HCD-EX100

SERVICE MANUAL

Ver 1.0 2001.07

US Model
Canadian Model
AEP Model
UK Model
E Model
Chinese Model

HCD-EX100 is the amplifier, CD and tuner section in CMT-EX100.

Model Name Using Similar Mechanism	NEW
Mechanism Type	CDM-60B
Base Unit Type	KSM-770ACA/Z-NP
Optical Pick-up Type	KSS-770A/Z-N1

SPECIFICATIONS

Amplifier section

For the U.S. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
With 4 ohms loads, both channels driven, from 120 – 10,000 Hz; rated 12 watts per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 milli watts to rated output.

Canadian model:
Continuous RMS power output (Reference): 15 + 15 watts (4 ohms at 1 kHz, 10% THD)

European model:
DIN power output (Rated): 12 + 12 watts (4 ohms at 1 kHz, DIN)
Continuous RMS power output (Reference): 15 + 15 watts (4 ohms at 1 kHz, 10% THD)
Music power output (Reference): 15 + 15 watts (4 ohms at 1 kHz, 10% THD)

Other models:
DIN power output (Rated): 12 + 12 watts (4 ohms at 1 kHz, DIN, 240 V)
12 + 12 watts (4 ohms at 1 kHz, DIN, 220 V)
Continuous RMS power output (Reference): 15 + 15 watts (4 ohms at 1 kHz, 10% THD, 240 V)
15 + 15 watts (4 ohms at 1 kHz, 10% THD, 220 V)

Inputs
PC/TAPE IN: voltage 250 mV, impedance 47 kilohms

Outputs
PC/TAPE OUT: voltage 250 mV, impedance 1 kilohms
CD DIGITAL OUT: Optical
PHONES (stereo mini jack): accepts headphones of 8 ohms or more

CD player section

System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780 nm) Emission duration: continuous
Frequency response: 20 Hz – 20,000 Hz

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range
North American model: 87.5 – 108.0 MHz (100 kHz step)
Other models: 87.5 – 108.0 MHz (50 kHz step)
Antenna: FM wire antenna
Antenna terminals: 75 ohms unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
Pan-American model: 530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
European model: 531 – 1,602 kHz (with the interval set at 9 kHz)
Other models: 531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna: AM loop antenna External antenna terminals
Intermediate frequency: 450 kHz

General

Power requirements
North American model: 120 V AC, 60 Hz
European model: 230 V AC, 50/60 Hz
Other models: 110 – 240 V AC, 50/60 Hz
Power consumption: 40 watts
North American model: 1.8 watts (in standby mode)
European model: 2.7 watts (in standby mode)
Dimensions: 175 x 222 x 201 mm (w/h/d, incl. projecting parts and controls)
Mass: Approx. 3.2 kg
Supplied accessories: Remote commander with battery (1) AM loop antenna (1) FM wire antenna (1) Speaker cords (2)

Design and specifications are subject to change without notice.

MICRO HI-FI COMPONENT SYSTEM

9-873-260-01
2001G0200-1

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

This caution label is located inside the unit.

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

Notes on chip component replacement

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

Flexible Circuit Board Repairing

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

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

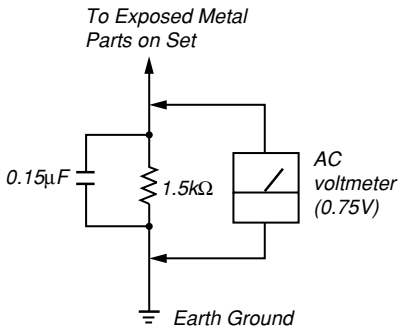


Fig. A. Using an AC voltmeter to check AC leakage.

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

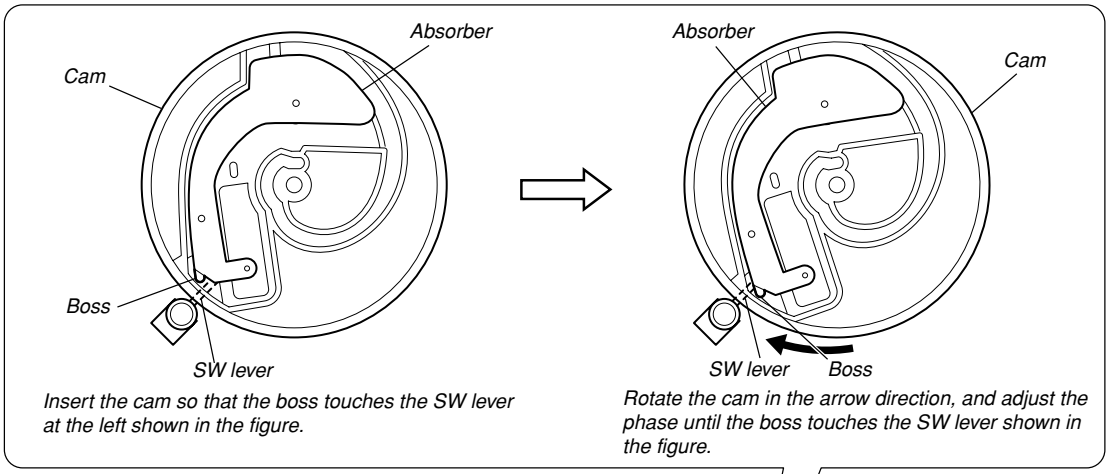
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output four times.

SECTION 1
SERVICING NOTE

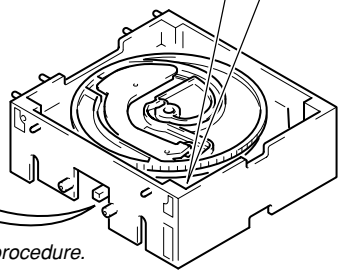
ADJUSTMENT OF CAM PHASE



Insert the cam so that the boss touches the SW lever at the left shown in the figure.

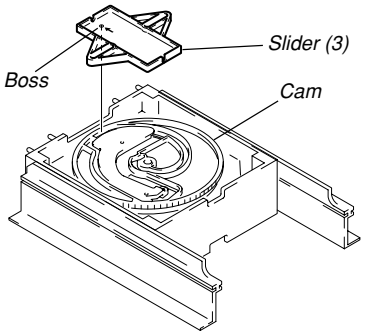
Rotate the cam in the arrow direction, and adjust the phase until the boss touches the SW lever shown in the figure.

Note : Set the slider (1) in this location before inserting the cam.

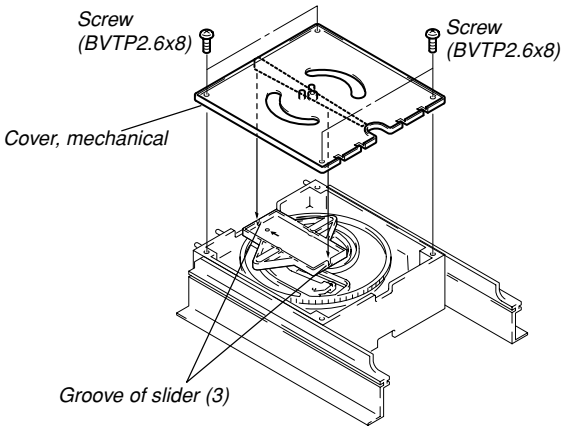


With the phase adjusted, attach the parts using the following procedure.

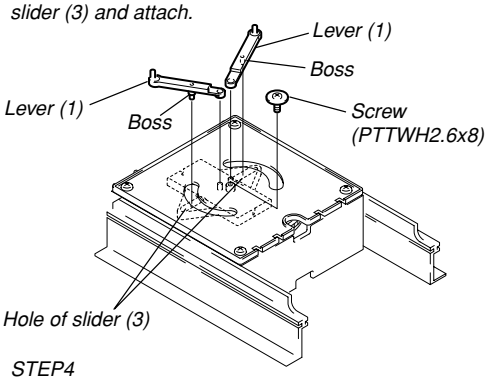
STEP1
Insert the boss of the slider (3) in the groove of the cam.



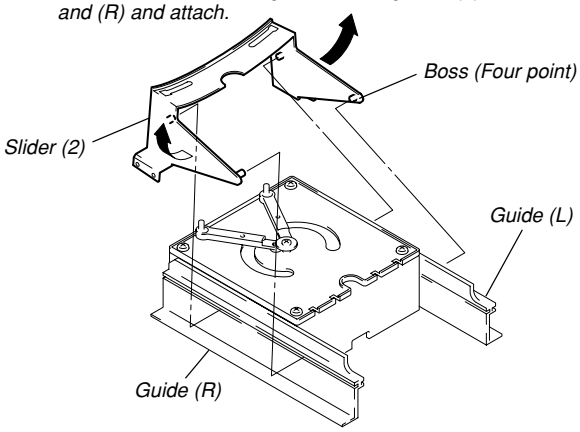
STEP2
Set the mecha cover to the groove on the slider (3) and attach.



STEP3
Insert the boss of the lever (1) in the hole of the slider (3) and attach.



STEP4
While bending the slider (2) slightly in the arrow direction, insert it in the groove of the guides (L) and (R) and attach.



Shipment Mode

• Mode for setting the state of the unit to the state at shipment. When returning the unit to the customer after completing servicing, set to the shipment mode.

Procedure :

Connect the power plug to the outlet while pressing the I/⏻ button.

Change-over of AM tuner Step between 9kHz and 10kHz.

• A step of AM channels can be changed over between 9kHz and 10kHz.

Procedure:

1. Press I/⏻ button to turn on the set ON.
2. Select the function "TUNER", and press the TUNER/BAND button to select the BAND "AM".
3. Press the I/⏻ button to turn on the set OFF.
4. Press I/⏻ button while pressing the ▶▶▶▶I/TUNING + button, and the display of liquid crystal indicator tube changes to "AM 9k STEP" or "AM 10k STEP", and thus the channel step is changed over.

Switching the TAPE IN input level attenuate function ON/OFF

• The attenuate function of the line input level (TAPE IN) of this unit can be turned ON/OFF.

Procedure:

1. Press the I/⏻ button to turn ON the power.
2. Press the FUNCTION button and set the function to "TAPE".
3. Press the I/⏻ button to turn OFF the power.
4. While pressing the ■ button, press the I/⏻ button to turn ON the power.
5. After "POWER ON" is displayed, "ATT ON" and "ATT OFF" are displayed, and the attenuate function can be switched ON/OFF.

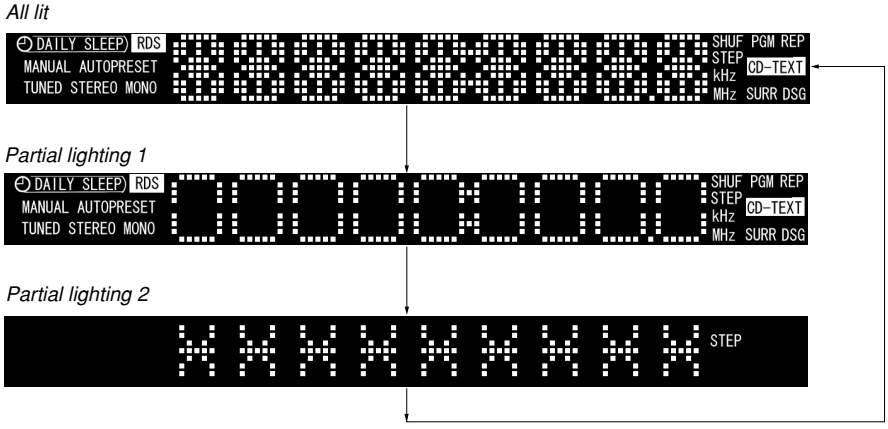
LCD All Lit and Key Check Mode

Procedure:

1. While pressing the FUNCTION button and ▶II button, connect the power plug to the outlet.
2. When the test mode is set, the characters "STEP" are displayed on the LCD.
3. While pressing the DISPLAY button (See page 6), press the ▶II button. The whole LCD lights up.
4. Each time the FUNCTION button is pressed, the display switches between all lit → partial lighting 1 → partial lighting 2 → all lit.
5. When the ■ button is pressed, "KEY 0" is displayed and the key check mode is set.
6. Each time the button is pressed, the counter counts up. Buttons once pressed will not be counted when pressed again. When all buttons have been pressed, "KEY OK" is displayed.
7. To end, press the I/⏻ button to turn OFF the power, and disconnect the power plug from the outlet.

Note:

Pressing buttons other than those specified in steps 4 and 5 displays modes not used in servicing. In such cases, press the I/⏻ button to exit the mode, and repeat from step 3 again.



Displaying the CD Text

- This unit is equipped with a simple CD text display function.
  The text is displayed only for the first 20 songs. As it will not be displayed from the 21st song, do not suspect a fault.
  In some cases, special characters may not be displayed or may be substituted by other characters. This is not a fault.

Aging Mode

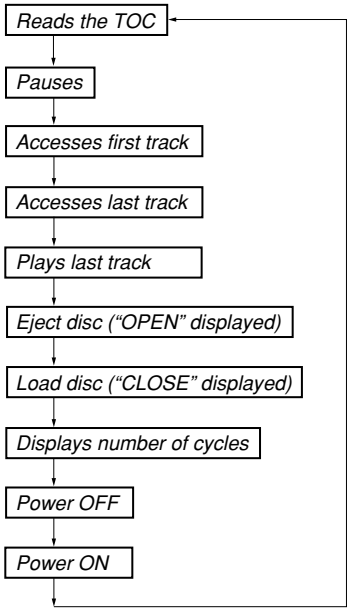
- The aging mode automatically repeats the operations of the CD.

When an error occurs:
Aging stops
When no error occurs:
Aging is performed repeatedly.

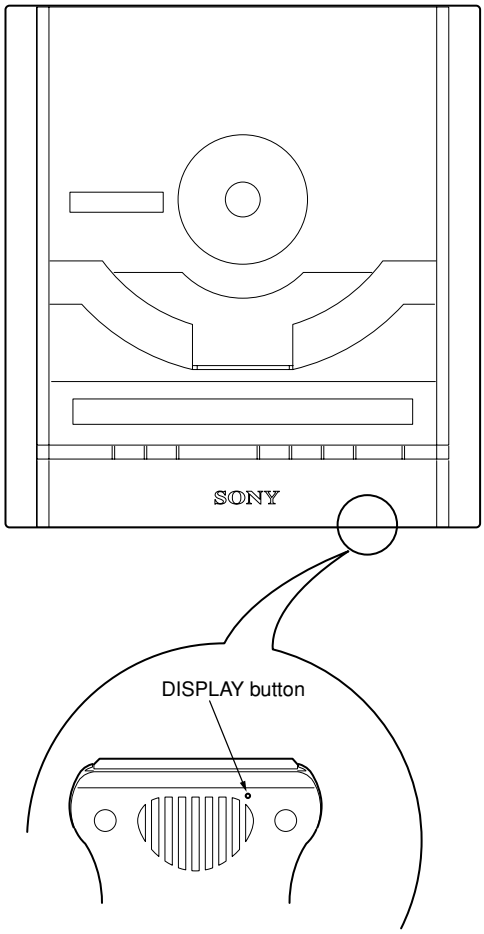
Procedure:

1. Set any CD. (One with a short playback time of the final track is recommended.)
2. While pressing the FUNCTION button and ▶II button, connect the power plug to the outlet.
3. When the test mode is set, the characters "STEP" is displayed on the LCD.
4. When the ▶II button is pressed while pressing the DISPLAY button, "AGING" will be displayed, and aging is performed in the following sequence. While aging is performed, "REP" will be displayed blinking.
5. Pressing the DISPLAY button during aging displays the cycle number (@ CY where @ is the number of agings).
6. To end aging, press the I/⏻ button, turn OFF the power, and disconnect the power plug from the outlet.

Sequence during aging



DISPLAY button



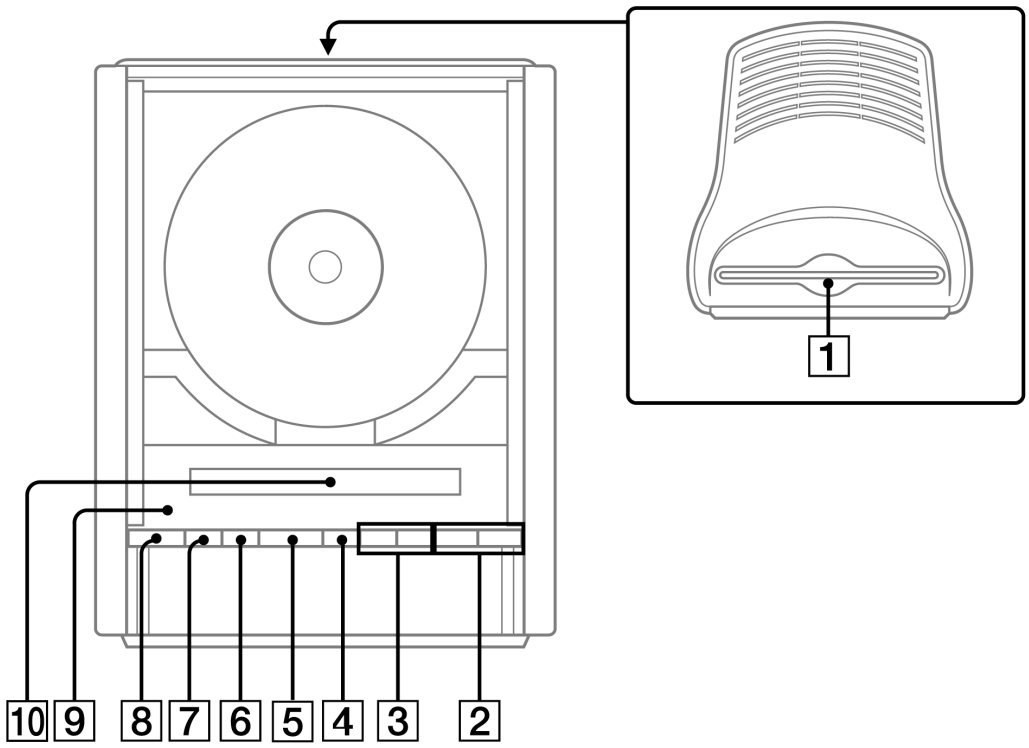
Note : Press DISPLAY button with a thing a fine point from the bottom of front panel.

This section is extracted from instruction manual.

Parts Identification

The items are arranged in alphabetical order.

Main unit

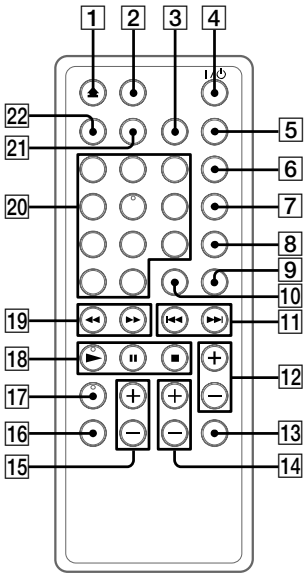


Display window 10
FUNCTION 7 (9, 16)
OPEN/CLOSE ⏏ 1 (9)
Remote sensor 9
TUNER/BAND 6 (12)
TUNING +/– 3 (12)
VOL +/– 2

BUTTON DESCRIPTIONS

◀◀/▶▶ 3
⏮/⏭ 3
■ 4
►II 5
I/⏻ 8

Remote Control



BASS +/– 15 (14)
CD ► 18 (9)
CLOCK/TIMER SELECT 6 (16)
CLOCK/TIMER SET 7 (8, 15)
DISPLAY 5 (8, 12, 14)
DSG 13 (14)
ENTER 8 (8, 11, 12, 15)
FM MODE 3 (13)
FUNCTION 22 (9, 16)
MEMORY 9 (12)
Number buttons 20 (10)
OPEN/CLOSE ⏏ 1 (9)
PC/TAPE 10 (16)
PLAY MODE 21 (9, 11)
REPEAT 3 (10)
SLEEP 2 (15)
SURROUND 16 (14)
TREBLE +/– 14 (14)
TUNER BAND 17 (12)
TUNING MODE 21 (12)
VOL +/– 12

BUTTON DESCRIPTIONS

I/⏻ 4
+/ – 11
⏮ 11
⏭ 11
⏸ 18
■ 18
◀◀ 19
▶▶ 19

Setting the time

1 **Turn on the system.**

2 **Press CLOCK/TIMER SET on the remote.**

Proceed to step 4 when you set the clock for the first time.

3 **Press ⏮ or ⏭ repeatedly to select "CLOCK SET", then press ENTER on the remote.**

The day indication flashes.

4 **Press ⏮ or ⏭ repeatedly to set the day, then press ENTER on the remote.**

The hour indication flashes.

5 **Press ⏮ or ⏭ repeatedly to set the hour, then press ENTER on the remote.**

The minute indication flashes.

6 **Press ⏮ or ⏭ repeatedly to set the minute, then press ENTER on the remote.**

The clock starts working.

Tip

If you made a mistake or want to change the time, start over from step 1.

Turning off the clock display in standby mode

Press DISPLAY on the remote while the system is off.

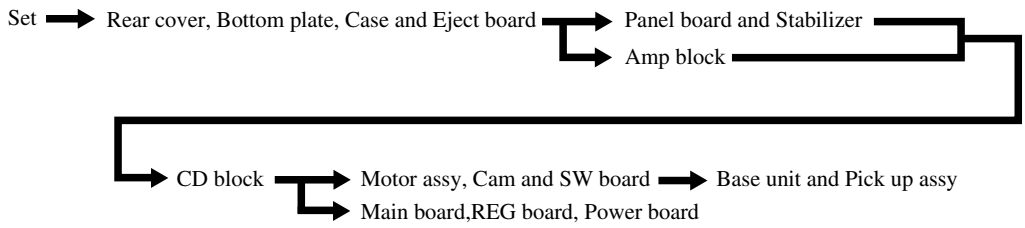
To turn on the clock display, press DISPLAY on the remote again.

Notes

- When the Daily Timer is set, you cannot turn off the clock display.
- The clock display will appear when you set the Daily Timer during turning off the display.

