

# XP-ZV610/ZV616

## SERVICE MANUAL

Ver 1.1 2004.04



Photo : XP-ZV616

*US Model*  
*Canadian Model*  
XP-ZV610

*AEP Model*  
*UK Model*  
XP-ZV616

*E Model*  
XP-ZV610/ZV616

*Australian Model*  
XP-ZV610

Model Name Using Similar Mechanism	XP-ZV71
CD Mechanism Type	CDM-3325ER
Optical Pick-up Name	DAX-25E

### SPECIFICATIONS

#### System

Compact disc digital audio system

#### Laser diode properties

Material: GaAlAs

Wavelength:  $\lambda = 770 - 800 \text{ nm}$

Emission duration: Continuous

Laser output: Less than  $44.6 \mu\text{W}$

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

#### D-A conversion

1-bit quartz time-axis control

#### Frequency response

20 - 20 000 Hz  $\pm 1$  dB (measured by JEITA)

#### Output (at 4.5 V input level)

Headphones (stereo minijack)

Approx. 5 mW + Approx. 5 mW at 16  $\Omega$

(Approx. 1.5 mW + Approx. 1.5 mW at 16  $\Omega$ )\*

\* For the customers in Europe

#### Power requirements

- Two LR6 (size AA) batteries: 1.5 V DC  $\times$  2
- AC power adaptor (DC IN 4.5 V jack)
- Rated current: 500 mA

#### Battery life\*1 (approx. hours)

When you use the CD player on a flat and stable surface.

When SOUND mode is set to "OFF"

Playing time varies depending on how the CD player is used.

#### When using two Sony alkaline batteries LR6 (SG) (produced in Japan)

	E•A•S•S GP "EASS GP 1" "EASS GP 2"	
Audio CD	50	45
ATRAC CD*2	85	85
MP3 CD*3	65	65

\*1 Measured value by the standard of JEITA (Japan Electronics and Information Technology Industries Association)

\*2 Recorded at 48 kbps

\*3 Recorded at 128 kbps

#### Operating temperature

5°C - 35°C (41°F - 95°F)

#### Dimensions (w/h/d) (excluding projecting parts and controls)

Approx. 135.8  $\times$  27.2  $\times$  135.8 mm  
(5  $\frac{3}{8}$   $\times$  1  $\frac{1}{8}$   $\times$  5  $\frac{3}{8}$  in.)

#### Mass (excluding accessories)

Approx. 180 g (6.4 oz.)

#### Supplied accessories

AC power adaptor (AC-ES455K)(1)

Earphones (1)

Remote control (1)(XP-ZV616)

CD-ROM\* (SonicStage)(1)

User's guide for SonicStage (1)

Operating Instructions

\* Do not play a CD-ROM on an audio CD player.

US and foreign patents licensed from Dolby Laboratories.

Design and specifications are subject to change without notice.

## PORTABLE CD PLAYER

9-961-546-02

2004D16-1

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**Sony Corporation**

Personal Audio Company

Published by Sony Engineering Corporation



## CAUTION

- INVISIBLE LASER RADIATION WHEN OPEN
- DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
- CLASS 1M INVISIBLE LASER RADIATION WHEN OPEN
- DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

## CAUTION

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

## Flexible Circuit Board Repairing

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

## Notes on chip component replacement

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

## On AC power adaptor

- Use only the AC power adaptor supplied. If your CD player is not supplied with the one, use the AC-E45HG AC power adaptor. Do not use any other AC power adaptor. It may cause a malfunction.

### Polarity of the plug



- Do not touch the AC power adaptor with wet hands.
- Connect the AC power adaptor to an easily accessible AC outlet. Should you notice an abnormality in the AC power adaptor, disconnect it from the AC outlet immediately.

## Music sources playable on this CD player

You can play the following 3 music sources on this CD player:

- Audio CDs (CDDA format)
- CDs with ATRAC3plus/ATRAC3 format files (ATRAC CD)
- CDs with MP3 format files (MP3 CD)

### Usable disc formats

You can use ISO 9660 Level 1/2 and Joliet extension format discs only.

### About CD-Rs/RWs

This CD player can play CD-Rs/RWs recorded in the ATRAC3plus/ATRAC3, MP3 or CDDA\* format, but playback capability may vary depending on the quality of the disc and the condition of the recording device.

\* CDDA is the abbreviation for Compact Disc Digital Audio. It is a recording standard used for the Audio CDs.

### Music discs encoded with copyright protection technologies

This product is designed to playback discs that conform to the Compact Disc (CD) standard. Recently, various music discs encoded with copyright protection technologies are marketed by some record companies. Please be aware that among those discs, there are some that do not conform to the CD standard and may not be playable by this product.

### Notes

- This CD player cannot record music content on recordable media, such as CD-Rs/RWs.
- CD-Rs/RWs recorded in the ATRAC3plus/ATRAC3 format cannot be played on your computer.

## Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



### : LEAD FREE MARK

Unleaded solder has the following characteristics.

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

## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

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## SECTION 1 SERVICING NOTE

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

### NOTES ON LASER DIODE EMISSION CHECK

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

### BEFORE REPLACING THE OPTICAL PICK-UP BLOCK

Please be sure to check thoroughly the parameters as per the “Optical Pick-Up Block Checking Procedures” (Part No.: 9-960-027-11) issued separately before replacing the optical pick-up block.

- FOK output: IC601 ⑤ pin  
When checking FOK, remove the lead wire to disc motor.
- RF signal P-to-P value: 0.45 to 0.65 V<sub>p-p</sub>

### LASER DIODE AND FOCUS SEARCH OPERATION CHECK

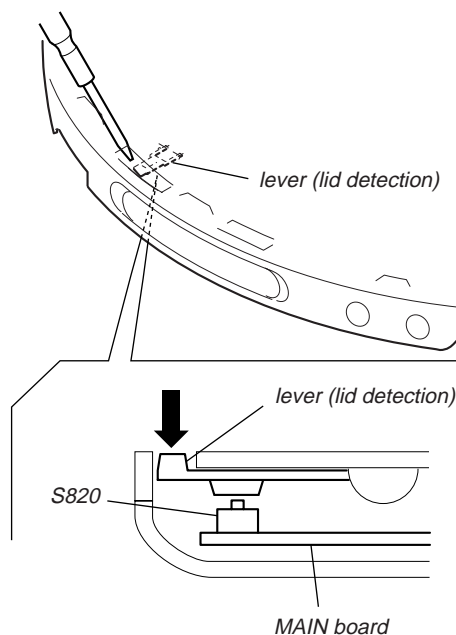
During normal operation of the equipment, emission of the laser diode is prohibited unless the upper lid is closed while turning ON the S820. (push switch type)

The following checking method for the laser diode is operable.

- **Method:**  
**Emission of the laser diode is visually checked.**
1. Open the upper lid.
  2. With a disc not set, turn on the S820 with a screwdriver having a thin tip as shown in Fig.1.
  3. Press the **▶II/ENT** button.
  4. Observing the objective lens, check that the laser diode emits light.

When the laser diode does not emit light, automatic power control circuit or optical pickup is faulty.

In this operation, the objective lens will move up and down 4 times along with inward motion for the focus search.



**Fig. 1 Method to push the S820**

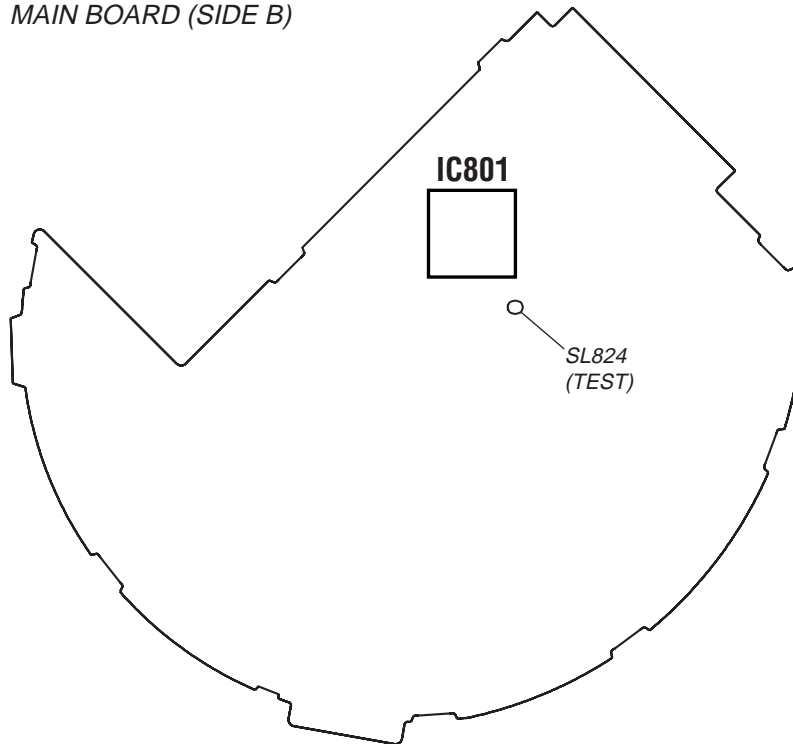
**TEST MODE**

The software version display and LCD test can be performed when the test mode is activated.

**Procedure:**

1. Confirm the set is not powered on. (Remove two batteries and disconnect the AC power adaptor.)
2. Short the solder land SL824 (TEST) on the MAIN board.
3. Turn on the main power. (Insert two batteries.)
4. Microcomputer version is displayed for about a second.
5. After that all segments of the liquid crystal display are turned on.
6. Turn off the main power. (Remove two batteries.)
7. Open the solder land SL824 (TEST) on the MAIN board.

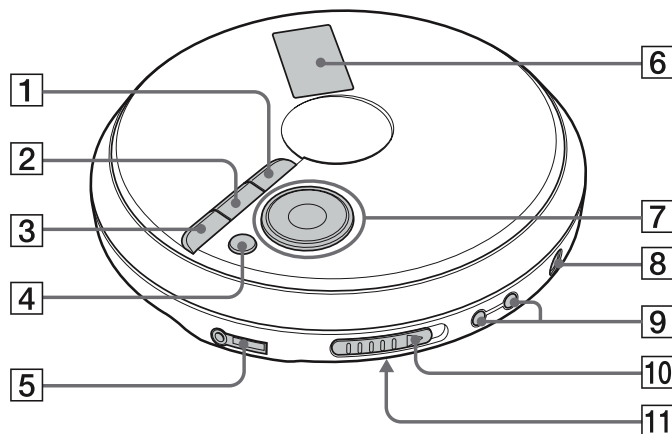
Note : The solder should be removed clean.

**MAIN BOARD (SIDE B)**

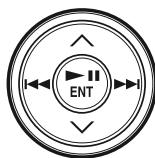
This section is extracted from instruction manual.

## Locating the controls

### CD player



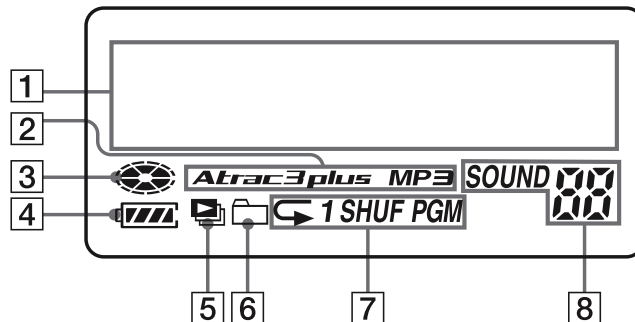
- 1** DSPL (display)/MENU button (16, 17, 20 - 25, 28)  
Use to enter the menu. Also use to enter the selection as well as ►||/ENT.
- 2** [Folder icon] (group) – button (15, 20, 21, 23, 24, 28)
- 3** [Folder icon] (group) + button (15, 20, 21)
- 4** [Square icon] (stop) button (15, 21, 23, 24, 28)
- 5** [Headphones icon] (headphones) jack (14)
- 6** Display (12, 16 - 18, 20 - 22, 28)
- 7** Operation button (15, 17 - 25, 28)
- 8** DC IN 4.5 V (external power input) jack (14)
- 9** VOL (volume) +\*/– buttons (15)
- 10** OPEN switch (14, 26)  
Slide the switch to open the CD player lid.
- 11** HOLD switch (rear) (24)  
Slide the switch in the direction of the arrow to disable the buttons on the CD player.



►||\*/ENT: play/pause/enter  
 ◀◀/▶▶: skip/search  
 ▲/▼: Use to select a file, play mode, etc.

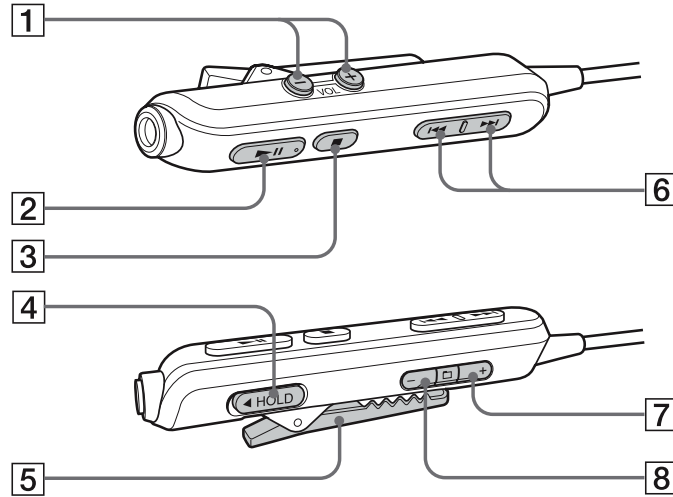
\* The button has a tactile dot.

## Display



- |   |   |
|---|---|
| <p><b>1</b> Character information display (16)<br/>While playing an audio CD, disc name, track name, etc. appear on the 2 lines of the display, if recorded on the CD.<br/>While playing an ATRAC CD/MP3 CD, group name, file name, etc. appear on the 2 lines of the display, if recorded on the CD.<br/>Menu items also appear in this display.</p> <p><b>2</b> Atrac3plus/MP3 indication</p> <p><b>3</b> Disc indication<br/>Lights up while the CD player is playing.</p> <p><b>4</b> Battery indication (26)<br/>Roughly shows the remaining power of the battery. If "▢" flashes, the batteries are depleted.</p> | <p><b>5</b> Play list indication (18)<br/>For MP3 CD only</p> <p><b>6</b> Group indication (17, 18)<br/>For ATRAC CD/MP3 CD only</p> <p><b>7</b> Play mode indication (17, 18, 20)<br/>Shows various playmodes such as shuffle play and program play. "↺" shows repeat play.</p> <p><b>8</b> SOUND indication (22)<br/>Shows the SOUND setting which has been selected on the menu.</p> |
|---|---|

Remote control (for XP-ZV616 only)



- 1 VOL (volume) +\*/- buttons (15)
- 2 ►||\* (play/pause) button (15)
- 3 ■ (stop) button (15)
- 4 HOLD switch (24)
- 5 Clip
- 6 ◀◀/▶▶ (skip/search) buttons (15)
- 7 [ ] (group) + button (15, 20, 21)
- 8 [ ] (group) - button (15, 20, 21)

**Note**

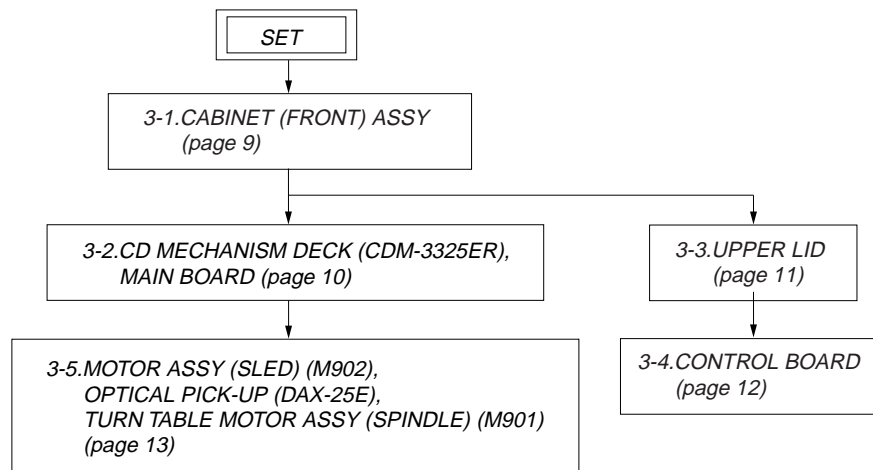
Use only the supplied remote control. You cannot operate this CD player with the remote control supplied with other CD players.

\* The button has a tactile dot.



