HCD-EC599

SERVICE MANUAL

E Model

Ver. 1.0 2012.02

- HCD-EC599 is the amplifier, USB, CD player and tuner section in MHC-EC599.

Model Name Using Similar Mechanism	HCD-EX600
Base Unit Name	BU-D1BD76
Optical Pick-up Block Name	DA11MMVGP

SPECIFICATIONS

Amplifier section

Argentina model

The following are measured at AC 220 V, 50/60 Hz

Power output (rated):
30 W + 30 W (at 6 ohms, 1 kHz, 1% THD)

Other models

The following are measured at

Mexican model:
AC 127 V, 60 Hz

Other models:
AC 120 V, 220 V, 240 V, 50/60 Hz

Power output (rated):
30 W + 30 W (at 6 ohms, 1 kHz, 1% THD)

RMS output power (reference):
60 W + 60 W (per channel at 6 ohms, 1 kHz)

Inputs

DVD/PC IN L/R
Voltage 1.5 V, impedance 47 kilohms

(USB) port: Type A

Outputs

PHONES (stereo mini jack)
Accepts headphones with an impedance of 8 ohms or more

USB section

Supported bit rate
MP3 (MPEG 1 Audio Layer-3):
32 kbps – 320 kbps, VBR
WMA: 48 kbps – 192 kbps
AAC: 48 kbps – 320 kbps

Sampling frequencies
MP3 (MPEG 1 Audio Layer-3):
32/44.1/48 kHz
WMA: 44.1 kHz
AAC: 44.1 kHz

Supported USB device
Mass Storage Class

Maximum current
500 mA

Disc player section

System
Compact disc and digital audio system

Laser Diode Properties
Emission Duration: Continuous
Laser Output*: Less than 44.6 µW
* This output is the value measurement at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Frequency response
20 Hz – 20 kHz

Signal-to-noise ratio
More than 90 dB

Dynamic range
More than 88 dB

Tuner section

FM stereo, FM/AM superheterodyne tuner

Antenna
FM lead antenna
AM loop antenna

FM tuner section

Tuning range
87.5 MHz – 108.0 MHz (50 kHz step)

AM tuner section

Tuning range
530 kHz – 1,710 kHz (10 kHz step)
531 kHz – 1,710 kHz (9 kHz step)

Design and specifications are subject to change without notice.

Standby power consumption: 0.5 W

COMPACT DISC RECEIVER

9-890-594-01
2012B08-1

Sony Corporation
Published by Sony EMCS (Malaysia) PG Tec

SONY®

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.

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

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

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.

TABLE OF CONTENTS

SECTION 1
SERVICING NOTES

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 pickup block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

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.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning on the SW305 (push switch type).
The following checking method for the laser diode is operable.

- **Method**
  Emission of the laser diode is visually checked.
  1. Open the upper lid.
  2. Push the SW305 as shown in Fig. 1.
     Note: Do not push the detection lever strongly, or it may be bent or damaged.
  3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up.
     In this operation, the object lens will move up and down 2 times along with inward motion for the focus search.

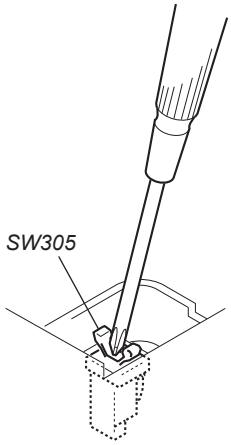


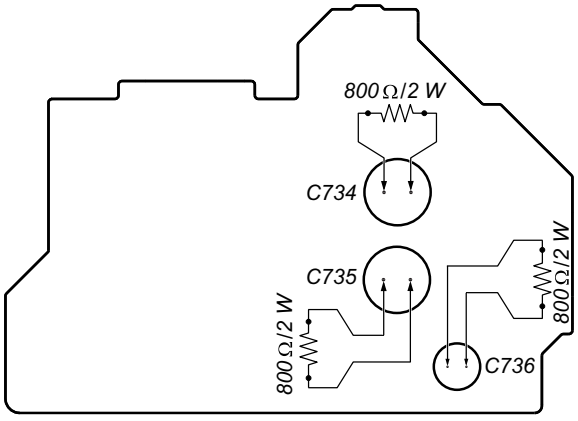
Fig. 1. Method to push the SW305

CAPACITOR ELECTRICAL DISCHARGE PROCESSING

When checking the board, the electrical discharge is necessary for the electric shock prevention. Connect the resistors referring to the figure below.

- **POWER board (C734, C735, C736)**
  Both ends of respective capacitors.

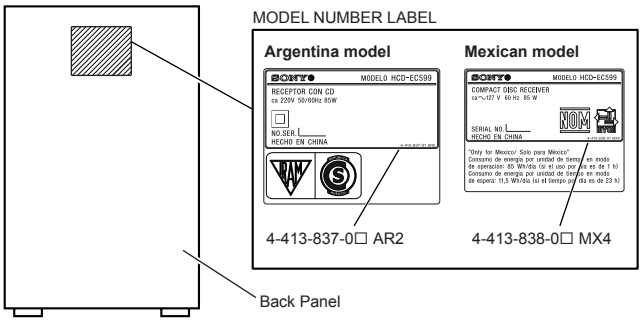
– POWER Board (Conductor Side) –



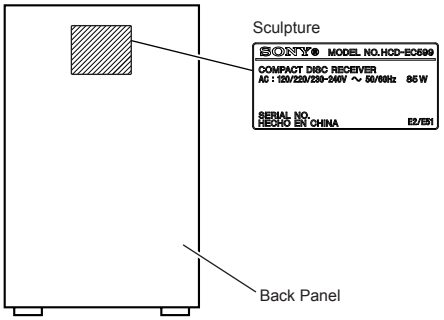
MODEL IDENTIFICATION

Distinguish the destination by referring to the model number label or the model number plate or the sculpture of back panel .

Argentina and Mexican models

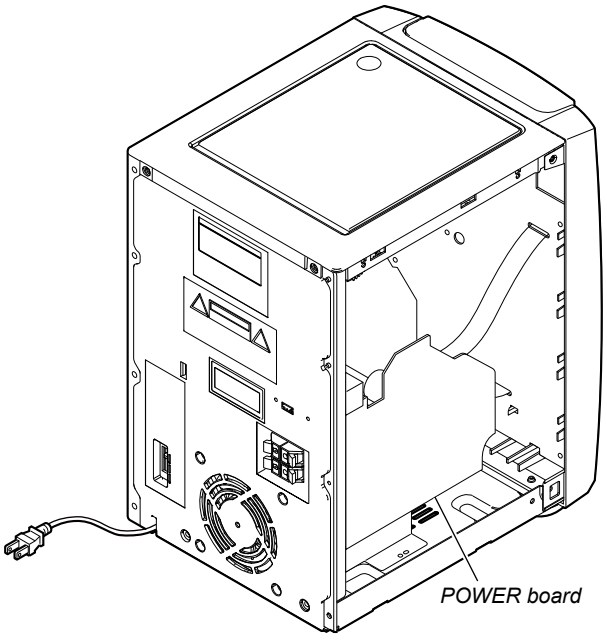


120V AC area in E model, Chilean and Peruvian models



POWER BOARD SERVICE POSITION

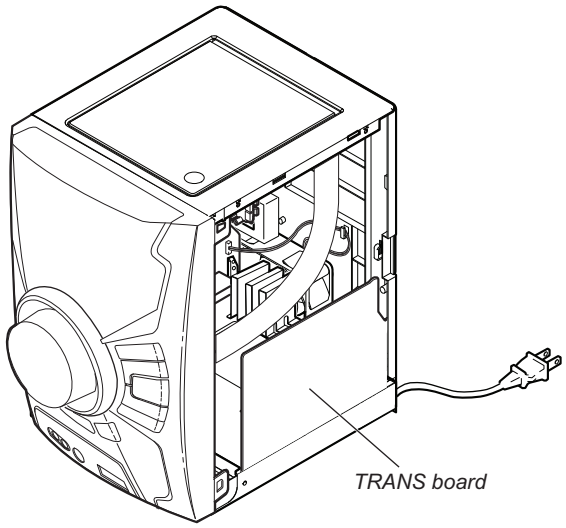
- SIDE PANEL (L) was removed.



– Rear side view –

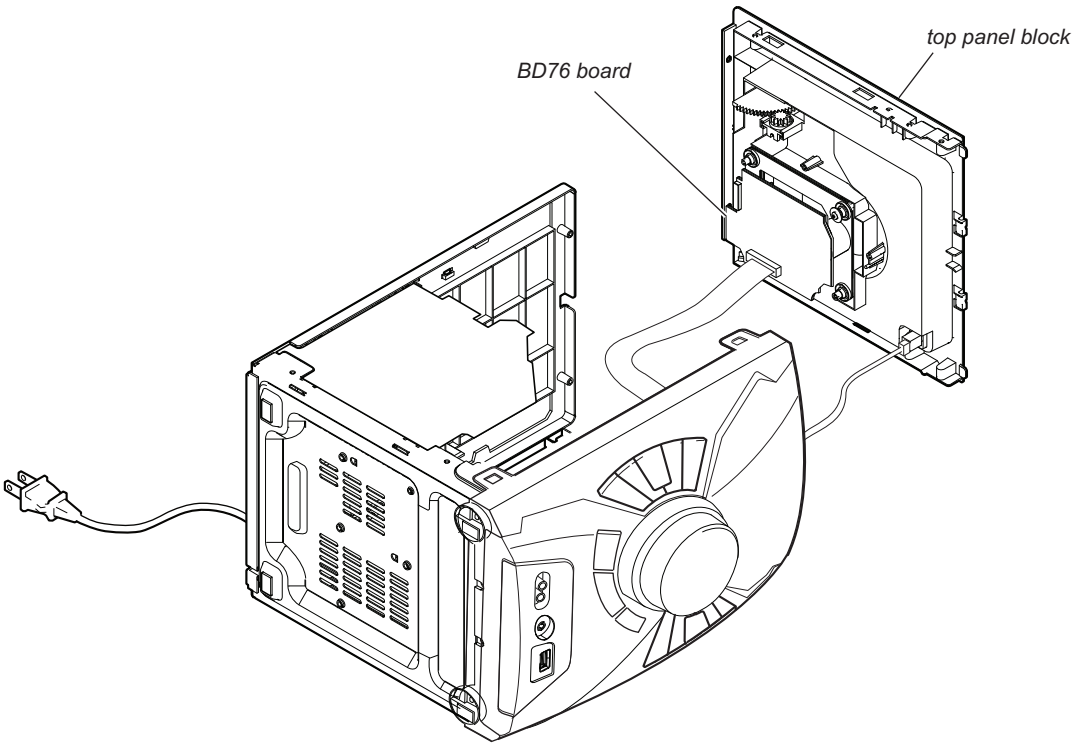
TRANS BOARD SERVICE POSITION

- SIDE PANEL (R) was removed.



BD76 BOARD SERVICE POSITION

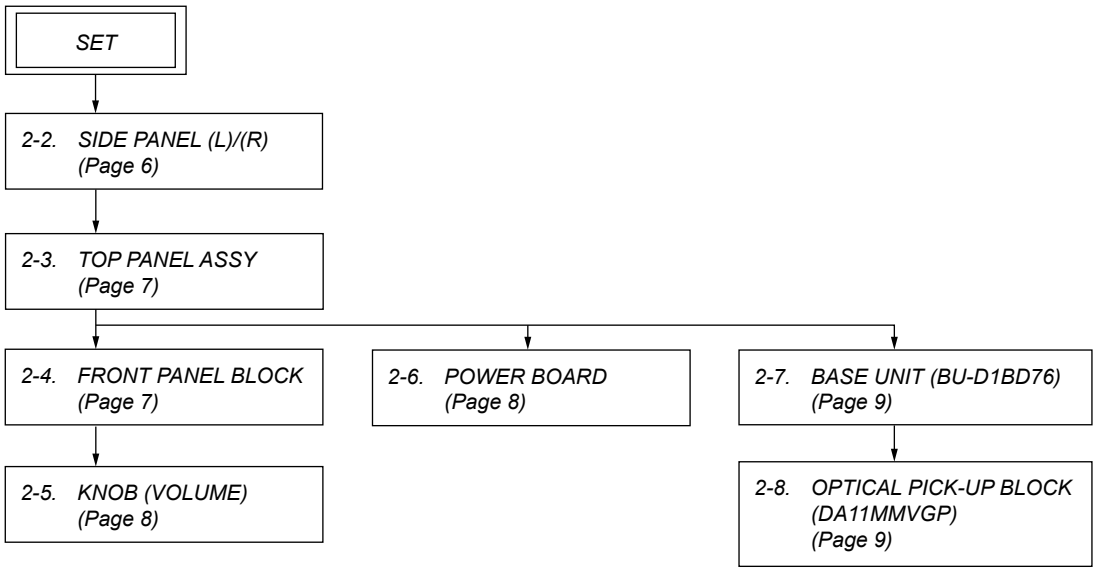
- SIDE PANEL (L) and (R) are removed, and the set is laid.



SECTION 2
DISASSEMBLY

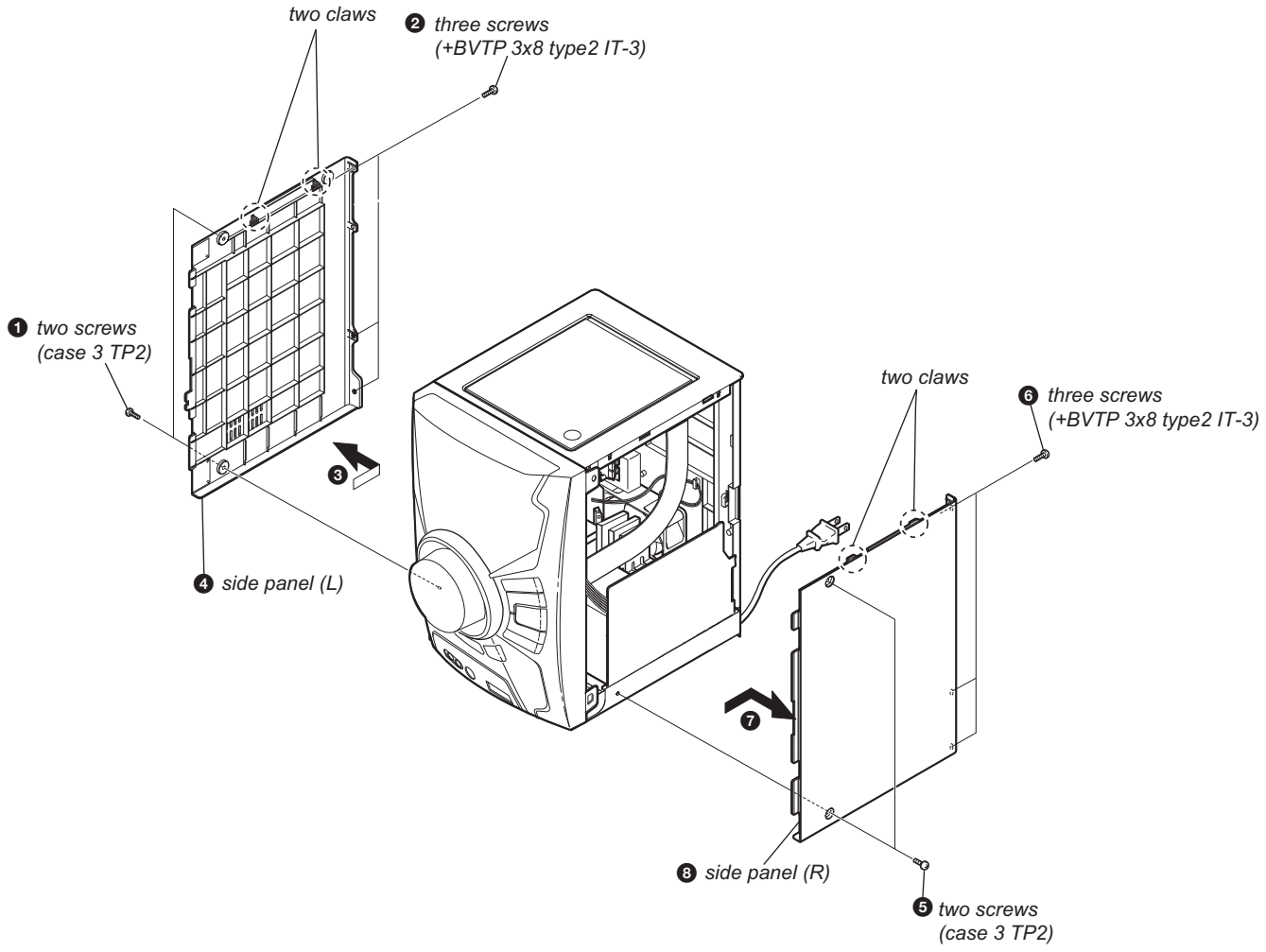
- This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

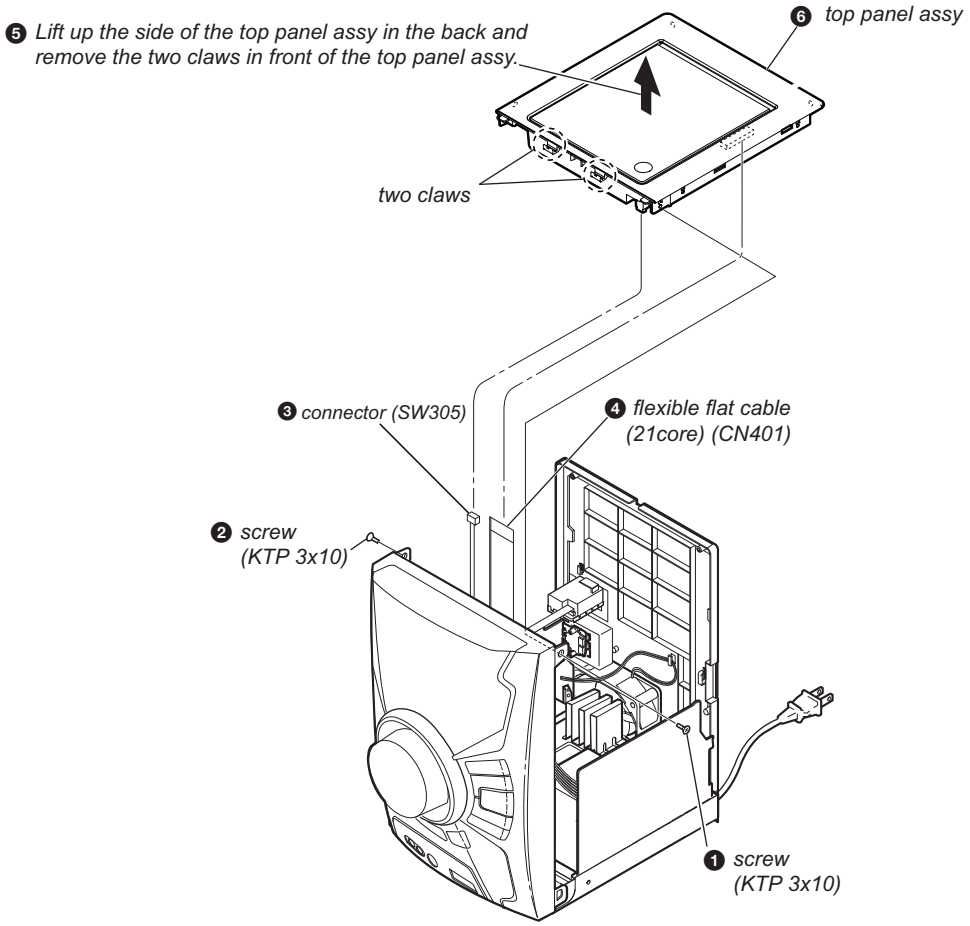


Note: Follow the disassembly procedure in the numerical order given.

