

# MZ-E909

## SERVICE MANUAL

Ver 1.2 2002.02  
with SUPPLEMENT-1

US Model  
AEP Model  
E Model  
Tourist Model



US and foreign patents licensed from Dolby Laboratories Licensing Corporation

Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MT-MZE909-173
Optical Pick-up Mechanism Type	LCX-4E

### Audio playing system

MiniDisc digital audio system

### Laser diode properties

Material: GaAlAs

Wavelength:  $\lambda = 790 \text{ nm}$

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.

### Revolutions

Approx. 300 rpm to 2,700 rpm

### Error correction

ACIRC (Advanced Cross Interleave Reed Solomon Code)

### Sampling frequency

44.1 kHz

### Coding

ATRAC (Adaptive TRansform Acoustic Coding)

ATRAC3: LP2

ATRAC3: LP4

### Modulation system

EFM (Eight to Fourteen Modulation)

### Number of channels

2 stereo channels

1 monaural channel

### Frequency response

20 to 20,000 Hz  $\pm 3 \text{ dB}$

### Wow and Flutter

Below measurable limits

### Outputs

Headphones/earphones: stereo mini-jack, maximum output level

5 mW + 5 mW (US model) load impedance

16 ohms,

3 mW + 3 mW (Other models)

load impedance 32 ohms

## SPECIFICATIONS

### Power requirements

Nickel metal hydride rechargeable battery

One NH-14WM(A) (supplied): 1.2V, 1,350 mAh

One LR6 (size AA) battery (not supplied)

External power jack (for the rechargeable battery): Power rating 3V DC

### Battery life <sup>1)</sup>

(Unit: Approx. hours) (JEITA <sup>2)</sup>)

Batteries	(Unit: Approx. hours) (JEITA <sup>2)</sup> )		
	SP Stereo (normal)	LP2 Stereo	LP4 Stereo
Ni-MH rechargeable battery NH-14WM(A) <sub>3)</sub>	38	45	53
LR6 (SG) Sony Alkaline dry battery <sub>4)</sub>	60	70	83
LR6 (SG) <sub>4)</sub> and NH-14WM(A) <sub>3)</sub>	100	122	145

<sup>1)</sup> Measured with the power save function on (see "Preserving battery power") is on.

<sup>2)</sup> Measured in accordance with the JEITA (Japan Electronics and Information Technology Industries Association) standard (using a Sony MDW-series Mini-disc).

<sup>3)</sup> With a fully charged battery

<sup>4)</sup> When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan).

### Note

The battery operation may be shorter than that specified, depending on the operating conditions, the temperature of the location, and the type of battery being used.

## PORTABLE MINIDISC PLAYER

9-873-304-03

2002B0200-1

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Sony Corporation

Personal Audio Company

Published by Sony Engineering Corporation

# SONY®

**Dimensions**

Approx. 71.1 x 77.6 x 12.5 mm (w/h/d) (2 7 / 8 x 3 1 / 8 x 1 / 2 in.)  
(not including projecting parts and controls)

**Mass**

- Approx. 49 g (1.8 oz) (the player only)
- Supplied accessories
- Headphones/earphones with a remote control (1)
- Battery charging stand (1)
- AC power adaptor (for the supplied battery charging stand)
- Rechargeable battery (1)
- Rechargeable battery carrying case (1)
- Dry battery case (1)
- Carrying pouch (1)
- AC plug adaptor (1) (world model only)

US and foreign patents licensed from Dolby Laboratories.

Design and specifications are subject to change without notice.

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**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.

**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.**

\* Replacement of CXD2671B-206GA (IC601) used in this set requires a special tool.

**● 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.)



Unleaded solder has the following characteristics.

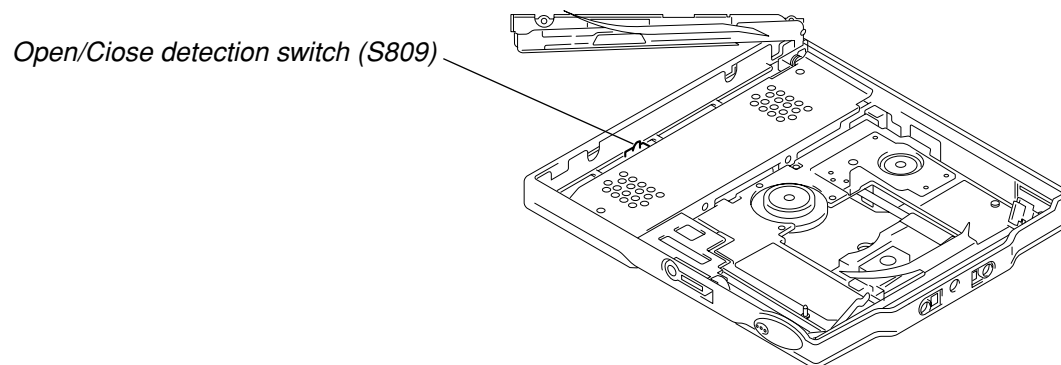
- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.  
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time. Soldering irons using a temperature regulator should be set to about 350°C.  
Caution: The printed 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.

**MAIN BOARD SUB ASSY**

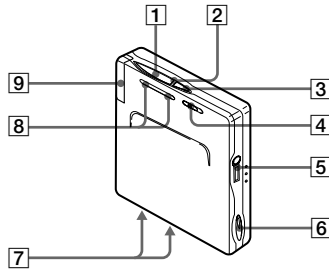
- Audio board is supplied with main board sub ASSY.
- Audio board can't be moved away from main board.  
Give a damage when take it off forcibly.
- The part that audio board overlap with main board can't be repaired.

## SECTION 1 SERVICING NOTE

When repairing this device with the power on, if you remove the main board, this device stops working.  
In this case, you work without the device stopping by fastening the hook of the Open/Close detection switch (S809).

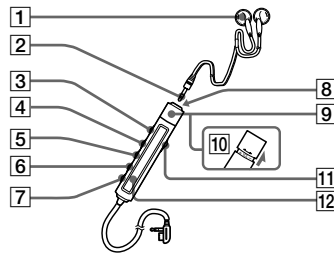


The Player



- 1 ◀▶/▶▶ button
- 2 3 Color Info-LED
- 3 GROUP button
- 4 HOLD (Locking the control) switch
- 5 ♯ (earphones) jack
- 6 OPEN switch
- 7 Terminals for charging stand / dry battery case (at the bottom)
- 8 VOL +/- button
- 9 Battery compartment

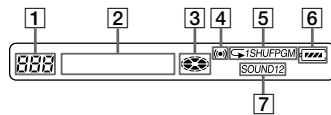
The earphones with a remote control



- 1 Headphones/earphones
- 2 Stereo mini plug
- 3 || (pause) button
- 4 SOUND button
- 5 RPT/ENT (Repeat/Enter) button
- 6 PLAYMODE button
- 7 DISPLAY button
- 8 ■ (stop) button\*
- 9 Control (◀▶/▶▶)
- 10 Control VOL +/-
- 11 HOLD (Locking the control) switch
- 12 Display window

\* The stop button also operates as the enter button, depending on the function.

The display window of the remote control



- 1 Track number display
- 2 Character information display
- 3 Disc indication
- 4 Alarm indication
- 5 Play mode indication
- 6 Battery level indication
- 7 SOUND indication

The battery charging stand

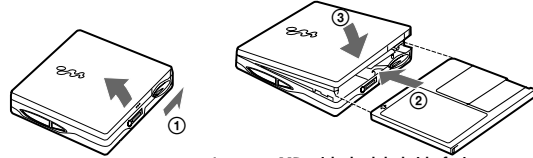


- 1 Terminals for charging
- 2 CHARGE lamp
- 3 DC IN (3V jack) (at the rear)

# Playing an MD

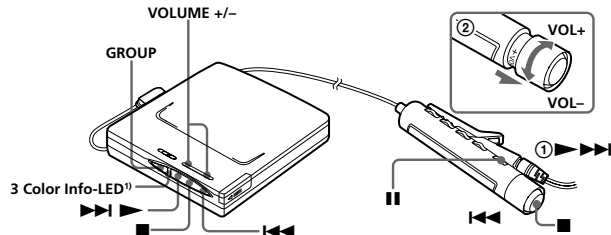
## 1 Insert an MD.

- ① Slide OPEN to open the lid.
- ② Insert an MD.
- ③ Close the lid.



Insert an MD with the label side facing up, pushing the MD to the direction of the arrow in the illustration.

## 2 Play an MD.



- ① Turn the control towards ▶▶▶ on the remote control (or press ▶▶▶ on the player) to play the disc.  
A short beep sounds in the headphones/earphones when using the remote control. The LED flashes and then lights up.
- ② Pull and turn VOL +/- on the remote control (or press VOLUME +/- on the player) to adjust the volume.  
The volume indicator appears in the display, allowing you to check the volume level. After you adjust the volume, push back the control.

**To stop play, press ■.**

Playback starts from the point you last stopped playing. To start playback from the beginning of the disc, turn and hold the control towards ▶▶▶ on the remote control (or hold down ▶▶▶ on the player) for 2 seconds or more.

<sup>1)</sup> The LED indicates the current operating status by the lighting up in the following colors. When the battery power is exhausted, the LED starts flashing. For more details, see "When to replace or recharge the battery."

LED color	Operating status
Red	Normal play (The LED lights up continuously)
Green	Group mode* (The LED lights up continuously)
Orange	Group skip mode* (The LED lights for about 5 seconds)

\*For more details, see "Using the group function."

To	Do this (Beeps <sup>2)</sup> in the headphones)
Find the beginning of the current track or the previous track <sup>3)</sup>	Turn the control towards ◀◀◀ on the remote control once (three short beeps). (Or press ◀◀◀ on the player once.) Turn the control towards ◀◀◀ on the remote control repeatedly (continuous three short beeps). (Or press ◀◀◀ on the player repeatedly.)
Find the beginning of the next track <sup>4)</sup>	Turn the control towards ▶▶▶ on the remote control (two short beeps). Press ▶▶▶ on the player once.
Go backwards while playing	Turn and hold the control towards ◀◀◀ on the remote control. Hold down ◀◀◀ on the player.
Go forward while playing	Turn and hold the control towards ▶▶▶ on the remote control. Hold down ▶▶▶ on the player.
Pause	Press    on the remote control (continuous short beeps). Press    on the remote control again to resume play.
Remove the MD	Press ■, and then slide OPEN. <sup>5)</sup>

<sup>2)</sup> You can turn off the beep sound. For more details, see "Turning off the beep sound."

<sup>3)</sup> If you turn the control towards ◀◀◀ on the remote control (or press ◀◀◀ on the player) during the first track of the disc, the player goes to the beginning of the last track on the disc.

<sup>4)</sup> If you turn the control towards ▶▶▶ on the remote control (or press ▶▶▶ on the player) during the last track of the disc, the player goes to the beginning of the first track on the disc.

<sup>5)</sup> If you open the lid, the playback will begin from the beginning of the first track (except when disc information is stored to the personal disc memory or when group mode is on).



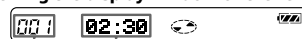
The MZ-E909 supports the newly developed DSP TYPE-R for ATRAC.

It thus allows you to enjoy TYPE-R high-quality sound from MDs recorded in SP stereo on TYPE-R-equipped MD decks, etc.

**Note**

When removing the disc, make sure to press ■ first, and then slide OPEN.

**Viewing the display window of the remote control**



Track number Track name<sup>6)</sup> or elapsed time of the track

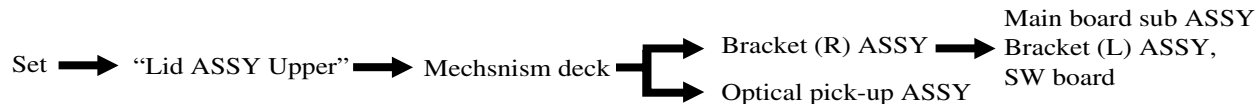
<sup>6)</sup> Appears only with MDs that have been electronically labeled.



- The player can play the track recorded by 2 × or 4 × long playing mode (LP2 or LP4). Normal stereo playback, LP2 stereo playback, LP4 stereo playback or monaural playback is automatically selected to match the audio source.
- The display on the remote control will turn off shortly after you press ■.

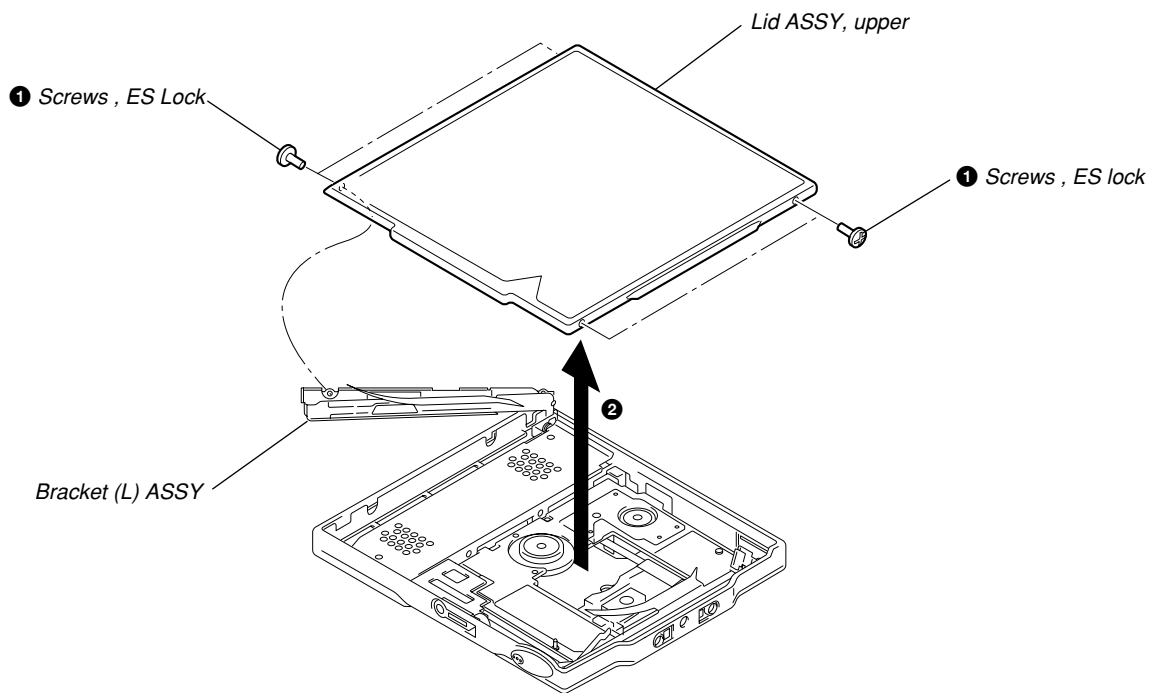
## SECTION 3 DISASSEMBLY

● The equipment can be removed using the following procedure.

