

MZ-E300

SERVICE MANUAL

Ver 1.2 2001.12



*US Model
Canadian Model
AEP Model
E Model
Chinese Model*

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Model Name Using Similar Mechanism	NEW
MD Mechanism Type	MT-MZE300-176
Optical Pick-up Mechanism Type	LCX-4E

SPECIFICATIONS

System

Audio playing system

MiniDisc digital audio system

Laser diode properties

Material: GaAlAs

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

Emission duration: continuous

Laser output: less than $44.6 \mu\text{W}^*$

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

Revolutions

Approx. 700 rpm to 1,500 rpm

Error correction

ACIRC (Advanced Cross Interleave Reed Solomon Code)

Sampling frequency

44.1 kHz

Coding

ATRAC (Adaptive TRansform Acoustic Coding)

Modulation system

EFM (Eight to Fourteen Modulation)

Number of channels

2 stereo channels

1 monaural channel

Frequency response

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

Wow and Flutter

Below measurable limits

Power requirements

One LR6 (size AA) battery (not supplied)

Battery operation time

Battery life

(EIAJ¹⁾)

Battery

Playback

LR6 (SG) Sony Alkaline dry battery²⁾

Approx. 33 hours

¹⁾ Measured in accordance with the EIAJ (Electronic Industries Association of Japan) standard (using a Sony MDW-series Mini-disc).

²⁾ When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan).

Note

The effective battery life may be shorter than that indicated above, depending on operating conditions, the surrounding temperature, and the battery type.

Dimensions

Approx. 83.0 x 26.7 x 76.5 mm (w/h/d) ($3 \frac{3}{8} \times 1 \frac{1}{16} \times 3 \frac{1}{8}$ in.) (not including projecting parts and controls)

Mass

Approx. 83.0 g (3.0 oz) (the player only)

Supplied accessories

Headphones/earphones (1)

Design and specifications are subject to change without notice.

PORTABLE MINIDISC PLAYER

9-873-064-13

2001L0200-1

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Sony Corporation

Personal Audio Company

Published by Sony Engineering Corporation

SONY®

TABLE OF CONTENTS

Specifications 1

1. SERVICING NOTE 2

2. GENERAL

 Preparing a Power Source 3

 To Connect the Headphones/Earphones 3

 Playing an MD 3

3. DISASSEMBLY

 3-1. "Lid ASSY, Upper", Holder ASSY 4

 3-2. Mechanism Deck 4

 3-3. Main Board 5

 3-4. Optical Pick-up ASSY 5

4. TEST MODE 6

5. DIAGRAMS

 5-1. Explanation of IC Terminals 13

 5-2. Block Diagram 18

 5-3. Printed Wiring Boards – Main Section (1/2) – 19

 5-4. Printed Wiring Boards – Main Section (2/2) – 20

 5-5. Schematic Diagram – Main Section (1/3) – 21

 5-6. Schematic Diagram – Main Section (2/3) – 22

 5-7. Schematic Diagram – Main Section (3/3) – 23

6. EXPLODED VIEWS

 6-1. Main Section 29

 6-2. Mechanism Deck Section 30

7. ELECTRICAL PARTS LIST 31

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

Flexible Circuit Board Repairing

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

Notes on chip component replacement

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

SAFETY-RELATED COMPONENT WARNING!!

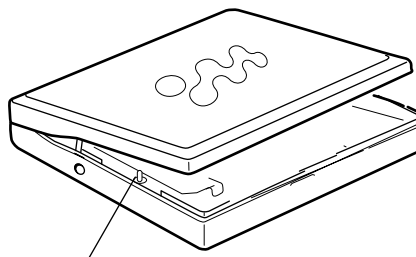
COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

**SECTION 1
 SERVICING NOTE**

When repairing this device with the power on, if you remove the main board, this device stops working.
 In this case, you work without the device stopping by fastening the hook of the Open/Close detection switch (S808).



Open/Close detection switch (S808)

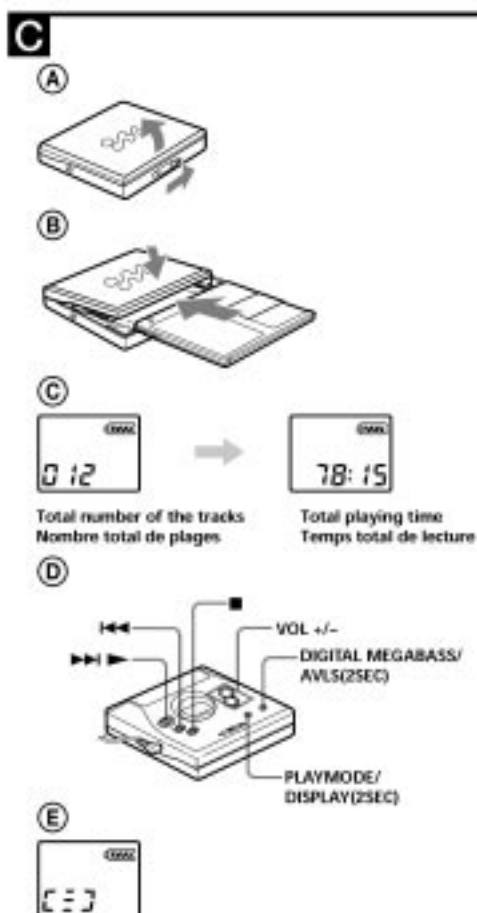
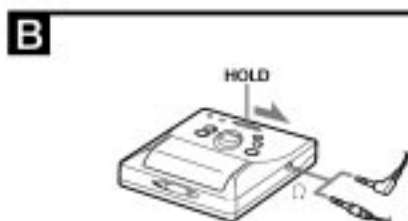
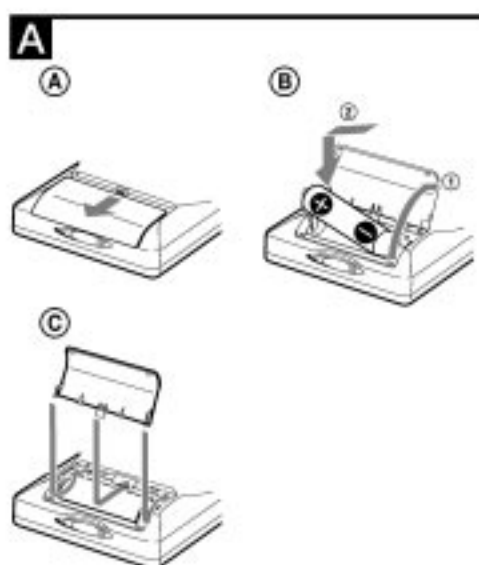
Note on IC replacement

If using flux on replacing IC801 etc., clean it with alcohol or equivalent, and after that, check carefully there are no dust or rags in between pins.