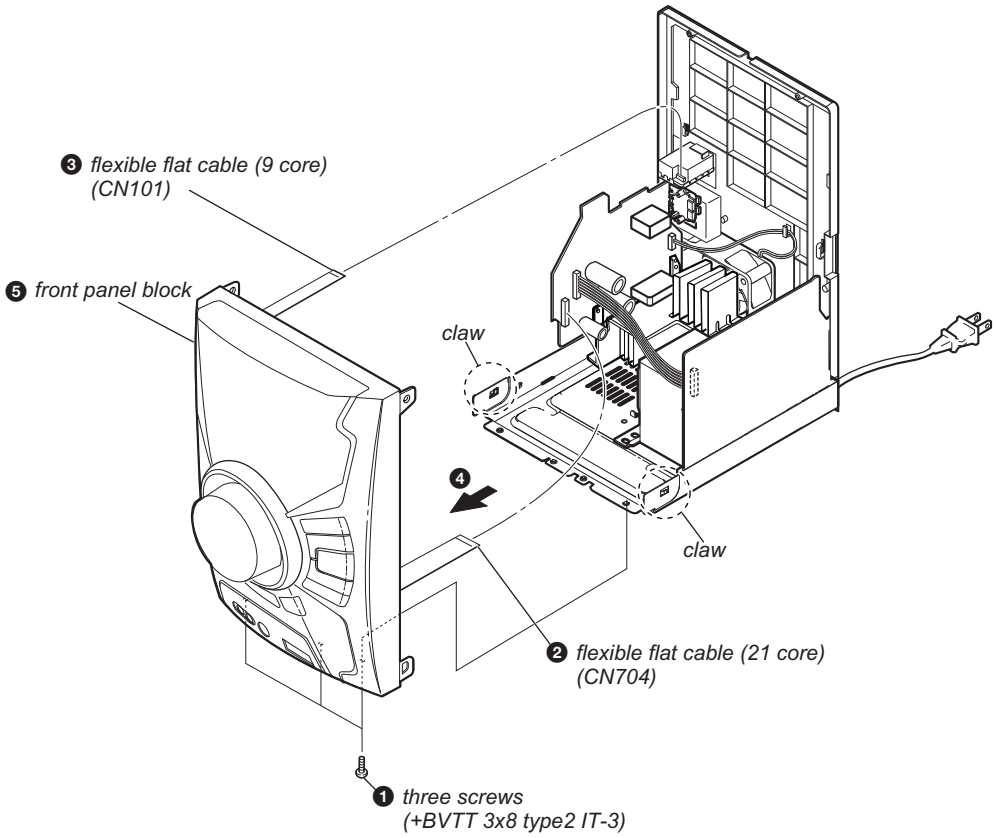
2-2. SIDE PANEL (L)/(R)



2-3. TOP PANEL ASSY

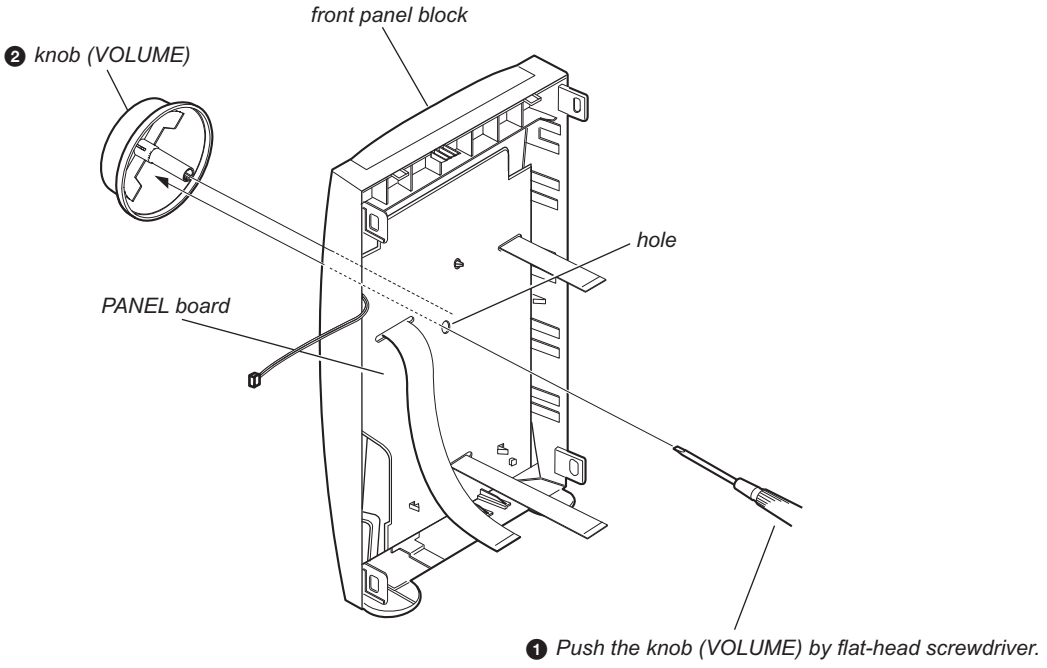


2-4. FRONT PANEL BLOCK

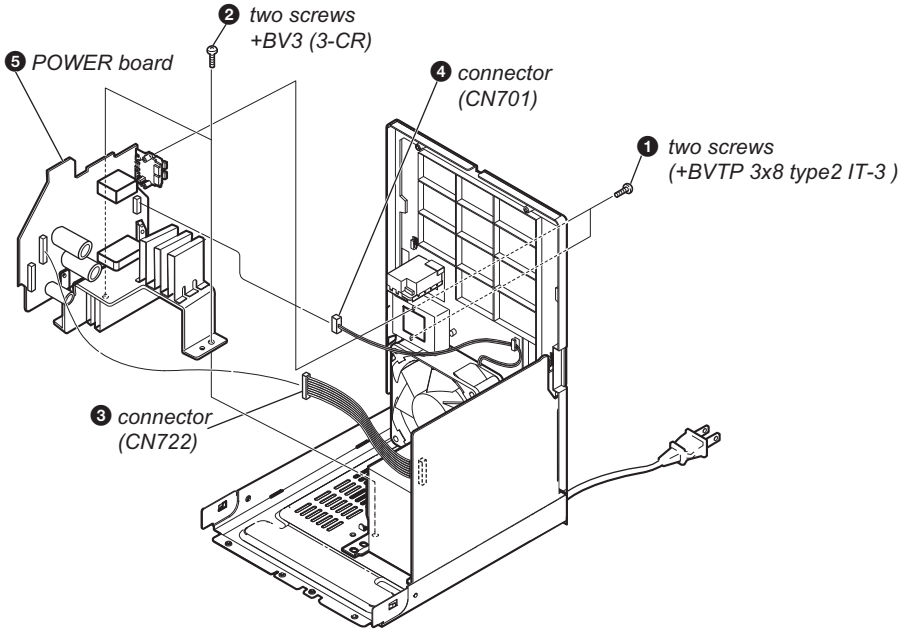


2-5. KNOB (VOLUME)

Note: This illustration sees the front panel block from PANEL board side.

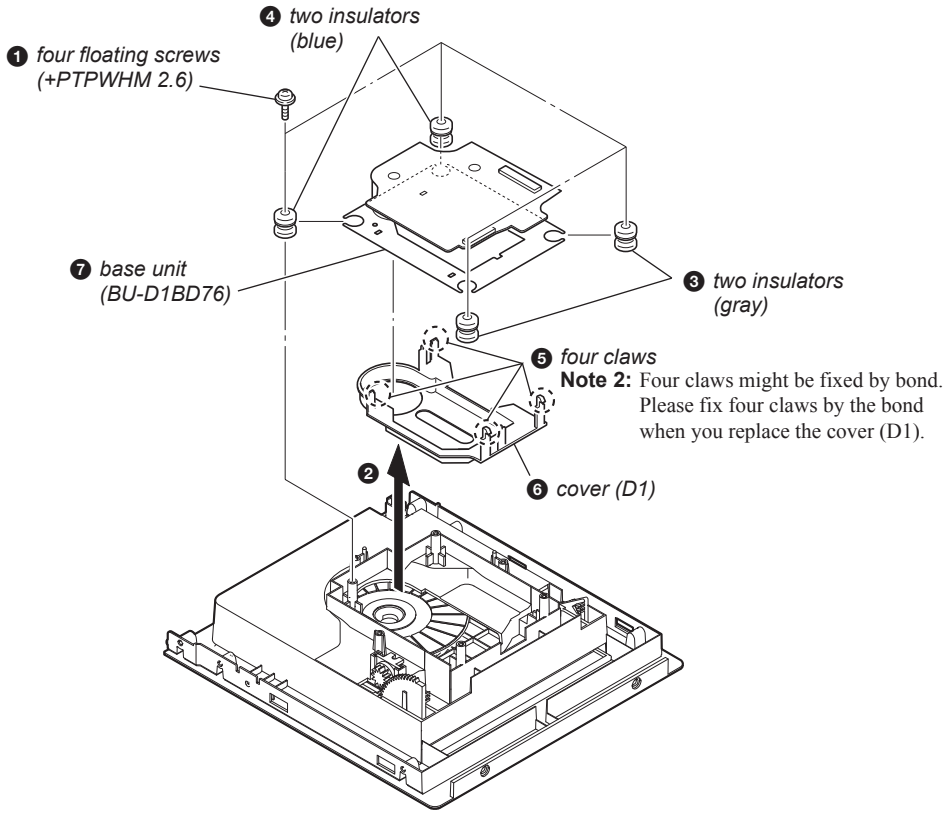


2-6. POWER BOARD



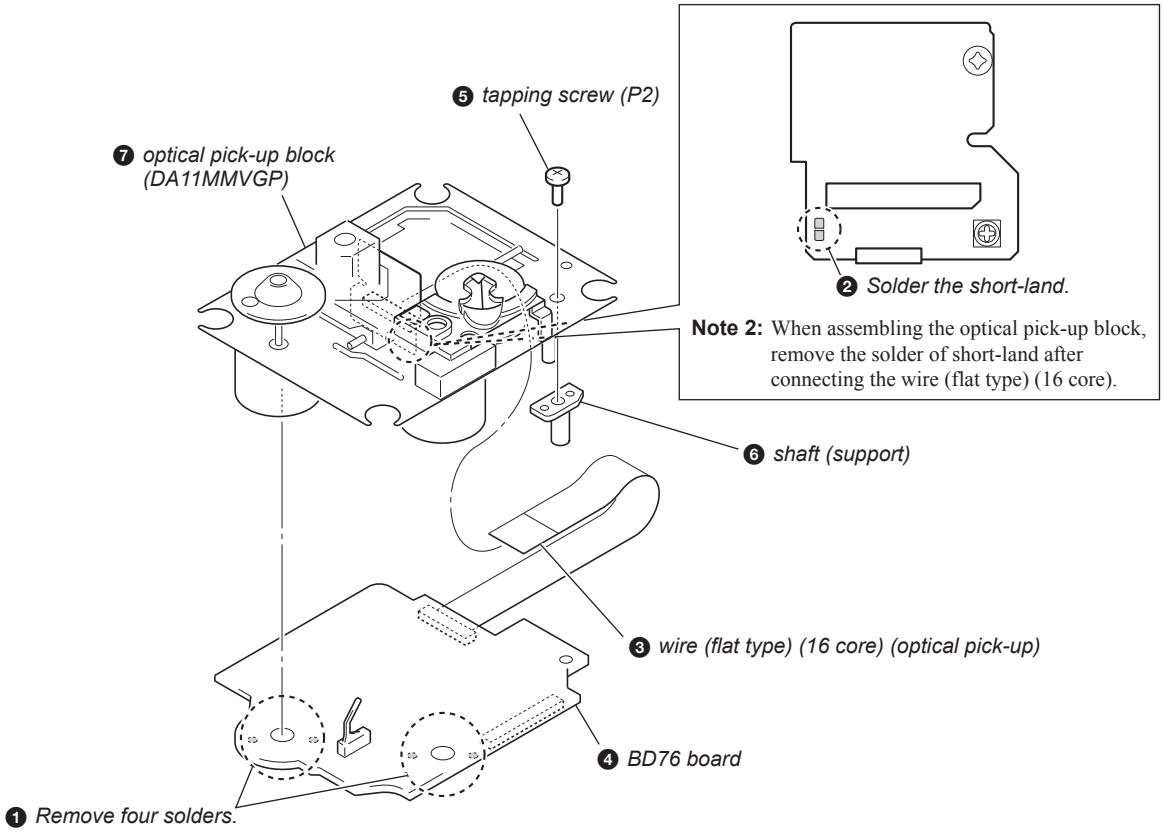
2-7. BASE UNIT (BU-D1BD76)

Note 1: This illustration sees the top panel assy from base unit side.



2-8. OPTICAL PICK-UP BLOCK (DA11MMVGP)

Note 1: When disconnecting the wire (flat type) (16 core) of optical pick-up block, solder the short-land.



SECTION 3
TEST MODE

COLD RESET

The cold reset clears all data including preset data stored in the memory to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. In the standby status, press [I/⏻] button to turn on the system.
2. Press three buttons of [■], [ENTER] and [I/⏻] simultaneously.
3. When "RESET" appears, the set enters standby status.

PANEL TEST MODE

This mode is used to check the Liquid crystal display, keys, destination and software version.

Enter the Panel Test Mode

Procedure:

1. In standby status, press the [I/⏻] button to turn the power on.
2. Press three buttons of [■], [DSGX] and [I/⏻] simultaneously.
3. All LEDs and segments of Liquid crystal display will light up.

Version Check

Procedure:

1. In the Panel test mode, press the [FUNCTION] button.
2. On the liquid crystal display panel, date and version are displayed alternately.
3. From this status, press the [EQ] button, the destination and model name are displayed alternately.
4. To release from this mode, press three buttons of [■], [DSGX] and [I/⏻] simultaneously.

Key & Encoder Test check

Procedure:

1. In the Panel test mode, press the [ENTER] button.
2. The message "KEY0 0 0" displayed. Whenever any buttons are pressed, the value is change.
3. To release from this mode, press three buttons of [■], [DSGX] and [I/⏻] simultaneously.

COMMON TEST MODE

This mode is used to check operations of the Amplifier section.

Procedure:

1. To enter Common Test Mode, press three buttons of [FUNCTION], [DSGX] and [I/⏻] simultaneously.
2. "COMMON" appears on the liquid crystal display panel. The volume is changed to VOLUME MIN.

   Check of Amplifier:

   1. Press [EQ] button repeatedly until a message "EQ MAX" appears on the liquid crystal display panel. EQ increases to its maximum.
   2. Press [EQ] button repeatedly until a message "EQ MIN" appears on the liquid crystal display panel. EQ decreases to its minimum.
   3. Press [EQ] button repeatedly until a message "EQ FLAT" appears on the liquid crystal display panel GEQ is set to flat.
   4. When the [VOLUME] knob is turned clockwise even slightly, the message "VOL MAX" appears on the liquid crystal display panel. Sound is set to volume maximum.
   5. When the [VOLUME] knob is turned clockwise even slightly, the message "VOL 38" appears on the liquid cry tal display panel. Sound is set to Standard Volume Position (SVP).
   6. When the [VOLUME] knob is turned counterclockwise even slightly, the message "VOL MIN" appears on the liquid crystal display panel. Sound is set to volume minimum.
3. To release from this mode, press [I/⏻] button.
4. The cold reset is enforced at the same time.

TUNER STEP CHANGE

The step interval of AM channels can be toggled between 9 kHz and 10 kHz. This mode is not available for Saudi Arabian, European and Russian models.

Procedure:

1. Press [I/⏻] button to turn on the system.
2. Press [FUNCTION] button repeatedly to select "TUNER AM".
3. Press [I/⏻] button to turn off the system.
4. Press the [DISPLAY] button on the remote control to enter clock mode. In clock mode, while pressing the [TUNING + ▶▶ ▷▷⏭] button, press the [I/⏻] button.
5. The system turns on automatically. The message "AM 9K STEP" or "AM 10K STEP" appears on the liquid crystal display panel and thus the channel step is changed.

CD POWER MANAGE

This mode is for switch the CD power supply on/off. Even if this state pulls out AC plug, it is held

Procedure:

1. Press [I/⏻] button to turn on the system.
2. Press [FUNCTION] button to select CD function.
3. Press [I/⏻] button again to turn off the system.
4. Press the [DISPLAY] button on the remote control to enter clock mode. In clock mode, while pressing the [■] button, press the [I/⏻] button.
5. The systems turn on and display "CD/USB", then display "PWR ON" or "PWR OFF".

CD SERVICE MODE

This mode can move the SLED of the optical pick-up and also can turn the optical pick-up laser power on and off.

Procedure:

1. Press [I/⏻] button to turn on the system.
2. Press [FUNCTION] button to select CD function.
3. Press three buttons of [▶II], [🗀+] and [I/⏻] simultaneously.
4. It enters the CD service mode and display "SERVICE".

Key Operation:

[TUNING + ▶▶ ▷▷⏭], [TUNING – ⏮◁◁ ◀◀]:

Use these keys to move the SLED.
When [TUNING + ▶▶ ▷▷⏭] is pressed in this mode, the SLED moves to outer circumference and the message "SLED OUT" is displayed. When [TUNING – ⏮◁◁ ◀◀] is pressed in this mode, the SLED moves to inner circumference and the message "SLED IN" is displayed.

[EQ]:

Use this key to turn the optical pick-up laser power on and off, When the laser power is turned on, the message "LD ON" is displayed. When the laser power is turned off, the message "LD OFF" is displayed.

5. To release from this mode, press three buttons of [▶II], [🗀+] and [I/⏻] simultaneously.

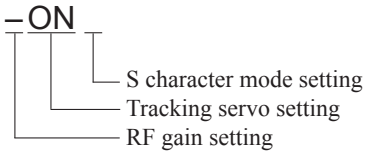
CD FACTORY MODE

Note 1: Do not enter this mode while any other test mode is in progress.
Note 2: Do not enter any other test mode while this mode is in progress.

Procedure:

1. Press [I/⏻] button to turn on the system.
2. Press [FUNCTION] button to select CD function.

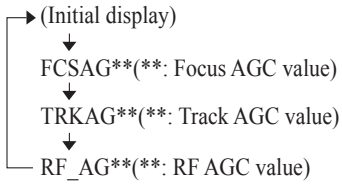
3. Press three buttons of [▶II], [🗀 -] and [I/⏻] simultaneously.
4. It enters the CD factory mode and the message "FACTORY" is displayed. When the [OPTIONS] button is pressed, the following message (initial display) is displayed.



Key Operation:

[OPTIONS]:

The display changes in the following order whenever the button is pressed.



[DSGX]:

RF gain setting changes whenever the button is pressed.
"–": No gain fixation.
"AL": Fix to the gain for AL disc.
"RW": Fix to the gain for RW disc.

[FUNCTION]:

S character mode setting changes whenever the button is pressed.
" ": S character mode OFF.
"S": S character mode ON.

5. To release from this mode, Press three buttons of [▶II], [🗀 -] and [I/⏻] simultaneously.

PROTECT KIND CHECK TEST MODE

This mode is used to check types of protect occurred during protector on.

Procedure:

During protection on, LCD will toggle between "PROTECT" message & type of protection mode.

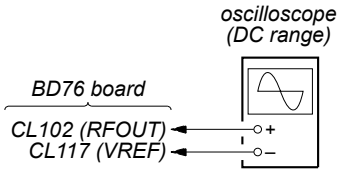
Indication of LCD	Type of defect	Possible cause(s)
PROTECT E01	Defect of AMP circuit	Defect of IC701, '+' and '-' speaker cord are shorted, fan is blocked from turning
PROTECT E02	Defect of power supply circuit to CD	Defect of optical unit, transformer or 9V Regulator supply
PROTECT E03	Defect of USB+5V power supply	Defect of IC400 and related circuitry
PROTECT E04	Defect of 9V power supply	Unusual heat up of IC702 (9V regulator) by improper assembly of heatsink, destruction of IC702 etc..
PROTECT E05	AC supply mismatch	Incorrect voltage selector setting

SECTION 4
ELECTRICAL CHECKS

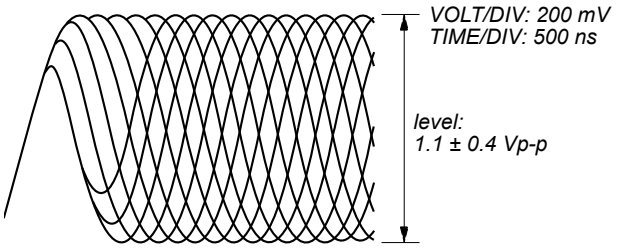
CD SECTION

Note:
1. CD Block is basically constructed to operate without adjustment.
2. Use YEDS-18 disc (Part No. 3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10 MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specifi ed value with the following checks.
5. Check the focus bias check when optical pick-up block is replaced.

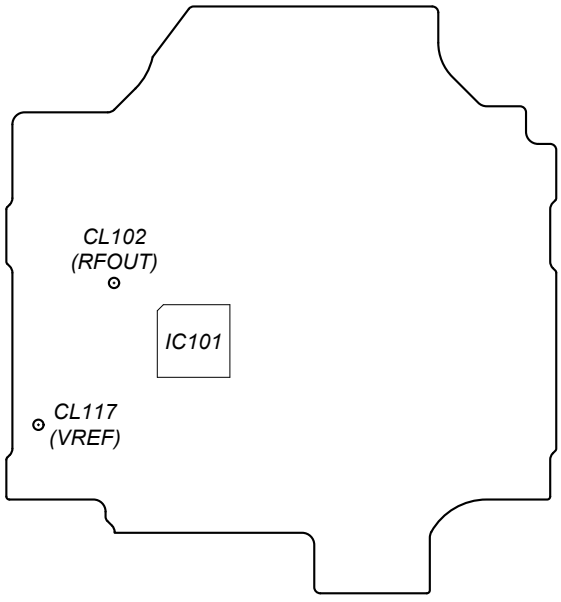
FOCUS BIAS CHECK



Procedure :
1. Connect the oscilloscope to CL102 (RFOUT) and CL117 (VREF) on the BD76UR board.
2. Press the [I/⏻] button to turn the power on, and press the [FUNCTION] button to select CD function.
3. Set disc (YEDS-18) and press the [▶II] button to playback.
4. Confirm that 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.

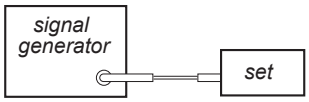


Checking Location:
-BD76 Board (SideB)-



TUNER SECTION 0 dB = 1 μV

FM AUTO STOP CHECK



Procedure :
1. Turn the power on.
2. Input the following signal from Signal Generator to FM antenna input directly.

