

MZ-RH710

SERVICE MANUAL

Ver. 1.0 2005.03

AEP Model
E Model



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Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MT-MZNH900-181
Optical Pick-up Name	ABX-U

SPECIFICATIONS

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 lens surface on the optical pick-up block with 7 mm aperture.)

– Continued on next page –

PORTABLE MD RECORDER

9-879-638-01
2005C05-1
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Personal Audio Group
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MZ-RH710

Recording and playback time

List of the recording time for each disc

When using a disc in Hi-MD mode

When recording on the recorder		Recording time ¹⁾			
Recording mode on the recorder	Codec/Bit rate	1GB Hi-MD disc	80-minute standard disc	74-minute standard disc	60-minute standard disc
PCM	Linear PCM/1.4Mbps	1 hour and 34 minutes	28 minutes	26 minutes	21 minutes
Hi-SP	ATRAC3plus/256kbps	7 hours and 55 minutes	2 hours and 20 minutes	2 hours and 10 minutes	1 hour and 40 minutes
Hi-LP	ATRAC3plus/64kbps	34 hours	10 hours and 10 minutes	9 hours and 20 minutes	7 hours and 40 minutes
When transferring from the computer		Recording time ¹⁾²⁾			
Codec/Bit rate		1GB Hi-MD disc	80-minute standard disc	74-minute standard disc	60-minute standard disc
Linear PCM/1.4Mbps		1 hour and 34 minutes	28 minutes	26 minutes	21 minutes
ATRAC3plus/256kbps		7 hours and 55 minutes	2 hours and 20 minutes	2 hours and 10 minutes	1 hour and 40 minutes
ATRAC3plus/64kbps		34 hours	10 hours and 10 minutes	9 hours and 20 minutes	7 hours and 40 minutes
ATRAC3plus/ 48 kbps		45 hours	13 hours and 30 minutes	12 hours and 30 minutes	10 hours
ATRAC3/132kbps		16 hours and 30 minutes	4 hours and 50 minutes	4 hours and 30 minutes	3 hours and 40 minutes
ATRAC3/105kbps		20 hours and 40 minutes	6 hours and 10 minutes	5 hours and 40 minutes	4 hours and 40 minutes
ATRAC3/66kbps		32 hours and 40 minutes	9 hours and 50 minutes	9 hours	7 hours and 20 minutes
MP3/128kbps		17 hours	5 hours	4 hours and 30 minutes	3 hours and 30 minutes

¹⁾ Approximate time
²⁾ When transferring 4-minute tracks

When using a disc in MD mode

You cannot record in MD mode on this recorder.

When transferring from the computer	Recording time ¹⁾²⁾		
Codec/Bit rate	80-minute standard disc	74-minute standard disc	60-minute standard disc
ATRAC(stereo)/292kbps	80 minutes	74 minutes	60 minutes
ATRAC3/132, 105kbps	2 hours and 40 minutes	2 hours and 28 minutes	2 hours
ATRAC3/66kbps	5 hours and 20 minutes	4 hours and 56 minutes	4 hours

¹⁾ Approximate time
²⁾ When transferring 4-minute tracks

Revolutions

350 rpm to 3,000 rpm (CLV)

Error correction

Hi-MD:
LDC (Long Distance Code)/BIS (Burst Indicator Subcode)

MD:
ACIRC (Advanced Cross Interleave Reed Solomon Code)

Sampling frequency

44.1 kHz

Sampling rate converter

Optical (digital) input: 32 kHz/44.1 kHz/48 kHz

Audio formats supported by this recorder

Recording:
Linear PCM (44.1 kHz/16 bit)
ATRAC3plus (Adaptive TRansform Acoustic Coding 3 plus) (Hi-SP/Hi-LP)

Playback:
Linear PCM
ATRAC3plus
ATRAC3
ATRAC
MP3 (MPEG-1 Audio Layer-3/Sampling frequency 44.1 kHz/Bit rate 32 - 320 kbps (constant/variable bit rate))

Modulation system

Hi-MD:
1-7RL (Run Length Limited)/PRML (Partial Response Maximum Likelihood)

MD:
EFM (Eight to Fourteen Modulation)

Frequency response

20 to 20,000 Hz ± 3 dB

Inputs

LINE IN (OPTICAL)¹⁾:
stereo mini-jack for analog input (minimum input level 49 mV)
optical (digital) mini-jack for optical (digital) input

¹⁾The LINE IN (OPTICAL) jack is used to connect either a digital (optical) cable or a line (analog) cable.

Outputs

⌚: stereo mini-jack

Maximum output (DC)

Headphones:
2.8 mW + 2.8 mW (16 Ω) (European models)
5 mW + 5 mW (16 Ω) (Other models)

Power requirements

One LR6 (size AA) alkaline battery
AC power adaptor DC IN 3V

Operating temperature

+5°C to +35°C

Battery operation time

Battery life¹⁾

When recording continuously in Hi-MD mode

(unit: approx.hours)(JEITA²⁾)

Disc type	Linear PCM	Hi-SP	Hi-LP
1 GB Hi-MD disc	2.5	3.5	4.0
60/74/80-minute standard disc	4.5	7.0	8.0

¹⁾ When using a new Sony LR6 (size AA) alkaline dry battery (produced in Japan)
²⁾ Measured in accordance with the JEITA (Japan Electronics and Information Technology Industries Association) standard.

When playing continuously in Hi-MD mode

(unit: approx.hours)(JEITA)

Disc type	Linear PCM	Hi-SP	Hi-LP	MP3 ¹⁾
1 GB Hi-MD disc	9.5	16.5	19.5	19.0
60/74/80-minute standard disc	8.5	16.0	19.0	18.5

¹⁾ Tracks transferred at 128kbps

When playing continuously in MD mode

(unit: approx.hours)(JEITA)

Disc type	SP	LP2	LP4
60/74/80-minute standard disc	18.0	21.5	23.5

Dimensions

Approx. 83.6 × 29.5 × 77.0 mm (w/h/d) (excluding projecting parts and controls)

Mass

Approx. 107 g (the recorder only)

Supplied accessories

Headphones/earphones
Dedicated USB cable
Clamp filter (medium-size) (except Mexican model)
CD-ROM (SonicStage/MD Simple Burner)*
Carrying case with a belt clip (Mexican model only)
* Do not play a CD-ROM on an audio CD player.

Design and specifications are subject to change without notice.

Notes on chip component replacement

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

Flexible Circuit Board Repairing

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

CAUTION

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

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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.

SECTION 1
SERVICING NOTES

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

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

NOTES ON LASER DIODE EMISSION CHECK

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

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

LF : LEAD FREE MARK

Unleaded solder has the following characteristics.

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

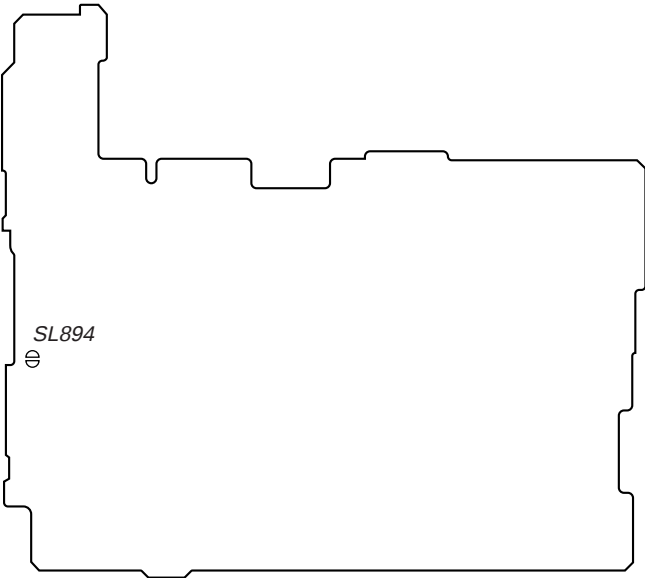
NOTES ON REPLACEMENT OF CSP (CHIP SIZE PACKAGE) IC
Replacement of MM1655NCBE (IC401), SN761059AZQLR (IC501), SC901585VAR2 (IC601) and CXD2681-225GG (IC801) used in this set requires a special tool.

OPERATION CHECK WHEN THE MAIN BOARD IS
REMOVED

In making an operation check with the MAIN board removed from the set, short the SL894 of the MAIN board with the solder before starting the operation check.

Note: Be sure to remove the solder used for shortcircuit after the repair is completed.

– MAIN BOARD (Conductor Side) –



Providing the required system environment

System requirements

The following system environment is required in order to use the SonicStage Ver. 3.0/MD Simple Burner Ver. 2.0 software for the MD Walkman.

Computer	IBM PC/AT or Compatible • CPU: Pentium III 450 MHz or higher • Hard disk drive space: 200 MB or more (1.5 GB or more is recommended) (The amount space will vary according to Windows version and the number of music files stored on the hard disk.) • RAM: 128 MB or more Others • CD drive (capable of digital playback by WDM) (A CD-R/RW drive is necessary for CD writing) • Sound Board • USB port
Operating System	Factory installed: Windows XP Media Center Edition 2005/Windows XP Media Center Edition 2004/Windows XP Media Center Edition/Windows XP Professional/Windows XP Home Edition/Windows 2000 Professional/Windows Millennium Edition/Windows 98 Second Edition
Display	High Color (16bit) or higher, 800 × 600 dots or better (1024 × 768 dots or better is recommended)
Others	• Internet access: for Web registration, EMD services and CDDB • Windows Media Player (version 7.0 or higher) installed for playing WMA files

- This software is not supported by the following environments:
- OSs other than the indicated above
 - Personally constructed PCs or operating systems
 - An environment that is an upgrade of the original manufacturer-installed operating system
 - Multi-boot environment
 - Multi-monitor environment
 - Macintosh

Notes

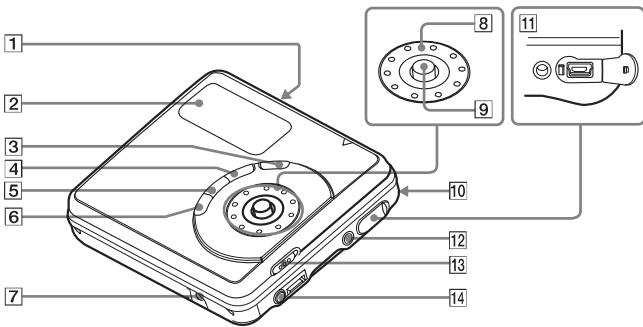
- We do not ensure trouble-free operation on all computers that satisfy the system requirements.
- The NTFS format of Windows XP/Windows 2000 Professional can be used only with the standard (factory) settings.
- For Windows 2000 Professional users, install Service Pack 3 or later version before using the software.
- We do not ensure trouble-free operation of the system suspend, sleep, or hibernation function on all computers.

SECTION 2
GENERAL

This section is extracted from instruction manual.

Looking at controls

The recorder



1 OPEN switch

2 Display window

3 REC (+▶)/T MARK button

4 (pause) button

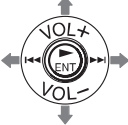
5 •SEARCH/ •MENU button
Press lightly to go to the SEARCH setting mode. Press for 2 seconds or more to go to the MENU setting mode.

6 (stop) • CANCEL button

7 DC IN 3V jack
When you use the optional AC power adaptor, connect it to this jack.

8 Jog dial

9 5-way control key



Operation	Function
Press ENT ¹⁾	play, enter
Press towards	find the beginning of the previous track, rewind
Press towards	find the beginning of the next track, fast forward
Press towards VOL + ¹⁾ or VOL -.	volume

¹⁾ There are tactile dots beside the ENT and VOL + buttons.

10 Battery compartment (at the bottom)

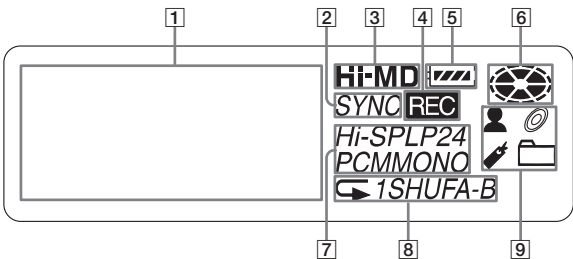
11 USB cable connecting jack

12 LINE IN (OPTICAL) jack

13 HOLD switch
Slide the switch in the direction of the arrow to disable the buttons on the recorder. To prevent the buttons from being accidentally operated when you carry the recorder, use this function.

14 (headphones/earphones) jack

The display window of the recorder



1 Character information display
Displays the disc and track names, date, error messages, track numbers, etc.

2 SYNC (synchro-recording) indication

3 Hi-MD/MD indication
“Hi-MD” lights up when the operation mode of the recorder is in Hi-MD mode and “MD” lights up when the operation mode is in MD mode.

4 REC indication
Lights up during recording or file transfers from the computer. When flashing, the recorder is in record standby mode.

5 Battery indication
Shows the approximate remaining battery power. If the battery is weak, the indication becomes empty and starts flashing.

6 Disc indication
Shows that the disc is rotating for recording or playing.

7 Track mode (PCM, Hi-SP, Hi-LP, SP, LP2, LP4, MONO) indication

8 Sub play mode/Repeat play indications
Shows the selected Sub play mode (single-track play, shuffle play, etc.) or Repeat play.

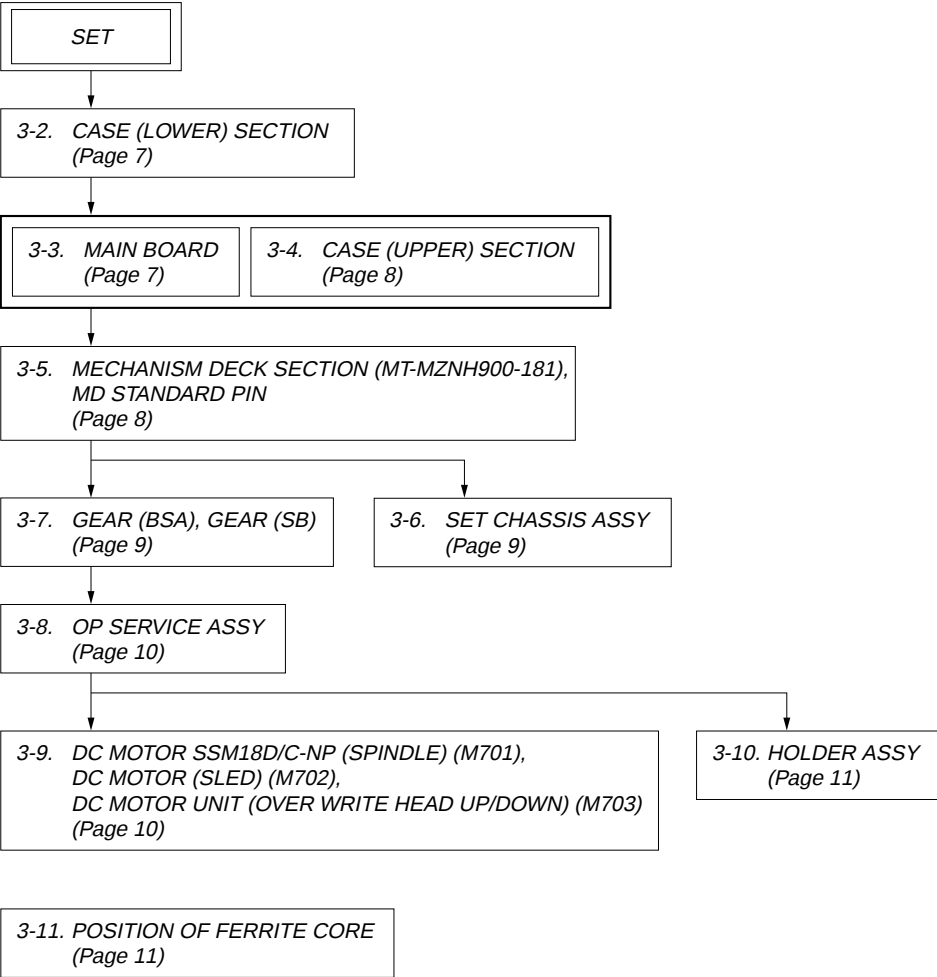
9 Main play mode indications
Shows the selected main play mode (group play, bookmark play, etc.).

SECTION 3
DISASSEMBLY

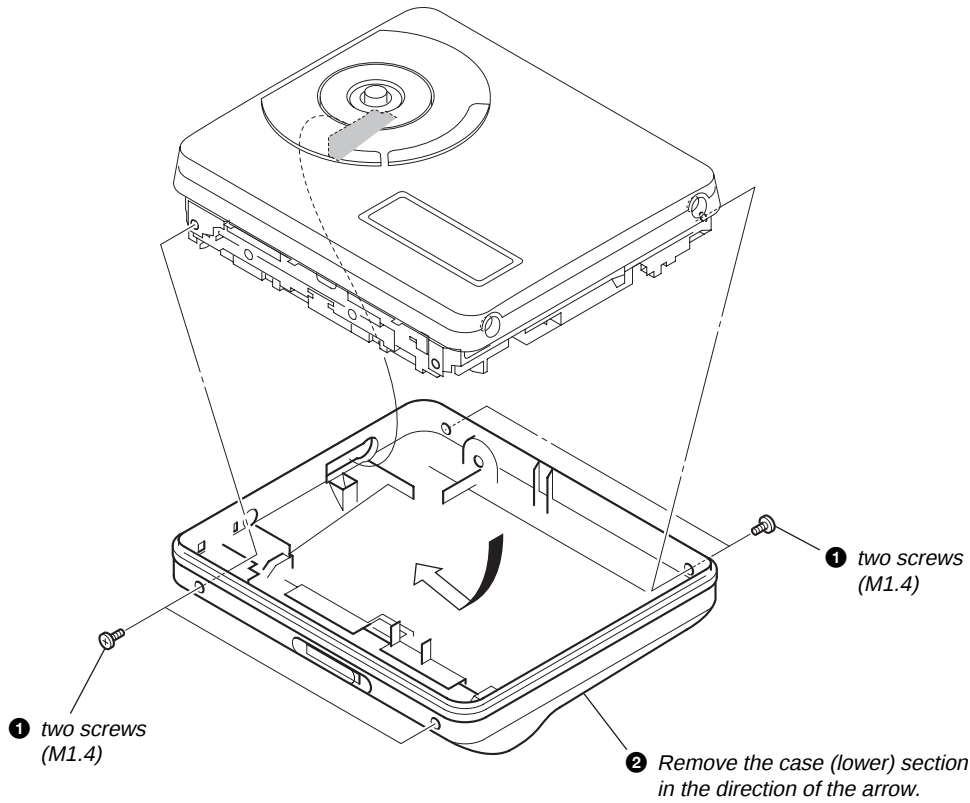
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

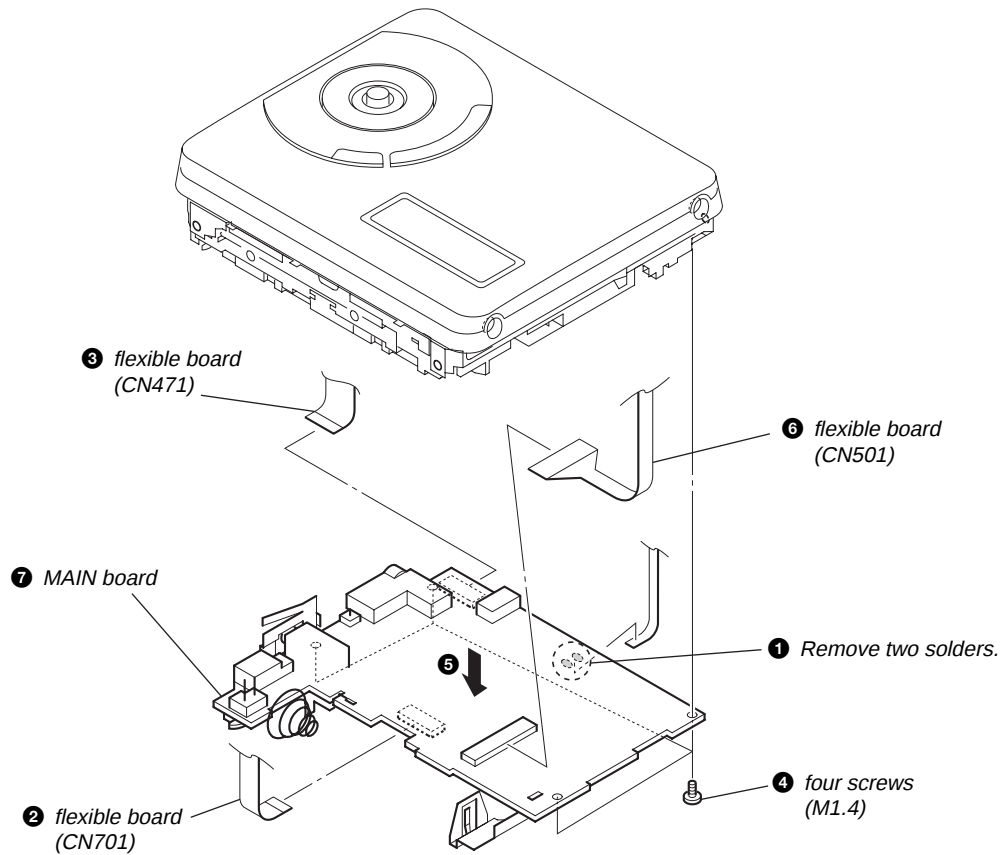
Note 1: The process described in  can be performed in any order.
Note 2: Without completing the process described in , the next process can not be performed.