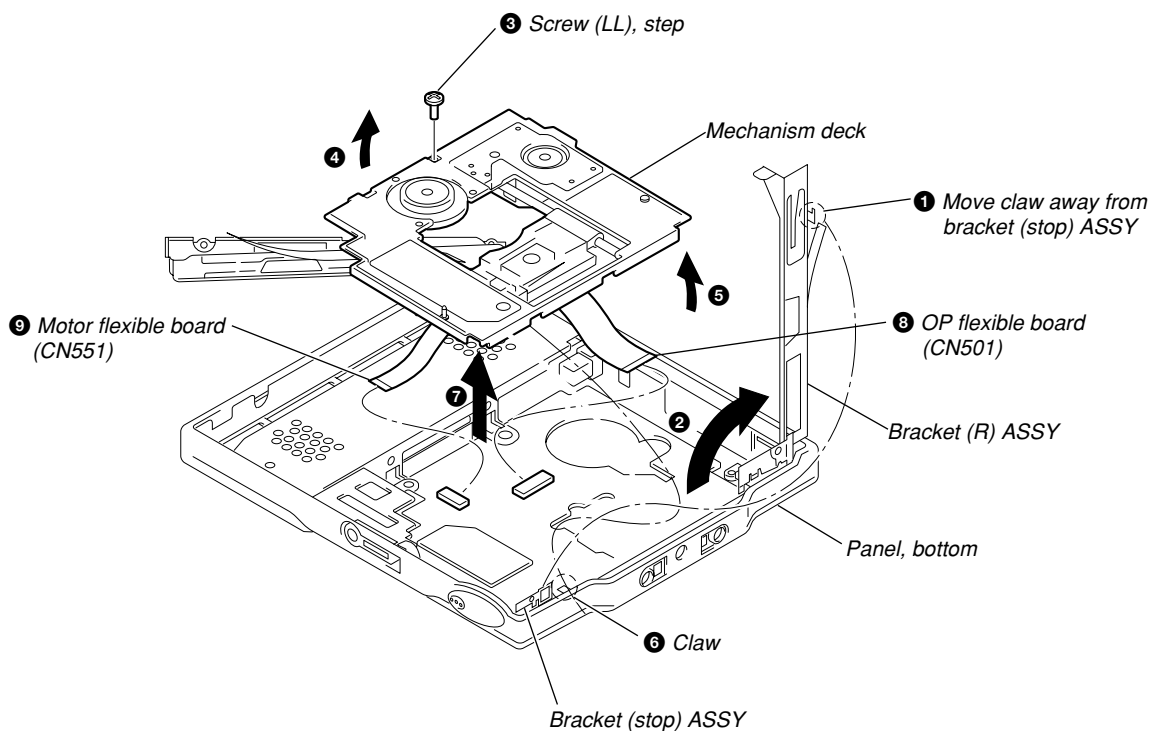


**Note :** Follow the disassembly procedure in the numerical order given.

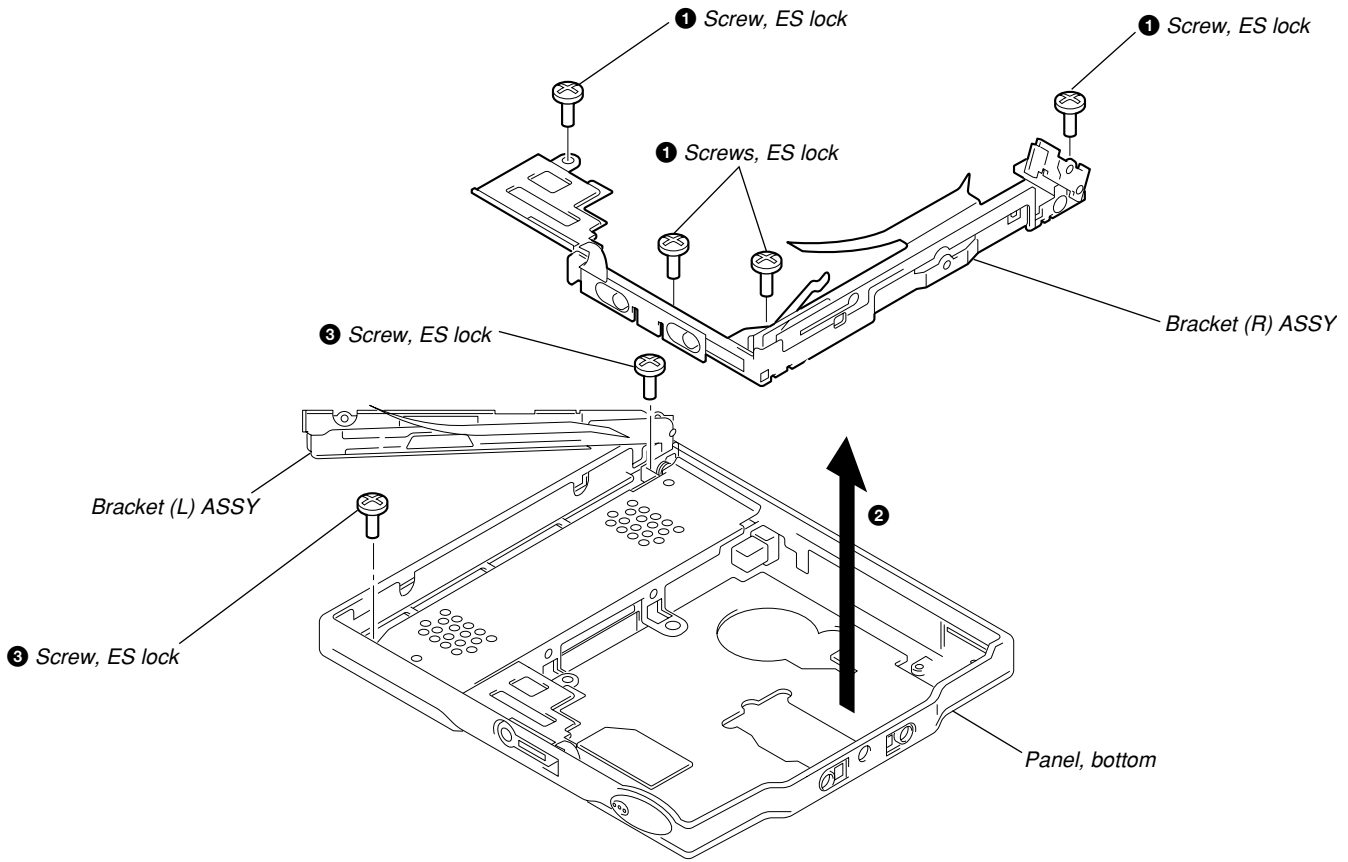
### 3-1. “LID ASSY, UPPER”



### 3-2. MECHANISM DECK



**3-3. BRACKET (R) ASSY**

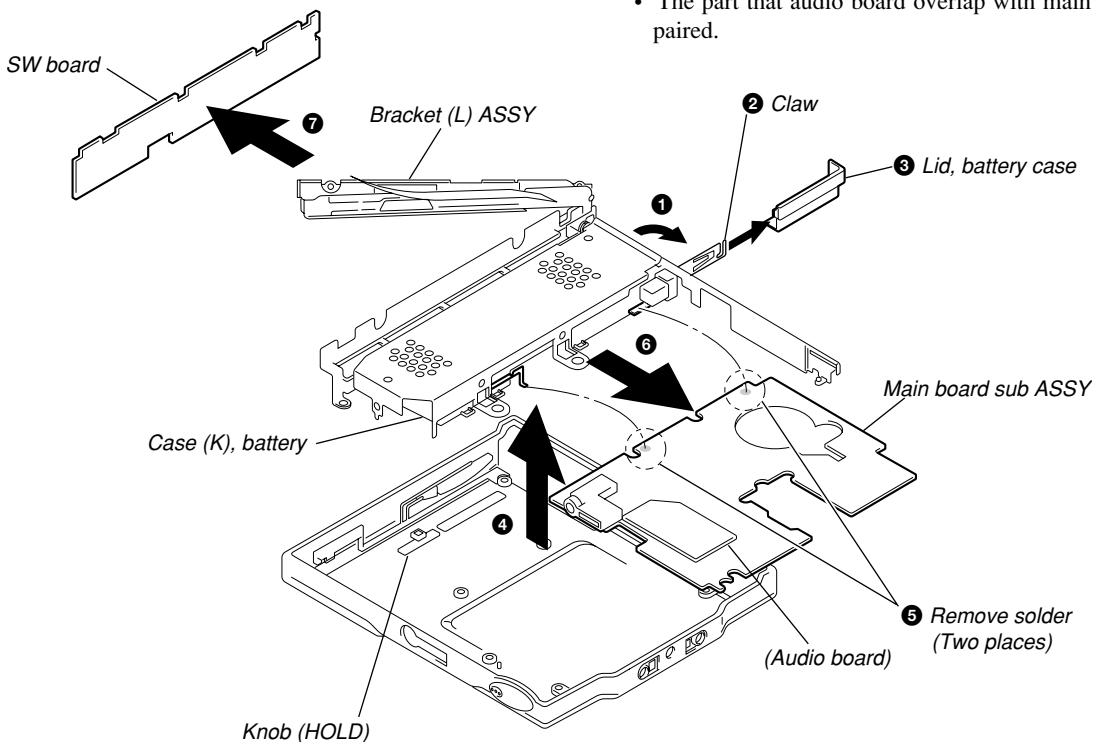


**3-4. MAIN BOARD SUB ASSY, BRACKET (L) ASSY, SW BOARD**

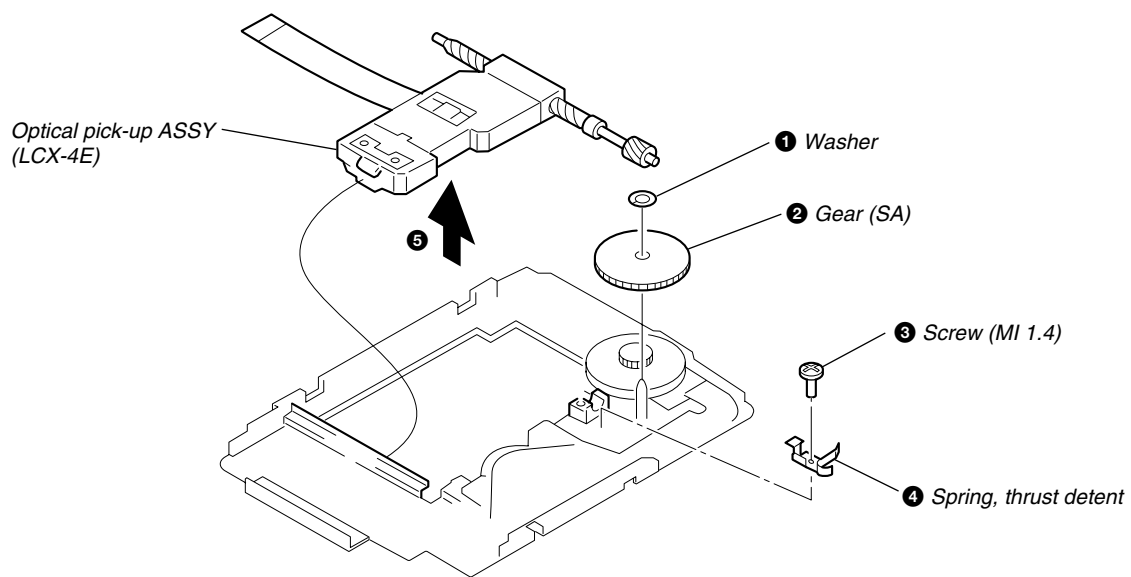
**Note :** On installation of bottom panel assy, adjust the position of both two switches (S807, S808) and two knobs (AVLS, HOLD).

**MAIN BOARD SUB ASSY**

- Audio board is supplied with main board sub ASSY.
- Audio board can't be moved away from main board. Give a damage when take it off forcibly.
- The part that audio board overlap with main board can't be repaired.



3-5. OPTICAL PICK-UP ASSY







## 4-4. MANUAL MODE

### 4-4-1. Outline of the function

The Manual mode is designed to perform adjustments and operational checks on the set's operation according to each individual function.

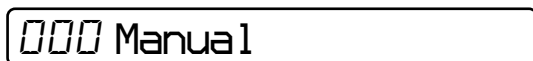
Usually, no adjustments are made in this mode.

However, the Manual mode is used to clear the memory before performing automatic adjustments in the Overall Adjustment mode.

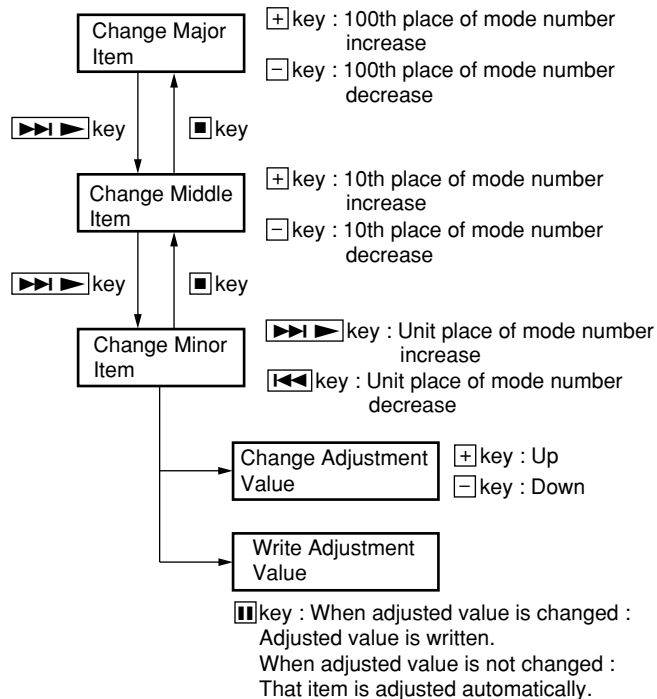
### 4-4-2. How to set the Manual mode

1. Set the TEST MODE and press **[+]** key to set the Manual mode.

Remote control LCD display



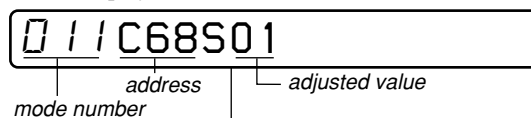
2. During each test, press and hold down **[▶▶▶]** key or **[◀◀◀]** key for a while to move the optical pickup on the sled outer or inner perimeter.
3. Each test item is assigned with a three-digit item number. The 100th place is a major item, 10th place is a middle item, and unit place is a minor item.