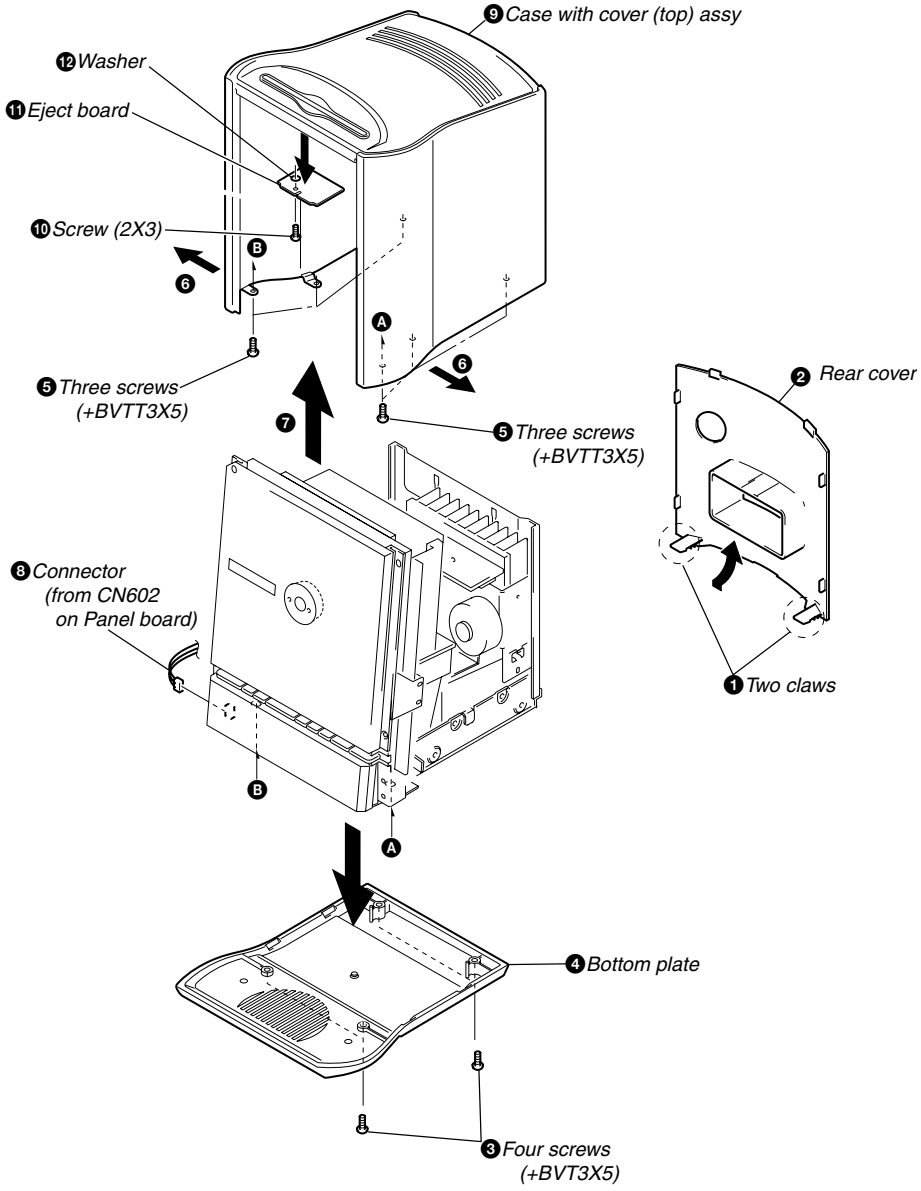
SECTION 3
DISASSEMBLY

Note: Disassemble the unit in the order as shown below.

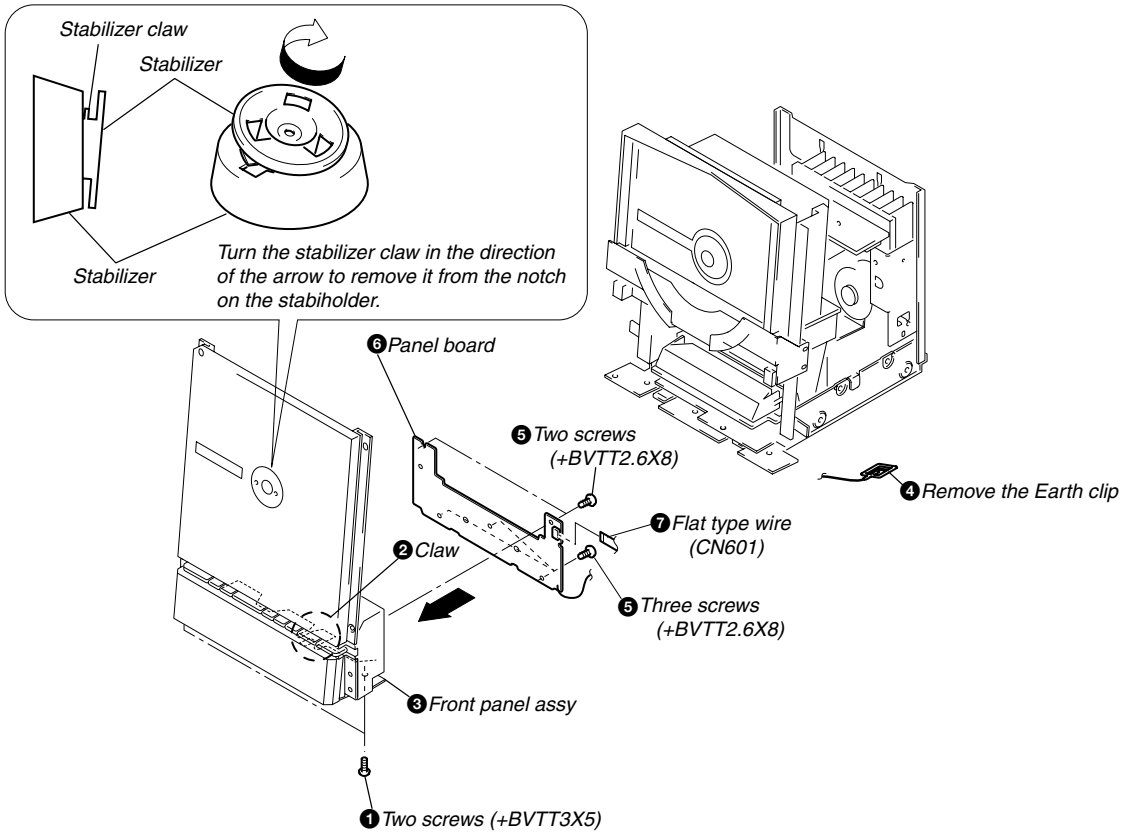


Note: Follow the disassembly procedure in the numerical order given.

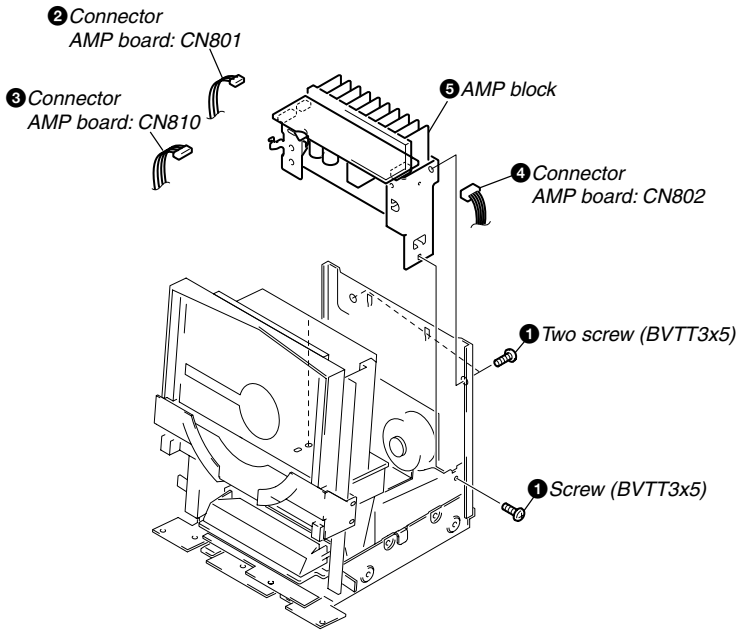
3-1. REAR COVER, BOTTOM PLATE, CASE AND EJECT BOARD



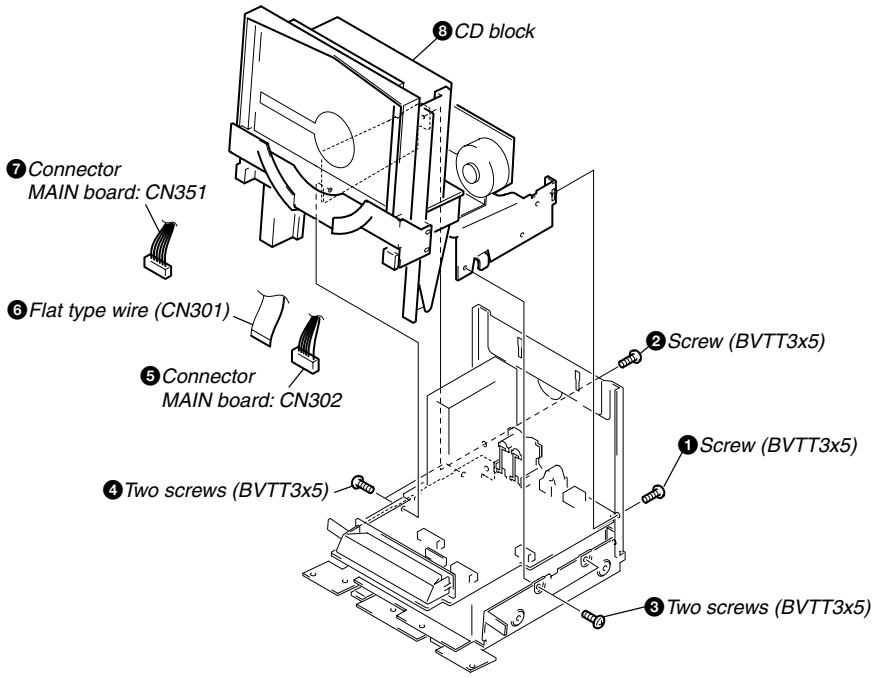
3-2. PANEL BOARD AND STABILIZER



3-3. AMP BLOCK

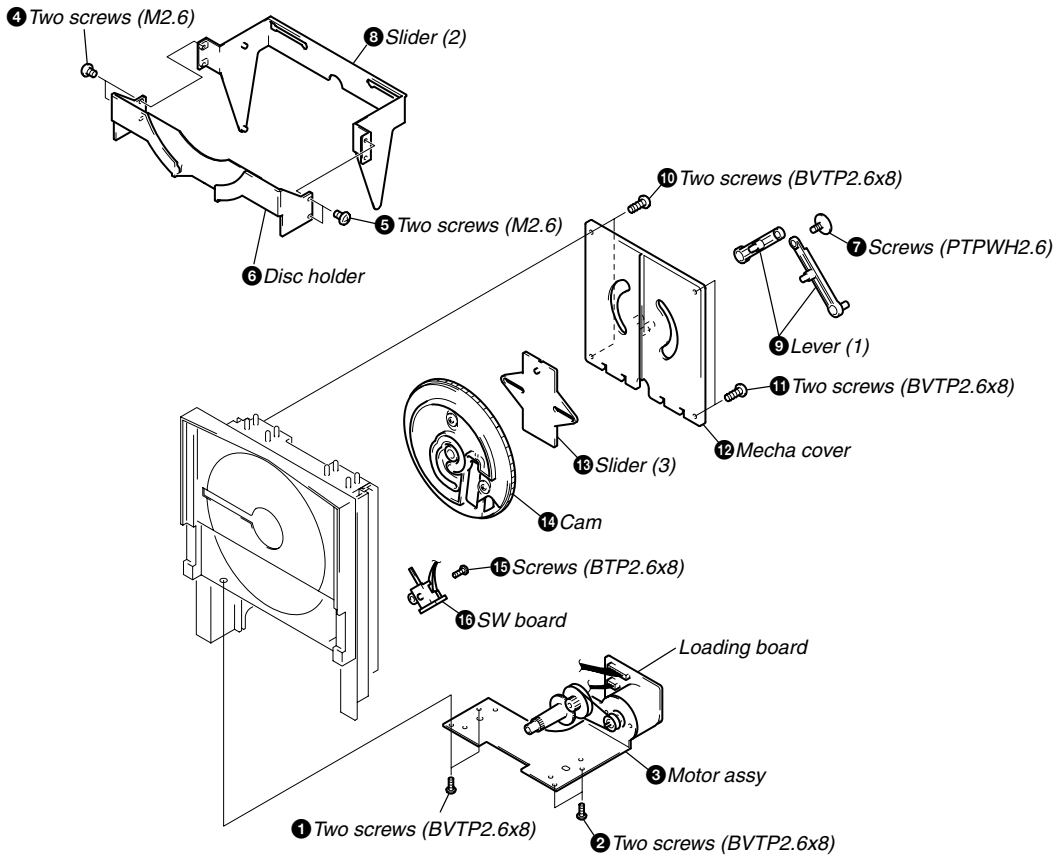


3-4. CD BLOCK

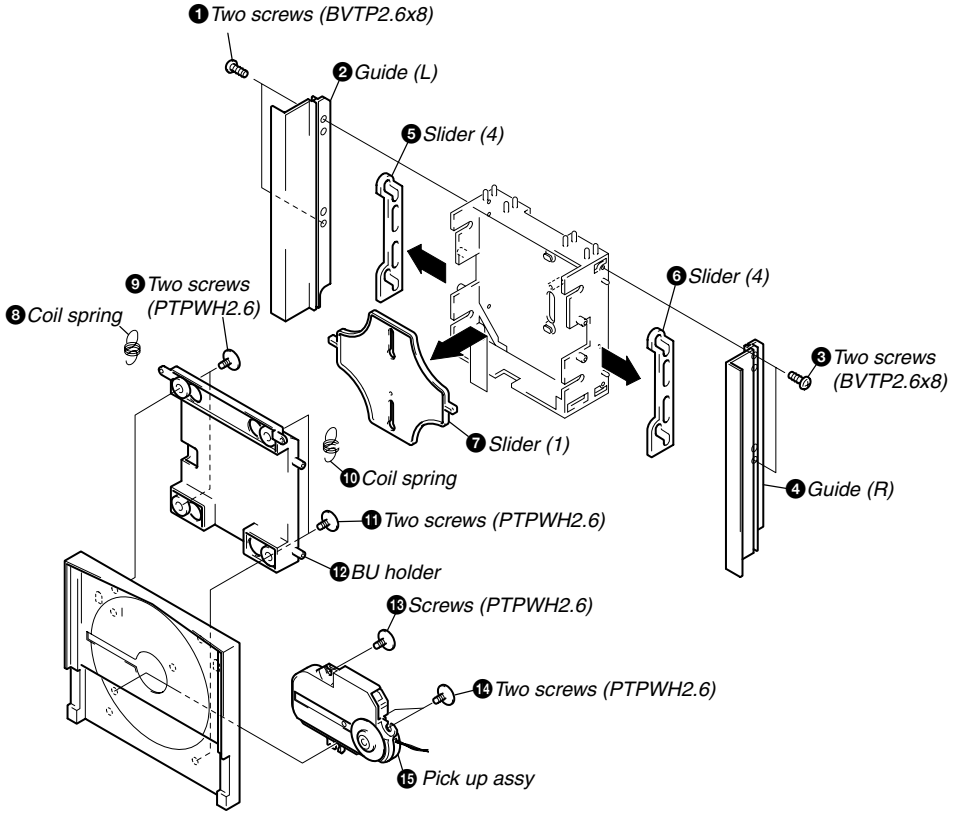


3-5. MOTOR ASSY (LOADING BOARD), CAM AND SW BOARD

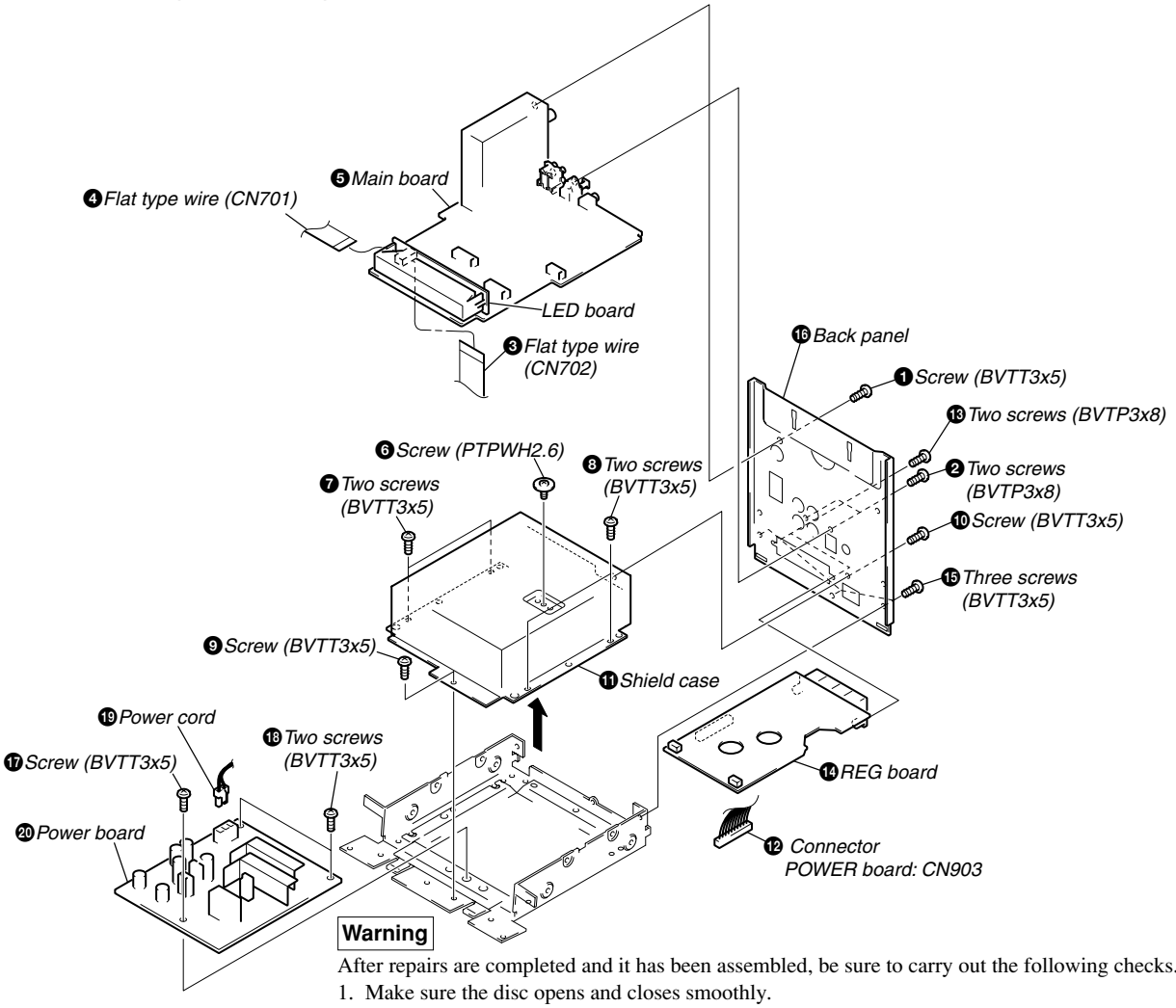
Note: The phase adjustment is required in assembly.
Refer to"Section 1. Servicing Note" for details.



3-6. BASE UNIT AND PICK UP ASSY



3-7. MAIN BOARD (LED BOARD), REG BOARD AND POWER BOARD



Warning

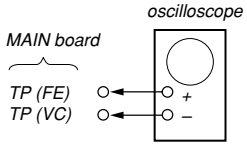
After repairs are completed and it has been assembled, be sure to carry out the following checks.

1. Make sure the disc opens and closes smoothly.
2. Make sure the disc does not rub on anything when it is played.

SECTION 4
ELECTRICAL ADJUSTMENT

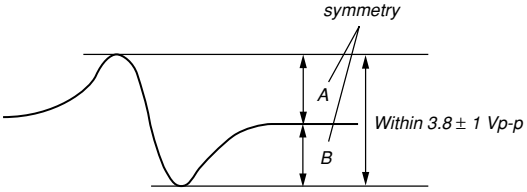
Note:
1. CD Block is basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :
1. Connect the oscilloscope to test points TP (FE) and TP (VC).
2. Connect TP (FEI) and TP (VC) of the MAIN board with lead wires.
3. Press the I/⏻ button to turn the set ON.
4. Press the ▶II button, load and eject the disc (YEDS-18) to perform focus search.
5. Check the symmetry and peak to peak level of the oscilloscope waveform (S curve) at this time.