Carrier frequency : A = 87.5 MHz, B = 98 MHz, C = 108 MHz
Deviation : 75 kHz
Modulation : 1 kHz
ANT input : 35 dBu (EMF)

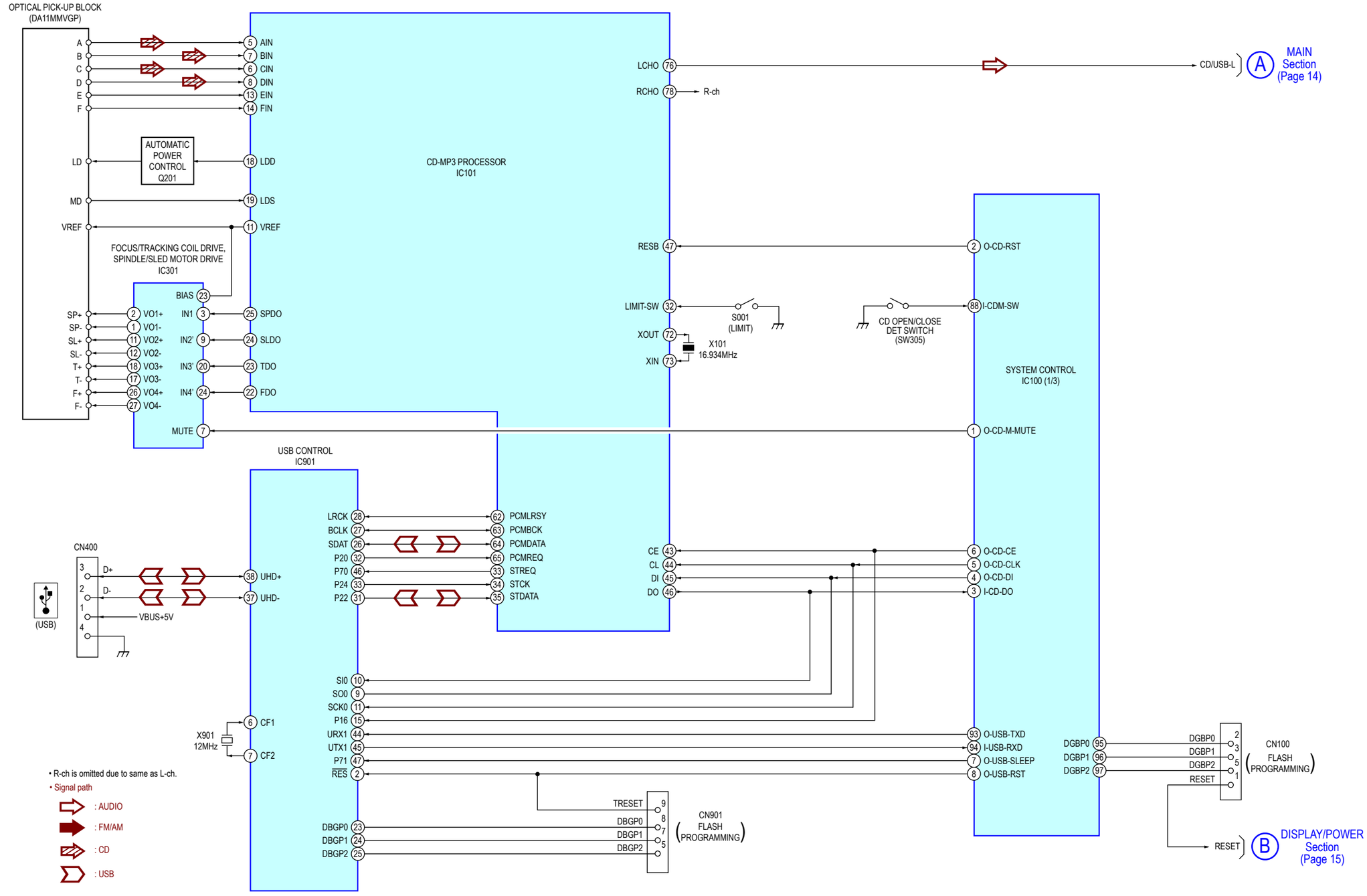
Note: Please use 75 ohm “coaxial cable” to connect SG and the set. You cannot use video cable for checking.
Please use SG whose output impedance is 75 ohm.

3. Set to FM tuner function and scan the input FM signal with automatic scanning.
4. Confirm that input Frequency of A, B and C detected and automatic scanning stops.

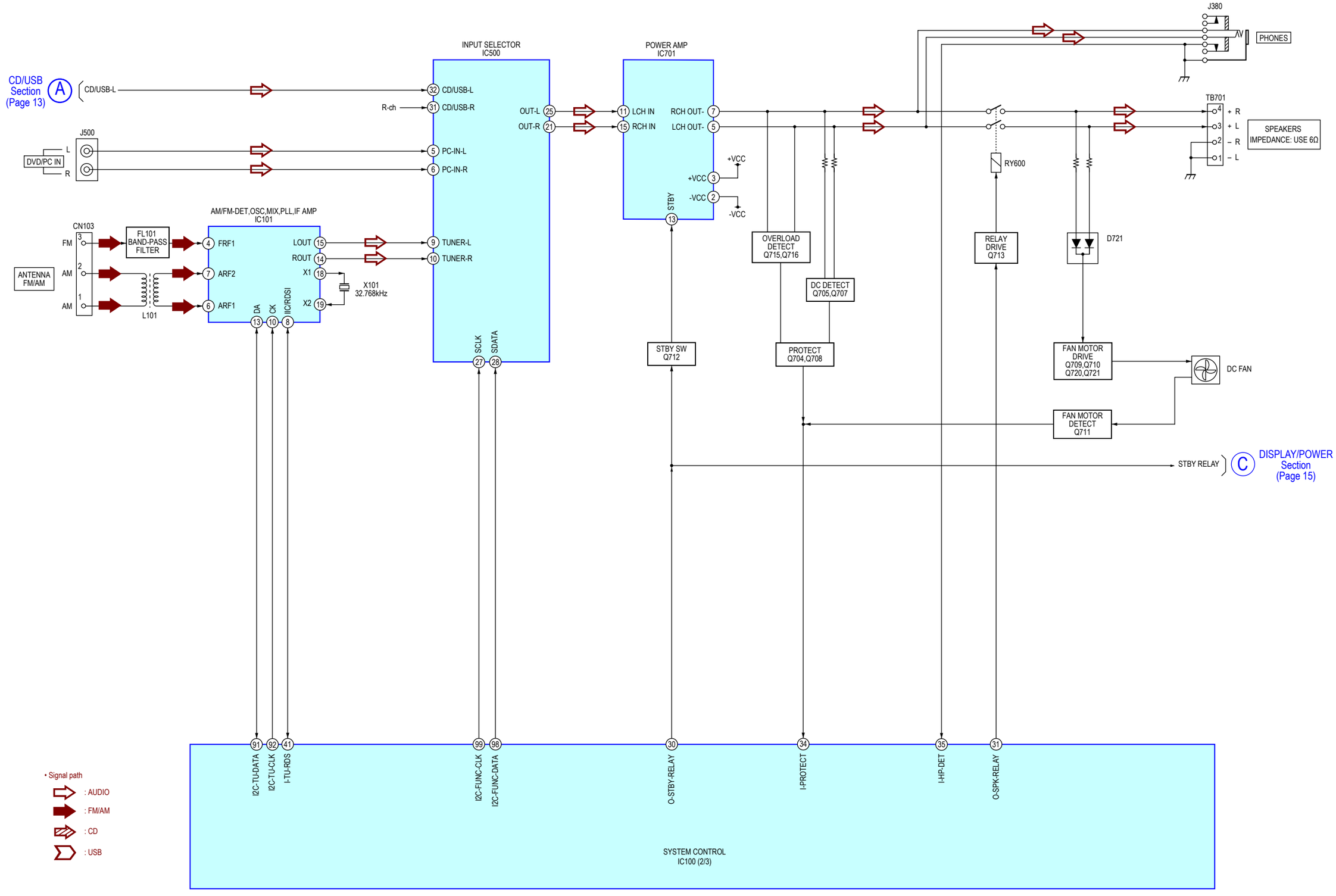
The stop of automatic scanning means “The station signal is received in good condition”.

SECTION 5
DIAGRAMS

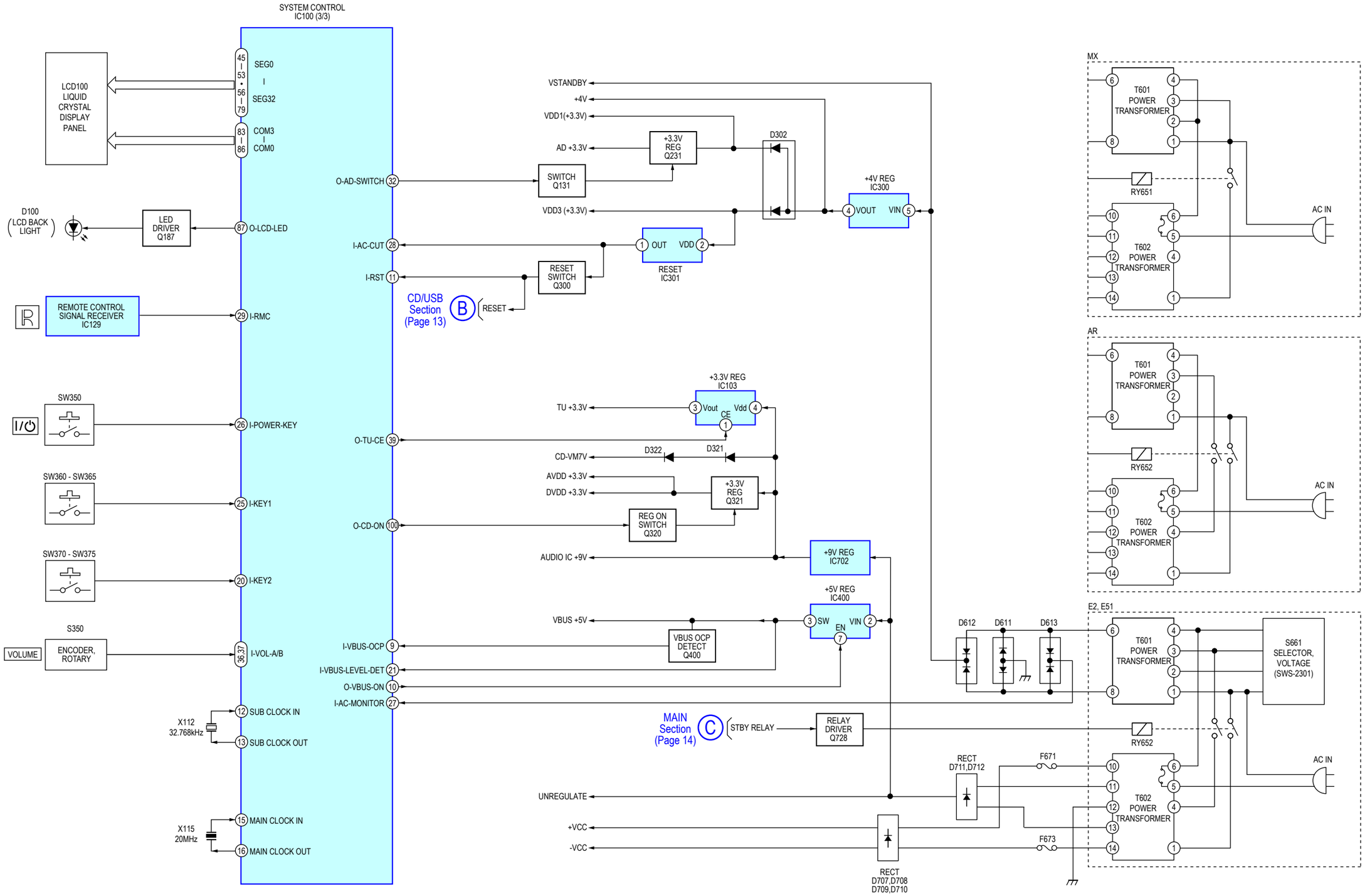
5-1. BLOCK DIAGRAM – CD/USB Section –



5-2. BLOCK DIAGRAM – MAIN Section –



5-3. BLOCK DIAGRAM – DISPLAY/POWER Section –



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

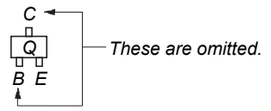
For Printed Wiring Boards.

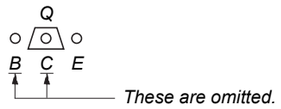
Note:

- ○——: parts extracted from the component side.
- ——: parts extracted from the conductor side.
- ⬚←: indicates side identified with part number.
- ▬: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

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

- Indication of transistor.





- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

For Schematic Diagrams.

Note:

- 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 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : panel designation.

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

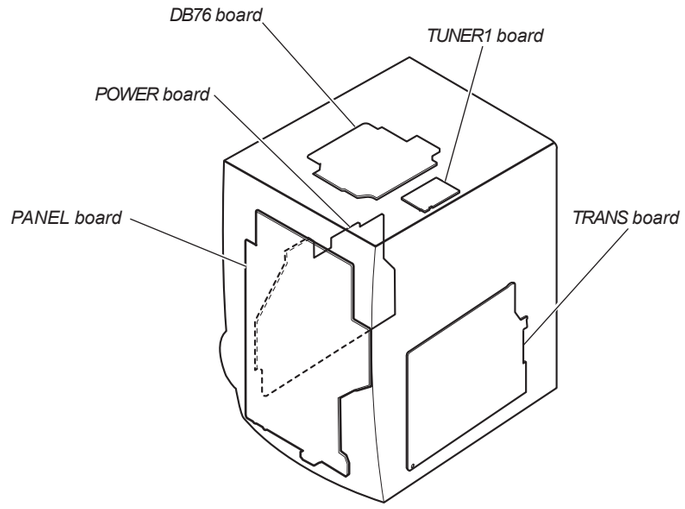
- ▬▬: B+ Line.
- ▬ ▬ ▬: B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.

– BD76 Board –
no mark: CD MODE
– Other Boards –
no mark: TUNER (FM/AM)

- Voltages are taken with VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : AUDIO
  ⇨ : CD
  ➡ : FM/AM
  ⇨ : USB

- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

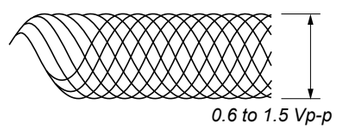
- **Circuit Boards Location**



- **Waveforms**

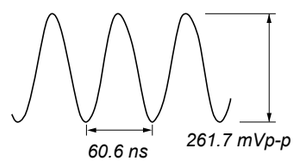
– BD76 Board –

① IC101 ② (RFOUT) (CD play mode)



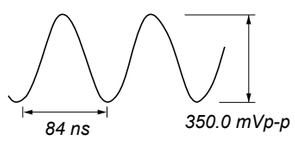
200 mV/DIV, 500 nsec/DIV

② IC101 ⑫ (XOUT)



50 mV/DIV, 20 nsec/DIV

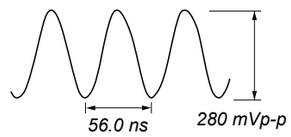
③ IC901 ⑦ (CF2)



100 mV/DIV, 20 nsec/DIV

– PANEL Board –

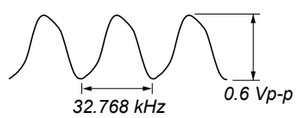
④ IC100 ⑯ (MAIN-CLK-OUT)



100 mV/DIV, 20 nsec/DIV

– TUNER1 Board –

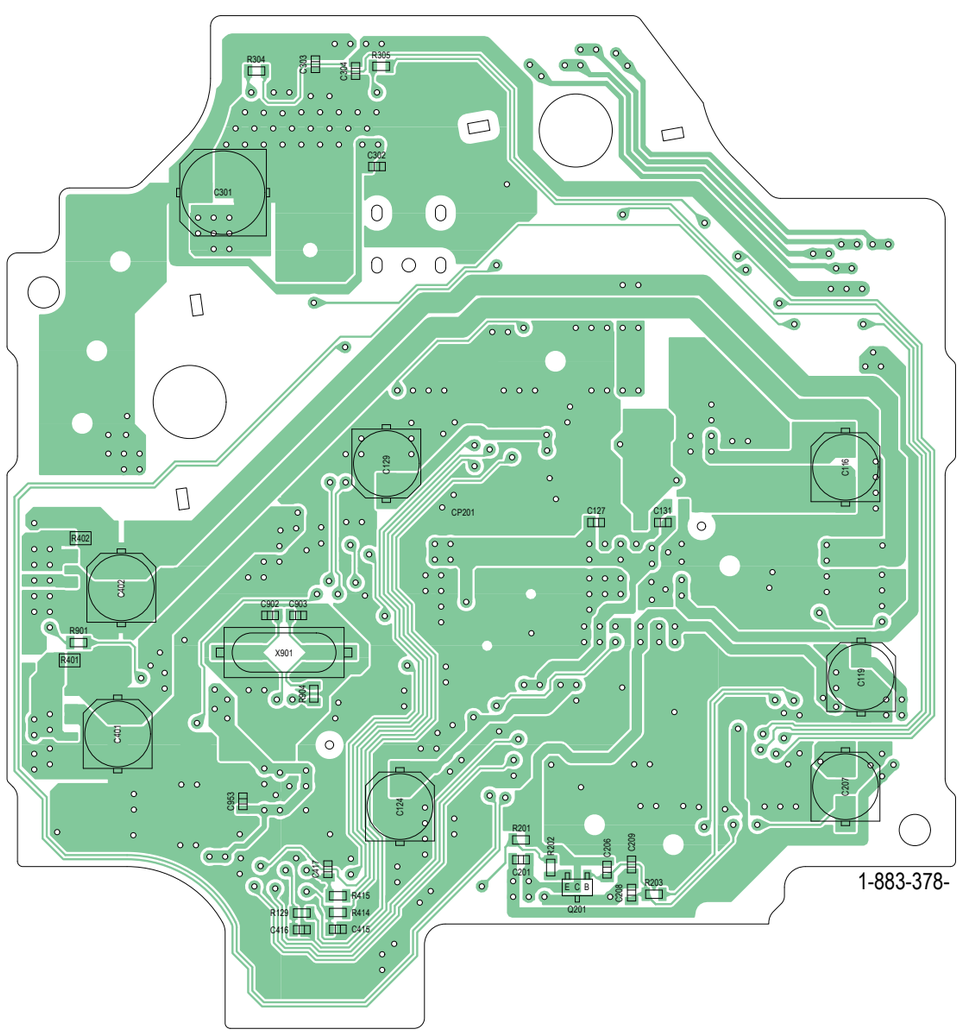
⑤ IC101 ⑱ (X1)



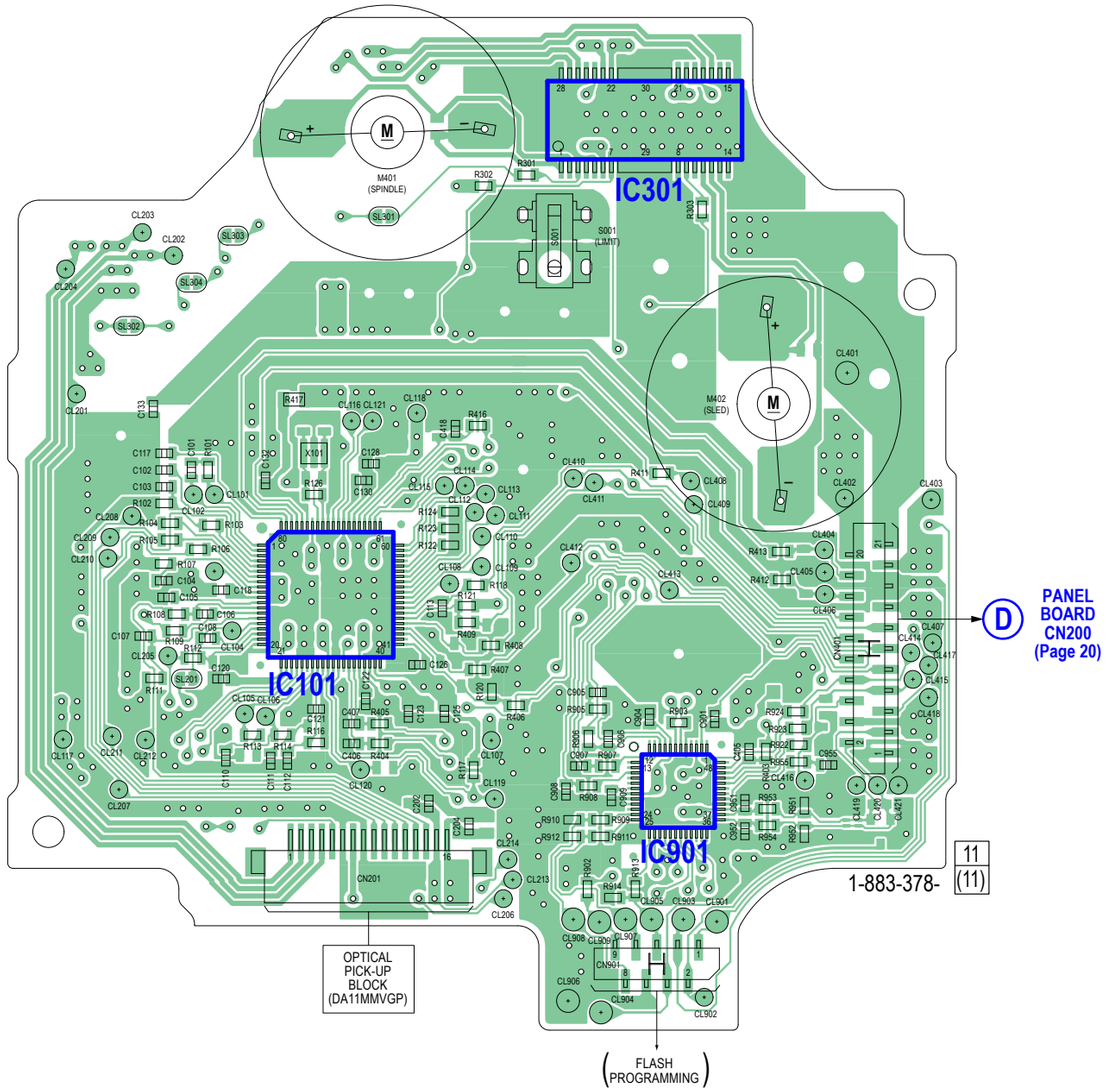
200 mV/DIV, 5 µsec/DIV

5-4. PRINTED WIRING BOARD – BD76 BOARD – • See page 16 for Circuit Boards Location. • : Uses unleaded solder.