4. During each test mode, the display is changed from one to another each time **[DISPLAY]** key is pressed.

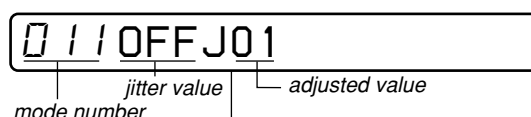
- Address & Adjusted Value Display

LCD display



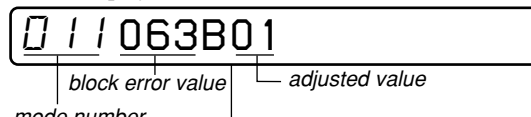
- Jitter Value & Adjusted Value Display

LCD display



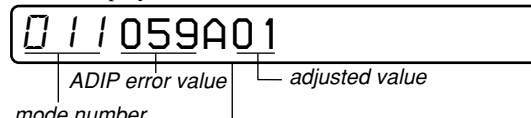
- Block Error Value & Adjusted Value Display

LCD display



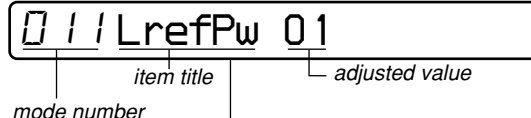
- ADIP Error Value & Adjusted Value Display

LCD display



- Item Title Display

LCD display



Note: In the Power mode, the item title display is only displayed.

5. To terminate the Manual mode and return to the TEST MODE, press **[■]** key.

## 4-5. OVERALL ADJUSTMENT MODE

### 4-5-1. Outline of the function

This mode is designed to adjust the servo system automatically by going through all the adjustment items.

Usually, this mode is used to perform automatic adjustments when servicing the set.

For further information, refer to section 5. ELECTRICAL ADJUSTMENTS. (See page 12)

## 4-6. SELF-DIAGNOSTIC DISPLAY MODE

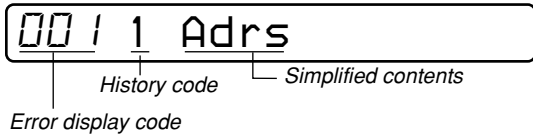
### 4-6-1. Outline of the function

The Self-diagnostic system is used in this set. If an error occurs during playback, this system detects the fault through the microprocessor's mechanism and power control blocks and stores the cause in EEPROM in a history format.

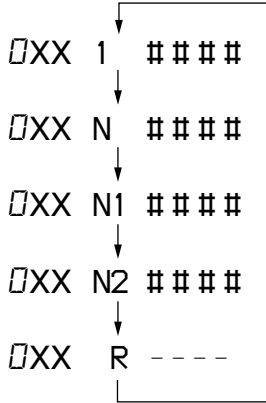
This history, which can be viewed in the TEST MODE, provides the means of locating the fault in troubleshooting.

**4-6-2. Self-diagnostic mode**

1. Set the TEST MODE.
2. With all the LCD display segments blinking on the set, press **DISPLAY** key and **▶▶▶▶** key, the Self-diagnostic mode is entered.



3. Hereinafter, each time **▶▶▶▶** key is pressed, the reference information display changes as follows:



- Press **◀◀◀◀** key to go back to the previous display.

• Description of the error display codes

Contents of fault	Display code	Meaning of code	Simplified contents	Description
No error	00	No error	----	No error
Servo system error	01	Access target address illegally specified	Adrs	An attempt to access an abnormal address.
	02	HIGH TEMP	Temp	HIGH TEMP
	03	FOCUS ERROR	Fcus	Focus off-center.
	04	SPINDLE ERROR	Spdl	Abnormal rotation of disc
TOC error	11	TOC ERROR	TOC	
	12	READ DATA ERROR	Data	
Power system error	22	LOWBATT	LBat	Instantaneous interruption detected.
Offset error	31	OFFSET ERROR	Ofst	Offset error
	32	FE_ABCD_OFFSET_ERR	ABCD	FE ABCD Offset error
	33	TE_ABCD_OFFSET_ERR	TE	TE ABCD Offset error
	34	X1_TE_OFFSET_ERR	X1TE	X1 TE ABCD Offset error

• Contents of the history codes

History code number	Contents
1	The first error that occurred.
N	The last error that occurred.
N-1	The first error from the last one.
N-2	The second error from the last one.
R	Total recording time (---- is displayed for MZ-E909)

**4-6-3. Clearing the error display code**

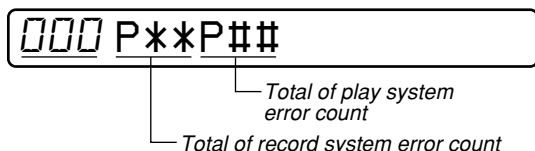
After servicing, reset the error display code.

1. Set the TEST MODE.
2. Press the **DISPLAY** key on the remote control activates the self-diagnosis display mode.
3. To reset the error display code press **■** key on the remote control when the code is displayed.(except for R - - - - display)  
(All the data on the 1st, N, N-1 and N-2 will be reset)
4. Press **■** key on the remote control again.

### 4-7. SOUND SKIP CHECK RESULT DISPLAY MODE

This set can display and check the error count occurring during play.

- Setting method of Sound Skip Check Result Display Mode
- Setting the test mode.
  - Press the key activates the sound skip check result display mode where the LCD displays as shown below.  
LCD display



- When key is pressed, the total of error count is displayed on the LCD, and each time the key is pressed, the error count descends one by one as shown below. Also, when key is pressed, the error count ascends by one.



P\*\*R00 : Total of play system error and record system error count  
 \*\* : Sound skip check items counter (hexadecimal)  
 ##### : 6-digit address (hexadecimal) where a sound skipped

**Error code**

	Cause of error	Description of error
Playback	EIB	Sound error correction error
	Stat	Decoder status error
	Adrs	Cannot access the address
	BEMP	Buffer becomes empty

- Quit the sound skip check result display mode, and press the key to return to the test mode. (display check mode)

### 4-8. KEY CHECK MODE

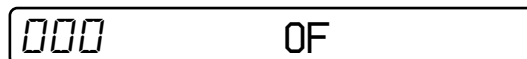
#### 4-8-1. Outline of the function

This mode is used to check to make sure that each of the keys (including the slide switch) on the set operates normally.

#### 4-8-2. Setting the Key Check mode

- Set the TEST MODE. Press and hold down key (for more than 3 sec) to set the Key Check mode.

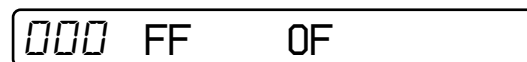
LCD display



- When each key on the set and on remote control is pressed, its name is displayed on the LCD. (The operated position is displayed for 4 sec after the slide switch is operated. If any other key is pressed during this display, the LCD switches to its name display)

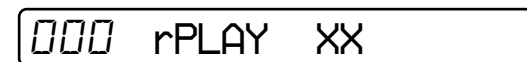
Example: When key on the set is pressed:

LCD display



Example: When key on the remote control is pressed:

LCD display

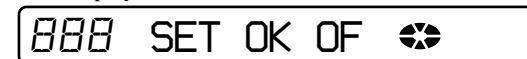


XX: AD value of the remote control key (hexadecimal 00 to FF)

- When all the keys on the set and on the remote control are considered as OK, the following displays are shown for 2 sec. (The key pressed to enter the Key Check mode has been checked even if it is not pressed in this mode)

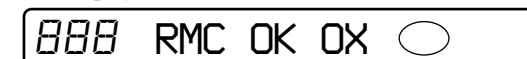
Example: When the keys on the set are considered as OK:

LCD display



Example: When the keys on the remote control are considered as OK:

LCD display



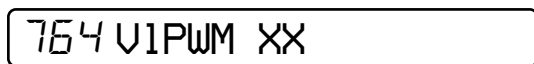
- When all the key have been checked or when the top panel is opened during this checking, the system terminates the Key Check mode and return to the TEST MODE.



### 5-4-3. VI PWM Duty adjustment method

1. Set the Manual mode and set the item No. to 764.

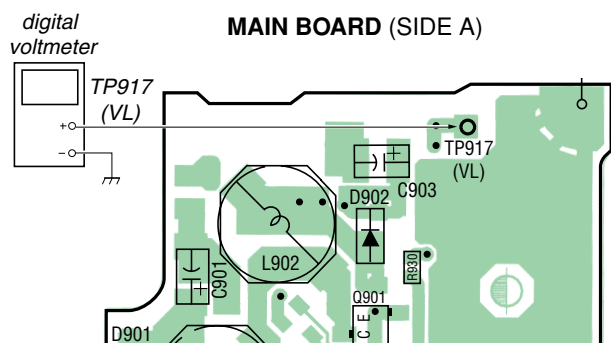
LCD display



2. Connect a digital voltmeter to TP917 (VL) on the main board and adjust  $\boxed{+}$  key (Voltage up) and  $\boxed{-}$  key (Voltage down) on the remote control.

Adjustment value:2.23V

Standard value:2.22 to 2.235V

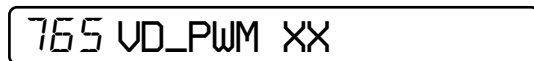


3. Press  $\boxed{||}$  key to write the adjustment value.

### 5-4-4. Vd PWM Duty adjustment method

1. Set the Manual mode and set the item No. to 765.

LCD display

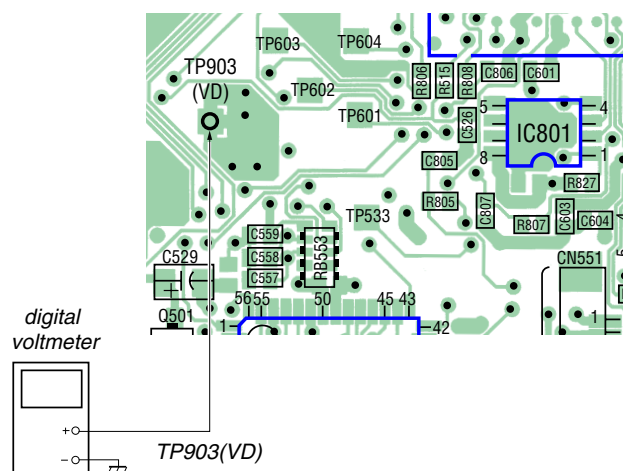


2. Connect a digital voltmeter to TP903(VD) on the main board and adjust  $\boxed{+}$  key (Voltage down) and  $\boxed{-}$  key (Voltage up) on the remote control.

Adjustment value:1.26V

Standard value:1.255 to 1.27V

MAIN BOARD (SIDE A)



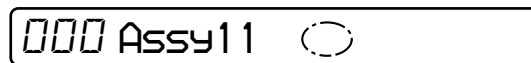
3. Press  $\boxed{||}$  key to write the adjustment value.

### 5-4-5. Electrical offset adjustment method

**Note:** Doing adjustment by the state that a disc does not enter.

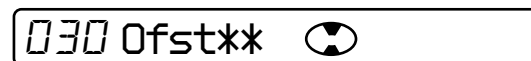
1. Confirm the power voltage is 1.5V.
2. Set to the test mode.
3. Press the  $\boxed{-}$  key activates the overall adjustment mode.

LCD display



4. Press the DISPLAY key.

LCD display



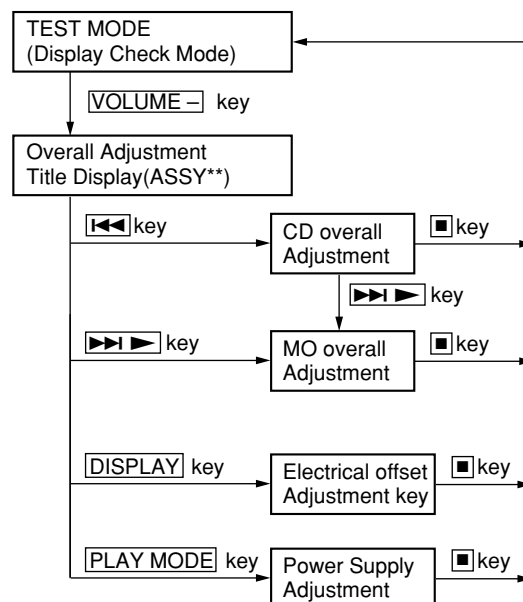
5. If result of electrical offset adjustment is OK, the following display appears.

LCD display



## 5-5. OVERALL ADJUSTMENT MODE

### 5-5-1. Overall adjustment mode structure

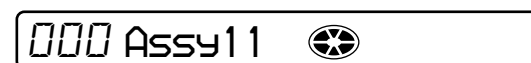


Note: The overall adjustments should be always performed in the sequence of CD → MO adjustments.

### 5-5-2. Overall CD and MO adjustment method

1. Set the TEST MODE and press  $\boxed{-}$  key to set the Overall Adjustment mode.

LCD display



2. Insert CD disc in the set, and press  $\boxed{\leftarrow}$  key to set the Overall CD Adjustment mode.

Automatic adjustments are made.

LCD display



XXX: Item No. for which an adjustment is being executed.

- If NG in the overall CD adjustments, return to Reset NV and perform from the electrical offset adjustment again.

LCD display


XXX NG

XXX: NG item No.

- If OK through the overall CD adjustments, then perform overall MO adjustments.

LCD display

XXX CD OK

- Insert MO disc in the set, and press  key to set the Overall MO Adjustment mode. Automatic adjustments are made.

LCD display

XXX MO RUN


XXX: Item No. for which an adjustment is being executed.

- If NG in the overall MO adjustments, return to Reset NV and perform the adjustment again.

LCD display

000 XXX NG

XXX: NG item No.

- If OK through the overall MO adjustments, press  key to return to the TEST MODE and terminate the Overall Adjustment mode.

LCD display


000 MO OK

**5-5-3. Resume clear method**

- Setting the testmode.
- Set the Manual mode and set the item No.043(RESUME Clear).

LCD display

043 Resume CC

- Press the  key.