Especially, be sure to check between pins 4 and 5.

SECTION 2 GENERAL

This section is extracted from instruction manual.



► Getting started

Preparing a power source (See Fig. A)

Insert one LR6 (size AA) battery with correct polarity. Be sure to insert the battery (minus) end first. (See Fig. A-②)

When to replace the battery

You can check the battery condition with the battery indication in the display.

- Battery power decreasing
- Weak battery
- The battery has gone out. "Lo" flashes in the display, and the power goes off. Replace it with a new one.

Battery	Playback (EIAJ ¹⁾)
LR6 (SG) Sony Alkaline dry battery ²⁾	Approx. 33 hours

¹⁾ Measured in accordance with the EIAJ (Electronic Industries Association of Japan) standard (using a Sony MDW-series Mini-disc).

²⁾ When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan).

Note

The effective battery life may be shorter than that indicated above, depending on operating conditions, the surrounding temperature, and the battery type.

To attach the battery compartment lid

Attach the battery compartment lid as shown in Fig. A-③.

To connect the headphones/ earphones (See Fig. B)

- 1 Connect the supplied headphones/earphones to jack. Slide HOLD in the direction of the arrow shown in the illustration to release the hold function.

► MD playing

Playing an MD (See Fig. C)

- 1 Insert an MD.
 - ① Slide OPEN. (See Fig. C-①)
 - ② Insert the MD with the label side facing up, and press the lid down to close (See Fig. C-②).
The total number of the tracks and the total playing time appear in the display (See Fig. C-③).
- 2 Play the MD. (See Fig. C-④)
 - ① Press or .
 - ② Press VOL +/- to adjust the volume.
The volume level changes from 0 to 10, with three levels for each number except for 0 and 10.
(Example: 2., 2>, 2<)
There are a total of 32 volume levels.

To	Do this
Stop	Press (See Fig. C-⑤).
Find the beginning of the current track	Press once.
Listen to the beginning of the previous track	Press repeatedly.
Listen to the beginning of the next track	Press once.
Go backwards while playing	Hold down .
Go forward while playing	Hold down .
Remove the MD	Press , and then slide OPEN.*

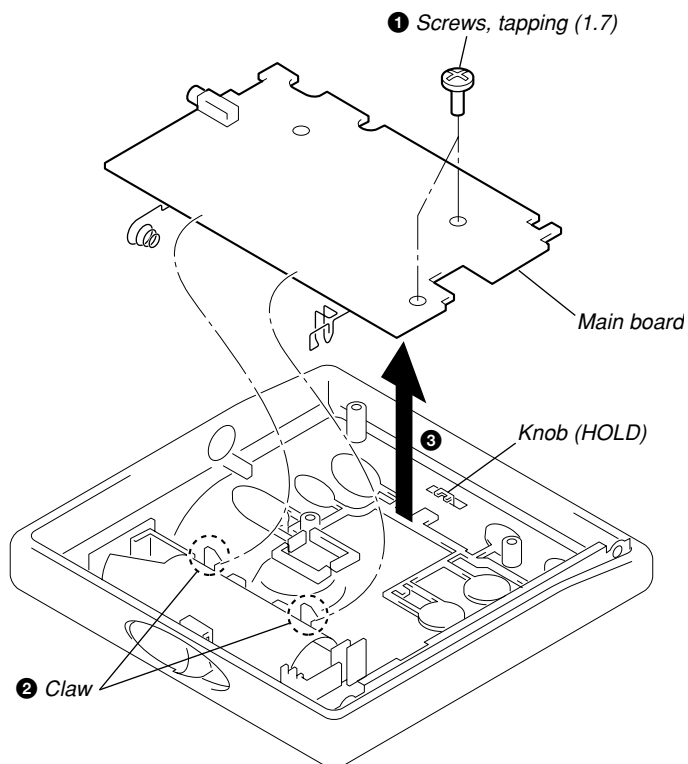
* Once you open the lid, the point to start playback changes to the beginning of the first track.

Notes

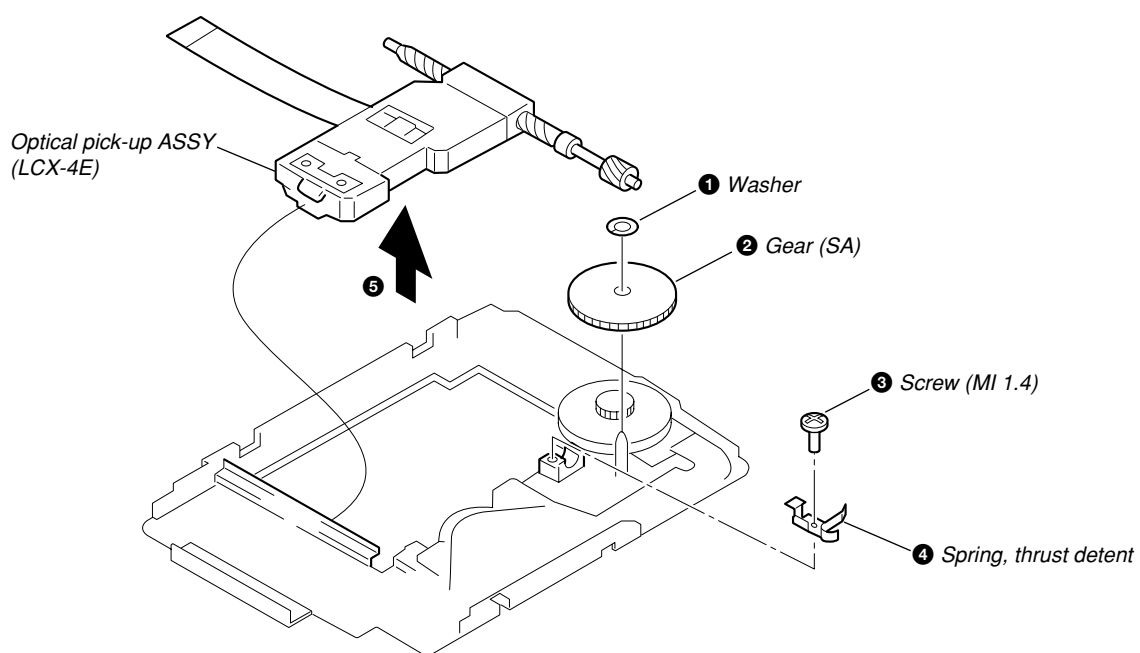
- When removing the disc, make sure to press first, and then slide OPEN.
- When a blank MD or no MD is inserted in the player, "[-]" flashes on the display in the player.