S-curve waveform

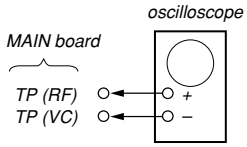


6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

Checking Location : MAIN board

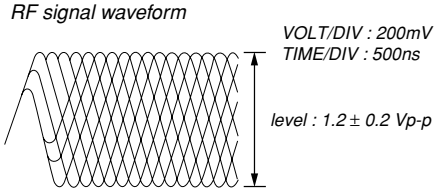
RF Level Check



Procedure :
1. Connect oscilloscope to test point TP (RF) and TP (VC) on MAIN board.
2. Press the I/⏻ button to turn the set ON.
3. Put disc (YEDS-18) in and playback No.5track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

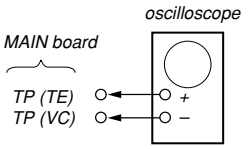
Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



Checking Location : MAIN board

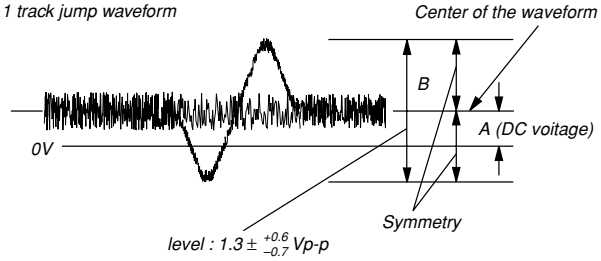
E-F Balance (1 Track Jump) check



Procedure:
1. Connect oscilloscope to test point TP (TE) and TP (VC) on MAIN board.
2. Press the I/⏻ button to turn the unit ON.
3. Put disc (YEDS-18) in and playback No.5track.
4. Press the ▶II button, to pause.
5. Check the level (B) of the oscilloscope's waveform and the DC voltage (A) of the center of the Traverse waveform. Confirm the following:

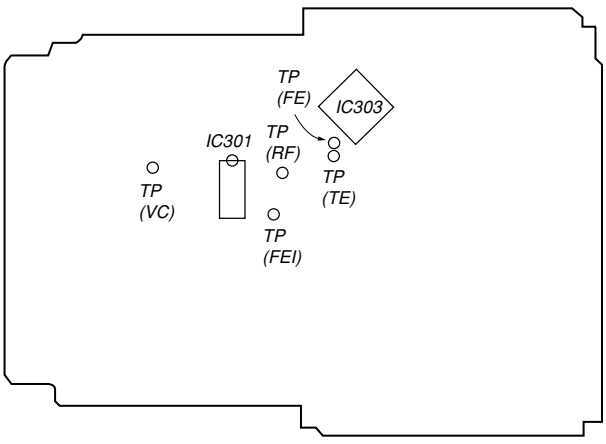
   • A/B x 100 = less then ± 22 (%)
   • B = 1.3 $\pm^{+0.6}_{-0.7}$ Vp-p

1 track jump waveform



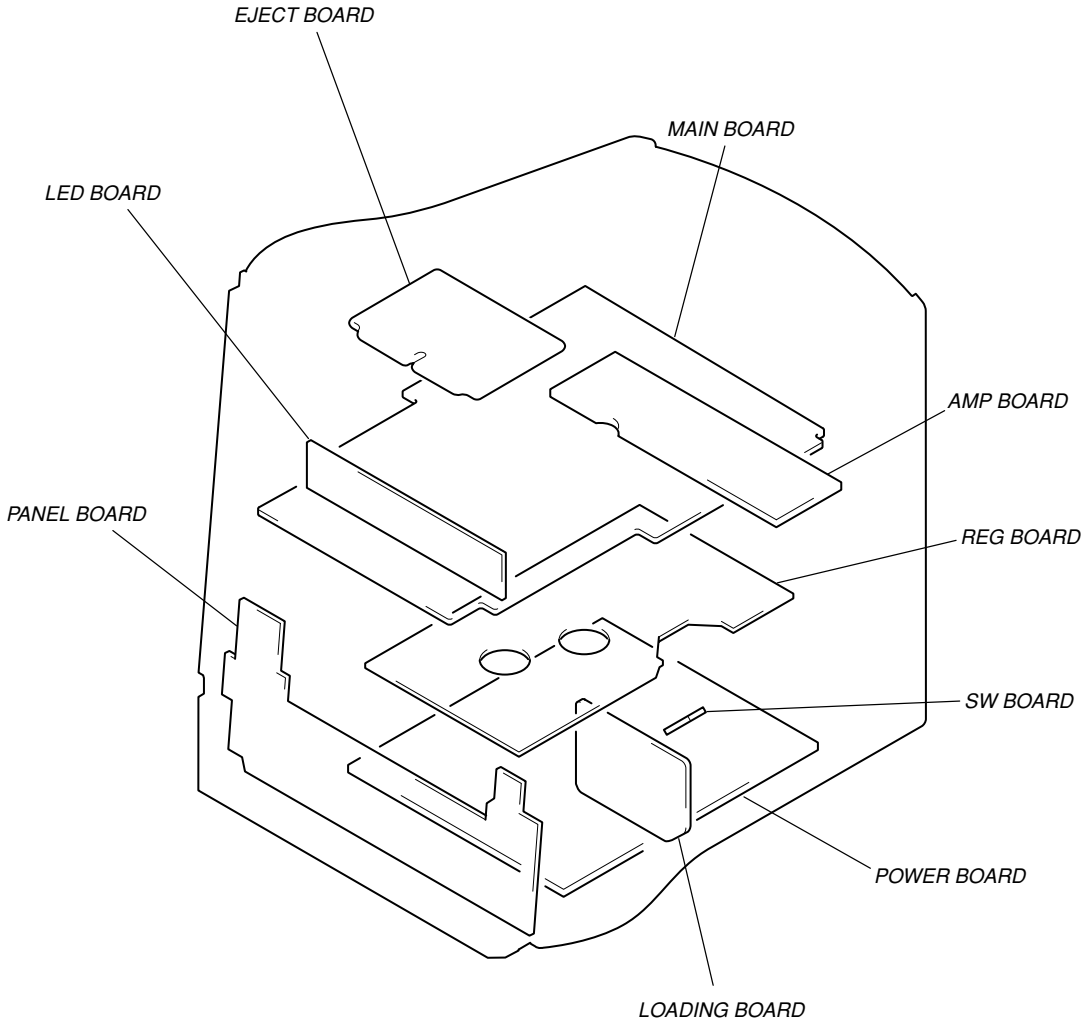
Checking Location : MAIN board

[MAIN BOARD] — SIDE A —



SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



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

For schematic diagrams.

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B− Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages and waveforms are dc with respect to ground in service mode.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
  no mark : RADIO, CD STOP
  ( ) : CD PLAY
- Circled numbers refer to waveforms.
- Signal path.
  : CD
  : digital out
- Abbreviation
  CND : Canadian model.
  SP : Singapore model.
  HK : Hong Kong model.
  KR : Korea model.
  CH : Chinese model.

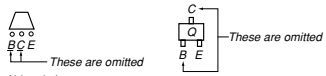
For printed wiring boards.

Note:

- : parts extracted from the component side.
- ○ : Through hole.
- : Pattern from the side which enables seeing.

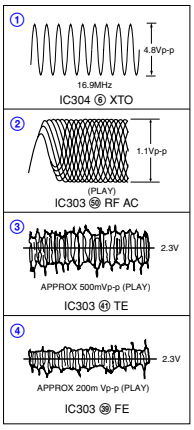
(The other layers' patterns are not indicated.)

- **Indication of transistor**

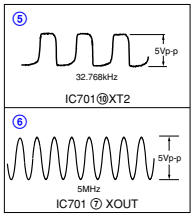


- Abbreviation
  CND : Canadian model.
  SP : Singapore model.
  HK : Hong Kong model.
  KR : Korea model.
  CH : Chinese model.

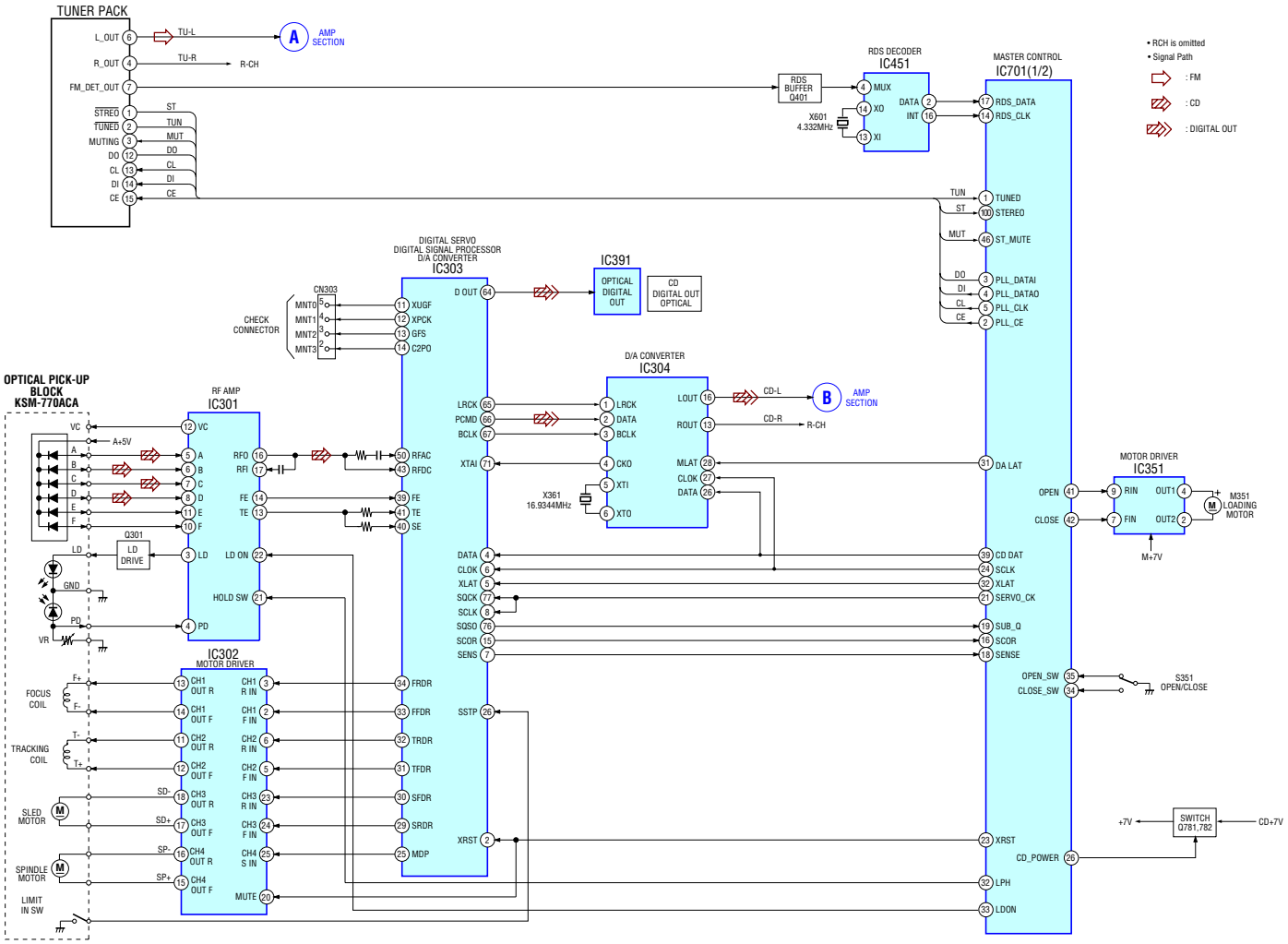
WAVEFORMS
– MAIN (1/3) SECTION –



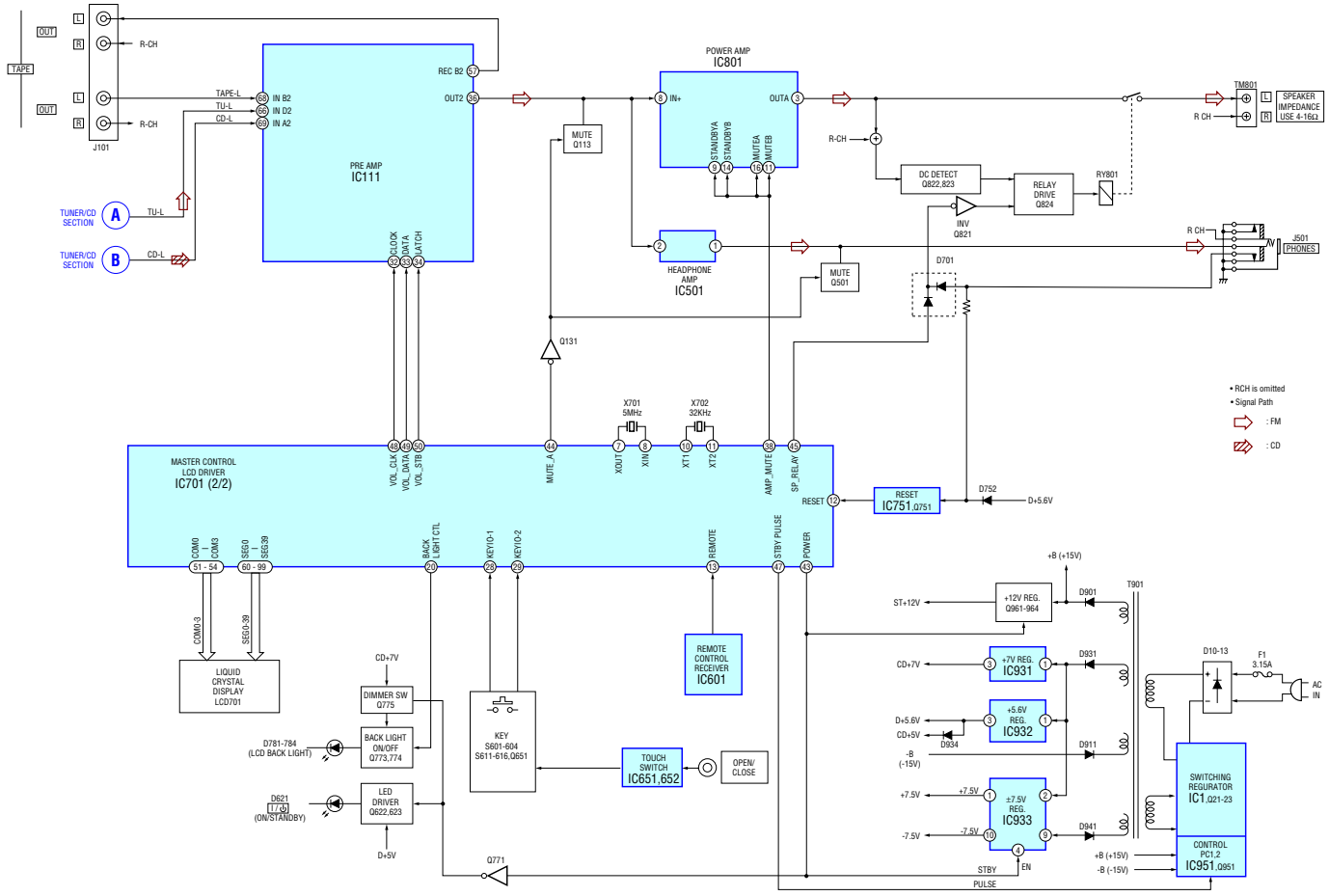
– MAIN (3/3) SECTION –



5-2. BLOCK DIAGRAMS – TUNER/CD SECTION –



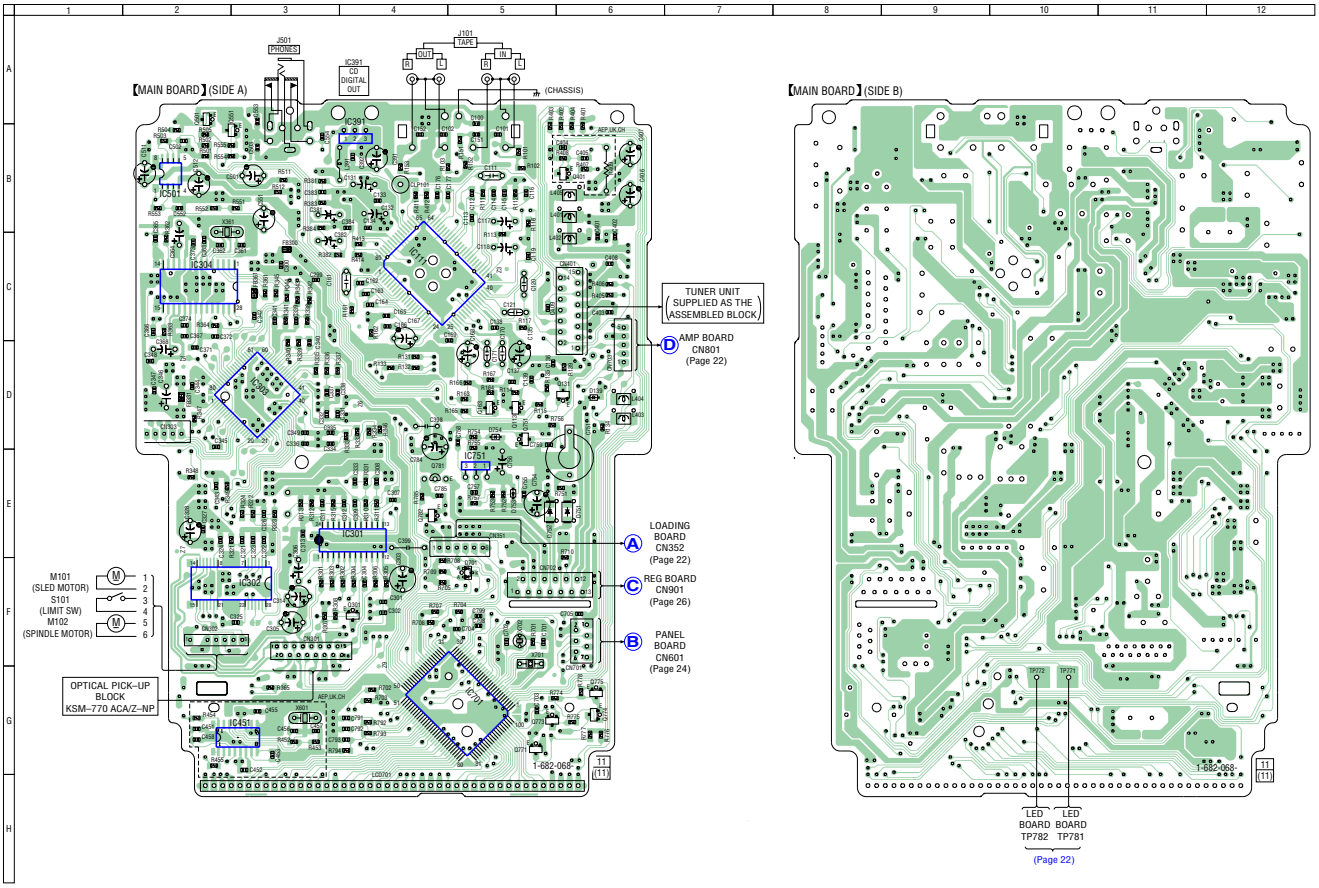
– AMP SECTION –



HCD-EX100

5-3. PRINTED WIRING BOARD – MAIN SECTION –

• See page 14 for Circuit Boards Location.