LCD display

043 Res \*\*\*

After reset is completed

LCD display

043 Res C1r

**5-5-4. Rewrite the NV value**

After resume clear, rewrite the NV value.  
 Microprocessor version 1.0 to 2.0 : Step 1 and 2.  
 Microprocessor version 2.1 and later : Step 1 only

Step	Item NO.	NV value
1	861	0F (h)
	862	0B (h)
2	863	87 (h)
	864	75 (h)

**5-5-5. Overall CD and MO adjustment items**

1. Overall offset adjustment

Item No.	Contents
030	GRV setting • Sarvo OFF • Head UP
035	Laser ON/OFF electrical offset difference measurement
Completed	

2. Overall CD adjustment items

Item No.	Contents
761	VC,VR power voltage High/Low selection
300	HPIT setting • Sarvo OFF
561	SLED move to inside
562	SLED move to outside
High reflection CD electrical offset adjustment	
312	Laser ON • Focus UP • VC correction ALFA offset adjustment
313	IJ offset adjustment
314	FE offset adjustment
HPIT adjustment	
320	Focus servo ON
324	TE offset adjustment 1
321	TE gain adjustment
328	TWPP gain adjustment
324	TE offset adjustment 1
332	TE offset adjustment 2
330	Tracking servo ON
336	ABCD gain adjustment
337	KF gain correction
338	RF gain adjustment
344	CD focus gain adjustment
345	CD tracking gain adjustment
521	CD two-axis sensitivity adjustment (inside)
522	CD two-axis sensitivity adjustment (outside)
341	CD focus bias adjustment
300	HPIT setting • servo OFF
completed	

3. Overall MO adjustment items

Item No.	Contents
761	VC,VR power voltage High/Low selection
100	G RV setting
Low reflect MO offset adjustment	
112	Laser ON • Focus UP • EVC correction ALFA offset adjustment
113	IJ offset adjustment
114	FE offset adjustment
118	Wpp denominator adjustment
HPIT adjustmet	
200	LPIT setting • servo OFF
561	SLED move to inside
220	Focus servo ON
224	TE offset adjustment 1
221	TE gain adjustment
224	TE offset adjustment 1
232	TE offset adjustment 2

Item No.	Contents
230	Tracking servo ON
236	ABCD gain adjustment
237	KF gain adjustment
238	RF gain adjustment
244	FCS gain adjustment
245	TRK gain adjustment
READ GRV adjustment 1	
100	R GRV setting
562	SLED move to outside
120	Focus servo OFF
122	TON offset adjustment
121	TE gain adjustment
122	TON offset adjustment
123	TEIN offset adjustment
124	TWPP offset adjustment
130	Tracking servo ON
131	TWPP offset adjustment
136	ABCD gain adjustment
137	KF gain adjustment
139	ADIP BPF fo adjustment
144	FCS gain adjustment
145	TRK gain adjustment
134	TWPP gain adjustment
131	TWPP offset adjustment 1
132	TWPP offset adjustment 2
149	TWPP OP offset adjustment
138	RF gain adjustment
100	R GRV setting • Servo OFF

## SECTION 6 DIAGRAMS

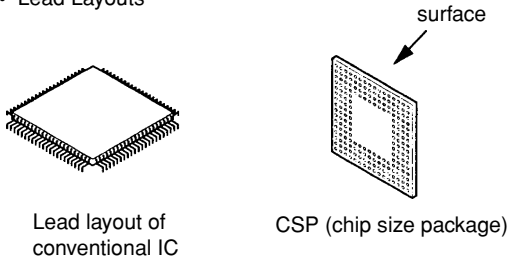
### Note on Printed Wiring Boards: MAIN SECTION

- — : parts extracted from the component side.
- : 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 the (Side B) pattern face are indicated.  
 Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

- Main boards is four-layer printed board. However, the patterns of layer 2 and 3 have not been included in this diagrams.
- Replacement of IC601 used in this set requires a special tool.

### Lead Layouts



### Note on Schematic Diagram: MAIN SECTION

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50  $\text{WV}$  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.
- $\triangle$  : internal component.

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

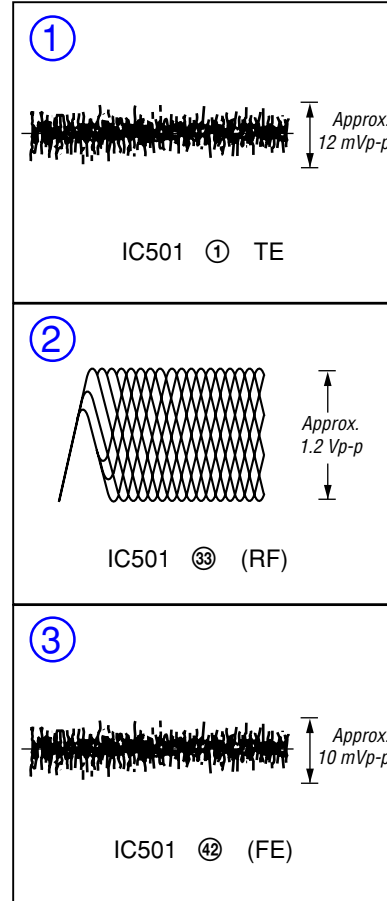
- : B+ Line.
- Power voltage is dc 1.5V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark : PLAY
- Voltages are taken with a VOM (Input impedance 10  $\text{M}\Omega$ ). Voltage variations may be 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.  
 : Analog  
 : Digital

- Replacement of IC601 used in this set requires a special tool.
- The voltage and waveform of CSP (chip size package) cannot be measured, because its lead layout is different form that of conventional IC.

### MAIN BOARD SUB ASSY

- Audio board is supplied with main board sub ASSY.
- Audio board can't be moved away from main board. Give a damage when take it off forcibly.
- The part that audio board overlap with main board can't be repaired.

### ● WAVEFORMS



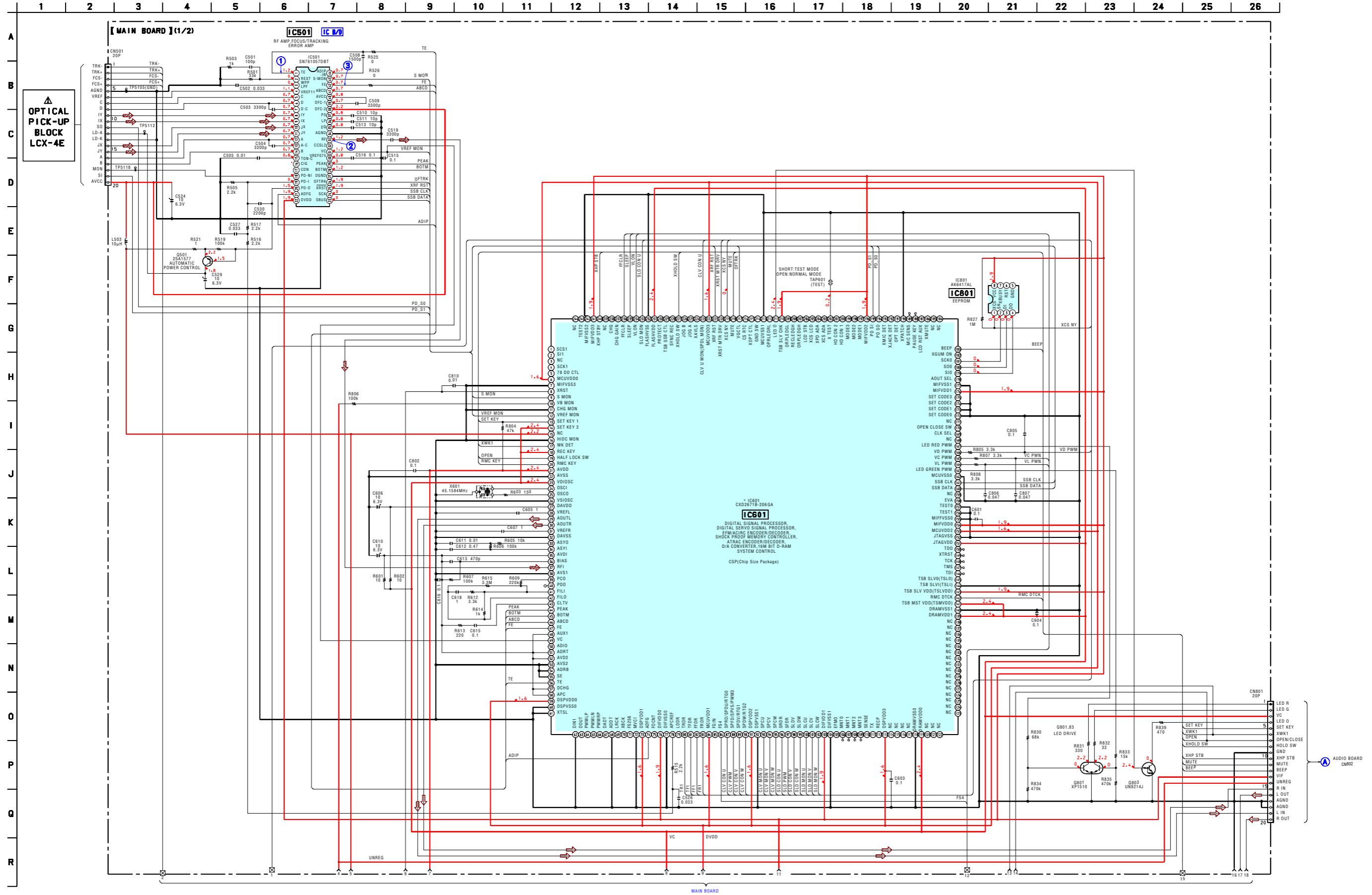




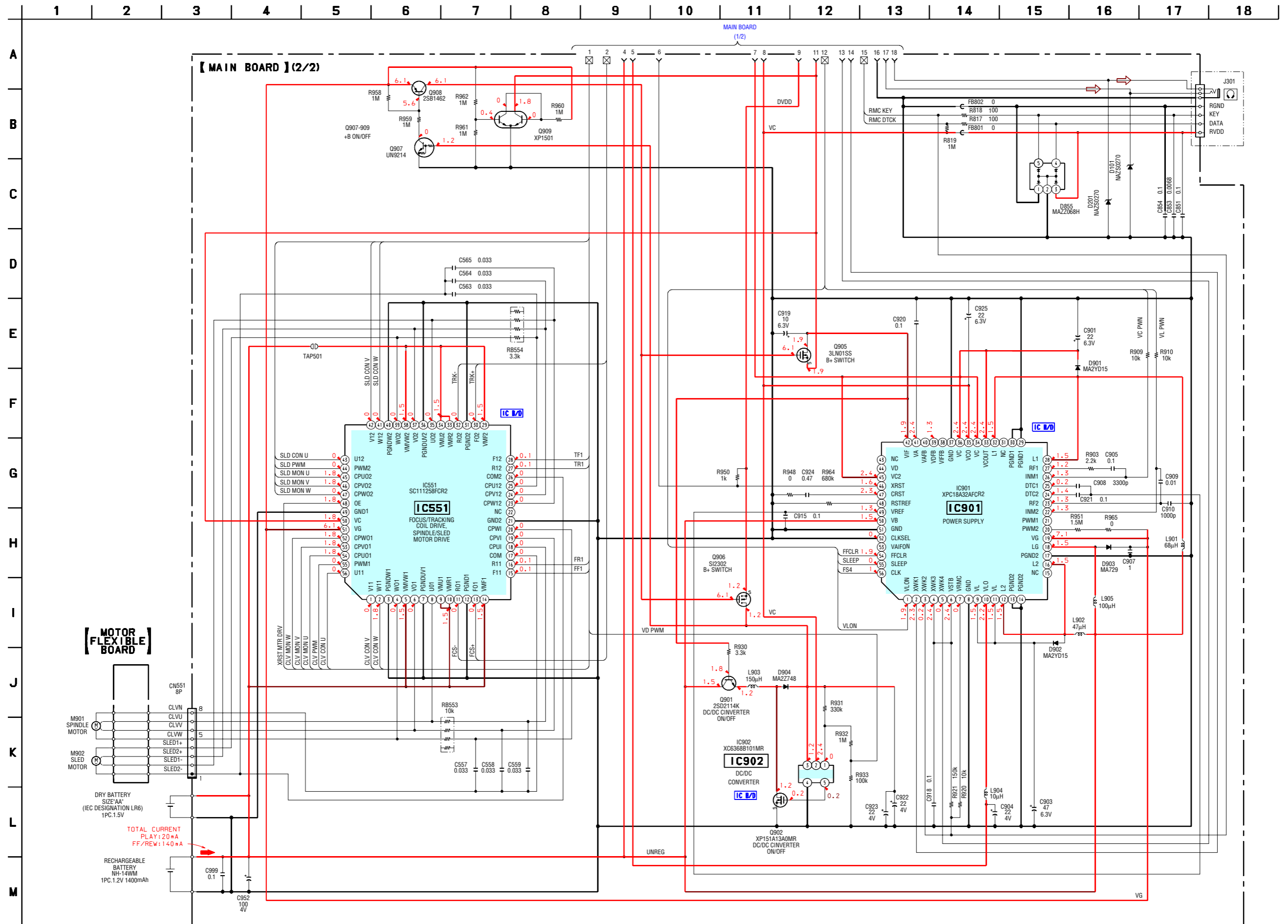




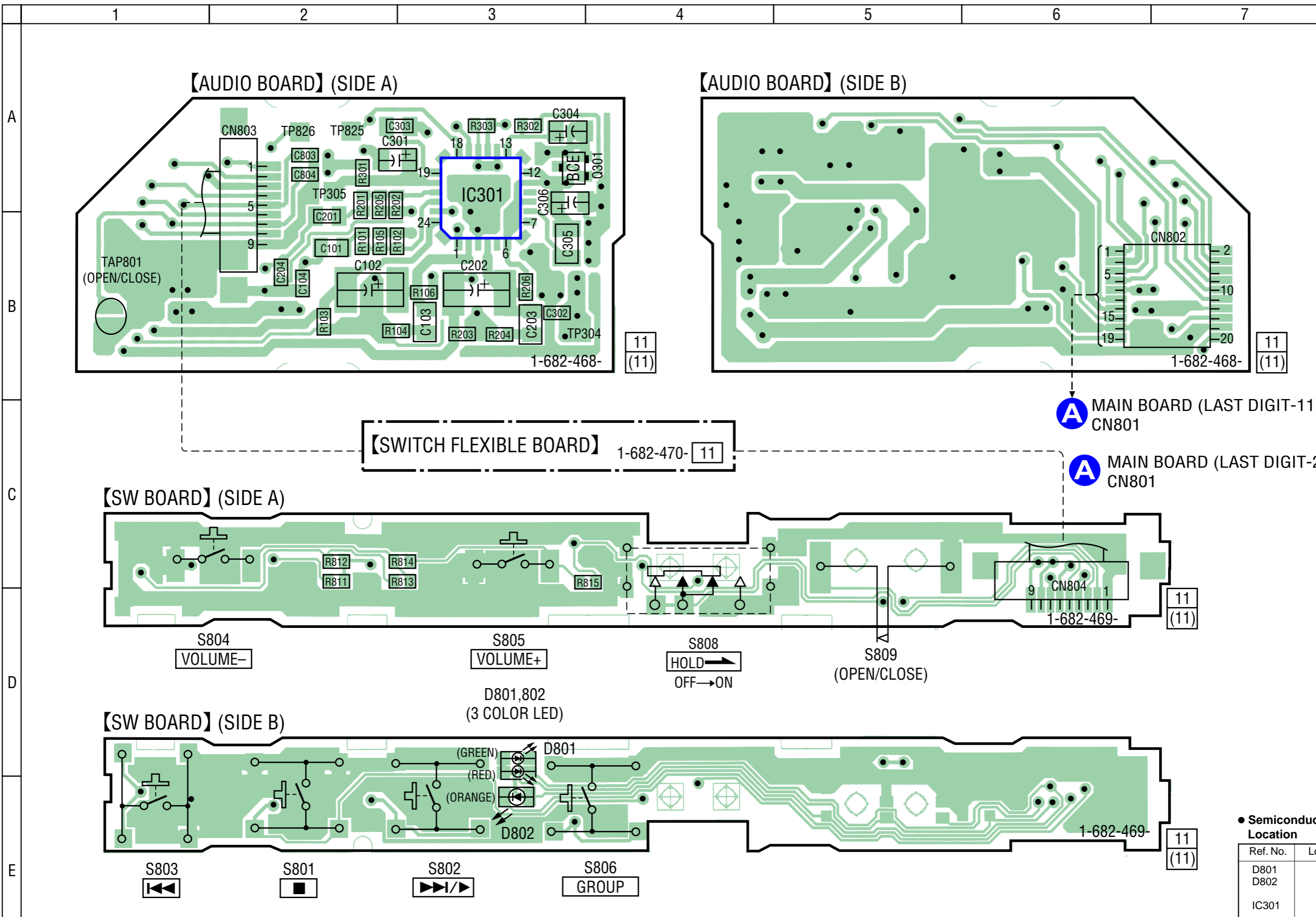
6-4. SCHEMATIC DIAGRAM – MAIN SECTION (1/2) – Refer to page 16 for Notes. Refer to page 16 for Waveforms. Refer to page 24 for IC Block Diagrams.