3-3. MAIN BOARD

Note : On installation of main board, adjust the position of both switch (S809) and knob (HOLD).



3-4. OPTICAL PICK-UP ASSY



SECTION 4 TEST MODE

4-1. GENERAL

- When entered in the TEST MODE, this set provides the Overall Adjustment mode which allows CD and MO discs to be automatically adjusted. In the Overall Adjustment mode, performs adjustments in sequence automatically, and displays the faulty location if any fault is found. In the Manual mode, selected adjustments can be performed automatically.
- Operations in the Overall Adjustment mode can be performed either via the main unit, or the keys of a remote control unit. Note that this device does not include a remote control unit. Therefore, since no connection terminals for a remote control are provided either, a connection device must be used in order to allow a suitable remote control unit to be connected.

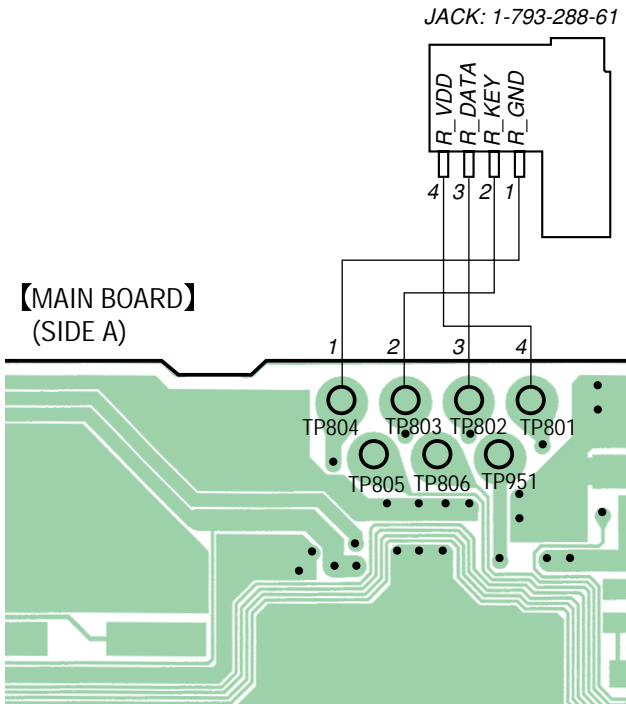
Connection

Following parts are required

Remote commander: RM-MZ2N (1-418-493-71)

After RM-MZE1 applicable to 2.4V
(Not applicable to remote commanders before RM-MZE1).

Jack: 7 poles jack for phones/remote commander (1-793-288-61)



Lead wires: 4 leads

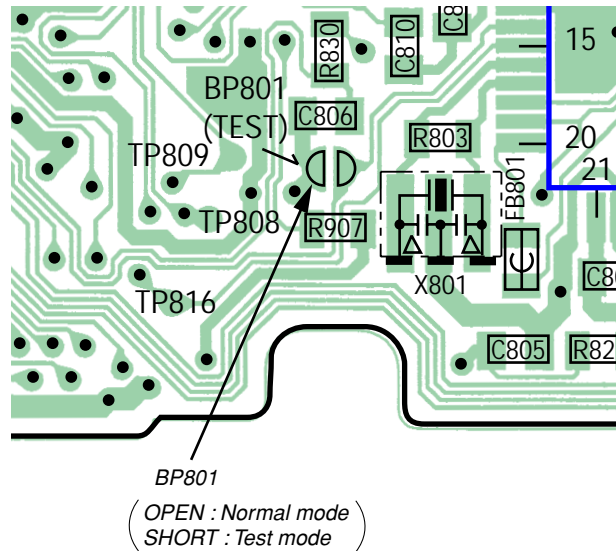
4-2. SETTING THE TEST MODE

4-2-1. How to set the TEST MODE

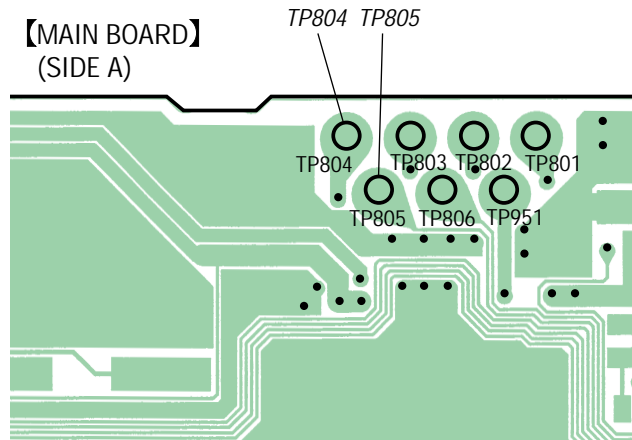
To set the TEST MODE, three methods are available.

- ① Solder bridge and short BP801 (TEST) on the main board.
Then turn on the power.

