

CFD-F15CP

SERVICE MANUAL

E Model

Ver. 1.1 2004. 11



CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	KSM-213RDP/KSM-213CDP
	Optical Pick-up Name	KSS-213C/KSS-213R
TC Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	MF-F15

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

Mexican model

FM: 87.5 - 108 MHz

AM: 530 - 1 710 kHz

Other models

FM: 87.5 - 108 MHz

AM: 531 - 1 611 kHz (9kHz step)

530 - 1 610 kHz (10kHz step)

Antennas

FM: Telescopic antenna

AM: Built-in ferrite bar antenna

Cassette-corder section

Recording system

4-track 2 channel stereo

Fast winding time

Approx. 110 s (sec.) with Sony cassette C-60

Frequency response

TYPE I (normal): 80 - 13 000 Hz

General

Speaker

Full range: 10 cm dia., 6 ohms, cone type (2)

Tweeter: 2 cm dia. (2)

Passive Radiator: 10 cm dia. (1)

Outputs

Headphones jack (stereo minijack)

For 16 - 68 Ω impedance headphones

Power output

4.5 W + 4.5 W (at 6 ohms, 10% harmonic distortion)

Power requirements

For CD radio cassette-corder:

Mexican Model:

120 V AC, 60 Hz

Other models:

230 V AC, 50Hz

9 V DC, 6 size D (R20) batteries

For remote control:

3 V DC, 2 size AAA (R03) batteries

Power consumption

AC 25 W

Battery life

For CD radio cassette-corder:

FM recording

Sony R20P: approx. 13.5 h

Sony alkaline LR20: approx. 10 h

Tape playback

Sony R20P: approx. 1.5 h

Sony alkaline LR20: approx. 5 h

CD playback

Sony R20P: approx. 1 h

Sony alkaline LR20: approx. 4 h

Dimensions

Approx. 515 \times 201 \times 287 mm (w/h/d)

(20 $\frac{3}{8}$ \times 8 \times 11 $\frac{3}{8}$ inches) (incl. projecting parts)

Mass

Approx. 5.1 kg (11 lb. 4 oz) (incl. batteries)

Supplied accessories

AC power cord (1)

Remote control (1)

Design and specifications are subject to change without notice.

CD RADIO CASSETTE-CORDER

9-877-992-02

2004K16-1

© 2004.11

Sony Corporation

Personal Audio Company

Published by Sony Engineering Corporation

SONY®

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 \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.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

TABLE OF CONTENTS

1. SERVICING NOTES	4
2. GENERAL	5
3. DISASSEMBLY	8
3-1. Cabinet Upper Assy	9
3-2. RELAY1 Board, RELAY2 Board	10
3-3. Cabinet Rear Assy	10
3-4. MAIN Board	11
3-5. LED-1 Board, LED-2 Board	11
3-6. LCD Board	12
3-7. Tape Mechanism Deck	12
3-8. TC Board	13
3-9. RF Belt (B), Sub Belt (B)	13
3-10. CD Mechanism Section	14
3-11. CD/MP3 Board	14
4. MECHANICAL ADJUSTMENTS	15
5. ELECTRICAL ADJUSTMENTS	15
6. DIAGRAMS	18
6-1. Block Diagram – CD Section –	20
– MAIN Section –	21
6-2. Printed Wiring Board – CD/MP3 Section –	22
6-3. Schematic Diagram – CD/MP3 Section –	23
6-4. Printed Wiring Board – TUNER Section –	24
6-5. Schematic Diagram – TUNER Section –	25
6-6. Printed Wiring Boards – MAIN Section –	26
6-7. Schematic Diagram – MAIN Section (1/2) –	27
6-8. Schematic Diagram – MAIN Section (2/2) –	28
6-9. Printed Wiring Board – TC Section –	29
6-10. Schematic Diagram – TC Section –	30
6-11. Printed Wiring Boards – CONTROL Section –	31
6-12. Schematic Diagram – CONTROL Section –	32
6-13. Printed Wiring Boards – Power Supply Section –	33
6-14. Schematic Diagram – Power Supply Section –	34
7. EXPLODED VIEWS	41
7-1. Main Section	41
7-2. Cabinet Front Section	42
7-3. Cabinet Rear Section	43
7-4. Cabinet Upper Section-1	44
7-5. Cabinet Upper Section-2	45
7-6. Tape Mechanism Deck Section (MF-F15)	46
7-7. CD Mechanism Deck Section (KSM-213C)	47
8. ELECTRICAL PARTS LIST	48

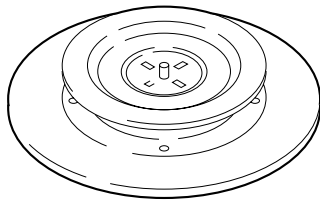
SECTION 1

SERVICING NOTES

CHUCK PLATE JIG ON REPAIRING

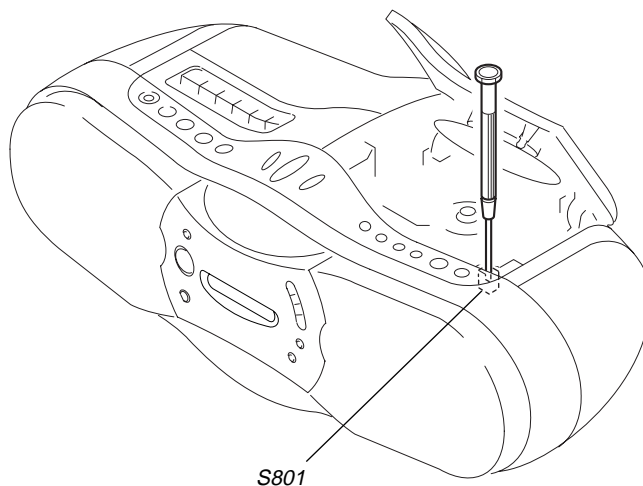
On repairing CD section, playing a disc without the lid (CD), use Chuck Plate Jig.

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



LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Turn ON the **POWER** 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.

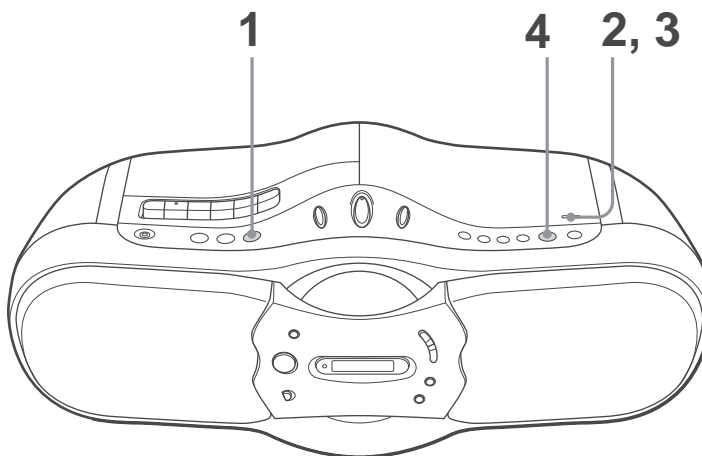


SECTION 2 GENERAL

This section is extracted
from instruction manual.

Basic Operations

Playing an audio CD or MP3 files



Connect the supplied AC power cord (see page 23).

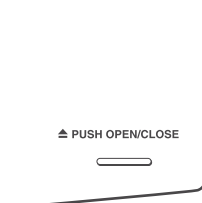
1



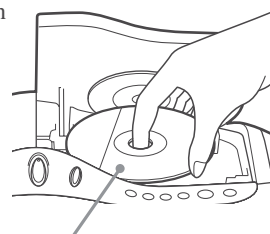
Press CD.

(On the remote, press POWER and then press FUNCTION repeatedly until "CD" appears in the display.)

2

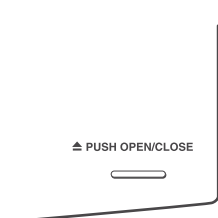


Press ▲ PUSH OPEN/CLOSE down to open the CD compartment and place the CD on the CD compartment.

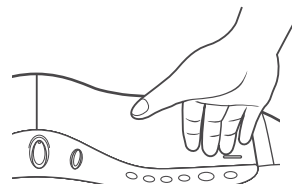


With the label side up

3



Close the lid of the CD compartment.



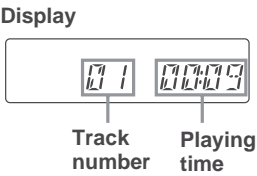
4



4

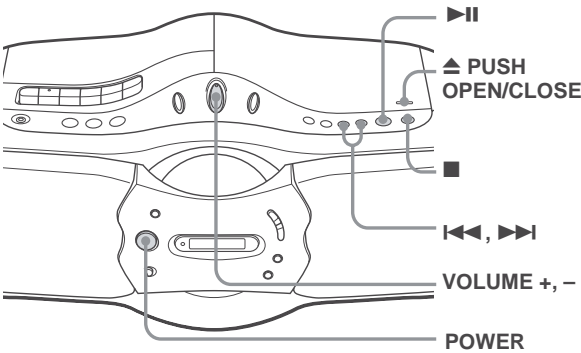


Press ►|| (► on the remote).
The player plays all the tracks once.
To play a CD with MP3 files, see
page 6.



Tip
Playback starts from the track you last stopped playing (Resume play). During stop, the track number to be played are displayed.
To cancel the resume play to start play from the beginning of the first track, press ■ in stop mode.

Use these buttons for additional operations



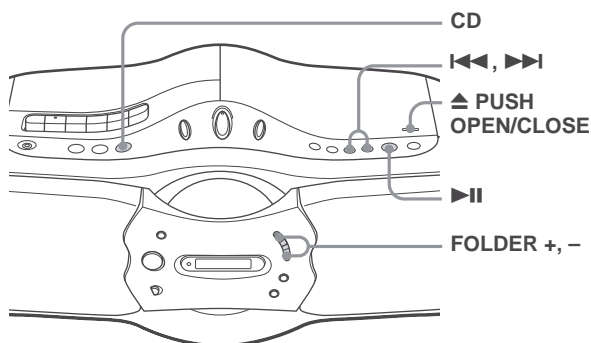
To	Press
adjust the volume	VOLUME +*, – (VOL +*, – on the remote.)
stop playback	■
pause playback	► * (on the remote) Press the button again to resume play after pause.
go to the next track	▶▶
go back to the previous track	◀◀
remove the CD	▲ PUSH OPEN/CLOSE**
turn on/off the player	POWER

* The button has a tactile dot.
**Once you open the CD compartment, the track to start play will change to the beginning of the first track.

continued

Playing an audio CD or MP3 files (continued)

Playing a CD with MP3 files



Note

Before playing a file, this player reads all file and folder information on the CD. Depending on the file structure, it may take more than a minute to read them. During this time, "READING" is displayed.

Tip

You can use the buttons mentioned in the table on page 5 for additional operations in the same way as when playing an audio CD.

1 Press CD.

2 Press **▲ PUSH OPEN/CLOSE** to open the CD compartment and place the CD on the CD compartment (see page 4) .

3 Close the lid of the CD compartment.

4 Press **▶II**.

The player plays all MP3 files on the CD.

When you play a CD with MP3 files, "MP3" appears in the display.



Track number

After the file name is displayed, the playing time will appear

To select a folder

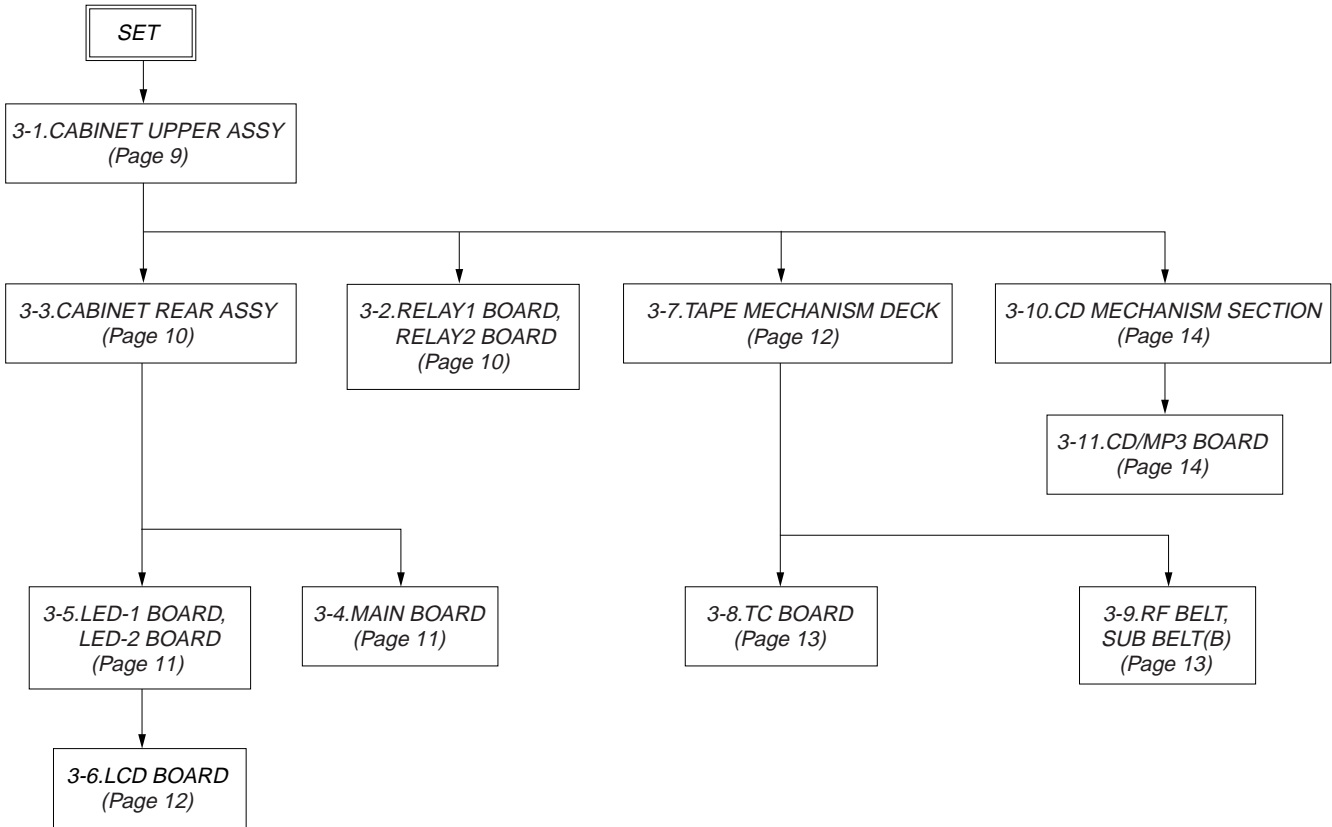
Press FOLDER + to go forward and FOLDER - to go backward .

To select a file

Press **▶II** to go forward and **◀◀** to go backward.

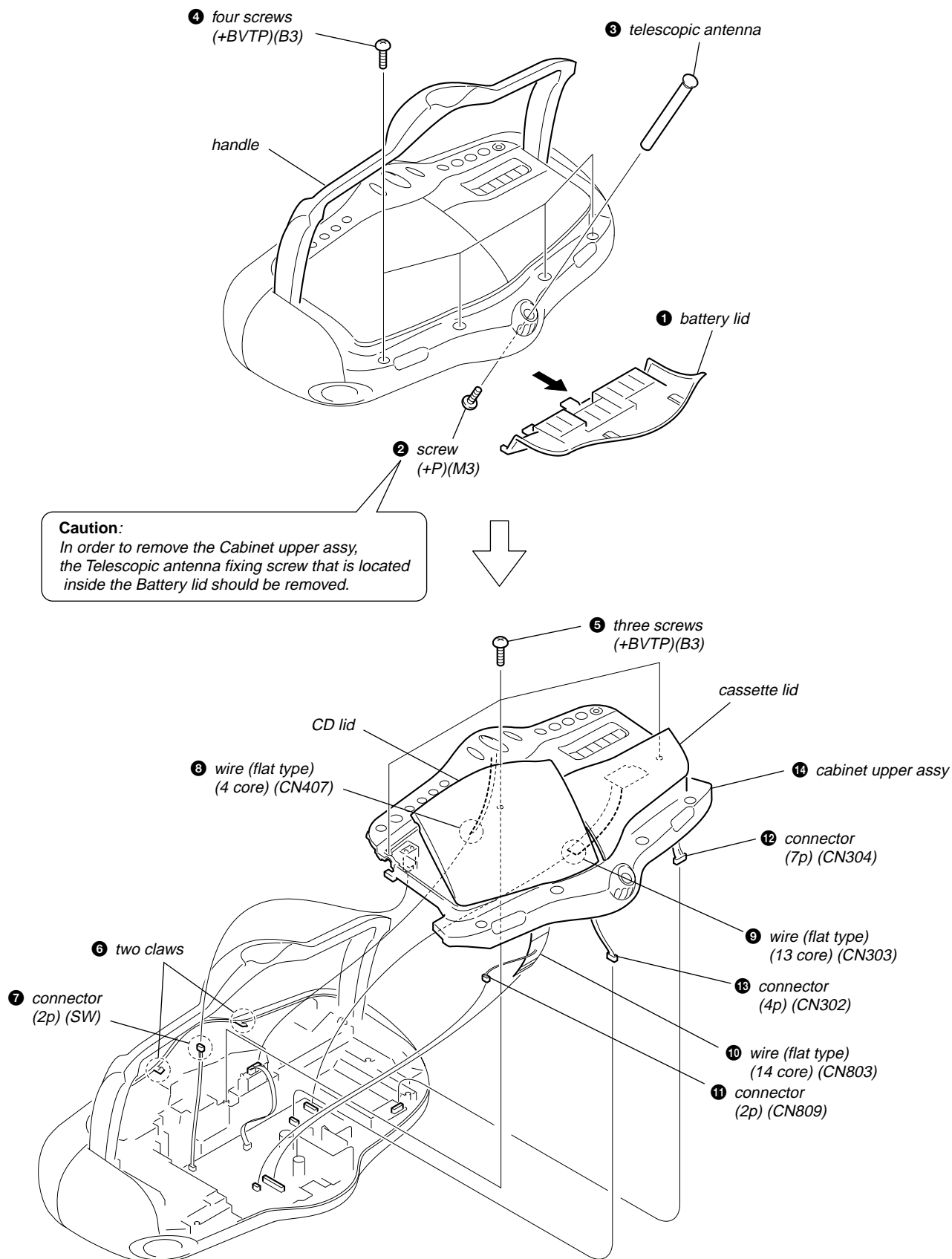
SECTION 3
DISASSEMBLY

- The equipment can be removed using the following procedure.

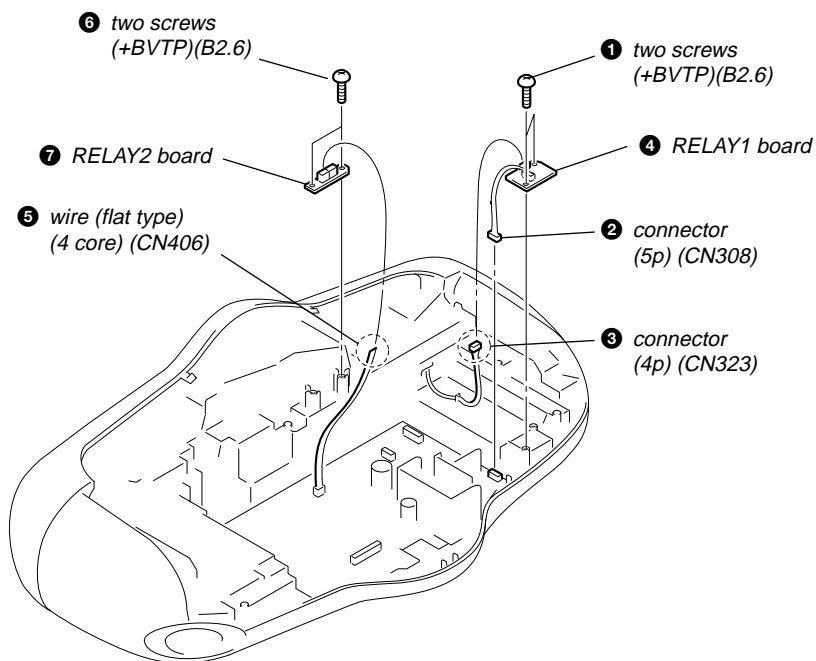


Note : Follow the disassembly procedure in the numerical order given.