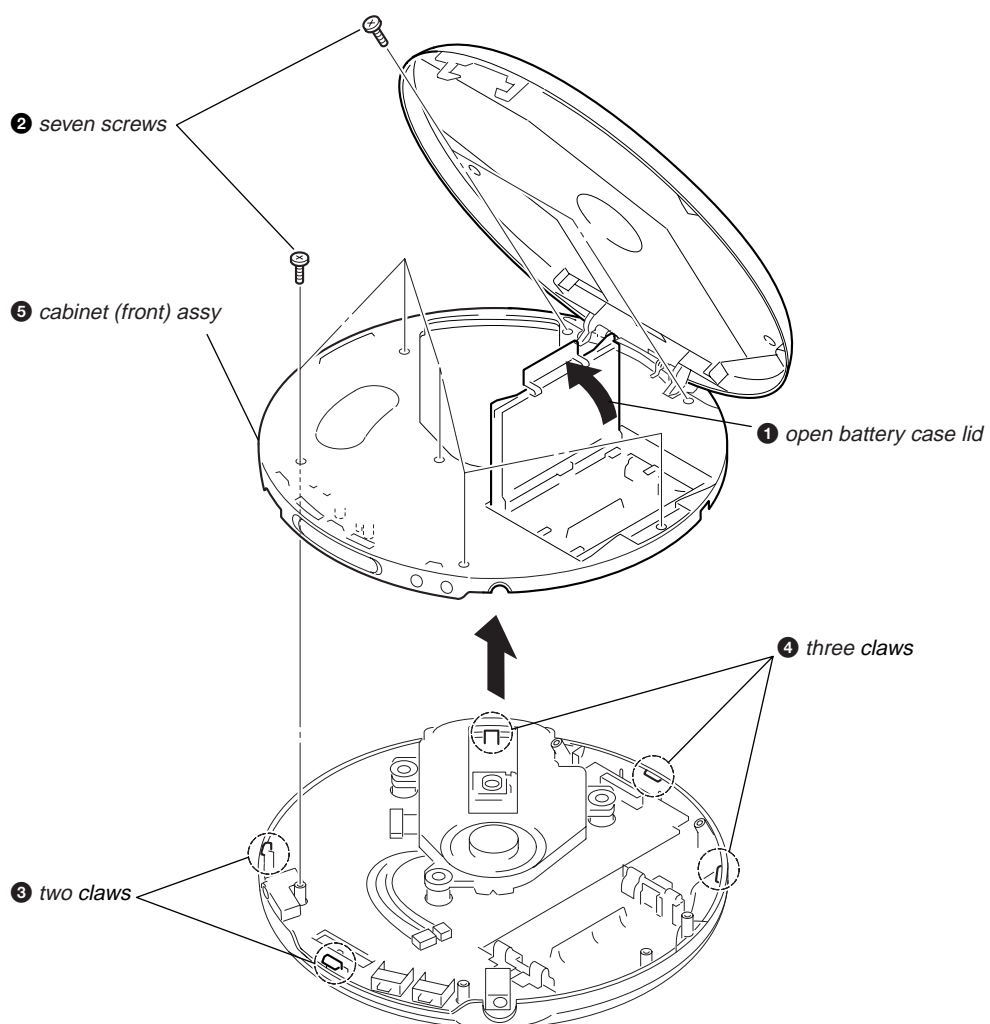
## SECTION 3 DISASSEMBLY

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

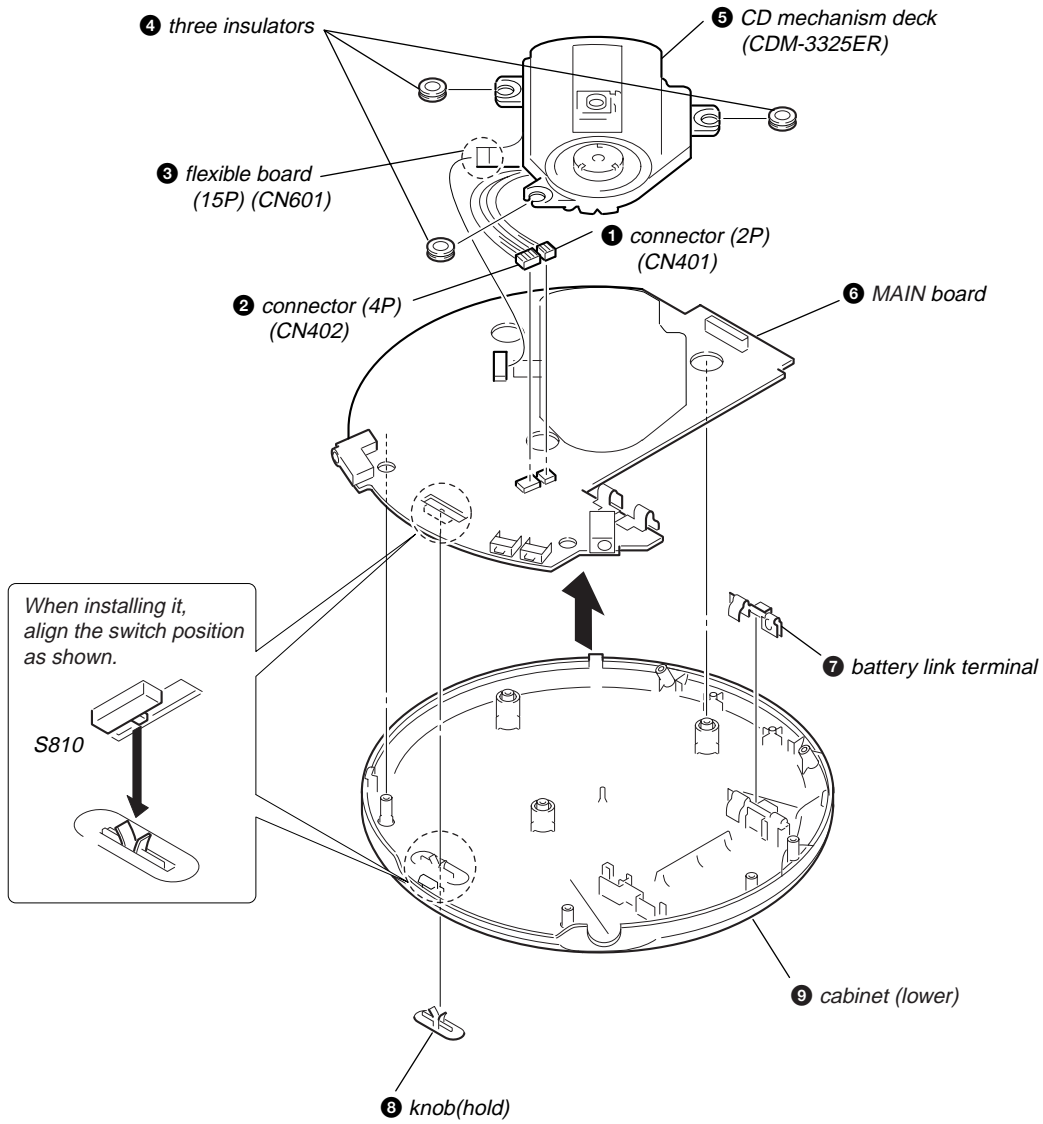


**Note :** Follow the disassembly procedure in the numerical order given.

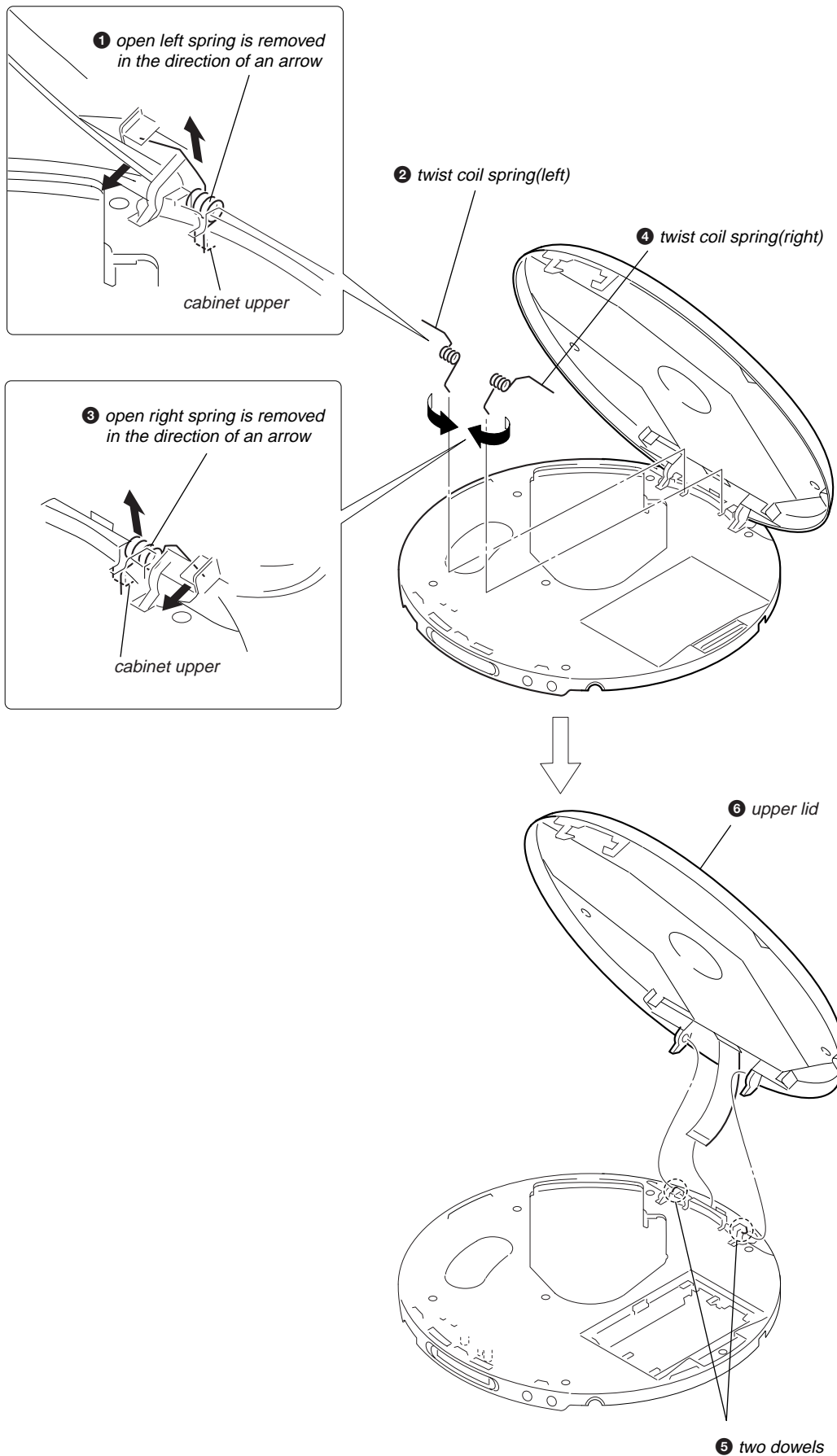
### 3-1. CABINET (FRONT) ASSY



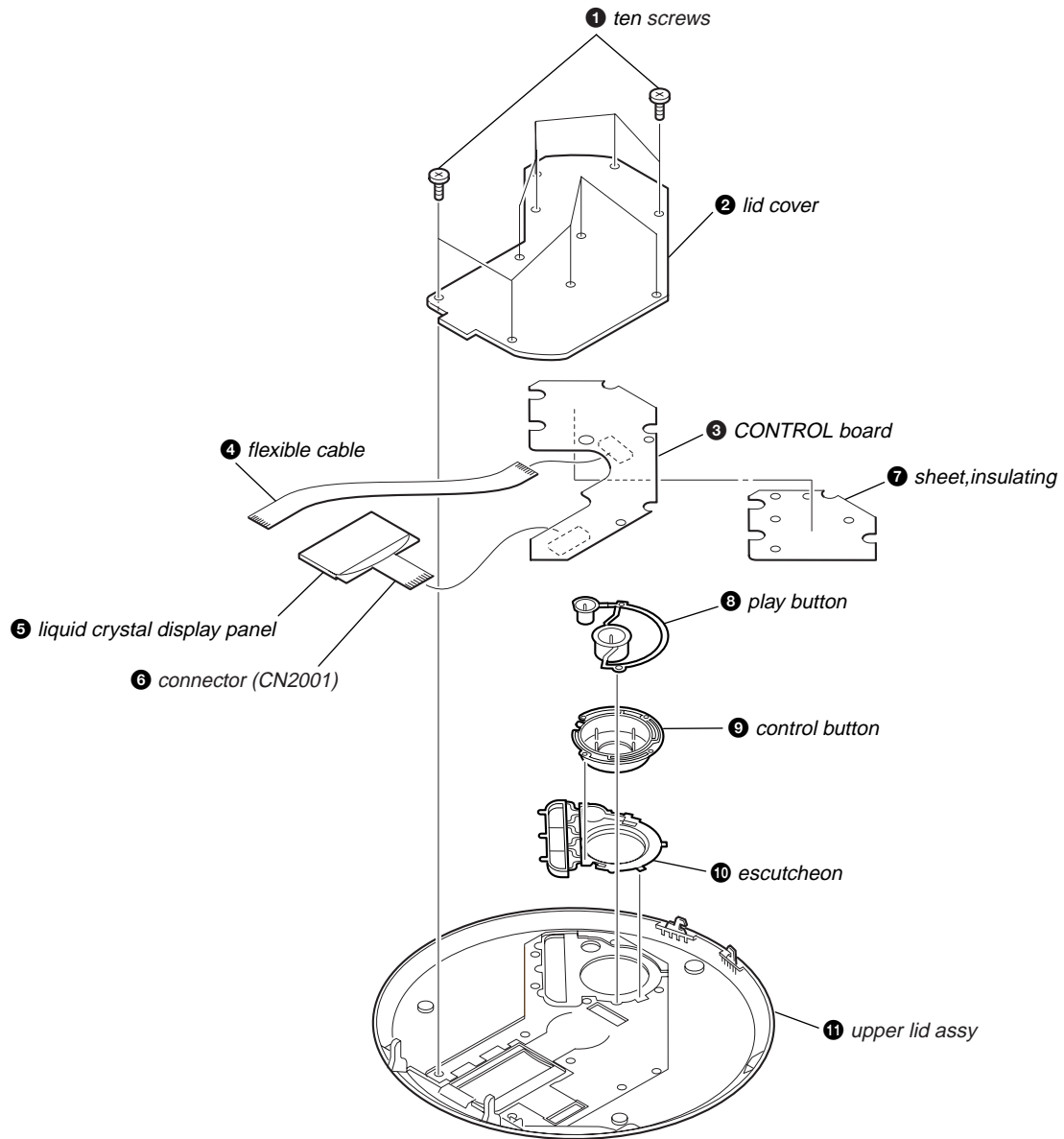
3-2. CD MECHANISM DECK (CDM-3325ER), MAIN BOARD



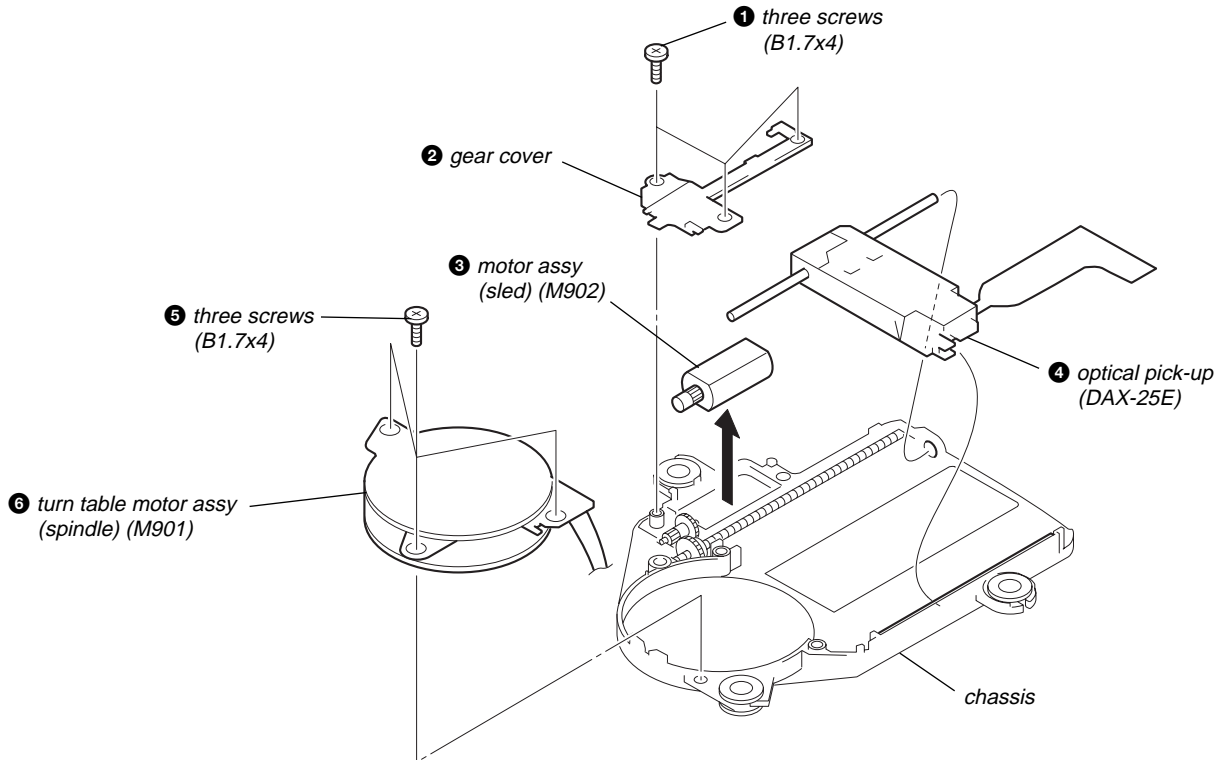
3-3. UPPER LID



3-4. CONTROL BOARD



3-5. MOTOR ASSY (SLED)(M902), OPTICAL PICK-UP (DAX-25E),  
TURN TABLE MOTOR ASSY (SPINDLE)(M901)



## SECTION 4 ELECTRICAL CHECKING

The CD section adjustments are done automatically in this set.  
In case of operation check, confirm that RF level.