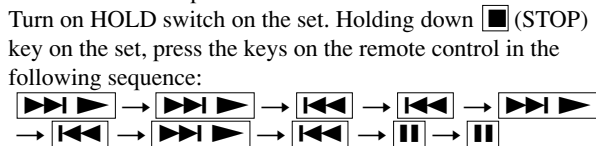
【MAIN BOARD】 (SIDE A)



- ② Using a pair of tweezers or similar tool short-circuit TP804 and TP805 on the main board and turn on the power.



- ③ In the normal mode, operate the keys on the set and those on the remote control as specified below:

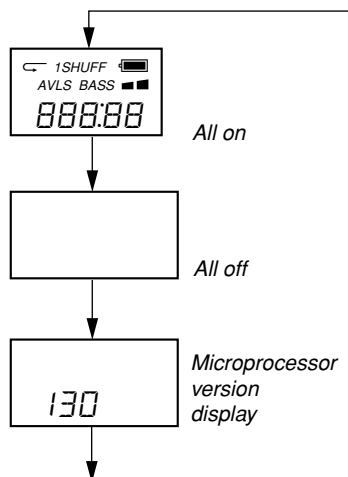


4-2-2. Operations when the TEST MODE is set

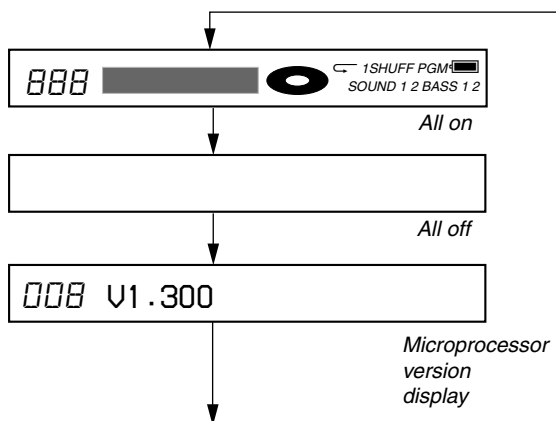
When the TEST MODE is entered, the system switches to the display check mode within the TEST MODE. From this mode, the other Test modes can be accessed.

When the TEST MODE is set, the LCD repeats a cycle of the following displays:

Main unit LCD



Remote control LCD



The remote control display varies with the type of remote control unit used.
(Example shown: RM-MC10L)

- The current display is retained as long as either the **PLAY MODE/DISPLAY** key on the main unit or the **PLAY MODE** key on the remote control unit is pressed and held.

4-2-3. How to release the TEST MODE

When method ① was used:

Turn off the power and open the solder bridge on BP801 on the main board.

Note: The solder should be removed clean. The remaining solder may make a short with the chassis and other part.

When method ② or ③ was used:

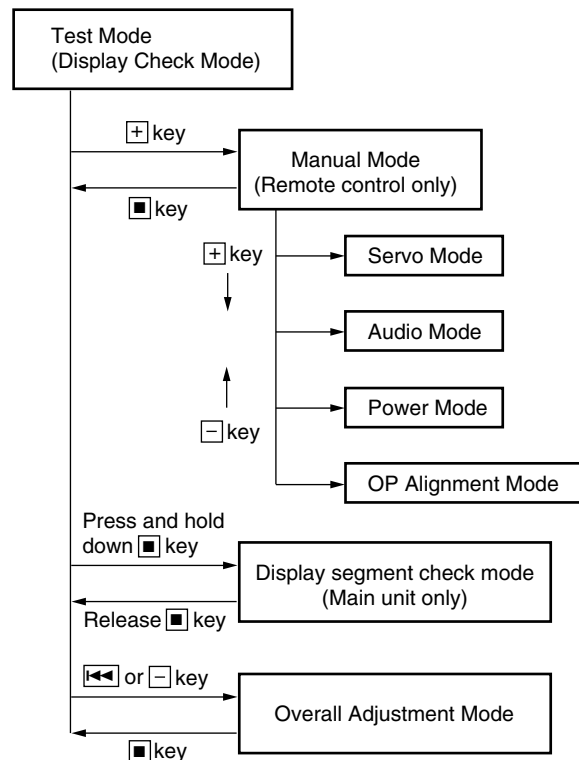
Turn off the power.

Note: If electrical adjustment (see page 8) has not been finished completely, always start in the test mode. (The set cannot start in normal mode)

4-3. TEST MODE STRUCTURE

* Manual mode operation can only be performed via the remote control unit.

Use the connection tool to connect the remote control unit. The display of the main unit shows "Adj".



4-4. MANUAL MODE

4-4-1. Outline of the function

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

Usually, no adjustments are made in this mode.

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

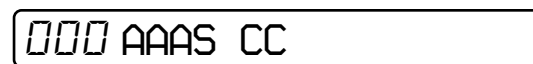
* Manual mode operation can only be performed via the remote control unit.

Use the connection tool to connect the remote control unit. The display of the main unit shows "Adj".

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

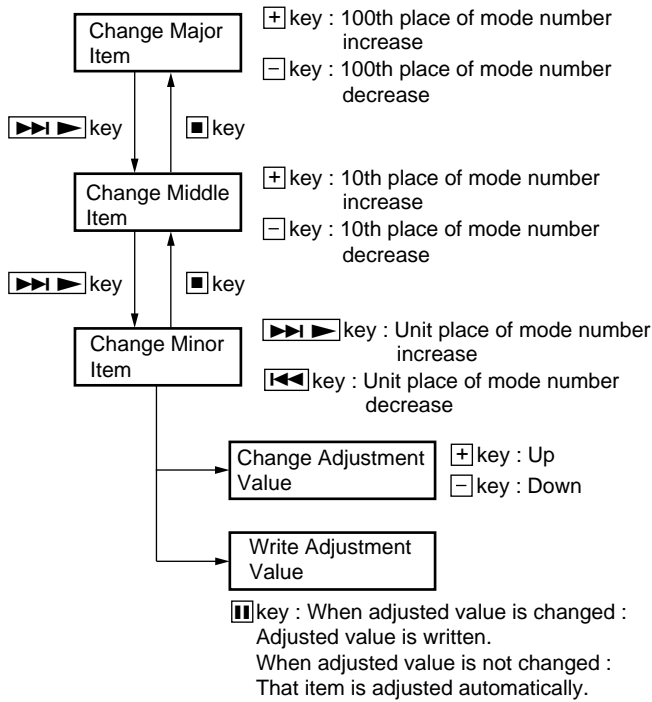
- Set the TEST MODE and press **+** key to set the Manual mode.

