MZ-N1

SERVICE MANUAL

Ver 1.6 2003. 11



US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model
Chinese Model
Tourist Model

US and foreign patents licensed from Dolby Laboratories.

- OpenMG, “MagicGate”, “MagicGate Memory Stick”, “Memory Stick”, VAIO,MusicClip and their logos are trademarks of Sony Corporation.
- “WALKMAN” is a trademark of Sony Corporation.
- Microsoft,Windows,Windows NT and Windows Media are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.
- IBM and PC/AT are registered trademarks of International Business Machines Corporation.
- Macintosh is a trademark of Apple Computer,Inc.in the United States and/or other countries.
- All other trademarks are trademarks of their respective owners. ™ and ® marks are omitted in this manual.

Model Name Using Similar Mechanism	NEW
Mechanism Type	MT-MZN1-171
Optical Pick-up Name	LCX-5R

SPECIFICATIONS

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 μW
(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.)
Recording and playback time (when using MDW-80)
Maximum 160 min. in monaural
Maximum 320 min. in stereo
Revolutions
382 rpm to 2,700 rpm (CLV)
Error correction
ACIRC (Advanced Cross Interleave Reed Solomon Code)
Sampling frequency
44.1 kHz
Sampling rate converter
Input: 32 kHz/44.1 kHz/48 kHz
Coding
ATRAC (Adaptive TRansform Acoustic Coding)
ATRAC3 — LP2/LP4

– Continued on next page –

PORTABLE MINIDISC RECORDER

9-873-443-07
2003K05-1
© 2003.11
Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

Modulation system
EFM (Eight to Fourteen Modulation)
Frequency response
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Inputs 1)
MIC: stereo mini-jack
(minimum input level 0.25 mV)
Line in:
stereo mini-jack for anolog input
(minimum input level 49 mV)
optical (digital) mini-jack for optical
(digital) input
Outputs
🎧/LINE OUT 2): stereo mini-jack (dedicated remote control jack)/194 mV (10 kohm)
Maximum output (DC) 2)
Headphones: 5 mW + 5 mW (16 ohm)
Power requirement
Sony AC Power Adaptor connected at the DC IN 3V jack (country model in parentheses):
120 V AC, 60 Hz (USA, Canada and Taiwan)
220 V AC, 50/60 Hz (Continental Europe)
240 V AC, 50 Hz (Australia)
220 V AC, 50 Hz (China)
230 - 240 V AC, 50 Hz (U.K. and Hong Kong)
110/220 V AC, 60 Hz (Korea)
100 - 240 V AC, 50/60 Hz (Other countries)
The recorder:
Nickel metal hydride rechargeable battery NH-14WM(A) 1.2V 1350 mAh (MIN) Ni-MH
LR6 (SG) alkaline battery
USB cradle:
AC power adaptor DC 3V
Dimensions
Approx. 77.7 × 71.4 ×16.4 mm (w/h/d)
($3^{1}/_{8} \times 2^{7}/_{8} \times 2^{1}/_{32}$ in.)
Mass
Approx. 87 g (3.0 oz) the recorder only

1) The LINE IN (OPT) jack is used to connect either a digital (optical) cable or a line (analog) cable.
2) The 🎧/LINE OUT jack connects either headphones/earphones or a line cable.

Supplied accessories
AC power adaptor (1)
Headphones/earphones with a remote control (1)
Optical cable (1)
USB cradle (1)
USB cable (1)
Nickel metal hydride rechargeable battery NH-14WM(A) (1)
CD-ROM (1)*
Dry battery case (1)
Rechargeable battery carrying case (1)
Recordable MD (USA and Canada models only) (1)
Carrying pouch/carrying case with a belt clip (except USA model) (1)
AC plug adaptor (Sony world model only) (1)

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

Design and specitications are subject to change without notice.

Battery life 1)

When recording 2)

(Unit: approxi.hours)(JEITA 3))

Batteries	SP Stereo	LP2 Stereo	LP4 Stereo
Nickel metal hydride rechargeable battery 4)	12	17	21
LR6 (SG) Sony alkaline dry battery 5)	12	19	23
Nickel metal hydride rechargeable battery 4) + One LR6 (SG) 5)	30	43	52

1) The battery life may be shorter due to operating conditions and the temperature of the location.
2) When you record, use a fully charged rechargeable battery. Recording time may differ according to the alkaline batteries.
3) Measured in accordance with the JEITA (Japan Electronics and Information Technology Industries Association) standard.
4) When using a 100% fully charged nickel metal hydride rechargeable battery (NH-14WM(A)).
5) When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan).

When playing

(Unit: approxi.hours)(JEITA 1))

Batteries	SP Stereo	LP2 Stereo	LP4 Stereo
Nickel metal hydride rechargeable battery 2)	30	38	42
LR6 (SG) Sony alkaline dry battery 3)	44	52	62
Nickel metal hydride rechargeable battery 2) + One LR6 (SG) 3)	79	95	110

1) Measured in accordance woth the JEITA (Japan Electronics and Information Technology Industries Association) standard.
2) When using a 100% fully charged nickel metal hydride rechargeable battery (NH-14WM(A)).
3) When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan)

SAFETY-RELATED COMPONENT WARNING!!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

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

On power sources

- Use house current, nikel metal hydride rechargeable battery, LR6 (SG) battery, or car battery.
- For use in your house: For the supplied battery charging stand, use the AC power adaptor supplied with this recorder. Do not use any other AC power adaptor since it may cause the recorder to malfunction.

Polarity of the plug



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.

UNLEADED SOLDER

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

: LEAD FREE MARK

Unleaded solder has the following characteristics.

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

TABLE OF CONTENTS

1. SERVICING NOTES 4

2. GENERAL 5

3. DISASSEMBLY
3-1. Disassembly Flow 6
3-2. Bottom Panel Assy 7
3-3. Upper Panel Section 7
3-4. LCD Module, Upper Panel Assy 8
3-5. MAIN Board Section 8
3-6. Battery Case Assy, MAIN Board 9
3-7. MD Mechanism Deck (MT-MZN1-171), Chassis Assy 9
3-8. OP Service Assy (LCX-5R) 10
3-9. Holder Assy 11
3-10. DC Motor (Sled) (M602) 11
3-11. DC SSM18B Motor (Spindle) (M601), DC Motor (Over Write Head UP/DOWN) (M603) 12

4. TEST MODE 13

5. ELECTRICAL ADJUSTMENTS 19

6. DIAGRAMS
6-1. Block Diagram – SERVO/USB Section – 30
6-2. Block Diagram – AUDIO Section – 31
6-3. Block Diagram – DISPLAY/KEY CONTROL/ POWER SUPPLY Section – 32
6-4. Note for Printed Wiring Board and Schematic Diagrams 33
6-5. Printed Wiring Board – MAIN Board (Component Side) – 34
6-6. Printed Wiring Board – MAIN Board (Conductor Side) – 35
6-7. Schematic Diagram – MAIN Board (1/4) – 36
6-8. Schematic Diagram – MAIN Board (2/4) – 37
6-9. Schematic Diagram – MAIN Board (3/4) – 38
6-10. Schematic Diagram – MAIN Board (4/4) – 39
6-11. IC Pin Function Description 46

7. EXPLODED VIEWS
7-1. Upper Panel Section 53
7-2. Bottom Panel Section 54
7-3. Chassis Section 55
7-4. Main Board Section 56
7-5. MD Mechanism Deck Section (MT-MZN1-171) 57

8. ELECTRICAL PARTS LIST 58

SECTION 1
SERVICING NOTES

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

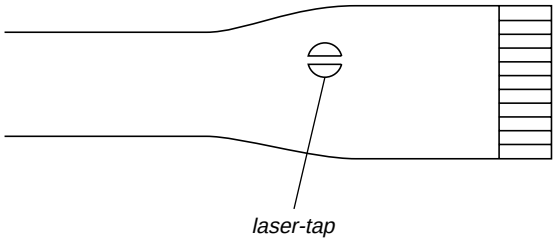
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter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

Never look into the laser diode emission from right above when checking it for adjustment. It is feared that you will lose your sight.

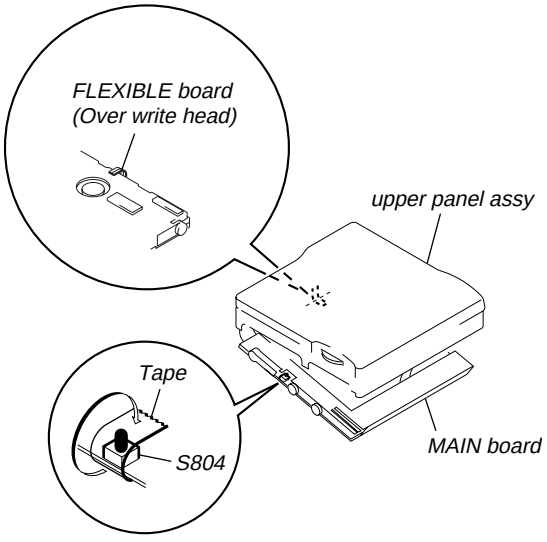
NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (LCX-5R)

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform measures against electrostatic break-down sufficiently before the operation. The flexible board is easily damaged and should be handled with care.



OPTICAL PICK-UP FLEXIBLE BOARD

- In performing the repair with the power supplied to the set, removing the MAIN board causes the set to be disabled.
  In such a case, fix a convex part of the open/close detect switch (S804 on MAIN board) with a tape in advance.
  Handle the FLEXIBLE board (over write head) with care, as it has been soldered directly to the MAIN board.
  In repairing the component side of MAIN board, connect the FLEXIBLE board (over write head) and the MAIN board with the lead wires in advance. (See page 8)



- The shipment data will be cleared when the NV is reset. Therefore, change the NV adjusted values following the Change of NV Adjusted Values immediately after the NV was reset. (See page 19)

- The set having the microcomputer version 1.000 to 1.300 requires the patch data in the nonvolatile memory (IC802) to be rewritten using the application, when the MAIN board was replaced. (See page 27)
  On the set having the microcomputer version 1.400 or later, rewriting the patch data is unnecessary.

- Replacement of CXD2677-205GA (IC801) used in this set requires a special tool.

System requirements

- IBM PC/AT or Compatible (The software does not run on Macintosh.)
  CPU: MMX™ Pentium® 233 MHz or higher (Pentium® II 400 MHz or higher is recommended.)
  Hard disk drive space: 60 MB or more (The amount of necessary space depends on the version of the Windows OS or the size of your audio files.)
  RAM: 64 MB or higher (128 MB or higher is recommended for Windows® XP Home Edition/Windows® XP Professional.)
  CD-ROM drive (capable of digital playback by WDM)
  Sound Board
  USB port (supports USB 2.0 Full Speed (previously USB 1.1))
- Operating System: Windows® 98/Windows® 98 Second Edition/Windows® 2000 Professional/Windows® Me/Windows® XP Home Edition/Windows® XP Professional (manufacturer installed)
  The NTFS format of Windows® 2000 Professional, Windows® XP Home Edition, or Windows® XP Professional (manufacturer-installed) is supported only when used with the standard (factory) settings.
  This software is not supported by the following environments.
  – Windows® 95, Windows® NT, or other versions of Windows® NT (such as Server)
  – An environment that is an upgrade of the original manufacturer-installed operating system, as in the following examples:
    Windows® 3.1/Windows® 95 → Windows® 98 (or Windows® 98 Second Edition/Windows® Me)
    Windows® Me/Windows® 2000 Professional → Windows® XP
  – Multi-boot environment with Windows® 2000 (or Windows® XP) and Windows® 98 (or Windows® 98 Second Edition/Windows® Me)
- Display: High (16bit) Color or more (800 × 480 dot or more)
- Internet access: for Web registration and EMD services
  for software upgrades and CDDB2 use. (US and Canadian models)
- Windows Media Player (version 7.0 or higher) installed for playing WMA files.

Notes

- Trouble-free operation is not assured within a multiple-monitor environment.
- We do not assure trouble-free operation for all computers satisfying the system requirements.
- Trouble-free operation is not guaranteed following the self-conducted upgrade of home-built PCs or operating systems.
- We do not assure trouble-free operation of the system suspend, sleep, or hibernation function on all computers.
- For details, refer to "Net MD Help" of the online help.

Note
The optical digital output connector (on computers provided with one) may be disabled during playback for the protection of copyrights.

Notes on using OpenMG Jukebox with Windows 2000/Windows XP

If your computer is Windows 2000 Professional, Windows XP Home Edition, or Windows XP Professional, please be aware of the following before instaling OpenMG Jukebox.

1 With Windows 2000 Professional, you must log on as "Administrators" (or with the user name "Administrator") to install OpenMG Jukebox.
2 With Windows XP Home Edition or Windows XP Professional, you must log on with user name "Computer Administrator" to install OpenMG Jubebox. To check whether a user name has the attribute of "Computer Administrator" or not, go to [Control Panel] - [User Account].

Notes on using OpenMG Jukebox with Windows XP/Windows Me

If Windows XP/Windows Me is installed in your computer, and you perform the "System Restore" function of the Windows "System Tools," the songs managed by OpenMG Jukebox may become corrupted and rendered unplayable.
Therefore, before executing "System Restore," back up the songs using "OpenMG Jukebox Backup Tool" first.
Then, after the "System Restore" function is finished, restore the songs using "OpenMG Jukebox Backup Tool" to ensure the integrity and reliability of song playback.
For more information about backup, refer to the online Help for OpenMG Jukebox.

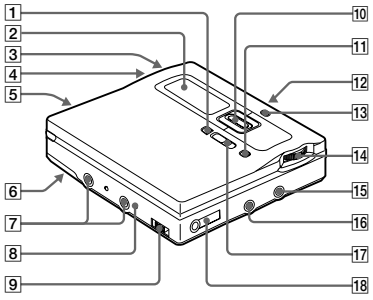
Note
When songs become unplayable by executing "System Restore," an error dialog box may be displayed. In this case, follow the displayed messages.

SECTION 2
GENERAL

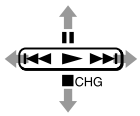
This section is extracted from instruction manual.

Looking at controls

The recorder



1 END SEARCH button
2 Display window
3 VOLUME +/– buttons
The VOLUME + button has a tactile dot.
4 Battery compartment
5 T MARK button
6 HOLD switch (at the rear)
7 Terminals for attaching dry battery case
8 DC IN 3V jack
9 USB cradle connecting jack
10 Control bar
• Moves the cursor in the display.

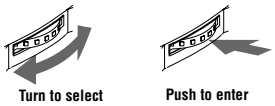


• Other operations

Operation	Function
Press ► [1]	play/enter
Press I◄◄	rewind
Press ►►I	fast forward
Flip towards ❚❚	pause
Flip towards ■	stop

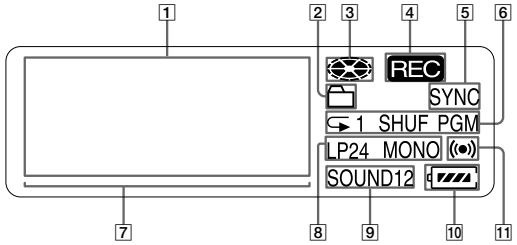
[1] The ► button has a tactile dot.

11 GROUP/CANCEL button
12 OPEN switch
13 Charge lamp
14 Jog dial (MENU/ENTER)



15 LINE IN (OPT) jack
16 MIC (PLUG IN POWER) jack
There is a tactile dot beside the MIC (PLUG IN POWER) jack.
17 REC (record) switch
18 ∩ (headphones/earphones)/LINE OUT jack

The display window of the recorder

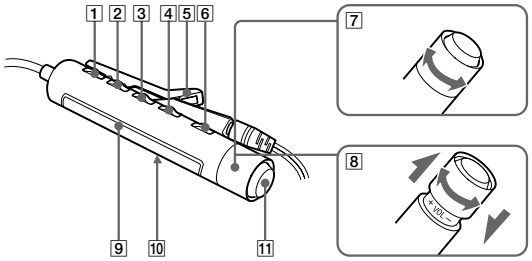


1 Character information display
Displays the disc and track names, date, error messages, track numbers, etc.
2 Group indication
3 Disc indication
Shows that the disc is rotating for recording, playing or editing an MD.
4 REC indication
Lights up while recording. When flashing, the recorder is in record standby mode.
5 SYNC (synchro-recording) indication
6 Play mode indication
Shows the play mode (shuffle play, program play, repeat play, etc.) of the MD.
7 Level meter
8 LP2 (LP2 stereo), LP4 (LP4 stereo), MONO (monaural) indication
9 Sound indication
Lights up when Digital Sound Preset is on.
10 Battery indication
Shows approximate battery condition.
11 Melody timer indication

12

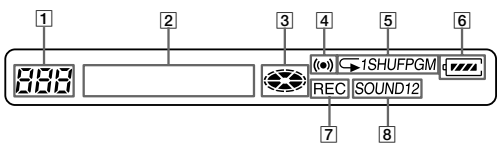
13

The headphones/earphones with a remote control



1 DISPLAY button
2 PLAY MODE button
3 RPT/ENT (repeat/enter) button
4 SOUND button
5 Clip
6 ❚❚ (pause) button
7 Control (I◄◄ /► ►►I)
►►I : play, AMS, FF
I◄◄ : REW
Turn or turn and hold to play, fast forward or rewind.
You can quickly fast forward or rewind without listening to the playback sound.
8 Control (VOLUME +/–)
Pull and turn to adjust the volume.
9 Display window
10 HOLD switch
11 ■ (stop) button
May be used as the "Enter" button, depending on the function.

The display window of the remote control



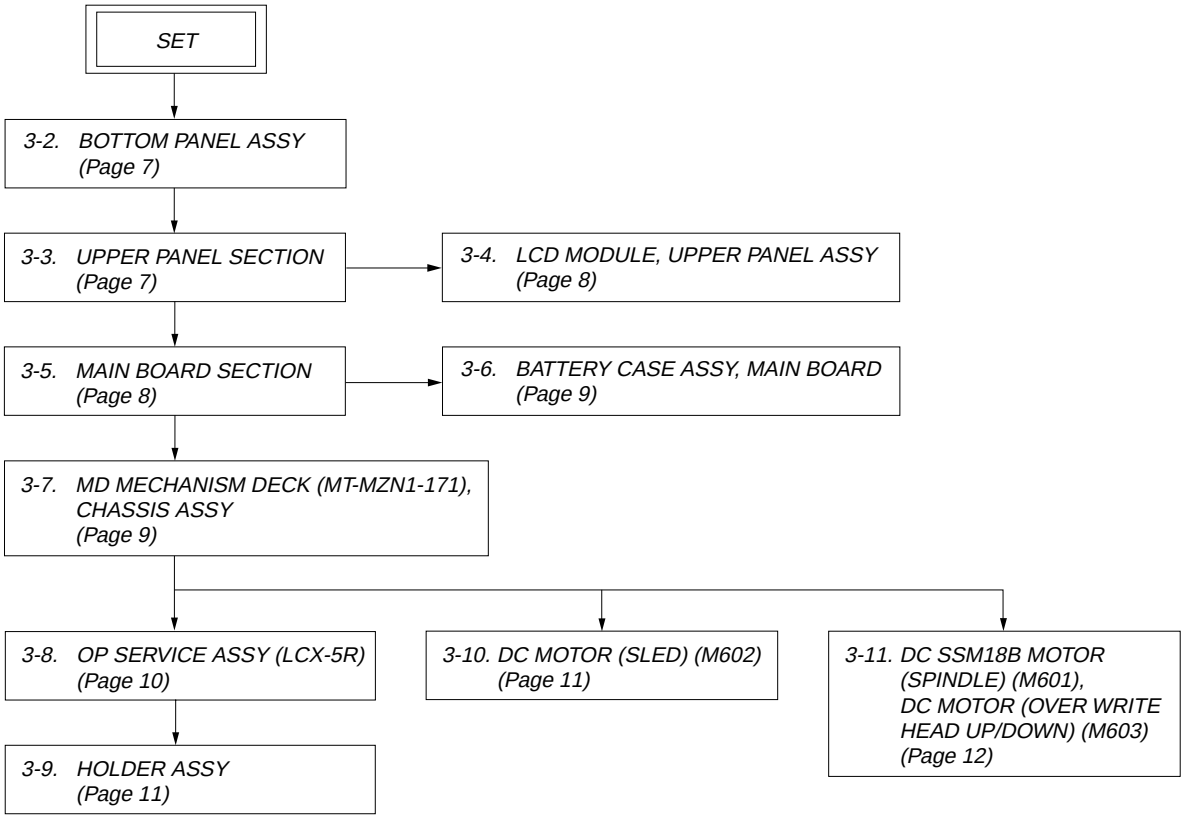
1 Track number display
2 Character information display
3 Disc indication
4 Melody timer indication
5 Play mode indication
6 Battery level indication
7 REC indication
8 SOUND indication

14

SECTION 3
DISASSEMBLY

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

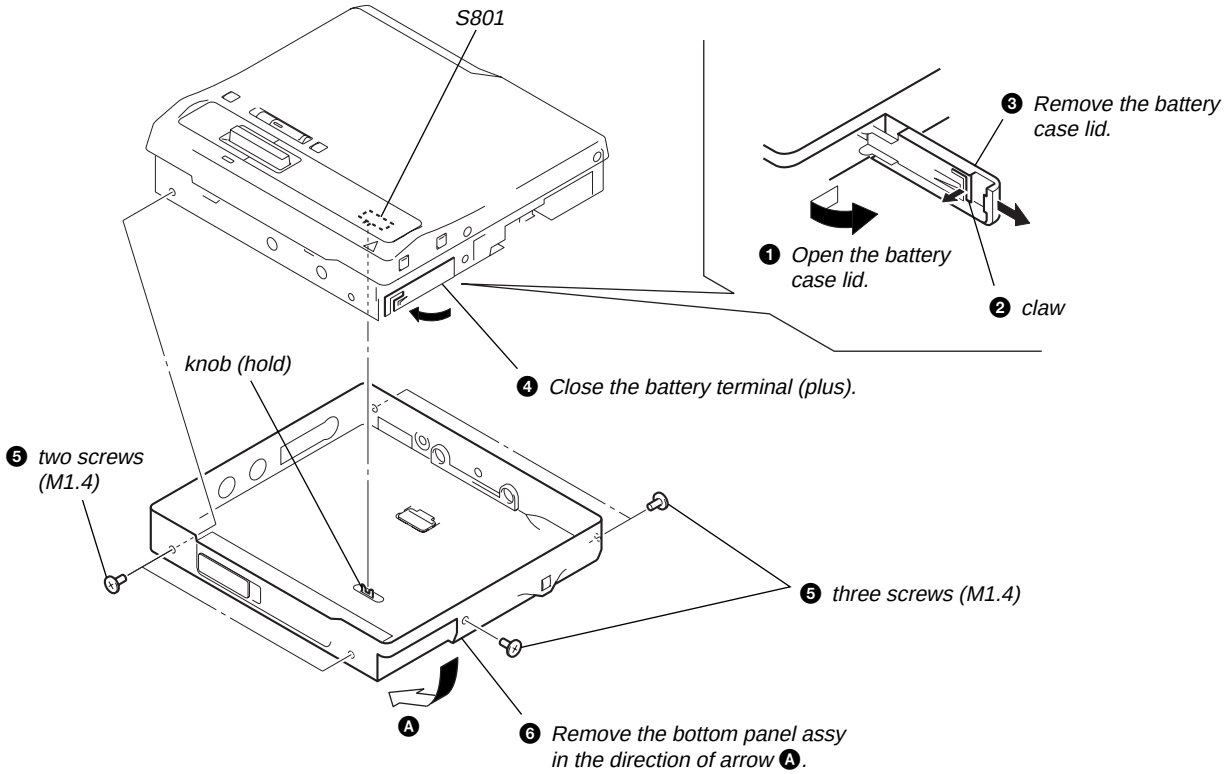
3-1. DISASSEMBLY FLOW



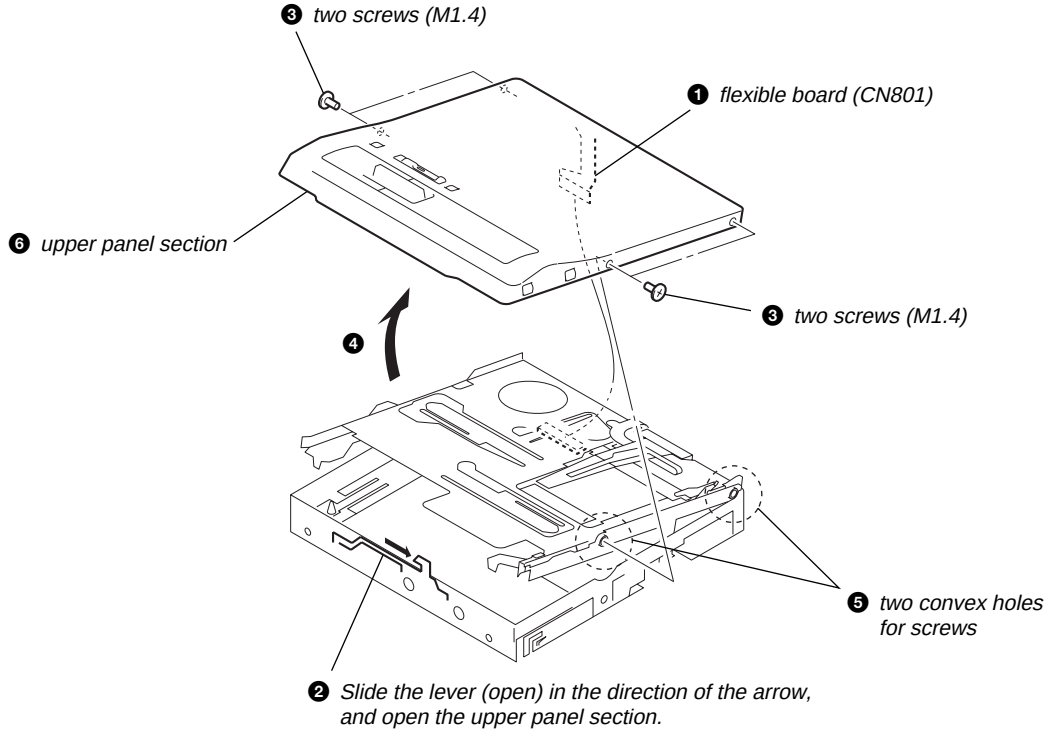
Note: Follow the disassembly procedure in the numerical order given.

3-2. BOTTOM PANEL ASSY

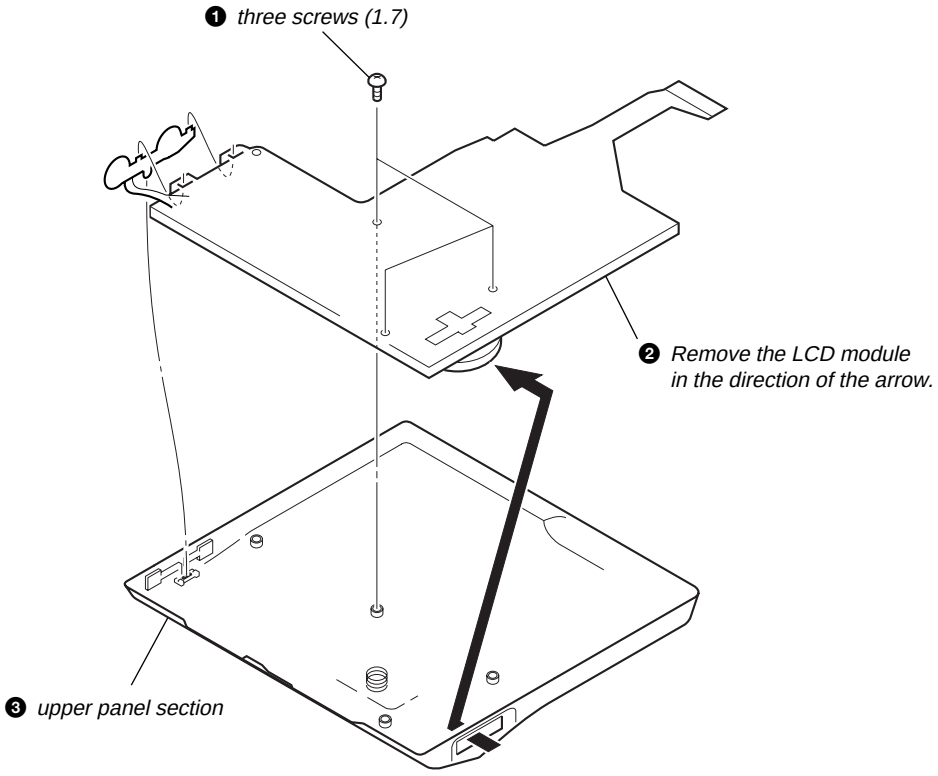
Note : On installation, adjust the position of both switch (S801) and knob (hold).