### Precautions for Check

1. Perform check in the order given.
2. Use YEDS-18 disc (Part No.: 3-702-101-01) unless otherwise indicated.
3. Power supply voltage requirement : DC4.5 V in DC IN jack.  
(J401)

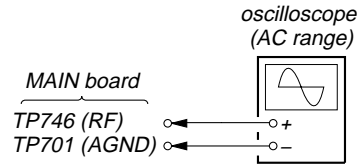
**[VOL]** button : Minimum  
**[HOLD]** switch : OFF

### RF Level Check

#### Condition:

- Hold the set in horizontal state.

#### Connection:

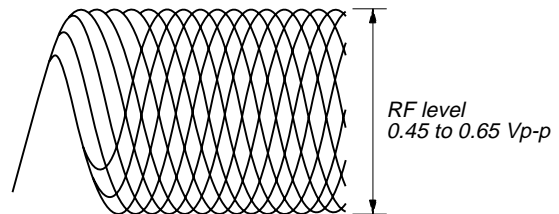


#### Procedure:

1. Connect the oscilloscope to the test points TP746 (RF) and TP701 (AGND) on the MAIN board.
2. Set a disc. (YEDS-18)
3. Press the **[▶II/ENT]** button.
4. Check the oscilloscope waveform is as shown below.  
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.

### RF Signal reference Waveform (Eye Pattern)

VOLT/DIV : 100 mV (With the 10:1 probe in use)  
TIME/DIV : 500 ns

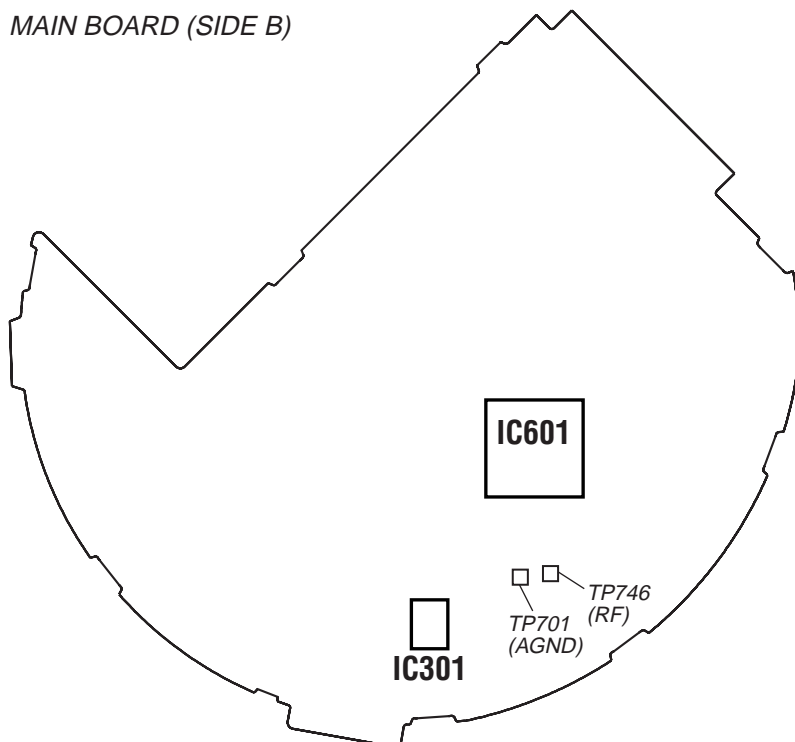


To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

5. Stop revolving of the disc motor by pressing the **[■]** button.

### Checking Location:

MAIN BOARD (SIDE B)



## SECTION 5 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.
- : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

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

- MAIN board is multi-layer printed board. However, the patterns of intermediate-layer have not been included in the diagram.

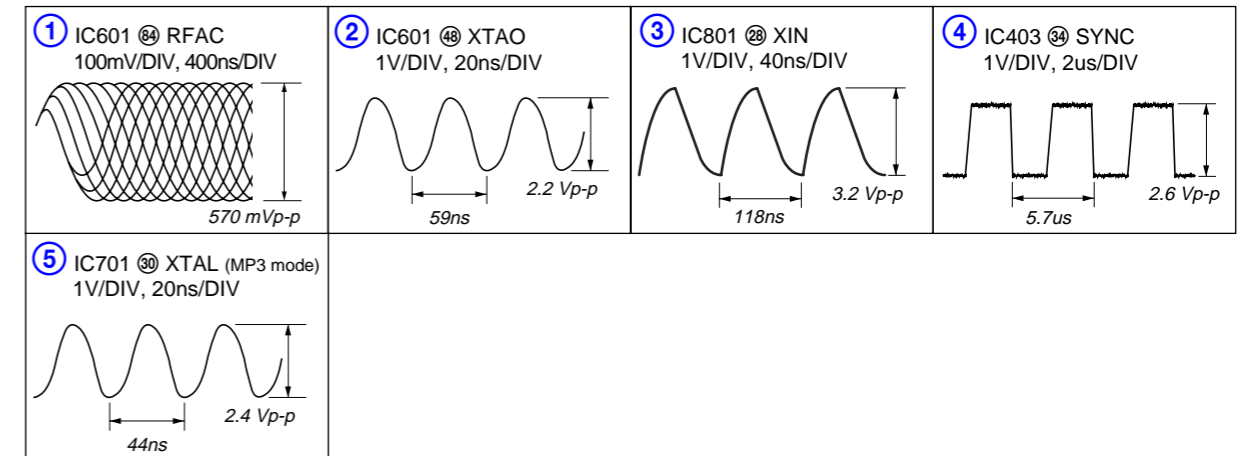
#### Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- % : indicates tolerance.
- : panel designation.

<p><b>Note:</b> The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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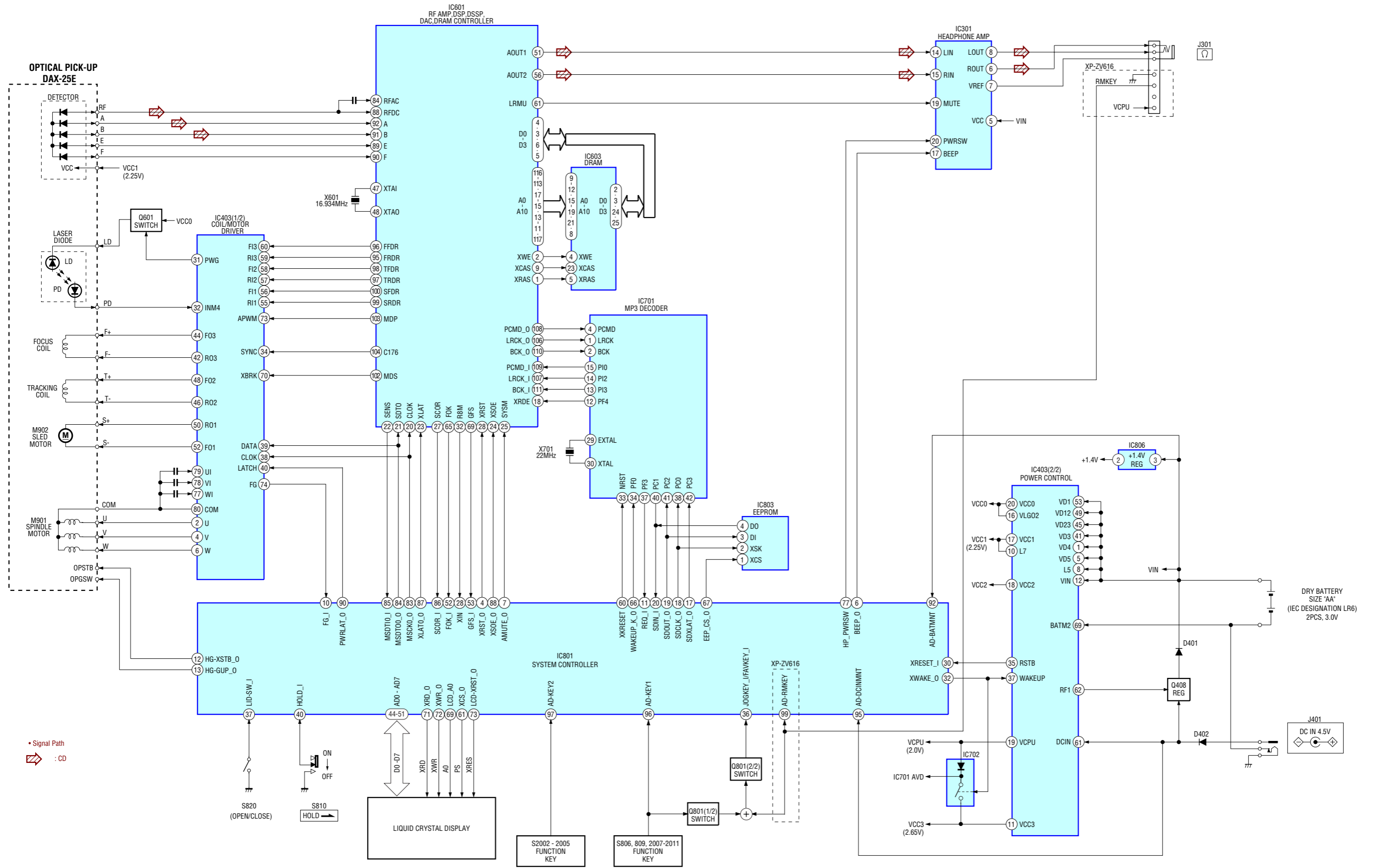
- : B+ Line.
- Total current is measured with CD installed.
- Power voltage is dc 4.5 V and fed with regulated dc power supply from DC IN jack (J401).
- Voltagés and waveforms are dc with respect to ground in playback mode.  
no mark : CD PLAY  
\* : Impossible to measure
- Voltagés are taken with a VOM (Input impedance 10 M $\Omega$ ).  
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.  
⇒ : CD
- Abbreviation  
E18 : 100V-240V AC area in E model  
EE : East European model

### • WAVEFORMS



# XP-ZV610/ZV616

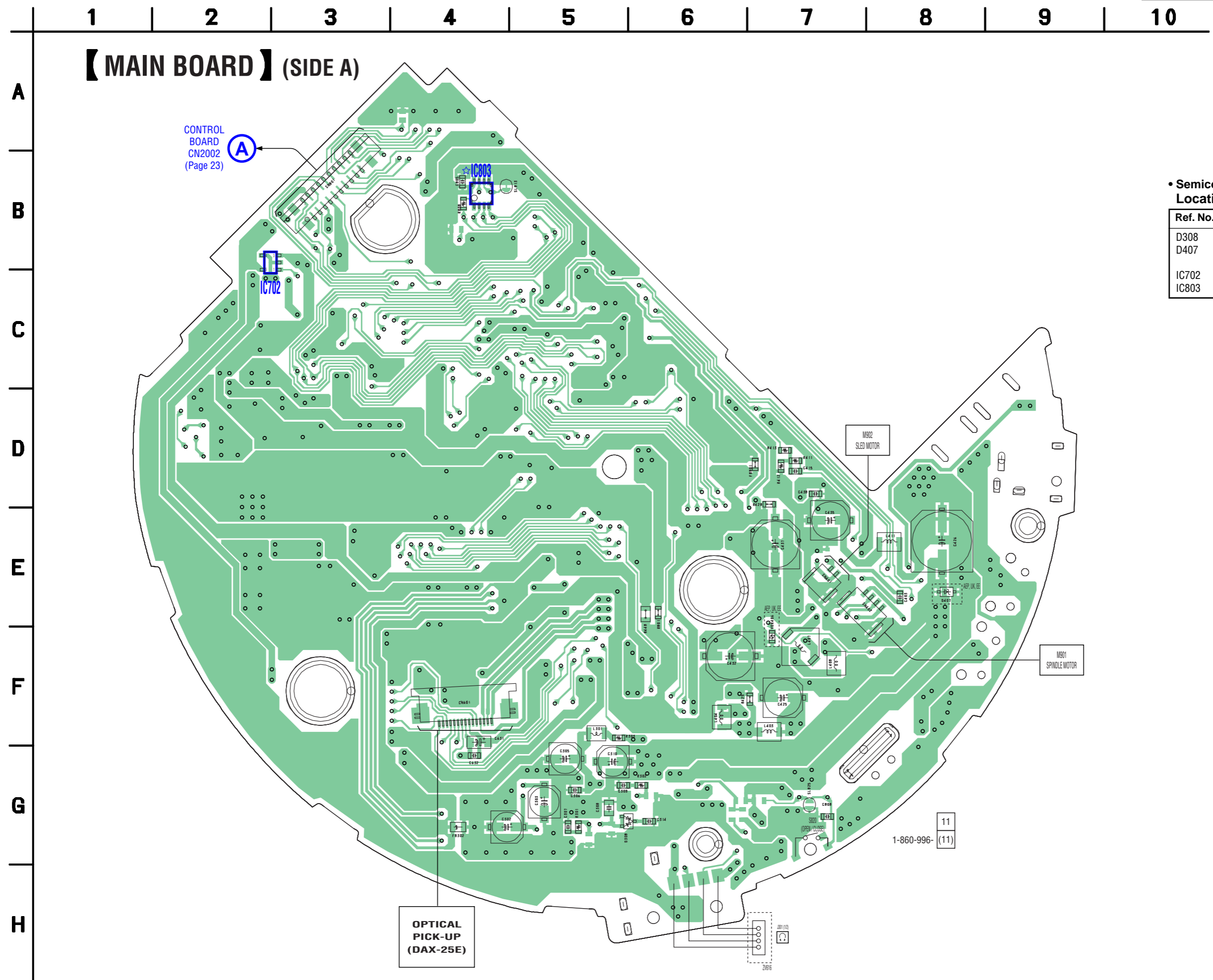
## 5-1. BLOCK DIAGRAM





5-2. PRINTED WIRING BOARD – MAIN BOARD (SIDE A) –  : Uses unleaded solder.

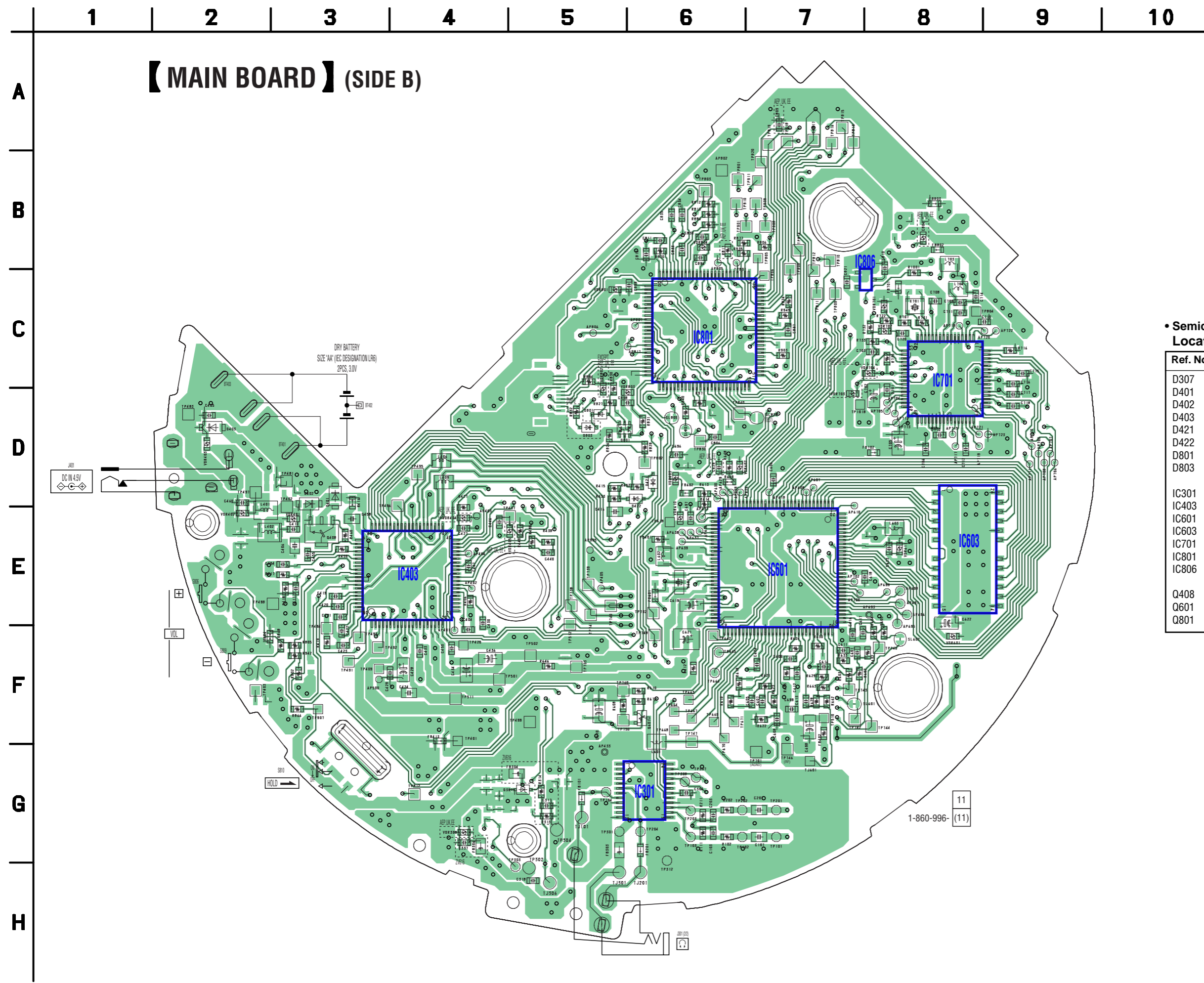
☆ When IC803 is damaged, replace the MAIN board.



