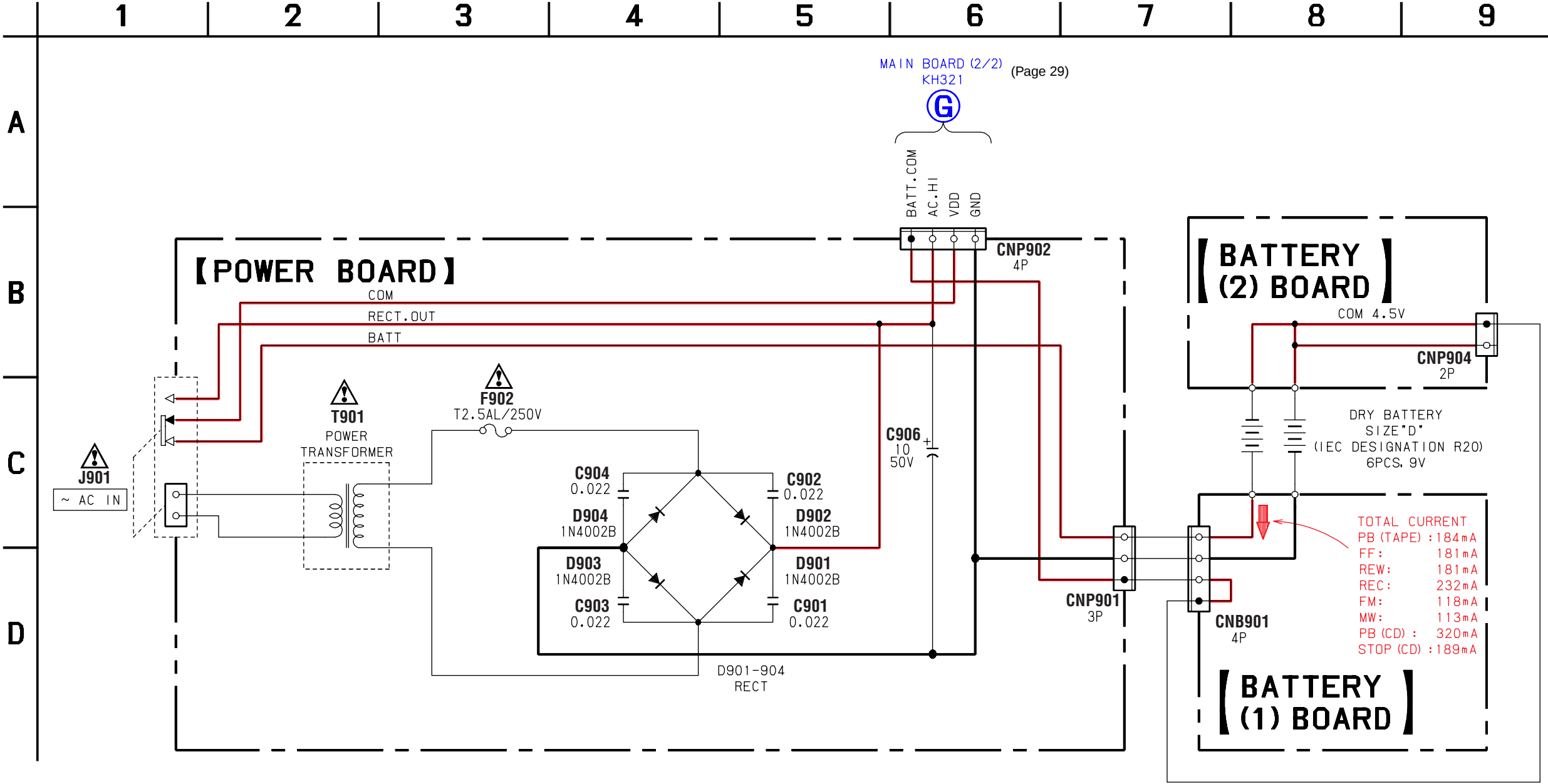


• Voltage is dc with respect to ground under no-signal (detuned) condition.
no mark : FM

6-18. PRINTED WIRING BOARDS — POWER SUPPLY SECTION — • Refer to page 19 for Circuit Boards Location and page 22 for Common Note on Printed Wiring Boards.

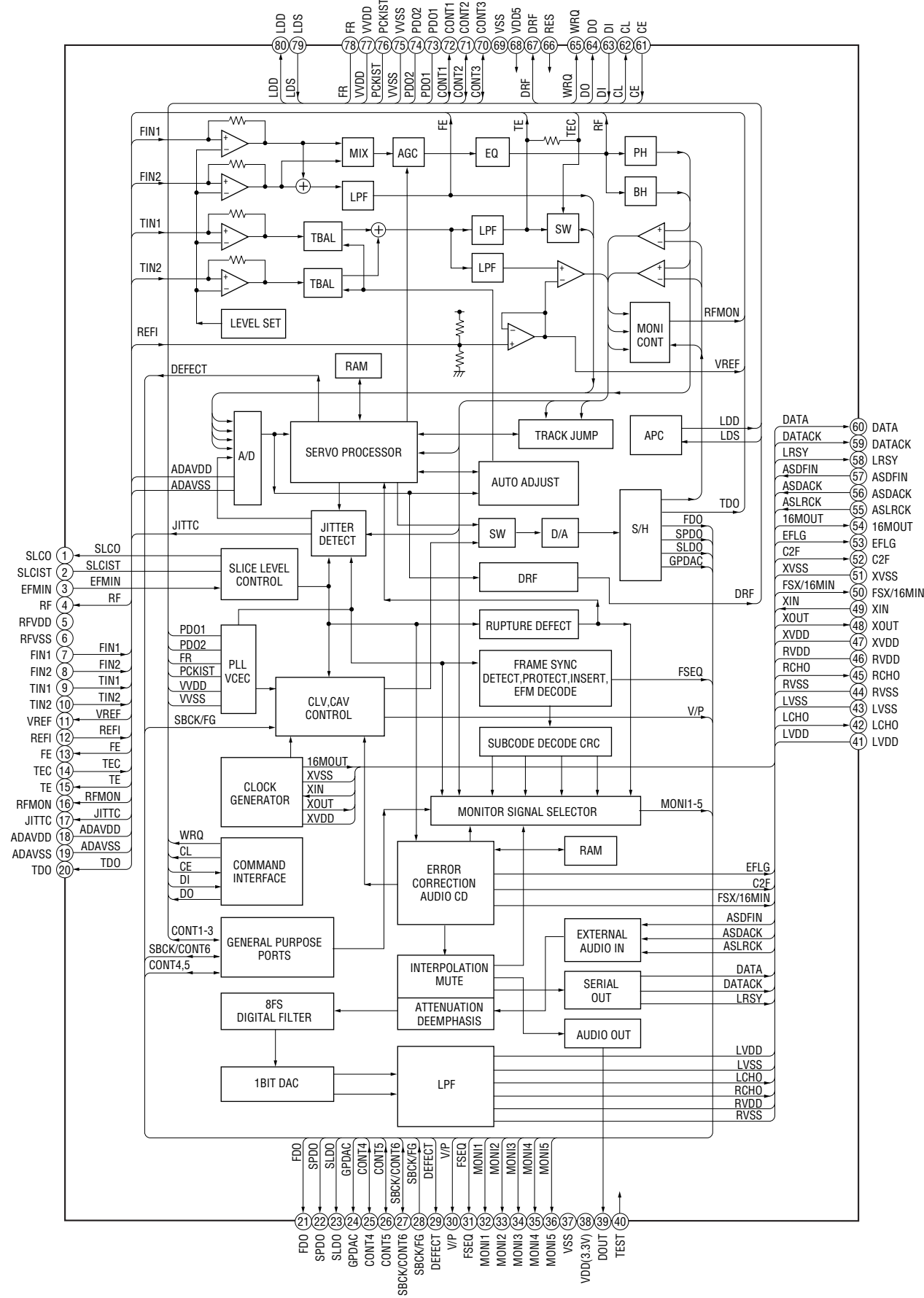


6-19. SCHEMATIC DIAGRAM — POWER SUPPLY SECTION — • Refer to page 22 for Common Note on Schematic Diagrams.

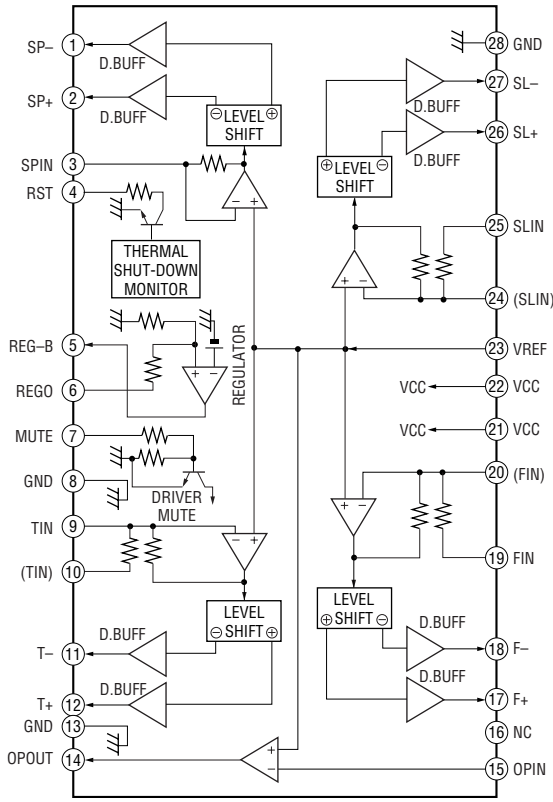


6-20. IC BLOCK DIAGRAMS

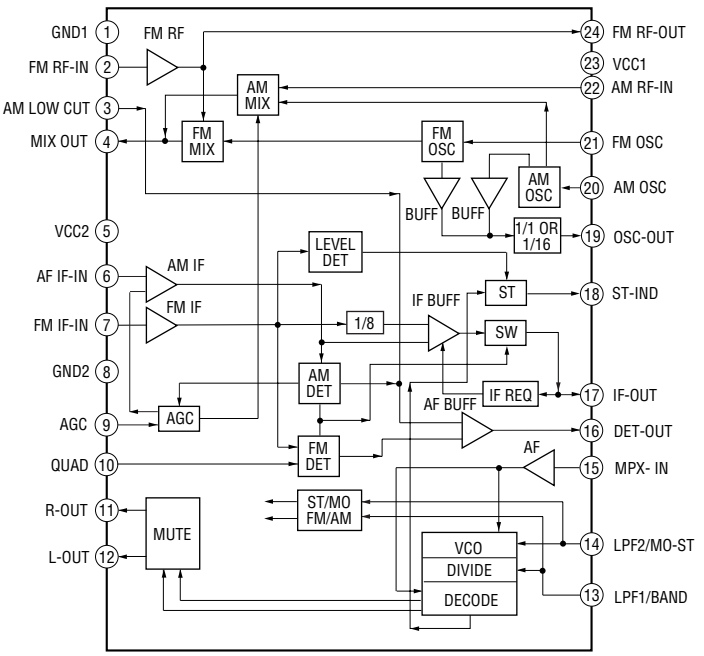
IC701 LC78646E-E (CD Board)



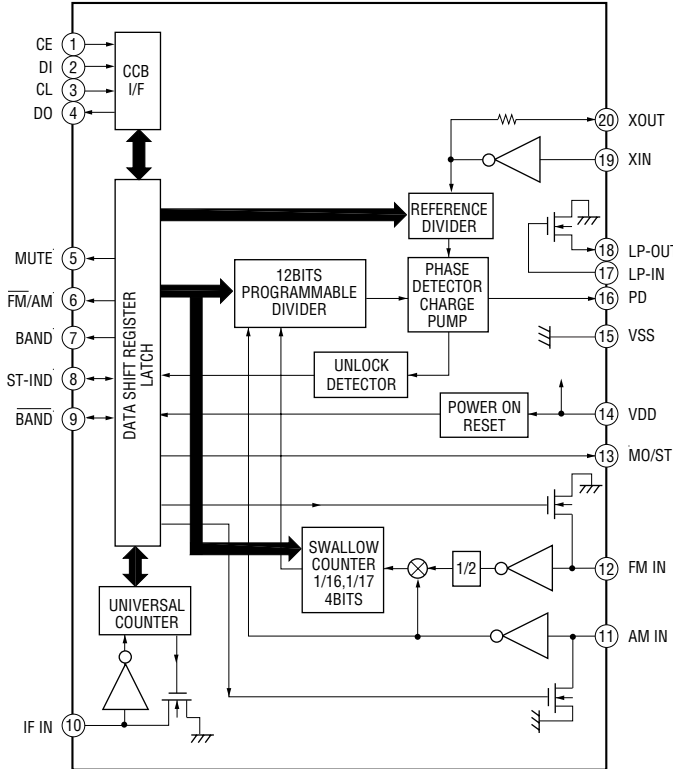
IC702 BA5826FP-E2 (CD Board)



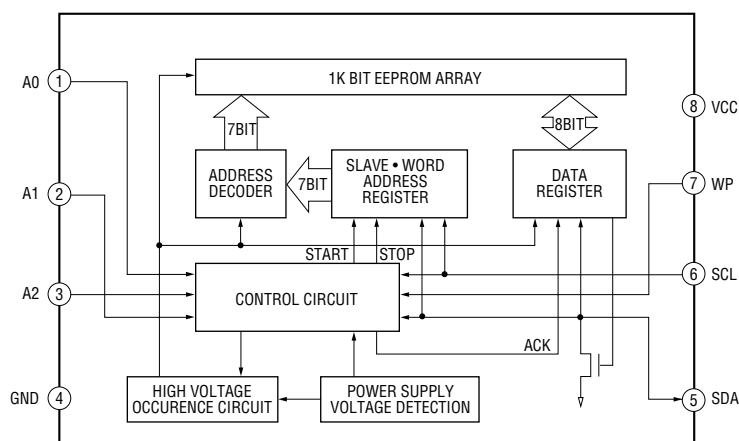
IC1 TA2149BN (TUNER Board)



