

HCD-SPZ50/SPZ70

SERVICE MANUAL

Ver. 1.3 2007.02



Photo: HCD-SPZ70

AEP Model
UK Model
E Model
HCD-SPZ50/SPZ70
Australian Model
HCD-SPZ50

- HCD-SPZ50 is the amplifier, CD player, tape deck and tuner section in CMT-SPZ50.
- HCD-SPZ70 is the amplifier, CD player, tape deck and tuner section in CMT-SPZ70.

U.S. and foreign patents licensed from Dolby Laboratories.

CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Name	DLM3A
	Base Unit Name	BU-K6BD83S-WOD
	Optical Pick-Up Block Name	KSM-213DCP
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Name	CFP42601

SPECIFICATIONS

Amplifier section

HCD-SPZ70

European and Russian models:

DIN power output (rated): 60 + 60 W (4 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 75 + 75 W (4 ohms at 1 kHz, 10% THD)
Music power output (reference): 75 + 75 W (4 ohms at 1 kHz, 10% THD)

Other models:

The following are measured at AC 127 V, 60 Hz (Mexican model)

AC 120 – 127 V or AC 220 – 240 V, 50/60 Hz (Other models)

DIN power output (rated): 50 + 50 W (4 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 60 + 60 W (4 ohms at 1 kHz, 10% THD)

Inputs

AUDIO IN: Sensitivity 250 mV, impedance 47 kilohms

Outputs

PHONES: Accepts headphones with an impedance of 8 ohms or more
SPEAKER: Accepts impedance of 4 ohms

HCD-SPZ50

European and Russian models:

DIN power output (rated): 40 + 40 W (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 50 + 50 W (6 ohms at 1 kHz, 10% THD)
Music power output (reference): 50 + 50 W (6 ohms at 1 kHz, 10% THD)

Other models:

The following are measured at AC 220 – 240 V, 50/60 Hz

DIN power output (rated): 30 + 30 W (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 40 + 40 W (6 ohms at 1 kHz, 10% THD)

Inputs

AUDIO IN: Sensitivity 250 mV, impedance 47 kilohms

Outputs

PHONES: Accepts headphones with an impedance of 8 ohms or more
SPEAKER: Accepts impedance of 6 ohms

CD player section

System: Compact disc and digital audio system

Laser Diode Properties

Emission Duration: Continuous

Laser Output*: Less than 44.6μW

* This output is the value measurement at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7mm aperture.

Frequency response: 20 Hz – 20 kHz (±2 dB)

Wavelength: 780 – 790 nm

Tape deck section

Recording system: 4-track 2-channel, stereo

Frequency response: 50 – 13,000 Hz (±3 dB), using Sony TYPE I cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section:

Tuning range: 87.5 – 108.0 MHz

Antenna: FM lead antenna

Antenna terminals: 75 ohms unbalanced

Intermediate frequency: 10.7 MHz

AM tuner section:

Tuning range

European and Russian models: 531 – 1,602 kHz (with 9 kHz tuning interval)

Latin American model: 530 – 1,710 kHz (with 10 kHz tuning interval)

531 – 1,710 kHz (with 9 kHz tuning interval)

Other models: 530 – 1,710 kHz (with 10 kHz tuning interval)

531 – 1,602 kHz (with 9 kHz tuning interval)

Antenna: AM loop antenna

Antenna terminals: External antenna terminal

Intermediate frequency: 450 kHz

– Continued on next page –

COMPACT DISC DECK RECEIVER

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General

Power requirements

Mexican model: 127 V AC, 60 Hz
Latin American model except for Mexican and Argentine models:
120 – 127 V or 220 – 240 V AC, 50/60 Hz
Adjustable with voltage selector
Other models: 220 – 240 V AC, 50/60 Hz

Power consumption:

HCD-SPZ70: 45 watts
HCD-SPZ50: 40 watts

Dimensions (w/h/d) (excl. speakers): Approx. 180 × 280 × 338 mm

Mass (excl. speakers): Approx. 4.1 kg

Design and specifications are subject to change without notice.

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Notes on chip component replacement

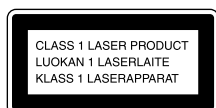
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

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

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.

Note: Refer to SUPPLEMENT-1 for the HP A-IN and MAIN boards of printed wiring boards, schematic diagrams and electrical parts list of HCD-SPZ70 Korean model.

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 pick-up 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)

LF: 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.

RELEASING THE ANTITHEFT LOCK

The disc table lock function for the antitheft of a demonstration disc in the store is equipped.

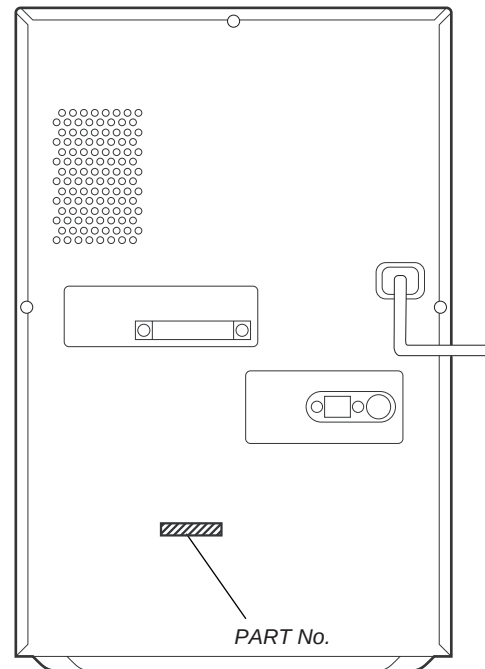
Releasing Procedure :

- Press the  button to turn the power on.
- While pressing the  button, press the  button until "UNLOCKED" displayed on the fluorescent indicator tube (around 5 seconds).

Note: When "LOCKED" is displayed, the antitheft lock is not released by turning power on/off with the  button.

MODEL IDENTIFICATION

— Rear Panel —



MODEL	PART No.
SPZ70: AEP, UK	2-659-064-0□
SPZ70: E2	2-659-064-1□
SPZ70: MX	2-659-064-2□
SPZ70: E51	2-659-064-3□
SPZ70: AR	2-659-064-4□
SPZ70: RU	2-659-064-6□
SPZ70: KR	2-659-064-7□
SPZ50: AEP, UK	2-670-256-0□
SPZ50: SP	2-670-256-1□
SPZ50: AUS	2-670-256-2□
SPZ50: KR	2-670-256-3□
SPZ50: RU	2-670-256-4□

• Abbreviation

- AR : Argentina model
- AUS : Australian model
- E2 : 120V AC area in E model
- E51 : Chilean and Peruvian models
- KR : Korean model
- MX : Mexican model
- RU : Russian model
- SP : Singapore model

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NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD

IC1301 that have been mounted on the MAIN board of AEP, UK and Russian models has been changed in the midway of production. C25 on the POWER board and POWER board have been changed with the change.

Because there is a suited combination, when you repairing exchange the MAIN board, IC1301 on the MAIN board, C25 on the POWER board or the POWER board, be sure to confirm which type set referring to the following.

• Corresponding Model

Model	Destination
HCD-SPZ50	AEP, UK and Russian
HCD-SPZ70	

Note: Destination except AEP, UK and Russian models are type B and type C only.

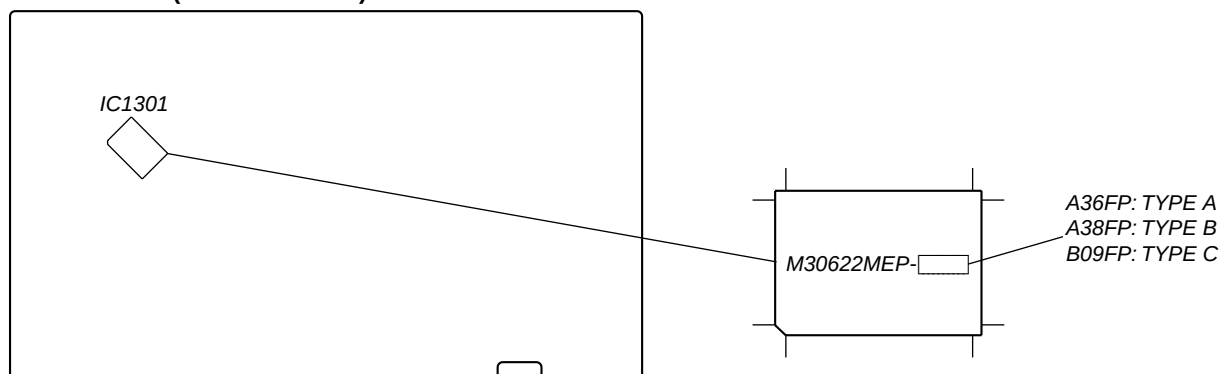
• Combination

TYPE	IC1301 (MAIN board)	C25 (POWER board)	POWER board
A	6-806-302-01 IC M30622MEP-A36FPU0	1-216-948-11 ELECT 100uF 20% 35V	A-1191-115-A (SPZ70)
			A-1191-116-A (SPZ50)
B	6-806-618-01 IC M30622MEP-A38FPU0	1-216-950-11 ELECT 330uF 20% 35V	A-1166-887-A (SPZ70)
			A-1167-006-A (SPZ50)
C	6-807-018-01 IC M30622MEP-B09FPU0	1-216-950-11 ELECT 330uF 20% 35V	A-1166-887-A (SPZ70)
			A-1167-006-A (SPZ50)

• Discrimination

Discriminate by the type name printed on IC1301 that have been mounted on the MAIN board.

– MAIN Board (Conductor Side) –



• Replacing work

When you exchange the MAIN board:

1. Confirm which type set of the repair (Refer to “Discrimination”).
2. Confirm the IC1301 of which has been mounted on the new MAIN board (Refer to “Combination”).
3. Work according to the following table.

	Type	Repairing Set	
		A	B or C
New MAIN Board	A	Install the MAIN board as it is	Install the MAIN board after exchanging C25 of the POWER board for 100uF (1-126-948-11)
	B or C	Install the MAIN board after exchanging C25 of the POWER board for 330uF (1-126-950-11)	Install the MAIN board as it is

When you exchange the IC1301 on the MAIN board:

1. Confirm which type set of the repair (Refer to “Discrimination”).
2. Exchange it for IC1301 of the same as the repairing set (Refer to “Combination”).

When you exchange the C25 on the POWER board:

1. Confirm which type set of the repair (Refer to “Discrimination”).
2. Exchange it for C25 of the same as the repairing set (Refer to “Combination”).

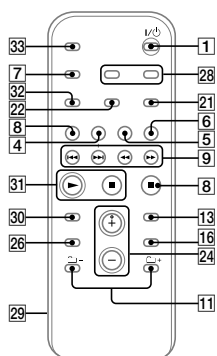
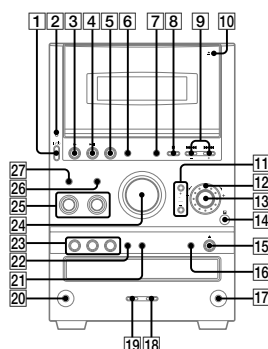
When you exchange the POWER board:

1. Confirm which type set of the repair (Refer to “Discrimination”).
2. Exchange it for POWER board of the same as the repairing set (Refer to “Combination”).

SECTION 2 GENERAL

This section is extracted from instruction manual.

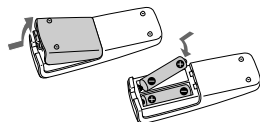
Basic Operations



Before using the system

To use the remote

Slide and remove the battery compartment lid **29**, and insert the two supplied R6 (size AA) batteries. **30** side first, matching the polarities shown below.



Notes on using the remote

- With normal use, the batteries should last for about six months.
- Do not mix an old battery with a new one or mix different types of batteries.
- If you do not use the remote for a long period of time, remove the batteries to avoid damage from battery leakage and corrosion.

To set the clock

1 Turn on the system.

Press **1** (power) **1**.

2 Select the clock set mode.

Press **CLOCK/TIMER SET** **28** on the remote. If the current mode appears on the display, press **◀▶** **9** on the remote repeatedly to select "CLOCK SET" and then press **ENTER** **13** on the remote.

3 Set the time.

Press **◀▶** **9** on the remote repeatedly to set the hour, and then press **ENTER** **13** on the remote. Use the same procedure to set the minute.

The clock settings are lost when you disconnect the power cord or if a power failure occurs.

Selecting a music source

Press the following buttons (or press **FUNCTION** **6** repeatedly).

To select	Press
CD	CD 4 on the remote.
Tuner	TUNER/BAND 5 .
Tape	TAPE 3 on the remote.
Component (connected using an audio cord)	FUNCTION 6 repeatedly until "AUDIO IN" appears.

Adjusting the sound

To adjust the volume

Press **VOLUME +/-** on the remote (or turn the **VOLUME** control on the unit) **24**.

To add a sound effect

To	Press
Generate a more dynamic sound (Dynamic Sound Generator X-tra)	DSGX 27 on the unit.
Generate a clearer sound (CMT-SPZ70 only)	SOURCE DIRECT 26 on the unit.
Set the sound effect	EQ 28 repeatedly to select "BASS" or "TREBLE," and then press +/- 9 on the remote (or EQ LEVEL +/- 25 on the unit (HCD-SPZ50 only)) repeatedly to adjust the level. Or, turn BASS or TREBLE controls 25 on the unit (HCD-SPZ70 only).

Notes on sound effects

- The bass and treble settings and DSGX do not function when Source Direct is on.
- Source Direct does not function when the headphones are connected.

Playing a CD/MP3 disc

1 Select the CD function.

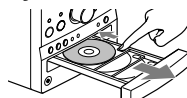
Press **CD** **4** on the remote.

2 Place a disc.

Press **▲** (CD open/close) **15** on the unit, and place a disc with the label side up on the disc tray.



To insert additional discs, slide the disc tray with your finger as shown below.



To close the disc tray, press **▲** (CD open/close) **15** on the unit again.

Do not force the disc tray closed with your finger, as this may damage the unit.

3 Start playback.

Press **▶** (play) **8** on the remote (or **CD/▶** (play/pause) **4**) on the unit).

To	Press
Pause playback	 (pause) 3 on the remote (or CD/▶ (play/pause) 4) on the unit). To resume play, press the button again.
Stop playback	■ (stop) 8 .
Select a folder on an MP3 disc	◀▶ (select folder) 11 . Or turn the jog dial 12 on the unit and press PUSH ENTER 13 on the unit (turn the jog dial 12 on the unit during playback until "GROUP" appears, and then press PUSH ENTER 13 on the unit to select the desired folder).
Select a track or file	◀▶ (go back/go forward) 9 . Or turn the jog dial 12 on the unit and press PUSH ENTER 13 on the unit. To cancel, press CANCEL 8 on the unit.
Find a point in a track or file	Hold down ◀▶ (rewind/fast forward) 9 during playback, and release the button at the desired point.
Select Repeat Play	REPEAT 21 repeatedly until "REP" or "REP1" appears.
Select a disc	Press DISC SKIP 16 on the remote (or DISC 1 - 3 23 or DISC SKIP 16 (in stop mode) on the unit).
Switch to CD function from another source	Press DISC 1 - 3 23 on the unit (Automatic Source Selection).
Exchange other discs while playing	Press EX-CHANGE 16 on the unit.

To change the play mode

Press **PLAY MODE** **22** repeatedly while the player is stopped. You can select normal play ("ALL DISCS" for all discs, "1DISC" for a disc, or "▶" for all MP3 files in the folder on the disc), shuffle play ("ALL DISCS SHUF", "1DISC SHUF", or "▶ SHUF"), or program play ("PGM").

* When playing a CD-DA disc, (SHUF) Play performs the same operation as 1DISC (SHUF) Play.

Note on the jog dial

Only the first 6 characters are displayed when performing the folder search, track search, or file search.

Notes on Repeat Play

- All tracks or files on a disc are played repeatedly up to five times.
- You cannot select "REP" and "ALL DISCS SHUF" at the same time.
- "REP 1" indicates that a single track or file is repeated until you stop it.

Notes on playing MP3 discs

- Do not save other types of files or unnecessary folders on a disc that has MP3 files.
- Folders that have no MP3 files are skipped.
- MP3 files are played back in the order that they are recorded onto the disc.
- The system can only play MP3 files that have a file extension of ".MP3".
- If there are files on the disc that have the ".MP3" file extension, but that are not MP3 files, the unit may produce noise or may malfunction.
- The maximum number of:
 - folders is 255 (including the root folder).
 - MP3 files is 511.
 - MP3 files and folders that can be contained on a single disc is 512.
 - folder levels (the tree structure of files) is 8.
- Compatibility with all MP3 encoding/writing software, recording device, and recording media cannot be guaranteed. Incompatible MP3 discs may produce noise or interrupted audio or may not play at all.

Notes on playing multisection discs

- If the disc begins with a CD-DA (or MP3) session, it is recognized as a CD-DA (or MP3) disc, and other sessions are not played back.
- A disc with a mixed CD format is recognized as a CD-DA (audio) disc.

Listening to the radio

1 Select "FM" or "AM."

Press **TUNER/BAND** **5** repeatedly.

2 Select the tuning mode.

Press **TUNING MODE** **22** repeatedly until "AUTO" appears.

3 Tune in the desired station.

Press **+/-** on the remote (or **TUNING +/-** on the unit) **9**. Scanning stops automatically when a station is tuned in, and then "TUNED" and "STEREO" (for stereo programs) appear. When you tune in a station that provides RDS services, the station name appears on the display (European model only).



To stop automatic scanning

Press **■** (stop) **8**.

To tune in a station with a weak signal

If "TUNED" does not appear and the scanning does not stop, press **TUNING MODE** **22** repeatedly until "AUTO" and "PRESET" disappear, and then press **+/-** on the remote (or **TUNING +/-** on the unit) **9** repeatedly to tune in the desired station.

To reduce static noise on a weak FM stereo station

Press **FM MODE** **21** repeatedly until "MONO" appears to turn off stereo reception.

Playing a tape

1 Select the tape function.

Press **TAPE** **3** on the remote.

2 Insert a tape.

Press **▲** **PUSH OPEN/CLOSE** **10** on the unit, and insert the **TYPE I** (normal) tape into the cassette holder with the side you want to play facing forward. Make sure there is no slack in the tape to avoid damaging the tape or the tape deck. Press **▲** **PUSH OPEN/CLOSE** **10** on the unit again to close the cassette holder.

3 Start playback.

Press **▶** (play) **8** on the remote (or **TAPE/▶** (play/pause) **3**) on the unit).

To	Press
Pause playback	 (pause) 3 on the remote (or TAPE/▶ (play/pause) 3) on the unit). To resume play, press the button again.
Stop playback	■ (stop) 8 .
Rewind or fast forward	◀▶ (rewind/fast forward) 9 .

Changing the display

To change	Press
Information on the display*	DISPLAY 7 repeatedly when the system is on.
Display mode (See below.)	DISPLAY 7 repeatedly when the system is off.

* For example, you can view CD/MP3 disc information, such as the track or file number or folder name during normal play, or the total play time while the player is stopped.

The system offers the following display modes.

Display mode	When the system is off, ¹⁾
Clock	The clock is displayed.
Power Saving Mode ²⁾	The display is turned off to conserve power. The timer and clock continue to operate.

¹⁾ The STANDBY indicator lights up when the system is off.

²⁾ When the system is in Power Saving Mode, the following functions are unavailable:

- setting the clock.
- changing the AM tuning interval
- changing the CD power manage function

Notes on the display information

- The following are not displayed:
 - total playing time for a CD-DA disc depending on the play mode.
 - total playing time for an MP3 disc.
 - remaining playing time for an MP3 file.
- The following are not displayed correctly;
 - elapsed playing time of an MP3 file encoded using a VBR (variable bit rate).
 - folder and file names that do not follow either the ISO9660 Level 1, Level 2 or Joliet in the expansion format.
- The following are displayed:
 - ID3 tag information for MP3 files when ID3 version 1 and version 2 tags are used. (The Russian model can display information in Russian characters, but the characters may not be displayed correctly for discs created with some encoding/writing software and some recording device.)
 - up to 62 characters of ID3 tag information using uppercase letters (A to Z), numbers (0 to 9), and symbols (" \$ % ' () * + , - . / < = > @ [\] ^ _ { | } ! ? ,)

Using optional audio components

To connect an optional headphones

Connect headphones to the **PHONES** jack **20** on the unit.

To connect an optional component

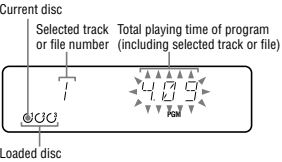
Connect additional audio component to the **AUDIO IN** jack **17** on the unit using an audio analog cord (not supplied). Turn down the volume on the system, and then press **FUNCTION** **6** repeatedly to select the **AUDIO IN** function.

Other Operations

Creating your own CD program (Program Play)

Use buttons on the remote to create your own program.

- 1 Press CD [4] to select the CD function.
 - 2 Press PLAY MODE [22] repeatedly until "PGM" appears while the player is stopped.
 - 3 Press DISC SKIP [16] to select a disc.
 - 4 Press [9] repeatedly or turn the jog dial [12] on the unit until the desired track number appears.
- When programming MP3 files, press [select folder] [11] repeatedly or turn the jog dial [12] on the unit to select the desired folder, and then select the desired file.



- 5 Press ENTER [13] to add the track or file to the program. "-----" appears when the total time exceeds 100 minutes for a disc, or when you select a CD track whose number is 21 or over, or when you select an MP3 file.
 - 6 Repeat steps 4 through 5 to program additional tracks or files, up to a total of 25 tracks or files.
 - 7 To play your program of tracks or files, press [play] [31].
- The program remains available until you open the disc tray. To play the same program again, select the CD function, and press [play] [31].

To cancel Program Play
Press PLAY MODE [22] repeatedly until "PGM" disappears while the player is stopped.

To delete the last track or file of the program
Press CLEAR [30] while the player is stopped.

To view program information, such as total track number of the program
Press DISPLAY [7] repeatedly.

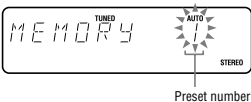
Tip
You can program additional tracks or files during playback by using the jog dial.

Presetting radio stations

You can preset your favorite radio stations and tune them instantly by selecting the corresponding preset number.

Use buttons on the remote to preset stations.

- 1 Tune in the desired station (see "Listening to the radio").
- 2 Press TUNER MEMORY [32].



- 3 Press +/- [9] repeatedly to select your desired preset number.
- If another station is already assigned to the selected preset number, the station is replaced by the new stations.
- 4 Press ENTER [13].
- 5 Repeat steps 1 through 4 to store other stations.
- You can preset up to 20 FM and 10 AM stations. The preset stations are retained for about half a day even if you disconnect the power cord or if a power failure occurs.
- 6 To call up a preset radio station, press TUNING MODE [22] repeatedly until "PRESET" appears, and then press +/- [9] repeatedly to select the desired preset number.

Recording onto a tape

You can record on a TYPE I (normal) tape in two ways:

CD Synchro Recording:
You can record an entire CD onto a tape.

Manual Recording:
You can record just the portions you like from a sound source, including connected audio components.

Use buttons on the unit to control tape recording.

- 1 Load a recordable tape with the side you want to record facing forward.
- 2 Prepare the recording source.

For CD Synchro Recording:
Press CD [4] on the remote to select the CD function. Load the disc you want to record. Press DISC SKIP [16] to select a disc.

When recording a folder from an MP3 disc, press PLAY MODE [22] repeatedly to select [select folder] [11] repeatedly to select the desired folder.

To record only your favorite CD tracks in your desired order, perform steps 2 through 6 of "Creating your own CD program."

For Manual Recording:
Select the desired source to record.

- 3 Set the tape deck to stand by for recording.

For CD Synchro Recording:
Press CD SYNCHRO [19].

For Manual Recording:
Press [PAUSE/START] [18].

- 4 Start recording.
- While recording, you cannot listen to other sources.
- For CD Synchro Recording:**
Press [PAUSE/START] [18]. When the recording is completed, the CD player and the tape deck stop automatically. If you are recording onto a tape and the tape reaches the end of the front side part-way through a track or file, "TURN TAPE" appears. Turn the tape over to the reverse side, re-insert it, and "PUSH REC" appears. And then press [PAUSE/START] [18].
- For Manual Recording:**
Press [PAUSE/START] [18], and then start playing the desired recording source.
- If there is noise while recording from the tuner, reposition the appropriate antenna to reduce the noise.

To stop recording
Press [stop] [8].

To pause recording
Press [PAUSE/START] [18].

Notes

- Recording stops if you change to a different function.
- You cannot eject the disc during CD synchro Recording.

Using the Timers

The system offers three timer functions. You cannot activate both the Play Timer and the Rec Timer at the same time. If you use either with the Sleep Timer, the Sleep Timer has priority.

Sleep Timer:
You can fall asleep to music. This function works even if the clock is not set.

Press SLEEP [33] on the remote repeatedly. If you select "AUTO," the system automatically turns off after the current disc or tape stops or in 100 minutes.

Do not select "AUTO" during Synchro Recording of a tape.

Play Timer:
You can wake up to CD, tape or tuner at a preset time.

Rec Timer:
You can record a preset radio station at a specified time.

Use buttons on the remote to control the Play Timer and the Rec Timer. Make sure you have set the clock.

- 1 Prepare the sound source.
- For Play Timer:**
Prepare the sound source, and then press VOLUME +/- [24] to adjust the volume.
- To start from a specific CD track or MP3 file, create your own CD program.
- For Rec Timer:**
Tune in the preset radio station.
- 2 Press CLOCK/TIMER SET [28].
- 3 Press [9] repeatedly to select "PLAY SET" or "REC SET" then press ENTER [13].
- "ON" appears, and the hour indication flashes.
- 4 Set the time to start playing or recording.
- Press [9] repeatedly to set the hour, and then press ENTER [13].
- The minute indication flashes. Use the procedure above to set the minute.
- 5 Use the same procedure as in step 4 to set the time to stop playing or recording.

- 6 Select the sound source or prepare the tape.
- For Play Timer:**
Press [9] repeatedly until the desired sound source appears, and then press ENTER [13]. The display shows the timer settings.
- For Rec Timer:**
Load a recordable tape. The display shows the timer settings.
- 7 Press I/O (power) [1] to turn off the system.
- The system turns on 15 seconds before the preset time.
- If the system is on at the preset time, the Play Timer and the Rec Timer will not play or record.

To activate or check the timer again
Press CLOCK/TIMER SELECT [28], press [9] repeatedly until "PLAY SEL" or "REC SEL" appears, and then press ENTER [13].

To cancel the timer
Repeat the same procedure as above until "TIMER OFF" appears, and then press ENTER [13].

To change the setting
Start over from step 1.

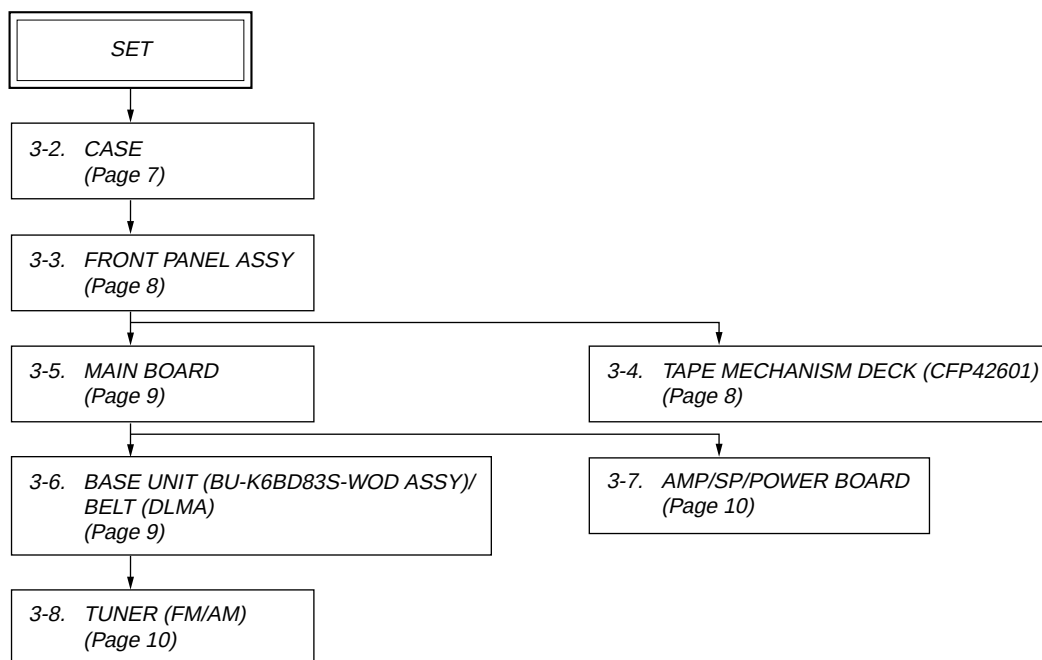
Tips

- The Play Timer setting remains as long as the setting is not canceled manually.
- The volume is reduced to minimum during the Rec Timer.
- The Rec Timer is canceled automatically after the Rec Timer has been activated.

SECTION 3 DISASSEMBLY

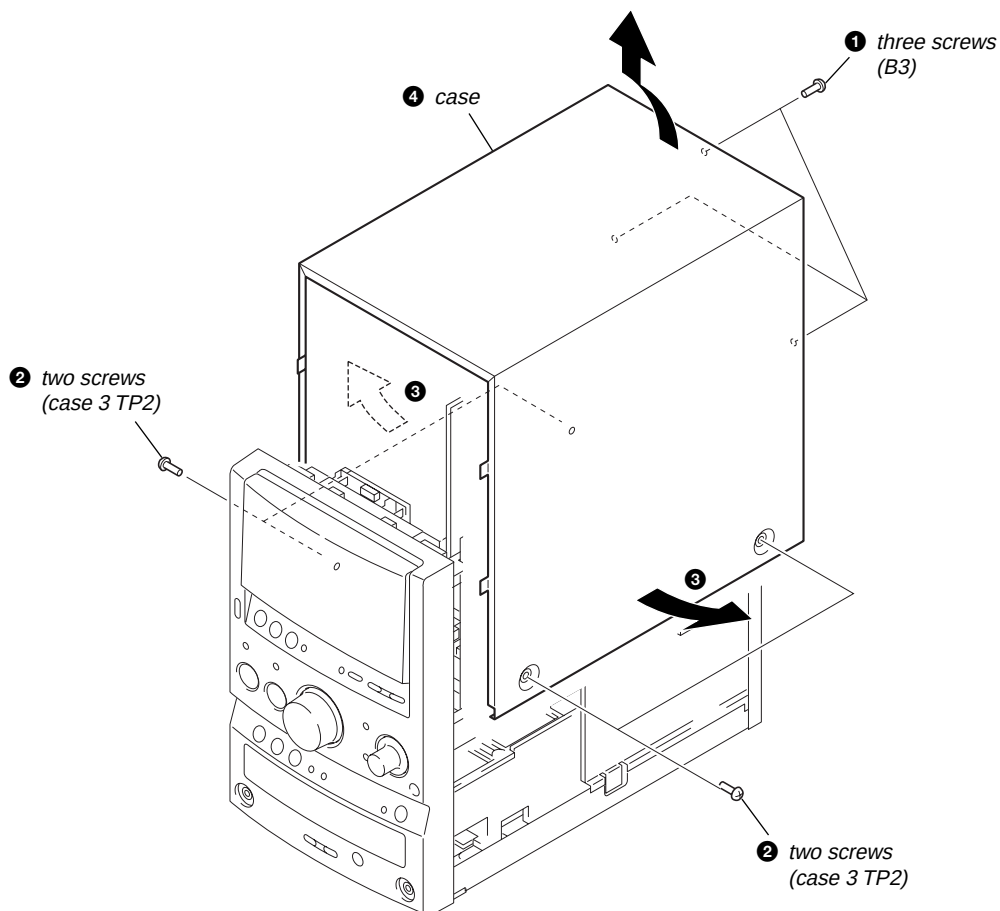
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

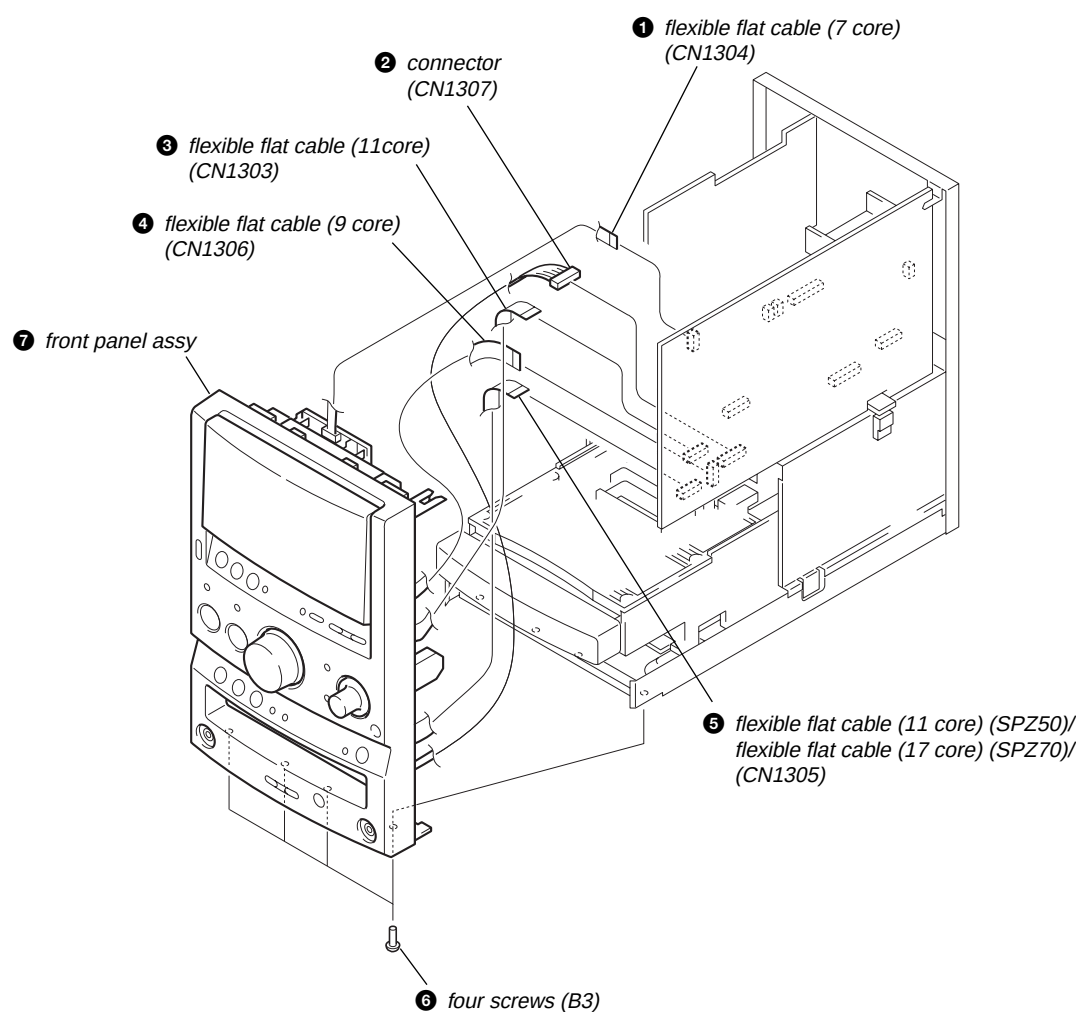


Note: Follow the disassembly procedure in the numerical order given.