• Semiconductor Location

Ref. No.	Location
D308	G-5
D407	E-8
IC702	C-2
IC803	B-4

1-860-996- (11)

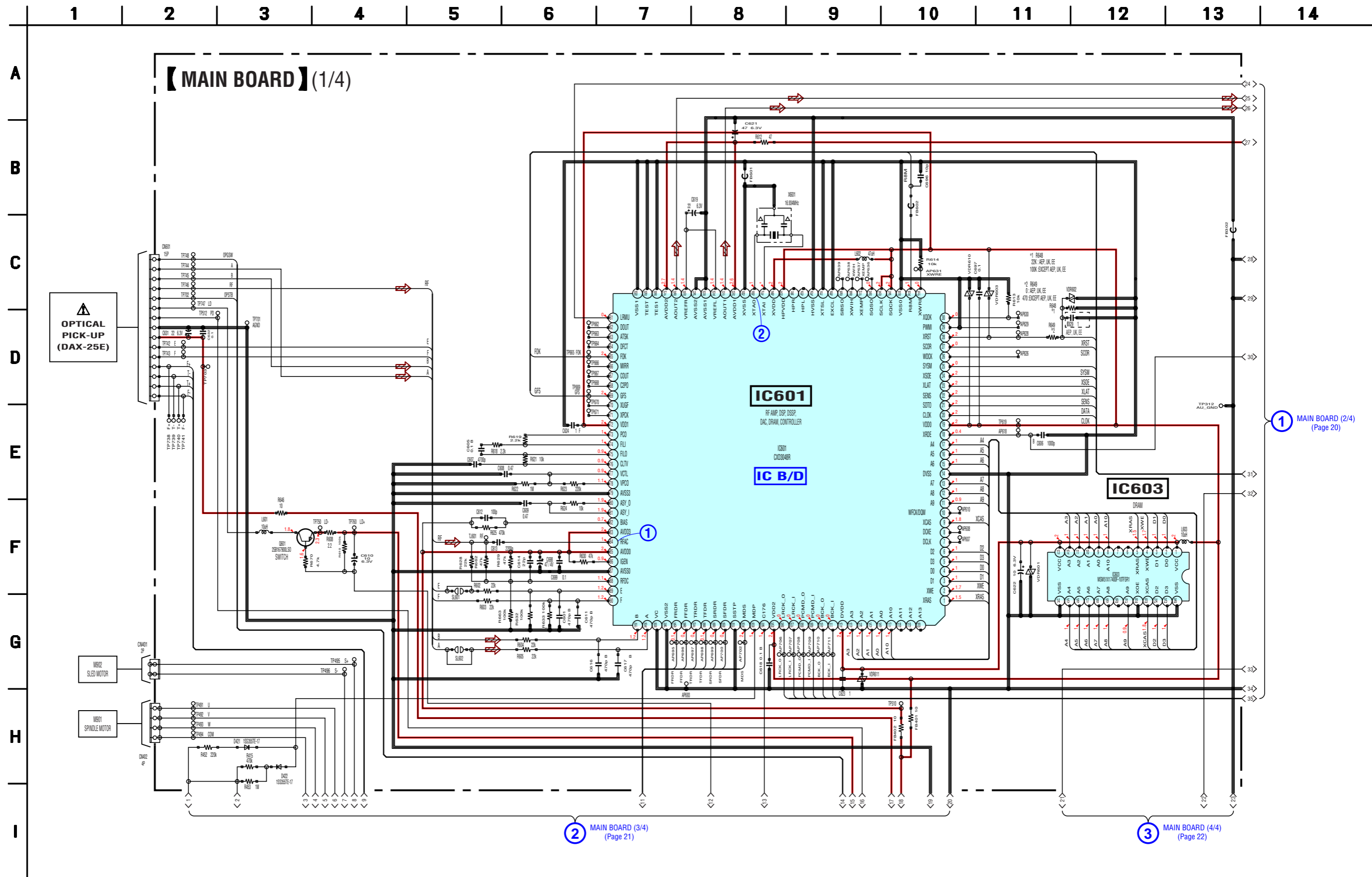


• Semiconductor Location

Ref. No.	Location
D307	G-5
D401	D-3
D402	D-3
D403	D-2
D421	D-6
D422	E-5
D801	D-5
D803	D-5
IC301	G-6
IC403	E-4
IC601	E-7
IC603	E-8
IC701	C-8
IC801	C-6
IC806	B-7
Q408	E-3
Q601	F-6
Q801	D-5

11  
1-860-996-(11)

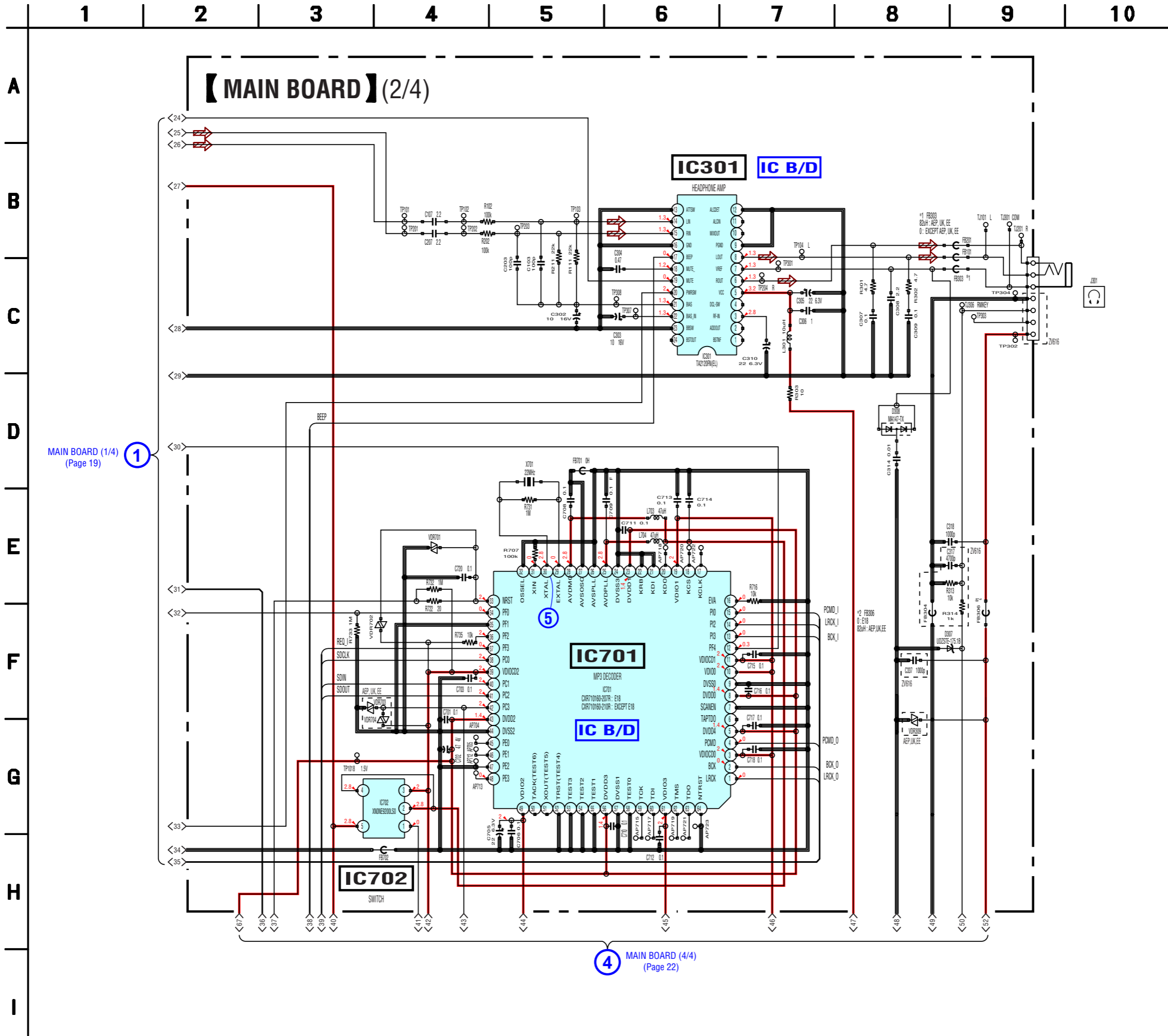
5-4. SCHEMATIC DIAGRAM – MAIN BOARD (1/4) –



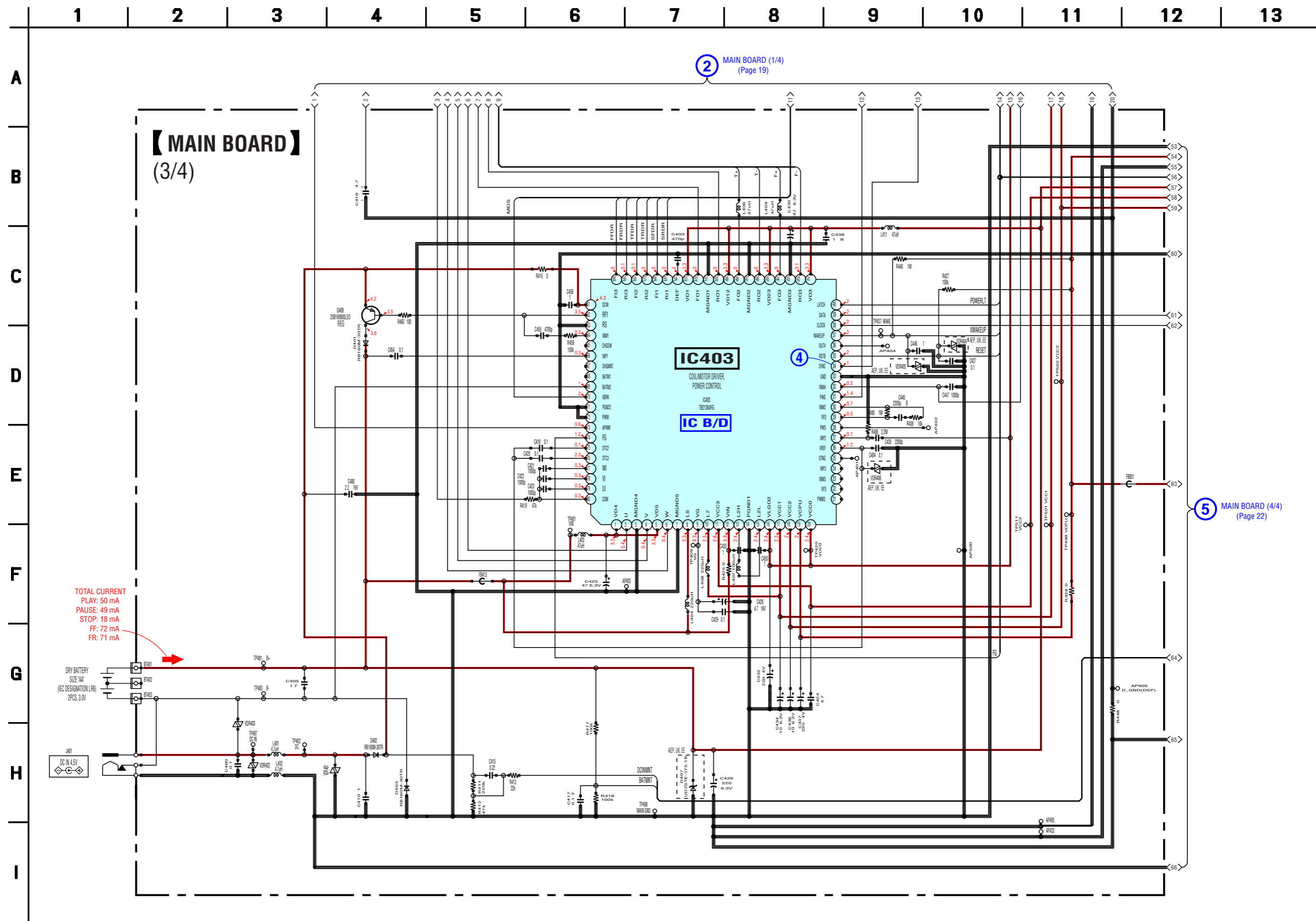
2 MAIN BOARD (3/4) (Page 21)

3 MAIN BOARD (4/4) (Page 22)

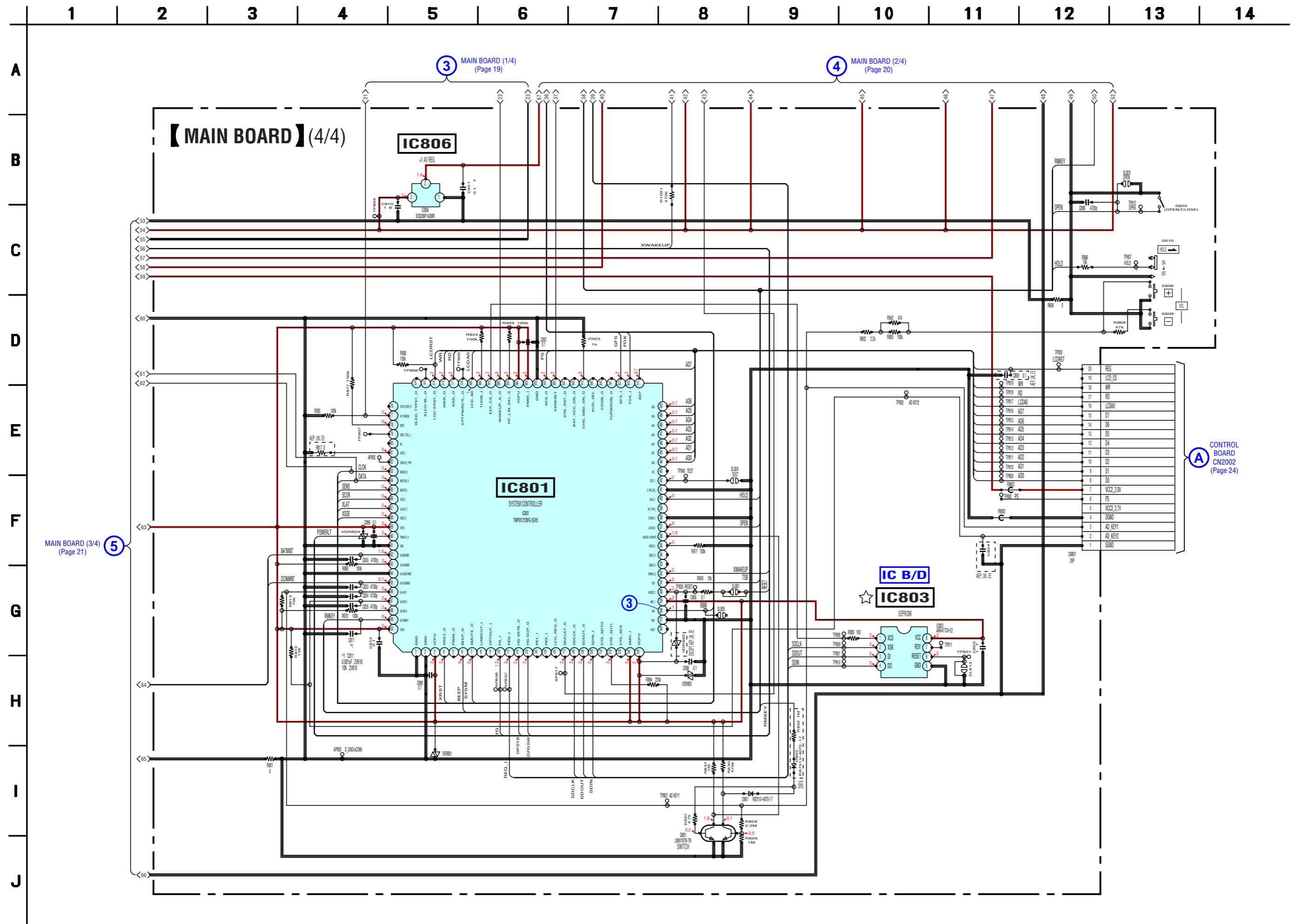
1 MAIN BOARD (2/4) (Page 20)