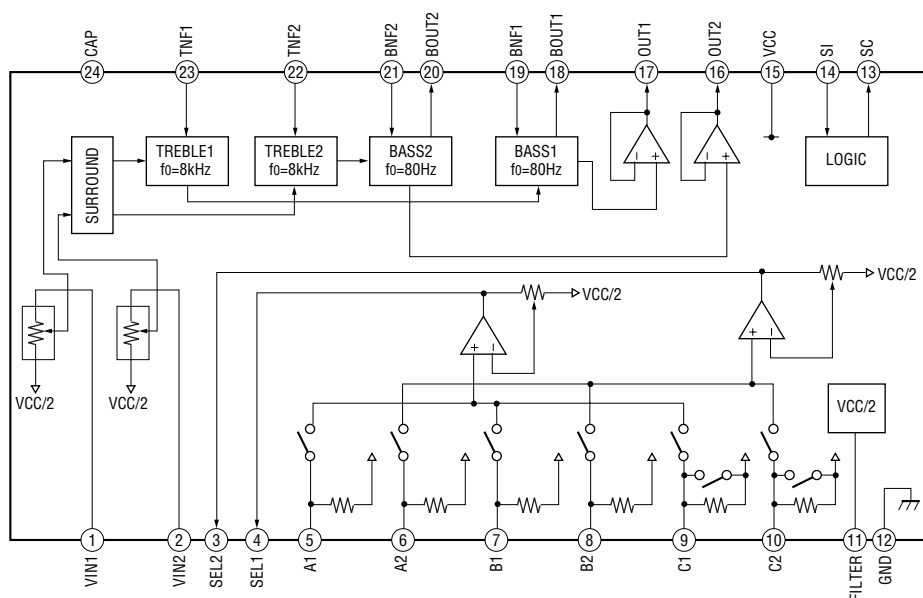
IC2 LC72137M-TLM (TUNER Board)



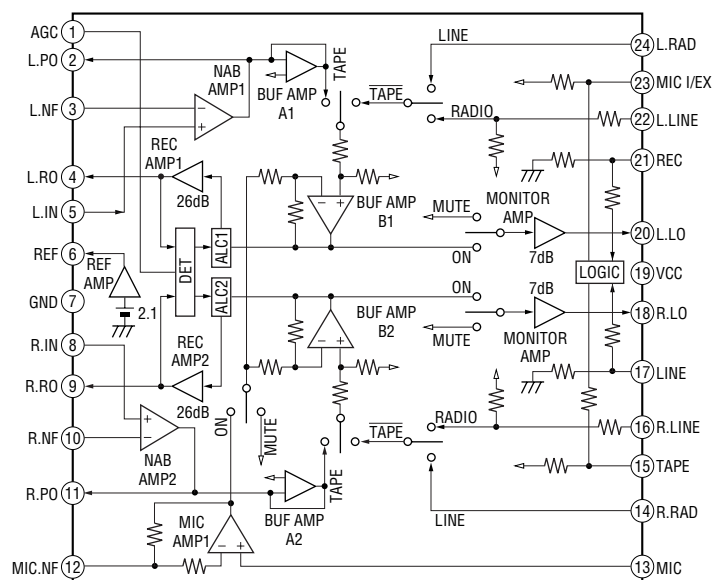
IC802 CAT24WC02JI-1.8-TE13 (MAIN Board)



IC303 BD3870FS-E2 (MAIN Board)



IC301 TA2068N (TC Board)



SECTION 7

EXPLODED VIEWS

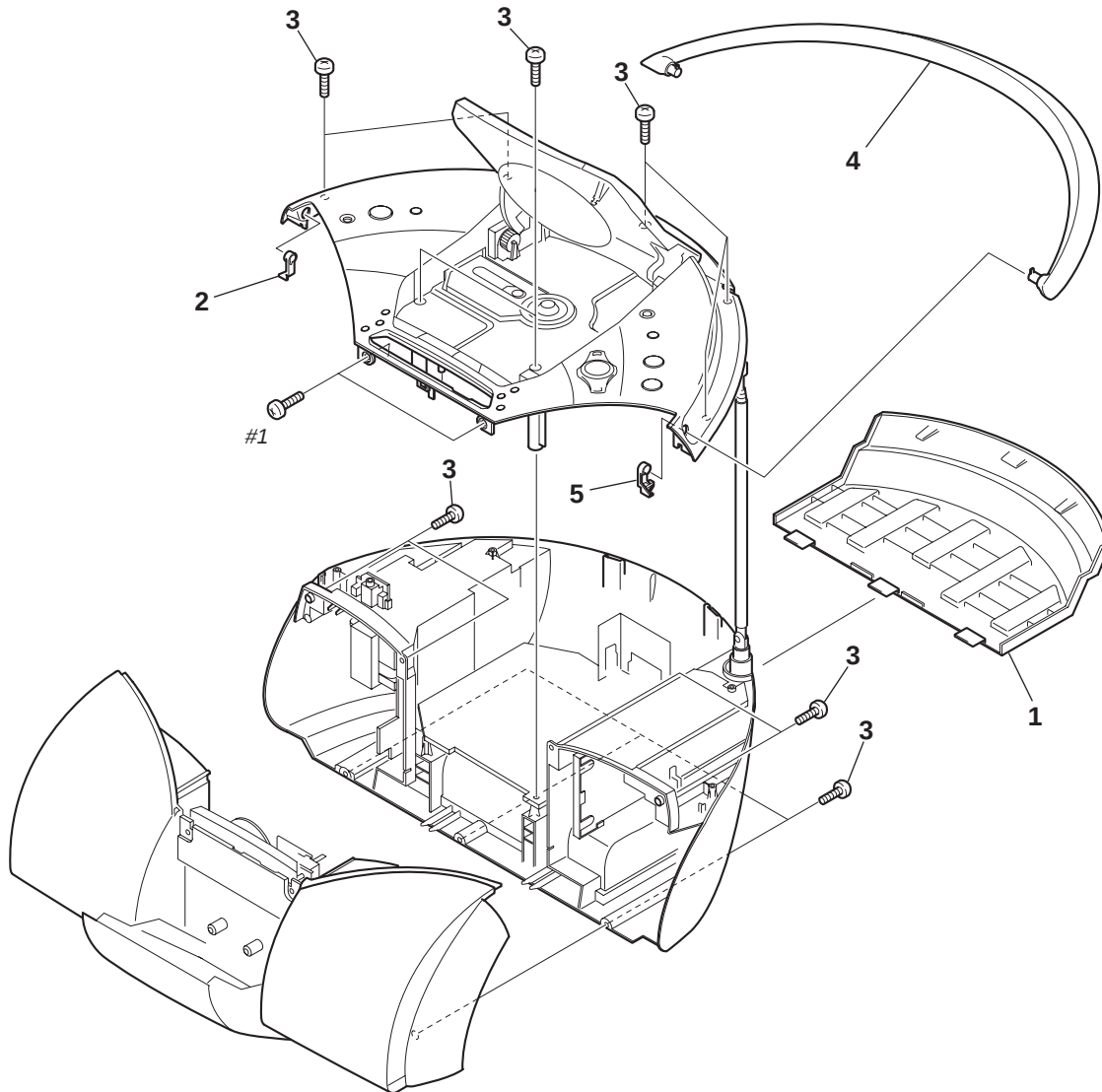
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
EA : Saudi Arabia model
SP : Singapore model

- Color Indication of Appearance Parts
Example :
 KNOB, BALANCE (WHITE) ... (RED)
 ↑ ↑
 Parts Color Cabinet's Color
- Accessories are given in the last of this parts list.

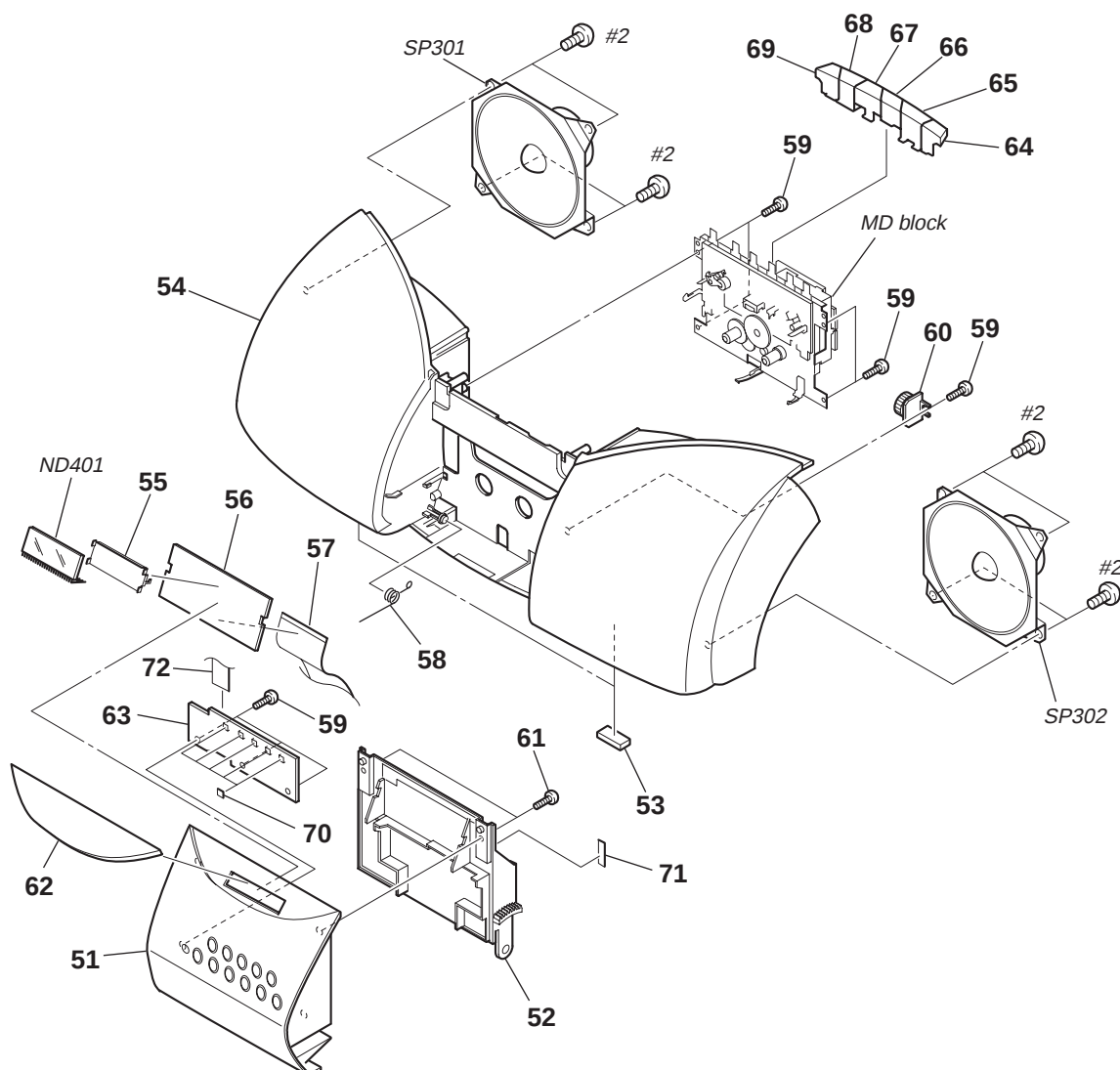
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

7-1. MAIN SECTION



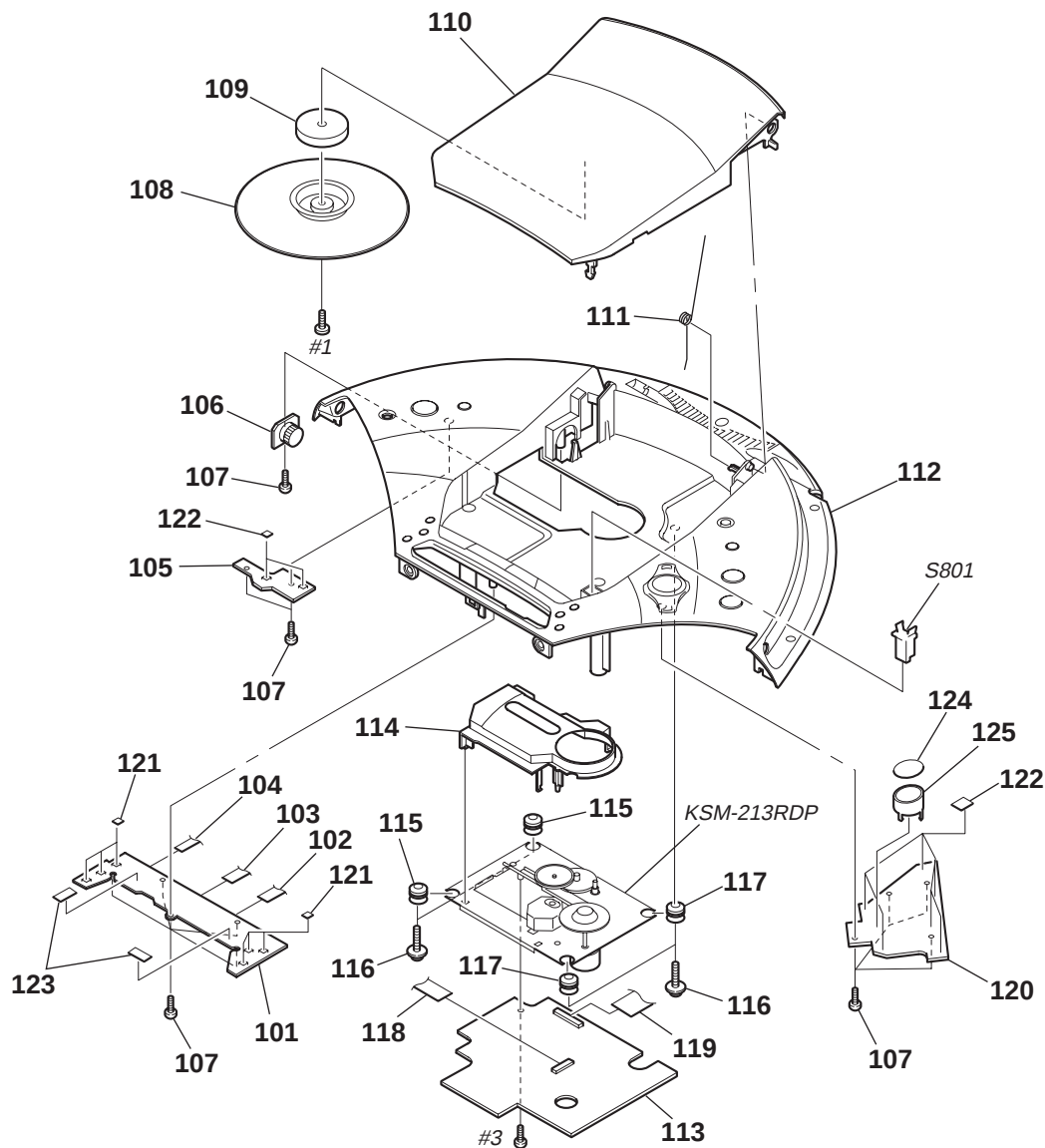
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	3-237-699-51	LID, BATTERY		4	3-237-700-11	HANDLE	
2	3-237-726-11	PLATE (L)		5	3-237-727-11	PLATE (R)	
3	4-951-620-81	SCREW (2.6)		#1	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	