6-5. SCHEMATIC DIAGRAM – MAIN SECTION (2/2) – Refer to page 16 for Notes. Refer to page 24 – 25 for IC Block Diagrams.



6-6. PRINTED WIRING BOARDS – AUDIO SECTION – Refer to page 16 for Notes.



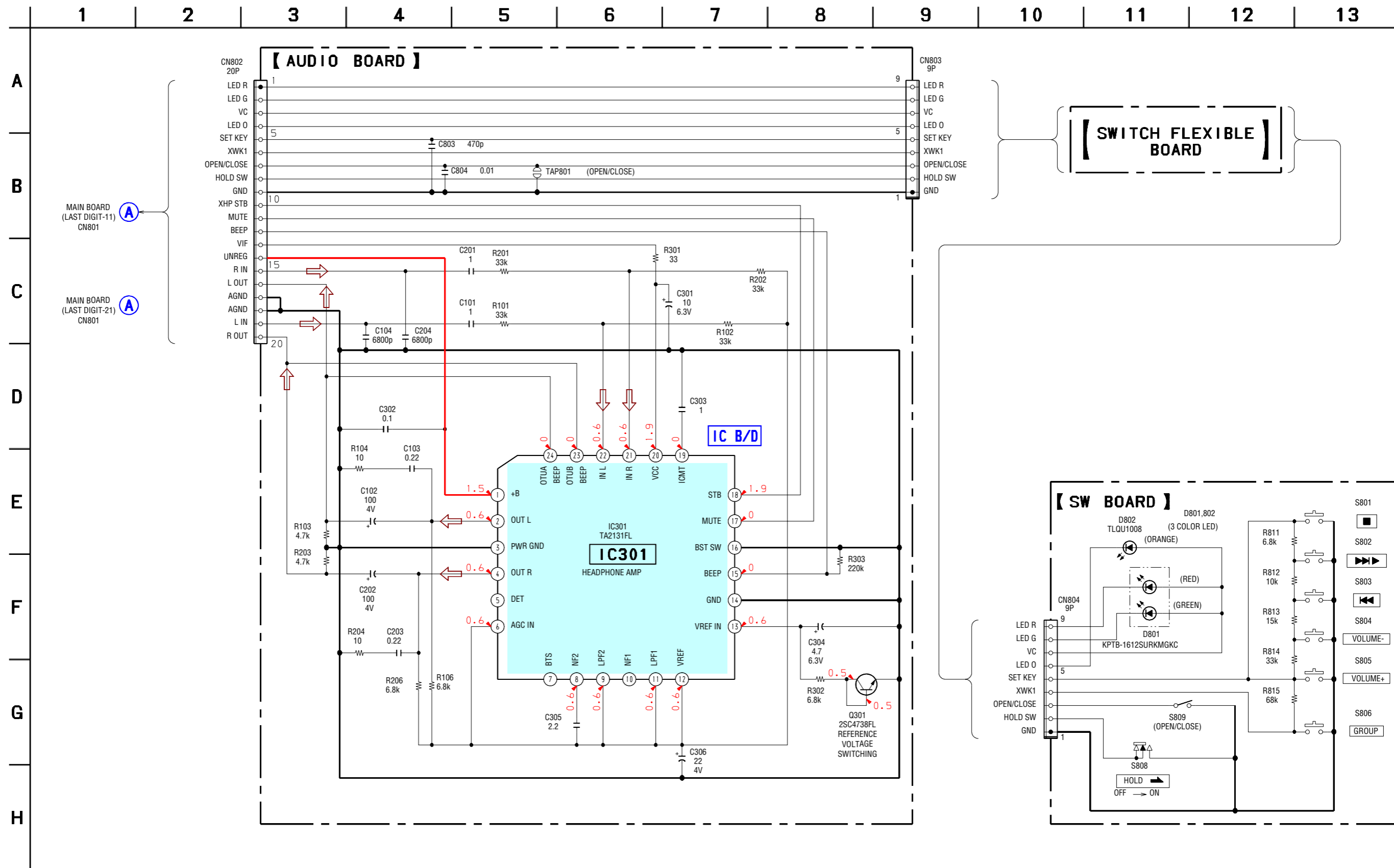
**A** MAIN BOARD (LAST DIGIT-11)  
CN801

**A** MAIN BOARD (LAST DIGIT-21)  
CN801

● Semiconductor Location

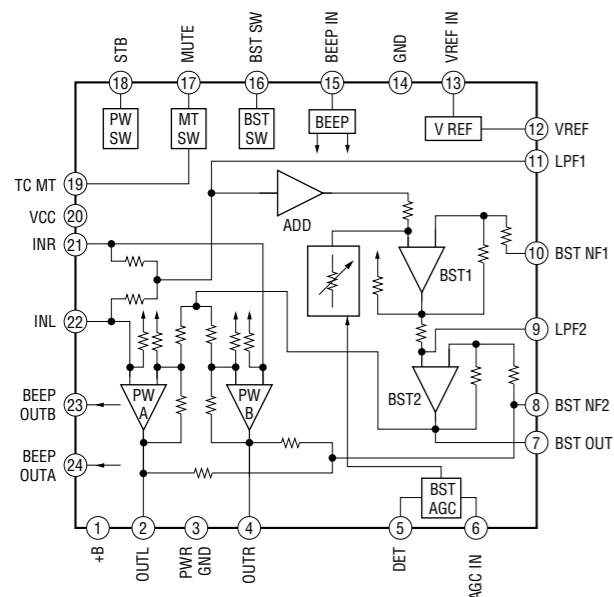
Ref. No.	Location
D801	D-3
D802	E-3
IC301	A-3
Q301	A-3

6-7. SCHEMATIC DIAGRAM – AUDIO SECTION – ● Refer to page 16 for Notes. ● Refer to page 24 for IC Block Diagrams.

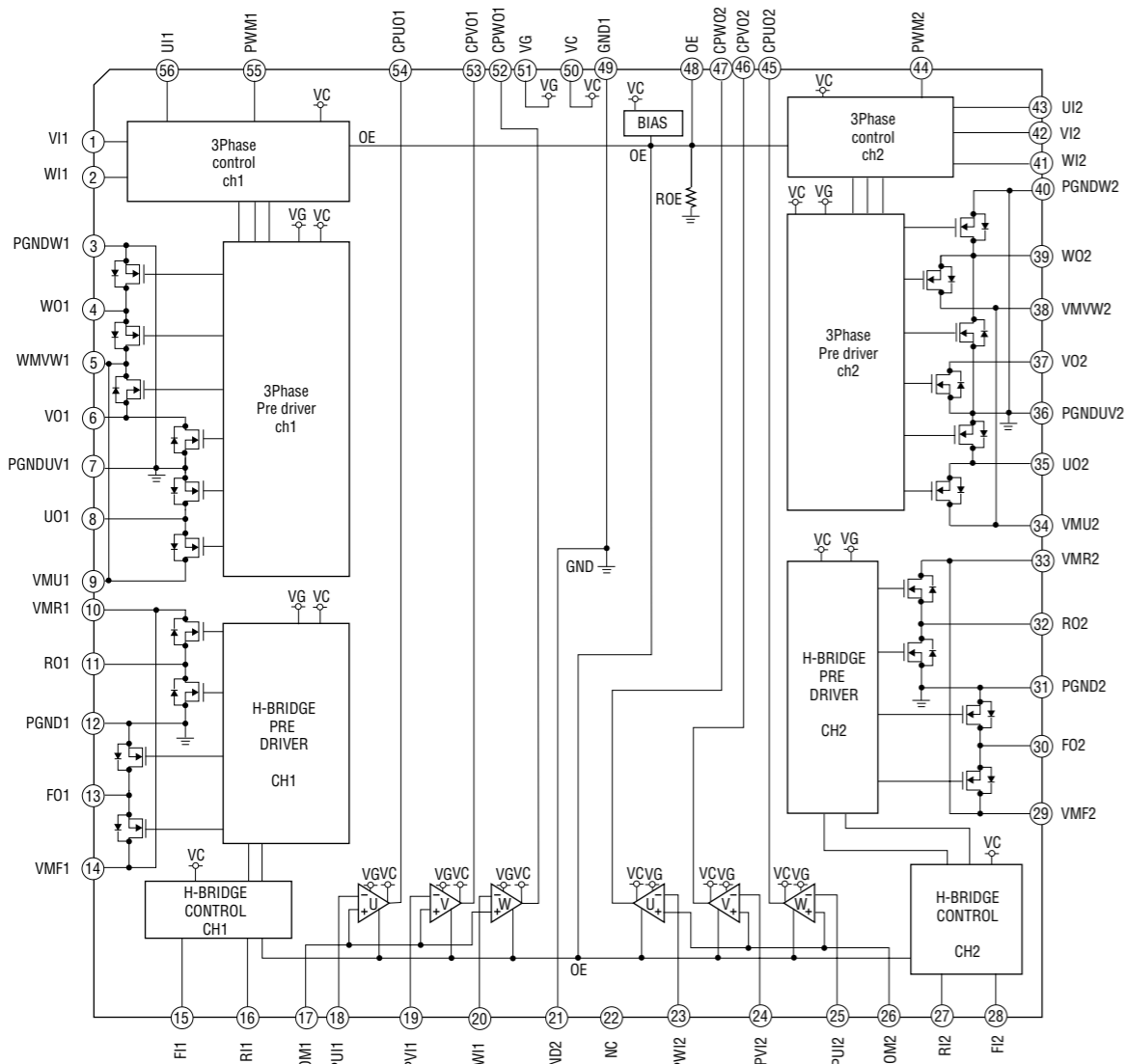


• IC BLOCK DIAGRAMS

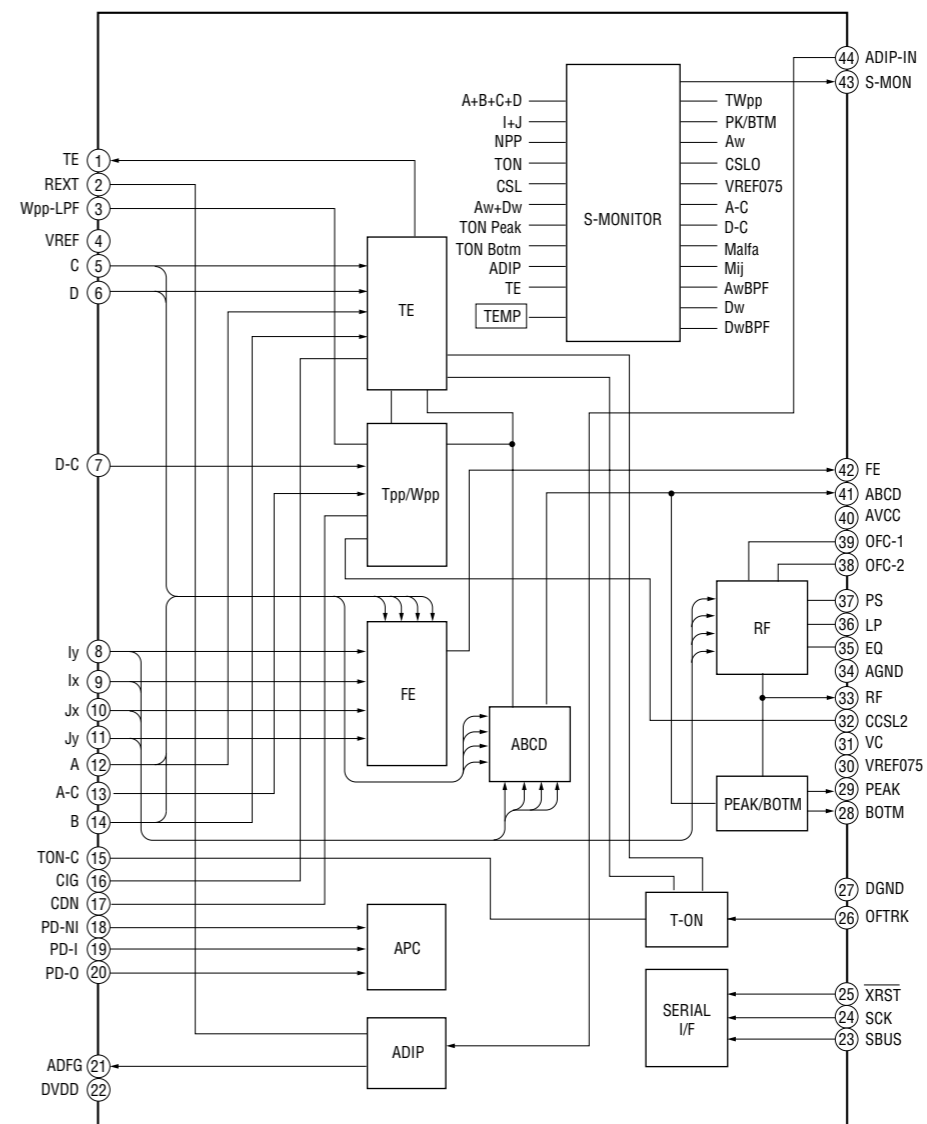
IC301 TA2131FL(EL)