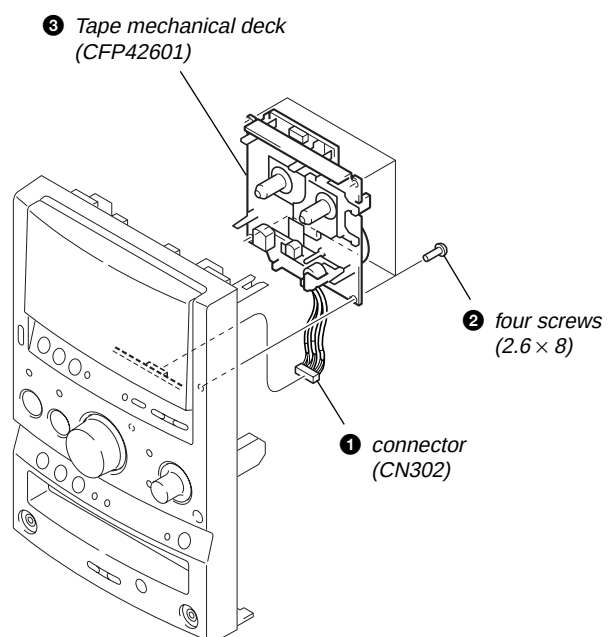
3-2. CASE



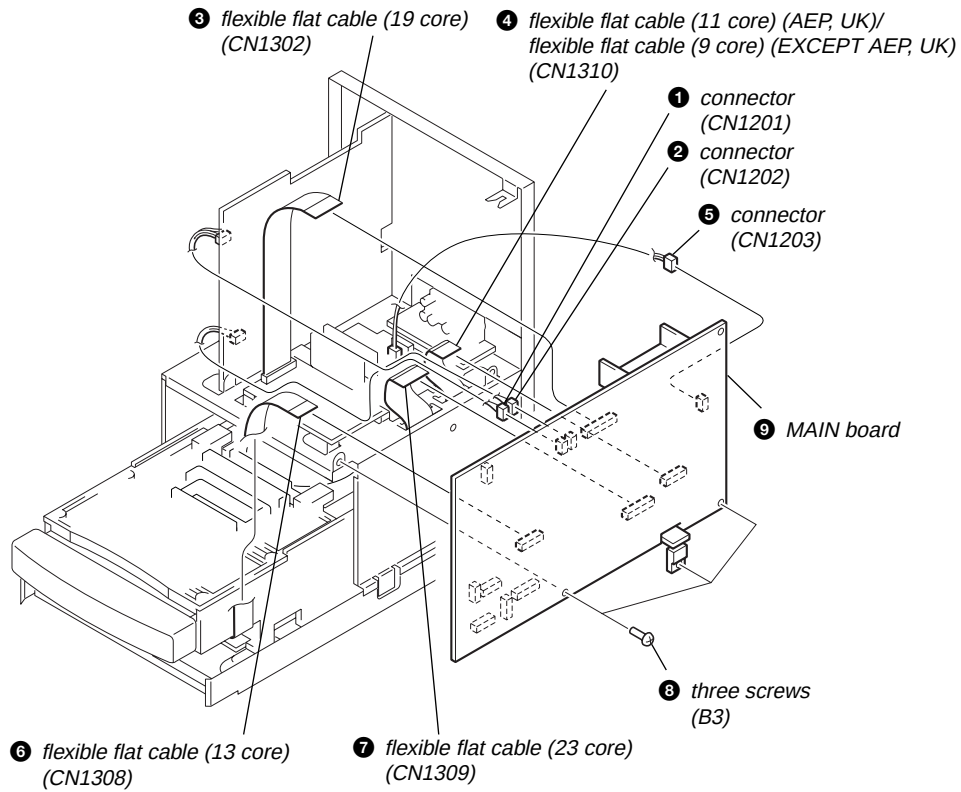
3-3. FRONT PANEL ASSY



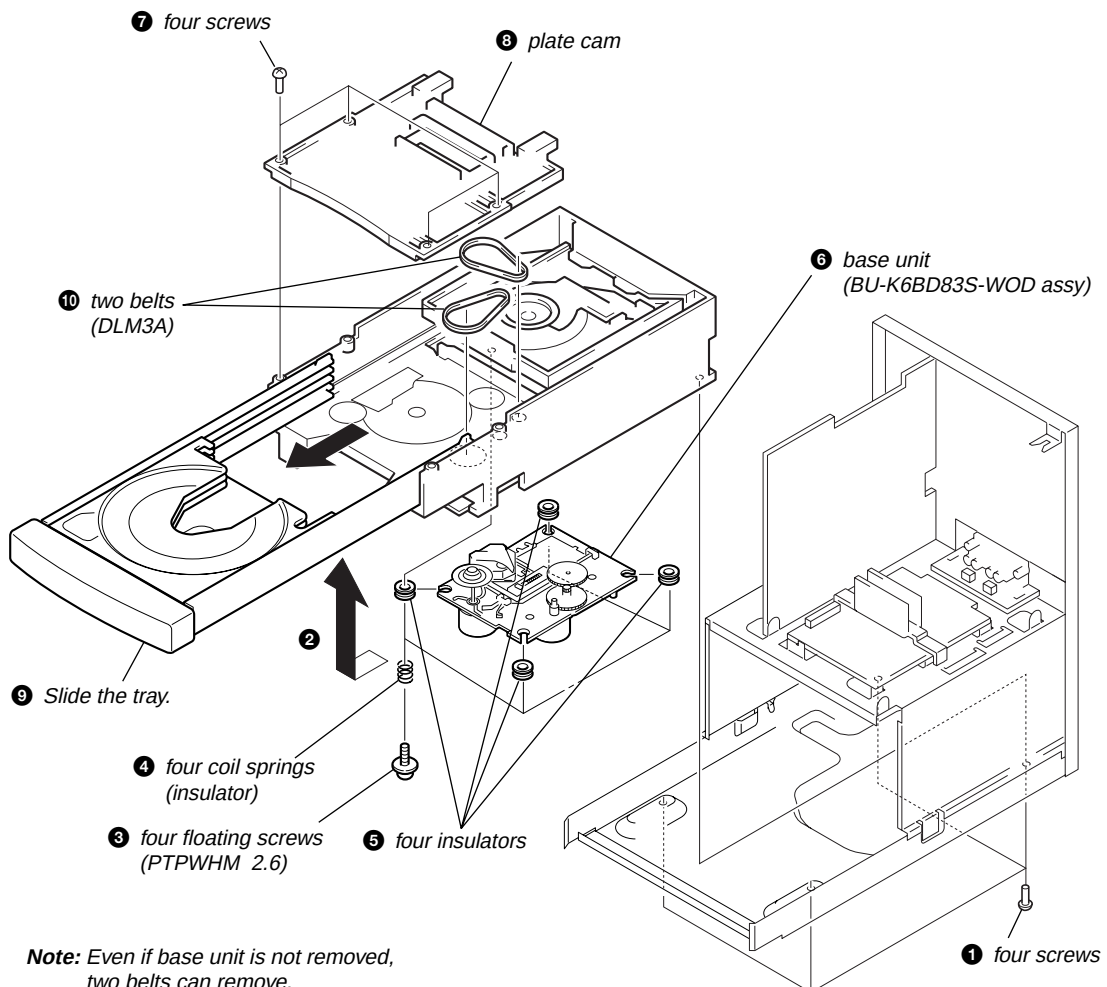
3-4. TAPE MECHANISM DECK (CFP42601)



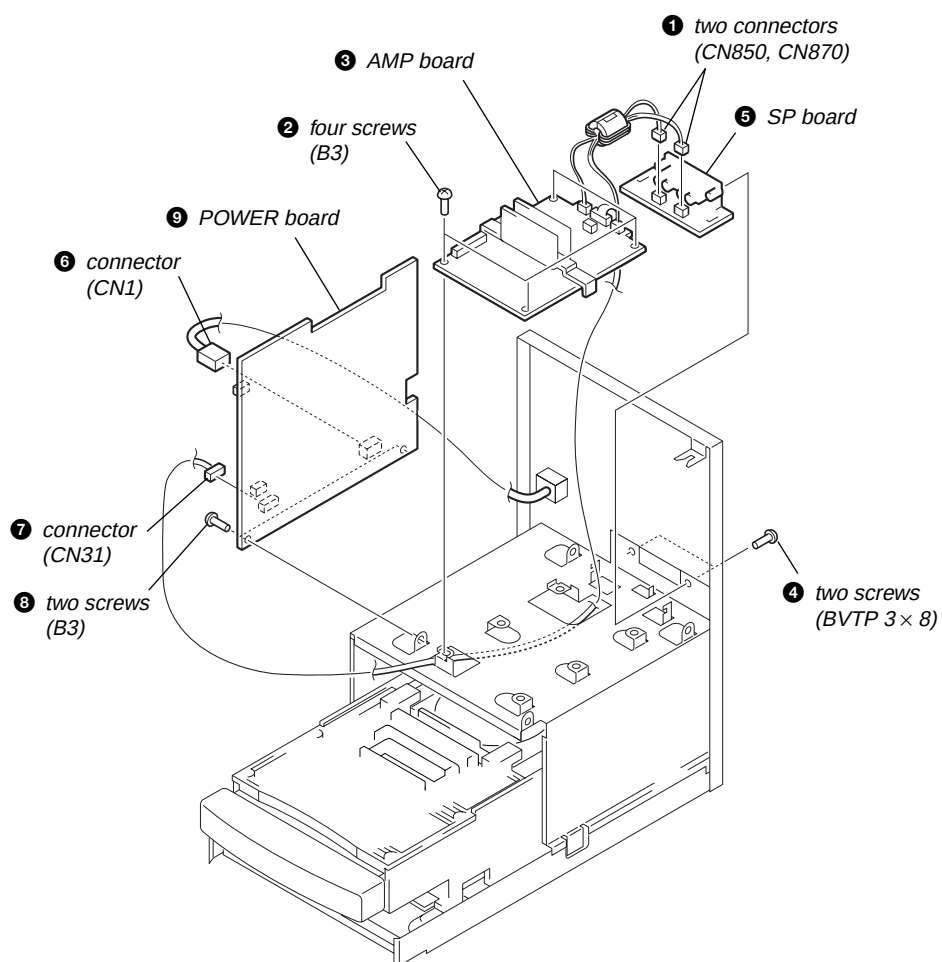
3-5. MAIN BOARD



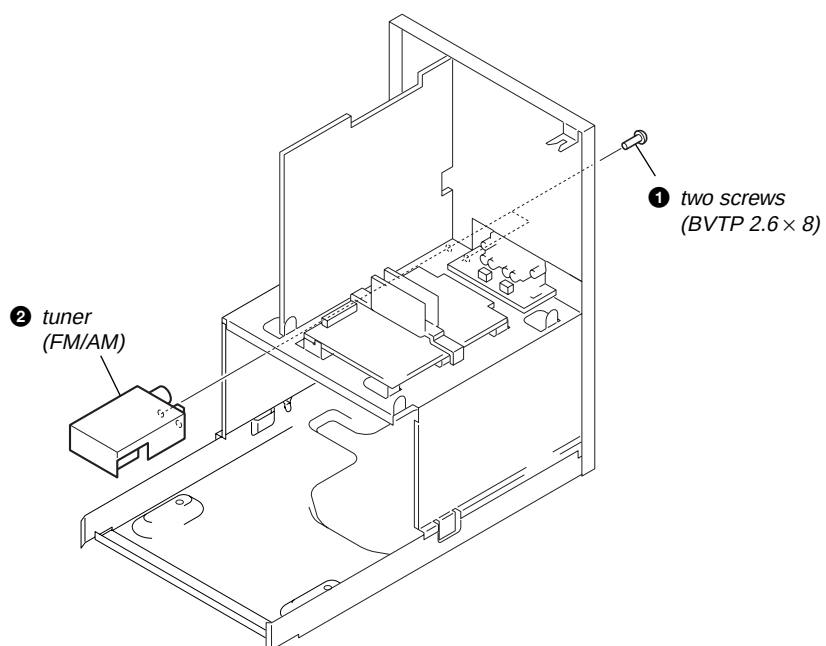
3-6. BASE UNIT (BU-K6BD83S-WOD ASSY)/ BELT (DLM3A)



3-7. AMP/SP/POWER BOARD



3-8. TUNER (FM/AM)



SECTION 4 TEST MODE

COLD RESET

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

Procedure:

1. Press three buttons of **[PLAY MODE/TUNING MODE]**, **[DISPLAY]** and **[I/⏮]** simultaneously.
2. The fluorescent indicator tube becomes blank momentarily, then becomes standby states.

COMMON TEST MODE

This mode is used to check operations of Amplifier.

Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press three buttons of **[DSGX]**, **[DISC SKIP/EX-CHANGE]** and **[DISPLAY]** simultaneously.
3. When the COMMON test mode is activated, "SLEEP" and "⏮ PLAY" blink on the fluorescent indicator tube.

– HCD-SPZ70 –

4. Turn the **[BASS]** knob counterclockwise, "TONE MIN" is displayed on the fluorescent indicator tube. Turn the **[BASS]** knob clockwise, "TONE MAX" is displayed on the fluorescent indicator tube. Turn the **[TREBLE]** knob clockwise or counterclockwise, "TONE FLAT" is displayed on the fluorescent indicator tube.

– HCD-SPZ50 –

4. Each time **[EQ]** button is pressed, the display changes starting "TONE MIN", "TONE FLAT" and "TONE MAX" this order.
5. Turn the **[VOLUME]** knob counterclockwise, "VOL MIN" is displayed on the fluorescent indicator tube. Turn the **[VOLUME]** knob clockwise, "VOL MAX" is displayed on the fluorescent indicator tube.
6. To release this mode, press the **[I/⏮]** button.

PANEL TEST MODE

This mode is used to check the fluorescent indicator tube, LED, model, destination, software version and key.

Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press three buttons of **[PLAY MODE/TUNING MODE]**, **[FUNCTION]** and **[DISPLAY]** simultaneously.
3. Fluorescent indicator tube is all turned on and each LED of **[DSGX]** and **[STANDBY]** blink every 0.5 seconds.
4. When you want to enter the model, destination and version display mode, press the **[DISPLAY]** button. The model and destination are displayed alternately on the fluorescent indicator tube.
5. Press the **[DISPLAY]** button again MC version, display on the fluorescent indicator tube.
6. When **[FUNCTION]** button is pressed while the MC version is displayed, year, month and day of the software creation display. When **[FUNCTION]** button is pressed again, the display returns to the MC version display.
7. Press the **[PUSH ENTER]** button, the key check mode is activated.
8. In the key check mode, the fluorescent indicator tube displays "K 0 J0 V0".
9. Each time a button is pressed, "K" value increases. However, once a button is pressed, it is no longer taken into account. All keys are pressed, display becomes "K25" (SPZ50) or "K23" (SPZ70).
10. "V" value increases 1, 2, 3 ... if turn the **[VOLUME]** knob clockwise, or it decreases 0, 9, 8 ... if turn the knob counterclockwise
"J" value increases like 1, 2, 3 ... if turn the **[BASS]** (SPZ70 only) or **[TREBLE]** (SPZ70 only) or jog knob clockwise, or it decreases like 0, 9, 8 ... if turn the knob counterclockwise.

11. To release this mode, press three keys in the same manner as step 2, or disconnect the power cord.

CD SHIP MODE

This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press the **[FUNCTION]** button to select "CD".
3. Press two buttons of **[PLAY MODE/TUNING MODE]** and **[DISC 1]** simultaneously.
4. After the "STANDBY" display blinks, "LOCK" is displayed on the fluorescent indicator tube, and the ship mode is set.

CD SHIP MODE & MEMORY CLEAR

This mode is used to perform CD ship mode and cold reset simultaneously.

Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press the **[FUNCTION]** button to select "CD".
3. Press three buttons of **[DSGX]**, **[DISC SKIP/EX-CHANGE]** and **[DISC 1]** simultaneously.
4. After the "STANDBY" display blinks, "LOCK" is displayed on the fluorescent indicator tube, and the ship mode is set.

ANTITHEFT LOCK MODE

This mode is used to unable to take sample disc out of disc table in the shop.

Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press the **[FUNCTION]** button to select "CD".
3. Press two buttons of **[■]** and **[▲]** for 5 seconds.
4. The message "LOCKED" is displayed on the fluorescent indicator tube and the disc slot is locked. (Even if pressing the **[▲]** button, the message "LOCKED" is displayed on the fluorescent indicator tube and the disc table is locked)
5. To release from this mode, press two buttons of **[■]** and **[▲]** for 5 seconds.
6. The message "UNLOCKED" is displayed on the fluorescent indicator tube and the disc table is unlocked.

CD POWER MANAGE

This mode is used to changed over CD power on/off for decreasing of reception noise in the tuner mode.

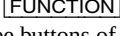
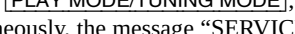
Procedure:

1. Press the **[I/⏮]** button to turn the power on.
2. Press the **[FUNCTION]** button to select "CD".
3. Press the **[I/⏮]** button again to turn the power off.
4. Press two buttons of **[■]** and **[I/⏮]** simultaneously.
5. The message "CD POWER" is displayed on the fluorescent indicator tube momentarily, then display changes "ON" or "OFF", and CD power on/off changed over in the tuner mode.

CD SERVICE MODE

This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the optical pick-up.

Procedure:

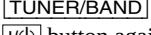
1. Press the  button to turn the power on.
2. Press the  button to select “CD”.
3. Press three buttons of ,  and  simultaneously, the message “SERVICE IN” is displayed on the fluorescent indicator tube.
4. Press the  button to move the optical pick-up to outside track and the message “SLED OUT” is displayed on the fluorescent indicator tube, or press the  button to inside track and the message “SLED IN” is displayed on the fluorescent indicator tube.
5. Press the  button, “LD OFF” is displayed and laser diode is turned off. Each time  button is pressed, laser diode ON/OFF switch is performed.
6. To release this mode, press the  button.

TUNER STEP CHANGE-OVER

(EXCEPT SPZ50: AEP, UK, Russian/SPZ70: AEP, UK, Russian models)

A step of AM tuning interval can be changed over between 9 kHz or 10 kHz.

Procedure:

1. Press the  button to turn the power on.
2. Press the  button to select “AM”.
3. Press the  button again to turn the power off.
4. Press two buttons of  and  simultaneously.
5. The message “STEP 9kHz” or “STEP 10kHz” is displayed on the fluorescent indicator tube and thus the tuning interval is changed over.

SECTION 5 MECHANICAL ADJUSTMENTS

PRECAUTION

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

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

TORQUE MEASUREMENT

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	2.9 – 7.4 mN·m (30 – 75 g·cm) (0.42 – 1.04 oz·inch)
FWD Back Tension	CQ-102C	0.14 – 0.59 mN·m (1.5 – 6.0 g·cm) (0.021 – 0.083 oz·inch)
FF/REW	CQ-201B	more than 5.4 mN·m (more than 55 g·cm) (more than 0.76 oz·inch)

TAPE TENSION MEASUREMENT

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 90 g (more than 3.17 oz)

SECTION 6 ELECTRICAL ADJUSTMENTS

DECK SECTION

0 dB=0.775 V

- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjust.

TEST TAPE

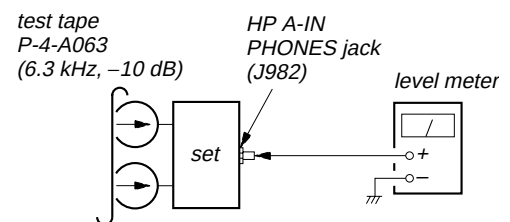
Tape	Signal	Used for
P-4-A063	6.3 kHz, -10 dB	Azimuth Adjustment

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

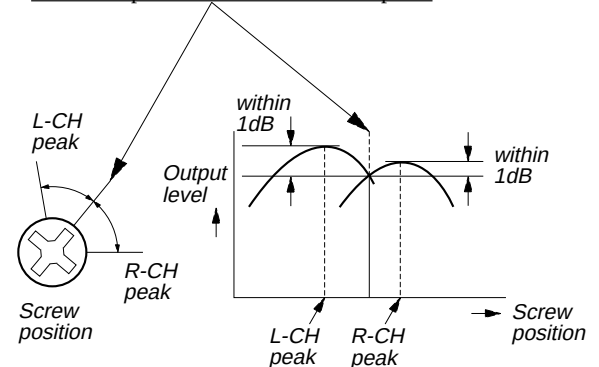
Note: Remove the mechanical deck before the adjust. (Refer to Section 3. DISASSEMBLY (See page 7))

Procedure:

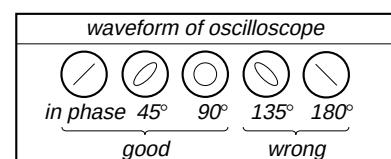
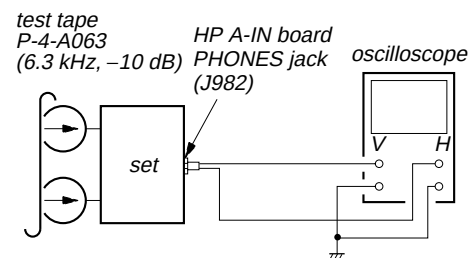
- Mode: Playback



- Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.

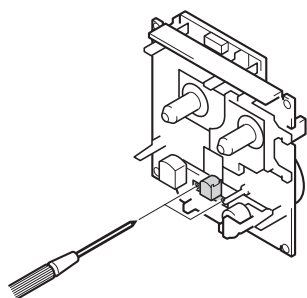


- Mode: Playback



- After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Record/Playback/Erase Head

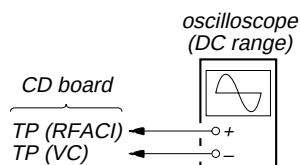


CD SECTION

Note:

1. CD Block is basically constructed to operate without adjustment.
2. Use YEDS-18 disc (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 specified value with the following checks.
5. Check the focus bias check when optical pick-up block is replaced.

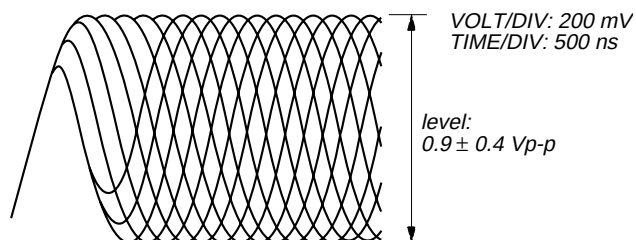
FOCUS BIAS CHECK



Procedure :

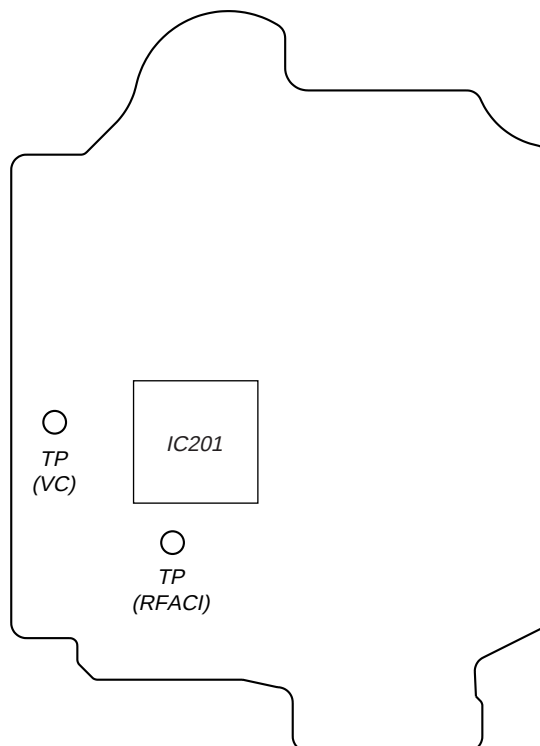
1. Connect oscilloscope to TP (RFACI) and TP (VC) on the CD board.
2. Press the button to turn the power on, and press the button to open the CD disc table.
3. Set disc (YEDS-18) on the tray and press the button to playback.
4. Confirm that oscilloscope waveform is as shown in the figure below. (eye pattern)

A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.



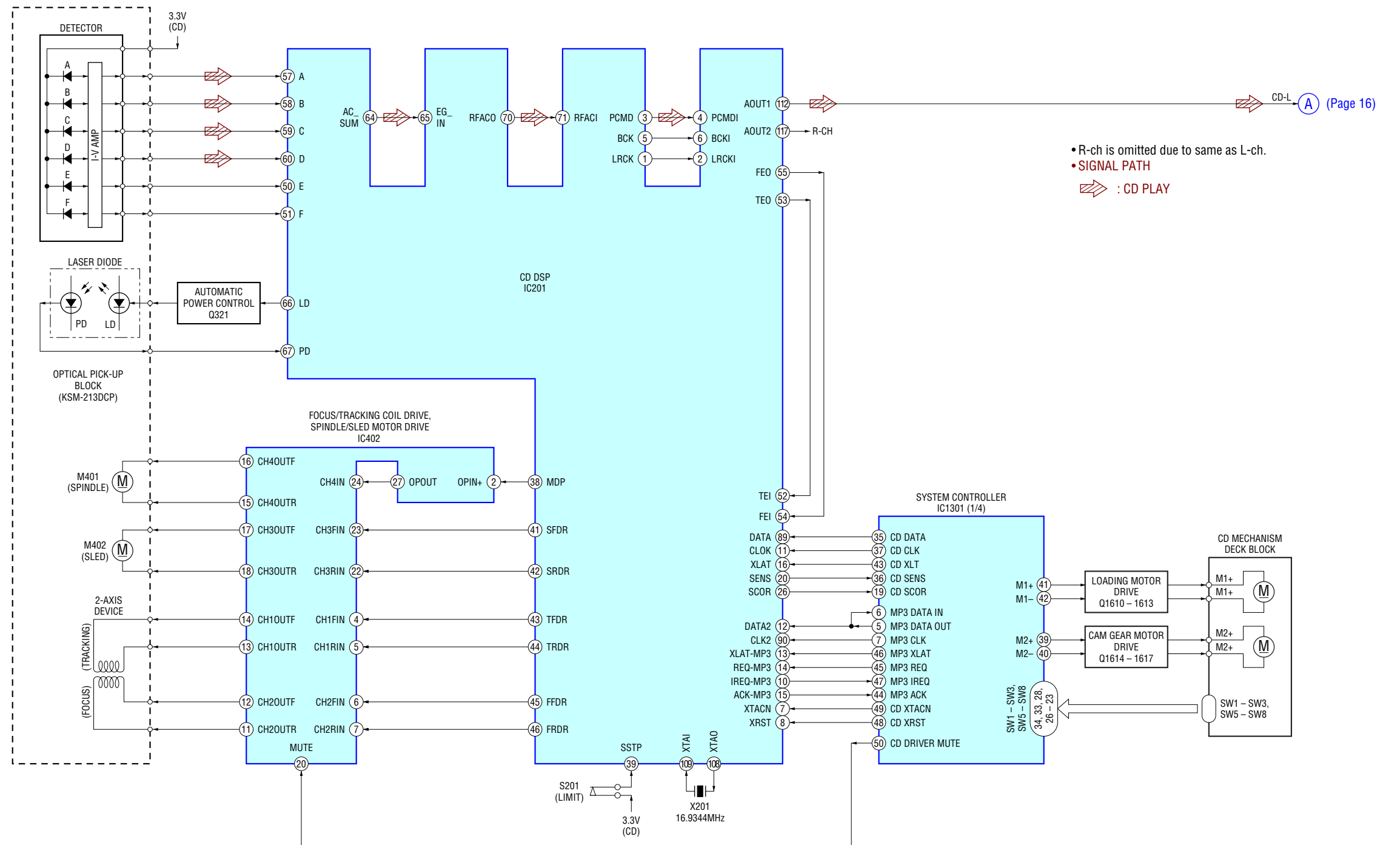
Checking Location:

– CD Board (Conductor Side) –

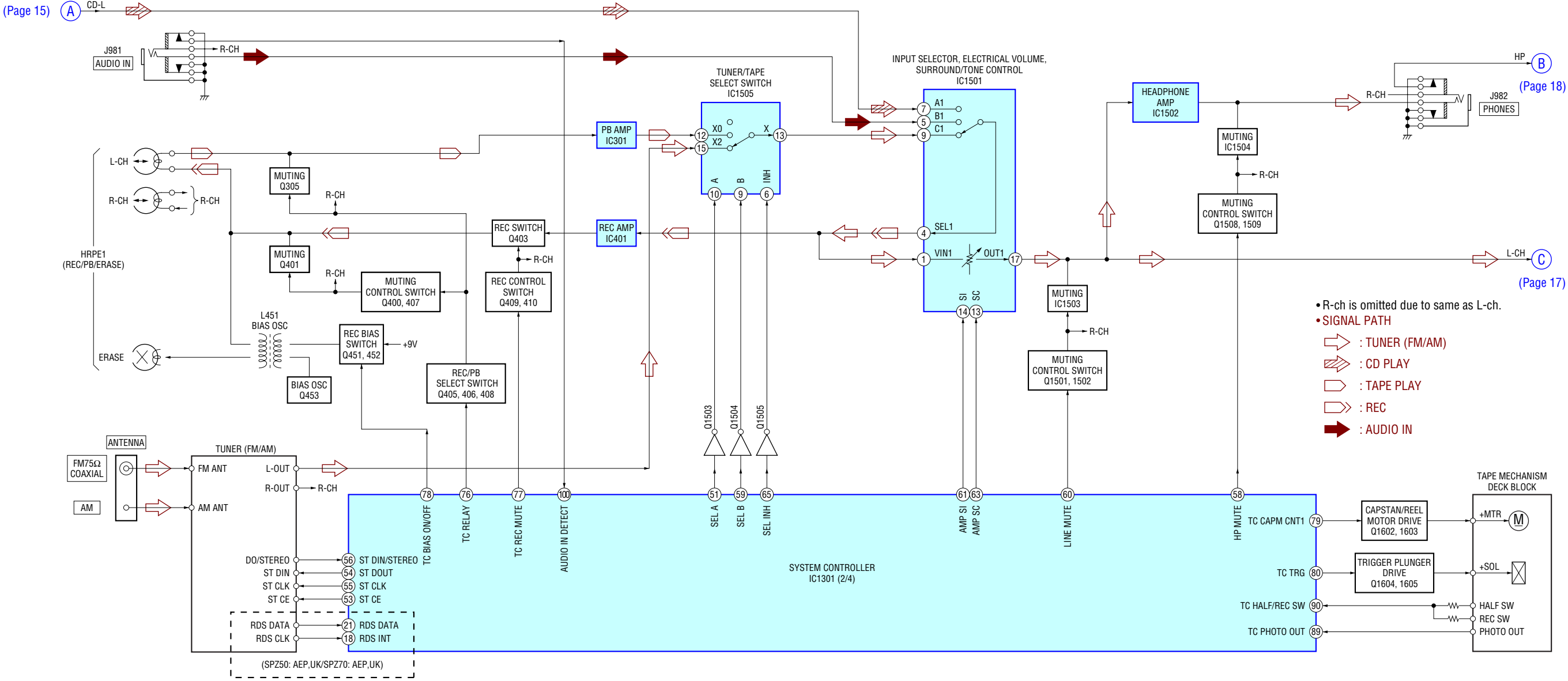


SECTION 7 DIAGRAMS

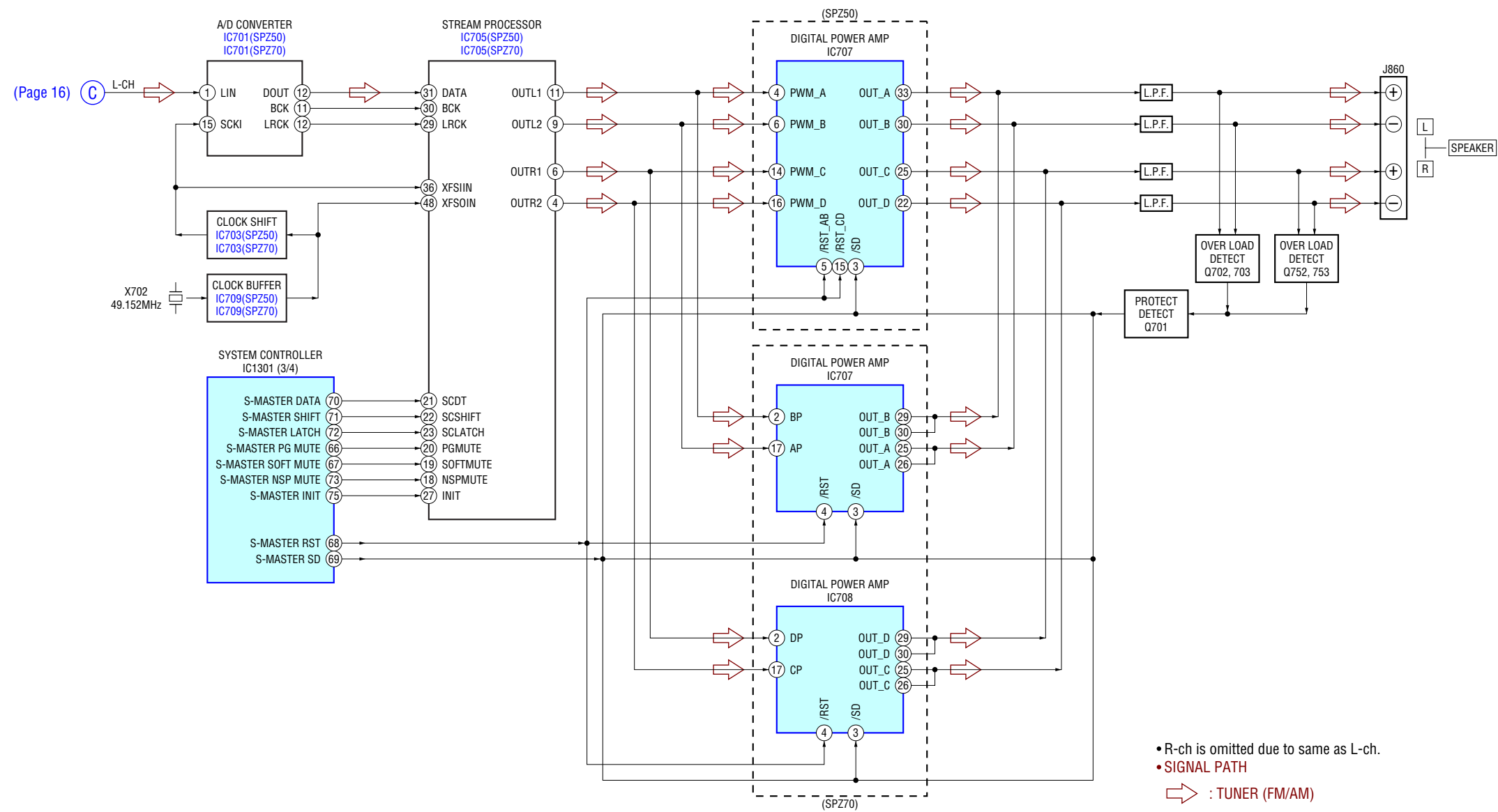
7-1. BLOCK DIAGRAM – CD SERVO Section –



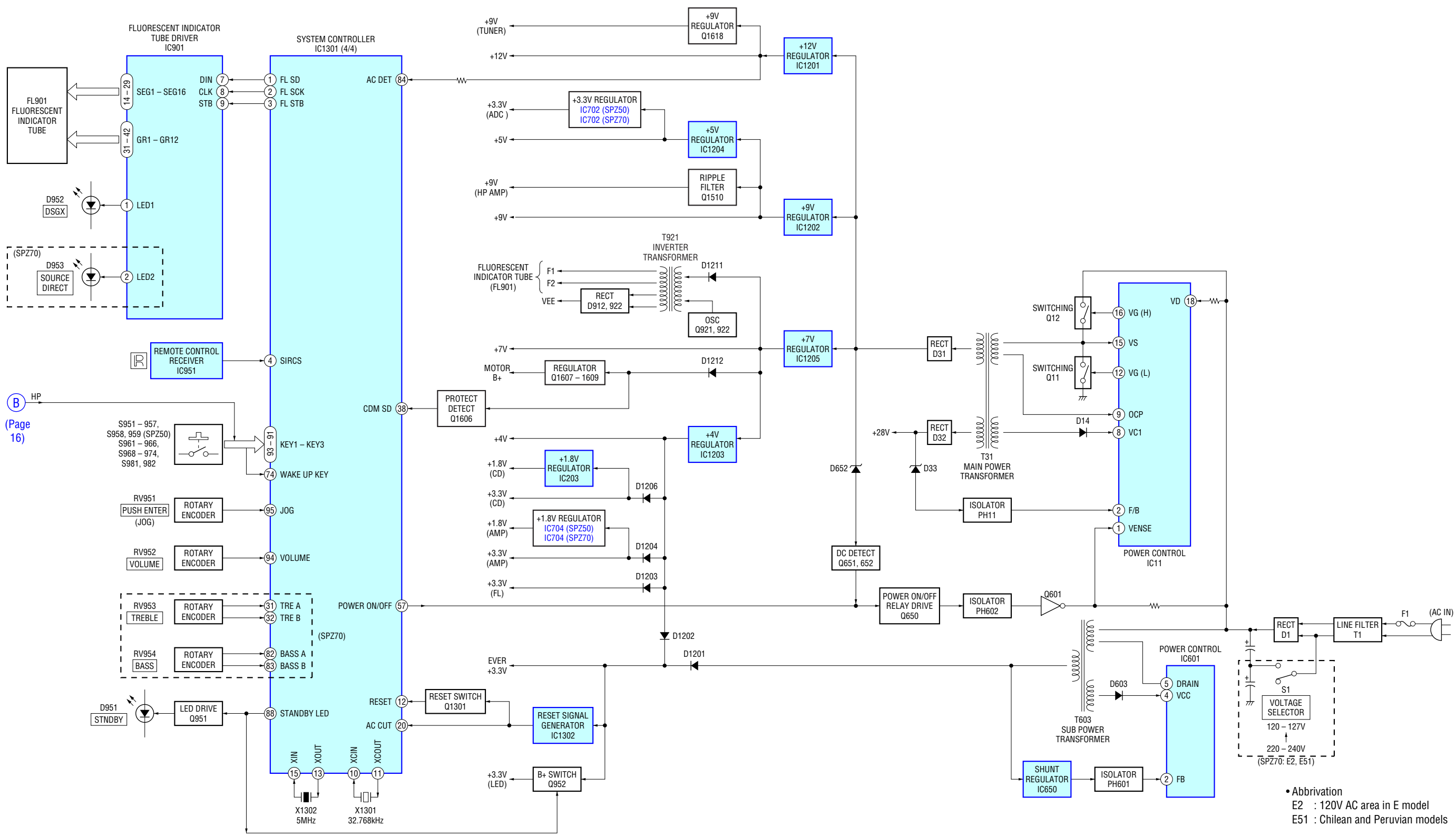
7-2. BLOCK DIAGRAM – MAIN Section –



7-3. BLOCK DIAGRAM – AMP Section –



7-4. BLOCK DIAGRAM – PANEL/POWER SUPPLY Section –



• Note For Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Board:

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

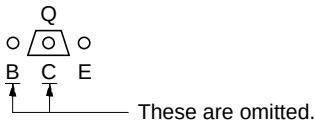
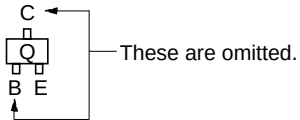
(The other layers' patterns are not indicated.)

Caution:

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

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

• Indication of transistor



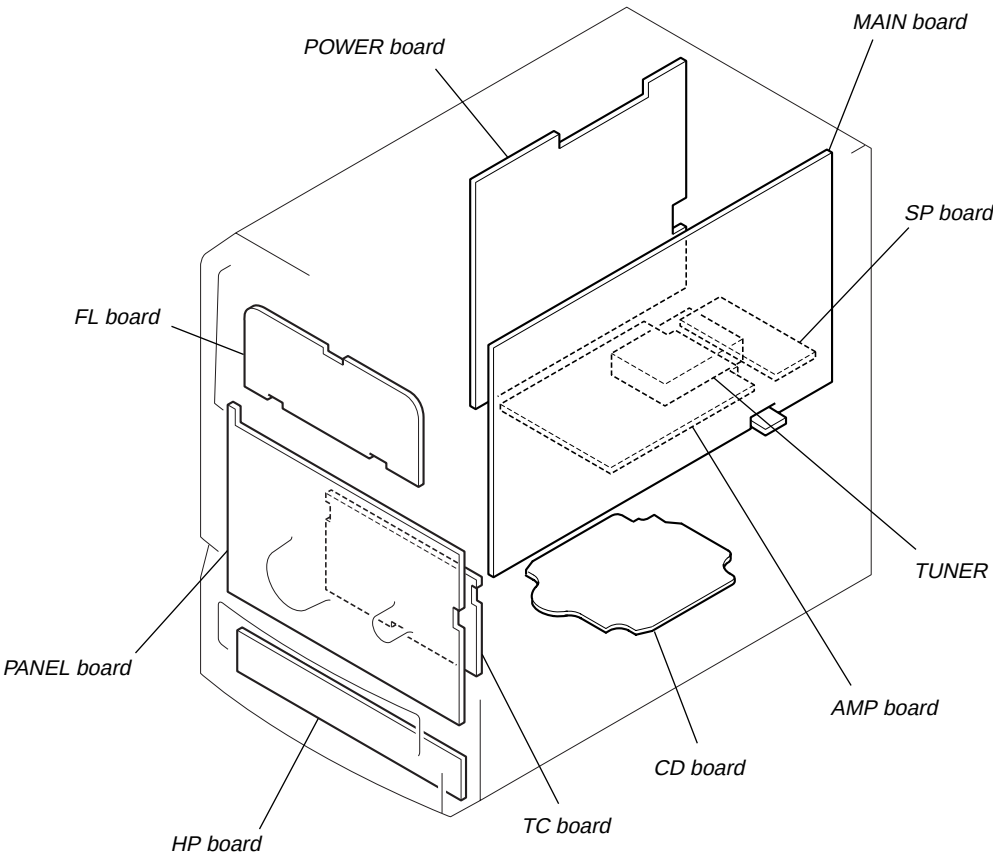
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- △ : 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.