7-2. CABINET FRONT SECTION



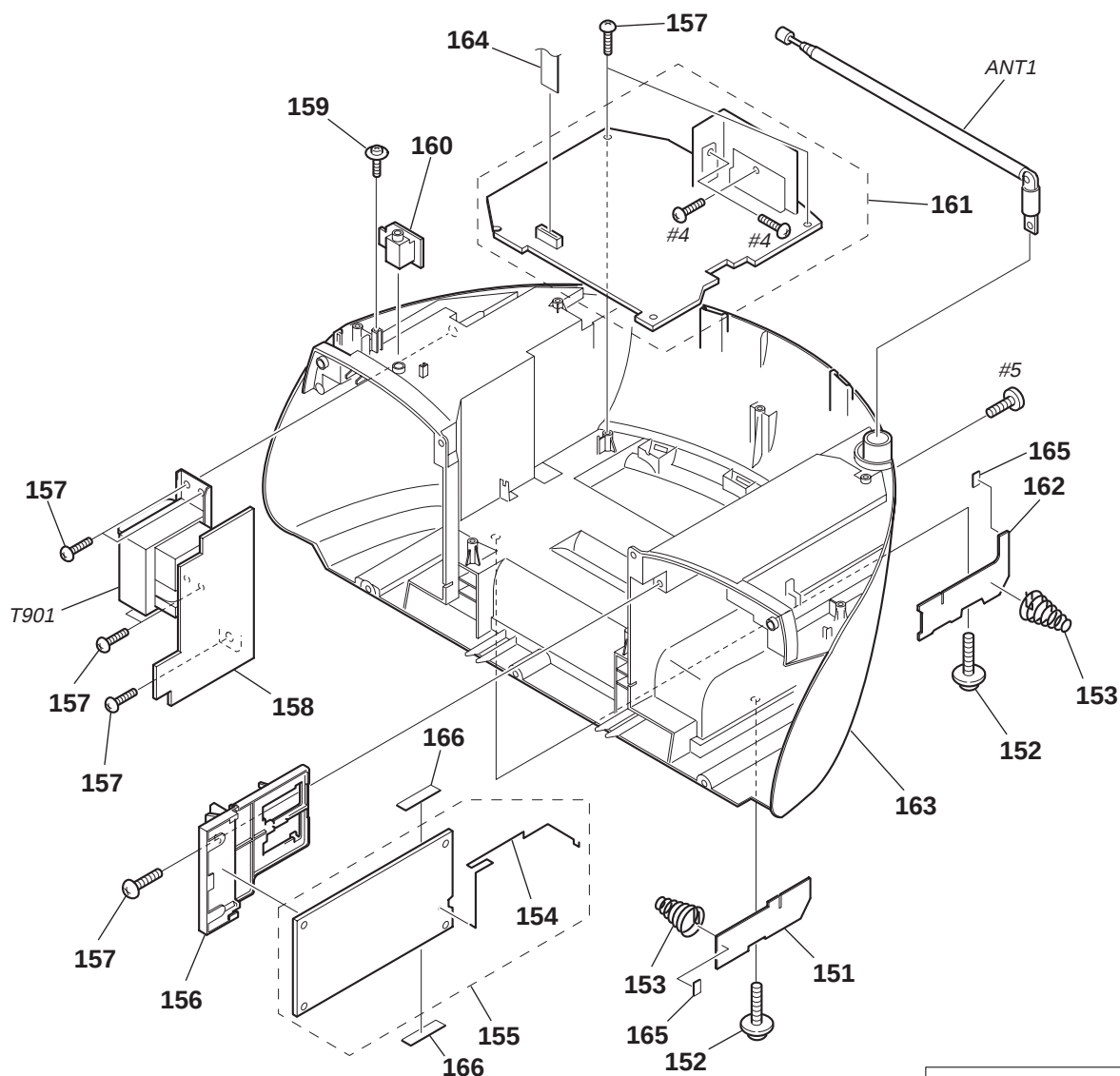
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3382-175-1	DOOR SUB ASSY, CASSETTE		64	3-237-707-31	BUTTON, REC	
52	3-237-694-31	HOLDER, CASSETTE		65	3-237-706-31	BUTTON, PLAY	
53	3-040-916-01	FOOT (FRONT), RUBBER		66	3-237-704-31	BUTTON, REW	
54	X-3382-176-1	CABINET FRONT SUB ASSY (EXCEPT EA,SP)		67	3-237-705-31	BUTTON, FF	
54	X-3382-302-1	CABINET FRONT SUB ASSY (EA,SP)		68	3-237-703-31	BUTTON, S/E	
55	3-242-758-01	HOLDER (LCD)		69	3-237-702-31	BUTTON, PAUSE	
* 56	1-683-993-11	LCD BOARD		70	3-831-441-11	CUSHION (B)	
57	1-824-342-11	CABLE, FLEXIBLE FLAT 8P (CNJ403)		71	3-243-185-11	CUSHION	
58	3-237-725-01	SPRING, CASSETTE		72	1-824-344-11	CABLE, FLEXIBLE FLAT (13 CORE)	
59	4-951-620-11	SCREW (2.6X10), +BVTP		ND401	1-804-712-11	DISPLAY PANEL, LIQUID CRYSTAL	
60	3-047-468-11	DAMPER		SP301	1-825-031-11	SPEAKER (10cm) (L-CH)	
61	4-951-620-31	SCREW (2.6), +BVTP		SP302	1-825-031-11	SPEAKER (10cm) (R-CH)	
62	3-237-709-41	WINDOW, LCD		#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
* 63	1-683-994-11	CONTROL (4) BOARD					

7-3. CABINET TOP SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	1-683-995-11	CONTROL (1) BOARD		115	3-931-379-21	RUBBER, VIBRATION PROOF	
102	1-824-340-11	CABLE, FLEXIBLE FLAT 4P (CNJ408)		116	3-921-725-11	SCREW (2.6X10), +PWH	
103	1-824-341-11	CABLE, FLEXIBLE FLAT 5P (CNJ406)		117	3-931-379-31	RUBBER, VIBRATION PROOF	
104	1-824-339-11	CABLE, FLEXIBLE FLAT 4P (CNJ407)		118	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)	
* 105	1-683-996-11	CONTROL (2) BOARD		119	1-824-345-11	CABLE, FLEXIBLE FLAT 20P	
106	3-922-112-41	DAMPER		* 120	1-683-997-11	CONTROL (3) BOARD	
107	4-951-620-01	SCREW (2.6X8), +BVTP		121	3-220-756-01	CUSHION (BUTTON)	
108	3-019-395-01	PLATE, CHUCKING		122	3-831-441-11	CUSHION (B)	
109	1-452-899-11	MAGNET		123	3-040-315-01	COVER (AC OUT)	
110	3-240-598-31	LID, CD		124	3-244-257-01	ILLUMINATOR	
111	3-245-184-01	SPRING, CD		125	3-240-288-01	TUBE, DIFFUSION	
112	X-3382-177-1	CABI TOP SUB ASSY (EXCEPT EA,SP)		S801	1-692-960-11	SWITCH, PUSH (1 KEY)	
112	X-3382-303-1	CABI TOP SUB ASSY (EA,SP)					(▲ PUSH OPEN/CLOSE)
* 113	A-3323-787-A	CD BOARD, COMPLETE		#1	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
114	3-923-736-01	COVER, CD		#3	7-685-853-04	SCREW +BVTT 2X6 (S)	

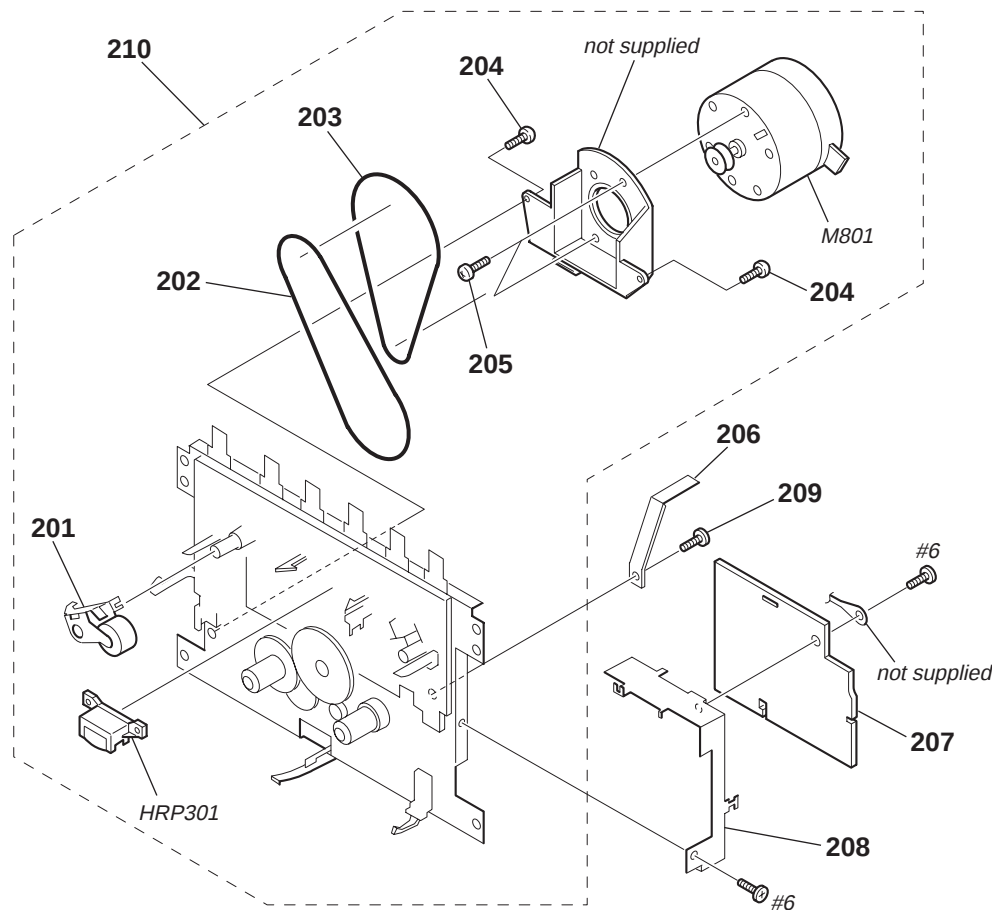
7-4. CABINET REAR SECTION



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

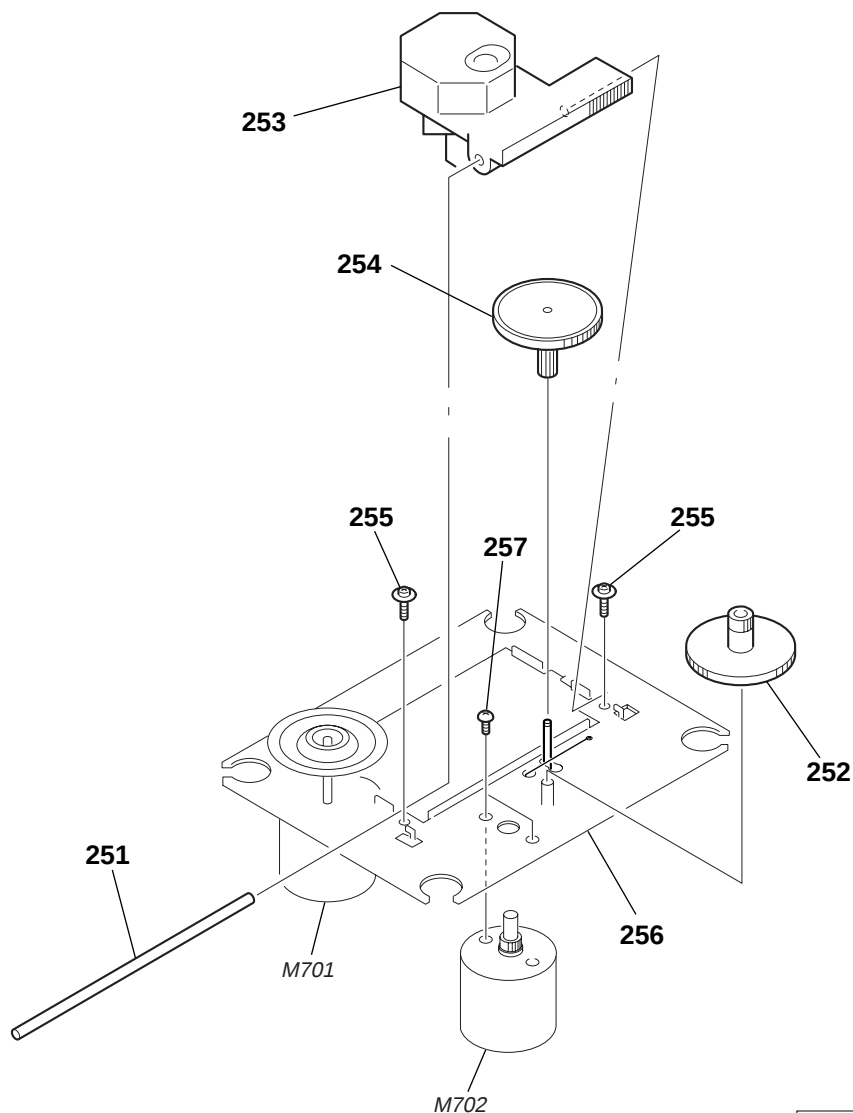
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151	1-684-000-11	BATTERY (1) BOARD		* 162	1-684-001-11	BATTERY (2) BOARD	
152	4-960-167-01	SCREW (3X8) (DIA.10), +WH		163	3-240-597-71	REAR, CABINET	
153	3-240-561-01	TERMINAL (-), BATTERY		164	1-824-343-11	CABLE, FLEXIBLE FLAT 13P	
154	3-237-724-01	TERMINAL, ANTENNA (CNP2)		165	3-018-963-01	CUSHION (BATTERY CASE LID)	
* 155	A-3323-807-A	TUNER BOARD, COMPLETE		166	3-846-312-01	SPACER	
156	3-249-551-01	HOLDER (PWB TU)		ANT1	1-754-241-11	ANTENNA, TELESCOPIC (FM)	
157	4-951-620-11	SCREW (2.6X10), +BVTP		$\triangle$ T901	1-435-918-21	TRANSFORMER, POWER	
* 158	1-683-998-11	POWER BOARD		#4	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
159	3-921-725-11	SCREW (2.6X10), +PWH		#5	7-682-548-04	SCREW +B 3X8	
* 160	1-683-999-11	HEADPHONE BOARD					
* 161	A-3178-740-A	MAIN BOARD, COMPLETE (EA,SP)					
* 161	A-3323-963-A	MAIN BOARD, COMPLETE (EXCEPT EA,SP)					