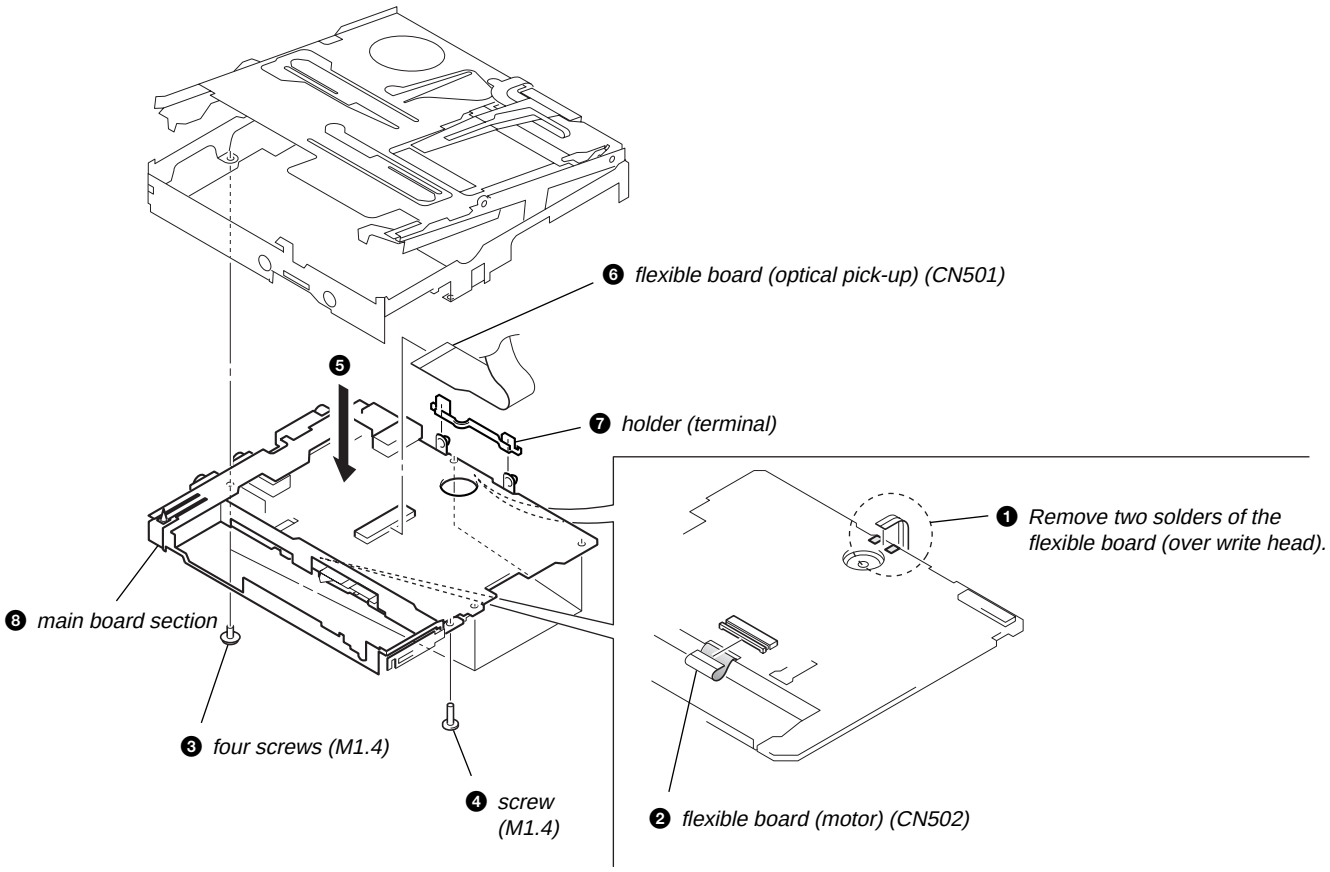
3-3. UPPER PANEL SECTION



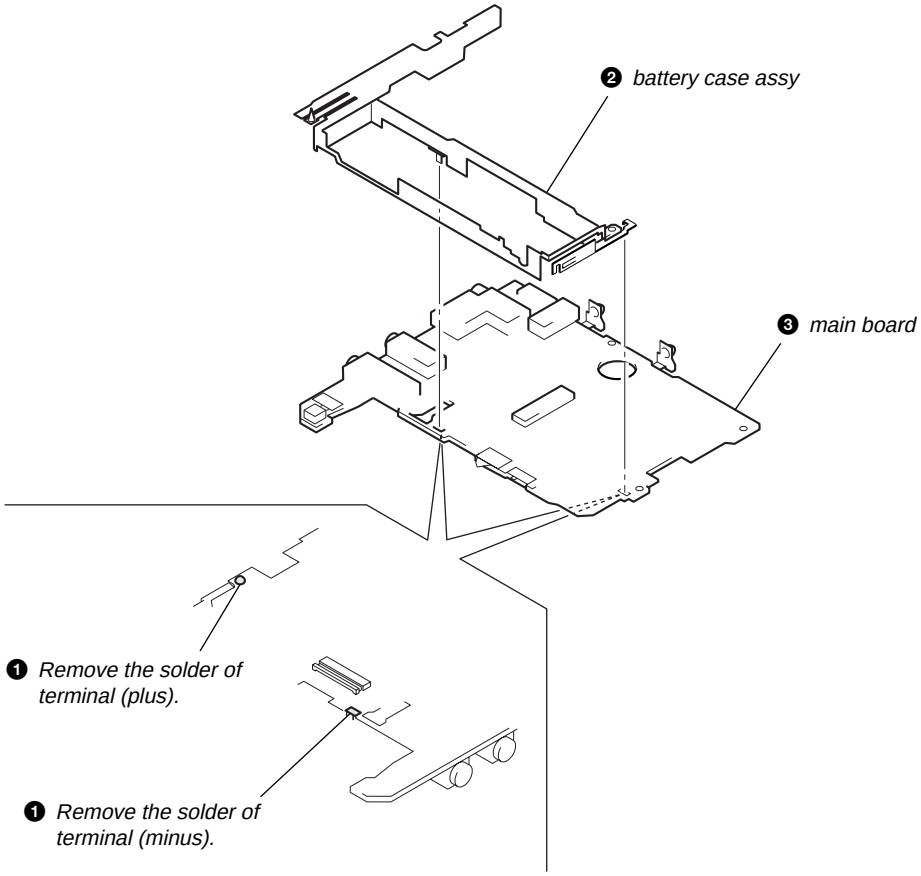
3-4. LCD MODULE, UPPER PANEL ASSY



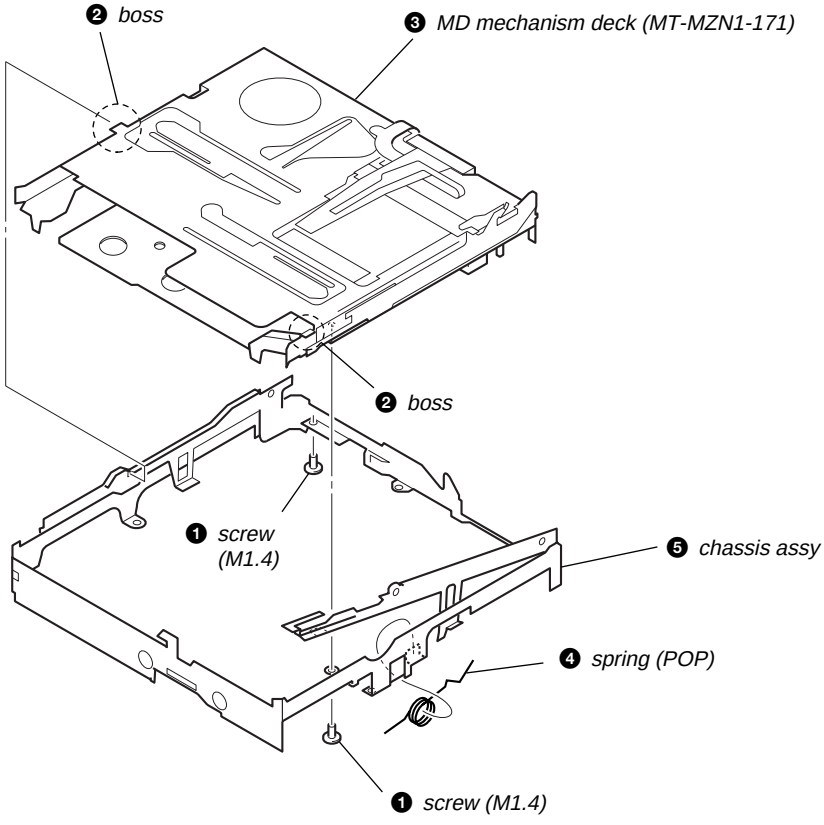
3-5. MAIN BOARD SECTION



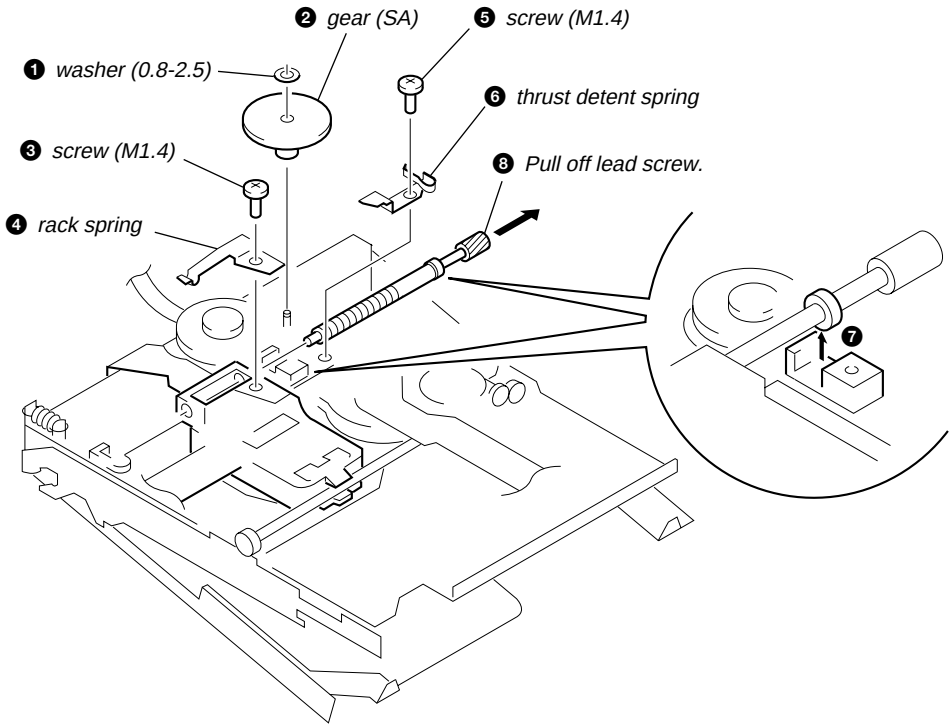
3-6. BATTERY CASE ASSY, MAIN BOARD

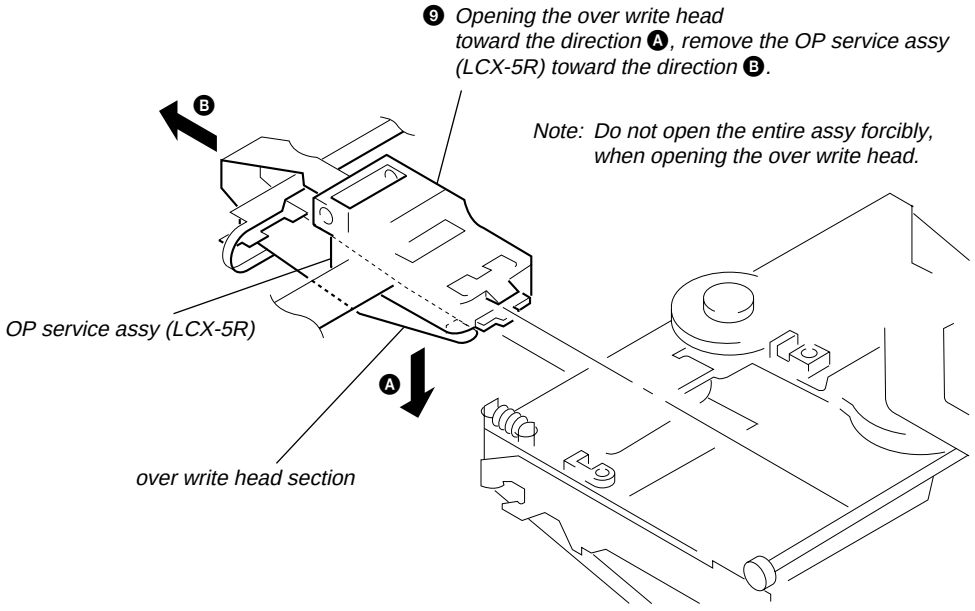


3-7. MD MECHANISM DECK (MT-MZN1-171), CHASSIS ASSY

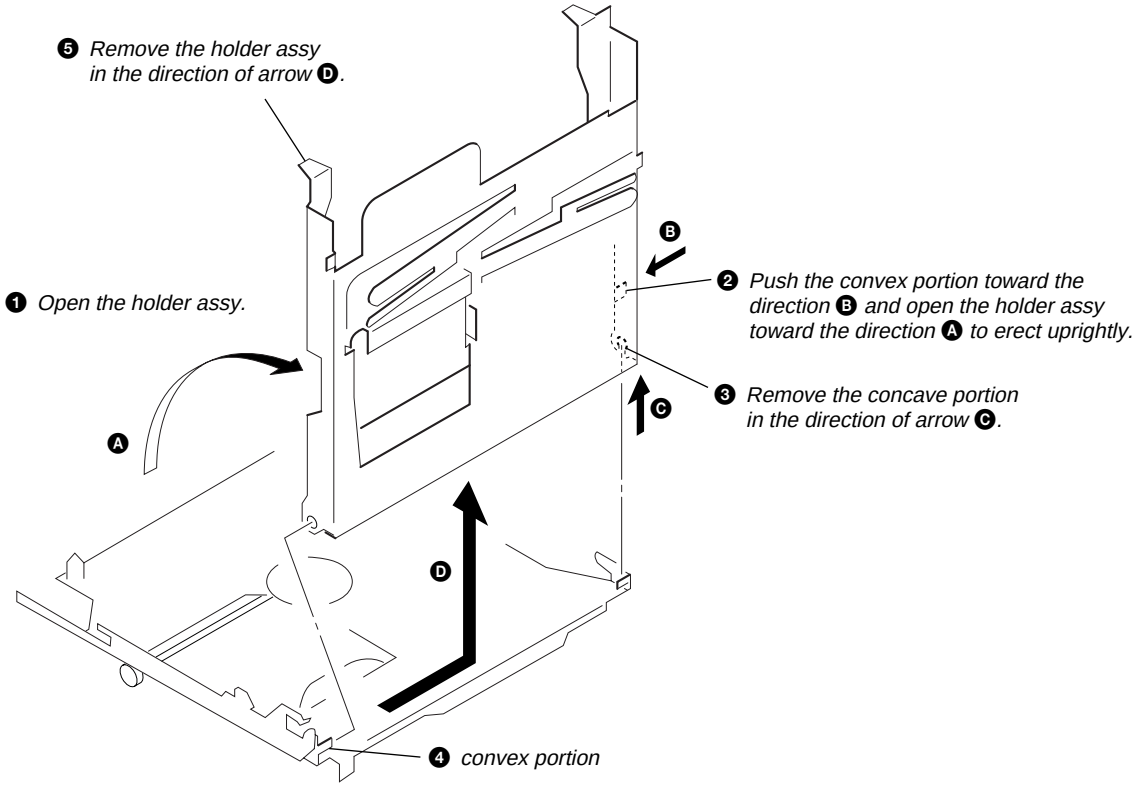


3-8. OP SERVICE ASSY (LCX-5R)

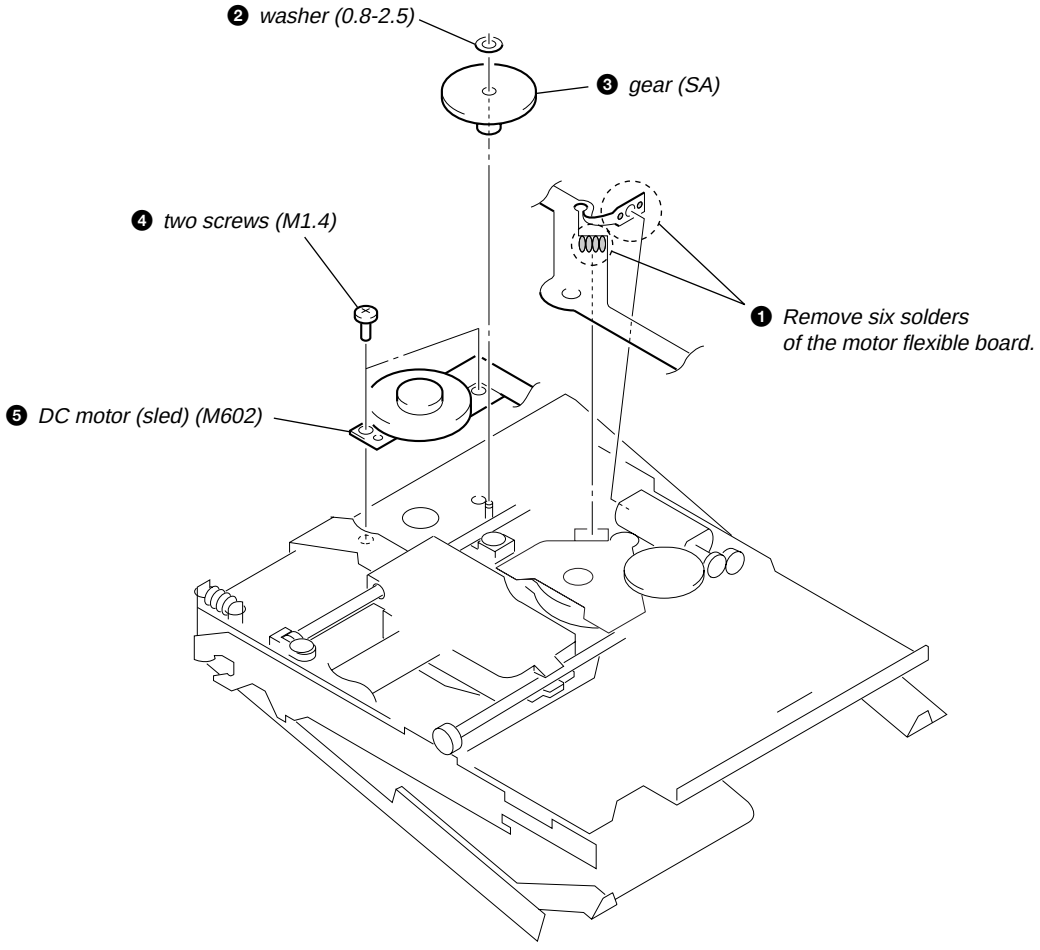




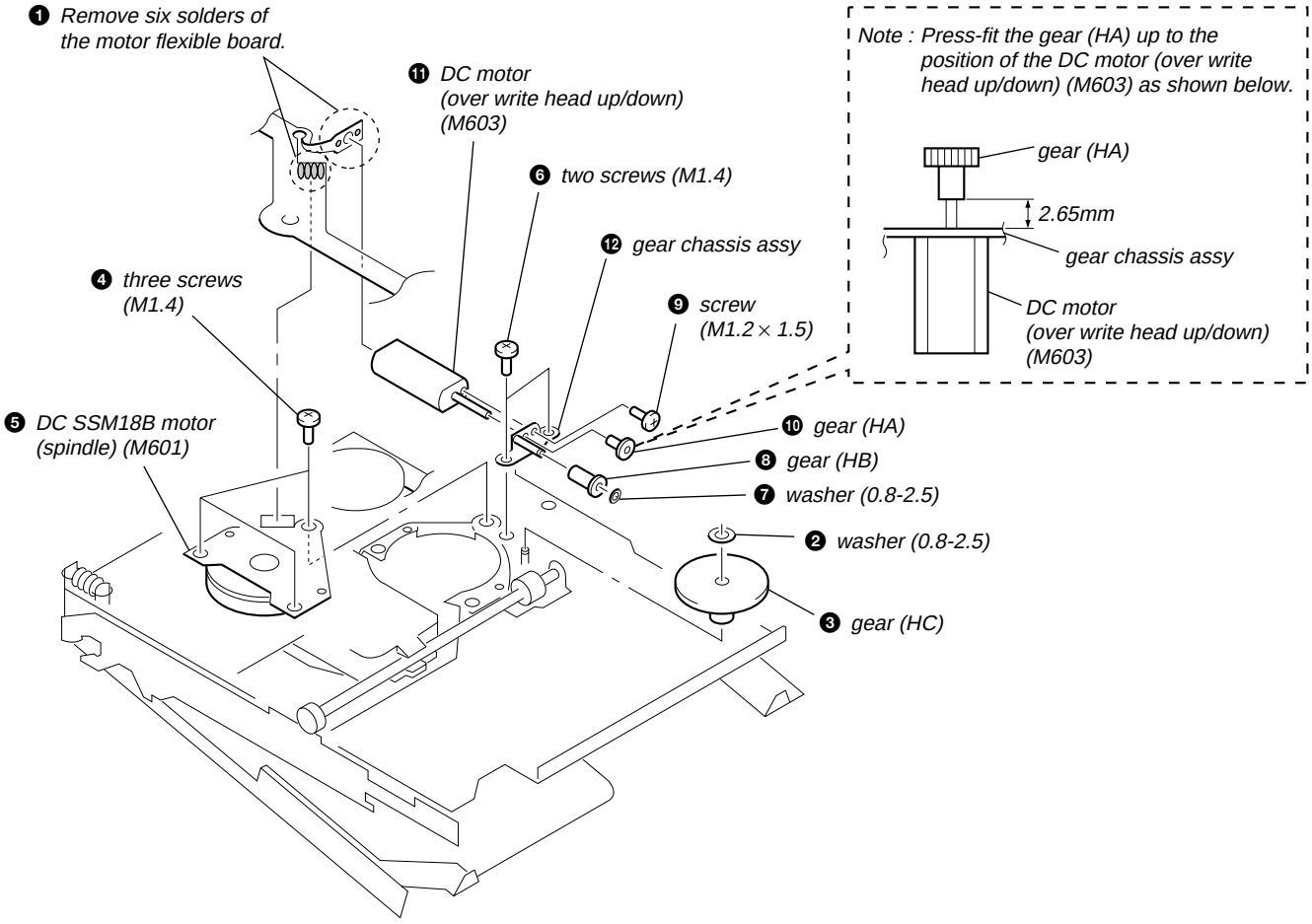
3-9. HOLDER ASSY



3-10. DC MOTOR (SLED) (M602)



3-11. DC SSM18B MOTOR (SPINDLE) (M601), DC MOTOR (OVER WRITE HEAD UP/DOWN) (M603)



SECTION 4
TEST MODE

Outline

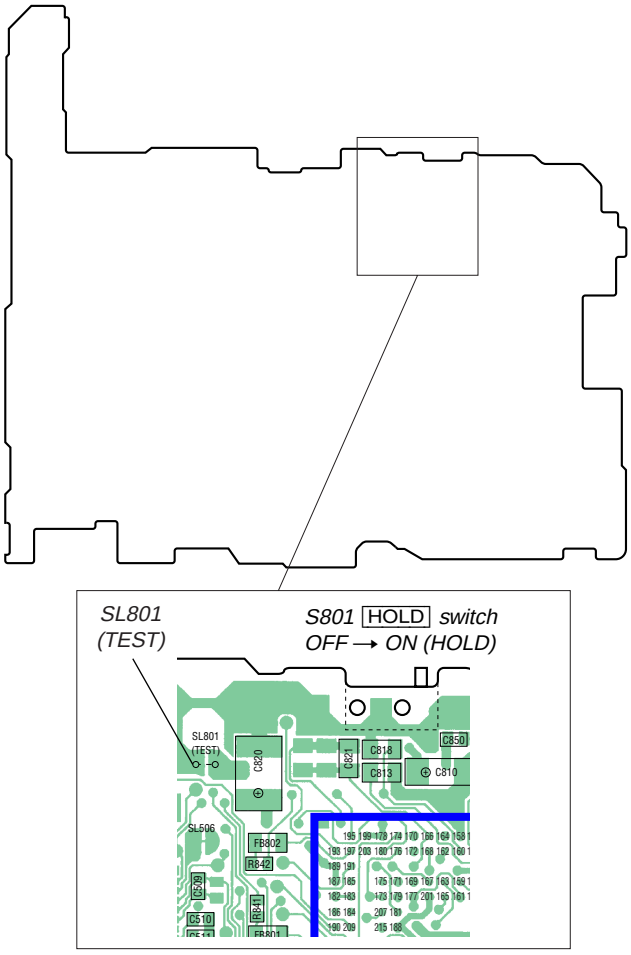
- This set provides the Overall adjustment mode that allows CD and MO discs to be automatically adjusted when in the test mode. In this overall adjustment mode, the disc is discriminate between CD and MO, and each adjustment is automatically executed in order. If a fault is found, the system displays its location. Also, the manual mode allows each individual adjustment to be automatically adjusted.
- Operation in the test mode is performed with the set. A key having no particular description in the text, indicates a set key.
- For the LCD display, the LCD on the remote commander is shown, but the contents of LCD display on the set are same.

Setting Method of Test Mode

There are three different methods to set the test mode:

① Short SL801 (TEST) on the MAIN board with a solder bridge (connect pin ⑯of IC801 to the ground) and turn on the [HOLD] switch. Then, turn on the power.

– MAIN Board (Conductor Side) –



② In the normal mode, turn on the [HOLD] switch. While pressing the [VOLUME –] key press the following order:

[▶▶|] → [▶▶|] → [|◀◀] → [|◀◀] → [▶▶|] →
[|◀◀] → [▶▶|] → [|◀◀] → [▮▮] → [▮▮]

③ In the normal mode, turn on the [HOLD] switch. While pressing the [■/CHG] key, press the keys on the remote commander with the following order:

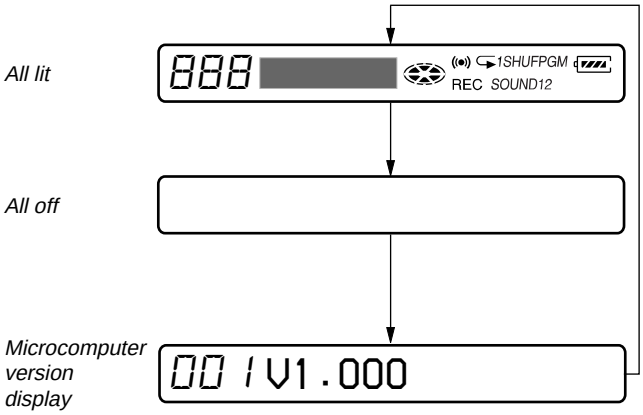
[► ▶▶|] → [► ▶▶|] → [|◀◀] → [|◀◀] → [► ▶▶|] →
[|◀◀] → [► ▶▶|] → [|◀◀] → [▮▮] → [▮▮]

Note: If electrical adjustment (CD and MO overall adjustment) has not been finished completely, "NV Error" is displayed on LCDs of the set and the remote commander.

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.

Remote commander LCD display



- When the [▮▮] key is pressed and hold down, the display at that time is held so that display can be checked.

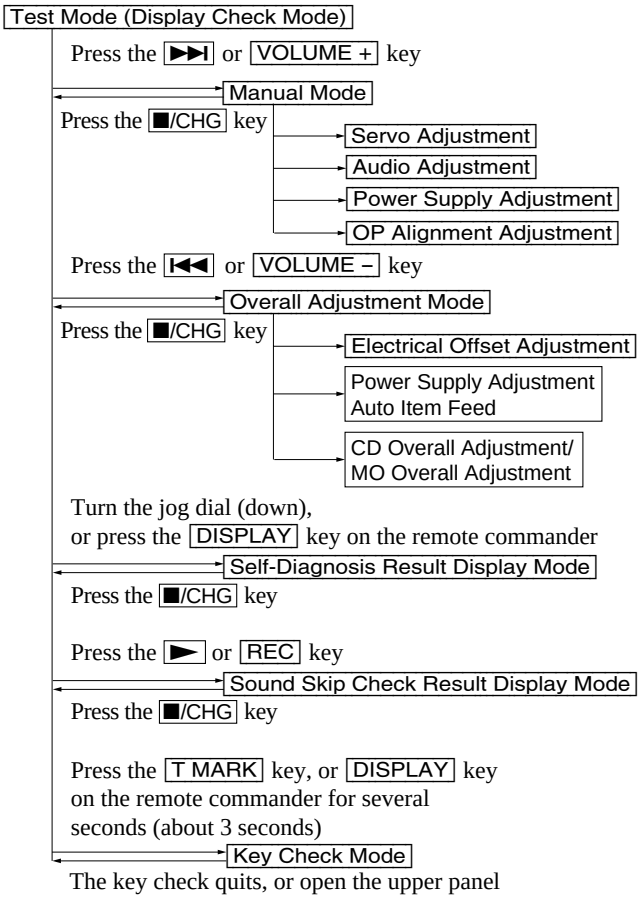
Releasing the Test Mode

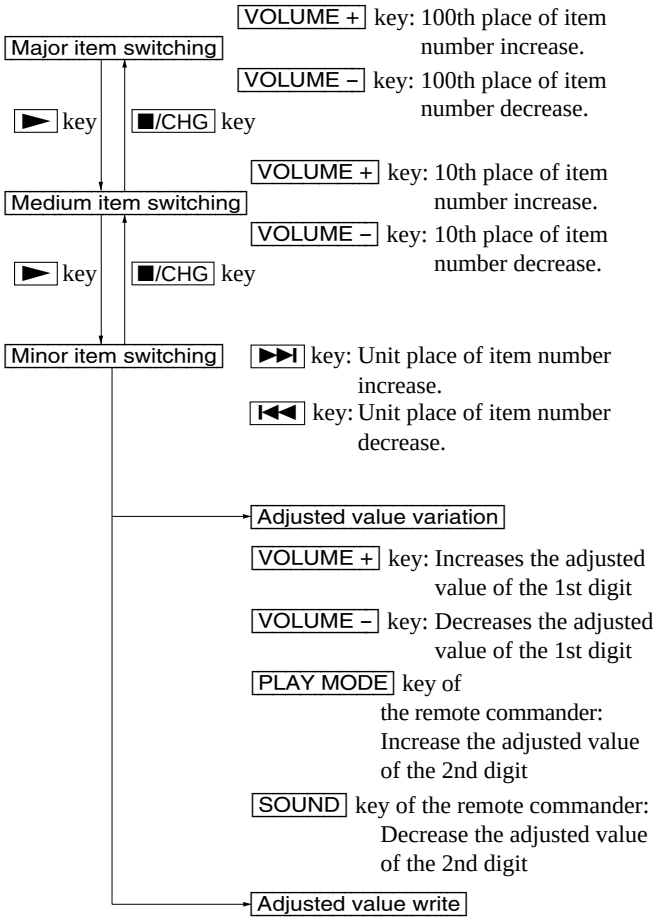
For test mode set with the method ①:
Turn off the power and open the solder bridge on SL801 (TEST) on the MAIN board.

Note: Remove the solders completely. Remaining could be shorted with the chassis, etc.

For test mode set with the method ② or ③:
Turn off the power.

Configuration of Test Mode





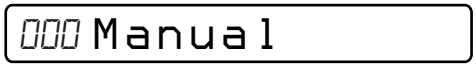
Manual Mode

Mode to adjust or check the operation of the set by function. Normally, the adjustment in this mode is not executed. However, the Manual mode is used to clear the memory, power supply adjustment, and laser power check before performing automatic adjustments in the Overall Adjustment mode.

- **Transition method in manual mode**

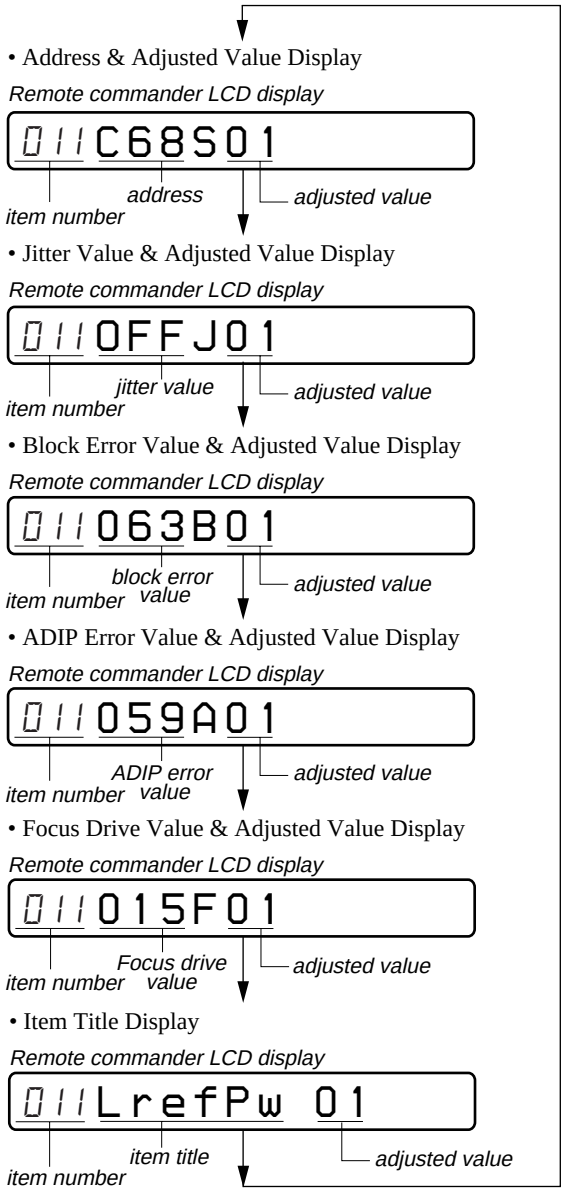
1. Set the test mode (see page 13).
2. Press the ▶▶I or VOLUME + key activates the manual mode where the LCD display as shown below.