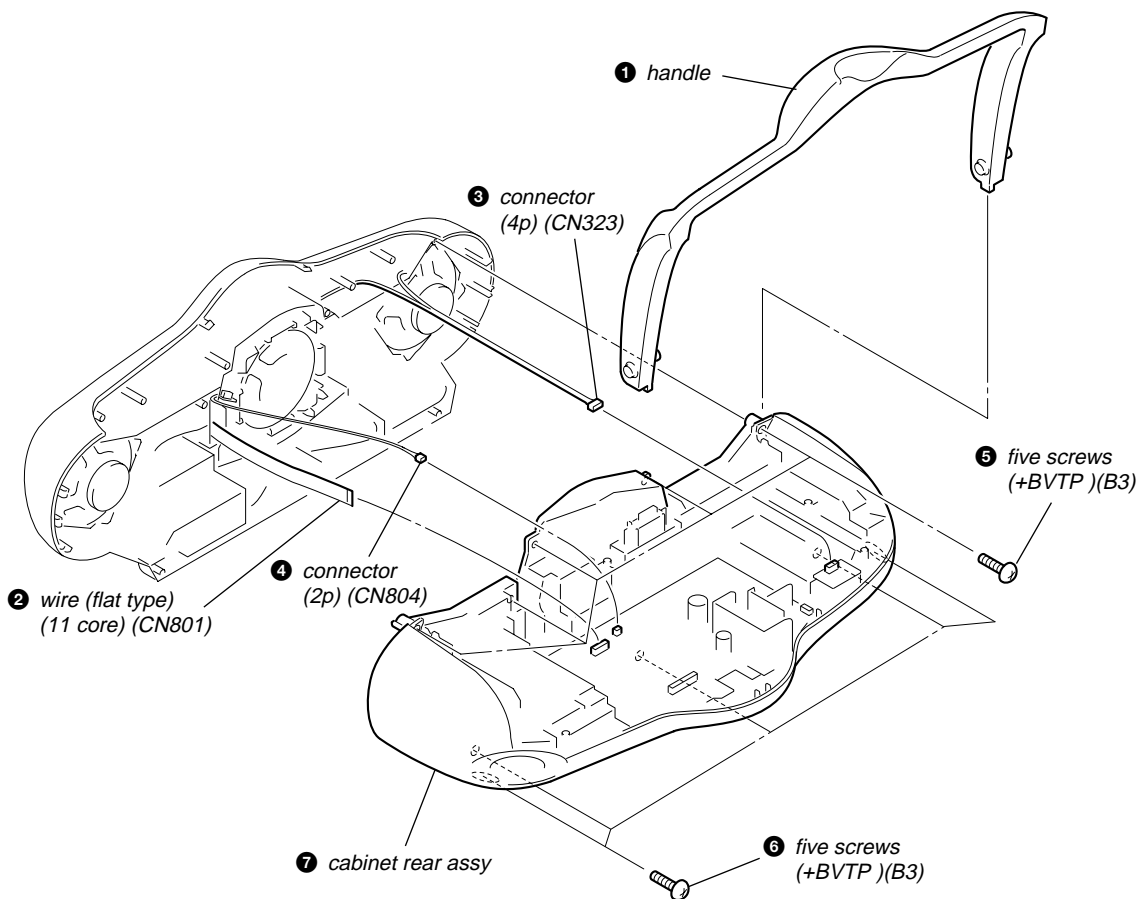
3-1. CABINET UPPER ASSY



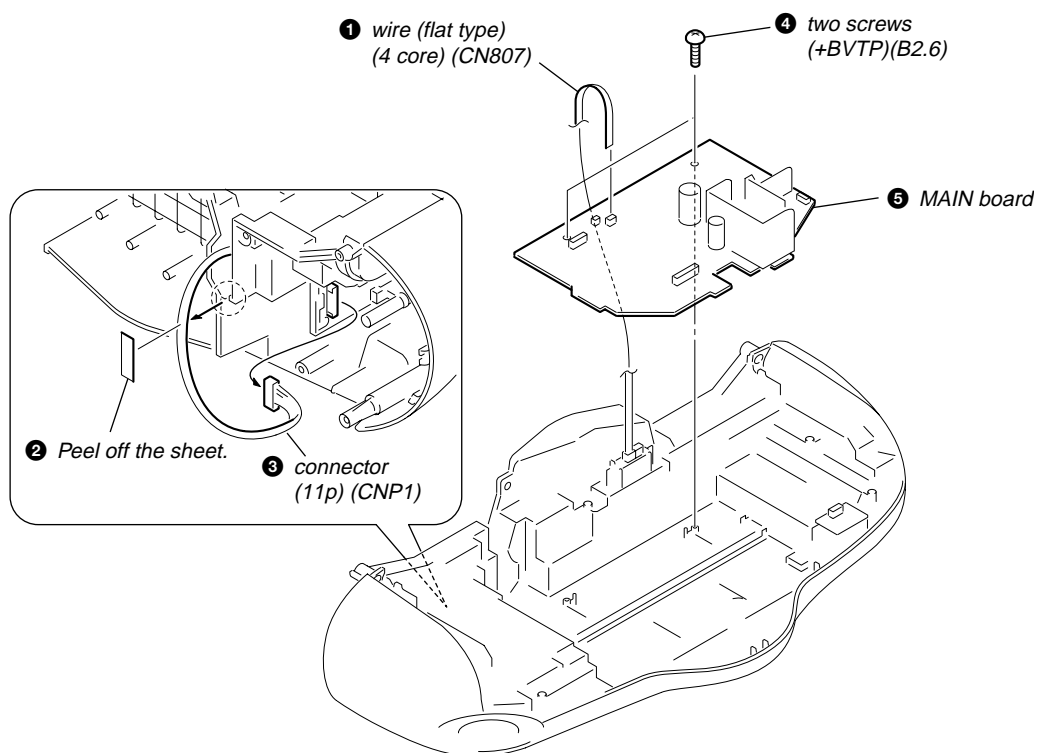
3-2. RELAY1 BOARD, RELAY2 BOARD



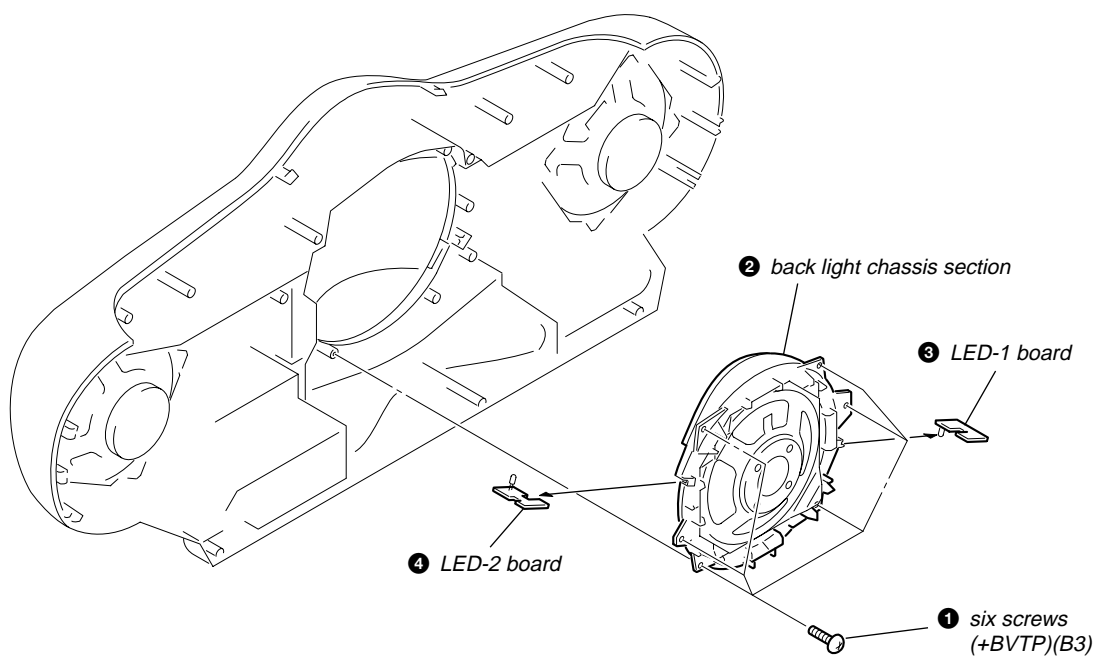
3-3. CABINET REAR ASSY



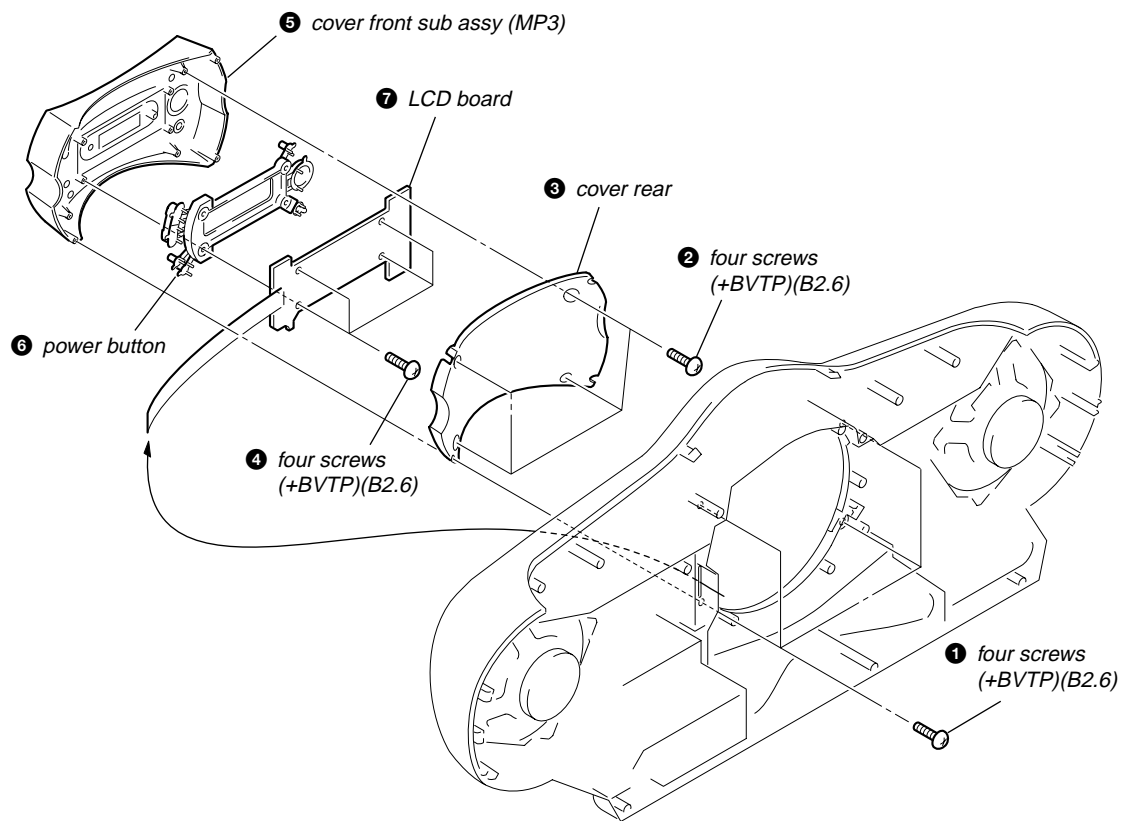
3-4. MAIN BOARD



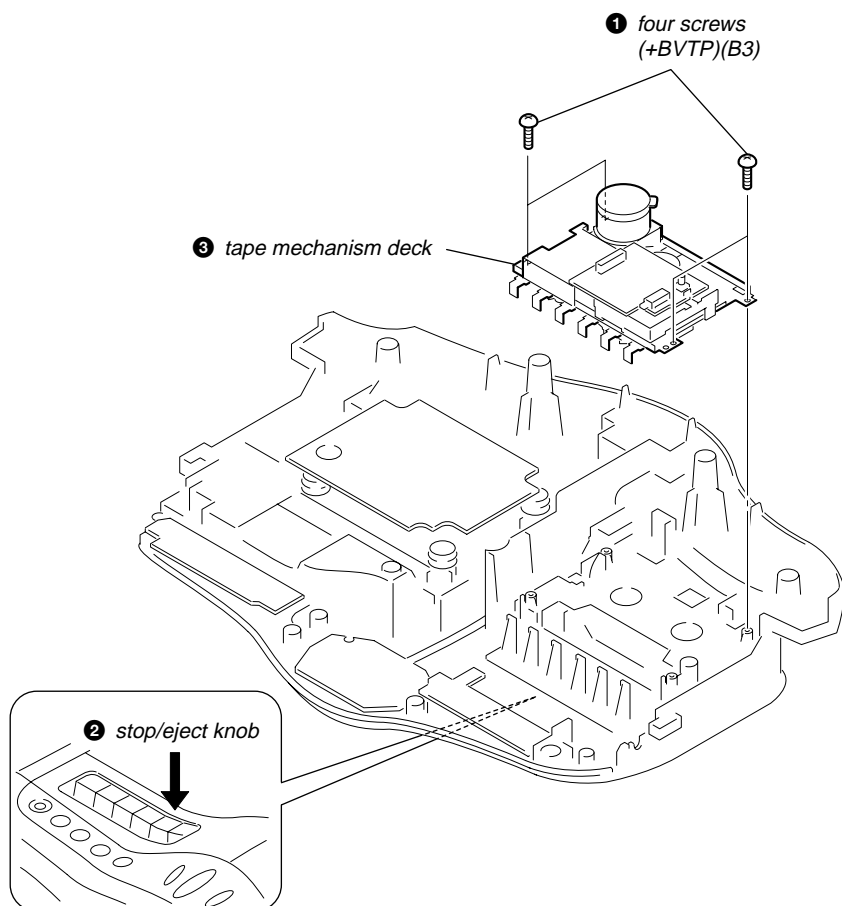
3-5. LED-1 BOARD, LED-2 BOARD



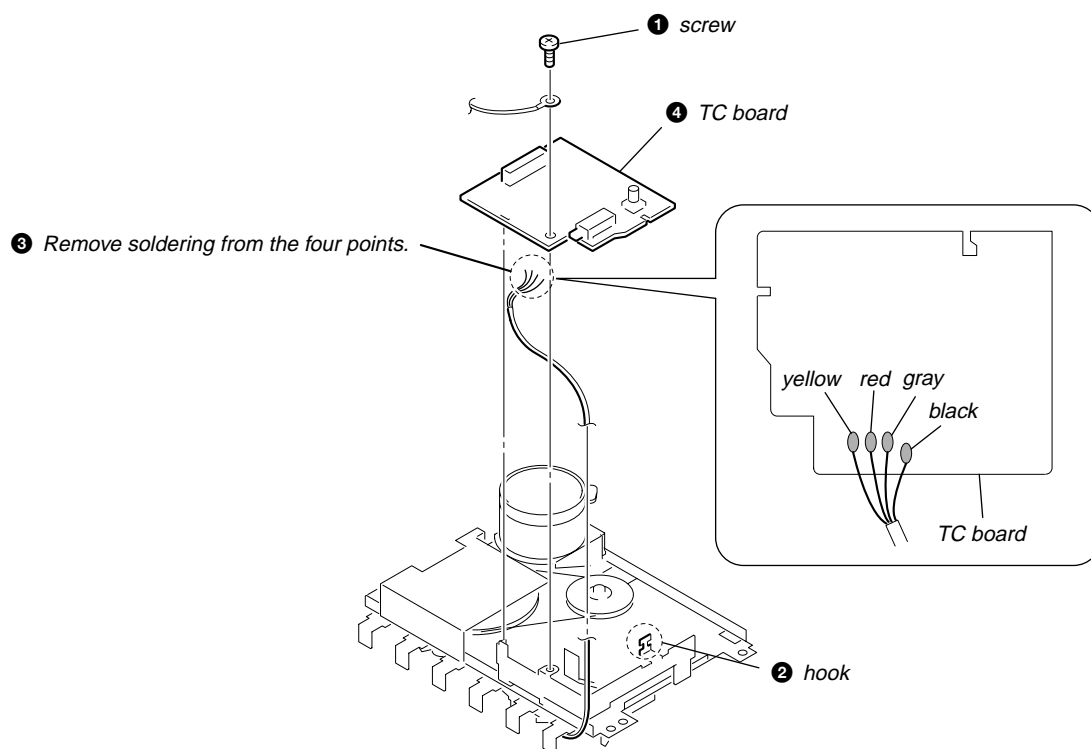
3-6. LCD BOARD



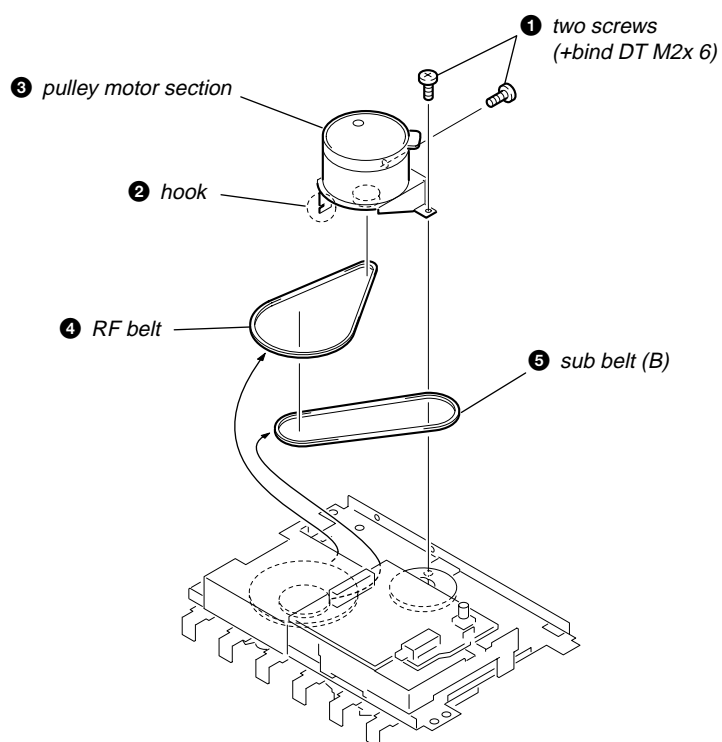
3-7. TAPE MECHANISM DECK



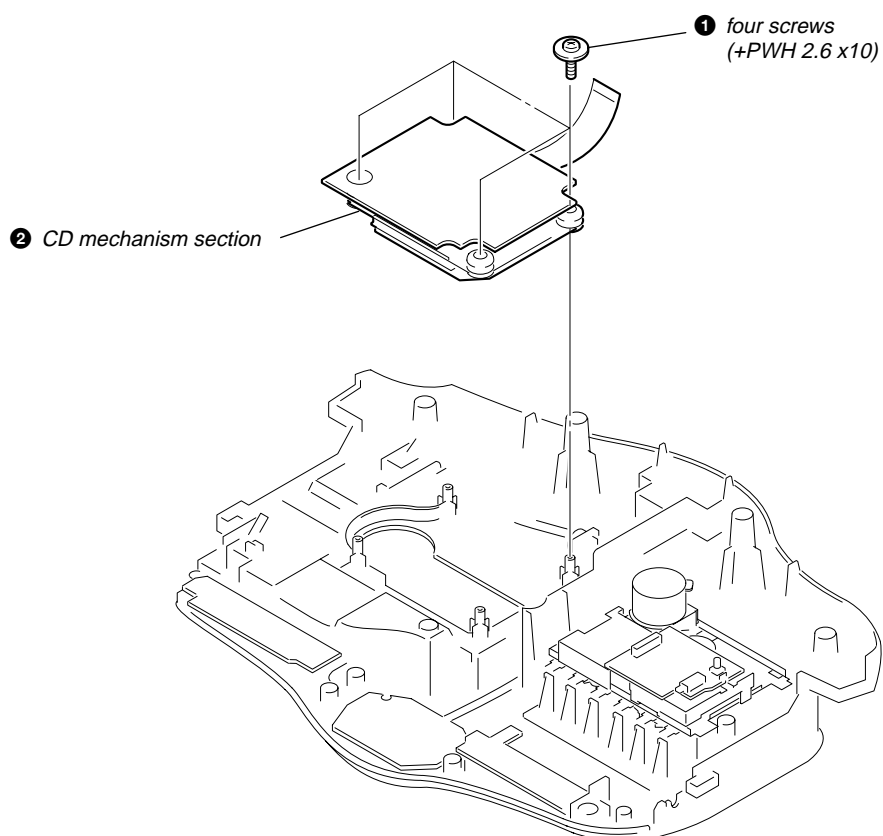
3-8. TC BOARD



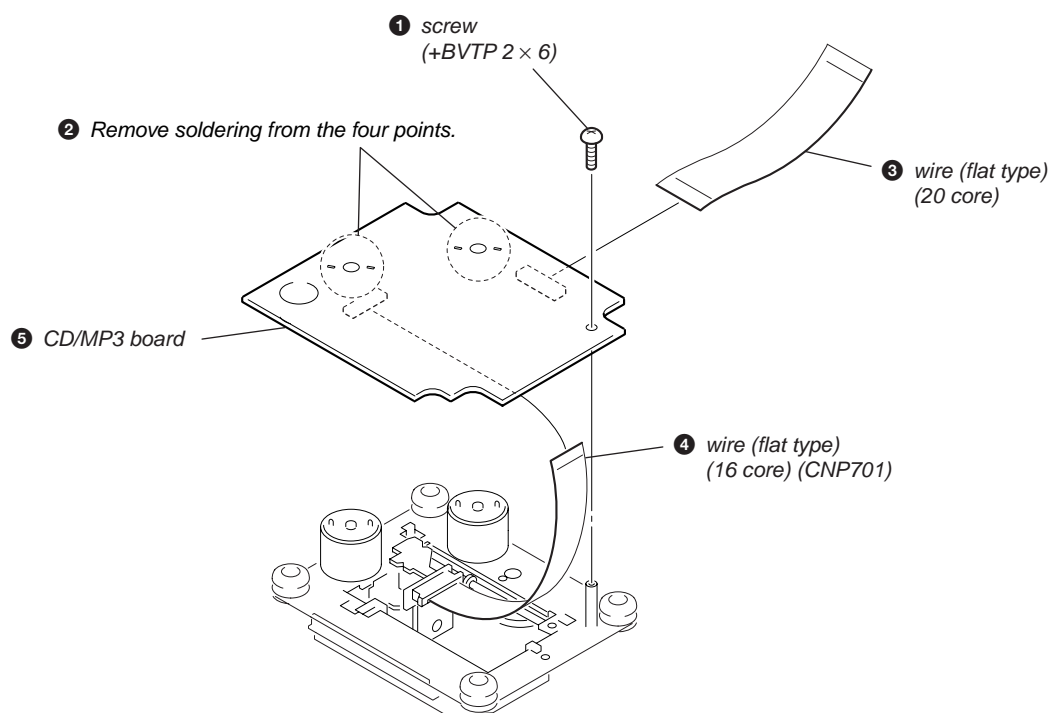
3-9. RF BELT, SUB BELT (B)



3-10. CD MECHANISM SECTION



3-11. CD/MP3 BOARD



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
---------------------	-----------------------

• Standard Output Level

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

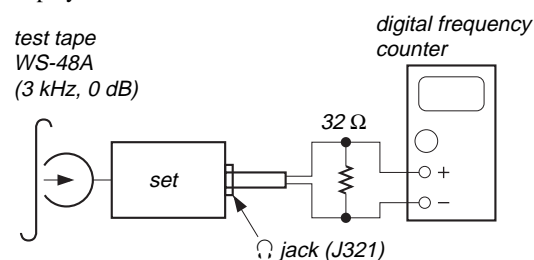
• Test Tape

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

Tape Speed Adjustment

Procedure:

Mode: playback



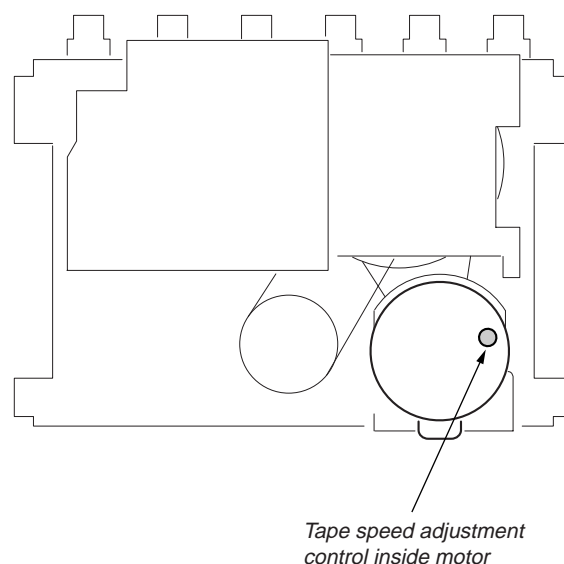
Adjust so that the value on the digital frequency counter is 3,000 Hz.

Specification Value:

Digital frequency counter
2,940 to 3,060 Hz

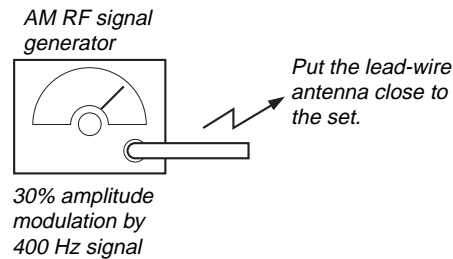
Adjust so that the frequency at the beginning and that at the end of tape winding are between 2,970 to 3,030 Hz.