Remote control LCD display

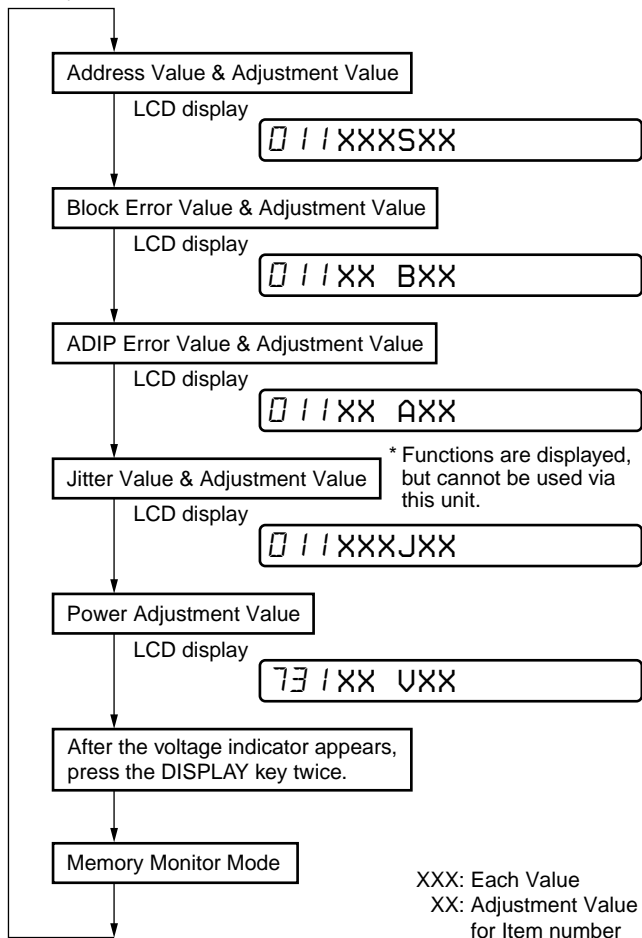


- When the test mode display shows "100", "200", "300", "500", "600", "700", "800", or "900", the optical pickup can be moved inside and outside of the SLED perimeter by continuously pressing the (**▶▶▶** or **◀◀◀**) keys on the main unit.

3. Each test item is assigned with a three-digit item number. The 100th place is a major item, 10th place is a middle item, and unit place is a minor item.



4. During each test mode, the display is changed from one to another each time [DISPLAY] key is pressed (Remote control only).



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

5. To terminate the Manual mode and return to the TEST MODE, press \boxminus key.

4-5. OVERALL ADJUSTMENT MODE

4-5-1. Outline of the function

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

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

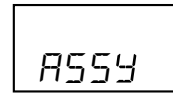
4-6. NV RESET

Power: Connect the battery terminals to a stable DC 1.5V power supply, or insert fresh batteries (size "AA", IEC "LR6").

Two different methods apply for NV reset, depending on whether the main unit or a remote control unit is used.

NV reset via main unit

1. Enter test mode.
2. Use the \boxminus key or the \boxleftarrow key to set the device to Overall Adjustment mode.



3. Press the [PLAY MODE/DISPLAY] key. "CL" starts to flash.



4. Press the [PLAY MODE/DISPLAY] key once more. "CL" stops flashing and remains lit, thus concluding NV reset.

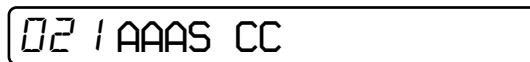


5. Press the \boxminus key to return to test mode.

NV reset via remote control

1. Set the TEST MODE.
2. Set the Manual mode and set the item No. 021, Reset NV.

LCD display



3. Press \boxbar key on the remote control.

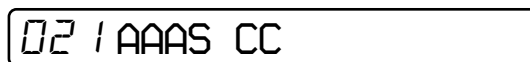
LCD display



Flash CC

4. Press \boxbar key on the remote control again.

LCD display



5. Press \boxminus key to terminate the Manual mode and return to the TEST MODE.

4-6-1. Electrical offset adjustment method

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

1. Confirm the power voltage is 1.5V.
2. Set to the test mode.
3. Press the \square key of main unit activates the overall adjustment mode.

Main unit LCD display

ASSY

4. Press the \square key.

Main unit LCD display

035:XX

5. Press the \square key once more. Adjustment is complete when the adjustment value appears in the "XX" position.

4-6-2. Display segment check mode

1. Enter test mode. Display continuously alternates between the following three conditions: entire LCD is lit, entire LCD is extinguished, version info is shown, and so on.

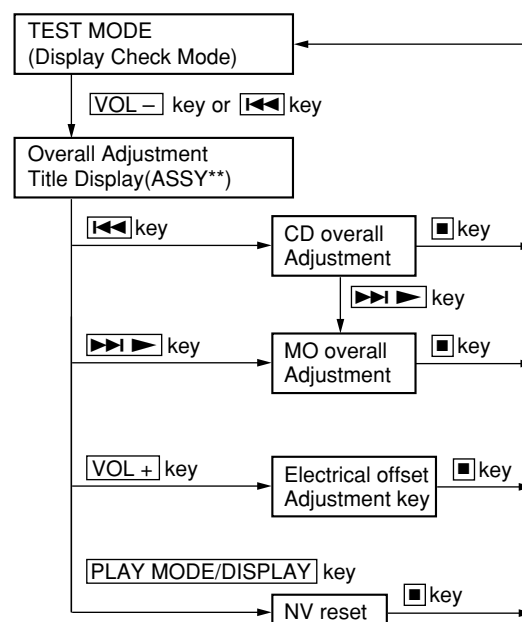
2. Press and hold the \blacksquare key on the main unit to enter display segment check mode.