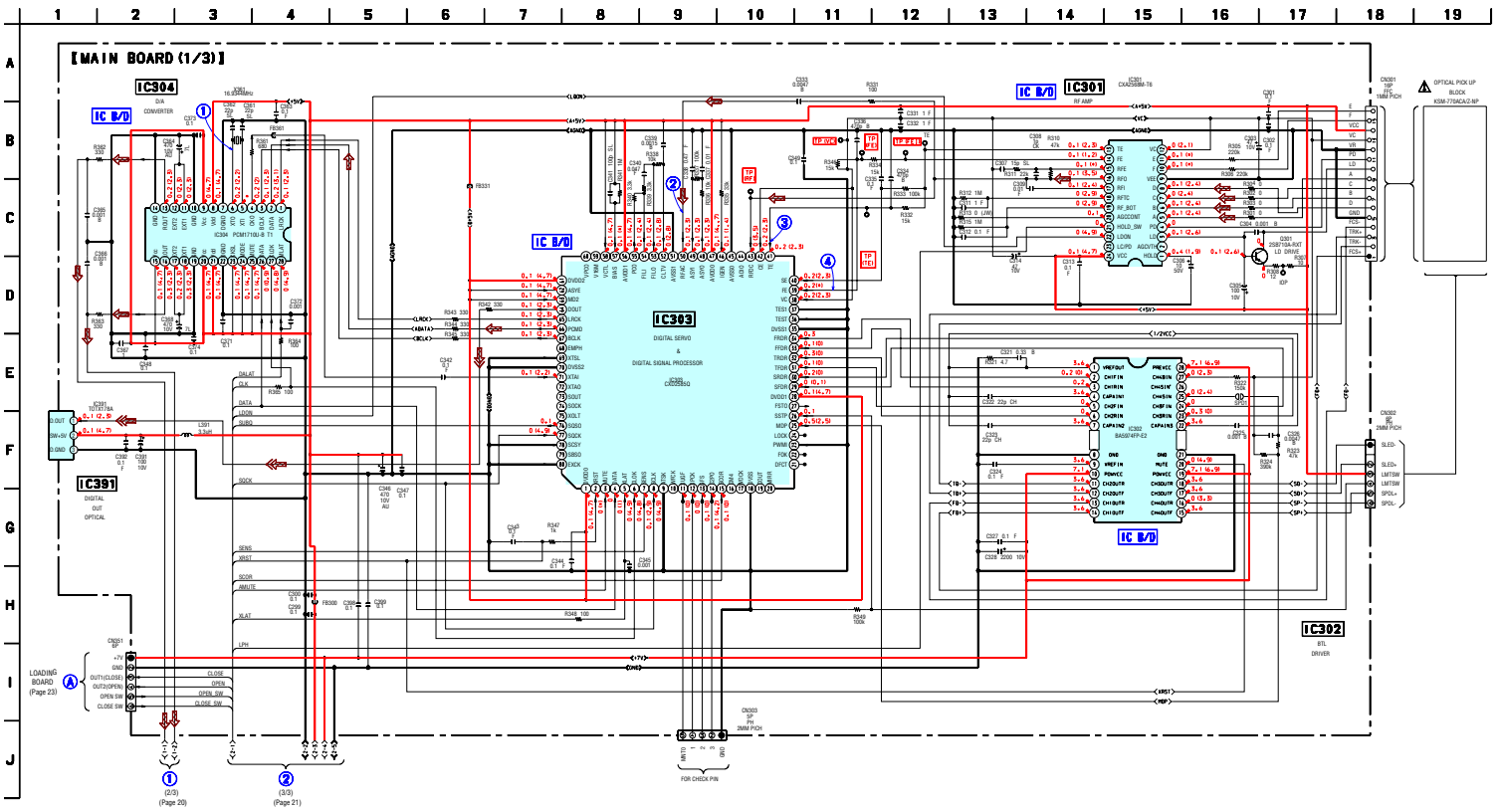


• **Semiconductor Location**

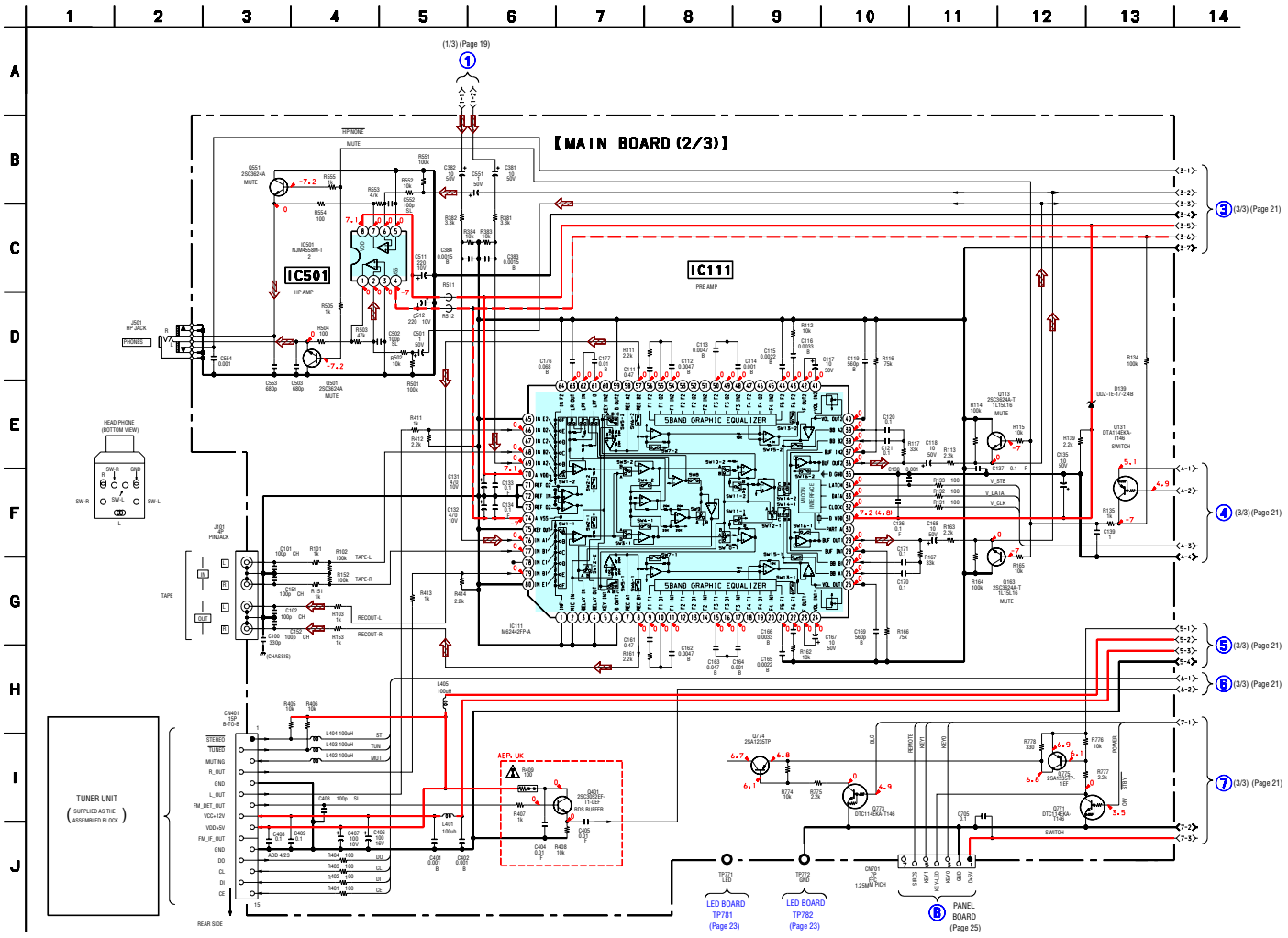
Ref. No.	Location
D139	D-6
D701	F-5
D751	E-6
D752	E-5
D753	E-5
D754	D-5
IC111	C-4
IC301	E-4
IC302	F-3
IC303	D-3
IC304	C-2
IC391	B-4
IC451	G-3
IC501	B-2
IC701	G-5
IC751	E-5
Q113	D-5
Q131	D-6
Q163	D-5
Q301	F-4
Q401	B-6
Q501	A-2
Q551	B-2
Q751	D-5
Q771	G-5
Q773	G-5
Q774	G-6
Q775	G-6
Q781	E-4
Q782	E-4

5-4. SCHEMATIC DIAGRAM – MAIN (1/3) SECTION –

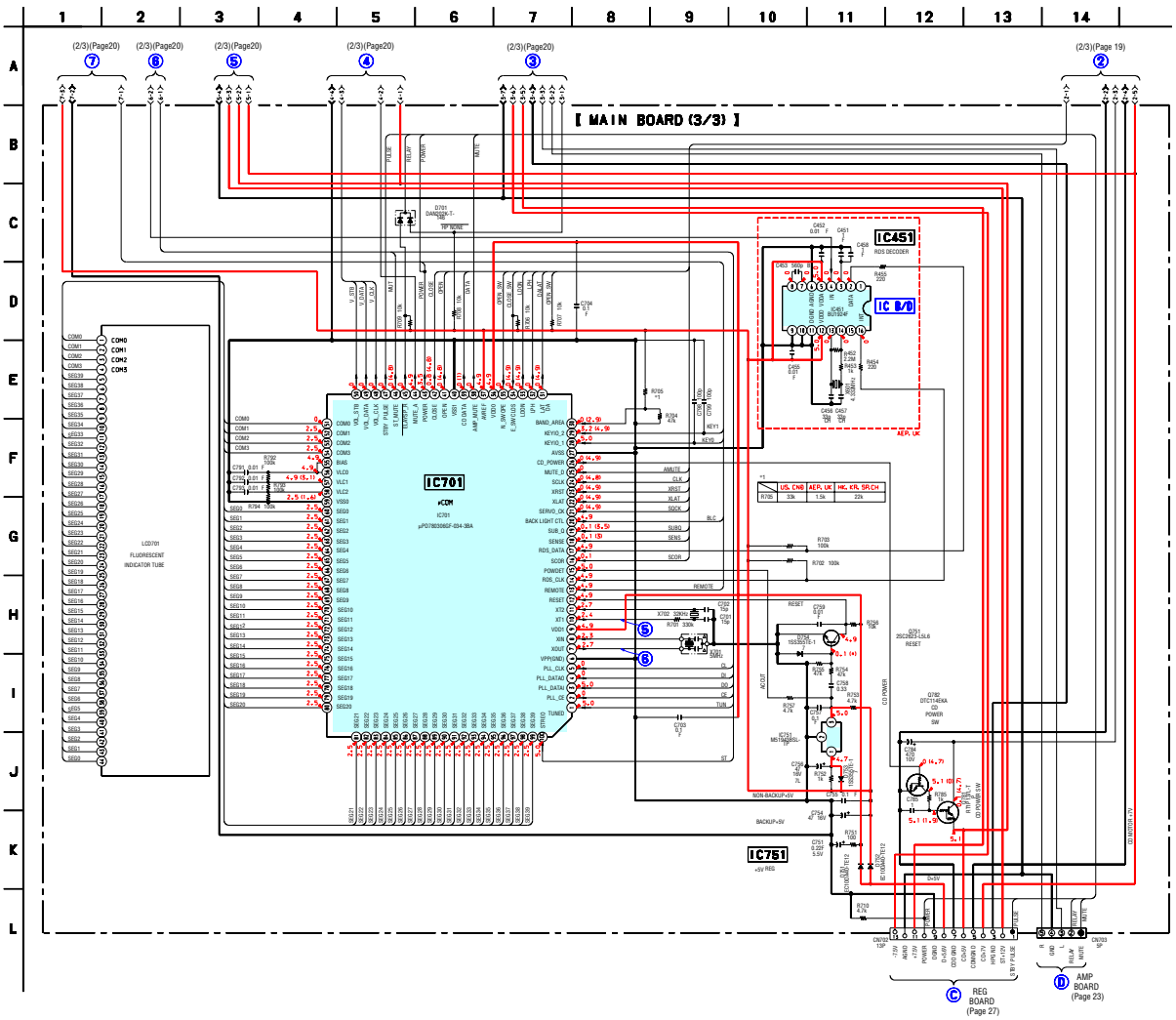
- **See page 15 for Waveforms.**
- **See page 33,34,35 for IC Block Diagrams.**
- **See page 30 for IC Pin Functions.**



5-5. SCHEMATIC DIAGRAM – MAIN (2/3) SECTION –

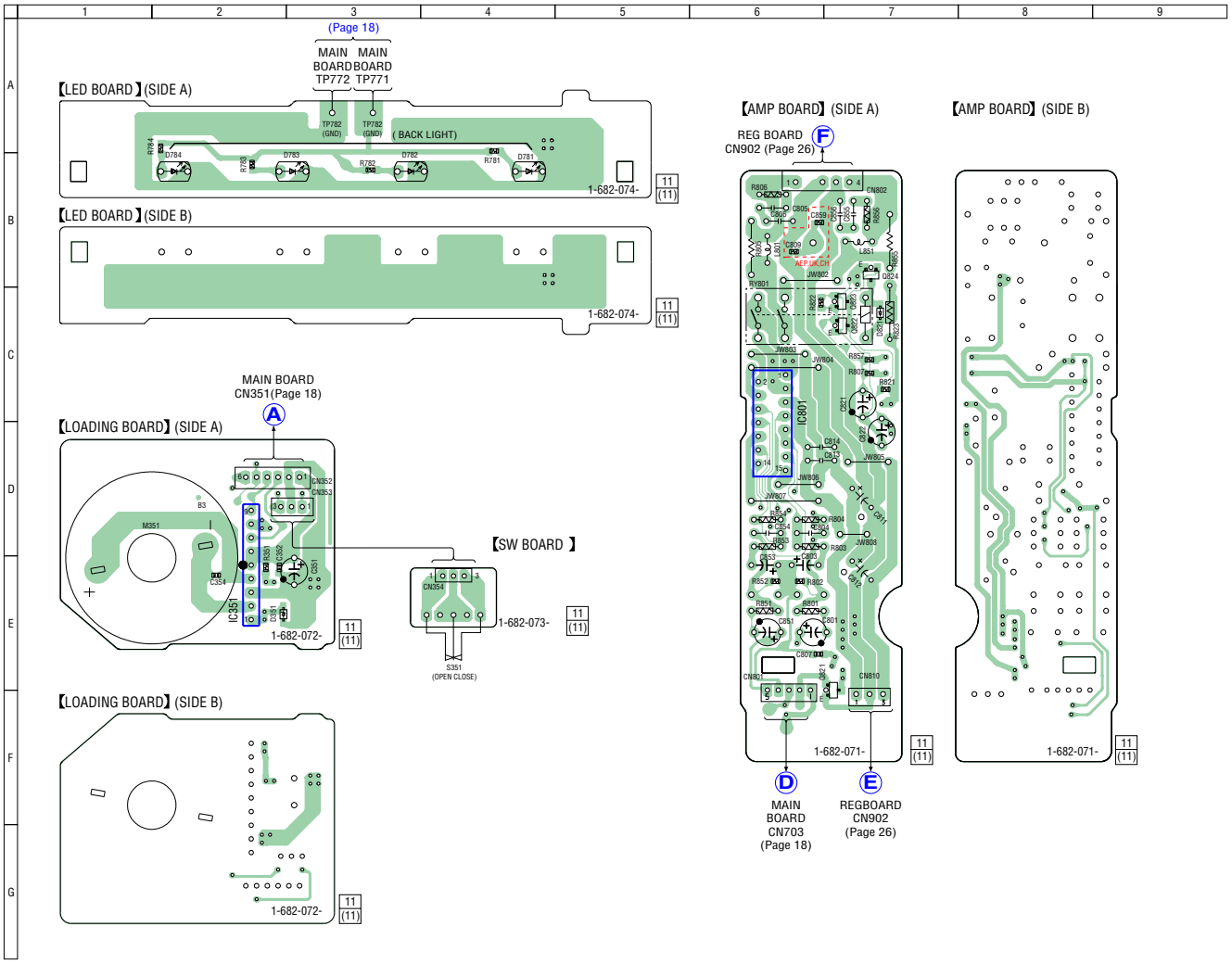


5-6. SCHEMATIC DIAGRAM – MAIN (3/3) SECTION – • See page 14 for Waveforms. • See page 35 for IC Block Diagrams. • See page 31 for IC Pin Functions.



5-7. PRINTED WIRING BOARD – LED/LOADING/SW/AMP SECTION –

• See page 14 for Circuit Boards Location.

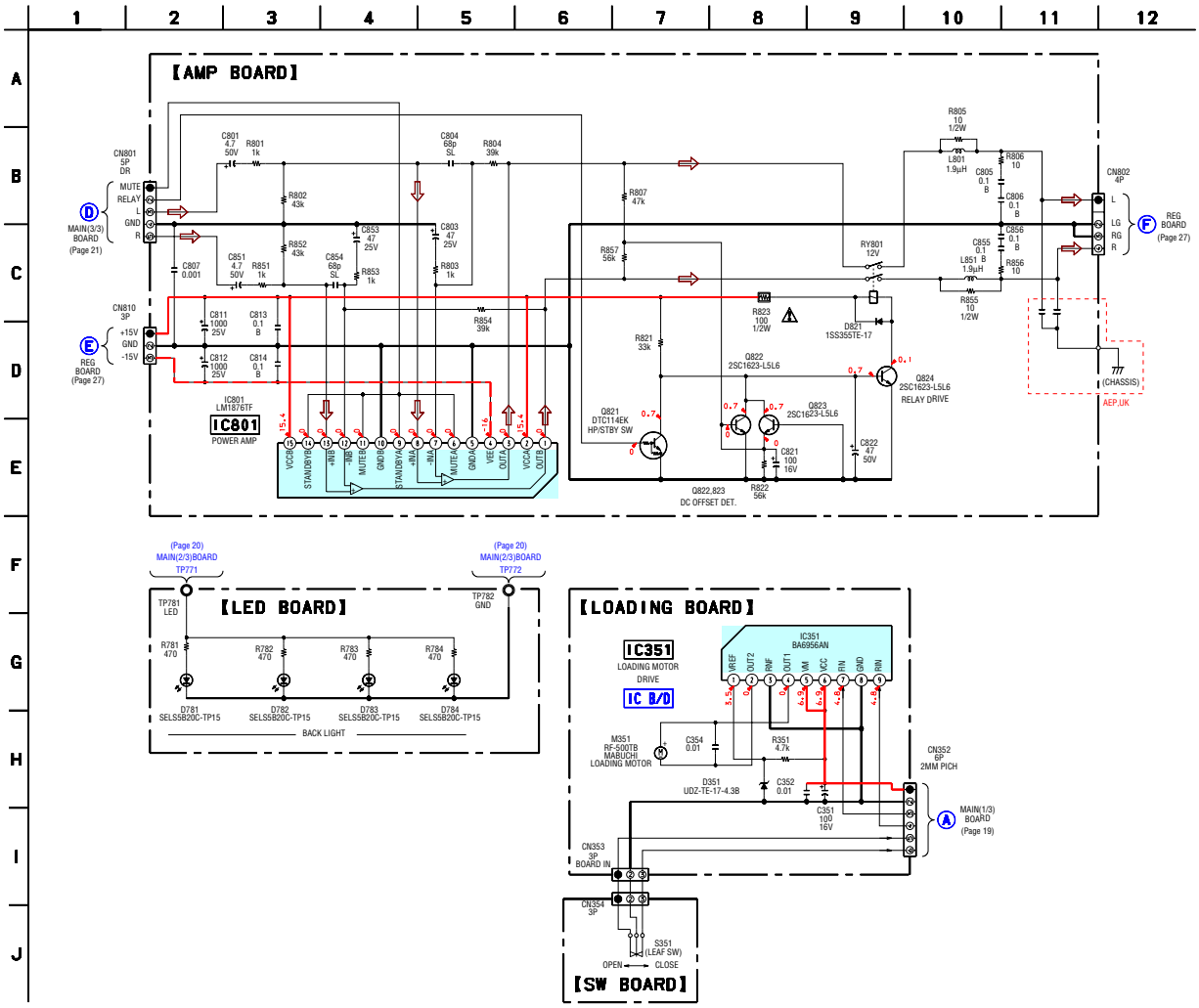


• **Semiconductor Location**

Ref. No.	Location
D351	E-2
D781	B-4
D782	B-3
D783	B-3
D784	B-2
D821	C-7
IC351	E-2
IC801	C-6
Q821	E-7
Q822	C-7
Q823	C-7
Q824	B-7

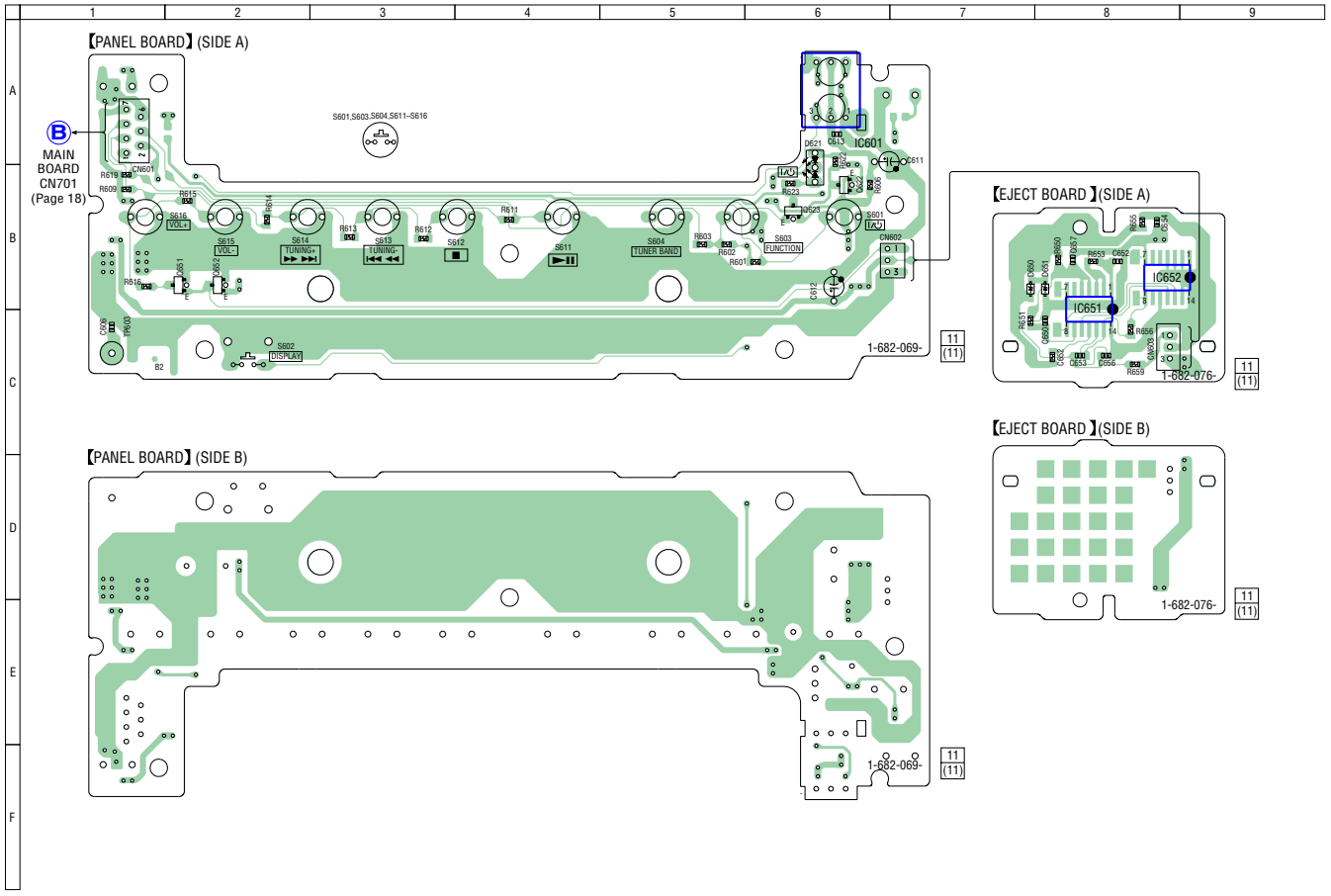
5-8. SCHEMATIC DIAGRAM – LED/LOADING/SW/AMP SECTION –

• See page 35 for IC Block Diagrams.



5-9. PRINTED WIRING BOARD – PANEL/EJECT SECTION –

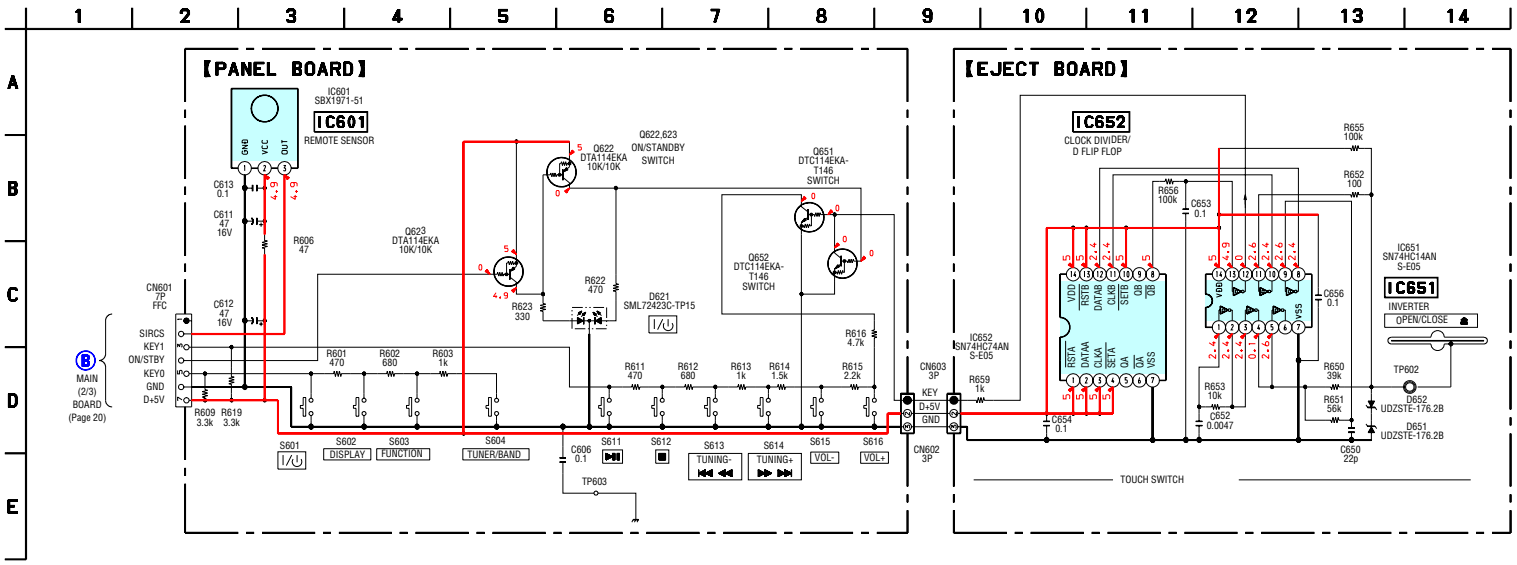
• See page 14 for Circuit Boards Location.