Adjustment Location:

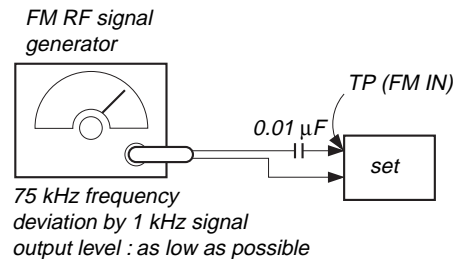


TUNER SECTION 0 dB = 1 μV

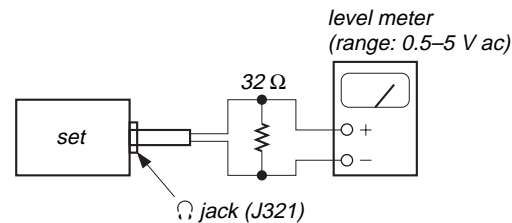
- **AM Section**
Setting:
RADIO BAND•AUTO PRESET button: MW or LW



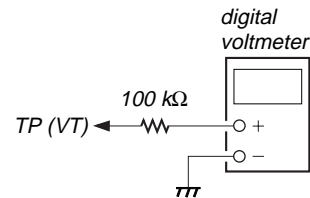
- **FM Section**
Setting:
RADIO BAND•AUTO PRESET button: FM



- **Connecting Level Meter (FM, MW)**



- **Connecting Digital Voltmeter (FM, MW)**



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

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>

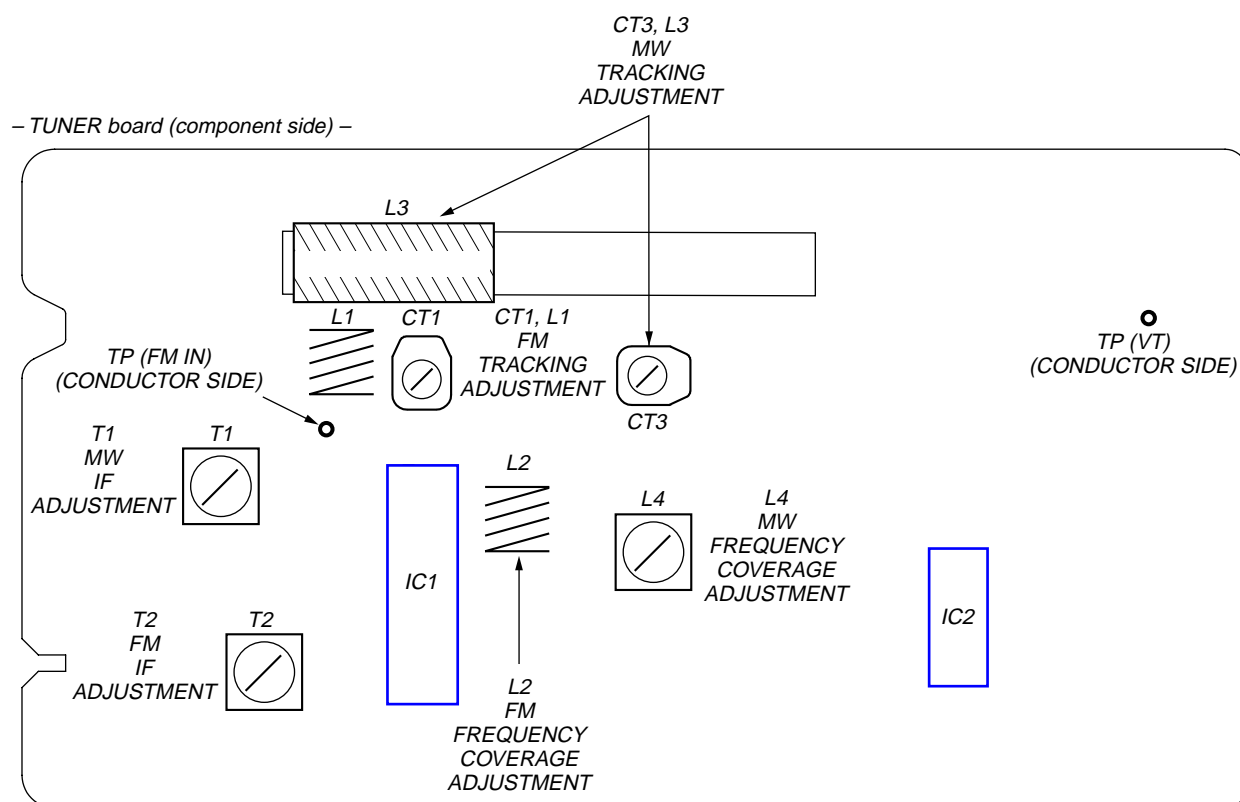
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	CT3
621 kHz	1,404 kHz

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

Adjustment Location: See page 17.

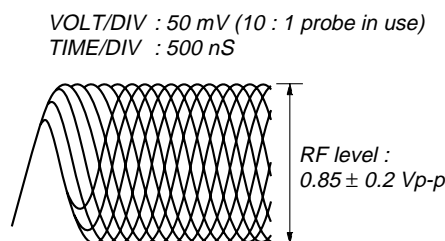
Adjustment Location:**CD SECTION**

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 (VC)).
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.

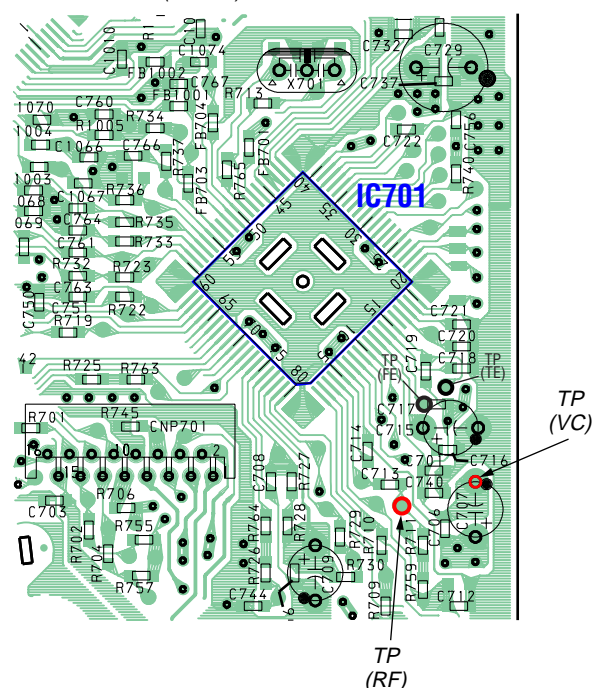
- RF signal reference waveform (eye pattern)



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

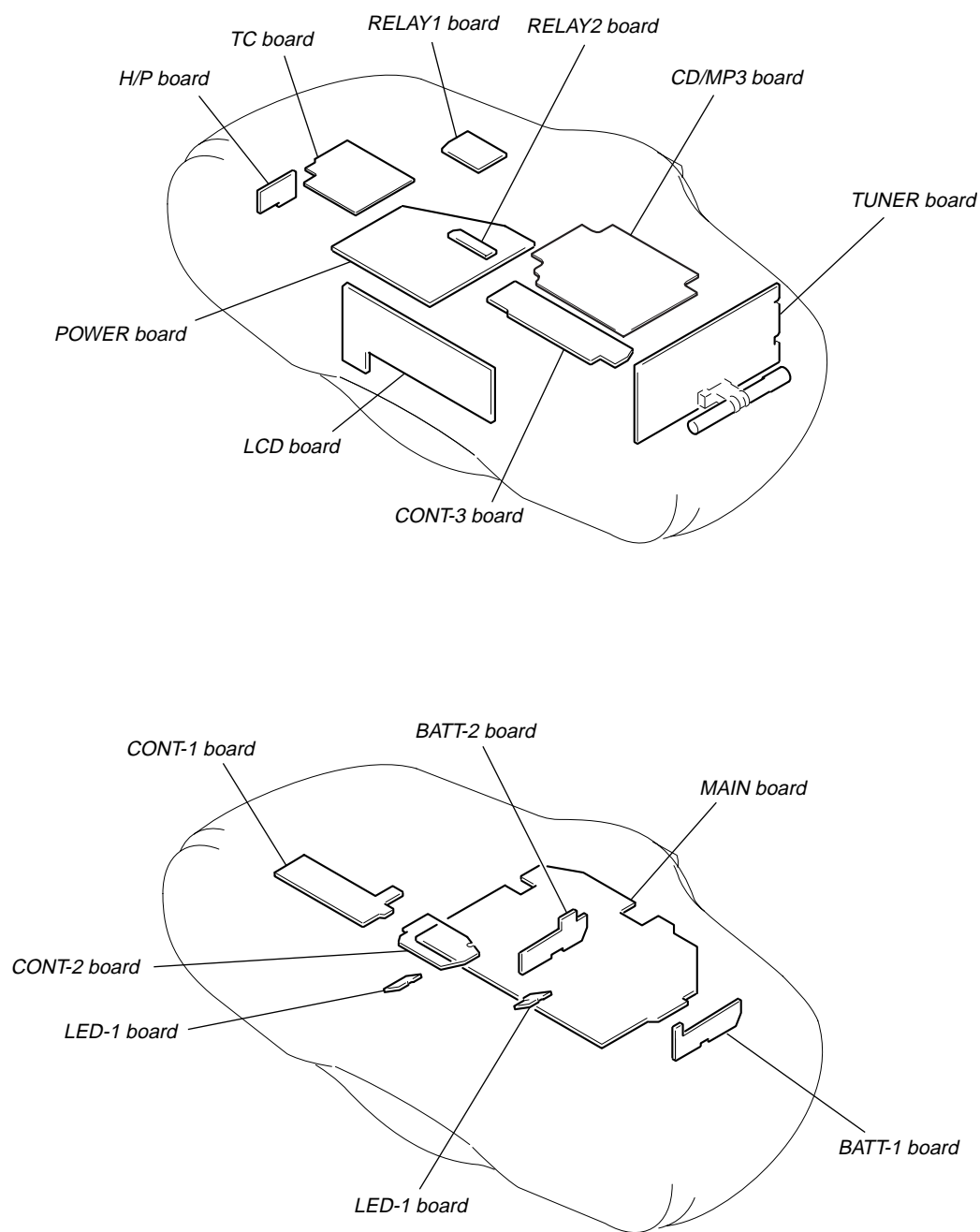
Test Point:

– CD/MP3 board (side B) –



SECTION 6 DIAGRAMS

• Circuit Board Location



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 $\frac{1}{4} W$ or less unless otherwise
specified.
- \triangle : internal component.
- \square : panel designation.

Note:
The components identi-
fied by mark \triangle or dotted
line with mark \triangle are criti-
cal for safety.
Replace only with part
number specified.

Note:
Les composants identifiés par
une marque \triangle sont critiques
pour la sécurité.
Ne les remplacer que par une
pièce portant le numéro
spécifié.

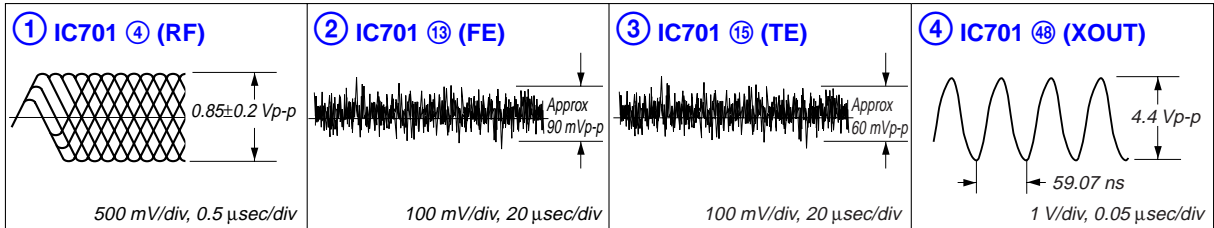
- — : B+ Line.
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 9V and fed with regulated dc power
supply from battery terminal.
- Voltages are taken with a VOM (Input impedance 10 M Ω).
Voltage variations may be noted due to normal produc-
tion tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal produc-
tion tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - \Rightarrow : FM
 - \Rightarrow : MW
 - \Rightarrow : PB
 - \Rightarrow : REC
 - \Rightarrow : CD
- Abbreviation
 - E41 : 230V AC Area in E model
 - MX : Mexican model

Common Note on Printed Wiring Boards:

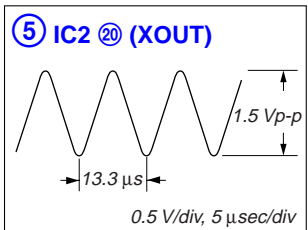
- \circ : parts extracted from the component side.
- \square : parts extracted from the conductor side.
- \triangle : internal component.
- : Pattern from the side which enables seeing.

• Waveforms

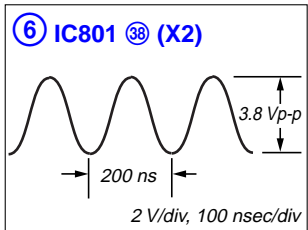
— CD/MP3 BOARD — (Mode: PLAY)