Remote commander LCD display



3. During each test, the optical pick-up moves outward or inward while the ▶▶I or I◀◀ key is pressed for several seconds respectively.
4. Each test item is assigned with a 3-digit item number; 100th place is a major item, 10th place is a medium item, and unit place is a minor item.
   The values adjusted in the test mode are written to the nonvolatile memory (for the items where adjustment was made).

5. The display changes a shown below each time the jog dial (down) is turned or the DISPLAY key on the remote commander is pressed.



However in the power mode (item number 700's), only the item is displayed.

6. Quit the manual mode, and press the ■/CHG key to return to the test mode (display check mode).

Overall Adjustment Mode

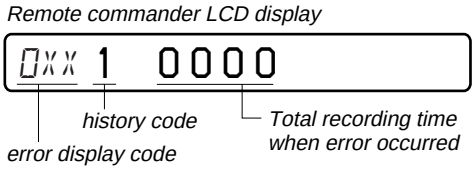
Mode to adjust the servo automatically in all items.
Normally, automatic adjustment is executed in this mode at the repair.
For further information, refer to "SECTION 5 ELECTRICAL ADJUSTMENTS" (see page 19).

Self-Diagnosis Result Display Mode

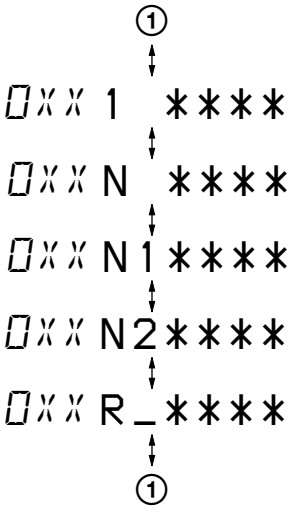
This set uses the self-diagnostic function system in which if an error occurred during the recording or playing, the mechanism control block and the power supply control block in the microcomputer detect it and record its cause as history in the nonvolatile memory.
By checking this history in the test mode, you can analyze a fault and determine its location.
Total recording time is recorded as a guideline of how long the optical pickup 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 both self-diagnosis history data and total recording time, if the optical pickup was replaced.

• Self-diagnosis result display mode setting method

1. Set the test mode (see page 13).
2. In the display check mode, turn the jog dial (down) or press the DISPLAY key on the remote commander activates the self-diagnosis result display mode where the LCD display as shown below.



3. Then, each time the ▶▶| key is pressed, LCD display descends by one as shown below. Also, the LCD display ascends by one when the |◀◀ key is pressed.



xx : Error code
***** : Total recording time*

If the jog dial (down) is turned or the DISPLAY key on remote commander is pressed with this display, the LCD switches to the simple display mode.

4. Quit the self-diagnosis result display mode, and press the ■/CHG key to return to the test mode (display check mode).

• Description of error indication codes

Problem	Indication code	Meaning of code	Simple display	Description
No error	00	No error	---	No error
Servo system error	01	Illegal access target address was specified	Adrs	Attempt to access an abnormal address
	02	High temperature	Temp	High temperature detected
	03	Focus error	Fcus	Disordered focus or can not read an address
	04	Spindle error	Spdl	Abnormal rotation of disc
TOC error	11	TOC error	TOC	Faulty TOC contents
	12	Data reading error	Data	Data could not be read at SYNC
Power supply system error	22	Low battery	LBat	Momentary interruption detected
Offset system error	31	Offset error	Ofst	Offset error
	32	Focus error ABCD offset error	ABCD	Focus error ABCD offset error
	33	Tracking error Offset error	TE	Tracking error Offset error
	34	X1 tracking error Offset error	X1TE	X1 tracking error Offset error
Disc error	35	MD DATA 2 disc error	MD2	MD DATA 2 disc error

• Description of indication history

History code number	Description
1	The first error
N	The last error
N1	One error before the last.
N2	Two errors before the last.
R_	Total recording time

Reset the Error Display Code

After servicing, reset the error display code.

• Setting method of reset the error display code

1. Set the test mode (see page 13).
2. Turn the jog dial (down) or press the DISPLAY key on the remote commander activates the self-diagnosis result display mode.
3. To reset the error display code, press the ▮▮ key (twice) when the code is displayed (except "R_✱✱✱✱").
   (All the data on the 1, N, N1, and N2 will be reset)

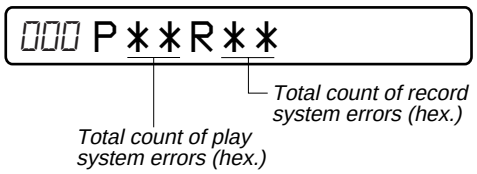
Sound Skip Check Result Display Mode

This set can display the count of errors that occurred during the recording/playing for checking.

• Setting method of sound skip check result display mode

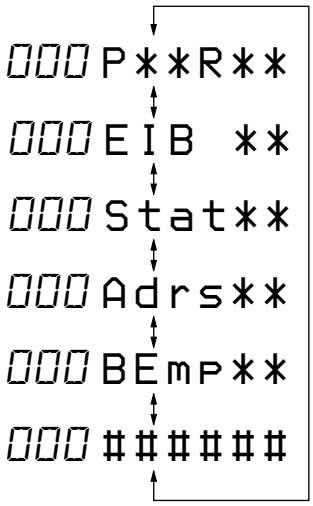
1. Set the test mode (see page 13).
2. Press the ► key or REC key, and the playing or recording sound skip result display mode becomes active respectively where the LCD displays the following.

Remote commander LCD display

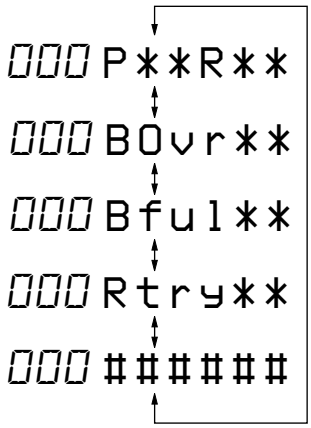


3. When the ► key is pressed, total error count is displayed on the LCD, and each time the ▶▶I key is pressed, the display item moves down by one as shown below. Also, if the I◀◀ key is pressed, the display item moves up by one, then if the REC key is pressed, the display in the record mode appears.
   When the REC key is pressed, total error count is displayed on the LCD, and each time the ▶▶I key is pressed, the display item moves down by one as shown below. Also, if the I◀◀ key is pressed, the display item moves up by one, then if the ► key is pressed, the display in the play mode appears.

Playing sound skip result display



Recording sound skip result display



P**R**: *Total play/record errors (hex.)*
**: *Counter of sound skip check each item (hex.)*
######: *6-digit address where sound was skipped last (hex.)*

• Cause of sound skip error

	Cause of error	Description of error
Play	EIB	Sound error correction error
	Stat	Decoder status error
	Adrs	Address access error
	BEmp	Buffer is empty
Record	BOvr	Buffer is full, and sounds were dumped
	Bful	Buffer capacity becomes less, and forcible writing occurred
	Rtry	Retry times over

4. To quit the sound skip check result display mode and to return to the test mode (display check mode), press the ■/CHG key.

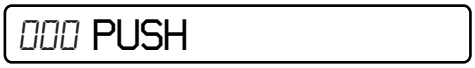
Jog and Key Check Mode

This set can check if the set and remote commander function normally.

• Setting method of jog check mode

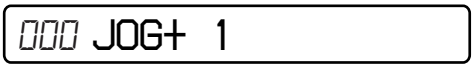
1. Set the test mode (see page 13).
2. Press the jog button to activate the jog check mode and display as below.

Remote commander LCD display



3. Turn the jog dial downwards one click.

Remote commander LCD display



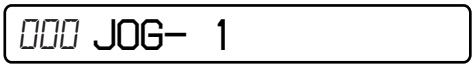
4. Turn the jog dial downwards three more clicks.

Remote commander LCD display



5. Turn the jog dial upwards one click.

Remote commander LCD display



6. Turn the jog dial upwards three more clicks.

Remote commander LCD display



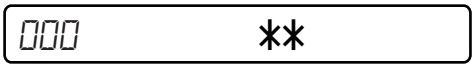
7. When the ■/CHG key is pressed, it changes over to the key check mode.

Note: To enter the key check mode, it is not necessary to enter via the jog dial check mode. (Refer to next item)

• Setting method of key check mode

1. Set the test mode (see page 13).
2. Press the T MARK key or DISPLAY key on the remote commander for several seconds (about 3 seconds) activates the key check mode. (At the last two digits, AD value of remote commander key line is displayed in hexadecimal)

Remote commander LCD display

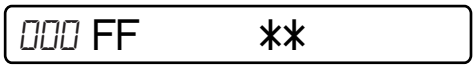


**: *AD value of the remote commander key (hexadecimal 00 to FF)*

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

Example1: When the ▶▶| key on the set is pressed:

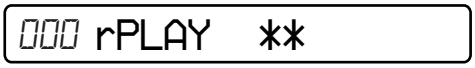
Remote commander LCD display



**: AD value of the remote commander key (hexadecimal 00 to FF)*

Example2: When the ▶ ▶▶| key on the remote commander is pressed:

Remote commander LCD display



**: AD value of the remote commander key (hexadecimal 00 to FF)*

4. When all the keys on the set and on the remote commander are considered as OK, the following displays are shown for 4 seconds.

Example1: When the keys on the set are considered as OK:

Remote commander LCD display



**: AD value of the remote commander key (hexadecimal 00 to FF)*

Example2: When the keys on the remote commander are considered as OK:

Remote commander LCD display



**: AD value of the remote commander key (hexadecimal 00 to FF)*

5. When all keys were checked or if the upper panel is opened, the key check mode quits and the test mode (display check mode) comes back.

SECTION 5
ELECTRICAL ADJUSTMENTS

Outline

- In this set, automatic adjustment of CD and MO can be performed by entering the test mode.
  However, before starting automatic adjustment, the memory clear, power supply adjustment, and laser power check must be performed in the manual mode.
- A key having no particular description in the text, indicates a set key.
- For the LCD display, the LCD on the remote commander is shown, but the contents of LCD display on the set are same.

Precautions for Adjustment

1. Adjustment must be done in the test mode only.
   After adjusting, release the test mode.
2. Use the following tools and measuring instruments.
   - Test CD disc TDYS-1
     (Part No. : 4-963-646-01)
   - SONY MO disc available on the market
   - Digital voltmeter
   - Laser power meter LPM-8001
     (Part No. : J-2501-046-A)
   - Thermometer (using the Temperature Correction)
3. Unless specified otherwise, supply DC 3V from the DC IN 3V jack (J601).
4. Switch position
   HOLD switch ..... ON

Adjustment Sequence

1. NV Reset (EEPROM clear) — Manual Mode
   ↓
2. Power Supply Manual Adjustment — Manual Mode
   ↓
3. Temperature Correction (item number: 015) — Manual Mode
   ↓
4. Laser Power Check — Manual Mode
   ↓
5. Electrical Offset Adjustment — Overall Mode

Caution: This adjustment must be made with no disc loaded.

   ↓
6. CD Overall Adjustment — Overall Mode
   ↓
7. MO Overall Adjustment — Overall Mode
   ↓
8. RESUME Clear — Manual Mode

Note: If the version of the microcomputer is 1.000 or later, "3. Temperature Correction" and "2. Power Supply Manual Adjustment" can be performed continuously in reverse order with pressing the PLAY MODE key on the remote commander in the overall adjustment mode.

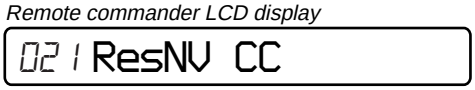
NV Reset

Caution: The shipment data will be cleared when the NV is reset. Therefore, change the NV adjusted values following the Change of NV Adjusted Values immediately after the NV was reset.
Only the set having the microcomputer version 1.000 to 1.100 should adjust. On the set having the microcomputer version 1.200 or later, adjustment is unnecessary.

• Setting method of NV reset

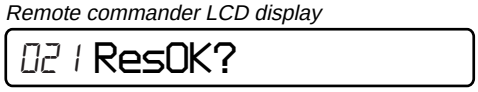
1. Select the manual mode of the test mode, and set item number 021 NV Reset (see page 14).

   Remote commander LCD display

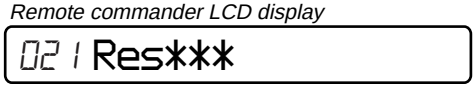
2. Press the ▮▮ key.

   Remote commander LCD display

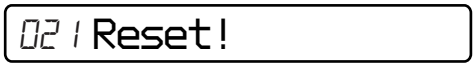
   

3. Press the ▮▮ key once more.

   Remote commander LCD display

   NV reset (after several seconds)

4. Press the ■/CHG key to quit the manual mode, and return the test mode (display check mode).

• Change of NV adjusted values (version 1.000)

Caution: Only the set having the microcomputer version 1.000 to 1.100 should adjust. On the set having the microcomputer version 1.200 or later, adjustment is unnecessary.

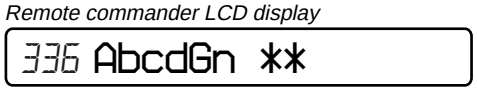
In this set, some adjusted values were set in the manual mode at the shipment, but these will be cleared when the NV is reset. Therefore, modify the NV adjusted values through the following procedure immediately after the NV was reset.

1. Item numbers in which the NV adjusted values are to be modified
   – Change ABCD gain [Hpit] initial value (item number 336)
     Caution: The ABCD gain [Hpit] initial value must be changed before the overall adjustment.
   – Change DFTC threshold value (item number 151)
   – Turn off sound generation speed-up (item numbers 861 to 864)
   – Change CLV drive voltage limiter (item numbers 865, 866)
   – Change x2 CLV speed gain, +6dB compared to conventional (item numbers 867, 868)
   – Change x2 CLV phase gain, +3dB compared to conventional (item numbers 871, 872)
   – Change x2/x1 switching temperature threshold value (+10°C → +5°C) (item numbers 873, 874)

2. NV adjusted values modifying procedure

1) Select manual mode of the test mode, and set item number 336 (see page 14).

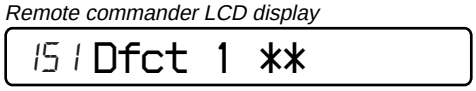
Remote commander LCD display



**: Adjusted value*

2) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 8.
3) Press the ▮▮ key to write the adjusted value.
4) Select manual mode of the test mode, and set item number 149 (see page 14).
5) Press the ▶▶| key to set item number 151.

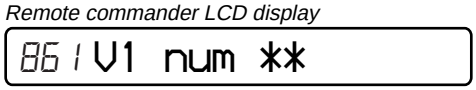
Remote commander LCD display



**: Adjusted value*

6) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 07.
7) Press the ▮▮ key to write the adjusted value.
8) Select manual mode of the test mode, and set item number 861 (see page 14).

Remote commander LCD display



**: Adjusted value*

9) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 79.
10) Press the ▮▮ key to write the adjusted value.
11) Select manual mode of the test mode, and set item number 862 (see page 14).

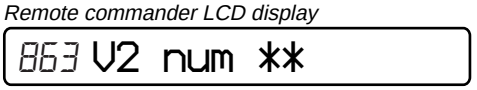
Remote commander LCD display



**: Adjusted value*

12) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 00.
13) Press the ▮▮ key to write the adjusted value.
14) Select manual mode of the test mode, and set item number 863 (see page 14).

Remote commander LCD display



**: Adjusted value*

15) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes EA.
16) Press the ▮▮ key to write the adjusted value.
17) Select manual mode of the test mode, and set item number 864 (see page 14).

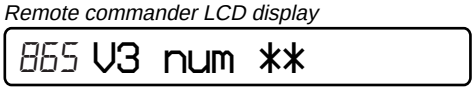
Remote commander LCD display



**: Adjusted value*

18) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 01.
19) Press the ▮▮ key to write the adjusted value.
20) Select manual mode of the test mode, and set item number 865 (see page 14).

Remote commander LCD display



**: Adjusted value*

21) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 2C.
22) Press the ▮▮ key to write the adjusted value.
23) Select manual mode of the test mode, and set item number 866 (see page 14).

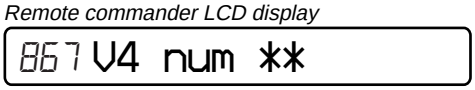
Remote commander LCD display



**: Adjusted value*

24) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes B9.
25) Press the ▮▮ key key to write the adjusted value.
26) Select manual mode of the test mode, and set item number 867 (see page 14).

Remote commander LCD display



**: Adjusted value*

27) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes C9.
28) Press the ▮▮ key to write the adjusted value.
29) Select manual mode of the test mode, and set item number 868 (see page 14).

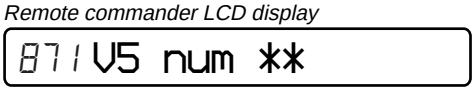
Remote commander LCD display



**: Adjusted value*

30) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 80.
31) Press the ▮▮ key to write the adjusted value.
32) Select manual mode of the test mode, and set item number 871 (see page 14).

Remote commander LCD display



**: Adjusted value*

33) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes CA.
34) Press the ▮▮ key to write the adjusted value.
35) Select manual mode of the test mode, and set item number 872 (see page 14).

Remote commander LCD display

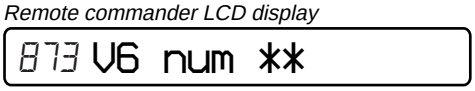


**: Adjusted value*

36) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 2D.
37) Press the ▮▮ key to write the adjusted value.

38) Select manual mode of the test mode, and set item number 873 (see page 14).

Remote commander LCD display



**: Adjusted value*

39) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes BB.
40) Press the ▮▮ key to write the adjusted value.
41) Select manual mode of the test mode, and set item number 874 (see page 14).

Remote commander LCD display



**: Adjusted value*

42) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 05.
43) Press the ▮▮ key to write the adjusted value.

• Change of NV adjusted values (version 1.100)

Caution: Only the set having the microcomputer version 1.000 to 1.100 should adjust. On the set having the microcomputer version 1.200 or later, adjustment is unnecessary.

In this set, some adjusted values were set in the manual mode at the shipment, but these will be cleared when the NV is reset. Therefore, modify the NV adjusted values through the following procedure immediately after the NV was reset.

1. Item numbers in which the NV adjusted values are to be modified
   – Change ABCD gain [Hpit] initial value (item number 336)
   Caution: The ABCD gain [Hpit] initial value must be changed before the overall adjustment.
   – Change CLV drive voltage limiter (item numbers 865, 866)
   – Change x2 CLV speed gain, +6dB compared to conventional (item numbers 867, 868)
   – Change x2 CLV phase gain, +3dB compared to conventional (item numbers 871, 872)
   – Change x2/x1 switching temperature threshold value (+10°C → +5°C) (item numbers 873, 874)

2. NV adjusted values modifying procedure

1) Select manual mode of the test mode, and set item number 336 (see page 14).

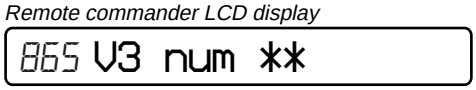
Remote commander LCD display



**: Adjusted value*

2) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 08.
3) Press the ▮▮ key to write the adjusted value.
4) Select manual mode of the test mode, and set item number 865 (see page 14).

Remote commander LCD display



**: Adjusted value*

5) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 2C.
6) Press the ▮▮ key to write the adjusted value.
7) Select manual mode of the test mode, and set item number 866 (see page 14).

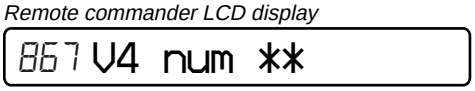
Remote commander LCD display



**: Adjusted value*

8) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes B9.
9) Press the ▮▮ key to write the adjusted value.
10) Select manual mode of the test mode, and set item number 867 (see page 14).

Remote commander LCD display



**: Adjusted value*

11) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes C9.
12) Press the ▮▮ key to write the adjusted value.
13) Select manual mode of the test mode, and set item number 868 (see page 14).

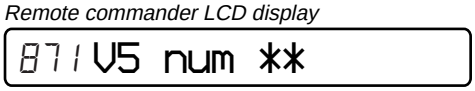
Remote commander LCD display



**: Adjusted value*

14) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 80.
15) Press the ▮▮ key to write the adjusted value.
16) Select manual mode of the test mode, and set item number 871 (see page 14).

Remote commander LCD display



**: Adjusted value*

17) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes CA.
18) Press the ▮▮ key to write the adjusted value.
19) Select manual mode of the test mode, and set item number 872 (see page 14).

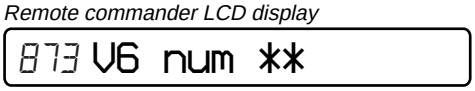
Remote commander LCD display



**: Adjusted value*

20) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes 2D.
21) Press the ▮▮ key to write the adjusted value.
22) Select manual mode of the test mode, and set item number 873 (see page 14).

Remote commander LCD display



**: Adjusted value*

23) Adjust with the VOLUME + key (adjusted value up) or VOLUME – key (adjusted value down) so that the adjusted value becomes BB.
24) Press the ▮▮ key to write the adjusted value.

25) Select manual mode of the test mode, and set item number 874 (see page 14).

Remote commander LCD display

874 V6 dat **

**: Adjusted value*

26) Adjust with the [VOLUME +] key (adjusted value up) or [VOLUME –] key (adjusted value down) so that the adjusted value becomes 05.
27) Press the [II] key to write the adjusted value.

Power Supply Manual Adjustment

• Adjustment sequence

Adjustment must be done with the following steps.

1. Vc PWM Duty (L) adjustment (item number: 762)
↓
2. Vc PWM Duty (H) adjustment (item number: 763)
↓
3. Vl PWM Duty (L) adjustment (item number: 764)
↓
4. Vl PWM Duty (H) adjustment (item number: 765)
↓
5. Vrec PWM Duty (L) adjustment (item number: 766)
↓
6. Vrec PWM Duty (H) adjustment (item number: 767)
↓
7. Vd PWM Duty adjustment (item number: 768)

• Setting method of power supply manual adjustment

1. Make sure that the power supply voltage is 3V.
2. Select the manual mode of the test mode (see page 14).
3. Set item number.

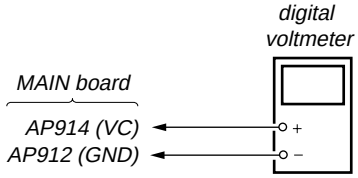
• Adjustment method of Vc PWM Duty (L) (item number: 762)

Remote commander LCD display

762 Vc1PWM **

**: Adjusted value*

1. Connect a digital voltmeter to the AP914 (VC) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME –] key (voltage down) so that the voltage becomes $2.40^{+0.005}_{-0.01}$ V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

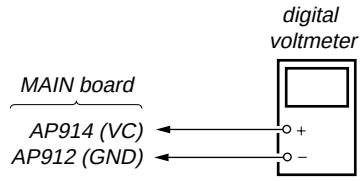
• Adjustment method of Vc PWM Duty (H) (item number: 763)

Remote commander LCD display

763 VchPWM **

**: Adjusted value*

1. Connect a digital voltmeter to the AP914 (VC) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME –] key (voltage down) so that the voltage becomes 2.75 ± 0.015 V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

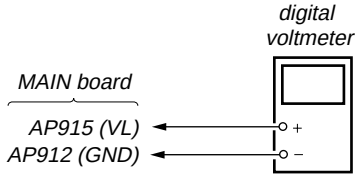
• Adjustment method of Vl PWM Duty (L) (item number: 764)

Remote commander LCD display

764 VLPwmL **

**: Adjusted value*

1. Connect a digital voltmeter to the AP915 (VL) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME –] key (voltage down) so that the voltage becomes $2.30^{+0.005}_{-0.01}$ V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

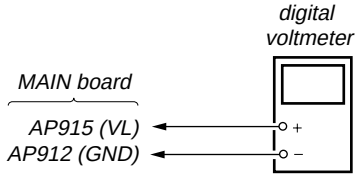
• Adjustment method of Vl PWM Duty (H) (item number: 765)

Remote commander LCD display

765 VLPwmH **

**: Adjusted value*

1. Connect a digital voltmeter to the AP915 (VL) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME –] key (voltage down) so that the voltage becomes $2.55^{+0.005}_{-0.01}$ V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

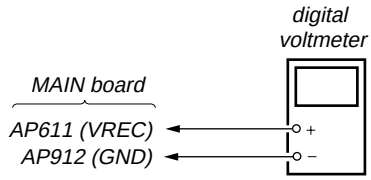
- **Adjustment method of Vrec PWM Duty (L) (item number: 766)**

Remote commander LCD display

766 RECPWL **

**: Adjusted value*

1. Connect a digital voltmeter to the AP611 (VREC) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME −] key (voltage down) so that the voltage becomes $1.08^{+0.025}_{-0.005}$ V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

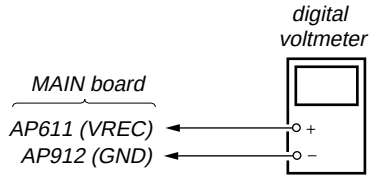
- **Adjustment method of Vrec PWM Duty (H) (item number: 767)**

Remote commander LCD display

767 RECPWH **

**: Adjusted value*

1. Connect a digital voltmeter to the AP611 (VREC) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME −] key (voltage down) so that the voltage becomes 1.65 to 1.70 V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

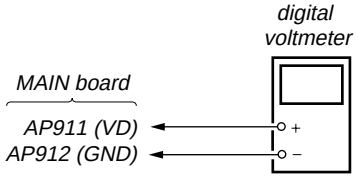
- **Adjustment method of Vd PWM Duty (item number: 768)**

Remote commander LCD display

768 VD_PWM **

**: Adjusted value*

1. Connect a digital voltmeter to the AP911 (VD) on the MAIN board, and adjust [VOLUME +] key (voltage up) or [VOLUME −] key (voltage down) so that the voltage becomes 1.31 ± 0.010 V.



2. Press the [II] key to write the adjusted value.

Adjustment and Connection Location: MAIN board (see page 24)

Temperature Correction

- **Adjustment method of temperature correction**

1. Select the manual mode of test mode, and set the item number 015 (see page 14).

Remote commander LCD display

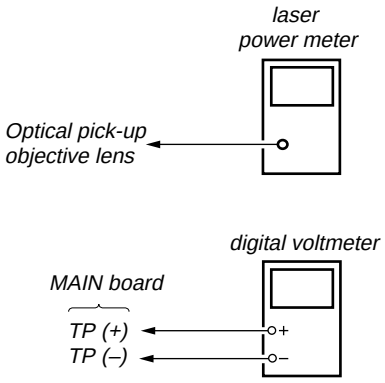
015 SetTmp **

**: Adjusted value*

2. Measure the ambient temperature.
3. Adjust with [VOLUME +], [VOLUME –] key so that the adjusted value (hexadecimal value) becomes the ambient temperature.
   (Initial value: 19h = 25 °C, Adjusting range: 80h to 7fh (–128 °C to +127 °C)
4. Press the [II] key to write the adjusted value.

Laser Power Check

Connection :



Checking Method :

1. Select the manual mode of test mode (see page 14), and set the laser power adjusting mode (item number 010).

Remote commander LCD display

010 Laser

2. Press the [⏮] key continuously until the optical pick-up moves to the most inward track.
3. Open the cover and set the laser power meter on the objective lens of the optical pick-up.
4. Press the [►] key, and set the laser MO read adjustment mode (item number 011).

Remote commander LCD display

011 LrefPw **

5. Check that the laser power meter reading is 0.81 ± 0.08 mW.
6. Check that the voltage both ends (TP (+) and TP (–)) of resistor R521 at this time is below 44 mV.
7. Press the [►] key, and set the laser CD read adjustment mode (item number 012).

Remote commander LCD display

012 HrefPw **

8. Check that the laser power meter reading is 0.97 ± 0.10 mW.
9. Check that the voltage both ends (TP (+) and TP (–)) of resistor R521 at this time is below 44 mV.

10. Press the [►] key, and set the laser MO write adjustment mode (item number 013).

Remote commander LCD display

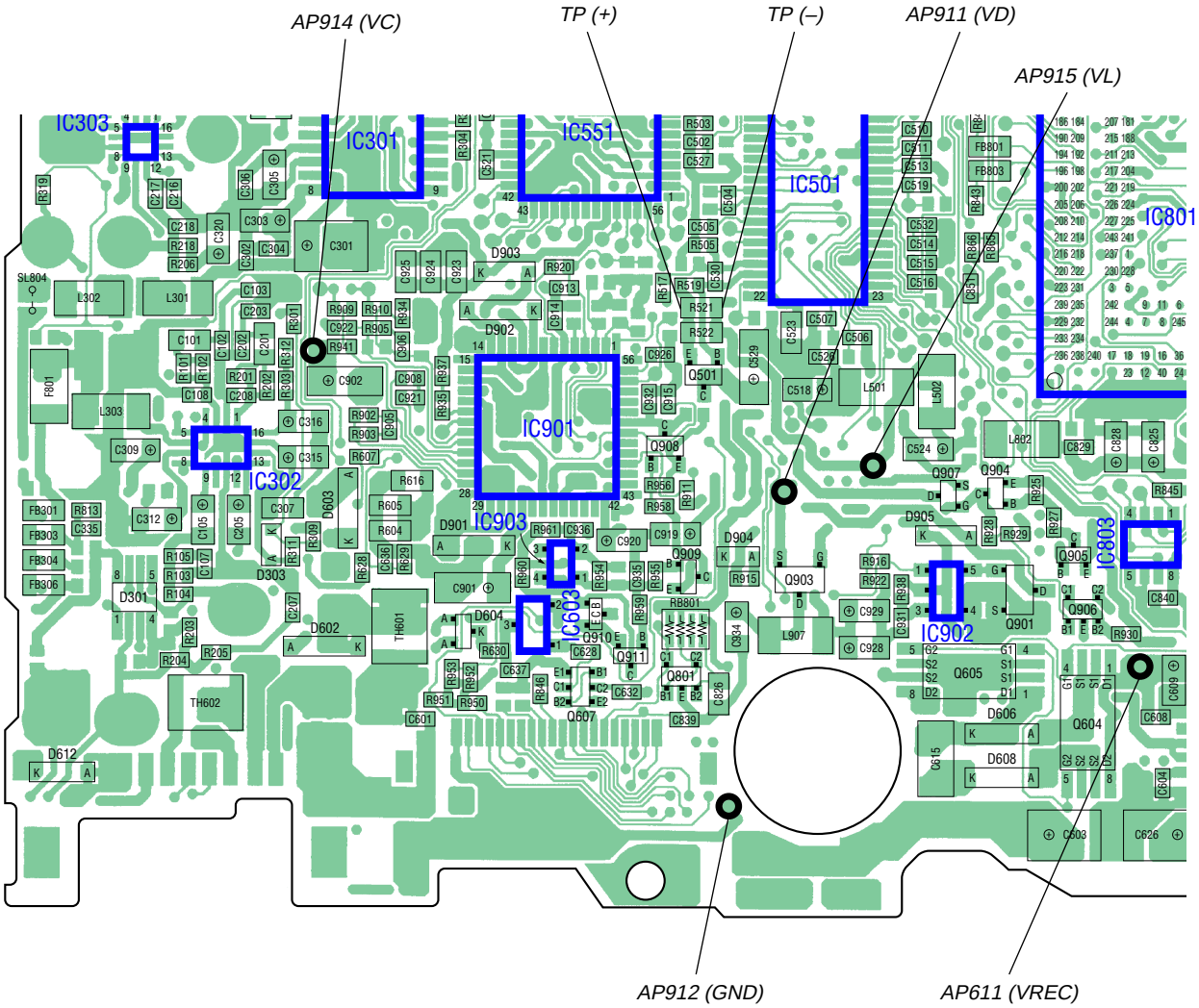
013 WritPw **

11. Check that the laser power meter reading is 4.95 ± 0.50 mW.
12. Check that the voltage both ends (TP (+) and TP (–)) of resistor R521 at this time is below 80 mV.
13. Press the [■/CHG] key to quit the manual mode, and activate the test mode (display check mode).