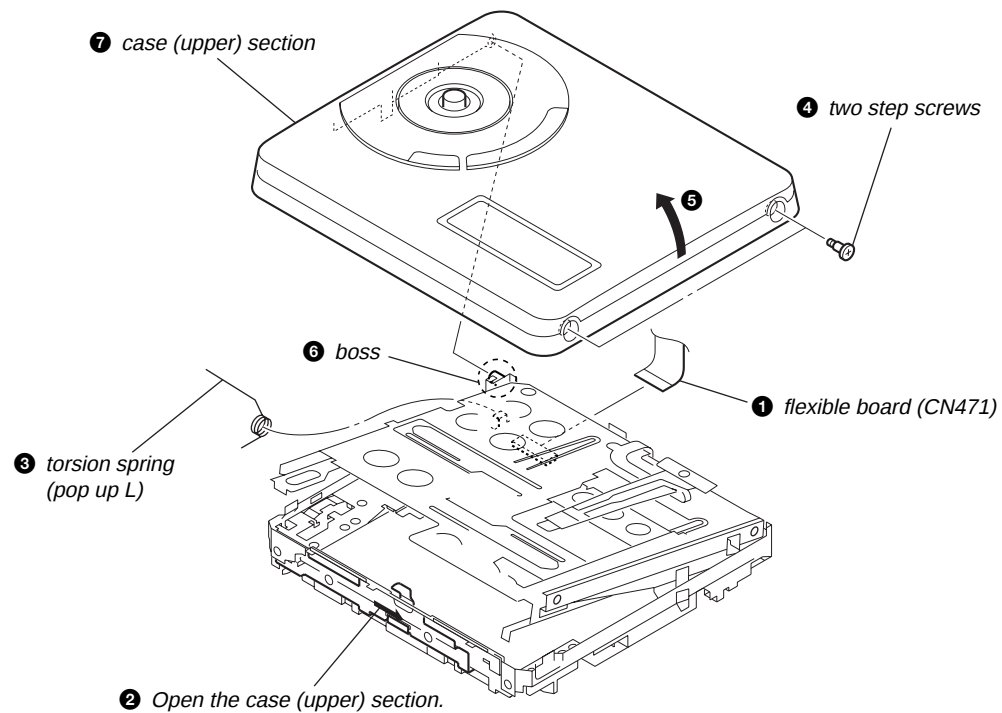
3-2. CASE (LOWER) SECTION



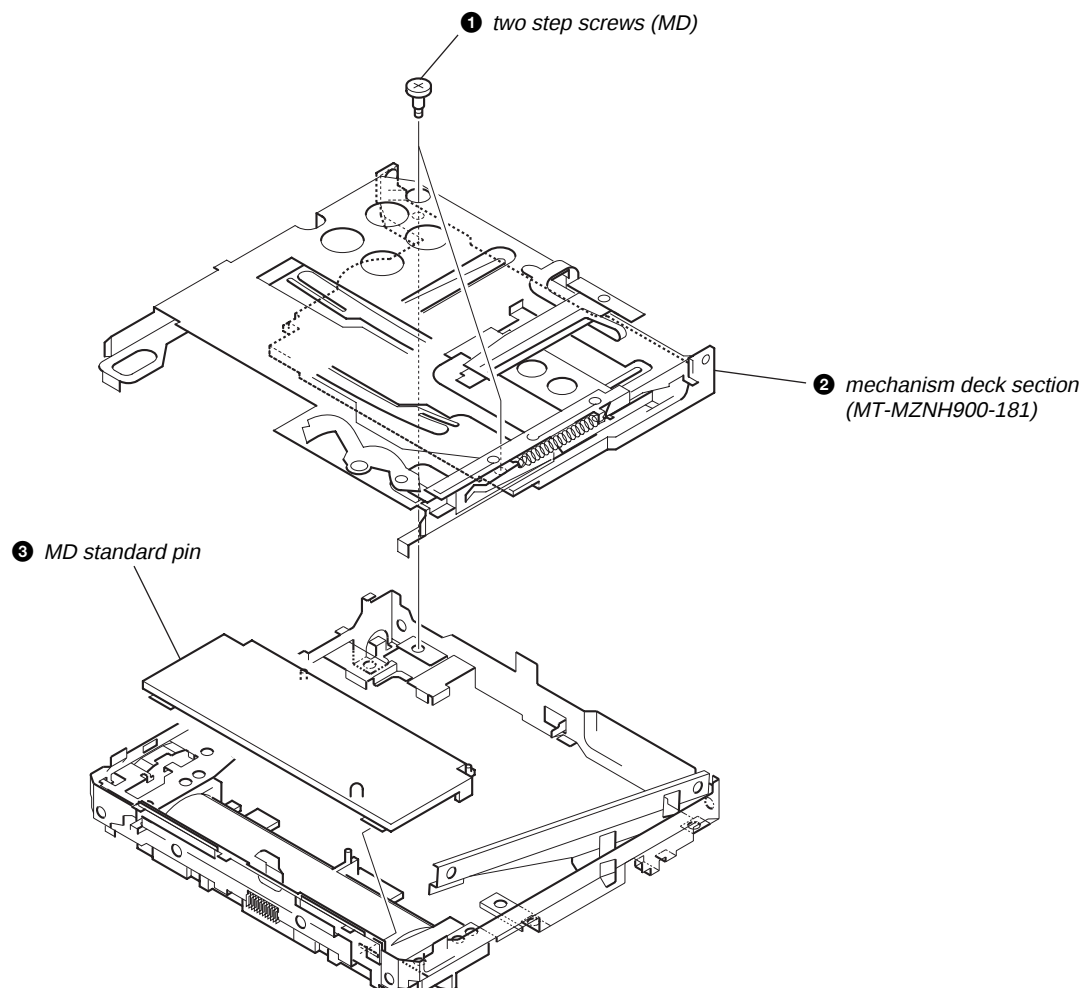
3-3. MAIN BOARD



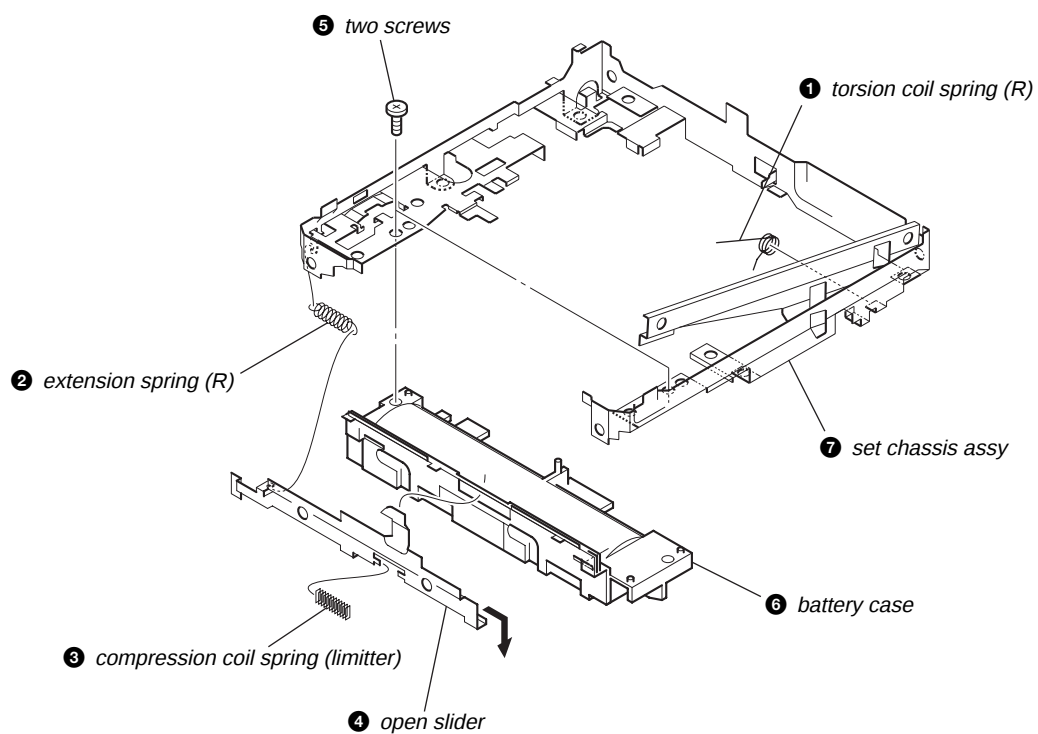
3-4. CASE (UPPER) SECTION



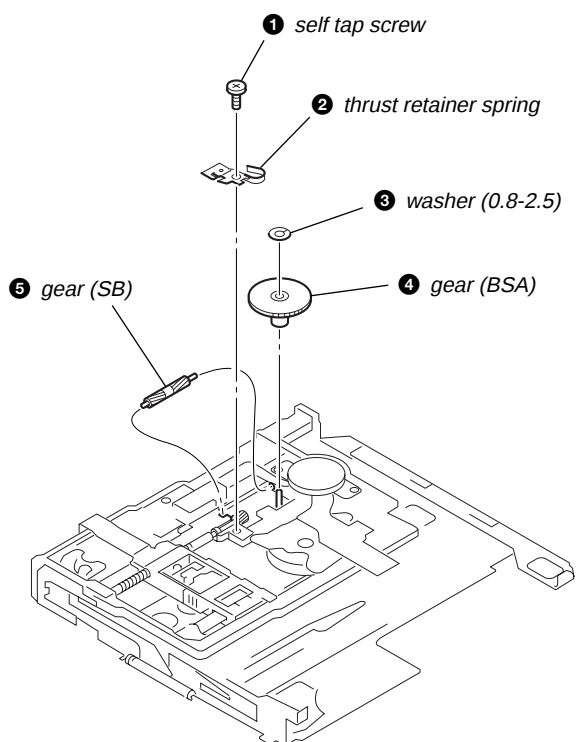
3-5. MECHANISM DECK SECTION (MT-MZNH900-181), MD STANDARD PIN



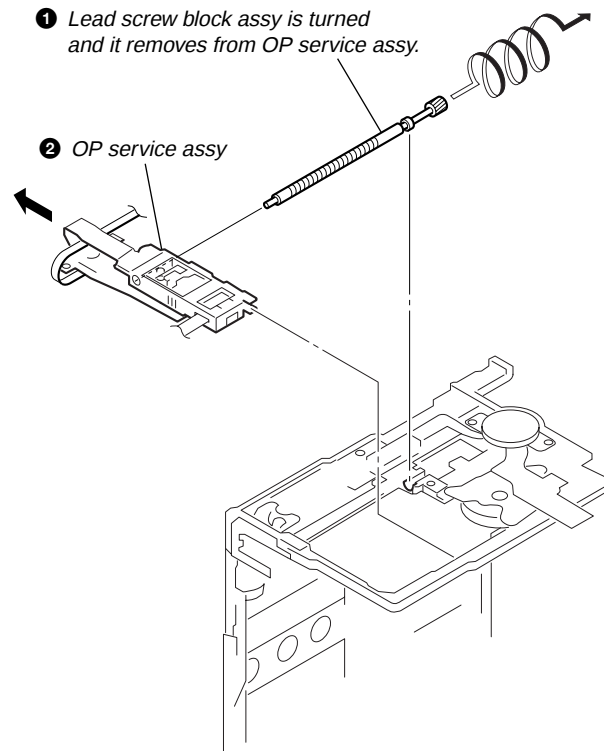
3-6. SET CHASSIS ASSY



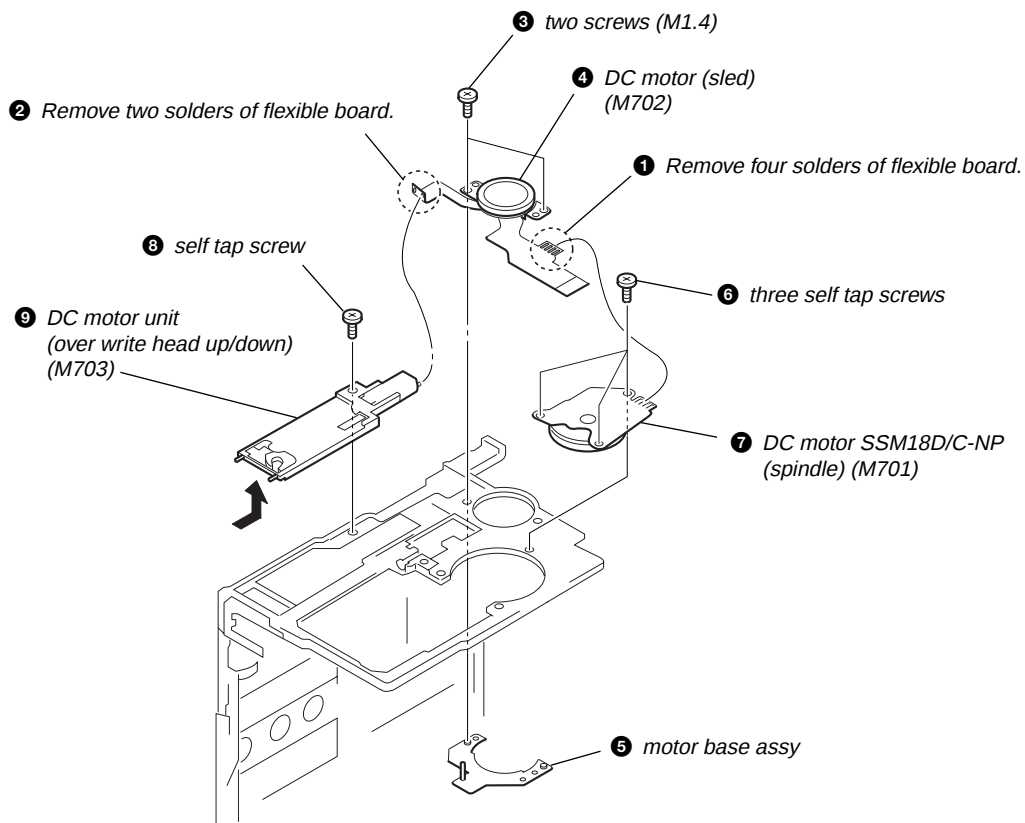
3-7. GEAR (BSA), GEAR (SB)



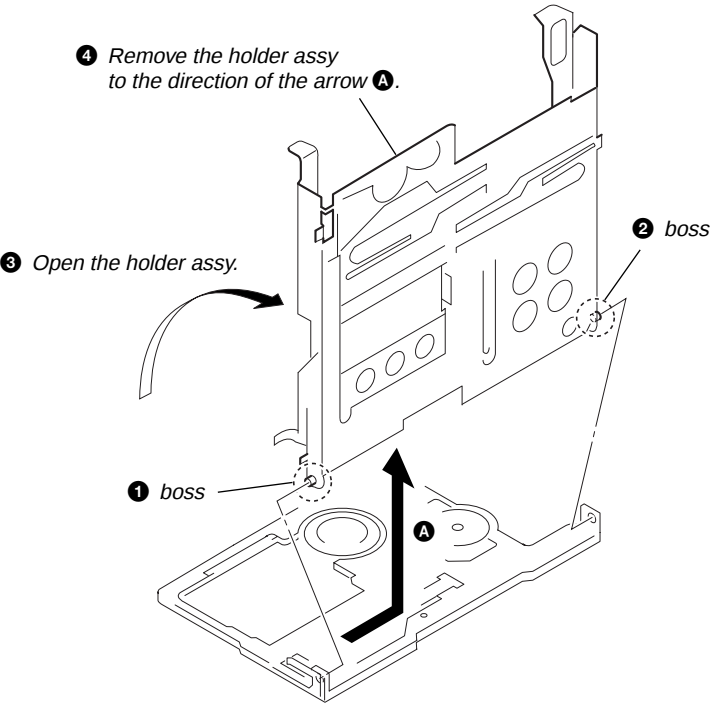
3-8. OP SERVICE ASSY



3-9. DC MOTOR SSM18D/C-NP (SPINDLE) (M701), DC MOTOR (SLED) (M702), DC MOTOR UNIT (OVER WRITE HEAD UP/DOWN) (M703)

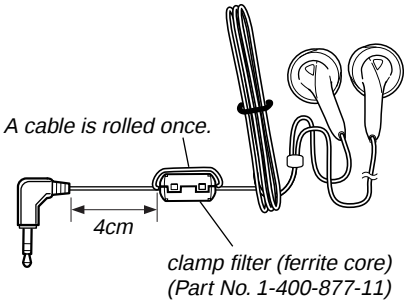


3-10. HOLDER ASSY

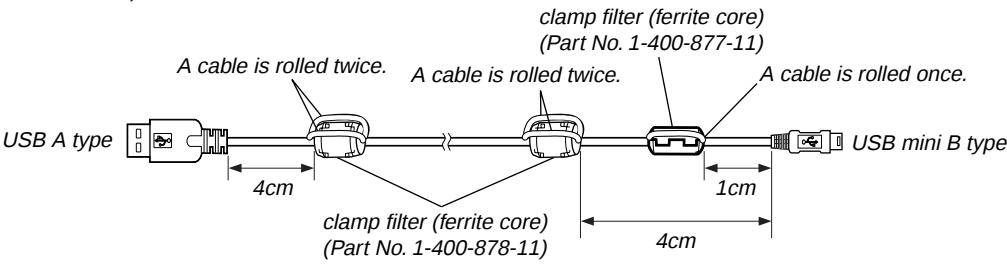


3-11. POSITION OF FERRITE CORE

-EARPHONES-
(EXCEPT MEXICAN MODEL)



-USB CABLE-
(EXCEPT MEXICAN MODEL)



SECTION 4
TEST MODE

OUTLINE

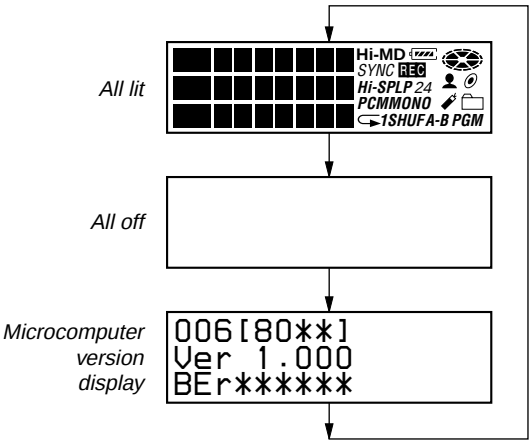
Operation in the test mode is performed with the set. A key having no particular description in the text, indicates a set key. Also, For the LCD display, the LCD on the set is shown.

1. OPERATION IN SETTING THE TEST MODE

- When the test mode becomes active, first the Display Check mode is selected.
- Other mode can be selected from the Display Check mode.
- When the test mode is set, the LCD repeats the following display.
- When the  key is pressed and hold down, the display at that time is held so that display can be checked.

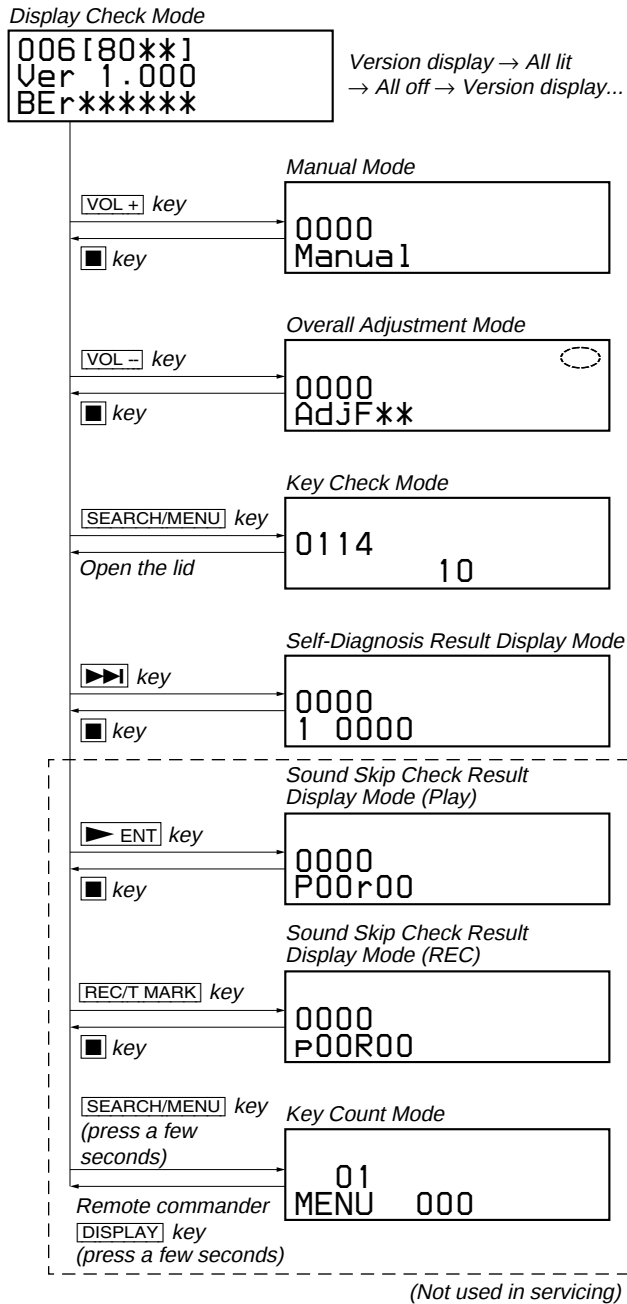
Display check mode:

Set LCD display



2. CONFIGURATION OF THE TEST MODE

Flow of the test mode:

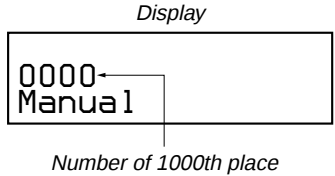


3. MANUAL MODE

This is mode to adjust or check the operation of the set by function.

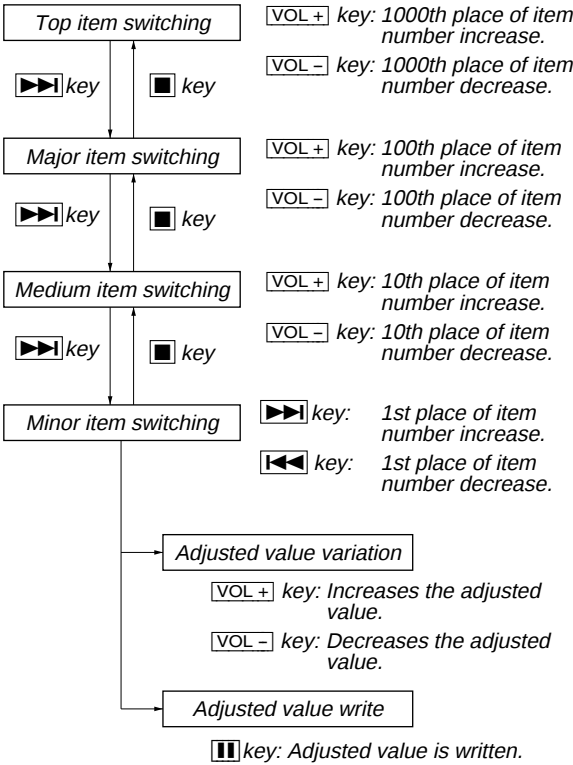
Operation of The Manual Mode

- 1. Enter the test mode (Display Check mode).
- 2. Press the [VOL+] key to activate the Manual mode where the LCD displays as shown below.

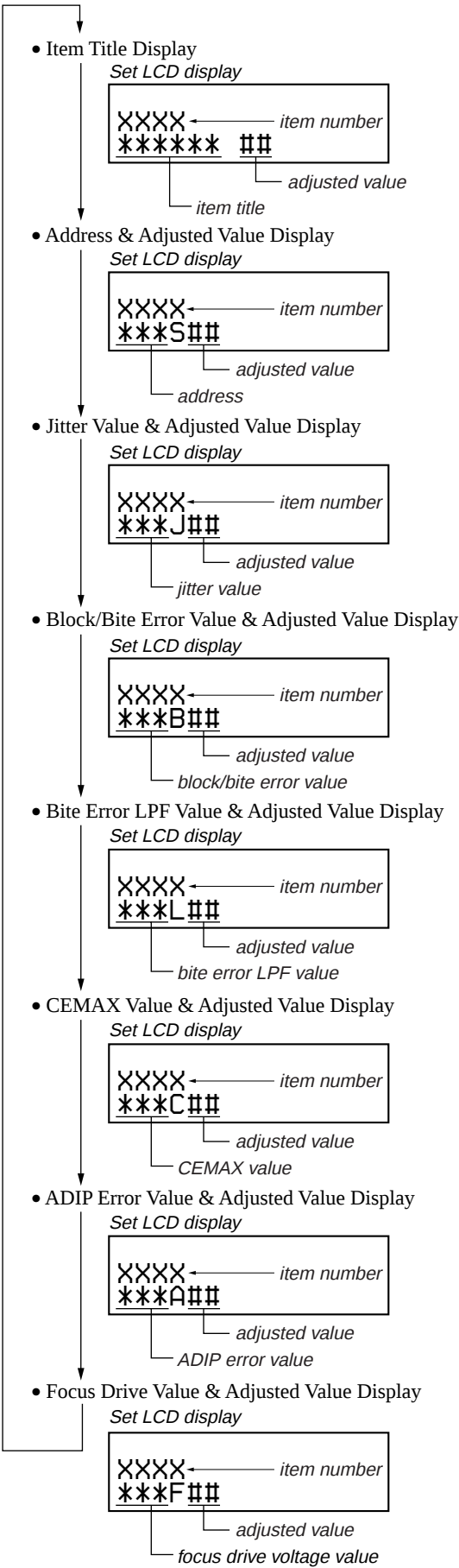


- 3. During Manual mode, the optical pick-up moves outward or inward while the [▶▶] or [◀◀] key is pressed for several seconds respectively.
- 4. Each test item is assigned with a four-digit item number; 1000th place is a top item, 100th place is a major item, 10th place is a medium item, and unit place is a minor item.

Flow of manual mode operation:



- 5. The display changes a shown below each time the [SEARCH/MENU] key is pressed.



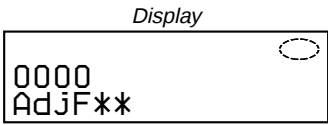
*1) It is skipped from the item number 5000 less than 8000.

- 6. To release the Manual mode, press the [◻] key to return to the Display Check mode.

4. OVERALL ADJUSTMENT MODE

4-1. Operation of The Overall Adjustment Mode

- 1. Enter the test mode (Display Check mode).
- 2. Press the [VOL-] key to activate the Overall Adjustment mode where the LCD displays as shown below.



Disc mark:

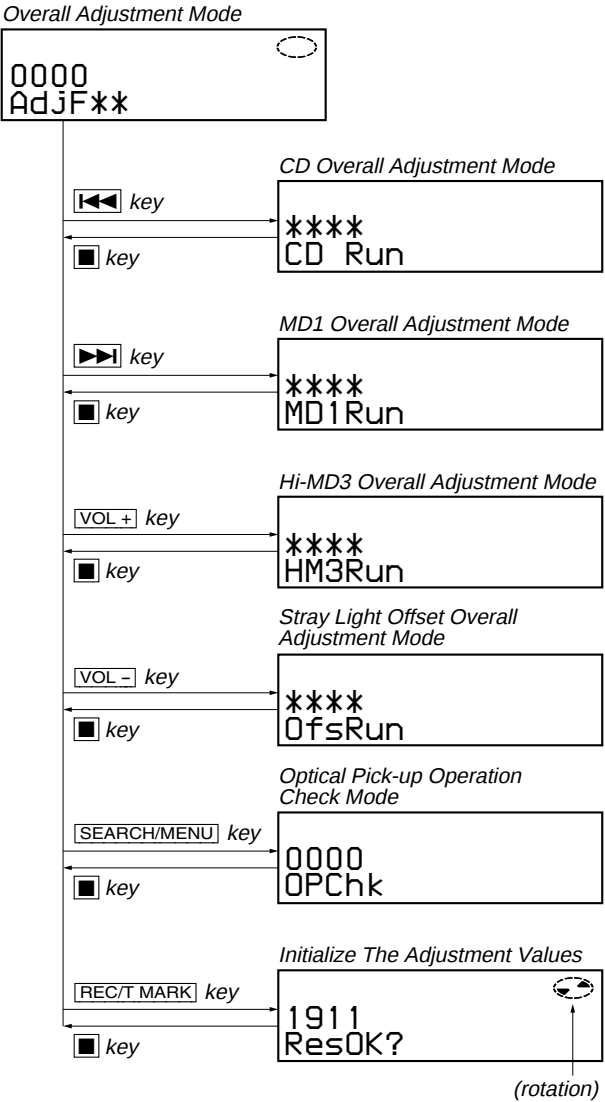
- Lit the inner segments: Completed the power supply adjustment.
- Lit the outer segments: Completed the check of charge function.

“**”:

- If “DF” or “FF” is displayed, it mean that completed the servo overall adjustment.

- 3. To release the Overall Adjustment mode, press the [key] and return to the Display Check mode.

Flow of overall adjustment mode:



4-2. Error Message in The Overall Adjustment Mode

In the Overall Adjustment mode, if an error occurred, it displays as following table.

Display	Description
Close!	Dose not close the lid
DfDis!	Unsuitableness disc was inserted
NoChg!	Does not finish the check of charge function yet
NoTmp!	Does not setting the temperature correction value
NotCD!	Does not complete the CD Overall adjustment before the MD1 Overall adjustment
NotM1!	Does not complete the MD1 Overall adjustment before the Hi-MD3 Overall adjustment
NotH3!	Does not complete the Hi-MD3 Overall adjustment before the Stray Light Offset Overall adjustment
****NG	Error of item number “****”

5. SELF-DIAGNOSIS RESULT DISPLAY MODE

This set uses the self-diagnostic function system in which if an error occurred during the recording or playing, the mechanism control block and the power supply control block in the microcomputer detect it and record its cause as history in the nonvolatile memory. By checking this history in the test mode, you can analyze a fault and determine its location.

Total recording time is recorded as a guideline of how long the optical pick-up has been used, and by comparing it with the total recording time at the time when an error occurred in the self-diagnosis result display mode, you can determine when the error occurred.

Clear the total recording time, if the optical pick-up was replaced.

5-1. Operation of The Self-Diagnosis Result Display Mode

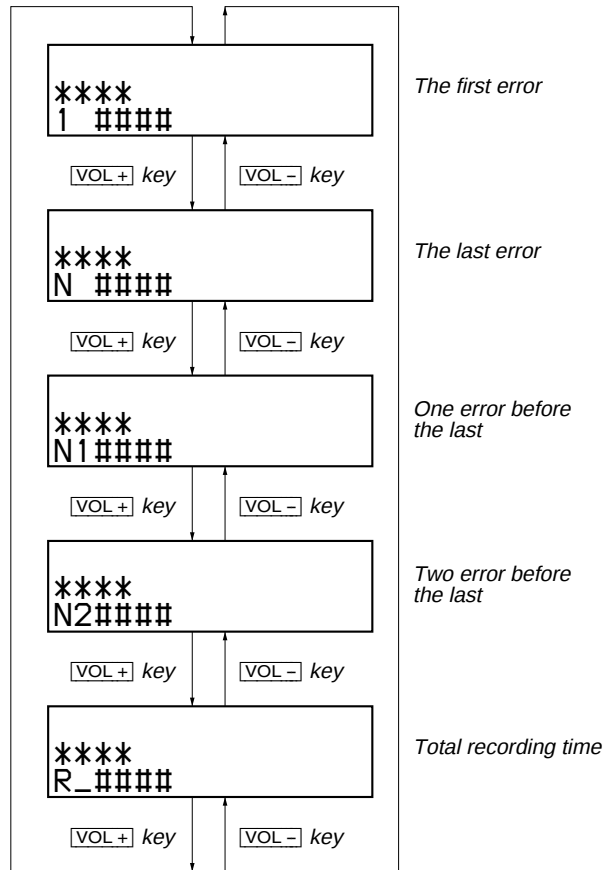
- 1. Enter the test mode (Display Check mode).
- 2. Press the [key] to activate the Self-Diagnosis Result Display mode where the LCD displays as shown below.