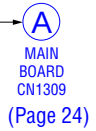
- : B+ Line.
- : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
 - CD Board —
no mark : CD PLAY
 - Other Boards —
no mark : TUNER (FM/AM)
 - () : CD PLAY
 - << >> : TAPE PLAY
 - { } : TAPE REC
 - * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - ⇒ : TUNER (FM/AM)
 - ⇒ : CD PLAY
 - ⇒ : TAPE PLAY
 - ⇒ : REC
 - ⇒ : AUDIO IN
- Abbreviation
 - AR : Argentina model
 - AUS : Australian model
 - E2 : 120 V AC area in E model
 - E51 : Chilean and Peruvian models
 - KR : Korean model
 - MX : Mexican model
 - RU : Russian model
 - SP : Singapore model

• Circuit Boards Location

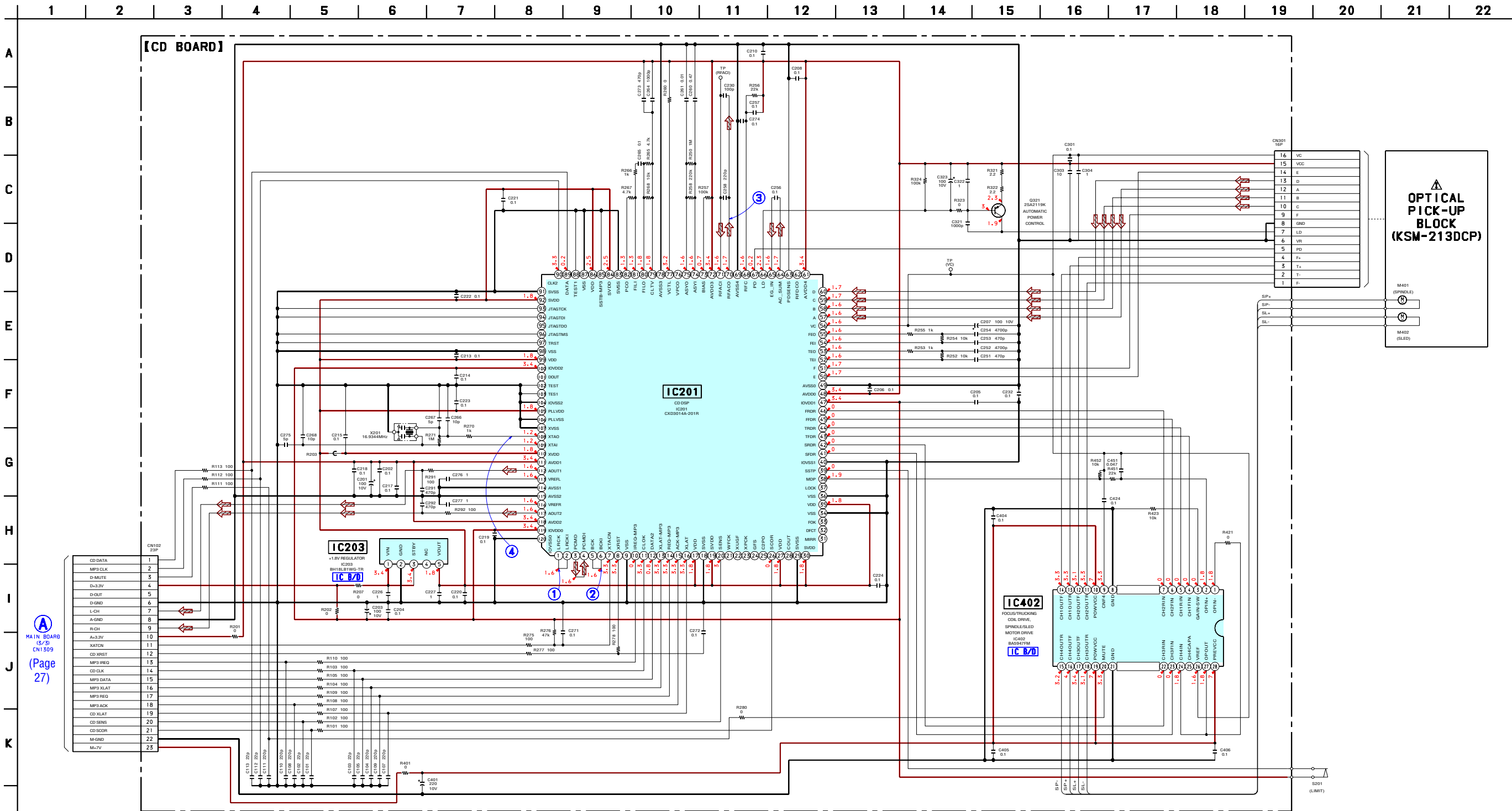


HCD-SPZ50/SPZ70

20 20



7-6. SCHEMATIC DIAGRAM – CD Board – • See page 38 for Waveforms. • See page 39 for IC Block Diagrams. • See page 46 for IC Pin Function Description.



4 : Uses unleaded solder.

Ref. No.	Location
D301	D-6
D401	C-2
IC301	C-6
IC401	C-3
Q305	B-5
Q306	B-5
Q400	C-5
Q401	B-4
Q402	B-4
Q403	B-3
Q404	B-3
Q405	D-7
Q406	D-7
Q407	B-4
Q408	D-7
Q409	D-5
Q410	D-5
Q451	C-2
Q452	D-1
Q453	B-2



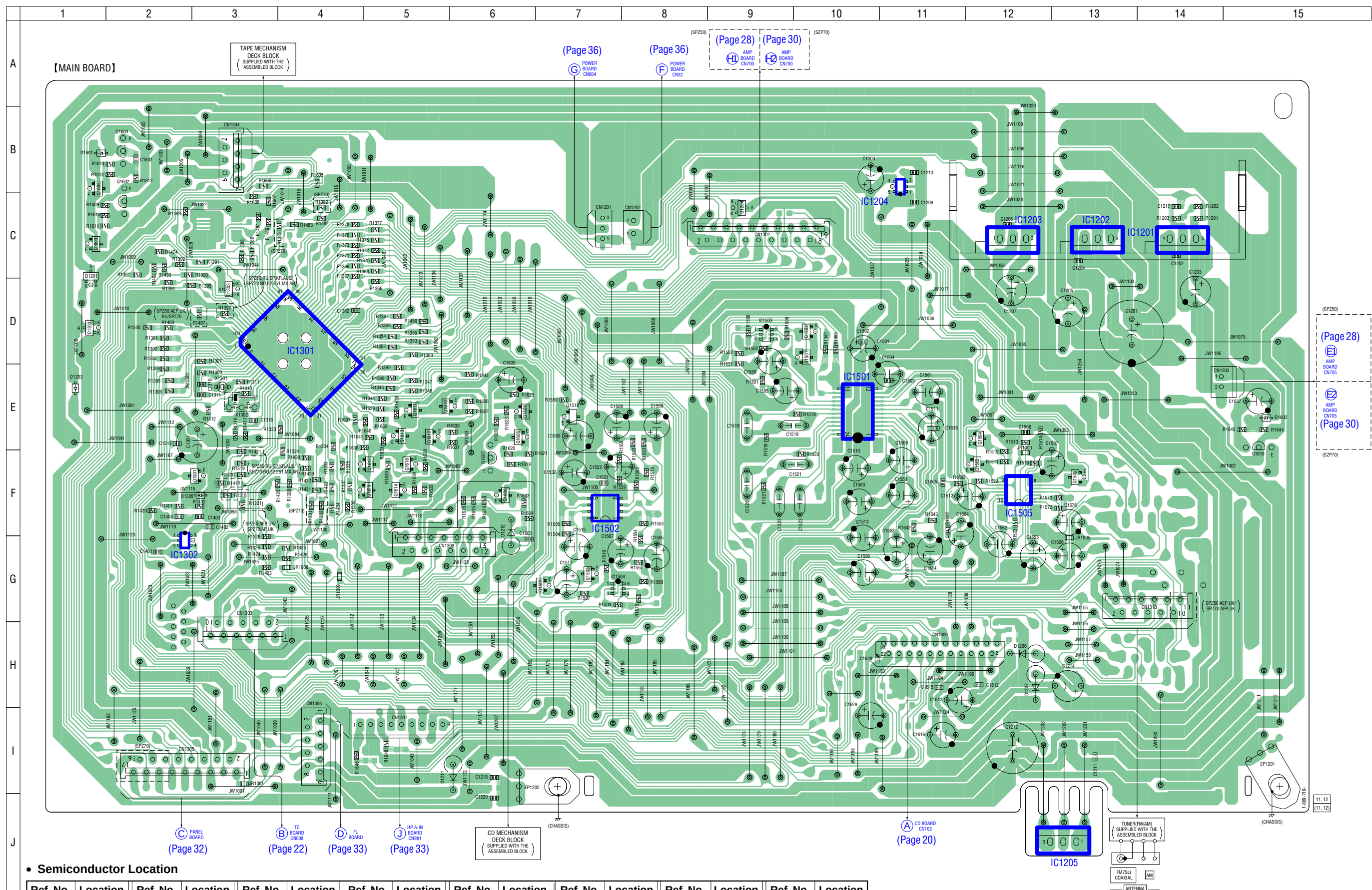
23 23



Ver. 1.3

7-9. PRINTED WIRING BOARD – MAIN Board – • See page 19 for Circuit Boards Location.

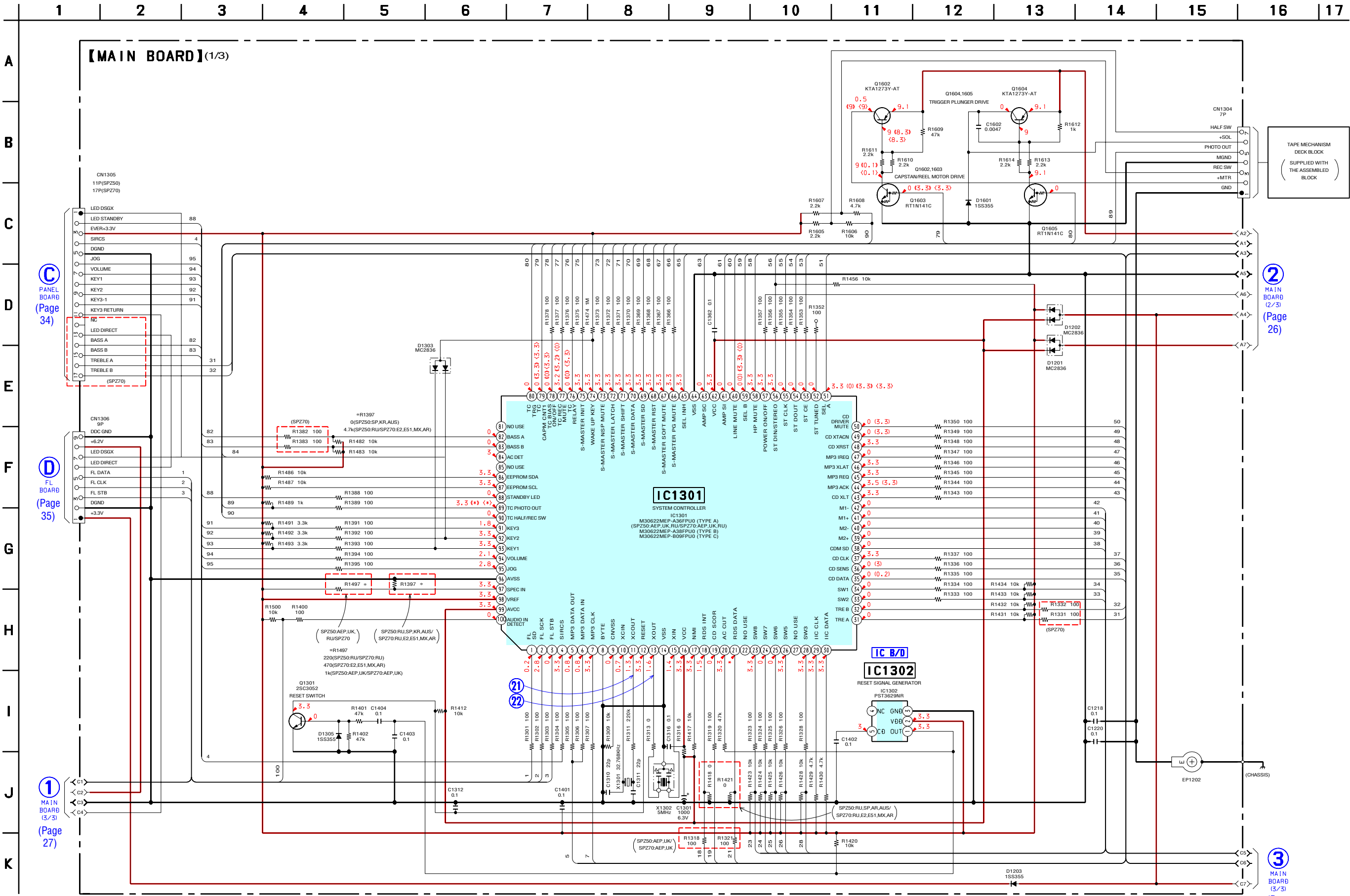
4 : Uses unleaded solder.



Note: Refer to SUPPLEMENT-1 for the MAIN board of HCD-SPZ70 Korean model.

Note: Refer to the Servicing Notes “NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD” (page 4), when you exchange the IC1301 or MAIN board.

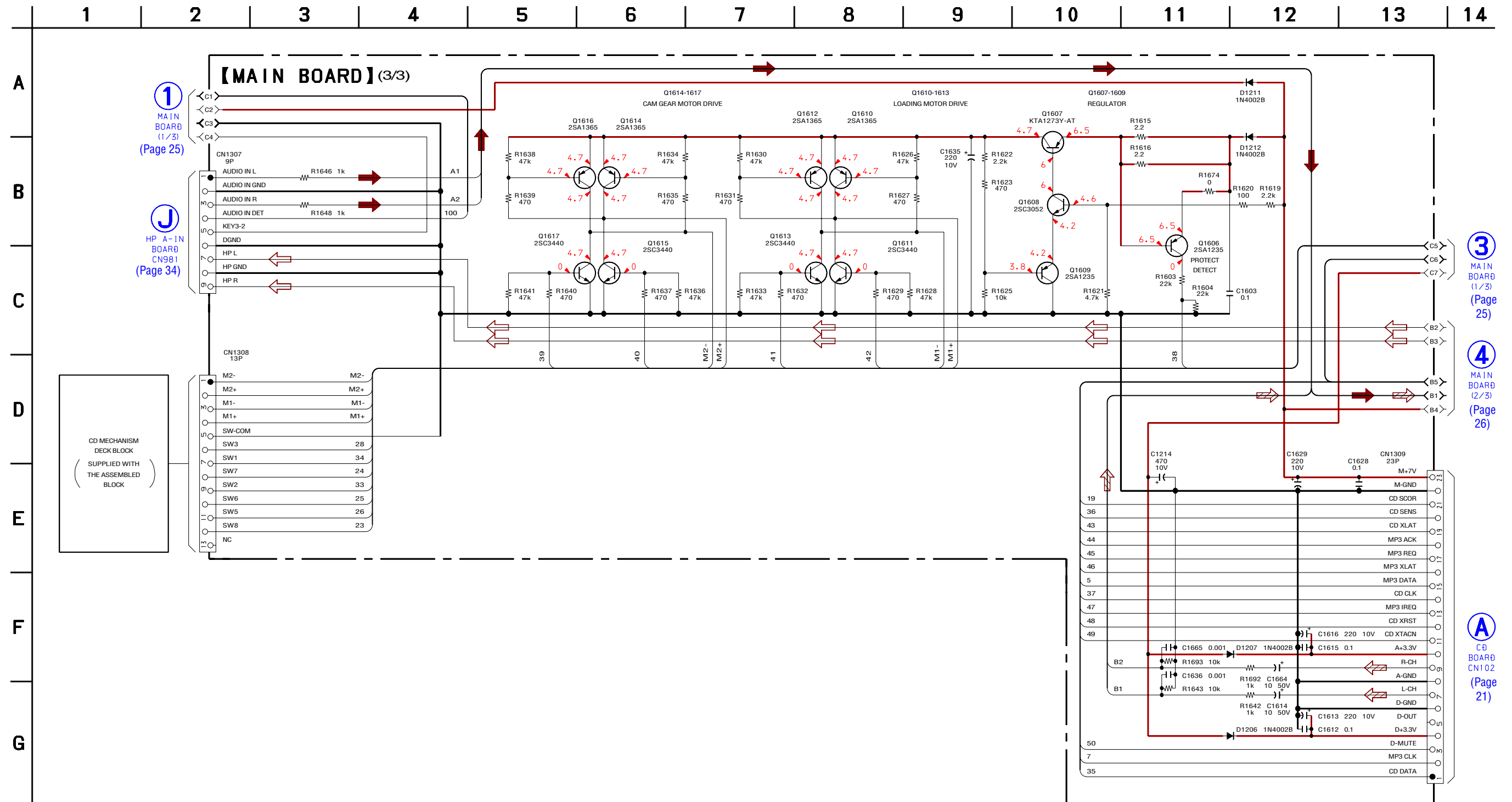
7-10. SCHEMATIC DIAGRAM – MAIN Board (1/3) – • See page 38 for Waveforms. • See page 39 for IC Block Diagrams. • See page 46 for IC Pin Function Description.



Note: Refer to SUPPLEMENT-1 for the MAIN board of HCD-SPZ70 Korean model.

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the IC1301 or MAIN board.

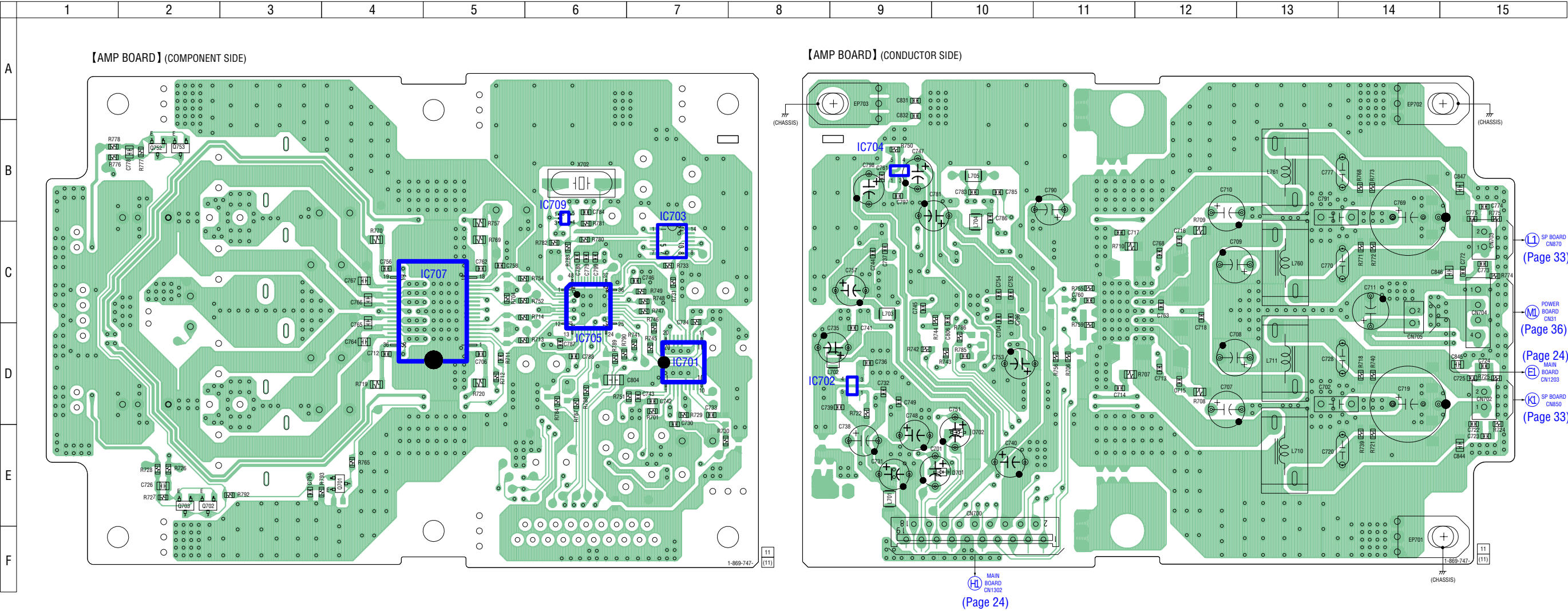
7-12. SCHEMATIC DIAGRAM – MAIN Board (3/3) –



Note: Refer to SUPPLEMENT-1 for the MAIN board of HCD-SPZ70 Korean model.

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the MAIN board.

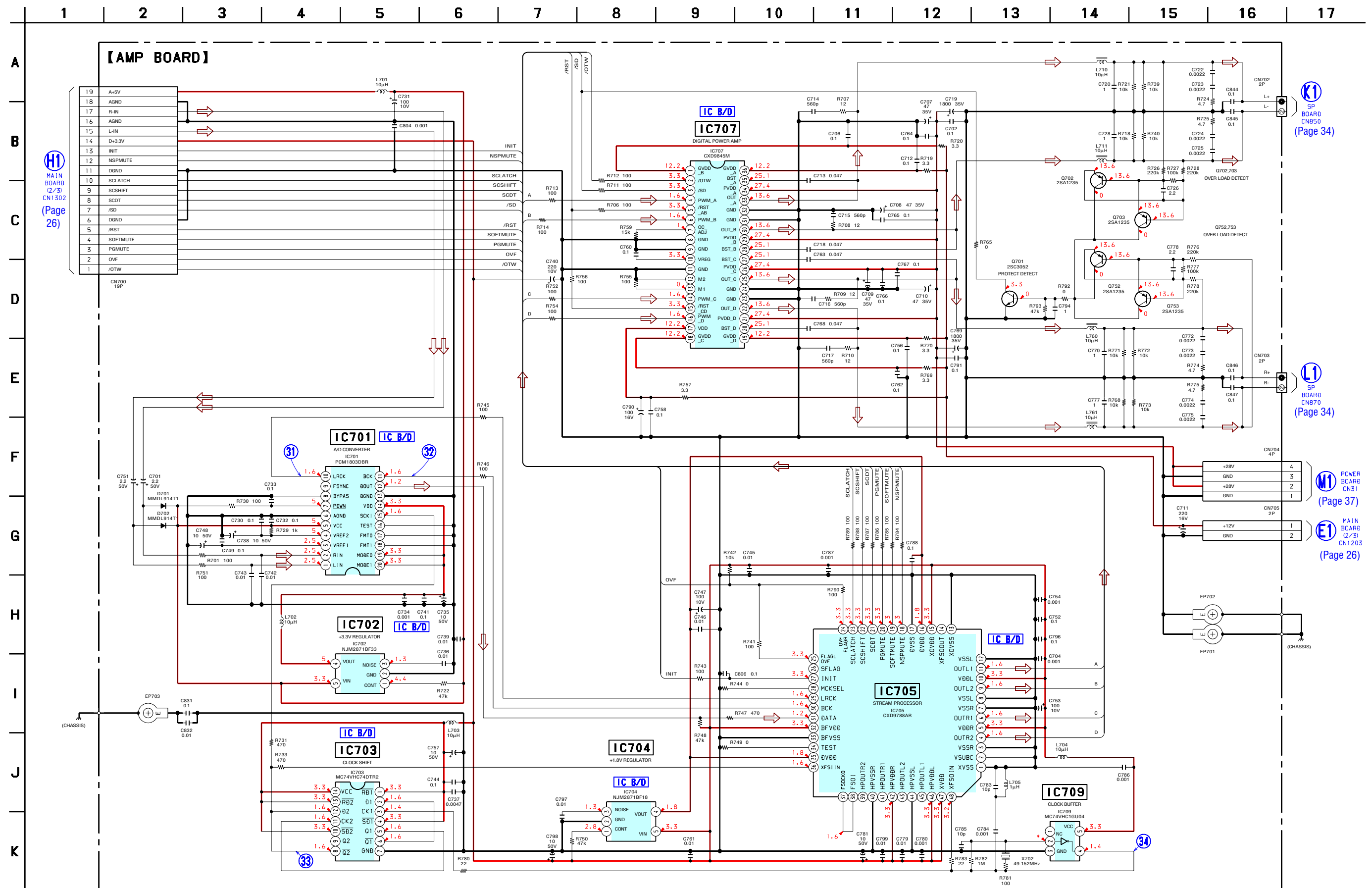
7-13. PRINTED WIRING BOARD – AMP Board (SPZ50) – • See page 19 for Circuit Boards Location.  : Uses unleaded solder.



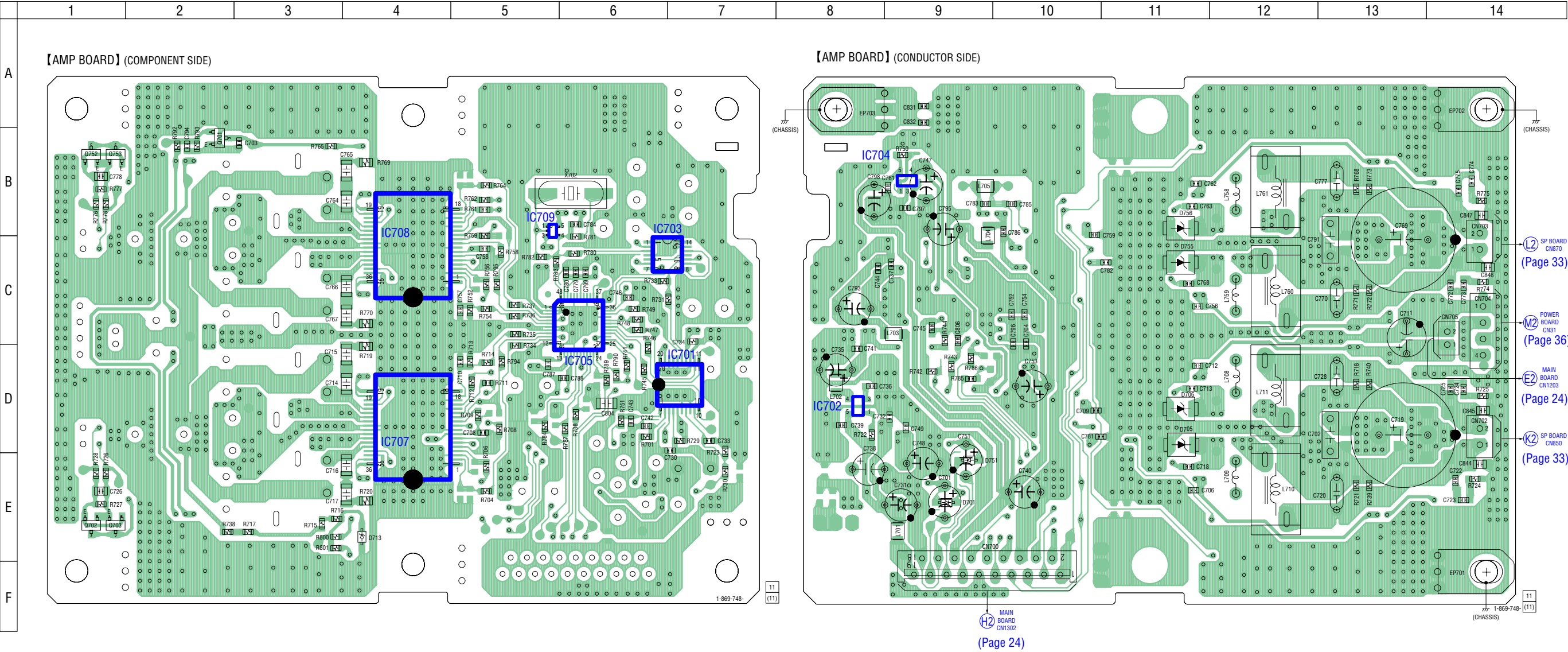
• Semiconductor Location

Ref. No.	Location
D701	E-10
D702	E-10
IC701	D-7
IC702	D-9
IC703	C-7
IC704	B-9
IC705	C-6
IC707	C-5
IC709	B-6
Q701	E-4
Q702	E-2
Q703	E-2
Q752	B-2
Q753	B-2

7-14. SCHEMATIC DIAGRAM – AMP Board (SPZ50) – • See page 38 for Waveforms. • See page 39 for IC Block Diagrams.



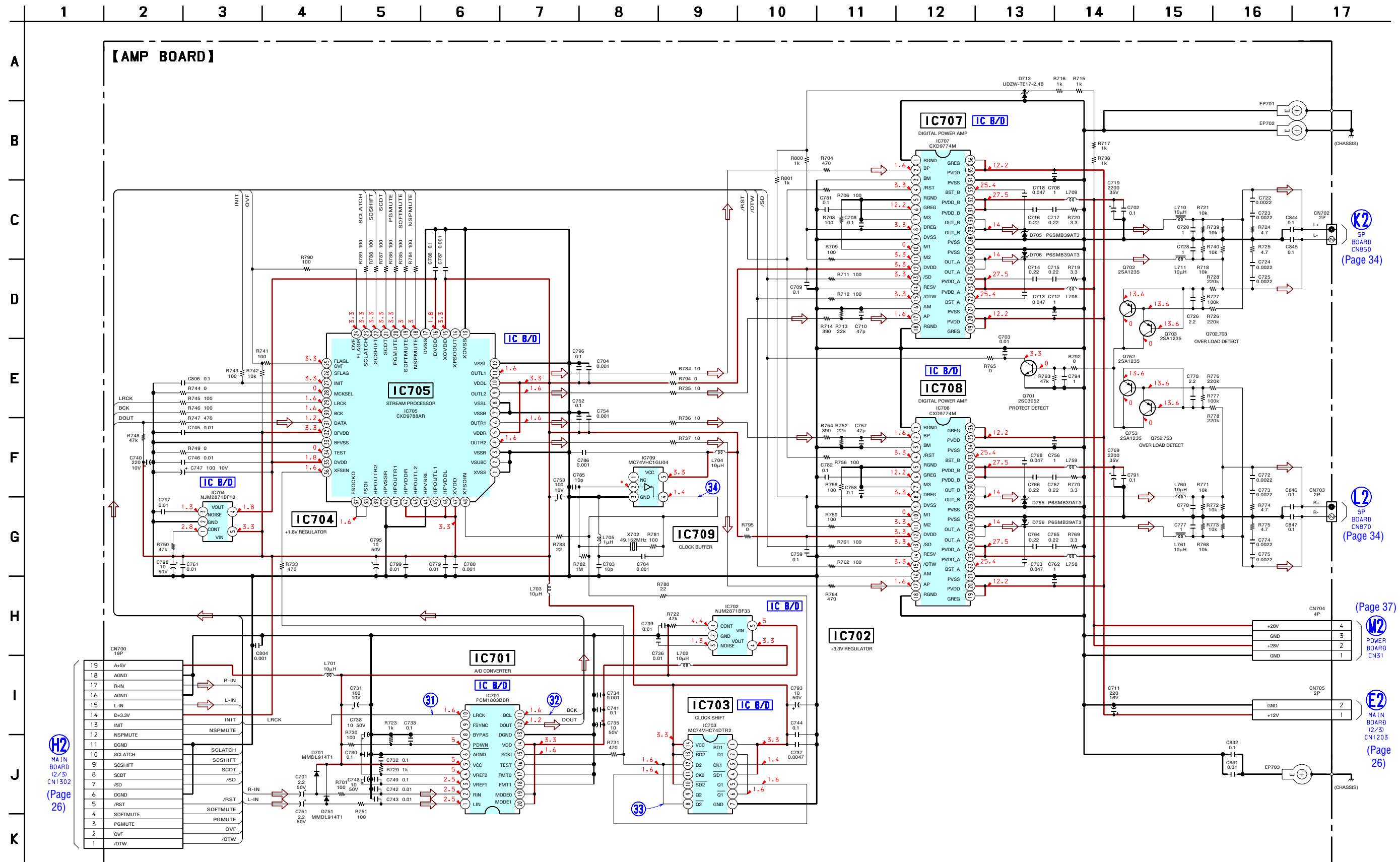
7-15. PRINTED WIRING BOARDS – AMP Section (SPZ70) – • See page 19 for Circuit Boards Location. : Uses unleaded solder.



• Semiconductor Location

Ref. No.	Location
D701	E-9
D705	D-11
D706	D-11
D713	E-4
D751	E-9
D755	C-11
D756	B-11
IC701	D-7
IC702	D-8
IC703	C-6
IC704	B-9
IC705	C-6
IC707	D-4
IC708	C-4
IC709	B-5
Q701	B-2
Q702	E-1
Q703	E-1
Q752	B-1
Q753	B-1

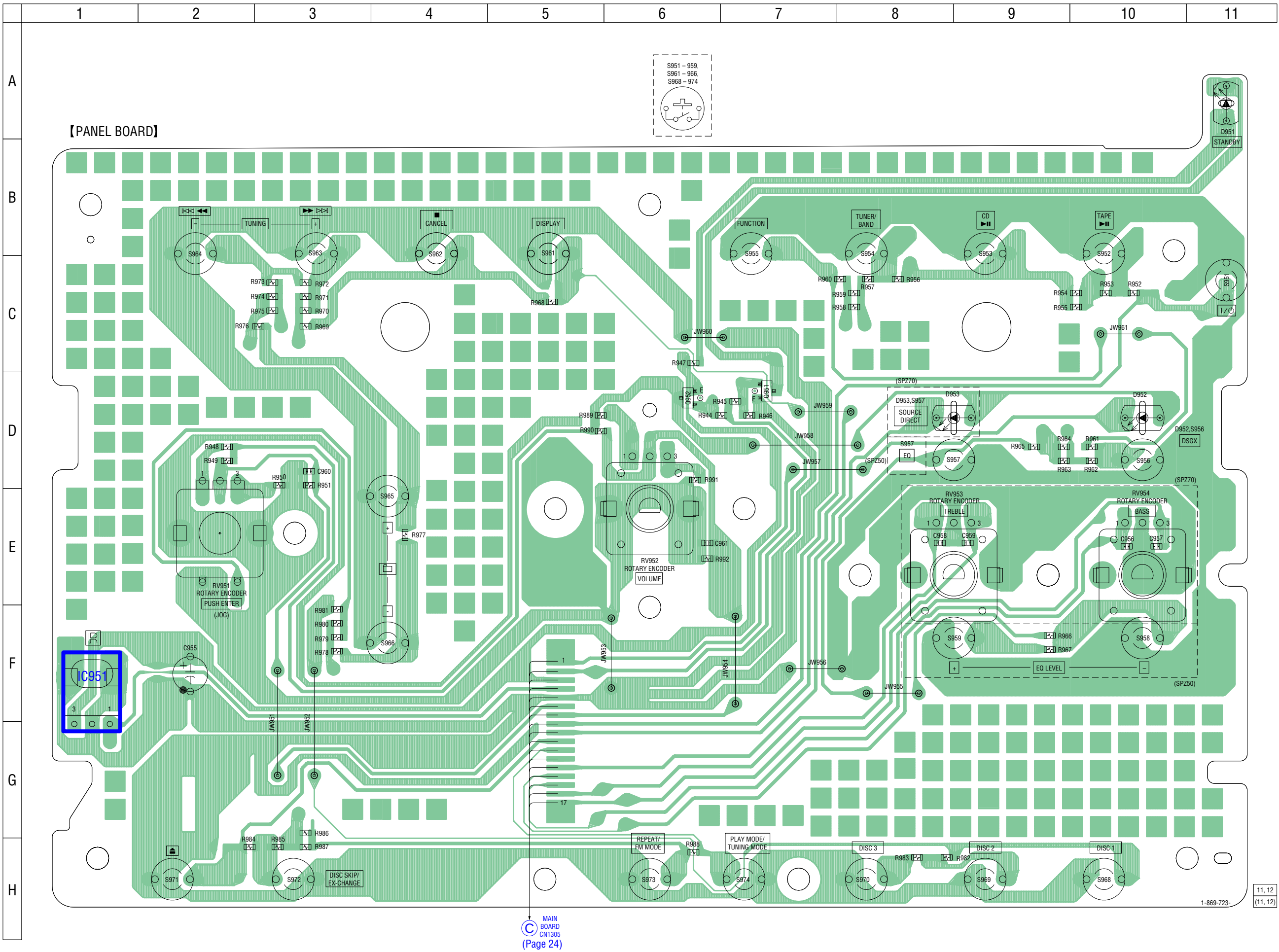
7-16. SCHEMATIC DIAGRAM – AMP Section (SPZ70) – • See page 38 for Waveforms. • See page 39 for IC Block Diagrams.



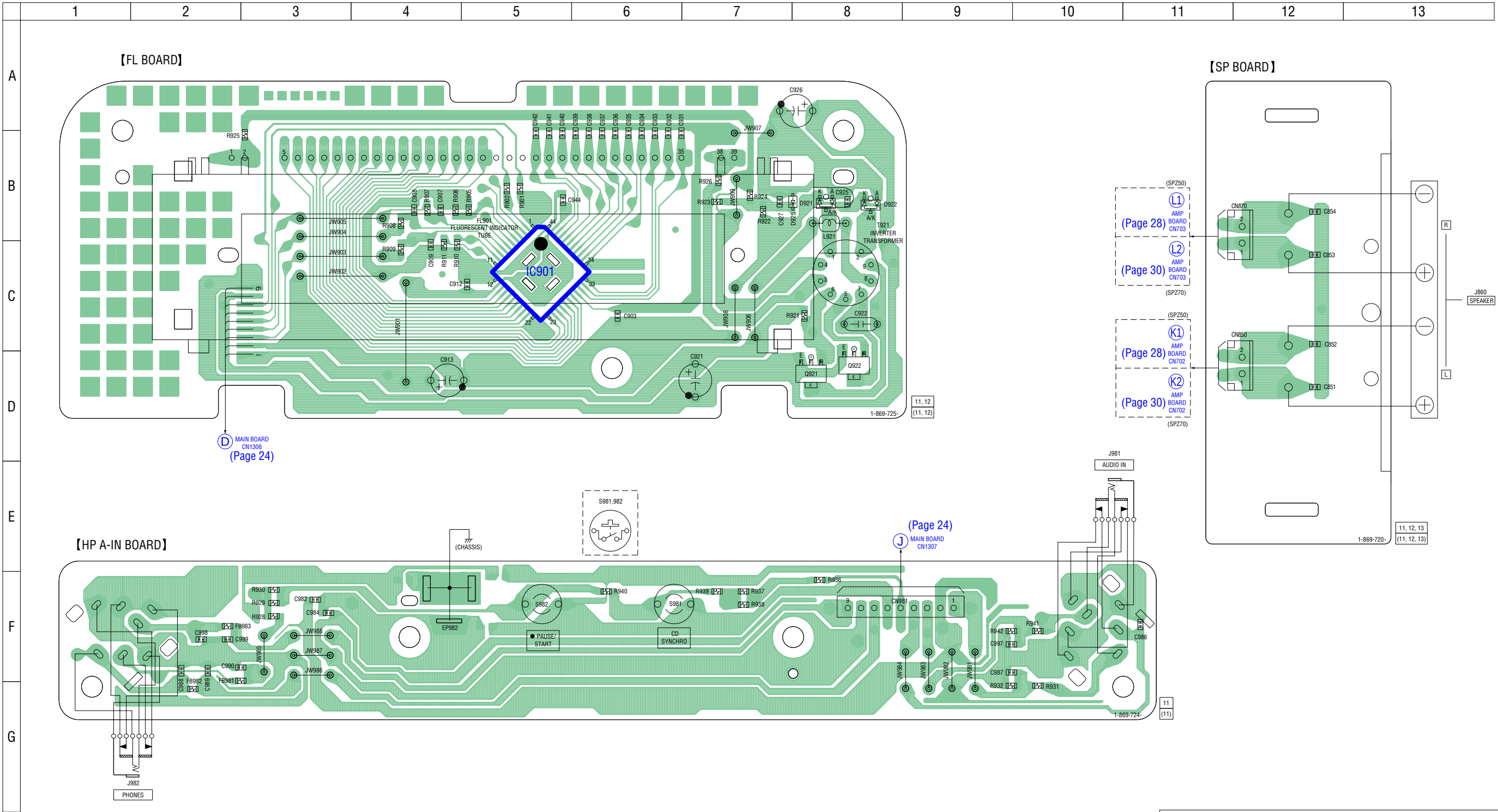
7-17. PRINTED WIRING BOARD – PANEL Section (1/2) – • See page 19 for Circuit Boards Location. : Uses unleaded solder.