Checking and Connection Location: MAIN board

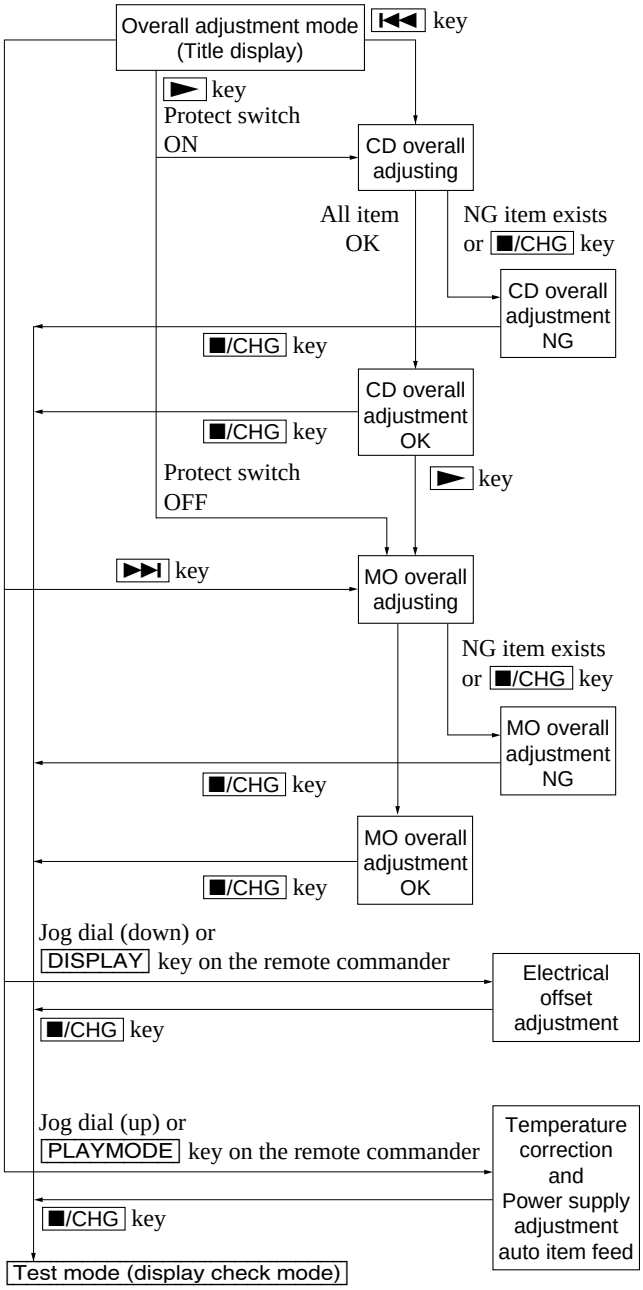
Adjustment/checking and Connection Location:

– MAIN Board (Conductor Side) –



Overall Adjustment Mode

• Configuration of overall adjustment mode



• Overall adjustment mode (title display)

Remote commander LCD display



◉*: (Disc mark) At end of power supply adjustment: Outside lit*
At end of electrical offset adj.: Inside lit
Note: On the set having microcomputer version 1.000, the disc mark is displayed on the remote commander LCD only.

*******: Left side = MO overall adjustment information*
F: MO overall adjustment completed*
1: Manual adjustment exists (overall adj. not completed)*
0: Not adjusted*
Right side = CD overall adjustment information
**F: CD overall adjustment completed*
**1: Manual adjustment exists (overall adj. not completed)*
**0: Not adjusted*

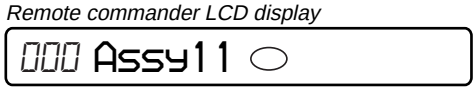
Note: Adjust the CD first, when performing adjustment.

• Electrical offset adjusting method

Caution: The electrical offset adjustment must be made with no disc loaded.

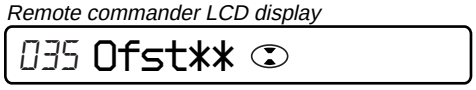
1. Make sure that the power supply voltage is 3 V.
2. Set the test mode (see page 13).
3. Press the |◄◄ or VOLUME – key to activate the overall adjustment mode.

Remote commander LCD display



4. Turn the jog dial (down), or press the DISPLAY key on the remote commander.

Remote commander LCD display



5. Electrical offset adjustment is over, if the following display appears.

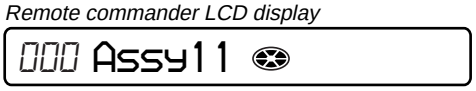
Remote commander LCD display



• Adjustment method of CD and MO overall adjustment mode

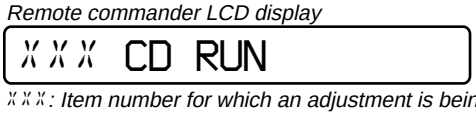
1. Set the test mode (see page 13).
2. Press the |◄◄ or VOLUME – key to activate the overall adjustment mode.

Remote commander LCD display



3. Insert CD disc in the set, and press thethe |◄◄ key to set the CD overall adjustment mode. Automatic adjustments are made.

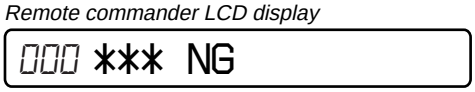
Remote commander LCD display



XXX: Item number for which an adjustment is being executed.

4. In case of CD overall adjustment NG, reset the NV (see page 19), then readjust from the temperature correction (see page 21).

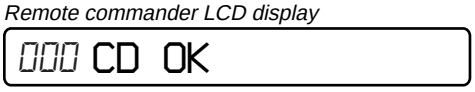
Remote commander LCD display



***: NG item number.*

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

Remote commander LCD display



6. Insert MO disc in the set, and press the ▶▶| key to set the MO overall adjustment mode. Automatic adjustments are made.

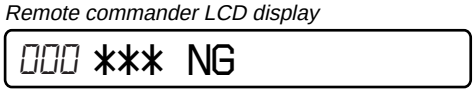
Remote commander LCD display



XXX: Item number for which an adjustment is being executed.

7. In case of MO overall adjustment NG, reset the NV (see page 19), then readjust from the temperature correction (see page 21).

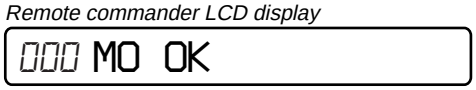
Remote commander LCD display



***: NG item number.*

8. If OK through the MO overall adjustments, press the ■/CHG key to return to the test mode and terminate the overall adjustment mode.

Remote commander LCD display



• CD and MO overall adjustment items

1. CD overall adjustment items

Item No.	Description
312 313 314	CD electrical offset adjustment
321	CD tracking error gain adjustment
328	CD TWPP gain adjustment
324 332	CD tracking error offset adjustment
336	CD ABCD gain adjustment
344	CD focus gain adjustment
345	CD tracking gain adjustment
521 522	CD two-axis sensitivity adjustment

2. MO overall adjustment items

Item No.	Description
112 113 114 118	MO electrical offset adjustment
221	Low reflective CD tracking error gain adjustment
224 232	Low reflective CD tracking error offset adjustment
236	Low reflective CD ABCD gain adjustment
244	Low reflective CD focus gain adjustment
245	Low reflective CD tracking gain adjustment
121	MO tracking error gain adjustment
122	MO TON offset adjustment
134	MO TWPP gain adjustment
131 132	MO triple speed read TWPP offset adjustment
136	MO ABCD gain adjustment
144	MO focus gain adjustment
145	MO tracking gain adjustment
138	MO RF gain adjustment
434	MO write TWPP gain adjustment
431	MO write TWPP offset adjustment
432	MO tracking error offset adjustment
436	MO write ABCD gain adjustment
445	MO write tracking gain adjustment
411	MO normal speed read TWPP offset adjustment
412	MO tracking error offset adjustment
448	20 sec full recording

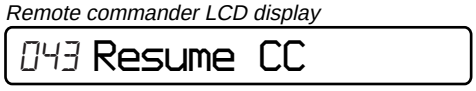
Resume Clear

Perform the Resume clear when all adjustments completed.

• Resume clear setting method

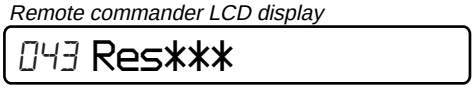
1. Select the manual mode of the test mode, and set item number 043 (see page 14).

Remote commander LCD display

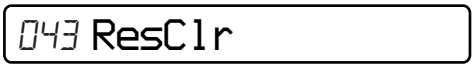


2. Press the ▮▮ key.

Remote commander LCD display



Resume clear complete



3. Press the ■/CHG key to return to the test mode (display check mode).

Rewriting the Patch Data at Replacement of Main Board

The set having the microcomputer version 1.000 to 1.300 requires the patch data in the nonvolatile memory (IC802) to be rewritten using the application, when the MAIN board was replaced.
On the set having the microcomputer version 1.400 or later, rewriting the patch data is unnecessary.

Caution: The application that meets the microcomputer version in this set must be used when rewriting the patch data. Rewriting the patch data using the application not suitable for the microcomputer version could cause the set to malfunction.
For a checking method of the microcomputer version, see "SECTION 4 TEST MODE" (page 13).

• Preparation

1. USB cradle (attached to the set)
2. USB cable (attached to the set)
3. Personal computer in which the Net MD Driver has been installed. (For further information, see "System requirements" (page 4) in "SECTION 1 SERVICING NOTES")
4. Application "PatchWriter" for patch data rewriting

• How to get the application "PatchWriter" for patch data rewriting

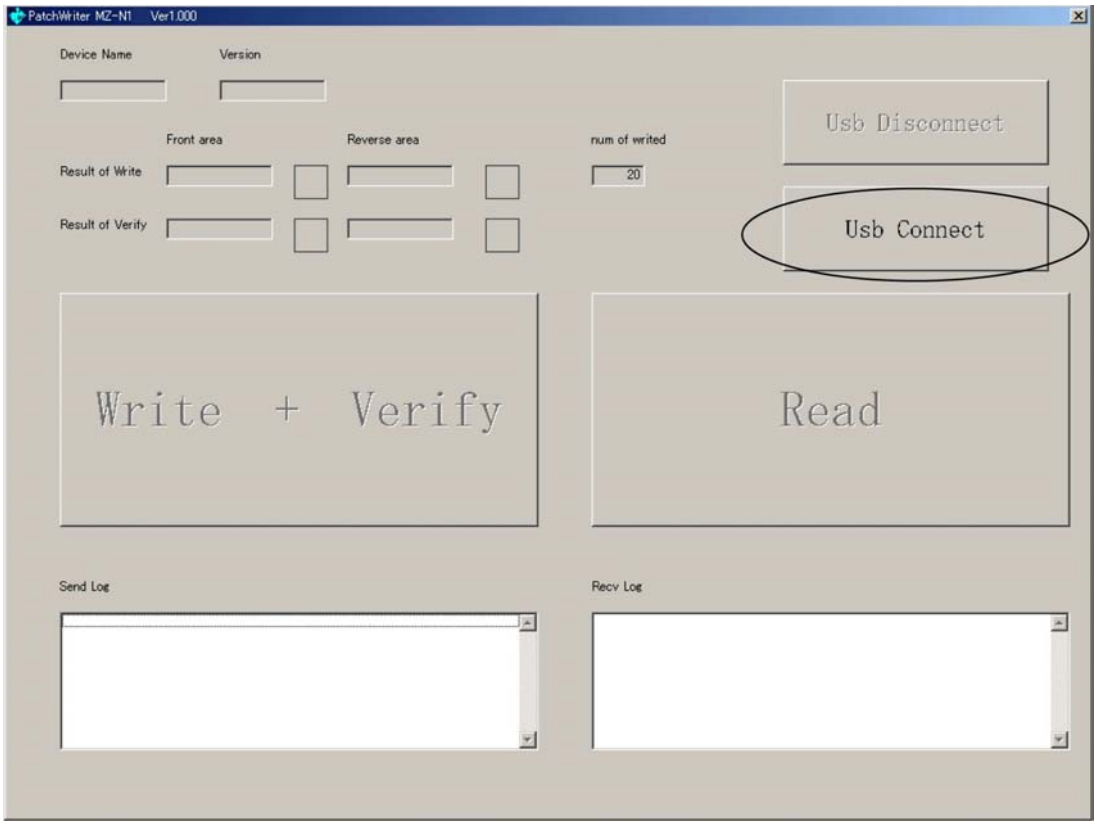
Contact our service technical support division to get the application.

• Pre-check

1. Check the microcomputer version in this set. (For a checking method of the microcomputer version, see "SECTION 4 TEST MODE" (page 13).)
2. Check that the Net MD Driver has been installed in the personal computer.
3. Make sure that the set is in the Normal mode.
   Note: Do not rewrite the patch data in the Test mode.

• Rewriting the patch data

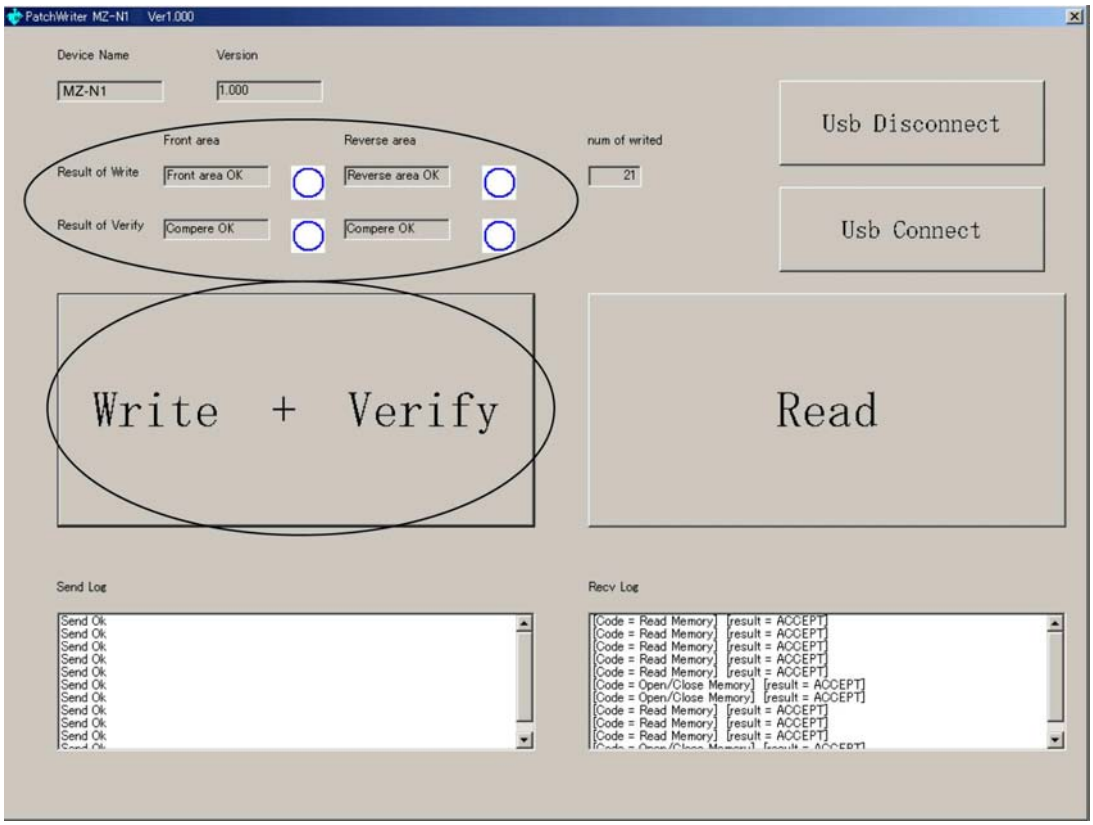
1. Connect the USB cradle to the personal computer with the USB cable, and place the set on the USB cradle.
2. Start the application "PatchWriter".
3. Make sure that the following window opens.
4. Click the [Usb Connect] button.



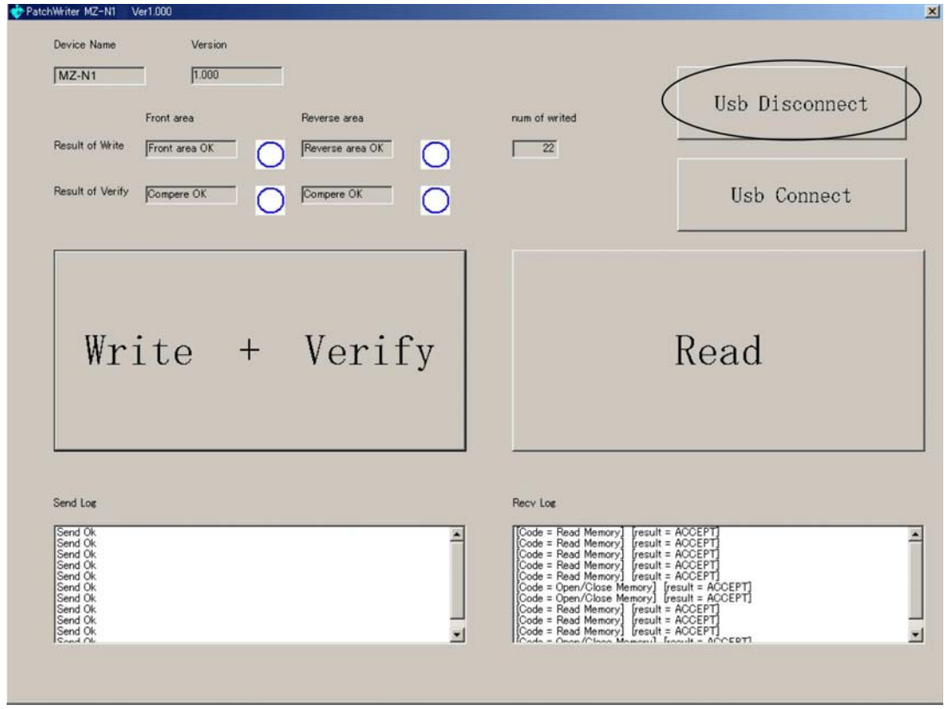
5. Confirm that the model and version indicated on the title bar coincide with the codes displayed in the Device Name block and the Version block in the window.



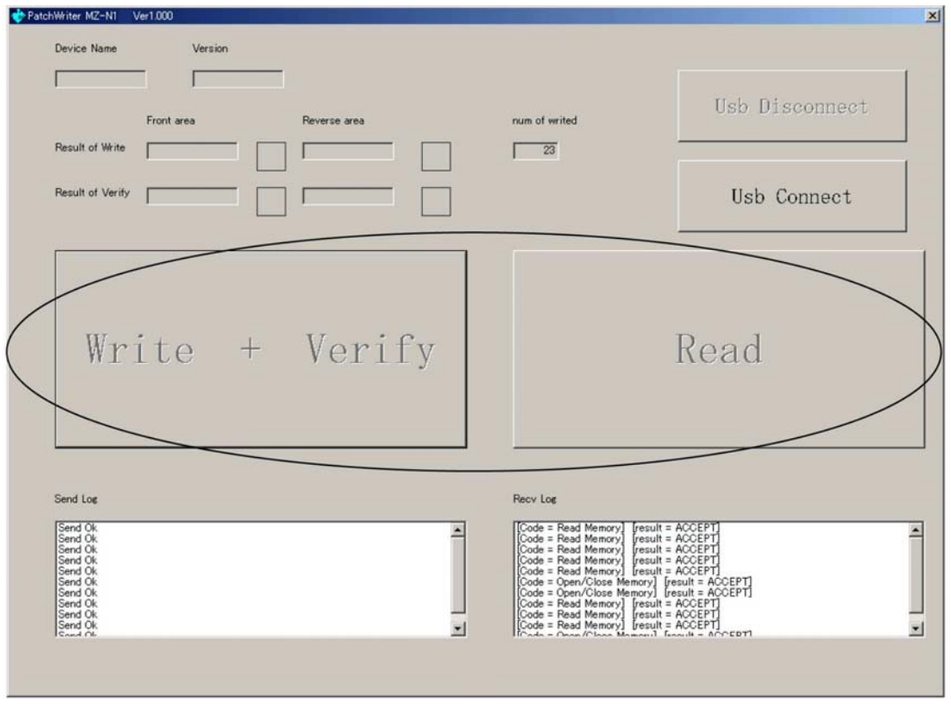
6. Click the [Write + Verify] button.
   The patch data writing and the verify processing will be executed automatically in the following order:
   1) Writing to patch area (front area)
   2) Writing to patch area (reverse area)
   3) Verifying patch area (front area)
   4) Verifying patch area (reverse area)
7. The operation will terminate with the ○ mark given to all areas.
   If the × mark is given to any area, the nonvolatile memory will be faulty.



8. Click the [Usb Disconnect] button.



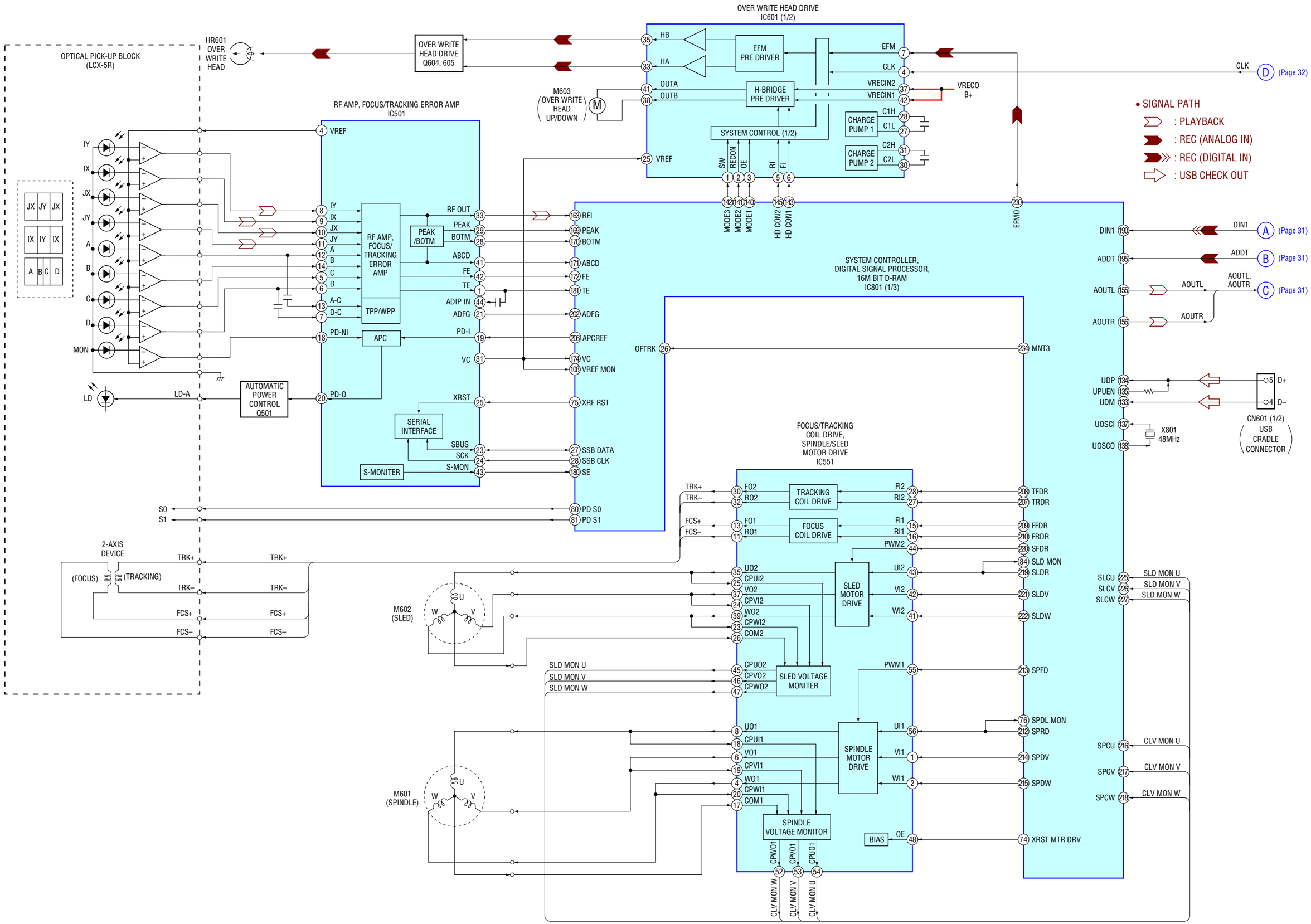
9. Confirm that the window becomes as shown below where the [Write + Verify] button and [Read] button are inactive.



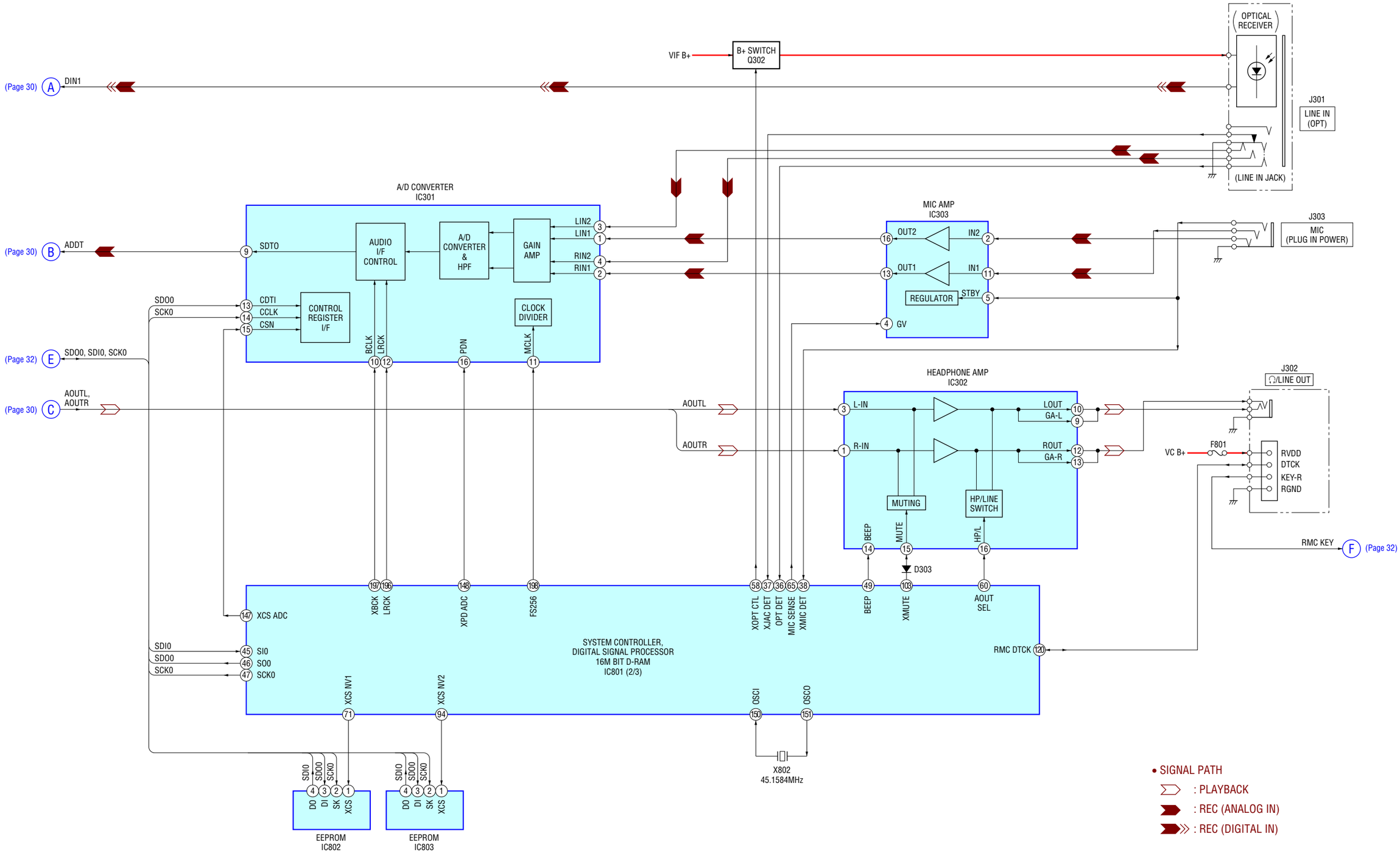
10. Disconnect the USB cable from the personal computer and the USB cradle.
11. Remove the set from the USB cradle.