- “****” : Error display code
- “\$\$” : Error rivision history code
- “####” : Addition information when error occurs

- 3. To release the Self-Diagnosis Result Display mode, press the [key] and return to the Display Check mode.

Flow of Self-diagnosis Result Display mode operation:



5-2. Error Code of The Self-Diagnosis Result Display Mode

Error display code	Description
000	No error
001	Attempt to access an abnormal address
002	High temperature detected
003	Focus error (no change)
004	Abnormal rotation of disc
005	Fault of disc discriminate
006	Error of access loop (no change)
007	Error of access loop (with change)
008	Could not read address
009	Focus error (with change)
012	Could not read data with SYNC
013	TOC address data error
032	Focus error, ABCD offset error
033	Tracking error, offset error
034	X1 tracking error, Tracking error, offset error

Error display code	Addition information when error occurs
000	0000
001	Illegal cluster specified when error occurs
002 to 034	Total recording time when error occurs

5-3. Clear The Total Recording Time

After replacing the optical pick-up, clear the total recording time.

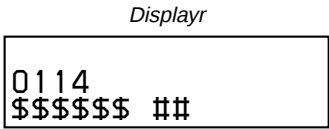
1. Enter the test mode (Display Check mode).
2. Press the **▶▶** key to activate the Self-Diagnosis Result Display mode.
3. Press the **VOL-** key once to display the total recording time indication.
4. Press the **■** key and display "ClrOK?".
5. Press the **■** key again to display "RecT 0" and clear the total recording time.

6. KEY CHECK MODE

This mode is used for key check.

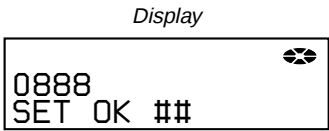
Operation of The Key Check Mode

1. Enter the test mode (Display Check mode).
2. Press the **SEARCH/MENU** key to activate the Key Check mode where the LCD displays as shown below.



- “\$\$\$\$\$\$” : Pressed key name.
When the jog dial is turned, it displays “JOG+ X” or “JOG-X” (“X” is number of 1 to 3). If the jog dial is turned four click, it displays “JOG+OK” or “JOG-OK”
- “##” : Key voltage of remote commander. (Hexadecimal number)

3. When all keys check is OK on the main unit, it displays as follows.



4. When all keys check are OK, it display backs to the Display Check mode automatically.
5. To release the Key Check mode, open the lid and return to the Display check mode.

SECTION 5 ELECTRICAL ADJUSTMENTS

1. PRECAUTIONS FOR ADJUSTMENT

1. Adjustment must be done in the test mode only. After adjusting, release the test mode. A key having no particular description in the text, indicates a set key. Also, for the LCD display, the LCD on the set is shown.
2. Use the following tools and measuring instruments.
 - Digital multi meter
 - Regulated dc power supply (two sets)
 - Thermometer
 - Laser power meter
 - CD adjustment disc TDYS-1 (Part No. : 4-963-646-01)
 - MD1/HiMD1 hybrid adjustment disc MDW-74/GA2 (Part No. : J-2503-022-A)
 - Hi-MD3 adjustment disc HMD1GSDJ (Part No. : 8-892-388-38) *1

*1) Hi-MD3 adjustment disc (HMD1GSDJ) is consumable. Therefore if it is used 400 times, exchange it for a new.

2. ADJUSTMENT SEQUENCE

Adjustment must be done with the following order.

Adjustment order:

1. Entering the test mode
- Note:** Enter the test mode with a key.
2. Initialize the adjustment value
3. Setting the temperature correction value
4. Power supply voltage adjustment
5. Laser power check
6. Setting the adjustment values
7. Servo Overall adjustment
8. Resume clear
9. Releasing the test mode

3. ADJUSTMENT OF THE EACH ITEM

3-1. Initialize The Adjustment Value

Procedure:

1. In the test mode (Display Check mode), press the [VOL-] key to enter the Overall adjustment mode.
2. Press the [REC/T MARK] key and display "911 ResOK?".
3. Press the [II] key to display "911 Reset!" and initialize the adjustment values.
4. Press the [■] key and back to Display Check mode.

3-2. Setting The Temperature Correction Value

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the [VOL+] key to enter the Manual mode.
3. Press the [▶▶] key twice, and press the [VOL+] key twice to display as follows.

Display

0130
Temp

4. Press the [▶▶] key once to select the item number 0131 and display as follows.

Display

0131
###S**

adjustment value (hexadecimal)

5. Measure the ambient temperature.
6. Adjust with [VOL+]/[VOL-] keys so that the adjusted value (hexadecimal value) becomes the ambient temperature. (example: 25 °C = 19h)
7. Press the [II] to write the adjusted value.
8. Press the [■] key four times and back to the Display Check mode.

3-3. Power Supply Voltage Adjustment

Adjustment must be done with the following order.

3-3-1. Setting

Procedure:

1. Apply the voltage of 1.2 V to the battery terminals, and enter the test mode (Display Check mode).
2. Press the [VOL+] key to enter the Manual mode.
3. Press the [VOL+] key twice to display as follows.

Display

2000
POWER

4. Press the [▶▶] key once, press the [VOL+] key once, and press the [▶▶] key once again to display as follows.

Display

2210
PwrAdj

5. Repeat the next procedures (3-3-2. PwrAdj Adjustments), and adjust all contents of "table 3-3-1. PwrAdj Specifications".

3-3-2. PwrAdj adjustments

Repeat the following procedures and adjust all contents of "table 3-3-1. PwrAdj Specifications".

Example Display (Item No. 2211)

2211
**

adjustment value (hexadecimal)

Procedure:

1. Connect the digital multi meter to measuring point (refer to the following table) and CL433 (GND).
2. Press the [▶▶] key to change the item numberr to 2211.
3. Adjust with [VOL+]/[VOL-] keys so that the value of digital multi meter becomes specification value.
4. Press the [II] key to write the adjusted value. (Shifts to the next item automatically)
5. Repeat adjustment from step 3 until item number 2233.

ItemNo.	Display	Specification value	Measuring point
2211	211 VC1 **	2.05V + 0.02V	CL8027
2212	212 VC1H N **	2.25V ± 0.01V	CL8027
2213	213 VC2 **	1.20V + 0.01V	CL8001
2214	214 DDC3 L **	3.10V ± 0.015V	CL658
2215	215 DDC3 H **	3.10V ± 0.015V	CL658
2216	216 REG1 L **	3.02V ± 0.02V	CL919
2217	217 REG1 H **	3.02V ± 0.02V	CL919
2218	218 REG2 1 **	2.275V ± 0.01V	CL921
2219	219 REG2 2 **	2.480V ± 0.01V	CL921
2221	221 REG2 3 **	2.740V ± 0.01V	CL921
2222	222 REG2 4 **	2.985V ± 0.01V	CL921
2223	223 REG3 **	2.52V ± 0.02V	CL931
2224	224 VREC 1 **	0.89V ± 0.02V	CL604
2225	225 VREC 2 **	1.08V ± 0.02V	CL604
2226	226 VREC 3 **	1.52V ± 0.02V	CL604
2227	227 VREC 4 **	2.27V ± 0.02V	CL604
2228	228 VREC 5 **	2.97V ± 0.02V	CL604
2229	229 VREC 6 **	0.94V ± 0.02V	CL604
2231	231 VREC 7 **	1.28V ± 0.02V	CL604
2232	232 VREC 8 **	2.57V ± 0.02V	CL604
2233	233 VREC 9 **	2.57V ± 0.02V	CL604

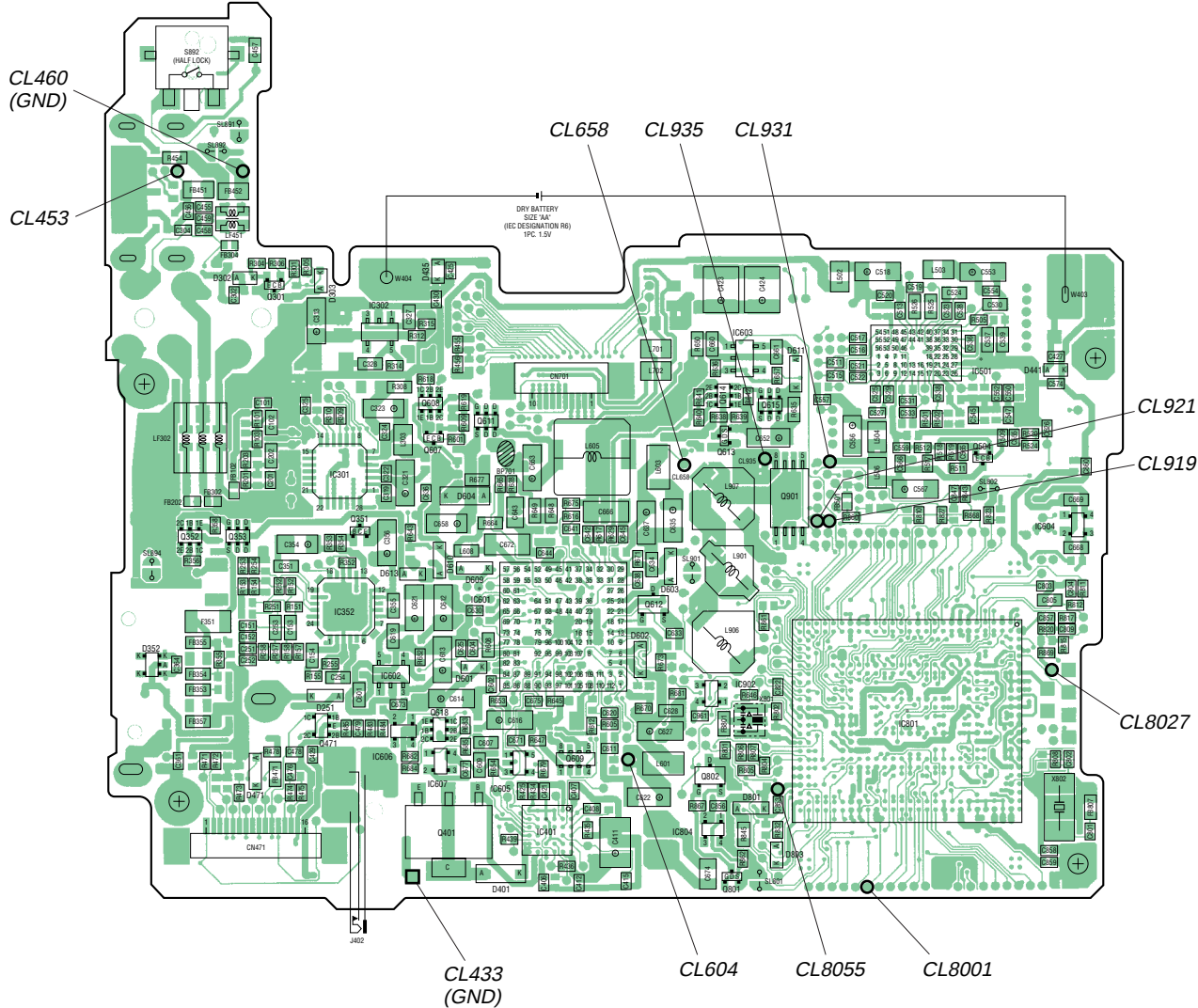
Note1: “**” is adjustment value (hexadecimal number).

Note2: Ground point of all measuring points is CL433.

Table 3-3-1. PwrAdj Specifications

Adjustment Location:

– MAIN BOARD (Conductor Side) –



3-3-3. VBsAdj adjustments

Procedure:

1. In the “3-3-2. PwrAdj Adjustments” completed status, display as follows.
-
2. Apply the voltage of 5 V to the CL453 and CL460 (GND).
 3. Press the key to change the item number to 2241.
 4. Adjust with / keys so that the value of digital multi meter becomes specification value. (Refer to “table 3-3-2. VBsAdj Specifications”)
 5. Press the key to write the adjusted value.
 6. Repeat adjustments to item number 2243 at the same manner as step 4 to step 5.

ItemNo.	Display	Specification value	Measuring point
2241	241 REG4 **	1.13 V ± 0.01 V	CL8001
2242	242 REG5 **	2.05 V + 0.02 V	CL8027
2243	243 REG6 **	3.30 V ± 0.01 V	CL8055

Note1: “**” is adjustment value (hexadecimal number).

Note2: Ground point of all adjustment points is CL433.

Table 3-3-2. VBsAdj Specifications

7. Select the item number 2244, and turn off the power supply of battery terminal.
8. Press the **▶▶** key to select the item number 2245.
9. Adjust with **[VOL+]/[VOL-]** keys so that the voltage of between CL935 and CL433 (GND) becomes 1.80 V (– 0.02 V).
10. Apply the voltage of 1.2 V to the battery terminal again.
11. Turn off the voltage of 5 V to the CL453 and CL460 (GND).
12. Press the **■** key three times and back to the Display Check mode.

3-4. Laser Power Check

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL+]** key to enter the Manual mode.
3. Open the lid and press the **◀◀** key continuously until the optical pick-up moves to the most inward track.
4. Press the **[VOL-]** key once to display as follows.

Display

9000
DESIGN

5. Press the **▶▶** key three times to select the item number 9111 and display as follows.

Display

9111
LrefPw **

6. Set the laser power meter so that the laser beam from the optical pick-up aims at the objective lens of laser power meter at right angle. (Confirm it with the disc not inserted)
7. Confirm that the value of laser power meter is 0.860 mW ± 19.2%.
8. Press the **▶▶** key to select the item number 9112.
9. Confirm that the value of laser power meter is 0.763 mW ± 18.2%.
10. Press the **▶▶** key to select the item number 9113.
11. Confirm that the value of laser power meter is 6.87 mW ± 12%.
12. Press the **■** key four times and back to the Display Check mode.

3-5. Setting The Adjustment Values

3-5-1. Hi-MD3 setting

Preparation:

1. Perform calculation every item based on the data given by the Hi-MD3 adjustment disc by referring to the following table. (Round off the value in decimal place)
2. Convert the calculated value into hexadecimal number.

Note: The Hi-MD3 adjustment parameters vary depending on the disc, and therefore use the parameters of the disc used when performing the adjustment.

Item No.	Calculating formula (*3)
0211	Pr_nominal / 0.05
(*1)	Por / 0.05
0212	Kr × (–100)
0213	Pw_nominal / 0.05
(*2)	Ppw / 0.05
0214	Kw × (–100)
0215	Prmin / 0.05
0216	Pwmin / 0.05

- *1) If the “Pr_nominal” value is indicated, use the “Pr_nominal” value and not used “Por” value.
- *2) If the “Pw_nominal” value is indicated, use the “Pw_nominal” value and not used “Ppw” value.
- *3) Round off after the decimal point.

Table 3-5-1. Hi-MD3 adjustment parameter

Example of Calculation:

Item No.	Parameter		Result	
			Decimal	Hexadecimal
0211	Pr_nominal	2.48 mW	50	32h
0212	Kr	–0.3 %/°C	30	1Eh
0213	Pw_nominal	7.35 mW	147	93h
0214	Kw	–0.4 %/°C	40	28h
0215	Prmin	1.9 mW	38	26h
0216	Pwmin	5.8 mW	116	74h

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL+]** key to enter the Manual mode.
3. Press the **▶▶** key once, press the **[VOL+]** key once, and press the **▶▶** key once again to display as follows.

Display

0210
DiscPr

4. Press the **▶▶** key once to select the item number 0211.
5. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of LCD becomes calculated value.
6. Press the **||** key to write the adjusted value.
7. Press the **▶▶** key to next item.
8. Repeat adjustment from step 4 until item number 0216.

3-5-2. Destination setting

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL+]** key to enter the Manual mode.
3. Press the **▶▶** key five time to select the item number 0113 and display as follows.

Display

0113
DistFL **

adjustment value (hexadecimal)

4. Press the **[VOL+]/[VOL-]** key and set the according value to each destination referring to the following table.
5. Press the **||** key to write the adjusted value.
6. Press the **▶▶** key to select the item number 0114.
7. Repeat adjustment from step 3.
8. Press the **■** key four times and back to the Display Check mode.

Destination	Setting value	
	Item No. 0113	Item No. 0114
AEP and East European	80	A0
E	80	24
Mexican	80	20

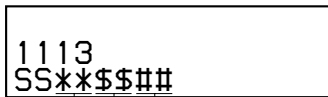
Table 3-5-2. Destination Setting

3-5-3. Other setting

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL+]** key to enter the Manual mode.
3. Press the **[VOL+]** key once and press the **[▶▶]** key five time to select the item number 1113 and display as follows.

Display of the remote commander



adjustment value (hexadecimal)

4. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of “**” on the LCD becomes “1A”.
5. Press the **[■]** to write the adjusted value. (\$\$ blinks and disc mark rotates on the LCD)
6. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of “\$\$” on the LCD becomes “20”.
7. Press the **[■]** key to write the adjusted value. (### blinks and disc mark rotates on the LCD)
8. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of “###” on the LCD becomes “94”.
9. Press the **[■]** key to write the adjusted value.
10. Press the **[VOL+]** key once to change the adjustment value of “**” on the LCD into “1B”.
11. Press the **[■]** key to write the adjusted value. (\$\$ blinks and disc mark rotates on the LCD)
12. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of “\$\$” on the LCD becomes “F1”.
13. Press the **[■]** key to write the adjusted value. (### blinks and disc mark rotates on the LCD)
14. Adjust with **[VOL+]/[VOL-]** keys so that the adjustment value of “###” on the LCD becomes “1A”.
15. Press the **[■]** to write the adjusted value.
16. Press the **[■]** key four times and back to the Display Check mode.

3-6. Servo Overall Adjustment

Note1: Be sure to adjustment so that the set is horizontal and the LCD is upside. Unless performed in that state, it is not adjusted correctly.

Note2: If NG is displayed in the middle of this adjustments, perform “3-2. Initialize The Adjustment Value” and “3-5. Setting The Adjustment Values” again, then retry this adjustments from step 1.

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL-]** key to enter the Overall Adjustment mode.
3. Insert the CD adjustment disc (TDYS-1).
4. Put the main unit horizontal so that the LCD becomes upside, and press the **[◀◀]** key.
5. Wait until “CD OK” is displayed on the LCD.
6. Insert the MD1/HiMD1 hybrid adjustment disc (MDW-74/GA2).
7. Put the main unit horizontal so that the LCD becomes upside, and press the **[▶▶]** key.
8. Wait until “MD1 OK” is displayed on the LCD.
9. Insert the Hi-MD3 adjustment disc (HMD1GSDJ).
10. Put the main unit horizontal so that the LCD becomes upside, and press the **[VOL+]** key.
11. Wait until “HMD3OK” is displayed on the LCD.
12. Eject the disc and close the lid.
13. Put the main unit horizontal so that the LCD becomes upside, and press the **[VOL-]** key.
14. Wait until “OfstOK” is displayed on the LCD.
15. Press the **[■]** key and back to the Display Check mode.

3-7. Resume Clear

Procedure:

1. Enter the test mode (Display Check mode).
2. Press the **[VOL+]** key to enter the Manual mode.
3. Press the **[VOL+]** key once, press the **[▶▶]** key once, press the **[VOL-]** key once, press the **[▶▶]** key once, and press the **[VOL+]** key twice, press the **[▶▶]** key three times to select the item number 1933.
4. Press the **[■]** key to resume clear.
5. Press the **[■]** key four times and back to the Display Check mode.

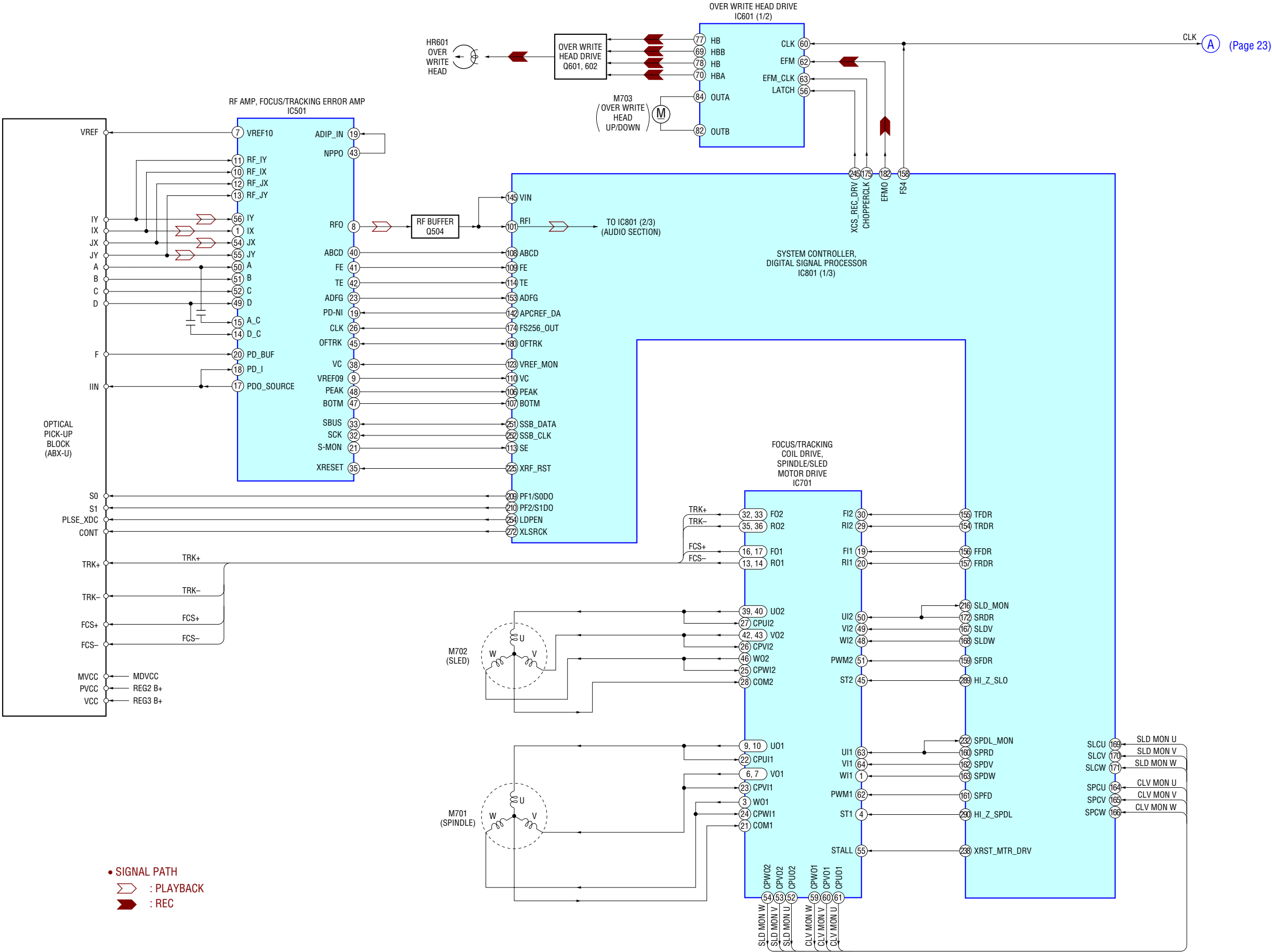
3-8. Releasing The Test Mode

Note: When the power supply is switched on in the state where all electrical adjustments have not finished, it is displayed on LCD as “Error EE” and the usual operation can’t be performed. When a power supply is accidentally turn off in the middle of electrical adjustments, it is again set as test mode and electrical adjustments is mode to complete.