• Semiconductor Location

Ref. No.	Location
D951	A-11
D952	D-10
D953	D-8
IC951	F-1
Q951	D-7
Q952	D-6



7-18. PRINTED WIRING BOARDS – PANEL Section (2/2) – • See page 19 for Circuit Boards Location. : Uses unleaded solder.



• Semiconductor Location

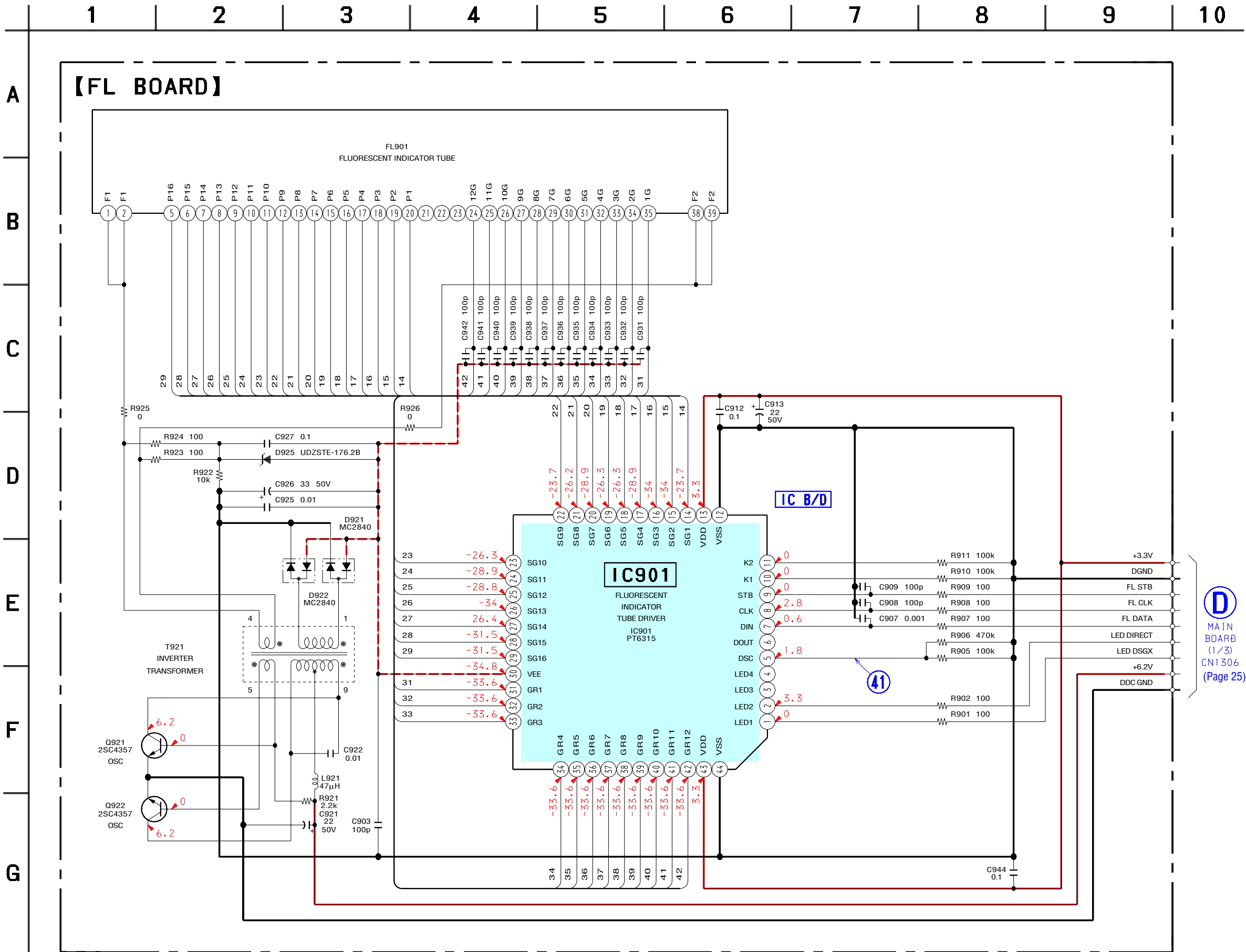
Ref. No.	Location
D921	B-8
D922	B-8
D925	B-8
IC901	C-5
Q921	D-8
Q922	D-8

Note: Refer to SUPPLEMENT-1 for the HP A-IN board of HCD-SPZ70 Korean model.

A
—
B
—
C
—
D
—
E
—
F
—
G
—
H
—
I



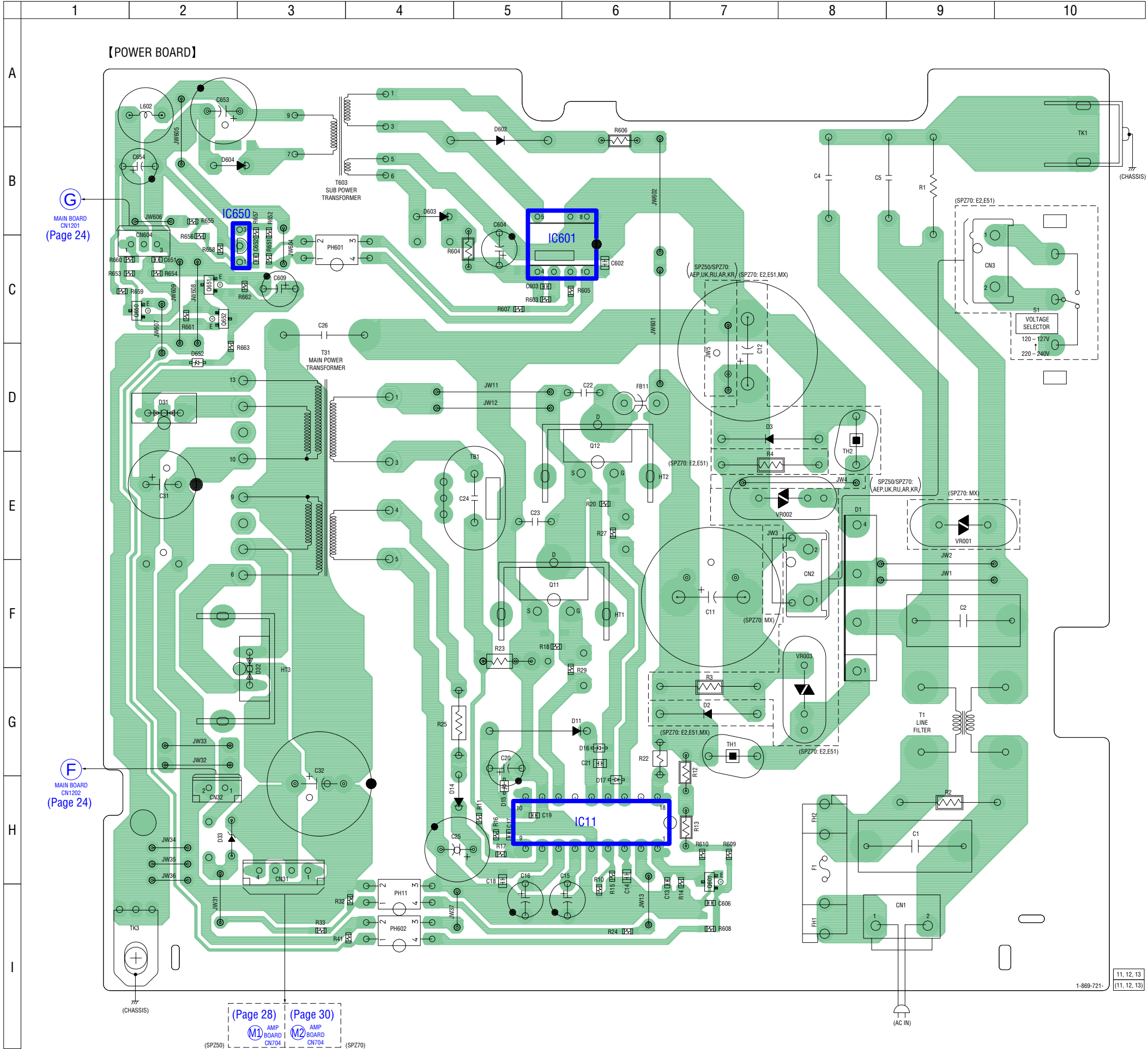
7-20. SCHEMATIC DIAGRAM – PANEL Section (2/2) – • See page 38 for Waveforms. • See page 39 for IC Block Diagrams.



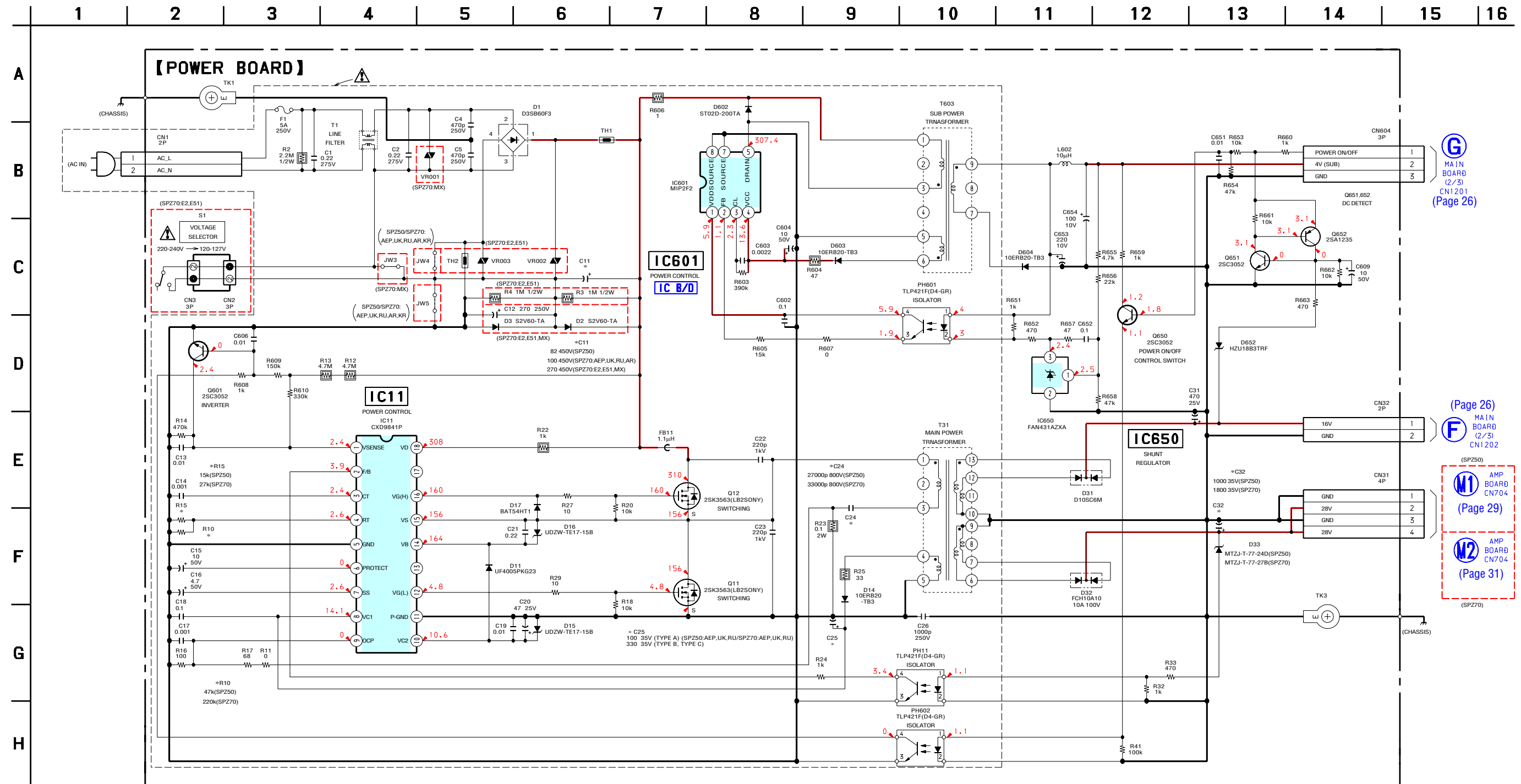
7-21. PRINTED WIRING BOARD – POWER Board – • See page 19 for Circuit Boards Location. : Uses unleaded solder.

• Semiconductor Location

Ref. No.	Location
D1	F-8
D2	G-7
D3	D-7
D11	G-6
D14	H-5
D15	H-5
D16	G-6
D17	H-6
D31	D-2
D32	G-3
D33	H-2
D602	B-5
D603	B-4
D604	B-2
D652	D-2
IC11	H-6
IC601	C-6
IC650	C-3
PH11	I-4
PH601	C-3
PH602	I-4
Q11	F-5
Q12	D-6
Q601	H-7
Q650	C-2
Q651	C-2
Q652	C-2



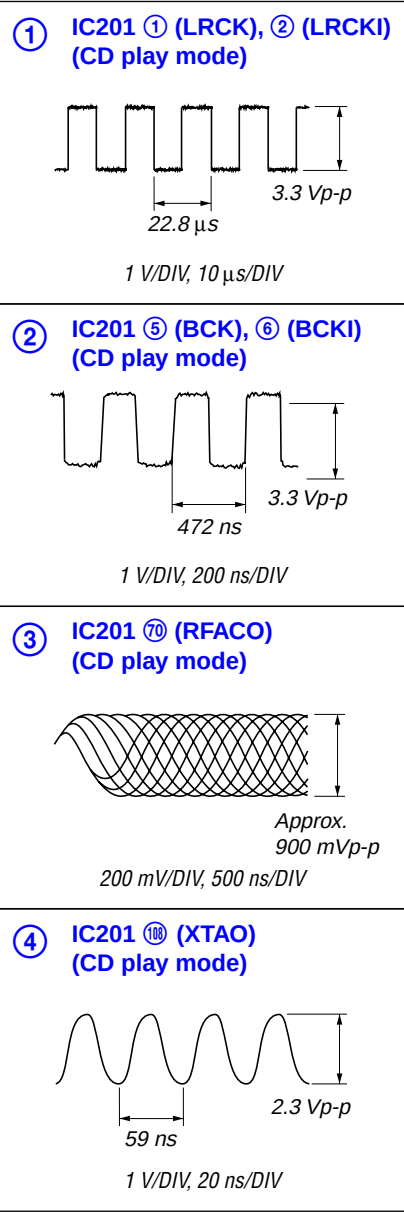
7-22. SCHEMATIC DIAGRAM – POWER Board – • See page 39 for IC Bloc Diagrams. • See page 46 for IC Pin Function Description.



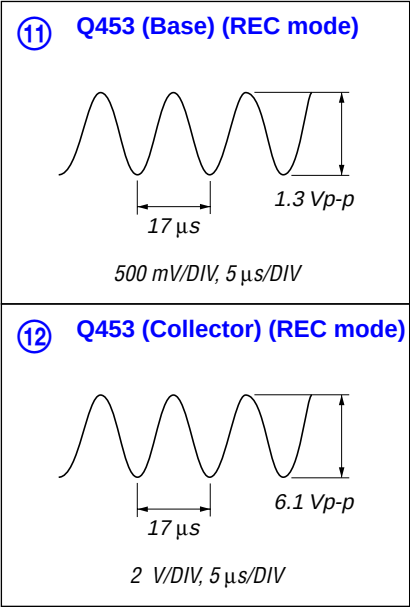
Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the C25 or POWER board.

• Waveforms

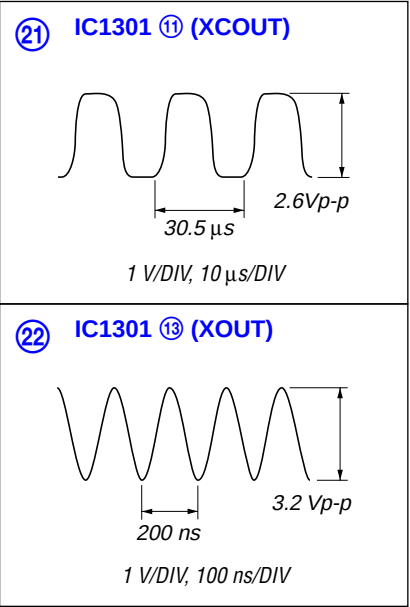
– CD Board –



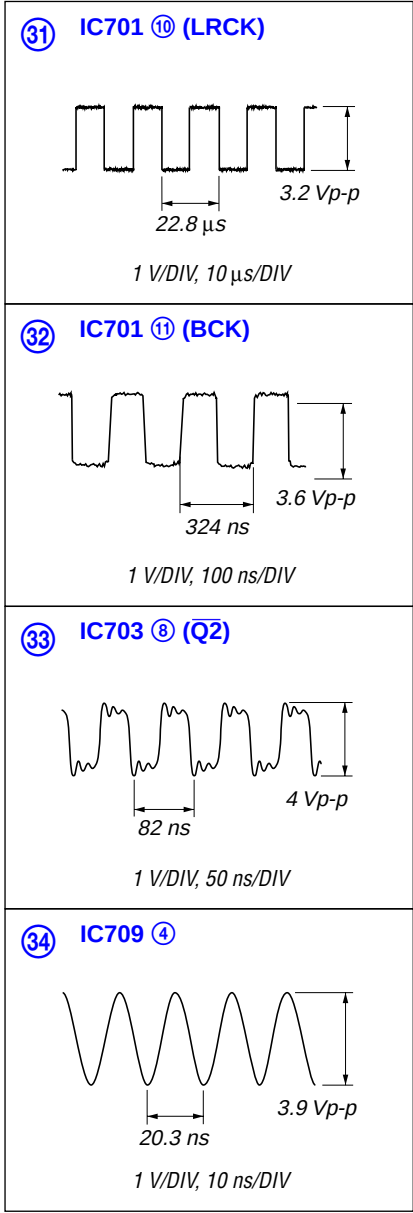
– TC Board –



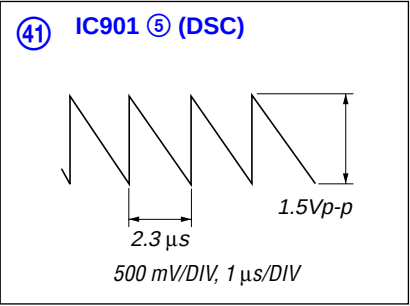
– MAIN Board –



– AMP Board –

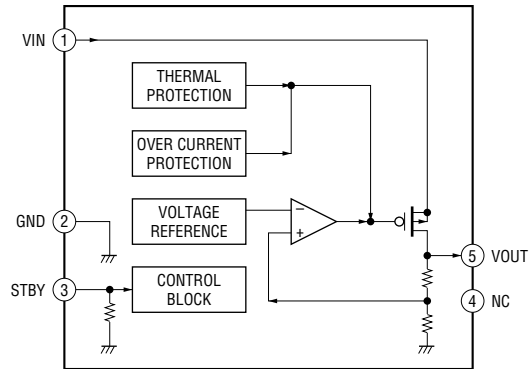


– FL Board –

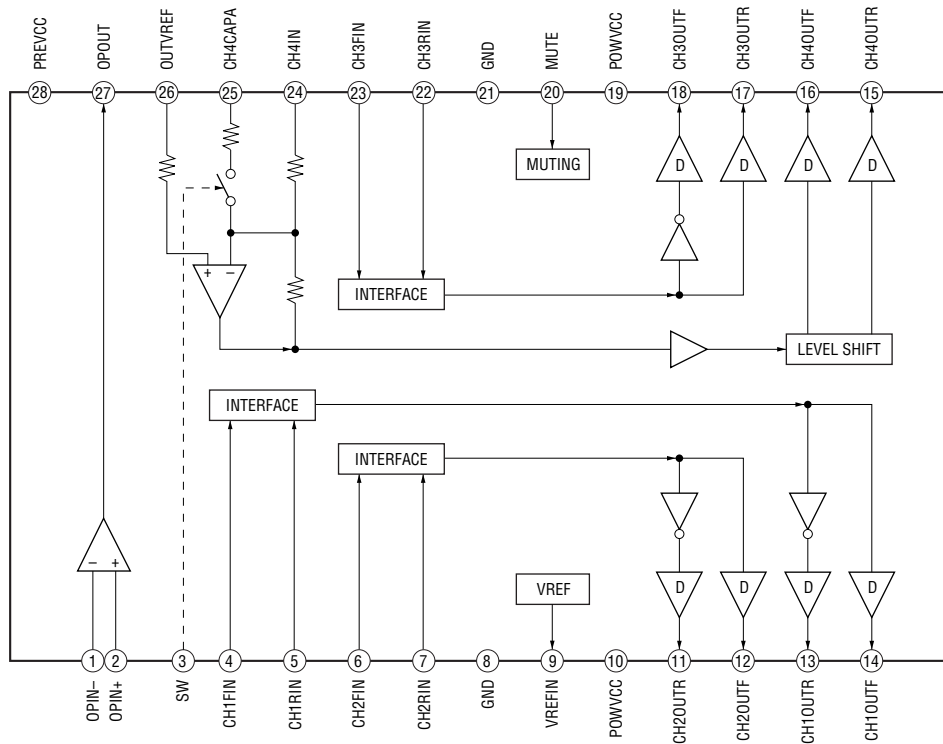


• IC Block Diagrams
– CD Board –

IC203 BH18LB1WG-TR



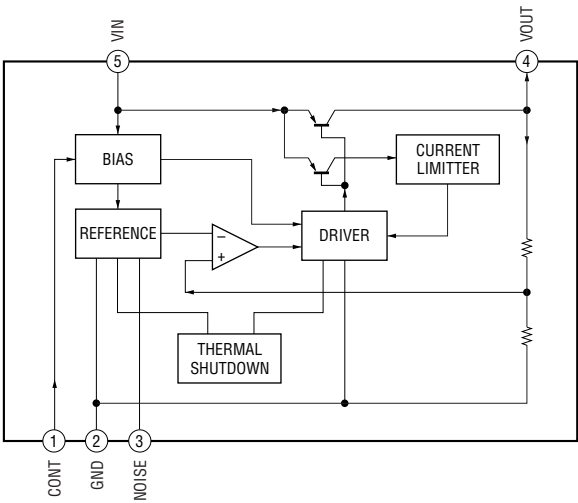
IC402 BA5947FM-E2



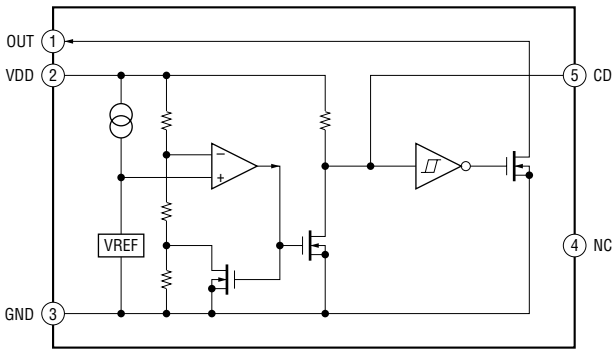
HCD-SPZ50/SPZ70

- MAIN Board -

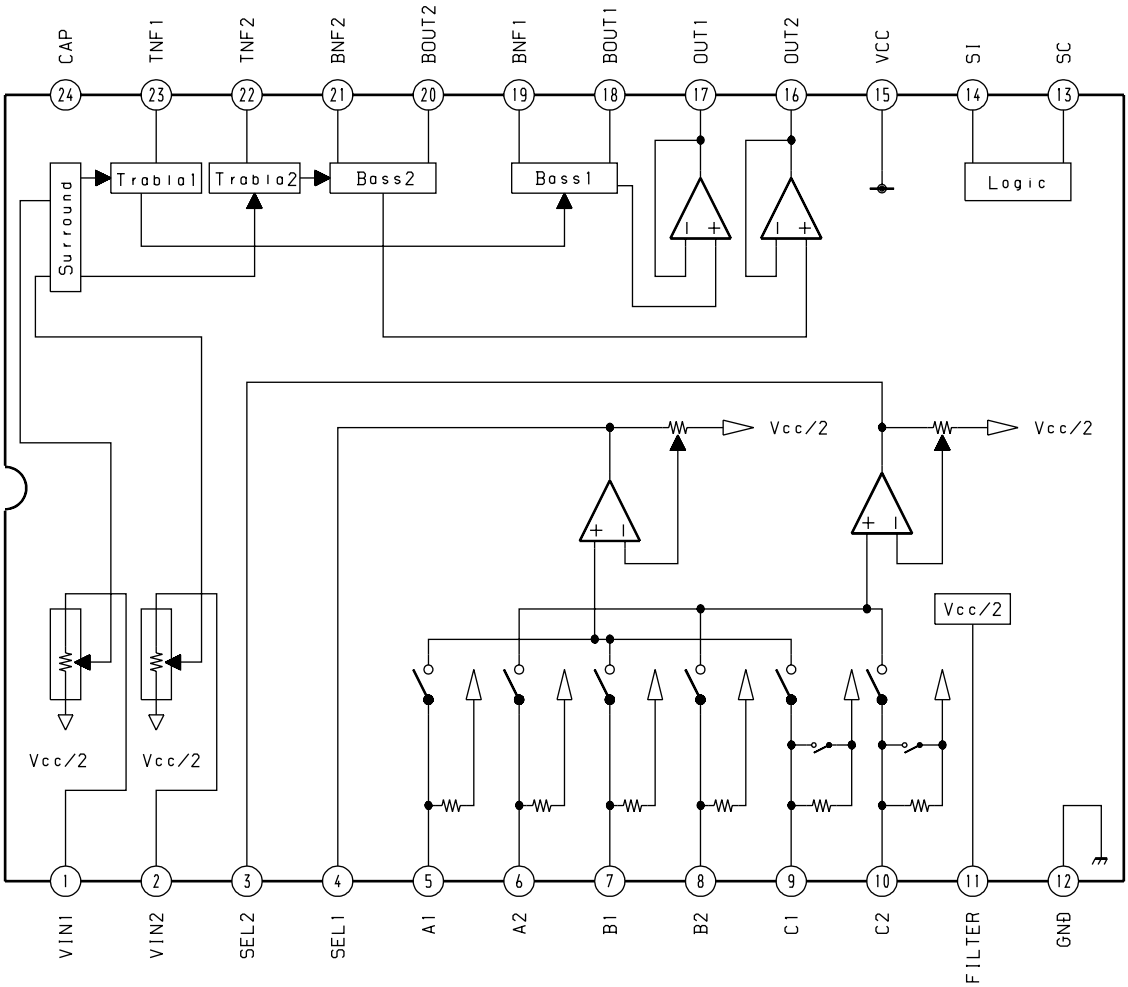
IC1204 MM1615ANLE

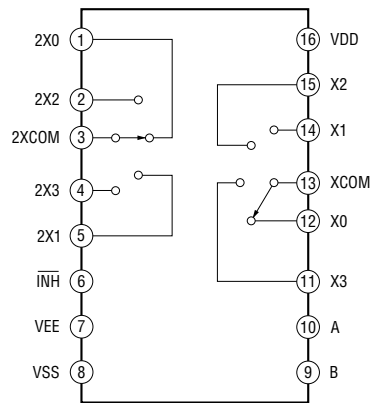
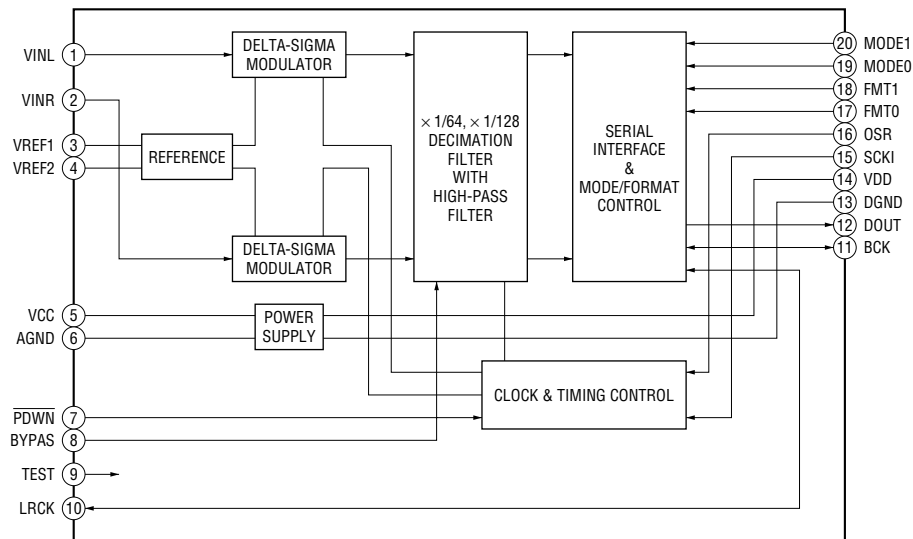
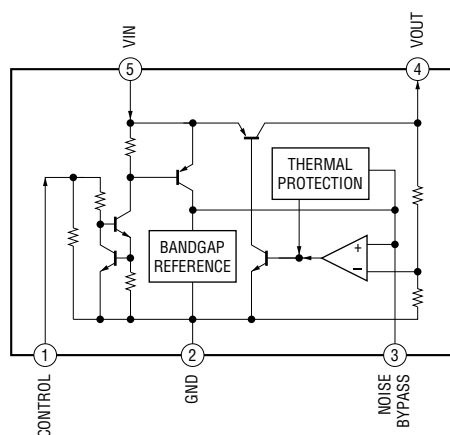
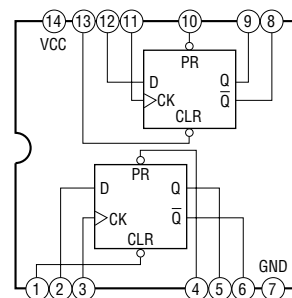


IC1302 PST3629NR

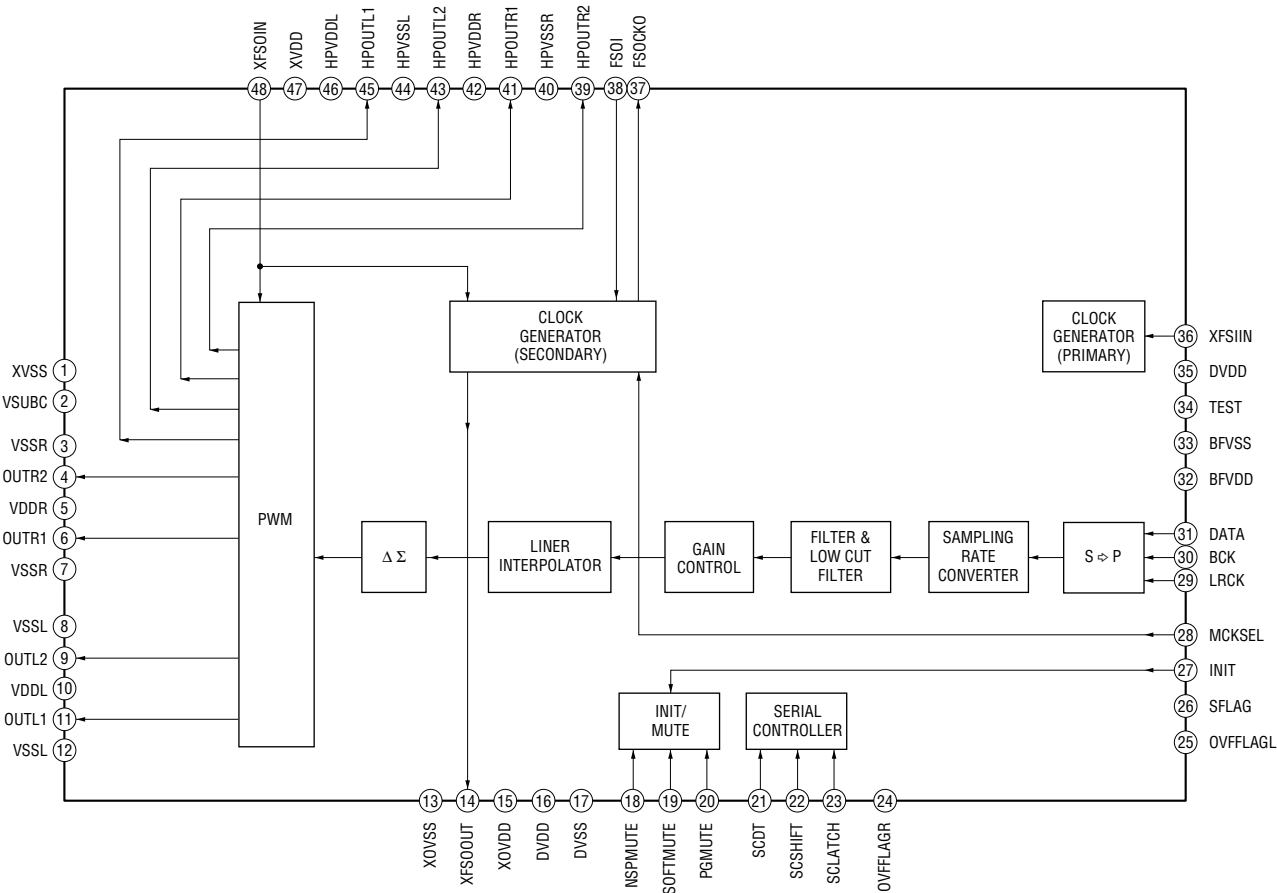


IC1501 BD3870FS-E2

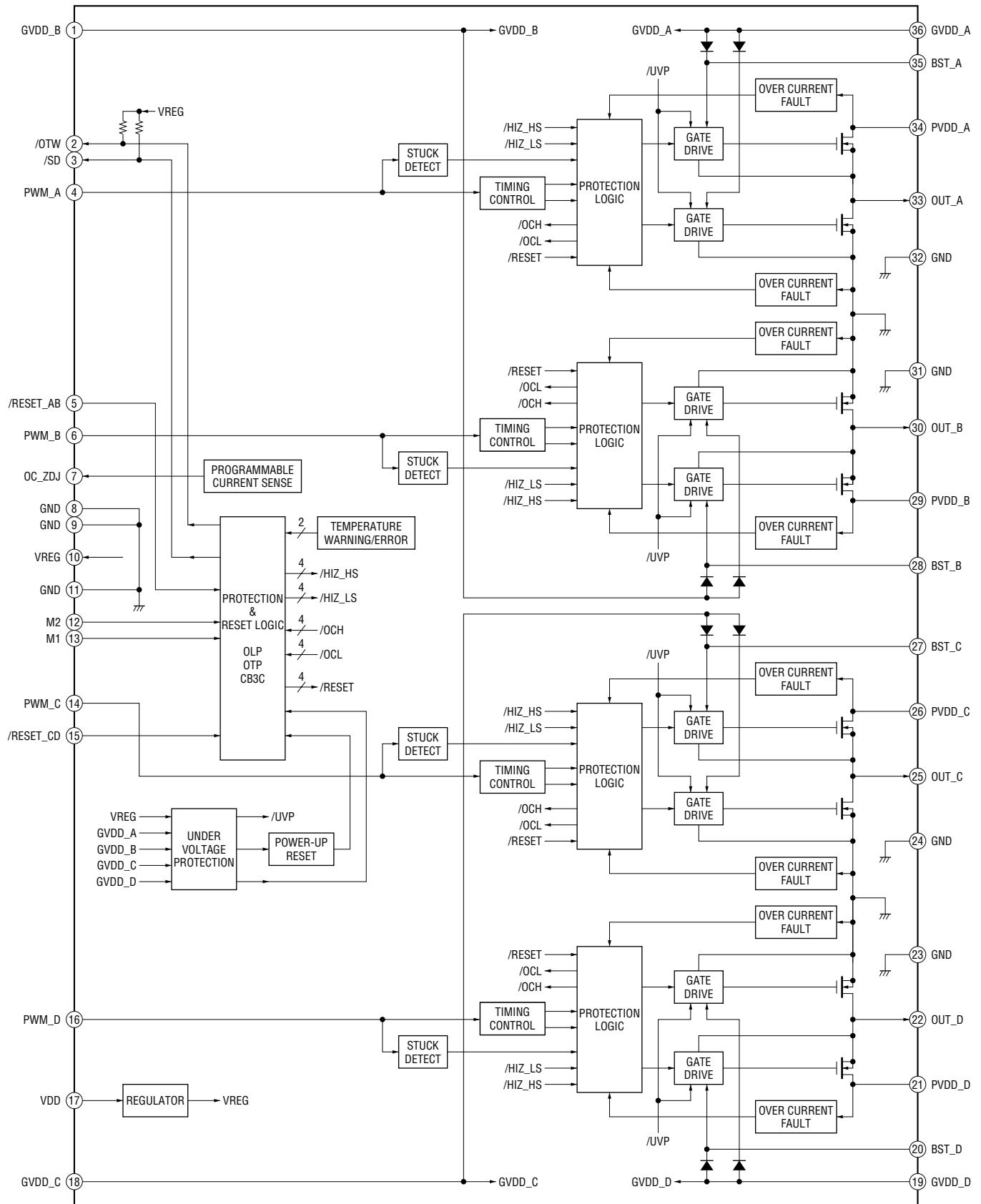


IC1505 MC14052BDTR2**– AMP Board –****IC701 PCM1803DBR****IC702 NJM2871BF33-TE2****IC704 NJM2871BF18-TE2****IC703 MC74VHC74DTR2**