SECTION 6
DIAGRAMS

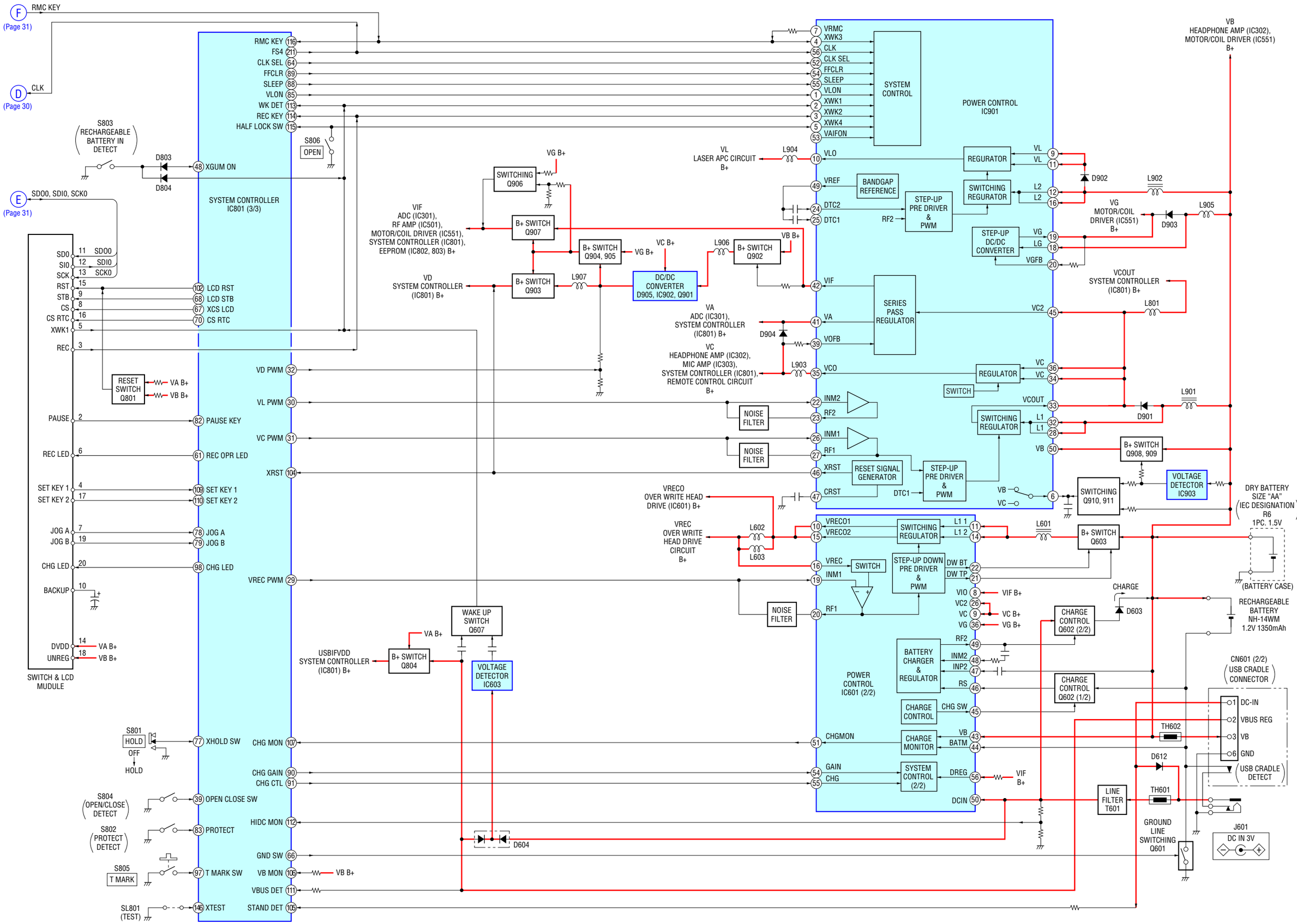
6-1. BLOCK DIAGRAM – SERVO/USB Section –



6-2. BLOCK DIAGRAM – AUDIO Section –



6-3. BLOCK DIAGRAM – DISPLAY/KEY CONTROL/POWER SUPPLY Section –



6-4. NOTE FOR PRINTED WIRING BOARD AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▬ : Pattern from the side which enables seeing.

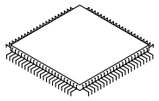
(The other layers' patterns are not indicated.)

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

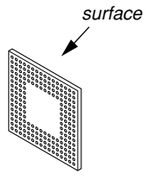
- MAIN board is four-layer printed board. However, the patterns of layers 2 and 3 have not been included in this diagrams.

∗ Replacement of IC801 used in this set requires a special tool.

- Lead Layouts



Lead layout of conventional IC



CSP (chip size package)

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : panel designation.

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

- ▬ : B+ Line.
- Total current is measured with MD installed.
- Power voltage is dc 3 V and fed with regulated dc power supply from DC IN 3 V jack (J601).
- Voltages and waveforms are dc with respect to ground in playback mode.
  no mark : PLAYBACK
  ( ) : REC
  〈〈 〉〉 : USB
  ∗ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : PLAYBACK
  : REC (ANALOG IN)
  : REC (DIGITAL IN)
  : USB CHECK OUT

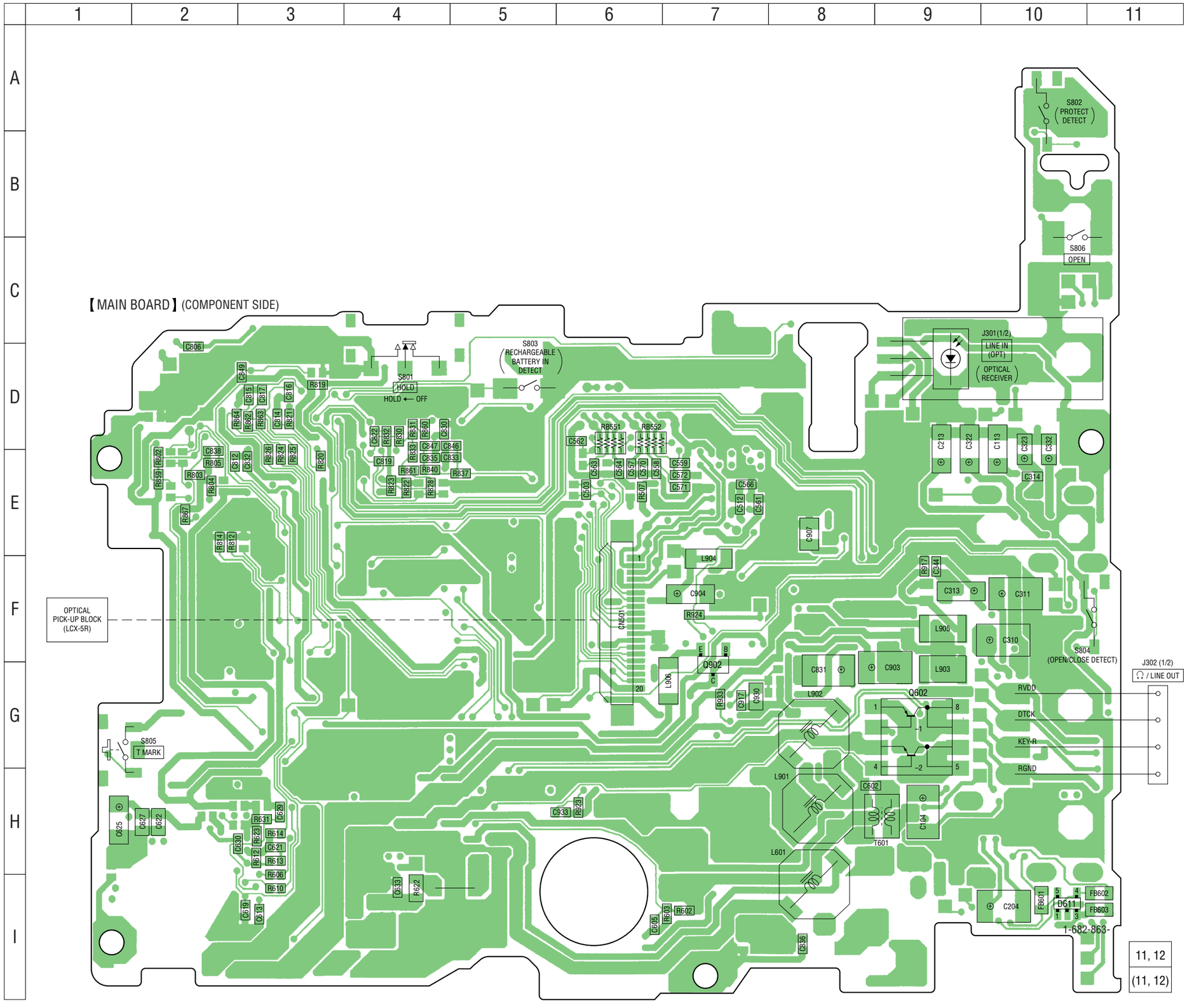
∗ Replacement of IC801 used in this set requires a special tool.

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

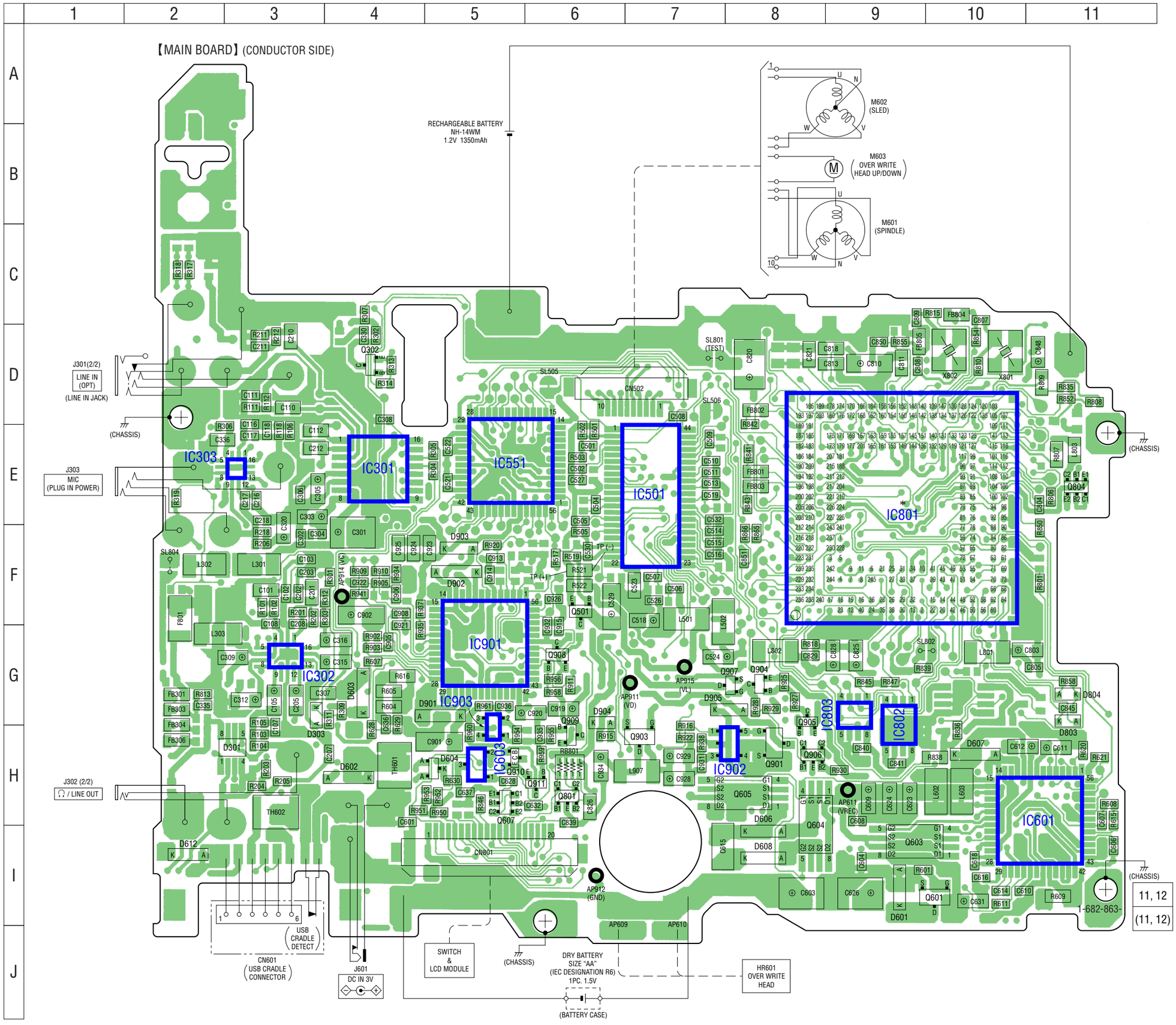
6-5. PRINTED WIRING BOARD – MAIN Board (Component Side) – :Uses unleaded solder.

- **Semiconductor Location**

Ref. No.	Location
D611	I-10
Q602	G-9
Q902	G-7



6-6. PRINTED WIRING BOARD – MAIN Board (Conductor Side) – :Uses unleaded solder.

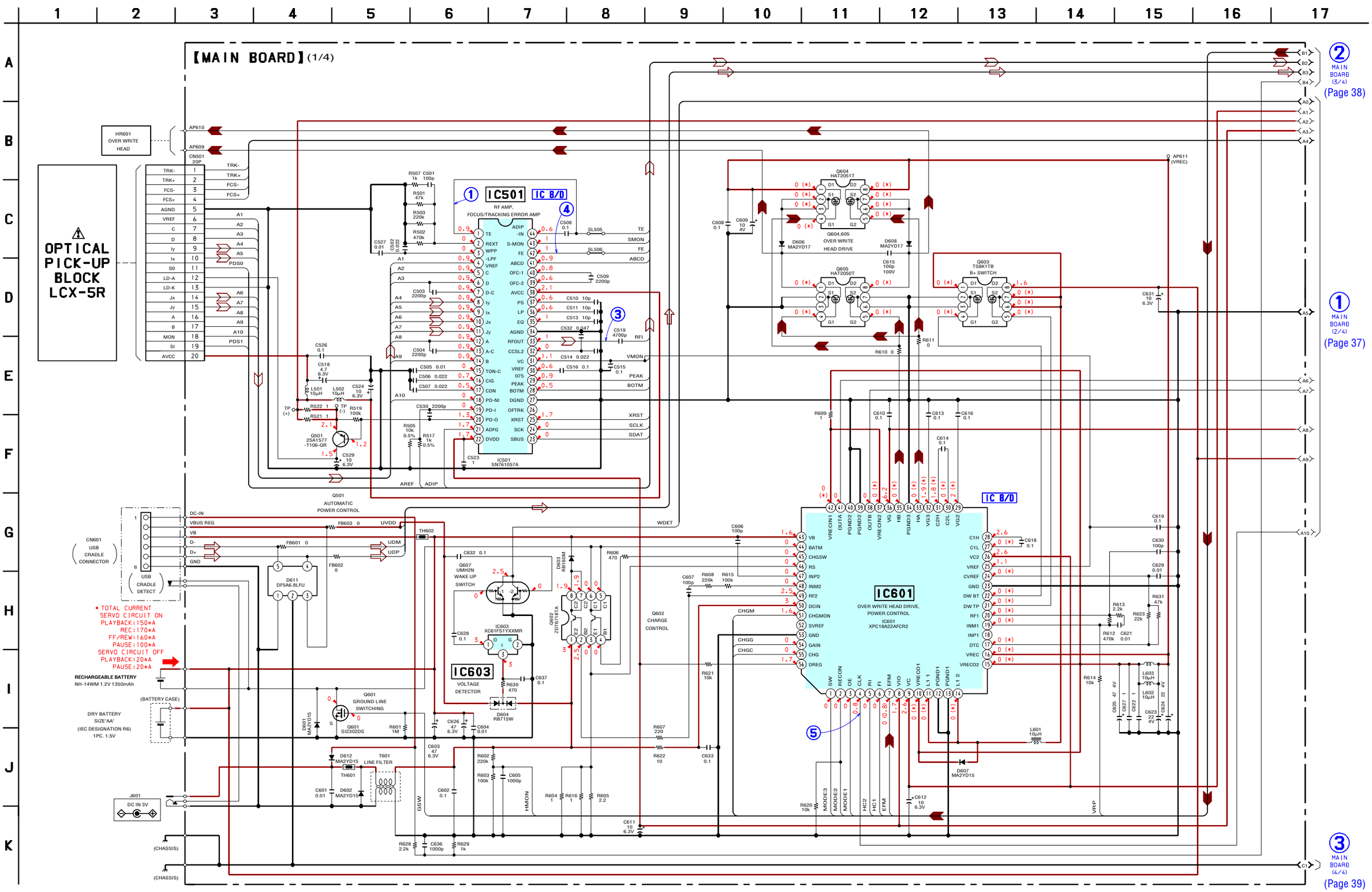


- **Semiconductor Location**

Ref. No.	Location
D301	H-3
D303	G-3
D601	I-9
D602	H-4
D603	G-4
D604	H-5
D606	I-8
D607	H-10
D608	I-8
D612	I-2
D803	G-11
D804	G-11
D901	G-5
D902	F-5
D903	F-5
D904	G-6
D905	G-8
IC301	E-4
IC302	G-3
IC303	E-3
IC501	E-7
IC551	E-5
IC601	H-11
IC603	H-5
IC801	E-9
IC802	G-9
IC803	G-9
IC901	G-5
IC902	H-8
IC903	H-5
Q302	D-4
Q501	F-6
Q601	I-10
Q603	I-9
Q604	H-8
Q605	H-8
Q607	H-5
Q801	H-6
Q804	E-11
Q901	H-8
Q903	H-7
Q904	G-8
Q905	G-8
Q906	H-8
Q907	G-8
Q908	G-6
Q909	H-6
Q910	H-5
Q911	H-6

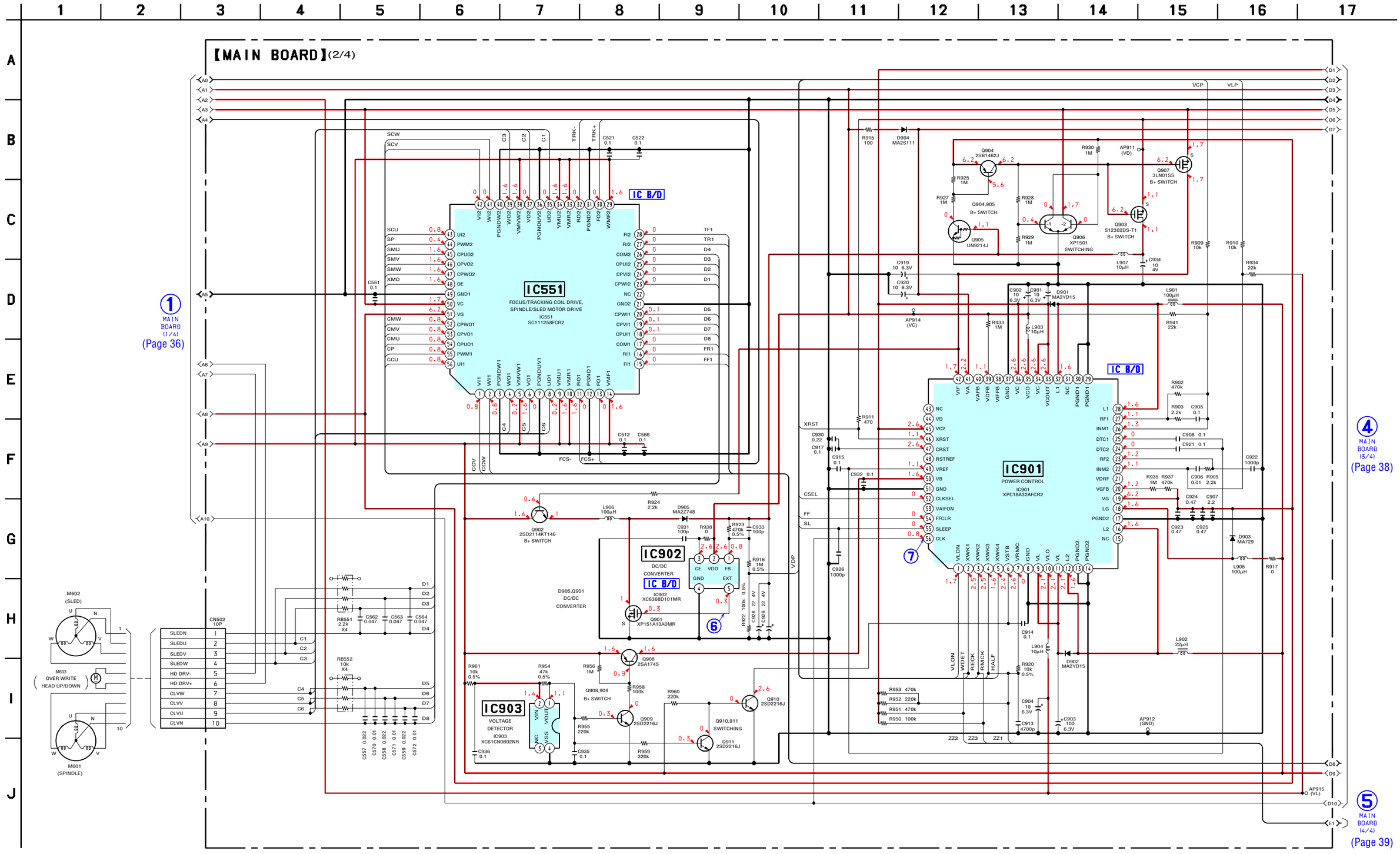
When IC802 is damaged, replace the MAIN board.

6-7. SCHEMATIC DIAGRAM – MAIN Board (1/4) – • See page 40 for Waveforms. • See page 41 for IC Block Diagrams.

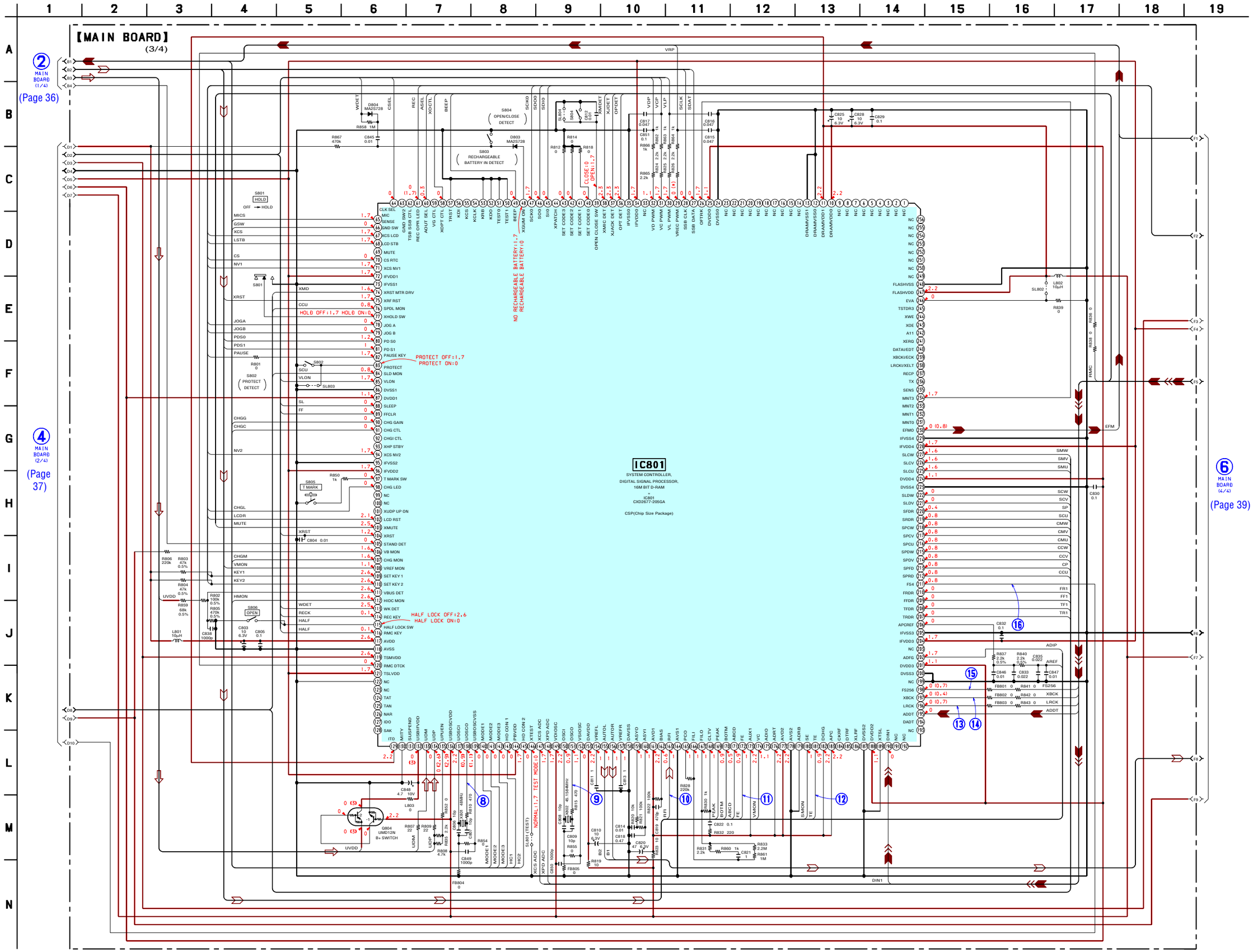


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

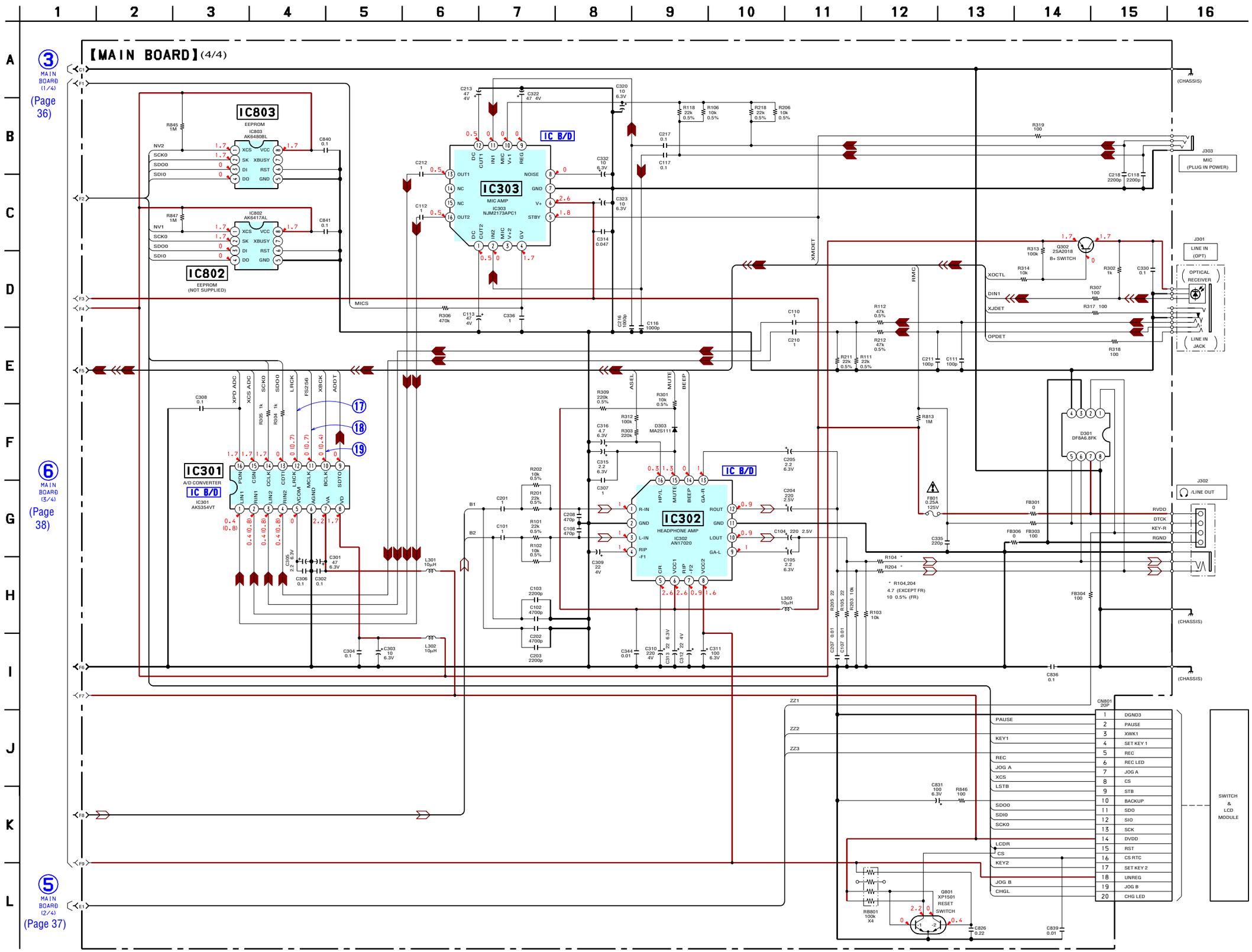
6-8. SCHEMATIC DIAGRAM – MAIN Board (2/4) – • See page 40 for Waveforms. • See page 41 for IC Block Diagrams.



6-9. SCHEMATIC DIAGRAM – MAIN Board (3/4) – • See page 40 for Waveforms.



6-10. SCHEMATIC DIAGRAM – MAIN Board (4/4) – • See page 40 for Waveforms. • See page 41 for IC Block Diagrams.



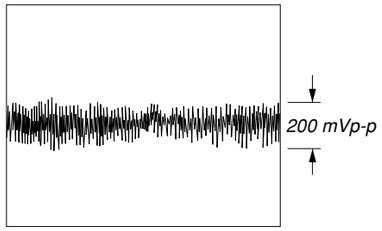
When IC802 is damaged, replace the MAIN board.