• **Semiconductor Location**

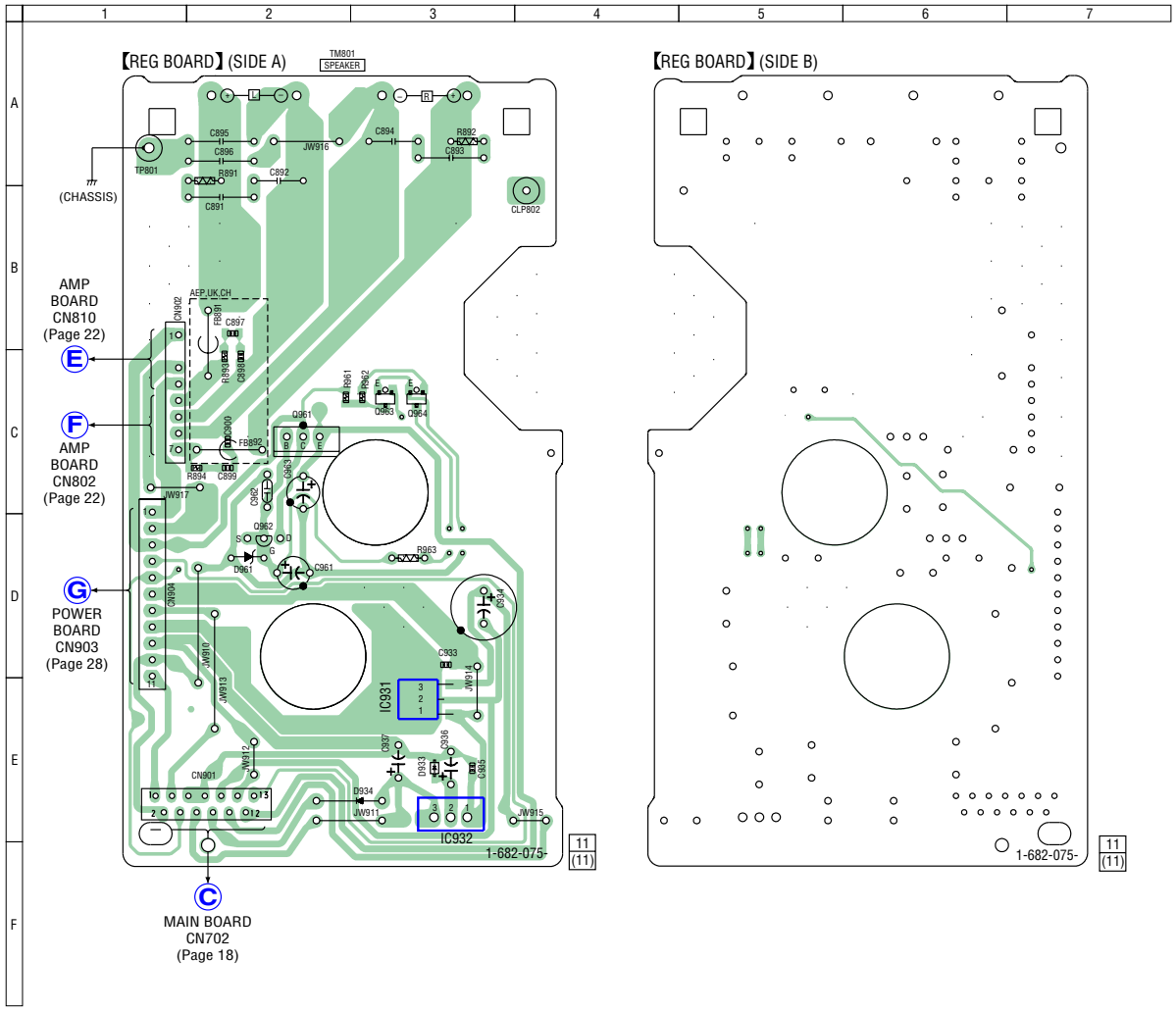
Ref. No.	Location
D621	A-6
D650	B-7
D651	B-8
IC601	A-6
IC651	B-8
IC652	B-8
Q622	B-6
Q623	B-6
Q651	B-2
Q652	B-2

5-10. SCHEMATIC DIAGRAM – PANEL/EJECT SECTION –



5-11. PRINTED WIRING BOARD – REG SECTION –

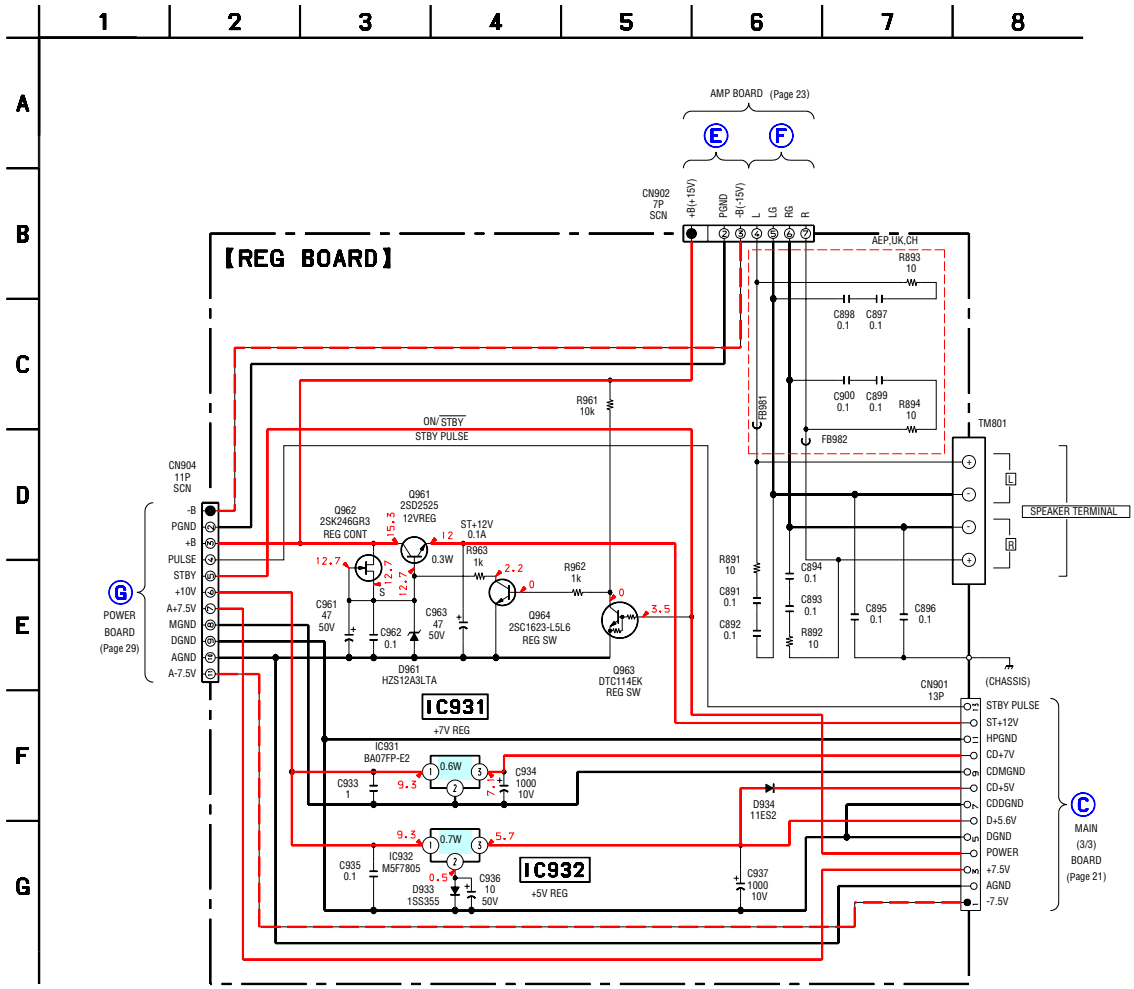
• See page 14 for Circuit Boards Location.



• **Semiconductor Location**

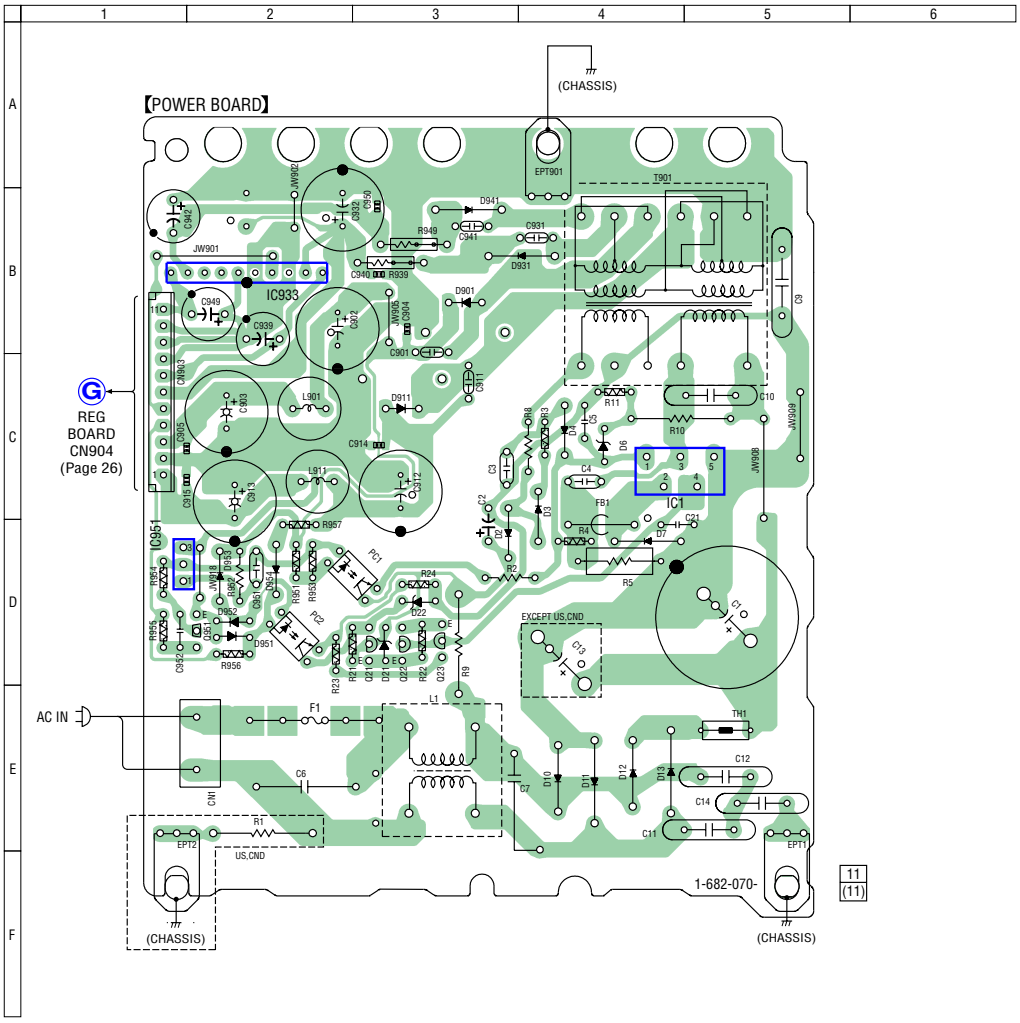
Ref. No.	Location
D933	E-3
D934	E-2
D961	D-2
IC931	E-3
IC932	E-3
Q961	C-2
Q962	D-2
Q963	C-3
Q964	C-3

5-12. SCHEMATIC DIAGRAM – REG SECTION –



5-13. PRINTED WIRING BOARD – POWER SECTION –

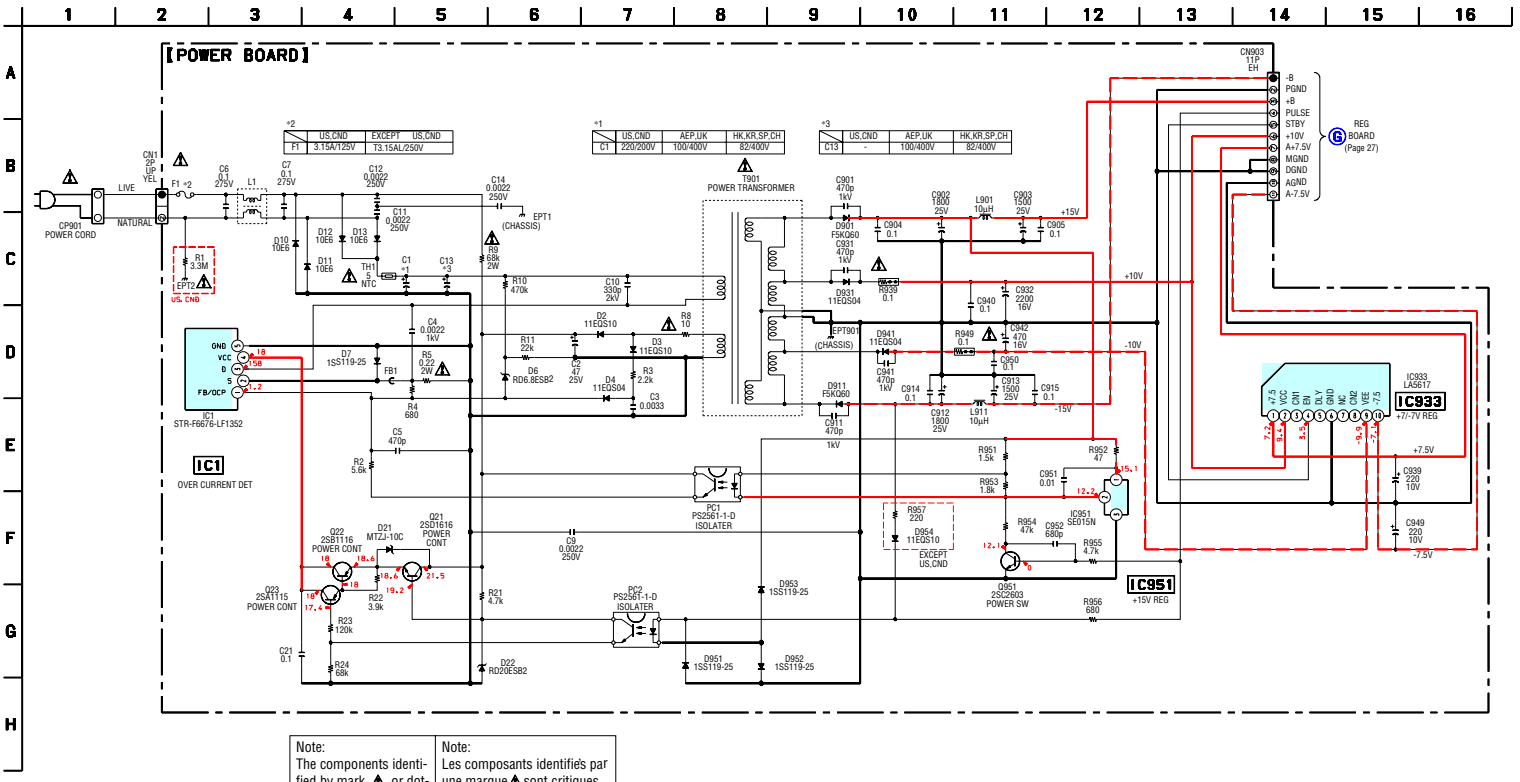
• See page 14 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D2	D-3
D3	C-4
D4	C-4
D6	C-4
D7	D-4
D10	E-4
D11	E-4
D12	E-4
D13	E-4
D21	D-3
D22	D-3
D901	B-3
D911	C-3
D931	B-4
D941	B-3
D951	D-2
D952	D-2
D953	D-2
D954	D-2
IC1	C-4
IC933	B-2
IC951	D-1
PC1	D-2
PC2	D-2
Q21	D-2
Q22	D-3
Q23	D-3
Q951	D-2

5-14. SCHEMATIC DIAGRAM – POWER SECTION –



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la securite.' Ne les remplacer que par une pièce portant le numero specifie.'

5-15. IC PIN FUNCTIONS

• IC303 DIGITAL SERVO & DIGITAL SIGNAL PROCESSOR (CXD2585Q) (MAIN Board (1/3))

Pin No.	Pin Name	I/O	Function
1	DVDD	I	Power supply
2	XRST	I	System reset input "L" : reset
3	MUTE	I	Muting input "H" : mute
4	DATA	I	Serial data input, supplied from CPU
5	XLAT	I	Latch input, supplied from CPU
6	CLOK	I	Serial data transfer clock input, supplied from CPU
7	SENS	O	SENS signal output to CPU
8	SCLK	I	SENS serial data read-out clock input
9	ATSK	I	Input pin for anti-shock (Connected to ground)
10	WFCK	O	Not used
11	XUGF	O	XPGF signal output (For check pin)
12	XPCK	O	XPCK signal output (For check pin)
13	GFS	O	GFS signal output (For check pin)
14	C2PO	O	C2PO signal output (For check pin)
15	SCOR	O	Sub-code sync output
16	CM4	O	4.2336 MHz output (Not used)
17	WDCK	O	Word clock output (f = 2Fs) (Not used)
18	DVSS	–	Digital ground
19	COUT	I/O	Numbers of track counted signal input/output (Not used)
20	MIRR	I/O	Mirror signal input/output (Not used)
21	DFCT	I/O	Defect signal input/output (Not used)
22	FOK	I/O	Focus OK input/output (Not used)
23	PWMI	I	Spindle motor external control input (Connected to ground)
24	LOCK	I/O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
25	MDP	O	Output to control spindle motor servo
26	SSTP	I	Input signal to detect disc inner most track
27	FSTO	O	2/3 divider output (Not used)
28	DVDD1	I	Power supply
29	SFDR	O	Sled drive output
30	SRDR	O	Sled drive output
31	TFDR	O	Tracking drive output
32	TRDR	O	Tracking drive output
33	FFDR	O	Focus drive output
34	FRDR	O	Focus drive output
35	DVSS1	–	Digital ground
36	TEST	I	TEST pin connected normally to ground
37	TES1	I	TEST pin connected normally to ground
38	VC	I	Center voltage input
39	FE	I	Focus error signal input
40	SE	I	Sled error signal input

• Abbreviation
GFS : Guarded Frame Sync

Pin No.	Pin Name	I/O	Function
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input (Connected to ground)
43	RFDC	I	RF signal input
44	ADIO	O	Not used
45	AVSS0	–	Analog ground
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	I	Power supply
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry comparate voltage input
50	RFAC	I	EFM signal input
51	AVSS1	–	Analog ground
52	CLTV	I	Control voltage input for master VCO1
53	FILO	O	Filter output for master PLL
54	FILI	I	Filter input for master PLL
55	PCO	O	Charge-pump output for master PLL
56	AVDD1	I	Power supply
57	BIAS	I	Asymmetry circuit constant current input
58	VCTL	I	VCO2 control voltage input (Connected to VDD)
59	V16M	I/O	Not used
60	VPCO	O	Not used
61	DVDD2	I	Power supply
62	ASYE	I	Asymmetry circuit ON/OFF input "L" OFF, "H" : ON (Connected to VDD)
63	MD2	I	Digital-out ON/OFF control input (Connected to VDD)
64	DOUT	O	Digital-out output pin
65	LRCK	O	D/A interface LR clock output (f = Fs)
66	PCMD	O	D/A interface serial data output
67	BCLK	O	D/A interface bit clock output
68	EMPH	O	Playback disc output in emphasis mode (Not used)
69	XTSL	I	X'tal selection input (Connected to ground)
70	DVSS2	–	Digital ground
71	XTAI	I	X'tal oscillator circuit input
72	XTAO	O	X'tal oscillator circuit output (Not used)
73	SOUT	O	Serial data output in servo block (Not used)
74	SOCK	O	Serial data read clock output in servo block (Not used)
75	XOLT	O	Serial data latch output in servo block (Not used)
76	SQSO	O	Sub-Q 80-bit and PCM peak level data output (CD text data output)
77	SQCK	I	Clock input for SQSO read-out
78	SCSY	I	Connected to ground
79	SBSO	O	Sub-P through Sub-W serial output (Not used)
80	EXCK	I	Clock input for SBSO read-out (Connected to ground)

• Abbreviation
EFM : Eight to Fourteen Modulation
PLL : Phase Locked Loop

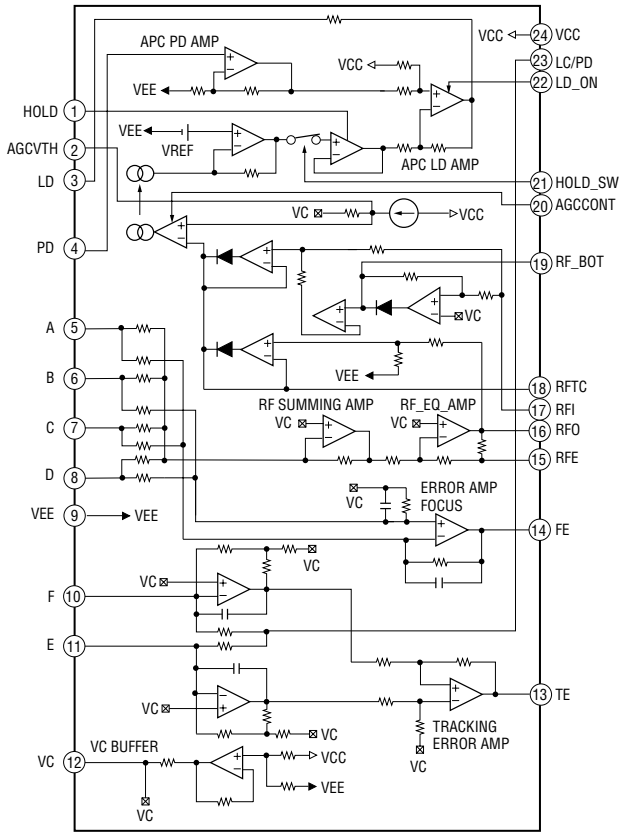
• **IC701 uCOM (UPD780306GF-034-3BA) (MAIN Board (3/3))**