IC705 CXD9788AR

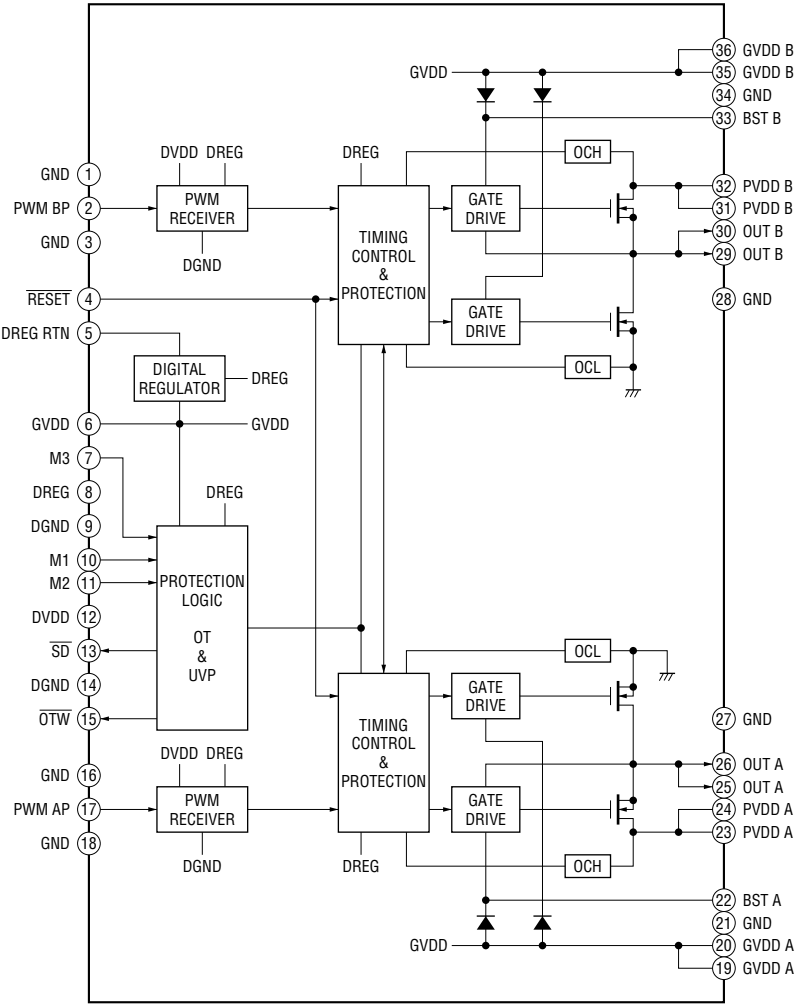


IC707 CXD9845M (SPZ50)



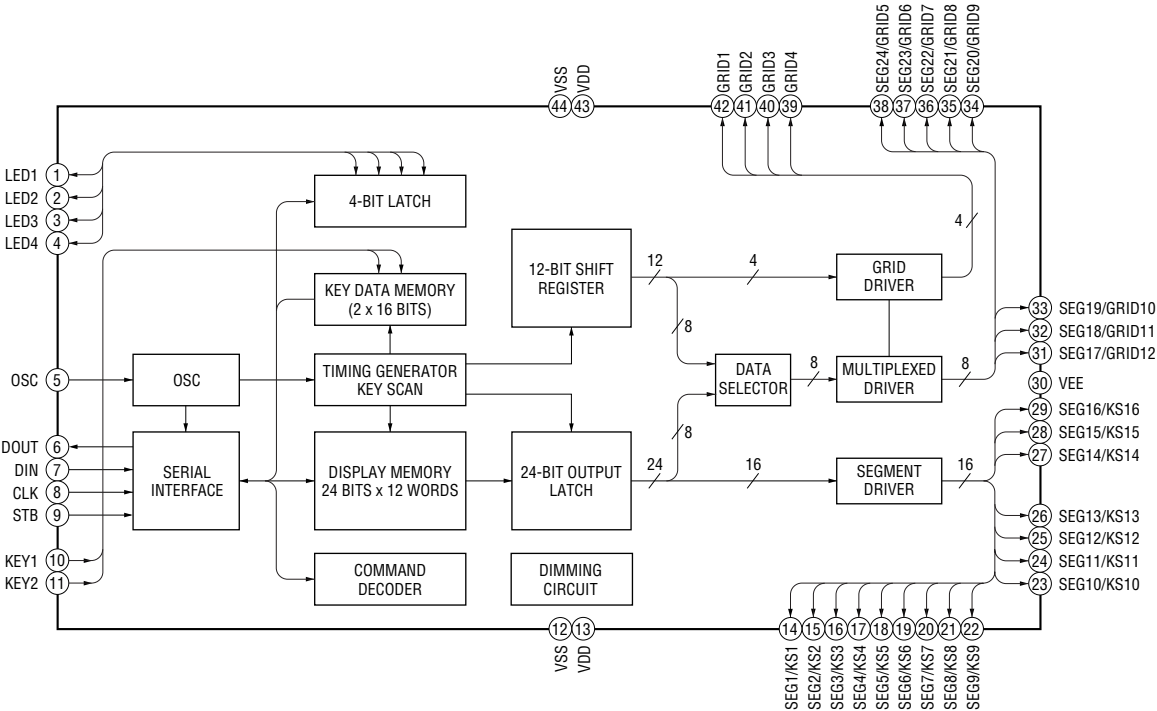
HCD-SPZ50/SPZ70

IC707, 708 CXD9774M (SPZ70)



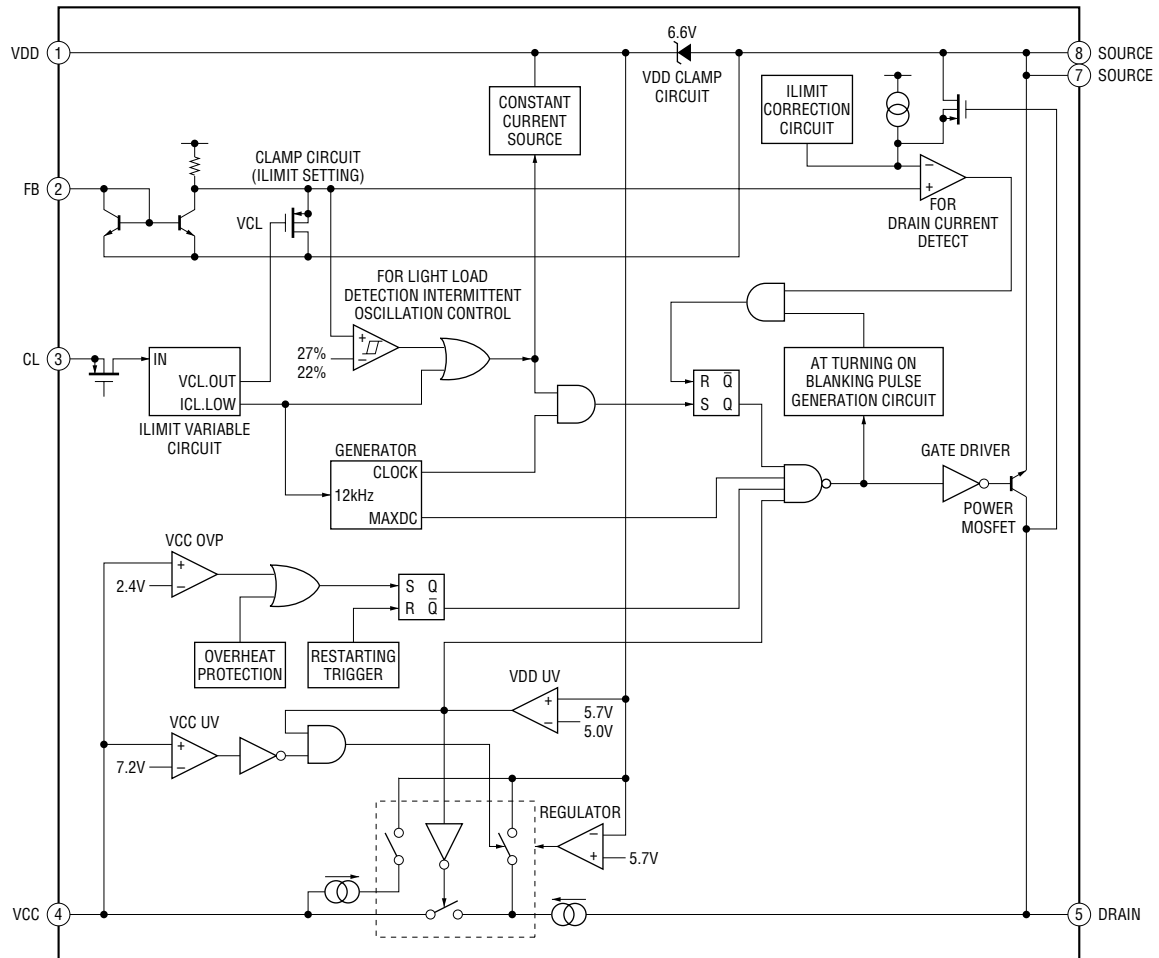
- FL Board -

IC901 μPD16315GB-3BS



- POWER Board -

IC601 MIP2F20MS1SO



• IC Pin Function Description

CD BOARD IC201 CXD3014A-201R (CD DSP)

Pin No.	Pin Name	I/O	Description
1	LRCK	O	L/R sampling clock signal output terminal
2	LRCKI	I	L/R sampling clock signal input terminal
3	PCMD	O	Serial data output terminal
4	PCMDI	I	Serial data input terminal
5	BCK	O	Bit clock signal output terminal
6	BCKI	I	Bit clock signal input terminal
7	XTACN	I	Oscillation circuit on/off control signal input from the system controller "L": oscillation stop, "H": self-oscillation
8	XRST	I	System reset signal input from the system controller "L": reset
9	VSS	-	Ground terminal
10	IREQ-MP3	O	MP3 data request signal output to the system controller
11	CLOK	I	CD serial data transfer clock signal input from the system controller
12	DATA2	I	MP3 serial data input from the system controller
13	XLAT-MP3	I	MP3 serial data latch pulse signal input from the system controller
14	REQ-MP3	I	MP3 data request signal input from the system controller
15	ACK-MP3	O	MP3 acknowledge signal output to the system controller
16	XLAT	I	CD serial data latch pulse signal input from the system controller
17	VDD	-	Power supply terminal (+1.8V)
18	SVSS	-	Ground terminal
19	SVDD	-	Power supply terminal (+1.8V)
20	SENS	O	Internal status (SENSE) signal output to the system controller
21	WFCK	O	Write frame clock signal output terminal Not used
22	XUGF	O	XUGF signal output terminal Not used
23	XPCK	O	XPCK signal output terminal Not used
24	GFS	O	Guard frame sync signal output terminal Not used
25	C2PO	O	C2 pointer signal output terminal Not used
26	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller
27	VDD	-	Power supply terminal (+1.8V)
28	COUT	O	Numbers of track counted signal output terminal Not used
29	SVSS	-	Ground terminal
30	SVDD	-	Power supply terminal (+1.8V)
31	MIRR	O	Mirror signal output terminal Not used
32	DFCT	O	Defect signal output terminal Not used
33	FOK	O	Focus OK signal output terminal Not used
34	VSS	-	Ground terminal
35	VDD	-	Power supply terminal (+1.8V)
36	VSS	-	Ground terminal
37	LOCK	O	GFS is sampled by 460 Hz "H" output when GFS is "H" Not used
38	MDP	O	Spindle motor servo control signal output terminal
39	SSTP	I	Disc inner position detection signal input terminal
40	IOVSS1	-	Ground terminal
41	SFDR	O	Sled servo drive signal (+) output terminal
42	SRDR	O	Sled servo drive signal (-) output terminal
43	TFDR	O	Tracking servo drive signal (+) output terminal
44	TRDR	O	Tracking servo drive signal (-) output terminal
45	FFDR	O	Focus servo drive signal (+) output terminal

Pin No.	Pin Name	I/O	Description
46	FRDR	O	Focus servo drive signal (-) output terminal
47	IOVDD1	-	Power supply terminal (+3.3V)
48	AVDD0	-	Power supply terminal (+3.3V)
49	AVSS0	-	Ground terminal
50	E	I	E signal input from the optical pick-up block
51	F	I	F signal input from the optical pick-up block
52	TEI	I	Tracking error signal input terminal
53	TEO	O	Tracking error signal output terminal
54	FEI	I	Focus error signal input terminal
55	FEO	O	Focus error signal output terminal
56	VC	O	Middle point voltage output terminal
57	A	I	A signal input from the optical pick-up block
58	B	I	B signal input from the optical pick-up block
59	C	I	C signal input from the optical pick-up block
60	D	I	D signal input from the optical pick-up block
61	AVDD4	-	Power supply terminal (+3.3V)
62	RFDCO	O	RFDC signal output terminal Not used
63	PDSSENS	I	Reference voltage input terminal for PD
64	AC_SUM	O	RFAC summing amplifier signal output terminal
65	EQ_IN	I	RF equalizer circuit input terminal
66	LD	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
67	PD	I	Light amount monitor input from the laser diode of optical pick-up block
68	RFC	I	Equalizer cut off frequency adjustment terminal
69	AVSS4	-	Ground terminal
70	RFACO	O	EFM signal output terminal
71	RFACI	I	EFM signal input terminal
72	AVDD3	-	Power supply terminal (+3.3V)
73	BIAS	I	Asymmetry circuit constant current input terminal
74	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
75	ASYO	O	Playback EFM full-swing output terminal
76	VPCO	O	Charge pump output terminal for broad-band EFM PLL
77	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
78	AVSS3	-	Ground terminal
79	CLTV	I	VCO1 control voltage input terminal for multiplier
80	FILO	O	Filter output terminal for master PLL
81	FILI	I	Filter input terminal for master PLL
82	PCO	O	Charge pump output terminal for master PLL
83	SVSS	-	Ground terminal
84	SVDD	-	Power supply terminal (+1.8V)
85	SSTB-MP3	I	MP3 standby on/off control signal input terminal "L": standby Not used
86	VDD	-	Power supply terminal (+1.8V)
87	VSS	-	Ground terminal
88	TEST1	I	Input terminal for the test Normally: fixed at "L"
89	DATA	I	CD serial data input from the system controller
90	CLK2	I	MP3 serial data transfer clock signal input from the system controller
91	SVSS	-	Ground terminal

Pin No.	Pin Name	I/O	Description
92	SVDD	-	Power supply terminal (+2.5V)
93	JTAGTCK	I	Clock signal input terminal (for JTAG) Not used
94	JTAGTDI	I	Data input terminal (for JTAG) Not used
95	JTAGTDO	O	Data output terminal (for JTAG) Not used
96	JTAGTMS	I	Mode select signal input terminal (for JTAG) Not used
97	TRST	I	Reset signal input terminal (for JTAG) Not used
98	VSS	-	Ground terminal
99	VDD	-	Power supply terminal (+1.8V)
100	IOVDD2	-	Power supply terminal (+3.3V)
101	DOUT	O	Digital audio signal output terminal Not used
102	TEST	I	Input terminal for the test Normally: fixed at "L"
103	TES1	I	Input terminal for the test Normally: fixed at "L"
104	IOVSS2	-	Ground terminal
105	PLLVD	-	Power supply terminal (+1.8V)
106	PLLVSS	-	Ground terminal
107	XVSS	-	Ground terminal
108	XTAO	O	System clock output terminal (16.9344 MHz)
109	XTAI	I	System clock input terminal (16.9344 MHz)
110	XVDD	-	Power supply terminal (+1.8V)
111	AVDD1	-	Power supply terminal (+3.3V)
112	AOUT1	O	L-ch analog audio signal output terminal
113	VREFL	O	L-ch reference voltage output terminal
114	AVSS1	-	Ground terminal
115	AVSS2	-	Ground terminal
116	VREFR	O	R-ch reference voltage output terminal
117	AOUT2	O	R-ch analog audio signal output terminal
118	AVDD2	-	Power supply terminal (+3.3V)
119	IOVDD0	-	Power supply terminal (+3.3V)
120	IOVSS0	-	Ground terminal

MAIN BOARD IC1301 (SYSTEM CONTROLLER)

M30622MEP-A36FPU0 (TYPE A) (SPZ50: AEP, UK, Russian/SPZ70: AEP, UK, Russian models)

M30622MEP-A38FPU0 (TYPE B)

M30622MEP-B09FPU0 (TYPE C)

Pin No.	Pin Name	I/O	Description
1	FL SD	O	Serial data output to the fluorescent indicator tube driver
2	FL SCK	O	Serial data transfer clock signal output to the fluorescent indicator tube driver
3	FL STB	O	Serial interface strobe signal output to the fluorescent indicator tube driver
4	SIRCS	I	SIRCS signal input from the remote control receiver
5	MP3 DATA OUT	O	MP3 serial data output to the CD DSP
6	MP3 DATA IN	I	MP3 serial data input terminal
7	MP3 CLK	O	MP3 serial data transfer clock signal output to the CD DSP
8	BYTE	I	External data bus width selection signal input terminal
9	CNVSS	I	Processor mode switch input terminal (for test)
10	XCIN	I	Sub system clock input terminal (32.768 kHz)
11	XCOUT	O	Sub system clock output terminal (32.768 kHz)
12	RESET	I	System reset signal input from the reset signal generator "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
13	XOUT	O	Main system clock output terminal (5 MHz)
14	VSS	-	Ground terminal
15	XIN	I	Main system clock input terminal (5 MHz)
16	VCC	-	Power supply terminal (+3.3V)
17	NMI	I	Non-maskable interrupt signal input terminal Not used
18	RDS INT	I	RDS data transfer clock signal input from the tuner (FM/AM) (SPZ50: AEP, UK/SPZ70: AEP, UK models)
19	CD SCOR	I	Subcode sync (S0+S1) detection signal input from the CD DSP
20	AC CUT	I	AC cut on/off detection signal input terminal "L": AC cut on
21	RDS DATA	I	RDS data input from the tuner (FM/AM) (SPZ50: AEP, UK/SPZ70: AEP, UK models)
22	NO USE	O	Not used
23	SW8	I	Disc table open detection switch input terminal
24	SW7	I	Disc chucking detection switch input terminal
25	SW6	I	Disc table close detection switch input terminal
26	SW5	I	Disc stocking detection switch input terminal
27	NO USE	O	Not used
28	SW3	I	Cam position detection switch input terminal
29	IIC CLK	I	IIC data reading clock signal input terminal Not used
30	IIC DATA	I	IIC data input terminal Not used
31	TRE A	I	Jog dial pulse input from the rotary encoder (TREBLE) (A phase input) (SPZ70)
32	TRE B	I	Jog dial pulse input from the rotary encoder (TREBLE) (B phase input) (SPZ70)
33	SW2	I	Cam position detection switch input terminal
34	SW1	I	Cam position detection switch input terminal
35	CD DATA	O	CD serial data output to the CD DSP
36	CD SENS	I	Internal status (SENSE) signal input from the CD DSP
37	CD CLK	O	CD serial data transfer clock signal output to the CD DSP
38	CDM SD	I	CD mechanism power protect on/off detection signal input terminal "H": protect on
39	M2+	O	Cam gear motor control signal output terminal (forward direction)
40	M2-	O	Cam gear motor control signal output terminal (reverse direction)
41	M1+	O	Loading motor control signal output terminal (forward direction)
42	M1-	O	Loading motor control signal output terminal (reverse direction)
43	CD XLT	O	CD serial data latch pulse signal output to the CD DSP

HCD-SPZ50/SPZ70

Pin No.	Pin Name	I/O	Description
44	MP3 ACK	I	MP3 acknowledge signal input from the CD DSP
45	MP3 REQ	O	MP3 data request signal output to the CD DSP
46	MP3 XLAT	O	MP3 serial data latch pulse signal output to the CD DSP
47	MP3 IREQ	I	MP3 data request signal input from the CD DSP
48	CD XRST	O	System reset signal output to the CD DSP "L": reset
49	CD XATCN	O	Oscillation circuit on/off control signal output to the CD DSP "L": oscillation stop, "H": self-oscillation
50	CD DRIVER MUTE	O	Muting signal output to the motor/coil driver
51	SEL A	O	Control signal output to the function selector
52	ST TUNED	I	Tuning detection signal input terminal Not used
53	ST CE	O	Chip enable signal output to the tuner (FM/AM)
54	ST DOUT	O	Serial data output to the tuner (FM/AM)
55	ST CLK	O	Serial data transfer clock signal output to the tuner (FM/AM)
56	ST DIN/STEREO	I	Serial data and stereo detection signal input from the tuner (FM/AM)
57	POWER ON/OFF	O	Sub power on/off relay drive signal output terminal "H": power on
58	HP MUTE	O	Headphone muting on/off control signal output terminal "H": muting on
59	SEL B	O	Control signal output to the function selector
60	LINE MUTE	O	Line muting on/off control signal output terminal "H": muting on
61	AMP SI	O	Serial data output to the electrical volume
62	VCC	-	Power supply terminal (+3.3V)
63	AMP SC	O	Serial data transfer clock signal output to the electrical volume
64	VSS	-	Ground terminal
65	SEL INH	O	Control signal output to the function selector
66	S-MASTER PG MUTE	O	PG muting control signal output to the stream processor
67	S-MASTER SOFT MUTE	O	Soft muting control signal output to the stream processor
68	S-MASTER RST	O	System reset signal output to the digital power amplifier "L": reset
69	S-MASTER SD	O	Shut down signal input from the digital power amplifier "L": shut down
70	S-MASTER DATA	O	Serial data output to the stream processor
71	S-MASTER SHIFT	O	Serial data transfer clock signal output to the stream processor
72	S-MASTER LATCH	O	Serial data latch pulse signal output to the stream processor
73	NSP MUTE	O	NSP muting control signal output to the stream processor
74	WAKE UP KEY	I	Wake up signal input terminal
75	S-MASTER INIT	O	Initialize signal output to the stream processor
76	TC RELAY	O	Recording/playback selection signal output terminal "L": playback, "H": recording
77	TC REC MUTE	O	Recording muting on/off control signal output terminal "L": muting on
78	TC BIAS ON/OFF	O	Recording bias on/off control signal output terminal "H": bias on
79	TC CAPM CNT1	O	Capstan/reel motor drive signal output terminal "H": motor on
80	TC TRG	O	Trigger plunger drive signal output terminal "H": plunger on
81	NO USE	O	Not used
82	BASS A	I	Jog dial pulse input from the rotary encoder (BASS) (A phase input) (SPZ70)
83	BASS B	I	Jog dial pulse input from the rotary encoder (BASS) (B phase input) (SPZ70)
84	AC DET	I	AC power detection signal input terminal
85	NO USE	O	Not used
86	EEPROM SDA	I	Serial data input from the EEPROM
87	EEPROM SCL	I	Serial data transfer clock signal input from the EEPROM
88	STANDBY LED	O	LED drive signal output terminal for STANDBY indicator "H": LED on

Pin No.	Pin Name	I/O	Description
89	TC PHOTO OUT	I	Tape reel rotating detection signal input from the tape mechanism deck block
90	TC HALF/REC SW	I	Cassette detection signal and recording-proof detection signal input from the tape mechanism deck block "L": cassette in or recording possible
91 to 93	KEY3 to KEY1	I	Front panel key input terminal (A/D input)
94	VOLUME	I	Jog dial pulse input from the rotary encoder (VOLUME) (A/D input)
95	JOG	I	Jog dial pulse input from the rotary encoder (jog) (A/D input)
96	AVSS	-	Ground terminal
97	SPEC IN	I	Setting terminal for the model and destination
98	VREF	I	Reference voltage (+3.3V) input terminal
99	AVCC	-	Power supply terminal (+3.3V)
100	AUDIO IN DETECT	I	Audio in plug insert detection signal input terminal "H": audio in plug insert

POWER BOARD IC11 CXD9841P (POWER CONTROL)

Pin No.	Pin Name	I/O	Description
1	VSENSE	I	AC line voltage detection signal input terminal
2	F/B	I	Feed back signal input terminal for frequency modulation of oscillator
3	CT	I	Connected to the external capacitor for oscillator duty/frequency setting
4	RT	I	Connected to the external resistor for oscillator frequency setting
5	GND	-	Ground terminal
6	TIMER	I	Connected to the external capacitor for determines intermittent operation period when abnormal detection state
7	SS	I	Connected to the external capacitor for soft start timing
8	VC1	I	Power supply terminal for control circuit "L": stop
9	OCP	I	Over current detection signal and didt protection signal input terminal
10	VC2	O	Power supply output terminal for driver
11	PGND	-	Ground terminal for low voltage side driver
12	VG (L)	O	Low voltage side driver drive signal output terminal
13	-	-	Not used
14	VG	O	Power supply output terminal for high voltage side driver
15	VS	I	High voltage side driver reference voltage input terminal
16	VG (H)	O	High voltage side driver drive signal output terminal
17	-	-	Not used
18	VD	I	Terminal for drain-kick starting When starting, current is supplied directly from the rectification diode to VC1

SECTION 8

EXPLODED VIEWS

NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE (WHITE) . . . (RED)

↑ ↑
Parts Color Cabinet's Color

- Abbreviation

AR : Argentina model

AUS : Australian model

E2 : 120V AC area in E model

E51 : Chilean and Peruvian models

KR : Korean model

MX : Mexican model

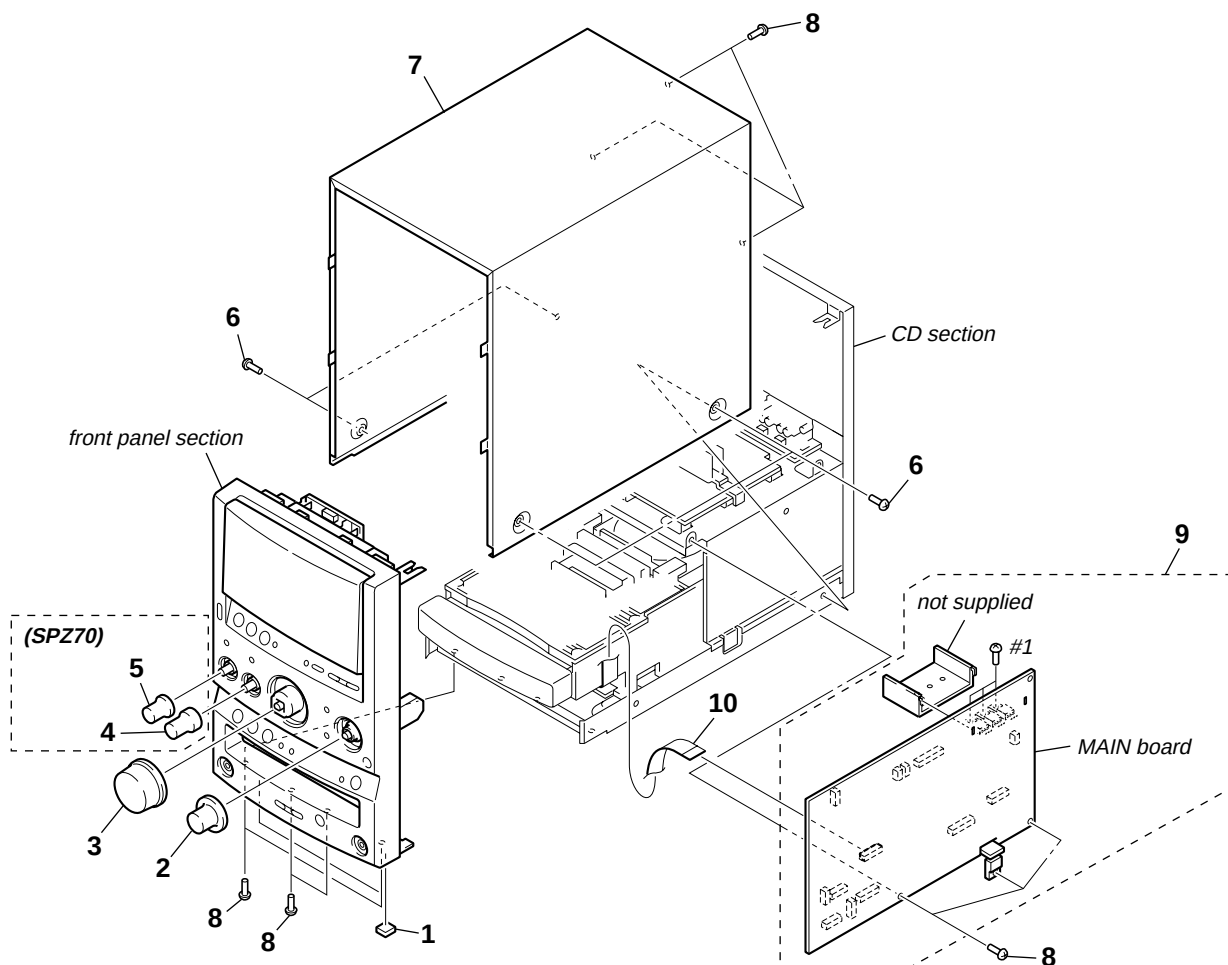
RU : Russian model

SP : Singapore model

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

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

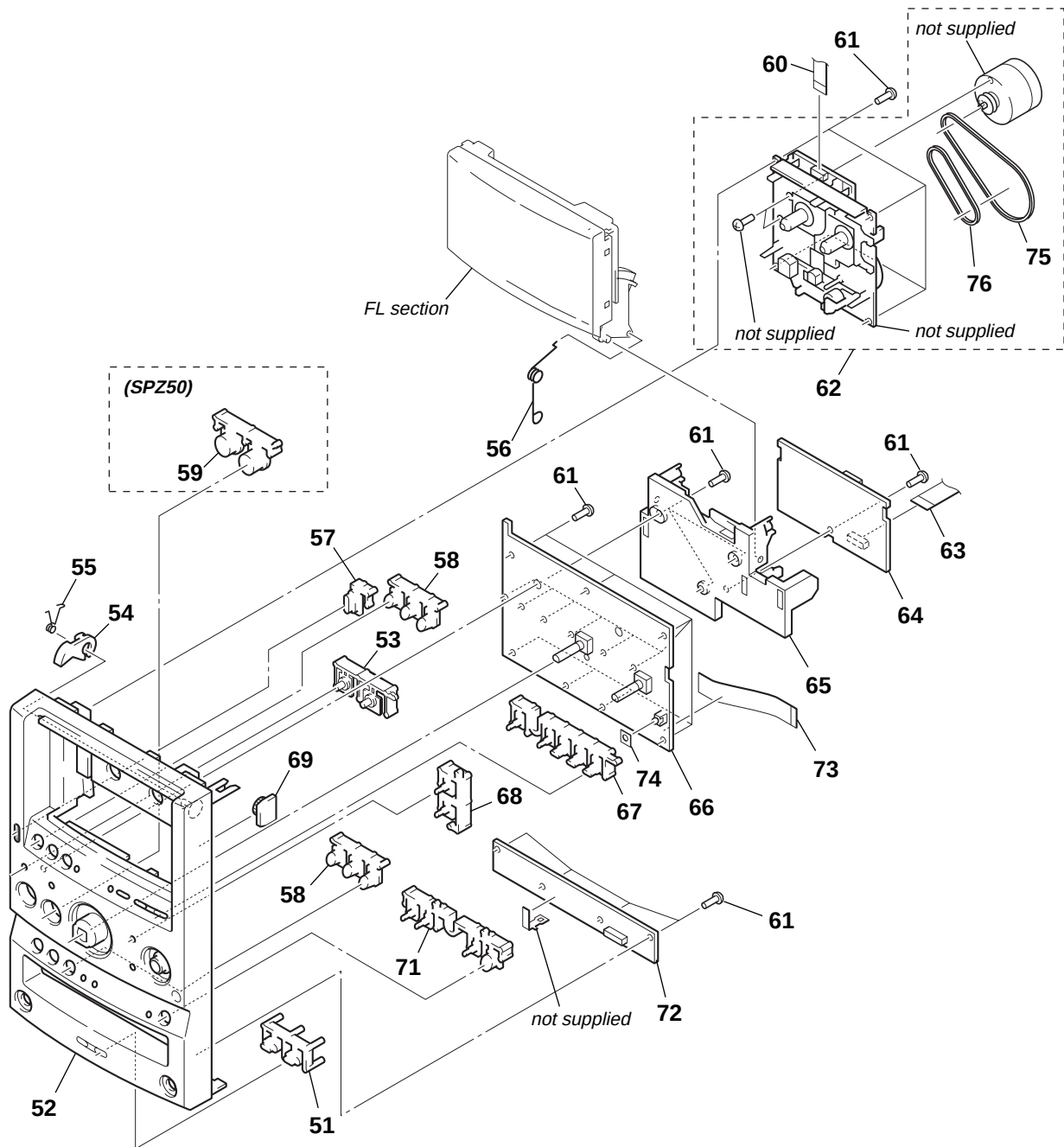
8-1. OVERALL SECTION



Note: Refer to the Servicing Notes “NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD” (page 4), when you exchange the MAIN board.

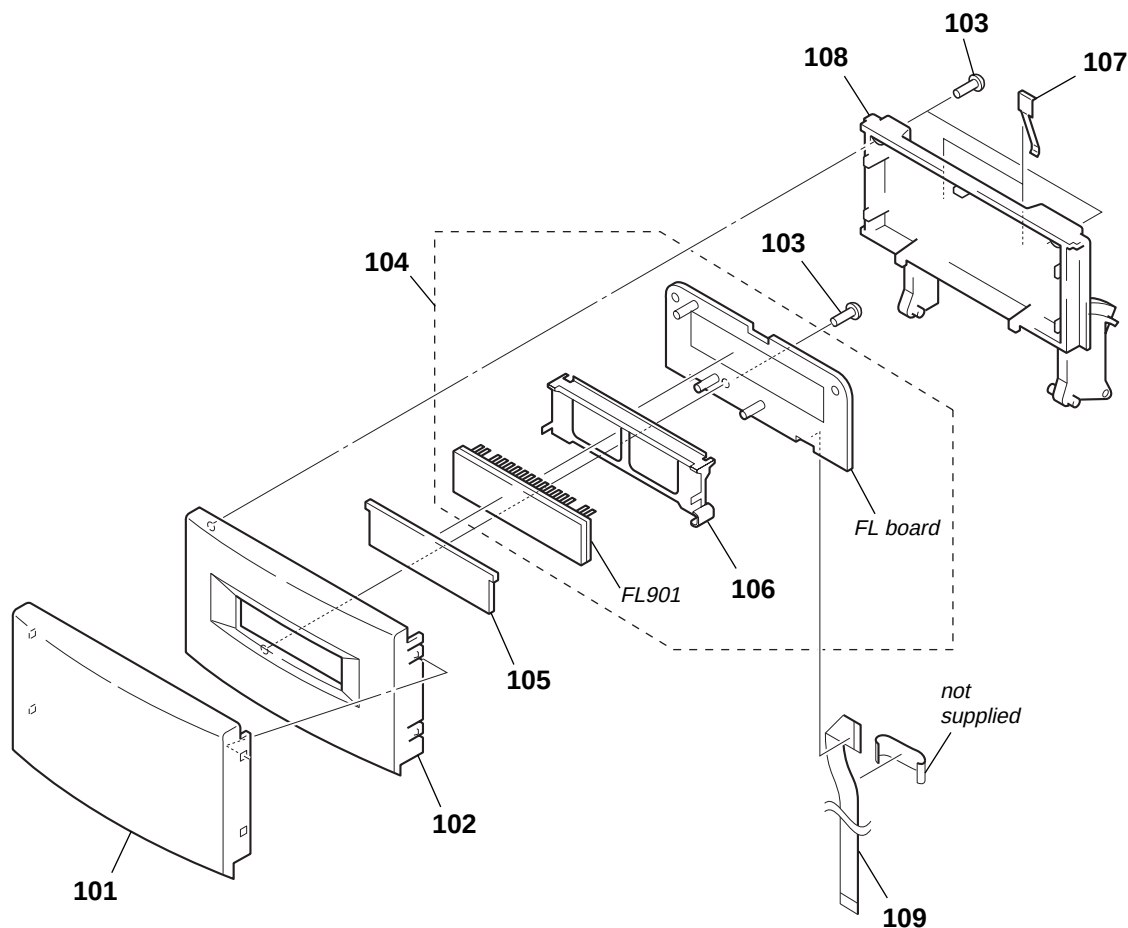
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	2-681-452-01	FOOT (CUSHION)		9	A-1166-993-A	MAIN BOARD, COMPLETE (SPZ70: RU)	
2	2-659-060-01	KNOB (JOG) (SPZ70)		9	A-1167-004-A	MAIN BOARD, COMPLETE (SPZ50: AEP, UK)	
2	2-659-060-11	KNOB (JOG) (SPZ50)		9	A-1167-017-A	MAIN BOARD, COMPLETE (SPZ50: RU)	
3	2-659-059-01	KNOB (VOL)		9	A-1171-390-A	MAIN BOARD, COMPLETE (SPZ70: E2, E51, MX, AR)	
4	2-659-057-01	KNOB (BAS) (SPZ70)					
5	2-659-058-01	KNOB (TRE) (SPZ70)		9	A-1171-419-A	MAIN BOARD, COMPLETE (SPZ50: SP, KR, AUS)	
6	3-363-099-11	SCREW (CASE 3 TP2)		9	A-1251-290-A	MAIN BOARD, COMPLETE (SPZ70: KR)	
7	2-659-063-02	CASE		10	1-831-938-21	CABLE, FLEXIBLE FLAT (13 CORE)	
8	3-252-829-01	SCREW (B3), (+) BV TAPPING		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
9	A-1166-883-A	MAIN BOARD, COMPLETE (SPZ70: AEP, UK)					