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

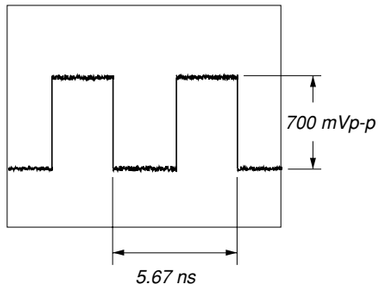
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- **Waveforms**

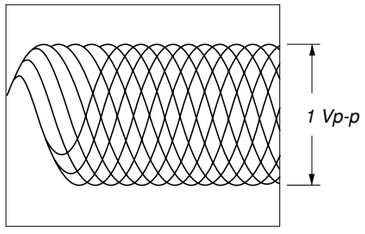
❶ IC501 ① (TE)



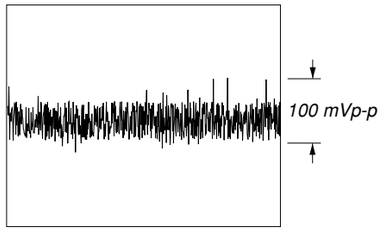
❷ IC901 ㊻ (CLK)



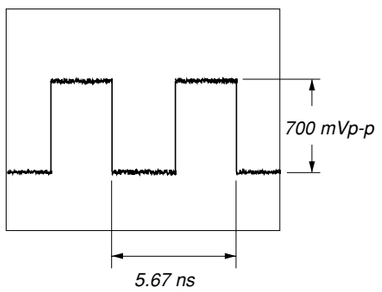
❸ IC501 ㉝ (RF OUT)



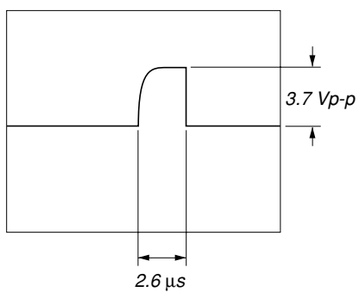
❹ IC501 ㊷ (FE)



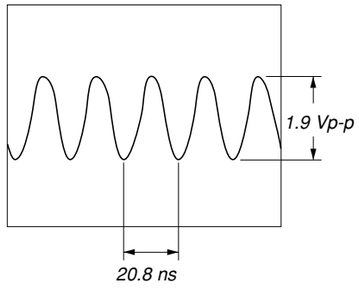
❺ IC601 ④ (CLK)



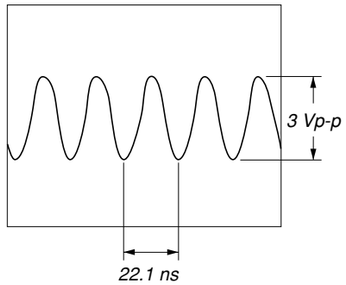
❻ IC902 ⑤ (EXT)



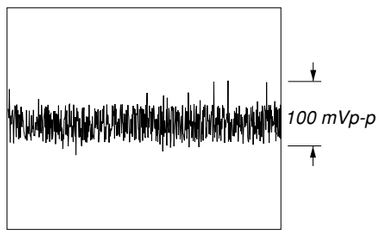
❼ IC801 ⑬⑧ (UOSCO) (USB mode)



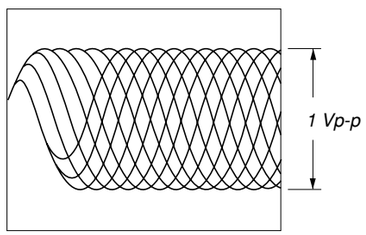
❽ IC801 ⑮ (OSCO)



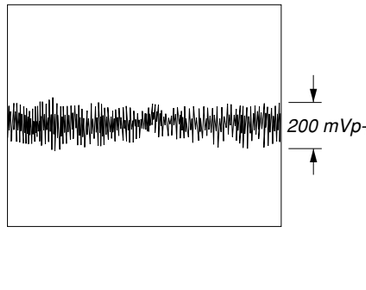
❾ IC801 ⑰② (FE)



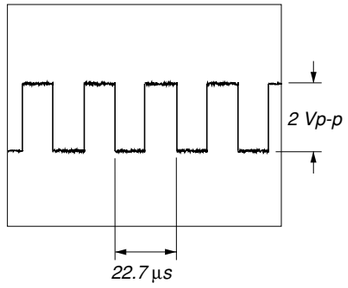
❿ IC801 ⑱ (RFI)



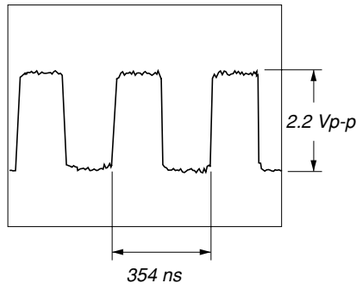
⓫ IC801 ⑫ (LRCK) (REC mode)



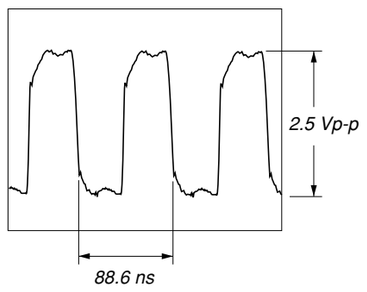
⓬ IC801 ⑯ (LRCK) (REC mode)



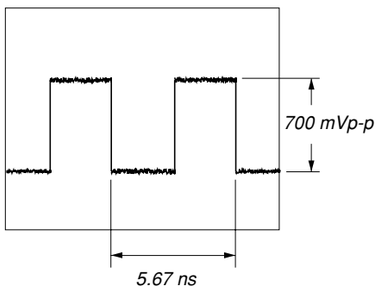
⓭ IC801 ⑲⑦ (XBCK) (REC mode)



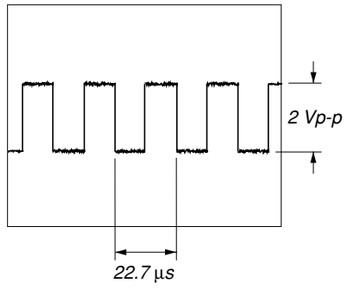
⓮ IC801 ⑲⑧ (FS256) (REC mode)



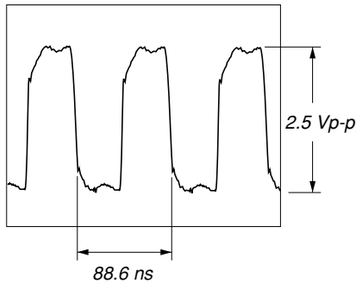
⓯ IC801 ㉑① (FS4)



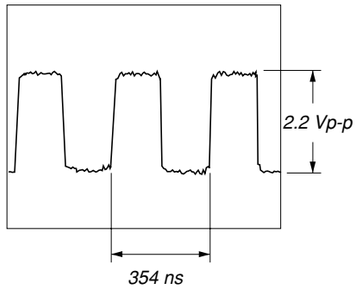
⓰ IC301 ⑫ (LRCK) (REC mode)



⓱ IC301 ⑪ (MCLK) (REC mode)

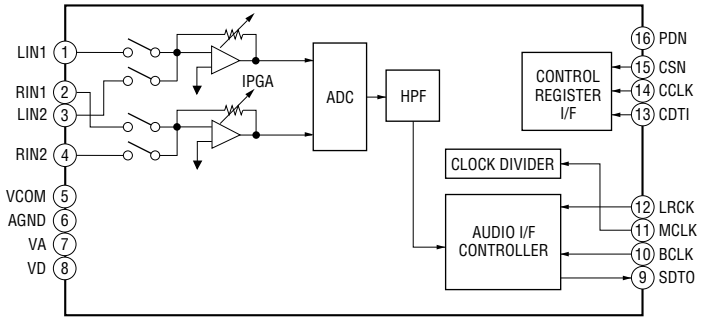


⓲ IC301 ⑩ (BCLK) (REC mode)

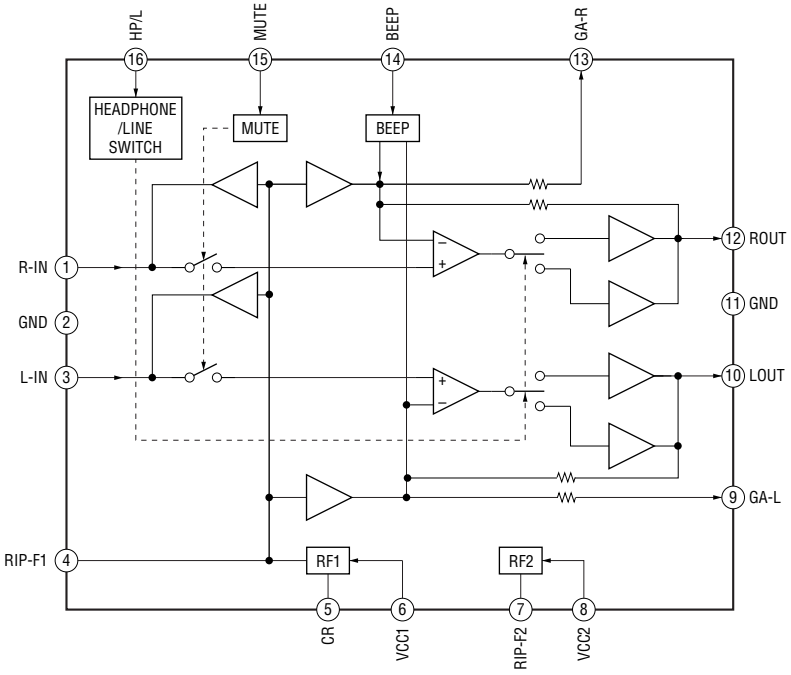


- **IC Block Diagrams**

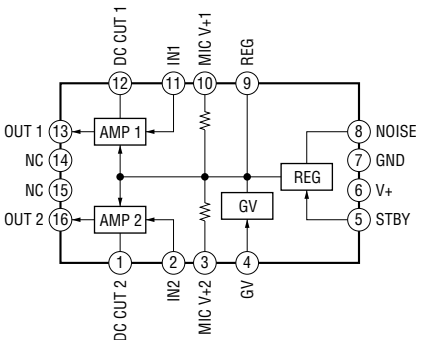
IC301 AK5354VT-E2



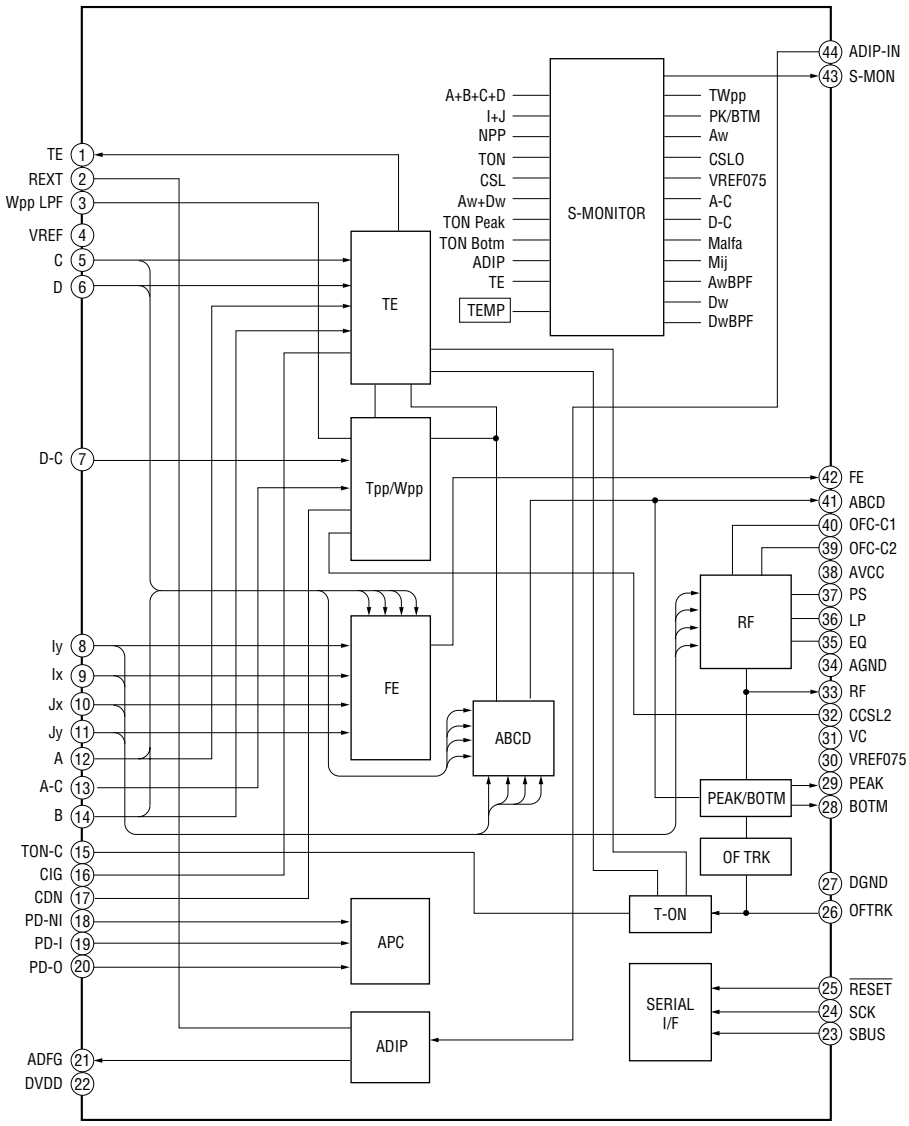
IC302 AN17020A-VB



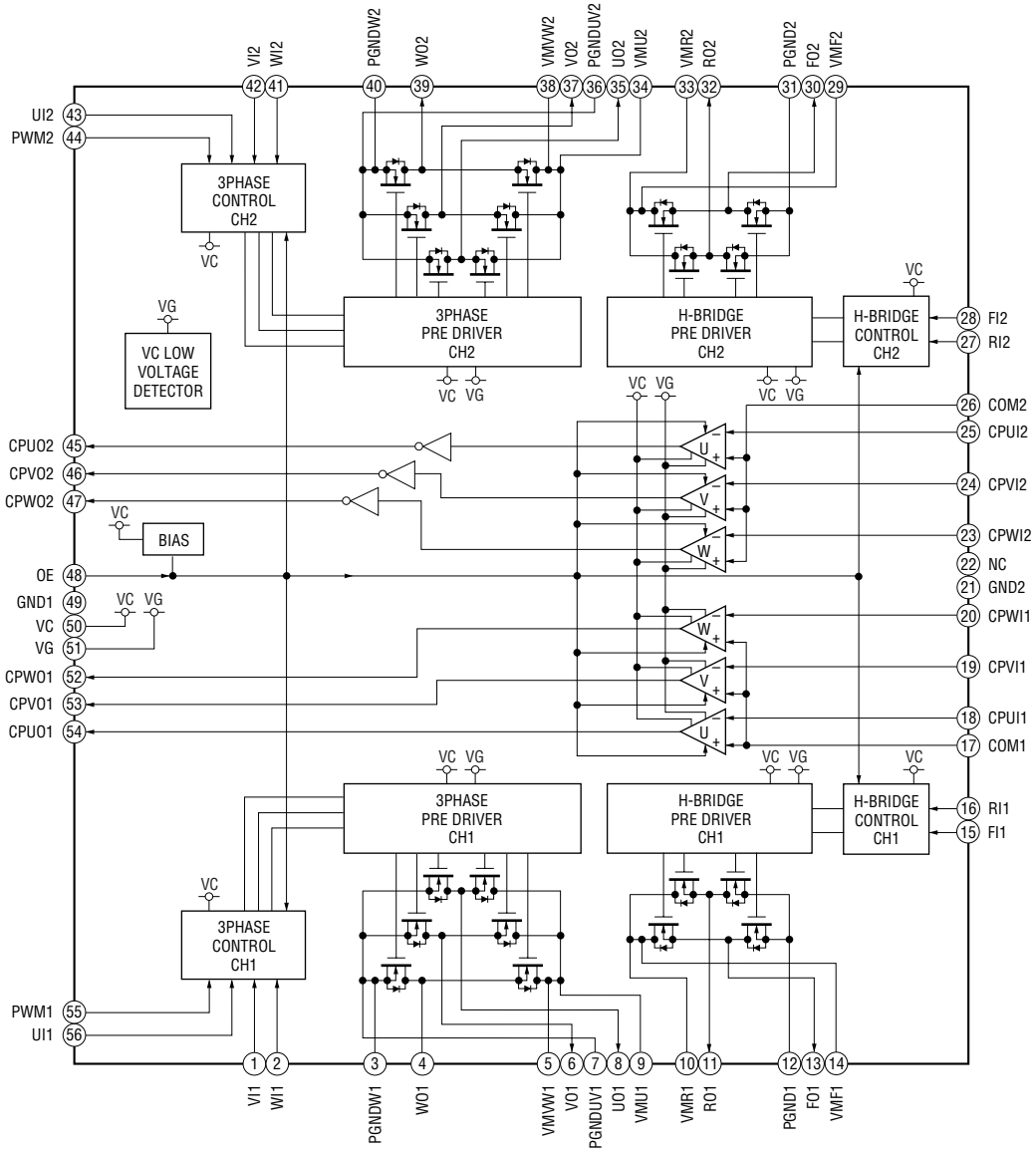
IC303 NJM2173APC1 (TE2)



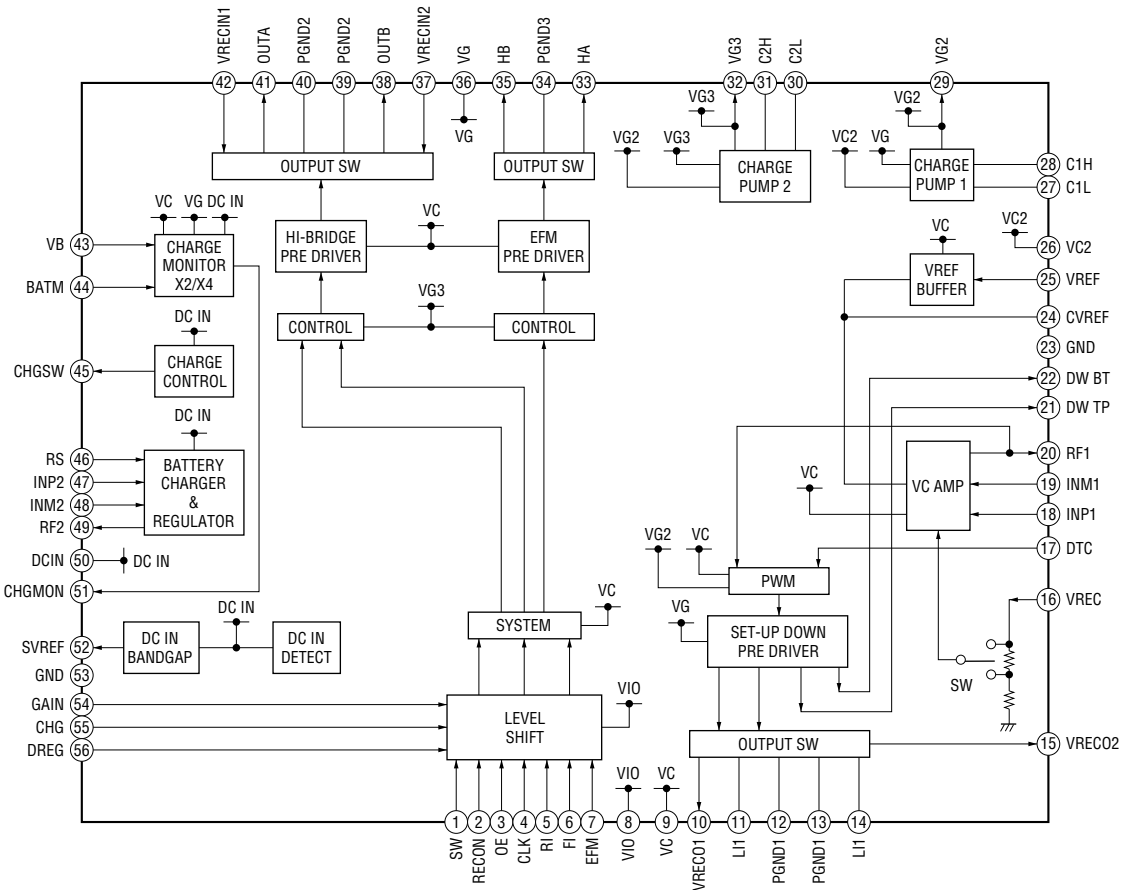
IC501 SN761057A



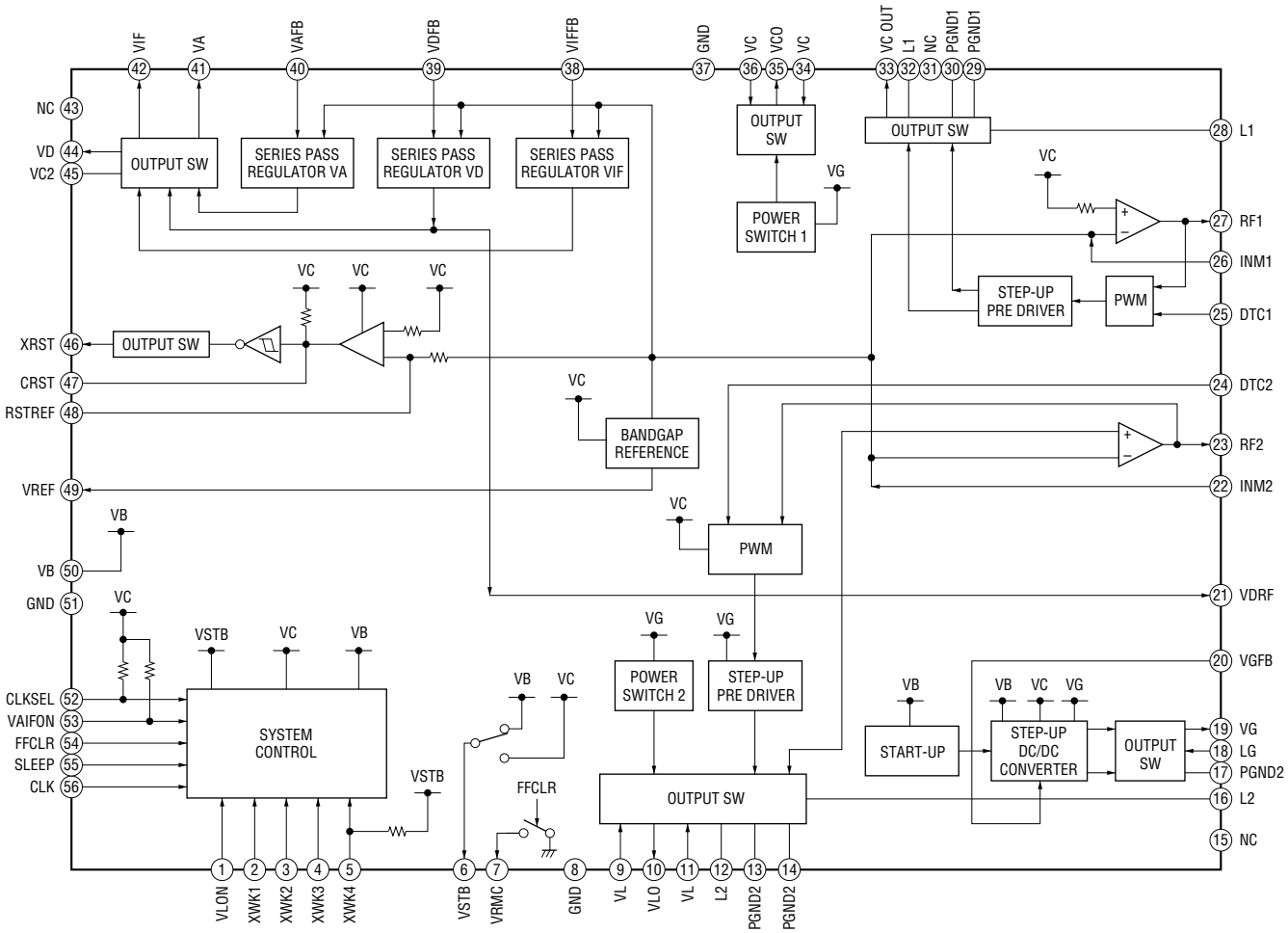
IC551 SC111258FCR2



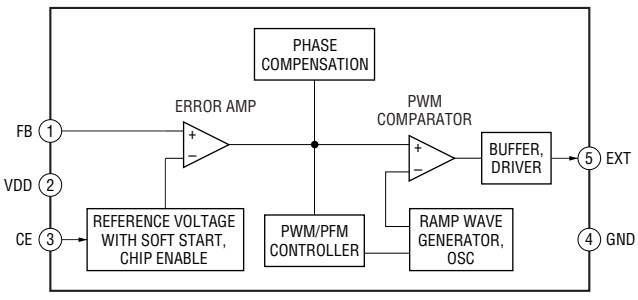
IC601 XPC18A22AFCR2



IC901 XPC18A32AFCR2



IC902 XC6368D101MR



6-11. IC PIN FUNCTION DESCRIPTION

• IC501 SN761057A (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Description
1	TE	O	Tracking error signal output to the system controller
2	REXT	—	Connect terminal to the external resistor for the ADIP amplifier control
3	WPP-LPF	—	Connect terminal to the external capacitor for the TPP/WPP low-pass filter
4	VREF	O	Reference voltage output terminal
5	C	I	Signal (C) input from the optical pickup detector
6	D	I	Signal (D) input from the optical pickup detector
7	D-C	I	Signal (D) input from the optical pickup detector (AC input)
8	IY	I	I-V converted RF signal (IY) input from the optical pickup detector
9	IX	I	I-V converted RF signal (IX) input from the optical pickup detector
10	JX	I	I-V converted RF signal (JX) input from the optical pickup detector
11	JY	I	I-V converted RF signal (JY) input from the optical pickup detector
12	A	I	Signal (A) input from the optical pickup detector
13	A-C	I	Signal (A) input from the optical pickup detector (AC input)
14	B	I	Signal (B) input from the optical pickup detector
15	TON-C	—	Connect terminal to the external capacitor for TON hold
16	CIG	—	Connect terminal to the external capacitor for the low-pass filter of NPP divider denominator
17	CDN	—	Connect terminal to the external capacitor for the low-pass filter of CSL divider denominator
18	PD-NI	I	Light amount monitor input terminal (non-invert input)
19	PD-I	I	Reference PWM signal input for the laser automatic power control from the system controller
20	PD-O	O	Light amount monitor output terminal
21	ADFG	O	ADIP duplex FM signal (22.05kHz ± 1kHz) output to the system controller
22	DVDD	—	Power supply terminal (+1.7V) (digital system)
23	SBUS	I/O	SSB serial data input/output with the system controller
24	SCK	I	SSB serial clock signal input from the system controller
25	XRST	I	Reset signal input from the system controller “L”: reset
26	OFTRK	I	Off track signal input terminal Not used
27	DGND	—	Ground terminal (digital system)
28	BOTM	O	Bottom hold signal output of the light amount signal (RF/ABCD) to the system controller
29	PEAK	O	Peak hold signal output of the light amount signal (RF/ABCD) to the system controller
30	VREF075	—	Connect terminal to the external capacitor for the internal reference voltage
31	VC	O	Middle point voltage (+1.1V) generation output terminal
32	CCSL2	—	Connect terminal to the external capacitor for the TPP/WPP low-pass filter
33	RF OUT	O	Playback EFM RF signal output to the system controller
34	AGND	—	Ground terminal (analog system)
35 to 37	EQ, LP, PS	—	Connect terminal to the external capacitor for the RF equalizer
38	AVCC	—	Power supply terminal (+2.1V) (analog system)
39, 40	OFC-2, OFC-1	—	Connect terminal to the external capacitor for the RF AC coupling
41	ABCD	O	Light amount signal (ABCD) output to the system controller
42	FE	O	Focus error signal output to the system controller
43	S-MON	O	Servo signal monitor output to the system controller
44	ADIP-IN	I	ADIP duplex FM signal (22.05kHz ± 1kHz) input terminal Not used

• **IC801 CXD2677-205GA (SYSTEM CONTROLLER, DIGITAL SIGNAL PROCESSOR, 16M BIT D-RAM)**

Pin No.	Pin Name	I/O	Description
1	NC	O	Load address strobe signal output terminal for D-RAM Not used
2	NC	I	Test input terminal for D-RAM Not used
3 to 7	NC	O	Address signal output terminal for D-RAM Not used
8, 9	NC	I/O	Two-way data bus terminal for D-RAM Not used
10, 11	DRAMVDD0, 1	—	Power supply terminal (for D-RAM) (+2.2V)
12, 13	DRAMVSS0, 1	—	Ground terminal (for D-RAM)
14, 15	NC	I/O	Two-way data bus terminal for D-RAM Not used
16 to 19	NC	O	Address signal output terminal for D-RAM Not used
20	NC	O	Column address strobe signal output terminal for D-RAM Not used
21	NC	I	Test input terminal for D-RAM Not used
22, 23	NC	O	Address signal output terminal for D-RAM Not used
24	DVSS0	—	Ground terminal (for the DSP block)
25	DVDD0	—	Power supply terminal (for the DSP block) (+1.1V)
26	OFTRK	I	Off track signal input from the DSP monitor (3)
27	SSB DATA	I/O	SSB data input/output with the RF amplifier
28	SSB CLK	O	SSB clock output to the RF amplifier
29	VREC PWM	O	PWM signal output for the Over write head drive power supply voltage control to the power control
30	VL PWM	O	PWM signal output for the laser power supply voltage control to the power control
31	VC PWM	O	PWM signal output for the system power supply voltage control to the power control
32	VD PWM	O	VD power supply voltage control signal output to the DC/DC converter
33	NC	—	Not used
34	IFVDD0	—	Power supply terminal (for the microcomputer I/F block) (+1.7V)
35	IFVSS0	—	Ground terminal (for the microcomputer I/F block)
36	OPT DET	I	DIN plug detection signal input terminal “H”: DIN plug detect
37	XJACK DET	I	LINE IN plug detection signal input terminal “L”: LINE or OPT plug detect
38	XMIC DET	I	Microphone plug detection signal input terminal “L”: microphone plug detect
39	OPEN CLOSE SW	I	Open/close detection switch of the upper panel input terminal “L”: when upper panel close
40	SET CODE0	I	Input terminal for the set (fixed at “L” in this set)
41	SET CODE1	I	Input terminal for the set (open in this set)
42, 43	SET CODE1, 2	I	Input terminal for the set (fixed at “L” in this set)
44	XPATCH	I	Patch function detection terminal “L”: patch function Not used
45	SI0	I	Serial data input from the nonvolatile memory and liquid crystal display element module
46	SO0	O	Serial data output to the nonvolatile memory, A/D converter and liquid crystal display element module
47	SCK0	O	Serial clock signal output to the nonvolatile memory, A/D converter and liquid crystal display element module
48	XGUM ON	I	Rechargeable battery detection switch input terminal “L”: rechargeable battery in detect
49	BEEP	O	Beep sound control signal output to the headphone amplifier
50, 51	TEST1, TEST0	I	Input terminal for the main test (normally fixed at “L”)
52	KDO	O	Data output terminal Not used
53	KRB	I	Ready/busy signal input terminal Not used
54	KCLK	O	Clock signal output terminal Not used
55	KCS	O	Chip select signal output terminal Not used

Pin No.	Pin Name	I/O	Description
56	KDI	I	Data input terminal Not used
57	TRST	I	Setting terminal for the test mode (normally fixed at "L")
58	XOPT CTL	O	Power supply ON/OFF control signal output for the DIN PD drive
59	VG CTL	O	VG power supply voltage control signal output terminal Not used
60	AOUT SEL	O	HP/LINE changeover signal output to the headphone amplifier
61	REC OPR LED	O	LED ON/OFF control signal output for the REC display
62	TSB SSB CTL	O	TSB/SSB changeover control signal output terminal Not used
63	GND SW2	O	Battery for Cradle ON/OFF switch control signal output terminal Not used
64	CLK SEL	O	System clock select signal output to the power control
65	MIC SENSE	O	Mic sensitivity control signal output to the mic amplifier "L": Low sensitivity "H": High sensitivity (normally: "H")
66	GND SW	O	GND changeover control signal output terminal
67	XCS LCD	O	Chip select signal output to the liquid crystal display element module
68	LCD STB	O	Strobe signal output to the liquid crystal display element module
69	MUTE	O	Analog muting control signal output "H": muting ON Not used
70	CS RTC	O	Chip select signal output to the clock IC
71	XCS NV1	O	Chip select signal (1) output to the nonvolatile memory
72	IFVDD1	—	Power supply terminal (for the microcomputer I/F block) (+1.7V)
73	IFVSS1	—	Ground terminal (for the microcomputer I/F block)
74	XRST MTR DRV	O	Reset control signal output to the motor driver "L": reset
75	XRF RST	O	Reset control signal output to the RF amplifier "L": reset
76	SPDL MON	I	Spindle servo monitor signal input
77	XHOLD SW	I	HOLD switch input terminal "L": hold ON
78, 79	JOG A, B	I	Jog dial pulse input terminal from the switch & liquid crystal display element module
80, 81	PD S0, PD S1	O	PD IC mode changeover signal output to the optical pick up
82	PAUSE KEY	I	Pause key input terminal from the switch & liquid crystal display element module
83	PROTECT	I	Detection input terminal of the record check claw from the protect detection switch "H": protect
84	SLD MON	I	Sled servo monitor signal input terminal
85	VLON	O	Power supply control signal output for the laser diode drive to the power control
86	DVSS1	—	Ground terminal (for the DSP block)
87	DVDD1	—	Power supply terminal (for the DSP block) (+1.1V)
88	SLEEP	O	System sleep control signal output to the power control "H": sleep ON
89	FFCLR	O	Input latch output for the start switching to the power control
90	CHG GAIN	O	Charge gain control signal output to the power control
91	CHG CTL	O	Charge ON/OFF control signal output to the power control "H": charge ON
92	CHGI CTL	O	Charge current control signal output terminal Not used
93	XHP STBY	O	Power supply control signal output terminal Not used
94	XCS NV2	O	Chip select signal (2) output to the nonvolatile memory
95	IFVSS2	—	Ground terminal (for the microcomputer I/F block)
96	IFVDD2	—	Power supply terminal (for the microcomputer I/F block) (+1.7V)
97	T MARK SW	I	T MARK (track mark) switch input terminal "L": track mark detection
98	CHG LED	O	LED ON/OFF control signal output for CHG (charge display) from the switch & liquid crystal display element module
99	NC	I	Initial switch detection input terminal Not used
100	NC	—	Not used