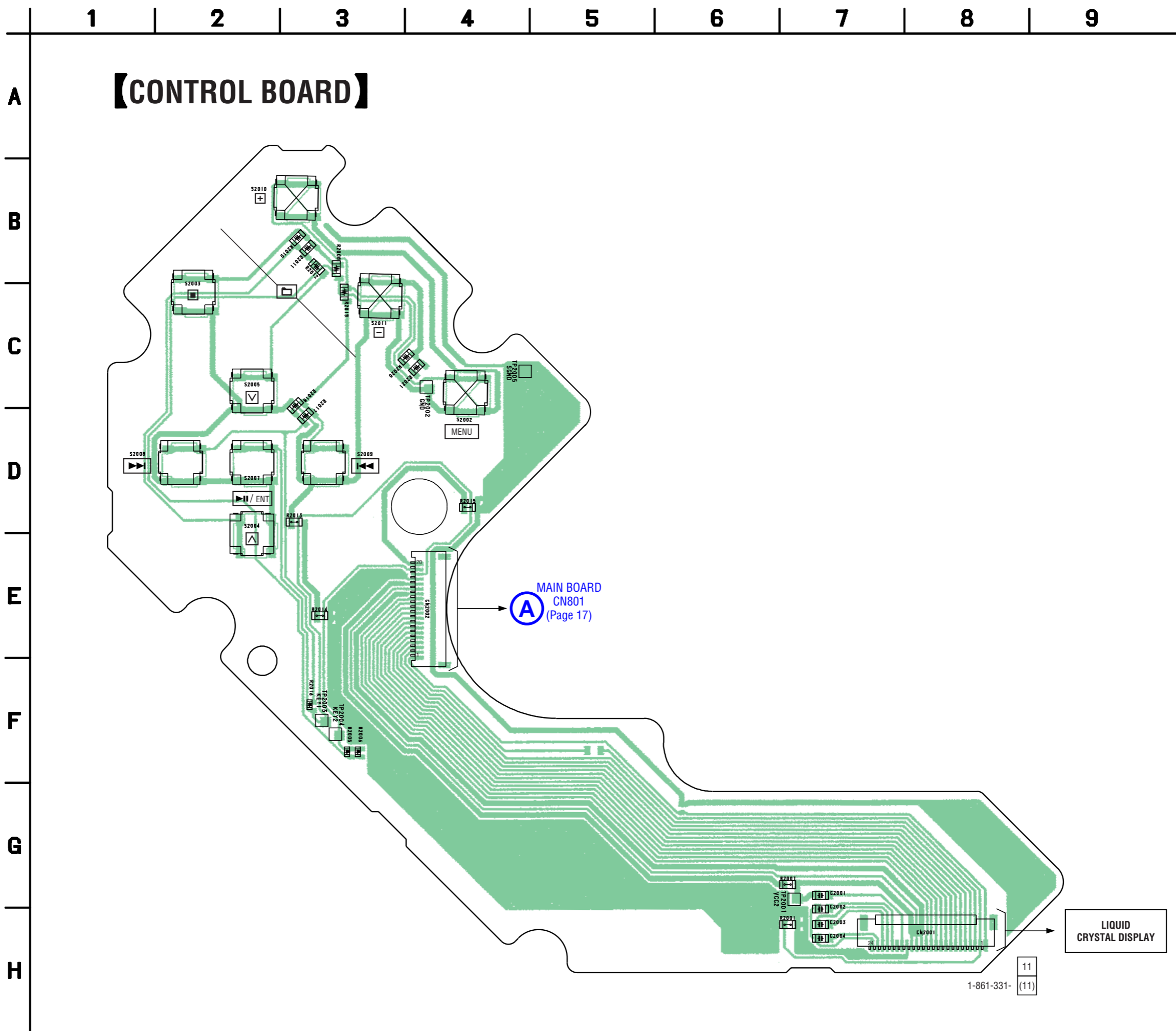
5-6. SCHEMATIC DIAGRAM – MAIN BOARD (3/4) –

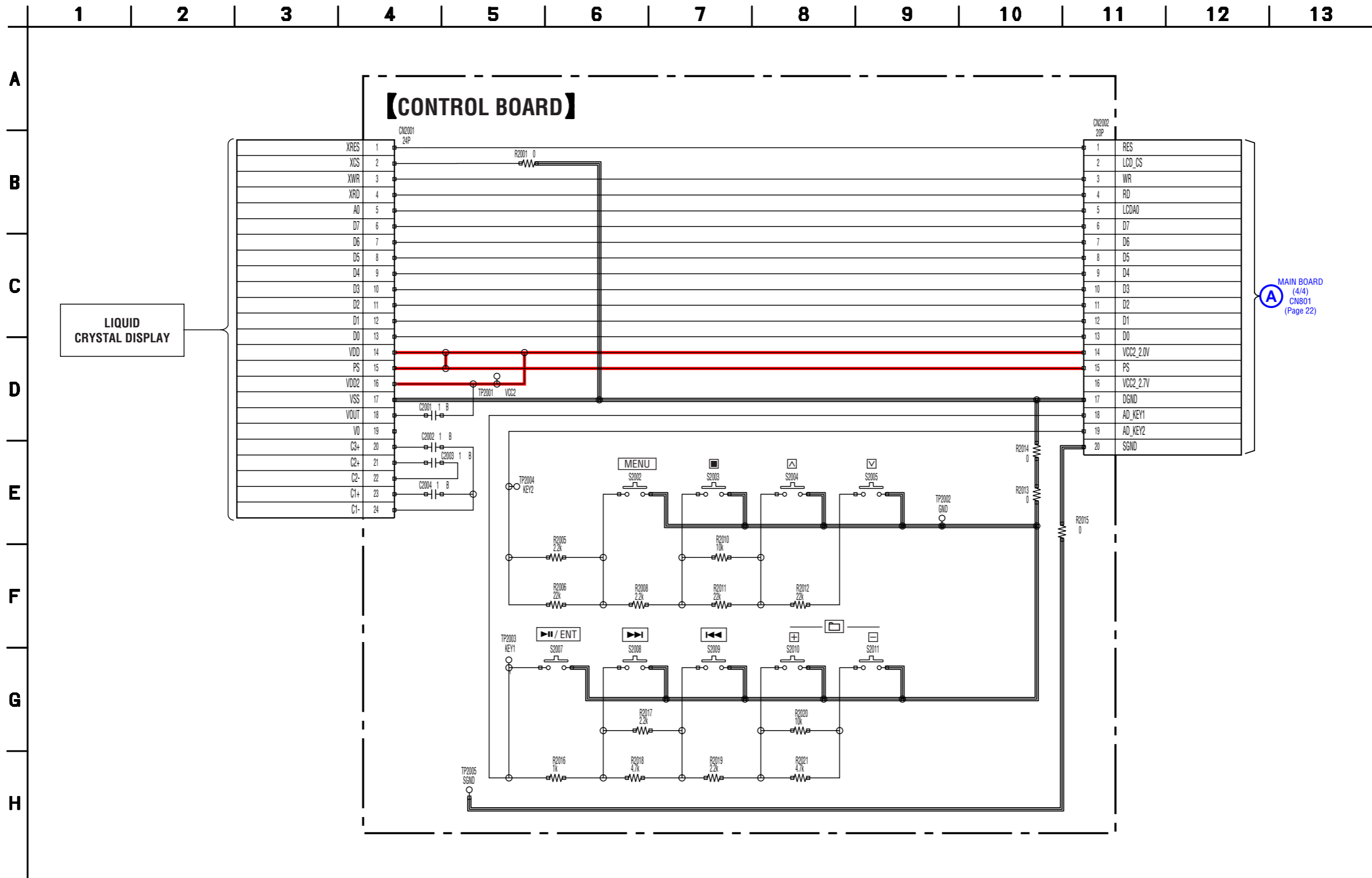


TOTAL CURRENT  
 PLAY: 50 mA  
 PAUSE: 49 mA  
 STOP: 18 mA  
 FF: 72 mA  
 FR: 71 mA



5-8. PRINTED WIRING BOARD – CONTROL BOARD – : Uses unleaded solder.

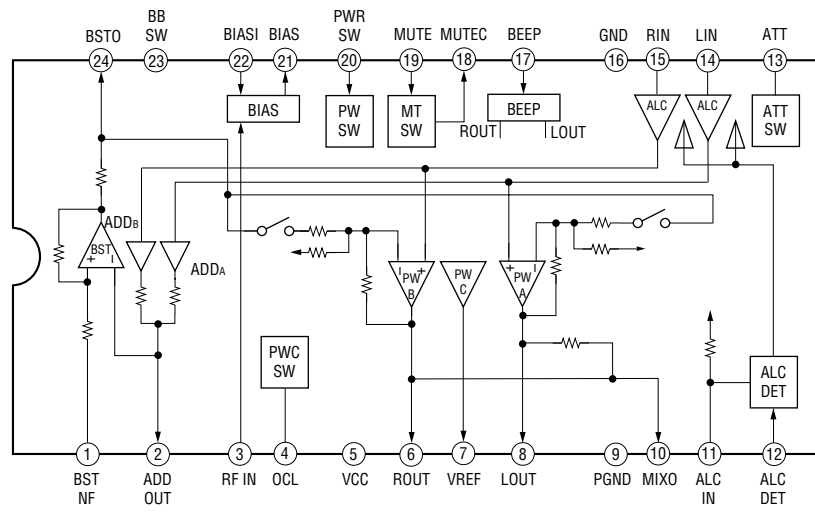




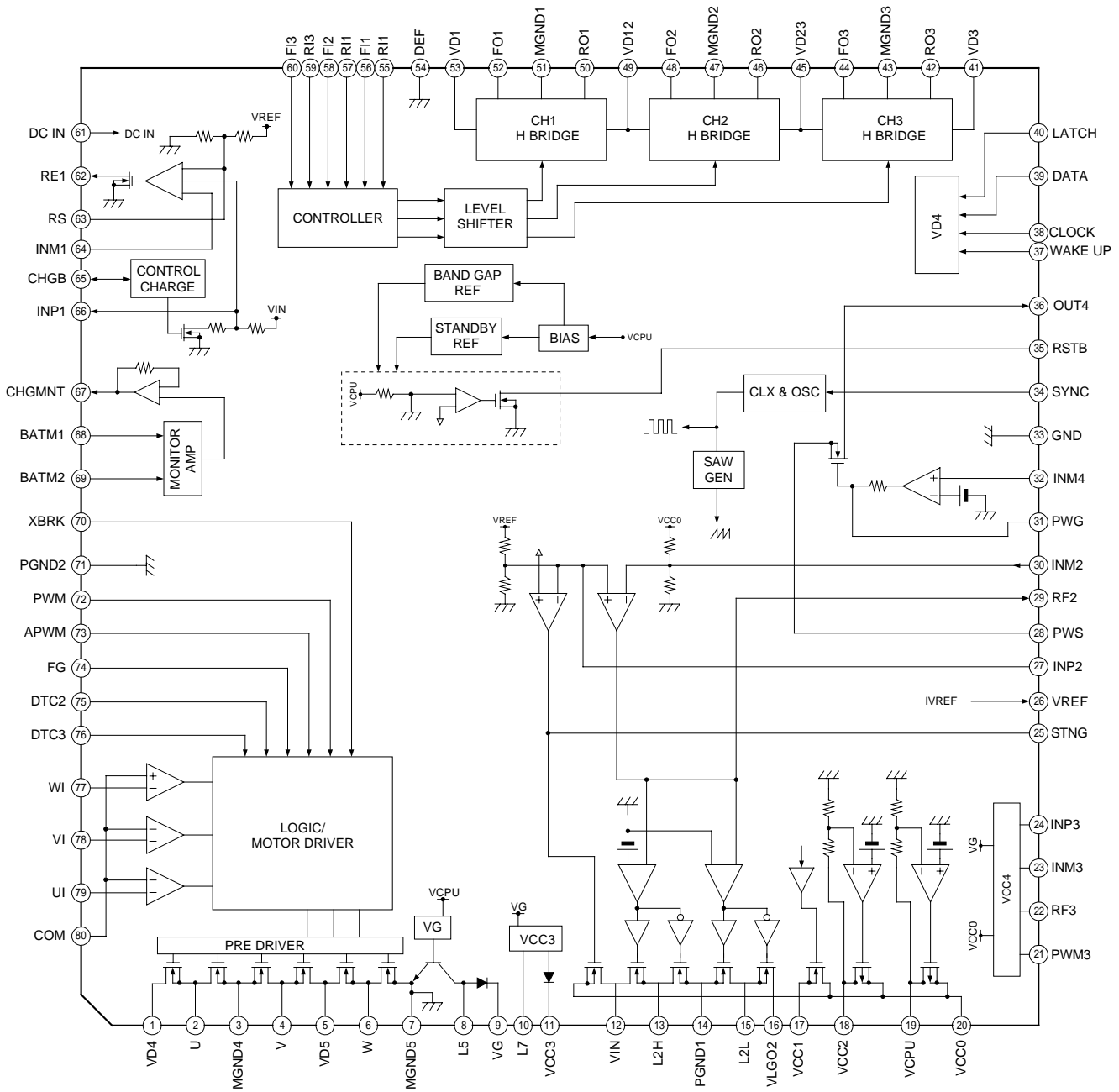


• IC Block Diagrams

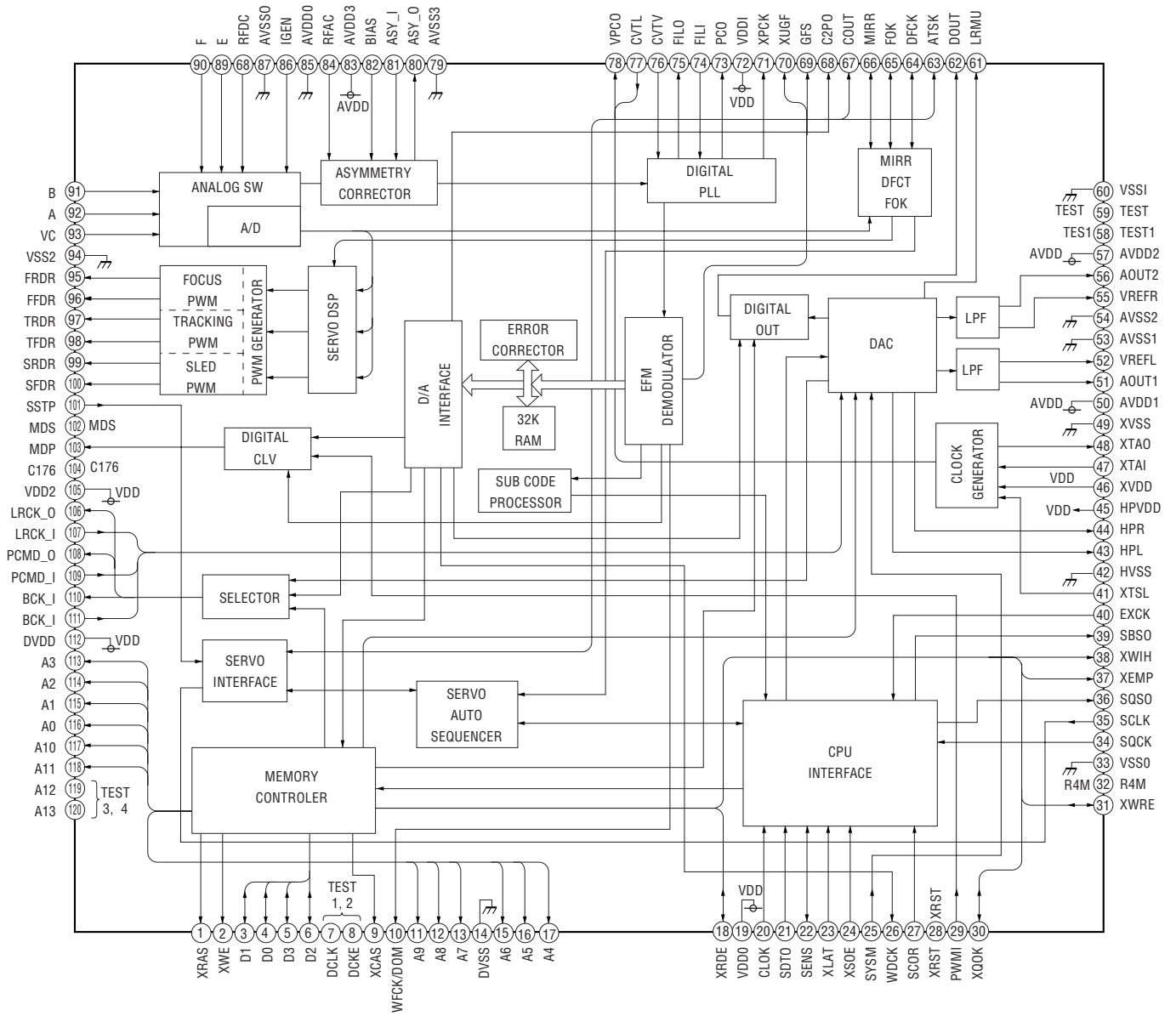
IC301 TA2120FN (EL)