Pin No.	Pin Name	I/O	Function
1	TUNED	I	ST tuning
2	PLL_CE	O	ST PLL CE signal output
3	PLL_DATAI	I	ST PLL data input
4	PLL_DATAO	O	ST PLL data output
5	PLL_CLK	O	ST PLL CLK
6	VPP (GND)	–	Ground
7	XOUT	O	Crystal oscillator terminal 5MHz (Main clock)
8	XIN	I	
9	VDD1	–	Ground
10	XT1	O	Crystal oscillator terminal 32KHz (Sub clock)
11	XT2	I	
12	RESET	I	System reset input
13	REMOTE	I	SIRCS signal input
14	RDS_CLK	I	ST RDS clock input
15	POWDET	I	AC power down detect input
16	SCOR	I	CD SCOR signal input
17	RDS_DATA	I	ST RDS data input
18	SENSE	I	CD SENS signal input
19	SUB Q	I	CD SUBQ signal input
20	CTL	O	LCD back light control output
21	SERVO_CK	O	CD SQCK/SCLK signal output
22	XLAT	O	CD data latch signal output
23	XRST	O	CD (BC) reset signal output
24	SCLK	O	Clock output to PCM1710 and CD.
25	MUTE_D	O	CD digital mute signal output
26	CD_POWER	O	CD (BD) power control signal output
27	AVSS	–	Ground
28	KEYIO_1	I	Key signal input (A/D port)
29	KEYIO_2	I	
30	BAND_AREA	I	Destination setting input (A/D port)
31	DALAT	O	Latch signal output to PCM1710
32	LPH	O	CD LPH signal output
33	LDON	O	CD LASER ON signal output
34	CLOSE_SW	I	CD slider CLOSE SW signal inpu
35	OPEN_SW	I	CD slider OPEN SW signal input
36	VDD0	I	Power supply
37	AVREF	I	A/D REF Voltage input
38	AMP_MUTE	O	POWER AMP mute signal output
39	CD DATA	O	Signal data output
40	VSS1	–	Ground
41	OPEN	O	CD loading motor open signal output
42	CLOSE	O	CD loading motor close signal output
43	POWER	O	System power control signal output
44	MUTE_A	O	TA mute output
45	$\overline{\text{SP\_RELAY}}$	O	Speaker relay control signal output
46	ST_MUTE	O	ST mute output
47	STBY PULSE	O	Power supply sleep control
48	VOL_CLK	O	VOL clock output
49	VOL_DATA	O	VOL OUT data output
50	VOL_STB	O	VOL STB signal output

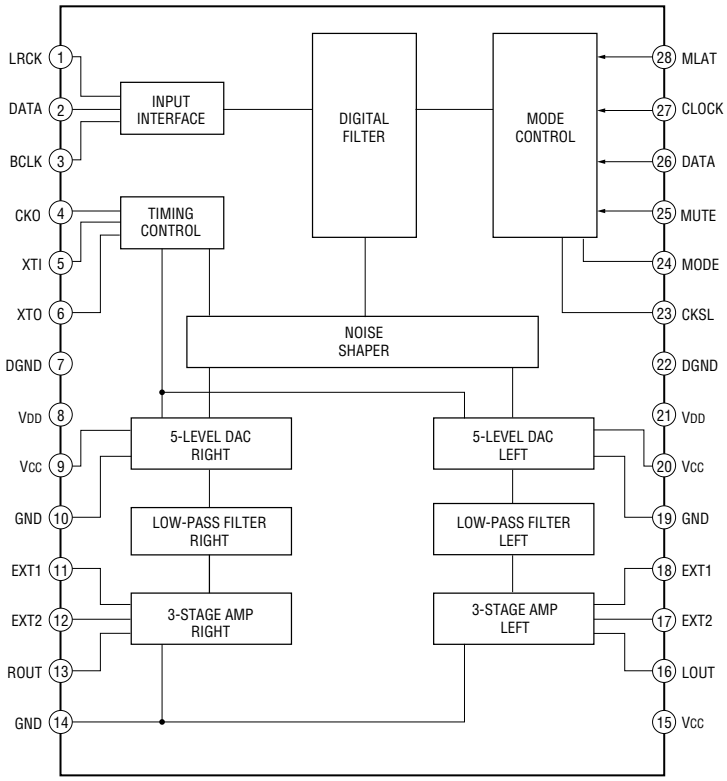
Pin No.	Pin Name	I/O	Function
51 to 54	COM0 to COM3	O	LCD common output
55	BIAS	O	LCD bias voltage terminal
56 to 58	VLC0 to VLC2	O	LCD bias voltage terminal
59	VSS0	O	Ground
60 to 99	SEG0 to SEG39	O	LCD segment signal output
100	STEREO	I	Tuner stero signal input

5-16. IC BLOCK DIAGRAMS

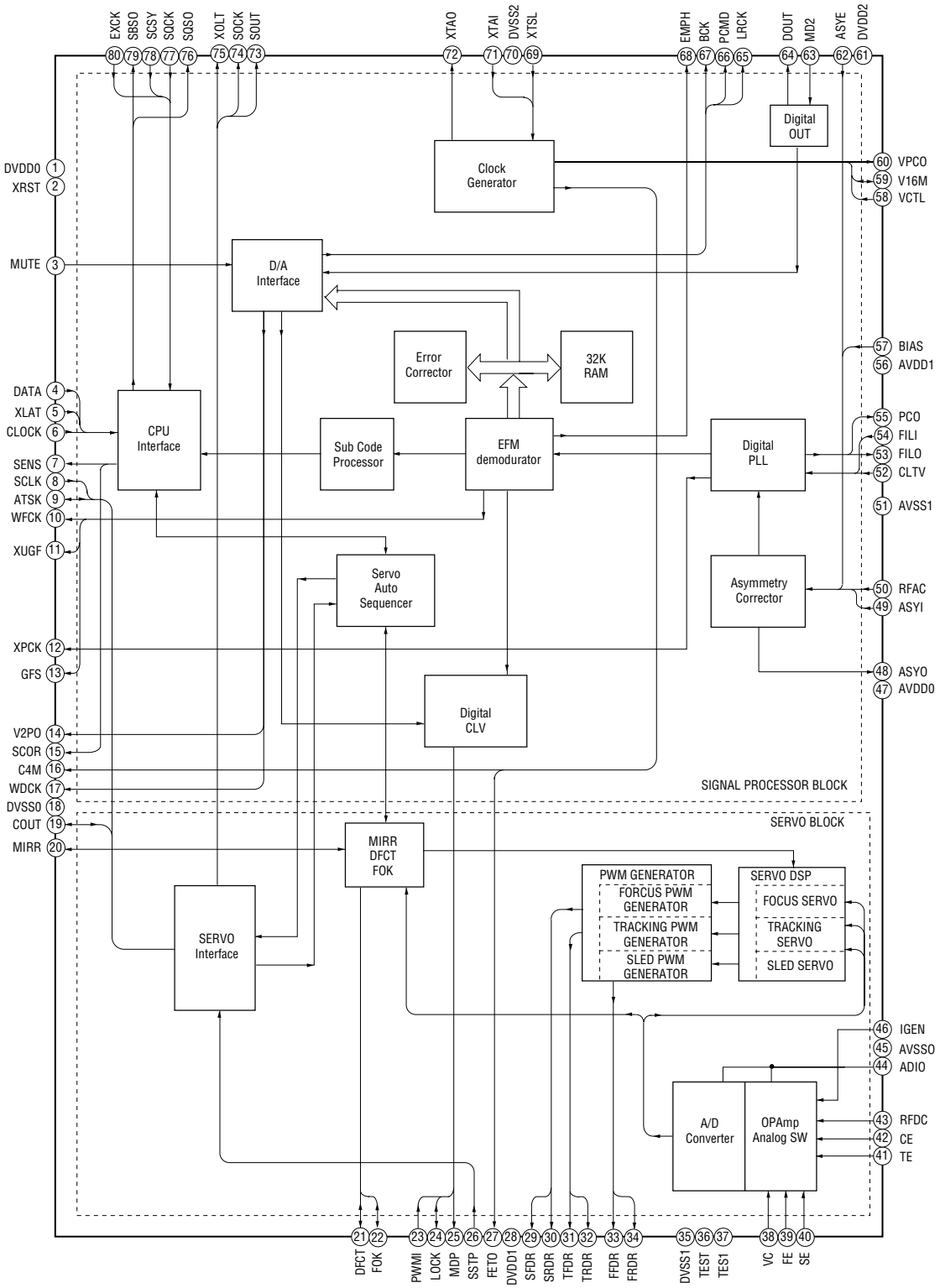
IC301 CXA2568M-T6 (MAIN board (1/3))



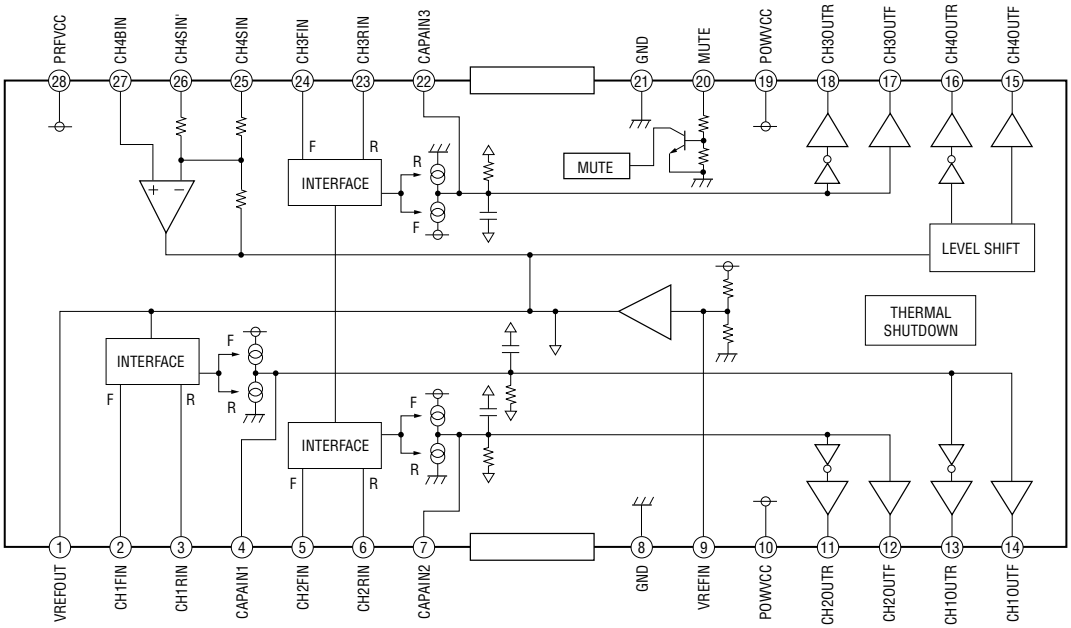
IC304 PCM1710U-B/1K (MAIN board (1/3))



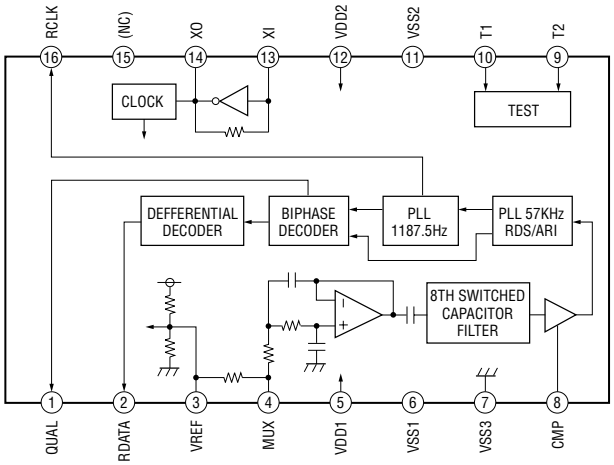
IC303 CXD2585Q (MAIN board (1/3))



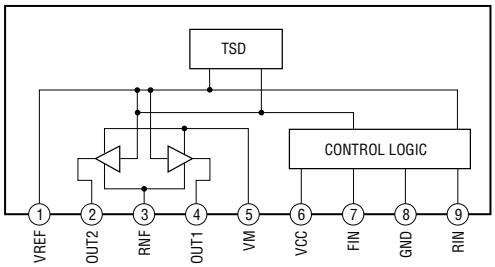
IC302 BA5974FP-E2 (MAIN board (1/3))



IC451 BU1924F (MAIN board (3/3))



IC351 BA6956AN (LOADING board)



SECTION 6
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example: KNOB, BALANCE (WHITE)

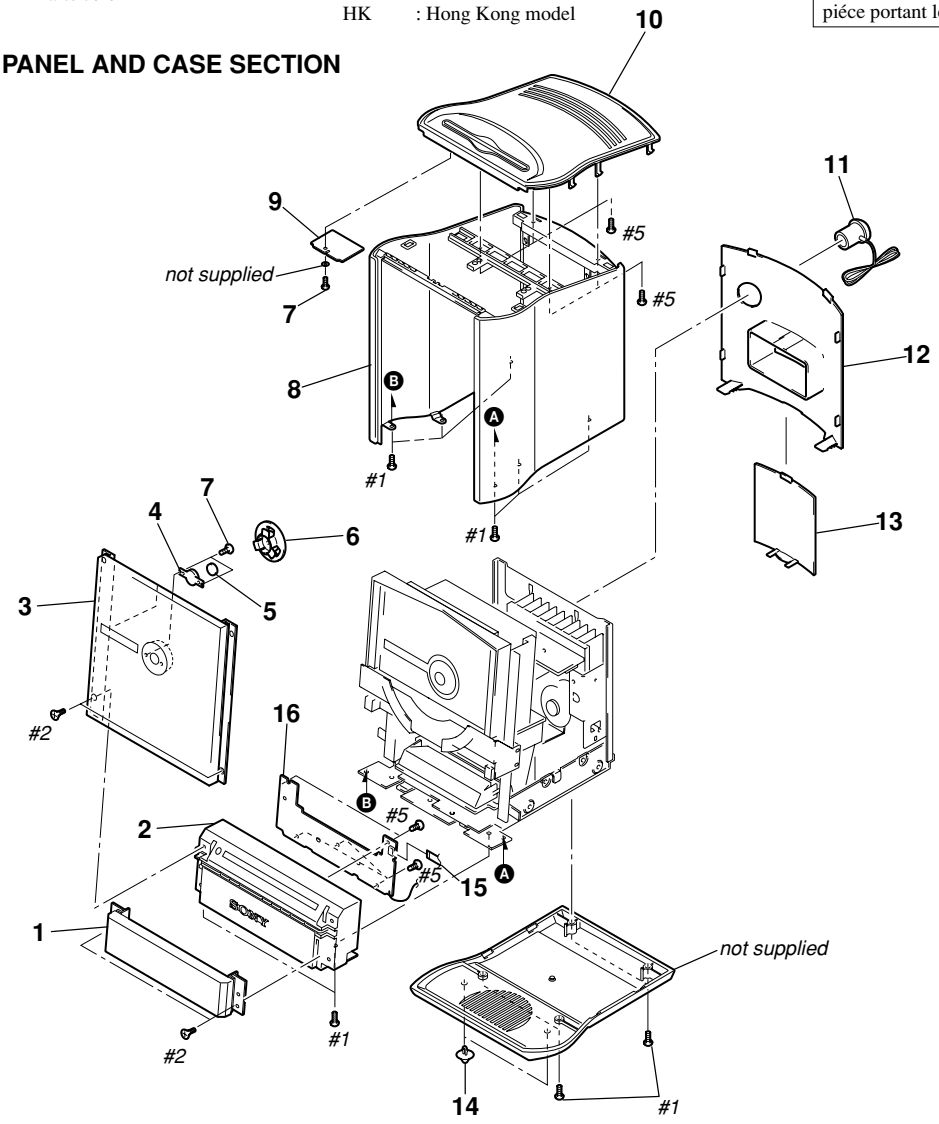
↑
Parts color

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  SP : Singapore model
  KR : Korea model
  CH : Chinese model
  HK : Hong Kong model

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

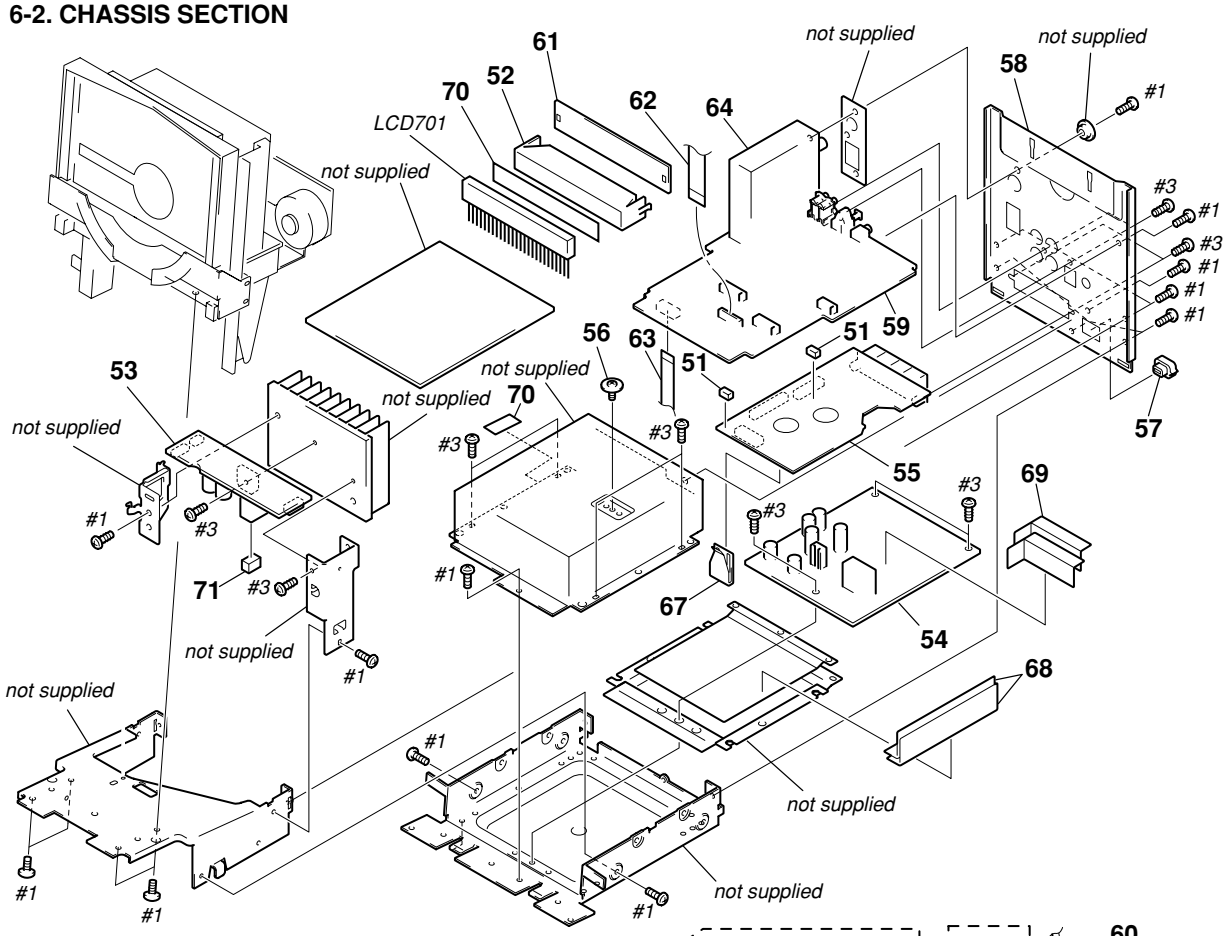
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. FRONT PANEL AND CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-4953-872-1	WINDOW (GRASS LOWER) ASSY	
2	X-4954-149-2	PANEL ASSY, FRONT (US,CND,CH,HK,KR,SP)	
2	X-4954-402-1	PANEL ASSY, FRONT (AEP,UK)	
3	X-4953-871-1	WINDOW ASSY-U, GLASS (EXCEPT AEP)	
3	X-4953-873-1	WINDOW (GLASS UPPER) ASSY (AEP)	
4	4-234-985-01	YOKE (RG)	
5	4-222-703-01	MAGNET	
6	4-222-709-01	YOKE (ST)	
7	3-927-664-01	SCREW (2X3)	
8	4-234-965-01	CASE (US,CND)	
8	4-234-965-11	CASE (AEP,CH,HK,KR,SP,UK)	
9	1-682-076-11	EJECT BOARD	
10	X-4954-403-1	COVER (TOP) ASSY (US,CND)	
11	1-754-208-11	ANTENNA, FM (US,CND)	
11	1-754-209-11	ANTENNA, FM (AEP,UK,CH,HK,KR,SP)	
12	4-234-976-01	COVER (BACK) (US,CND)	
12	4-234-976-11	COVER (BACK) (AEP,CH,HK,KR,SP,UK)	
13	4-234-977-01	COVER (PIN JACK) (US,CND)	
13	4-234-977-11	COVER (PIN JACK)(AEP,CH,HK,KR,SP,UK)	
14	4-234-981-01	FOOT	
15	1-769-889-11	WIRE (FLAT TYPE) (7 CORE)	
16	1-682-069-11	PANEL BOARD	