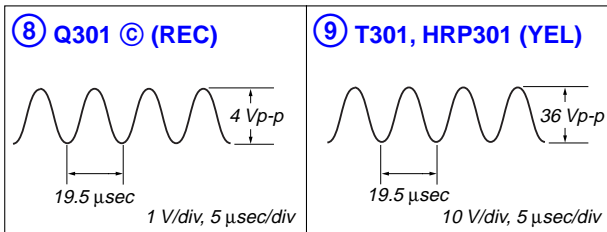
— TUNER BOARD —



— MAIN BOARD —



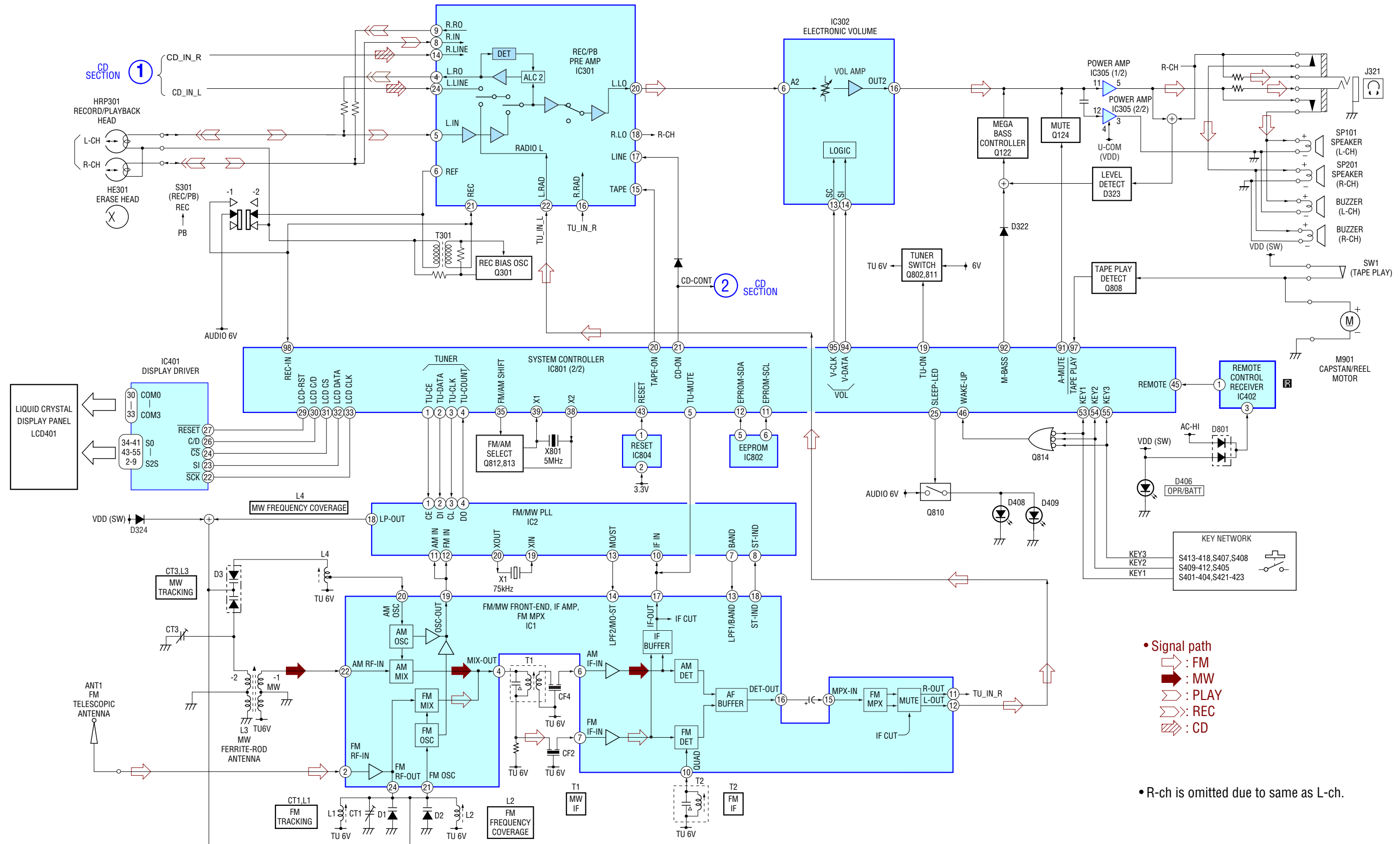
— TC BOARD —

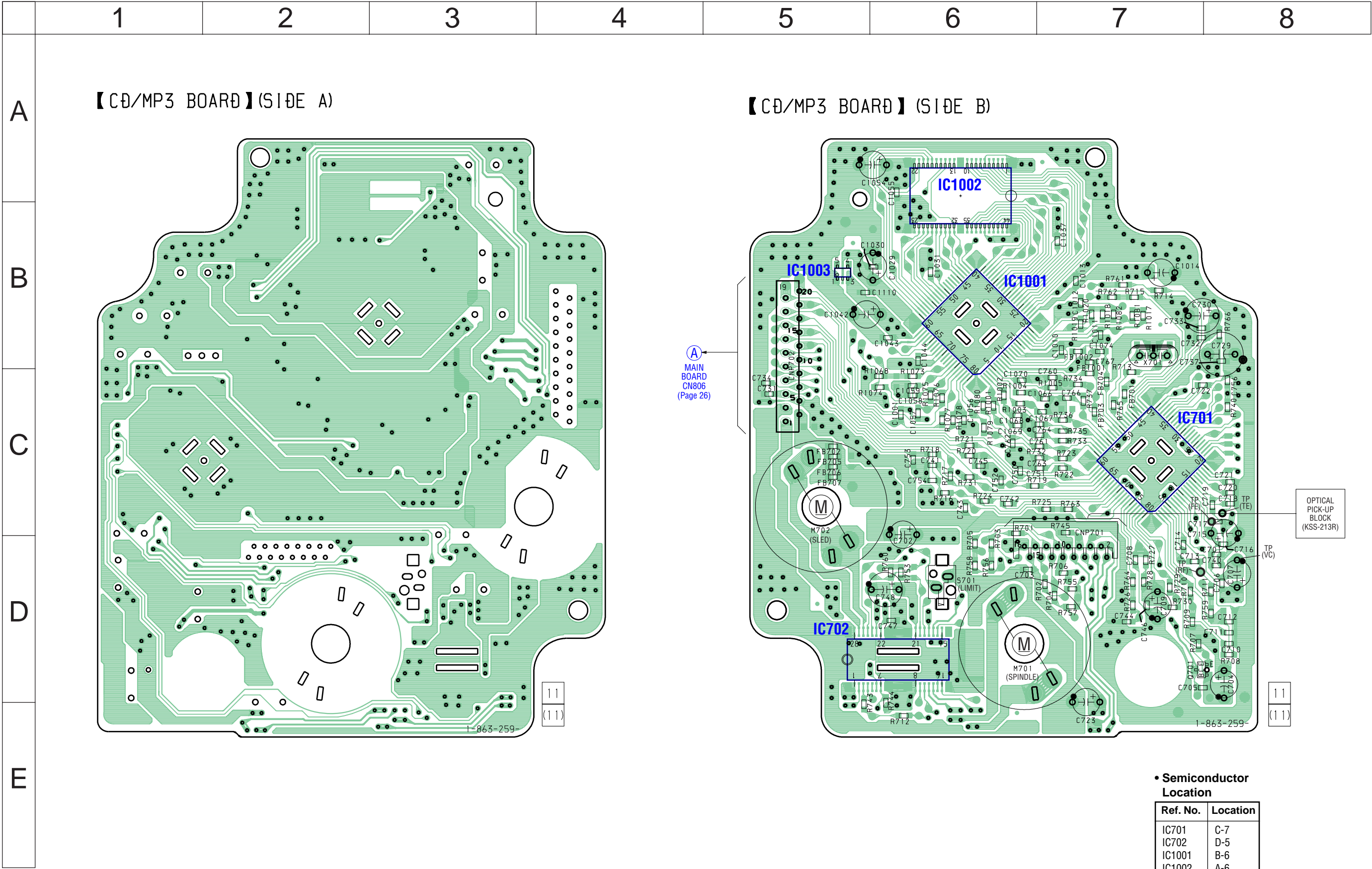


6-1. BLOCK DIAGRAM – CD SECTION –



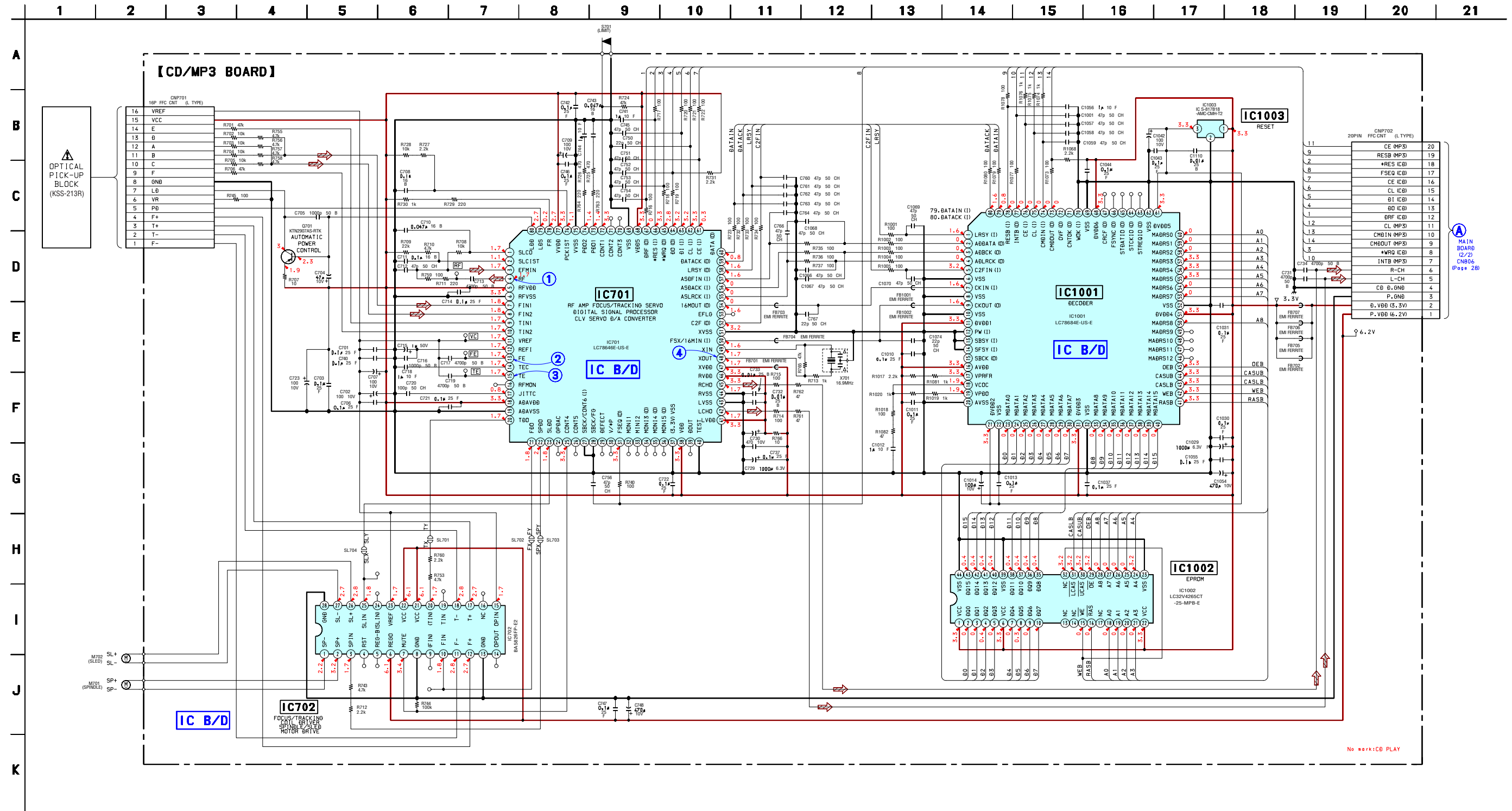
- MAIN SECTION -

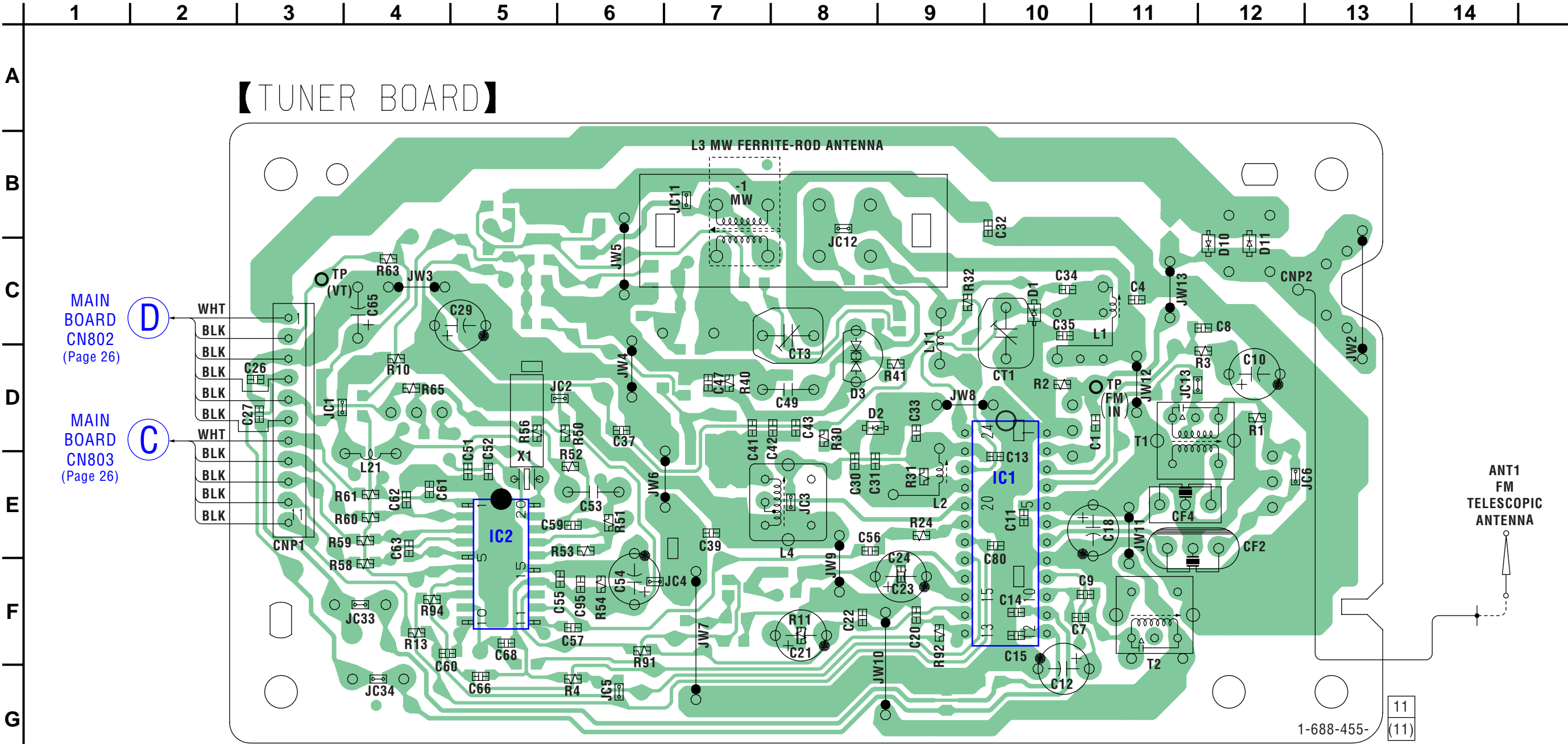




6-3. SCHEMATIC DIAGRAM – CD/MP3 SECTION –

- Refer to page 35, 36 and 37 for IC Block Diagram.
- Refer to page 19 for Waveforms.



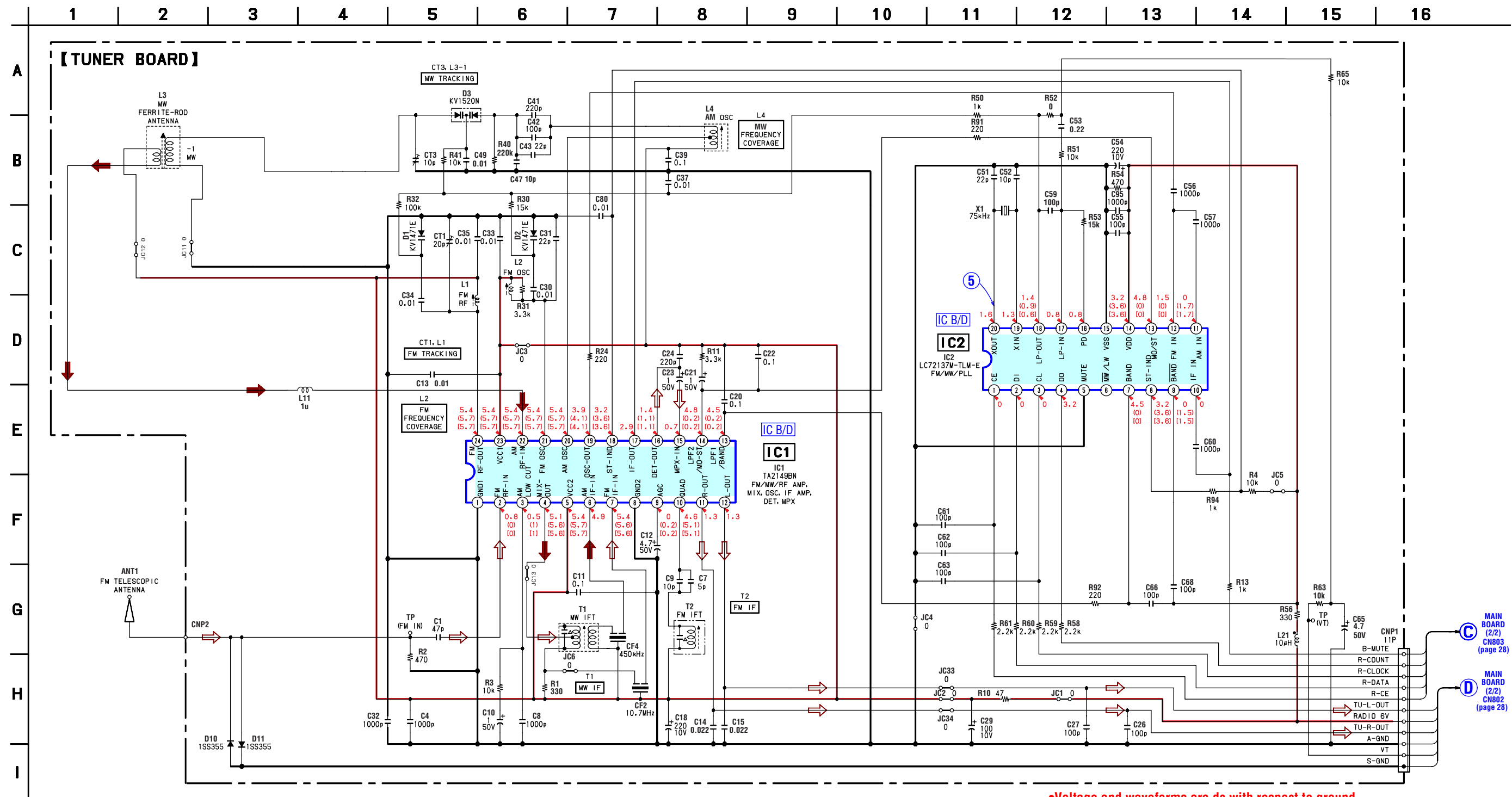


• Semiconductor Location

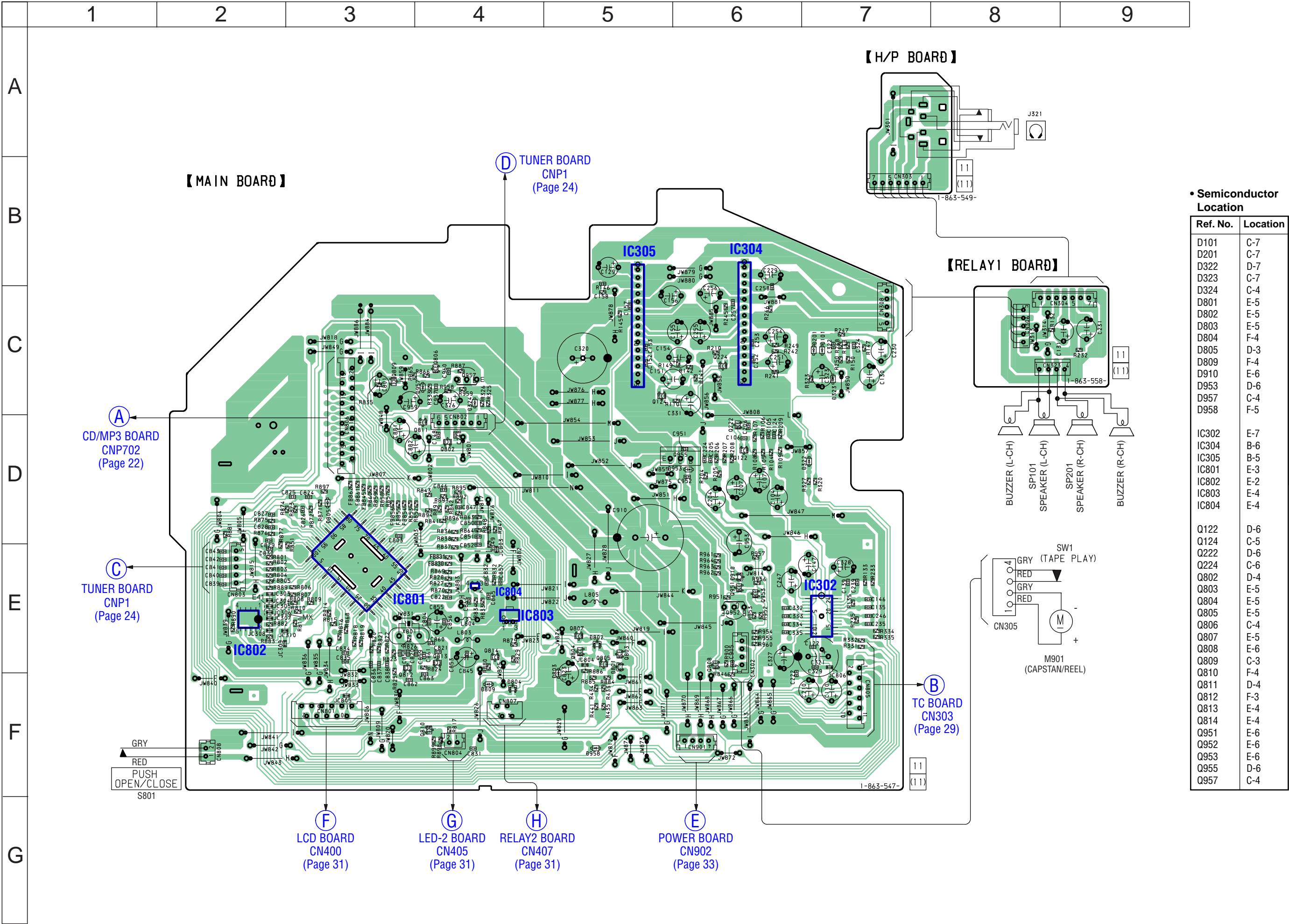
Ref. No.	Location
D1	C-10
D2	D-8
D3	D-8
D10	B-12
D11	B-12
IC1	E-10
IC2	E-5

6-5. SCHEMATIC DIAGRAM – TUNER SECTION –

- Refer to page 37 for IC Block Diagram.
- Refer to page 19 for Waveforms.

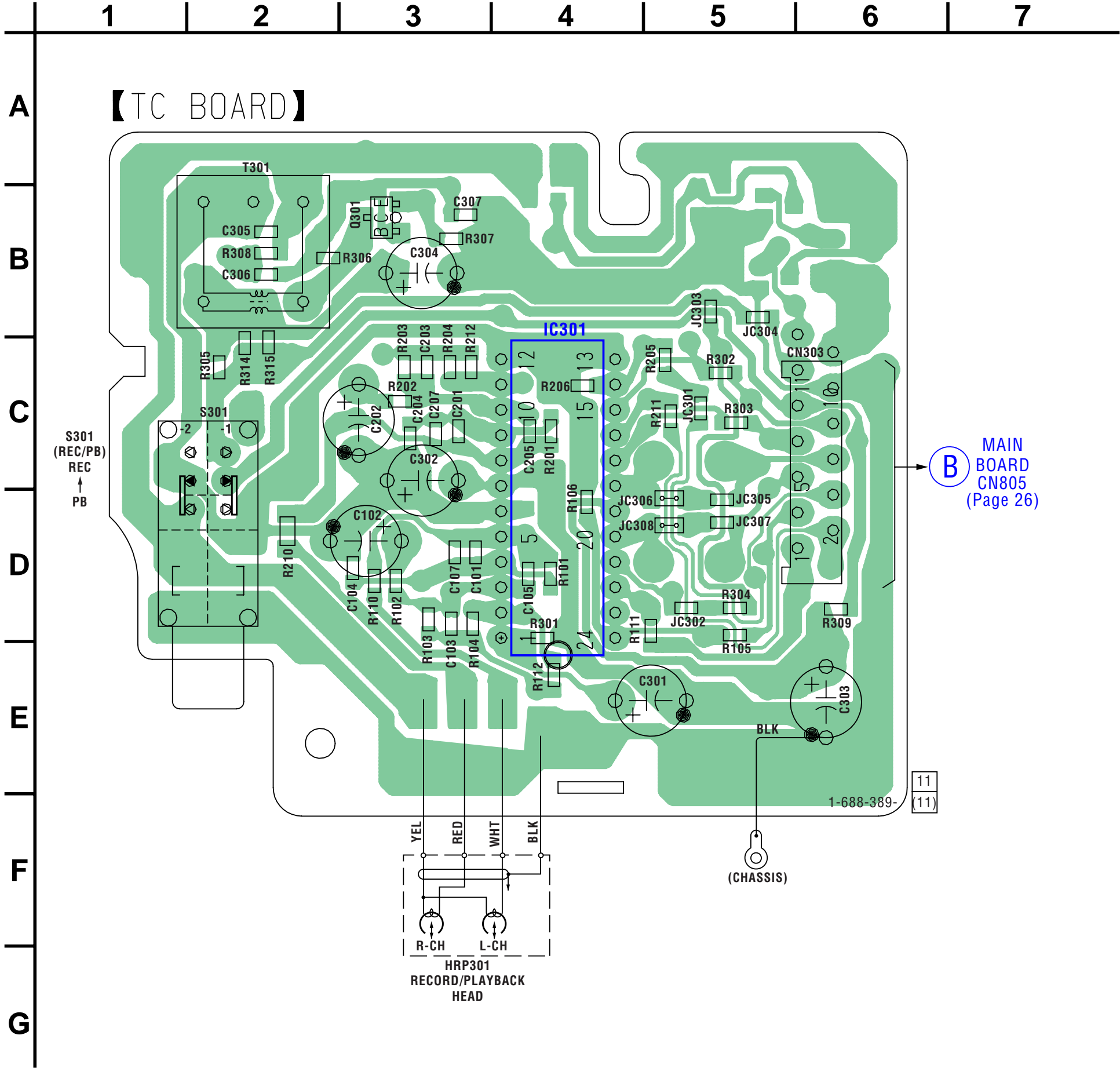


•Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
(): MW

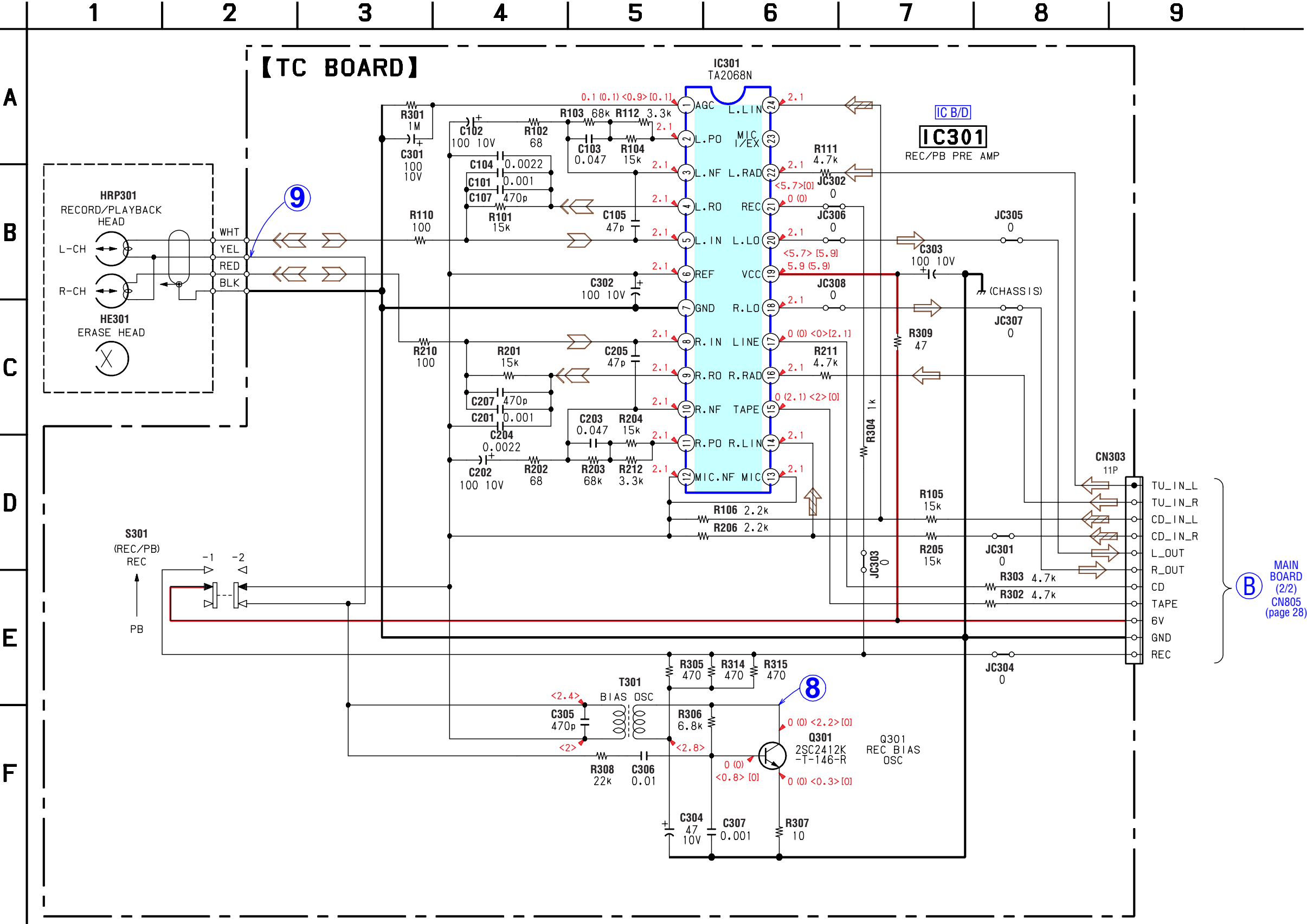




6-9. PRINTED WIRING BOARD – TC SECTION – • Refer to page 18 for Circuit Boards Location.



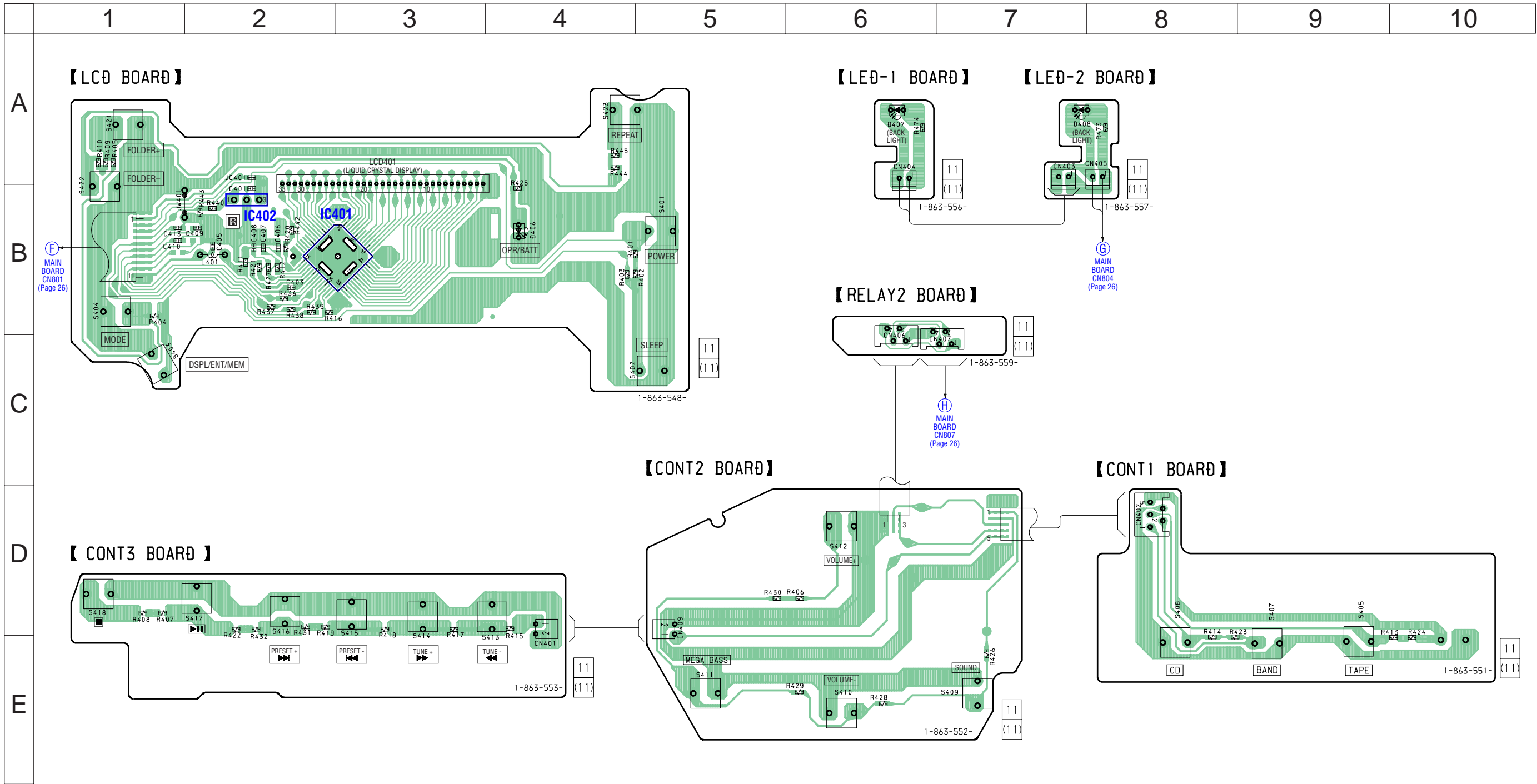
6-10. SCHEMATIC DIAGRAM – TC SECTION – • Refer to page 38 for IC Block Diagram.
• Refer to page 19 for Waveforms.