IC551 SC111258FCR2

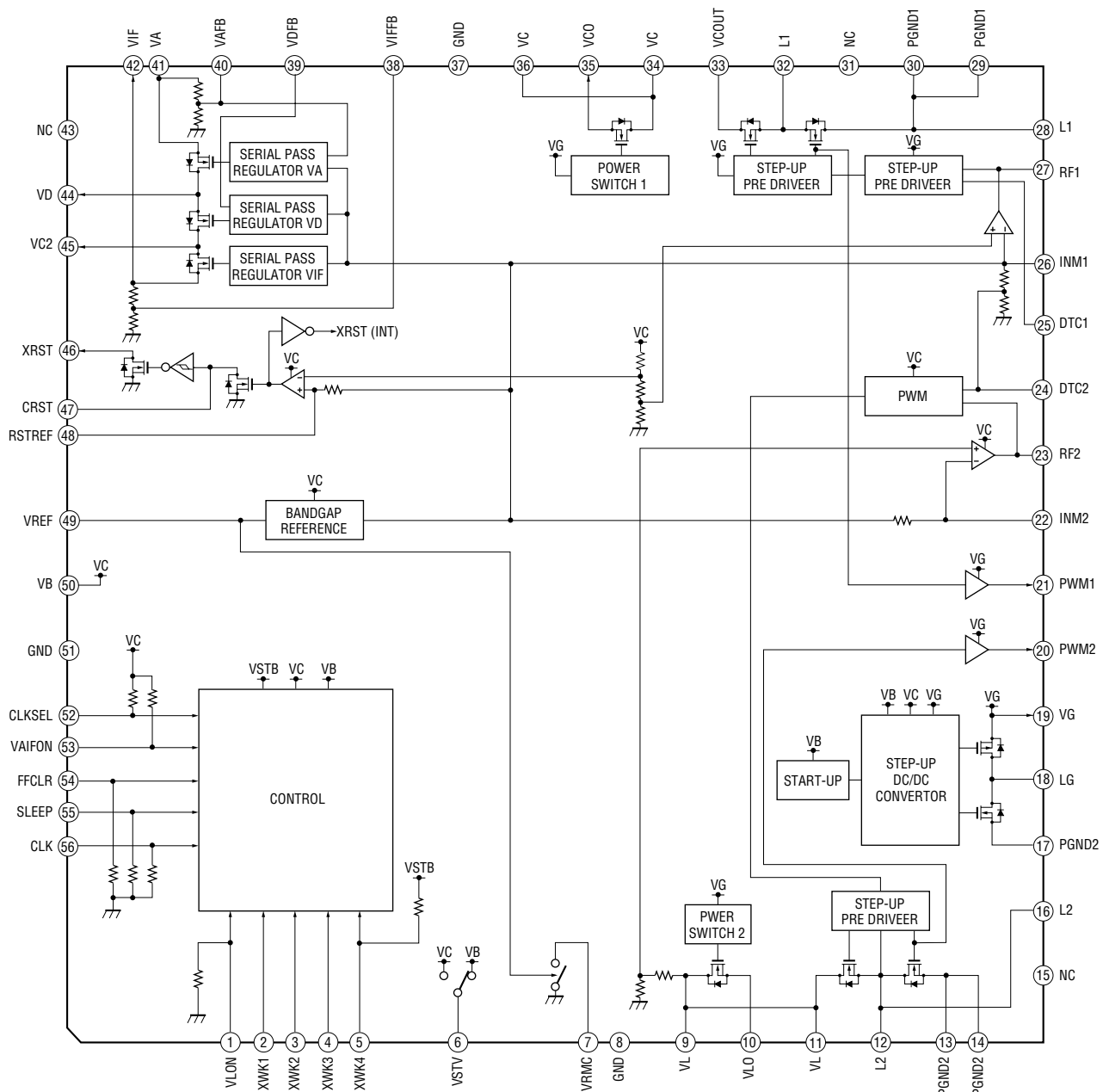


IC501 SN761057DBT

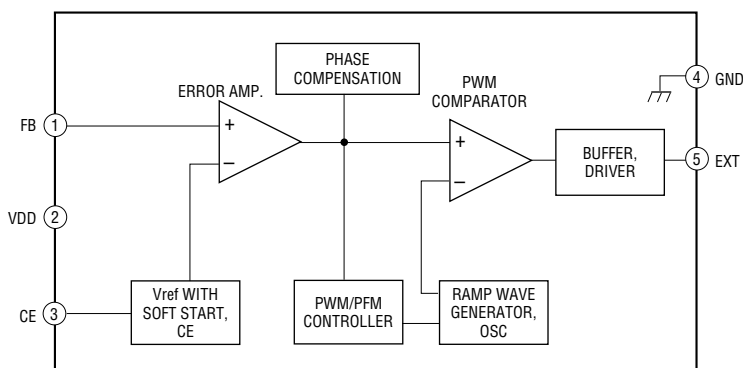




IC901 XPC18A32AFCR2

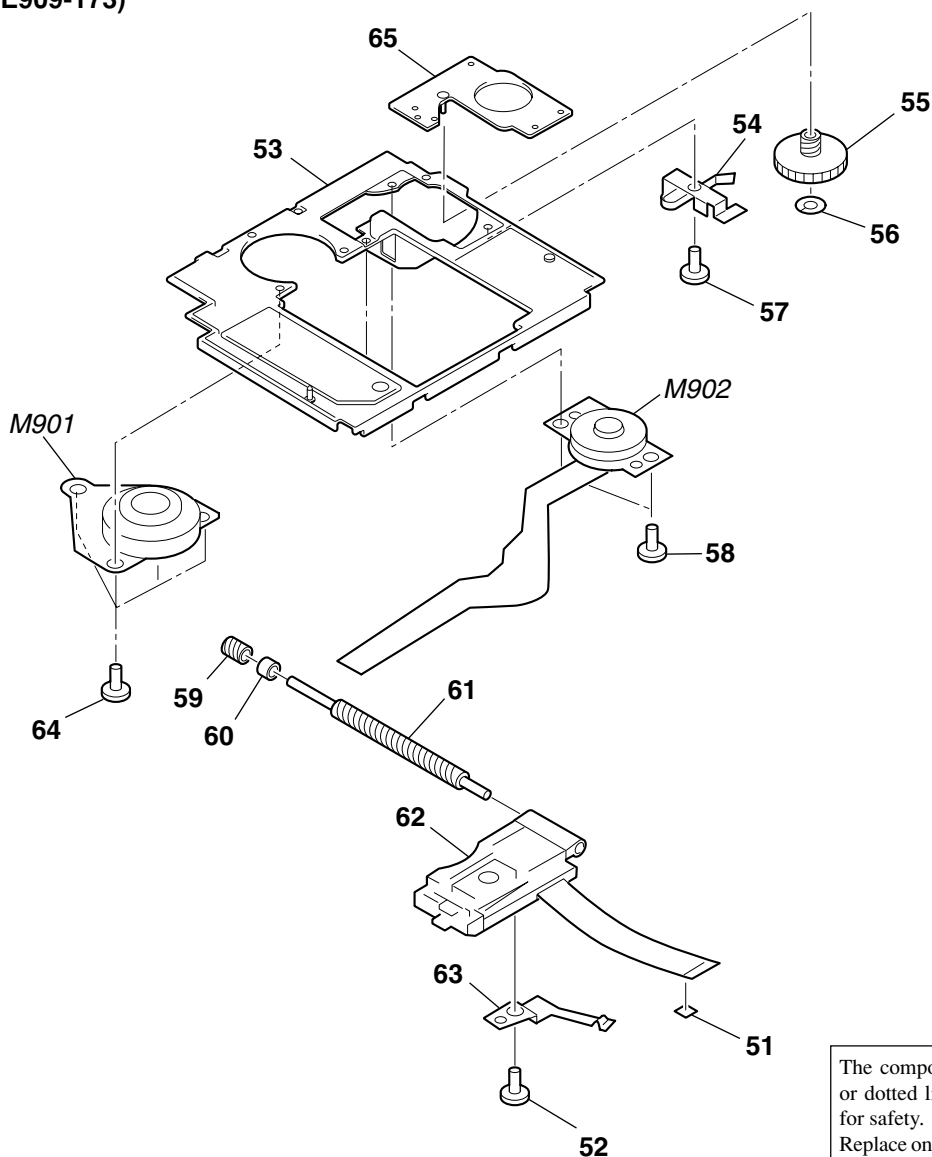


IC902 XC6368B101MR





**7-2. MECHANISM DECK SECTION  
(MT-MZE909-173)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-232-142-01	SHEET (CONNECTOR)		61	4-222-203-02	SCREW, LEAD	
52	3-222-392-01	SCREW (M1.4), TAPPING		Δ 62	X-3379-869-1	OPTICAL PICK-UP (LCX-4E)	
53	3-222-394-01	CHASSIS		63	3-222-391-01	SPRING (M), RACK	
54	3-224-779-02	SPRING, THRUST DETENT		64	3-225-278-11	SCREW, TAPPING	
55	4-222-216-01	GEAR (SA)		65	X-3379-529-4	BASE ASSY, MOTOR	
56	3-338-645-31	WASHER (0.8-2.5)		M901	8-835-744-01	MOTOR, DC SSM18B (SPINDLE)	
57	3-225-996-01	SCREW (M1.4)(EG),PRECISION PAN		M902	1-763-727-21	MOTOR, DC (SLED) (INCLUDING MOTOR FLEXIBLE BOARD, PULLEY GEAR)	
58	3-225-996-07	SCREW (M1.4)(EG),PRECISION PAN					
59	4-222-208-01	GEAR (SB)					
60	3-043-237-02	BEARING (N)					

**SECTION 8**  
**ELECTRICAL PARTS LIST**

**AUDIO**    **MAIN**

**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.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE :Metal oxide-film resistor  
F : nonflammable
- 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 :  $\mu$ , for example :  
uA.... :  $\mu$  A.... , uPA.... :  $\mu$  PA....  
uPB.... :  $\mu$  PB.... , uPC.... :  $\mu$  PC....  
uPD.... :  $\mu$  PD....
- CAPACITORS  
uF :  $\mu$  F
- COILS  
uH :  $\mu$  H
- Abbreviation  
FR : French  
HK : Hong Kong  
JEW : Tourist

**MAIN BOARD SUB ASSY**

- Audio board is supplied with main board sub ASSY.
- Audio board can't be moved away from main board.  
Give a damage when take it off forcibly.

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  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
		AUDIO BOARD (included in MAIN BOARD SUB ASSY)	
		*****	
		<CAPACITOR>	
C101	1-125-837-91	CERAMIC CHIP 1uF	10% 6.3V
C102	1-127-569-91	TANTAL CHIP 100uF	20% 4V
C103	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V
C104	1-164-942-11	CERAMIC CHIP 0.0068uF	10% 16V
C201	1-125-837-91	CERAMIC CHIP 1uF	10% 6.3V
C202	1-127-569-91	TANTAL CHIP 100uF	20% 4V
C203	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V
C204	1-164-942-11	CERAMIC CHIP 0.0068uF	10% 16V
C301	1-117-919-11	TANTAL CHIP 10uF	20% 6.3V
C302	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C303	1-125-837-91	CERAMIC CHIP 1uF	10% 6.3V
C304	1-125-926-91	TANTAL CHIP 4.7uF	20% 6.3V
C305	1-125-838-11	CERAMIC CHIP 2.2uF	10% 6.3V
C306	1-127-895-91	TANTAL CHIP 22uF	20% 4V
C803	1-164-935-11	CERAMIC CHIP 470PF	10% 16V
C804	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
		<CONNECTOR>	
CN802	1-778-595-21	CONNECTOR, BOARD TO BOARD 20P	
* CN803	1-793-327-21	CONNECTOR, FPC(ZIF) 9P	
		<IC>	
IC301	8-759-598-15	IC TA2131FL(EL)	
		<TRANSISTOR>	
Q301	8-729-598-15	TRANSISTOR 2SC4738	
		<RESISTOR>	
R101	1-218-971-11	RES-CHIP 33K	5% 1/16W
R102	1-218-971-11	RES-CHIP 33K	5% 1/16W
R103	1-218-961-11	RES-CHIP 4.7K	5% 1/16W
R104	1-208-929-11	RES-CHIP 10	5% 1/16W
R106	1-218-963-11	RES-CHIP 6.8K	5% 1/16W
R201	1-218-971-11	RES-CHIP 33K	5% 1/16W
R202	1-218-971-11	RES-CHIP 33K	5% 1/16W
R203	1-218-961-11	RES-CHIP 4.7K	5% 1/16W
R204	1-208-929-11	RES-CHIP 10	5% 1/16W
R206	1-218-963-11	RES-CHIP 6.8K	5% 1/16W