6-2. CHASSIS SECTION

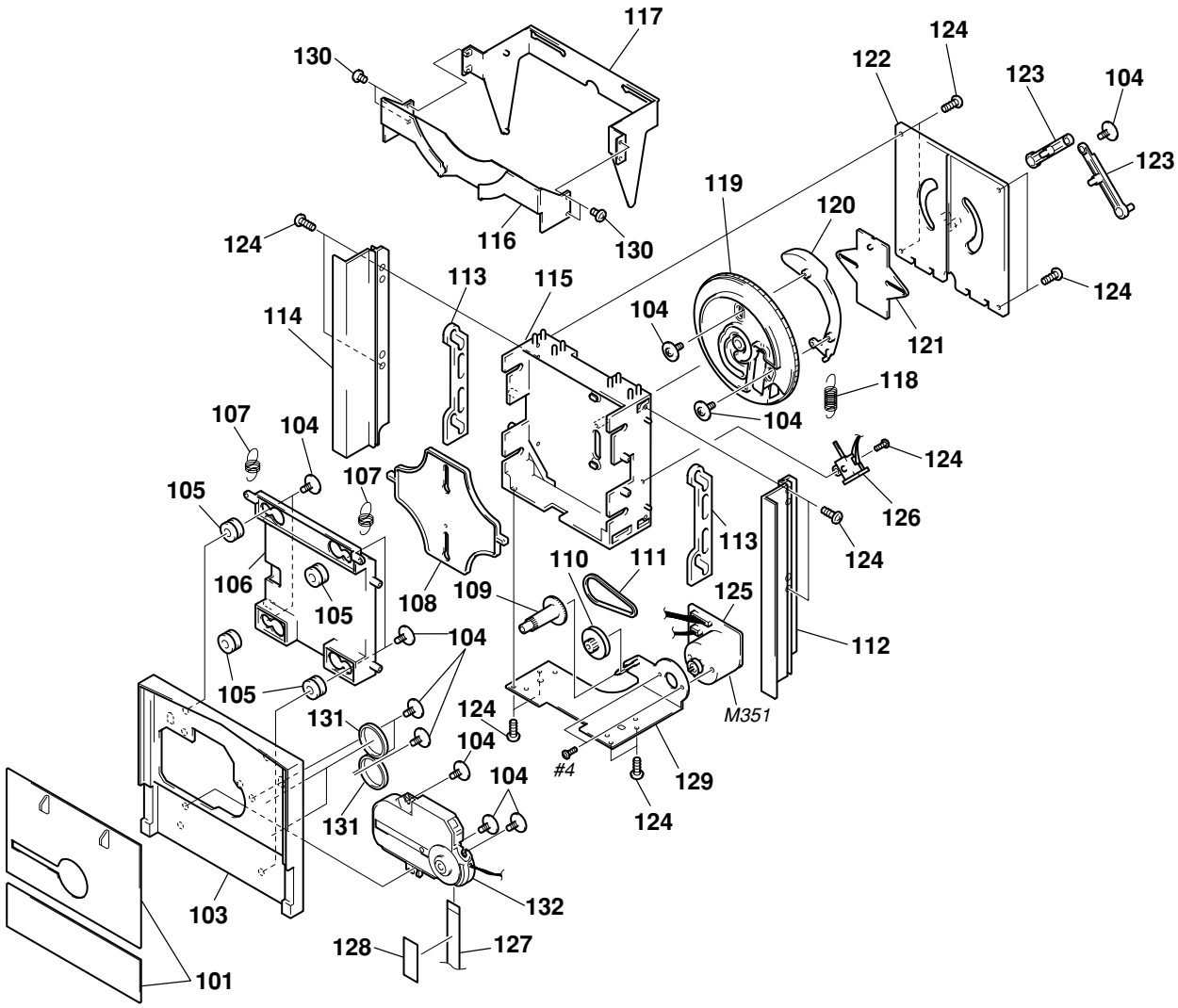


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	3-314-903-01	CUSHION	
52	4-234-982-01	HOUSE, LAMP	
53	A-4725-965-A	AMP BOARD, COMPLETE (US,CND)	
53	A-4725-973-A	AMP BOARD, COMPLETE (AEP,UK)	
53	A-4725-977-A	AMP BOARD, COMPLETE (HK,KR,SP)	
53	A-4726-858-A	AMP BOARD, COMPLETE (CH)	
54	A-4725-964-A	POWER BOARD, COMPLETE (US,CND)	
54	A-4725-972-A	POWER BOARD, COMPLETE (AEP,UK)	
54	A-4725-976-A	POWER BOARD, COMPLETE (HK,KR,SP)	
54	A-4726-857-A	POWER BOARD, COMPLETE (CH)	
55	A-4725-969-A	REG BOARD, COMPLETE (US,CND)	
55	A-4725-974-A	REG BOARD, COMPLETE (AEP,UK)	
55	A-4725-978-A	REG BOARD, COMPLETE (HK,KR,SP)	
55	A-4726-859-A	REG BOARD, COMPLETE (CH)	
56	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
* 57	3-703-244-00	BUSHING (2104), CORD	
58	4-222-730-01	PANEL, BACK	
59	A-4725-962-A	MAIN BOARD, COMPLETE (US,CND)	
59	A-4725-971-A	MAIN BOARD, COMPLETE (AEP,UK)	
59	A-4725-975-A	MAIN BOARD, COMPLETE (HK,KR,SP)	

Ref. No.	Part No.	Description	Remark
59	A-4726-856-A	MAIN BOARD, COMPLETE (CH)	
⚠60	1-757-316-11	CORD, POWER (AEP,HK,SP,UK)	
⚠60	1-769-079-11	CORD, POWER (KR)	
⚠60	1-782-464-21	CORD, POWER (CH)	
⚠60	1-783-531-31	CORD, POWER (US,CND)	
61	1-682-074-11	LED BOARD	
62	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)	
63	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)	
64	1-693-407-13	TUNER (US,CND)	
64	1-693-408-12	TUNER (AEP,UK,HK,CH,KR,SP)	
⚠65	1-569-008-21	ADAPTOR, CONVERSION (HK,SP)	
⚠66	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK,UK)	
* 67	4-028-047-01	HEAT SINK, CLIP TYPE	
68	4-224-741-01	INSULATED PLATE (POWER.2)	
69	4-224-740-01	INSULATED PLATE (POWER.1)	
* 70	3-344-749-01	RETAINER (B)	
71	3-561-427-11	CUSHION	
LCD701	1-804-474-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-3. MECHANISM SECTION



Ref. No.	Part No.	Description	Remark
101	4-236-397-01	DECORATION (CD)	
103	4-222-701-01	PANEL, MECHANICAL	
104	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
105	4-222-697-01	RUBBER, FLOATING	
106	4-222-692-01	HOLDER, BU	
107	4-222-702-01	SPRING (CANCEL), TENSION COIL	
108	4-222-685-01	SLIDER (1)	
109	4-222-694-01	GEAR (1)	
110	4-999-513-11	GEAR, PULLEY	
111	4-999-537-01	BELT (LOADING)	
112	4-222-695-02	GUIDE (R)	
113	4-222-693-01	SLIDER (4)	
114	4-222-700-02	GUIDE (L)	
115	4-222-687-01	BASE, MECHANICAL	
116	4-222-688-01	HOLDER, DISC	
117	4-222-813-02	SLIDER (2)	

Ref. No.	Part No.	Description	Remark
118	4-225-227-01	SPRING (ABSORBER),TENSION COIL	
119	4-225-228-01	CAM (A)	
120	4-225-226-01	ABSORBER	
121	4-222-689-01	SLIDER (3)	
122	4-222-690-01	COVER, MECHANICAL	
123	4-222-691-01	LEVER (1)	
124	4-951-620-01	SCREW (2.6X8), +BVTP	
125	1-682-072-11	LOADING BOARD	
126	1-682-073-11	SW BOARD	
127	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)	
128	3-831-441-99	CUSHION	
129	X-4952-497-1	BASE ASSY, MOTOR	
130	3-946-435-11	SCREW (M2.6)	
131	4-230-919-01	MAGNET (MECHANICAL PANEL)	
132	A-4909-346-A	BASE UNIT (KSM-770ACA)	
M351	X-4952-498-1	MOTOR ASSY	

SECTION 7
ELECTRICAL PARTS LIST

AMP | EJECT

Note:

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

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

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

- 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, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- 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
- Abbreviation
  CND : Canadian model
  SP : Singapore model
  HK : Hong kong nodel
  KR : Korea model
  CH : Chinese model

Ref. No.	Part No.	Description			Remark
	A-4725-965-A	AMP BOARD, COMPLETE (US,CND)			
	A-4725-973-A	AMP BOARD, COMPLETE (AEP,UK)			
	A-4725-977-A	AMP BOARD, COMPLETE (HK,KR,SP)			
	A-4726-858-A	AMP BOARD, COMPLETE (CH)			
		**********			
		< CAPACITOR >			
C801	1-126-047-71	ELECT	4.7uF	20%	50V
C803	1-126-022-11	ELECT	47uF	20%	25V
C804	1-162-219-31	CERAMIC	68PF	5%	50V
C805	1-164-159-11	CERAMIC	0.1uF		50V
C806	1-164-159-11	CERAMIC	0.1uF		50V
C807	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C809	1-163-013-11	CERAMIC CHIP	2200P		50V (AEP,UK,CH)
C811	1-126-027-11	ELECT	1000uF	20%	25V
C812	1-126-027-11	ELECT	1000uF	20%	25V
C813	1-164-159-11	CERAMIC	0.1uF		50V
C814	1-164-159-11	CERAMIC	0.1uF		50V
C821	1-126-933-11	ELECT	100uF	20%	16V
C822	1-126-967-11	ELECT	47uF	20%	50V
C851	1-126-047-71	ELECT	4.7uF	20%	50V
C853	1-126-022-11	ELECT	47uF	20%	25V
C854	1-162-219-31	CERAMIC	68PF	5%	50V
C855	1-164-159-11	CERAMIC	0.1uF		50V
C856	1-164-159-11	CERAMIC	0.1uF		50V
C859	1-163-013-11	CERAMIC CHIP	2200P		50V (AEP,UK,CH)
		< CONNECTOR >			
* CN801	1-568-943-11	PIN, CONNECTOR 5P			
CN802	1-691-766-11	PLUG (MICRO CONNECTOR) 4P			
* CN810	1-564-518-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D821	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC801	8-759-333-24	IC LM1876TF			
		< COIL >			
L801	1-420-872-00	COIL, AIR-CORE			
L851	1-420-872-00	COIL, AIR-CORE			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q821	8-729-900-53	TRANSISTOR DTC114EK			
Q822	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q823	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q824	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		< RESISTOR >			
R801	1-249-417-11	CARBON	1K	5%	1/4W
R802	1-216-088-00	METAL CHIP	43K	5%	1/10W
R803	1-249-417-11	CARBON	1K	5%	1/4W
R804	1-249-436-11	CARBON	39K	5%	1/4W
R805	1-249-754-11	CARBON	10	5%	1/2W
R806	1-249-393-11	CARBON	10	5%	1/4W
R807	1-216-089-91	RES-CHIP	47K	5%	1/10W
R821	1-216-085-91	RES-CHIP	33K	5%	1/10W
R822	1-216-091-00	METAL CHIP	56K	5%	1/10W
⚠R823	1-247-739-11	CARBON	100	5%	1/2W
R851	1-249-417-11	CARBON	1K	5%	1/4W
R852	1-216-088-00	METAL CHIP	43K	5%	1/10W
R853	1-249-417-11	CARBON	1K	5%	1/4W
R854	1-249-436-11	CARBON	39K	5%	1/4W
R855	1-249-754-11	CARBON	10	5%	1/2W
R856	1-249-393-11	CARBON	10	5%	1/4W
R857	1-216-091-00	METAL CHIP	56K	5%	1/10W
		< RELAY >			
RY801	1-755-170-11	RELAY (12V)			
**********					
	1-682-076-11	EJECT BOARD			
		**********			
		< CAPACITOR >			
C650	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C652	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C653	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C654	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C656	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< DIODE >			
D650	8-719-069-56	DIODE UDZSTE-176.2B			
D651	8-719-069-56	DIODE UDZSTE-176.2B			

EJECT **LED** **LOADING** **MAIN**

Ref. No.	Part No.	Description			Remark
		< IC >			
IC651	8-759-673-48	IC SN74HC14ANSR			
IC652	8-759-925-90	IC SN74HC74ANSR			
		< RESISTOR >			
R650	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R651	1-216-091-00	METAL CHIP	56K	5%	1/10W
R652	1-216-025-11	RES-CHIP	100	5%	1/10W
R653	1-216-073-91	RES-CHIP	10K	5%	1/10W
R655	1-216-097-11	RES-CHIP	100K	5%	1/10W
R656	1-216-097-11	RES-CHIP	100K	5%	1/10W
R659	1-216-049-11	RES-CHIP	1K	5%	1/10W
**********					
	1-682-074-11	LED BOARD			
		*********			
		< DIODE >			
D781	8-719-085-19	DIODE SELS5B20C-TP15			
D782	8-719-085-19	DIODE SELS5B20C-TP15			
D783	8-719-085-19	DIODE SELS5B20C-TP15			
D784	8-719-085-19	DIODE SELS5B20C-TP15			
		< RESISTOR >			
R781	1-216-041-00	METAL CHIP	470	5%	1/10W
R782	1-216-041-00	METAL CHIP	470	5%	1/10W
R783	1-216-041-00	METAL CHIP	470	5%	1/10W
R784	1-216-041-00	METAL CHIP	470	5%	1/10W
**********					
	1-682-072-11	LOADING BOARD			
		**********			
	1-791-868-11	CORD, CONNECTION			
		< CAPASCITOR >			
C351	1-104-665-11	ELECT	100uF	20%	16V
C352	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C354	1-163-031-91	CERAMIC CHIP	0.01uF		50V
		< DIODE >			
D351	8-719-056-78	DIODE UDZ-TE-17-4.3B			
		< IC >			
IC351	8-759-598-69	IC BA6956AN			
		< RESISTOR >			
R351	1-216-065-11	RES-CHIP	4.7K	5%	1/10W
**********					
	A-4725-962-A	MAIN BOARD, COMPLETE (US,CND)			
	A-4725-971-A	MAIN BOARD, COMPLETE (AEP,UK)			
	A-4725-975-A	MAIN BOARD, COMPLETE (HK,KR,SP)			
	A-4726-856-A	MAIN BOARD, COMPLETE (CH)			
		**********			
	4-234-982-01	HOUSE, LAMP			
	4-235-011-01	ILLUMINATOR			

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C100	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C101	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C111	1-136-173-00	MYLAR	0.47uF	5%	50V
C112	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C113	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C114	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C115	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C116	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C117	1-126-964-11	ELECT	10uF	20%	50V
C118	1-126-964-11	ELECT	10uF	20%	50V
C119	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C120	1-136-165-00	MYLAR	0.1uF	5%	50V
C121	1-136-165-00	MYLAR	0.1uF	5%	50V
C131	1-128-834-11	ELECT	470uF	20%	10V
C132	1-128-834-11	ELECT	470uF	20%	10V
C133	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C135	1-126-964-11	ELECT	10uF	20%	50V
C136	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C137	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C138	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C139	1-164-346-11	CERAMIC CHIP	1uF		16V
C151	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C152	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C161	1-136-173-00	MYLAR	0.47uF	5%	50V
C162	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C163	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C164	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C165	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C166	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C167	1-126-964-11	ELECT	10uF	20%	50V
C168	1-126-964-11	ELECT	10uF	20%	50V
C169	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C170	1-136-165-00	MYLAR	0.1uF	5%	50V
C171	1-136-165-00	MYLAR	0.1uF	5%	50V
C176	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C177	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C299	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C300	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C301	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C302	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C303	1-126-947-11	ELECT	47uF	20%	10V
C304	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C305	1-104-665-11	ELECT	100uF	20%	10V
C306	1-126-964-11	ELECT	10uF	20%	50V
C307	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C308	1-163-217-11	CERAMIC CHIP	1PF	0.25PF	50V
C309	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C311	1-164-346-11	CERAMIC CHIP	1uF		16V
C312	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C313	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C314	1-126-947-11	ELECT	47uF	20%	10V
C321	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C322	1-163-235-11	CERAMIC CHIP	22PF	5%	50V

Ref. No.	Part No.	Description			Remark
C323	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C324	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C325	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C326	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C327	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C328	1-126-927-11	ELECT	2200uF	20%	10V
C331	1-164-346-11	CERAMIC CHIP	1uF		16V
C332	1-164-346-11	CERAMIC CHIP	1uF		16V
C333	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C334	1-163-005-91	CERAMIC CHIP	470PF	10%	50V
C335	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C336	1-163-005-91	CERAMIC CHIP	470PF	10%	50V
C337	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C338	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C339	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C340	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C341	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C342	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C343	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C344	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C345	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C346	1-128-834-11	ELECT	470uF	20%	10V
C347	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C348	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C349	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C361	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C362	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C363	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C364	1-128-834-11	ELECT	470uF	20%	10V
C365	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C366	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C367	1-164-346-11	CERAMIC CHIP	1uF		16V
C368	1-128-834-11	ELECT	470uF	20%	10V
C371	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C372	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C373	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C374	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C381	1-126-964-11	ELECT	10uF	20%	50V
C382	1-126-964-11	ELECT	10uF	20%	50V
C383	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C384	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C391	1-104-665-11	ELECT	100uF	20%	10V
C392	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C398	1-164-159-11	CERAMIC	0.1uF		50V
C399	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C402	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C403	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C404	1-163-031-91	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C405	1-163-031-91	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C406	1-126-933-11	ELECT	100uF	20%	16V
C407	1-104-665-11	ELECT	100uF	20%	10V
C408	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C409	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C451	1-164-346-11	CERAMIC CHIP	1uF		16V (AEP,UK)
C452	1-163-031-91	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C453	1-163-006-11	CERAMIC CHIP	560PF	10%	50V (AEP,UK)
C455	1-163-031-91	CERAMIC CHIP	0.01uF		50V (AEP,UK)
C456	1-163-239-11	CERAMIC CHIP	33PF	5%	50V (AEP,UK)
C457	1-163-239-11	CERAMIC CHIP	33PF	5%	50V (AEP,UK)
C458	1-164-346-11	CERAMIC CHIP	1uF		16V (AEP,UK)
C501	1-126-960-11	ELECT	1uF	20%	50V
C502	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C503	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C511	1-126-934-11	ELECT	220uF	20%	10V
C512	1-126-934-11	ELECT	220uF	20%	10V
C551	1-126-960-11	ELECT	1uF	20%	50V
C552	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C553	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C554	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C701	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C702	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C703	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C704	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C705	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C751	1-104-905-11	CAPACITOR	0.22F		5.5V
C754	1-126-786-11	ELECT	47uF	20%	16V
C755	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C756	1-126-786-11	ELECT	47uF	20%	16V
C757	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C758	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C759	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C784	1-128-834-11	ELECT	470uF	20%	10V
C785	1-164-346-11	CERAMIC CHIP	1uF		16V
C791	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C792	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C793	1-163-031-91	CERAMIC CHIP	0.01uF		50V
C798	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C799	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

< CONNECTOR >

CN301	1-770-168-11	CONNECTOR,FFC(LIF(NON-ZIF))16P	
CN302	1-779-977-11	PIN, CONNECTOR 6P	
CN303	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CN351	1-568-955-11	PIN, CONNECTOR 6P	
CN401	1-774-289-11	PIN, CONNECTOR (PC BOARD) 15P	
* CN701	1-568-850-11	SOCKET, CONNECTOR 7P	
CN702	1-691-647-11	SOCKET, CONNECTOR 13P	

< DIODE >

D139	8-719-056-72	DIODE	UDZ-TE-17-2.4B
D701	8-719-914-43	DIODE	DAN202K
D751	8-719-075-77	DIODE	EC10DA40-TE12
D752	8-719-075-77	DIODE	EC10DA40-TE12
D753	8-719-988-61	DIODE	1SS355TE-17
D754	8-719-988-61	DIODE	1SS355TE-17

MAIN

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
FB300	1-500-245-11	FERRITE	0UH		
FB331	1-500-245-11	FERRITE	0UH		
FB361	1-500-445-21	FERRITE	0UH		
		< IC >			
IC111	8-759-495-85	IC	M62442FP-A		
IC301	8-752-085-51	IC	CXA2568M-T6		
IC302	8-759-549-28	IC	BA5974FP-E2		
IC303	8-752-389-34	IC	CXD2585Q		
IC304	8-759-569-28	IC	PCM1710U-B/1K		
IC391	8-749-923-04	IC	TOTX178A (CD DIGITAL OUT)		
IC451	8-759-560-51	IC	BU1924F (AEP,UK)		
IC501	8-759-331-72	IC	NJM4558E-D(TE2)		
IC701	8-759-688-93	IC	uPD780306GF-034-3BA		
IC751	8-759-635-63	IC	M51943BSL-TP		
		< JACK >			
J101	1-695-188-31	JACK, PIN 4P (TAPE IN/OUT)			
J501	1-566-891-11	JACK (PHONES)			
		< COIL >			
L391	1-410-322-11	INDUCTOR	3.3uH		
L401	1-410-393-11	INDUCTOR CHIP	100uH		
L402	1-410-393-11	INDUCTOR CHIP	100uH		
L403	1-410-393-11	INDUCTOR CHIP	100uH		
L404	1-410-393-11	INDUCTOR CHIP	100uH		
L405	1-410-393-11	INDUCTOR CHIP	100uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD701	1-804-474-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q113	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q131	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q163	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q301	8-729-049-31	TRANSISTOR	2SB710A-RTX		
Q401	8-729-120-28	TRANSISTOR	2SC1623-L5L6 (AEP,UK)		
Q501	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q551	8-729-141-73	TRANSISTOR	2SC3624A-T1L15L16		
Q751	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q771	8-729-900-53	TRANSISTOR	DTC114EK		
Q773	8-729-027-43	TRANSISTOR	DTC114EA		
Q774	8-729-620-33	TRANSISTOR	2SA1235		
Q775	8-729-600-22	TRANSISTOR	2SA1235-F		
Q781	8-729-040-20	TRANSISTOR	RT1P137L-TP		
Q782	8-729-900-53	TRANSISTOR	DTC114EK		
		< RESISTOR >			
R101	1-216-049-11	RES-CHIP	1K	5%	1/10W
R102	1-216-097-11	RES-CHIP	100K	5%	1/10W
R103	1-216-049-11	RES-CHIP	1K	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R112	1-216-073-91	RES-CHIP	10K	5%	1/10W
R113	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R114	1-216-097-11	RES-CHIP	100K	5%	1/10W
R115	1-216-073-91	RES-CHIP	10K	5%	1/10W
R116	1-216-094-00	RES-CHIP	75K	5%	1/10W
R117	1-216-085-91	RES-CHIP	33K	5%	1/10W
R131	1-216-025-11	RES-CHIP	100	5%	1/10W
R132	1-216-025-11	RES-CHIP	100	5%	1/10W
R133	1-216-025-11	RES-CHIP	100	5%	1/10W
R134	1-216-097-11	RES-CHIP	100K	5%	1/10W
R135	1-216-049-11	RES-CHIP	1K	5%	1/10W
R139	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R151	1-216-049-11	RES-CHIP	1K	5%	1/10W
R152	1-216-097-11	RES-CHIP	100K	5%	1/10W
R153	1-216-049-11	RES-CHIP	1K	5%	1/10W
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R162	1-216-073-91	RES-CHIP	10K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-097-11	RES-CHIP	100K	5%	1/10W
R165	1-216-073-91	RES-CHIP	10K	5%	1/10W
R166	1-216-094-00	RES-CHIP	75K	5%	1/10W
R167	1-216-085-91	RES-CHIP	33K	5%	1/10W
R301	1-216-295-91	SHORT	0		
R302	1-216-295-91	SHORT	0		
R303	1-216-295-91	SHORT	0		
R304	1-216-295-91	SHORT	0		
R305	1-216-105-91	RES-CHIP	220K	5%	1/10W
R306	1-216-105-91	RES-CHIP	220K	5%	1/10W
R307	1-216-001-00	METAL CHIP	10	5%	1/10W
R308	1-216-003-11	RES-CHIP	12	5%	1/10W
R310	1-216-089-91	RES-CHIP	47K	5%	1/10W
R311	1-216-081-00	METAL CHIP	22K	5%	1/10W
R312	1-216-121-11	RES-CHIP	1M	5%	1/10W
R313	1-216-295-91	SHORT	0		
R315	1-216-121-11	RES-CHIP	1M	5%	1/10W
R321	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R322	1-216-101-00	METAL CHIP	150K	5%	1/10W
R323	1-216-089-91	RES-CHIP	47K	5%	1/10W
R324	1-216-111-00	METAL CHIP	390K	5%	1/10W
R331	1-216-025-11	RES-CHIP	100	5%	1/10W
R332	1-216-077-91	RES-CHIP	15K	5%	1/10W
R333	1-216-097-11	RES-CHIP	100K	5%	1/10W
R334	1-216-077-91	RES-CHIP	15K	5%	1/10W
R335	1-216-085-91	RES-CHIP	33K	5%	1/10W
R336	1-216-073-91	RES-CHIP	10K	5%	1/10W
R337	1-216-097-11	RES-CHIP	100K	5%	1/10W
R338	1-216-073-91	RES-CHIP	10K	5%	1/10W
R339	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R340	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R341	1-216-121-11	RES-CHIP	1M	5%	1/10W
R342	1-216-037-00	METAL CHIP	330	5%	1/10W
R343	1-216-037-00	METAL CHIP	330	5%	1/10W
R344	1-216-037-00	METAL CHIP	330	5%	1/10W
R345	1-216-037-00	METAL CHIP	330	5%	1/10W
R346	1-216-077-91	RES-CHIP	15K	5%	1/10W
R347	1-216-049-11	RES-CHIP	1K	5%	1/10W
R348	1-216-025-11	RES-CHIP	100	5%	1/10W
R349	1-216-097-11	RES-CHIP	100K	5%	1/10W
R361	1-216-045-00	METAL CHIP	680	5%	1/10W
R362	1-216-037-00	METAL CHIP	330	5%	1/10W
R363	1-216-037-00	METAL CHIP	330	5%	1/10W