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

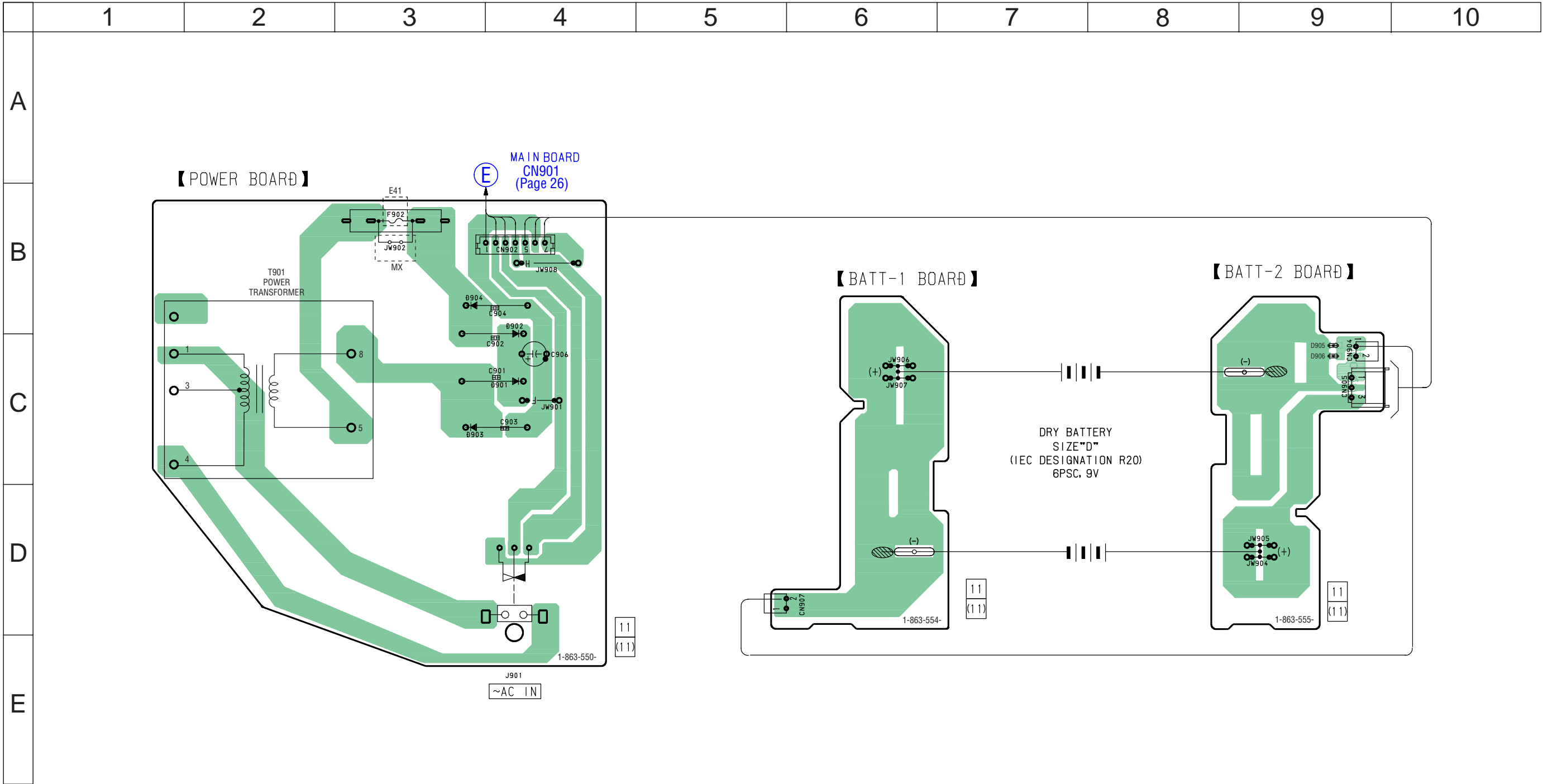
6-11. PRINTED WIRING BOARD – CONTROL SECTION – • Refer to page 18 for Circuit Boards Location.

•  : Uses unleaded solder.





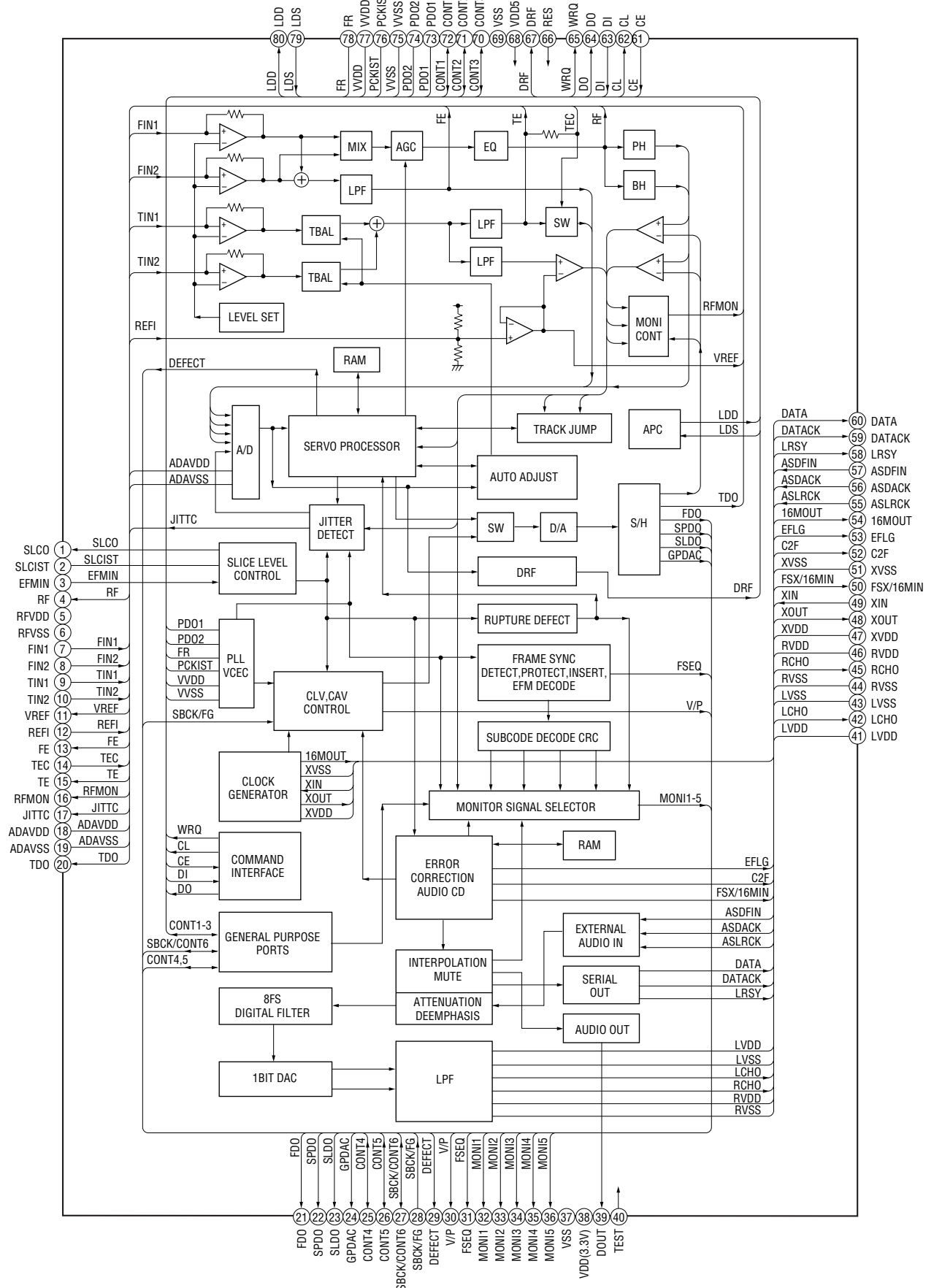
6-13. PRINTED WIRING BOARD – POWER SUPPLY SECTION – • Refer to page 18 for Circuit Boards Location. •  : Uses unleaded solder.



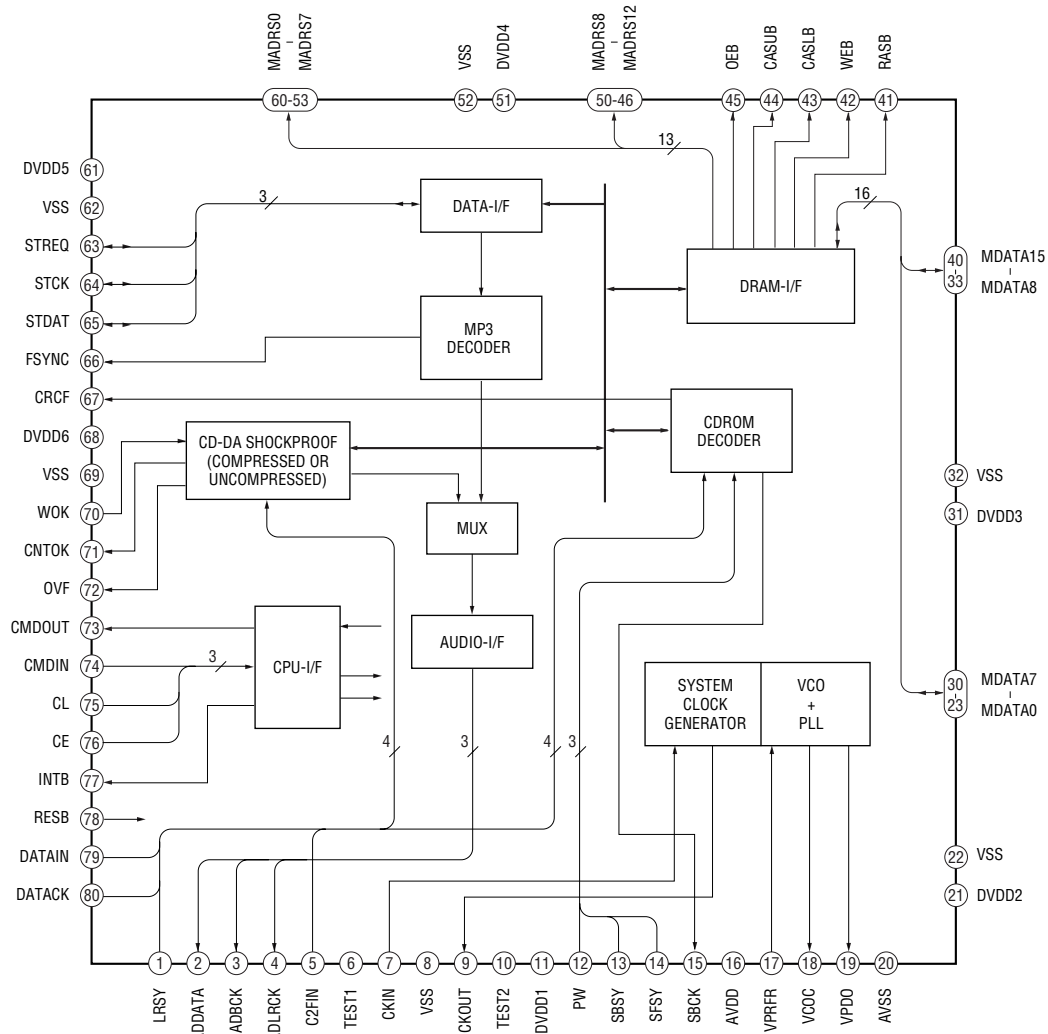


• IC Block Diagrams

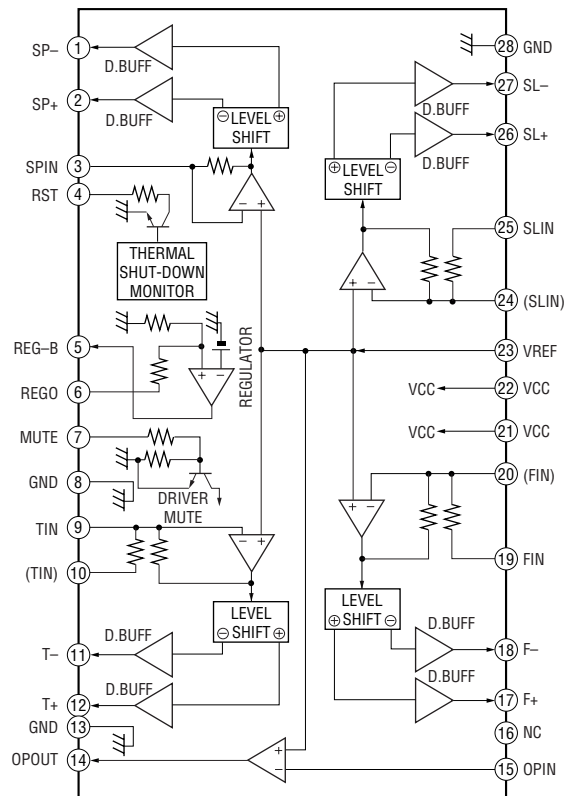
IC701 LC78646E-E (CD/MP3 Board)



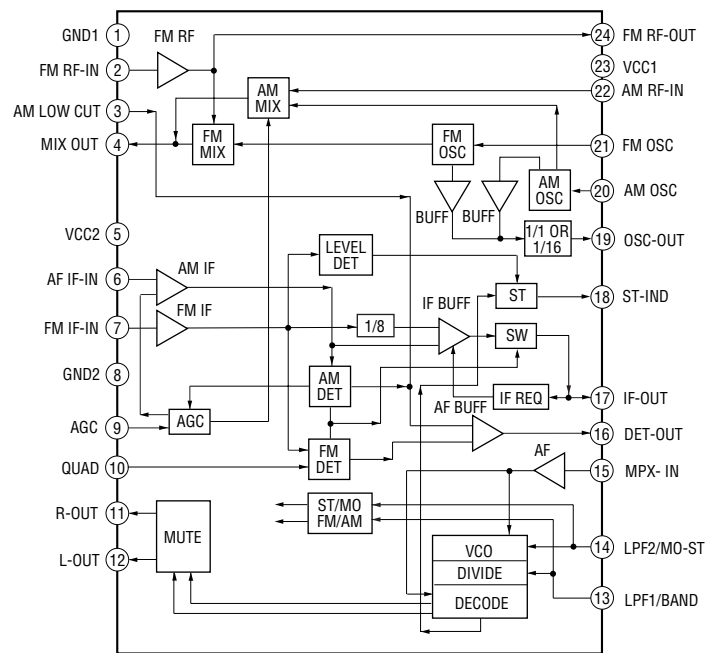
IC1001 LC78684E-US-E (CD/MP3 Board)



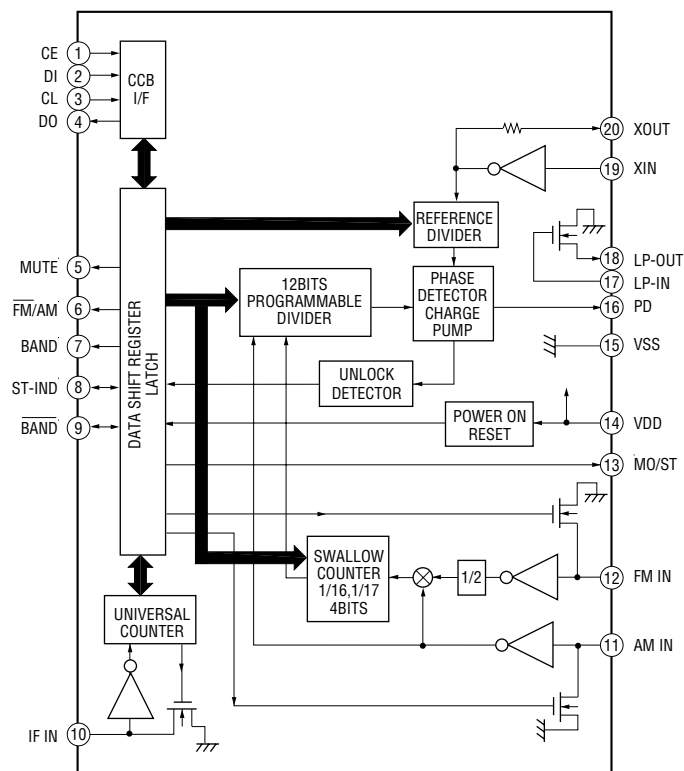
IC702 BA5826FP-E2 (CD/MP3 Board)



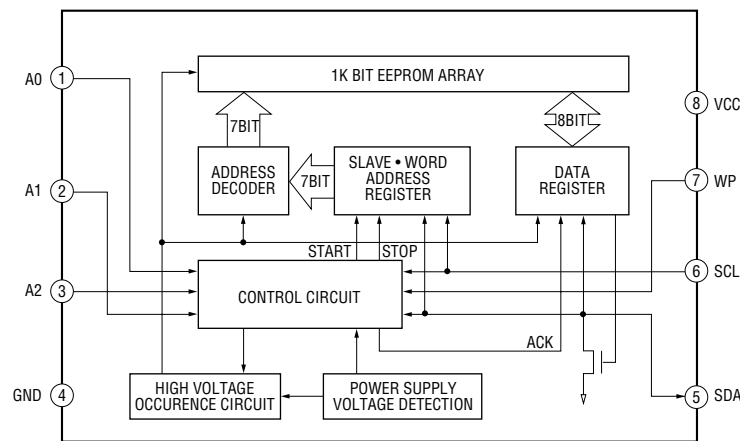
IC1 TA2149BN (TUNER Board)



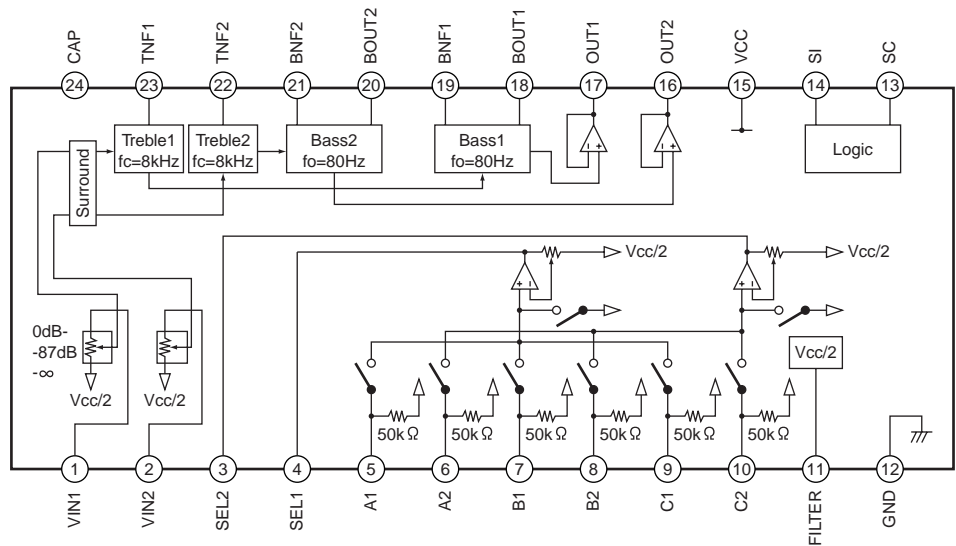
IC2 LC72137M-TLM-E (TUNER Board)



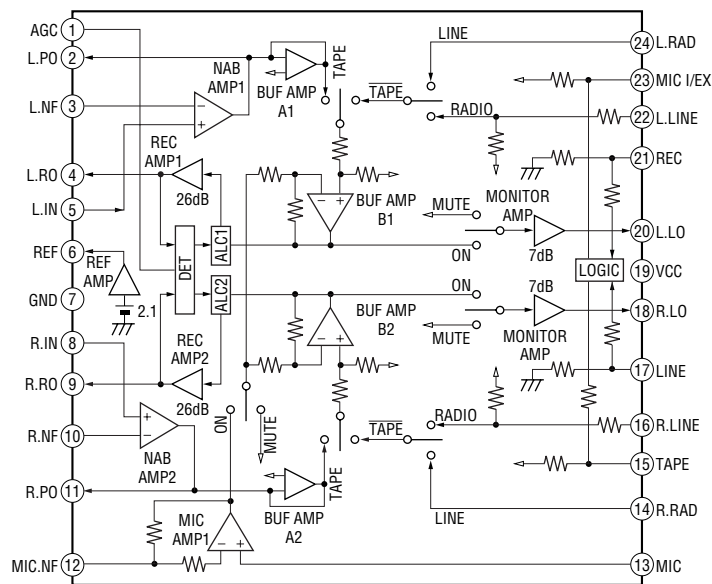
IC802 BR24L01AF-WE2 (MAIN Board)



IC302 BD3870FS-E2 (MAIN Board)



IC301 TA2068N (TC Board)





• IC Pin Function Description

IC801 μ PD784216AGF-546-3BA (SYSTEM CONTROLLER)(MAIN BOARD)