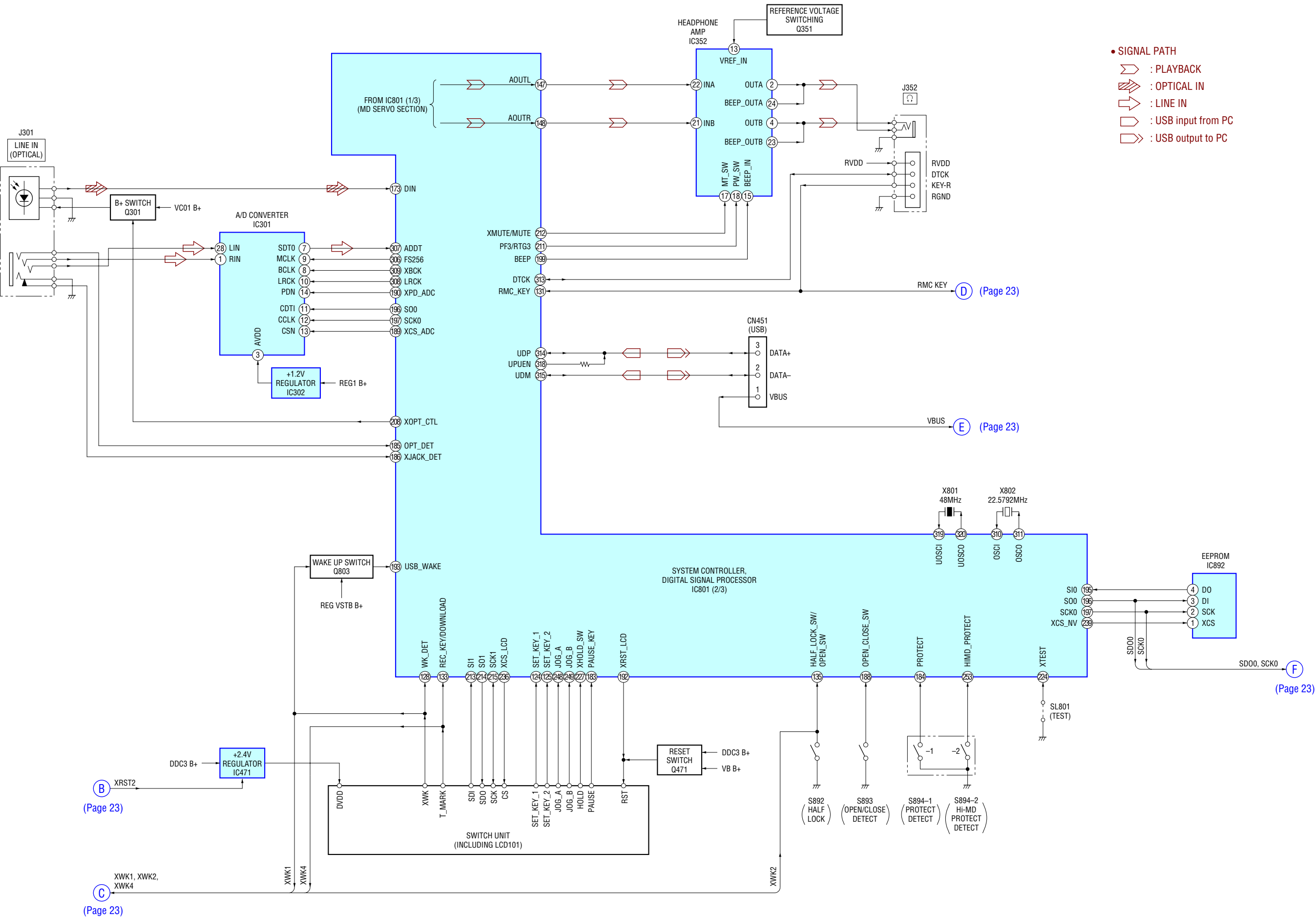
MEMO

SECTION 6
DIAGRAMS

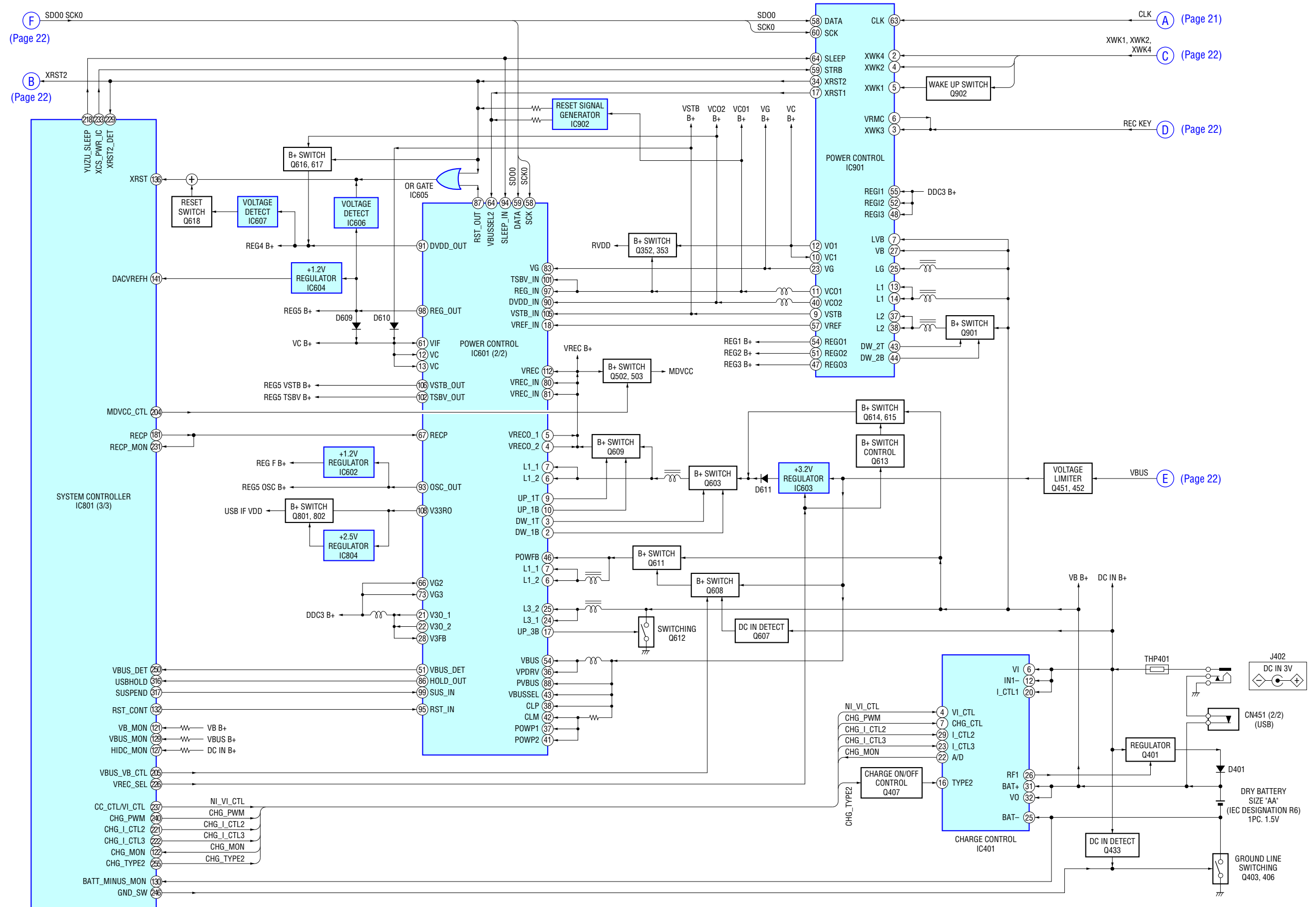
6-1. BLOCK DIAGRAM – MD SERVO Section –



6-2. BLOCK DIAGRAM – AUDIO Section –



6-3. BLOCK DIAGRAM – POWER SUPPLY Section –



• Note For Printed Wiring Boards and Schematic Diagrams

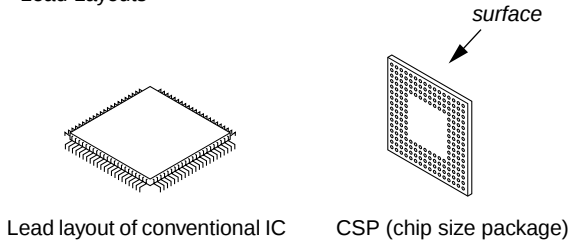
Note on Printed Wiring Board:

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

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

*Replacement of IC401, IC501, IC601 and IC801 used in this set requires a special tool.

- MAIN board is multi-layer printed board. However, the patterns of intermediate-layer have not been included in this diagrams.
- Lead Layouts



Note on Schematic Diagram:

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

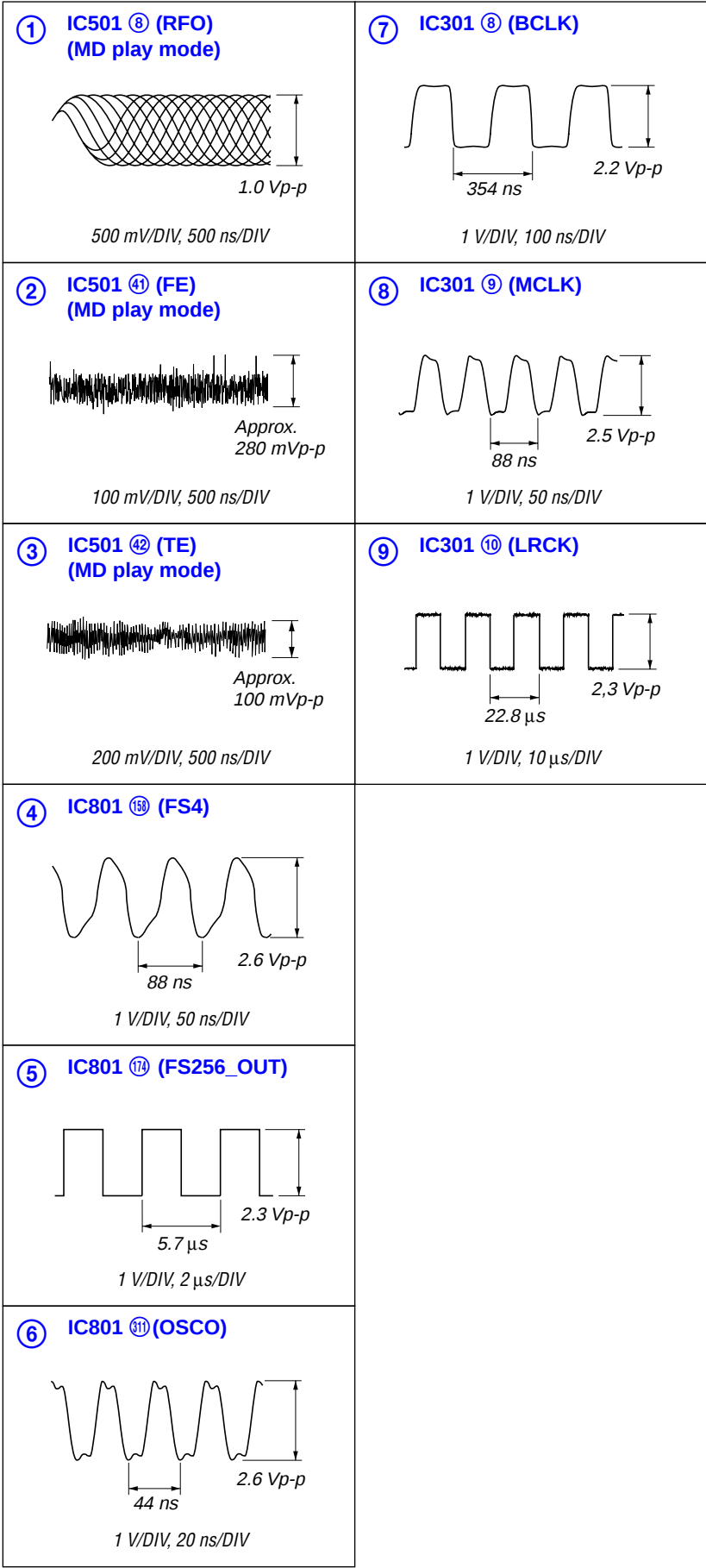
Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

- : B+ Line.
- Power voltage is dc 1.5 V 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 : PLAYBACK
- * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - Σ : PLAYBACK
 - : REC
 - ◀ : OPTICAL IN
 - ⇒ : LINE IN
 - : USB input from PC
 - ◀ : USB output to PC
- Abbreviation
 - EE : East European model
 - MX : Mexican model

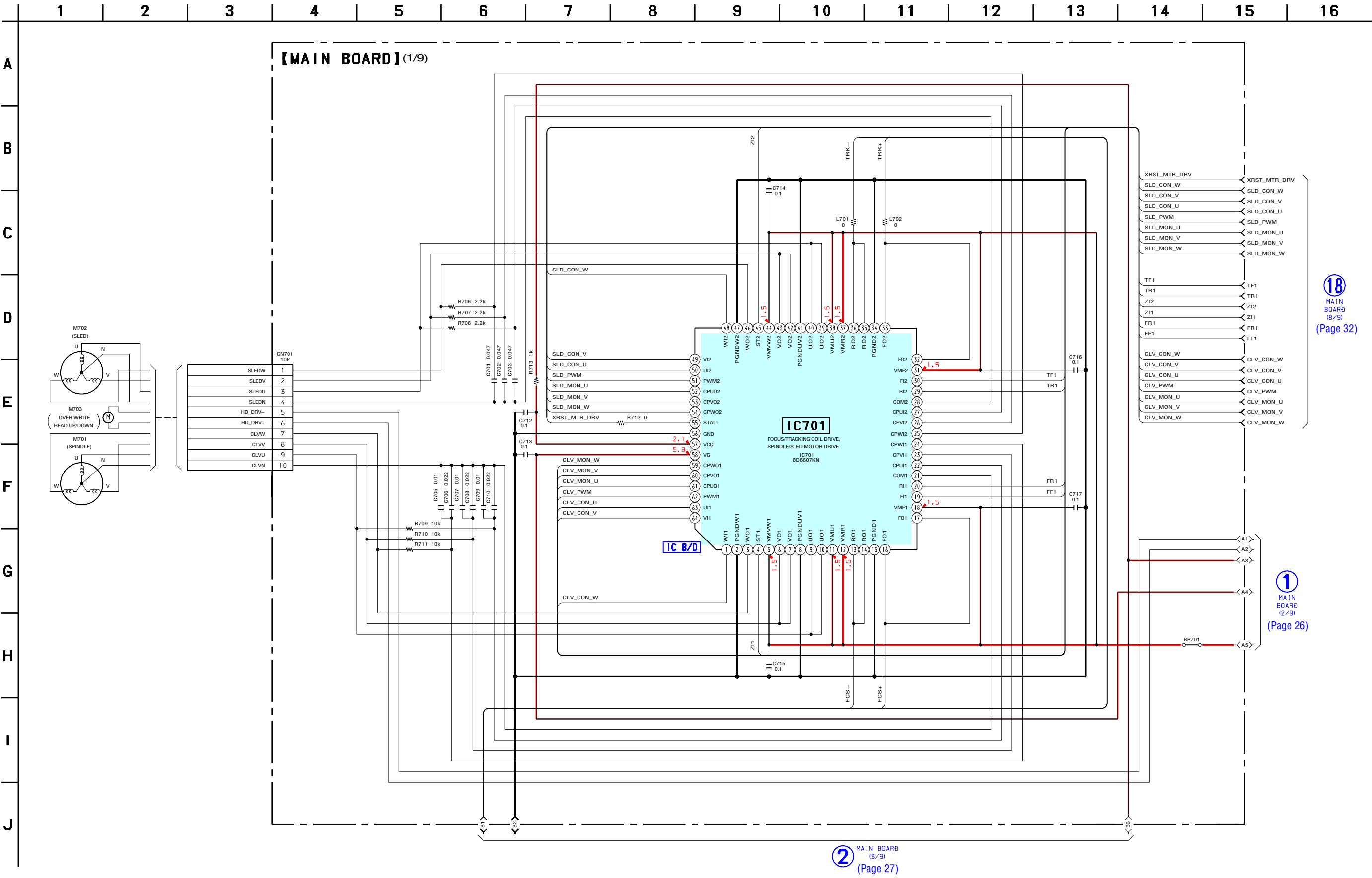
*Replacement of IC401, IC501, IC601 and IC801 used in this set requires a special tool.

- The voltage and waveform of CSP (chip size package) cannot be measured, because its lead layout is different form that of conventional IC.

• Waveforms



6-4. SCHEMATIC DIAGRAM – MAIN Section (1/9) – • See page 36 for IC Block Diagram.



18
MAIN
BOARD
(8/9)
(Page 32)

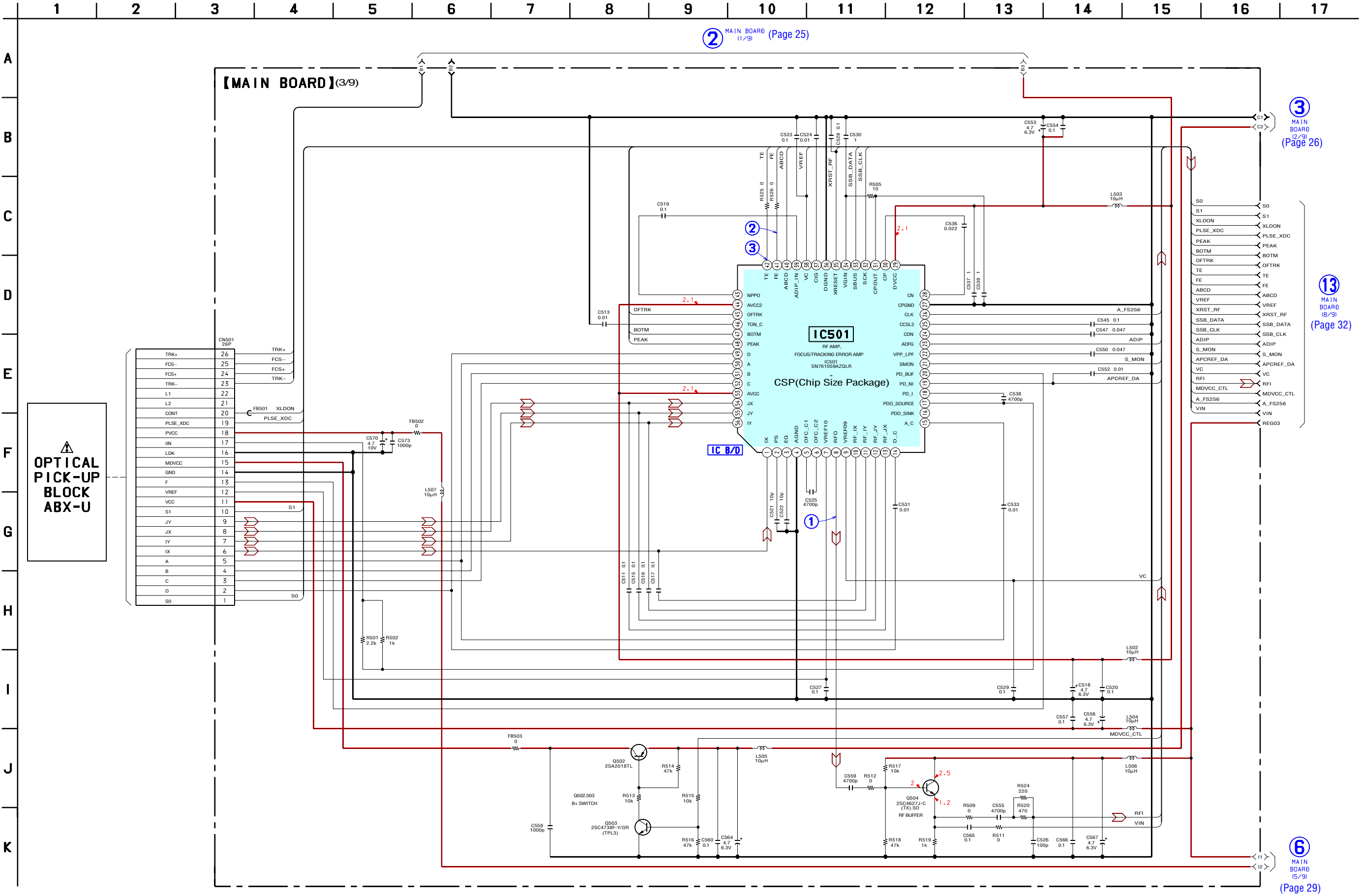
1
MAIN
BOARD
(2/9)
(Page 26)

2
MAIN
BOARD
(3/9)
(Page 27)

5 MAIN BOARD
(5/9)
(Page 29)

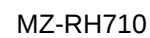


6-6. SCHEMATIC DIAGRAM – MAIN Section (3/9) – • See Page 24 for Waveforms. • See page 36 for IC Block Diagram.



28 28

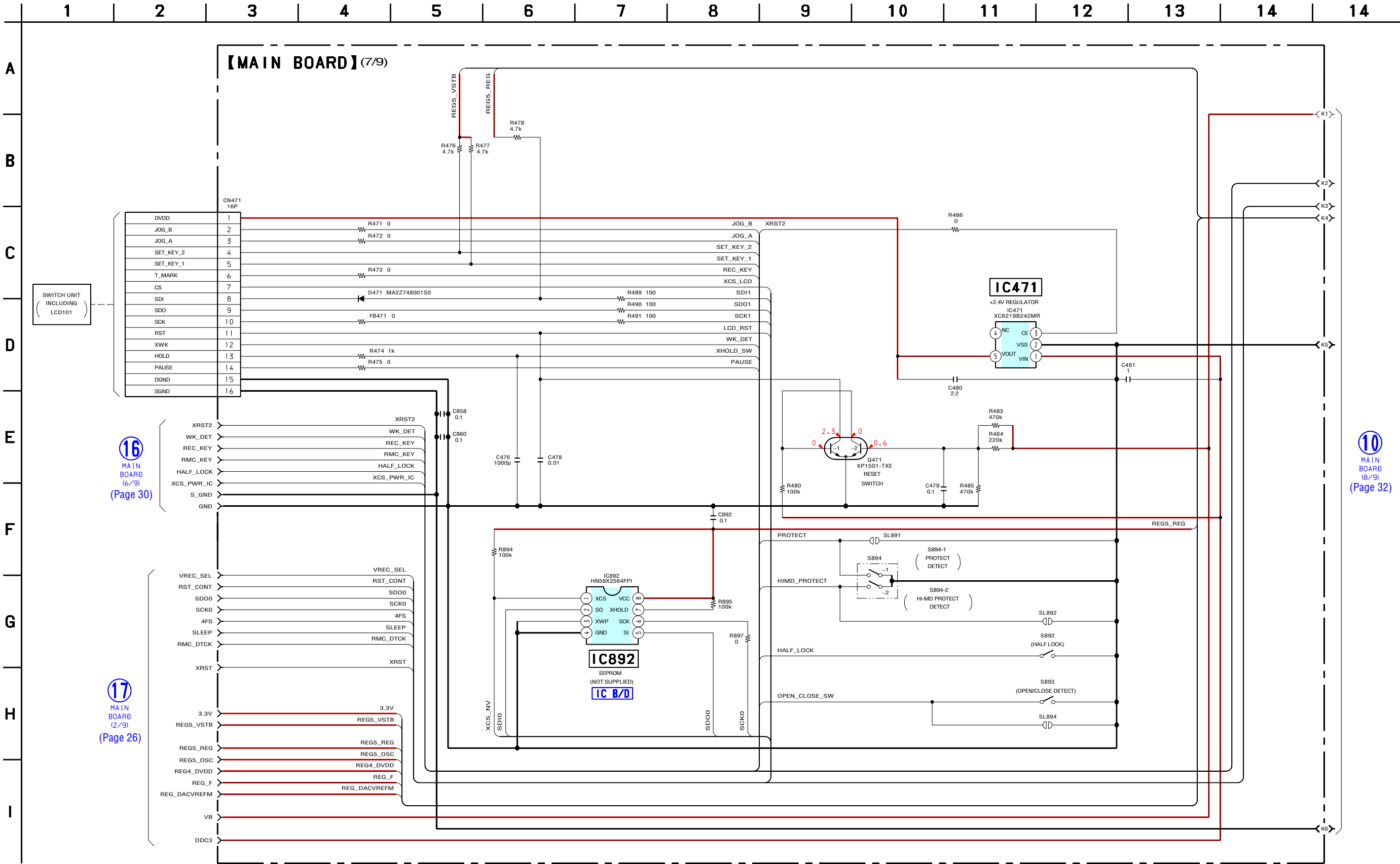




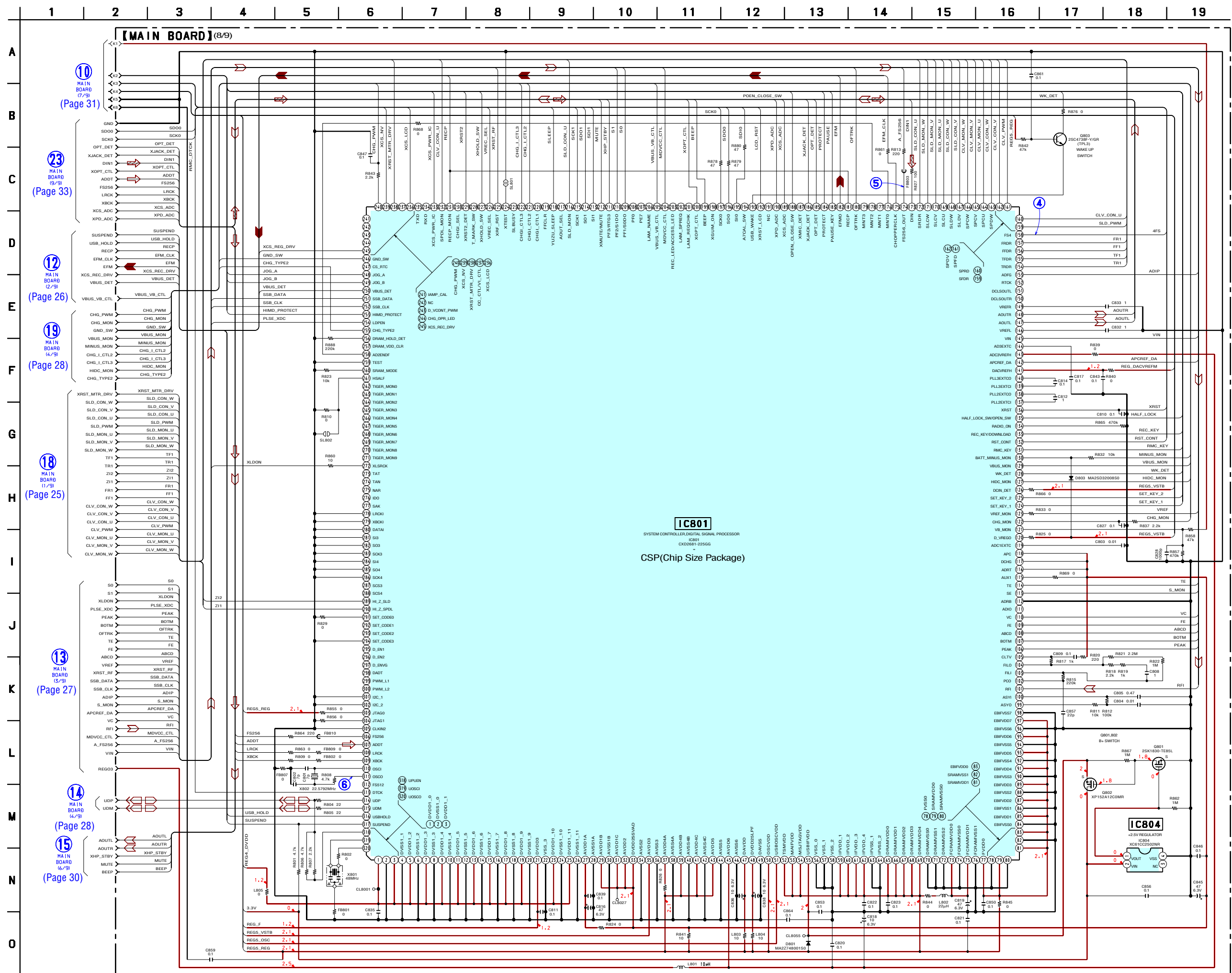
30 30



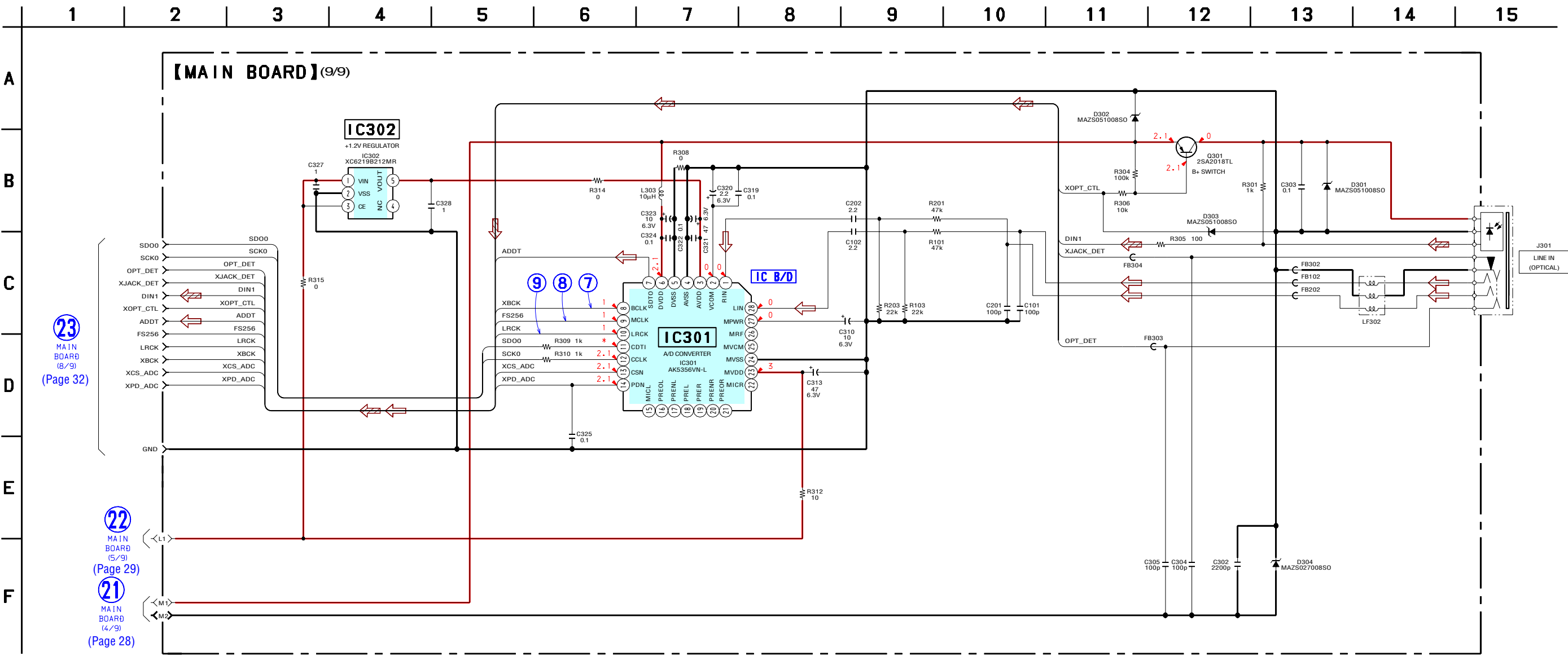
6-10. SCHEMATIC DIAGRAM – MAIN Section (7/9) – • See page 36 for IC Block Diagram.