Ref. No.	Part No.	Description			Remark
R364	1-216-025-11	RES-CHIP	100	5%	1/10W
R365	1-216-025-11	RES-CHIP	100	5%	1/10W
R381	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R382	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R383	1-216-073-91	RES-CHIP	10K	5%	1/10W
R384	1-216-073-91	RES-CHIP	10K	5%	1/10W
R401	1-216-025-11	RES-CHIP	100	5%	1/10W
R402	1-216-025-11	RES-CHIP	100	5%	1/10W
R403	1-216-025-11	RES-CHIP	100	5%	1/10W
R404	1-216-025-11	RES-CHIP	100	5%	1/10W
R405	1-216-073-91	RES-CHIP	10K	5%	1/10W
R406	1-216-073-91	RES-CHIP	10K	5%	1/10W
R407	1-216-049-11	RES-CHIP	1K	5%	1/10W (AEP,UK)
R408	1-216-073-91	RES-CHIP	10K	5%	1/10W (AEP,UK)
⚠R409	1-212-881-11	FUSIBLE	100	5%	1/4W (AEP,UK)
R411	1-216-049-11	RES-CHIP	1K	5%	1/10W
R412	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R413	1-216-049-11	RES-CHIP	1K	5%	1/10W
R414	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R452	1-216-129-00	METAL CHIP	2.2M	5%	1/10W (AEP,UK)
R453	1-216-049-11	RES-CHIP	1K	5%	1/10W (AEP,UK)
R454	1-216-033-00	METAL CHIP	220	5%	1/10W (AEP,UK)
R455	1-216-033-00	METAL CHIP	220	5%	1/10W (AEP,UK)
R501	1-216-097-11	RES-CHIP	100K	5%	1/10W
R502	1-216-073-91	RES-CHIP	10K	5%	1/10W
R503	1-216-089-91	RES-CHIP	47K	5%	1/10W
R504	1-216-025-11	RES-CHIP	100	5%	1/10W
R505	1-216-049-11	RES-CHIP	1K	5%	1/10W
R511	1-500-445-21	FERRITE	0		
R512	1-500-445-21	FERRITE	0		
R551	1-216-097-11	RES-CHIP	100K	5%	1/10W
R552	1-216-073-91	RES-CHIP	10K	5%	1/10W
R553	1-216-089-91	RES-CHIP	47K	5%	1/10W
R554	1-216-025-11	RES-CHIP	100	5%	1/10W
R555	1-216-049-11	RES-CHIP	1K	5%	1/10W
R701	1-216-109-00	METAL CHIP	330K	5%	1/10W
R702	1-216-097-11	RES-CHIP	100K	5%	1/10W
R703	1-216-097-11	RES-CHIP	100K	5%	1/10W
R704	1-216-089-91	RES-CHIP	47K	5%	1/10W
R705	1-216-085-91	RES-CHIP	33K	5%	1/10W (US,CND)
R705	1-216-081-00	METAL CHIP	22K	5%	1/10W (HK,KR,SP,CH
R705	1-216-053-00	METAL CHIP	1.5K	5%	1/10W (AEP,UK)
R706	1-216-073-91	RES-CHIP	10K	5%	1/10W
R707	1-216-073-91	RES-CHIP	10K	5%	1/10W
R708	1-216-073-91	RES-CHIP	10K	5%	1/10W
R709	1-216-073-91	RES-CHIP	10K	5%	1/10W
R710	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R751	1-216-025-11	RES-CHIP	100	5%	1/10W
R752	1-216-049-11	RES-CHIP	1K	5%	1/10W
R753	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R754	1-216-089-91	RES-CHIP	47K	5%	1/10W
R755	1-216-089-91	RES-CHIP	47K	5%	1/10W
R756	1-216-073-91	RES-CHIP	10K	5%	1/10W
R757	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R774	1-216-073-00	RES-CHIP	10K	5%	1/10W
R775	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R776	1-216-073-91	RES-CHIP	10K	5%	1/10W
R777	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R778	1-216-037-00	METAL CHIP	330	5%	1/10W
R785	1-216-049-11	RES-CHIP	1K	5%	1/10W
R792	1-216-097-11	RES-CHIP	100K	5%	1/10W
R793	1-216-097-11	RES-CHIP	100K	5%	1/10W
R794	1-216-097-11	RES-CHIP	100K	5%	1/10W
		< VIBRATOR >			
X361	1-579-280-31	VIBRATOR, CRYSTAL (16.9344MHz)			
X601	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)(AEP,UK)			
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
X702	1-567-098-41	VIBRATOR, CRYSTAL (32KHz)			
**********					
	1-682-069-11	PANEL BOARD			
		**********			
		< CAPACITOR >			
C606	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C611	1-124-589-11	ELECT	47uF	20%	16V
C612	1-124-589-11	ELECT	47uF	20%	16V
C613	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN601	1-568-850-11	SOCKET, CONNECTOR 7P			
* CN602	1-568-941-11	PIN, CONNECTOR 3P			
		< DIODE >			
D621	8-719-056-11	DIODE SML72423C-TP15 (**I**/⏻)			
		< IC >			
IC601	8-742-129-00	IC SBX1971-51P			
		< TRANSISTOR >			
Q622	8-729-027-23	TRANSISTOR DTA114EKA-T146			
Q623	8-729-027-23	TRANSISTOR DTA114EKA-T146			
Q651	8-729-900-53	TRANSISTOR DTC114EK			
Q652	8-729-900-53	TRANSISTOR DTC114EK			
		< RESISTOR >			
R601	1-216-041-00	METAL CHIP	470	5%	1/10W
R602	1-216-045-00	METAL CHIP	680	5%	1/10W
R603	1-216-049-11	RES-CHIP	1K	5%	1/10W
R606	1-216-017-91	RES-CHIP	47	5%	1/10W
R609	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R611	1-216-041-00	METAL CHIP	470	5%	1/10W
R612	1-216-045-00	METAL CHIP	680	5%	1/10W
R613	1-216-049-11	RES-CHIP	1K	5%	1/10W
R614	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R615	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

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

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

PANEL POWER

Ref. No.	Part No.	Description			Remark
R616	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R619	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R622	1-216-041-00	METAL CHIP	470	5%	1/10W
R623	1-216-037-00	METAL CHIP	330	5%	1/10W
		< SWITCH >			
S601	1-762-875-21	SWITCH, KEYBOARD (I/⏻)			
S602	1-571-532-21	SWITCH, TACTIL (DISPLAY)			
S603	1-762-875-21	SWITCH, KEYBOARD (FUNCTION)			
S604	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
S611	1-762-875-21	SWITCH, KEYBOARD (▶II)			
S612	1-762-875-21	SWITCH, KEYBOARD (■)			
S613	1-762-875-21	SWITCH, KEYBOARD (TUNING -I◀◀ ◀◀)			
S614	1-762-875-21	SWITCH, KEYBOARD (TUNING +▶▶ ▶▶I)			
S615	1-762-875-21	SWITCH, KEYBOARD (VOL -)			
S616	1-762-875-21	SWITCH, KEYBOARD (VOL +)			
		< TEST PIN >			
TP603	1-690-880-51	LEAD (WITH CONNECTOR)			
**********					
	A-4725-964-A	POWER BOARD, COMPLETE (US,CND)			
	A-4725-972-A	POWER BOARD, COMPLETE (AEP,UK)			
	A-4725-976-A	POWER BOARD, COMPLETE (HK,KR,SP)			
	A-4726-857-A	POWER BOARD, COMPLETE (CH)			
		**********			
	1-533-293-11	FUSE HOLDER			
	4-224-739-01	CASE (TR), RUBBER			
	4-224-742-01	TUBE, RUBBER			
	4-224-743-01	RETAINER, IC			
	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT			
		< CAPACITOR >			
C1	1-131-678-11	ELECT	82uF	20%	400V (HK,KR,SP,CH)
C1	1-107-956-11	ELECT	220uF	20%	200V (US,CND)
C1	1-131-714-11	ELECT	100uF	20%	400V (AEP,UK)
C2	1-107-888-11	ELECT	47uF	20%	25V
C3	1-130-477-00	MYLAR	0.0033uF	5%	50V
C4	1-107-429-11	CERAMIC	0.0022uF	10%	1KV
C5	1-162-290-31	CERAMIC	470PF	10%	50V
C6	1-131-983-11	FILM	0.1uF	10%	275V
C7	1-131-983-11	FILM	0.1uF	10%	275V
C9	1-113-907-51	CERAMIC	0.0022uF	99%	250V
C10	1-162-115-00	CERAMIC	330PF	10%	2KV
C11	1-113-920-11	CERAMIC	0.0022uF	20%	250V
C12	1-113-920-11	CERAMIC	0.0022uF	20%	250V
C13	1-131-678-11	ELECT	82uF	20%	400V (HK,KR,SP)
C13	1-131-714-11	ELECT	100uF	20%	400V (AEP,UK,CH)
C14	1-113-920-11	CERAMIC	0.0022uF	20%	250V
C21	1-164-159-11	CERAMIC	0.1uF		50V
C901	1-107-425-11	CERAMIC	470PF	10%	1KV
C902	1-131-969-11	ELECT	1800uF	20%	25V
C903	1-131-970-11	ELECT	1500uF	20%	25V
C904	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C905	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C911	1-107-425-11	CERAMIC	470PF	10%	1KV
C912	1-131-969-11	ELECT	1800uF	20%	25V
C913	1-131-970-11	ELECT	1500uF	20%	25V
C914	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C915	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C931	1-107-425-11	CERAMIC	470PF	10%	1KV
C932	1-126-768-11	ELECT	2200uF	20%	16V
C939	1-124-995-11	ELECT	220uF	20%	10V
C940	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C941	1-107-425-11	CERAMIC	470PF	10%	1KV
C942	1-126-012-11	ELECT	470uF	20%	16V
C949	1-124-995-11	ELECT	220uF	20%	10V
C950	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C951	1-136-153-00	FILM	0.01uF	5%	50V
C952	1-162-292-31	CERAMIC	680PF	10%	50V
		< CONNECTOR >			
* CN1	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
CN903	1-764-334-11	PLUG, CONNECTOR 11P			
		< DIODE >			
D2	8-719-200-93	DIODE 11EQS10-TA2			
D3	8-719-200-93	DIODE 11EQS10-TA2			
D4	8-719-210-21	DIODE 11EQS04			
D6	8-719-109-97	DIODE RD6.8ESB2			
D7	8-719-911-19	DIODE 1SS119-25			
D10	8-719-084-21	DIODE 10E6N-TA1B2			
D11	8-719-084-21	DIODE 10E6N-TA1B2			
D12	8-719-084-21	DIODE 10E6N-TA1B2			
D13	8-719-084-21	DIODE 10E6N-TA1B2			
D21	8-719-048-55	DIODE MTZJ-T-77-10C			
D22	8-719-110-53	DIODE RD20ESB2			
D901	8-719-043-52	DIODE F5KQ60			
D911	8-719-043-52	DIODE F5KQ60			
D931	8-719-210-21	DIODE 11EQS04			
D941	8-719-210-21	DIODE 11EQS04			
D951	8-719-911-19	DIODE 1SS119-25			
D952	8-719-911-19	DIODE 1SS119-25			
D953	8-719-200-93	DIODE 11EQS10-TA2			
D954	8-719-200-93	DIODE 11EQS10-TA2(AEP,UK,HK,KR,SP,CH)			
		< GROUND TERMINAL >			
EPT1	1-537-770-21	TERMINAL BOARD, GROUND			
EPT2	1-537-770-21	TERMINAL BOARD, GROUND (US,CND)			
EPT901	1-537-770-21	TERMINAL BOARD, GROUND			
		< FUSE >			
⚠ F1	1-533-451-11	FUSE, GLASS TUBE (DIA. 5) (3.15A/125V) (US,CND)			
⚠ F1	1-533-470-11	FUSE, GLASS TUBE (DIA. 5) (T3.15AL/250V) (AEP,UK,HK,KR,SP,CH)			
		< FERRITE BEAD >			
FB1	1-412-473-21	INDUCTOR 0uH			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC1	8-749-019-48	IC STR-F6676-LF1352			
IC933	8-759-288-53	IC LA5617			
IC951	8-749-016-65	IC SE015N			
		< COIL >			
L1	1-419-528-11	INDUCTOR	13mH		
L901	1-419-281-11	INDUCTOR	10uH		
L911	1-419-281-11	INDUCTOR	10uH		
		< ISOLATER >			
PC1	8-749-013-68	IC PS2561-1-D			
PC2	8-749-013-68	IC PS2561-1-D			
		< TRANSISTOR >			
Q21	8-729-111-29	TRANSISTOR 2SD1616A-K			
Q22	8-729-140-04	TRANSISTOR 2SB1116A-L			
Q23	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q951	8-729-620-05	TRANSISTOR 2SC2603-EF			
		< RESISTOR >			
⚠R1	1-219-237-11	SOLID	3.3M	20%	1/2W (US,CND)
R2	1-249-426-11	CARBON	5.6K	5%	1/4W
R3	1-247-843-11	CARBON	3.3K	5%	1/4W
R4	1-249-415-11	CARBON	680	5%	1/4W
⚠R5	1-217-151-00	METAL	0.22	10%	2W
⚠R8	1-249-393-11	CARBON	10	5%	1/4W
⚠R9	1-215-903-11	METAL OXIDE	68K	5%	2W
R10	1-247-895-00	CARBON	470K	5%	1/4W
R11	1-249-433-11	CARBON	22K	5%	1/4W
R21	1-249-425-11	CARBON	4.7K	5%	1/4W
R22	1-249-424-11	CARBON	3.9K	5%	1/4W
R23	1-247-881-00	CARBON	120K	5%	1/4W
R24	1-249-439-11	CARBON	68K	5%	1/4W
⚠R939	1-219-119-81	FUSIBLE	0.1	5%	1/4W
⚠R949	1-219-119-81	FUSIBLE	0.1	5%	1/4W
R951	1-249-419-11	CARBON	1.5K	5%	1/4W
R952	1-249-401-11	CARBON	47	5%	1/4W
R953	1-249-420-11	CARBON	1.8K	5%	1/4W
R954	1-249-437-11	CARBON	47K	5%	1/4W
R955	1-249-425-11	CARBON	4.7K	5%	1/4W
R956	1-249-415-11	CARBON	680	5%	1/4W
R957	1-249-409-11	CARBON	220	5%	1/4W (AEP,UK,HK,KR,SP,CH)
		< TRANSFORMER >			
⚠T901	1-435-130-11	TRANSFORMER, POWER			
		< THERMISTOR >			
⚠TH1	1-803-806-31	THERMISTOR, NTC			

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	A-4725-969-A	REG BOARD, COMPLETE (US,CND)
	A-4725-974-A	REG BOARD, COMPLETE (AEP,UK)
	A-4725-978-A	REG BOARD, COMPLETE (HK,KR,SP)
	A-4726-859-A	REG BOARD, COMPLETE (CH)

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Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C891	1-164-159-11	CERAMIC	0.1uF		50V
C892	1-164-159-11	CERAMIC	0.1uF		50V
C893	1-164-159-11	CERAMIC	0.1uF		50V
C894	1-164-159-11	CERAMIC	0.1uF		50V
C895	1-164-159-11	CERAMIC	0.1uF		50V
C896	1-164-159-11	CERAMIC	0.1uF		50V
C897	1-163-038-91	CERAMIC CHIP	0.1uF		25V (AEP,UK,CH)
C898	1-163-038-91	CERAMIC CHIP	0.1uF		25V (AEP,UK,CH)
C899	1-163-038-91	CERAMIC CHIP	0.1uF		25V (AEP,UK,CH)
C900	1-163-038-91	CERAMIC CHIP	0.1uF		25V (AEP,UK,CH)
C933	1-164-346-11	CERAMIC CHIP	1uF		16V
C934	1-126-926-11	ELECT	1000uF	20%	10V
C935	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C936	1-126-964-11	ELECT	10uF	20%	50V
C937	1-126-926-11	ELECT	1000uF	20%	10V
C961	1-126-967-11	ELECT	47uF	20%	50V
C962	1-164-159-11	CERAMIC	0.1uF		50V
C963	1-126-967-11	ELECT	47uF	20%	50V
		< CONNECTOR >			
* CN901	1-568-832-11	SOCKET, CONNECTOR 13P			
		< DIODE >			
D933	8-719-988-61	DIODE 1SS355TE-17			
D934	8-719-200-82	DIODE 11ES2			
D961	8-719-986-26	DIODE HZS12A3LTA			
		< FERRITE BEAD >			
FB891	1-412-473-21	INDUCTOR	0UH		(AEP,UK,CH)
FB892	1-412-473-21	INDUCTOR	0UH		(AEP,UK,CH)
		< IC >			
IC931	8-759-460-76	IC BA07FP-E2			
IC932	8-759-231-53	IC M5F7805L			
		< TRANSISTOR >			
Q961	8-729-026-68	TRANSISTOR 2SD2525(TP)			
Q962	8-729-202-67	TRANSISTOR 2SK246-GR3			
Q963	8-729-900-53	TRANSISTOR DTC114EK			
Q964	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		< RESISTOR >			
R891	1-249-393-11	CARBON	10	5%	1/4W
R892	1-249-393-11	CARBON	10	5%	1/4W
R893	1-216-001-00	METAL CHIP	10	5%	1/10W (AEP,UK,CH)
R894	1-216-001-00	METAL CHIP	10	5%	1/10W (AEP,UK,CH)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

REG **SW**

Ref. No.	Part No.	Description			Remark
R961	1-216-073-91	RES-CHIP	10K	5%	1/10W
R962	1-216-049-11	RES-CHIP	1K	5%	1/10W
R963	1-249-417-11	CARBON	1K	5%	1/4W
		< TERMINAL >			
TM801	1-537-238-11	TERMINAL BOARD			
**********					
	1-682-073-11	SW BOARD			
		********			
		< SWITCH >			
S351	1-786-154-11	SWITCH, ROTARY (OPEN/CLOSE)			
**********					
		MISCELLANEOUS			
		**********			
15	1-769-889-11	WIRE (FLAT TYPE) (7 CORE)			
18	1-754-208-11	ANTENNA, FM (US,CND)			
18	1-754-209-11	ANTENNA, FM (AEP,UK,CH,HK,KR,SP)			
⚠60	1-757-316-11	CORD, POWER (AEP,HK,SP,UK)			
⚠60	1-769-079-11	CORD, POWER (KR)			
⚠60	1-782-464-21	CORD, POWER (CH)			
⚠60	1-783-531-31	CORD, POWER (US,CND)			
62	1-791-698-11	WIRE (FLAT TYPE) (16 CORE)			
63	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)			
64	1-693-407-13	TUNER (US,CND)			
64	1-693-408-12	TUNER (AEP,UK,HK,CH,KR,SP)			
⚠65	1-569-008-21	ADAPTOR, CONVERSION (HK,SP)			
⚠66	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK,UK)			
127	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)			
152	A-4909-346-A	BASE UNIT (KSM-770ACA)			
LCD701	1-804-474-11	DISPLAY PANEL, LIQUID CRYSTAL			
M351	X-4952-498-1	MOTOR ASSY			
**********					

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-870-01	SCREW +BVTT 3X5 (S)	
#2	7-685-246-14	SCREW +KTP 3X8 TYPE2 NON-SLIT	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-621-775-08	SCREW +B 2.6X3	
#5	7-685-534-14	SCREW +BTP 2.6X8 TYPE2 N-S	
#6	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
#7	7-624-105-04	STOP RING 2.3, TYPE -E	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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.

Ver.	Date	Description of Revision
1.0	2001. 07	New