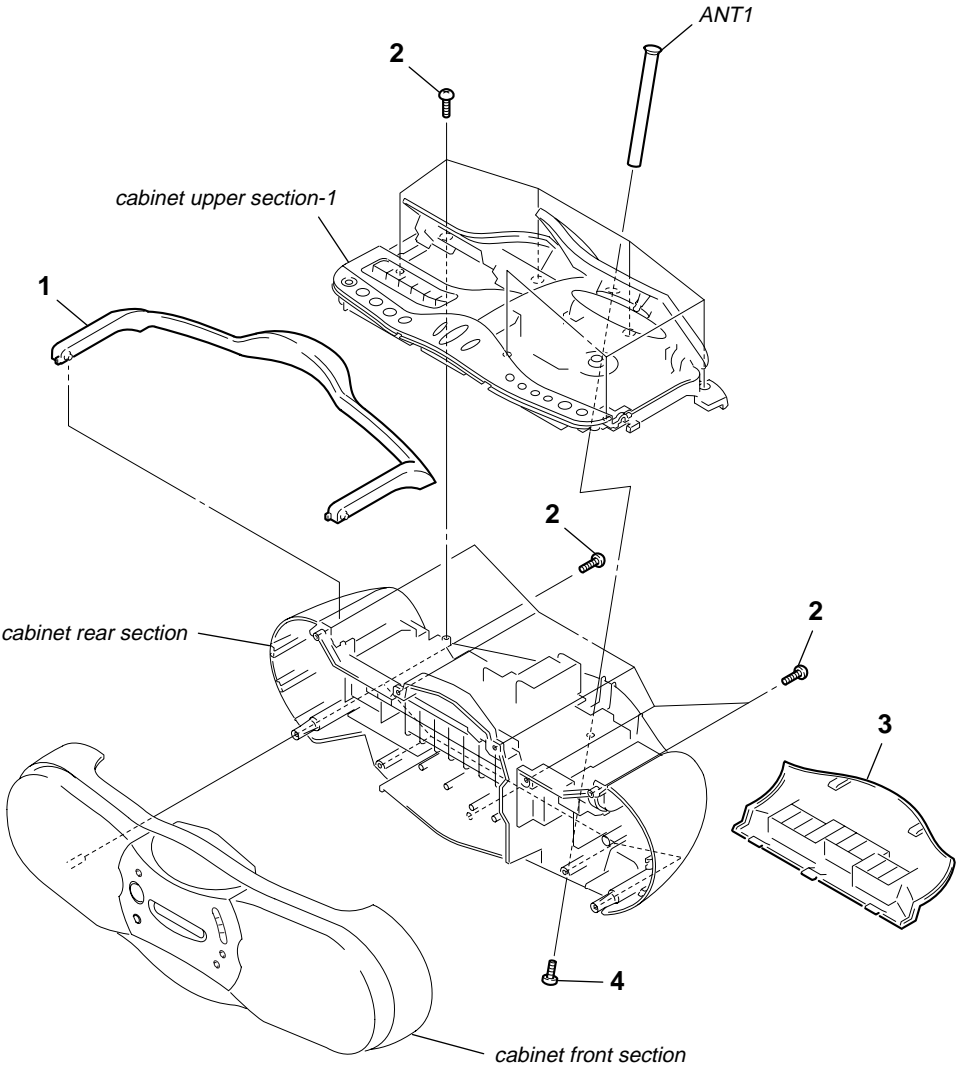
Pin No.	Pin Name	I/O	Pin Description
1	TU- CE	O	Tuner PLL chip enable output
2	TU- DATA	O	Tuner PLL data output
3	TU- CLK	O	Tuner PLL clock output
4	TU- COUNT	I	Tuner PLL IF count input
5	TU- MUTE	O	Tuner mute signal output
6	SIMUKE1	I	Simuke signal input
7	SIMUKE2	I	“Simuke signal input H : E41, L : MX”
8	TEST-B	I	Test terminal input
9	VDD	—	Power supply terminal (+3.3V)
10	TEST-A	I	Test terminal input
11	EPROM-SCL	O	EEPROM clock output
12	EPROM-SDA	I/O	EEPROM data input/output
13	SIMUKE3	I	Simuke signal input
14 to 16	NC	—	Not used (Open)
17	ISS-1	O	ISS1 output
18	ISS-2	O	ISS2 output
19	TU-ON	O	tuner function output
20	TAPE-ON	O	tuner function output
21	CD-ON	O	CD function output
22	TEST/VPP	I	Test/Vpp signal input
23, 24	NC	—	Not used (Open)
25	SLEEP-LED	O	LED control signal output
26 to 28	NC	—	Not used (Open)
29	LCD-RST	O	LCD display driver system reset output
30	LCD-C/D	O	LCD display driver c/d signal output
31	LCD-CS	O	LCD display driver chip select signal output
32	LCD-DATA	O	LCD display driver data output
33	LCD-CLK	O	LCD display driver clock output
34	NC	—	Not used (Open)
35	FM/AM SHIFT	O	FA/AM shift output
36	NC	—	Not used (Open)
37	VDD	—	Power supply terminal (+3.3V)
38	X2	O	Main system osillation output (5MHz)
39	X1	I	Main system osillation input (5MHz)
40	VSS	—	Ground terminal
41	XT2	—	Not used (Open)
42	XT1	I	Ground terminal
43	RESET	I	System reset input
44	AC-CHK	I	AC power supply detection signal input L : AC in
45	RMC-IN	I	Remote control signal input
46	WAKE-UP	I	Wake-up setting read signal input
47	INITLI	O	Initial setting output
48	CD-DOOR	I	CD door open/close swith input L : Close
49	INTB (MP3)	I	MP3 decoder intb signal input
50	WRQ (CD)	I	CD digital signal processor write request data input
51	AVDD	—	Power supply terminal (+3.3V)
52	AVREF	I	Reference voltage (+3.3v)
53 to 55	KEY1-3	I	Key input
56	MODE	I	Mode signal input
57	NC	—	Not used (Open)
58	REG-CHK	I	Regulator voltage check input

Pin No.	Pin Name	I/O	Pin Description
59	VH	I	Battery check input for Hi-voltage
60	VM	I	Battery check input for Mid-voltage
61	AVSS	—	Ground terminal
62, 63	NC	—	Not used (Open)
64	AVREF	I	Reference voltage (+3.3v)
65 to 67	NC	—	Not used (Open)
68	CMDOUT (MP3)	I	MP3 decoder data input
69	CMDIN (MP3)	O	MP3 decoder data output
70	CL (MP3)	O	MP3 decoder clock signal input
71	NC	—	Not used (Open)
72	DRF (CD)	I	CD digital signal processor DRF signal input
73	DO (CD)	I	CD digital signal processor data input
74	DI (CD)	O	CD digital signal processor data output
75	CL (CD)	O	CD digital signal processor clock signal input
76	CE (CD)	O	CD digital signal processor chip enable output
77	FSEQ (CD)	I	CD digital signal processor frame sync input
78	RES (CD)	O	CD digital signal processor system reset output
79	RESB (MP3)	O	MP3 decoder system reset output
80	CE (MP3)	O	MP3 decoder chip enable output
81 to 90	NC	—	Not used (Open)
91	A-MUTE	O	Audio mute output
92	MEGABASS	O	MEGA BASS control output
93	P-CON	O	Systemu power control output
94	V-DATA	O	Vilume data output
95	V-CLOCK	O	Vilume clock output
96	NC	—	Not used (Open)
97	TAPE PLAY	I	Tape play swith input L : Play
98	REC-IN	I	Tape record signal input H : REC
99	NC	—	Not used (Open)
100	VSS	—	Ground terminal

SECTION 7
EXPLODED VIEWS

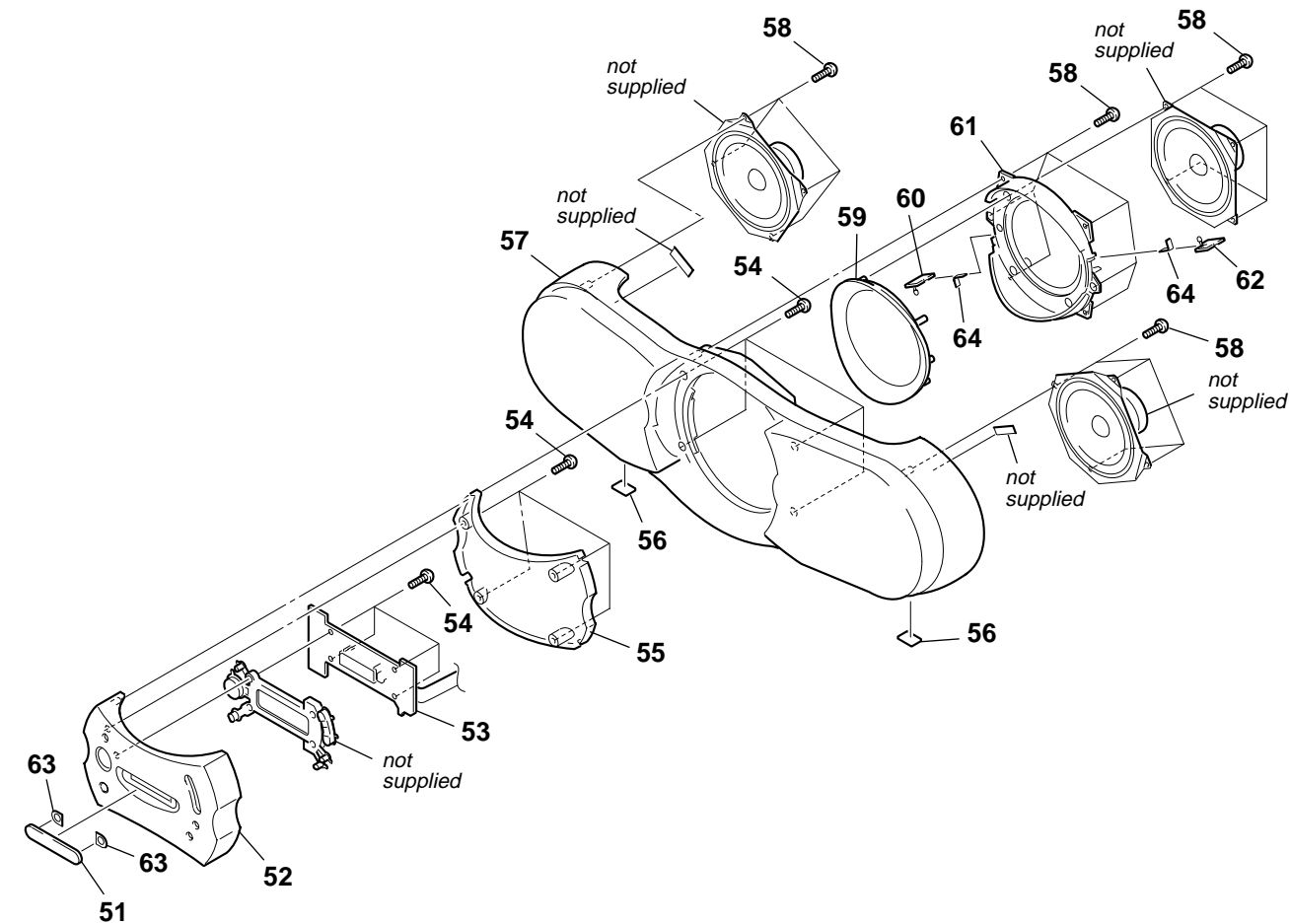
- NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
 - Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
E41 : 230V AC area in E model
MX : Mexican model
- The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

7-1. MAIN SECTION



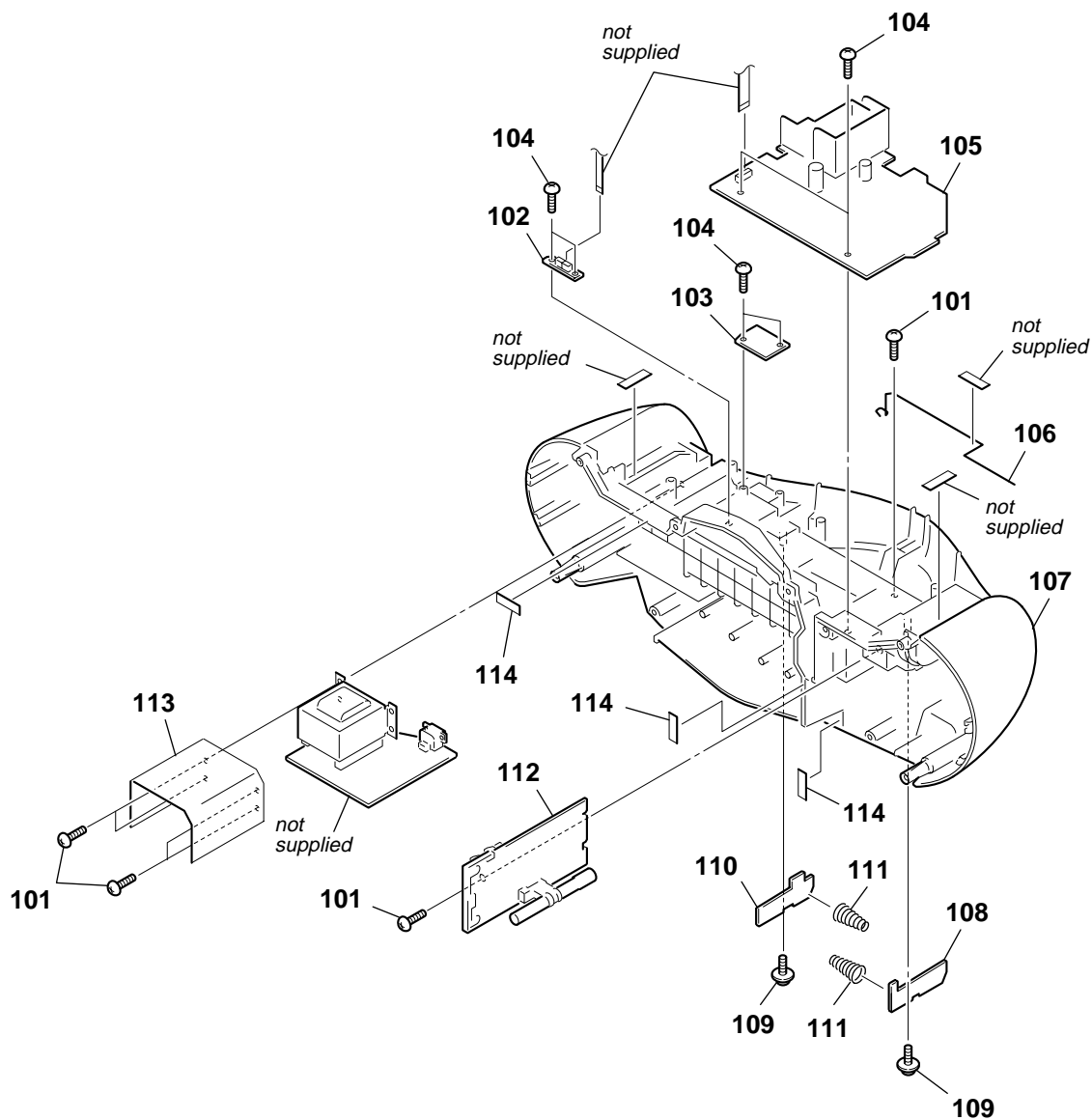
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-261-747-01	HANDLE		4	3-252-833-01	SCREW (M3), (+) P	
2	3-254-145-11	SCREW (B3), (+) BV TAPPING		ANT1	1-754-321-11	ANTENNA, TELESCOPIC	
3	3-261-728-01	LID, BATTERY					

7-2. CABINET FRONT SECTION



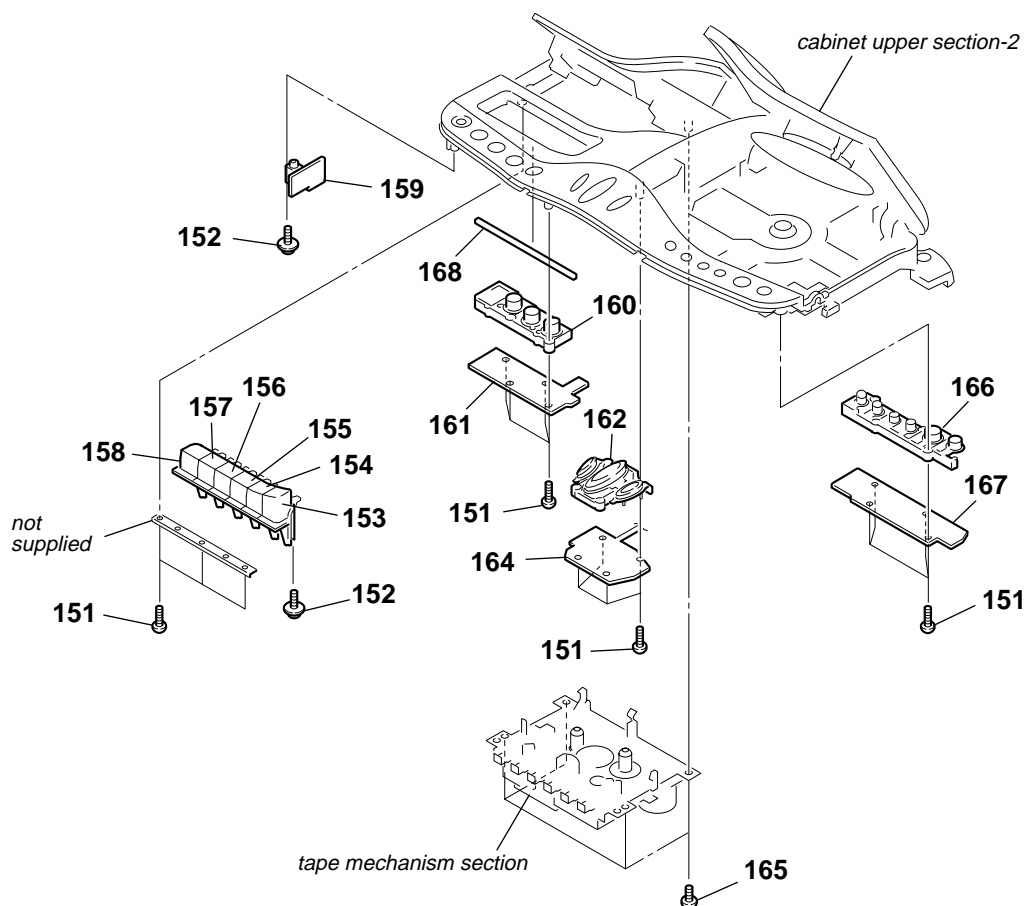
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	2-067-173-01	WINDOW LCD (MP3)		58	3-254-143-01	SCREW (B3), (+) BV TAPPING (AUS)	
52	X-2022-325-1	COVER FRONT SUB ASSY (MP3)		59	X-3384-802-1	COVER SPEAKER SUB ASSY	
53	A-1068-492-A	LCD BOARD, COMPLETE		60	1-863-556-11	LED-1 BOARD	
54	3-252-827-01	SCREW (B2.6), (+) BV TAPPING		61	X-3384-890-1	CHASSIS BACK LIGHT SUB ASSY	
55	3-261-737-01	COVER REAR		62	1-863-557-11	LED-2 BOARD	
56	3-040-916-01	FOOT (FRONT), RUBBER		63	2-108-141-01	TAPE WINDOW MP3 (B)	
57	X-3384-922-1	CABINET FRONT SUB ASSY		64	3-242-622-01	CUSHION (A)	

7-3. CABINET REAR SECTION



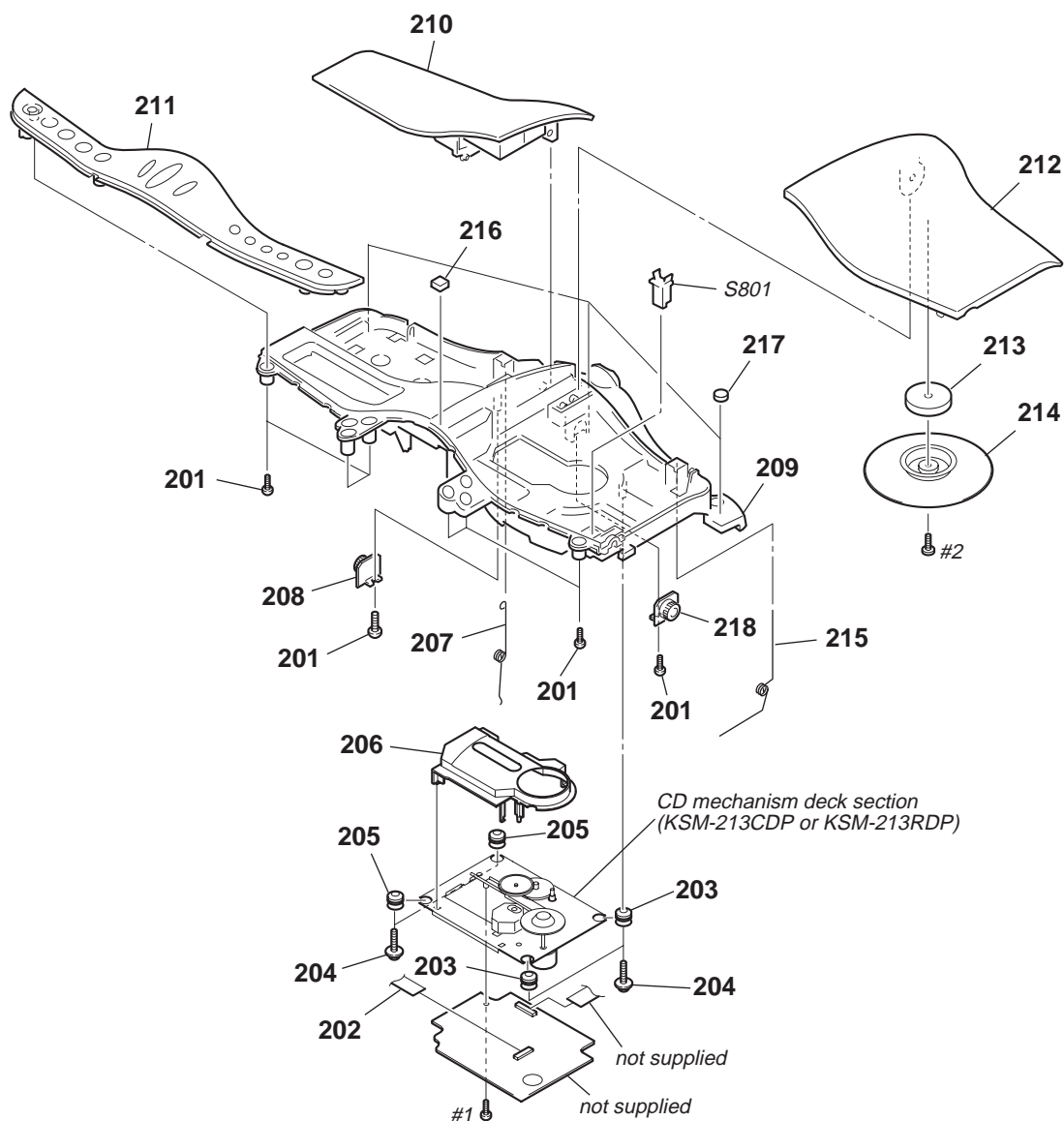
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-254-143-01	SCREW (B3), (+) BV TAPPING		108	1-863-554-11	BATT-1 BOARD	
102	1-863-559-11	RELAY2 BOARD		109	3-252-830-01	SCREW (B3), (+) PWH TAPPING (AUS)	
103	1-863-558-11	RELAY1 BOARD		110	1-863-555-11	BATT-2 BOARD	
104	3-252-827-01	SCREW (B2.6), (+) BV TAPPING		111	3-240-561-02	TERMINAL (-), BATTERY	
105	A-1068-501-A	MAIN BOARD, COMPLETE (MX)		* 112	A-4547-323-A	TUNER BOARD, COMPLETE	
105	A-1068-509-A	MAIN BOARD, COMPLETE (E41)		113	3-267-109-01	PLATE (TRANS) SHIELD	
106	3-261-722-01	TERMINAL ANTENNA		114	2-024-906-01	CUSHION (REAR)	
107	3-267-110-01	CABINET REAR (MX)					