6-11. SCHEMATIC DIAGRAM – MAIN Section (8/9) – • See Page 24 for Waveforms. • See page 41 for IC Pin Function Description.



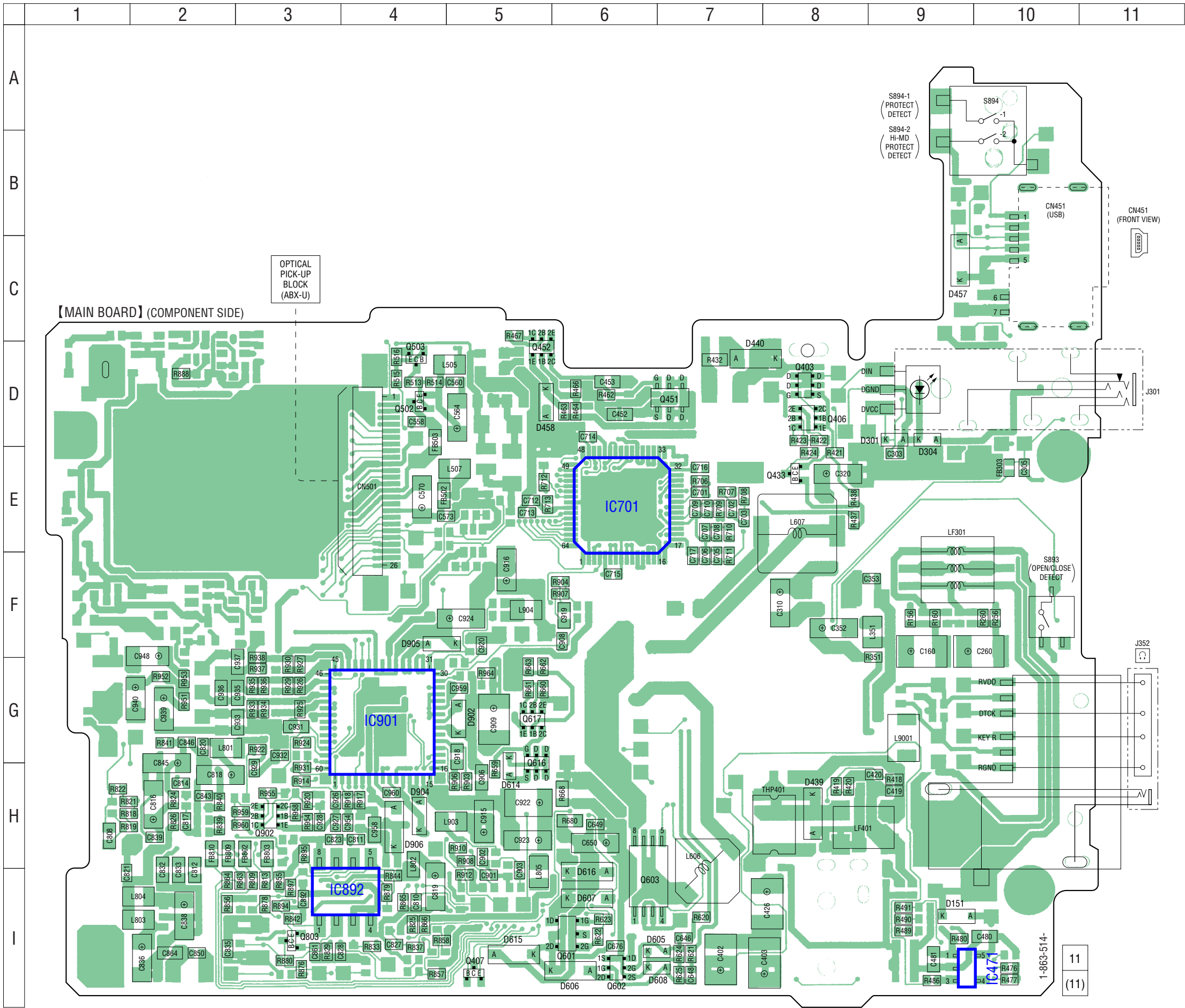
6-12. SCHEMATIC DIAGRAM – MAIN Section (9/9) – • See Page 24 for Waveforms. • See page 36 for IC Block Diagram.



6-13. PRINTED WIRING BOARD – MAIN Section (1/2) –  : Uses unleaded solder.

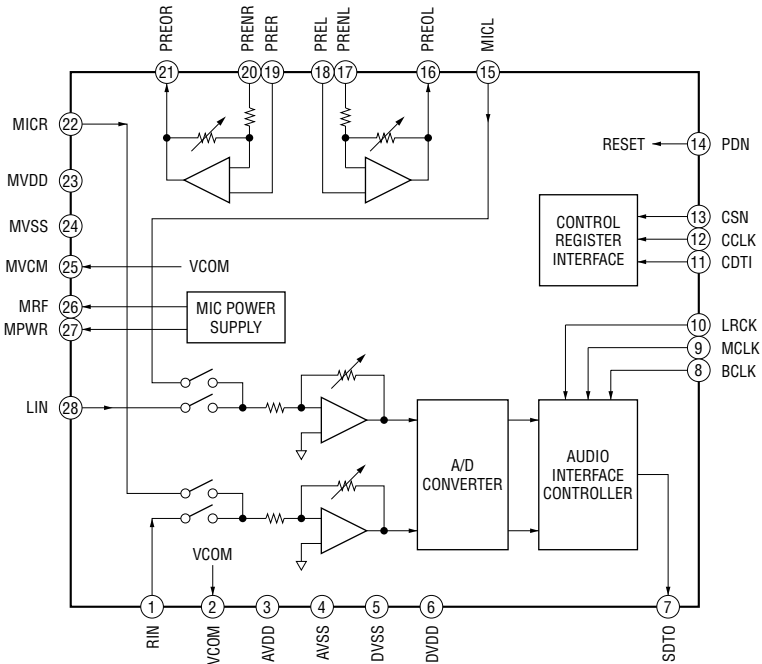
• Semiconductor Location

Ref. No.	Location
D151	I-9
D301	D-9
D304	D-9
D439	H-8
D440	D-7
D457	C-9
D458	D-5
D605	I-6
D606	I-6
D607	I-6
D608	I-6
D614	H-5
D615	I-5
D616	I-6
D902	G-5
D904	H-4
D905	F-4
D906	H-4
IC471	I-9
IC701	E-6
IC892	I-4
IC901	G-4
Q403	D-8
Q406	D-8
Q407	I-5
Q433	E-8
Q451	D-7
Q452	D-5
Q502	D-4
Q503	D-4
Q601	I-6
Q602	I-6
Q603	I-6
Q616	G-5
Q617	G-5
Q803	I-3
Q902	H-3

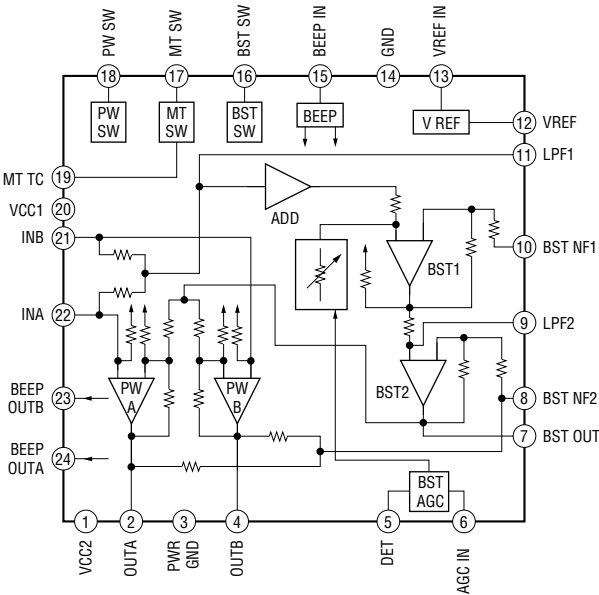


• IC Block Diagrams

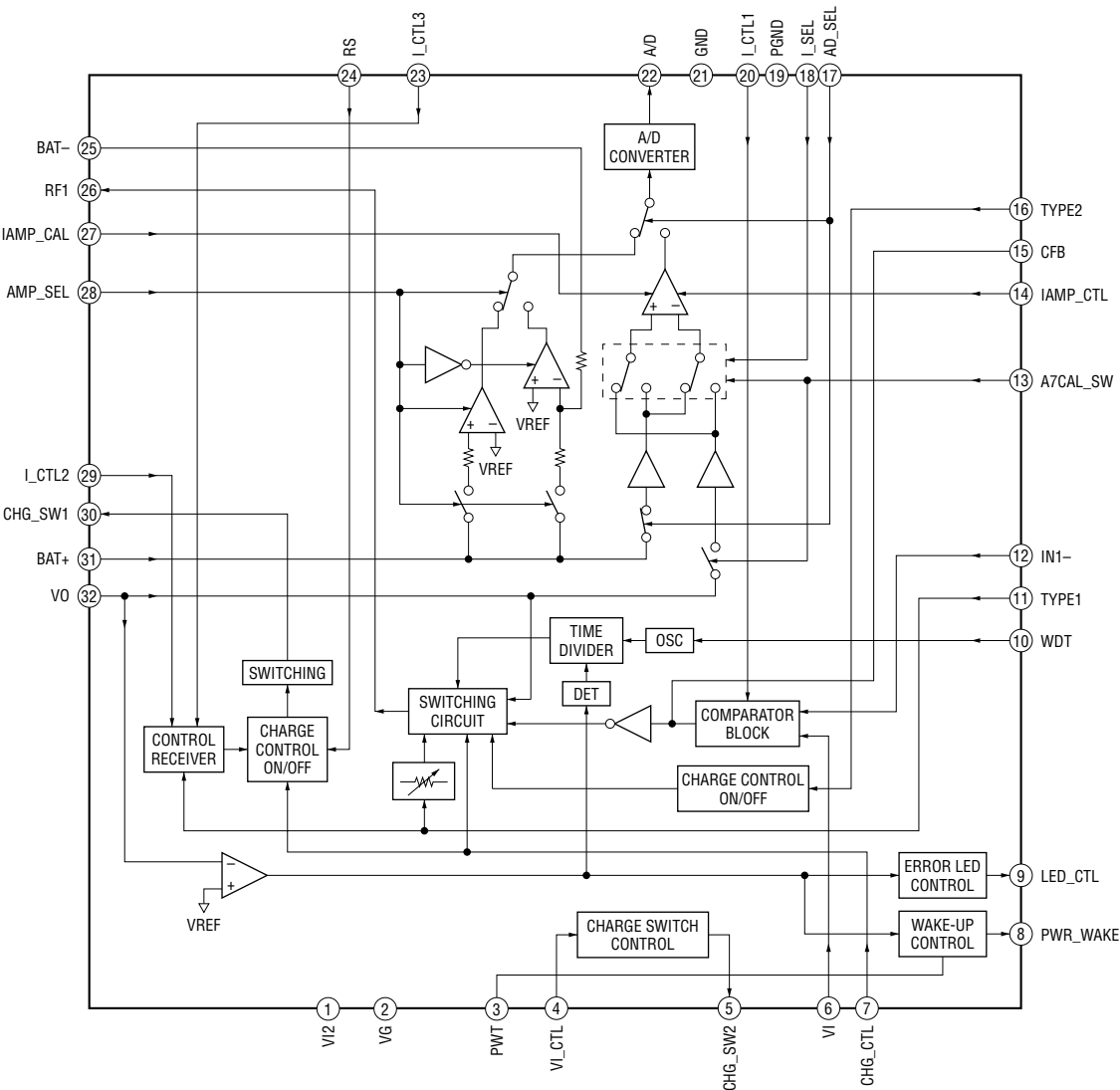
IC301 AK5356VN-L



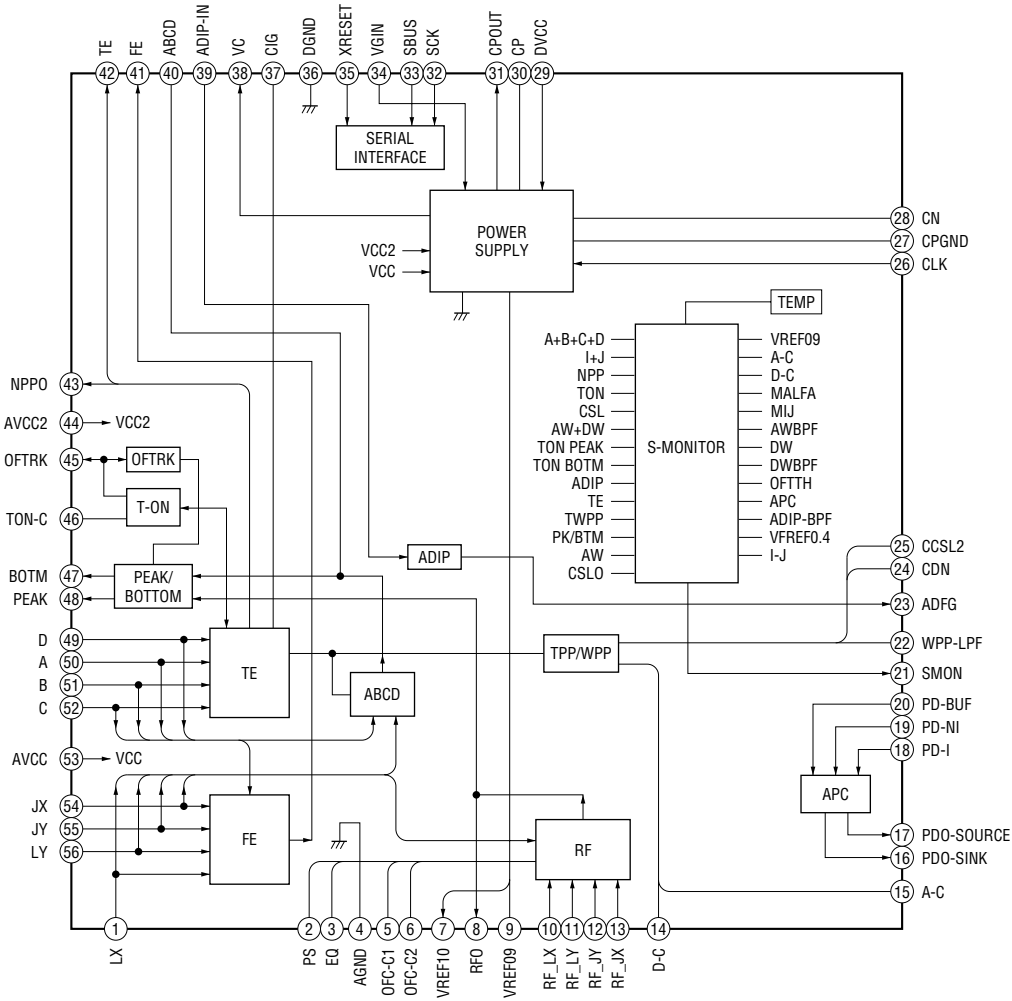
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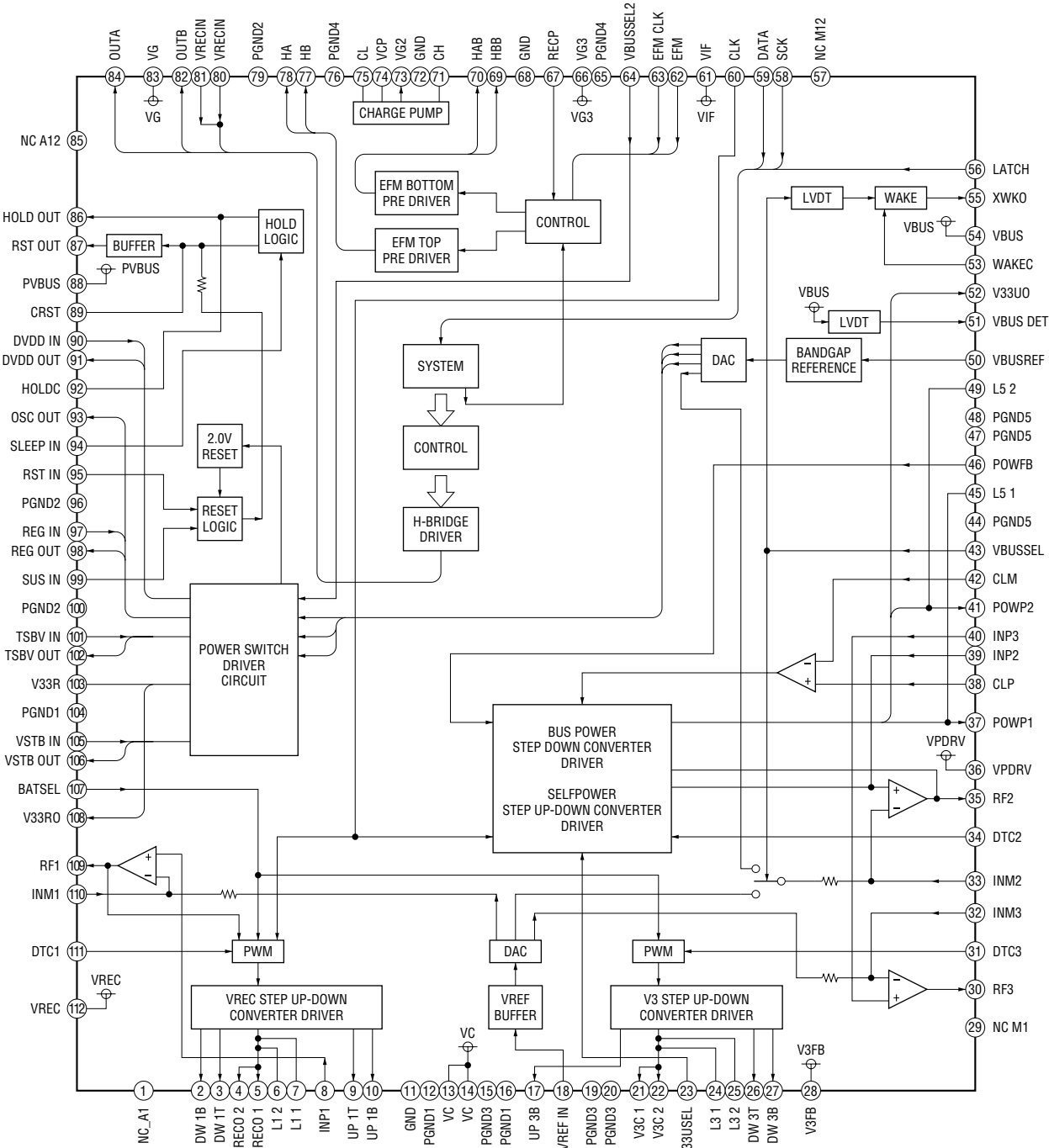
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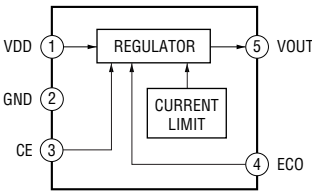
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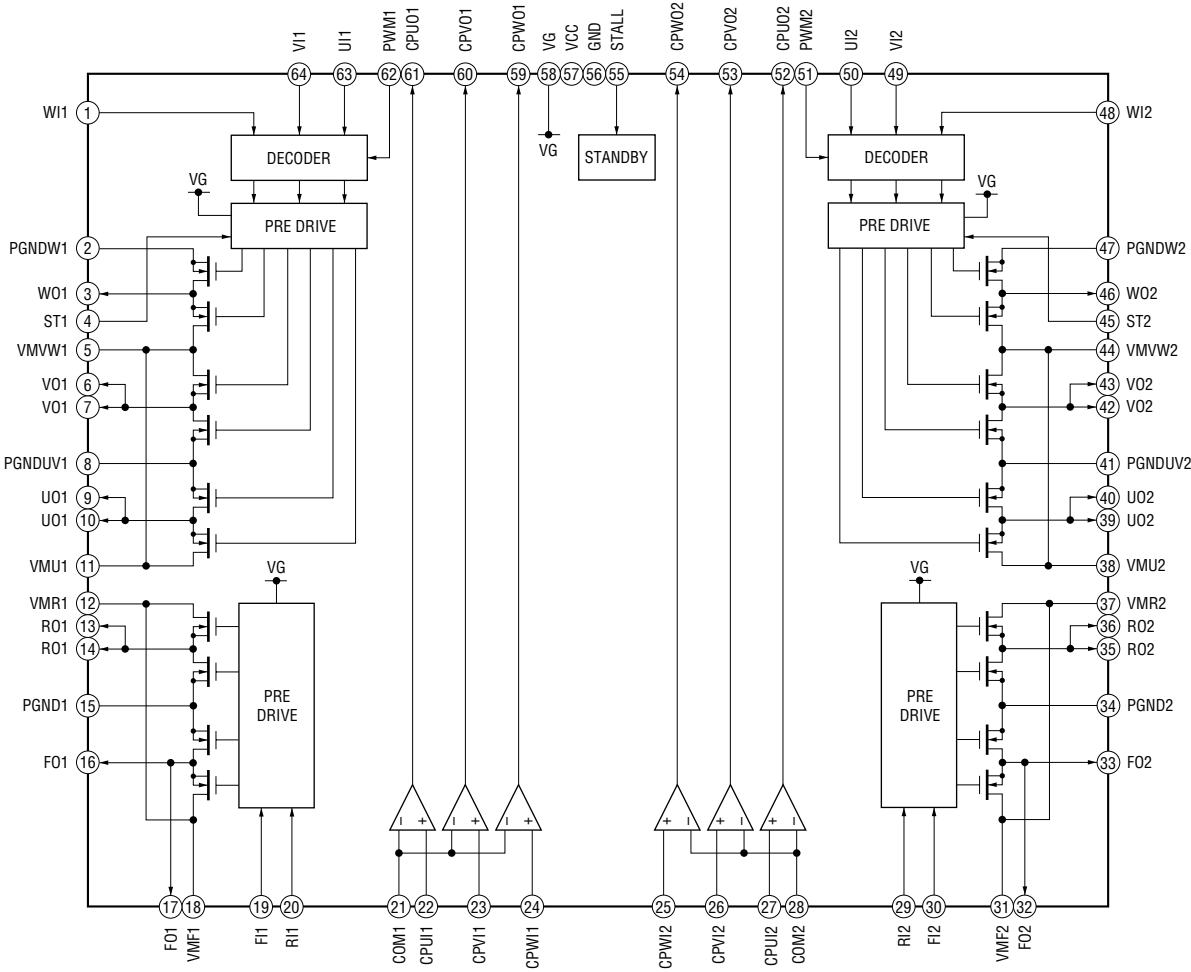
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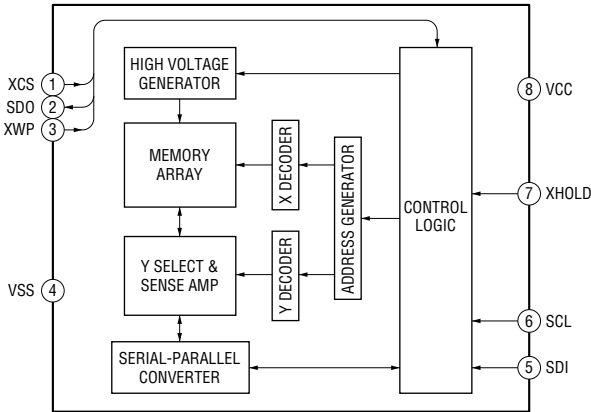
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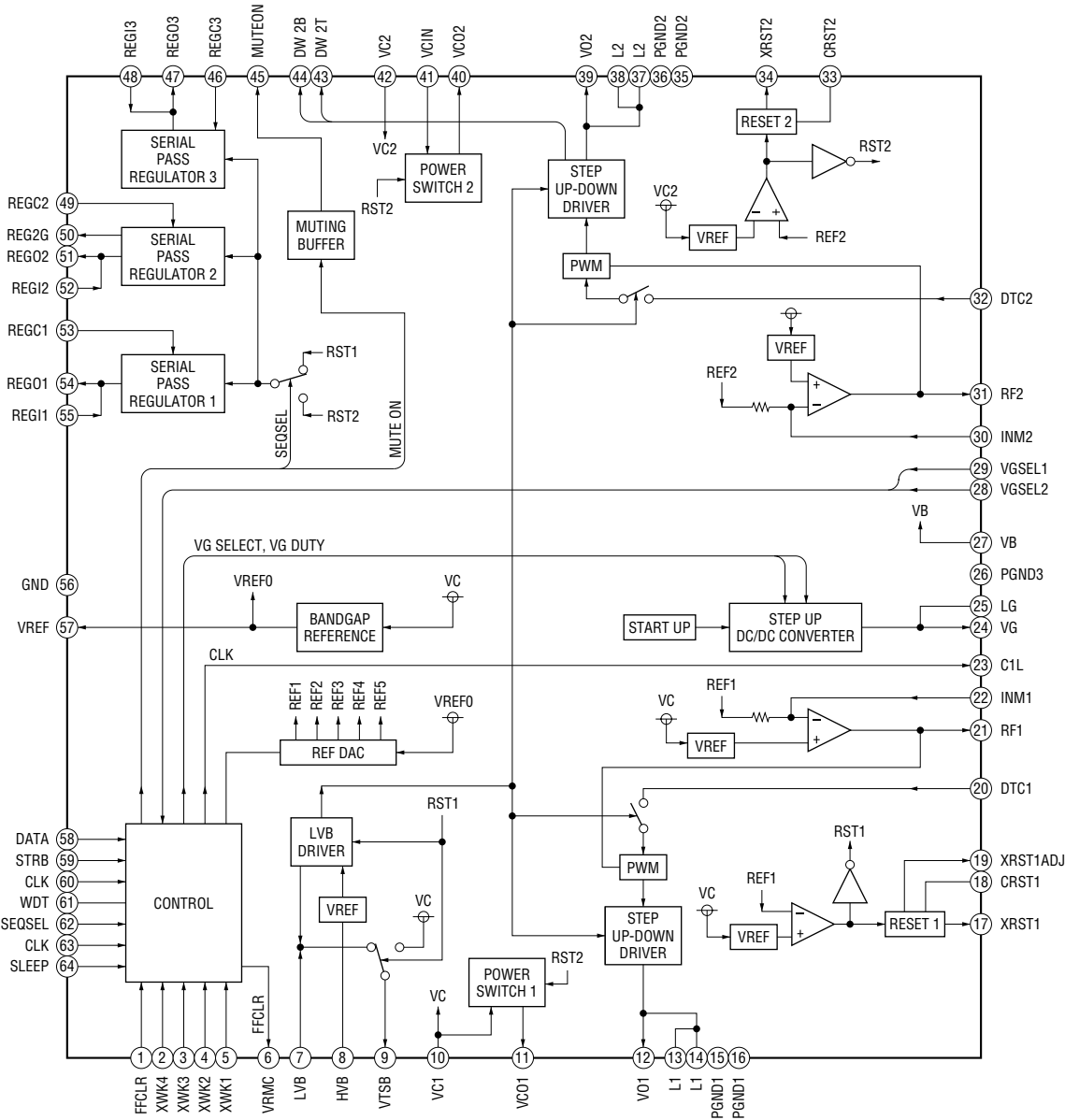