Ref. No.	Part No.	Description	Remark
R301	1-218-935-11	RES-CHIP 33	5% 1/16W
R302	1-218-963-11	RES-CHIP 6.8K	5% 1/16W
R303	1-218-981-11	RES-CHIP 220K	5% 1/16W
		*****	
*	X-3381-935-1	MAIN BOARD SUB ASSY (including AUDIO BOARD)	
		*****	
	3-049-041-01	TERMINAL BOARD	
		<CAPACITOR>	
C501	1-164-931-11	CERAMIC CHIP 100PF	10% 16V
C502	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C503	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C504	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C505	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
C508	1-164-938-11	CERAMIC CHIP 0.0015uF	10% 16V
C509	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C510	1-164-850-11	CERAMIC CHIP 10PF	0.50PF 16V
C511	1-164-850-11	CERAMIC CHIP 10PF	0.50PF 16V
C513	1-164-850-11	CERAMIC CHIP 10PF	0.50PF 16V
C515	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C516	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C519	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C524	1-117-919-11	TANTAL CHIP 10uF	20% 6.3V
C526	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C527	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C529	1-137-762-91	TANTALUM 10uF	20% 4V
C530	1-164-939-11	CERAMIC CHIP 0.0022uF	10% 16V
C557	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C558	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C559	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C563	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C564	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C565	1-127-772-81	CERAMIC CHIP 33000PF	10% 10V
C601	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C603	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C604	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C605	1-115-156-11	CERAMIC CHIP 1uF	10V
C606	1-117-919-11	TANTAL CHIP 10uF	20% 6.3V
C607	1-115-156-11	CERAMIC CHIP 1uF	10V
C610	1-117-919-11	TANTAL CHIP 10uF	20% 6.3V
C611	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
C612	1-125-891-11	CERAMIC CHIP 0.47uF	10% 10V
C613	1-164-935-11	CERAMIC CHIP 470PF	10% 16V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C615	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V			<JACK>	
C616	1-107-820-11	CERAMIC CHIP	0.1uF 16V	J301	1-793-288-62	JACK (♁)	
C618	1-109-982-11	CERAMIC CHIP	1uF 10% 10V			<INDUCTOR>	
C699	1-164-943-11	CERAMIC CHIP	0.01uF 10% 16V				
C802	1-107-820-11	CERAMIC CHIP	0.1uF 16V	L503	1-469-570-21	INDUCTOR	10uH
C805	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	L901	1-419-258-21	INDUCTOR	68uH
C806	1-119-923-81	CERAMIC CHIP	0.047uF 10% 10V	L902	1-419-646-21	INDUCTOR	47uH
C807	1-119-923-81	CERAMIC CHIP	0.047uF 10% 10V	L903	1-424-929-21	INDUCTOR	150uH
C810	1-164-943-11	CERAMIC CHIP	0.01uF 10% 16V	L904	1-414-398-11	INDUCTOR	10uH
C851	1-107-820-11	CERAMIC CHIP	0.1uF 16V	L905	1-412-032-22	INDUCTOR	100uH
C853	1-164-942-11	CERAMIC CHIP	0.0068uF 10% 16V			<TRANSISTOR>	
C854	1-107-820-11	CERAMIC CHIP	0.1uF 16V	Q501	8-729-922-10	TRANSISTOR	2SA1577-QR
C901	1-137-739-91	TANTALUM	22uF 20% 6.3V	Q801	8-729-429-44	TRANSISTOR	XP151
C903	1-135-989-91	TANTAL CHIP	47uF 20% 6.3V	Q803	8-729-037-75	TRANSISTOR	UN9214J-(TX).SO
C904	1-135-837-91	TANTAL CHIP	22uF 20% 6.3V	Q901	8-729-023-22	TRANSISTOR	2SD2114K
C905	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	Q902	8-729-052-37	TRANSISTOR	XP151A13A0MR
C907	1-109-982-11	CERAMIC CHIP	1uF 10% 10V	Q905	8-729-055-32	TRANSISTOR	3LN01SS-TL
C908	1-164-940-11	CERAMIC CHIP	0.0033uF 10% 16V	Q906	8-729-046-45	TRANSISTOR	SI2302DS-T1
C909	1-164-943-11	CERAMIC CHIP	0.01uF 10% 16V	Q907	8-729-037-75	TRANSISTOR	UN9214J-(TX).SO
C910	1-164-937-11	CERAMIC CHIP	0.001uF 10% 16V	Q908	8-729-037-53	TRANSISTOR	2SB1462J-QR(TX)SO
C915	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	Q909	8-729-429-44	TRANSISTOR	XP151
C918	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V			<RESISTOR>	
C919	1-117-919-11	TANTAL CHIP	10uF 20% 6.3V	R501	1-218-971-11	RES-CHIP	33K 5% 1/16W
C920	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	R503	1-218-953-11	RES-CHIP	1K 5% 1/16W
C921	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	R505	1-208-895-11	METAL CHIP	2.2K 1% 1/16W
C922	1-127-895-91	TANTAL CHIP	22uF 20% 4V	R515	1-208-895-11	METAL CHIP	2.2K 1% 1/16W
C923	1-127-895-91	TANTAL CHIP	22uF 20% 4V	R516	1-208-895-11	METAL CHIP	2.2K 0.50% 1/16W
C924	1-125-891-11	CERAMIC CHIP	0.47uF 10% 10V	R517	1-208-895-11	METAL CHIP	2.2K 1% 1/16W
C925	1-135-837-91	TANTAL CHIP	22uF 20% 6.3V	R519	1-218-977-11	RES-CHIP	100K 5% 1/16W
C952	1-128-964-91	TANTAL CHIP	100uF 20% 6.3V	R521	1-242-967-81	RES-CHIP	1 5.00% 1/16W
C999	1-125-777-11	CERAMIC CHIP	0.1uF 10% 10V	R525	1-218-990-11	SHORT	0
		<CONNECTOR>		R526	1-218-990-11	SHORT	0
* CN501	1-794-772-21	CONNECTOR, FPC(ZIF) 20P		R601	1-208-929-11	RES-CHIP	10 5.00% 1/16W
* CN551	1-778-156-11	CONNECTOR, FFC/FPC (ZIF) 8P		R602	1-208-929-11	RES-CHIP	10 5.00% 1/16W
CN801	1-778-590-21	CONNECTOR, BOARD TO BOARD 20P		R603	1-218-943-11	RES-CHIP	150 5% 1/16W
		<DIODE>		R605	1-218-965-11	RES-CHIP	10K 5.00% 1/16W
D101	8-719-056-58	DIODE MAZS027008SO		R606	1-218-977-11	RES-CHIP	100K 5% 1/16W
D201	8-719-056-58	DIODE MAZS027008SO		R607	1-218-977-11	RES-CHIP	100K 5% 1/16W
D855	8-719-077-43	DIODE MAZZ068H01SO		R609	1-218-981-11	RES-CHIP	220K 5% 1/16W
D901	8-719-081-33	DIODE MA2YD1500LSO		R612	1-218-959-11	RES-CHIP	3.3K 5% 1/16W
D902	8-719-081-33	DIODE MA2YD1500LSO		R613	1-218-945-11	RES-CHIP	220 5% 1/16W
D903	8-719-420-51	DIODE MA729		R614	1-218-953-11	RES-CHIP	1K 5% 1/16W
D904	8-719-072-27	DIODE MA2Z748001SO		R615	1-202-974-11	RES-CHIP	3.3M 5% 1/16W
		<FERRITE BEAD>		R804	1-218-973-11	RES-CHIP	47K 5% 1/16W
FB801	1-414-228-11	FERRITE	0uH	R805	1-218-959-11	RES-CHIP	3.3K 5% 1/16W
FB802	1-414-228-11	FERRITE	0uH	R806	1-218-977-11	RES-CHIP	100K 5% 1/16W
		<IC>		R807	1-218-959-11	RES-CHIP	3.3K 5% 1/16W
IC501	8-759-689-67	IC SN761057DBT		R808	1-218-959-11	RES-CHIP	3.3K 5% 1/16W
IC551	6-700-680-01	IC SC111258FCR2		R817	1-218-941-81	RES-CHIP	100 5% 1/16W
@ IC601	8-753-000-06	IC CXD2671B-206GA		R818	1-218-941-81	RES-CHIP	100 5% 1/16W
IC801	8-759-680-85	IC AK6417AL-L		R819	1-218-989-11	RES-CHIP	1M 5% 1/16W
IC901	6-700-880-01	IC XPC18A32AFCR2		R827	1-218-989-11	RES-CHIP	1M 5% 1/16W
IC902	8-759-657-26	IC XC6368B101MR		R830	1-218-975-11	RES-CHIP	68K 5% 1/16W
				R831	1-218-947-11	RES-CHIP	330 5% 1/16W
				R832	1-218-935-11	RES-CHIP	33 5% 1/16W

@ Replacement of IC601 used in this set requires a special tool.

# MZ-E909

**MAIN** **SW**

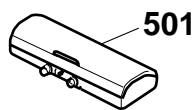
Ref. No.	Part No.	Description	Remark
R833	1-218-967-11	RES-CHIP 15K 5%	1/16W
R834	1-218-985-11	RES-CHIP 470K 5%	1/16W
R835	1-218-985-11	RES-CHIP 470K 5%	1/16W
R839	1-218-949-11	RES-CHIP 470 5%	1/16W
R903	1-218-957-11	RES-CHIP 2.2K 5%	1/16W
R909	1-218-965-11	RES-CHIP 10K 5%	1/16W
R910	1-218-965-11	RES-CHIP 10K 5%	1/16W
R920	1-208-911-11	METAL CHIP 10K 0.50%	1/16W
R921	1-218-979-11	RES-CHIP 150K 5%	1/16W
R930	1-218-959-11	RES-CHIP 3.3K 5%	1/16W
R931	1-208-947-11	METAL CHIP 330K 0.50%	1/16W
R932	1-208-959-11	METAL CHIP 1M 0.50%	1/16W
R933	1-208-935-11	METAL CHIP 100K 0.50%	1/16W
R948	1-218-990-11	SHORT 0	
R950	1-218-953-11	RES-CHIP 1K 5%	1/16W
R951	1-245-242-81	METAL CHIP 1.5M 1%	1/16W
R965	1-218-990-11	SHORT 0	
R958	1-218-989-11	RES-CHIP 1M 5%	1/16W
R959	1-218-989-11	RES-CHIP 1M 5%	1/16W
R960	1-218-989-11	RES-CHIP 1M 5%	1/16W
R961	1-218-989-11	RES-CHIP 1M 5%	1/16W
R962	1-218-989-11	RES-CHIP 1M 5%	1/16W
R964	1-218-987-11	RES-CHIP 680K 5%	1/16W
<NETWORK RESISTOR>			
RB553	1-233-967-11	RES, NETWORK (CHIP TYPE) 10K	
RB554	1-233-964-21	RES, NETWORK (CHIP TYPE) 3.3K	
<VIBLATOR>			
X601	1-795-002-21	VIBRATOR, CERAMIC (45.1584 MHz)	
*****			
*	A-3062-694-A	SW BOARD, COMPLETE	
*****			
<CONNECTOR>			
* CN804	1-793-327-21	CONNECTOR, FPC(ZIF) 9P	
<DIODE>			
D801	6-500-050-01	LED KPTB-1612LSURKMGKC	
(3 COLOR INFO-LED)			
D802	8-719-083-54	LED TLOU1008A(T05) (3 COLOR INFO-LED)	
<RESISTOR>			
R811	1-218-963-11	RES-CHIP 6.8K 5%	1/16W
R812	1-218-965-11	RES-CHIP 10K 5%	1/16W
R813	1-218-967-11	RES-CHIP 15K 5%	1/16W
R814	1-218-971-11	RES-CHIP 33K 5%	1/16W
R815	1-218-975-11	RES-CHIP 68K 5%	1/16W
<SWITCH>			
S801	1-786-033-21	SWITCH, TACTILE ( ■ )	
S802	1-786-033-21	SWITCH, TACTILE ( ►►►► )	
S803	1-786-033-21	SWITCH, TACTILE ( ◀◀◀◀ )	
S804	1-786-227-21	SWITCH, TACTILE (VOLUME-)	
S805	1-786-227-21	SWITCH, TACTILE (VOLUME+)	
S806	1-786-033-21	SWITCH, TACTILE (GROUP)	

Ref. No.	Part No.	Description	Remark
S808	1-572-922-11	SWITCH, SLIDE (HOLD →)	
S809	1-771-483-61	SWITCH, PUSH (1KEY) (OPEN/CLOSE)	
*****			
MISCELLANEOUS			
*****			
12	1-682-470-11	SWITCH FLEXIBLE BOARD	
△62	X-3379-869-1	OPTICAL PICK-UP (LCX-4E)	
M901	8-835-744-01	MOTOR, DC SSM18B (SPINDLE)	
M902	1-763-727-21	MOTOR, DC (SLED)	
(INCLUDING MOTOR FLEXIBLE BOARD, PULLEY GEAR)			
*****			

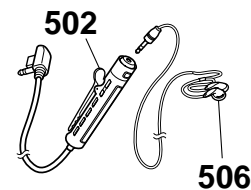
The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES *****	
501	1-251-895-11	BATTERY CASE	
502	1-476-395-12	REMOTE CONTROL UNIT (RM-MC11EL)	
△ 503	1-476-837-11	ADAPTOR, AC (AC-ES305S) (JEW)	
△ 503	1-476-838-11	ADAPTOR, AC (AC-ES305S) (HK)	
△ 503	1-476-839-11	ADAPTOR, AC (AC-ES305S) (AEP, FR)	
△ 503	1-476-840-11	ADAPTOR, AC (AC-ES305S) (US)	
504	1-756-194-11	BATTERY, NICKEL HYDROGEN (JEW)	
504	1-756-194-21	BATTERY, NICKEL HYDROGEN (US,AEP, FR, E, HK)	
505	3-220-749-01	CASE, CARRYING	
506	8-953-811-91	RECEIVER,EAR MDR-E803SP (EXCEPT US)	
506	8-954-019-90	HEADPHONE MDR-A034SP (US)	
507	X-3381-087-1	ATTACHMENT ASSY (ST)	
508	1-476-763-15	CHARGE UNIT (AEP, E, HK, JEW)	
△	1-569-007-11	ADAPTOR, CONVERSION 2P (JEW)	
	3-008-521-01	CASE, BATTERY CHARGE (US, AEP, FR)	
	3-008-521-21	CASE, BATTERY CHARGE (E, HK, JEW)	
	3-021-018-11	LABEL, FRANCE (FR)	
	3-234-034-01	MANUAL, INSTRUCTION (JAPANESE) (JEW)	
	3-234-034-11	MANUAL, INSTRUCTION (ENGLISH) (US, AEP, E, HK, JEW)	
	3-234-034-21	MANUAL, INSTRUCTION (FRENCH) (AEP, FR, JEW)	
	3-234-034-31	MANUAL, INSTRUCTION (SPANISH) (JEW) (AEP, E, JEW)	
	3-234-034-41	MANUAL, INSTRUCTION (DUTCH) (AEP)	
	3-234-034-51	MANUAL, INSTRUCTION (SWEDISH) (AEP)	
	3-234-034-61	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
	3-234-034-71	MANUAL, INSTRUCTION (GERMAN) (AEP)	
	3-234-034-81	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
	3-234-034-91	MANUAL, INSTRUCTION (FINNISH) (AEP)	
	3-236-886-11	MANUAL, INSTRUCTION (RUSSIAN) (AEP)	
	3-236-886-21	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (E, HK, JEW)	
	3-236-886-31	MANUAL, INSTRUCTION (KOREAN) (E, HK, JEW)	

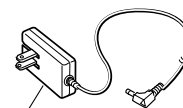
• Dry Battery Case



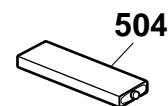
• Headphnes/earphones with a remote control



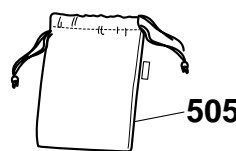
• AC adaptor



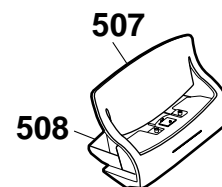
• Rechargeable Battery



• Carrying Pouch



• Battery Charging stand



**Note :** The component name in a figure just mentions a component name in instruction manual.

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





# MZ-E909

**SONY**<sup>®</sup>

## **SERVICE MANUAL**

2002.02

*US Model  
AEP Model  
E Model  
Tourist Model*

### **SUPPLEMENT - 1**

File this Supplement with the Service Manual.

**Subject :**

- **CHANGE OF MAIN BOARD**

(ECN-DAB01299)

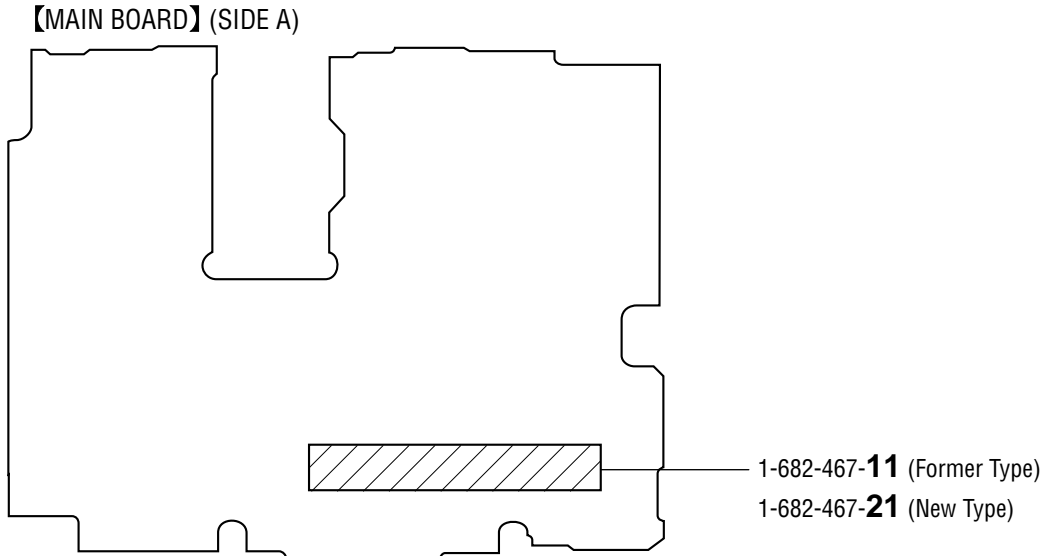
# MZ-E909

## ● CHANGE OF MAIN BOARD

The main board have been changed.