7-4. CABINET UPPER SECTION-1



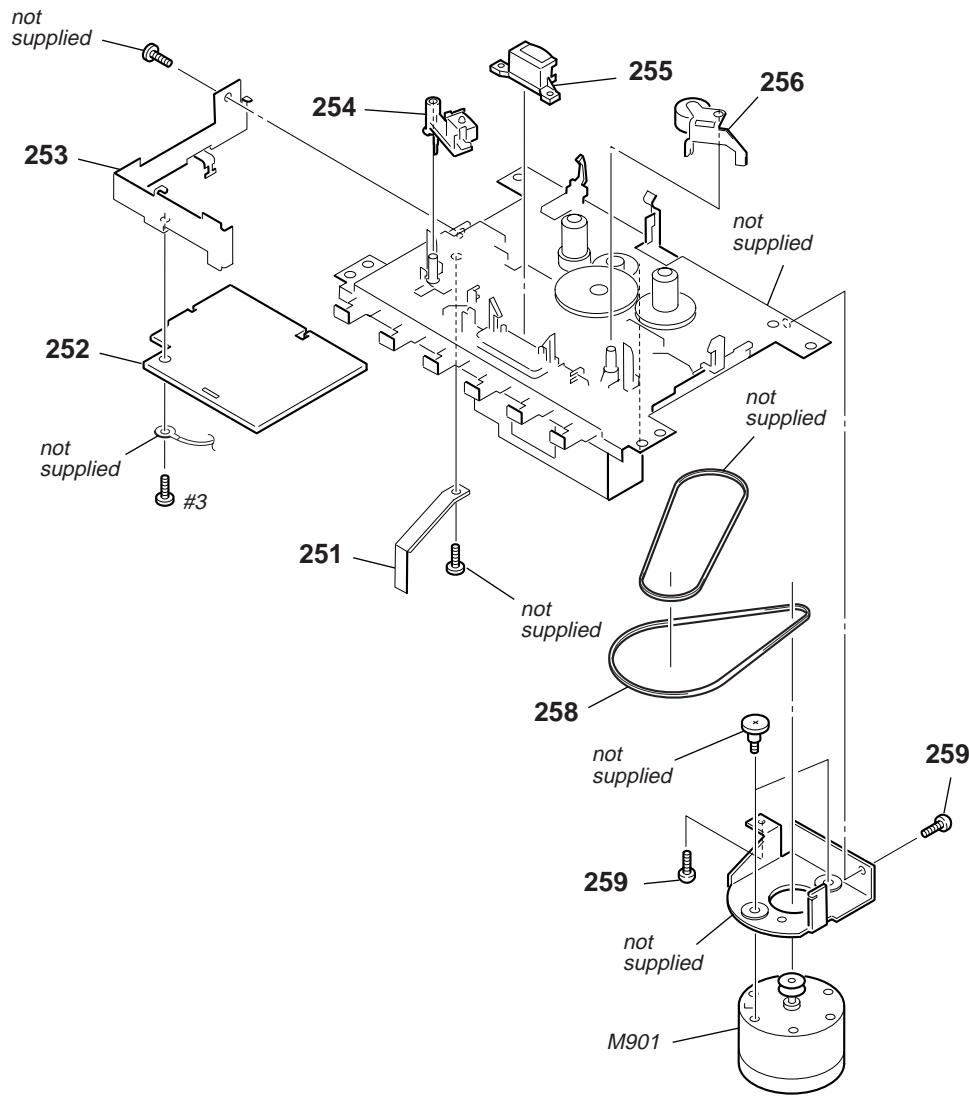
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-254-151-01	SCREW (B2.6), (+) P TAPPING		160	3-261-733-01	BUTTON FUNCTION	
152	3-252-828-01	SCREW (B2.6), (+) PWH TAPPING		161	1-863-551-11	CONT1 BOARD	
153	3-261-750-01	KNOB (MD) (PAUSE)		162	3-261-735-01	BUTTON VOLUME	
154	3-261-751-01	KNOB (MD) (STOP/EJECT)		164	1-863-552-11	CONT2 BOARD	
155	3-261-753-01	KNOB (MD) (FWD)		165	3-254-143-01	SCREW (B3), (+) BV TAPPING	
156	3-261-752-01	KNOB (MD) (REW)		166	3-261-734-01	BUTTON CD	
157	3-261-754-01	KNOB (MD) (PLAY)		167	1-863-553-11	CONT3 BOARD	
158	3-261-755-01	KNOB (MD) (REC)		168	3-252-613-01	CUSHION (MD BUTTON)	
159	1-863-549-11	H/P BOARD					

7-5. CABINET UPPER SECTION-2



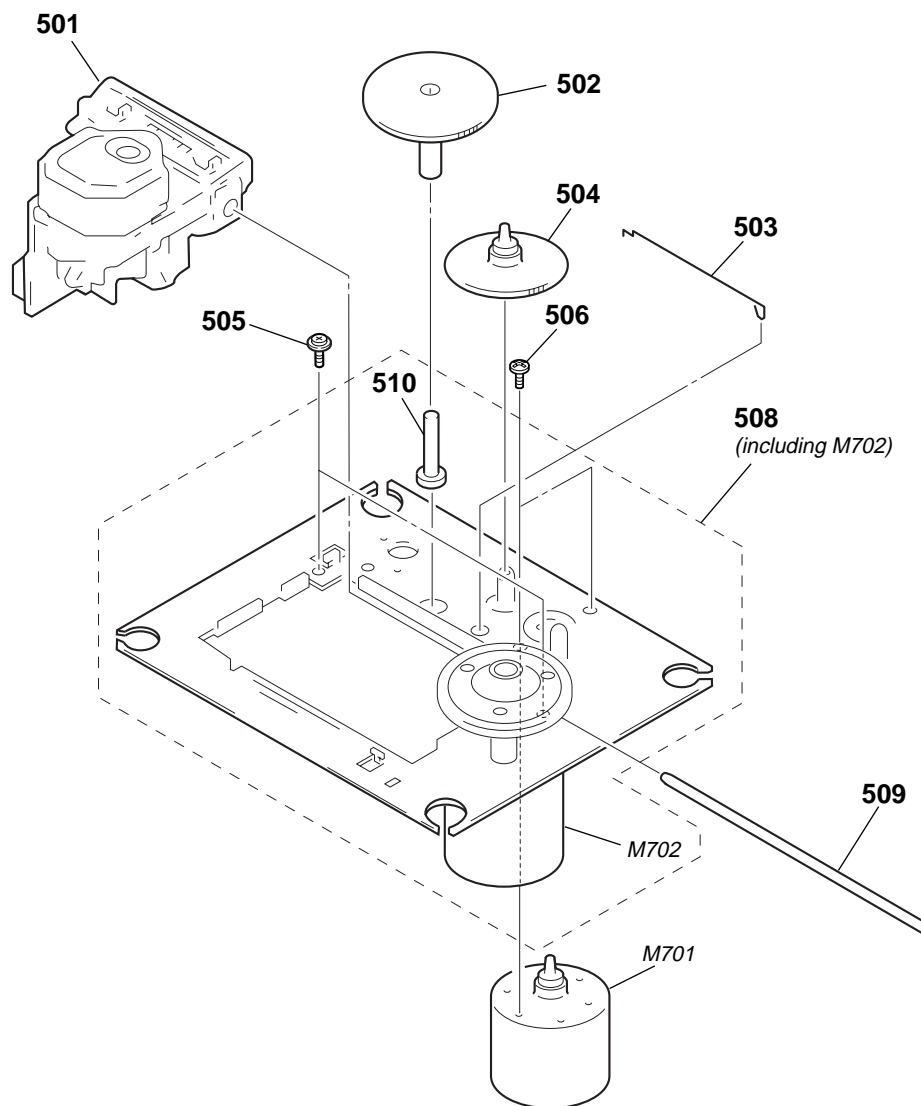
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	3-254-143-01	SCREW (B3), (+) BV TAPPING		212	3-261-748-11	LID CD	
202	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)		213	1-452-899-11	MAGNET	
203	3-931-379-31	RUBBER, VIBRATION PROOF		214	3-019-395-01	PLATE, CHUCKING	
204	3-252-828-01	SCREW (B2.6), (+) PWH TAPPING		215	3-261-717-01	SPRING CD	
205	3-931-379-21	RUBBER, VIBRATION PROOF		216	2-067-270-01	CUSHION (CD)	
206	3-923-736-01	COVER, CD		217	3-267-113-01	CUSHION (HANDLE)	
207	3-261-718-01	SPRING CASSETTE		218	3-047-468-11	DAMPER (FOR LID CD)	
208	3-047-468-21	DAMPER (FOR LID CASSETTE)		S801	1-692-960-11	SWITCH, PUSH (1 KEY) (PUSH OPEN/CLOSE)	
209	3-261-746-11	CABINET UPPER		#1	7-685-853-01	+BVTT 2X6 TYPE2 (S)	
210	3-261-749-01	LID CASSETTE		#2	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
211	3-261-732-31	PANEL, BUTTON					

7-6. TAPE MECHANISM DECK SECTION (MF-F15)



<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>
251	3-237-718-01	LEVER REC		256	3-933-825-01	ARM ASSY, PINCH ROLLER	
* 252	A-4547-315-A	TC BOARD, COMPLETE		258	3-933-833-01	BELT, RF	
253	3-237-719-02	CHASSIS, TC		259	3-244-083-01	+SCREW BIND DT M2X6	
254	1-500-813-11	HEAD, ERASE		M901	X-3385-048-1	MOTOR SUB ASSY (CAPSTAN/REEL)	
255	3-266-053-01	HEAD, RP					

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
△ 501	8-820-161-02	OPTICAL PICK-UP (KSS-213R/C2RP)		506	3-713-786-51	SCREW (M2 x 3)	
* 502	2-169-065-01	GEAR (A)		508	X-2162-707-1	CHASSIS ASSY, (RDP) (RP) MOTOR(SPINDLE)	
* 503	2-169-385-01	SPRING, SLED		509	2-626-908-01	SHAFT, SLED	
* 504	2-647-408-02	GEAR (B)		* 510	2-169-384-01	SHAFT (S), GEAR	
505	2-169-388-01	TAPPING (M2), +PWB		M701	X-2162-712-1	GEAR ASSY (R) (RP), MOTOR (SLED)	

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

BATT-1

BATT-2

CD/MP3

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

- CAPACITORS
uF : μ F
• COILS
uH : μ H
• 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..

- Abbreviation
E41 : 230V AC area in E model
MX : Mexican model

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 name.

- Accessories are given in the last of this parts list.

Ref. No.	Part No.	Description	Remark
	1-863-554-11	BATT-1 BOARD *****	
	3-240-561-02	TERMINAL (-), BATTERY < CONNECTOR >	
CN907	1-815-550-11	PIN, CONNECTOR (PWB) 2P *****	
	1-863-555-11	BATT-2 BOARD *****	
	3-240-561-02	TERMINAL (-), BATTERY *****	
		CD/MP3 BOARD *****	
		< CAPACITOR >	
C701	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C702	1-104-658-91	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	1-104-658-91	ELECT 100uF	20% 10V
C708	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C709	1-104-658-91	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	1-104-658-91	ELECT 100uF	20% 10V
C730	1-126-925-91	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

Ref. No.	Part No.	Description	Remark
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	1-126-925-91	ELECT 470uF	20% 10V
C750	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
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	1-104-658-91	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	1-104-658-91	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	1-126-925-91	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

49

CFD-F15CP

CONT1	CONT2	CONT3	H/P	LCD
-------	-------	-------	-----	-----

Ref. No.	Part No.	Description	Remark		
R423	1-216-813-11	METAL CHIP	220	5%	1/10W
R424	1-216-817-11	METAL CHIP	470	5%	1/10W
< SWITCH >					
S405	1-786-050-21	SWITCH, KEY BOARD (TAPE)			
S407	1-786-050-21	SWITCH, KEY BOARD (BAND)			
S408	1-786-050-21	SWITCH, KEY BOARD (CD)			

	1-863-552-11	CONT2 BOARD			

< RESISTOR >					
R406	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R426	1-216-821-11	METAL CHIP	1K	5%	1/10W
R428	1-216-821-11	METAL CHIP	1K	5%	1/10W
R429	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R430	1-216-821-11	METAL CHIP	1K	5%	1/10W
< SWITCH >					
S409	1-786-050-21	SWITCH, KEY BOARD (SOUND)			
S410	1-786-050-21	SWITCH, KEY BOARD (VOLUME -)			
S411	1-786-050-21	SWITCH, KEY BOARD (MEGA BASS)			
S412	1-786-050-21	SWITCH, KEY BOARD (VOLUME +)			

	1-863-553-11	CONT3 BOARD			

< CONNECTOR >					
CN401	1-815-550-11	PIN, CONNECTOR (PWB) 2P			
< RESISTOR >					
R407	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R408	1-216-833-11	METAL CHIP	10K	5%	1/10W
R415	1-216-821-11	METAL CHIP	1K	5%	1/10W
R417	1-216-821-11	METAL CHIP	1K	5%	1/10W
R418	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R419	1-216-821-11	METAL CHIP	1K	5%	1/10W
R422	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R431	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R432	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
< SWITCH >					
S413	1-786-050-21	SWITCH, KEY BOARD (TUNE - ◀◀)			
S414	1-786-050-21	SWITCH, KEY BOARD (TUNE + ▶▶)			
S415	1-786-050-21	SWITCH, KEY BOARD (PRESET - ◀◀◀)			
S416	1-786-050-21	SWITCH, KEY BOARD (PRESET + ▶▶▶)			
S417	1-786-050-21	SWITCH, KEY BOARD (▶▶▶)			
S418	1-786-050-21	SWITCH, KEY BOARD (■)			

	1-863-549-11	H/P BOARD			

< JACK >					
J321	1-815-325-11	JACK (㊤)			

Ref. No.	Part No.	Description	Remark		
	A-1068-492-A	LCD BOARD, COMPLETE			

		< CAPACITOR >			
C401	1-115-156-11	CERAMIC CHIP	1uF		10V
C403	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C405	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C407	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C408	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C409	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C410	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C413	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
		< DIODE >			
D406	8-719-059-97	DIODE L-34HD (OPR/BATT)			
		< IC >			
IC401	8-759-153-90	IC uPD7225GB-3B7			
IC402	6-701-681-01	IC RPM7140-V4 (㊤)			
		< SHORT >			
JC401	1-216-864-11	SHORT CHIP	0		
		< COIL >			
L401	1-410-509-11	INDUCTOR, MICRO	10uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD401	1-805-678-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< RESISTOR >			
R401	1-216-813-11	METAL CHIP	220	5%	1/10W
R402	1-216-817-11	METAL CHIP	470	5%	1/10W
R403	1-216-821-11	METAL CHIP	1K	5%	1/10W
R404	1-216-821-11	METAL CHIP	1K	5%	1/10W
R405	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R409	1-216-821-11	METAL CHIP	1K	5%	1/10W
R410	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R411	1-216-833-11	METAL CHIP	10K	5%	1/10W
R412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R416	1-216-837-11	METAL CHIP	22K	5%	1/10W
R420	1-216-845-11	METAL CHIP	100K	5%	1/10W
R421	1-216-833-11	METAL CHIP	10K	5%	1/10W
R425	1-216-813-11	METAL CHIP	220	5%	1/10W
R427	1-216-833-11	METAL CHIP	10K	5%	1/10W
R436	1-216-864-11	SHORT CHIP	0		
R437	1-216-864-11	SHORT CHIP	0		
R438	1-216-833-11	METAL CHIP	10K	5%	1/10W
R439	1-216-833-11	METAL CHIP	10K	5%	1/10W
R440	1-216-841-11	METAL CHIP	47K	5%	1/10W
R442	1-216-841-11	METAL CHIP	47K	5%	1/10W
R443	1-216-845-11	METAL CHIP	100K	5%	1/10W
R444	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R445	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R447	1-216-809-11	METAL CHIP	100	5%	1/10W

LCD

LED-1

LED-2

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< SWITCH >					
S401	1-786-050-21	SWITCH, KEY BOARD (POWER)		C222	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
S402	1-786-050-21	SWITCH, KEY BOARD (SLEEP)		C224	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
S403	1-786-050-21	SWITCH, KEY BOARD (DSPL/ENT/MEM)		C229	1-104-658-91	ELECT	100uF 20% 10V
S404	1-786-050-21	SWITCH, KEY BOARD (MODE)		C230	1-126-964-11	ELECT	10uF 20% 50V
S421	1-786-050-21	SWITCH, KEY BOARD (FOLDER +)		C235	1-164-156-11	CERAMIC CHIP	0.1uF 25V
S422	1-786-050-21	SWITCH, KEY BOARD (FOLDER -)		C239	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
S423	1-786-050-21	SWITCH, KEY BOARD (REPEAT)		C246	1-164-156-11	CERAMIC CHIP	0.1uF 25V
*****				C247	1-126-794-11	ELECT	4.7uF 20% 50V
1-863-556-11	LED-1 BOARD	*****		C248	1-115-156-11	CERAMIC CHIP	1uF 10V
		< DIODE >		C251	1-126-947-11	ELECT	47uF 20% 35V
D407	6-500-524-01	DIODE SLR343BBT3F (BACK LIGHT)		C252	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
*****				C253	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
1-863-557-11	LED-2 BOARD	*****		C254	1-126-947-11	ELECT	47uF 20% 35V
		< DIODE >		C255	1-126-785-11	ELECT	47uF 20% 10V
D408	6-500-524-01	DIODE SLR343BBT3F (BACK LIGHT)		C256	1-104-658-91	ELECT	100uF 20% 10V
*****				C257	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
A-1068-501-A	MAIN BOARD, COMPLETE (MX)			C258	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
A-1068-509-A	MAIN BOARD, COMPLETE (E41)	*****		C320	1-126-768-11	ELECT	2200uF 20% 16V
3-252-829-01	SCREW (B3), (+) BV TAPPING			C321	1-126-926-11	ELECT	1000uF 20% 10V
3-264-607-01	TERMINAL, LED CONTACT			C322	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
		< CAPACITOR >		C323	1-126-964-11	ELECT	10uF 20% 50V
C104	1-115-871-11	ELECT	1uF 20% 50V	C324	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C105	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C326	1-126-934-11	ELECT	220uF 20% 16V
C106	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C327	1-126-947-11	ELECT	47uF 20% 35V
C107	1-126-959-11	ELECT	0.47uF 20% 50V	C328	1-115-870-11	ELECT	0.47uF 20% 50V
C110	1-126-960-11	ELECT	1uF 20% 50V	C329	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C122	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C331	1-104-662-91	ELECT	22uF 20% 25V
C124	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	C332	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C129	1-104-658-91	ELECT	100uF 20% 10V	C333	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C130	1-126-964-11	ELECT	10uF 20% 50V	C334	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C135	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C335	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C139	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C801	1-126-947-11	ELECT	47uF 20% 35V
C146	1-164-156-11	CERAMIC CHIP	0.1uF 25V	C803	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C147	1-126-794-11	ELECT	4.7uF 20% 50V	C804	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C148	1-115-156-11	CERAMIC CHIP	1uF 10V	C820	1-162-908-11	CERAMIC CHIP	3PF 0.25PF 50V
C151	1-126-947-11	ELECT	47uF 20% 35V	C821	1-162-908-11	CERAMIC CHIP	3PF 0.25PF 50V
C152	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C822	1-162-962-11	CERAMIC CHIP	470PF 10% 50V
C153	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C823	1-126-964-11	ELECT	10uF 20% 50V
C154	1-126-947-11	ELECT	47uF 20% 35V	C824	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C155	1-126-785-11	ELECT	47uF 20% 10V	C825	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C156	1-104-658-91	ELECT	100uF 20% 10V	C826	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C157	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C827	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C158	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C828	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C204	1-126-960-11	ELECT	1uF 20% 50V	C829	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C205	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C830	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C206	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C831	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C207	1-126-959-11	ELECT	0.47uF 20% 50V	C832	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C210	1-126-960-11	ELECT	1uF 20% 50V	C834	1-162-974-11	CERAMIC CHIP	0.01uF 50V
				C835	1-162-974-11	CERAMIC CHIP	0.01uF 50V
				C836	1-162-974-11	CERAMIC CHIP	0.01uF 50V
				C837	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
				C838	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
				C839	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
				C840	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
				C841	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
				C842	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
				C843	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
				C845	1-104-658-91	ELECT	100uF 20% 10V

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C846	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	FB845	1-469-701-21	FERRITE, EMI (SMD) (1608)	
C847	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	FB854	1-469-701-21	FERRITE, EMI (SMD) (1608)	
C850	1-162-927-11	CERAMIC CHIP 100PF 5%	50V				
C851	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	FB855	1-469-701-21	FERRITE, EMI (SMD) (1608)	
C852	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	FB856	1-469-701-21	FERRITE, EMI (SMD) (1608)	
				FB861	1-469-701-21	FERRITE, EMI (SMD) (1608)	
C853	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	FB862	1-469-701-21	FERRITE, EMI (SMD) (1608)	
C855	1-126-964-11	ELECT 10uF 20%	50V			< IC >	
C856	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V				
C857	1-162-927-11	CERAMIC CHIP 100PF 5%	50V	IC302	6-701-824-11	IC BD3870FS-E2	
C858	1-162-921-11	CERAMIC CHIP 33PF 5%	50V	IC304	8-759-426-51	IC BA5417	
				IC305	8-759-426-51	IC BA5417	
C859	1-162-921-11	CERAMIC CHIP 33PF 5%	50V	IC801	6-804-515-01	IC uPD784216AGF-546-3BA	
C860	1-162-921-11	CERAMIC CHIP 33PF 5%	50V	IC802	6-703-769-01	IC BR24L01AF-WE2	
C861	1-162-921-11	CERAMIC CHIP 33PF 5%	50V				
C862	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	IC803	6-703-285-01	IC S-812C33AUA-C2NT2G	
C863	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	IC804	6-703-773-01	IC S-80828CNNB-B8N-T2G	
						< SHORT >	
C864	1-115-156-11	CERAMIC CHIP 1uF	10V	JC304	1-216-864-11	SHORT CHIP 0	
C881	1-126-963-11	ELECT 4.7uF 20%	50V	JC305	1-216-864-11	SHORT CHIP 0 (E41)	
C882	1-126-963-11	ELECT 4.7uF 20%	50V	JC306	1-216-864-11	SHORT CHIP 0 (MX)	
C905	1-164-156-11	CERAMIC CHIP 0.1uF	25V	JC309	1-216-864-11	SHORT CHIP 0	
C910	1-126-937-11	ELECT 4700uF 20%	16V	JC803	1-216-864-11	SHORT CHIP 0	
C951	1-162-974-11	CERAMIC CHIP 0.01uF	50V	JC804	1-216-864-11	SHORT CHIP 0	
C952	1-162-974-11	CERAMIC CHIP 0.01uF	50V	JC805	1-216-864-11	SHORT CHIP 0	
C953	1-126-935-11	ELECT 470uF 20%	16V	JC806	1-216-864-11	SHORT CHIP 0	
C957	1-162-974-11	CERAMIC CHIP 0.01uF	50V			< COIL >	
C959	1-126-923-91	ELECT 220uF 20%	10V	L803	1-410-509-11	INDUCTOR 10uH	
				L804	1-414-142-61	INDUCTOR 1uH	
C960	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	L805	1-410-509-11	INDUCTOR 10uH	
						< TRANSISTOR >	
		< CONNECTOR >		Q122	8-729-905-40	TRANSISTOR 2SC4081-T106	
CN302	1-815-445-11	PIN, CONNECTOR (PWB) 4P		Q124	8-729-047-12	TRANSISTOR DTC314TU-T106	
CN308	1-815-446-11	PIN, CONNECTOR (PWB) 5P		Q222	8-729-905-40	TRANSISTOR 2SC4081-T106	
CN804	1-815-443-11	PIN, CONNECTOR (PWB) 2P		Q224	8-729-047-12	TRANSISTOR DTC314TU-T106	
CN806	1-691-052-31	HOUSING, CONNECTOR 20P		Q802	8-729-028-76	TRANSISTOR DTA114YUA-T106	
CN807	1-691-036-21	HOUSING, CONNECTOR 4P					
				Q803	8-729-028-99	TRANSISTOR DTC114YUA-T106	
CN808	1-824-028-11	HOLDER, CABLE 2P		Q804	8-729-028-76	TRANSISTOR DTA114YUA-T106	
CN901	1-815-445-21	PIN, CONNECTOR (PWB) 4P		Q805	8-729-028-76	TRANSISTOR DTA114YUA-T106	
				Q806	8-729-922-10	TRANSISTOR 2SA1577-QR	
		< DIODE >		Q807	8-729-028-99	TRANSISTOR DTC114YUA-T106	
D101	8-719-988-61	DIODE 1SS355TE-17					
D201	8-719-988-61	DIODE 1SS355TE-17		Q808	8-729-905-40	TRANSISTOR 2SC4081-T106	
D322	8-719-988-61	DIODE 1SS355TE-17		Q809	8-729-028-99	TRANSISTOR DTC114YUA-T106	
D323	8-719-988-61	DIODE 1SS355TE-17		Q810	8-729-029-13	TRANSISTOR DTC143ZUA-T106	
D324	8-719-988-61	DIODE 1SS355TE-17		Q811	8-729-028-99	TRANSISTOR DTC114YUA-T106	
				Q812	8-729-905-40	TRANSISTOR 2SC4081-T106	
D801	8-719-082-07	DIODE KDS121-RTK					
D802	8-719-082-07	DIODE KDS121-RTK		Q813	8-729-905-40	TRANSISTOR 2SC4081-T106	
D803	8-719-069-54	DIODE UDZSTE-175.1B		Q814	8-729-028-92	TRANSISTOR DTA144TUA-T106	
D804	8-719-083-93	DIODE KDS120-RTK		Q951	8-729-029-13	TRANSISTOR DTC143ZUA-T106	
D805	8-719-988-61	DIODE 1SS355TE-17		Q952	8-729-040-76	TRANSISTOR KTA1273-Y-AT	
				Q953	8-729-905-40	TRANSISTOR 2SC4081-T106	
D809	8-719-988-61	DIODE 1SS355TE-17					
D910	8-719-083-93	DIODE KDS120-RTK		Q955	8-729-018-99	TRANSISTOR 2SD2394-F	
D953	8-719-978-33	DIODE DTZ-TT11-6.8B		Q957	8-729-036-86	TRANSISTOR KTC3203Y-AT	
D957	8-719-083-58	DIODE UDZSTE-173.9B					
D958	8-719-988-61	DIODE 1SS355TE-17					
		< RESISTOR >					
FB805	1-469-701-21	FERRITE, EMI (SMD) (1608)					
FB830	1-469-701-21	FERRITE, EMI (SMD) (1608)					
FB831	1-469-701-21	FERRITE, EMI (SMD) (1608)					