7-5. TAPE MECHANISM SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	3-244-086-01	ARM ASSY, PINCH ROLLER		208	3-237-719-01	CHASSIS, TC	
202	3-244-079-01	BELT (B), SUB		209	3-030-741-01	SCREW (M2X2)	
203	3-244-080-01	BELT (B), MAIN		210	A-3013-956-A	MF-S200	
204	3-244-083-01	SCREW BIND DT M2X6		HRP301	3-244-085-01	HEAD, R/P (REC/PB)	
205	3-244-084-01	SCREW PAN M2.6X4.5		M801	3-244-082-01	MOTOR ASSY (CAPSTAN/REEL)	
206	3-237-718-01	LEVER, REC		#6	7-685-851-04	SCREW +BVTT 2X4 (S)	
* 207	A-3323-806-A	TC BOARD, COMPLETE					

7-6. CD MECHANISM SECTION (KSM-213RDP)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	2-626-908-01	SHAFT, SLED		256	X-2162-707-1	CHASSIS ASSY (RDP) (RP), MOTOR (SPINDLE) (including M701)	
* 252	2-647-408-02	GEAR (B)		257	3-713-786-51	SCREW (M2X3)	
$\triangle$ 253	8-820-161-02	PICK-UP, OPTICAL KSS-213R/C2RP		M702	X-2162-712-1	GEAR ASSY (R) (RP), MOTOR (SLED)	
* 254	2-169-065-01	GEAR (A)					
255	2-169-388-01	TAPPING (M2), +PWB					

SECTION 8
ELECTRICAL PARTS LIST

BATTERY (1)
BATTERY (2)

CD

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

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

- Abbreviation
IT : Italian model
CET : East European & CIS model
EA : Saudi Arabia model
SP : Singapore model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-684-000-11	BATTERY (1) BOARD *****		C734	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
	3-240-561-01	TERMINAL (-), BATTERY *****		C737	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
				C740	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C741	1-115-156-11	CERAMIC CHIP 1uF	10V
				C742	1-164-156-11	CERAMIC CHIP 0.1uF	25V
*	1-684-001-11	BATTERY (2) BOARD *****		C743	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
	3-240-561-01	TERMINAL (-), BATTERY		C744	1-115-156-11	CERAMIC CHIP 1uF	10V
		< CONNECTOR >		C745	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
* CNP904	1-815-550-11	PIN, CONNECTOR (PWB) 2P *****		C746	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C747	1-164-156-11	CERAMIC CHIP 0.1uF	25V
*	A-3323-787-A	CD BOARD, COMPLETE *****		C748	1-126-935-11	ELECT 470uF 20%	10V
		< CAPACITOR >		C750	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
				C751	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
				C752	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
				C753	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C701	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C754	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C702	1-104-665-11	ELECT 100uF 20%	10V	C756	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C703	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C760	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C704	1-126-947-11	ELECT 47uF 20%	10V	C761	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C705	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C762	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C706	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C763	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C707	1-104-665-11	ELECT 100uF 20%	10V	C764	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C708	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C766	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C709	1-104-665-11	ELECT 100uF 20%	10V	C767	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C710	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V	C1001	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C711	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C1004	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C712	1-162-923-11	CERAMIC CHIP 47PF 5%	50V	C1010	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C713	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C1011	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C714	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C1012	1-115-156-11	CERAMIC CHIP 1uF	10V
C715	1-126-960-11	ELECT 1uF 20%	50V	C1013	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C716	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C1014	1-104-665-11	ELECT 100uF 20%	10V
C717	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C1029	1-126-916-11	ELECT 1000uF 20%	6.3V
C718	1-115-156-11	CERAMIC CHIP 1uF	10V	C1030	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C719	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C1031	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C720	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	C1037	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C721	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C1042	1-104-665-11	ELECT 100uF 20%	10V
C722	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C1043	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C723	1-104-665-11	ELECT 100uF 20%	10V	C1044	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C729	1-126-927-11	ELECT 2200uF 20%	10V	C1054	1-126-935-11	ELECT 470uF 20%	10V
C731	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V	C1055	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C732	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C1056	1-115-156-11	CERAMIC CHIP 1uF	10V
C733	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C1057	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
				C1058	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
				C1059	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
				C1066	1-162-923-11	CERAMIC CHIP 47PF 5%	50V

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C1067	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R724	1-216-841-11	METAL CHIP	47K	5%	1/10W	
C1068	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R725	1-216-817-11	METAL CHIP	470	5%	1/10W	
C1069	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R726	1-216-817-11	METAL CHIP	470	5%	1/10W	
C1070	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R727	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
C1074	1-162-919-11	CERAMIC CHIP	22PF	5%	50V		R728	1-216-833-11	METAL CHIP	10K	5%	1/10W	
< CONNECTOR >							R729	1-216-813-11	METAL CHIP	220	5%	1/10W	
CNP701	1-779-466-11	CONNECTOR, FFC (LIF(NON-ZIF)) 16P					R730	1-216-821-11	METAL CHIP	1K	5%	1/10W	
CNP702	1-784-742-11	CONNECTOR, FFC 20P					R731	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
< DIODE >							R732	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R733	1-216-809-11	METAL CHIP	100	5%	1/10W	
D701	8-719-988-61	DIODE	1SS355TE-17				R734	1-216-809-11	METAL CHIP	100	5%	1/10W	
D702	8-719-988-61	DIODE	1SS355TE-17				R735	1-216-809-11	METAL CHIP	100	5%	1/10W	
< FERRITE BEAD >							R736	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R737	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R740	1-216-809-11	METAL CHIP	100	5%	1/10W	
FB701	1-469-701-21	FERRITE, EMI (SMD)					R743	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB702	1-469-701-21	FERRITE, EMI (SMD)					R744	1-216-845-11	METAL CHIP	100K	5%	1/10W	
FB703	1-469-701-21	FERRITE, EMI (SMD)					R745	1-216-809-11	METAL CHIP	100	5%	1/10W	
FB704	1-469-701-21	FERRITE, EMI (SMD)					R753	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB705	1-469-701-21	FERRITE, EMI (SMD)					R755	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB706	1-469-701-21	FERRITE, EMI (SMD)					R756	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB707	1-469-701-21	FERRITE, EMI (SMD)					R757	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB1001	1-469-701-21	FERRITE, EMI (SMD)					R758	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
FB1002	1-469-701-21	FERRITE, EMI (SMD)					R759	1-216-809-11	METAL CHIP	100	5%	1/10W	
< IC >							R760	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
IC701	6-701-796-01	IC	LC78646E-E				R761	1-216-805-11	METAL CHIP	47	5%	1/10W	
IC702	6-701-787-11	IC	BA5826FP-E2				R762	1-216-805-11	METAL CHIP	47	5%	1/10W	
IC1001	6-701-791-01	IC	LC78683E-US-E				R763	1-216-813-11	METAL CHIP	220	5%	1/10W	
IC1002	8-759-597-78	IC	MSM54V16258BSL-40TSK				R764	1-216-813-11	METAL CHIP	220	5%	1/10W	
< TRANSISTOR >							R765	1-216-841-11	METAL CHIP	47K	5%	1/10W	
Q701	8-729-054-57	TRANSISTOR KTN2907AS-RTK					R1001	1-216-809-11	METAL CHIP	100	5%	1/10W	
< RESISTOR >							R1002	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R1003	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R1004	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R1005	1-216-809-11	METAL CHIP	100	5%	1/10W	
R701	1-216-841-11	METAL CHIP	47K	5%	1/10W		R1017	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R702	1-216-833-11	METAL CHIP	10K	5%	1/10W		R1018	1-216-809-11	METAL CHIP	100	5%	1/10W	
R703	1-216-833-11	METAL CHIP	10K	5%	1/10W		R1019	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R704	1-216-833-11	METAL CHIP	10K	5%	1/10W		R1020	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R705	1-216-833-11	METAL CHIP	10K	5%	1/10W		R1068	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R706	1-216-841-11	METAL CHIP	47K	5%	1/10W		R1073	1-216-809-11	METAL CHIP	100	5%	1/10W	
R707	1-216-797-11	METAL CHIP	10	5%	1/10W		R1074	1-216-809-11	METAL CHIP	100	5%	1/10W	
R708	1-216-833-11	METAL CHIP	10K	5%	1/10W		R1075	1-216-809-11	METAL CHIP	100	5%	1/10W	
R709	1-216-837-11	METAL CHIP	22K	5%	1/10W		R1076	1-216-809-11	METAL CHIP	100	5%	1/10W	
R710	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		R1077	1-216-809-11	METAL CHIP	100	5%	1/10W	
R711	1-216-813-11	METAL CHIP	220	5%	1/10W		R1078	1-216-809-11	METAL CHIP	100	5%	1/10W	
R712	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		R1079	1-216-809-11	METAL CHIP	100	5%	1/10W	
R713	1-216-821-11	METAL CHIP	1K	5%	1/10W		R1080	1-216-809-11	METAL CHIP	100	5%	1/10W	
R714	1-216-809-11	METAL CHIP	100	5%	1/10W		R1081	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R715	1-216-809-11	METAL CHIP	100	5%	1/10W		R1082	1-216-805-11	METAL CHIP	47	5%	1/10W	
R716	1-216-809-11	METAL CHIP	100	5%	1/10W		< SWITCH >						
R717	1-216-809-11	METAL CHIP	100	5%	1/10W		S701	1-571-936-11	SWITCH, LEAF (LIMIT)				
R718	1-216-809-11	METAL CHIP	100	5%	1/10W		< VIBRATOR >						
R719	1-216-809-11	METAL CHIP	100	5%	1/10W								
R720	1-216-809-11	METAL CHIP	100	5%	1/10W								
R721	1-216-809-11	METAL CHIP	100	5%	1/10W		X701	1-795-563-21	VIBRATOR, CERAMIC (16.9MHz)				
R722	1-216-809-11	METAL CHIP	100	5%	1/10W		*****						
R723	1-216-809-11	METAL CHIP	100	5%	1/10W								

CFD-S20CP

CONTROL (1)	CONTROL (2)	CONTROL (3)	CONTROL (4)
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Ref. No.	Part No.	Description	Remark			
*	1-683-995-11	CONTROL (1) BOARD *****				
	1-824-339-11	CABLE, FLEXIBLE FLAT 4P (CNJ407)				
	1-824-340-11	CABLE, FLEXIBLE FLAT 4P (CNJ408)				
	1-824-341-11	CABLE, FLEXIBLE FLAT 5P (CNJ406)				
	< JUMPER RESISTOR >					
JC404	1-216-864-11	METAL CHIP	0	5%	1/10W	
JC405	1-216-864-11	METAL CHIP	0	5%	1/10W	
	< RESISTOR >					
R429	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R430	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R433	1-216-813-11	METAL CHIP	220	5%	1/10W	
R434	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R435	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R436	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R437	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R438	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R440	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R441	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R444	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R445	1-216-817-11	METAL CHIP	470	5%	1/10W	
	< SWITCH >					
S420	1-786-050-21	SWITCH, KEYBOARD (REPEAT)				
S421	1-786-050-21	SWITCH, KEYBOARD (MODE)				
S422	1-786-050-21	SWITCH, KEYBOARD (DISPLAY•ENT•MEMORY)				
S425	1-786-050-21	SWITCH, KEYBOARD (CD)				
S426	1-786-050-21	SWITCH, KEYBOARD (RADIO BAND• AUTO PRESET)				
S427	1-786-050-21	SWITCH, KEYBOARD (TAPE)				
S428	1-786-050-21	SWITCH, KEYBOARD (I◀◀/TUNE -)				
S429	1-786-050-21	SWITCH, KEYBOARD (▶▶ II)				
S430	1-786-050-21	SWITCH, KEYBOARD (■)				
S431	1-786-050-21	SWITCH, KEYBOARD (▶▶I/TUNE +)				

*	1-683-996-11	CONTROL (2) BOARD				

	3-831-441-11	CUSHION (B)				
		< CONNECTOR >				
CNJ405	1-784-726-11	CONNECTOR, FFC 4P				
		< RESISTOR >				
R443	1-216-813-11	METAL CHIP	220	5%	1/10W	
R446	1-216-817-11	METAL CHIP	470	5%	1/10W	
		< SWITCH >				
S418	1-786-050-21	SWITCH, KEYBOARD (OPERATE)				
S419	1-786-050-21	SWITCH, KEYBOARD (SLEEP)				

Ref. No.	Part No.	Description	Remark			
*	1-683-997-11	CONTROL (3) BOARD *****				
	3-240-288-01	TUBE, DIFFUSION				
	3-244-257-01	ILLUMINATOR				
	3-831-441-11	CUSHION (B)				
		< CAPACITOR >				
C414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
		< CONNECTOR >				
CNJ404	1-784-726-11	CONNECTOR, FFC 4P				
		< DIODE >				
D401	6-500-199-01	LED BT-333D-31 (MP3)				
		< RESISTOR >				
R421	1-216-809-11	METAL CHIP	100	5%	1/10W	
R422	1-216-813-11	METAL CHIP	220	5%	1/10W	
R423	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R424	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R425	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R426	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R439	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R447	1-216-817-11	METAL CHIP	470	5%	1/10W	
		< SWITCH >				
S412	1-786-050-21	SWITCH, KEYBOARD (VOL +)				
S413	1-786-050-21	SWITCH, KEYBOARD (VOL -)				
S414	1-786-050-21	SWITCH, KEYBOARD (FOLDER +)				
S415	1-786-050-21	SWITCH, KEYBOARD (FOLDER -)				
S416	1-786-050-21	SWITCH, KEYBOARD (MEGA BASS)				
S417	1-786-050-21	SWITCH, KEYBOARD (SOUND)				

*	1-683-994-11	CONTROL (4) BOARD *****				
		< CAPACITOR >				
C401	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C402	1-126-785-11	ELECT	47uF	20%	10V	
		< CONNECTOR >				
CNJ401	1-784-735-11	CONNECTOR, FFC 13P				
CNJ402	1-770-516-31	CONNECTOR, FFC 8P				
		< IC >				
IC402	6-600-070-01	IC PIC-37041TE2				
		< RESISTOR >				
R401	1-216-817-11	METAL CHIP	470	5%	1/10W	
R402	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R403	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R404	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R405	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R406	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R407	1-216-817-11	METAL CHIP	470	5%	1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
C410	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C413	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
< DIODE >					
D402	6-500-198-01	LED BT-233D-31 (OPR/BATT)			
< IC >					
IC401	8-759-153-90	IC uPD7225GB-3B7			
< JUMPER RESISTOR >					
JC402	1-216-864-11	METAL CHIP	0	5%	1/10W
JC406	1-216-864-11	METAL CHIP	0	5%	1/10W
JC407	1-216-864-11	METAL CHIP	0	5%	1/10W
< COIL >					
L401	1-410-509-11	INDUCTOR	10uH		
< FLUORESCENT INDICATOR >					
ND401	1-804-712-11	DISPLAY PANEL, LIQUID CRYSTAL			
< RESISTOR >					
R411	1-216-833-11	METAL CHIP	10K	5%	1/10W
R412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R413	1-216-833-11	METAL CHIP	10K	5%	1/10W
R414	1-216-833-11	METAL CHIP	10K	5%	1/10W
R415	1-216-837-11	METAL CHIP	22K	5%	1/10W
R416	1-216-864-11	METAL CHIP	0	5%	1/10W
R417	1-216-864-11	METAL CHIP	0	5%	1/10W
R418	1-216-833-11	METAL CHIP	10K	5%	1/10W
R419	1-216-833-11	METAL CHIP	10K	5%	1/10W
R420	1-216-845-11	METAL CHIP	100K	5%	1/10W
R428	1-216-813-11	METAL CHIP	220	5%	1/10W
R442	1-216-841-11	METAL CHIP	47K	5%	1/10W
R472	1-216-821-11	METAL CHIP	1K	5%	1/10W
R473	1-216-821-11	METAL CHIP	1K	5%	1/10W
R474	1-216-821-11	METAL CHIP	1K	5%	1/10W