IC701 BD6607KN



IC892 HN58X2564FPIEZ





• IC Pin Function Description

IC801 CXD2681-225GG (SYSTEM CONTROLLER, DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Description
1	DVDD1_0	—	Power supply terminal
2	DVSS1_0	—	Ground terminal
3	DVDD1_1	—	Power supply terminal
4	DVSS1_1	—	Ground terminal
5	DVDD1_2	—	Power supply terminal
6	DVSS1_2	—	Ground terminal
7	DVDD1_3	—	Power supply terminal
8	DVSS1_3	—	Ground terminal
9	DVDD1_4	—	Power supply terminal
10	DVSS1_4	—	Ground terminal
11	DVDD1_5	—	Power supply terminal
12	DVSS1_5	—	Ground terminal
13	DVDD1_6	—	Power supply terminal
14	DVSS1_6	—	Ground terminal
15	DVDD1_7	—	Power supply terminal
16	DVSS1_7	—	Ground terminal
17	DVDD1_8	—	Power supply terminal
18	DVSS1_8	—	Ground terminal
19	DVDD1_9	—	Power supply terminal
20	DVSS1_9	—	Ground terminal
21	DVDD3	—	Power supply terminal
22	VSS_3	—	Ground terminal
23	DVDD1_10	—	Power supply terminal
24	DVSS1_10	—	Ground terminal
25	DVDD1_11	—	Power supply terminal
26	DVSS1_11	—	Ground terminal
27	AVDD1A	—	Power supply terminal (for PLL)
28	AVSS1A	—	Ground terminal (for PLL)
29	AVDD1B	—	Power supply terminal
30	AVSS1B	—	Ground terminal
31	AVDD1C	—	Power supply terminal
32	AVDD2	—	Power supply terminal (for A/D converter)
33	DVDD25SVADC	—	Power supply terminal (for A/D converter)
34	AVSS2	—	Ground terminal (for A/D converter)
35	AVDD3	—	Power supply terminal (for A/D converter)
36	AVSS3	—	Ground terminal (for A/D converter)
37	AVDD4A	—	Power supply terminal (for PLL)
38	AVSS4A	—	Ground terminal (for PLL)
39	AVDD4B	—	Power supply terminal (for PLL)
40	AVSS4B	—	Ground terminal (for PLL)
41	AVDD4C	—	Power supply terminal (for D/A converter)
42	AVSS4C	—	Ground terminal (for D/A converter)
43	AVDD5	—	Power supply terminal (for PLL)
44	AVSS5	—	Ground terminal (for PLL)
45	AVDD6	—	Power supply terminal (for A/D converter)
46	AVSS6	—	Ground terminal (for A/D converter)

Pin No.	Pin Name	I/O	Description
47	DAVDD	—	Power supply terminal (for D/A converter)
48	DVDD25LPF	—	Power supply terminal (for D/A converter)
49	DAVSS	—	Ground terminal (for D/A converter)
50	OSCVDD	—	Power supply terminal (for 22 MHz OSC)
51	USBOSCVDD	—	Power supply terminal (for the USB 48 MHz OSC)
52	TSMVDD	—	Power supply terminal (for the TSB master communication)
53	MAIFVDD	—	Power supply terminal (for MA interface)
54	MSJTAGVDD	—	Power supply terminal (for AUX)
55	USBIFVDD	—	Power supply terminal (for USB interface)
56 to 58	VSS_0 to VSS_2	—	Ground terminal
59 to 62	IFVDD_1 to IFVDD_4	—	Power supply terminal (for interface)
63	IFVSS_1	—	Ground terminal (for interface)
64	IFVSS_2	—	Ground terminal (for interface)
65 to 69	DRAMVDD0 to DRAMVDD4	—	Power supply terminal (for D-RAM/DSP interface)
70 to 72	DRAMVSS0 to DRAMVSS2	—	Ground terminal (for D-RAM/DSP interface)
73	FCRAMVDD0	—	Power supply terminal (for D-RAM)
74	FCRAMVSS0	—	Ground terminal (for D-RAM)
75	FCRAMVDD1	—	Power supply terminal (for D-RAM)
76	FCRAMVSS1	—	Ground terminal (for D-RAM)
77	FVDD0	—	Power supply terminal (for AUX)
78	FVSS0	—	Ground terminal (for AUX)
79	SRAMVDD0	—	Power supply terminal (for AUX)
80	SRAMVSS0	—	Ground terminal (for AUX)
81	SRAMVDD1	—	Power supply terminal (for AUX)
82	SRAMVSS1	—	Ground terminal (for AUX)
83	EBIFVDD0	—	Power supply terminal (for interface circuit)
84	EBIFVSS0	—	Ground terminal (for interface circuit)
85	EBIFVDD1	—	Power supply terminal (for interface circuit)
86	EBIFVSS1	—	Ground terminal (for interface circuit)
87	EBIFVDD2	—	Power supply terminal (for interface circuit)
88	EBIFVSS2	—	Ground terminal (for interface circuit)
89	EBIFVDD3	—	Power supply terminal (for interface circuit)
90	EBIFVSS3	—	Ground terminal (for interface circuit)
91	EBIFVDD4	—	Power supply terminal (for interface circuit)
92	EBIFVSS4	—	Ground terminal (for interface circuit)
93	EBIFVDD5	—	Power supply terminal (for interface circuit)
94	EBIFVSS5	—	Ground terminal (for interface circuit)
95	EBIFVDD6	—	Power supply terminal (for interface circuit)
96	EBIFVSS6	—	Ground terminal (for interface circuit)
97	EBIFVDD7	—	Power supply terminal (for interface circuit)
98	EBIFVSS7	—	Ground terminal (for interface circuit)
99	ASYO	O	Playback EFM duplex signal output
100	ASYI	I	Playback EFM comparator slice level input
101	RFI	I	Playback EFM RF signal input from the RF amplifier

Pin No.	Pin Name	I/O	Description
102	PCO	O	Phase comparison output terminal for the playback EFM system master PLL
103	FILI	I	Filter input terminal for the playback EFM system master PLL
104	FILO	O	Filter output terminal for the playback EFM system master PLL
105	CLTV	I	Internal VCO control voltage input terminal for the playback EFM system master PLL
106	PEAK	I	Peak hold signal input of the light amount signal (RF/ABCD) the RF amplifier
107	BOTM	I	Bottom hold signal input of the light amount signal (RF/ABCD) the RF amplifier
108	ABCD	I	Light amount signal (ABCD) input from the RF amplifier
109	FE	I	Focus error signal input from the RF amplifier
110	VC	I	Middle point voltage input from the RF amplifier
111	ADIO	I	Monitor output terminal of A/D converter input signal Not used
112	ADRB	I	A/D converter the lower limit voltage input terminal
113	SE	I	Sled error signal input from the RF amplifier
114	TE	I	Tracking error signal input from the RF amplifier
115	AUX1	I	Auxiliary A/D input terminal
116	ADRT	I	The upper limit voltage of A/D converter input terminal Not used
117	DCHG	—	Connecting terminal with the analog power supply of low impedance
118	APC	I	Error signal input for the laser automatic power control
119	ADC1EXTC	—	Connection terminal for an external capacitor
120	D_VREGO	I	Voltage sensibility of regulator for class-D amplifier Not used
121	VB_MON	I	Unregulated power supply voltage monitoring terminal
122	CHG_MON	I	Charge or discharge current monitoring terminal Not used
123	VREF_MON	O	Reference voltage output terminal
124	SET_KEY_1	I	Front panel key input terminal
125	SET_KEY_2	I	Front panel key input terminal
126	DCIN_DET	I	DC input voltage for battery charge monitoring terminal Not used
127	HIDC_MON	I	High DC voltage monitoring terminal
128	WK_DET	I	Panel key input for wake-up
129	VBUS_MON	I	USB power supply voltage monitoring terminal
130	BATT_MINUS_MON	I	Voltage monitoring terminal for the minus terminal of rechargeable battery
131	RMC_KEY	I	Remote commander key input terminal
132	RST_CONT	O	System reset signal output to the power control IC
133	REC_KEY /DOWNLOAD	I	DOWNLOAD key input terminal
134	RADIO_ON	I	Radio on detection input from the remote commander jack Not used
135	HALF_LOCK_SW /OPEN_SW	I	Front panel open switch detection terminal
136	XRST	I	System reset signal input from the power control IC
137	PLL2EXTCI	I	Connection terminal for an external capacitor
138	PLL2EXTCO	O	Connection terminal for an external capacitor
139	PLL3EXTCI	I	Connection terminal for an external capacitor
140	PLL3EXTCO	O	Connection terminal for an external capacitor
141	DACVREFH	I	Reference voltage input terminal
142	APCREF_DA	O	Reference voltage output terminal
143	ADC3VREFH	I	Reference voltage input terminal
144	ADC3EXTC	—	Connection terminal for an external capacitor
145	VIN	I	RF signal input from the RF amplifier

Pin No.	Pin Name	I/O	Description
146	VREFL	I	Reference voltage terminal connected to the capacitor (for the built-in D/A converter L-CH)
147	AOUTL	O	Built-in D/A converter L-CH signal output
148	AOUTR	O	Built-in D/A converter R-CH signal output
149	VREFR	I	Reference voltage terminal connected to the capacitor (for the built-in D/A converter R-CH)
150	DCLSOUTR	O	PWM modulator signal output for the class-D headphone amplifier Not used
151	DCLSOUTL	O	PWM modulator signal output for the class-D headphone amplifier Not used
152	RTCK	—	Not used
153	ADFG	I	ADIP duplex FM signal (22.05±1kHz) input from the RF amplifier
154	TRDR	O	Tracking servo drive PWM signal output (–) to the coil driver
155	TFDR	O	Tracking servo drive PWM signal output (+) to the coil driver
156	FFDR	O	Focus servo drive PWM signal output (+) to the coil driver
157	FRDR	O	Focus servo drive PWM signal output (–) to the coil driver
158	FS4	O	176.4 kHz clock signal output
159	SFDR	O	Sled servo drive PWM signal output to the motor driver
160	SPRD	O	Spindle motor drive control signal output (U) to the motor driver
161	SPFD	O	Spindle servo drive PWM signal output to the motor driver
162	SPDV	O	Spindle motor drive control signal output (V) to the motor driver
163	SPDW	O	Spindle motor drive control signal output (W) to the motor driver
164	SPCU	I	Spindle motor drive comparison signal input (U) from the motor driver
165	SPCV	I	Spindle motor drive comparison signal input (V) from the motor driver
166	SPCW	I	Spindle motor drive comparison signal input (W) from the motor driver
167	SLDV	O	Sled motor drive control signal output (V) to the motor driver
168	SLDW	O	Sled motor drive control signal output (W) to the motor driver
169	SLCU	I	Sled motor drive comparison signal input (U) from the motor driver
170	SLCV	I	Sled motor drive comparison signal input (V) from the motor driver
171	SLCW	I	Sled motor drive comparison signal input (W) from the motor driver
172	SRDR	O	Sled motor drive control signal output (U) to the motor driver
173	DIN	I	Digital audio signal input terminal
174	FS256_OUT	O	11.2896 MHz clock output
175	CHOPPERCLK	O	Clock signal output for chopper
176 to 179	MNT0 to MNT3	O	Monitor output for DSP
180	OFTRK	I/O	Tracking signal input/output for MD3
181	RECP	O	Laser power changeover signal output
182	EFMO	O	EFM encode data output for the record
183	PAUSE_KEY	I	Pause key input terminal
184	PROTECT	I	Recording protector detection input for normal disc
185	OPT_DET	I	Optical digital input plug detection input terminal “H”: optical in
186	XJACK_DET	I	Line input plug detection input terminal “L”: plug in
187	XMIC_DET	I	Microphone input plug detection input terminal “L”: plug in Not used
188	OPEN_CLOSE_SW	I	Open switch input terminal
189	XCS_ADC	O	Chip select signal output for A/D converter
190	XPD_ADC	O	Power control signal output for A/D converter
191	NC	—	Not used
192	XRST_LCD	O	Reset signal output for the LCD module
193	USB_WAKE	I	System wake up signal input by USB connect
194	A7CAL_SW	I/O	Current sense amplifier input, and short switch control output terminal Not used

Pin No.	Pin Name	I/O	Description
195	SI0	I	Serial data input from the EEPROM
196	SO0	O	Serial data output to the EEPROM
197	SCK0	O	Serial clock output to the EEPROM
198	XGUM_ON	I	Rechargeable battery detection signal terminal Not used
199	BEEP	O	Beep sound control signal output to the headphone amplifier
200	XOPT_CTL	O	Power supply on/off control signal output for the optical input jack
201	LAM_REQCHK	I	LAM power check terminal Not used
202	LAM_SPREQ	O	LAM force stop request signal output Not used
203	REC_LED /ACCESS_LED	O	REC or Access LED drive signal output terminal Not used
204	MDVCC_CTL	O	Power supply control signal output for the OP modulation
205	VBUS_VB_CTL	O	USB power supply control signal output terminal
206	LAM_NAME	O	LAM name data request signal output terminal Not used
207	PE7	—	Not used
208	PF0	—	Not used
209	PF1/S0DO	O	Connect to the optical pick-up block
210	PF2/S1DO	O	Connect to the optical pick-up block
211	PF3/RTG3	O	Connect to the headphone amplifier
212	XMUTE /MUTE	O	Muting on/off control signal output terminal
213	SI1	I	Serial data input from the LCD module
214	SO1	O	Serial data output to the LCD module
215	SCK1	I/O	Serial data transfer clock signal input/output terminal with the LCD module
216	SLD_MON	I	Sled servo monitoring terminal
217	AOUT_SEL	O	Headphone/line output switching terminal Not used
218	YUZU_SLEEP	O	Chip enable output to the power control IC
219	FFCLR	O	Input latch output for the start switching to the power control Not used
220	CHGI_CTL1	O	Charge current limiter control signal output at the time of DC adaptor use “L”: charge Not used
221	CHGI_CTL2	O	Charge current control signal output terminal “L”: low current charge
222	CHGI_CTL3	O	Charge current control signal output terminal “L”: low current charge
223	SLBUSY	I	Receive signal monitoring terminal for sled command
224	XTEST	I	Terminal for the test mode setting (normally open) “L”: test mode
225	XRF_RST	O	Reset signal output to the RF amplifier
226	VREC_SEL	O	VREC start-up timing control signal output terminal
227	XHOLD_SW	I	HOLD switch detection input terminal
228	T_MARK_SW	I	Track mark switch input terminal Not used
229	XRST2_DET	I	Reset signal input from the power control IC
230	CHGI_SEL	O	Charge/discharge control signal output for current sense amplifier Not used
231	RECP_MON	I	Laser power changeover signal monitoring terminal
232	SPDL_MON	I	Spindle servo monitoring terminal
233	XCS_PWR_IC	O	Chip select signal output to the power control IC
234	RXD	I	Not used
235	TXD	O	Not used
236	XCS_LCD	O	Chip select signal output to the LCD module
237	CC_CTL /VI_CTL	O	Constant current circuit control signal output terminal

Pin No.	Pin Name	I/O	Description
238	XRST_MTR_DRV	O	Reset signal output to the motor driver
239	XCS_NV	O	Chip select signal output to the EEPROM
240	CHG_PWM	O	Charge current or voltage control signal output terminal
241	IAMP_CAL	O	Offset signal output of current sense amplifier Not used
242	NC	—	Not used
243	D_VCONT_PWM	I	Power supply voltage setting terminal for only class-D amplifier Not used
244	CHG_OPR_LED	O	Charge indication LED drive signal output terminal Not used
245	XCS_REC_DRV	O	Chip select signal output to the over write head driver
246	GND_SW	O	Ground line switching signal output terminal
247	CS_RTC	O	Chip select signal output for real time clock Not used
248	JOG_A	I	Jog dial pulse input terminal
249	JOG_B	I	Jog dial pulse input terminal
250	VBUS_DET	I	USB power supply voltage detection terminal
251	SSB_DATA	I/O	SSB data input/output with the RF amplifier
252	SSB_CLK	O	SSB clock output to the RF amplifier
253	HIMD_PROTECT	I	Recording protector detection input for Hi-MD disc
254	LDPEN	O	Pulse/DC light-emit switching signal output terminal
255	CHG_TYPE2	O	Battery charge control signal output terminal “H”: charging
256	DRAM_HOLD_DET	I	Detection terminal for D-RAM power supply information keeping Not used
257	DRAM_VDD_CLR	O	D-RAM power latch clear signal output for quick mode sleep Not used
258	AD2ENDF	I	Monitoring terminal for flag of servo signal A/D measuring finish
259	TEST	—	Not used
260	SRAM_MODE	I	Not used
261	HSALF	I	Not used
262 to 271	TIGER_MON0 to TIGER_MON9	O	Trigger monitoring terminal output clock=18.5 MHz
272	XLSRCK	O	Pulse output for laser strobe recording
273	TAT	—	Not used
274	TAN	—	Not used
275	NAR	—	Not used
276	IDO	—	Not used
277	SAK	—	Not used
278	LRCKI	I	L/R sampling clock signal input terminal for PCM data interface Not used
279	XBCKI	I	Bit clock signal input terminal for the PCM data interface Not used
280	DATAI	I	Serial clock signal input terminal for the PCM data interface Not used
281	SI3	I	Serial data input for LAM microcomputer communication Not used
282	SO3	O	Serial data output for LAM microcomputer communication Not used
283	SCK3	O	Serial data transfer clock signal output for LAM microcomputer communication Not used
284	SI4	I	Data input from ATRAC3 plus encoder communication Not used
285	SO4	O	Data output for ATRAC3 plus encoder communication Not used
286	SCK4	O	Clock signal output for ATRAC3 plus encoder communication Not used
287	SCS3	O	Chip select signal output for LAM microcomputer communication Not used

Pin No.	Pin Name	I/O	Description
288	SCS4	O	Chip select signal output for ATRAC3 plus encoder communication Not used
289	HI_Z_SLD	O	Standby signal output terminal for the sled motor
290	HI_Z_SPDL	O	Standby signal output terminal for the spindle motor
291 to 294	SET_CODE0 to SET_CODE3	I	Setting terminal for the destination
295	D_EN1	O	Control signal output for class-D amplifier Not used
296	D_EN2	O	Control signal output for class-D amplifier Not used
297	D_ENVG	O	Enable/disable switching control terminal for class-D amplifier booster circuit Not used
298	DADT	O	Audio data output terminal Not used
299	PWM_L1	O	LC drive PWM output terminal Not used
300	PWM_L2	O	LC drive PWM output terminal Not used
301	I2C 1	—	Open drain for IIC
302	I2C 2	—	Open drain for IIC
303, 304	TEST	—	Not used
305	CLKIN2	I	Clock signal input terminal (13.5 MHz or 27 MHz) Not used
306	FS256	O	Master clock signal (256Fs=11.2896 MHz) output to A/D converter
307	ADDT	I	Data input from A/D converter
308	LRCK	O	L/R sampling clock signal (44.1kHz) output to external A/D converter
309	XBCK	O	Bit clock (2.8224 MHz) output to the external A/D converter
310	OSCI	I	Main system clock input terminal (22.5792 MHz)
311	OSCO	O	Main system clock output terminal (22.5792 MHz)
312	FS512	O	Clock signal output for class-D amplifier Not used
313	DTCK	I/O	TSB master data clock input/output or SSB data input/output
314	UDP	I/O	USB data (+) input/output terminal
315	UDM	I/O	USB data (-) input/output terminal
316	USBHOLD	I	USB hold signal input terminal
317	SUSPEND	O	USB suspend signal output
318	UPUEN	O	USB pull-up resistor connection control output terminal
319	UOSCI	I	Resonator (48MHz) connection terminal for the USB oscillation circuit
320	UOSCO	O	Resonator (48MHz) connection terminal for the USB oscillation circuit
321 to 325	NC	—	Not used