Pin No.	Pin Name	I/O	Description
101	XUDP UP ON	O	Pull-up resistor changeover control signal output of USB data (+) output terminal Not used
102	LCD RST	O	Reset control signal output to the liquid crystal display element module "L": reset
103	XMUTE	O	Analog muting control signal output to the headphone amplifier "L": muting ON
104	XRST	I	System reset signal input from the power control "L": reset
105	STAND DET	I	USB cradle detection signal input terminal
106	VB MON	I	Voltage monitor input terminal (A/D input) of the UNREG power supply
107	CHG MON	I	Charge voltage monitor input (A/D input) from the power control
108	VREF MON	I	Clear reference voltage monitor input (A/D input) from the RF amplifier
109, 110	SET KEY 1, 2	I	Key input terminal (A/D input) from the switch & liquid crystal display element module
111	VBUS DET	I	USB power supply voltage detection terminal
112	HIDC MON	I	HIGH DC voltage monitor input terminal (A/D input)
113	WK DET	I	Set key and USB start switching detection signal input terminal (A/D input)
114	REC KEY	I	REC key input terminal (A/D input)
115	HALF LOCK SW	I	Open button detection switch input terminal (A/D input) Input "L" when the open button is pressed. Input "H" in other cases.
116	RMC KEY	I	Key input terminal (A/D input) from the remote commander attached headphone
117	AVDD	—	Power supply terminal (for the microcomputer analog) (+2.6V)
118	AVSS	—	Ground terminal (for the microcomputer analog)
119	TSMVDD	—	Power supply terminal (for the TSB master communication) (+2.6V)
120	RMC DTCK	I/O	Serial data input/output with the remote commander attached headphone
121	TSLVDD	—	Power supply terminal (for the I/F to TSB slave) (+1.7V)
122, 123	NC	—	Not used
124	TAT	—	Not used
125	TAN	—	Not used
126	NAR	—	Not used
127	ID0	—	Not used
128	SAK	—	Not used
129	IT0	—	Not used
130	MITY	—	Not used
131	SUSPEND	O	USB suspend signal output terminal Not used
132	USBIFVDD	—	Power supply terminal (for USB I/F) (+3V)
133	UDM	I	USB data (-) input terminal
134	UDP	I	USB data (+) input terminal
135	UPUEN	O	USB pull-up resistor connection control output terminal
136	USBOSCVDD	—	Power supply terminal (for the USB oscillation circuit) (+2.2V)
137	UOSCI	I	Clock (48MHz) input terminal for the USB
138	UOSCO	O	Clock (48MHz) output terminal for the USB
139	USBOSCVSS	—	Ground terminal (for the USB oscillation circuit)
140 to 142	MODE1 to 3	O	Power supply control signal output for the over write head to the over write head drive
143	HD CON 1	O	Over write head control signal output to the over write head drive
144	PBVDD	—	Power supply terminal (+1.7V)
145	HD CON 2	O	Over write head control signal output to the over write head drive
146	XTEST	I	Terminal for test mode set (normally: open) "L": test mode
147	XCS ADA	O	Chip select signal output to the A/D converter
148	XPD ADA	O	Power supply control signal output for the drive to the A/D converter

Pin No.	Pin Name	I/O	Description
149	VDIOSC	—	Power supply terminal (for the OSC cell) (+2.2V)
150	OSCI	I	System clock (45.1584MHz) input terminal
151	OSCO	O	System clock (45.1584MHz) output terminal
152	VSIOSC	I	Ground terminal (for the OSC cell)
153	DAVDD	—	Power supply terminal (for the built-in D/A converter) (+2.2V)
154	VREFL	I	Reference voltage input terminal (for the built-in D/A converter L-CH)
155	AOUTL	O	Built-in D/A converter (L-CH) output terminal
156	AOUTR	O	Built-in D/A converter (R-CH) output terminal
157	VREFR	I	Reference voltage input terminal (for the built-in D/A converter R-CH)
158	DAVSS	—	Ground terminal (for the built-in D/A converter)
159	ASYO	O	Playback EFM duplex signal output terminal
160	ASYI	I	Playback EFM comparison slice level input terminal
161	AVD1	—	Power supply terminal (for the DSP asymmetry system analog) (+2.2V)
162	BIAS	I	Bias current input terminal for the playback EFM comparison
163	RFI	I	Playback EFM the RF signal input from the RF amplifier
164	AVS1	—	Ground terminal (for the DSP asymmetry system analog)
165	PCO	O	Phase comparison output terminal for the playback EFM system master PLL
166	FILI	I	Filter input terminal for the playback EFM system master PLL
167	FILO	O	Filter output terminal for the playback EFM system master PLL
168	CLTV	I	Internal VCO control voltage input terminal for the playback EFM system master PLL
169	PEAK	I	Peak hold signal input of the light amount signal (RF/ABCD) from the RF amplifier
170	BOTM	I	Bottom hold signal input of the light amount signal (RF/ABCD) from the RF amplifier
171	ABCD	I	Light amount signal (ABCD) input from the RF amplifier
172	FE	I	Focus error signal input from the Focus error amplifier
173	AUX1	I	Support signal (I_3 signal/temperature signal) input terminal (A/D input)
174	VC	I	Middle point voltage (+1.1V) input terminal
175	ADIO	O	Monitor output terminal of A/D converter input signal Not used
176	ADRT	I	A/D converter the upper limit voltage input terminal (fixed at "H" in this set)
177	AVD2	—	Power supply terminal (for the DSP servo analog system) (+2.2V)
178	AVS2	—	Ground terminal (for the DSP servo analog system)
179	ADRB	I	A/D converter the lower limit voltage input terminal (fixed at "L" in this set)
180	SE	I	Servo signal monitor input terminal (A/D input) from the RF amplifier
181	TE	I	Tracking error signal input from the Tracking error amplifier
182	DCHG	—	Connecting terminal with the analog power supply of the low impedance (fixed at "H" in this set)
183	APC	I	Error signal input for the laser automatic power control (fixed at "H" in this set)
184	CKRF	O	Clock output terminal for the RF amplifier control Not used
185	DTRF	O	Data output terminal for the RF amplifier control Not used
186	XLRF	O	Latch signal output terminal for the RF amplifier control Not used
187	DVSS2	—	Ground terminal (for the DSP block)
188	DVDD2	—	Power supply terminal (for the DSP block) (+1.1V)
189	XTSL	I	Input terminal for the frequency set up of the system clock "L": 45.1584MHz, "H": 22.5792MHz (fixed at "L" in this set)
190	DIN1	I	Input terminal of the record system digital audio signal
191 to 193	NC	O	D/A converter PWM signal output terminal Not used
194	DADT	O	Audio data output terminal Not used

Pin No.	Pin Name	I/O	Description
195	ADDT	I	Data input from the external A/D converter
196	LRCK	O	L/R sampling clock signal (44.1KHz) output to the external A/D converter
197	XBCK	O	Bit clock signal (2.8224MHz) output to the external A/D converter
198	FS256	O	11.2896MHz clock signal output to the external A/D converter
199	NC	I	Clock signal input from the external VCO Not used
200	DVSS3	—	Ground terminal (for the DSP block)
201	DVDD3	—	Power supply terminal (for the DSP block) (+1.1V)
202	ADFG	I	ADIP duplex FM signal (20.05±1kHz) input from the RF amplifier
203	NC	O	Filter cut off control signal output terminal Not used
204	IFVDD3	—	Power supply terminal (for the microcomputer I/F block) (+1.7V)
205	IFVSS3	—	Ground terminal (for the microcomputer I/F block)
206	APCREF	O	Reference PWM signal output for the laser automatic power control to the RF amplifier
207	TRDR	O	Tracking servo drive PWM signal output (–) to the coil driver
208	TFDR	O	Tracking servo drive PWM signal output (+) to the coil driver
209	FFDR	O	Focus servo drive PWM signal output (+) to the coil driver
210	FRDR	O	Focus servo drive PWM signal output (–) to the coil driver
211	FS4	O	176.4kHz clock signal output to the power control
212	SPRD	O	Spindle motor drive control signal output (U) to the motor driver
213	SPFD	O	Spindle servo drive PWM signal output to the motor driver
214	SPDV	O	Spindle motor drive control signal output (V) to the motor driver
215	SPDW	O	Spindle motor drive control signal output (W) to the motor driver
216	SPCU	I	Spindle motor drive comparison signal input (U) from the motor driver
217	SPCV	I	Spindle motor drive comparison signal input (V) from the motor driver
218	SPCW	I	Spindle motor drive comparison signal input (W) from the motor driver
219	SRDR	O	Sled motor drive control signal output (U) to the motor driver
220	SFDR	O	Sled servo drive PWM signal output to the motor driver
221	SLDV	O	Sled motor drive control signal output (V) to the motor driver
222	SLDW	O	Sled motor drive control signal output (W) to the motor driver
223	DVSS4	—	Ground terminal (for the DSP block)
224	DVDD4	—	Power supply terminal (for the DSP block) (+1.1V)
225	SLCU	I	Sled motor drive comparison signal input (U) from the motor driver
226	SLCV	I	Sled motor drive comparison signal input (V) from the motor driver
227	SLCW	I	Sled motor drive comparison signal input (W) from the motor driver
228	IFVDD4	—	Power supply terminal (for the microcomputer I/F block) (+1.7V)
229	IFVSS4	—	Ground terminal (for the microcomputer I/F block)
230	EFMO	O	EFM encode data output for the record to the over write head drive
231 to 233	MNT0 to 2	O	DSP monitor (0) to (2) output terminal Not used
234	MNT3	O	Off track signal output from the DSP monitor (3)
235	SENSE	O	DSP internal status (DSP SENS monitor) signal output terminal Not used
236	TX	O	Record data output enable signal output monitor terminal of the DSP Not used
237	RECP	O	Laser power changeover signal output terminal Not used
238	LRCKI/XELT	I	Input terminal for the PCM data I/F/ ATRAC data I/F Not used
239	XBCKI/ECK	I	Input terminal for the PCM data I/F/ ATRAC data I/F Not used
240	DATAI/EDT	I	Input terminal for the PCM data I/F/ ATRAC data I/F Not used
241	XERQ	I	Input terminal for the ATRAC data I/F Not used

Pin No.	Pin Name	I/O	Description
242	A11	O	Address signal output terminal for D-RAM Not used
243	XOE	O	Output enable signal output terminal for D-RAM Not used
244	XWE	O	Data write enable signal output terminal for D-RAM Not used
245	TSTDR3	I	Test input terminal for D-RAM Not used
246	EVA	I	EVA/FLASH chip discrimination terminal "L": FLASH chip, "H": EVA chip (fixed at "L" in this set)
247	FLASHVDD	—	Power supply terminal (for the built-in flash memory) (+2.2V)
248	FLASHVSS	—	Ground terminal (for the built-in flash memory)
249 to 256	NC	—	Not used

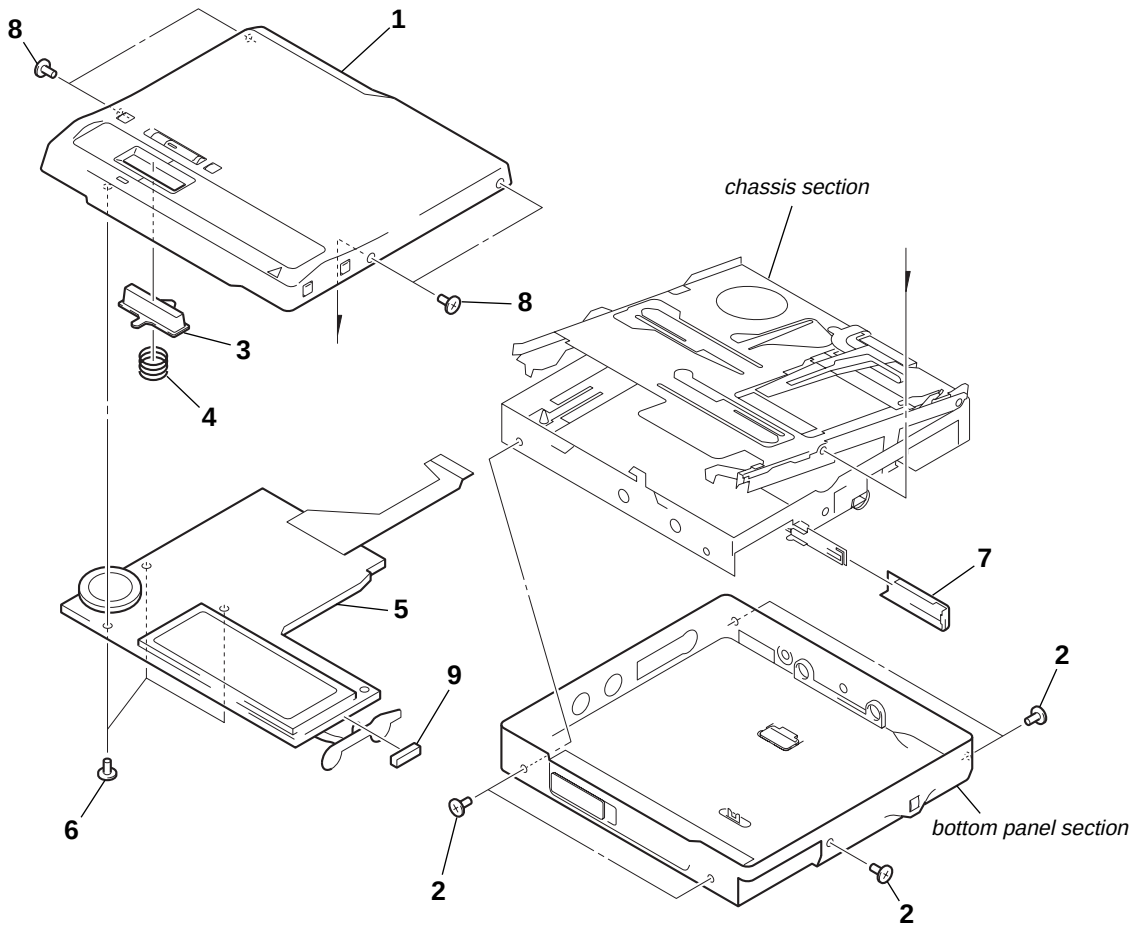
SECTION 7
EXPLODED VIEWS

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
  AUS : Australian model
  CH : Chinese model
  CND : Canadian model
  FR : French model
  HK : Hong Kong model
  JE : Tourist model
  KR : Korea model
  TW : Taiwan model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

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

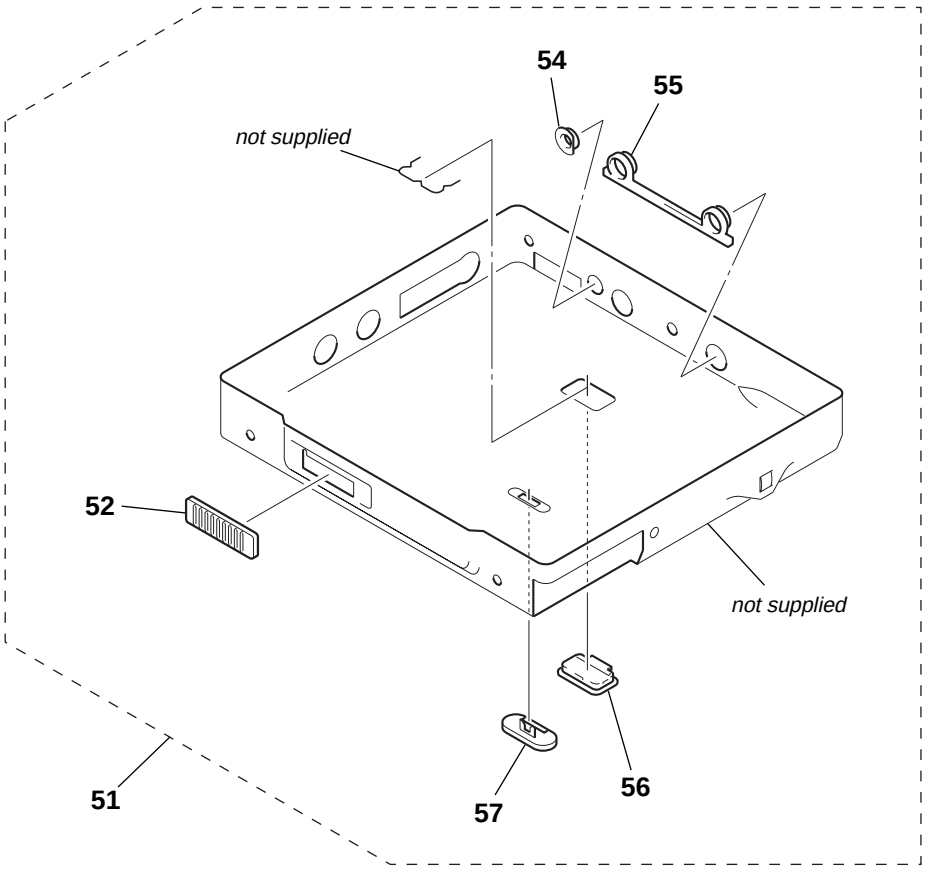
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. UPPER PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-3381-786-1	SERVICE ASSY, UPPER PANEL (S) (SILVER)	
1	X-3381-787-1	SERVICE ASSY, UPPER PANEL (L) (BLUE)	(AEP, UK, E, HK, KR, CH)
2	3-234-449-09	SCREW (M1.4) (for BLUE)	(AEP, UK, E, HK, KR, CH)
2	3-234-449-11	SCREW (M1.4) (for SILVER)	
3	3-236-392-02	KNOB (CONTROL)	
4	3-236-393-01	SPRING, COMPRESSION	
5	1-804-528-11	LCD MODULE	
6	4-984-017-01	SCREW (1.7), TAPPING	
7	3-236-418-04	LID, BATTERY CASE (SILVER)	
7	3-236-418-14	LID, BATTERY CASE (BLUE)	(AEP, UK, E, HK, KR, CH)
8	3-234-449-05	SCREW (M1.4) (for BLUE)	(AEP, UK, E, HK, KR, CH)
8	3-234-449-07	SCREW (M1.4) (for SILVER)	
9	3-240-549-01	CUSHION (VOL)	

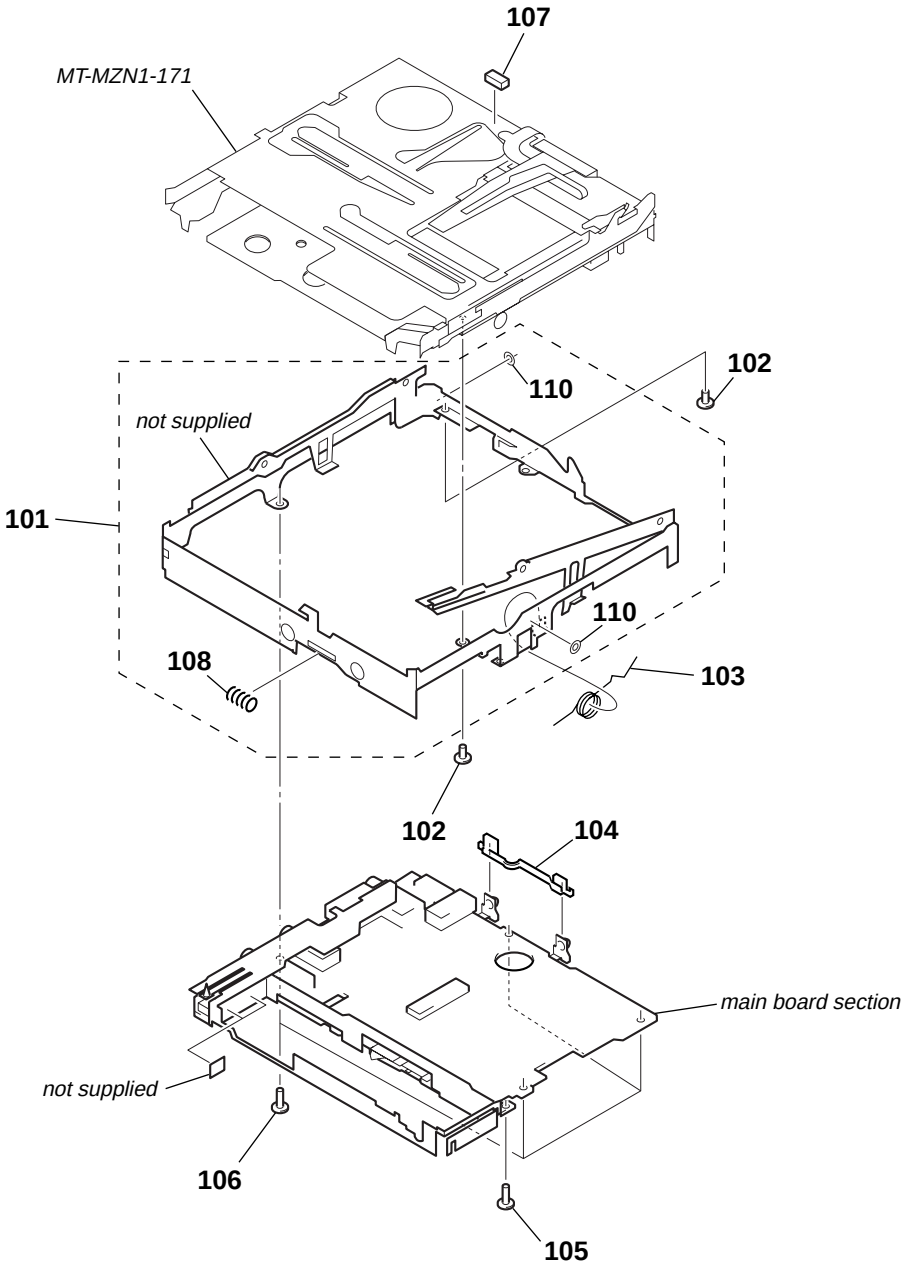
7-2. BOTTOM PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	A-3170-906-A	PANEL BLOCK ASSY, BOTTOM (SILVER) (FR)	
51	A-3174-322-A	PANEL BLOCK ASSY, BOTTOM (SILVER)	(US, CND, TW, AUS)
51	X-3382-438-1	PANEL (SV-NONCE-L) ASSY, BOTTOM	(BLUE) (E, HK, KR, CH)
51	X-3382-441-1	PANEL (SV-CE-S) ASSY, BOTTOM	(SILVER) (AEP, UK)
51	X-3382-442-1	PANEL (SV-CE-L) ASSY, BOTTOM	(BLUE) (AEP, UK)
51	X-3382-443-1	PANEL (SV-NONCE-S) ASSY, BOTTOM	(SILVER) (E, HK, KR, CH, JE)

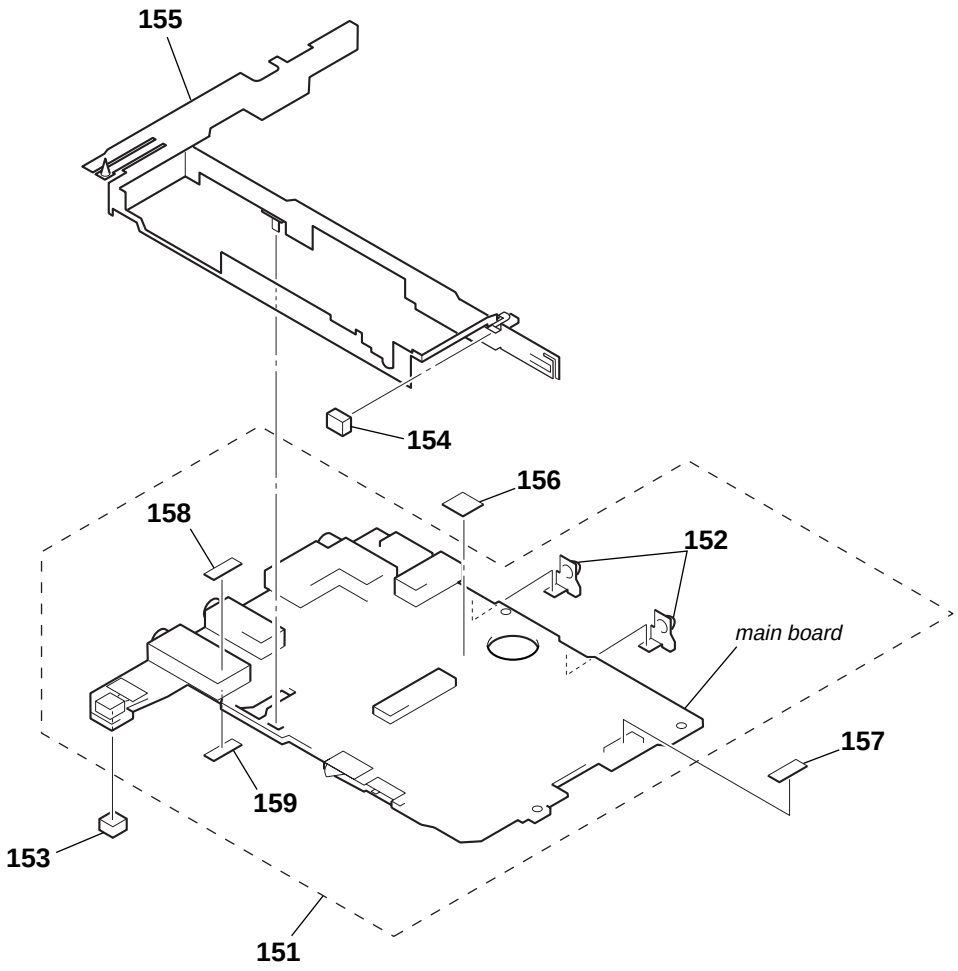
Ref. No.	Part No.	Description	Remark
52	3-236-423-02	KNOB (OPEN)	
54	4-219-968-01	COLLAR (DC IN)	
55	3-236-422-01	ESCUTCHEON	
56	3-236-412-01	ORNAMENT (CRADLE) (for SILVER)	
56	3-236-412-11	ORNAMENT (CRADLE) (for BLUE)	(AEP, UK, E, HK, KR, CH)
57	3-236-410-01	KNOB (HOLD) (for SILVER)	
57	3-236-410-11	KNOB (HOLD) (for BLUE)	(AEP, UK, E, HK, KR, CH)

7-3. CHASSIS SECTION



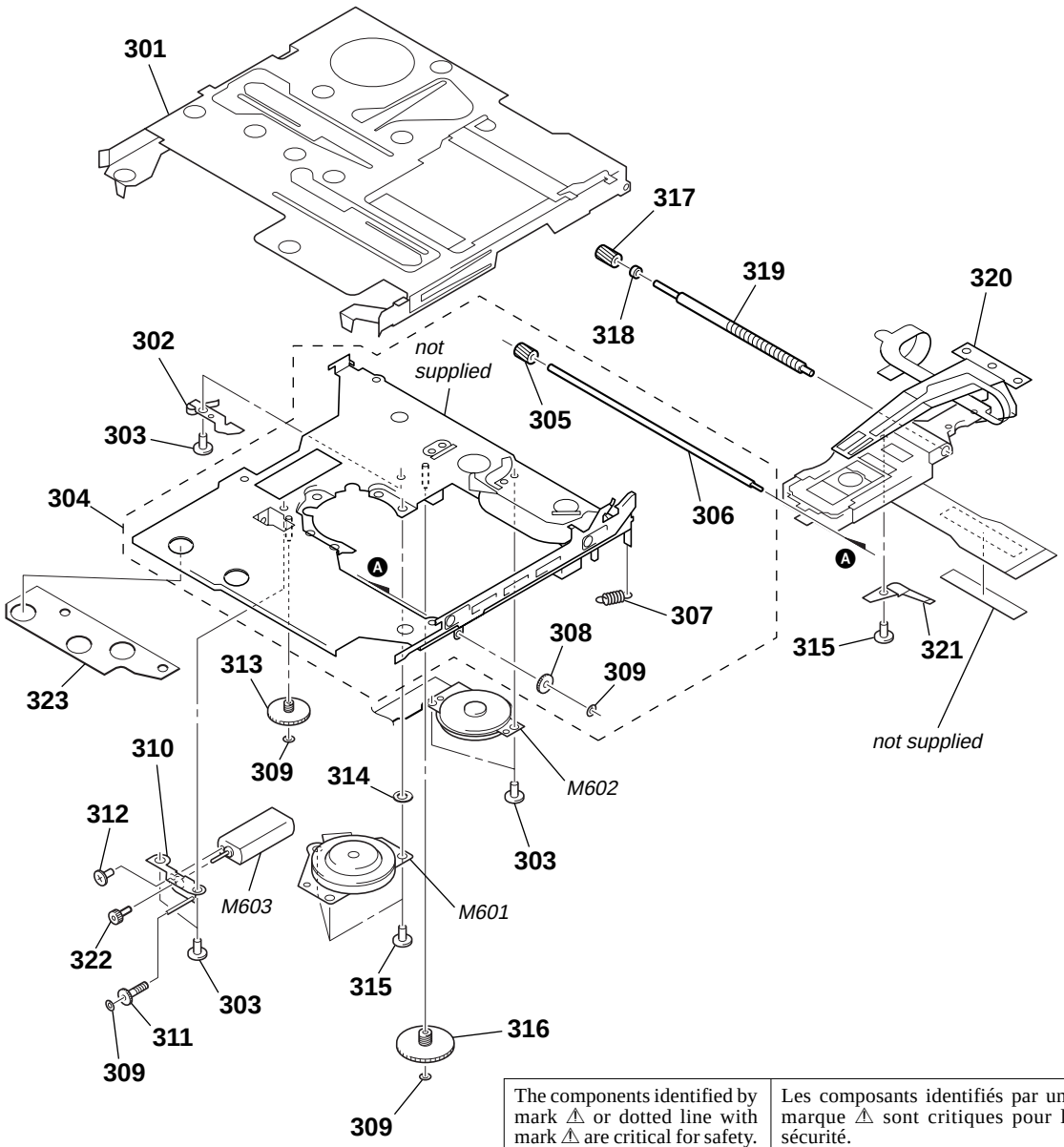
Ref. No.	Part No.	Description	Remark
101	X-3381-264-6	CHASSIS ASSY	
102	3-234-449-05	SCREW (M1.4)	
103	3-236-416-02	SPRING (POP)	
104	3-236-414-01	HOLDER (TERMINAL)	
105	3-232-536-02	SCREW (M1.4) (EG)	
106	3-238-876-07	SCREW (M1.4), TOOTHED LOCK	
107	3-240-548-01	SHEET (H)	
108	3-239-274-02	SPRING (LOCK), COMPRESSION COIL	
110	3-350-949-41	SHEET (SYSTEM CONTROL SCREW)	

7-4. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark
* 151	A-3021-730-B	MAIN BOARD, COMPLETE (for SERVICE) (EXCEPT FR)	
* 151	A-3021-835-B	MAIN BOARD, COMPLETE (for SERVICE) (FR)	
152	3-236-413-01	TERMINAL	
153	3-240-738-03	CUSHION (PROTECT)	
154	3-235-763-01	SHEET (PLUS)	
155	X-3381-266-4	CASE ASSY, BATTERY	
156	3-245-815-01	SHEET (SW)	
157	3-244-564-01	SHEET (SA)	
158	3-239-480-01	SHEET (J2)	
159	3-239-481-01	SHEET (J1)	

7-5. MD MECHANISM DECK SECTION (MT-MZN1-171)