*	A-3178-740-A	MAIN BOARD, COMPLETE (EA,SP)			
*	A-3323-963-A	MAIN BOARD, COMPLETE (EXCEPT EA,SP)			

	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S			
< CAPACITOR >					
C106	1-126-960-11	ELECT	1uF	20%	50V
C122	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C125	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C126	1-126-960-11	ELECT	1uF	20%	50V
C128	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C129	1-126-947-11	ELECT	47uF	20%	10V
C130	1-104-665-11	ELECT	100uF	20%	10V
C131	1-126-926-11	ELECT	1000uF	20%	10V
C132	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C133	1-126-963-11	ELECT	4.7uF	20%	50V
C135	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C139	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C146	1-164-156-11	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C147	1-126-963-11	ELECT	4.7uF	20%	50V	C846	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C148	1-115-156-11	CERAMIC CHIP	1uF		10V	C847	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C150	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C848	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C206	1-126-960-11	ELECT	1uF	20%	50V	C849	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C222	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C850	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C225	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C851	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C226	1-126-960-11	ELECT	1uF	20%	50V	C852	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C228	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C853	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C229	1-126-947-11	ELECT	47uF	20%	10V	C854	1-104-665-11	ELECT	100uF	20%	10V
C230	1-104-665-11	ELECT	100uF	20%	10V	C855	1-126-964-11	ELECT	10uF	20%	50V
C231	1-126-926-11	ELECT	1000uF	20%	10V	C856	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C232	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C857	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C233	1-126-963-11	ELECT	4.7uF	20%	50V	C858	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C235	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C859	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C239	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C860	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C246	1-164-156-11	CERAMIC CHIP	0.1uF		25V	C861	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C247	1-126-963-11	ELECT	4.7uF	20%	50V	C862	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C248	1-115-156-11	CERAMIC CHIP	1uF		10V	C863	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C864	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C321	1-104-665-11	ELECT	100uF	20%	10V	C880	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C322	1-126-947-11	ELECT	47uF	20%	10V	C881	1-126-963-11	ELECT	4.7uF	20%	50V
C323	1-126-964-11	ELECT	10uF	20%	50V	C882	1-126-963-11	ELECT	4.7uF	20%	50V
C324	1-162-974-11	CERAMIC CHIP	0.01uF		50V	C951	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C324	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	C952	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C325	1-126-937-11	ELECT	4700uF	20%	16V	C953	1-126-935-11	ELECT	470uF	20%	10V
C326	1-126-934-11	ELECT	220uF	20%	16V	C957	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C327	1-126-947-11	ELECT	47uF	20%	10V	C959	1-104-665-11	ELECT	100uF	20%	10V
C328	1-126-959-11	ELECT	0.47uF	20%	50V	C960	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C329	1-162-974-11	CERAMIC CHIP	0.01uF		50V	< CONNECTOR >					
C331	1-126-934-11	ELECT	220uF	20%	10V	CNJ804	1-784-766-11	CONNECTOR, FFC 5P			
C801	1-126-947-11	ELECT	47uF	20%	10V	CNJ805	1-784-774-11	CONNECTOR, FFC 13P			
C803	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	CNJ806	1-784-781-11	CONNECTOR, FFC 20P			
C804	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	CNJ807	1-784-774-11	CONNECTOR, FFC 13P			
C820	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	CNP801	1-815-445-11	PIN, CONNECTOR (PWB) 4P			
C821	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V	< DIODE >					
C822	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	D322	8-719-988-61	DIODE 1SS355TE-17			
C823	1-104-665-11	ELECT	100uF	20%	10V	D323	8-719-988-61	DIODE 1SS355TE-17			
C824	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D324	8-719-988-61	DIODE 1SS355TE-17			
C825	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D801	8-719-082-07	DIODE KDS121-RTK			
C826	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D802	8-719-082-07	DIODE KDS121-RTK			
C827	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D803	8-719-069-54	DIODE UDZS-TE-17-5.1B			
C828	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D804	8-719-083-93	DIODE KDS120-RTK			
C829	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D805	8-719-988-61	DIODE 1SS355TE-17			
C830	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D951	8-719-083-93	DIODE KDS120-RTK			
C831	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D953	8-719-978-33	DIODE DTZ-TT11-6.8B			
C832	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D957	8-719-083-58	DIODE UDZS-TE-17-3.9B			
C833	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	< IC >					
C834	1-162-974-11	CERAMIC CHIP	0.01uF		50V	IC303	6-701-824-11	IC BD3870FS-E2			
C835	1-162-974-11	CERAMIC CHIP	0.01uF		50V	IC304	8-759-426-51	IC BA5417			
C836	1-162-974-11	CERAMIC CHIP	0.01uF		50V	IC801	6-801-938-01	IC uPD784216AGF-527-3BA			
C837	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	IC802	6-700-336-01	IC CAT24WC02JI-1.8-TE13			
C838	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	IC803	8-759-658-46	IC S-81233SGY-Z			
C839	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	IC804	8-759-544-01	IC S-80828ANNP-EDR-T2			
C840	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	< IC LINK >					
C841	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	△ ICP301	1-533-674-11	LINK, CHIP IC (0.5A)			
C842	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V						
C843	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
< JUMPER RESISTOR >							R150	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	(EXCEPT EA,SP)
JC303	1-216-864-11	METAL CHIP	0	5%	1/10W		R225	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
JC306	1-216-864-11	METAL CHIP	0	5%	1/10W		R227	1-216-833-11	METAL CHIP	10K	5%	1/10W	
JC310	1-216-864-11	METAL CHIP	0	5%	1/10W		R228	1-216-817-11	METAL CHIP	470	5%	1/10W	
JC311	1-216-864-11	METAL CHIP	0	5%	1/10W		R230	1-216-813-11	METAL CHIP	220	5%	1/10W	
JC314	1-216-864-11	METAL CHIP	0	5%	1/10W								
JC315	1-216-864-11	METAL CHIP	0	5%	1/10W		R231	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
JC317	1-216-864-11	METAL CHIP	0	5%	1/10W		R233	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
< CABLE HOLDER >							R235	1-216-853-11	METAL CHIP	470K	5%	1/10W	
							R240	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
							R244	1-216-789-11	METAL CHIP	2.2	5%	1/10W	
KH301	1-824-027-11	HOLDER, CABLE 3P											
KH321	1-824-029-11	HOLDER, CABLE 4P					R248	1-216-813-11	METAL CHIP	220	5%	1/10W	(EXCEPT EA,SP)
KH801	1-824-028-11	HOLDER, CABLE 2P											
< COIL >							R248	1-216-864-11	METAL CHIP	0	5%	1/10W	(EA,SP)
							R249	1-216-821-11	METAL CHIP	1K	5%	1/10W	
L801	1-414-142-61	INDUCTOR	1uH				R250	1-216-821-11	METAL CHIP	1K	5%	1/10W	
L803	1-410-509-11	INDUCTOR	10uH										
L804	1-414-142-61	INDUCTOR	1uH				R250	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	(EXCEPT EA,SP)
< TRANSISTOR >													
Q122	8-729-905-34	TRANSISTOR	2SC4081-Q				R322	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q124	8-729-029-10	TRANSISTOR	DTC143TUA-T106				R323	1-216-857-11	METAL CHIP	1M	5%	1/10W	
Q222	8-729-905-34	TRANSISTOR	2SC4081-Q				R324	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	(EA,SP)
Q224	8-729-029-10	TRANSISTOR	DTC143TUA-T106				R324	1-216-833-11	METAL CHIP	10K	5%	1/10W	(EXCEPT EA,SP)
Q801	8-729-028-99	TRANSISTOR	DTC114YUA-T106				R325	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q802	8-729-028-76	TRANSISTOR	DTA114YUA-T106				R326	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q803	8-729-028-99	TRANSISTOR	DTC114YUA-T106				R331	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q804	8-729-028-76	TRANSISTOR	DTA114YUA-T106				R332	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q805	8-729-028-76	TRANSISTOR	DTA114YUA-T106				R333	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q806	8-729-922-10	TRANSISTOR	2SA1577-QR				R334	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q807	8-729-028-99	TRANSISTOR	DTC114YUA-T106				R335	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q808	8-729-028-99	TRANSISTOR	DTC114YUA-T106				R801	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q810	8-729-028-76	TRANSISTOR	DTA114YUA-T106				R802	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q811	8-729-028-99	TRANSISTOR	DTC114YUA-T106				R803	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q812	8-729-905-34	TRANSISTOR	2SC4081-Q				R804	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q813	8-729-905-34	TRANSISTOR	2SC4081-Q				R805	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q814	8-729-028-92	TRANSISTOR	DTA144TUA-T106				R806	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q951	8-729-029-13	TRANSISTOR	DTC143ZUA-T106				R807	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q952	8-729-040-76	TRANSISTOR	KTA1273-Y-AT				R808	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q953	8-729-029-09	TRANSISTOR	DTC143EUA-T106				R809	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q955	8-729-021-82	TRANSISTOR	2SD2396K				R810	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q957	8-729-212-02	TRANSISTOR	2SC2120-Y				R811	1-216-821-11	METAL CHIP	1K	5%	1/10W	
< RESISTOR >							R812	1-216-821-11	METAL CHIP	1K	5%	1/10W	
							R813	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R125	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		R814	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R127	1-216-833-11	METAL CHIP	10K	5%	1/10W								
R128	1-216-817-11	METAL CHIP	470	5%	1/10W		R815	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R130	1-216-813-11	METAL CHIP	220	5%	1/10W		R816	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R131	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		R817	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R133	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		R818	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R135	1-216-853-11	METAL CHIP	470K	5%	1/10W		R819	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R140	1-216-825-11	METAL CHIP	2.2K	5%	1/10W								
R144	1-216-789-11	METAL CHIP	2.2	5%	1/10W		R820	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R148	1-216-813-11	METAL CHIP	220	5%	1/10W	(EXCEPT EA,SP)	R821	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
							R822	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
							R823	1-216-821-11	METAL CHIP	1K	5%	1/10W	
							R824	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R148	1-216-864-11	METAL CHIP	0	5%	1/10W	(EA,SP)	R825	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R149	1-216-821-11	METAL CHIP	1K	5%	1/10W		R826	1-216-815-11	METAL CHIP	330	5%	1/10W	
R150	1-216-821-11	METAL CHIP	1K	5%	1/10W	(EA,SP)	The components identified by mark △ or dotted line with mark.						

Ref. No.	Part No.	Description	Remark		
R827	1-216-821-11	METAL CHIP	1K	5%	1/10W
R828	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R829	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R830	1-216-809-11	METAL CHIP	100	5%	1/10W
R831	1-216-821-11	METAL CHIP	1K	5%	1/10W
R832	1-216-833-11	METAL CHIP	10K	5%	1/10W
R833	1-216-841-11	METAL CHIP	47K	5%	1/10W
R834	1-216-817-11	METAL CHIP	470	5%	1/10W
R836	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R837	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R838	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R839	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R840	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R841	1-216-821-11	METAL CHIP	1K	5%	1/10W
R842	1-216-821-11	METAL CHIP	1K	5%	1/10W
R843	1-216-821-11	METAL CHIP	1K	5%	1/10W
R844	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R845	1-216-821-11	METAL CHIP	1K	5%	1/10W
R846	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R847	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R848	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R849	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R850	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R851	1-216-833-11	METAL CHIP	10K	5%	1/10W
R852	1-216-809-11	METAL CHIP	100	5%	1/10W
R853	1-216-809-11	METAL CHIP	100	5%	1/10W
R854	1-216-809-11	METAL CHIP	100	5%	1/10W
R855	1-216-821-11	METAL CHIP	1K	5%	1/10W
R856	1-216-821-11	METAL CHIP	1K	5%	1/10W
R857	1-216-821-11	METAL CHIP	1K	5%	1/10W
R858	1-216-821-11	METAL CHIP	1K	5%	1/10W
R859	1-216-821-11	METAL CHIP	1K	5%	1/10W
R860	1-216-821-11	METAL CHIP	1K	5%	1/10W
R861	1-216-809-11	METAL CHIP	100	5%	1/10W
R862	1-216-809-11	METAL CHIP	100	5%	1/10W
R863	1-216-821-11	METAL CHIP	1K	5%	1/10W
R864	1-216-821-11	METAL CHIP	1K	5%	1/10W
R865	1-216-845-11	METAL CHIP	100K	5%	1/10W
R868	1-216-821-11	METAL CHIP	1K	5%	1/10W
R869	1-216-821-11	METAL CHIP	1K	5%	1/10W
R870	1-216-821-11	METAL CHIP	1K	5%	1/10W
R871	1-216-817-11	METAL CHIP	470	5%	1/10W
R872	1-216-821-11	METAL CHIP	1K	5%	1/10W
R873	1-216-817-11	METAL CHIP	470	5%	1/10W
R874	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R875	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R876	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R877	1-216-833-11	METAL CHIP	10K	5%	1/10W
R879	1-216-845-11	METAL CHIP	100K	5%	1/10W
R880	1-216-849-11	METAL CHIP	220K	5%	1/10W
R881	1-216-845-11	METAL CHIP	100K	5%	1/10W
R882	1-216-845-11	METAL CHIP	100K	5%	1/10W
R883	1-216-845-11	METAL CHIP	100K	5%	1/10W
R884	1-216-813-11	METAL CHIP	220	5%	1/10W
R885	1-216-813-11	METAL CHIP	220	5%	1/10W
R886	1-216-813-11	METAL CHIP	220	5%	1/10W
R887	1-216-841-11	METAL CHIP	47K	5%	1/10W
R888	1-216-817-11	METAL CHIP	470	5%	1/10W
R889	1-216-833-11	METAL CHIP	10K	5%	1/10W
R890	1-216-841-11	METAL CHIP	47K	5%	1/10W
R891	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R892	1-216-833-11	METAL CHIP	10K	5%	1/10W
R893	1-216-833-11	METAL CHIP	10K	5%	1/10W
R894	1-216-833-11	METAL CHIP	10K	5%	1/10W
R895	1-216-841-11	METAL CHIP	47K	5%	1/10W
R896	1-216-841-11	METAL CHIP	47K	5%	1/10W
R897	1-216-797-11	METAL CHIP	10	5%	1/10W
R898	1-216-821-11	METAL CHIP	1K	5%	1/10W
R899	1-216-821-11	METAL CHIP	1K	5%	1/10W
R951	1-216-841-11	METAL CHIP	47K	5%	1/10W
R952	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R953	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R954	1-216-821-11	METAL CHIP	1K	5%	1/10W
R955	1-216-821-11	METAL CHIP	1K	5%	1/10W
R956	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R957	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R958	1-216-813-11	METAL CHIP	220	5%	1/10W
R959	1-216-809-11	METAL CHIP	100	5%	1/10W
R960	1-216-864-11	METAL CHIP	0	5%	1/10W
R961	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R962	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R963	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R964	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
< VIBRATOR >					
X801	1-795-526-11	VIBRATOR, CERAMIC (5MHz)			