Block diagrams, printed wiring board and schematic diagram of new type, and changed parts list are described in this Supplement-1. Refer to original service manual (9-873-304-03) previously issued for the other information.

## NEW TYPE IDENTIFICATION



## ● CHANGED ELECTRICAL PARTS LIST

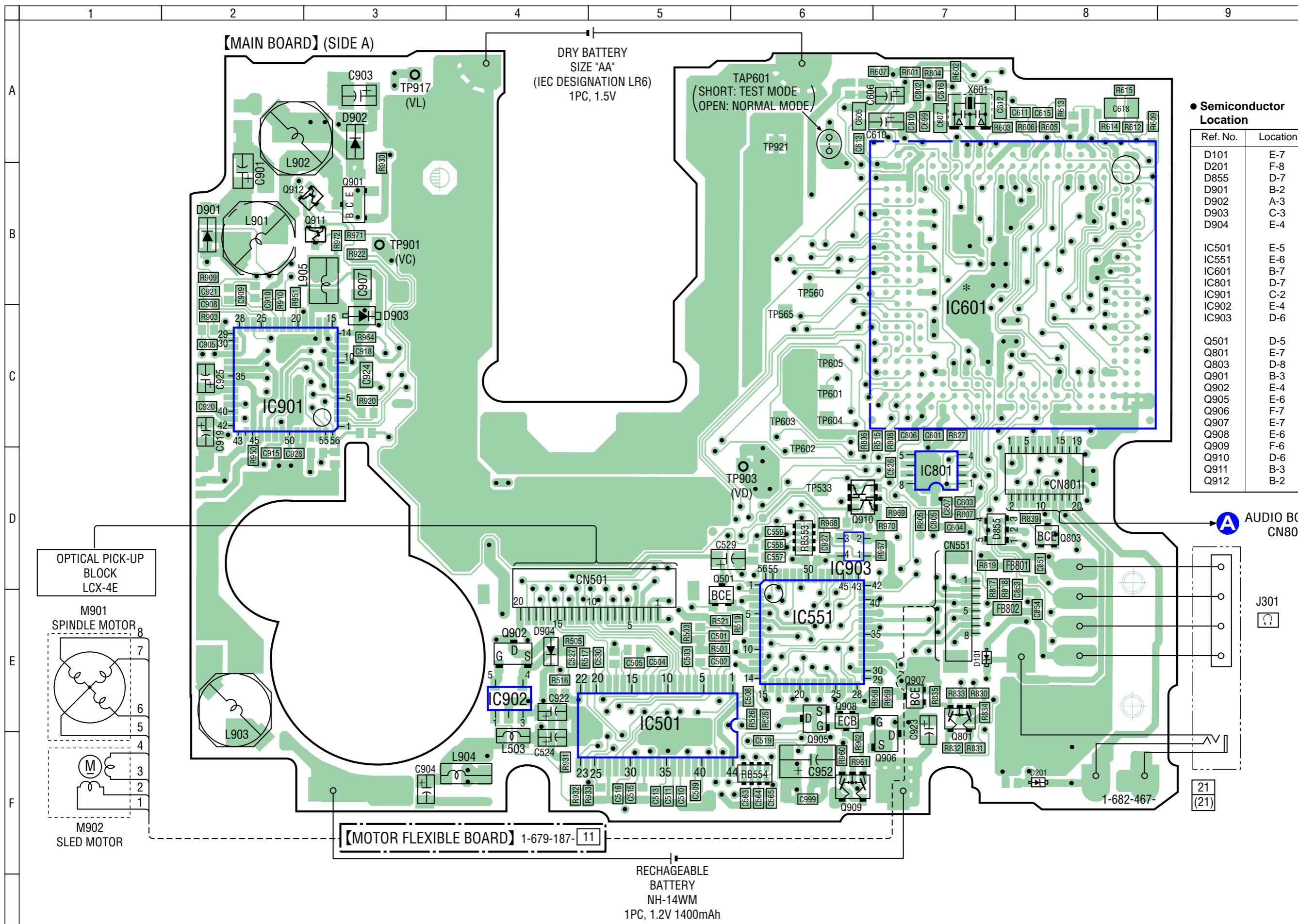
**MAIN** (Service Manual See page 28 to 30)

Ref. No.	Before Change (Last digit: -11)			After Change (Last digit: -21)			
	Part No.	Description		Part No.	Description		
C927		_____		1-125-777-11	CERAMIC CHIP	0.1uF	10% 10V
C928		_____		1-125-777-11	CERAMIC CHIP	0.1uF	10% 10V
IC601	8-753-000-06	IC CXD2671B-206GA		8-753-000-15	IC CXD2671B-209GA		
IC903		_____		8-759-572-21	IC S-80808ANNP-E7Y-T2		
Q902		_____		8-729-046-45	TRANSISTOR	SI2302DS-T1	
Q910		_____		6-550-075-01	TRANSISTOR	UMZ8NTR	
Q911		_____		8-729-037-92	TRANSISTOR	2SD2216J-R(TX).SO	
Q912		_____		8-729-037-92	TRANSISTOR	2SD2216J-R(TX).SO	
R921	1-218-979-11	RES-CHIP	150K 5% 1/16W		_____		
R922		_____		1-218-979-11	RES-CHIP	150K 5% 1/16W	
R965	1-218-990-11	SHORT	0		_____		
R967		_____		1-218-977-11	RES-CHIP	100K 5% 1/16W	
R968		_____		1-218-989-11	RES-CHIP	1M 5% 1/16W	
R969		_____		1-218-973-11	RES-CHIP	47K 5% 1/16W	
R970		_____		1-218-989-11	RES-CHIP	1M 5% 1/16W	
R971		_____		1-218-989-11	RES-CHIP	1M 5% 1/16W	
R972		_____		1-218-977-11	RES-CHIP	100K 5% 1/16W	



Last digit-21

PRINTED WIRING BOARDS – MAIN SECTION (1/2) – • Refer to Service Manual page 16 for Notes.



● Semiconductor Location

Ref. No.	Location
D101	E-7
D201	F-8
D855	D-7
D901	B-2
D902	A-3
D903	C-3
D904	E-4
IC501	E-5
IC551	E-6
IC601	B-7
IC801	D-7
IC901	C-2
IC902	E-4
IC903	D-6
Q501	D-5
Q801	E-7
Q803	D-8
Q901	B-3
Q902	E-4
Q905	E-6
Q906	F-7
Q907	E-7
Q908	E-6
Q909	F-6
Q910	D-6
Q911	B-3
Q912	B-2

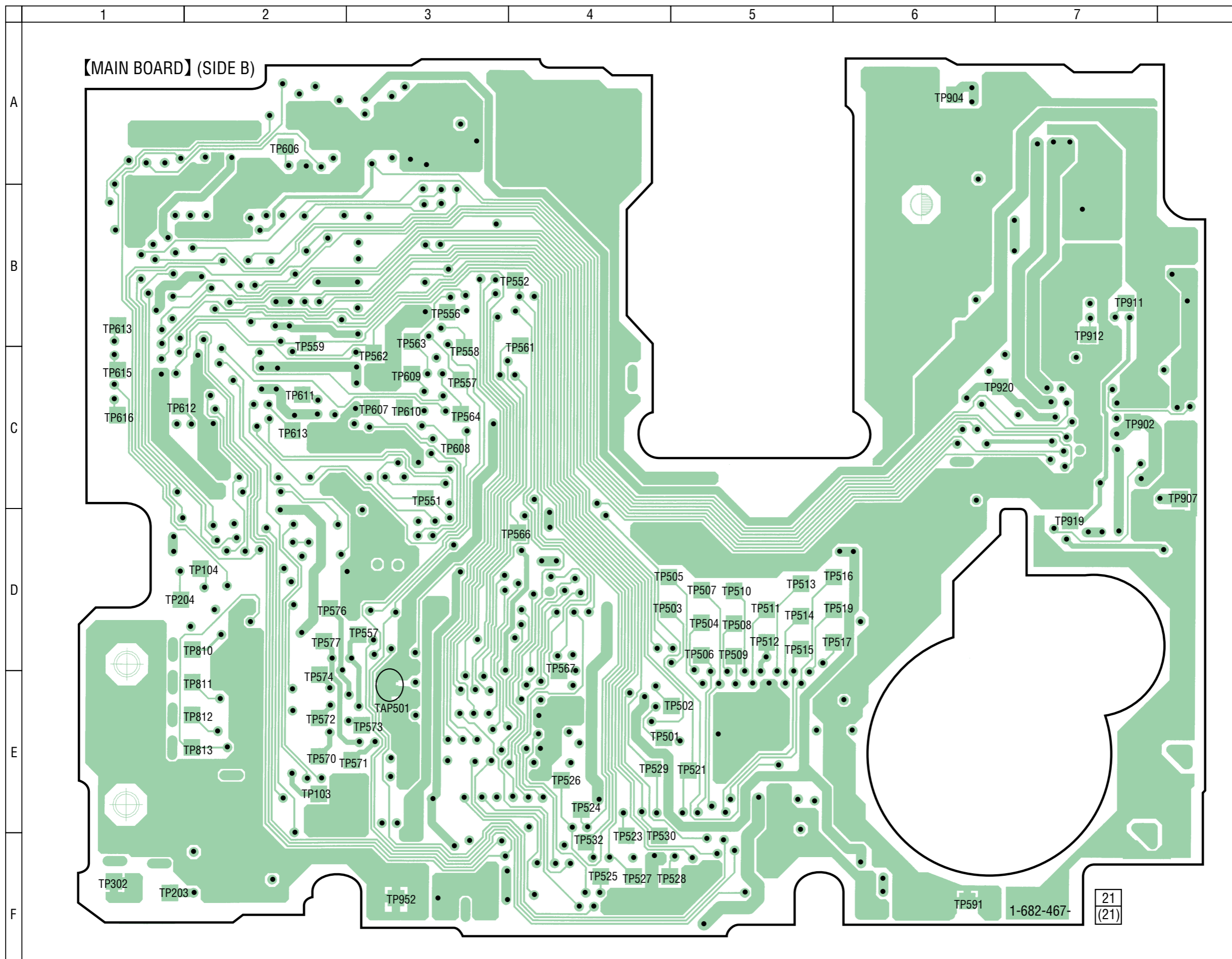
A AUDIO BOARD CN802

J301

21 (21)

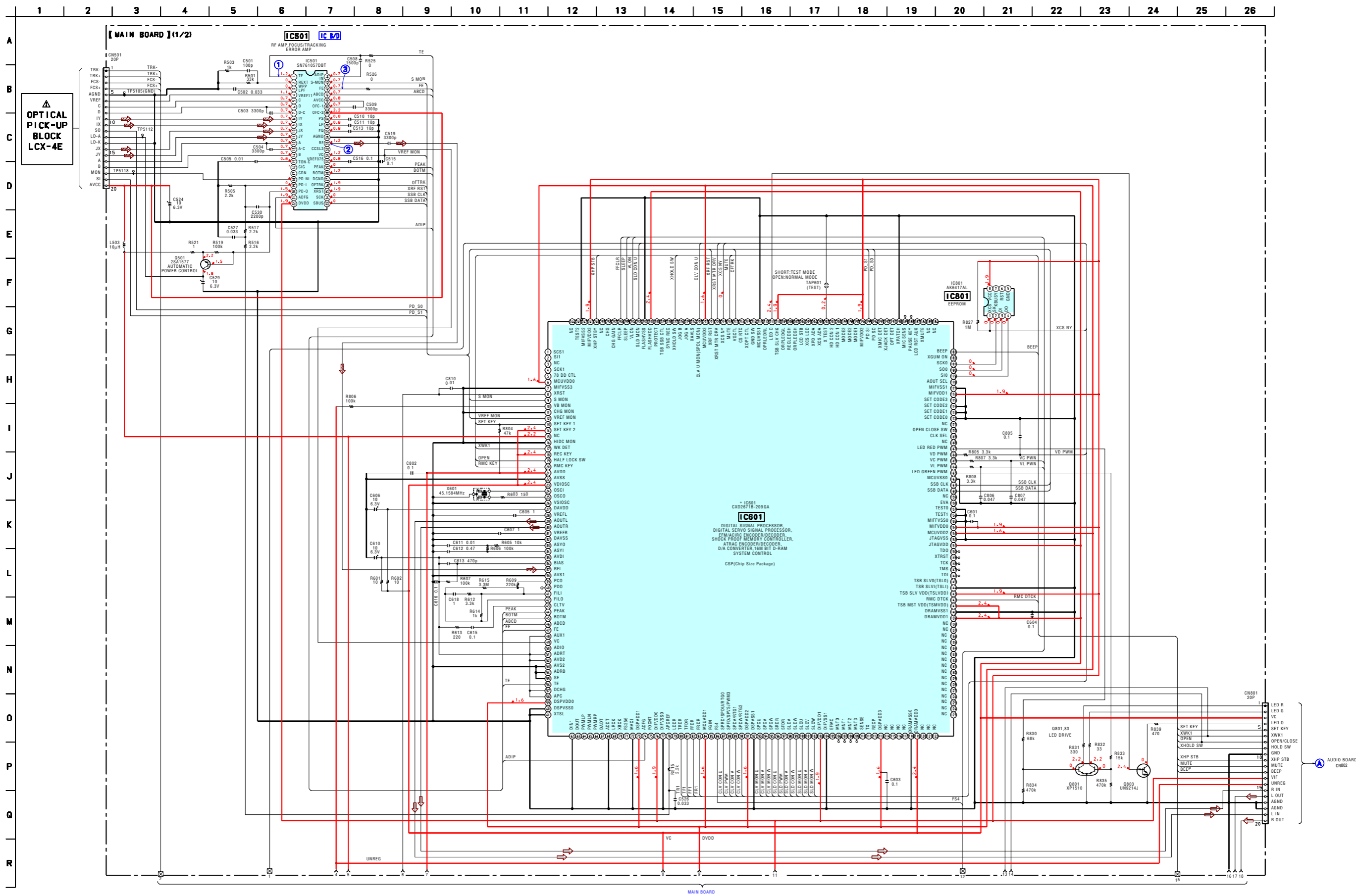
Last digit-21

PRINTED WIRING BOARDS – MAIN SECTION (2/2) – • Refer to Service Manual page 16 for Notes.



Last digit-21

SCHEMATIC DIAGRAM – MAIN SECTION (1/2) – Refer to Service Manual page 16 for Notes. Refer to Service Manual page 16 for Waveforms. Refer to Service Manual page 24 for IC Block Diagrams.



Last digit-21

SCHEMATIC DIAGRAM – MAIN SECTION (2/2) – Refer to Service Manual page 16 for Notes. Refer to Service Manual page 24 – 25 for IC Block Diagrams.