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

Ref. No.	Part No.	Description	Remark
301	X-3381-232-3	HOLDER ASSY	
302	3-224-779-02	SPRING, THRUST DETENT	
303	3-225-996-01	SCREW (M1.4) (EG), PRECISION PAN	
304	X-3381-231-2	CHASSIS ASSY	
305	4-222-218-02	GEAR (HD)	
306	4-222-223-01	SHAFT, SUB	
307	4-222-226-01	SPRING (EJECT), TENSION	
308	4-222-222-01	GEAR (RACK)	
309	3-338-645-31	WASHER (0.8-2.5)	
310	X-4951-918-3	CHASSIS ASSY, GEAR	
311	3-222-545-01	GEAR (HB)	
312	4-224-885-01	SCREW (M1.2X1.5)	
313	4-222-215-01	GEAR (HC)	
314	4-997-677-21	WASHER	
315	3-225-996-06	SCREW (M1.4) (EG), PRECISION PAN	
316	4-222-216-01	GEAR (SA)	
317	4-222-208-01	GEAR (SB)	
318	3-043-237-02	BEARING (N)	
319	3-239-403-01	SCREW, LEAD	
⚠320	X-3382-947-1	SERVICE ASSY, OP (LCX-5R)	
321	4-222-205-11	SPRING, RACK	
322	3-222-544-01	GEAR (HA)	
323	3-239-193-01	SHEET (INSULATE MD)	
M601	8-835-744-03	MOTOR, DC SSM18B (SPINDLE) (WITH TURN TABLE)	
M602	1-763-727-11	MOTOR, DC (SLED) (WITH GEAR)	
M603	1-763-400-21	MOTOR, DC (OVER WRITE HEAD UP/DOWN)	

MAIN

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
  AUS : Australian model
  CH : Chinese model
  CND : Canadian model
  E13 : 220-230V AC area in E model
  FR : French model
  HK : Hong Kong model
  JE : Tourist model
  KR : Korean model
  TW : Taiwan 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. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

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

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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

Ref. No.	Part No.	Description			Remark
*	A-3021-730-B	MAIN BOARD, COMPLETE (for SERVICE) (EXCEPT FR)			
*	A-3021-835-B	MAIN BOARD, COMPLETE (for SERVICE) (FR)			
		**********			
	3-239-480-01	SHEET (J2)			
	3-239-481-01	SHEET (J1)			
	3-236-413-01	TERMINAL			
		< CAPACITOR >			
C101	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C102	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C103	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C104	1-135-868-11	TANTALUM CHIP	220uF	20%	2.5V
C105	1-113-600-11	TANTALUM CHIP	2.2uF	20%	6.3V
C107	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C108	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C110	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C111	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C112	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C113	1-131-862-11	TANTALUM CHIP	47uF	20%	4V
C116	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C118	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C201	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C202	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C203	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C204	1-135-868-11	TANTALUM CHIP	220uF	20%	2.5V
C205	1-113-600-11	TANTALUM CHIP	2.2uF	20%	6.3V
C207	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C208	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C210	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C211	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C212	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C213	1-131-862-11	TANTALUM CHIP	47uF	20%	4V
C216	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C217	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C218	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C301	1-125-839-11	TANTALUM CHIP	47uF	20%	6.3V
C302	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C303	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C304	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C305	1-113-600-11	TANTALUM CHIP	2.2uF	20%	6.3V
C306	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C307	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C308	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C309	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C310	1-125-899-11	TANTALUM CHIP	220uF	20%	4V
C311	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C312	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C313	1-119-750-11	TANTALUM CHIP	22uF	20%	6.3V
C314	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C315	1-113-600-11	TANTALUM CHIP	2.2uF	20%	6.3V
C316	1-125-926-11	TANTALUM CHIP	4.7uF	20%	6.3V
C320	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C322	1-131-862-11	TANTALUM CHIP	47uF	20%	4V
C323	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C330	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C332	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C335	1-164-933-11	CERAMIC CHIP	220PF	10%	50V
C336	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C344	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C501	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C502	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C503	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C504	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C506	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C507	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C508	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C509	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C510	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C511	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C513	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C514	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C515	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C516	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C518	1-125-926-11	TANTALUM CHIP	4.7uF	20%	6.3V
C519	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C521	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C523	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C524	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C526	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C527	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C529	1-125-840-11	TANTALUM	10uF	20%	6.3V
C530	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V

Ref. No.	Part No.	Description			Remark
C532	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C557	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C558	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C559	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C561	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C562	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C563	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C564	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C566	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C570	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C571	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C572	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C601	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C602	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C603	1-125-839-11	TANTALUM CHIP	47uF	20%	6.3V
C604	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C605	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C606	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C607	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-137-762-11	TANTALUM	10uF	20%	4V
C610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C611	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C612	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C613	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C614	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C615	1-137-760-11	MICA CHIP	100PF	5%	100V
C616	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C618	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C619	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C621	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C622	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C623	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C624	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C625	1-131-862-11	TANTALUM CHIP	47uF	20%	4V
C626	1-125-839-11	TANTALUM CHIP	47uF	20%	6.3V
C627	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C628	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C629	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C630	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C631	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C632	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C633	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C636	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C637	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C803	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C804	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C805	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C806	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C807	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C808	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C809	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C810	1-125-840-11	TANTALUM	10uF	20%	6.3V
C811	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C813	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C814	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			Remark
C815	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C816	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C817	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C818	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C819	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C820	1-125-839-11	TANTALUM CHIP	47uF	20%	6.3V
C821	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C822	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C825	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C826	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C828	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C829	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C830	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C831	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C832	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C833	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C835	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C836	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C838	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C839	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C840	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C841	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C845	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C846	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C847	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C848	1-131-860-11	TANTALUM CHIP	4.7uF	20%	10V
C849	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C850	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C851	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C901	1-125-840-11	TANTALUM	10uF	20%	6.3V
C902	1-125-840-11	TANTALUM	10uF	20%	6.3V
C903	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C904	1-125-840-11	TANTALUM	10uF	20%	6.3V
C905	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C906	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C907	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C908	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C913	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C914	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C915	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C917	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C919	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C920	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C921	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C922	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C923	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C924	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C925	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C926	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C928	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C929	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C930	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C931	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C932	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C933	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C934	1-137-762-11	TANTALUM	10uF	20%	4V
C935	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C936	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

MAIN

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN501	1-778-168-11	CONNECTOR, FFC/FPC (ZIF) 20P	
* CN502	1-815-790-21	CONNECTOR, FPC (ZIF) 10P	
CN601	1-815-951-11	CONNECTOR (USB CRADLE CONNECTOR)	
* CN801	1-794-772-21	CONNECTOR, FPC (ZIF) 20P	
		< DIODE >	
D301	8-719-081-71	DIODE DF8A6.8FK (TE85R)	
D303	8-719-046-91	DIODE MA2S111-TX	
D601	8-719-081-33	DIODE MA2YD1500LS0	
D602	8-719-081-33	DIODE MA2YD1500LS0	
D603	8-719-081-34	DIODE RB160M-30TR	
D604	8-719-082-45	DIODE RB715W-TL	
D606	8-719-081-35	DIODE MA2YD1700LS0	
D607	8-719-081-33	DIODE MA2YD1500LS0	
D608	8-719-081-35	DIODE MA2YD1700LS0	
D611	6-500-164-01	DIODE DF5A6.8LFU (TE85R)	
D612	8-719-081-33	DIODE MA2YD1500LS0	
D803	8-719-046-85	DIODE MA2S728-(K8).SO	
D804	8-719-046-85	DIODE MA2S728-(K8).SO	
D901	8-719-081-33	DIODE MA2YD1500LS0	
D902	8-719-081-33	DIODE MA2YD1500LS0	
D903	8-719-420-51	DIODE MA729-TX	
D904	8-719-046-91	DIODE MA2S111-TX	
D905	8-719-072-27	DIODE MA2Z748001S0	
		< FUSE >	
⚠ F801	1-576-439-21	FUSE (SMD) 0.25A 125V	
		< RESISTOR >	
FB301	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB303	1-216-809-11	METAL CHIP 100 5% 1/16W	
FB304	1-216-809-11	METAL CHIP 100 5% 1/16W	
FB306	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB601	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB602	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB603	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB801	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB802	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB803	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB804	1-216-864-11	METAL CHIP 0 5% 1/16W	
FB805	1-216-864-11	METAL CHIP 0 5% 1/16W	
		< IC >	
IC301	8-759-694-88	IC AK5354VT-E2	
IC302	6-700-662-01	IC AN17020A-VB	
IC303	8-759-699-54	IC NJM2173APC1 (TE2)	
IC501	6-701-391-01	IC SN761057A	
IC551	6-700-680-01	IC SC111258FCR2	
IC601	6-701-477-01	IC XPC18A22AFCR2	
IC603	6-700-958-01	IC XC61FS1YXXMR	
@ IC801	8-753-000-52	IC CXD2677-205GA	
IC802	(Not supplied)	IC AK6417AL-L	
IC803	8-759-680-84	IC AK6480BL-L	
IC901	6-700-880-01	IC XPC18A32AFCR2	
IC902	6-701-832-01	IC XC6368D101MR	
IC903	6-701-978-01	IC XC61CN0802NR	
		< JACK >	
J301	1-815-950-11	JACK (LINE IN (OPT))	
J302	1-816-153-21	JACK (🎧/LINE OUT)	
J303	1-793-620-21	JACK (MIC PLUG IN POWER)	
J601	1-785-383-11	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 3V)
		< COIL/RESISTOR >	
L301	1-469-535-21	INDUCTOR 10uH	
L302	1-469-535-21	INDUCTOR 10uH	
L303	1-469-535-21	INDUCTOR 10uH	
L501	1-469-535-21	INDUCTOR 10uH	
L502	1-469-535-21	INDUCTOR 10uH	
L601	1-428-912-21	CHOKE COIL 10uH	
L602	1-469-535-21	INDUCTOR 10uH	
L603	1-469-535-21	INDUCTOR 10uH	
L801	1-469-535-21	INDUCTOR 10uH	
L802	1-469-535-21	INDUCTOR 10uH	
L803	1-216-864-11	METAL CHIP 0 5% 1/16W	
L901	1-419-953-21	CHOKE COIL 100uH	
L902	1-419-949-21	CHOKE COIL 22uH	
L903	1-469-367-21	INDUCTOR 10uH	
L904	1-414-398-11	INDUCTOR 10uH	
L905	1-469-426-21	INDUCTOR 100uH	
L906	1-414-404-41	INDUCTOR 100uH	
L907	1-469-535-21	INDUCTOR 10uH	
		< TRANSISTOR >	
Q302	8-729-051-23	TRANSISTOR 2SA2018TL	
Q501	8-729-922-10	TRANSISTOR 2SA1577-T106-QR	
Q601	8-729-046-45	FET SI2302DS-T1	
Q602	8-729-046-44	TRANSISTOR ZDT6718TA	
Q603	8-729-053-71	FET TS8K1TB	
Q604	8-729-046-43	FET HAT2051T-EL	
Q605	8-729-046-42	FET HAT2050T-EL	
Q607	8-729-427-47	TRANSISTOR UMH2NTN	
Q801	8-729-429-44	TRANSISTOR XP1501-TXE	
Q804	8-729-047-48	TRANSISTOR UMD12N-TR	
Q901	8-729-052-37	FET XP151A13A0MR	
Q902	8-729-023-22	TRANSISTOR 2SD2114KT146	
Q903	8-729-046-45	FET SI2302DS-T1	
Q904	8-729-037-53	TRANSISTOR 2SB1462J-QR (TX).SO	
Q905	8-729-037-75	TRANSISTOR UN9214J-(TX).SO	
Q906	8-729-429-44	TRANSISTOR XP1501-TXE	
Q907	8-729-055-32	FET 3LN01SS-TL	
Q908	8-729-034-59	TRANSISTOR 2SA1745-6.7-TL	
Q909	8-729-037-92	TRANSISTOR 2SD2216J-R (TX).SO	
Q910	8-729-037-92	TRANSISTOR 2SD2216J-R (TX).SO	
Q911	8-729-037-92	TRANSISTOR 2SD2216J-R (TX).SO	
		< RESISTOR >	
R101	1-208-715-11	METAL CHIP 22K 0.5% 1/16W	
R102	1-208-707-11	METAL CHIP 10K 0.5% 1/16W	
R103	1-218-965-11	RES-CHIP 10K 5% 1/16W	
R104	1-208-635-11	METAL CHIP 10 0.5% 1/16W	(FR)

@ Replacement of IC801 (CXD2677-205GA) used in this set requires a special tool.

When IC802 is damaged, replace the MAIN board.

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

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

Ref. No.	Part No.	Description			Remark
R104	1-220-803-11	RES-CHIP	4.7	5%	1/16W (EXCEPT FR)
R105	1-208-643-11	RES-CHIP	22	5%	1/16W
R106	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R111	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R112	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R118	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R201	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R202	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R203	1-218-965-11	RES-CHIP	10K	5%	1/16W
R204	1-208-635-11	METAL CHIP	10	0.5%	1/16W (FR)
R204	1-220-803-11	RES-CHIP	4.7	5%	1/16W (EXCEPT FR)
R205	1-208-643-11	RES-CHIP	22	5%	1/16W
R206	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R211	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R212	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R218	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R301	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R302	1-218-953-11	RES-CHIP	1K	5%	1/16W
R303	1-218-981-11	RES-CHIP	220K	5%	1/16W
R304	1-218-953-11	RES-CHIP	1K	5%	1/16W
R305	1-218-953-11	RES-CHIP	1K	5%	1/16W
R306	1-218-985-11	RES-CHIP	470K	5%	1/16W
R307	1-218-941-11	RES-CHIP	100	5%	1/16W
R309	1-208-943-11	METAL CHIP	220K	0.5%	1/16W
R312	1-218-977-11	RES-CHIP	100K	5%	1/16W
R313	1-218-977-11	RES-CHIP	100K	5%	1/16W
R314	1-218-965-11	RES-CHIP	10K	5%	1/16W
R317	1-218-941-11	RES-CHIP	100	5%	1/16W
R318	1-218-941-11	RES-CHIP	100	5%	1/16W
R319	1-218-941-11	RES-CHIP	100	5%	1/16W
R501	1-218-973-11	RES-CHIP	47K	5%	1/16W
R502	1-218-985-11	RES-CHIP	470K	5%	1/16W
R503	1-218-981-11	RES-CHIP	220K	5%	1/16W
R505	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R507	1-218-953-11	RES-CHIP	1K	5%	1/16W
R517	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R519	1-218-977-11	RES-CHIP	100K	5%	1/16W
R521	1-218-446-11	METAL CHIP	1	5%	1/16W
R522	1-218-446-11	METAL CHIP	1	5%	1/16W
R601	1-218-989-11	RES-CHIP	1M	5%	1/16W
R602	1-218-981-11	RES-CHIP	220K	5%	1/16W
R603	1-218-977-11	RES-CHIP	100K	5%	1/16W
R604	1-218-446-11	METAL CHIP	1	5%	1/16W
R605	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R606	1-218-949-11	RES-CHIP	470	5%	1/16W
R607	1-218-945-11	RES-CHIP	220	5%	1/16W
R608	1-218-981-11	RES-CHIP	220K	5%	1/16W
R609	1-218-446-11	METAL CHIP	1	5%	1/16W
R610	1-218-990-11	SHORT	0		
R611	1-218-990-11	SHORT	0		
R612	1-218-985-11	RES-CHIP	470K	5%	1/16W
R613	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R614	1-218-965-11	RES-CHIP	10K	5%	1/16W
R615	1-218-977-11	RES-CHIP	100K	5%	1/16W
R616	1-218-446-11	METAL CHIP	1	5%	1/16W
R620	1-218-965-11	RES-CHIP	10K	5%	1/16W
R621	1-218-965-11	RES-CHIP	10K	5%	1/16W
R622	1-216-797-11	METAL CHIP	10	5%	1/16W
R623	1-218-969-11	RES-CHIP	22K	5%	1/16W
R628	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R629	1-218-953-11	RES-CHIP	1K	5%	1/16W
R630	1-218-949-11	RES-CHIP	470	5%	1/16W
R631	1-218-973-11	RES-CHIP	47K	5%	1/16W
R801	1-218-990-11	SHORT	0		
R802	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R803	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R804	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R805	1-208-951-11	METAL CHIP	100K	0.5%	1/16W
R806	1-218-981-11	RES-CHIP	220K	5%	1/16W
R807	1-216-801-11	METAL CHIP	22	5%	1/16W
R808	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R809	1-216-801-11	METAL CHIP	22	5%	1/16W
R810	1-218-949-11	RES-CHIP	470	5%	1/16W
R812	1-218-990-11	SHORT	0		
R813	1-218-989-11	RES-CHIP	1M	5%	1/16W
R814	1-218-990-11	SHORT	0		
R815	1-218-949-11	RES-CHIP	470	5%	1/16W
R818	1-218-990-11	SHORT	0		
R819	1-208-635-11	RES-CHIP	10	5%	1/16W
R820	1-218-965-11	RES-CHIP	10K	5%	1/16W
R821	1-218-977-11	RES-CHIP	100K	5%	1/16W
R822	1-218-977-11	RES-CHIP	100K	5%	1/16W
R823	1-208-635-11	RES-CHIP	10	5%	1/16W
R824	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R825	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R826	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R828	1-218-981-11	RES-CHIP	220K	5%	1/16W
R830	1-218-953-11	RES-CHIP	1K	5%	1/16W
R831	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R832	1-218-945-11	RES-CHIP	220	5%	1/16W
R833	1-220-804-11	RES-CHIP	2.2M	5%	1/16W
R835	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R836	1-218-990-11	SHORT	0		
R837	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R838	1-216-864-11	METAL CHIP	0	5%	1/16W
R839	1-218-990-11	SHORT	0		
R840	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R841	1-218-990-11	SHORT	0		
R842	1-218-990-11	SHORT	0		
R843	1-218-990-11	SHORT	0		
R845	1-218-989-11	RES-CHIP	1M	5%	1/16W
R846	1-218-941-11	RES-CHIP	100	5%	1/16W
R847	1-218-989-11	RES-CHIP	1M	5%	1/16W
R850	1-218-953-11	RES-CHIP	1K	5%	1/16W
R852	1-218-990-11	SHORT	0		
R854	1-218-990-11	SHORT	0		
R855	1-218-990-11	SHORT	0		
R858	1-218-989-11	RES-CHIP	1M	5%	1/16W
R859	1-208-931-11	RES-CHIP	68K	0.5%	1/16W
R860	1-218-953-11	RES-CHIP	1K	5%	1/16W
R861	1-218-989-11	RES-CHIP	1M	5%	1/16W
R862	1-218-953-11	RES-CHIP	1K	5%	1/16W

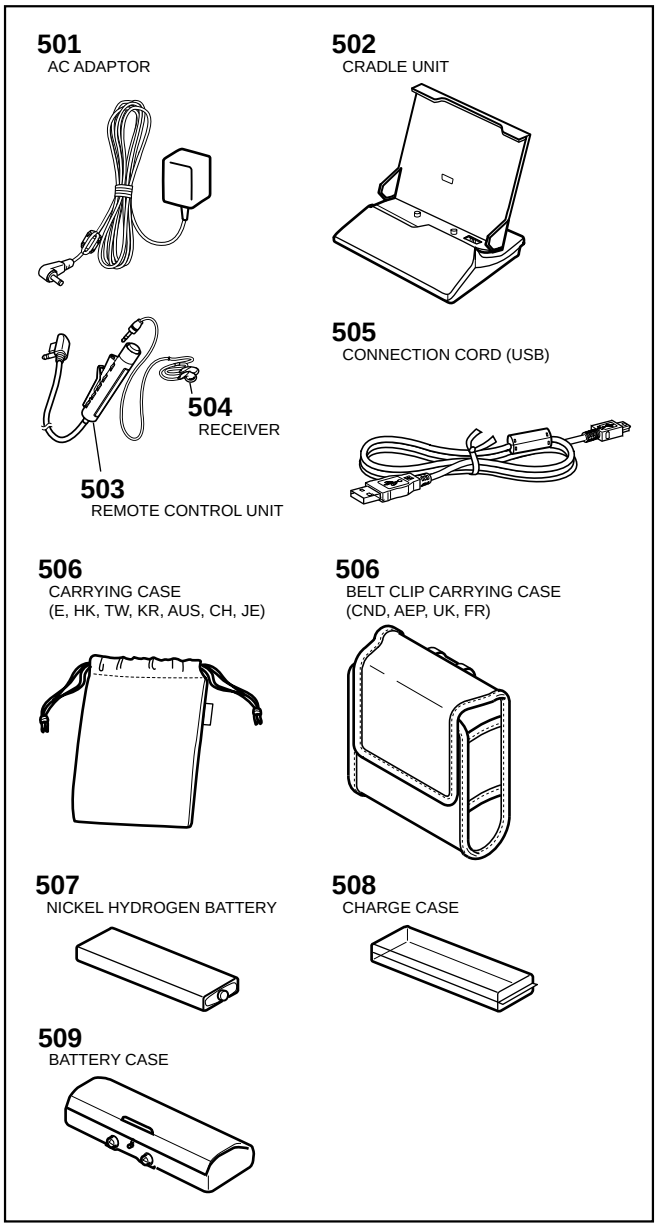
MAIN

Ref. No.	Part No.	Description			Remark
R863	1-218-953-11	RES-CHIP	1K	5%	1/16W
R864	1-218-953-11	RES-CHIP	1K	5%	1/16W
R865	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R866	1-218-953-11	RES-CHIP	1K	5%	1/16W
R867	1-218-985-11	RES-CHIP	470K	5%	1/16W
R902	1-218-985-11	RES-CHIP	470K	5%	1/16W
R903	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R905	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R909	1-218-965-11	RES-CHIP	10K	5%	1/16W
R910	1-218-965-11	RES-CHIP	10K	5%	1/16W
R911	1-218-949-11	RES-CHIP	470	5%	1/16W
R915	1-218-941-11	RES-CHIP	100	5%	1/16W
R916	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
R917	1-218-990-11	SHORT	0		
R920	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R922	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R923	1-218-985-11	METAL CHIP	470K	0.5%	1/16W
R924	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R925	1-218-989-11	RES-CHIP	1M	5%	1/16W
R927	1-218-989-11	RES-CHIP	1M	5%	1/16W
R928	1-218-989-11	RES-CHIP	1M	5%	1/16W
R929	1-218-989-11	RES-CHIP	1M	5%	1/16W
R930	1-218-989-11	RES-CHIP	1M	5%	1/16W
R933	1-218-989-11	RES-CHIP	1M	5%	1/16W
R934	1-218-969-11	RES-CHIP	22K	5%	1/16W
R935	1-218-989-11	RES-CHIP	1M	5%	1/16W
R937	1-218-985-11	RES-CHIP	470K	5%	1/16W
R938	1-218-990-11	SHORT	0		
R941	1-218-969-11	RES-CHIP	22K	5%	1/16W
R950	1-218-977-11	RES-CHIP	100K	5%	1/16W
R951	1-218-985-11	RES-CHIP	470K	5%	1/16W
R952	1-218-981-11	RES-CHIP	220K	5%	1/16W
R953	1-218-985-11	RES-CHIP	470K	5%	1/16W
R954	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R955	1-218-981-11	RES-CHIP	220K	5%	1/16W
R956	1-218-989-11	RES-CHIP	1M	5%	1/16W
R958	1-218-977-11	RES-CHIP	100K	5%	1/16W
R959	1-218-981-11	RES-CHIP	220K	5%	1/16W
R960	1-218-981-11	RES-CHIP	220K	5%	1/16W
R961	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB551	1-233-963-21	RES, NETWORK (CHIP TYPE) 2.2K			
RB552	1-233-967-11	RES, NETWORK (CHIP TYPE) 10K			
RB801	1-233-973-11	RES, NETWORK (CHIP TYPE) 100K			
		< SWITCH >			
S801	1-786-030-21	SWITCH, SLIDE (HOLD)			
S802	1-771-860-21	SWITCH, PUSH (1 KEY) (PROTECT DETECT)			
S803	1-771-806-61	SWITCH, PUSH (1 KEY) (RECHARGEABLE BATTERY IN DETECT)			
S804	1-762-805-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE DETECT)			
S805	1-786-260-21	SWITCH, TACTILE (T MARK)			
S806	1-762-947-12	SWITCH, PUSH (1 KEY) (OPEN)			

Ref. No.	Part No.	Description	Remark
		< EMI FILTER >	
T601	1-416-405-21	FILTER, CHIP EMI	
		< THERMISTOR >	
TH601	1-804-616-21	THERMISTOR, POSITIVE	
TH602	1-804-616-21	THERMISTOR, POSITIVE	
		< VIBRATOR >	
X801	1-795-462-21	VIBRATOR, CRYSTAL (48MHz)	
X802	1-795-047-21	VIBRATOR, CRYSTAL (45.1584MHz)	
**********			
		MISCELLANEOUS	
		**********	
5	1-804-528-11	LCD MODULE	
⚠320	X-3382-947-1	SERVICE ASSY, OP (LCX-5R)	
M601	8-835-744-03	MOTOR, DC SSM18B (SPINDLE) (WITH TURN TABLE)	
M602	1-763-727-11	MOTOR, DC (SLED) (WITH GEAR)	
M603	1-763-400-21	MOTOR, DC (OVER WRITE HEAD UP/DOWN)	
**********			
		ACCESSORIES	
		**********	
	1-543-798-11	FILTER, CLAMP (FERRITE CORE) (JE)	
⚠	1-569-007-12	ADAPTOR, CONVERSION 2P (JE)	
	1-794-451-11	CONNECTOR, LIGHT (EXCEPT HK, KR, CH, JE)	
	1-794-451-51	CONNECTOR, LIGHT (HK, KR, CH, JE)	
	3-021-018-11	LABEL, FRANCE (FR)	
	3-234-039-12	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT FR)	
	3-234-039-22	MANUAL, INSTRUCTION (FRENCH) (CND, AEP, FR)	
	3-234-039-32	MANUAL, INSTRUCTION (GERMAN) (AEP)	
	3-234-039-42	MANUAL, INSTRUCTION (SPANISH) (AEP, JE)	
	3-234-039-52	MANUAL, INSTRUCTION (DUTCH) (AEP)	
	3-234-039-62	MANUAL, INSTRUCTION (SWEDISH) (AEP)	
	3-234-039-72	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
	3-234-039-81	MANUAL, INSTRUCTION (PORTUGUES) (JE)	
	3-234-039-92	MANUAL, INSTRUCTION (FINNISH) (AEP)	
	3-236-743-12	MANUAL, INSTRUCTION (Open MG Jukebox) (ENGLISH) (EXCEPT FR)	
	3-236-743-22	MANUAL, INSTRUCTION (Open MG Jukebox) (FRENCH) (CND, AEP, FR)	
	3-236-743-32	MANUAL, INSTRUCTION (Open MG Jukebox) (GERMAN) (AEP)	
	3-236-743-42	MANUAL, INSTRUCTION (Open MG Jukebox) (SPANISH) (AEP)	
	3-236-743-52	MANUAL, INSTRUCTION (Open MG Jukebox) (DUTCH) (AEP)	
	3-236-743-62	MANUAL, INSTRUCTION (Open MG Jukebox) (SWEDISH) (AEP)	
	3-236-743-72	MANUAL, INSTRUCTION (Open MG Jukebox) (ITALIAN) (AEP)	
	3-236-743-92	MANUAL, INSTRUCTION (Open MG Jukebox) (FINNISH) (AEP)	
	3-237-042-13	SOFT (CD-ROM), APPLICATION (US, CND)	
	3-237-042-23	SOFT (CD-ROM), APPLICATION (AEP, UK, FR)	
	3-237-042-34	SOFT (CD-ROM), APPLICATION (HK, E, AUS, KR, TW, CH)	

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

Ref. No.	Part No.	Description	Remark
	3-237-042-42	SOFT (CD-ROM), APPLICATION (JE)	
	3-238-089-12	MANUAL, INSTRUCTION (Open MG Jukebox) (TRADITIONAL CHINESE) (E, HK, TW)	
	3-238-089-22	MANUAL, INSTRUCTION (Open MG Jukebox) (SIMPLIFIED CHINESE) (CH)	
	3-238-089-32	MANUAL, INSTRUCTION (Open MG Jukebox) (KOREAN) (KR)	
	3-238-322-12	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (E, HK, TW, JE)	
	3-238-322-21	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (CH)	
	3-238-322-32	MANUAL, INSTRUCTION (KOREAN) (KR, JE)	
	3-239-215-11	MANUAL, INSTRUCTION (How to Install) (ENGLISH) (US, CND)	
	3-239-215-21	MANUAL, INSTRUCTION (How to Install) (FRENCH) (CND)	
	3-241-316-11	CARD (OPERATING INSTRUCTIONS) (ENGLISH) (US, CND)	
	3-241-316-21	CARD (OPERATING INSTRUCTIONS) (FRENCH) (CND)	
⚠501	1-418-028-12	ADAPTOR, AC (AC-MZR55) (JE)	
⚠501	1-476-856-11	ADAPTOR, AC (AC-ES305) (CH)	
⚠501	1-476-857-21	ADAPTOR, AC (AC-ES305) (AEP, FR, E)	
⚠501	1-476-858-21	ADAPTOR, AC (AC-ES305) (UK, HK)	
⚠501	1-476-859-21	ADAPTOR, AC (AC-ES305) (US, CND, TW)	
⚠501	1-476-860-21	ADAPTOR, AC (AC-ES305) (AUS)	
⚠501	1-477-425-21	ADAPTOR, AC (AC-ES305) (KR)	
⚠502	1-476-915-31	CRADLE UNIT (BCA-WM20U) (SILVER)	
⚠502	1-476-915-41	CRADLE UNIT (BCA-WM20U) (BLUE) (AEP, UK, E, HK, KR, CH)	
503	1-476-395-12	REMOTE CONTROL UNIT (RM-MC11EL)	
504	8-953-278-90	HEADPHONE MDR-A34SP SET (US)	
504	8-954-008-90	RECEIVER, EAR MDR-E808SP/C SET (EXCEPT US)	
505	1-823-647-11	CORD, CONNECTION (USB)	
506	3-220-749-01	CASE, CARRYING (E, HK, TW, KR, AUS, CH, JE)	
506	3-228-300-11	CASE, BELT CLIP CARRYING (CND, AEP, UK, FR)	
507	1-756-120-23	BATTERY, NICKEL HYDROGEN (NH-14WM (A)) (EXCEPT US, CND)	
507	1-756-120-32	BATTERY, NICKEL HYDROGEN (NH-14WM (A)) (US, CND)	
508	3-008-521-01	CASE, BATTERY CHARGE	
509	1-251-895-11	BATTERY CASE	



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

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.

Ver.	Date	Description of Revision
1.0	2002.01	New
1.1	2002.02	Addition of US, Canadian, E13 (220-230V AC area in E model), Taiwan, Australian, Chinese and Tourist models Addition of Part No. for MAIN board, complete
1.2	2002.03	Change of Part No. for application soft (CD-ROM) (ECN-DAA01139)
1.3	2002.09	Correction of EXPLODED VIEWS (SPM-02036)
1.4	2002.10	Change of Part No. for OP SERVICE ASSY (ECN-DAA01316)
1.5	2003.08	Change of the adjustment values after NV reset and the patch software accompanying it. Changing of parts supply classification of IC801 and IC802. (SPM-03026)
1.6	2003.11	Correction of Part No. for Ref. No. 8 to EXPLODED VIEWS (SPM-03046)