*	1-683-998-11	POWER BOARD			

	1-533-233-11	HOLDER, FUSE			
< CAPACITOR >					
C901	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C902	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C903	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C904	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C906	1-126-964-11	ELECT	10uF	20%	50V
< CONNECTOR >					
* CNP901	1-815-551-11	PIN, CONNECTOR (PWB) 3P			
* CNP902	1-815-552-21	PIN, CONNECTOR (PWB) 4P			
< DIODE >					
D901	8-719-063-79	DIODE	1N4002B		
D902	8-719-063-79	DIODE	1N4002B		
D903	8-719-063-79	DIODE	1N4002B		
D904	8-719-063-79	DIODE	1N4002B		
< FUSE >					
△ F902	1-533-469-21	FUSE, GLASS TUBE (DIA.5) (T2.5AL/250V)			
< AC INLET >					
△ J901	1-526-838-11	INLET, AC 2P (～ AC IN)			
< TRANSFORMER >					
△ T901	1-435-918-11	TRANSFORMER, POWER			

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

TC

TUNER

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	A-3323-806-A	TC BOARD, COMPLETE					R204	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
		*****					R205	1-216-835-11	METAL CHIP	15K	5%	1/10W	
							R206	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
							R210	1-216-025-11	RES-CHIP	100	5%	1/10W	
							R211	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
		< CAPACITOR >					R301	1-216-857-11	METAL CHIP	1M	5%	1/10W	
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R302	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
C102	1-126-947-11	ELECT	47uF	20%	10V		R303	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
C103	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R304	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C104	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		R305	1-216-811-11	METAL CHIP	150	5%	1/10W	
C105	1-162-923-11	CERAMIC CHIP	47PF	5%	50V								
C106	1-126-960-11	ELECT	1uF	20%	50V		R306	1-218-867-11	RES-CHIP	6.8K	5%	1/10W	
C107	1-162-962-11	CERAMIC CHIP	470PF	10%	50V		R307	1-216-799-11	METAL CHIP	15	5%	1/10W	
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V		R308	1-216-837-11	METAL CHIP	22K	5%	1/10W	
C202	1-126-947-11	ELECT	47uF	20%	10V		R309	1-216-805-11	METAL CHIP	47	5%	1/10W	
C203	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V		R310	1-216-857-11	METAL CHIP	1M	5%	1/10W	
C204	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V		R311	1-216-857-11	METAL CHIP	1M	5%	1/10W	
C205	1-162-923-11	CERAMIC CHIP	47PF	5%	50V		R312	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C206	1-126-960-11	ELECT	1uF	20%	50V		R313	1-216-821-11	METAL CHIP	1K	5%	1/10W	
C207	1-162-962-11	CERAMIC CHIP	470PF	10%	50V								
C301	1-104-665-11	ELECT	100uF	20%	10V								
C302	1-104-665-11	ELECT	100uF	20%	10V								
C303	1-104-665-11	ELECT	100uF	20%	10V		S301	1-786-126-11	SWITCH, SLIDE (REC/PB)				
C304	1-126-947-11	ELECT	47uF	20%	10V								
C305	1-162-962-11	CERAMIC CHIP	470PF	10%	50V								
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C307	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V								
C308	1-162-927-11	CERAMIC CHIP	100PF	5%	50V								
C310	1-164-230-11	CERAMIC CHIP	220PF	5%	50V								
		< CONNECTOR >											
CNP301	1-784-774-11	CONNECTOR, FFC 13P											
		< IC >											
IC301	8-759-264-71	IC TA2068N											
		< JUMPER RESISTOR >											
JC301	1-216-864-11	METAL CHIP	0	5%	1/10W								
JC302	1-216-864-11	METAL CHIP	0	5%	1/10W								
JC303	1-216-864-11	METAL CHIP	0	5%	1/10W								
JC304	1-216-864-11	METAL CHIP	0	5%	1/10W								
		< TRANSISTOR >											
Q301	8-729-120-28	TRANSISTOR	2SC1623-L5L6										
Q302	8-729-029-09	TRANSISTOR	DTC143EUA-T106										
Q303	8-729-029-09	TRANSISTOR	DTC143EUA-T106										
		< RESISTOR >											
R101	1-216-835-11	METAL CHIP	15K	5%	1/10W								
R102	1-216-807-11	METAL CHIP	68	5%	1/10W								
R103	1-216-843-11	METAL CHIP	68K	5%	1/10W								
R104	1-216-825-11	METAL CHIP	2.2K	5%	1/10W								
R105	1-216-835-11	METAL CHIP	15K	5%	1/10W								
R106	1-216-825-11	METAL CHIP	2.2K	5%	1/10W								
R110	1-216-809-11	METAL CHIP	100	5%	1/10W								
R111	1-216-829-11	METAL CHIP	4.7K	5%	1/10W								
R201	1-216-835-11	METAL CHIP	15K	5%	1/10W								
R202	1-216-807-11	METAL CHIP	68	5%	1/10W								
R203	1-216-843-11	METAL CHIP	68K	5%	1/10W								

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TUNER

Ref. No.	Part No.	Description	Remark		
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C39	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C40	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C41	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C42	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C43	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C44	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C45	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C46	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C48	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C49	1-161-772-11	CERAMIC	0.1uF	10%	25V
C51	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C52	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C53	1-137-194-81	FILM	0.47uF	5%	50V
C54	1-126-934-11	ELECT	220uF	20%	10V
C55	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C56	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C57	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C58	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C59	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C60	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C61	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C62	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C63	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C64	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C66	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C68	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C70	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C71	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C72	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C73	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C77	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C78	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C80	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C93	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C95	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< FILTER >					
CF2	1-795-426-11	FILTER, CERAMIC (10.7MHz)			
CF4	1-781-962-21	FILTER, CERAMIC (450kHz)			
< CONNECTOR >					
* CNP1	1-785-663-11	PIN, CONNECTOR (PC BOARD) 11P			
< TRIMMER >					
CT1	1-141-603-11	CAP, ADJ	20PF		
CT3	1-141-601-11	CAP, ADJ	10PF		
CT5	1-141-622-11	CAP, ADJ	50PF		
< DIODE >					
D1	8-719-078-48	DIODE KV1471ETR1-3			
D2	8-719-078-48	DIODE KV1471ETR1-3			
D3	8-719-050-69	DIODE KV1520N			
D10	8-719-988-61	DIODE 1SS355TE-17			
D11	8-719-988-61	DIODE 1SS355TE-17			

Ref. No.	Part No.	Description	Remark		
< IC >					
IC1	6-700-512-01	IC TA2149BN			
IC2	8-759-483-40	IC LC72137M-TLM			
< JUMPER RESISTOR >					
JC1	1-216-864-11	METAL CHIP	0	5%	1/10W
JC2	1-216-864-11	METAL CHIP	0	5%	1/10W
JC3	1-216-864-11	METAL CHIP	0	5%	1/10W
JC4	1-216-864-11	METAL CHIP	0	5%	1/10W
JC5	1-216-864-11	METAL CHIP	0	5%	1/10W
JC6	1-216-864-11	METAL CHIP	0	5%	1/10W
JC22	1-216-864-11	METAL CHIP	0	5%	1/10W
JC23	1-216-864-11	METAL CHIP	0	5%	1/10W
JC24	1-216-864-11	METAL CHIP	0	5%	1/10W
JC33	1-216-864-11	METAL CHIP	0	5%	1/10W
JC34	1-216-864-11	METAL CHIP	0	5%	1/10W
< COIL >					
L1	1-409-775-11	COIL, AIR-CORE			
L2	1-416-509-11	COIL, AIR-CORE			
L3	1-754-116-11	ANTENNA, FERRITE-ROD (MW/LW)			
L4	1-411-199-31	COIL, MW/LW OSC			
L21	1-410-509-61	INDUCTOR	10uH		
< TRANSISTOR >					
Q12	8-729-028-99	TRANSISTOR	DTC114YUA-T106		
Q14	8-729-905-35	TRANSISTOR	2SC4081-R		
Q41	8-729-920-31	TRANSISTOR	DTC343TK		
Q42	8-729-054-77	TRANSISTOR	2SC4098-T106-PQ		
Q43	8-729-920-38	TRANSISTOR	2SC2059K-N		
Q44	8-729-054-77	TRANSISTOR	2SC4098-T106-PQ		
Q61	8-729-106-07	FET	2SK514-H		
< RESISTOR >					
R1	1-216-817-11	METAL CHIP	470	5%	1/10W
R2	1-216-817-11	METAL CHIP	470	5%	1/10W
R3	1-216-833-11	METAL CHIP	10K	5%	1/10W
R4	1-216-833-11	METAL CHIP	10K	5%	1/10W
R7	1-216-853-11	METAL CHIP	470K	5%	1/10W
R9	1-216-845-11	METAL CHIP	100K	5%	1/10W
R10	1-216-805-11	METAL CHIP	47	5%	1/10W
R11	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R12	1-216-841-11	METAL CHIP	47K	5%	1/10W
R13	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R16	1-216-833-11	METAL CHIP	10K	5%	1/10W
R17	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R18	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R19	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R22	1-216-833-11	METAL CHIP	10K	5%	1/10W
R24	1-216-813-11	METAL CHIP	220	5%	1/10W
R30	1-216-835-11	METAL CHIP	15K	5%	1/10W
R31	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R32	1-216-845-11	METAL CHIP	100K	5%	1/10W
R40	1-216-853-11	METAL CHIP	470K	5%	1/10W
R41	1-216-833-11	METAL CHIP	10K	5%	1/10W
R42	1-216-845-11	METAL CHIP	100K	5%	1/10W
R43	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R50	1-216-821-11	METAL CHIP	1K 5% 1/10W			ACCESSORIES	
R51	1-216-833-11	METAL CHIP	10K 5% 1/10W			*****	
R52	1-216-809-11	METAL CHIP	100 5% 1/10W				
R53	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	△	1-751-115-14	CORD, POWER (EA)	
R54	1-216-817-11	METAL CHIP	470 5% 1/10W	△	1-769-412-22	CORD, POWER (EXCEPT EA)	
				△	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)	
R56	1-216-815-11	METAL CHIP	330 5% 1/10W		2-022-423-11	MANUAL, INSTRUCTION (ENGLISH,ARABIC)	(EA)
R58	1-216-825-11	METAL CHIP	2.2K 5% 1/10W		3-027-153-11	LID, BATTERY CASE (for RMT-CS20CPA/ CS20CPAD)	
R59	1-216-825-11	METAL CHIP	2.2K 5% 1/10W				
R60	1-216-825-11	METAL CHIP	2.2K 5% 1/10W		3-241-606-33	MANUAL, INSTRUCTION (ENGLISH,SPANISH)	(AEP,UK,SP)
R61	1-216-825-11	METAL CHIP	2.2K 5% 1/10W		3-241-606-42	MANUAL, INSTRUCTION (FRENCH,GERMAN)	(AEP)
R63	1-216-829-11	METAL CHIP	4.7K 5% 1/10W		3-241-606-52	MANUAL, INSTRUCTION (DUTCH,PORTUGUESE)	(AEP)
R64	1-216-825-11	METAL CHIP	2.2K 5% 1/10W		3-241-606-62	MANUAL, INSTRUCTION (ITALIAN) (IT)	
R66	1-216-805-11	METAL CHIP	47 5% 1/10W		3-241-606-72	MANUAL, INSTRUCTION (SWEDISH,FINNISH)	(CET)
R91	1-216-813-11	METAL CHIP	220 5% 1/10W				
R92	1-216-813-11	METAL CHIP	220 5% 1/10W		3-241-606-82	MANUAL, INSTRUCTION (POLISH,CZECH, HUNGARIAN) (CET)	
R93	1-216-821-11	METAL CHIP	1K 5% 1/10W		3-241-606-92	MANUAL, INSTRUCTION (RUSSIAN,SLOVAKIAN)	(CET)
R94	1-216-821-11	METAL CHIP	1K 5% 1/10W		A-3013-995-A	REMOTE COMMANDER (RMT-CS20CPAD)	(EXCEPT EA,SP)
		< TRANSFORMER >			A-3172-013-A	REMOTE COMMANDER (RMT-CS20CPA)	(EA,SP)
T1	1-433-741-11	TRANSFORMER, IF					
T2	1-419-465-11	COIL (DET)					
		< VIBRATOR >					
X1	1-795-449-11	VIBRATOR, CRYSTAL (75kHz)					

		MISCELLANEOUS					

72	1-824-344-11	CABLE, FLEXIBLE FLAT (13 CORE)					
109	1-452-899-11	MAGNET					
118	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)					
119	1-824-345-11	CABLE, FLEXIBLE FLAT 20P					
164	1-824-343-11	CABLE, FLEXIBLE FLAT 13P					
△ 253	8-848-483-05	OPTICAL PICK-UP KSS-213R/C2N					
ANT1	1-754-241-11	ANTENNA, TELESCOPIC (FM)					
HRP301	3-244-085-01	HEAD, R/P (REC/PB)					
M801	3-244-082-01	MOTOR ASSY (CAPSTAN/REEL)					
S801	1-692-960-11	SWITCH, PUSH (1 KEY)					
		(▲ PUSH OPEN/CLOSE)					
SP301	1-825-031-11	SPEAKER (10cm) (L-CH)					
SP302	1-825-031-11	SPEAKER (10cm) (R-CH)					

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

MEMO

CFD-S20CP

SONY®

SERVICE MANUAL

Ver 1.3 2004. 09

AEP Model
UK Model
E Model

SUPPLEMENT-1

File this supplement with the service manual.