SECTION 7

EXPLODED VIEWS

NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

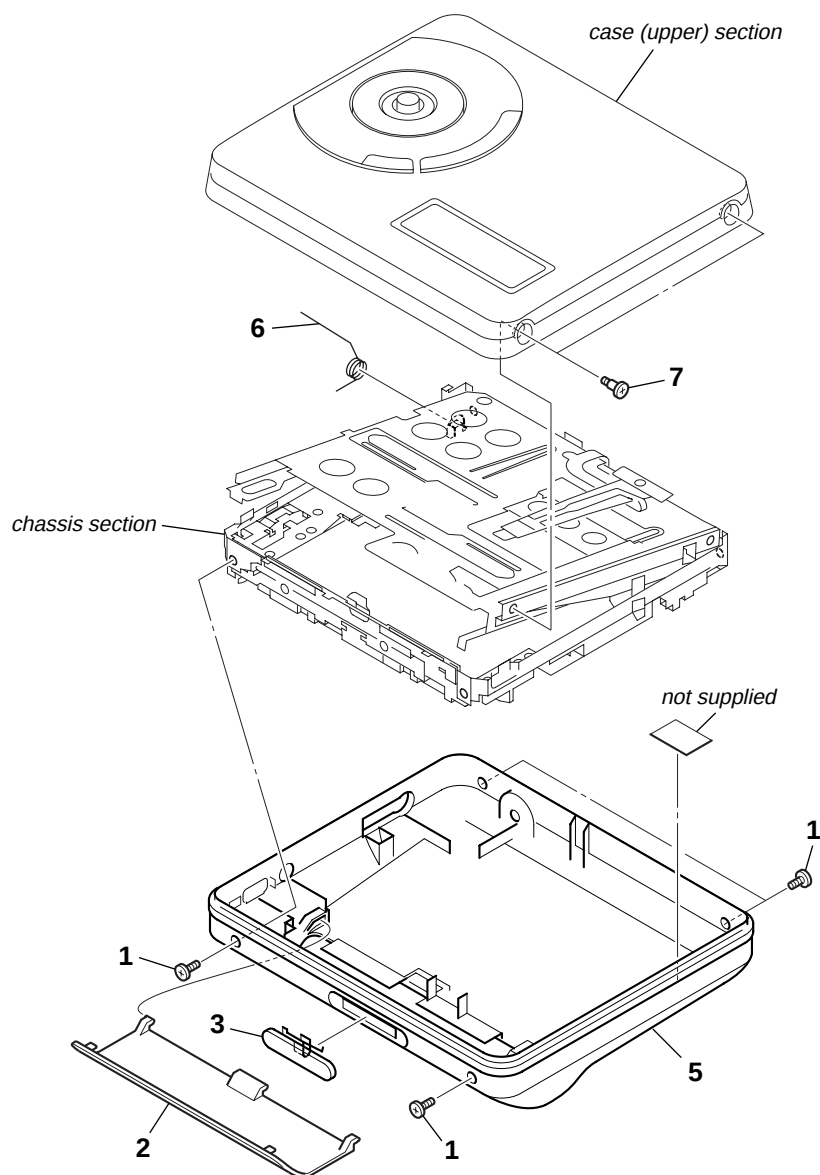
Parts Color

Cabinet's Color
- Abbreviation
EE : East European model
MX : Mexican model

- Items marked “**66**” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

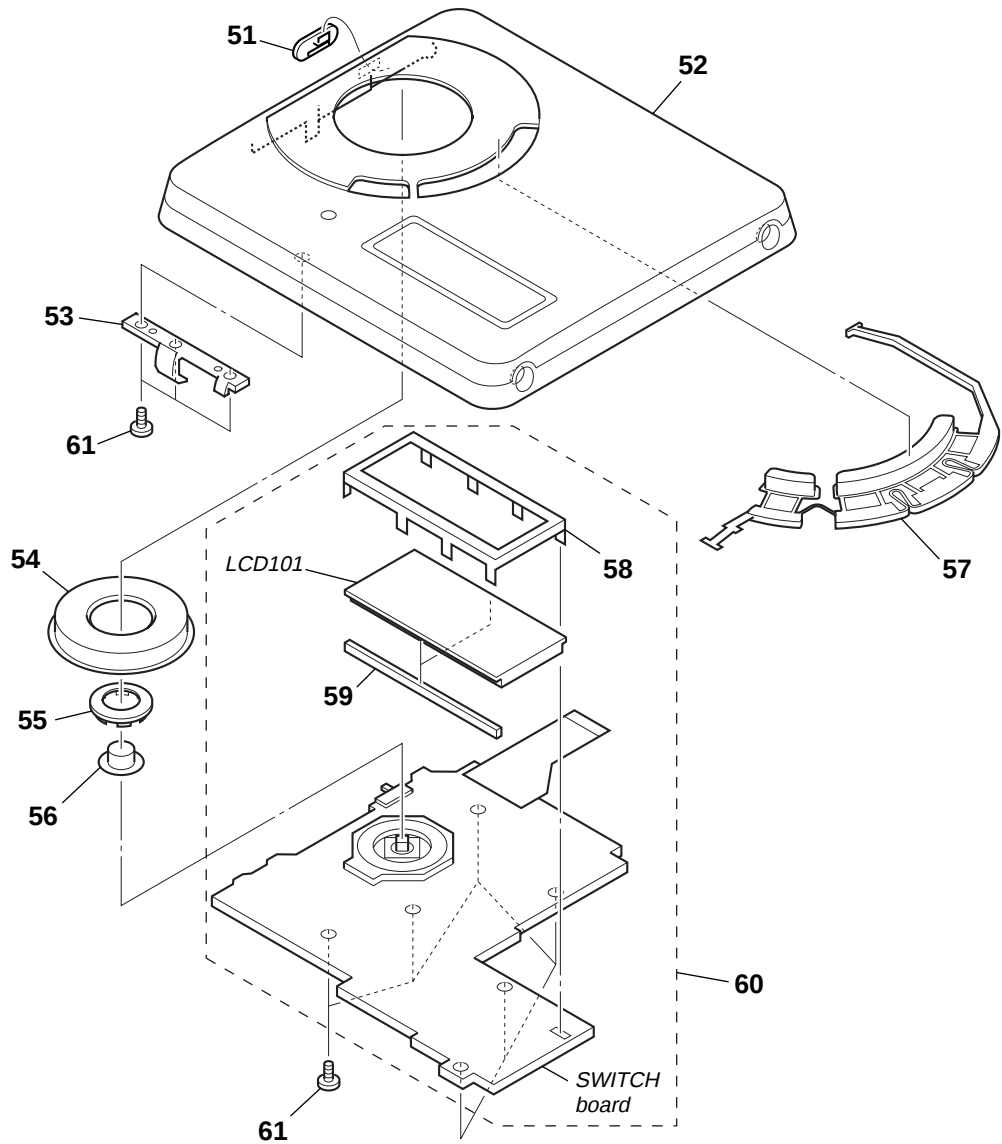
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

7-1. CASE (LOWER) SECTION



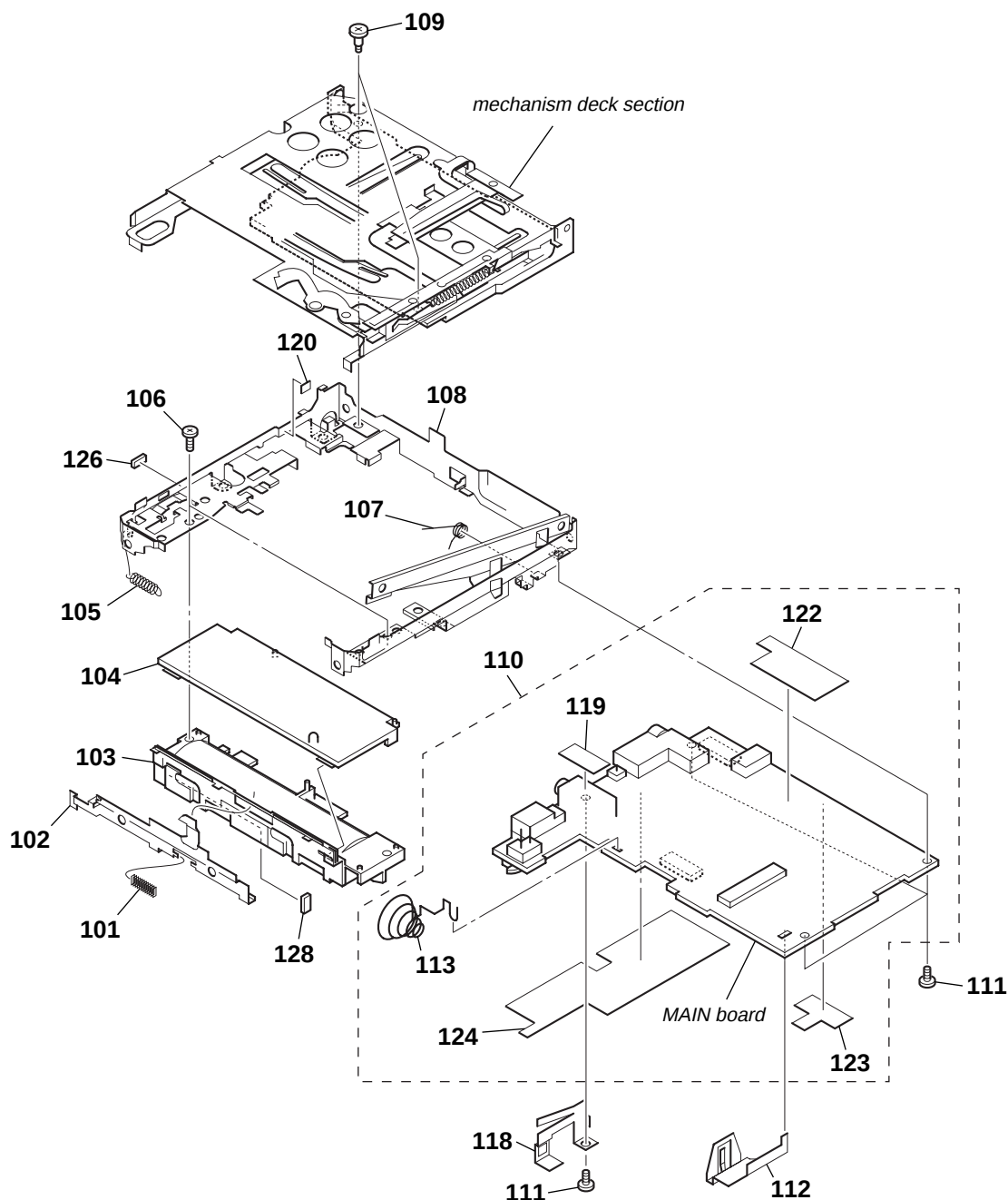
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	3-234-449-17	SCREW (M1.4) (for BLACK, SILVER)		3	3-266-206-91	KNOB (OPEN) (for BLUE)	
1	3-234-449-19	SCREW (M1.4) (for BLUE)		5	X-2059-840-1	CASE LOWER ASSY, SVX (for BLACK, SILVER)	
2	3-266-208-71	LID, BATTERY CASE (for BLACK, SILVER)		5	X-2059-841-1	CASE LOWER ASSY, SVX (for BLUE)	
2	3-266-208-81	LID, BATTERY CASE (for BLUE)		6	3-266-359-01	SPRING (POP UP L), TORSION	
3	3-266-206-81	KNOB (OPEN) (for BLACK, SILVER)		7	3-241-529-01	SCREW, STEP	

7-2. CASE (UPPER) SECTION



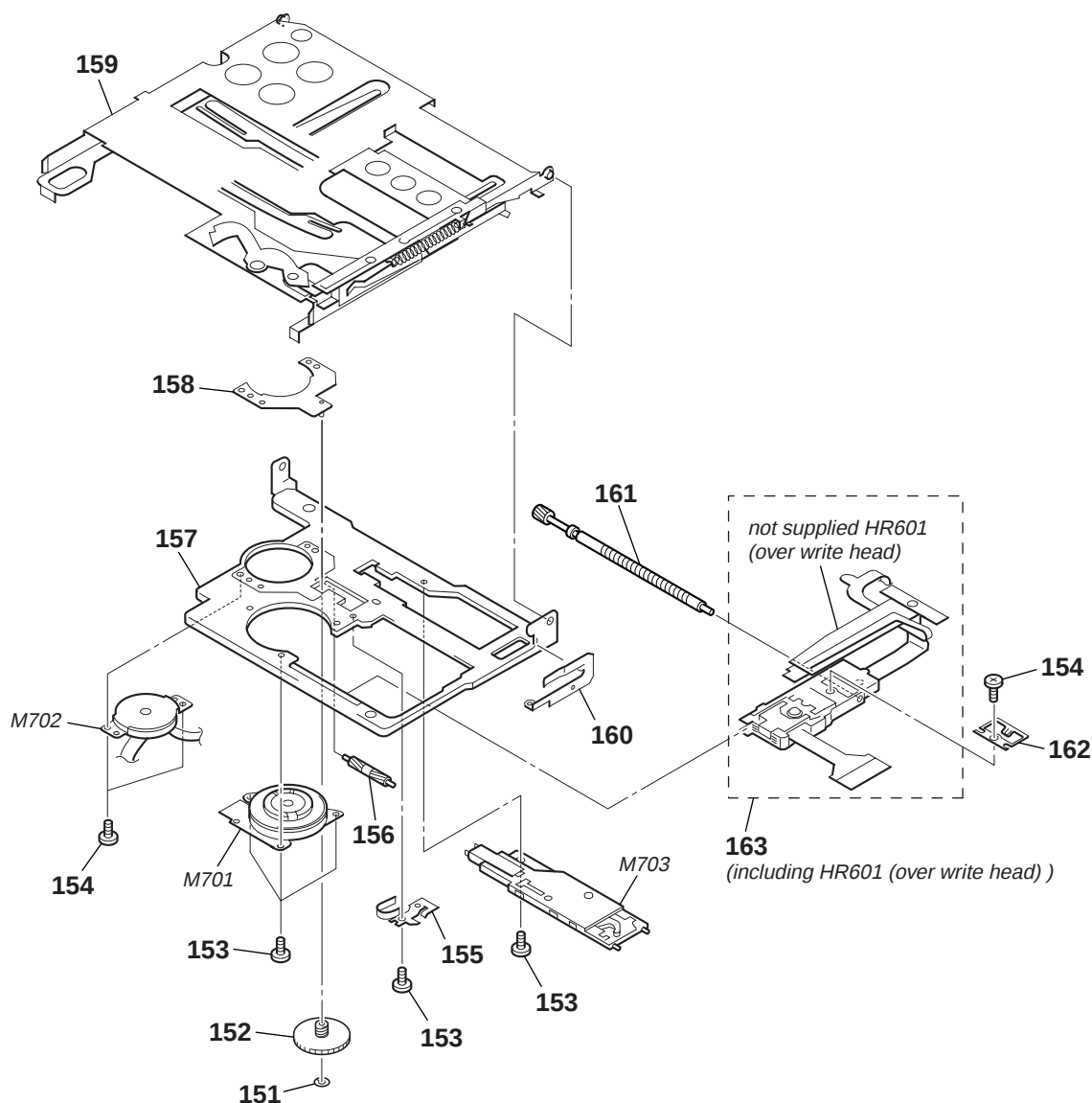
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-249-687-91	KNOB (HOLD)		56	3-266-191-01	KNOB (5 DIRECTION) (▶ ENT)	
52	X-2055-993-1	CASE UPPER ASSY, SVX (SILVER)		57	2-541-972-01	BUTTON (CONTROL) (REC (+▶)/T MARK. ■■. SEARCH/MENU. CANCEL)	
52	X-2055-994-1	CASE UPPER ASSY, SVX (BLUE)		58	2-541-969-01	HOLDER (LCD)	
52	X-2055-995-1	CASE UPPER ASSY, SVX (BLACK)		59	2-022-247-01	RUBBER, CONDUCTIVE	
53	3-266-189-01	LOCKER, OPEN		60	A-1104-958-A	SWITCH BOARD, COMPLETE	
54	2-541-973-01	KNOB (ROTARY)		61	3-254-014-01	SCREW	
55	3-266-192-01	ESCAPHEON (5 DIRECTION) (VOL+ ▶▶ VOL- ◀◀)		LCD101	1-805-632-11	LCD	

7-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-266-202-01	SPRING (LIMITTER), COMPRESSION COIL		111	3-238-876-04	SCREW (M1.4), TOOTHED LOCK	
102	3-266-197-01	OPEN SLIDER		112	3-266-204-01	TERMINAL (+), BATTERY	
103	3-266-196-01	CASE, BATTERY		113	3-266-203-02	TERMINAL (-), BATTERY	
104	3-266-194-01	MD STANDARD PIN		118	2-541-975-01	SPRING (USB), LEAF	
105	3-266-201-01	SPRING (R), EXTENSION		119	3-242-558-01	SPACER (LINE IN)	
106	3-254-003-01	SCREW		120	2-176-386-01	SHEET (SET CHASSIS L)	
107	3-266-199-01	SPRING (R), TORSION COIL		122	2-177-905-01	SHEET (EMC H BRIDGE)	
108	X-3385-057-3	CHASSIS ASSY, SET		123	2-177-906-01	SHEET (EMC YUZU)	
109	3-246-996-01	SCREW (MD), STEP		124	2-177-907-01	SHEET (EMC JACK)	
110	X-2059-300-1	MAIN BOARD, COMPLETE (for SERVICE)	(AEP, EE)	126	2-149-797-01	CUSHION (USB SPRING)	
				128	2-149-335-01	SHEET (BATT CASE)	
110	X-2059-301-1	MAIN BOARD, COMPLETE (for SERVICE)	(E, MX)				

7-4. MECHANISM DECK SECTION (MT-MZNH900-181)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-338-645-31	WASHER (0.8-2.5)		161	X-2023-272-1	LEAD SCREW SERVICE ASSY	
152	3-263-454-01	GEAR (BSA)		162	3-244-879-01	SPRING, RACK	
153	3-248-370-01	SCREW, SELF TAP		△ 163	X-2055-997-1	OP SERVICE ASSY (ABX-U) (including HR601(OVER WRITE HEAD))	
154	3-225-996-17	SCREW (M1.4) (EG), PRECISION PAN		M701	8-835-782-12	MOTOR, DC SSM18D/C-NP (SPINDLE)	
155	3-244-880-01	SPRING, THRUST RETAINER		M702	1-787-143-11	MOTOR, DC (SLED)	
156	3-263-455-01	GEAR (SB)		M703	1-477-519-21	MOTOR UNIT, DC (OVER WRITE HEAD UP/DOWN)	
157	3-259-972-24	CHASSIS (REC)					
158	X-3384-651-2	BASE ASSY, MOTOR					
159	X-3384-650-3	HOLDER ASSY					
160	3-263-453-01	PLATE, RATCHET					

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
- Abbreviation
EE : East European model
MX : Mexican model
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA... : μ A... uPA... : μ PA...
uPB... : μ PB... uPC... : μ PC...
uPD... : μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	X-2059-300-1	MAIN BOARD, COMPLETE (for SERVICE)	(AEP, EE)	C354	1-135-151-21	TANTALUM CHIP 4.7uF 20%	4V
	X-2059-301-1	MAIN BOARD, COMPLETE (for SERVICE)	(E, MX)	C355	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V
		*****		C356	1-135-201-11	TANTALUM CHIP 10uF 20%	4V
	2-177-905-01	SHEET (EMC H BRIDGE)		C361	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
	2-177-906-01	SHEET (EMC YUZU)		C364	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
	2-177-907-01	SHEET (EMC JACK)		C402	1-100-609-11	TANTALUM CHIP 220uF	5V
	3-242-558-01	SPACER (LINE IN)		C403	1-100-609-11	TANTALUM CHIP 220uF	5V
	3-266-203-02	TERMINAL (-), BATTERY		C406	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
		< CAPACITOR >		C407	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C101	1-164-874-11	CERAMIC CHIP 100PF 5%	50V	C408	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C102	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V	C411	1-119-751-11	TANTALUM CHIP 22uF 20%	16V
C151	1-164-941-11	CERAMIC CHIP 0.0047uF 10%	16V	C412	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C152	1-164-939-11	CERAMIC CHIP 0.0022uF 10%	50V	C415	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C153	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V	C419	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C154	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V	C420	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C160	1-137-859-11	TANTALUM CHIP 220uF 20%	4V	C421	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C201	1-164-874-11	CERAMIC CHIP 100PF 5%	50V	C423	1-100-609-11	TANTALUM CHIP 220uF	5V
C202	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V	C424	1-100-609-11	TANTALUM CHIP 220uF	5V
C251	1-164-941-11	CERAMIC CHIP 0.0047uF 10%	16V	C425	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C252	1-164-939-11	CERAMIC CHIP 0.0022uF 10%	50V	C426	1-119-751-11	TANTALUM CHIP 22uF 20%	16V
C253	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V	C427	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C254	1-115-467-11	CERAMIC CHIP 0.22uF 10%	10V	C429	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C260	1-137-859-11	TANTALUM CHIP 220uF 20%	4V	C430	1-164-937-11	CERAMIC CHIP 0.001uF 10%	50V
C302	1-164-939-11	CERAMIC CHIP 0.0022uF 10%	50V	C452	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C303	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C453	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C304	1-164-874-11	CERAMIC CHIP 100PF 5%	50V	C455	1-164-939-11	CERAMIC CHIP 0.0022uF 10%	50V
C305	1-164-874-11	CERAMIC CHIP 100PF 5%	50V	C456	1-164-939-11	CERAMIC CHIP 0.0022uF 10%	50V
C310	1-135-259-11	TANTALUM CHIP 10uF 20%	6.3V	C457	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C313	1-100-539-11	TANTALUM CHIP 47uF 20%	6.3V	C458	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C319	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C459	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C320	1-135-149-21	TANTALUM CHIP 2.2uF 10%	10V	C476	1-164-937-11	CERAMIC CHIP 0.001uF 10%	50V
C321	1-100-539-11	TANTALUM CHIP 47uF 20%	6.3V	C478	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
C322	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C479	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C323	1-135-259-11	TANTALUM CHIP 10uF 20%	6.3V	C480	1-165-884-11	CERAMIC CHIP 2.2uF 10%	6.3V
C324	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C481	1-125-837-11	CERAMIC CHIP 1uF 10%	6.3V
C325	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C511	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C327	1-125-837-11	CERAMIC CHIP 1uF 10%	6.3V	C513	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
C328	1-125-837-11	CERAMIC CHIP 1uF 10%	6.3V	C515	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C351	1-125-837-11	CERAMIC CHIP 1uF 10%	6.3V	C516	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C352	1-135-259-11	TANTALUM CHIP 10uF 20%	6.3V	C517	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C353	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V	C518	1-135-210-11	TANTALUM CHIP 4.7uF 20%	10V
				C519	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
				C520	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C521	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V	C638	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C522	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V	C641	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C523	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C642	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C524	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C643	1-100-743-91	CERAMIC CHIP	2.2uF	20%	16V
C525	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C644	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C526	1-164-874-11	CERAMIC CHIP	100PF	5%	50V	C645	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C527	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C646	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C528	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C648	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C529	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C649	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C530	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C650	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C531	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C652	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C533	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C653	1-135-259-11	TANTALUM CHIP	10uF	20%	6.3V
C536	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	C658	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C537	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C660	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C538	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C661	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C539	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C666	1-127-820-11	CERAMIC CHIP	4.7uF	10%	16V
C545	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C668	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C547	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V	C669	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C550	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V	C671	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C552	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C672	1-127-820-11	CERAMIC CHIP	4.7uF	10%	16V
C553	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V	C673	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C554	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C674	1-112-010-11	CAP, CHIP MICA	33PF	5%	100V
C555	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C675	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C556	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V	C676	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C557	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C677	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C558	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V	C701	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C559	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	C702	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C560	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C703	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C564	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V	C705	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C565	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C706	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C566	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C707	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C567	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V	C708	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C570	1-165-847-91	TANTALUM CHIP	4.7uF	20%	10V	C709	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C573	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V	C710	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C574	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C712	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C601	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C713	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C602	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C715	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C607	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C716	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C717	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C611	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C801	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	50V
C612	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V	C802	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	50V
C613	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V	C803	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C614	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V	C804	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C616	1-165-897-11	TANTALUM CHIP	22uF	20%	10V	C805	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C619	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C808	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C620	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V	C809	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C621	1-135-201-11	TANTALUM CHIP	10uF	20%	4V	C810	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C622	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V	C811	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C625	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C812	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C627	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V	C814	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C628	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C816	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C630	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C817	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C633	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C818	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C634	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	C819	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C635	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V	C820	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C636	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C821	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C637	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V						