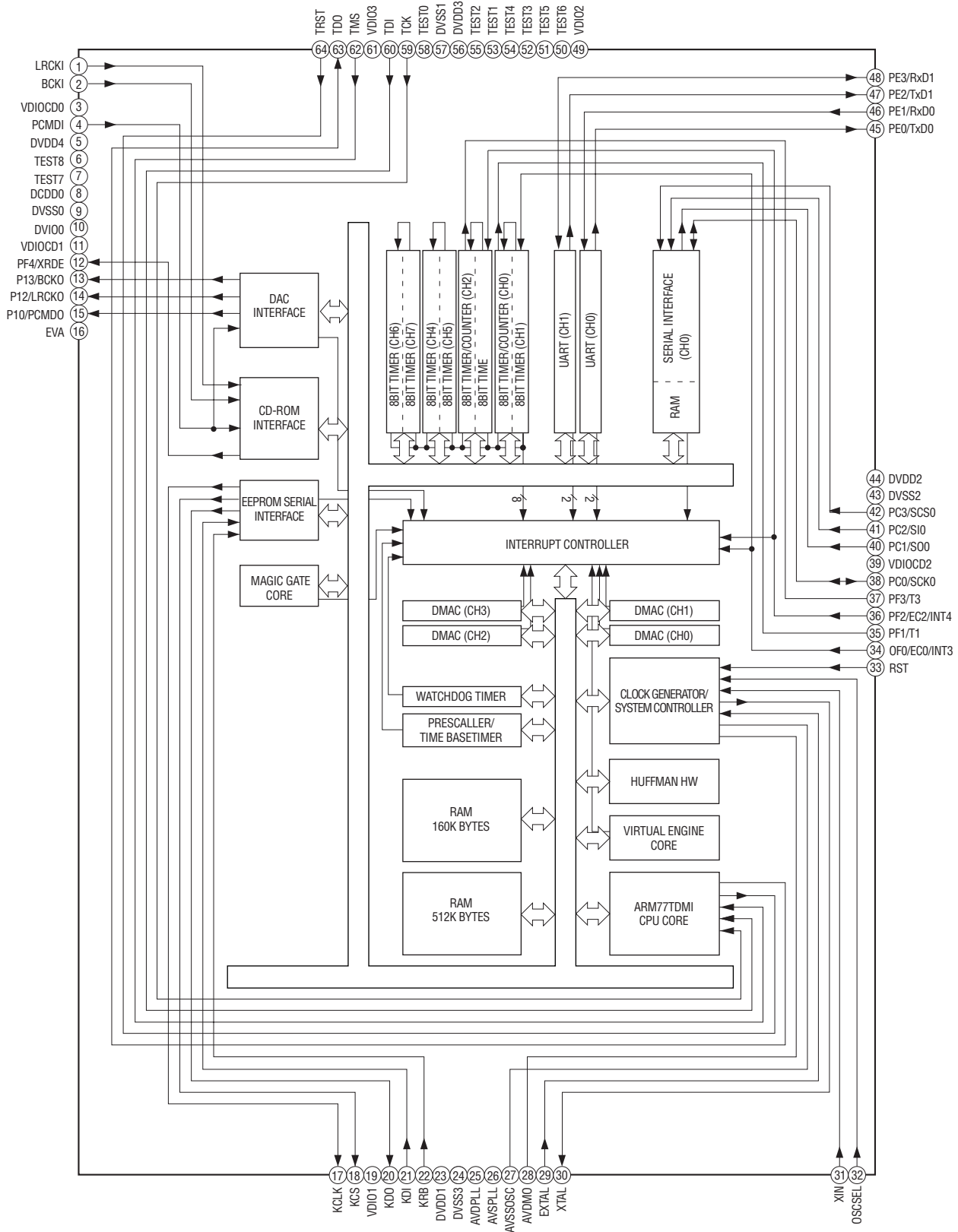
IC403 TB2138AFG



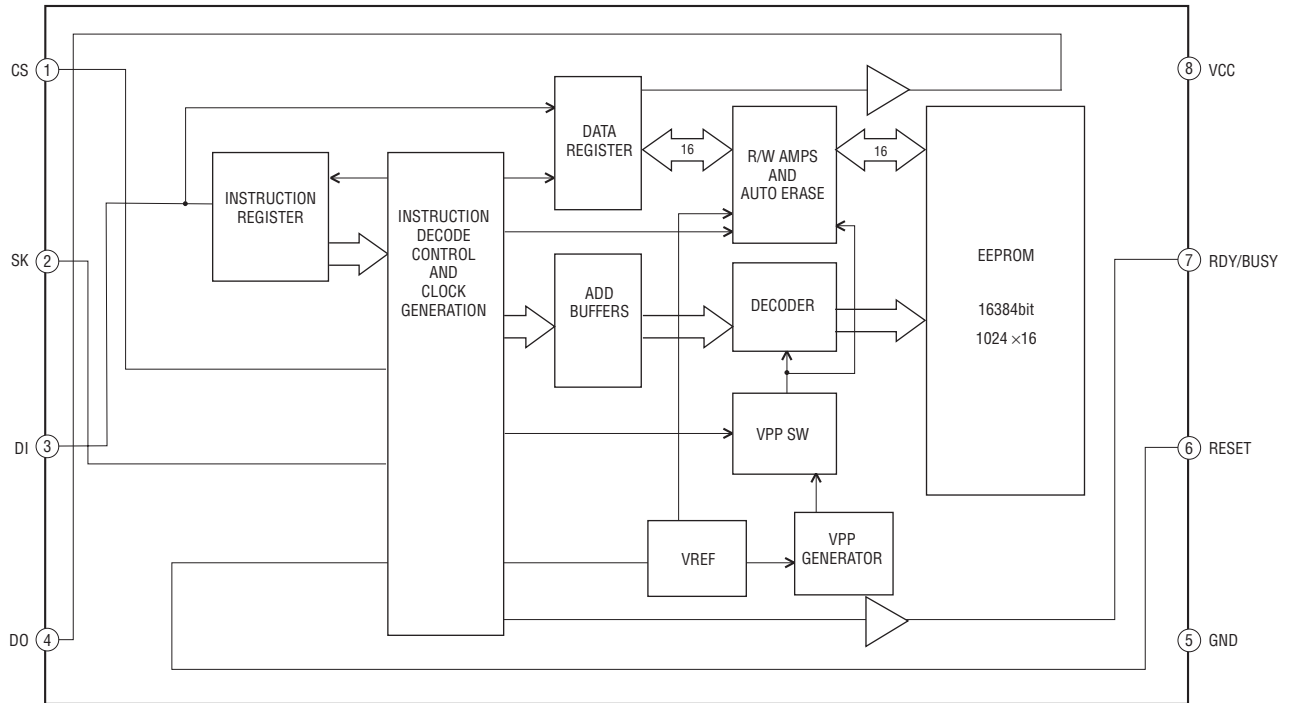
IC601 CXD3048R



IC701 CXR710160-207R (ZV618:E18)  
 IC701 CXR710160-210R (EXCEPT ZV618:E18)



IC803 AK6417CH-E2



5-10. IC PIN FUNCTION DESCRIPTION

• IC801 TMP91CY28FG-5CH5 SYSTEM CONTROLLER (MAIN BOARD)

Pin No.	Pin Name	I/O	Description
1	GND	—	Reference voltage terminal (A/D converter)
2	GND	—	Ground terminal (A/D converter)
3	VCPU	—	Power supply terminal (A/D converter)
4	XRST_O	O	Reset signal output to the DSP (IC601)
5	PWM_O	O	Not used (open)
6	BEEP_O	O	BEEP signal output
7	AMUTE_O	O	Muting signal output to the DSP (IC601)
8	LINEOUT_I	I	Line plug in detection signal input (“H” : line plug in) (not used (open))
9	OPTOUT_I	I	Optical plug in detection signal input (“H” : optical plug in) (not used (open))
10	FG_I	I	FG (3 phase drive) signal input from the power control (IC403)
11	REQ_I	I	Request signal input from the decoder (IC701)
12	HG-XSTB_O	O	HG sleep mode signal output to the optical-pickup
13	HG-GUP_O	O	HG gain up signal output to the optical-pickup
14	RE1_I	I	Not used (open)
15	RE2_I	I	Not used (open)
16	LCD_REQ_O	O	Not used (open)
17	SDXLAT_O	O	Serial data latch signal output to the decoder (IC701)
18	SDCLK_O	O	Clock output to the decoder (IC701) and the EEPROM (IC803)
19	SDOUT_O	O	Serial data output to the decoder (IC701) and the EEPROM (IC803)
20	SDIN_I	I	Serial data input from the decoder (IC701) and the EEPROM (IC803)
21	DTS_SDTO	O	Not used
22	DTS_SDTI	I	Not used
23	DTS_SCK	O	Not used
24	AM0_I	I	Not used (fixed at “H”)
25	VCPU	—	Power supply terminal
26	XOUT	O	Clock output (not used)
27	GND	—	Ground terminal
28	XIN	I	Clock input
29	AM1_I	I	Not used (fixed at “H”)
30	XRESET_I	I	Reset signal input (“L” : reset)
31	TSB	I/O	Data input/output from/to the remote control (not used)
32	XWAKE_O	O	Wake signal output to the power control (IC403) (“L” : running)
33	EMU0_O	O	Not used (open)
34	EMU1_O	O	Not used (open)
35	ACKCD_I	I	Not used (fixed at “L”)
36	JOGKEY_I/FAVKEY_I	I	Key interrupt signal input from the function key
37	LID-SW_I	I	Lid open/close detection signal input (“H” : lid open)
38	EXTBAT_I	I	External battery in detection signal input (“H” : external battery in) (not used (fixed at “L”))
39	HP_TYPE_I	I	Not used (open)
40	HOLD_I	I	HOLD switch detection signal input (“H” : HOLD on)
41	X_PEQ_NE_I	I	Not used (fixed at “L”)
42	TEST_I	I	Test mode setting terminal (“L” : test mode)
43	NC	—	Not used (open)
44 to 51	AD0 to AD7	I/O	Address and data input/output from/to the LCD unit
52	FOK_I	I	FOK signal input from the DSP (IC601)
53	GFS_I	I	GFS signal input from the DSP (IC601)
54	TUPWRON_O	O	Not used (open)
55	CDON_O	O	Not used (open)
56	AUD_SEL_O	O	Not used (open)
57	CHG_GND_ON_O	O	Charge ground switch control signal output (not used)

Pin No.	Pin Name	I/O	Description
58	BAT_VCC_ON_O	O	Battery power switch control signal output (not used (open))
59	DTS_RST_O	O	Not used (open)
60	XKRESET	O	Reset signal output to the decoder (IC701)
61	XCS_O	O	P/S signal output to the LCD unit
62	GND	—	Ground terminal
63	XNMI_I	I	Not used (fixed at “H”)
64	VCPU	—	Power supply terminal
65	HP_LIN_SEL_I	I	Headphone or line out selection signal input (fixed at “H”)
66	WAKEUP_K_O	O	Wakeup signal output to the decoder (IC701)
67	EEP_CS_O	O	Chip select signal output to the EEPROM (IC803)
68	TUON_I	I	Not used (fixed at “H”)
69	LCD_A0	O	A0 signal output to the LCD unit
70	OPTPWRCTL_O	O	Optical output power supply control signal output (not used (open))
71	XRD_O	O	Read signal output to the LCD unit
72	XWR_O	O	Write signal output to the LCD unit
73	LCD-XRST_O	O	Reset signal output to the LCD unit
74	XLCD-BL_O	O	Not used (open)
75	XLED_TYPE1_O	O	Not used (open)
76	XLED_DISP2_O	O	Not used (open)
77	HP_PWESW	O	Headphone amplifier enable signal output (“H” : enable)
78	BOOT	I	BOOT signal input
79	XBAT_1CELL_I	I	Not used (open)
80	NC	I	Not used (open)
81	XCEX_I	I	Not used (open)
82	DISPLAY_TYPE	I	Not used (open)
83	MSCK0_O	O	Clock output to the DSP (IC601) and the power control (IC403)
84	MSDTO0_O	O	Serial data output to the DSP (IC601) and the power control (IC403)
85	MSDTI0_I	I	SENS signal input from the DSP (IC601)
86	SCOR_I	I	SCOR signal input from the DSP (IC601)
87	XLAT0_O	O	Latch signal output to the DSP (IC601)
88	XSOE_O	O	Serial data output enable signal output to the DSP (IC601)
89	VCPU	—	Power supply terminal
90	PWRLAT_O	O	Data latch signal output to the power control (IC403)
91	GND	—	Ground terminal
92	AD-BATMNT	I	Battery monitoring signal input
93	AD-CHGMNT	I	Charge monitoring signal input (not used (fixed at “H”))
94	AD-CHGSTMNT	I	Charge stand monitoring signal input (not used (fixed at “L”))
95	AD-DCINMNT	I	DC in monitoring signal input
96	AD-KEY1	I	Key 1 signal A/D input
97	AD-KEY2	I	Key 2 signal A/D input
98	AD-KEY3	I	Key 3 signal A/D input (not used (fixed at “H”))
99	AD-RMKEY	I	Remote control key signal A/D input (XP-ZV616)
100	VCPU	—	Reference voltage terminal (A/D converter)

## SECTION 6 EXPLODED VIEWS

**NOTE:**

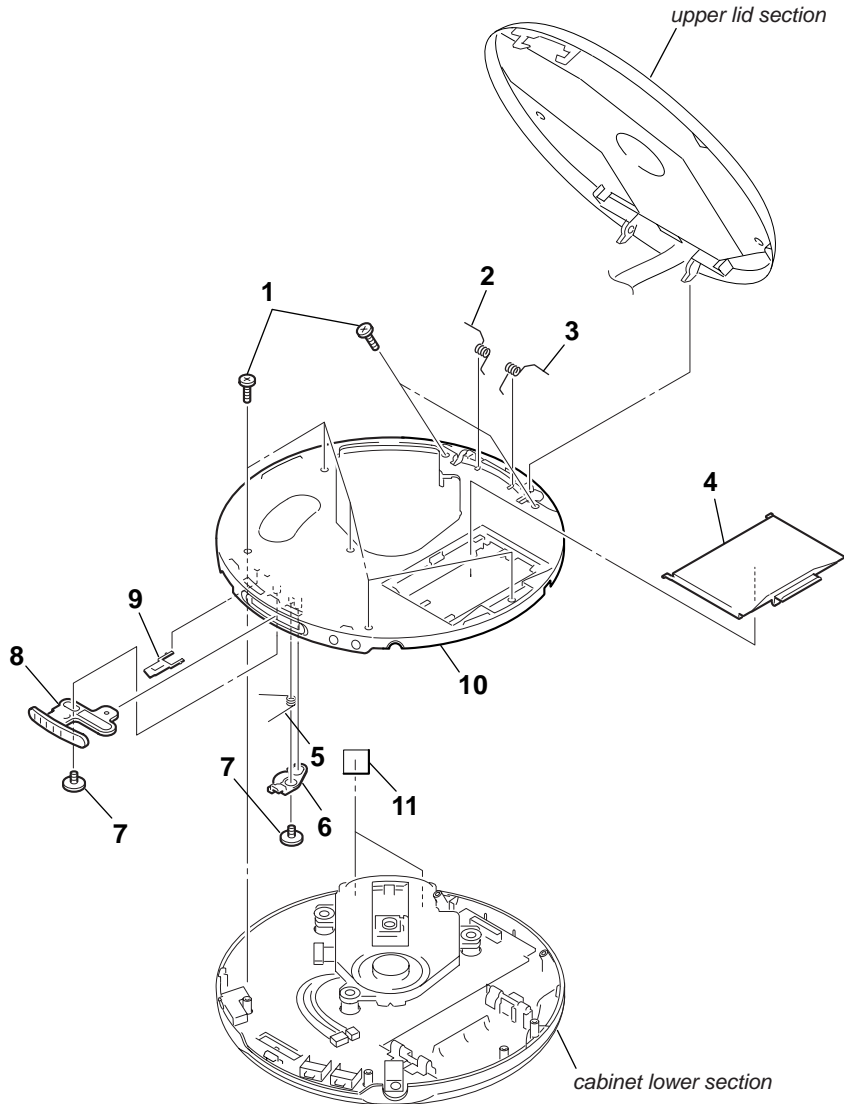
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation  
 AUS : Australian model  
 CND : Canadian model  
 E18 : 100V-240V AC area in E model  
 E33 : 110V-240V AC area in E model  
 EE : East European model  
 HK : HongKong model  
 MX : Mexican model  
 TW : Taiwan model

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

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

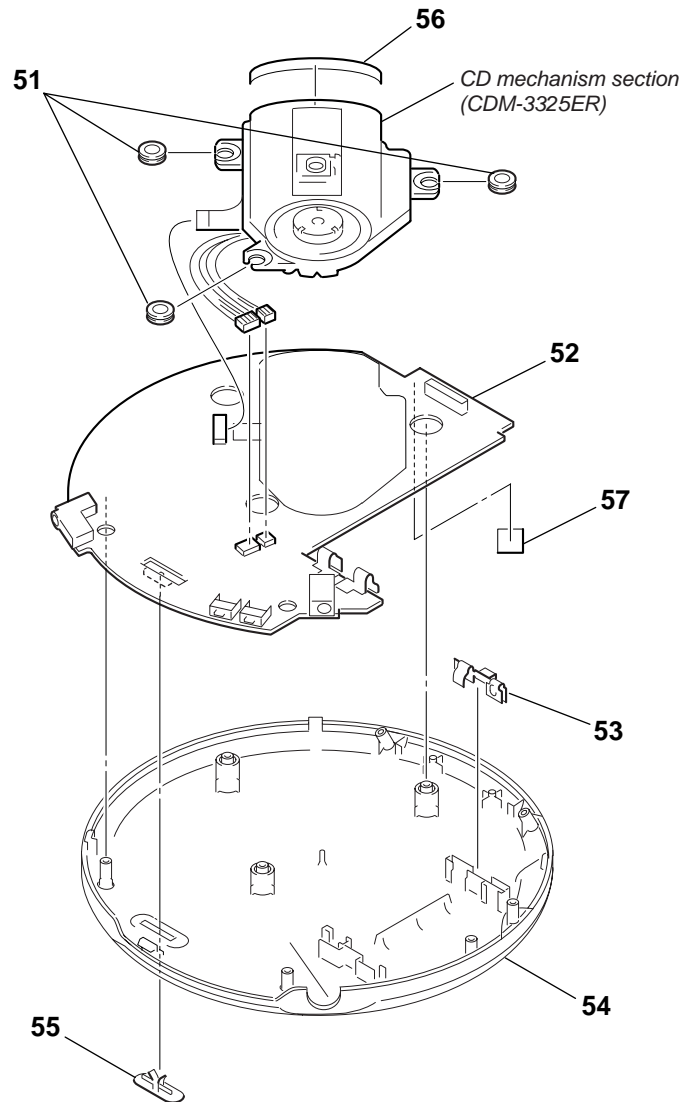
### 6-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-254-070-11	SCREW		7	3-034-792-11	SCREW, TAPPING (B2.0)	
2	3-263-984-01	LEFT, UPPER LID SPRING		8	3-261-239-01	KNOB (OPEN)	
3	3-263-983-01	RIGHT, UPPER LID SPRING		9	3-261-240-01	LEVER (DETECTION)	
4	3-261-258-01	LID, BATTERY CASE		10	X-3384-437-1	CABINET (UPPER) SUB ASSY (S)	
5	3-261-251-01	SPRING (OPEN)		11	3-266-622-01	SHEET (CDM)	
6	3-261-250-01	LOCK, OPEN					