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark			
< RESISTOR >						R809	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R104	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R810	1-216-821-11	METAL CHIP	1K	5%	1/10W	
	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R811	1-216-821-11	METAL CHIP	1K	5%	1/10W	
	1-216-817-11	METAL CHIP	470	5%	1/10W	R814	1-216-821-11	METAL CHIP	1K	5%	1/10W	
	1-216-813-11	METAL CHIP	220	5%	1/10W	R815	1-216-821-11	METAL CHIP	1K	5%	1/10W	
	1-216-817-11	METAL CHIP	470	5%	1/10W	R816	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R109	1-216-833-11	METAL CHIP	10K	5%	1/10W		R817	1-216-817-11	METAL CHIP	470	5%	1/10W
	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		R818	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		R819	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-853-11	METAL CHIP	470K	5%	1/10W		R820	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W	R821	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R142	1-216-813-11	METAL CHIP	220	5%	1/10W		R822	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-789-11	METAL CHIP	2.2	5%	1/10W		R823	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-789-11	METAL CHIP	2.2	5%	1/10W		R824	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R825	1-216-833-11	METAL CHIP	10K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W	R826	1-216-815-11	METAL CHIP	330	5%	1/10W	
R149	1-216-809-11	METAL CHIP	100	5%	1/10W		R827	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-813-11	METAL CHIP	220	5%	1/10W		R828	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		R829	1-216-853-11	METAL CHIP	470K	5%	1/10W
	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		R832	1-216-833-11	METAL CHIP	10K	5%	1/10W
	1-216-817-11	METAL CHIP	470	5%	1/10W	R833	1-216-841-11	METAL CHIP	47K	5%	1/10W	
R207	1-216-813-11	METAL CHIP	220	5%	1/10W		R834	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-817-11	METAL CHIP	470	5%	1/10W		R835	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-833-11	METAL CHIP	10K	5%	1/10W		R836	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		R837	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R838	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R235	1-216-853-11	METAL CHIP	470K	5%	1/10W		R841	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R842	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-813-11	METAL CHIP	220	5%	1/10W		R843	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-789-11	METAL CHIP	2.2	5%	1/10W		R846	1-216-833-11	METAL CHIP	10K	5%	1/10W
	1-216-789-11	METAL CHIP	2.2	5%	1/10W	R847	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R247	1-216-821-11	METAL CHIP	1K	5%	1/10W		R848	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R849	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-809-11	METAL CHIP	100	5%	1/10W		R851	1-216-833-11	METAL CHIP	10K	5%	1/10W
	1-216-813-11	METAL CHIP	220	5%	1/10W		R852	1-216-809-11	METAL CHIP	100	5%	1/10W
	1-216-833-11	METAL CHIP	10K	5%	1/10W	R853	1-216-809-11	METAL CHIP	100	5%	1/10W	
R323	1-216-857-11	METAL CHIP	1M	5%	1/10W		R857	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R858	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R859	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R860	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-809-11	METAL CHIP	100	5%	1/10W	R863	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R332	1-216-809-11	METAL CHIP	100	5%	1/10W		R864	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-833-11	METAL CHIP	10K	5%	1/10W		R865	1-216-845-11	METAL CHIP	100K	5%	1/10W
	1-216-809-11	METAL CHIP	100	5%	1/10W		R866	1-216-817-11	METAL CHIP	470	5%	1/10W
	1-216-809-11	METAL CHIP	100	5%	1/10W		R868	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W	R869	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R434	1-216-817-11	METAL CHIP	470	5%	1/10W		R870	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R871	1-216-817-11	METAL CHIP	470	5%	1/10W
	1-216-817-11	METAL CHIP	470	5%	1/10W		R872	1-216-821-11	METAL CHIP	1K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R873	1-216-817-11	METAL CHIP	470	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W	R874	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R801	1-216-821-11	METAL CHIP	1K	5%	1/10W		R875	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R876	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R877	1-216-833-11	METAL CHIP	10K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R879	1-216-845-11	METAL CHIP	100K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W	R880	1-216-849-11	METAL CHIP	220K	5%	1/10W	
R803	1-216-821-11	METAL CHIP	1K	5%	1/10W		R881	1-216-845-11	METAL CHIP	100K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W		R882	1-216-845-11	METAL CHIP	100K	5%	1/10W
	1-216-821-11	METAL CHIP	1K	5%	1/10W							
	1-216-821-11	METAL CHIP	1K	5%	1/10W							

CFD-F15CP

MAIN	POWER	RELAY1	RELAY2	TC
------	-------	--------	--------	----

Ref. No.	Part No.	Description	Remark		
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
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
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	1-216-809-11	METAL CHIP	100	5%	1/10W
R899	1-216-813-11	METAL CHIP	220	5%	1/10W
R900	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R951	1-216-841-11	METAL CHIP	47K	5%	1/10W
R952	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R953	1-216-825-11	METAL CHIP	2.2K	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	1-216-833-11	METAL CHIP	10K	5%	1/10W
R957	1-216-833-11	METAL CHIP	10K	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	1-216-821-11	METAL CHIP	1K	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	1-795-526-12	VIBRATOR, CERAMIC (5MHz)			

POWER BOARD					

< 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
< DIODE >					
D901	8-719-046-07	DIODE 2A02M			
D902	8-719-046-07	DIODE 2A02M			
D903	8-719-046-07	DIODE 2A02M			
D904	8-719-046-07	DIODE 2A02M			
< FUSE >					
△ F902	1-533-471-12	FUSE, GLASS TUBE (DIA. 5)(T4AL/250V)(E41)			
< JACK >					
△ J901	1-526-818-11	INLET, AC (~ AC IN)(MX)			
△ J901	1-526-838-11	INLET, AC 2P (~ AC IN)(E41)			

Ref. No.	Part No.	Description	Remark		
< TRANSFORMER >					
△ T901	1-443-259-11	TRANSFORMER, POWER (MX)			
△ T901	1-443-260-11	TRANSFORMER, POWER (E41)			

	1-863-558-11	RELAY1 BOARD			

< CAPACITOR >					
C131	1-126-947-11	ELECT	47uF	20%	35V
C231	1-126-947-11	ELECT	47uF	20%	35V
< CONNECTOR >					
* CN304	1-815-448-11	PIN, CONNECTOR (PWB) 7P			
CN323	1-815-445-11	PIN, CONNECTOR (PWB) 4P			
< RESISTOR >					
R132	1-216-809-11	METAL CHIP	100	5%	1/10W
R232	1-216-809-11	METAL CHIP	100	5%	1/10W

	1-863-559-11	RELAY2 BOARD			

< CONNECTOR >					
CN406	1-691-036-21	HOUSING, CONNECTOR 4P			
CN407	1-691-036-21	HOUSING, CONNECTOR 4P			

*	A-4547-315-A	TC BOARD, COMPLETE			

< CAPACITOR >					
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-104-658-91	ELECT	100uF	20%	10V
C103	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C104	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C105	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C107	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-104-658-91	ELECT	100uF	20%	10V
C203	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C204	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C205	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C207	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C301	1-104-658-91	ELECT	100uF	20%	10V
C302	1-104-658-91	ELECT	100uF	20%	10V
C303	1-104-658-91	ELECT	100uF	20%	10V
C304	1-126-947-11	ELECT	47uF	20%	35V
C305	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< CONNECTOR >					
CN303	1-568-830-11	CONNECTOR, FFC 11P			
< IC >					
IC301	8-759-264-71	IC TA2068N			

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		
< SHORT >						< CAPACITOR >					
JC301	1-216-864-11	SHORT CHIP	0			C1	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
JC302	1-216-864-11	SHORT CHIP	0			C4	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
JC303	1-216-864-11	SHORT CHIP	0			C7	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
JC304	1-216-864-11	SHORT CHIP	0			C8	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
JC305	1-216-864-11	SHORT CHIP	0			C9	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
JC306	1-216-295-91	SHORT CHIP	0			C10	1-126-960-11	ELECT	1uF	20%	50V
JC307	1-216-864-11	SHORT CHIP	0			C11	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
JC308	1-216-295-91	SHORT CHIP	0			C12	1-126-963-11	ELECT	4.7uF	20%	50V
< TRANSISTOR >						C13	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
Q301	8-729-901-81	TRANSISTOR	2SC2412K-T-146-R			C14	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
< RESISTOR >						C15	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
R101	1-216-835-11	METAL CHIP	15K	5%	1/10W	C18	1-126-923-91	ELECT	220uF	20%	10V
R102	1-216-807-11	METAL CHIP	68	5%	1/10W	C20	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R103	1-216-843-11	METAL CHIP	68K	5%	1/10W	C21	1-126-960-11	ELECT	1uF	20%	50V
R104	1-216-835-11	METAL CHIP	15K	5%	1/10W	C22	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R105	1-216-835-11	METAL CHIP	15K	5%	1/10W	C23	1-126-960-11	ELECT	1uF	20%	50V
R106	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	C24	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
R110	1-216-809-11	METAL CHIP	100	5%	1/10W	C26	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R111	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C27	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R112	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	C29	1-104-658-91	ELECT	100uF	20%	10V
R201	1-216-835-11	METAL CHIP	15K	5%	1/10W	C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R202	1-216-807-11	METAL CHIP	68	5%	1/10W	C31	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
R203	1-216-843-11	METAL CHIP	68K	5%	1/10W	C32	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R204	1-216-835-11	METAL CHIP	15K	5%	1/10W	C33	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R205	1-216-835-11	METAL CHIP	15K	5%	1/10W	C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R206	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	C35	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R210	1-216-025-11	RES-CHIP	100	5%	1/10W	C37	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R211	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C39	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R212	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	C41	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
R301	1-216-857-11	METAL CHIP	1M	5%	1/10W	C42	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R302	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C43	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
R303	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	C47	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
R304	1-216-821-11	METAL CHIP	1K	5%	1/10W	C49	1-161-051-00	CERAMIC	0.01uF	10%	25V
R305	1-216-817-11	METAL CHIP	470	5%	1/10W	C51	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
R306	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W	C52	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
R307	1-216-797-11	METAL CHIP	10	5%	1/10W	C53	1-137-190-91	FILM	0.22uF	5%	50V
R308	1-216-837-11	METAL CHIP	22K	5%	1/10W	C54	1-126-923-91	ELECT	220uF	20%	10V
R309	1-216-805-11	METAL CHIP	47	5%	1/10W	C55	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R314	1-216-817-11	METAL CHIP	470	5%	1/10W	C56	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R315	1-216-817-11	METAL CHIP	470	5%	1/10W	C57	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< SWITCH >						C59	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
S301	1-786-126-11	SWITCH, SLIDE (REC/PB)				C60	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< TRANSFORMER >						C61	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
T301	1-416-041-11	TRANSFORMER, BIAS OSCILLATION				C62	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
*****						C63	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
< FILTER >						C65	1-126-963-11	ELECT	4.7uF	20%	50V
* A-4547-323-A TUNER BOARD, COMPLETE						C66	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
*****						C68	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
3-249-551-01 HOLDER (PWB TU)						C80	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C95	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
						< FILTER >					
						CF2	1-760-235-81	FILTER, CERAMIC			
						CF4	1-781-962-21	FILTER, CERAMIC			

CFD-F15CP

Ver. 1.1

TUNER

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CNP1	1-785-663-11	PIN, CONNECTOR (PC BOARD) 11P	
< TRIMMER >			
CT1	1-141-442-91	CAP, CERAMIC TRIMMER	20PF
CT3	1-141-304-21	CAP, CERAMIC TRIMMER	10PF
< 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	
< IC >			
IC1	6-700-512-01	IC TA2149BN	
IC2	8-759-483-40	IC LC72137M-TLM-E	
< SHORT >			
JC1	1-216-864-11	SHORT CHIP	0
JC2	1-216-864-11	SHORT CHIP	0
JC3	1-216-864-11	SHORT CHIP	0
JC4	1-216-864-11	SHORT CHIP	0
JC5	1-216-864-11	SHORT CHIP	0
JC6	1-216-864-11	SHORT CHIP	0
JC11	1-216-864-11	SHORT CHIP	0
JC12	1-216-864-11	SHORT CHIP	0
JC13	1-216-864-11	SHORT CHIP	0
JC33	1-216-864-11	SHORT CHIP	0
JC34	1-216-864-11	SHORT CHIP	0
< COIL >			
L1	1-409-775-11	COIL, AIR-CORE	
L2	1-416-509-11	COIL, AIR-CORE	
L3	1-754-117-12	ANTENNA, FERRITE-ROD (MW)	
L4	1-411-234-21	COIL, AM OSC	
L11	1-414-142-11	INDUCTOR	1uH
L21	1-410-509-11	INDUCTOR	10uH
< RESISTOR >			
R1	1-216-815-11	METAL CHIP	330 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
R10	1-216-805-11	METAL CHIP	47 5% 1/10W
R11	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
R13	1-216-821-11	METAL CHIP	1K 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	1-216-849-11	METAL CHIP	220K 5% 1/10W
R41	1-216-833-11	METAL CHIP	10K 5% 1/10W
R50	1-216-821-11	METAL CHIP	1K 5% 1/10W
R51	1-216-833-11	METAL CHIP	10K 5% 1/10W
R52	1-216-864-11	SHORT CHIP	0

Ref. No.	Part No.	Description	Remark
R53	1-216-835-11	METAL CHIP	15K 5% 1/10W
R54	1-216-817-11	METAL CHIP	470 5% 1/10W
R56	1-216-815-11	METAL CHIP	330 5% 1/10W
R58	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R59	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R60	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R61	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R63	1-216-833-11	METAL CHIP	10K 5% 1/10W
R65	1-216-833-11	METAL CHIP	10K 5% 1/10W
R91	1-216-813-11	METAL CHIP	220 5% 1/10W
R92	1-216-813-11	METAL CHIP	220 5% 1/10W
R94	1-216-821-11	METAL CHIP	1K 5% 1/10W
< TRANSFORMER >			
T1	1-433-741-11	TRANSFORMER, IF	
T2	1-419-465-11	COIL (DET)	
< VIBRATOR >			
X1	1-795-449-11	VIBRATOR, CRYSTAL (75kHz)	

MISCELLANEOUS			

202	1-757-689-11	CABLE, FLEXIBLE FLAT (16 CORE)	
213	1-452-899-11	MAGNET	
254	1-500-813-11	HEAD, ERASE	
△ 501	8-820-161-02	OPTICAL PICK-UP (KSS-213R/C2RP)	
ANT1	1-754-321-11	ANTENNA, TELESCOPIC	
M702	X-2625-769-1	MOTOR GEAR ASSY (MB) (RP) (SLED)	
M901	X-3385-048-1	MOTOR SUB ASSY (CAPSTAN/REEL)	
S801	1-692-960-11	SWITCH, PUSH (1 KEY)(PUSH OPEN/CLOSE)	

ACCESSORIES			

△	1-769-412-22	CORD, POWER (E41)	

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

CFD-F15CP

SONY®

E Model

SERVICE MANUAL

Ver. 1.1 2004. 11

SUPPLEMENT-1

File this supplement with the service manual.

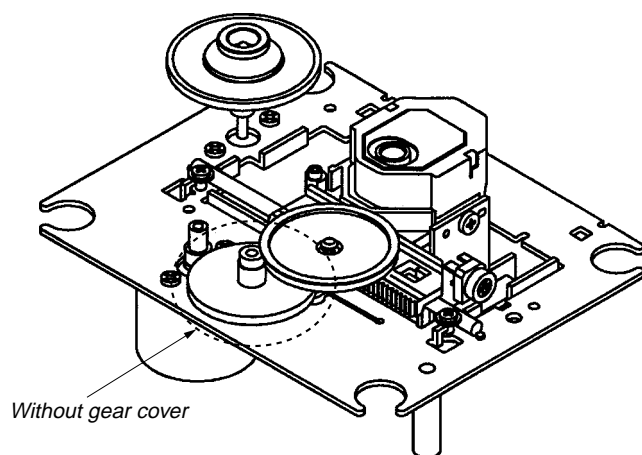
Subject: Change of Optical Pick-up Block (KSM-213RDP→KSM-213CDP)

Optical pick-up block is changed from KSM-213RDP to KSM-213CDP in the midway of production.

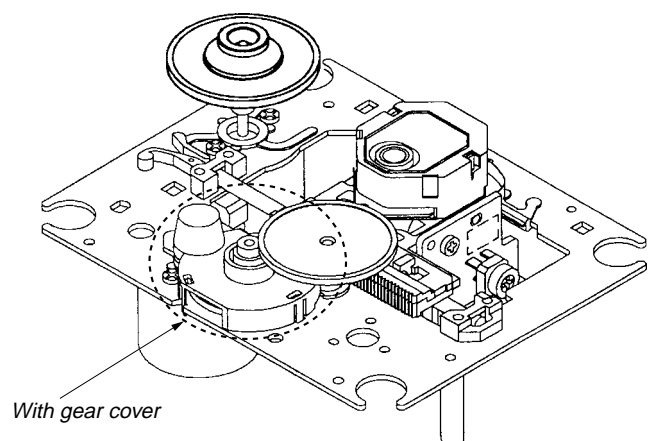
In performing the replacing of Optical pick-up block, be sure to check which Optical pick-up block is used, according to the following identification. SUPPLEMENT-1 has indicated only the information of KSM-213RDP.

IDENTIFICATION

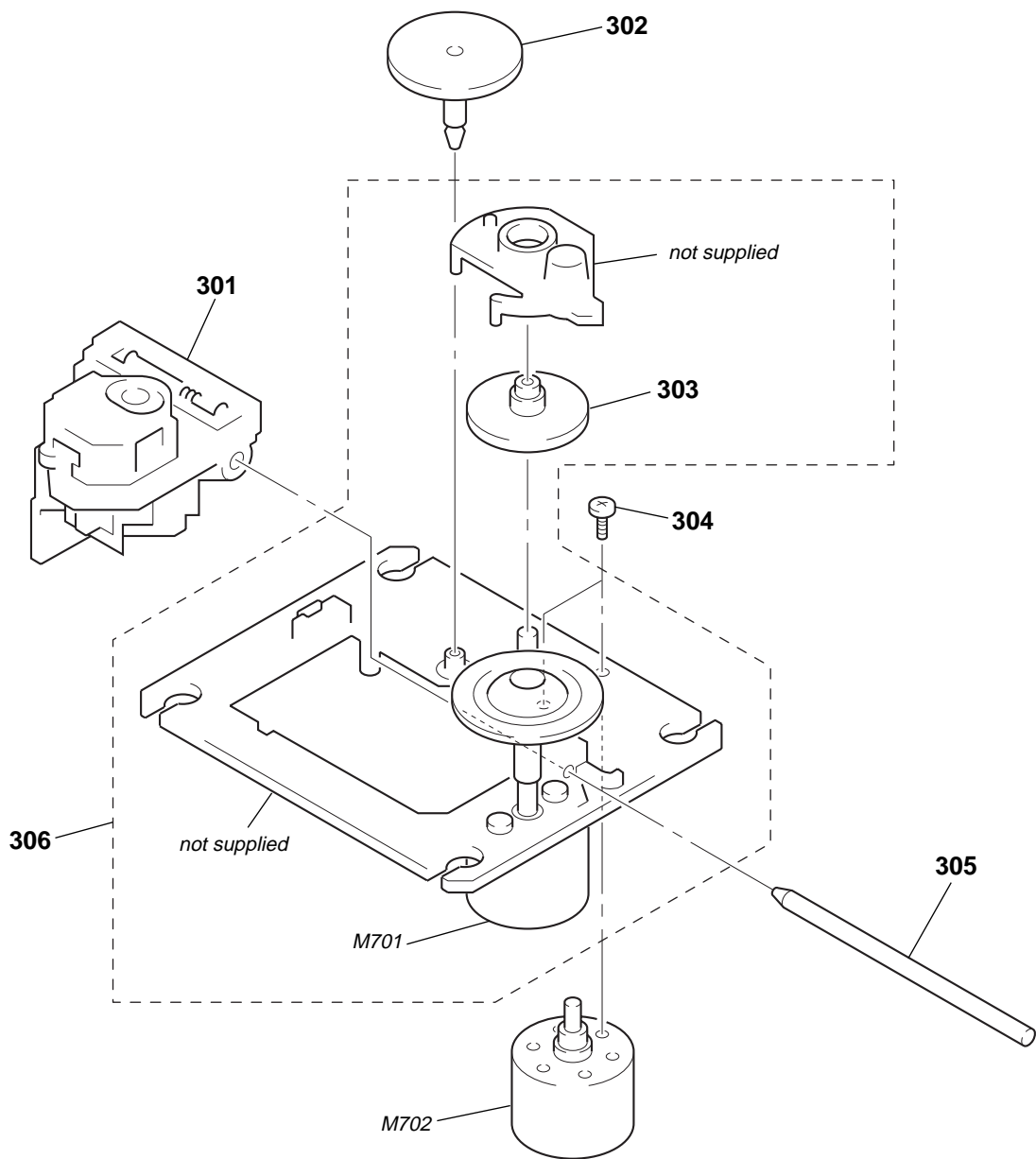
KSM-213RDP



KSM-213CDP



CD MECHANISM DECK SECTION (KSM-213CDP)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
△ 301	8-848-483-12	OPTICAL PICK-UP (KSS-213C/C2RP1)		305	2-626-908-32	SHAFT, SLED	
* 302	2-626-907-11	GEAR (A)		306	X-2162-709-2	MOTOR CHASSIS ASSY (CDP) (SPINDLE)	
* 303	2-627-003-02	GEAR (B) (RP)				(including M701)	
304	2-174-500-01	SCREW (2X3)		M702	X-2625-769-1	MOTOR GEAR ASSY (MB) (RP) (SLED)	

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

MEMO

REVISION HISTORY

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

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

[illegible]