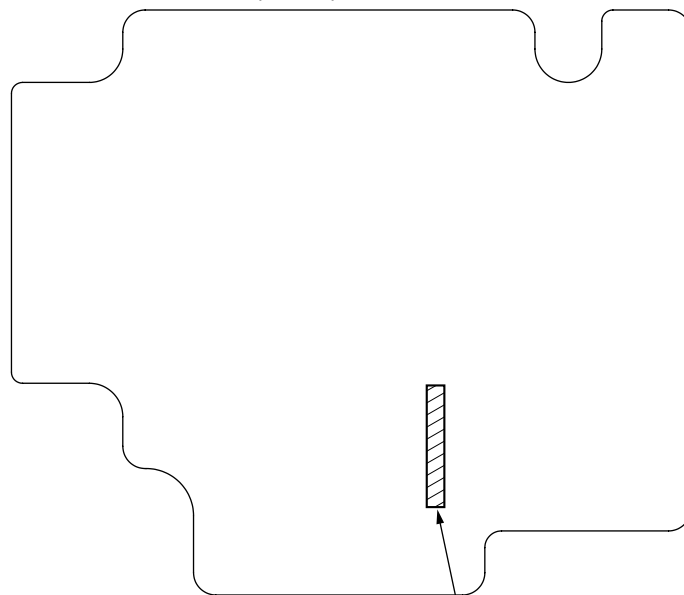
Subject: Change of CD Board
Change of CD Mechanism Block (KSM-213RDP→KSM-213CDP)

(SPM-04041)

The CD board and CD mechanism block was changed from KSM-213RDP to KSM-213CDP in the course of production.
This Supplement-1 only describes the change.

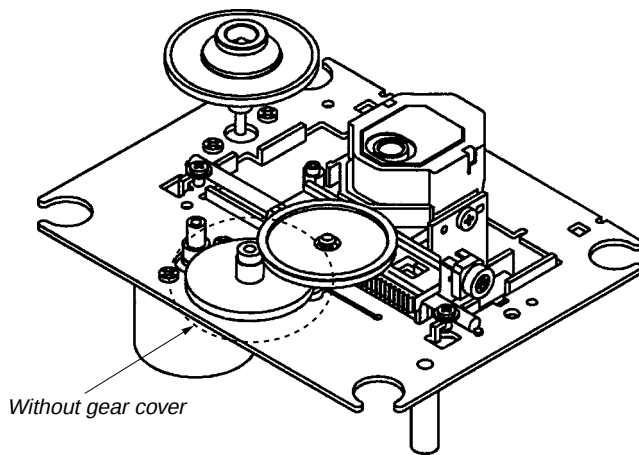
1. IDENTIFICATION

– CD BOARD (SIDE A) –

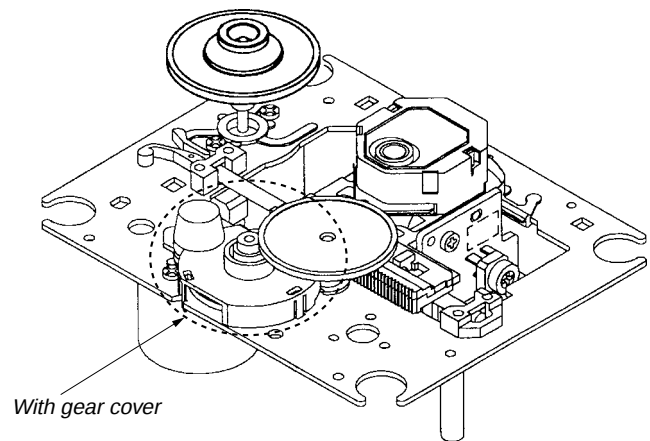


CD Board Part No.
Former type : 1-684-176-□□
New type : 1-687-530-□□

KSM-213RDP



KSM-213CDP



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Common Note on Schematic Diagrams:

- All capacitors are in μF unless otherwise noted. (p: pF)
- 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.
- $\triangle$: internal component.

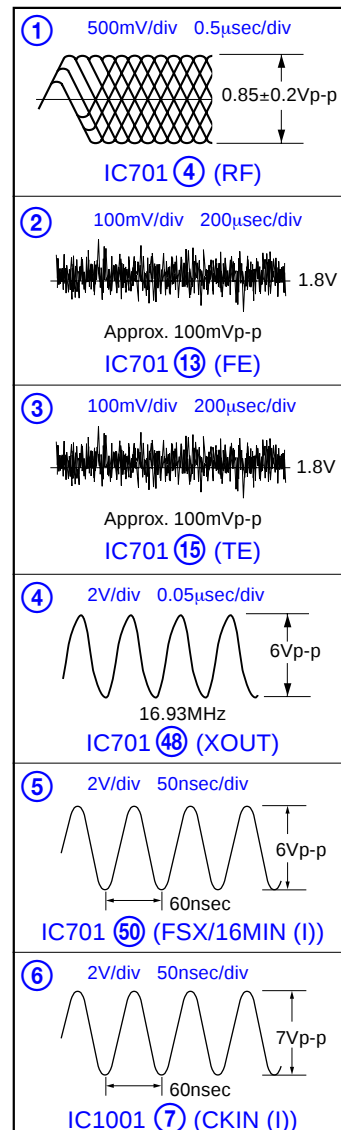
Note: The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety.
Replace only with part number specified.

- — : B+ Line.
- Total current is measured with no cassette installed.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are taken with a VOM (Input impedance 10 M Ω). 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.
- $\Rightarrow$: CD
- (()) : Refer to page of Service manual.

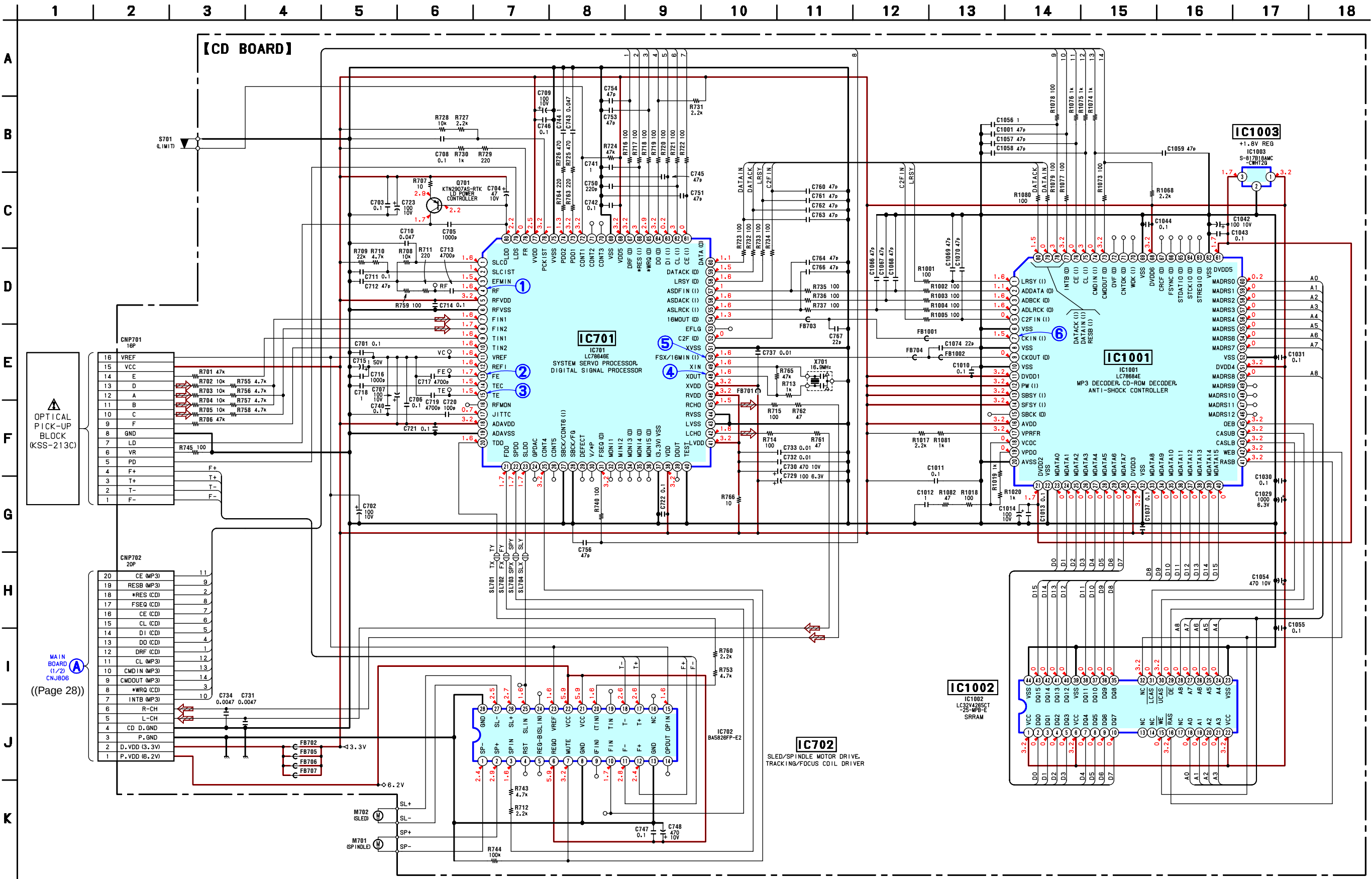
Common Note on Printed Wiring Boards:

- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- $\triangle$: internal component.
- : Pattern from the side which enables seeing.
- (()) : Refer to page of Service manual.

• Waveforms (Mode: PLAY) — CD Board —

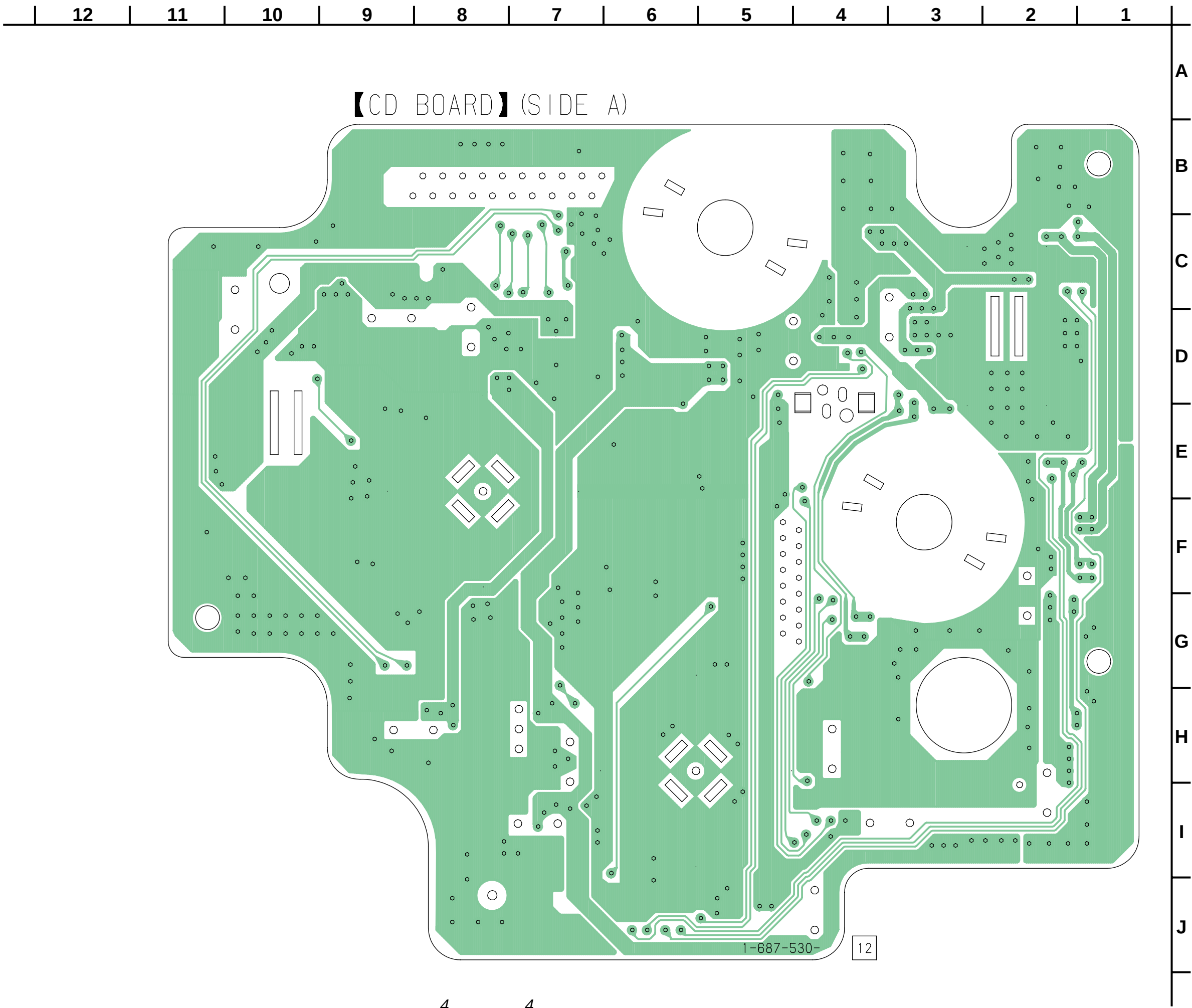


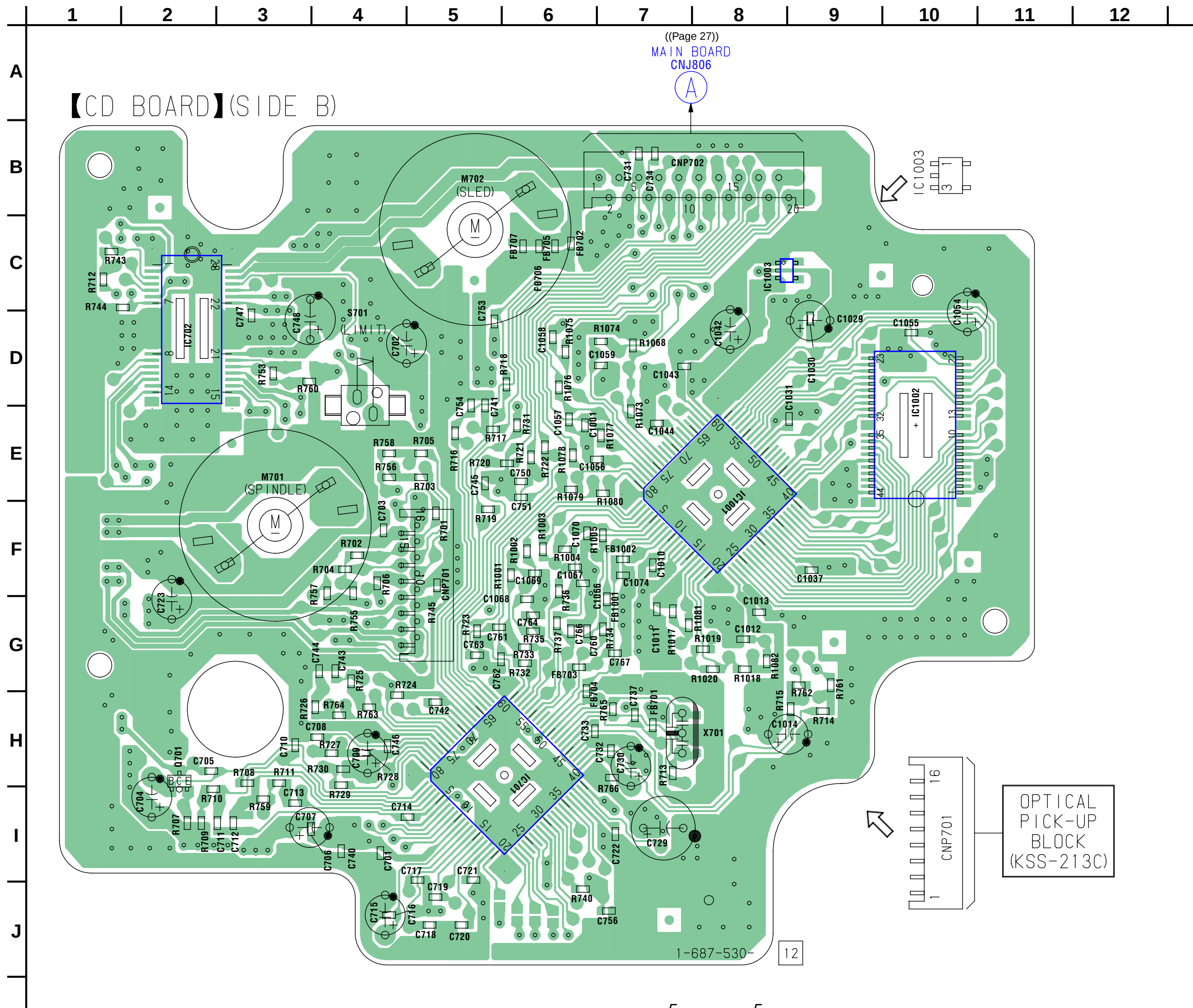
2. SCHEMATIC DIAGRAM — CD SECTION — • Refer to page 2 for Waveforms.