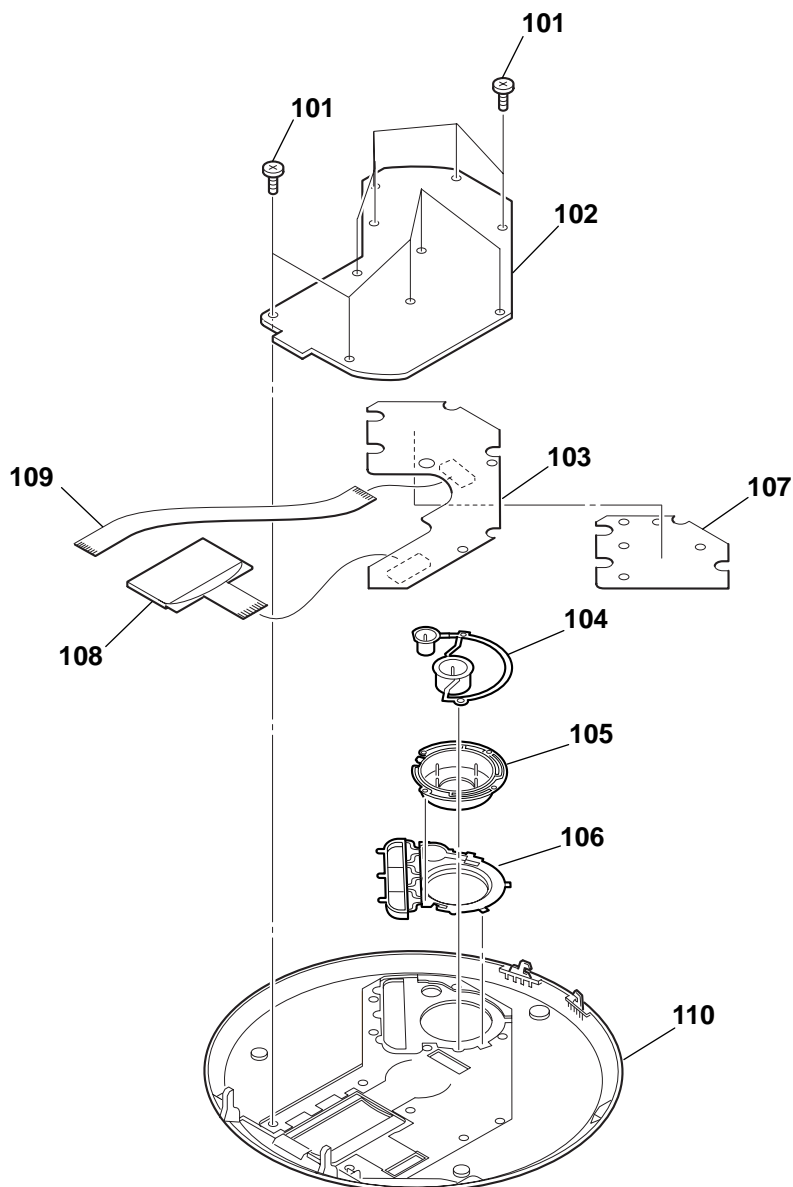


6-2. CABINET LOWER SECTION



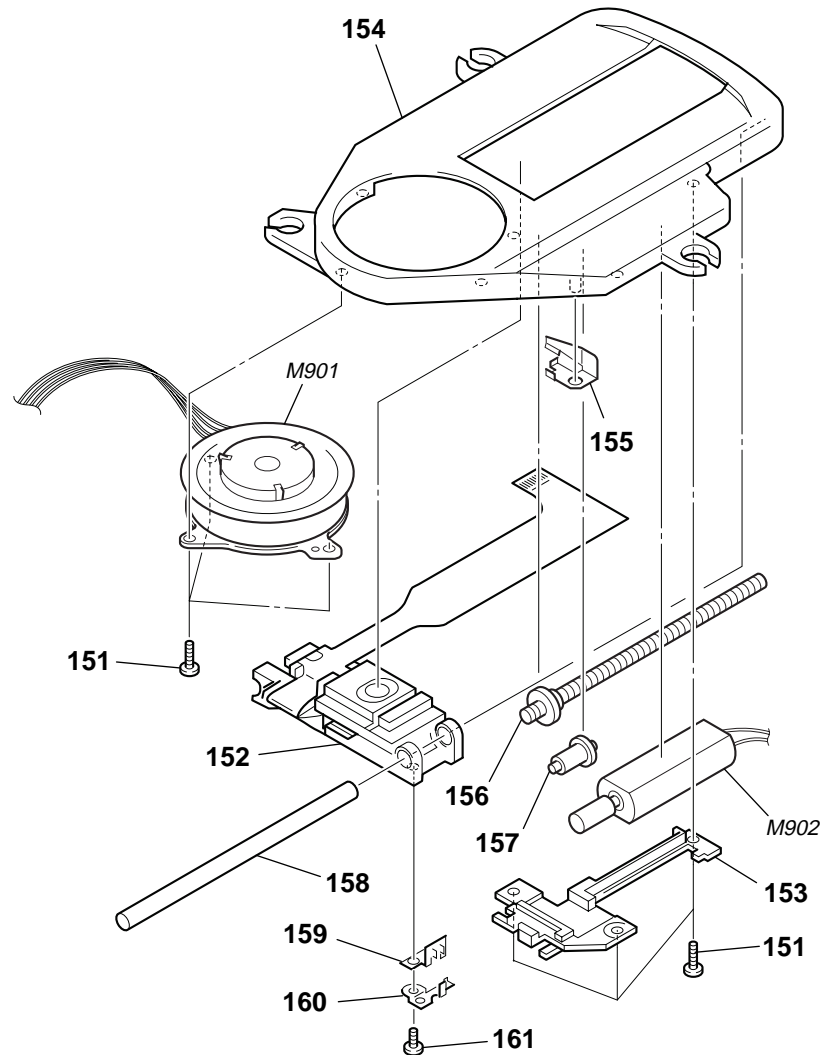
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-245-331-02	INSULATOR		53	3-261-254-01	TERMINAL, BATTERY LINK	
52	A-1058-742-A	MAIN BOARD, COMPLETE (ZV616:EE)		54	3-261-236-41	CABINET (LOWER)	
* 52	A-4542-861-A	MAIN BOARD, COMPLETE (ZV616:E18,TW)		55	3-261-238-01	KNOB (HOLD)	
* 52	A-4542-870-A	MAIN BOARD, COMPLETE (ZV610)		56	3-265-520-01	CUSHION RUBBER	
* 52	A-4542-871-A	MAIN BOARD, COMPLETE (ZV616:AEP,UK)		57	3-266-079-01	LEAF (PWB), COPPER (2)	

6-3. UPPER LID SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	3-254-003-11	SCREW		108	1-805-467-11	DISPLAY PANEL, LIQUID CRYSTAL	
102	3-263-057-01	COVER (LIGHT GRAY)...(SILVER)		109	1-828-111-11	CABLE, FLEXIBLE FLAT 20P	
102	3-263-057-11	COVER (BLUE)		110	X-2022-113-1	LID SUB (B) ASSY (616), UPPER (BLACK)	(ZV616)
102	3-263-057-21	COVER (BLACK)		110	X-3385-049-1	LID SUB (S) ASSY (616), UPPER (SILVER)	(ZV616:AEP,E18,TW)
* 103	A-4542-885-A	CONTROL BOARD, COMPLETE		110	X-3385-050-1	LID SUB (L) ASSY (616), UPPER (BLUE)	(ZV616)
104	3-263-056-01	PLAY, BUTTON		110	X-3385-051-1	LID SUB (B) ASSY (610), UPPER (BLACK)	(ZV610)
105	3-263-055-01	CONTROL, BUTTON		110	X-3385-095-1	LID SUB (S) ASSY (610), UPPER (SILVER)	(ZV610:US,CND,E18,E33,HK,MX/ZV616:UK,EE)
106	3-263-054-01	ESCUTCHEON (BLUE)...(SILVER)					
106	3-263-054-11	ESCUTCHEON (WHITE)...(BLUE)					
106	3-263-054-21	ESCUTCHEON (METALIC BLUE)...(BLACK)					
107	3-266-438-01	SHEET, INSULATING					

6-4. CD MECHANISM SECTION (CDM-3325ER)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	3-318-203-61	SCREW (B1.7X4), TAPPING		158	3-221-475-01	SHAFT, STANDARD	
△ 152	X-3380-950-1	OPTICAL PICK-UP (DAX-25E)		159	3-222-298-01	RACK	
153	3-221-473-01	COVER, GEAR		160	3-222-299-01	SPRING, RACK RETAINER	
154	3-221-472-02	CHASSIS		161	3-348-998-31	SCREW (M1.4X2.5), TAPPING, PAN	
155	3-221-474-01	SPRING, SLED		M901	A-3174-848-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
156	A-3331-663-A	SCREW (FEED) ASSY		M902	A-3174-850-A	MOTOR ASSY, SLED (SLED)	
157	3-221-268-01	GEAR (B)					

<p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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SECTION 7  
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -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:  $\mu$ F
- COILS  
uH:  $\mu$ H

- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- Accessories are given in the last of this parts list.
- Abbreviation  
AUS : Australian model  
CND : Canadian model  
E18 : 100V-240V AC area in E model  
E33 : 110V-240V AC area in E model  
EE : East European model  
HK : HongKong model

- MX : Mexican model  
TW : Taiwan model
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A... , uPA... ,  $\mu$ PA... ,  
uPB... ,  $\mu$ PB... , uPC... ,  $\mu$ PC... ,  
uPD... ,  $\mu$ PD...

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

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

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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-4542-885-A	CONTROL BOARD, COMPLETE *****		*	A-4542-870-A	MAIN BOARD, COMPLETE (ZV610) *****	
		< CAPACITOR >		*	A-4542-871-A	MAIN BOARD, COMPLETE (ZV616:AEP,UK) *****	
C2001	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	3-261-252-01	TERMINAL,BATTERY(+)		
C2002	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	3-261-253-01	TERMINAL,BATTERY(-)		
C2003	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V		< CAPACITOR >		
C2004	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V				
		< CONNECTOR >		C103	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
CN2001	1-817-947-21	CONNECTOR, FFC/FPC (ZIF) 24P		C107	1-125-838-11	CERAMIC CHIP	2.2uF 10% 6.3V
* CN2002	1-816-844-21	CONNECTOR, FFC/FPC 20P		C203	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
		< RESISTOR >		C207	1-125-838-11	CERAMIC CHIP	2.2uF 10% 6.3V
R2001	1-216-864-11	METAL CHIP	0 5% 1/16W	C302	1-124-779-00	ELECT CHIP	10uF 20% 16V
R2005	1-218-957-11	RES-CHIP	2.2K 5% 1/16W				
R2006	1-218-969-11	RES-CHIP	22K 5% 1/16W	C303	1-124-779-00	ELECT CHIP	10uF 20% 16V
R2008	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	C304	1-117-863-11	CERAMIC CHIP	0.47uF 10.00% 6.3V
R2010	1-216-833-11	METAL CHIP	10K 5% 1/16W	C305	1-124-778-00	ELECT CHIP	22uF 20% 6.3V
				C306	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
R2011	1-216-837-11	METAL CHIP	22K 5% 1/16W	C307	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V
R2012	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R2013	1-216-864-11	METAL CHIP	0 5% 1/16W	C308	1-125-838-11	CERAMIC CHIP	2.2uF 10% 6.3V
R2014	1-216-864-11	METAL CHIP	0 5% 1/16W	C309	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V
R2015	1-216-864-11	METAL CHIP	0 5% 1/16W	C310	1-124-778-00	ELECT CHIP	22uF 20% 6.3V
				C314	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R2016	1-218-953-11	RES-CHIP	1K 5% 1/16W	C317	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V (ZV616)
R2017	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R2018	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	C318	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
R2019	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	C337	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V (ZV616)
R2020	1-216-833-11	METAL CHIP	10K 5% 1/16W				
				C403	1-162-962-11	CERAMIC CHIP	470PF 10% 50V
R2021	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	C404	1-164-360-11	CERAMIC CHIP	0.1uF 16V
		< SWITCH >		C405	1-115-156-11	CERAMIC CHIP	1uF 10V
S2002	1-786-650-21	SWITCH, TACTILE (MENU)					
S2003	1-786-650-21	SWITCH, TACTILE (■)		C406	1-164-505-11	CERAMIC CHIP	2.2uF 16V
S2004	1-786-650-21	SWITCH, TACTILE (∧)		C410	1-115-156-11	CERAMIC CHIP	1uF 10V
S2005	1-786-650-21	SWITCH, TACTILE (v)		C415	1-115-467-11	CERAMIC CHIP	0.22uF 10.00% 10V
S2007	1-786-650-21	SWITCH, TACTILE (▶  /ENT)		C416	1-127-760-11	CERAMIC CHIP	4.7uF 10% 6.3V
				C417	1-164-360-11	CERAMIC CHIP	0.1uF 16V
S2008	1-786-650-21	SWITCH, TACTILE (▶▶)					
S2009	1-786-650-21	SWITCH, TACTILE (◀◀)		C419	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V
S2010	1-786-650-21	SWITCH, TACTILE (+ □)		C420	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V
S2011	1-786-650-21	SWITCH, TACTILE (- □)		C421	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
		*****		C422	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
				C423	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
*	A-1058-742-A	MAIN BOARD, COMPLETE (ZV616:EE) *****					
*	A-4542-861-A	MAIN BOARD, COMPLETE (ZV616:E18,TW) *****		C424	1-127-760-11	CERAMIC CHIP	4.7uF 10% 6.3V
				C425	1-126-205-11	ELECT CHIP	47uF 20% 6.3V
				C426	1-128-390-11	ELECT CHIP	220uF 20% 6.3V
				C427	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V
				C428	1-107-686-11	TANTAL. CHIP	4.7uF 20.00% 16V
				C429	1-164-360-11	CERAMIC CHIP	0.1uF 16V

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C430	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C718	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C432	1-126-246-11	ELECT CHIP	220uF 20% 4V	C720	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C433	1-115-156-11	CERAMIC CHIP	1uF 10V	C804	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)	
C434	1-165-851-91	TANTAL. CHIP	10uF 20% 6.3V	C805	1-115-156-11	CERAMIC CHIP	1uF 10V
C435	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	C806	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C436	1-127-688-21	TANTAL. CHIP	10uF 20% 6.3V	C808	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C437	1-126-246-11	ELECT CHIP	220uF 20% 4V	C809	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C438	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V				(AEP,UK,EE)
C440	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C810	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V
C446	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	C811	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C447	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V				(ZV616)
C450	1-115-156-11	CERAMIC CHIP	1uF 10V	C811	1-216-833-11	METAL CHIP	10K 5% 1/16W
C454	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V				(ZV610)
C455	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	C812	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C458	1-127-573-11	CERAMIC CHIP	1uF 10% 16V	C821	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C460	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V	C830	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C601	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	C833	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C605	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V	C834	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C606	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C835	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C607	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	C896	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C608	1-117-863-11	CERAMIC CHIP	0.47uF 10.00% 6.3V	C897	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C609	1-117-863-11	CERAMIC CHIP	0.47uF 10.00% 6.3V	C898	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C610	1-127-688-21	TANTAL. CHIP	10uF 20% 6.3V	C899	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C611	1-162-962-11	CERAMIC CHIP	470PF 10% 50V				< CONNECTOR >
C612	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	CN401	1-784-342-21	HOUSING, CONNECTOR 2P	
C613	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	* CN402	1-785-877-21	HOUSING, CONNECTOR 4P	
C614	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	CN601	1-818-127-11	CONNECTOR, FFC/FPC (ZIF) 15P (EXCEPT E18)	
C616	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	CN601	1-818-127-21	CONNECTOR, FFC/FPC 15P (ZIF L)(E18)	
C617	1-162-962-11	CERAMIC CHIP	470PF 10% 50V	CN801	1-818-129-21	CONNECTOR, FFC/FPC (ZIF) 20P	
C618	1-107-826-11	CERAMIC CHIP	0.1uF 10.00% 16V				< DIODE >
C619	1-119-750-11	TANTAL. CHIP	22uF 20.00% 6.3V	D307	8-719-069-54	DIODE UHZSTE-175.1B	
C621	1-110-569-11	TANTAL. CHIP	47uF 20.00% 6.3V	D308	8-719-421-33	DIODE MA147-TX	
C622	1-127-688-21	TANTAL. CHIP	10uF 20% 6.3V	D401	8-719-081-34	DIODE RB160M-30TR	
C623	1-125-837-91	CERAMIC CHIP	1uF 10% 6.3V	D402	8-719-081-34	DIODE RB160M-30TR	
C624	1-115-156-11	CERAMIC CHIP	1uF 10V	D403	8-719-081-34	DIODE RB160M-30TR	
C629	1-115-156-11	CERAMIC CHIP	1uF 10V				
			(AEP,UK,EE)	D407	8-719-069-54	DIODE UHZSTE-175.1B (AEP,UK,EE)	
C631	1-119-750-11	TANTAL. CHIP	22uF 20.00% 6.3V	D421	8-719-988-61	DIODE 1SS355TE-17	
C632	1-164-360-11	CERAMIC CHIP	0.1uF 16V	D422	8-719-988-61	DIODE 1SS355TE-17	
C696	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	D801	8-719-060-48	DIODE RB751V-40TE-17	
C697	1-164-360-11	CERAMIC CHIP	0.1uF 16V	D803	8-719-060-48	DIODE RB751V-40TE-17 (ZV616)	
C698	1-131-862-91	TANTAL. CHIP	47uF 20% 4V				< FERRITE BEAD >
C699	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB101	1-500-234-22	FERRITE	0uH
C701	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB201	1-500-234-22	FERRITE	0uH
C702	1-131-862-91	TANTAL. CHIP	47uF 20% 4V	FB302	1-414-553-11	FERRITE	0uH
C703	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB303	1-414-553-11	FERRITE	0uH (EXCEPT AEP,UK,EE)
C705	1-119-750-11	TANTAL. CHIP	22uF 20.00% 6.3V	FB303	1-414-862-11	INDUCTOR	82uH (AEP,UK,EE)
C706	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB304	1-414-553-11	FERRITE	0uH (ZV616)
C708	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB306	1-414-553-11	FERRITE	0uH (E18)
C709	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB306	1-414-862-11	INDUCTOR	82uH (AEP,UK,EE)
C710	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB401	1-216-797-11	METAL CHIP	10 5% 1/16W
C711	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB402	1-216-797-11	METAL CHIP	10 5% 1/16W
C712	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB413	1-216-295-91	SHORT CHIP	0 (EXCEPT AEP,UK,EE)
C713	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB413	1-400-179-21	INDUCTOR	0uH (AEP,UK,EE)
C714	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB601	1-414-760-21	FERRITE	0uH
C715	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB602	1-414-760-21	FERRITE	0uH
C716	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB701	1-414-760-21	FERRITE	0uH
C717	1-164-360-11	CERAMIC CHIP	0.1uF 16V				