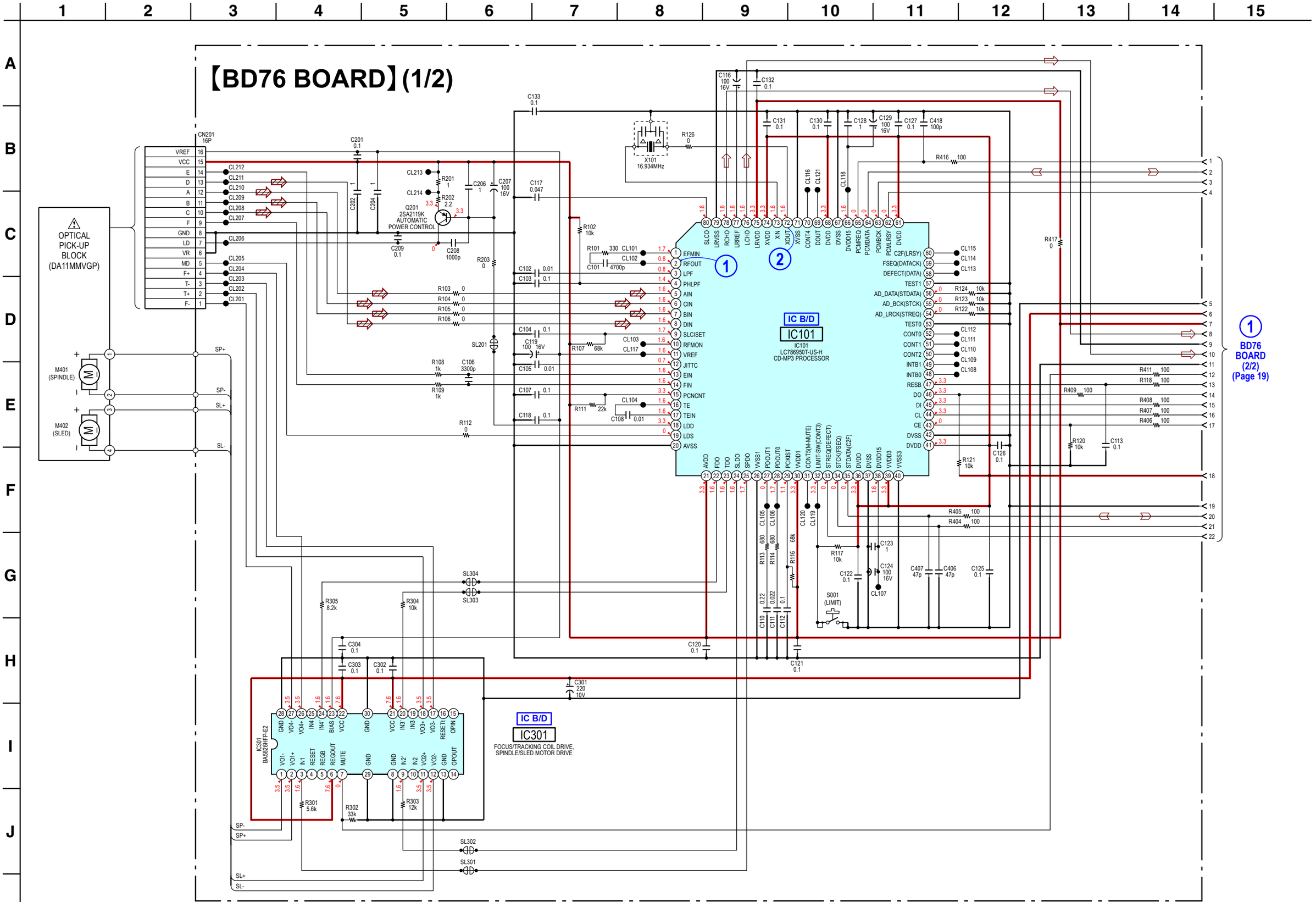
【BD76 BOARD】(Component Side)



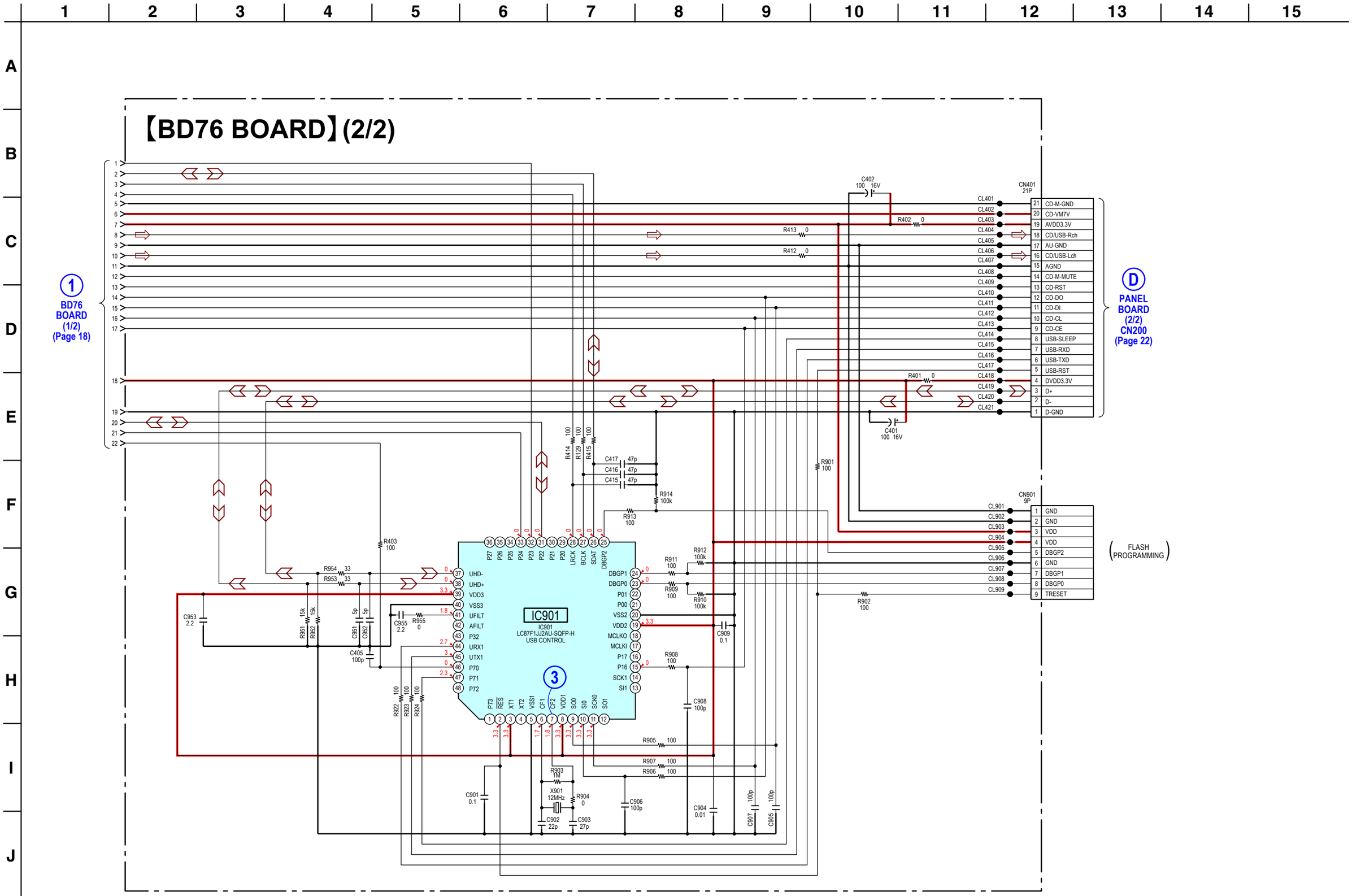
【BD76 BOARD】(Conductor Side)



5-5. SCHEMATIC DIAGRAM – BD76 BOARD (1/2) – • See page 16 for Waveforms. • See page 27 for IC Block Diagrams.

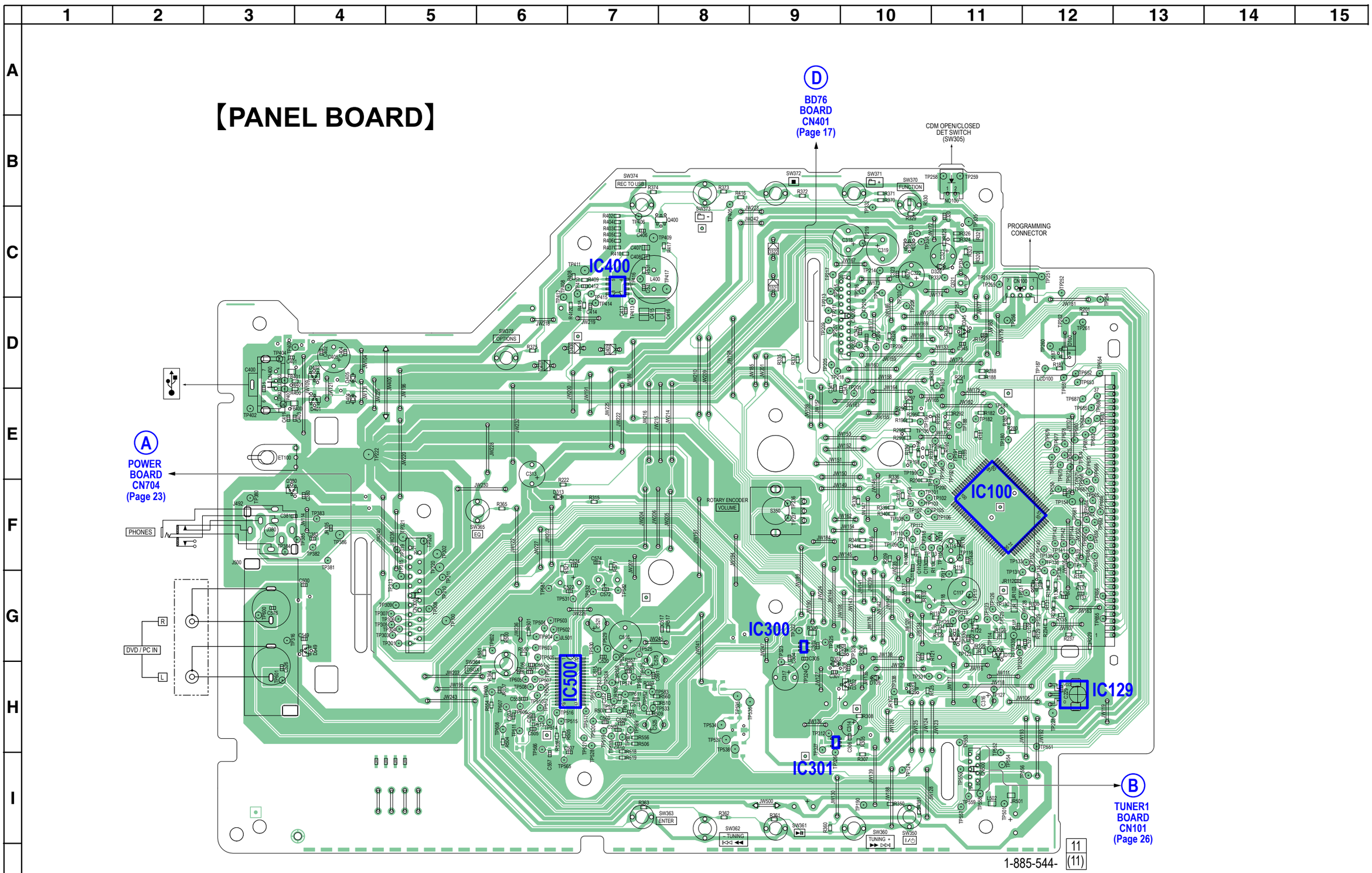


5-6. SCHEMATIC DIAGRAM – BD76 BOARD (2/2) – • See page 16 for Waveforms. • See page 31 for IC Pin Function Descriptions..



5-7. PRINTED WIRING BOARD – PANEL BOARD – • See page 16 for Circuit Boards Location. • : Uses unleaded solder.

【PANEL BOARD】



5-8. SCHEMATIC DIAGRAM – PANEL Board (1/2) –

• See page 27 for IC Block Diagrams.

【PANEL BOARD】(1/2)

CN500 9P
9 NO USED
8 VDD
7 TU-AUDIO-L
6 TU-CE
5 TU-AUDIO-R
4 GND
3 I2C-TU-DATA
2 TU-RDS
1 I2C-TU-CLK

B TUNER1 BOARD CN101 (Page 26)

1 PANEL BOARD (2/2) (Page 22)

CN300 21P
1 INPUT-L
2 AGND
3 INPUT-R
4 PROTECT
5 SPK-RELAY
6 STBY-RELAY
7 AC MONITOR
8 V-STBY
9 AUDIO-IC-9V
10 9V
11 9V-GND
12 9V-GND
13 MOTOR-GND
14 MOTOR-GND
15 UNREGULATE
16 PGND
17 PGND
18 PGND
19 HP-L
20 HP-R
21 HP-GND

A POWER BOARD CN704 (Page 24)

IC B/D
IC500
INPUT SELECTOR IC500 BD3491FS-SE2

IC300 +4V REG IC300 TK11140CSCL-G

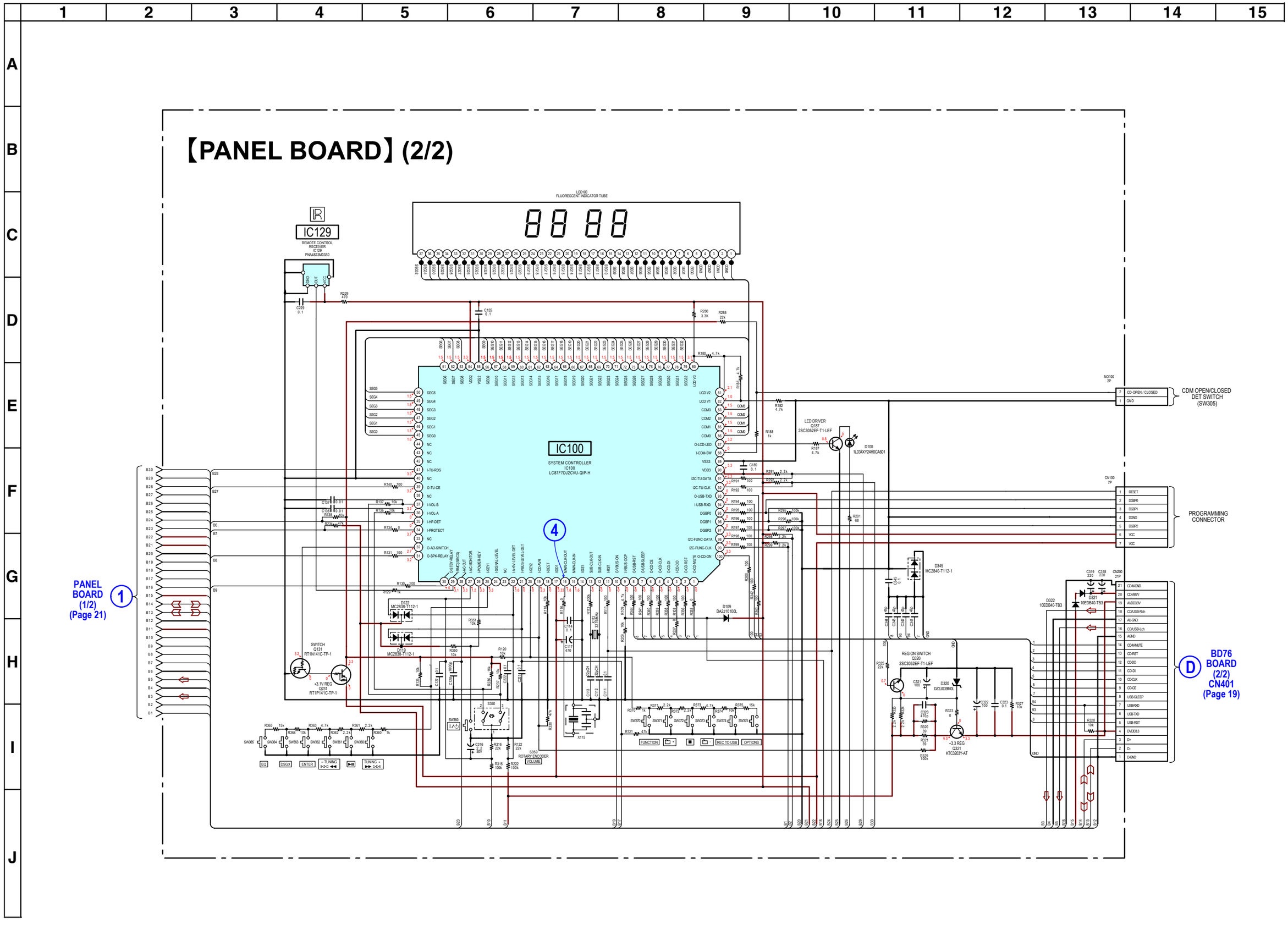
IC400 +5V REG IC400 RT8293ALZSP

IC B/D
IC301 RESET IC301 PST3629NR

J500 DVD / PC IN
J380 PHONES
ET100
CN400 4P

5-9. SCHEMATIC DIAGRAM – PANEL Board (2/2) –

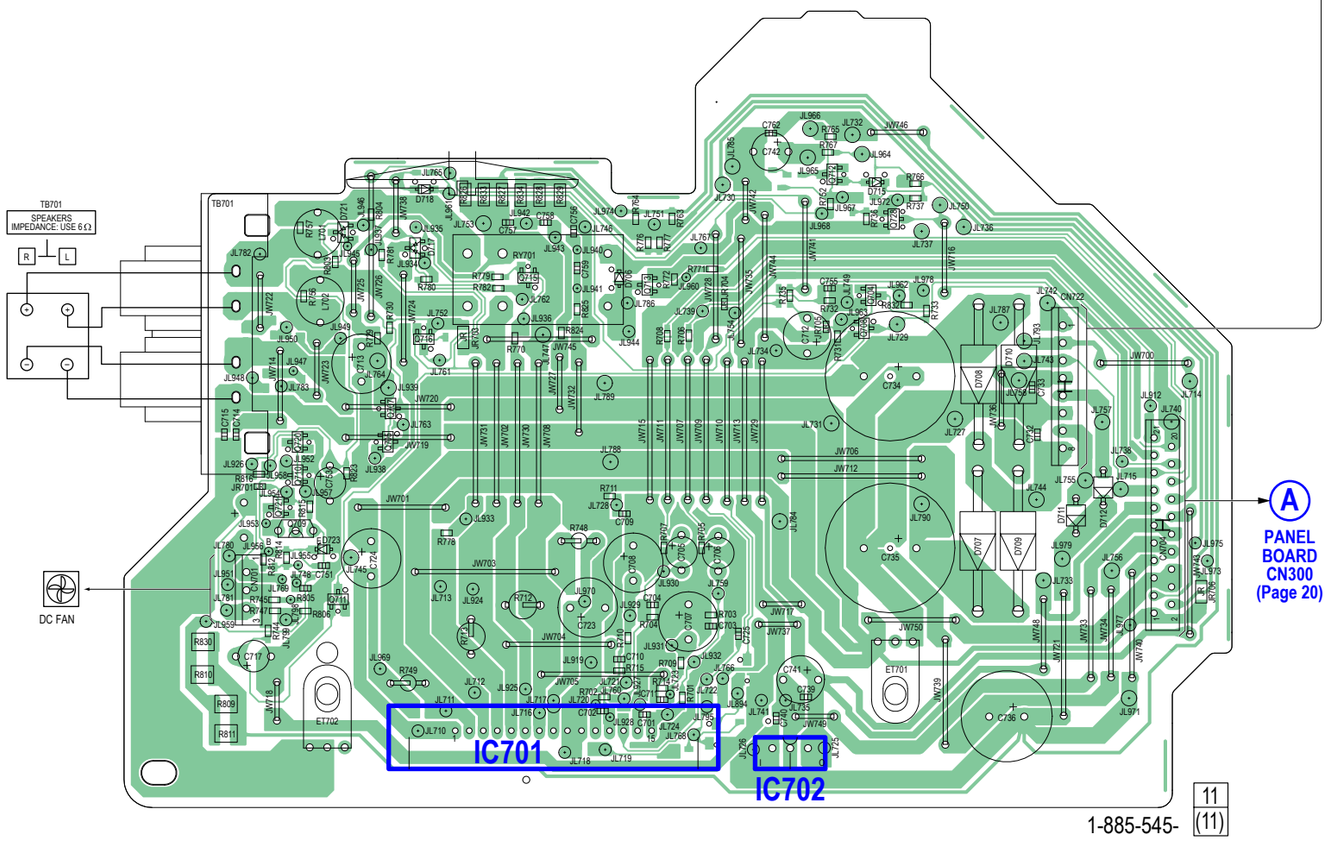
• See page 16 for Waveforms. • See page 31 for IC Pin Function Descriptions.



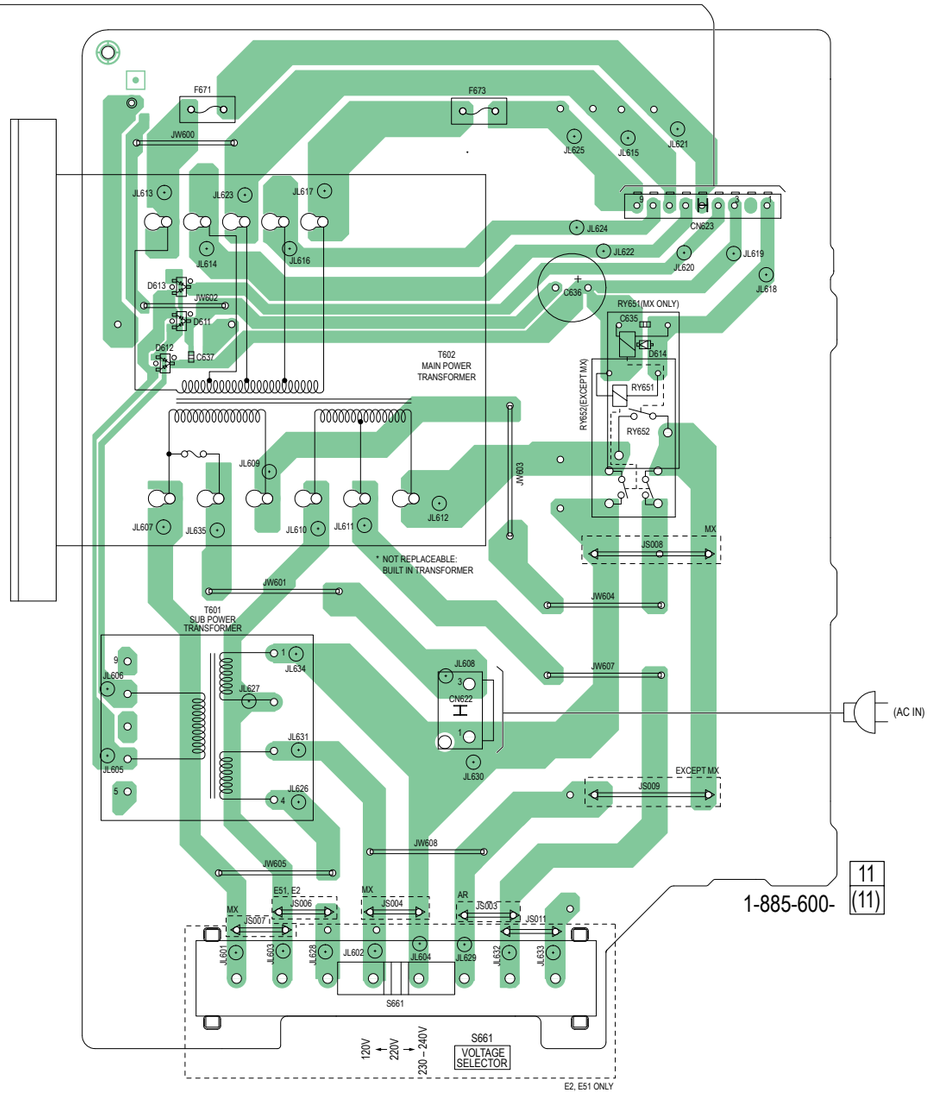
5-10. PRINTED WIRING BOARD – POWER AND TRANS BOARDS –

• See page 16 for Circuit Boards Location. • : Uses unleaded solder.