8-2. FRONT PANEL SECTION



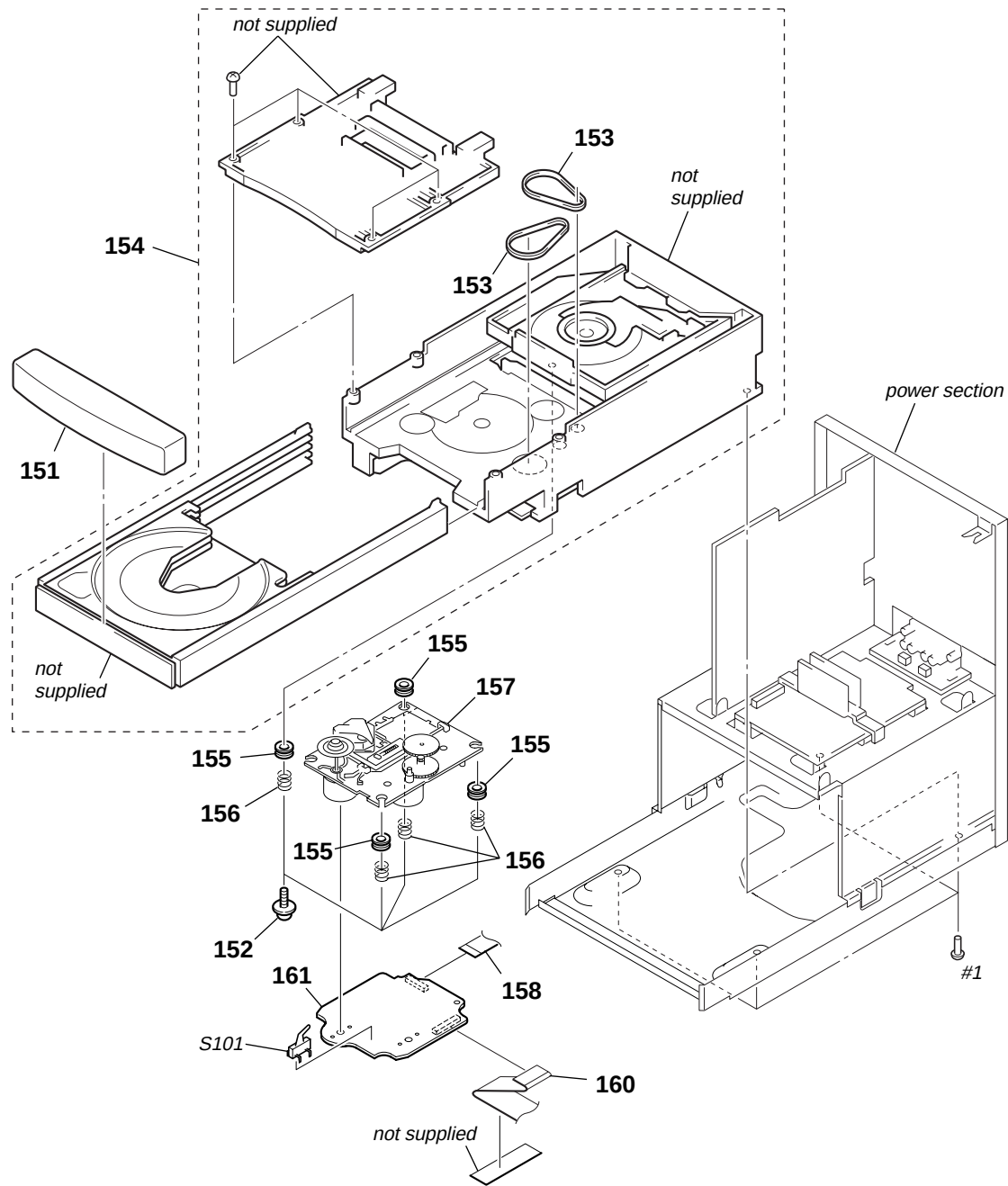
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	2-659-048-01	BUTTON (REC)		63	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)	
52	X-2109-480-1	PANEL (SERVICE) ASSY, FRONT (SPZ70)		64	A-1166-888-A	TC BOARD, COMPLETE	
52	X-2109-481-1	PANEL (SERVICE) ASSY, FRONT (SPZ50)		65	2-659-040-01	BASE (TC HOLDER)	
53	X-2109-287-1	BUTTON (DSGX) (SPZ50) ASSY (SPZ50)		66	A-1166-880-A	PANEL BOARD, COMPLETE (SPZ70)	
53	X-2109-289-1	BUTTON (DSGX) (SPZ70) ASSY (SPZ70)		66	A-1167-002-A	PANEL BOARD, COMPLETE (SPZ50)	
54	4-231-825-01	CAM (B), HEART		67	2-659-043-01	BUTTON (FUNCTION)	
55	4-231-841-01	SPRING (HEART CAM-B)		68	2-659-046-01	BUTTON (DIRECTION)	
56	2-659-068-01	SPRING (CASSETTE)		69	4-244-530-01	DAMPER	
57	2-659-041-01	BUTTON (POWER)		71	2-659-047-01	BUTTON (PLAY MODE)	
58	X-2109-479-1	BUTTON (CAP) ASSY (SPZ70)		72	A-1166-881-A	HP A-IN BOARD, COMPLETE	
58	2-666-034-01	BUTTON (DISC) (SPZ50)		73	1-831-996-21	CABLE, FLEXIBLE FLAT (11 CORE) (SPZ50)	
59	2-659-045-01	BUTTON (BAS/TRE) (SPZ50)		73	1-832-431-21	CABLE, FLEXIBLE FLAT (17 CORE) (SPZ70)	
60	1-832-430-21	CABLE, FLEXIBLE FLAT (7 CORE)		74	2-681-451-01	SHEET (RM)	
61	4-951-620-01	SCREW (2.6X8), +BVTP		75	2-683-561-01	BELT (SF)	
62	1-797-503-12	DECK, MECHANICAL (CFP42601)		76	2-685-676-01	BELT (FR)	

8-3. FL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	2-659-036-01	WINDOW (FL) (SPZ70: AEP, UK)		104	A-1166-879-A	FL BOARD, COMPLETE	
101	2-659-036-11	WINDOW (FL)		105	2-659-054-01	FILTER (FL)	
		(SPZ70: RU, E2, E51, MX, AR, KR)		106	2-659-053-01	HOLDER (FL)	
101	2-659-036-21	WINDOW (FL) (SPZ50: AEP, UK)		107	2-584-676-01	SPRING (TC), PLATE	
101	2-659-036-31	WINDOW (FL) (SPZ50: RU, SP, KR, AUS)					
102	2-659-037-01	BASE (FL)		108	2-659-039-01	HOLDER (TC)	
				109	1-831-922-21	CABLE, FLEXIBLE FLAT (9 CORE)	
103	4-951-620-01	SCREW (2.6X8), +BVTP		FL901	1-519-874-11	INDICATOR TUBE, FLUORESCENT	

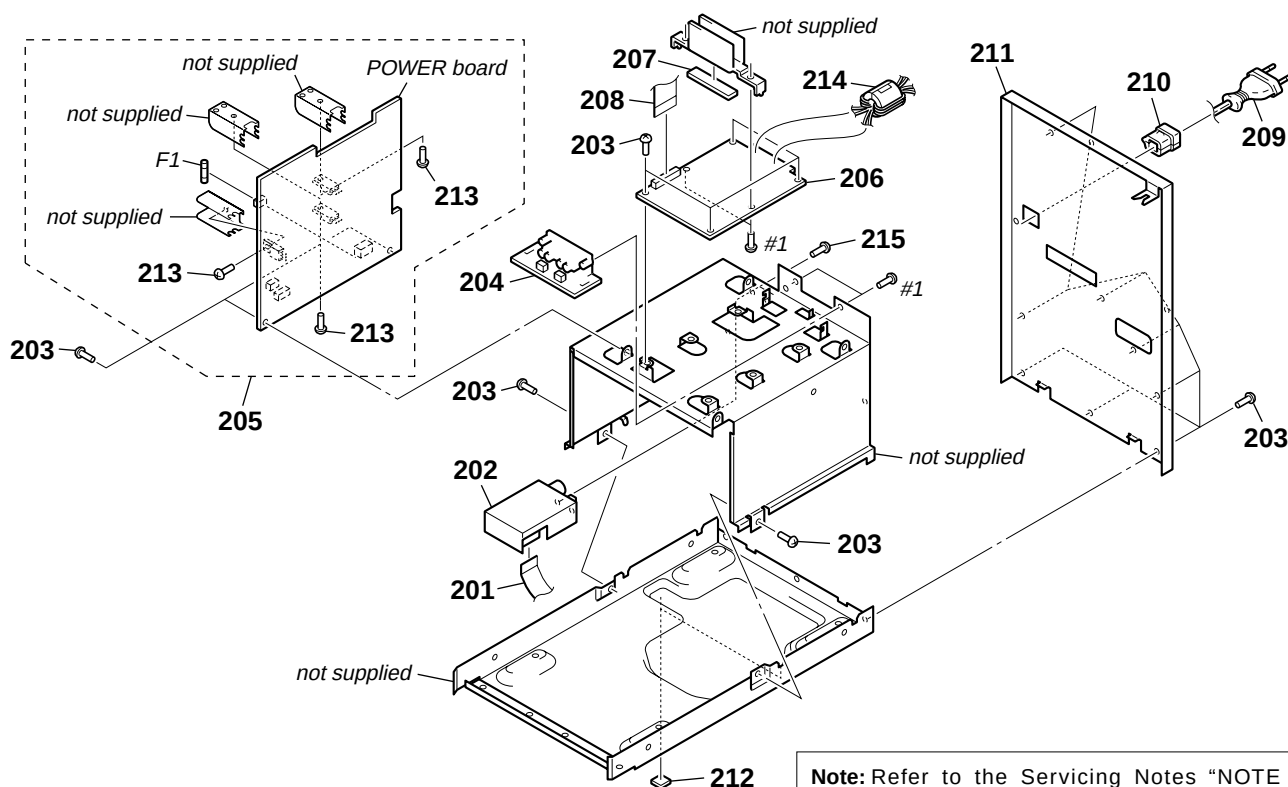
8-4. CD SECTION



Ref. No.	Part No.	Description	Remark
151	2-659-049-01	LID (CD)	
152	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
153	2-632-062-11	BELT (DLM3A)	
154	1-797-193-12	MECHANICAL, CD (DLM3A)	
155	4-227-549-11	INSULATOR	
156	4-227-045-31	SPRING (INSULATOR), COIL	

Ref. No.	Part No.	Description	Remark
△ 157	A-4735-357-A	OPTICAL PICK-UP DEVICE (KSM-213DCP)	
158	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)	
160	1-828-382-21	WIRE (FLAT TYPE) (23 CORE)	
161	A-1134-279-A	CD BOARD, COMPLETE	
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

8-5. POWER SECTION



Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the POWER board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	1-832-434-21	CABLE, FLEXIBLE FLAT (11 CORE) (SPZ50: AEP, UK/SPZ70: AEP, UK)		△ 209	1-775-790-71	CORD, POWER (SPZ50: AUS)	
201	1-832-435-21	CABLE, FLEXIBLE FLAT (9 CORE) (SPZ50: RU, SP, KR, AUS/SPZ70: RU, E2, E51, MX, AR, KR)		△ 209	1-777-071-83	CORD, POWER (SPZ50: AEP/SPZ70: AEP)	
202	1-693-710-11	TUNER (FM/AM) (SPZ50: RU, KR/SPZ70: RU, KR)		△ 209	1-827-226-31	CORD, POWER (SPZ70: MX)	
202	1-693-711-11	TUNER (FM/AM) (SPZ50: SP, AUS/SPZ70: E2, E51, MX, AR)		△ 209	1-829-387-11	CORD, POWER (SPZ70: AR)	
202	1-693-712-11	TUNER (FM/AM) (SPZ50: AEP, UK/SPZ70: AEP, UK)		△ 209	1-830-188-11	CORD, POWER (SPZ50: RU, SP/SPZ70: RU, E2, E51)	
203	3-252-829-01	SCREW (B3), (+) BV TAPPING		210	3-703-244-00	BUSHING (2104), CORD (SPZ50/SPZ70: AEP, UK, RU, E2, E51, AR, KR)	
204	A-1166-886-A	SP BOARD, COMPLETE		* 210	3-703-571-12	BUSHING (S) (4516), CORD (SPZ70: MX)	
205	A-1166-887-A	POWER BOARD, COMPLETE (SPZ70: AR, KR)		211	2-659-064-01	PANEL, BACK (SPZ70: AEP, UK)	
205	A-1166-887-A	POWER BOARD, COMPLETE (TYPE B, TYPE C) (SPZ70: AEP, UK, RU)		211	2-659-064-11	PANEL, BACK (SPZ70: E2)	
205	A-1167-006-A	POWER BOARD, COMPLETE (SPZ50: SP, KR, AUS)		211	2-659-064-21	PANEL, BACK (SPZ70: MX)	
205	A-1167-006-A	POWER BOARD, COMPLETE (TYPE B, TYPE C) (SPZ50: AEP, UK, RU)		211	2-659-064-31	PANEL, BACK (SPZ70: E51)	
205	A-1171-392-A	POWER BOARD, COMPLETE (SPZ70: E2, E51)		211	2-659-064-41	PANEL, BACK (SPZ70: AR)	
205	A-1173-190-A	POWER BOARD, COMPLETE (SPZ70: MX)		211	2-659-064-61	PANEL, BACK (SPZ70: RU)	
205	A-1191-115-A	POWER BOARD, COMPLETE (TYPE A) (SPZ70: AEP, UK, RU)		211	2-659-064-71	PANEL, BACK (SPZ70: KR)	
205	A-1191-116-A	POWER BOARD, COMPLETE (TYPE A) (SPZ50: AEP, UK, RU)		211	2-670-256-01	PANEL, BACK (SPZ50: AEP, UK)	
206	A-1166-890-A	AMP BOARD, COMPLETE (SPZ70)		211	2-670-256-11	PANEL, BACK (SPZ50: SP)	
206	A-1167-008-A	AMP BOARD, COMPLETE (SPZ50)		211	2-670-256-21	PANEL, BACK (SPZ50: AUS)	
207	2-514-691-01	SHEET, RADIATION		211	2-670-256-31	PANEL, BACK (SPZ50: KR)	
208	1-831-951-21	CABLE, FLEXIBLE FLAT (19 CORE)		211	2-670-256-41	PANEL, BACK (SPZ50: RU)	
△ 209	1-769-079-41	CORD, POWER (SPZ50: KR/SPZ70: KR)		212	4-233-372-02	FOOT (FELT)	
△ 209	1-769-744-81	CORD, POWER (SPZ50: UK/SPZ70: UK)		213	3-254-142-01	SCREW (B3), (+) BV TAPPING (SPZ50: AEP, UK, RU/SPZ70: AEP, UK, RU)	
				213	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3 (SPZ50: SP, KR, AUS/SPZ70: E2, E51, MX, AR)	
				214	1-400-932-11	FILTER, CLAMP	
				215	4-951-620-01	SCREW (2.6X8), +BVTP	
				△ F1	1-576-232-51	FUSE (5A/250V)	
				#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

SECTION 9 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- Abbreviation**
AUS : Australian model E51 : Chilean and Peruvian models RU : Russian model
AR : Argentina model KR : Korean model SP : Singapore model
E2 : 120V AC area in E model MX : Mexican model

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

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-1166-890-A	AMP BOARD, COMPLETE (SPZ70)		C717	1-125-898-11	CERAMIC CHIP 0.22uF 10%	50V (SPZ70)
	A-1167-008-A	AMP BOARD, COMPLETE (SPZ50)		C717	1-164-739-11	CERAMIC CHIP 560PF 5%	50V (SPZ50)

	< CAPACITOR >						
C701	1-126-961-11	ELECT 2.2uF 20%	50V	C718	1-100-756-91	CERAMIC CHIP 0.047uF	50V
C702	1-136-497-81	FILM 0.1uF 5%	50V	C719	1-100-924-21	ELECT 2200uF 20%	35V (SPZ70)
C703	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V (SPZ70)	C719	1-137-806-21	ELECT 1800uF 20%	35V (SPZ50)
C704	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V	C720	1-131-704-11	FILM 1uF 5%	50V
C706	1-100-717-91	CERAMIC CHIP 1uF	16V (SPZ70)	C722	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C706	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (SPZ50)	C723	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C707	1-112-245-21	ELECT 47uF 20%	35V (SPZ50)	C724	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C708	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (SPZ70)	C725	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C708	1-112-245-21	ELECT 47uF 20%	35V (SPZ50)	C726	1-125-838-11	CERAMIC CHIP 2.2uF 10%	6.3V
C709	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (SPZ70)	C728	1-131-704-11	FILM 1uF 5%	50V
C709	1-112-245-21	ELECT 47uF 20%	35V (SPZ50)	C730	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C710	1-112-245-21	ELECT 47uF 20%	35V (SPZ50)	C731	1-104-658-91	ELECT 100uF 20%	10V
C710	1-162-923-11	CERAMIC CHIP 47PF 5%	50V (SPZ70)	C732	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C711	1-126-934-11	ELECT 220uF 20%	16V	C733	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C712	1-100-717-91	CERAMIC CHIP 1uF	16V (SPZ70)	C734	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C712	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (SPZ50)	C735	1-126-964-11	ELECT 10uF 20%	50V
C713	1-100-756-91	CERAMIC CHIP 0.047uF	50V	C736	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
C714	1-125-898-11	CERAMIC CHIP 0.22uF 10%	50V (SPZ70)	C737	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C714	1-164-739-11	CERAMIC CHIP 560PF 5%	50V (SPZ50)	C738	1-126-964-11	ELECT 10uF 20%	50V
C715	1-125-898-11	CERAMIC CHIP 0.22uF 10%	50V (SPZ70)	C739	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
C715	1-164-739-11	CERAMIC CHIP 560PF 5%	50V (SPZ50)	C740	1-126-923-91	ELECT 220uF 20%	10V
C716	1-125-898-11	CERAMIC CHIP 0.22uF 10%	50V (SPZ70)	C741	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C716	1-164-739-11	CERAMIC CHIP 560PF 5%	50V (SPZ50)	C742	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
				C743	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
				C744	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C745	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
				C746	1-107-726-91	CERAMIC CHIP 0.01uF 10%	16V
				C747	1-104-658-91	ELECT 100uF 20%	10V
				C748	1-126-964-11	ELECT 10uF 20%	50V
				C749	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C751	1-126-961-11	ELECT 2.2uF 20%	50V
				C752	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C753	1-104-658-91	ELECT 100uF 20%	10V
				C754	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
				C756	1-100-717-91	CERAMIC CHIP 1uF	16V (SPZ70)
				C756	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V (SPZ50)

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C757	1-126-964-11	ELECT	10uF 20% 50V (SPZ50)	C793	1-126-964-11	ELECT	10uF 20% 50V (SPZ70)
C757	1-162-923-11	CERAMIC CHIP	47PF 5% 50V (SPZ70)	C794	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C758	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C795	1-126-964-11	ELECT	10uF 20% 50V (SPZ70)
C759	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (SPZ70)	C796	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C760	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (SPZ50)	C797	1-107-726-91	CERAMIC CHIP	0.01uF 10% 16V
C761	1-107-726-91	CERAMIC CHIP	0.01uF 10% 16V	C798	1-126-964-11	ELECT	10uF 20% 50V
C762	1-100-717-11	CERAMIC CHIP	1uF 16V (SPZ70)	C799	1-107-726-91	CERAMIC CHIP	0.01uF 10% 16V
C762	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (SPZ50)	C804	1-163-205-00	CERAMIC CHIP	0.001uF 10% 50V
C763	1-100-756-91	CERAMIC CHIP	0.047uF 50V	C806	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C764	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V (SPZ50)	C831	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C764	1-125-898-11	CERAMIC CHIP	0.22uF 10% 50V (SPZ70)	C832	1-107-726-91	CERAMIC CHIP	0.01uF 10% 16V
C765	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V (SPZ50)	C844	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C765	1-125-898-11	CERAMIC CHIP	0.22uF 10% 50V (SPZ70)	C845	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C766	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V (SPZ50)	C846	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C766	1-125-898-11	CERAMIC CHIP	0.22uF 10% 50V (SPZ70)	C847	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C767	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V (SPZ50)	< CONNECTOR >			
C767	1-125-898-11	CERAMIC CHIP	0.22uF 10% 50V (SPZ70)	CN700	1-784-780-11	CONNECTOR, FFC 19P	
C768	1-100-756-91	CERAMIC CHIP	0.047uF 50V	< DIODE >			
C769	1-100-924-21	ELECT	2200uF 20% 35V (SPZ70)	D701	8-719-081-97	DIODE MMDL914T1	
C769	1-137-806-21	ELECT	1800uF 20% 35V (SPZ50)	D702	8-719-081-97	DIODE MMDL914T1 (SPZ50)	
C770	1-131-704-11	FILM	1uF 5% 50V	D705	6-500-260-01	DIODE P6SMB39AT3 (SPZ70)	
C772	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	D706	6-500-260-01	DIODE P6SMB39AT3 (SPZ70)	
C773	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	D713	6-501-159-01	DIODE UDZW-TE17-2.4B (SPZ70)	
C774	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	D751	8-719-081-97	DIODE MMDL914T1 (SPZ70)	
C775	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	D755	6-500-260-01	DIODE P6SMB39AT3 (SPZ70)	
C777	1-131-704-11	FILM	1uF 5% 50V	D756	6-500-260-01	DIODE P6SMB39AT3 (SPZ70)	
C778	1-125-838-11	CERAMIC CHIP	2.2uF 10% 6.3V	< EARTH TERMINAL >			
C779	1-107-726-91	CERAMIC CHIP	0.01uF 10% 16V	EP701	1-537-771-21	TERMINAL BOARD, GROUND	
C780	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	EP702	1-537-771-21	TERMINAL BOARD, GROUND	
C781	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (SPZ70)	EP703	1-537-771-21	TERMINAL BOARD, GROUND	
C781	1-126-964-11	ELECT	10uF 20% 50V (SPZ50)	< IC >			
C782	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V (SPZ70)	IC701	6-707-608-01	IC PCM1803DBR	
C783	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	IC702	6-708-637-01	IC NJM2871BF33-TE2	
C784	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	IC703	6-701-261-01	IC MC74VHC74DTR2	
C785	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	IC704	6-707-956-01	IC NJM2871BF18-TE2	
C786	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	IC705	6-705-979-01	IC CXD9788AR	
C787	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	IC707	6-704-802-01	IC CXD9774M (SPZ70)	
C788	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	IC707	6-707-629-01	IC CXD9845M (SPZ50)	
C790	1-126-933-11	ELECT	100uF 20% 16V (SPZ50)	IC708	6-704-802-01	IC CXD9774M (SPZ70)	
C791	1-136-497-81	FILM	0.1uF 5% 50V	IC709	6-701-189-01	IC MC74VHC1GU04DFT1	
				< COIL >			
				L701	1-469-967-21	INDUCTOR 10uH	
				L702	1-469-967-21	INDUCTOR 10uH	
				L703	1-469-967-21	INDUCTOR 10uH	
				L704	1-469-967-21	INDUCTOR 10uH	
				L705	1-412-939-11	INDUCTOR 1uH	
				L708	1-456-813-11	COIL, AIR-CORE (SPZ70)	
				L709	1-456-813-11	COIL, AIR-CORE (SPZ70)	
				L710	1-456-680-11	COIL, CHOKES 10uH	
				L711	1-456-680-11	COIL, CHOKES 10uH	
				L758	1-456-813-11	COIL, AIR-CORE (SPZ70)	

HCD-SPZ50/SPZ70

AMP

Ref. No.	Part No.	Description	Remark		
L759	1-456-813-11	COIL, AIR-CORE (SPZ70)			
L760	1-456-680-11	COIL, CHOKE 10uH			
L761	1-456-680-11	COIL, CHOKE 10uH			
< TRANSISTOR >					
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q702	8-729-600-22	TRANSISTOR 2SA1235-F			
Q703	8-729-600-22	TRANSISTOR 2SA1235-F			
Q752	8-729-600-22	TRANSISTOR 2SA1235-F			
Q753	8-729-600-22	TRANSISTOR 2SA1235-F			
< RESISTOR >					
R701	1-216-809-11	METAL CHIP 100 5%	1/10W		
R704	1-216-817-11	METAL CHIP 470 5%	1/10W (SPZ70)		
R706	1-216-809-11	METAL CHIP 100 5%	1/10W		
R707	1-216-798-11	METAL CHIP 12 5%	1/10W (SPZ50)		
R708	1-216-798-11	METAL CHIP 12 5%	1/10W (SPZ50)		
R708	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R709	1-216-798-11	METAL CHIP 12 5%	1/10W (SPZ50)		
R709	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R710	1-216-798-11	METAL CHIP 12 5%	1/10W (SPZ50)		
R711	1-216-809-11	METAL CHIP 100 5%	1/10W		
R712	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R713	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R713	1-216-837-11	METAL CHIP 22K 5%	1/10W (SPZ70)		
R714	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R714	1-216-816-11	METAL CHIP 390 5%	1/10W (SPZ70)		
R715	1-216-821-11	METAL CHIP 1K 5%	1/10W (SPZ70)		
R716	1-216-821-11	METAL CHIP 1K 5%	1/10W (SPZ70)		
R717	1-216-821-11	METAL CHIP 1K 5%	1/10W (SPZ70)		
R718	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R719	1-220-942-11	METAL CHIP 3.3 1%	1/4W		
R720	1-220-942-11	METAL CHIP 3.3 1%	1/4W		
R721	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R722	1-216-841-11	METAL CHIP 47K 5%	1/10W		
R723	1-216-821-11	METAL CHIP 1K 5%	1/10W (SPZ70)		
R724	1-216-793-11	METAL CHIP 4.7 5%	1/10W		
R725	1-216-793-11	METAL CHIP 4.7 5%	1/10W		
R726	1-216-849-11	METAL CHIP 220K 5%	1/10W		
R727	1-216-845-11	METAL CHIP 100K 5%	1/10W		
R728	1-216-849-11	METAL CHIP 220K 5%	1/10W		
R729	1-216-821-11	METAL CHIP 1K 5%	1/10W		
R730	1-216-809-11	METAL CHIP 100 5%	1/10W		
R731	1-216-817-11	METAL CHIP 470 5%	1/10W		
R733	1-216-817-11	METAL CHIP 470 5%	1/10W		

Ref. No.	Part No.	Description	Remark		
R734	1-216-797-11	METAL CHIP 10 5%	1/10W (SPZ70)		
R735	1-216-797-11	METAL CHIP 10 5%	1/10W (SPZ70)		
R736	1-216-797-11	METAL CHIP 10 5%	1/10W (SPZ70)		
R737	1-216-797-11	METAL CHIP 10 5%	1/10W (SPZ70)		
R738	1-216-821-11	METAL CHIP 1K 5%	1/10W (SPZ70)		
R739	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R740	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R741	1-216-809-11	METAL CHIP 100 5%	1/10W		
R742	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R743	1-216-809-11	METAL CHIP 100 5%	1/10W		
R744	1-216-864-11	SHORT CHIP 0			
R745	1-216-809-11	METAL CHIP 100 5%	1/10W		
R746	1-216-809-11	METAL CHIP 100 5%	1/10W		
R747	1-216-817-11	METAL CHIP 470 5%	1/10W		
R748	1-216-841-11	METAL CHIP 47K 5%	1/10W		
R749	1-216-864-11	SHORT CHIP 0			
R750	1-216-841-11	METAL CHIP 47K 5%	1/10W		
R751	1-216-809-11	METAL CHIP 100 5%	1/10W		
R752	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R752	1-216-837-11	METAL CHIP 22K 5%	1/10W (SPZ70)		
R754	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R754	1-216-816-11	METAL CHIP 390 5%	1/10W (SPZ70)		
R755	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ50)		
R756	1-216-809-11	METAL CHIP 100 5%	1/10W		
R757	1-220-942-11	METAL CHIP 3.3 1%	1/4W (SPZ50)		
R758	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R759	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R759	1-216-835-11	METAL CHIP 15K 5%	1/10W (SPZ50)		
R761	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R762	1-216-809-11	METAL CHIP 100 5%	1/10W (SPZ70)		
R764	1-216-817-11	METAL CHIP 470 5%	1/10W (SPZ70)		
R765	1-216-864-11	SHORT CHIP 0			
R768	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R769	1-220-942-11	METAL CHIP 3.3 1%	1/4W		
R770	1-220-942-11	METAL CHIP 3.3 1%	1/4W		
R771	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R772	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R773	1-216-833-11	METAL CHIP 10K 5%	1/10W		
R774	1-216-793-11	METAL CHIP 4.7 5%	1/10W		
R775	1-216-793-11	METAL CHIP 4.7 5%	1/10W		
R776	1-216-849-11	METAL CHIP 220K 5%	1/10W		
R777	1-216-845-11	METAL CHIP 100K 5%	1/10W		
R778	1-216-849-11	METAL CHIP 220K 5%	1/10W		

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark			
R780	1-216-801-11	METAL CHIP	22	5%	1/10W	C223	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R781	1-216-809-11	METAL CHIP	100	5%	1/10W	C224	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R782	1-216-857-11	METAL CHIP	1M	5%	1/10W	C226	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
R783	1-216-801-11	METAL CHIP	22	5%	1/10W	C227	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
						C230	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
R784	1-216-809-11	METAL CHIP	100	5%	1/10W							
R785	1-216-809-11	METAL CHIP	100	5%	1/10W	C232	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
R786	1-216-809-11	METAL CHIP	100	5%	1/10W	C251	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
R787	1-216-809-11	METAL CHIP	100	5%	1/10W	C252	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
R788	1-216-809-11	METAL CHIP	100	5%	1/10W	C253	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
						C254	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
R789	1-216-809-11	METAL CHIP	100	5%	1/10W							
R790	1-216-809-11	METAL CHIP	100	5%	1/10W	C256	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R792	1-216-864-11	SHORT CHIP	0			C257	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R793	1-216-841-11	METAL CHIP	47K	5%	1/10W	C258	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	
R794	1-216-864-11	SHORT CHIP	0 (SPZ70)			C260	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	
						C261	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
R795	1-216-864-11	SHORT CHIP	0 (SPZ70)									
R800	1-216-821-11	METAL CHIP	1K	5%	1/10W (SPZ70)	C264	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
						C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
R801	1-216-821-11	METAL CHIP	1K	5%	1/10W (SPZ70)	C266	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	
						C267	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	
						C268	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	
< VIBRATOR >												
X702	1-795-660-21	QUARTZ CRYSTAL UNIT (49.152MHz)				C271	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
*****						C272	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
						C273	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
A-1134-279-A	CD BOARD, COMPLETE					C274	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
		*****					C275	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
		< CAPACITOR >										
C101	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C276	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
C102	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C277	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
C103	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C291	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C104	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C292	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	
C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C301	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C107	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C303	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V	
C108	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C304	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
C109	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C321	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C110	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C322	1-165-908-11	CERAMIC CHIP	1uF	10%	10V	
C111	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	C323	1-128-995-21	ELECT CHIP	100uF	20%	10V	
C112	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C401	1-128-394-11	ELECT CHIP	220uF	20%	10V	
C113	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	C404	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C201	1-128-995-21	ELECT CHIP	100uF	20%	10V	C405	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C203	1-128-995-21	ELECT CHIP	100uF	20%	10V	C424	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C204	1-164-360-11	CERAMIC CHIP	0.1uF		16V			< CONNECTOR >				
C205	1-164-360-11	CERAMIC CHIP	0.1uF		16V	CN102	1-770-706-21	CONNECTOR, FFC/FPC 23P				
C206	1-164-360-11	CERAMIC CHIP	0.1uF		16V	CN301	1-770-425-51	CONNECTOR, FFC/FPC 16P				
C207	1-128-995-21	ELECT CHIP	100uF	20%	10V							
C208	1-164-360-11	CERAMIC CHIP	0.1uF		16V			< IC >				
C210	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC201	8-753-246-30	IC CXD3014A-201R				
C213	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC203	6-709-050-01	IC BH18LB1WG-TR				
C214	1-164-360-11	CERAMIC CHIP	0.1uF		16V	IC402	6-705-808-01	IC BA5947FM-E2				
C215	1-164-360-11	CERAMIC CHIP	0.1uF		16V							
C217	1-164-360-11	CERAMIC CHIP	0.1uF		16V			< TRANSISTOR >				
C218	1-164-360-11	CERAMIC CHIP	0.1uF		16V	Q321	6-551-120-01	TRANSISTOR	2SA2119K			
C219	1-164-360-11	CERAMIC CHIP	0.1uF		16V			< RESISTOR/FERRITE BEAD >				
C220	1-164-360-11	CERAMIC CHIP	0.1uF		16V							
C221	1-164-360-11	CERAMIC CHIP	0.1uF		16V							
C222	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R101	1-216-809-11	METAL CHIP	100	5%	1/10W	
						R102	1-216-809-11	METAL CHIP	100	5%	1/10W	

HCD-SPZ50/SPZ70

CD FL

Ref. No.	Part No.	Description	Remark		
R103	1-216-809-11	METAL CHIP	100	5%	1/10W
R104	1-216-809-11	METAL CHIP	100	5%	1/10W
R105	1-216-809-11	METAL CHIP	100	5%	1/10W
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-216-809-11	METAL CHIP	100	5%	1/10W
R109	1-216-809-11	METAL CHIP	100	5%	1/10W
R110	1-216-809-11	METAL CHIP	100	5%	1/10W
R111	1-216-809-11	METAL CHIP	100	5%	1/10W
R112	1-216-809-11	METAL CHIP	100	5%	1/10W
R113	1-216-809-11	METAL CHIP	100	5%	1/10W
R201	1-216-295-00	SHORT CHIP	0		
R202	1-216-295-00	SHORT CHIP	0		
R203	1-500-445-21	FERRITE, EMI (SMD) (2012)			
R207	1-216-295-00	SHORT CHIP	0		
R250	1-216-857-11	METAL CHIP	1M	5%	1/10W
R252	1-216-833-11	METAL CHIP	10K	5%	1/10W
R253	1-216-821-11	METAL CHIP	1K	5%	1/10W
R254	1-216-833-11	METAL CHIP	10K	5%	1/10W
R255	1-216-821-11	METAL CHIP	1K	5%	1/10W
R256	1-216-837-11	METAL CHIP	22K	5%	1/10W
R257	1-216-845-11	METAL CHIP	100K	5%	1/10W
R258	1-216-849-11	METAL CHIP	220K	5%	1/10W
R260	1-216-864-11	SHORT CHIP	0		
R265	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R266	1-216-821-11	METAL CHIP	1K	5%	1/10W
R267	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R268	1-216-833-11	METAL CHIP	10K	5%	1/10W
R270	1-216-821-11	METAL CHIP	1K	5%	1/10W
R271	1-216-857-11	METAL CHIP	1M	5%	1/10W
R275	1-216-809-11	METAL CHIP	100	5%	1/10W
R276	1-216-841-11	METAL CHIP	47K	5%	1/10W
R277	1-216-809-11	METAL CHIP	100	5%	1/10W
R278	1-216-809-11	METAL CHIP	100	5%	1/10W
R280	1-216-864-11	SHORT CHIP	0		
R291	1-216-809-11	METAL CHIP	100	5%	1/10W
R292	1-216-809-11	METAL CHIP	100	5%	1/10W
R321	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R322	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R323	1-216-864-11	SHORT CHIP	0		
R324	1-216-845-11	METAL CHIP	100K	5%	1/10W
R401	1-216-295-00	SHORT CHIP	0		
R421	1-216-864-11	SHORT CHIP	0		
R423	1-216-833-11	METAL CHIP	10K	5%	1/10W
R451	1-216-837-11	METAL CHIP	22K	5%	1/10W
R452	1-216-833-11	METAL CHIP	10K	5%	1/10W
< VIBRATOR >					
X201	1-795-101-21	VIBRATOR, CERAMIC (16.9344MHz)			

A-1166-879-A	FL BOARD, COMPLETE	*****			
2-659-053-01	HOLDER (FL)	< CAPACITOR >			
C903	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C907	1-162-971-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description	Remark		
C908	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C909	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C912	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C913	1-126-965-11	ELECT	22uF	20%	50V
C921	1-126-965-11	ELECT	22uF	20%	50V
C922	1-136-153-00	FILM	0.01uF	5%	50V
C925	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C926	1-126-966-11	ELECT	33uF	20%	50V
C927	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C931	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C932	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C933	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C934	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C935	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C936	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C937	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C938	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C939	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C940	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C941	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C942	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C944	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
< DIODE >					
D921	6-500-848-01	DIODE MC2840-T112-1			
D922	6-500-848-01	DIODE MC2840-T112-1			
D925	8-719-069-56	DIODE UDZSTE-176.2B			
< FLUORESCENT INDICATOR >					
FL901	1-519-874-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC901	8-759-643-83	IC uPD16315GB-3BS			
< COIL >					
L921	1-410-671-31	INDUCTOR	47uH		
< TRANSISTOR >					
Q921	8-729-055-50	TRANSISTOR	2SC4357-T11-1E		
Q922	8-729-055-50	TRANSISTOR	2SC4357-T11-1E		
< RESISTOR >					
R901	1-216-809-11	METAL CHIP	100	5%	1/10W
R902	1-216-809-11	METAL CHIP	100	5%	1/10W
R905	1-216-845-11	METAL CHIP	100K	5%	1/10W
R906	1-216-853-11	METAL CHIP	470K	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	1-216-845-11	METAL CHIP	100K	5%	1/10W
R921	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R922	1-216-833-11	METAL CHIP	10K	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
R925	1-216-864-11	SHORT CHIP	0		
R926	1-216-864-11	SHORT CHIP	0		

Ref. No.	Part No.	Description	Remark
< TRANSFORMER >			
T921	1-443-953-11	TRANSFORMER, DC-DC CONVERTER	

A-1166-881-A	HP A-IN BOARD, COMPLETE		

< CAPACITOR >			
C982	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C984	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C986	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C987	1-162-962-11	CERAMIC CHIP	470PF 10% 50V
C989	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C990	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C997	1-162-962-11	CERAMIC CHIP	470PF 10% 50V
C999	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
< JUMPER RESISTOR >			
FB981	1-216-864-11	SHORT CHIP	0
FB982	1-216-864-11	SHORT CHIP	0
FB983	1-216-864-11	SHORT CHIP	0
< JACK >			
J981	1-815-603-11	JACK (AUDIO IN)	
J982	1-815-603-11	JACK (PHONES)	
< RESISTOR >			
R928	1-216-821-11	METAL CHIP	1K 5% 1/10W
R929	1-216-821-11	METAL CHIP	1K 5% 1/10W
R930	1-216-821-11	METAL CHIP	1K 5% 1/10W
R931	1-216-821-11	METAL CHIP	1K 5% 1/10W
R932	1-216-845-11	METAL CHIP	100K 5% 1/10W
R936	1-216-817-11	METAL CHIP	470 5% 1/10W
R937	1-216-813-11	METAL CHIP	220 5% 1/10W
R938	1-216-813-11	METAL CHIP	220 5% 1/10W
R939	1-216-809-11	METAL CHIP	100 5% 1/10W
R940	1-216-821-11	METAL CHIP	1K 5% 1/10W
R941	1-216-821-11	METAL CHIP	1K 5% 1/10W
R942	1-216-845-11	METAL CHIP	100K 5% 1/10W
< SWITCH >			
S981	1-762-875-21	SWITCH, KEYBOARD (CD SYNCHRO)	
S982	1-762-875-21	SWITCH, KEYBOARD (● PAUSE/START)	

A-1166-883-A	MAIN BOARD, COMPLETE (SPZ70: AEP, UK)		
A-1166-993-A	MAIN BOARD, COMPLETE (SPZ70: RU)		
A-1167-004-A	MAIN BOARD, COMPLETE (SPZ50: AEP, UK)		
A-1167-017-A	MAIN BOARD, COMPLETE (SPZ50: RU)		
A-1171-390-A	MAIN BOARD, COMPLETE		
	(SPZ70: E2, E51, MX, AR)		
A-1171-419-A	MAIN BOARD, COMPLETE (SPZ50: SP, KR, AUS)		

7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		

Note: Refer to SUPPLEMENT-1 for the HP A-IN and MAIN boards of HCD-SPZ70 Korean model.