• Voltage and waveforms are dc with respect to ground
under no-signal (detuned) conditions.
no mark : CD PLAY

3. PRINTED WIRING BOARD — CD SECTION —





• **Semiconductor Location**

Ref. No.	Location
IC701	I-6
IC702	D-2
IC1001	F-8
IC1002	D-10
IC1003	C-8
Q701	H-2

CFD-S20CP

CD

4. 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 $\triangle$ or dotted line with mark. $\triangle$ are critical for safety. Replace only with part number specified.

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

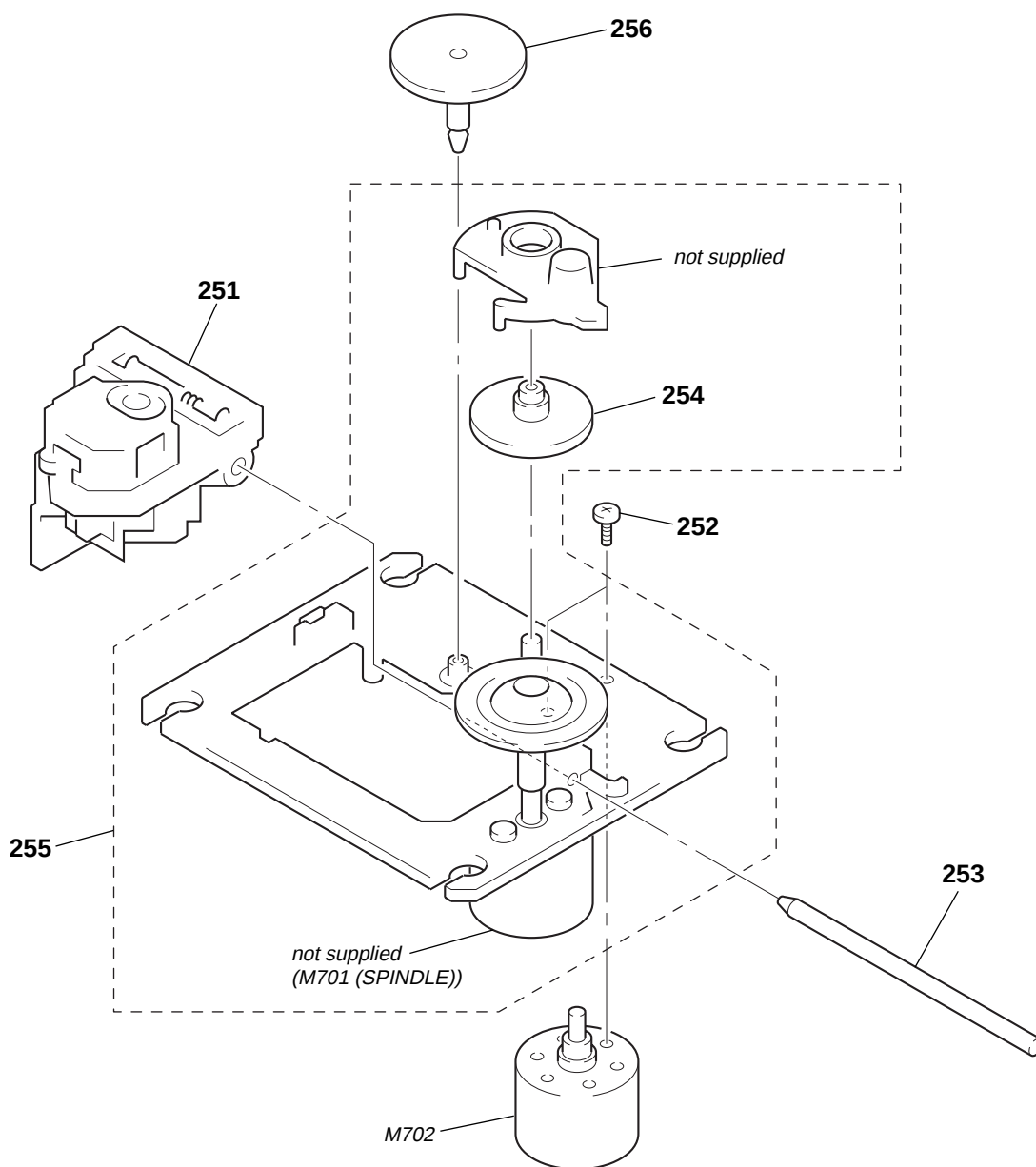
Ref. No.	Part No.	Description	Remark
*	A-3347-681-A	CD BOARD, COMPLETE *****	
		< CAPACITOR >	
C701	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C702	1-104-658-11	ELECT 100uF 20%	10V
C703	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C704	1-126-947-11	ELECT 47uF 20%	35V
C705	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C706	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C707	1-104-658-11	ELECT 100uF 20%	10V
C708	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C709	1-104-658-11	ELECT 100uF 20%	10V
C710	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C711	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C712	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C713	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C714	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C715	1-126-960-11	ELECT 1uF 20%	50V
C716	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C717	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C718	1-115-156-11	CERAMIC CHIP 1uF	10V
C719	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C720	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C721	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C722	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C723	1-104-658-11	ELECT 100uF 20%	10V
C729	1-126-916-11	ELECT 1000uF 20%	6.3V
C730	1-126-925-11	ELECT 470uF 20%	10V
C731	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C732	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C733	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C734	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C737	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C740	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C741	1-115-156-11	CERAMIC CHIP 1uF	10V
C742	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C743	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C744	1-115-156-11	CERAMIC CHIP 1uF	10V
C745	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C746	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C747	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C748	1-126-925-11	ELECT 470uF 20%	10V
C750	1-162-919-11	CERAMIC CHIP 22PF 5%	50V

Ref. No.	Part No.	Description	Remark
C751	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C753	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C754	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C756	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C760	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C761	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C762	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C763	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C764	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C766	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C767	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C1001	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1010	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1011	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1012	1-115-156-11	CERAMIC CHIP 1uF	10V
C1013	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1014	1-104-658-11	ELECT 100uF 20%	10V
C1029	1-126-916-11	ELECT 1000uF 20%	6.3V
C1030	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1031	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1037	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1042	1-104-658-11	ELECT 100uF 20%	10V
C1043	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1044	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1054	1-126-925-11	ELECT 470uF 20%	10V
C1055	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1056	1-115-156-11	CERAMIC CHIP 1uF	10V
C1057	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1058	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1059	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1066	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1067	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1068	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1069	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1070	1-162-923-11	CERAMIC CHIP 47PF 5%	50V
C1074	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
< CONNECTOR >			
CNP701	1-779-553-21	CONNECTOR, FFC (LIF(NON-ZIF)) 16P	
CNP702	1-784-742-11	CONNECTOR, FFC 20P	
< FERRITE BEAD >			
FB701	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB702	1-469-701-21	FERRITE, EMI (SMD) (1608)	

Ref. No.	Part No.	Description	Remark
FB703	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB704	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB705	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB706	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB707	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB1001	1-469-701-21	FERRITE, EMI (SMD) (1608)	
FB1002	1-469-701-21	FERRITE, EMI (SMD) (1608)	
< IC >			
IC701	6-701-796-01	IC LC78646E-US-E	
IC702	6-701-787-11	IC BA5826FP-E2	
IC1001	6-704-008-01	IC LC78684E-US-E	
IC1002	6-704-009-01	IC LC32V4265CT-25-MPB-E	
IC1003	6-704-059-01	IC S-817B18AMC-CWHT2G	
< TRANSISTOR >			
Q701	8-729-054-57	TRANSISTOR KTN2907AS-RTK	
< RESISTOR >			
R701	1-216-841-11	METAL CHIP 47K 5%	1/10W
R702	1-216-833-11	METAL CHIP 10K 5%	1/10W
R703	1-216-833-11	METAL CHIP 10K 5%	1/10W
R704	1-216-833-11	METAL CHIP 10K 5%	1/10W
R705	1-216-833-11	METAL CHIP 10K 5%	1/10W
R706	1-216-841-11	METAL CHIP 47K 5%	1/10W
R707	1-216-797-11	METAL CHIP 10 5%	1/10W
R708	1-216-833-11	METAL CHIP 10K 5%	1/10W
R709	1-216-837-11	METAL CHIP 22K 5%	1/10W
R710	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R711	1-216-813-11	METAL CHIP 220 5%	1/10W
R712	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R713	1-216-821-11	METAL CHIP 1K 5%	1/10W
R714	1-216-809-11	METAL CHIP 100 5%	1/10W
R715	1-216-809-11	METAL CHIP 100 5%	1/10W
R716	1-216-809-11	METAL CHIP 100 5%	1/10W
R717	1-216-809-11	METAL CHIP 100 5%	1/10W
R718	1-216-809-11	METAL CHIP 100 5%	1/10W
R719	1-216-809-11	METAL CHIP 100 5%	1/10W
R720	1-216-809-11	METAL CHIP 100 5%	1/10W
R721	1-216-809-11	METAL CHIP 100 5%	1/10W
R722	1-216-809-11	METAL CHIP 100 5%	1/10W
R723	1-216-809-11	METAL CHIP 100 5%	1/10W
R724	1-216-841-11	METAL CHIP 47K 5%	1/10W
R725	1-216-817-11	METAL CHIP 470 5%	1/10W
R726	1-216-817-11	METAL CHIP 470 5%	1/10W
R727	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R728	1-216-833-11	METAL CHIP 10K 5%	1/10W
R729	1-216-813-11	METAL CHIP 220 5%	1/10W
R730	1-216-821-11	METAL CHIP 1K 5%	1/10W
R731	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R732	1-216-809-11	METAL CHIP 100 5%	1/10W
R733	1-216-809-11	METAL CHIP 100 5%	1/10W
R734	1-216-809-11	METAL CHIP 100 5%	1/10W
R735	1-216-809-11	METAL CHIP 100 5%	1/10W
R736	1-216-809-11	METAL CHIP 100 5%	1/10W
R737	1-216-809-11	METAL CHIP 100 5%	1/10W
R740	1-216-809-11	METAL CHIP 100 5%	1/10W
R743	1-216-829-11	METAL CHIP 4.7K 5%	1/10W

Ref. No.	Part No.	Description	Remark
R744	1-216-845-11	METAL CHIP 100K 5%	1/10W
R745	1-216-809-11	METAL CHIP 100 5%	1/10W
R753	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R755	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R756	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R757	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R758	1-216-829-11	METAL CHIP 4.7K 5%	1/10W
R759	1-216-809-11	METAL CHIP 100 5%	1/10W
R760	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R761	1-216-805-11	METAL CHIP 47 5%	1/10W
R762	1-216-805-11	METAL CHIP 47 5%	1/10W
R763	1-216-813-11	METAL CHIP 220 5%	1/10W
R764	1-216-813-11	METAL CHIP 220 5%	1/10W
R765	1-216-841-11	METAL CHIP 47K 5%	1/10W
R766	1-216-797-11	METAL CHIP 10 5%	1/10W
R1001	1-216-809-11	METAL CHIP 100 5%	1/10W
R1002	1-216-809-11	METAL CHIP 100 5%	1/10W
R1003	1-216-809-11	METAL CHIP 100 5%	1/10W
R1004	1-216-809-11	METAL CHIP 100 5%	1/10W
R1005	1-216-809-11	METAL CHIP 100 5%	1/10W
R1017	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R1018	1-216-809-11	METAL CHIP 100 5%	1/10W
R1019	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1020	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1068	1-216-825-11	METAL CHIP 2.2K 5%	1/10W
R1073	1-216-809-11	METAL CHIP 100 5%	1/10W
R1074	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1075	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1076	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1077	1-216-809-11	METAL CHIP 100 5%	1/10W
R1078	1-216-809-11	METAL CHIP 100 5%	1/10W
R1079	1-216-809-11	METAL CHIP 100 5%	1/10W
R1080	1-216-809-11	METAL CHIP 100 5%	1/10W
R1081	1-216-821-11	METAL CHIP 1K 5%	1/10W
R1082	1-216-805-11	METAL CHIP 47 5%	1/10W
< SWITCH >			
S701	1-571-936-11	SWITCH, LEAF (LIMIT)	
< VIBRATOR >			
X701	1-795-563-21	VIBRATOR, CERAMIC (16.9MHz)	

5. CD MECHANISM SECTION (KSM-213CDP)



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
$\triangle$ 251	8-848-483-12	OPTICAL PICK-UP (KSS-213C/C2RP1)		255	X-2162-709-2	CHASSIS ASSY (CDP), MOTOR (including M701 (SPINDLE))	
252	2-174-500-01	SCREW (2X3)		256	2-626-907-11	GEAR (A)	
253	2-626-908-01	SHAFT, SLED		M702	X-2625-769-1	GEAR ASSY (MB) (RP), MOTOR (SLED)	
254	2-627-003-01	GEAR (B) (RP)					

REVISION HISTORY

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper on the revised page allows you to jump to the next revised page.

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