Ref. No.	Part No.	Description	Remark		
C822	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C823	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C827	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C828	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C832	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C833	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C835	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C836	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C838	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C839	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C843	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C845	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C846	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C847	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C850	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C853	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C856	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C857	1-164-858-11	CERAMIC CHIP	22PF	5%	50V
C858	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C859	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C860	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C861	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C864	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C892	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C901	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C902	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C903	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C906	1-100-352-11	CERAMIC CHIP	1uF	20%	16V
C908	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C909	1-119-751-11	TANTALUM CHIP	22uF	20%	16V
C915	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C916	1-165-851-91	TANTALUM CHIP	10uF	20%	6.3V
C918	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C919	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C920	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C922	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C923	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C924	1-100-539-11	TANTALUM CHIP	47uF	20%	6.3V
C926	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C927	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C928	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C929	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C931	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C932	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C933	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C935	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C936	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C937	1-165-884-11	CERAMIC CHIP	2.2uF	10%	6.3V
C939	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C940	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C948	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C954	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C958	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C959	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C960	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C961	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN451	1-818-190-21	CONNECTOR, SQUARE TYPE (USB) 7P	
CN471	1-818-543-21	CONNECTOR, FFC/FPC (ZIF) 16P	
CN501	1-818-545-21	CONNECTOR, FFC/FPC (ZIF) 26P	
CN701	1-818-540-21	CONNECTOR, FFC/FPC (ZIF) 10P	
		< DIODE >	
D151	8-719-056-72	DIODE UDZ-TE-17-2.4B	
D251	8-719-056-72	DIODE UDZ-TE-17-2.4B	
D301	8-719-056-53	DIODE MAZS051008S0	
D302	8-719-056-53	DIODE MAZS051008S0	
D303	8-719-056-53	DIODE MAZS051008S0	
D304	8-719-056-58	DIODE MAZS027008S0	
D352	6-500-116-01	DIODE NNCD6.8H-T1	
D401	6-500-483-01	DIODE MA22D2800LS0	
D435	8-719-056-58	DIODE MAZS027008S0	
D439	6-500-483-01	DIODE MA22D2800LS0	
D440	6-500-483-01	DIODE MA22D2800LS0	
D441	8-719-056-29	DIODE 015AZ4.7-TPL3	
D457	6-500-483-01	DIODE MA22D2800LS0	
D458	8-719-422-49	DIODE MA8056-L	
D471	8-719-072-27	DIODE MA2Z748001S0	
D601	6-500-813-01	DIODE MA2SD32008S0	
D602	8-719-072-27	DIODE MA2Z748001S0	
D603	8-719-072-27	DIODE MA2Z748001S0	
D604	6-500-483-01	DIODE MA22D2800LS0	
D605	6-500-910-01	DIODE MA2SD3000LS0	
D606	6-500-909-01	DIODE MA22D1700LS0	
D607	6-500-909-01	DIODE MA22D1700LS0	
D608	6-500-910-01	DIODE MA2SD3000LS0	
D609	8-719-072-27	DIODE MA2Z748001S0	
D610	8-719-072-27	DIODE MA2Z748001S0	
D611	8-719-072-27	DIODE MA2Z748001S0	
D613	6-500-813-01	DIODE MA2SD32008S0	
D614	6-500-813-01	DIODE MA2SD32008S0	
D615	6-500-909-01	DIODE MA22D1700LS0	
D616	6-500-909-01	DIODE MA22D1700LS0	
D801	8-719-072-27	DIODE MA2Z748001S0	
D803	6-500-813-01	DIODE MA2SD32008S0	
D902	8-719-072-27	DIODE MA2Z748001S0	
D904	8-719-072-27	DIODE MA2Z748001S0	
D905	8-719-072-27	DIODE MA2Z748001S0	
D906	6-500-483-01	DIODE MA22D2800LS0	
		< FUSE >	
△ F351	1-576-439-41	FUSE (0.25A/125V)	
		< FERRITE BEAD/JUMPER RESISTOR >	
FB102	1-469-580-11	INDUCTOR, FERRITE BEAD (1005)	
FB202	1-469-580-11	INDUCTOR, FERRITE BEAD (1005)	
FB302	1-469-580-11	INDUCTOR, FERRITE BEAD (1005)	
FB303	1-400-807-21	BEAD, FERRITE (1005)	
FB304	1-400-807-21	BEAD, FERRITE (1005)	
FB353	1-414-594-11	INDUCTOR, FERRITE BEAD	
FB354	1-216-864-11	SHORT CHIP 0	
FB355	1-414-594-11	INDUCTOR, FERRITE BEAD	
FB357	1-414-594-11	INDUCTOR, FERRITE BEAD	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
FB451	1-469-869-21	INDUCTOR (EMI FERRITE) (2012)		L801	1-400-397-11	INDUCTOR 10uH	
FB452	1-469-869-21	INDUCTOR (EMI FERRITE) (2012)		L802	1-400-343-21	INDUCTOR 22uH	
FB471	1-216-864-11	SHORT CHIP 0		L803	1-216-001-00	RES-CHIP 10 5% 1/10W	
FB501	1-400-620-21	INDUCTOR, FERRITE BEAD (1005)		L804	1-216-001-00	RES-CHIP 10 5% 1/10W	
FB502	1-216-864-11	SHORT CHIP 0		L805	1-216-295-00	SHORT CHIP 0	
FB503	1-216-864-11	SHORT CHIP 0		L901	1-456-711-21	COIL, CHOKE 100uH	
FB801	1-216-864-11	SHORT CHIP 0		L903	1-400-397-11	INDUCTOR 10uH	
FB802	1-216-864-11	SHORT CHIP 0		L904	1-400-397-11	INDUCTOR 10uH	
FB803	1-414-760-21	INDUCTOR, FERRITE BEAD		L906	1-456-677-21	COIL, CHOKE 47uH	
FB807	1-216-864-11	SHORT CHIP 0		L907	1-456-677-21	COIL, CHOKE 47uH	
FB809	1-216-864-11	SHORT CHIP 0		L9001	1-414-398-11	INDUCTOR 10uH	
FB810	1-414-760-21	INDUCTOR, FERRITE BEAD		< COIL/FILTER >			
< IC >				LF301	1-456-827-11	COIL, COMMON MODE CHOKE	
IC301	6-702-894-01	IC AK5356VN-L		LF302	1-456-827-11	COIL, COMMON MODE CHOKE	
IC302	6-706-528-01	IC XC6219B212MR		LF401	1-411-957-11	FILTER, COMMON MODE	
IC352	6-705-942-01	IC TA2131FLG (EL)		LF451	1-456-111-11	COIL, COMMON MODE CHOKE	
@ IC401	6-705-536-01	IC MM1655NCBE		< TRANSISTOR >			
IC471	6-705-715-01	IC XC6219B242MR		Q301	8-729-051-23	TRANSISTOR 2SA2018TL	
@ IC501	6-705-012-11	IC SN761059AZQLR		Q351	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO	
@ IC601	6-705-000-01	IC SC901585VAR2		Q352	8-729-030-46	TRANSISTOR XP4314-TX	
IC602	6-703-317-01	IC R1160N121B-TR-FA		Q353	6-550-353-01	FET SI1410EDH-T1	
* IC603	6-706-038-01	IC XC6209B322MR		Q401	6-550-326-01	TRANSISTOR FZT968TA	
IC604	6-706-079-01	IC R1180Q121C-TR-FA		Q403	6-550-353-01	FET SI1410EDH-T1	
IC605	6-706-214-01	IC TC7SL32FU (TE85R)		Q406	8-729-427-74	TRANSISTOR XP4601	
IC606	6-702-590-01	IC XC61CN1702NR		Q407	8-729-037-75	TRANSISTOR UN9214J-(TX).SO	
IC607	8-759-690-72	IC XC61CN0902NR		Q433	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO	
IC701	6-704-999-01	IC BD6607KN		Q451	6-550-354-01	FET RTQ035P02TR	
@ IC801	8-753-239-65	IC CXD2681-225GG		Q452	8-729-427-74	TRANSISTOR XP4601	
IC804	6-706-089-01	IC XC61CC2502NR		Q471	8-729-429-44	TRANSISTOR XP1501	
IC892	(Not supplied)	IC HN58X2564FPIEZ		Q502	8-729-051-23	TRANSISTOR 2SA2018TL	
IC901	6-704-997-01	IC SC901584EPR2		Q503	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO	
IC902	6-704-245-01	IC XC61CC1702NR		Q504	8-729-037-89	TRANSISTOR 2SC4627J-C (TX).SO	
< JACK >				Q601	6-550-357-01	FET CPH5614-TL-E	
J301	1-815-950-12	JACK (LINE IN (OPTICAL))		Q602	6-550-740-01	FET MCH6617-TL-E	
J352	1-817-447-12	JACK (⌚)		Q603	8-729-053-71	FET TS8K1TB	
J402	1-817-169-11	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 3V)	Q607	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO	
< COIL/RESISTOR >				Q608	8-729-030-46	TRANSISTOR XP4314-TX	
L303	1-400-397-11	INDUCTOR 10uH		Q609	6-550-859-01	FET NTHD4508NT1G	
L351	1-216-295-00	SHORT CHIP 0		Q611	6-550-353-01	FET SI1410EDH-T1	
L502	1-400-397-11	INDUCTOR 10uH		Q612	6-551-273-01	FET RTR025N03TL	
L503	1-400-397-11	INDUCTOR 10uH		Q613	8-729-047-68	FET SSM3K03FE (TPL3)	
L504	1-400-397-11	INDUCTOR 10uH		Q614	8-729-427-74	TRANSISTOR XP4601	
L505	1-400-397-11	INDUCTOR 10uH		Q615	6-550-353-01	FET SI1410EDH-T1	
L506	1-400-397-11	INDUCTOR 10uH		Q616	6-550-353-01	FET SI1410EDH-T1	
L507	1-400-397-11	INDUCTOR 10uH		Q617	8-729-427-74	TRANSISTOR XP4601	
L601	1-414-398-11	INDUCTOR 10uH		Q618	8-729-427-74	TRANSISTOR XP4601	
L603	1-414-398-11	INDUCTOR 10uH		Q801	8-729-047-68	FET SSM3K03FE (TPL3)	
L605	1-416-669-11	INDUCTOR 22uH		Q802	8-729-051-50	FET XP152A12C0MR	
L606	1-400-626-11	INDUCTOR 10uH		Q803	8-729-037-52	TRANSISTOR 2SD2216J-QR (TX).SO	
L607	1-419-881-11	INDUCTOR 47uH		Q901	8-729-053-71	FET TS8K1TB	
L608	1-400-402-21	INDUCTOR 4.7uH		Q902	8-729-427-74	TRANSISTOR XP4601	
L701	1-216-295-00	SHORT CHIP 0		< RESISTOR >			
L702	1-216-295-00	SHORT CHIP 0		R101	1-208-927-11	METAL CHIP 47K 0.5% 1/16W	
				R103	1-208-715-11	METAL CHIP 22K 0.5% 1/16W	
				R151	1-218-965-11	RES-CHIP 10K 5% 1/16W	

@ Replacement of IC401, IC501, IC601 and IC801 used in this set requires a special tool.

MZ-RH710

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R152	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R462	1-218-981-11	RES-CHIP	220K	5%	1/16W
R153	1-218-965-11	RES-CHIP	10K	5%	1/16W						
R154	1-218-965-11	RES-CHIP	10K	5%	1/16W	R463	1-218-945-11	RES-CHIP	220	5%	1/16W
R155	1-218-929-11	RES-CHIP	10	5%	1/16W	R464	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R156	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R466	1-220-804-11	RES-CHIP	2.2M	5%	1/16W
R157	1-208-683-11	METAL CHIP	1K	0.5%	1/16W	R467	1-218-965-11	RES-CHIP	10K	5%	1/16W
R158	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W	R471	1-218-990-11	SHORT CHIP	0		
R160	1-218-990-11	SHORT CHIP	0 (E, MX)			R472	1-218-990-11	SHORT CHIP	0		
R160	1-208-635-11	METAL CHIP	10	0.5%	1/16W (AEP, EE)	R473	1-218-990-11	SHORT CHIP	0		
						R474	1-218-953-11	RES-CHIP	1K	5%	1/16W
R201	1-208-927-11	METAL CHIP	47K	0.5%	1/16W	R475	1-218-990-11	SHORT CHIP	0		
R203	1-208-715-11	METAL CHIP	22K	0.5%	1/16W	R476	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R251	1-218-965-11	RES-CHIP	10K	5%	1/16W						
						R477	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R252	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R478	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R253	1-218-965-11	RES-CHIP	10K	5%	1/16W	R480	1-218-977-11	RES-CHIP	100K	5%	1/16W
R254	1-218-965-11	RES-CHIP	10K	5%	1/16W	R483	1-218-985-11	RES-CHIP	470K	5%	1/16W
R255	1-218-929-11	RES-CHIP	10	5%	1/16W	R484	1-218-981-11	RES-CHIP	220K	5%	1/16W
R256	1-218-961-11	RES-CHIP	4.7K	5%	1/16W						
						R485	1-218-985-11	RES-CHIP	470K	5%	1/16W
R257	1-208-683-11	METAL CHIP	1K	0.5%	1/16W	R486	1-218-990-11	SHORT CHIP	0		
R258	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W	R489	1-218-941-11	RES-CHIP	100	5%	1/16W
R260	1-218-990-11	SHORT CHIP	0 (E)			R490	1-218-941-11	RES-CHIP	100	5%	1/16W
R260	1-208-635-11	METAL CHIP	10	0.5%	1/16W (AEP, EE)	R491	1-218-941-11	RES-CHIP	100	5%	1/16W
R301	1-218-953-11	RES-CHIP	1K	5%	1/16W	R501	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
						R502	1-218-953-11	RES-CHIP	1K	5%	1/16W
R304	1-218-977-11	RES-CHIP	100K	5%	1/16W	R505	1-218-929-11	RES-CHIP	10	5%	1/16W
R305	1-218-941-11	RES-CHIP	100	5%	1/16W	R509	1-218-990-11	SHORT CHIP	0		
R306	1-218-965-11	RES-CHIP	10K	5%	1/16W	R511	1-218-990-11	SHORT CHIP	0		
R308	1-216-864-11	SHORT CHIP	0								
R309	1-218-953-11	RES-CHIP	1K	5%	1/16W	R512	1-218-990-11	SHORT CHIP	0		
						R513	1-218-965-11	RES-CHIP	10K	5%	1/16W
R310	1-218-953-11	RES-CHIP	1K	5%	1/16W	R514	1-218-973-11	RES-CHIP	47K	5%	1/16W
R312	1-218-929-11	RES-CHIP	10	5%	1/16W	R515	1-218-965-11	RES-CHIP	10K	5%	1/16W
R314	1-218-990-11	SHORT CHIP	0			R516	1-218-973-11	RES-CHIP	47K	5%	1/16W
R315	1-218-990-11	SHORT CHIP	0								
R351	1-218-937-11	RES-CHIP	47	5%	1/16W	R517	1-218-965-11	RES-CHIP	10K	5%	1/16W
						R518	1-218-973-11	RES-CHIP	47K	5%	1/16W
R352	1-218-981-11	RES-CHIP	220K	5%	1/16W	R519	1-218-953-11	RES-CHIP	1K	5%	1/16W
R353	1-218-969-11	RES-CHIP	22K	5%	1/16W	R520	1-218-949-11	RES-CHIP	470	5%	1/16W
R354	1-218-965-11	RES-CHIP	10K	5%	1/16W	R524	1-218-945-11	RES-CHIP	220	5%	1/16W
R355	1-218-989-11	RES-CHIP	1M	5%	1/16W						
R356	1-218-977-11	RES-CHIP	100K	5%	1/16W	R525	1-216-864-11	SHORT CHIP	0		
						R526	1-216-864-11	SHORT CHIP	0		
R358	1-220-804-11	RES-CHIP	2.2M	5%	1/16W	R601	1-218-981-11	RES-CHIP	220K	5%	1/16W
R418	1-218-977-11	RES-CHIP	100K	5%	1/16W	R605	1-218-953-11	RES-CHIP	1K	5%	1/16W
R419	1-218-965-11	RES-CHIP	10K	5%	1/16W	R608	1-218-446-11	METAL CHIP	1	5%	1/10W
R420	1-218-961-11	RES-CHIP	4.7K	5%	1/16W						
R421	1-218-977-11	RES-CHIP	100K	5%	1/16W	R609	1-218-977-11	RES-CHIP	100K	5%	1/16W
						R612	1-220-804-11	RES-CHIP	2.2M	5%	1/16W
R422	1-218-989-11	RES-CHIP	1M	5%	1/16W	R616	1-218-953-11	RES-CHIP	1K	5%	1/16W
R423	1-218-981-11	RES-CHIP	220K	5%	1/16W	R617	1-218-953-11	RES-CHIP	1K	5%	1/16W
R424	1-218-985-11	RES-CHIP	470K	5%	1/16W	R618	1-218-977-11	RES-CHIP	100K	5%	1/16W
R425	1-218-957-11	RES-CHIP	2.2K	5%	1/16W						
R432	1-216-864-11	SHORT CHIP	0			R619	1-218-977-11	RES-CHIP	100K	5%	1/16W
						R620	1-218-990-11	SHORT CHIP	0		
R434	1-218-989-11	RES-CHIP	1M	5%	1/16W	R621	1-218-990-11	SHORT CHIP	0		
R435	1-218-990-11	SHORT CHIP	0			R622	1-218-990-11	SHORT CHIP	0		
R436	1-218-981-11	RES-CHIP	220K	5%	1/16W	R623	1-218-990-11	SHORT CHIP	0		
R437	1-218-981-11	RES-CHIP	220K	5%	1/16W						
R438	1-218-977-11	RES-CHIP	100K	5%	1/16W	R624	1-218-985-11	RES-CHIP	470K	5%	1/16W
						R625	1-218-985-11	RES-CHIP	470K	5%	1/16W
R439	1-218-990-11	SHORT CHIP	0			R628	1-218-933-11	RES-CHIP	22	5%	1/16W
R454	1-216-864-11	SHORT CHIP	0			R629	1-220-804-11	RES-CHIP	2.2M	5%	1/16W
R455	1-218-989-11	RES-CHIP	1M	5%	1/16W	R635	1-216-864-11	SHORT CHIP	0		
R456	1-218-985-11	RES-CHIP	470K	5%	1/16W						
						R636	1-218-985-11	RES-CHIP	470K	5%	1/16W

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R638	1-218-981-11	RES-CHIP	220K	5%	1/16W	R818	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R639	1-218-989-11	RES-CHIP	1M	5%	1/16W	R819	1-218-953-11	RES-CHIP	1K	5%	1/16W
R640	1-218-981-11	RES-CHIP	220K	5%	1/16W	R820	1-218-945-11	RES-CHIP	220	5%	1/16W
R641	1-218-989-11	RES-CHIP	1M	5%	1/16W	R821	1-220-804-11	RES-CHIP	2.2M	5%	1/16W
R642	1-218-977-11	RES-CHIP	100K	5%	1/16W	R822	1-218-989-11	RES-CHIP	1M	5%	1/16W
R643	1-218-990-11	SHORT CHIP	0			R823	1-218-965-11	RES-CHIP	10K	5%	1/16W
R645	1-218-985-11	RES-CHIP	470K	5%	1/16W	R824	1-218-990-11	SHORT CHIP	0		
R646	1-218-973-11	RES-CHIP	47K	5%	1/16W	R825	1-218-990-11	SHORT CHIP	0		
R647	1-218-989-11	RES-CHIP	1M	5%	1/16W	R826	1-218-990-11	SHORT CHIP	0		
R648	1-245-456-21	METAL CHIP	1	1%	1/5W	R827	1-218-941-11	RES-CHIP	100	5%	1/16W
R649	1-245-456-21	METAL CHIP	1	1%	1/5W	R829	1-218-990-11	SHORT CHIP	0		
R650	1-216-793-11	METAL CHIP	4.7	5%	1/10W	R832	1-218-965-11	RES-CHIP	10K	5%	1/16W
R652	1-218-990-11	SHORT CHIP	0			R833	1-218-990-11	SHORT CHIP	0		
R653	1-218-969-11	RES-CHIP	22K	5%	1/16W	R837	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R654	1-218-989-11	RES-CHIP	1M	5%	1/16W	R839	1-218-990-11	SHORT CHIP	0		
R657	1-218-990-11	SHORT CHIP	0			R840	1-218-990-11	SHORT CHIP	0		
R659	1-218-977-11	RES-CHIP	100K	5%	1/16W	R841	1-218-929-11	RES-CHIP	10	5%	1/16W
R660	1-218-985-11	RES-CHIP	470K	5%	1/16W	R842	1-218-973-11	RES-CHIP	47K	5%	1/16W
R661	1-218-985-11	RES-CHIP	470K	5%	1/16W	R843	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R662	1-218-985-11	RES-CHIP	470K	5%	1/16W	R844	1-218-990-11	SHORT CHIP	0		
R663	1-218-981-11	RES-CHIP	220K	5%	1/16W	R845	1-216-864-11	SHORT CHIP	0		
R664	1-216-789-11	METAL CHIP	2.2	5%	1/10W	R855	1-218-990-11	SHORT CHIP	0		
R665	1-218-990-11	SHORT CHIP	0			R856	1-218-990-11	SHORT CHIP	0		
R668	1-216-864-11	SHORT CHIP	0			R857	1-218-985-11	RES-CHIP	470K	5%	1/16W
R670	1-218-990-11	SHORT CHIP	0			R858	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R671	1-218-990-11	SHORT CHIP	0			R860	1-218-929-11	RES-CHIP	10	5%	1/16W
R673	1-218-990-11	SHORT CHIP	0			R861	1-218-990-11	SHORT CHIP	0		
R675	1-220-804-11	RES-CHIP	2.2M	5%	1/16W	R862	1-218-989-11	RES-CHIP	1M	5%	1/16W
R677	1-216-864-11	SHORT CHIP	0			R863	1-218-990-11	SHORT CHIP	0		
R679	1-218-945-11	RES-CHIP	220	5%	1/16W	R864	1-218-945-11	RES-CHIP	220	5%	1/16W
R680	1-216-864-11	SHORT CHIP	0			R865	1-218-985-11	RES-CHIP	470K	5%	1/16W
R681	1-218-989-11	RES-CHIP	1M	5%	1/16W	R866	1-218-990-11	SHORT CHIP	0		
R682	1-218-989-11	RES-CHIP	1M	5%	1/16W	R867	1-218-989-11	RES-CHIP	1M	5%	1/16W
R683	1-218-989-11	RES-CHIP	1M	5%	1/16W	R868	1-218-990-11	SHORT CHIP	0		
R684	1-218-965-11	RES-CHIP	10K	5%	1/16W	R869	1-218-990-11	SHORT CHIP	0		
R685	1-218-965-11	RES-CHIP	10K	5%	1/16W	R876	1-218-990-11	SHORT CHIP	0		
R706	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R878	1-218-937-11	RES-CHIP	47	5%	1/16W
R707	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R879	1-218-937-11	RES-CHIP	47	5%	1/16W
R708	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R880	1-218-937-11	RES-CHIP	47	5%	1/16W
R709	1-218-965-11	RES-CHIP	10K	5%	1/16W	R888	1-218-981-11	RES-CHIP	220K	5%	1/16W
R710	1-218-965-11	RES-CHIP	10K	5%	1/16W	R894	1-218-977-11	RES-CHIP	100K	5%	1/16W
R711	1-218-965-11	RES-CHIP	10K	5%	1/16W	R895	1-218-977-11	RES-CHIP	100K	5%	1/16W
R712	1-218-990-11	SHORT CHIP	0			R897	1-218-990-11	SHORT CHIP	0		
R713	1-218-953-11	RES-CHIP	1K	5%	1/16W	R903	1-218-989-11	RES-CHIP	1M	5%	1/16W
R801	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R904	1-218-989-11	RES-CHIP	1M	5%	1/16W
R802	1-218-990-11	SHORT CHIP	0			R906	1-218-973-11	RES-CHIP	47K	5%	1/16W
R804	1-218-933-11	RES-CHIP	22	5%	1/16W	R907	1-218-965-11	RES-CHIP	10K	5%	1/16W
R805	1-218-933-11	RES-CHIP	22	5%	1/16W	R908	1-218-969-11	RES-CHIP	22K	5%	1/16W
R806	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R910	1-218-969-11	RES-CHIP	22K	5%	1/16W
R807	1-218-957-11	RES-CHIP	2.2K	5%	1/16W	R912	1-218-981-11	RES-CHIP	220K	5%	1/16W
R808	1-218-961-11	RES-CHIP	4.7K	5%	1/16W	R914	1-208-911-11	METAL CHIP	10K	0.5%	1/16W
R809	1-218-990-11	SHORT CHIP	0			R917	1-218-981-11	RES-CHIP	220K	5%	1/16W
R810	1-218-990-11	SHORT CHIP	0			R918	1-218-985-11	RES-CHIP	470K	5%	1/16W
R811	1-218-965-11	RES-CHIP	10K	5%	1/16W	R920	1-218-985-11	RES-CHIP	470K	5%	1/16W
R812	1-218-977-11	RES-CHIP	100K	5%	1/16W	R922	1-218-977-11	RES-CHIP	100K	5%	1/16W
R813	1-218-945-11	RES-CHIP	220	5%	1/16W	R924	1-218-985-11	RES-CHIP	470K	5%	1/16W
R815	1-218-981-11	RES-CHIP	220K	5%	1/16W	R925	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R817	1-218-953-11	RES-CHIP	1K	5%	1/16W						

MZ-RH710

MAIN

SWITCH

Ref. No.	Part No.	Description			Remark
R926	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R927	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R929	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R930	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R931	1-218-990-11	SHORT CHIP	0		
R933	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R934	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R935	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R936	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R937	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R938	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R951	1-218-990-11	SHORT CHIP	0		
R952	1-218-990-11	SHORT CHIP	0		
R953	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R954	1-218-985-11	RES-CHIP	470K	5%	1/16W
R955	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R958	1-218-973-11	RES-CHIP	47K	5%	1/16W
R959	1-218-985-11	RES-CHIP	470K	5%	1/16W
R960	1-218-990-11	SHORT CHIP	0		
R964	1-218-977-11	RES-CHIP	100K	5%	1/16W
< SWITCH >					
S892	1-771-339-41	SWITCH, PUSH (HALF LOCK)			
S893	1-762-805-21	SWITCH, PUSH (1 KEY) (OPEN/COLSE DETECT)			
S894	1-786-703-21	SWITCH, PUSH (2 KEY) (PROTECT DETECT, Hi-MD PROTECT DETECT)			
< THERMISTOR (POSITIVE) >					
THP401	1-805-580-11	THERMISTOR, POSITIVE			
< VIBRATOR >					
X801	1-813-353-21	VIBRATOR, CERAMIC (48MHz)			
X802	1-813-314-11	VIBRATOR, CRYSTAL (22.5792MHz)			

A-1104-958-A SWITCH BOARD					

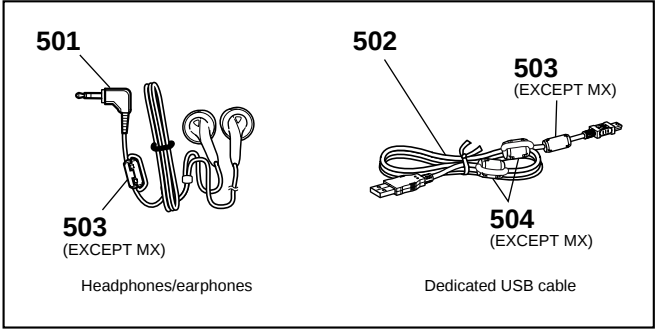
Parts other than the following on the SWITCH board cannot be exchanged. Replace the entire mounted board.					
	2-022-247-01	RUBBER CONDUCTIVE			
	2-541-969-01	HOLDER (LCD)			
< LIQUID CRYSTAL DISPLAY >					
LCD101	1-805-632-11	LCD			

MISCELLANEOUS					

△ 163	X-2055-997-1	OP SERVICE ASSY (ABX-U) (including HR601(OVER WRITE HEAD))			
M701	8-835-782-12	MOTOR, DC SSM18D/C-NP (SPINDLE)			
M702	1-787-143-11	MOTOR, DC (SLED)			
M703	1-477-519-21	MOTOR UNIT, DC (OVER WRITE HEAD UP/DOWN)			

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
ACCESSORIES			

	1-400-878-11	FILTER, CLAMP (FERRITE CORE) (for optional AC power adaptor & optional line cable) (EXCEPT MX)	
	2-593-568-11	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT MX)	
	2-593-568-21	MANUAL, INSTRUCTION (FRENCH) (AEP)	
	2-593-568-31	MANUAL, INSTRUCTION (GERMAN) (AEP)	
	2-593-568-41	MANUAL, INSTRUCTION (SPANISH) (AEP, MX)	
	2-593-568-51	MANUAL, INSTRUCTION (DUTCH) (AEP)	
	2-593-568-61	MANUAL, INSTRUCTION (SWEDISH) (AEP)	
	2-593-568-71	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
	2-593-568-81	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
	2-593-568-91	MANUAL, INSTRUCTION (FINNISH) (AEP)	
	2-593-569-11	MANUAL, INSTRUCTION (CZECH) (EE)	
	2-593-569-21	MANUAL, INSTRUCTION (HUNGARIAN) (EE)	
	2-593-569-31	MANUAL, INSTRUCTION (POLISH) (EE)	
	2-593-569-41	MANUAL, INSTRUCTION (SLOVAKIAN) (EE)	
	2-593-569-51	MANUAL, INSTRUCTION (RUSSIAN) (EE)	
	2-593-569-61	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (E)	
	3-228-300-11	CASE, BELT CLIP CARRYING (MX)	
	X-2050-995-2	CD-ROM (APPLICATION) ASSY (SonicStage/MD Simple Burner)	
501	8-912-744-94	EARPHONES MDR-E808LPB29 SET	
502	1-830-472-11	CORD, CONNECTION (USB)	
503	1-400-877-11	FILTER, CLAMP (FERRITE CORE) (for USB cable & earphone) (EXCEPT MX)	
504	1-400-878-11	FILTER, CLAMP (FERRITE CORE) (for USB cable) (EXCEPT MX)	



MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.

Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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