Ref. No.	Part No.	Description	Remark
< CAPACITOR >			
C1201	1-126-943-11	ELECT 2200uF	20% 25V
C1202	1-100-566-91	CERAMIC CHIP 0.1uF	10% 25V
C1203	1-126-935-11	ELECT 470uF	20% 16V
C1204	1-100-566-91	CERAMIC CHIP 0.1uF	10% 25V
C1205	1-126-925-91	ELECT 470uF	20% 10V
C1206	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C1207	1-126-925-91	ELECT 470uF	20% 10V
C1208	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C1209	1-126-923-91	ELECT 220uF	20% 10V
C1211	1-100-566-91	CERAMIC CHIP 0.1uF	10% 25V
C1212	1-126-925-91	ELECT 470uF	20% 10V
C1213	1-107-726-91	CERAMIC CHIP 0.01uF	10% 16V
C1214	1-126-925-91	ELECT 470uF	20% 10V
C1217	1-107-726-91	CERAMIC CHIP 0.01uF	10% 16V
C1218	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1220	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1301	1-126-916-11	ELECT 1000uF	20% 6.3V
C1310	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C1311	1-162-919-11	CERAMIC CHIP 22PF	5% 50V
C1312	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1316	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1362	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1401	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1402	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1403	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C1404	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C1501	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1502	1-126-923-91	ELECT 220uF	20% 10V
C1503	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1504	1-126-923-91	ELECT 220uF	20% 10V
C1505	1-126-964-11	ELECT 10uF	20% 50V
C1506	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1507	1-126-933-11	ELECT 100uF	20% 16V
C1508	1-126-964-11	ELECT 10uF	20% 50V
C1509	1-126-960-11	ELECT 1uF	20% 50V
C1510	1-126-960-11	ELECT 1uF	20% 50V
C1511	1-126-964-11	ELECT 10uF	20% 50V
C1512	1-126-960-11	ELECT 1uF	20% 50V
C1513	1-126-960-11	ELECT 1uF	20% 50V
C1515	1-126-964-11	ELECT 10uF	20% 50V
C1517	1-126-923-91	ELECT 220uF	20% 10V
C1518	1-130-495-00	MYLAR 0.1uF	5% 50V
C1519	1-130-495-00	MYLAR 0.1uF	5% 50V
C1520	1-130-495-00	MYLAR 0.1uF	5% 50V
C1521	1-130-495-00	MYLAR 0.1uF	5% 50V
C1522	1-130-475-00	MYLAR 0.0022uF	5% 50V
C1523	1-130-475-00	MYLAR 0.0022uF	5% 50V
C1526	1-126-960-11	ELECT 1uF	20% 50V
C1531	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C1532	1-126-933-11	ELECT 100uF	20% 16V
C1550	1-126-934-11	ELECT 220uF	20% 16V
C1552	1-126-933-11	ELECT 100uF	20% 16V
C1555	1-126-964-11	ELECT 10uF	20% 50V
C1558	1-126-964-11	ELECT 10uF	20% 50V
C1559	1-126-960-11	ELECT 1uF	20% 50V
C1560	1-126-960-11	ELECT 1uF	20% 50V

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the MAIN board.

HCD-SPZ50/SPZ70

Ver. 1.3

MAIN

Ref. No.	Part No.	Description	Remark		
C1561	1-126-964-11	ELECT	10uF	20%	50V
C1562	1-126-960-11	ELECT	1uF	20%	50V
C1563	1-126-960-11	ELECT	1uF	20%	50V
C1565	1-126-964-11	ELECT	10uF	20%	50V
C1567	1-126-923-91	ELECT	220uF	20%	10V
C1576	1-126-960-11	ELECT	1uF	20%	50V
C1595	1-126-960-11	ELECT	1uF	20%	50V
C1596	1-126-960-11	ELECT	1uF	20%	50V
C1602	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1603	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1613	1-126-923-91	ELECT	220uF	20%	10V
C1614	1-126-964-11	ELECT	10uF	20%	50V
C1615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1616	1-126-923-91	ELECT	220uF	20%	10V
C1628	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1629	1-126-923-91	ELECT	220uF	20%	10V
C1635	1-126-923-91	ELECT	220uF	20%	10V
C1636	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C1637	1-126-933-11	ELECT	100uF	20%	16V
C1664	1-126-964-11	ELECT	10uF	20%	50V
C1665	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
< CONNECTOR >					
CN1203	1-815-443-11	PIN, CONNECTOR (PWB) 2P			
CN1302	1-784-780-11	CONNECTOR, FFC 19P			
CN1303	1-568-830-11	CONNECTOR, FFC 11P			
CN1304	1-568-826-11	CONNECTOR, FFC 7P			
CN1305	1-568-830-11	CONNECTOR, FFC 11P (SPZ50)			
CN1305	1-784-778-11	CONNECTOR, FFC 17P (SPZ70)			
CN1306	1-568-828-11	CONNECTOR, FFC 9P			
CN1307	1-815-450-11	PIN, CONNECTOR (PWB) 9P			
CN1308	1-784-774-11	CONNECTOR, FFC 13P			
CN1309	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P			
CN1310	1-568-828-11	CONNECTOR, FFC 9P (SPZ50: RU, SP, KR, AUS/ SPZ70: RU, E2, E51, MX, AR)			
CN1310	1-568-830-11	CONNECTOR, FFC 11P (SPZ50: AEP, UK/SPZ750: AEP, UK)			
< DIODE >					
D1201	8-719-000-07	DIODE MC2836			
D1202	8-719-000-07	DIODE MC2836			
D1203	6-501-193-01	DIODE 1SS355WTE-17			
D1204	8-719-000-07	DIODE MC2836			
D1206	8-719-063-79	DIODE 1N4002B			
D1207	8-719-063-79	DIODE 1N4002B			
D1211	8-719-063-79	DIODE 1N4002B			
D1212	8-719-063-79	DIODE 1N4002B			
D1303	8-719-000-07	DIODE MC2836			
D1305	6-501-193-01	DIODE 1SS355WTE-17			
D1601	6-501-193-01	DIODE 1SS355WTE-17			
D1602	8-719-977-28	DIODE DTZ10B			
< EARTH TERMINAL >					
EP1201	1-537-771-21	TERMINAL BOARD, GROUND			
EP1202	1-537-771-21	TERMINAL BOARD, GROUND			

Ref. No.	Part No.	Description	Remark		
< IC/TRANSISTOR >					
IC1201	8-759-647-17	IC uPC2912HF			
IC1202	8-759-231-59	IC TA7809S			
IC1203	6-703-546-01	IC TA7804LS			
IC1204	6-707-282-01	IC MM1615ANLE			
IC1205	6-703-548-01	IC TA7807LS			
IC1301	6-806-302-01	IC M30622MEP-A36FPU0 (TYPE A) (SPZ50: AEP, UK, RU/SPZ70: AEP, UK, RU)			
IC1301	6-806-618-01	IC M30622MEP-A38FPU0 (TYPE B)			
IC1301	6-807-018-01	IC M30622MEP-B09FPU0 (TYPE C)			
IC1302	6-701-680-01	IC PST3629NR			
IC1501	6-701-824-11	IC BD3870FS-E2			
IC1502	8-759-656-83	IC NJM4580MD- (TE2)			
IC1503	6-551-484-01	TRANSISTOR RT3C55M-TP-1B			
IC1504	6-551-484-01	TRANSISTOR RT3C55M-TP-1B			
IC1505	8-759-430-37	IC MC14052BDTR2			
< JUMPER RESISTOR >					
JR1001	1-216-864-11	SHORT CHIP	0		
JR1003	1-216-864-11	SHORT CHIP	0		
JR1005	1-216-864-11	SHORT CHIP	0		
JR1008	1-216-864-11	SHORT CHIP	0		
JR1009	1-216-864-11	SHORT CHIP	0		
< TRANSISTOR >					
Q1301	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1501	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1502	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1503	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1504	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1505	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1508	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1509	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1510	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1602	8-729-040-76	TRANSISTOR	KTA1273-Y-AT		
Q1603	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1604	8-729-040-76	TRANSISTOR	KTA1273-Y-AT		
Q1605	8-729-027-43	TRANSISTOR	DTC114EKA-T146		
Q1606	8-729-600-22	TRANSISTOR	2SA1235-F		
Q1607	8-729-040-76	TRANSISTOR	KTA1273-Y-AT		
Q1608	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q1609	8-729-600-22	TRANSISTOR	2SA1235-F		
Q1610	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF		
Q1611	8-729-047-62	TRANSISTOR	2SC3440-T12-1F		
Q1612	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF		
Q1613	8-729-047-62	TRANSISTOR	2SC3440-T12-1F		
Q1614	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF		
Q1615	8-729-047-62	TRANSISTOR	2SC3440-T12-1F		
Q1616	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF		
Q1617	8-729-047-62	TRANSISTOR	2SC3440-T12-1F		
Q1618	8-729-036-89	TRANSISTOR	KTC3198GR-AT		
< RESISTOR >					
R1201	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1202	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1203	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1301	1-216-809-11	METAL CHIP	100	5%	1/10W
R1302	1-216-809-11	METAL CHIP	100	5%	1/10W

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the IC1301.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R1303	1-216-809-11	METAL CHIP	100 5% 1/10W	R1382	1-216-809-11	METAL CHIP	100 5% 1/10W (SPZ70)
R1304	1-216-809-11	METAL CHIP	100 5% 1/10W	R1383	1-216-809-11	METAL CHIP	100 5% 1/10W (SPZ70)
R1305	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1306	1-216-809-11	METAL CHIP	100 5% 1/10W	R1388	1-216-809-11	METAL CHIP	100 5% 1/10W
R1307	1-216-809-11	METAL CHIP	100 5% 1/10W	R1389	1-216-809-11	METAL CHIP	100 5% 1/10W
				R1391	1-216-809-11	METAL CHIP	100 5% 1/10W
R1309	1-216-833-11	METAL CHIP	10K 5% 1/10W	R1392	1-216-809-11	METAL CHIP	100 5% 1/10W
R1311	1-216-849-11	METAL CHIP	220K 5% 1/10W	R1393	1-216-809-11	METAL CHIP	100 5% 1/10W
R1313	1-216-864-11	SHORT CHIP	0				
R1316	1-216-864-11	SHORT CHIP	0	R1394	1-216-809-11	METAL CHIP	100 5% 1/10W
R1318	1-216-809-11	METAL CHIP	100 5% 1/10W	R1395	1-216-809-11	METAL CHIP	100 5% 1/10W
			(SPZ50: AEP, UK/SPZ70: AEP, UK)	R1397	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1319	1-216-809-11	METAL CHIP	100 5% 1/10W				(SPZ50: RU/SPZ70: RU, E2, E51, MX, AR)
R1320	1-216-841-11	METAL CHIP	47K 5% 1/10W	R1397	1-216-864-11	SHORT CHIP	0 (SPZ50: SP, KR, AUS)
R1321	1-216-809-11	METAL CHIP	100 5% 1/10W	R1400	1-216-809-11	METAL CHIP	100 5% 1/10W
			(SPZ50: AEP, UK/SPZ70: AEP, UK)				
R1323	1-216-809-11	METAL CHIP	100 5% 1/10W	R1401	1-216-841-11	METAL CHIP	47K 5% 1/10W
R1324	1-216-809-11	METAL CHIP	100 5% 1/10W	R1402	1-216-841-11	METAL CHIP	47K 5% 1/10W
				R1412	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1325	1-216-809-11	METAL CHIP	100 5% 1/10W	R1417	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1326	1-216-809-11	METAL CHIP	100 5% 1/10W	R1418	1-216-864-11	SHORT CHIP	0 (SPZ50: RU, SP, KR, AUS/ SPZ70:RU, E2, E51, MX, AR)
R1328	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1331	1-216-809-11	METAL CHIP	100 5% 1/10W				
			(SPZ70)	R1420	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1332	1-216-809-11	METAL CHIP	100 5% 1/10W	R1421	1-216-864-11	SHORT CHIP	0 (SPZ50: RU, SP, KR, AUS/ SPZ70:RU, E2, E51, MX, AR)
			(SPZ70)				
R1333	1-216-809-11	METAL CHIP	100 5% 1/10W	R1423	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1334	1-216-809-11	METAL CHIP	100 5% 1/10W	R1424	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1335	1-216-809-11	METAL CHIP	100 5% 1/10W	R1425	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1336	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1337	1-216-809-11	METAL CHIP	100 5% 1/10W	R1426	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R1428	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1343	1-216-809-11	METAL CHIP	100 5% 1/10W	R1429	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1344	1-216-809-11	METAL CHIP	100 5% 1/10W	R1430	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1345	1-216-809-11	METAL CHIP	100 5% 1/10W	R1431	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1346	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1347	1-216-809-11	METAL CHIP	100 5% 1/10W	R1432	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R1433	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1348	1-216-809-11	METAL CHIP	100 5% 1/10W	R1434	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1349	1-216-809-11	METAL CHIP	100 5% 1/10W	R1456	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1350	1-216-809-11	METAL CHIP	100 5% 1/10W	R1474	1-216-857-11	METAL CHIP	1M 5% 1/10W
R1352	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1353	1-216-809-11	METAL CHIP	100 5% 1/10W	R1482	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R1483	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1354	1-216-809-11	METAL CHIP	100 5% 1/10W	R1486	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1355	1-216-809-11	METAL CHIP	100 5% 1/10W	R1487	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1356	1-216-809-11	METAL CHIP	100 5% 1/10W	R1489	1-216-821-11	METAL CHIP	1K 5% 1/10W
R1357	1-216-809-11	METAL CHIP	100 5% 1/10W				
R1361	1-216-864-11	SHORT CHIP	0	R1491	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
				R1492	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
R1363	1-216-864-11	SHORT CHIP	0	R1493	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
R1366	1-216-809-11	METAL CHIP	100 5% 1/10W	R1497	1-216-813-11	METAL CHIP	220 5% 1/10W
R1367	1-216-809-11	METAL CHIP	100 5% 1/10W				(SPZ50: RU/SPZ70: RU)
R1368	1-216-809-11	METAL CHIP	100 5% 1/10W	R1497	1-216-817-11	METAL CHIP	470 5% 1/10W
R1369	1-216-809-11	METAL CHIP	100 5% 1/10W				(SPZ70: E2, E51, MX, AR)
R1370	1-216-809-11	METAL CHIP	100 5% 1/10W	R1497	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1371	1-216-809-11	METAL CHIP	100 5% 1/10W				(SPZ50: AEP, UK/SPZ70: AEP, UK)
R1372	1-216-809-11	METAL CHIP	100 5% 1/10W	R1500	1-216-833-11	METAL CHIP	10K 5% 1/10W
R1373	1-216-809-11	METAL CHIP	100 5% 1/10W	R1501	1-216-813-11	METAL CHIP	220 5% 1/10W
R1375	1-216-809-11	METAL CHIP	100 5% 1/10W	R1502	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R1503	1-216-821-11	METAL CHIP	1K 5% 1/10W
R1376	1-216-809-11	METAL CHIP	100 5% 1/10W	R1504	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R1377	1-216-809-11	METAL CHIP	100 5% 1/10W	R1505	1-216-837-11	METAL CHIP	22K 5% 1/10W
R1378	1-216-809-11	METAL CHIP	100 5% 1/10W	R1506	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R1507	1-216-805-11	METAL CHIP	47 5% 1/10W

HCD-SPZ50/SPZ70

MAIN

PANEL

Ref. No.	Part No.	Description	Remark		
R1509	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1510	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1511	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1512	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1513	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1514	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1515	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1516	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1518	1-216-849-11	METAL CHIP	220K	5%	1/10W
R1519	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1520	1-216-849-11	METAL CHIP	220K	5%	1/10W
R1521	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1522	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1523	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1550	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1551	1-216-813-11	METAL CHIP	220	5%	1/10W
R1552	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1553	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1554	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1555	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1556	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1557	1-216-805-11	METAL CHIP	47	5%	1/10W
R1558	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1559	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1560	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1565	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1572	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1573	1-216-845-11	METAL CHIP	100K	5%	1/10W
R1575	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1603	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1604	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1605	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1606	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1607	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1608	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1609	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1610	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1611	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1612	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1613	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1614	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1615	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R1616	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R1619	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1620	1-216-809-11	METAL CHIP	100	5%	1/10W
R1621	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1622	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1623	1-216-817-11	METAL CHIP	470	5%	1/10W
R1625	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1626	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1627	1-216-817-11	METAL CHIP	470	5%	1/10W
R1628	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1629	1-216-817-11	METAL CHIP	470	5%	1/10W
R1630	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1631	1-216-817-11	METAL CHIP	470	5%	1/10W
R1632	1-216-817-11	METAL CHIP	470	5%	1/10W
R1633	1-216-841-11	METAL CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R1634	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1635	1-216-817-11	METAL CHIP	470	5%	1/10W
R1636	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1637	1-216-817-11	METAL CHIP	470	5%	1/10W
R1638	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1639	1-216-817-11	METAL CHIP	470	5%	1/10W
R1640	1-216-817-11	METAL CHIP	470	5%	1/10W
R1641	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1642	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1643	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1644	1-216-817-11	METAL CHIP	470	5%	1/10W
R1645	1-216-809-11	METAL CHIP	100	5%	1/10W
R1646	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1648	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1674	1-216-864-11	SHORT CHIP	0		
R1692	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1693	1-216-833-11	METAL CHIP	10K	5%	1/10W
< VIBRATOR >					
X1301	1-760-252-12	VIBRATOR, CRYSTAL (32.768kHz)			
X1302	1-760-489-11	VIBRATOR, CERAMIC (5MHz)			

	A-1166-880-A	PANEL BOARD, COMPLETE (SPZ70)			
	A-1167-002-A	PANEL BOARD, COMPLETE (SPZ50)			

< CAPACITOR >					
C955	1-126-947-11	ELECT	47uF	20%	35V
C956	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C957	1-164-156-11	CERAMIC CHIP	0.1uF		(SPZ70)
C958	1-164-156-11	CERAMIC CHIP	0.1uF		(SPZ70)
C959	1-164-156-11	CERAMIC CHIP	0.1uF		25V
					(SPZ70)
C960	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C961	1-164-156-11	CERAMIC CHIP	0.1uF		25V
< LED >					
D951	8-719-063-93	LED	SLR325VC-N-T32 (STANDBY)		
D952	8-719-063-91	LED	SLR325DC-P-T32 (DSGX)		
D953	8-719-063-91	LED	SLR325DC-P-T32 (SOURCE DIRECT)		
(SPZ70)					
< IC >					
IC951	6-600-349-21	IC	NJL23H400A		
< TRANSISTOR >					
Q951	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q952	8-729-600-22	TRANSISTOR	2SA1235-F		
< RESISTOR >					
R944	1-216-833-11	METAL CHIP	10K	5%	1/10W
R945	1-216-833-11	METAL CHIP	10K	5%	1/10W
R946	1-216-833-11	METAL CHIP	10K	5%	1/10W
R947	1-216-809-11	METAL CHIP	100	5%	1/10W
R948	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R949	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	S953	1-762-875-21	SWITCH, KEYBOARD (CD ►)			
R950	1-216-821-11	METAL CHIP	1K	5%	1/10W	S954	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
R951	1-216-833-11	METAL CHIP	10K	5%	1/10W	S955	1-762-875-21	SWITCH, KEYBOARD (FUNCTION)			
R952	1-216-813-11	METAL CHIP	220	5%	1/10W	S956	1-762-875-21	SWITCH, KEYBOARD (DSGX)			
R953	1-216-813-11	METAL CHIP	220	5%	1/10W	S957	1-762-875-21	SWITCH, KEYBOARD (EQ) (SPZ50)			
						S957	1-762-875-21	SWITCH, KEYBOARD (SOURCE DIRECT)	(SPZ70)		
R954	1-216-813-11	METAL CHIP	220	5%	1/10W	S958	1-762-875-21	SWITCH, KEYBOARD (EQ LEVEL -) (SPZ50)			
R955	1-216-813-11	METAL CHIP	220	5%	1/10W	S959	1-762-875-21	SWITCH, KEYBOARD (EQ LEVEL +) (SPZ50)			
R956	1-216-817-11	METAL CHIP	470	5%	1/10W						
R957	1-216-817-11	METAL CHIP	470	5%	1/10W	S961	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)			
R958	1-216-813-11	METAL CHIP	220	5%	1/10W	S962	1-762-875-21	SWITCH, KEYBOARD (■, CANCEL)			
R959	1-216-813-11	METAL CHIP	220	5%	1/10W	S963	1-762-875-21	SWITCH, KEYBOARD (►► ►►►, TUNING +)			
R960	1-216-809-11	METAL CHIP	100	5%	1/10W	S964	1-762-875-21	SWITCH, KEYBOARD (◀◀ ◀◀, TUNING -)			
R961	1-216-821-11	METAL CHIP	1K	5%	1/10W	S965	1-762-875-21	SWITCH, KEYBOARD (SELECT FOLDER +)			
R962	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R963	1-216-821-11	METAL CHIP	1K	5%	1/10W	S966	1-762-875-21	SWITCH, KEYBOARD (SELECT FOLDER -)			
						S968	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
R964	1-216-821-11	METAL CHIP	1K	5%	1/10W	S969	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
R965	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	S970	1-762-875-21	SWITCH, KEYBOARD (DISC 3)			
					(SPZ50)	S971	1-762-875-21	SWITCH, KEYBOARD (▲)			
R965	1-216-864-11	SHORT CHIP	0 (SPZ70)			S972	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)			
R966	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	S973	1-762-875-21	SWITCH, KEYBOARD (REPEAT/FM MODE)			
					(SPZ50)	S974	1-762-875-21	SWITCH, KEYBOARD	(PLAY MODE/TUNING MODE)		
R967	1-216-833-11	METAL CHIP	10K	5%	1/10W	*****					
					(SPZ50)						
R968	1-216-813-11	METAL CHIP	220	5%	1/10W	A-1166-887-A	POWER BOARD, COMPLETE (SPZ70: AR, KR)				
R969	1-216-813-11	METAL CHIP	220	5%	1/10W	A-1166-887-A	POWER BOARD, COMPLETE (TYPE B, TYPE C)				
R970	1-216-813-11	METAL CHIP	220	5%	1/10W		(SPZ70: AEP, UK, RU)				
R971	1-216-813-11	METAL CHIP	220	5%	1/10W	A-1167-006-A	POWER BOARD, COMPLETE				
R972	1-216-817-11	METAL CHIP	470	5%	1/10W		(SPZ50: SP, KR, AUS)				
R973	1-216-817-11	METAL CHIP	470	5%	1/10W	A-1167-006-A	POWER BOARD, COMPLETE (TYPE B, TYPE C)				
R974	1-216-813-11	METAL CHIP	220	5%	1/10W		(SPZ50: AEP, UK, RU)				
R975	1-216-813-11	METAL CHIP	220	5%	1/10W	A-1171-392-A	POWER BOARD, COMPLETE (SPZ70: E2, E51)				
R976	1-216-809-11	METAL CHIP	100	5%	1/10W						
R977	1-216-821-11	METAL CHIP	1K	5%	1/10W	A-1173-190-A	POWER BOARD, COMPLETE (SPZ70: MX)				
						A-1191-115-A	POWER BOARD, COMPLETE (TYPE A)	(SPZ70: AEP, UK, RU)			
R978	1-216-821-11	METAL CHIP	1K	5%	1/10W	A-1191-116-A	POWER BOARD, COMPLETE (TYPE A)	(SPZ50: AEP, UK, RU)			
R979	1-216-821-11	METAL CHIP	1K	5%	1/10W			*****			
R980	1-216-821-11	METAL CHIP	1K	5%	1/10W						
R981	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	1-533-233-31	FUSE HOLDER				
R982	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
								< CAPACITOR >			
R983	1-216-833-11	METAL CHIP	10K	5%	1/10W	△ C1	1-165-529-11	MYLAR	0.22uF	10	275V
R984	1-216-813-11	METAL CHIP	220	5%	1/10W	△ C2	1-165-529-11	MYLAR	0.22uF	10	275V
R985	1-216-813-11	METAL CHIP	220	5%	1/10W	△ C4	1-119-886-51	CERAMIC	470PF	10%	250V
R986	1-216-813-11	METAL CHIP	220	5%	1/10W	△ C5	1-119-886-51	CERAMIC	470PF	10%	250V
R987	1-216-813-11	METAL CHIP	220	5%	1/10W	△ C11	1-100-877-11	ELECT (BLOCK)	270uF	20%	250V
											(SPZ70: E2, E51, MX)
R988	1-216-817-11	METAL CHIP	470	5%	1/10W	△ C11	1-100-923-21	ELECT	100uF	20%	450V
R989	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		(SPZ70: AEP, UK, RU, AR)				
R990	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	△ C11	1-112-865-21	ELECT	82uF	20%	450V
R991	1-216-821-11	METAL CHIP	1K	5%	1/10W		(SPZ50)				
R992	1-216-833-11	METAL CHIP	10K	5%	1/10W	△ C12	1-100-877-11	ELECT (BLOCK)	270uF	20%	250V
							(SPZ70: E2, E51, MX)				
						△ C13	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						△ C14	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
						△ C15	1-126-964-11	ELECT	10uF	20%	50V
						△ C16	1-126-963-11	ELECT	4.7uF	20%	50V
						△ C17	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the POWER board.

HCD-SPZ50/SPZ70

Ver. 1.3

POWER

Ref. No.	Part No.	Description	Remark		
△ C18	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
△ C19	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
△ C20	1-126-947-11	ELECT	47uF	20%	35V
△ C21	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
△ C22	1-107-824-11	CERAMIC	220PF	5%	1KV
△ C23	1-107-824-11	CERAMIC	220PF	5%	1KV
△ C24	1-165-609-11	FILM	27000PF	3%	800V (SPZ50)
△ C24	1-165-610-11	FILM	33000PF	3%	800V (SPZ70)
△ C25	1-126-948-11	ELECT	100uF	20%	35V (TYPE A)
△ C25	1-126-950-11	ELECT	330uF	20%	35V (SPZ50: AEP, UK, RU/SPZ70: AEP, UK, RU) (TYPE B, TYPE C)
△ C26	1-112-877-51	CERAMIC	0.001uF	20%	250V
C31	1-112-238-21	ELECT	470uF	20%	25V
C32	1-112-254-21	ELECT	1000uF	20%	35V (SPZ50)
C32	1-137-806-21	ELECT	1800uF	20%	35V (SPZ70)
△ C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
△ C603	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
△ C604	1-126-964-11	ELECT	10uF	20%	50V
△ C606	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
C609	1-126-964-11	ELECT	10uF	20%	50V
C651	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
C652	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C653	1-126-923-91	ELECT	220uF	20%	10V
C654	1-104-658-91	ELECT	100uF	20%	10V
< CONNECTOR >					
△ CN1	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P			
CN31	1-819-132-11	PIN, CONNECTOR 4P			
CN32	1-819-130-11	PIN, CONNECTOR 2P			
CN604	1-815-444-11	PIN, CONNECTOR (PWB) 3P			
< DIODE >					
△ D1	8-719-077-77	DIODE	D3SB60F3		
△ D2	8-719-081-58	DIODE	S2V60-TA (SPZ70: E2, E51, MX)		
△ D3	8-719-081-58	DIODE	S2V60-TA (SPZ70: E2, E51, MX)		
△ D11	8-719-979-64	DIODE	UF4005/23		
△ D14	6-500-567-31	DIODE	10ERB20-TB3		
△ D15	6-501-178-01	DIODE	UDZW-TE17-15B		
△ D16	6-501-178-01	DIODE	UDZW-TE17-15B		
△ D17	6-500-137-01	DIODE	BAT54HT1		
D31	8-719-510-09	DIODE	D10SC6M		
D32	8-719-074-58	DIODE	FCH10A10		
D33	8-719-924-32	DIODE	MTZJ-T-77-24D (SPZ50)		
D33	8-719-982-15	DIODE	MTZJ-27B (SPZ70)		
△ D602	8-719-073-23	DIODE	ST02D-200TA		
△ D603	6-500-567-31	DIODE	10ERB20-TB3		
D604	6-500-567-31	DIODE	10ERB20-TB3		
D652	8-719-071-26	DIODE	HZU18B3TRF		
< FUSE >					
△ F1	1-576-232-51	FUSE (5A/250V)			

Ref. No.	Part No.	Description	Remark		
< FERRITE BEAD >					
△ FB11	1-410-397-21	FERRITE	1.1uH		
< IC >					
△ IC11	6-707-749-01	IC CXD9841P			
△ IC601	6-708-726-01	IC MIP2F20MS1S0			
IC650	6-705-280-01	IC FAN431AZXA			
< COIL >					
L602	1-412-525-31	INDUCTOR	10uH		
< PHOTO COUPLER >					
△ PH11	6-600-438-01	PHOTO COUPLER	TLP421F (D4-GR)		
△ PH601	6-600-438-01	PHOTO COUPLER	TLP421F (D4-GR)		
△ PH602	6-600-438-01	PHOTO COUPLER	TLP421F (D4-GR)		
< TRANSISTOR >					
△ Q11	6-551-319-01	FET	2SK3563 (LB2SONY)		
△ Q12	6-551-319-01	FET	2SK3563 (LB2SONY)		
△ Q601	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q650	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q651	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q652	8-729-600-22	TRANSISTOR	2SA1235-F		
< RESISTOR >					
△ R2	1-219-512-11	METAL	2.2M	5%	1/2W F
△ R3	1-219-759-11	METAL	1M	5%	1/2W F
△ R4	1-219-759-11	METAL	1M	5%	1/2W F
△ R10	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
△ R10	1-218-903-11	METAL CHIP	220K	0.5%	1/10W
△ R11	1-216-864-11	SHORT CHIP	0		
△ R12	1-245-502-31	METAL	4.7M	2%	1/4W F
△ R13	1-245-502-31	METAL	4.7M	2%	1/4W F
△ R14	1-218-911-11	METAL CHIP	470K	0.5%	1/10W
△ R15	1-218-875-11	METAL CHIP	15K	0.5%	1/10W
△ R15	1-218-881-11	METAL CHIP	27K	0.5%	1/10W
△ R16	1-218-823-11	METAL CHIP	100	0.5%	1/10W
△ R17	1-211-989-11	METAL CHIP	68	0.5%	1/10W
△ R18	1-216-833-11	METAL CHIP	10K	5%	1/10W
△ R20	1-216-833-11	METAL CHIP	10K	5%	1/10WF
△ R22	1-249-417-11	CARBON	1K	5%	1/4W F
△ R23	1-219-984-51	METAL	0.1	2%	2W F
△ R24	1-216-821-11	METAL CHIP	1K	5%	1/10W
△ R25	1-247-694-11	CARBON	33	5%	1/4W F
△ R27	1-216-797-11	METAL CHIP	10	5%	1/10W
△ R29	1-216-797-11	METAL CHIP	10	5%	1/10W
R32	1-216-821-11	METAL CHIP	1K	5%	1/10W
R33	1-216-817-11	METAL CHIP	470	5%	1/10W
R41	1-216-845-11	METAL CHIP	100K	5%	1/10W
△ R603	1-216-852-11	METAL CHIP	390K	5%	1/10WF
△ R604	1-249-401-11	CARBON	47	5%	1/4W

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the C25.

POWER

SP

TC

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
△ R605	1-216-835-11	METAL CHIP	15K	5%	1/10W	C853	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
△ R606	1-249-381-11	CARBON	1	5%	1/4W F	C854	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
△ R607	1-216-864-11	SHORT CHIP	0								
△ R608	1-216-821-11	METAL CHIP	1K	5%	1/10W			< CONNECTOR >			
△ R609	1-218-899-11	METAL CHIP	150K	0.5%	1/16W	CN850	1-819-130-11	PIN, CONNECTOR 2P			
△ R610	1-218-907-11	METAL CHIP	330K	0.5%	1/10W	CN870	1-819-130-11	PIN, CONNECTOR 2P			
R651	1-216-821-11	METAL CHIP	1K	5%	1/10W			< TERMINAL BOARD >			
R652	1-216-817-11	METAL CHIP	470	5%	1/10W						
R653	1-216-833-11	METAL CHIP	10K	5%	1/10W	J860	1-537-114-21	TERMINAL BOARD (SPEAKER)			

R654	1-216-841-11	METAL CHIP	47K	5%	1/10W		A-1166-888-A	TC BOARD, COMPLETE			
R655	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W			*****			
R656	1-218-879-11	METAL CHIP	22K	0.5%	1/10W			< CAPACITOR/RESISTOR >			
R657	1-216-805-11	METAL CHIP	47	5%	1/10W						
R658	1-218-887-11	METAL CHIP	47K	0.5%	1/10W						
R659	1-216-821-11	METAL CHIP	1K	5%	1/10W	C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R660	1-216-821-11	METAL CHIP	1K	5%	1/10W	C304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R661	1-216-833-11	METAL CHIP	10K	5%	1/10W	C315	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R662	1-216-833-11	METAL CHIP	10K	5%	1/10W	C316	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
R663	1-216-817-11	METAL CHIP	470	5%	1/10W	C317	1-104-662-91	ELECT	22uF	20%	25V
		< SWITCH >				C318	1-104-662-91	ELECT	22uF	20%	25V
△ S1	1-762-753-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (SPZ70: E2, E51)				C323	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
		< TRANSFORMER/LINE FILTER >				C324	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
△ T1	1-443-941-11	TRANSFORMER, LINE FILTER (SPZ70: AEP, UK, RU, AR, KR)				C325	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
△ T1	1-445-048-11	TRANSFORMER, LINE FILTER (SPZ50)				C326	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
△ T1	1-457-125-11	COIL, LINE FILTER (SPZ70: E2, E51, MX)									
△ T31	1-443-795-11	TRANSFORMER, CONVERTER (SPZ50)				C327	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
△ T31	1-443-943-11	TRANSFORMER, CONVERTER (SPZ70)				C328	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
△ T603	1-443-942-11	TRANSFORMER, DC-DC CONVERTER				C329	1-126-956-11	ELECT	0.1uF	20%	50V
		< TAB >				C330	1-126-956-11	ELECT	0.1uF	20%	50V
TB1	1-695-915-11	TAB (CONTACT)				C331	1-216-849-11	METAL CHIP	220K	5%	1/10W
		< THERMISTOR >				C332	1-216-849-11	METAL CHIP	220K	5%	1/10W
△ TH1	1-802-073-11	THERMISTOR, NTC (SPZ50)				C350	1-126-934-11	ELECT	220uF	20%	16V
△ TH1	1-802-075-11	THERMISTOR, NTC (SPZ70: AEP, UK, RU, AR, KR)				C351	1-126-923-91	ELECT	220uF	20%	16V
△ TH1	1-805-901-11	THERMISTOR, NTC (SPZ70: E2, E51, MX)				C352	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
△ TH2	1-805-901-11	THERMISTOR, NTC (SPZ70: E2, E51, MX)				C353	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< EARTH TERMINAL >				C354	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
TK3	1-537-771-21	TERMINAL BOARD, GROUND				C356	1-126-964-11	ELECT	10uF	20%	50V
		< VARISTOR >				C401	1-126-956-11	ELECT	0.1uF	20%	50V
△ VR001	1-805-481-21	VARISTOR (SPZ70: MX)				C402	1-126-956-11	ELECT	0.1uF	20%	50V
△ VR002	1-802-094-21	VARISTOR (SPZ70: E2, E51)				C403	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
△ VR003	1-802-094-21	VARISTOR (SPZ70: E2, E51)				C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
*****						C405	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
	A-1166-886-A	SP BOARD, COMPLETE				C406	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
		*****				C409	1-126-964-11	ELECT	10uF	20%	50V
		< CAPACITOR >				C410	1-126-964-11	ELECT	10uF	20%	50V
C851	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	C411	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C852	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	C412	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
						C413	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
						C414	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
						C415	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
						C416	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
						C417	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
						C418	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
						C430	1-164-156-11	CERAMIC CHIP	0.1uF		25V
						C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V
						C433	1-164-156-11	CERAMIC CHIP	0.1uF		25V
						C452	1-126-947-11	ELECT	47uF	20%	35V
						C453	1-130-471-00	MYLAR	0.001uF	5%	50V