【POWER BOARD】

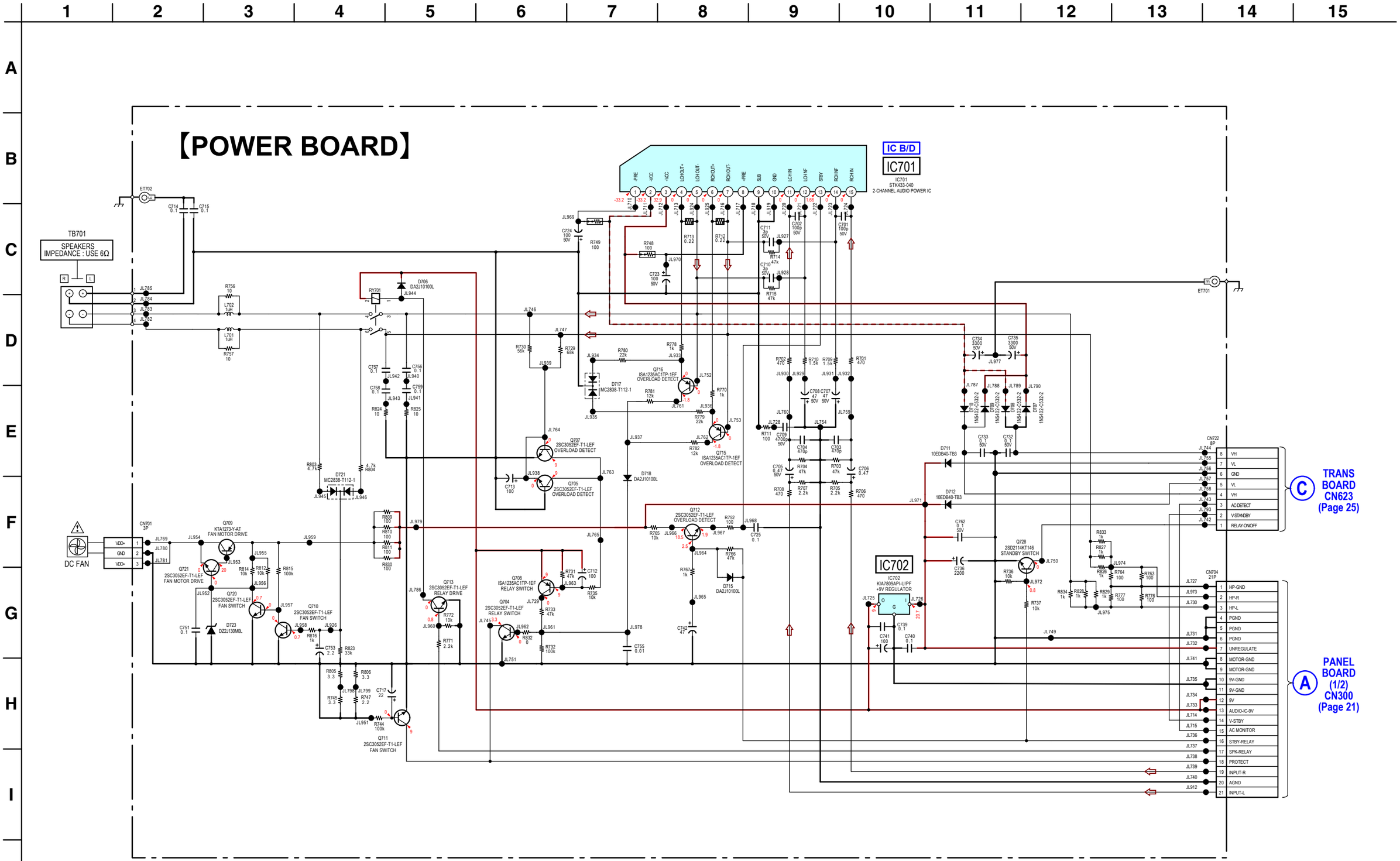


【TRANS BOARD】

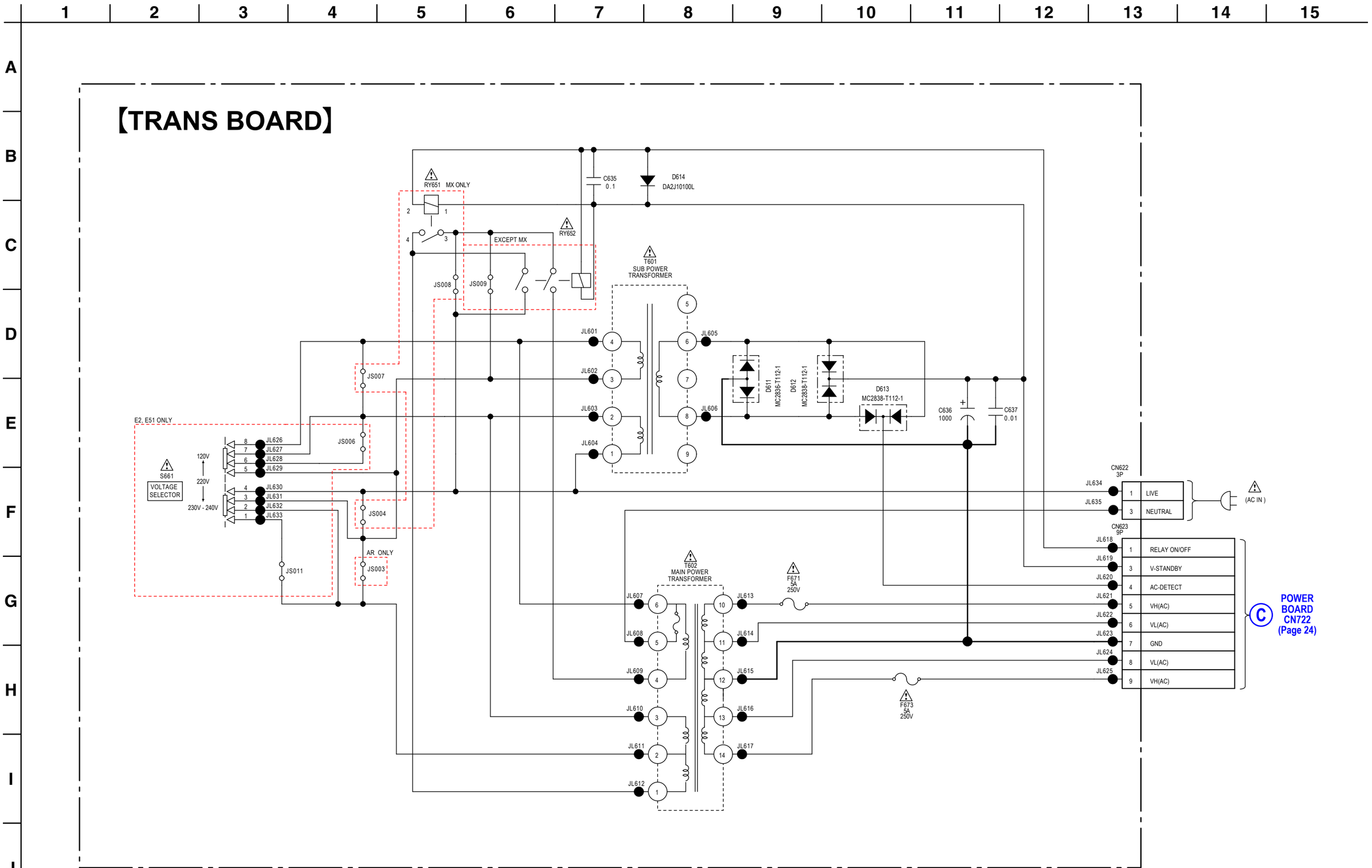


5-11. SCHEMATIC DIAGRAM – POWER Board –

• See page 27 for IC Block Diagrams.



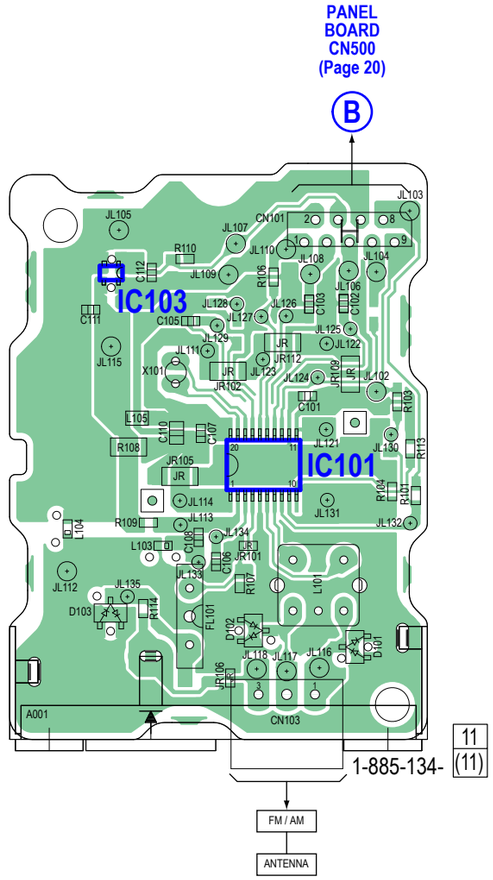
5-12. SCHEMATIC DIAGRAM – TRANS Board –



5-13. PRINTED WIRING BOARD – TUNER1 BOARD –

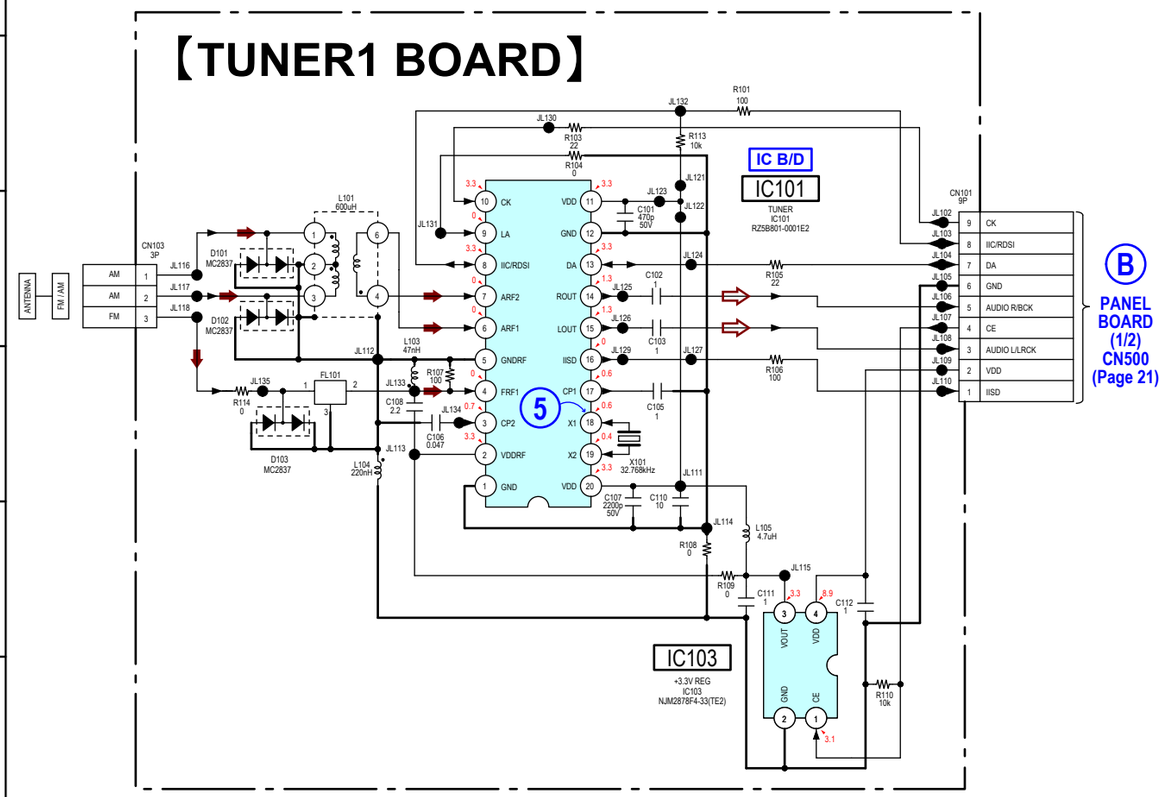
• See page 16 for Circuit Boards Location. • : Uses unleaded solder.

【TUNER1 BOARD】



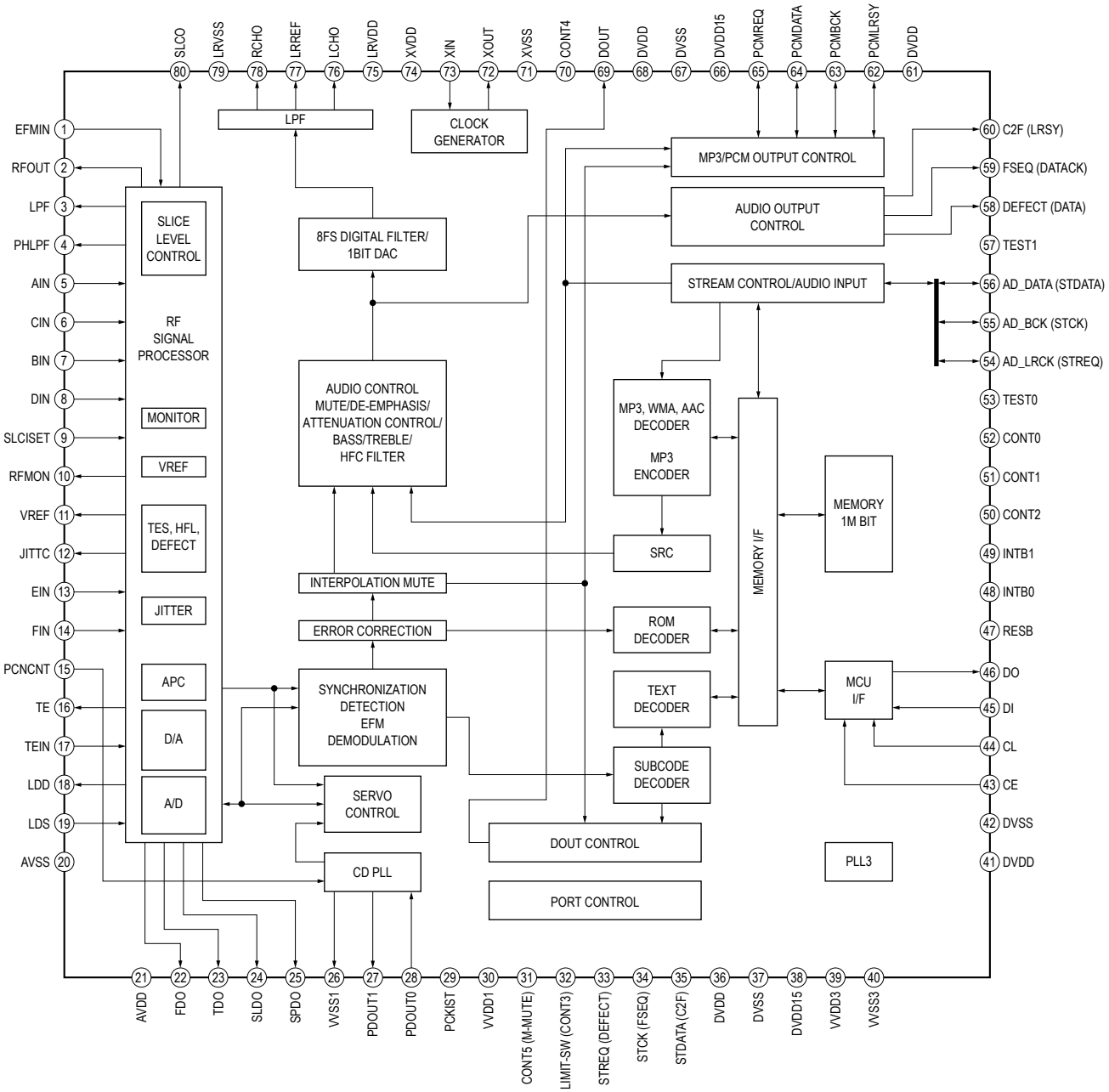
5-14. SCHEMATIC DIAGRAM – TUNER1 Board –

• See page 16 for Waveforms. • See page 27 for IC Block Diagrams.

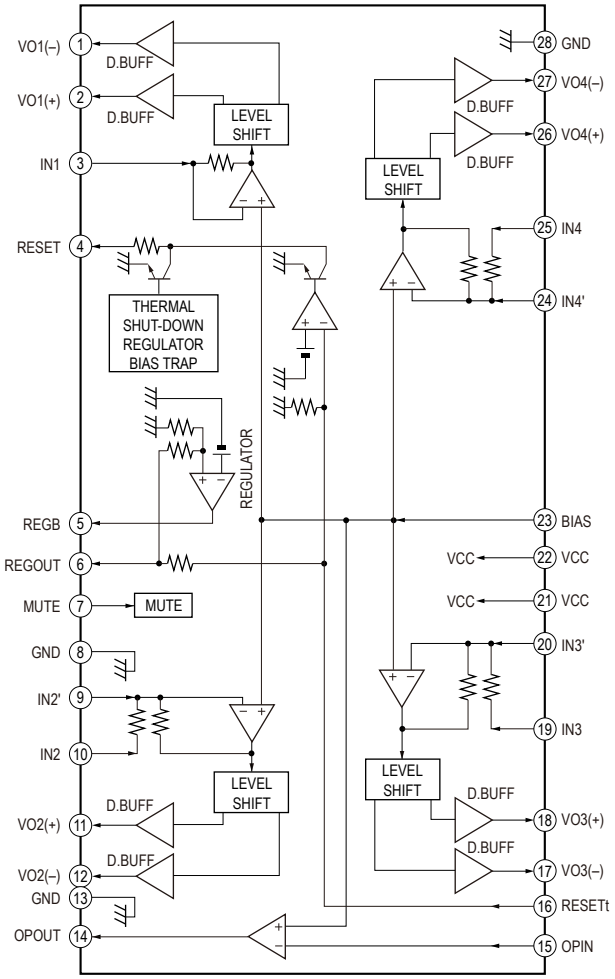


- **IC Block Diagrams**

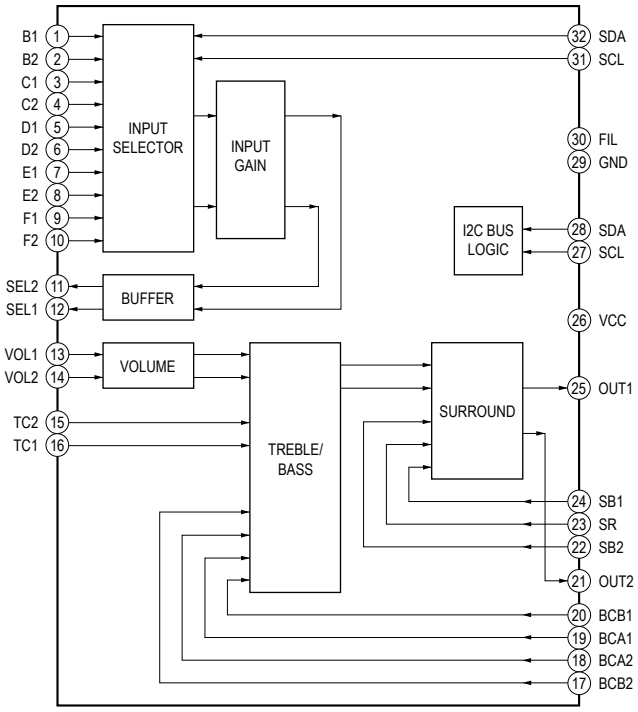
IC101 LC786950T-US-H (BD76 BOARD (1/2))



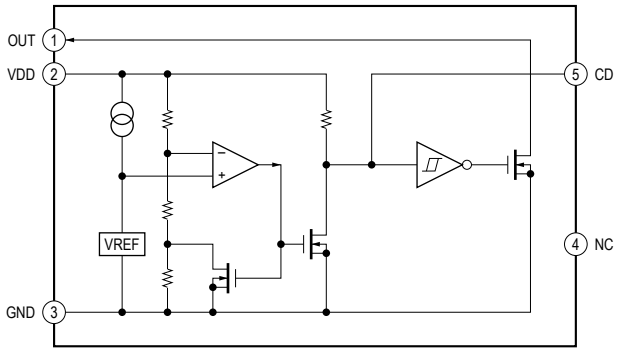
IC301 BA5826HFP-E2 (BD76 BOARD (1/2))