* Should segments not be displayed correctly at this point, a short-circuited COM terminal and/or SEG terminal on the microprocessor chip (IC801) are possible causes.

3. Display returns to condition "1" as soon as the \blacksquare key is released.

4-7. OVERALL ADJUSTMENT MODE

4-7-1. Overall adjustment mode structure



Perform overall adjustments according to the following procedures (procedures may differ depending on the microprocessor chip version used).

For Ver. 1.10, if it is no good in the overall adjustment, please repeat the overall adjustment several times.

Microprocessor Version 1.10

- ① Clear NV.
- ② Electric offset adjustment.
- ③ Rewriting of RAM 633h
 1. switch to manual mode No. 100.
 2. Press the \square key on the remote control unit 6 times consecutively to enter RAM mode.
 3. Change the RAM address to 633h.
Use the following keys on the remote control unit to change the digits of the RAM address:
"The \square key for the first digit (hundreds), the \blacksquare key for the second digit (tens) and the \rightarrow key or the \leftarrow key for the third digits (units)."
 4. Use the \square and \square keys on the remote control unit to set the adjustment value of No.633h to 03h and press once the pause key on the remote control unit to write this value to NV.
"(If NV is cleared, the value is 00h.)"
 5. Press the \square key once more to change the display to "address and adjustment value display".
 6. Switch to the overall adjustment.
- ④ CD overall adjustment * (Not to turn off the power between the items ③ and ④ .)

- ⑤ Rewriting of the adjustment value.
1. After CD overall adjustment, switch to manual mode No. 321 in the condition the disc is in.
 2. Press \square key on the remote control unit to set 1 step down the adjustment value of No. 321, and press the pause key on the remote control unit to write this value to NV.
 3. Press the $\blacktriangleright\blacktriangleright\blacktriangleright$ key on the remote control unit to switch to manual mode No. 323.
 4. Press the pause key on the remote control unit to set to the automatic adjustment.
During adjusting automatically, the adjustment value turns on and off, so wait for the time the adjustment value is on.
 5. Press the $\blacktriangleright\blacktriangleright\blacktriangleright$ key on the remote control unit to switch to manual mode No. 345.
 6. Note down the current adjustment value of No. 345 (value X). Use the \square and \square keys on the remote control unit to set the adjustment value of No. 345 to the value (Y) determined by the formula below, and press the pause key on the remote control unit to write this value to NV.
Formula: $X \times 1.18 = Y$
* Since X and Y are 2'sC, attention must be paid to codes. And the maximum value of Y must be 7Fh. (Never set it to the negative value.)
Example: Since $X = 2Bh$, $Y = 2Bh \times 1.18 = 33h$

- ⑥ Change the disc to MO overall adjustment disc (GA1 disc).
Switch to manual mode No.114.
Press the pause key on the remotecontrol unit to set to the automatic adjustment.
After adjustment, pull out the battery from the set to turn off the power.
Then insert the battery again.

- ⑦ MO overall adjustment.

Microprocessor Version 1.20 and higher

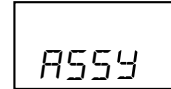
- ① Clear NV.
- ② Electric offset adjustment.
- ③ CD overall adjustment.
- ④ Rewriting of the adjustment value.
 1. After CD overall adjustment, switch to manual mode No. 321 in the condition the disc is in.
 2. Press \square key on the remote control unit to set 1 step down the adjustment value of No. 321, and press the pause key on the remote control unit to write this value to NV.
 3. Press the $\blacktriangleright\blacktriangleright\blacktriangleright$ key on the remote control unit to switch to manual mode No. 323.
 4. Press the pause key on the remote control unit to set to the automatic adjustment.
During adjusting automatically, the adjustment value turns on and off, so wait for the time the adjustment value is on.
 5. Press the $\blacktriangleright\blacktriangleright\blacktriangleright$ key on the remote control unit to switch to manual mode No. 345.
 6. Note down the current adjustment value of No. 345 (value X). Use the \square and \square keys on the remote control unit to set the adjustment value of No. 345 to the value (Y) determined by the formula below, and press the pause key on the remote control unit to write this value to NV.
Formula: $X \times 1.18 = Y$
* Since X and Y are 2'sC, attention must be paid to codes. And the maximum value of Y must be 7Fh. (Never set it to the negative value.)
Example: Since $X = 2Bh$, $Y = 2Bh \times 1.18 = 33h$

- ⑤ Change the disc to MO overall adjustment disc (GA1 disc).
Switch to manual mode No.114.
Press the pause key on the remotecontrol unit to set to the automatic adjustment.
After adjustment, pull out the battery from the set to turn off the power.
Then insert the battery again.
- ⑥ MO overall adjustment.

4-7-2. Overall CD and MO adjustment method

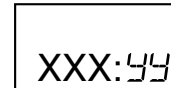
1. Set the TEST MODE and press \square key or $\blacktriangleleft\blacktriangleleft$ key to set the Overall Adjustment mode.

Main unit LCD display



2. Insert CD disc in the set, and press $\blacktriangleleft\blacktriangleleft$ key to set the Overall CD Adjustment mode.
Automatic adjustments are made.

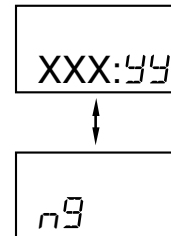
Main unit LCD display



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

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

The NG item and "ng" alternately flash on the main unit LCD display.



XXX: NG item No.
YY: Adjustment Value

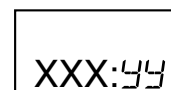
4. If OK through the overall CD adjustments, then perform overall MO adjustments.

Main unit LCD display



5. Insert MO disc in the set, and press $\blacktriangleright\blacktriangleright\blacktriangleright$ key to set the Overall MO Adjustment mode. Automatic adjustments are made.