HCD-SPZ50/SPZ70

TC

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C454	1-130-479-00	MYLAR	0.0047uF	5%	50V		R307	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
C456	1-130-483-00	MYLAR	0.01uF	5%	50V		R308	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
							R309	1-216-817-11	METAL CHIP	470	5%	1/10W	
C458	1-130-475-00	MYLAR	0.0022uF	5%	50V								
C461	1-162-962-11	CERAMIC CHIP	470PF	10%	50V		R310	1-216-817-11	METAL CHIP	470	5%	1/10W	
C462	1-162-962-11	CERAMIC CHIP	470PF	10%	50V		R311	1-216-813-11	METAL CHIP	220	5%	1/10W	
							R312	1-216-813-11	METAL CHIP	220	5%	1/10W	
		< CONNECTOR >					R313	1-216-805-11	METAL CHIP	47	5%	1/10W	
							R314	1-216-805-11	METAL CHIP	47	5%	1/10W	
CN008	1-568-830-11	CONNECTOR, FFC 11P											
CN302	1-815-449-11	PIN, CONNECTOR (PWB) 8P					R315	1-216-864-11	SHORT CHIP	0			
							R316	1-216-864-11	SHORT CHIP	0			
		< DIODE >					R317	1-216-853-11	METAL CHIP	470K	5%	1/10W	
							R318	1-216-853-11	METAL CHIP	470K	5%	1/10W	
D301	6-501-165-01	DIODE UDZW-TE17-4.3B					R319	1-216-836-11	METAL CHIP	18K	5%	1/10W	
D401	6-500-335-01	DIODE MC2838-T112-1											
		< JUMPER RESISTOR >					R320	1-216-836-11	METAL CHIP	18K	5%	1/10W	
							R323	1-216-864-11	SHORT CHIP	0			
							R324	1-216-864-11	SHORT CHIP	0			
FB301	1-216-864-11	SHORT CHIP	0				R325	1-216-809-11	METAL CHIP	100	5%	1/10W	
							R326	1-216-809-11	METAL CHIP	100	5%	1/10W	
		< IC >											
							R349	1-216-809-11	METAL CHIP	100	5%	1/10W	
IC301	6-702-457-01	IC NJM14558M-TE2					R350	1-216-864-11	SHORT CHIP	0			
IC401	8-759-909-71	IC BA4558F					R351	1-216-821-11	METAL CHIP	1K	5%	1/10W	
							R401	1-216-845-11	METAL CHIP	100K	5%	1/10W	
		< JUMPER RESISTOR >					R402	1-216-845-11	METAL CHIP	100K	5%	1/10W	
JR301	1-216-864-11	SHORT CHIP	0				R403	1-216-821-11	METAL CHIP	1K	5%	1/10W	
JR302	1-216-864-11	SHORT CHIP	0				R404	1-216-821-11	METAL CHIP	1K	5%	1/10W	
JR303	1-216-864-11	SHORT CHIP	0				R405	1-216-841-11	METAL CHIP	47K	5%	1/10W	
JR304	1-216-864-11	SHORT CHIP	0				R406	1-216-841-11	METAL CHIP	47K	5%	1/10W	
JR306	1-216-864-11	SHORT CHIP	0				R407	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
JR307	1-216-864-11	SHORT CHIP	0				R408	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
JR310	1-216-864-11	SHORT CHIP	0				R409	1-216-845-11	METAL CHIP	100K	5%	1/10W	
JR311	1-216-864-11	SHORT CHIP	0				R410	1-216-845-11	METAL CHIP	100K	5%	1/10W	
JR402	1-216-864-11	SHORT CHIP	0				R411	1-216-853-11	METAL CHIP	470K	5%	1/10W	
							R412	1-216-853-11	METAL CHIP	470K	5%	1/10W	
		< TRANSFORMER >											
							R413	1-216-849-11	METAL CHIP	220K	5%	1/10W	
L451	1-443-760-11	TRANSFORMER, BIAS OSCILLATION					R414	1-216-849-11	METAL CHIP	220K	5%	1/10W	
							R415	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
		< TRANSISTOR >					R416	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
							R423	1-216-837-11	METAL CHIP	22K	5%	1/10W	
Q305	8-729-120-28	TRANSISTOR	2SC1623-L5L6										
Q306	8-729-120-28	TRANSISTOR	2SC1623-L5L6				R424	1-216-837-11	METAL CHIP	22K	5%	1/10W	
Q400	8-729-045-62	FET	2SK2158-T2B				R427	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q401	8-729-045-62	FET	2SK2158-T2B				R428	1-216-809-11	METAL CHIP	100	5%	1/10W	
Q402	8-729-045-62	FET	2SK2158-T2B				R429	1-216-833-11	METAL CHIP	10K	5%	1/10W	
							R430	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q403	8-729-600-22	TRANSISTOR	2SA1235-F										
Q404	8-729-600-22	TRANSISTOR	2SA1235-F				R431	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q405	8-729-120-28	TRANSISTOR	2SC1623-L5L6				R432	1-216-821-11	METAL CHIP	1K	5%	1/10W	
Q406	8-729-600-22	TRANSISTOR	2SA1235-F				R433	1-216-841-11	METAL CHIP	47K	5%	1/10W	
Q407	8-729-600-22	TRANSISTOR	2SA1235-F				R434	1-216-841-11	METAL CHIP	47K	5%	1/10W	
							R435	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q408	8-729-600-22	TRANSISTOR	2SA1235-F										
Q409	6-551-276-01	TRANSISTOR	RT1N431C-TP-1				R436	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q410	6-551-276-01	TRANSISTOR	RT1N431C-TP-1				R437	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q451	8-729-037-13	TRANSISTOR	KTA1271Y				R438	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q452	8-729-120-28	TRANSISTOR	2SC1623-L5L6				R439	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
							R440	1-216-833-11	METAL CHIP	10K	5%	1/10W	
Q453	8-729-011-92	TRANSISTOR	2SC2001TP-K1K2										
		< RESISTOR >					R441	1-216-864-11	SHORT CHIP	0			
							R442	1-216-841-11	METAL CHIP	47K	5%	1/10W	
							R443	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R303	1-216-845-11	METAL CHIP	100K	5%	1/10W		R444	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R304	1-216-845-11	METAL CHIP	100K	5%	1/10W		R445	1-216-845-11	METAL CHIP	100K	5%	1/10W	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R446	1-216-845-11	METAL CHIP 100K 5%	1/10W	△ 209	1-829-387-11	CORD, POWER (SPZ70: AR)	
R449	1-216-801-11	METAL CHIP 22 5%	1/10W	△ 209	1-830-188-11	CORD, POWER (SPZ50: RU, SP/SPZ70: RU, E2, E51)	
R450	1-216-801-11	METAL CHIP 22 5%	1/10W	214	1-400-932-11	FILTER, CLAMP	
R451	1-216-833-11	METAL CHIP 10K 5%	1/10W	S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
R452	1-216-841-11	METAL CHIP 47K 5%	1/10W	*****			
R453	1-216-829-11	METAL CHIP 4.7K 5%	1/10W			ACCESSORIES	
R454	1-216-829-11	METAL CHIP 4.7K 5%	1/10W			*****	
R455	1-216-797-11	METAL CHIP 10 5%	1/10W	△	1-569-008-22	ADAPTOR, CONVERSION 2P (SPZ50: SP/SPZ70: E2, E51)	
R456	1-216-801-11	METAL CHIP 22 5%	1/10W	△	1-770-019-61	ADAPTOR, CONVERSION PLUG (SPZ50: UK/SPZ70: UK)	
R457	1-216-837-11	METAL CHIP 22K 5%	1/10W				
R458	1-216-793-11	METAL CHIP 4.7 5%	1/10W				
R459	1-216-864-11	SHORT CHIP 0					
R460	1-216-864-11	SHORT CHIP 0					
R461	1-216-825-11	METAL CHIP 2.2K 5%	1/10W				
R462	1-216-825-11	METAL CHIP 2.2K 5%	1/10W				
R463	1-216-821-11	METAL CHIP 1K 5%	1/10W				
R464	1-216-821-11	METAL CHIP 1K 5%	1/10W				
R465	1-216-821-11	METAL CHIP 1K 5%	1/10W				
R466	1-216-821-11	METAL CHIP 1K 5%	1/10W				
R481	1-216-829-11	METAL CHIP 4.7K 5%	1/10W				
R482	1-216-841-11	METAL CHIP 47K 5%	1/10W				
R483	1-216-837-11	METAL CHIP 22K 5%	1/10W				
R484	1-216-837-11	METAL CHIP 22K 5%	1/10W				
R485	1-216-829-11	METAL CHIP 4.7K 5%	1/10W				
R488	1-216-837-11	METAL CHIP 22K 5%	1/10W				
R489	1-216-837-11	METAL CHIP 22K 5%	1/10W				
R490	1-216-829-11	METAL CHIP 4.7K 5%	1/10W				

MISCELLANEOUS							

10	1-831-938-21	CABLE, FLEXIBLE FLAT (13 CORE)					
60	1-832-430-21	CABLE, FLEXIBLE FLAT (7 CORE)					
62	1-797-503-12	DECK, MECHANICAL (CFP42601)					
63	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)					
73	1-831-996-21	CABLE, FLEXIBLE FLAT (11 CORE) (SPZ50)					
73	1-832-431-21	CABLE, FLEXIBLE FLAT (17 CORE) (SPZ70)					
109	1-831-922-21	CABLE, FLEXIBLE FLAT (9 CORE)					
154	1-797-193-12	MECHANICAL, CD					
△ 157	A-4735-357-A	OPTICAL PICK-UP DEVICE (KSM-213DCP)					
158	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)					
160	1-828-382-21	WIRE (FLAT TYPE) (23 CORE)					
201	1-832-434-21	CABLE, FLEXIBLE FLAT (11 CORE) (SPZ50: AEP, UK/SPZ70: AEP, UK)					
201	1-832-435-21	CABLE, FLEXIBLE FLAT (9 CORE) (SPZ50: RU, SP, KR, AUS/SPZ70: RU, E2, E51, MX, AR, KR)					
202	1-693-710-11	TUNER (FM/AM) (SPZ50: RU, KR/SPZ70: RU, KR)					
202	1-693-711-11	TUNER (FM/AM) (SPZ50: SP, AUS/SPZ70: E2, E51, MX, AR)					
202	1-693-712-11	TUNER (FM/AM) (SPZ50: AEP, UK/SPZ70: AEP, UK)					
208	1-831-951-21	CABLE, FLEXIBLE FLAT (19 CORE)					
△ 209	1-769-079-41	CORD, POWER (SPZ50: KR/SPZ70: KR)					
△ 209	1-769-744-81	CORD, POWER (SPZ50: UK/SPZ70: UK)					
△ 209	1-775-790-71	CORD, POWER (SPZ50: AUS)					
△ 209	1-777-071-83	CORD, POWER (SPZ50: AEP/SPZ70: AEP)					
△ 209	1-827-226-31	CORD, POWER (SPZ70: MX)					

MEMO

HCD-SPZ50/SPZ70

SONY®

SERVICE MANUAL

Ver. 1.3 2007.02

AEP Model
UK Model
E Model
HCD-SPZ50/SPZ70
Australian Model
HCD-SPZ50

SUPPLEMENT-1

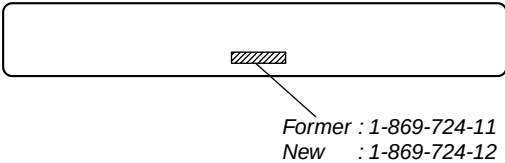
File this supplement with the service manual.

Subject: Change of HP A-IN (Suffix-12) and MAIN (Suffix-13) boards

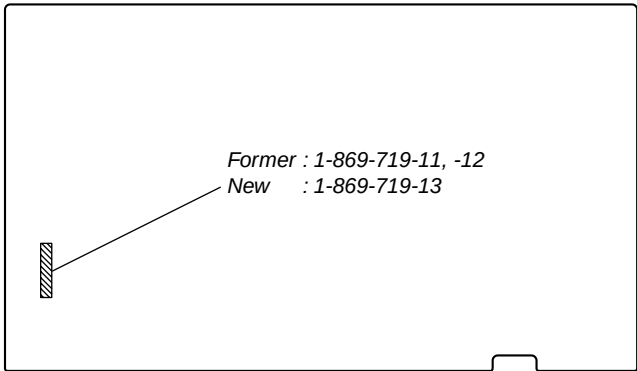
In this set, HP A-IN and MAIN boards have been changed in the midway of production.
Printed wiring board, schematic diagrams and electrical parts list of new type are described in this supplement-1.
Refer to original service manual for other information.

1. NEW/FORMER DISCRIMINATION

– HP A-IN Board (Conductor Side) –



– MAIN Board (Conductor Side) –

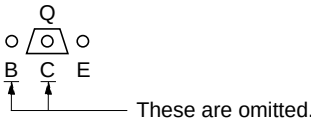
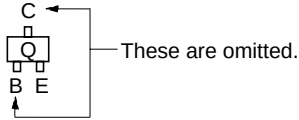


2. DIAGRAMS

• Note for Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Board:

- — : parts extracted from the component side.
- ○ : parts extracted from the conductor side.
- △ : internal component.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)
- Indication of transistor



Note on Schematic Diagram:

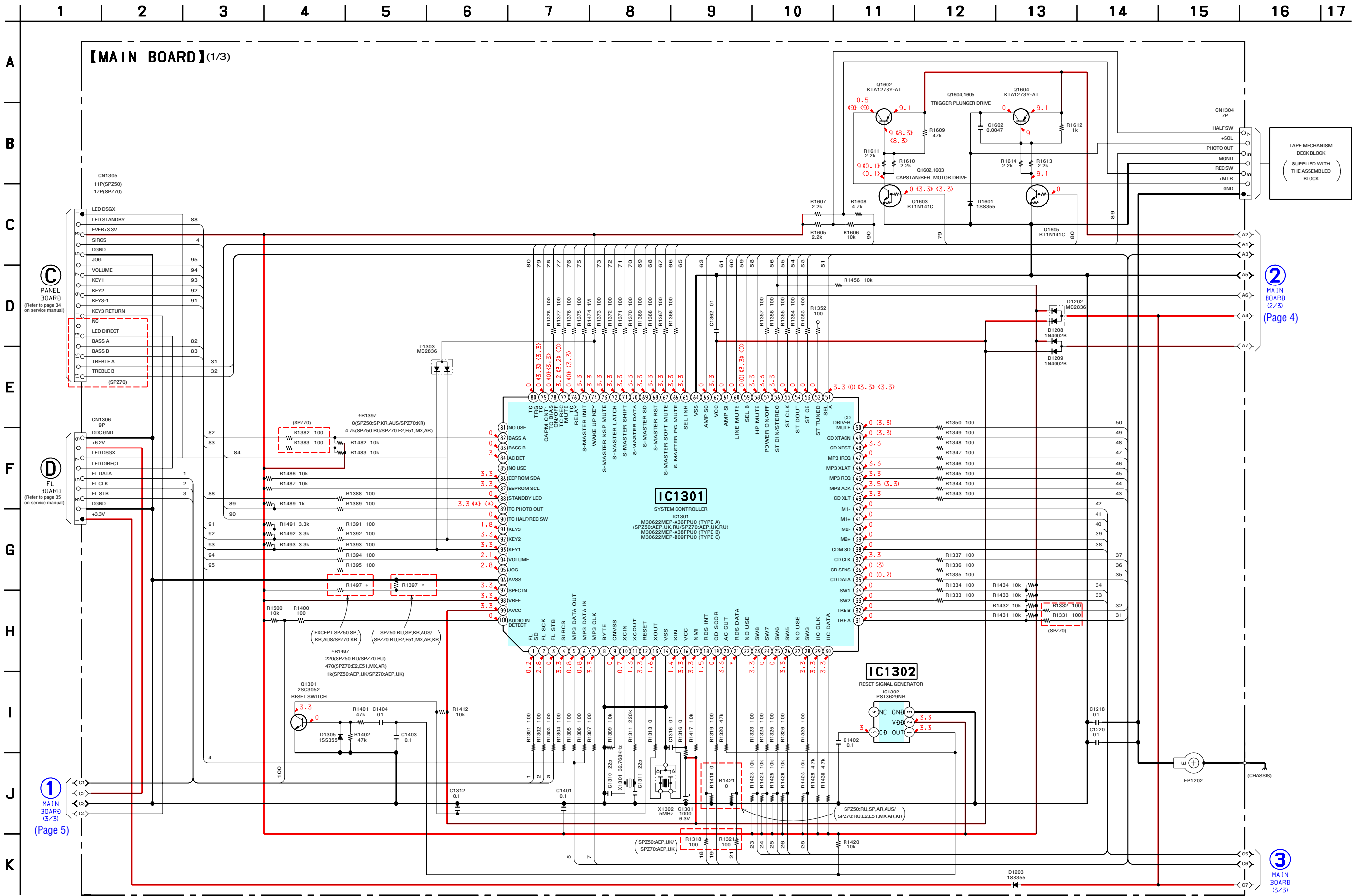
- All capacitors are in μF unless otherwise noted. (p: pF)
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- △ : internal component.
- : panel designation.
- : B+ Line.
- : B– Line.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER (FM/AM)
() : CD PLAY
<< >> : TAPE PLAY
{ } : TAPE REC
* : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
⇒ : TUNER (FM/AM)
⇒ : CD PLAY
⇒ : TAPE PLAY
⇒ : REC
⇒ : AUDIO IN
- Abbreviation
AR : Argentina model
AUS : Australian model
E2 : 120 V AC area in E model
E51 : Chilean and Peruvian models
KR : Korean model
MX : Mexican model
RU : Russian model
SP : Singapore model

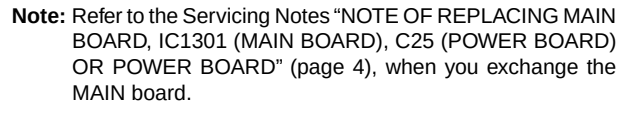


Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1202	D-1	D1211	I-6	IC1201	C-14	IC1501	E-10	Q1501	D-10	Q1510	E-7	Q1608	E-6	Q1616	F-5
D1203	E-1	D1212	F-6	IC1202	C-13	IC1502	F-7	Q1502	D-10	Q1602	C-2	Q1610	E-5	Q1617	F-5
D1204	C-9	D1303	D-3	IC1203	C-12	IC1503	D-9	Q1503	F-12	Q1603	C-1	Q1611	E-5	Q1618	E-15
D1206	H-12	D1305	F-3	IC1204	B-11	IC1504	G-7	Q1504	E-12	Q1604	B-2	Q1612	E-5		
D1207	H-12	D1601	B-1	IC1205	J-13	IC1505	F-12	Q1505	F-13	Q1605	B-1	Q1613	E-5		
D1208	B-5	D1602	E-15	IC1301	D-4			Q1508	G-7	Q1606	F-6	Q1614	F-5		
D1209	C-1			IC1302	G-2	Q1301	F-3	Q1509	G-7	Q1607	F-6	Q1615	F-5		

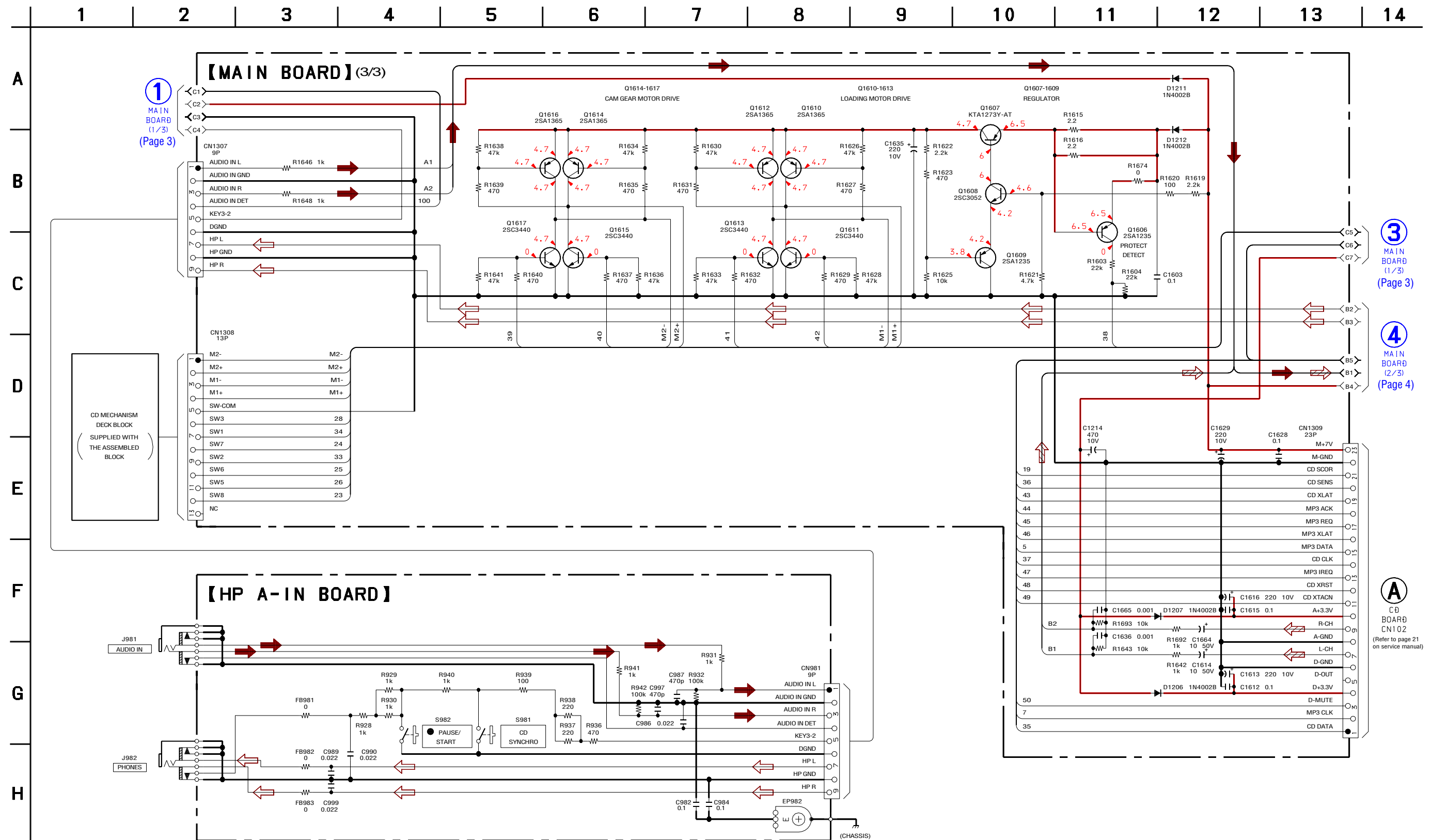
Note: Refer to the Servicing Notes “NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD” (page 4), when you exchange the IC1301 or MAIN board.

2-2. SCHEMATIC DIAGRAM – MAIN Section (1/3) –

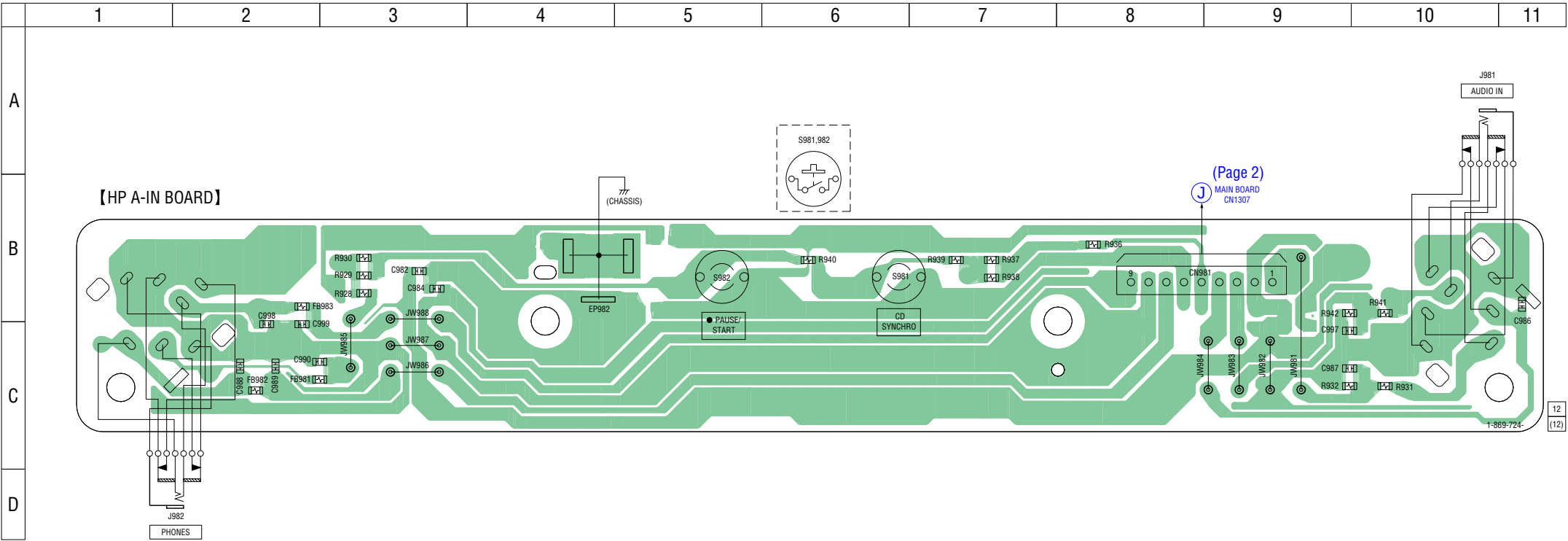




2-4. SCHEMATIC DIAGRAM – MAIN Section (3/3) –



2-5. PRINTED WIRING BOARD – HP A-IN Board – : Uses unleaded solder.



3. 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.
- CAPACITORS
uF: μ F
- COILS
uH: μ H
- 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...
- Abbreviation
AUS : Australian model
AR : Argentina model
E2 : 120V AC area in E model
E51 : Chilean and Peruvian models

KR : Korean model
MX : Mexican model
RU : Russian model
SP : Singapore model

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

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark			
	A-1166-881-A	HP A-IN BOARD, COMPLETE *****					A-1166-883-A	MAIN BOARD, COMPLETE (SPZ70: AEP, UK)				
		< CAPACITOR >					A-1166-993-A	MAIN BOARD, COMPLETE (SPZ70: RU)				
							A-1167-004-A	MAIN BOARD, COMPLETE (SPZ50: AEP, UK)				
							A-1167-017-A	MAIN BOARD, COMPLETE (SPZ50: RU)				
							A-1171-390-A	MAIN BOARD, COMPLETE (SPZ70: E2, E51, MX, AR)				
C982	1-164-156-11	CERAMIC CHIP	0.1uF		25V							
C984	1-164-156-11	CERAMIC CHIP	0.1uF		25V							
C986	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V		A-1171-419-A	MAIN BOARD, COMPLETE(SPZ50: SP, KR, AUS)				
C987	1-162-962-11	CERAMIC CHIP	470PF	10%	50V		A-1251-290-A	MAIN BOARD, COMPLETE(SPZ70: KR) *****				
C989	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V							
C990	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V		7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
C997	1-162-962-11	CERAMIC CHIP	470PF	10%	50V			< CAPACITOR >				
C999	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V							
		< JUMPER RESISTOR >										
						C1201	1-126-943-11	ELECT	2200uF	20%	25V	
FB981	1-216-864-11	SHORT CHIP	0			C1202	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V	
FB982	1-216-864-11	SHORT CHIP	0			C1203	1-126-935-11	ELECT	470uF	20%	16V	
FB983	1-216-864-11	SHORT CHIP	0			C1204	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V	
		< JACK >				C1205	1-126-925-91	ELECT	470uF	20%	10V	
J981	1-815-603-11	JACK (AUDIO IN)				C1206	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
J982	1-815-603-11	JACK (PHONES)				C1207	1-126-925-91	ELECT	470uF	20%	10V	
		< RESISTOR >				C1208	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
						C1209	1-126-923-91	ELECT	220uF	20%	10V	
						C1211	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V	
R928	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1212	1-126-925-91	ELECT	470uF	20%	10V	
R929	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1213	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V	
R930	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1214	1-126-925-91	ELECT	470uF	20%	10V	
R931	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1217	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V	
R932	1-216-845-11	METAL CHIP	100K	5%	1/10W	C1218	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
R936	1-216-817-11	METAL CHIP	470	5%	1/10W	C1220	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
R937	1-216-813-11	METAL CHIP	220	5%	1/10W	C1301	1-126-916-11	ELECT	1000uF	20%	6.3V	
R938	1-216-813-11	METAL CHIP	220	5%	1/10W	C1310	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R939	1-216-809-11	METAL CHIP	100	5%	1/10W	C1311	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
R940	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1312	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
R941	1-216-821-11	METAL CHIP	1K	5%	1/10W	C1316	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
R942	1-216-845-11	METAL CHIP	100K	5%	1/10W	C1362	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
		< SWITCH >				C1401	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
						C1402	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
						C1403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
S981	1-762-875-21	SWITCH, KEYBOARD (CD SYNCHRO)				C1404	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
S982	1-762-875-21	SWITCH, KEYBOARD (● PAUSE/START)				C1501	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
*****						C1502	1-126-923-91	ELECT	220uF	20%	10V	
						C1503	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
						C1504	1-126-923-91	ELECT	220uF	20%	10V	
						C1505	1-126-964-11	ELECT	10uF	20%	50V	

Note: Refer to the Servicing Notes “NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD” (page 4), when you exchange the MAIN board.

HCD-SPZ50/SPZ70

MAIN

Ref. No.	Part No.	Description	Remark	
C1506	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1507	1-126-933-11	ELECT	100uF	20% 16V
C1508	1-126-964-11	ELECT	10uF	20% 50V
C1509	1-126-960-11	ELECT	1uF	20% 50V
C1510	1-126-960-11	ELECT	1uF	20% 50V
C1511	1-126-964-11	ELECT	10uF	20% 50V
C1512	1-126-960-11	ELECT	1uF	20% 50V
C1513	1-126-960-11	ELECT	1uF	20% 50V
C1515	1-126-964-11	ELECT	10uF	20% 50V
C1517	1-126-923-91	ELECT	220uF	20% 10V
C1518	1-130-495-00	MYLAR	0.1uF	5% 50V
C1519	1-130-495-00	MYLAR	0.1uF	5% 50V
C1520	1-130-495-00	MYLAR	0.1uF	5% 50V
C1521	1-130-495-00	MYLAR	0.1uF	5% 50V
C1522	1-130-475-00	MYLAR	0.0022uF	5% 50V
C1523	1-130-475-00	MYLAR	0.0022uF	5% 50V
C1526	1-126-960-11	ELECT	1uF	20% 50V
C1531	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1532	1-126-933-11	ELECT	100uF	20% 16V
C1550	1-126-934-11	ELECT	220uF	20% 16V
C1552	1-126-933-11	ELECT	100uF	20% 16V
C1555	1-126-964-11	ELECT	10uF	20% 50V
C1558	1-126-964-11	ELECT	10uF	20% 50V
C1559	1-126-960-11	ELECT	1uF	20% 50V
C1560	1-126-960-11	ELECT	1uF	20% 50V
C1561	1-126-964-11	ELECT	10uF	20% 50V
C1562	1-126-960-11	ELECT	1uF	20% 50V
C1563	1-126-960-11	ELECT	1uF	20% 50V
C1565	1-126-964-11	ELECT	10uF	20% 50V
C1567	1-126-923-91	ELECT	220uF	20% 10V
C1576	1-126-960-11	ELECT	1uF	20% 50V
C1595	1-126-960-11	ELECT	1uF	20% 50V
C1596	1-126-960-11	ELECT	1uF	20% 50V
C1602	1-162-968-11	CERAMIC CHIP	0.0047uF	10% 50V
C1603	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1612	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1613	1-126-923-91	ELECT	220uF	20% 10V
C1614	1-126-964-11	ELECT	10uF	20% 50V
C1615	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1616	1-126-923-91	ELECT	220uF	20% 10V
C1628	1-164-156-11	CERAMIC CHIP	0.1uF	25V
C1629	1-126-923-91	ELECT	220uF	20% 10V
C1635	1-126-923-91	ELECT	220uF	20% 10V
C1636	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V
C1637	1-126-933-11	ELECT	100uF	20% 16V
C1664	1-126-964-11	ELECT	10uF	20% 50V
C1665	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V
< CONNECTOR >				
CN1203	1-815-443-11	PIN, CONNECTOR (PWB) 2P		
CN1302	1-784-780-11	CONNECTOR, FFC 19P		
CN1303	1-568-830-11	CONNECTOR, FFC 11P		
CN1304	1-568-826-11	CONNECTOR, FFC 7P		
CN1305	1-568-830-11	CONNECTOR, FFC 11P (SPZ50)		
CN1305	1-784-778-11	CONNECTOR, FFC 17P (SPZ70)		
CN1306	1-568-828-11	CONNECTOR, FFC 9P		
CN1307	1-815-450-11	PIN, CONNECTOR (PWB) 9P		
CN1308	1-784-774-11	CONNECTOR, FFC 13P		

Ref. No.	Part No.	Description	Remark
CN1309	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P	
CN1310	1-568-828-11	CONNECTOR, FFC 9P (SPZ50: RU, SP, KR, AUS/ SPZ70: RU, E2, E51, MX, AR, KR)	
CN1310	1-568-830-11	CONNECTOR, FFC 11P (SPZ50: AEP, UK/SPZ750: AEP, UK)	
< DIODE >			
D1202	8-719-000-07	DIODE MC2836	
D1203	6-501-193-01	DIODE 1SS355WTE-17	
D1204	8-719-000-07	DIODE MC2836	
D1206	8-719-063-79	DIODE 1N4002B	
D1207	8-719-063-79	DIODE 1N4002B	
D1208	8-719-063-79	DIODE 1N4002B	
D1209	8-719-063-79	DIODE 1N4002B	
D1211	8-719-063-79	DIODE 1N4002B	
D1212	8-719-063-79	DIODE 1N4002B	
D1303	8-719-000-07	DIODE MC2836	
D1305	6-501-193-01	DIODE 1SS355WTE-17	
D1601	6-501-193-01	DIODE 1SS355WTE-17	
D1602	8-719-977-28	DIODE DTZ10B	
< EARTH TERMINAL >			
EP1201	1-537-771-21	TERMINAL BOARD, GROUND	
EP1202	1-537-771-21	TERMINAL BOARD, GROUND	
< IC/TRANSISTOR >			
IC1201	8-759-647-17	IC uPC2912HF	
IC1202	8-759-231-59	IC TA7809S	
IC1203	6-703-546-01	IC TA7804LS	
IC1204	6-707-282-01	IC MM1615ANLE	
IC1205	6-703-548-01	IC TA7807LS	
IC1301	6-806-302-01	IC M30622MEP-A36FPU0 (TYPE A) (SPZ50: AEP, UK, RU/SPZ70: AEP, UK, RU)	
IC1301	6-806-618-01	IC M30622MEP-A38FPU0 (TYPE B)	
IC1301	6-807-018-01	IC M30622MEP-B09FPU0 (TYPE C)	
IC1302	6-701-680-01	IC PST3629NR	
IC1501	6-701-824-11	IC BD3870FS-E2	
IC1502	8-759-656-83	IC NJM4580MD- (TE2)	
IC1503	6-551-484-01	TRANSISTOR RT3C55M-TP-1B	
IC1504	6-551-484-01	TRANSISTOR RT3C55M-TP-1B	
IC1505	8-759-430-37	IC MC14052BDTR2	
< JUMPER RESISTOR >			
JR1001	1-216-864-11	SHORT CHIP	0
JR1003	1-216-864-11	SHORT CHIP	0
JR1005	1-216-864-11	SHORT CHIP	0
JR1008	1-216-864-11	SHORT CHIP	0
JR1009	1-216-864-11	SHORT CHIP	0
< TRANSISTOR >			
Q1301	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1501	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q1502	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q1503	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q1504	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q1505	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q1508	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q1509	8-729-027-23	TRANSISTOR DTA114EKA-T146	

Note: Refer to the Servicing Notes "NOTE OF REPLACING MAIN BOARD, IC1301 (MAIN BOARD), C25 (POWER BOARD) OR POWER BOARD" (page 4), when you exchange the IC1301.

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
Q1510	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R1347	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1602	8-729-040-76	TRANSISTOR	KTA1273-Y-AT								
Q1603	8-729-027-43	TRANSISTOR	DTC114EKA-T146			R1348	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1604	8-729-040-76	TRANSISTOR	KTA1273-Y-AT			R1349	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1605	8-729-027-43	TRANSISTOR	DTC114EKA-T146			R1350	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1606	8-729-600-22	TRANSISTOR	2SA1235-F			R1352	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1607	8-729-040-76	TRANSISTOR	KTA1273-Y-AT			R1353	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1608	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R1354	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1609	8-729-600-22	TRANSISTOR	2SA1235-F			R1355	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1610	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF			R1356	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1611	8-729-047-62	TRANSISTOR	2SC3440-T12-1F			R1357	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1612	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF			R1361	1-216-864-11	SHORT CHIP	0		
Q1613	8-729-047-62	TRANSISTOR	2SC3440-T12-1F			R1363	1-216-864-11	SHORT CHIP	0		
Q1614	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF			R1366	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1615	8-729-047-62	TRANSISTOR	2SC3440-T12-1F			R1367	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1616	8-729-024-43	TRANSISTOR	2SA1365-T112-1EF			R1368	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1617	8-729-047-62	TRANSISTOR	2SC3440-T12-1F			R1369	1-216-809-11	METAL CHIP	100	5%	1/10W
Q1618	8-729-036-89	TRANSISTOR	KTC3198GR-AT			R1370	1-216-809-11	METAL CHIP	100	5%	1/10W
< RESISTOR >						R1371	1-216-809-11	METAL CHIP	100	5%	1/10W
R1201	1-216-845-11	METAL CHIP	100K	5%	1/10W	R1372	1-216-809-11	METAL CHIP	100	5%	1/10W
R1202	1-216-833-11	METAL CHIP	10K	5%	1/10W	R1373	1-216-809-11	METAL CHIP	100	5%	1/10W
R1203	1-216-837-11	METAL CHIP	22K	5%	1/10W	R1375	1-216-809-11	METAL CHIP	100	5%	1/10W
R1301	1-216-809-11	METAL CHIP	100	5%	1/10W						
R1302	1-216-809-11	METAL CHIP	100	5%	1/10W	R1376	1-216-809-11	METAL CHIP	100	5%	1/10W
R1303	1-216-809-11	METAL CHIP	100	5%	1/10W	R1377	1-216-809-11	METAL CHIP	100	5%	1/10W
R1304	1-216-809-11	METAL CHIP	100	5%	1/10W	R1378	1-216-809-11	METAL CHIP	100	5%	1/10W
R1305	1-216-809-11	METAL CHIP	100	5%	1/10W	R1382	1-216-809-11	METAL CHIP	100	5%	1/10W
R1306	1-216-809-11	METAL CHIP	100	5%	1/10W						(SPZ70)
R1307	1-216-809-11	METAL CHIP	100	5%	1/10W	R1383	1-216-809-11	METAL CHIP	100	5%	1/10W
R1309	1-216-833-11	METAL CHIP	10K	5%	1/10W						(SPZ70)
R1311	1-216-849-11	METAL CHIP	220K	5%	1/10W	R1388	1-216-809-11	METAL CHIP	100	5%	1/10W
R1313	1-216-864-11	SHORT CHIP	0			R1389	1-216-809-11	METAL CHIP	100	5%	1/10W
R1316	1-216-864-11	SHORT CHIP	0			R1391	1-216-809-11	METAL CHIP	100	5%	1/10W
R1318	1-216-809-11	METAL CHIP	100	5%	1/10W	R1392	1-216-809-11	METAL CHIP	100	5%	1/10W
(SPZ50: AEP, UK/SPZ70: AEP, UK)						R1393	1-216-809-11	METAL CHIP	100	5%	1/10W
R1319	1-216-809-11	METAL CHIP	100	5%	1/10W	R1394	1-216-809-11	METAL CHIP	100	5%	1/10W
R1320	1-216-841-11	METAL CHIP	47K	5%	1/10W	R1395	1-216-809-11	METAL CHIP	100	5%	1/10W
R1321	1-216-809-11	METAL CHIP	100	5%	1/10W	R1397	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
(SPZ50: AEP, UK/SPZ70: AEP, UK)						(SPZ50: RU/SPZ70: RU, E2, E51, MX, AR)					
R1323	1-216-809-11	METAL CHIP	100	5%	1/10W	R1397	1-216-864-11	SHORT CHIP	0		
R1324	1-216-809-11	METAL CHIP	100	5%	1/10W	(SPZ50: SP, KR, AUS/SPZ70: KR)					
R1325	1-216-809-11	METAL CHIP	100	5%	1/10W	R1400	1-216-809-11	METAL CHIP	100	5%	1/10W
R1326	1-216-809-11	METAL CHIP	100	5%	1/10W						
R1328	1-216-809-11	METAL CHIP	100	5%	1/10W	R1401	1-216-841-11	METAL CHIP	47K	5%	1/10W
R1331	1-216-809-11	METAL CHIP	100	5%	1/10W	R1402	1-216-841-11	METAL CHIP	47K	5%	1/10W
(SPZ70)						R1412	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1332	1-216-809-11	METAL CHIP	100	5%	1/10W	R1417	1-216-833-11	METAL CHIP	10K	5%	1/10W
(SPZ70)						R1418	1-216-864-11	SHORT CHIP	0		
R1333	1-216-809-11	METAL CHIP	100	5%	1/10W	(SPZ50: RU, SP, KR, AUS/SPZ70:RU, E2, E51, MX, AR, KR)					
R1334	1-216-809-11	METAL CHIP	100	5%	1/10W	R1420	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1335	1-216-809-11	METAL CHIP	100	5%	1/10W	R1421	1-216-864-11	SHORT CHIP	0		
R1336	1-216-809-11	METAL CHIP	100	5%	1/10W	(SPZ50: RU, SP, KR, AUS/SPZ70:RU, E2, E51, MX, AR, KR)					
R1337	1-216-809-11	METAL CHIP	100	5%	1/10W	R1423	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1343	1-216-809-11	METAL CHIP	100	5%	1/10W	R1424	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1344	1-216-809-11	METAL CHIP	100	5%	1/10W	R1425	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1345	1-216-809-11	METAL CHIP	100	5%	1/10W						
R1346	1-216-809-11	METAL CHIP	100	5%	1/10W	R1426	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R1428	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R1429	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R1430	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R1431	1-216-833-11	METAL CHIP	10K	5%	1/10W
						R1432	1-216-833-11	METAL CHIP	10K	5%	1/10W

MAIN

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REVISION HISTORY

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