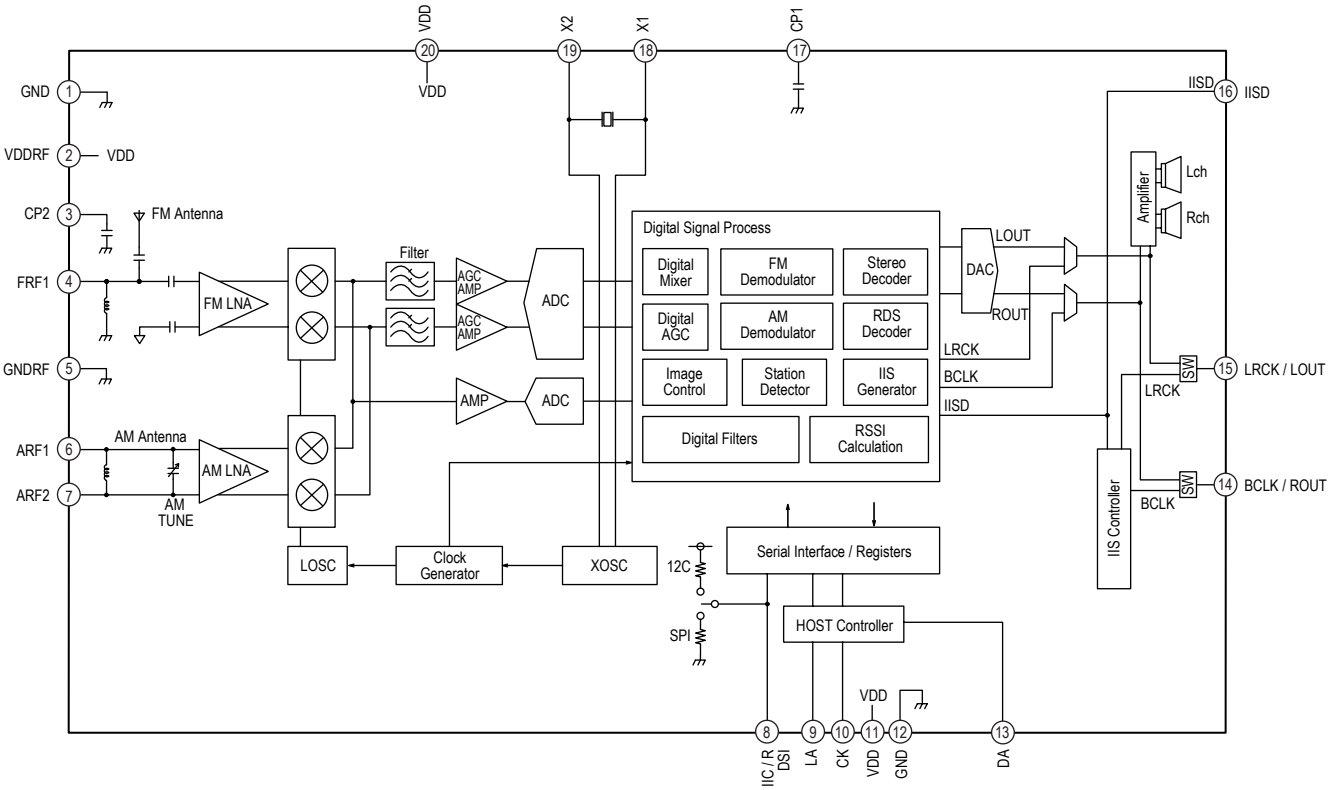
IC500 BD3491FS-SE2 (PANEL BOARD (1/2))



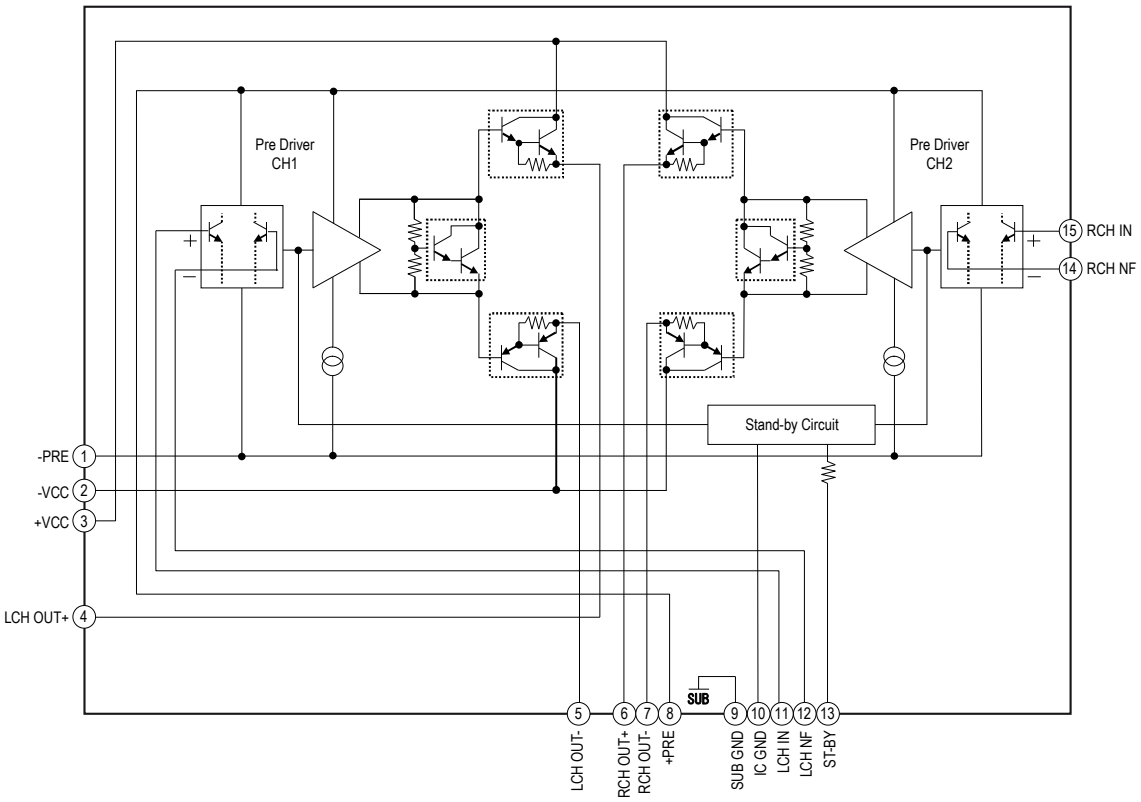
IC301 PST3629NR (PANEL BOARD (1/2))



IC101 RZ5B801-0002E2 (TUNER1 BOARD)



IC701 STK433-040N-E (POWER Board)



• **IC Pin Function Description**

DB76 BOARD IC901(2/2) IC LC87F1JJ2AU-SQFP-H (USB CONTROL)

Pin No.	Pin Name	I/O	Description
1	P73	O	Not used. (Open)
2	RES	—	USB control reset pin
3	XT1	—	Not used. (Connect to VDD)
4	XT2	O	Not used. (Open)
5	VSS1	—	Ground
6	CF1	I	Oscillation signal input (12 MHz)
7	CF2	O	Oscillation signal output (12 MHz)
8	VDD1	—	Power supply pin (+3.3 V)
9	SO0	O	CD digital signal processor serial data communication signal output
10	SI0	I	CD digital signal processor serial data communication signal input
11	SCK0	I/O	CD digital signal processor clock communication signal input/output
12	SO1	O	Not used. (Open)
13	SI1	O	Not used. (Open)
14	SCK1	O	Not used. (Open)
15	P16	I	CD digital signal processor enable communication signal input
16	P17	O	Not used. (Open)
17	MCLKI	O	Not used. (Open)
18	MCLKO	O	Not used. (Open)
19	VDD2	—	Power supply pin (+3.3 V)
20	VSS2	—	Ground
21, 22	P00, P01	O	Not used. (Open)
23 to 25	DBGP0 to DBGP2	O	For debagger pin
26	SDAT	I	USB record MP3 serial data signal input
27	BCLK	I	USB record MP3 serial data shift clock signal input
28	LRCK	I	USB record MP3 serial data word clock signal input
29, 30	P20, P21	O	Not used. (Open)
31	P22	O	USB playback serial data signal output
32	P23	O	USB record MP3 serial data request signal output
33	P24	O	USB playback serial data communication clock signal output
34 to 36	P25 to P27	O	Not used. (Open)
37	UHD–	I/O	USB D– serial data input/output
38	UHD+	I/O	USB D+ serial data input/output
39	VDD3	—	Power supply pin (+3.3 V)
40	VSS3	—	Ground
41	UFILT	I	USB interface PLL fi lter circuit connection pin (Fixed at L in this set)
42	AFILT	O	Not used. (Open)
43	P32	O	Not used. (Open)
44	URX1	I	System controller input communication signal input
45	UTX1	O	System controller output communication signal output
46	P70	I	USB playback serial data request signal input
47	P71	I	USB controller command processing cancel signal input
48	P72	O	Not used. (Open)

PANEL BOARD IC100(2/2) LC87F7DJ2CVU-QIP-H (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1	O-CD-MUTE	O	CD motor driver ON/OFF mute control signal output for the CD motor/coil driver
2	O-CD-RST	O	System reset signal output for the CD-MP3 processor
3	I-CD-DO	I	Serial data input from the CD-MP3 processor
4	O-CD-DI	O	Serial data output for the CD-MP3 processor
5	O-CD-CLK	O	Clock signal output for the CD-MP3 processor
6	O-CD-CE	O	Chip enable signal output for the CD-MP3 processor
7	O-USB-SLEEP	O	Sleep control signal output for the USB control
8	O-USB-RST	O	System reset signal output for the USB control
9	I-VBUS-OCP	I	VBUS overcurrent detection signal input (L:abnormal, H: normal)
10	O-VBUS-ON	O	VBUS power supply ON/OFF control signal output (L: VBUS off, H: VBUS on)
11	I-RST	I	Reset signal input
12	SUB-CLK-IN(32.768KHz)	I	Sub system clock signal input (32.768kHz)
13	SUB-CLK-OUT(32.768KHz)	O	Sub system clock signal output (32.768kHz)
14	VSS1	-	Ground terminal
15	MAIN-CLK-IN(18MHz)	I	Main system clock input terminal (18MHz)
16	MAIN-CLK-OUT(18MHz)	O	Main system clock output terminal (18MHz)
17	VDD1	-	Power supply pin (+3.3V)
18	I-DEST	I	Destination setting pin (A/D input)
19	I-CD-AVR	I	CD protection detection signal input (A/D input)
20	I-KEY-2	I	Key signal input (A/D input)
21	I-VBUS-LEVEL-DET	I	VBUS protection detection signal input (A/D input)
22	I-A+9V-LEVEL-DET	I	9V protection detection signal input (A/D input)
23	NC	O	Not used
24	NC	O	Not used
25	I-KEY1	I	Key signal input (A/D input)
26	I-POWER-KEY	I	Power key signal input (A/D input)
27	I-AC-MONITOR	I	AC power monitor input pin (A/D input)
28	I-AC-CUT	I	AC cut detection signal input (L: AC cut, H: AC In)
29	I-RMC	I	Remote control signal input from the remove control signal receiver
30	O-STBY-RELAY	O	Main power on/off control signal output (L: STBY RELAY off, H: STBY RELAY on)
31	O-SPK-RELAY	O	Relay drive signal output for the speakers (L: SPK RELAY off, H:SPK RELAY on)
32	O-AD-SWITCH	O	AD Power Control pin (L: Off, H: On)
33	NC	O	Not used
34	I-PROTECT	I	Speaker protect detection signal input from speaker protect circuit (L: abnormal, H:normal)
35	I-HP-DET	I	Headphone connection detection signal input (L:Headphone disconect, H: Headphone connect)
36	I-VOL-A	I	Jog dial pulse input A from the MASTER VOLUME encoder
37	I-VOL-B	I	Jog dial pulse input B from the MASTER VOLUME encoder
38	NC	O	Not used
39	O-TU-CE	O	Chip enable signal output for the Tuner
40	NC	I	Not used
41	I-TU-RDS	I	RDS Text Detection Signal input
42	NC	O	Not used
43	NC	O	Not used
44	NC	O	Not used
45 to 53	SEG0 to SEG8	O	Segment drive signal output for the liquid crystal display panel
54	VDD2	-	Power supply pin (+3.3V)
55	VSS2	-	Ground terminal
56 to 79	SEG9 to SEG32	O	Segment drive signal output for the liquid crystal display panel
80 to 82	LCD V3 to LCD V1	-	Bias power supply for the liquid crystal display panel
83 to 86	COM3 to COM0	O	Common drive signal output for the liquid crystal display panel
87	O-LCD-LED	O	LCD back light LED ON/OFF control signal output
88	I-CDM-SW	I	CD lid open/close detection switch
89	VSS3	-	Ground terminal
90	VDD3	-	Power supply pin (+3.3V)
91	I2C-TU-DATA	I/O	Tuner IC data signal for IIC communcation

Pin No.	Pin Name	I/O	Description
92	I2C-TU-CLK	I/O	Tuner IC clock signal for IIC communcation
93	O-USB-TXD	O	USB TX signal output for the USB control
94	I-USB-RXD	I	USB RX signal input from the USB control
95 to 97	DGBP0 to DGBP2	I	For Debungger
98	I2C-FUNC-DATA	I/O	Audio IC data signal for IIC comunication
99	I2C-FUNC-CLK	I/O	Audio IC clock signal for IIC comunication
100	O-CD-ON	O	CD power supply control signal output for the CD-MP3 processor

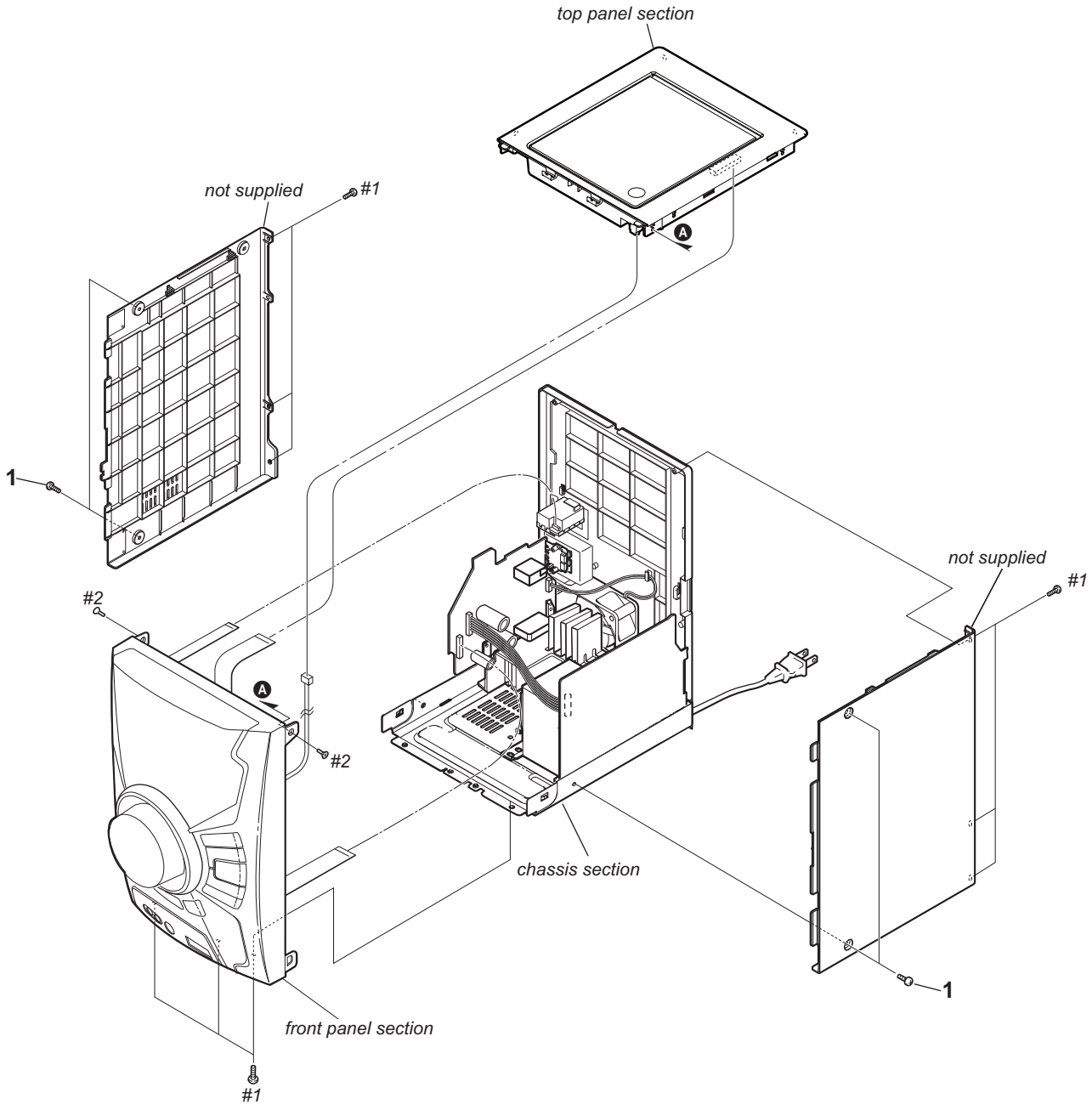
SECTION 6
EXPLODED VIEWS

Note:

- -XX and -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.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

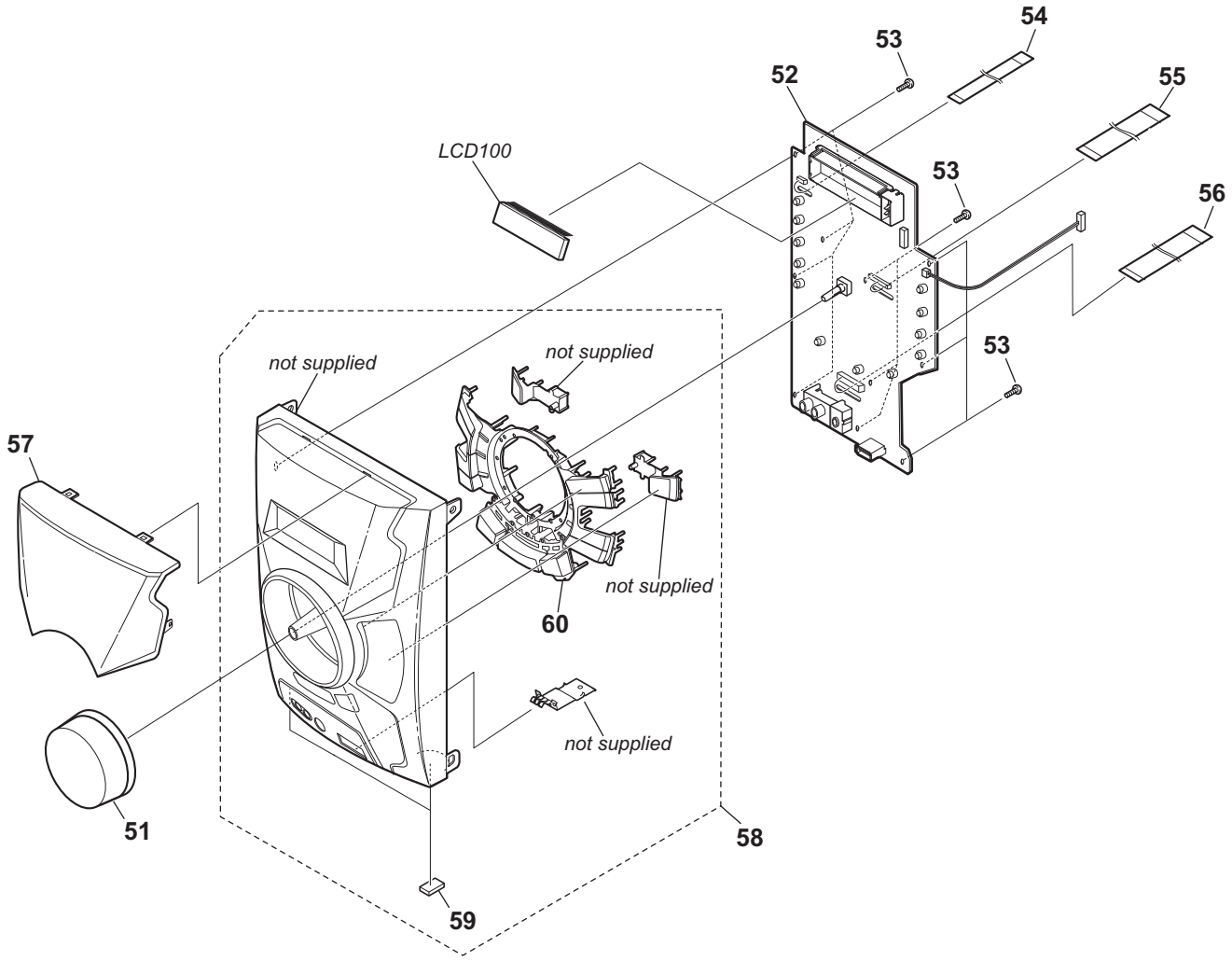
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remark
1	3-363-099-32	SCREW (CASE 3 TP2)	
#1	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-247-14	SCREW +KTP 3X10 TYPE2 NON-SLIT	