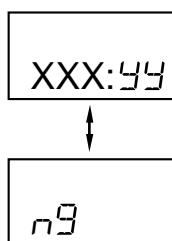
Main unit LCD display



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

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

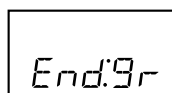
The NG item and “ng” alternately flash on the main unit LCD display.



XXX: NG item No.
YY: Adjustment Value

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

Main unit LCD display



4-7-3. Overall CD and MO adjustment items

1. Overall offset adjustment

Item No.	Description
030h	GRV setting servo off
035h	Laser ON/OFF Electric offset differential measurement

2. CD overall adjustment

Item No.	Description
300h	HPIT setting servo off
312h	ALFA offset adjustment
313h	IJ offset adjustment
314h	FE offset adjustment
571h	CLV start
561h	Move to inside of SLED perimeter
562h	Move to outside of SLED perimeter
320h	Focus on
323h	TE offset adjustment
321h	TE gain adjustment
328h	TWPP gain adjustment
829h	TWPP gain [LPIT] adjustment value write
323h	TE offset adjustment
324h	OFTRK adjustment
330h	Tracking ON
336h	ABCD gain adjustment
337h	KF gain adjustment
338h	RF gain adjustment
344h	FOCUS gain adjustment
345h	Tracking gain adjustment
521h	Twin axis sensitivity compensation (inside perimeter)
522h	Twin axis sensitivity compensation (outside perimeter)
341h	Field of vision oscillation check
300h	HPIT setting servo OFF

3. MO overall adjustment

Item No.	Description
100h	GRV setting servo off
112h	ALFA offset adjustment
113h	IJ offset adjustment
114h	FE offset adjustment
118h	AW_DW_OFFSET
200h	LPIT setting servo off
571h	CLV START
561h	Move to inside of SLED perimeter
220h	Focus on
223h	TE offset adjustment
221h	TE gain adjustment
223h	TE offset adjustment
226h	Tracking Drive Voltage = "00h" setting
230h	Tracking ON
236h	ABCD gain adjustment
237h	KF gain adjustment
238h	RF gain adjustment
244h	Focus gain adjustment
245h	Tracking gain adjustment
110h	GRV setting servo off (CLV remains as is)
562h	Move to outside of SLED perimeter
120h	Focus on
122h	TE offset adjustment (TON)
121h	TE gain adjustment
122h	TE offset adjustment (TON)
123h	TE offset adjustment (TEIN)
124h	TE offset adjustment (TWPP)
125h	OFTRK adjustment
130h	Tracking ON
144h	Focus gain adjustment
145h	Tracking gain adjustment
139h	bpf f0 adjustment
131h	TE offset adjustment (TWPP/RF)
132h	TE offset adjustment (TWPP/DSP)
136h	ABCD gain adjustment
137h	KF gain adjustment
134h	TWPP gain adjustment
131h	TE offset adjustment (TWPP/RF)
132h	TE offset adjustment (TWPP/DSP)
138h	RF gain adjustment
141h	Field of vision oscillation check
100h	GRV setting servo OFF

SECTION 5 DIAGRAMS

5-1. EXPLANATION OF IC TERMINALS

• IC601 LC89642-8B-E

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR, ATRAC ENCODER/DECODER, 8MBIT D-RAM, D/A CONVERTER)

Pin No.	Pin name	I/O	Description
1	FR	I	Connected to Bias resistor for VTEC oscillating frequency
2	ISET	I	Connected to Bias resistor for VTEC current charge pump
3	VCVDD	—	Power supply for VTEC
4	PDD	O	VTEC current charge pump output
5	TEST3	I	Input for test
6	TEST2	I	Input for test
7	SLCO	O	Slice level output for HF signal
8	SLCIST	I	Connected to Bias resistor for the slice level adjusting amplifier
9	EFMIN	I	HF signal input
10	RESETB	I	System reset
11	TEST1	I	Input for test
12	HFL	I	Track detection signal input
13	VDD2	—	Power supply
14	VSS	—	Ground
15	VDD1	—	Internal power supply
16	AVSS1	—	Ground for digital servo
17	PEAK	I	PEAK signal input
18	BOTTOM	I	BOTTOM signal input
19	ABCD	I	Main beam quantity signal input
20	TE	I	Tracking error signal input
21	FE	I	Focus error signal input
22	VC	I	Center potential input
23	AVDD1	—	Power supply for digital servo
24	MAD9	O*	Address output to DRAM (NC)
25	DSW1	O*	Disc mode select output
26	MAD8	O*	Address output to DRAM (NC)
27	DSW0	O*	Disc mode select output
28	MAD7	O*	Address output to DRAM (NC)
29	SGC	O*	AGC control signal output
30	MAD6	O*	Address output to DRAM (NC)
31	AOFFSET	O*	ABCD offset control signal output
32	MAD5	O*	Address output to DRAM (NC)
33	FOFFSET	O*	Focus offset control signal output
34	TOFFSET	O*	Tracking offset control signal output
35	MAD4	O*	Address output to DRAM (NC)
36	TBAL	O*	Tracking balance control signal output
37	LDREF	O*	Laser control signal output
38	FBAL	O*	Focus balance control signal output
39	VDD1	—	Internal power supply
40	VSS	—	Ground
41	VDD2	—	Power supply
42	MAD3	O*	Address output to DRAM (NC)
43	SPPWMF	O*	Spindle PWM output
44	SPPWMR	O*	Spindle PWM output
45	SLPWMF	O*	Sled PWM output