# XP-ZV610/ZV616

## MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
FB702	1-414-760-21	FERRITE	0uH	R415	1-218-911-11	METAL CHIP	470K 0.5% 1/10W
FB801	1-500-234-22	FERRITE	0uH (EXCEPT AEP,UK,EE)	R416	1-216-864-11	METAL CHIP	0 5% 1/16W
FB801	1-216-864-11	METAL CHIP	0 5% 1/16W (AEP,UK,EE)	R417	1-218-895-11	METAL CHIP	100K 0.5% 1/10W
FB802	1-414-760-21	FERRITE	0uH (AEP,UK,EE)	R418	1-218-895-11	METAL CHIP	100K 0.5% 1/10W
FB803	1-414-760-21	FERRITE	0uH (AEP,UK,EE)	R419	1-216-841-11	METAL CHIP	47K 5% 1/16W
< IC >				R425	1-216-864-11	METAL CHIP	0 5% 1/16W (EXCEPT AEP,UK,EE)
IC301	8-759-681-65	IC TA2120FN(EL)		R425	1-400-180-21	INDUCTOR	0uH (AEP,UK,EE)
IC403	6-704-187-01	IC TB2138AFG		R427	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC601	8-752-419-91	IC CXD3048R		R428	1-216-864-11	METAL CHIP	0 5% 1/16W
IC603	6-702-737-01	IC MSM51X17400F-10TFSR1		R438	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC701	8-753-210-87	IC CXR710160-207R (E18)		R440	1-216-857-11	METAL CHIP	1M 5% 1/16W
IC701	8-753-217-12	IC CXR710160-210R (EXCEPT E18)		R448	1-216-295-91	SHORT CHIP	0
IC702	6-550-559-01	TRANSISTOR XN0NE9200LSO		R452	1-218-903-11	METAL CHIP	220K 0.5% 1/10W
IC801	6-803-855-01	IC TMP91CY28FG-5CH5		R453	1-216-857-11	METAL CHIP	1M 5% 1/16W
☆ IC803	-----	IC AK6417CH-E2		R459	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC806	6-705-397-01	IC XC6206P142MR		R460	1-216-809-11	METAL CHIP	100 5% 1/16W
< JACK >				R480	1-216-857-11	METAL CHIP	1M 5% 1/16W
J301	1-816-153-61	JACK (⊕)(⊖)(ZV616)		R602	1-216-837-11	METAL CHIP	22K 5% 1/16W
J301	1-818-051-21	JACK (⊕)(⊖)(ZV610)		R603	1-216-837-11	METAL CHIP	22K 5% 1/16W
J401	1-778-153-51	JACK,DC(POLARITY UNIFIED TYPE) (DC IN 4.5V ⚡)		R604	1-216-837-11	METAL CHIP	22K 5% 1/16W
< COIL >				R605	1-216-837-11	METAL CHIP	22K 5% 1/16W
L301	1-469-525-91	INDUCTOR	10uH	R608	1-216-789-11	METAL CHIP	2.2 5% 1/16W
L401	1-400-373-21	INDUCTOR	4.7uH	R610	1-216-845-11	METAL CHIP	100K 5% 1/16W
L402	1-400-373-21	INDUCTOR	4.7uH	R612	1-216-805-11	METAL CHIP	47 5% 1/16W
L403	1-400-387-21	INDUCTOR	47uH	R613	1-216-833-11	METAL CHIP	10K 5% 1/16W
L404	1-400-388-21	INDUCTOR	220uH	R614	1-216-833-11	METAL CHIP	10K 5% 1/16W
L406	1-400-145-21	INDUCTOR	47uH	R618	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
L407	1-456-178-21	INDUCTOR	100uH	R619	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
L408	1-400-388-21	INDUCTOR	220uH	R621	1-216-833-11	METAL CHIP	10K 5% 1/16W
L409	1-400-145-21	INDUCTOR	47uH	R622	1-216-857-11	METAL CHIP	1M 5% 1/16W
L411	1-400-387-21	INDUCTOR	47uH	R623	1-216-849-11	METAL CHIP	220K 5% 1/16W
L601	1-400-389-21	INDUCTOR	10uH	R624	1-216-833-11	METAL CHIP	10K 5% 1/16W
L602	1-400-390-21	INDUCTOR	47uH	R625	1-216-853-11	METAL CHIP	470K 5% 1/16W
L603	1-400-389-21	INDUCTOR	10uH	R628	1-216-837-11	METAL CHIP	22K 5% 1/16W
L703	1-400-390-21	INDUCTOR	47uH	R629	1-216-841-11	METAL CHIP	47K 5% 1/16W
L704	1-400-390-21	INDUCTOR	47uH	R630	1-216-841-11	METAL CHIP	47K 5% 1/16W
< TRANSISTOR >				R632	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q408	6-550-396-01	TRANSISTOR	2SB16990LSO	R633	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q601	8-729-054-79	TRANSISTOR	2SB167900LSO	R646	1-216-797-11	METAL CHIP	10 5% 1/16W
Q801	6-550-376-01	TRANSISTOR	UMX1N-TN	R648	1-216-845-11	METAL CHIP	100K 5% 1/16W (EXCEPT AEP,UK,EE)
< RESISTOR >				R648	1-216-837-11	METAL CHIP	22K 5% 1/16W (AEP,UK,EE)
R102	1-216-845-11	METAL CHIP	100K 5% 1/16W	R649	1-216-817-11	METAL CHIP	470 5% 1/16W (EXCEPT AEP,UK,EE)
R111	1-216-837-11	METAL CHIP	22K 5% 1/16W	R649	1-216-864-11	METAL CHIP	0 5% 1/16W (AEP,UK,EE)
R202	1-216-845-11	METAL CHIP	100K 5% 1/16W	R662	1-216-841-11	METAL CHIP	47K 5% 1/16W
R211	1-216-837-11	METAL CHIP	22K 5% 1/16W	R663	1-216-845-11	METAL CHIP	100K 5% 1/16W
R301	1-216-793-11	METAL CHIP	4.7 5% 1/10W	R670	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R302	1-216-793-11	METAL CHIP	4.7 5% 1/10W	R707	1-216-845-11	METAL CHIP	100K 5% 1/16W
R303	1-216-797-11	METAL CHIP	10 5% 1/16W	R716	1-216-833-11	METAL CHIP	10K 5% 1/16W
R313	1-218-871-11	METAL CHIP	10K 0.5% 1/10W (ZV616)	R722	1-216-813-11	METAL CHIP	220 5% 1/16W
R314	1-216-821-11	METAL CHIP	1K 5% 1/16W (ZV616)	R731	1-216-857-11	METAL CHIP	1M 5% 1/16W
R406	1-216-861-11	METAL CHIP	2.2M 5% 1/16W	R732	1-216-857-11	METAL CHIP	1M 5% 1/16W
R411	1-218-903-11	METAL CHIP	220K 0.5% 1/10W	R733	1-216-857-11	METAL CHIP	1M 5% 1/16W
R412	1-218-887-11	METAL CHIP	47K 0.5% 1/10W	R735	1-216-833-11	METAL CHIP	10K 5% 1/16W
R413	1-216-837-11	METAL CHIP	22K 5% 1/16W	R801	1-216-864-11	METAL CHIP	0 5% 1/16W
				R802	1-216-825-11	METAL CHIP	2.2K 5% 1/16W

☆ When IC803 is damaged, replace the MAIN board.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R804	1-216-864-11	METAL CHIP	0 5% 1/16W			MISCELLANEOUS	
R805	1-216-845-11	METAL CHIP	100K 5% 1/16W			*****	
R806	1-216-845-11	METAL CHIP	100K 5% 1/16W	108	1-805-467-11	DISPLAY PANEL, LIQUID CRYSTAL	
R808	1-216-809-11	METAL CHIP	100 5% 1/16W	109	1-828-111-11	CABLE, FLEXIBLE FLAT 20P	
R812	1-218-871-11	METAL CHIP	10K 0.5% 1/10W	△ 152	X-3380-950-1	OPTICAL PICK-UP (DAX-25E)	
R813	1-218-871-11	METAL CHIP	10K 0.5% 1/10W	M901	A-3174-848-A	MOTOR ASSY, TURN TABLE (SPINDLE)	
R817	1-216-864-11	METAL CHIP	0 5% 1/16W	M902	A-3174-850-A	MOTOR ASSY, SLED (SLED)	
			(AEP,UK,EE)	*****			
R824	1-216-845-11	METAL CHIP	100K 5% 1/16W			ACCESSORIES	
R826	1-216-857-11	METAL CHIP	1M 5% 1/16W			*****	
R827	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R828	1-216-861-11	METAL CHIP	2.2M 5% 1/16W	△	1-477-496-11	ADAPTOR, AC (AC-ES455K)(E33)	
R830	1-216-853-11	METAL CHIP	470K 5% 1/16W	△	1-478-432-11	ADAPTOR, AC (AC-ES455K)(AEP,EE,E18)	
R831	1-216-857-11	METAL CHIP	1M 5% 1/16W	△	1-478-433-11	ADAPTOR, AC (AC-ES455K)(UK,HK)	
R832	1-216-857-11	METAL CHIP	1M 5% 1/16W	△	1-478-434-11	ADAPTOR, AC (AC-ES455K)(US,CND,MX,TW)	
			(ZV616)	△	1-478-435-11	ADAPTOR, AC (AC-ES455K)(AUS)	
R840	1-216-833-11	METAL CHIP	10K 5% 1/16W		1-478-544-11	REMOTE COMMANDER (RM-Z1C006)(ZV616)	
R866	1-216-833-11	METAL CHIP	10K 5% 1/16W		1-542-514-13	HEADPHONE (HP-M070)	
R868	1-216-841-11	METAL CHIP	47K 5% 1/16W			(EXCEPT ZV610:US/ZV616)	
R877	1-216-845-11	METAL CHIP	100K 5% 1/16W		1-542-516-12	HEADPHONE (HP-M061)(ZV610:US)	
R886	1-216-845-11	METAL CHIP	100K 5% 1/16W		1-542-529-13	HEADPHONE (HP-M170)(ZV616)	
R894	1-216-849-11	METAL CHIP	220K 5% 1/16W		3-263-073-12	MANUAL, INSTRUCTION	
R903	1-216-821-11	METAL CHIP	1K 5% 1/16W			(ENGLISH,SPANISH)(US,E33,MX)	
R935	1-216-845-11	METAL CHIP	100K 5% 1/16W		3-263-073-21	MANUAL, INSTRUCTION	
						(ENGLISH,FRENCH,SPANISH)(CND,AEP)	
R942	1-216-841-11	METAL CHIP	47K 5% 1/16W		3-263-073-31	MANUAL, INSTRUCTION	
R949	1-216-845-11	METAL CHIP	100K 5% 1/16W			(GERMAN,ITALIAN,SPANISH)(AEP)	
R970	1-216-845-11	METAL CHIP	100K 5% 1/16W		3-263-073-41	MANUAL, INSTRUCTION (POLISH,CZECH)(AEP)	
R971	1-216-845-11	METAL CHIP	100K 5% 1/16W		3-263-073-51	MANUAL, INSTRUCTION (RUSSIAN)(EE)	
R1001	1-216-853-11	METAL CHIP	470K 5% 1/16W		3-263-073-62	MANUAL, INSTRUCTION	
						(SIMPLIFIED CHINESE)(E18)	
		< SWITCH >			3-263-073-71	MANUAL, INSTRUCTION (ENGLISH)	
						(UK,E18,HK,TW,AUS)	
S806	1-572-499-21	SWITCH, TACTIL (+ (VOL))			3-263-073-81	MANUAL, INSTRUCTION	
S809	1-572-499-21	SWITCH, TACTIL (- (VOL))				(TRADITIONAL CHINESE)(HK,TW)	
S810	1-572-922-11	SWITCH, SLIDE (HOLD →)			3-263-346-11	MANUAL, INSTRUCTION (FOR SonicStage)	
S820	1-762-805-41	SWITCH, PUSH (1 KEY)				(ENGLISH)(US,UK,E18,E33,MX,HK,TW,AUS)	
		< VARISTOR >			3-263-346-21	MANUAL, INSTRUCTION (FOR SonicStage)	
						(ENGLISH,FRENCH,SPANISH)(CND,AEP)	
VDR309	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)			3-263-346-31	MANUAL, INSTRUCTION (FOR SonicStage)	
VDR401	1-801-864-21	VARISTOR, CHIP (1608)				(GERMAN,ITALIAN,HUNGARIAN)(AEP)	
VDR402	1-801-864-21	VARISTOR, CHIP (1608)			3-263-346-41	MANUAL, INSTRUCTION (FOR SonicStage)	
VDR403	1-801-864-21	VARISTOR, CHIP (1608)				(POLISH,CZECH)(AEP)	
VDR404	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)			3-263-346-51	MANUAL, INSTRUCTION (FOR SonicStage)	
						(SIMPLIFIED CHINESE)(E18)	
VDR405	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)			3-263-346-61	MANUAL, INSTRUCTION (FOR SonicStage)	
VDR406	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)				(SPANISH)(US,E33,MX)	
VDR601	1-801-862-11	VARISTOR, CHIP (1608)			3-263-346-71	MANUAL, INSTRUCTION (FOR SonicStage)	
VDR602	1-801-862-11	VARISTOR, CHIP (1608)				(RUSSIAN)(EE)	
VDR603	1-801-862-11	VARISTOR, CHIP (1608)			3-263-346-81	MANUAL, INSTRUCTION (FOR SonicStage)	
						(TRADITIONAL CHINESE)(HK,TW)	
VDR610	1-801-862-11	VARISTOR, CHIP (1608)			X-3385-129-2	APPLICATION SS(CD-ROM) ASSY	
VDR611	1-801-862-11	VARISTOR, CHIP (1608)				(SonicStage)(US,CND)	
VDR701	1-801-862-11	VARISTOR, CHIP (1608)			X-3385-131-2	APPLICATION SS(CD-ROM) ASSY	
VDR702	1-801-862-11	VARISTOR, CHIP (1608)				(SonicStage)(AEP,UK,EE)	
VDR703	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)			X-3385-132-2	APPLICATION SS(CD-ROM) ASSY	
						(SonicStage)(E18)	
VDR704	1-801-862-11	VARISTOR, CHIP (1608)(AEP,UK,EE)			X-3385-133-2	APPLICATION SS(CD-ROM) ASSY	
VDR801	1-801-862-11	VARISTOR, CHIP (1608)				(SonicStage)(E33,MX)	
VDR802	1-801-862-11	VARISTOR, CHIP (1608)(EXCEPT AEP,UK,EE)					
VDR803	1-801-862-11	VARISTOR, CHIP (1608)					
VDR804	1-801-862-11	VARISTOR, CHIP (1608)					
		< VIBRATOR >					
X601	1-795-101-21	VIBRATOR, CERAMIC 16.934MHZ					
X701	1-795-392-41	VIBRATOR, CERAMIC 22MHZ					

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