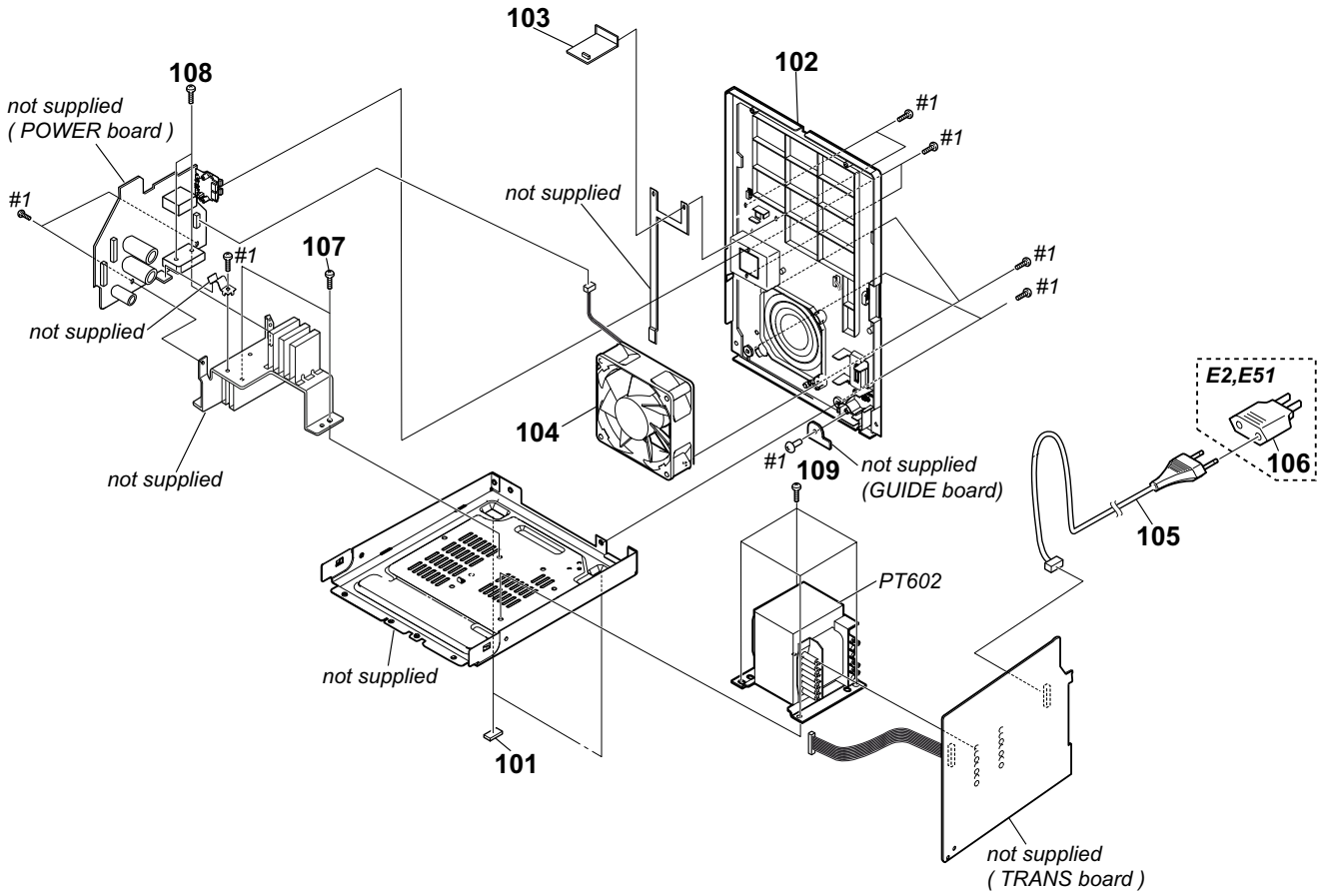
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	4-411-870-11	KNOB, VOLUME	
52	A-1853-405-A	PANEL BOARD, COMPLETE	
53	3-087-053-01	+BVTP2.6 (3CR)	
54	1-846-044-11	WIRE (FLAT TYPE) (9 CORE)	
55	1-832-618-11	WIRE (FLAT TYPE) (21 CORE)	
56	1-846-045-11	WIRE (FLAT TYPE) (21 CORE)	
57	4-411-864-02	WINDOW, DISPLAY	
58	A-1857-588-A	FRONT PANEL ASSY	
59	4-264-672-01	CUSHION (FOOT)	

Ref. No.	Part No.	Description	Remark
60	4-412-060-01	BUTTON, COMBINED	
LCD100	1-811-042-11	DISPLAY PANEL, LIQUID CRYSTAL	

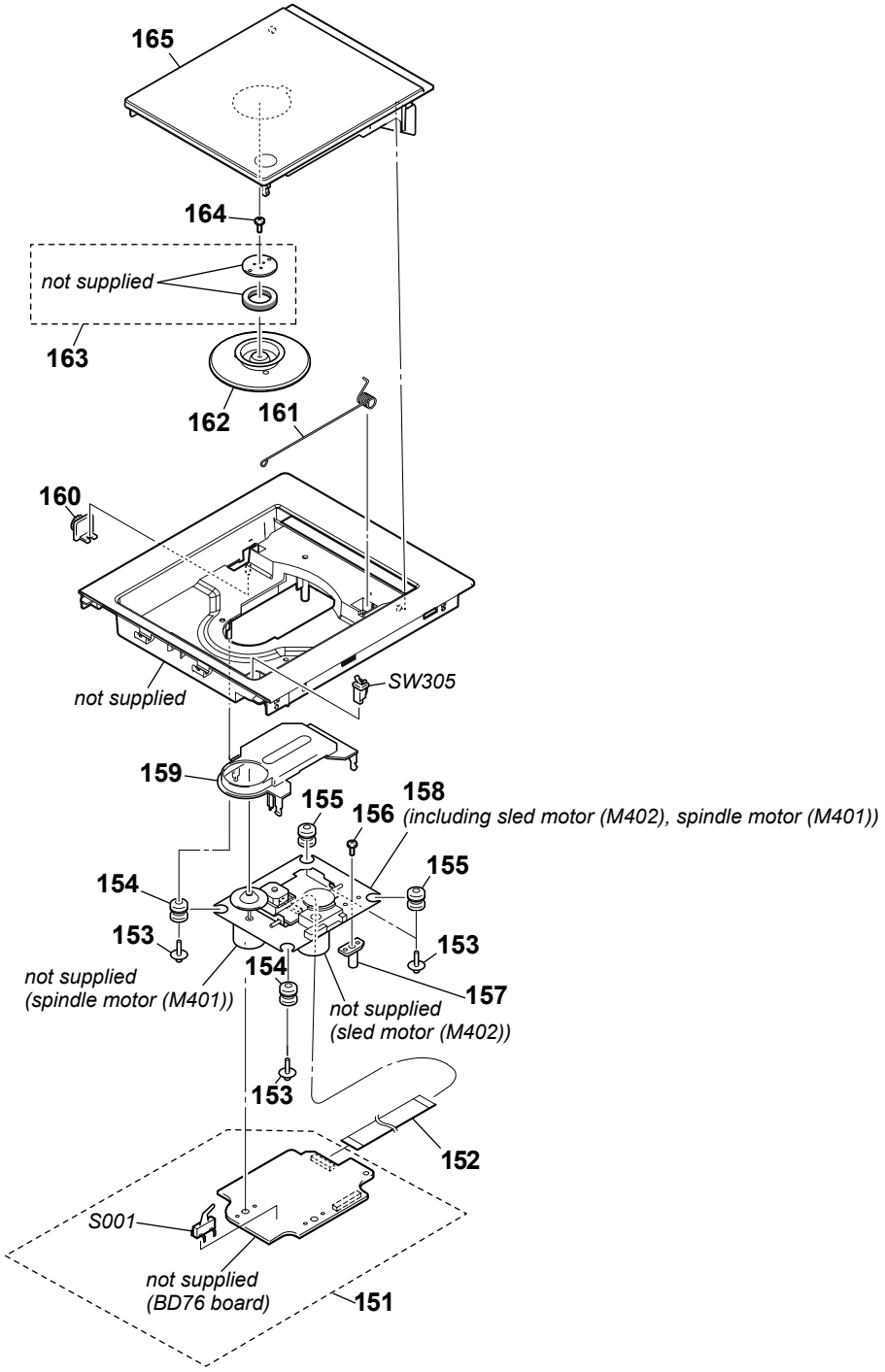
6-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	4-264-672-01	CUSHION (FOOT)	
102	4-411-871-01	PANEL, BACK (E2, E51)	
102	4-411-871-11	PANEL, BACK (MX, AR)	
103	A-1846-435-A	TUNER1AM3R-NS	
⚠ 104	1-855-006-11	FAN, DC	
⚠ 105	1-834-966-41	POWER-SUPPLY CORD (E51)	
⚠ 105	1-837-312-11	CORD, POWER-SUPPLY (AR)	
⚠ 105	1-837-344-11	CORD, POWER-SUPPLY (E2, MX)	
⚠ 106	1-569-007-12	ADAPTOR, CONVERSION 2P (E2)	
⚠ 106	1-569-008-33	ADAPTOR, CONVERSION (E51)	

Ref. No.	Part No.	Description	Remark
107	3-077-331-01	+BV3 (3-CR)	
108	3-905-609-31	SCREW (TRANSISTOR)	
109	4-900-386-01	SCREW +BV SUMITITE S 4X8 ROUND	
⚠ PT602	1-697-157-11	TRANSFORMER, POWER (EXCEPT MX)	
⚠ PT602	1-697-158-11	POWER TRANSFORMER (MX)	
#1	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

6-4. TOP PANEL SECTION



Ref. No.	Part No.	Description	Remark
151	A-1853-274-A	BD76 PC BOARD ASSY	
152	1-834-268-21	WIRE (FLAT TYPE) (16 CORE)	
153	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
154	4-189-053-01	INSULATOR (BLUE)	
155	4-189-053-11	INSULATOR (GRAY)	
156	3-080-204-31	SCREW, TAPPING, P2	
157	4-166-292-01	SHAFT (SUPPORT)	
⚠ 158	A-1800-257-A	OPTICAL PICK-UP BLOCK (DA11MMVGP) (Including sled motor (M402), spindle motor (M401))	
159	4-166-010-01	COVER (D1)	
160	4-232-238-11	DAMPER	

Ref. No.	Part No.	Description	Remark
161	4-145-341-01	SPRING (LID)	
162	4-161-552-01	PULLEY, CHUCKING (D1)	
163	1-452-899-31	MAGNET	
164	3-253-143-01	SCREW (B2.6), (+) P TAPPING	
165	4-413-340-01	LID, CD	
S001	1-771-853-11	SWITCH, DETECTION	
SW305	1-692-960-11	SWITCH, PUSH (1 KEY) (CD LID OPEN/CLOSE DETECT)	

BD76

SECTION 7
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.
- 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
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . , uPA. . , µPA. . ,
  uPB. . : µPB. . , uPC. . , µPC. . ,
  uPD. . : µPD. .
- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

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

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

Ref. No.	Part No.	Description			Remark
		BD76 BOARD			
		**********			
		< CAPACITOR >			
C101	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C107	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C111	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C112	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C113	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C116	1-117-681-11	ELECT CHIP	100uF	20%	16V
C117	1-100-756-91	CERAMIC CHIP	0.047uF	10%	50V
C118	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C119	1-117-681-11	ELECT CHIP	100uF	20%	16V
C120	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C121	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C122	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C123	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C124	1-117-681-11	ELECT CHIP	100uF	20%	16V
C125	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C126	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C127	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C128	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C129	1-117-681-11	ELECT CHIP	100uF	20%	16V
C130	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C131	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C132	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C133	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C201	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C202	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C204	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C206	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C207	1-117-681-11	ELECT CHIP	100uF	20%	16V
C208	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C209	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C301	1-128-394-11	ELECT CHIP	220uF	20%	10V
C302	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C303	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

Ref. No.	Part No.	Description			Remark
C401	1-117-681-11	ELECT CHIP	100uF	20%	16V
C402	1-117-681-11	ELECT CHIP	100uF	20%	16V
C405	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C406	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C407	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C415	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C416	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C417	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C418	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C901	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C902	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C903	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C904	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C905	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C906	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C907	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C908	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C909	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C951	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C952	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C953	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C955	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
		< CONNECTOR >			
CN201	1-770-425-51	CONNECTOR, FFC/FPC 16P			
CN401	1-820-119-41	CONNECTOR, FFC/FPC 21P			
CN901	1-820-112-41	CONNECTOR, FFC/FPC 9P			
		< IC >			
IC101	6-713-623-01	IC LC786950T-US-H			
IC301	6-710-637-01	IC BA5826HFP-E2			
IC901	6-714-801-01	IC LC87F1JJ2AU-SQFP-H			
		< TRANSISTOR >			
Q201	6-551-120-01	TRANSISTOR	2SA2119K		
		< RESISTOR >			
R101	1-216-815-11	METAL CHIP	330	5%	1/10W
R102	1-216-833-11	METAL CHIP	10K	5%	1/10W
R103	1-216-864-11	SHORT CHIP	0		
R104	1-216-864-11	SHORT CHIP	0		
R105	1-216-864-11	SHORT CHIP	0		
R106	1-216-864-11	SHORT CHIP	0		
R107	1-216-843-11	METAL CHIP	68K	5%	1/10W
R108	1-216-821-11	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R109	1-216-821-11	METAL CHIP	1K	5%	1/10W
R111	1-216-837-11	METAL CHIP	22K	5%	1/10W
R112	1-216-864-11	SHORT CHIP	0		
R113	1-216-819-11	METAL CHIP	680	5%	1/10W
R114	1-216-819-11	METAL CHIP	680	5%	1/10W
R116	1-216-843-11	METAL CHIP	68K	5%	1/10W
R117	1-216-833-11	METAL CHIP	10K	5%	1/10W
R118	1-216-809-11	METAL CHIP	100	5%	1/10W
R120	1-216-833-11	METAL CHIP	10K	5%	1/10W
R121	1-216-833-11	METAL CHIP	10K	5%	1/10W
R122	1-216-833-11	METAL CHIP	10K	5%	1/10W
R123	1-216-833-11	METAL CHIP	10K	5%	1/10W
R124	1-216-833-11	METAL CHIP	10K	5%	1/10W
R126	1-216-864-11	SHORT CHIP	0		
R129	1-216-809-11	METAL CHIP	100	5%	1/10W
R201	1-218-446-11	METAL CHIP	1	5%	1/10W
R202	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R203	1-216-864-11	SHORT CHIP	0		
R301	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R302	1-216-839-11	METAL CHIP	33K	5%	1/10W
R303	1-216-834-11	METAL CHIP	12K	5%	1/10W
R304	1-216-833-11	METAL CHIP	10K	5%	1/10W
R305	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R401	1-216-295-91	SHORT CHIP	0		
R402	1-216-295-91	SHORT CHIP	0		
R403	1-216-809-11	METAL CHIP	100	5%	1/10W
R404	1-216-809-11	METAL CHIP	100	5%	1/10W
R405	1-216-809-11	METAL CHIP	100	5%	1/10W
R406	1-216-809-11	METAL CHIP	100	5%	1/10W
R407	1-216-809-11	METAL CHIP	100	5%	1/10W
R408	1-216-809-11	METAL CHIP	100	5%	1/10W
R409	1-216-809-11	METAL CHIP	100	5%	1/10W
R411	1-216-809-11	METAL CHIP	100	5%	1/10W
R412	1-216-864-11	SHORT CHIP	0		
R413	1-216-864-11	SHORT CHIP	0		
R414	1-216-809-11	METAL CHIP	100	5%	1/10W
R415	1-216-809-11	METAL CHIP	100	5%	1/10W
R416	1-216-809-11	METAL CHIP	100	5%	1/10W
R417	1-216-295-91	SHORT CHIP	0		
R901	1-216-809-11	METAL CHIP	100	5%	1/10W
R902	1-216-809-11	METAL CHIP	100	5%	1/10W
R903	1-216-857-11	METAL CHIP	1M	5%	1/10W
R904	1-216-864-11	SHORT CHIP	0		
R905	1-216-809-11	METAL CHIP	100	5%	1/10W
R906	1-216-809-11	METAL CHIP	100	5%	1/10W
R907	1-216-809-11	METAL CHIP	100	5%	1/10W
R908	1-216-809-11	METAL CHIP	100	5%	1/10W
R909	1-216-809-11	METAL CHIP	100	5%	1/10W
R910	1-216-845-11	METAL CHIP	100K	5%	1/10W
R911	1-216-809-11	METAL CHIP	100	5%	1/10W
R912	1-216-845-11	METAL CHIP	100K	5%	1/10W
R913	1-216-809-11	METAL CHIP	100	5%	1/10W
R914	1-216-845-11	METAL CHIP	100K	5%	1/10W
R922	1-216-809-11	METAL CHIP	100	5%	1/10W
R923	1-216-809-11	METAL CHIP	100	5%	1/10W
R924	1-216-809-11	METAL CHIP	100	5%	1/10W
R951	1-216-835-11	METAL CHIP	15K	5%	1/10W
R952	1-216-835-11	METAL CHIP	15K	5%	1/10W
R953	1-216-803-11	METAL CHIP	33	5%	1/10W
R954	1-216-803-11	METAL CHIP	33	5%	1/10W

Ref. No.	Part No.	Description			Remark
R955	1-216-864-11	SHORT CHIP	0		
		< VIBRATOR >			
X101	1-795-101-21	VIBRATOR, CERAMIC (16.934MHz)			
X901	1-814-365-11	QUARTZ CRYSTAL UNITS (12MHz)			
**********					
	A-1853-405-A	PANEL BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C111	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C112	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C113	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C114	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C117	1-119-941-91	ELECT	470uF	20%	6.3V
C127	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C128	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C136	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C137	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C155	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C189	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C221	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C222	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C229	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C305	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C306	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C308	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C313	1-125-972-91	ELECT	100uF	20%	16V
C314	1-126-157-11	ELECT	10uF	20%	16V
C316	1-124-257-00	ELECT	2.2uF	20%	50V
C317	1-124-589-11	ELECT	47uF	20%	16V
C318	1-126-176-11	ELECT	220uF	20%	10V
C319	1-126-176-11	ELECT	220uF	20%	10V
C320	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C321	1-125-972-91	ELECT	100uF	20%	16V
C322	1-125-972-91	ELECT	100uF	20%	16V
C323	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C341	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C342	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C343	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C344	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C345	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C380	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C381	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C382	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C400	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C401	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C404	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C405	1-126-176-11	ELECT	220uF	20%	10V
C406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C407	1-100-611-91	CERAMIC CHIP	22uF	20%	6.3V
C408	1-100-611-91	CERAMIC CHIP	22uF	20%	6.3V
C411	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C412	1-114-811-11	CERAMIC CHIP	0.0033uF	10%	50V
C413	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

PANEL

Ref. No.	Part No.	Description			Remark
C414	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-114-334-11	CERAMIC CHIP	10uF	10%	25V
C416	1-114-334-11	CERAMIC CHIP	10uF	10%	25V
C500	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C501	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C503	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C505	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C507	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V
C509	1-100-436-91	CERAMIC CHIP	0.033uF	10%	25V
C510	1-100-436-91	CERAMIC CHIP	0.033uF	10%	25V
C511	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C512	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C513	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C515	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C516	1-126-176-11	ELECT	220uF	20%	10V
C517	1-100-155-91	CERAMIC CHIP	470PF	5%	100V
C520	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C521	1-126-157-11	ELECT	10uF	20%	16V
C522	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C524	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C525	1-126-157-11	ELECT	10uF	20%	16V
C526	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C531	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C549	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C551	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C553	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C555	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C557	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V
C559	1-100-436-91	CERAMIC CHIP	0.033uF	10%	25V
C560	1-100-436-91	CERAMIC CHIP	0.033uF	10%	25V
C561	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C563	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C572	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C574	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C575	1-126-157-11	ELECT	10uF	20%	16V
C576	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN100	1-779-544-21	CONNECTOR, FFC (LIF (NON-ZIF)) 7P			
CN200	1-779-289-11	CONNECTOR, FFC (LIF (NON-ZIF)) 21P			
CN300	1-568-838-11	CONNECTOR, FFC 21P			
CN400	1-819-866-11	USB CONNECTOR (A) (Ψ)			
CN500	1-779-277-11	CONNECTOR, FFC (LIF (NON-ZIF)) 9P			
		< DIODE >			
D100	6-503-429-01	DI 1L034XY24H0CA601			
D109	6-502-961-01	DI DA2J10100L			
D119	6-500-335-01	DIODE MC2838-T112-1			
D122	6-500-335-01	DIODE MC2838-T112-1			
D302	6-500-334-01	DIODE MC2836-T112-1			
D303	6-502-961-01	DI DA2J10100L			
D313	6-502-961-01	DI DA2J10100L			
D320	6-503-011-01	DI DZ2J039M0L			
D321	6-500-522-21	DIODE 10EDB40-TB3			
D322	6-500-522-21	DIODE 10EDB40-TB3			
D345	6-500-848-01	DIODE MC2840-T112-1			
D380	6-500-848-01	DIODE MC2840-T112-1			
D401	6-500-848-01	DIODE MC2840-T112-1			
D402	6-500-848-01	DIODE MC2840-T112-1			
D404	6-502-970-01	DI DZ2J068M0L			

Ref. No.	Part No.	Description			Remark
D405	6-502-970-01	DI DZ2J068M0L			
D407	6-500-522-21	DIODE 10EDB40-TB3			
D408	6-500-522-21	DIODE 10EDB40-TB3			
D409	6-500-522-21	DIODE 10EDB40-TB3			
D549	6-500-848-01	DIODE MC2840-T112-1			
		< FERRITE BEAD >			
FB400	1-216-295-91	SHORT CHIP	0		
FB401	1-216-295-91	SHORT CHIP	0		
		< IC >			
IC100	A-1863-397-A	IC LC87F7DJ2CVU-QIP-H (for SERVICE)			
IC129	6-600-768-01	IC PNA4823M03S0			
IC300	6-703-639-01	IC TK11140CSCL-G			
IC301	6-701-680-01	IC PST3629NR			
IC400	6-717-879-01	IC RT8293ALZSP			
IC500	6-713-384-01	IC BD3491FS-SE2			
		< JACK >			
J380	1-842-549-11	JACK (PHONES)			
J500	1-842-550-11	JACK BLOCK, PIN 2P (DVD/PC IN)			
		< JUMPER RESISTOR >			
JR100	1-216-296-11	SHORT CHIP	0		
JR101	1-216-864-11	SHORT CHIP	0		
JR102	1-216-864-11	SHORT CHIP	0		
JR103	1-216-296-11	SHORT CHIP	0		
JR104	1-216-864-11	SHORT CHIP	0		
JR105	1-216-864-11	SHORT CHIP	0		
JR106	1-216-864-11	SHORT CHIP	0		
JR107	1-216-864-11	SHORT CHIP	0		
JR108	1-216-296-11	SHORT CHIP	0		
JR109	1-216-296-11	SHORT CHIP	0		
JR110	1-216-864-11	SHORT CHIP	0		
JR111	1-216-864-11	SHORT CHIP	0		
JR112	1-216-864-11	SHORT CHIP	0		
JR501	1-216-295-91	SHORT CHIP	0		
		< COIL >			
L400	1-456-509-21	INDUCTOR	10uH		
L502	1-500-445-21	FERRITE, EMI (SMD) (2012)			
		< LIQUID CRYSTAL DISPLAY >			
LCD100	1-811-042-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q131	8-729-038-23	TRANSISTOR	RT1N141C-TP-1		
Q187	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF		
Q231	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q300	8-729-038-23	TRANSISTOR	RT1N141C-TP-1		
Q320	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF		
Q321	8-729-036-86	TRANSISTOR	KTC3203Y-AT		
Q400	6-551-696-01	TR ISA1235AC1-T112-1EF			
		< RESISTOR >			
R103	1-216-809-11	METAL CHIP	100	5%	1/10W
R109	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R111	1-216-809-11	METAL CHIP	100	5%	1/10W
R113	1-216-845-11	METAL CHIP	100K	5%	1/10W
R116	1-216-864-11	SHORT CHIP	0		

Ref. No.	Part No.	Description			Remark
R118	1-216-833-11	METAL CHIP	10K	5%	1/10W
R120	1-216-833-11	METAL CHIP	10K	5%	1/10W
R121	1-216-841-11	METAL CHIP	47K	5%	1/10W
R122	1-216-837-11	METAL CHIP	22K	5%	1/10W
R125	1-216-833-11	METAL CHIP	10K	5%	1/10W
R129	1-216-821-11	METAL CHIP	1K	5%	1/10W
R130	1-216-809-11	METAL CHIP	100	5%	1/10W
R131	1-216-809-11	METAL CHIP	100	5%	1/10W
R134	1-216-864-11	SHORT CHIP	0		
R135	1-216-833-11	METAL CHIP	10K	5%	1/10W
R136	1-216-833-11	METAL CHIP	10K	5%	1/10W
R137	1-216-833-11	METAL CHIP	10K	5%	1/10W
R140	1-216-809-11	METAL CHIP	100	5%	1/10W
R180	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R181	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R182	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R187	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R188	1-216-821-11	METAL CHIP	1K	5%	1/10W
R191	1-216-809-11	METAL CHIP	100	5%	1/10W
R192	1-216-809-11	METAL CHIP	100	5%	1/10W
R194	1-216-809-11	METAL CHIP	100	5%	1/10W
R195	1-216-809-11	METAL CHIP	100	5%	1/10W
R196	1-216-809-11	METAL CHIP	100	5%	1/10W
R197	1-216-809-11	METAL CHIP	100	5%	1/10W
R198	1-216-809-11	METAL CHIP	100	5%	1/10W
R199	1-216-809-11	METAL CHIP	100	5%	1/10W
R200	1-216-809-11	METAL CHIP	100	5%	1/10W
R201	1-216-807-11	METAL CHIP	68	5%	1/10W
R209	1-216-833-11	METAL CHIP	10K	5%	1/10W
R222	1-216-845-11	METAL CHIP	100K	5%	1/10W
R229	1-216-817-11	METAL CHIP	470	5%	1/10W
R234	1-216-841-11	METAL CHIP	47K	5%	1/10W
R236	1-216-833-11	METAL CHIP	10K	5%	1/10W
R237	1-216-833-11	METAL CHIP	10K	5%	1/10W
R280	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R288	1-216-837-11	METAL CHIP	22K	5%	1/10W
R291	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R292	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R295	1-216-845-11	METAL CHIP	100K	5%	1/10W
R296	1-216-845-11	METAL CHIP	100K	5%	1/10W
R297	1-216-845-11	METAL CHIP	100K	5%	1/10W
R298	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R299	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R300	1-216-295-91	SHORT CHIP	0		
R305	1-216-833-11	METAL CHIP	10K	5%	1/10W
R306	1-216-833-11	METAL CHIP	10K	5%	1/10W
R307	1-216-841-11	METAL CHIP	47K	5%	1/10W
R308	1-216-817-11	METAL CHIP	470	5%	1/10W
R315	1-216-845-11	METAL CHIP	100K	5%	1/10W
R316	1-216-837-11	METAL CHIP	22K	5%	1/10W
R320	1-257-324-91	METAL CHIP	39	5%	1/3W
R321	1-257-324-91	METAL CHIP	39	5%	1/3W
R323	1-216-809-11	METAL CHIP	100	5%	1/10W
R324	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R325	1-216-837-11	METAL CHIP	22K	5%	1/10W
R326	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R327	1-216-833-11	METAL CHIP	10K	5%	1/10W
R328	1-216-833-11	METAL CHIP	10K	5%	1/10W
R329	1-216-845-11	METAL CHIP	100K	5%	1/10W
R330	1-216-841-11	METAL CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R335	1-216-864-11	SHORT CHIP	0		
R336	1-216-809-11	METAL CHIP	100	5%	1/10W
R337	1-216-864-11	SHORT CHIP	0		
R338	1-216-809-11	METAL CHIP	100	5%	1/10W
R339	1-216-809-11	METAL CHIP	100	5%	1/10W
R340	1-216-809-11	METAL CHIP	100	5%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R342	1-216-809-11	METAL CHIP	100	5%	1/10W
R343	1-216-809-11	METAL CHIP	100	5%	1/10W
R344	1-216-809-11	METAL CHIP	100	5%	1/10W
R350	1-216-833-11	METAL CHIP	10K	5%	1/10W
R351	1-216-833-11	METAL CHIP	10K	5%	1/10W
R359	1-216-845-11	METAL CHIP	100K	5%	1/10W
R360	1-216-821-11	METAL CHIP	1K	5%	1/10W
R361	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R362	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R363	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R364	1-216-833-11	METAL CHIP	10K	5%	1/10W
R365	1-216-835-11	METAL CHIP	15K	5%	1/10W
R370	1-216-821-11	METAL CHIP	1K	5%	1/10W
R371	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R372	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R373	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R374	1-216-833-11	METAL CHIP	10K	5%	1/10W
R375	1-216-835-11	METAL CHIP	15K	5%	1/10W
R400	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R401	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R402	1-216-833-11	METAL CHIP	10K	5%	1/10W
R403	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R404	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R405	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R406	1-216-793-11	METAL CHIP	4.7	5%	1/10W
R407	1-216-793-11	METAL CHIP	4.7	5%	1/10W
R408	1-218-853-11	METAL CHIP	1.8K	0.5%	1/10W
R409	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R410	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R415	1-216-833-11	METAL CHIP	10K	5%	1/10W
R416	1-216-821-11	METAL CHIP	1K	5%	1/10W
R417	1-216-845-11	METAL CHIP	100K	5%	1/10W
R500	1-216-836-11	METAL CHIP	18K	5%	1/10W
R501	1-216-839-11	METAL CHIP	33K	5%	1/10W
R504	1-216-864-11	SHORT CHIP	0		
R505	1-216-837-11	METAL CHIP	22K	5%	1/10W
R506	1-216-840-11	METAL CHIP	39K	5%	1/10W
R507	1-216-833-11	METAL CHIP	10K	5%	1/10W
R508	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R509	1-216-845-11	METAL CHIP	100K	5%	1/10W
R510	1-216-864-11	SHORT CHIP	0		
R517	1-216-809-11	METAL CHIP	100	5%	1/10W
R518	1-216-813-11	METAL CHIP	220	5%	1/10W
R519	1-216-813-11	METAL CHIP	220	5%	1/10W
R521	1-216-864-11	SHORT CHIP	0		
R531	1-216-801-11	METAL CHIP	22	5%	1/10W
R550	1-216-836-11	METAL CHIP	18K	5%	1/10W
R551	1-216-839-11	METAL CHIP	33K	5%	1/10W
R554	1-216-864-11	SHORT CHIP	0		
R555	1-216-837-11	METAL CHIP	22K	5%	1/10W
R556	1-216-840-11	METAL CHIP	39K	5%	1/10W
R557	1-216-833-11	METAL CHIP	10K	5%	1/10W

PANEL **POWER**

Ref. No.	Part No.	Description			Remark
R558	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R560	1-216-864-11	SHORT CHIP	0		
R571	1-216-864-11	SHORT CHIP	0		
		< ROTARY ENCODER >			
S350	1-786-417-11	ENCODER, ROTARY (VOLUME)			
		< SWITCH >			
SW350	1-771-410-21	SWITCH, TACT (I/⏻)			
SW360	1-771-410-21	SWITCH, TACT (TUNING + ▶▶▷▷I)			
SW361	1-771-410-21	SWITCH, TACT (▶II)			
SW362	1-771-410-21	SWITCH, TACT (TUNING - I◁◁◀◀)			
SW363	1-771-410-21	SWITCH, TACT (ENTER)			
SW364	1-771-410-21	SWITCH, TACT (DSGX)			
SW365	1-771-410-21	SWITCH, TACT (EQ)			
SW370	1-771-410-21	SWITCH, TACT (FUNCTION)			
SW371	1-771-410-21	SWITCH, TACT (⏏+)			
SW372	1-771-410-21	SWITCH, TACT (■)			
SW373	1-771-410-21	SWITCH, TACT (⏏-)			
SW374	1-771-410-21	SWITCH, TACT (REC TO USB)			
SW375	1-771-410-21	SWITCH, TACT (OPTIONS)			
		< VIBRATOR >			
X112	1-814-067-11	OSCILLATOR, CRYSTAL (32.768kHz)			
X115	1-814-474-21	CELAMIC OSCILLATOR (18MHz)			

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POWER BOARD
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< CAPACITOR >

C701	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C702	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C703	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C704	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C705	1-115-870-11	ELECT	0.47uF	20%	50V
C706	1-115-870-11	ELECT	0.47uF	20%	50V
C707	1-119-943-91	ELECT	47uF	20%	50V
C708	1-119-943-91	ELECT	47uF	20%	50V
C709	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C710	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C711	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C712	1-126-382-11	ELECT	100uF	20%	16V
C713	1-128-126-11	ELECT	100uF	20%	25V
C714	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C715	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C717	1-126-514-11	ELECT	22uF	20%	16V
C723	1-126-968-11	ELECT	100uF	20%	50V
C724	1-126-968-11	ELECT	100uF	20%	50V
C725	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C732	1-114-868-11	CERAMIC CHIP	0.1uF	10%	50V
C733	1-114-868-11	CERAMIC CHIP	0.1uF	10%	50V
C734	1-126-974-11	ELECT	3300uF	20%	50V
C735	1-126-974-11	ELECT	3300uF	20%	50V
C736	1-126-943-11	ELECT	2200uF	20%	25V
C739	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C740	1-114-868-11	CERAMIC CHIP	0.1uF	10%	50V
C741	1-126-382-11	ELECT	100uF	20%	16V
C742	1-126-785-11	ELECT	47uF	20%	10V
C751	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C753	1-115-872-11	ELECT	2.2uF	20%	50V
C755	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C756	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C757	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C758	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C759	1-100-597-91	CERAMIC CHIP	0.1uF	10%	25V
C762	1-114-868-11	CERAMIC CHIP	0.1uF	10%	50V

< CONNECTOR >

CN701	1-564-506-11	PLUG, CONNECTOR 3P	
CN704	1-568-838-11	SOCKET, CONNECTOR 21P	
* CN722	1-564-511-11	PLUG, CONNECTOR 8P	

< DIODE >

D706	6-502-961-01	DI DA2J10100L
D707	6-502-619-01	DI 1N5402-C532-2
D708	6-502-619-01	DI 1N5402-C532-2
D709	6-502-619-01	DI 1N5402-C532-2
D710	6-502-619-01	DI 1N5402-C532-2
D711	6-500-522-21	DIODE 10EDB40-TB3
D712	6-500-522-21	DIODE 10EDB40-TB3
D715	6-502-961-01	DI DA2J10100L
D717	6-500-335-01	DIODE MC2838-T112-1
D718	6-502-961-01	DI DA2J10100L
D721	6-500-335-01	DIODE MC2838-T112-1
D723	6-503-028-01	DI DZ2J130M0L

< IC >

IC701	6-718-464-01	IC STK433-040N-E
IC702	6-713-032-01	IC KIA7809API-U/PF

< JUMPER RESISTOR >

JR701	1-216-864-11	SHORT CHIP	0
JR703	1-216-296-11	SHORT CHIP	0
JR704	1-216-864-11	SHORT CHIP	0
JR705	1-216-864-11	SHORT CHIP	0
JR706	1-216-296-11	SHORT CHIP	0

< COIL >

L701	1-456-107-11	COIL, AIR-CORE
L702	1-456-107-11	COIL, AIR-CORE

< TRANSISTOR >

Q704	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q705	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q707	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q708	6-551-696-01	TR ISA1235AC1-T112-1EF	
Q709	8-729-040-76	TRANSISTOR	KTA1273-Y-AT
Q710	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q711	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q712	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q713	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q715	6-551-696-01	TR ISA1235AC1-T112-1EF	
Q716	6-551-696-01	TR ISA1235AC1-T112-1EF	
Q720	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q721	8-729-620-07	TRANSISTOR	2SC3052EF-T1-LEF
Q728	8-729-023-22	TRANSISTOR	2SD2114K

< RESISTOR >

R701	1-216-817-11	METAL CHIP	470	5%	1/10W
R702	1-216-817-11	METAL CHIP	470	5%	1/10W

Ref. No.	Part No.	Description			Remark
R703	1-216-841-11	METAL CHIP	47K	5%	1/10W
R704	1-216-841-11	METAL CHIP	47K	5%	1/10W
R705	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R706	1-216-817-11	METAL CHIP	470	5%	1/10W
R707	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R708	1-216-817-11	METAL CHIP	470	5%	1/10W
R709	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R710	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R711	1-216-809-11	METAL CHIP	100	5%	1/10W
R712	1-216-361-31	METAL OXIDE	0.22	5%	2W
R713	1-216-361-31	METAL OXIDE	0.22	5%	2W
R714	1-216-841-11	METAL CHIP	47K	5%	1/10W
R715	1-216-841-11	METAL CHIP	47K	5%	1/10W
R729	1-216-843-11	METAL CHIP	68K	5%	1/10W
R730	1-216-842-11	METAL CHIP	56K	5%	1/10W
R731	1-216-841-11	METAL CHIP	47K	5%	1/10W
R732	1-216-845-11	METAL CHIP	100K	5%	1/10W
R733	1-216-841-11	METAL CHIP	47K	5%	1/10W
R735	1-216-833-11	METAL CHIP	10K	5%	1/10W
R736	1-216-833-11	METAL CHIP	10K	5%	1/10W
R737	1-216-833-11	METAL CHIP	10K	5%	1/10W
R744	1-216-845-11	METAL CHIP	100K	5%	1/10W
R745	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R747	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R748	1-245-605-55	FUSIBLE	100	5%	1/4W
R749	1-245-605-55	FUSIBLE	100	5%	1/4W
R752	1-216-809-11	METAL CHIP	100	5%	1/10W
R756	1-216-797-11	METAL CHIP	10	5%	1/10W
R757	1-216-797-11	METAL CHIP	10	5%	1/10W
R763	1-216-809-11	METAL CHIP	100	5%	1/10W
R764	1-216-809-11	METAL CHIP	100	5%	1/10W
R765	1-216-833-11	METAL CHIP	10K	5%	1/10W
R766	1-216-841-11	METAL CHIP	47K	5%	1/10W
R767	1-216-821-11	METAL CHIP	1K	5%	1/10W
R770	1-216-821-11	METAL CHIP	1K	5%	1/10W
R771	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R772	1-216-833-11	METAL CHIP	10K	5%	1/10W
R776	1-216-809-11	METAL CHIP	100	5%	1/10W
R777	1-216-809-11	METAL CHIP	100	5%	1/10W
R778	1-216-821-11	METAL CHIP	1K	5%	1/10W
R779	1-216-837-11	METAL CHIP	22K	5%	1/10W
R780	1-216-837-11	METAL CHIP	22K	5%	1/10W
R781	1-216-834-11	METAL CHIP	12K	5%	1/10W
R782	1-216-834-11	METAL CHIP	12K	5%	1/10W
R803	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R804	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R805	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R806	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R809	1-227-869-21	METAL CHIP	100	5%	1/2W
R810	1-227-869-21	METAL CHIP	100	5%	1/2W
R811	1-227-869-21	METAL CHIP	100	5%	1/2W
R812	1-216-833-11	METAL CHIP	10K	5%	1/10W
R814	1-216-833-11	METAL CHIP	10K	5%	1/10W
R815	1-216-845-11	METAL CHIP	100K	5%	1/10W
R816	1-216-821-11	METAL CHIP	1K	5%	1/10W
R823	1-216-839-11	METAL CHIP	33K	5%	1/10W
R824	1-216-797-11	METAL CHIP	10	5%	1/10W
R825	1-216-797-11	METAL CHIP	10	5%	1/10W
R826	1-257-331-91	METAL CHIP	1K	5%	1/3W
R827	1-257-331-91	METAL CHIP	1K	5%	1/3W
R828	1-257-331-91	METAL CHIP	1K	5%	1/3W
R829	1-257-331-91	METAL CHIP	1K	5%	1/3W
R830	1-227-869-21	METAL CHIP	100	5%	1/2W
R832	1-216-864-11	SHORT CHIP	0		
R833	1-257-331-91	METAL CHIP	1K	5%	1/3W
R834	1-257-331-91	METAL CHIP	1K	5%	1/3W

< RELAY >

RY701	1-755-654-11	RELAY			

< TERMINAL >

TB701	1-780-314-11	TERMINAL BOARD (SPEAKERS IMPEDANCE: USE 6 Ω)			

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TRANS BOARD
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< CAPACITOR >

C635	1-114-868-11	CERAMIC CHIP	0.1uF	10%	50V
C636	1-126-942-61	ELECT	1000uF	20%	25V
C637	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

< CONNECTOR >

* CN622	1-793-660-11	PIN, CONNECTOR (PC BOARD) 3P			

< DIODE >

D611	6-500-334-01	DIODE MC2836-T112-1			
D612	6-500-335-01	DIODE MC2838-T112-1			
D613	6-500-335-01	DIODE MC2838-T112-1			
D614	6-502-961-01	DI DA2J10100L			

< FUSE >

⚠ F671	1-523-088-11	FUSE 5A 250V			
⚠ F673	1-523-088-11	FUSE 5A 250V			

< RELAY >

⚠ RY651	1-755-334-11	RELAY, AC POWER (MX)			
⚠ RY652	1-755-496-11	RELAY (EXCEPT MX)			

< SWITCH >

⚠ S661	1-786-408-11	SELECTOR, VOLTAGE (SWS-2301) (E2, E51)			

< TRANSFORMER >

⚠ T601	1-445-105-11	TRANSFORMER, POWER			

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TUNER1 BOARD
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< CAPACITOR >

C101	1-100-155-91	CERAMIC CHIP	470PF	5%	100V
C102	1-116-734-11	CERAMIC CHIP	1uF	20%	16V
C103	1-116-734-11	CERAMIC CHIP	1uF	20%	16V
C105	1-116-734-11	CERAMIC CHIP	1uF	20%	16V
C106	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C107	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C108	1-116-729-11	CERAMIC CHIP	2.2uF	20%	10V
C110	1-116-717-11	CERAMIC CHIP	10uF	20%	10V
C111	1-116-734-11	CERAMIC CHIP	1uF	20%	16V

TUNER1

Ref. No.	Part No.	Description			Remark
C112	1-116-734-11	CERAMIC CHIP	1uF	20%	16V
		< CONNECTOR >			
CN101	1-779-277-11	CONNECTOR, FFC (LIF (NON-ZIF)) 9P			
* CN103	1-506-680-11	PLUG, CONNECTOR (2.5MM) 3P (ANTENNA FM/AM)			
		< DIODE >			
D101	6-501-579-01	DIODE MC2837			
D102	6-501-579-01	DIODE MC2837			
D103	6-501-579-01	DIODE MC2837			
		< FILTER >			
FL101	1-236-711-21	FILTER, BAND PASS			
		< IC >			
IC101	6-717-981-01	IC RZ5B801-0002E2			
IC103	6-710-536-01	IC NJM2878F4-33 (TE2)			
		< JUMPER RESISTOR >			
JR101	1-216-864-11	SHORT CHIP	0		
JR102	1-216-296-11	SHORT CHIP	0		
JR105	1-216-296-11	SHORT CHIP	0		
JR106	1-216-864-11	SHORT CHIP	0		
JR109	1-216-296-11	SHORT CHIP	0		
JR112	1-216-296-11	SHORT CHIP	0		
		< COIL >			
L101	1-457-998-11	COIL, AM ANTENNA			
L103	1-414-576-41	INDUCTOR	47nH		
L104	1-481-330-21	INDUCTOR	220nH		
L105	1-481-523-11	INDUCTOR	4.7uH		
		< RESISTOR >			
R101	1-216-809-11	METAL CHIP	100	5%	1/10W
R103	1-216-801-11	METAL CHIP	22	5%	1/10W
R104	1-216-864-11	SHORT CHIP	0		
R105	1-216-801-11	METAL CHIP	22	5%	1/10W
R106	1-216-809-11	METAL CHIP	100	5%	1/10W
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-216-296-11	SHORT CHIP	0		
R109	1-216-864-11	SHORT CHIP	0		
R110	1-216-833-11	METAL CHIP	10K	5%	1/10W
R113	1-216-833-11	METAL CHIP	10K	5%	1/10W
R114	1-216-864-11	SHORT CHIP	0		
		< VIBRATOR >			
X101	1-767-317-11	VIBRATOR, CRYSTAL (32.768kHz)			

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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
54	1-846-044-11	WIRE (FLAT TYPE) (9 CORE)	
55	1-832-618-11	WIRE (FLAT TYPE) (21 CORE)	
56	1-846-045-11	WIRE (FLAT TYPE) (21 CORE)	
⚠ 104	1-855-006-11	FAN, DC	
⚠ 105	1-834-966-41	POWER-SUPPLY CORD (E51)	
⚠ 105	1-837-312-11	CORD, POWER-SUPPLY (AR)	
⚠ 105	1-837-344-11	CORD, POWER-SUPPLY (E2, MX)	
⚠ 106	1-569-007-12	ADAPTOR, CONVERSION 2P (E2)	
⚠ 106	1-569-008-33	ADAPTOR, CONVERSION (E51)	
152	1-834-268-21	WIRE (FLAT TYPE) (16 CORE)	
⚠ 158	A-1800-257-A	OPTICAL PICK-UP BLOCK (DA11MMVGP) (Including sled motor (M402), spindle motor (M401))	
163	1-452-899-31	MAGNET	
S001	1-771-853-11	SWITCH, DETECTION	
SW305	1-692-960-11	SWITCH, PUSH (1 KEY) (CD LID OPEN/CLOSE DETECT)	
LCD100	1-811-042-11	DISPLAY PANEL, LIQUID CRYSTAL	
⚠ PT602	1-697-157-11	TRANSFORMER, POWER (EXCEPT MX)	
⚠ PT602	1-697-158-11	POWER TRANSFORMER (MX)	

MEMO

REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2012.02	New