Pin No.	Pin name	I/O	Description
46	MAD2	O*	Address output to DRAM (NC)
47	SLPWMR	O*	Sled PWM output
48	MAD1	O*	Address output to DRAM (NC)
49	FOPWMF	O*	Focus PWM output
50	MAD0	O*	Address output to DRAM (NC)
51	FOPWMR	O*	Focus PWM output
52	TRPWMF	O*	Tracking PWM output
53	TRPWMR	O*	Tracking PWM output
54	MAD10	O*	Address output to DRAM (NC)
55	AVDD	—	Power supply for 1bit DAC
56	OUTL	O	1bit DAC L channel output
57	OUTR	O	1bit DAC R channel output
58	AVSS	—	Ground for 1bit DAC
59	VDD2	—	Power supply
60	XIN	I	16.9344MHz oscillation input
61	XOUT	O	16.9344MHz oscillation output
62	VSS	—	Ground
63	VDD1	—	Internal power supply
64	F16M	O*	16.9344MHz output
65	ENH	O*	De-emphasis instruction output
66	LRCO	O*	LR clock output
67	DDATA	O*	Audio expansion data output
68	BCO	O*	Bit clock output
69	DDOUT	O*	Digital audio output
70	SMON3	O*	Monitor signal output
71	SMON2	O*	Monitor signal output
72	SMON1	O*	Monitor signal output
73	SMON0	O*	Monitor signal output
74	FSEQ	O*	Frame sync. detection signal output
75	VP	O*	CLV servo lock decision output
76	MRASBT	O*	Output for test
77	MRASB	O*	RAS signal output to DRAM (NC)
78	FOK	O*	Focus OK signal output
79	NWEB	O*	WE signal output to DRAM (NC)
80	DEFECT	O*	Defect signal output
81	MD1	I/O	Data input/output to/from DRAM
82	FG	I	Speed pulse input
83	CL	I	Data transferring clock input for CPU interface
84	CE	I	Chip enable signal input for CPU interface
85	MDO	I/O	Data input/output to/from DRAM
86	DI	I	Data input for CPU interface
87	VDD1	—	power supply
88	DO	O	Data output for CPU interface
89	VDD2	—	Power supply
90	VSS	—	Ground
91	MD3	I/O	Data input/output to/from DRAM
92	WRQB	O	Interruption output for CPU interface
93	INTB	O	Interruption output for CPU interface
94	ADIPWO	I	Wobbly signal input

Pin No.	Pin name	I/O	Description
95	MD2	I/O	Data input/output to/from DRAM
96	SHOCK	O*	SHOCK/RFNG output
97	MCASB	O*	CAS signal output to DRAM (NC)
98	PCK	O	VTEC system clock signal output
99	MOEB	O*	OE signal output to DRAM (NC)
100	VCVSS	—	Ground for VTEC

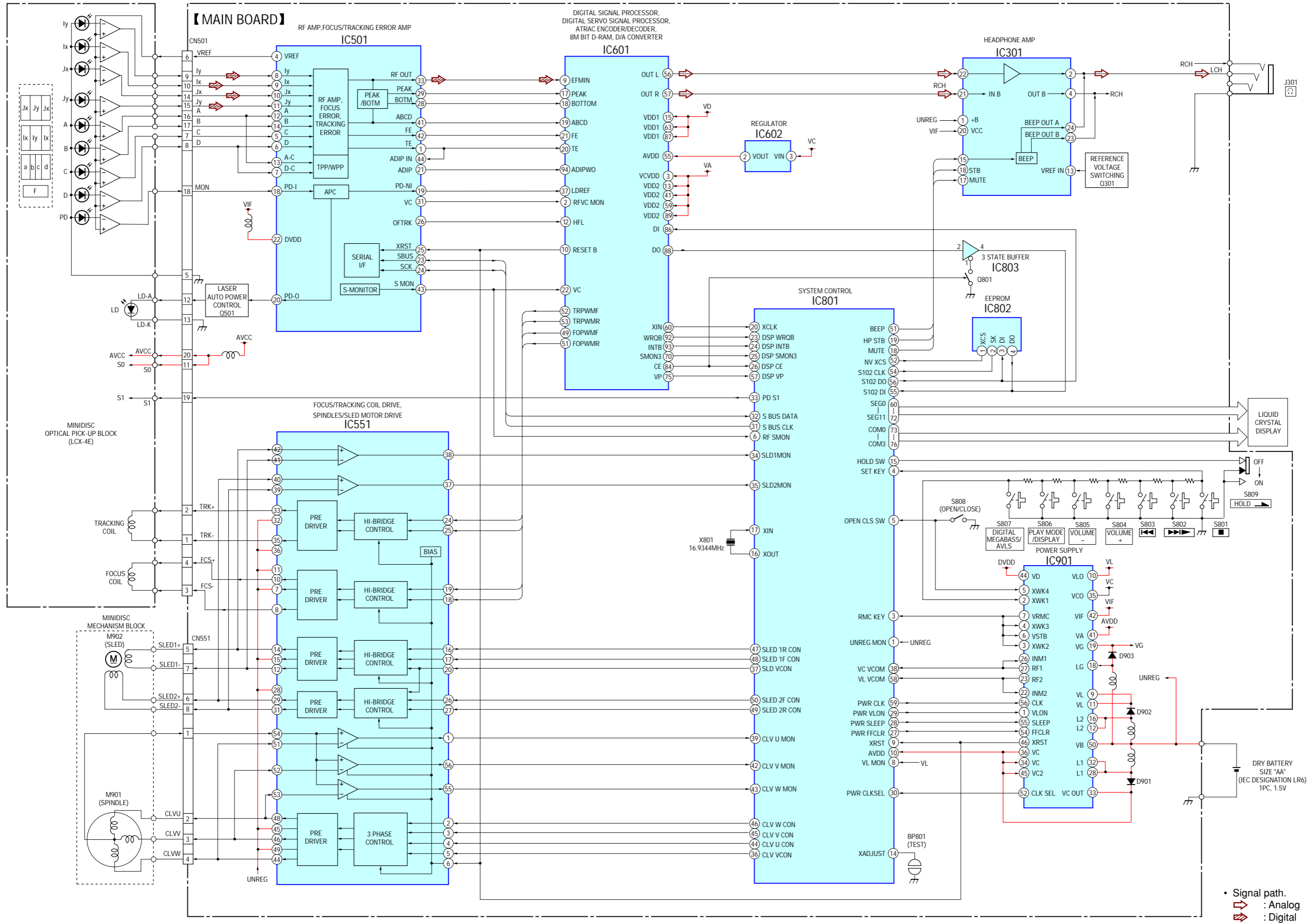
* : I/O on the test mode.

• IC801 RU6615MF-0003 (SYSTEM CONTROL)

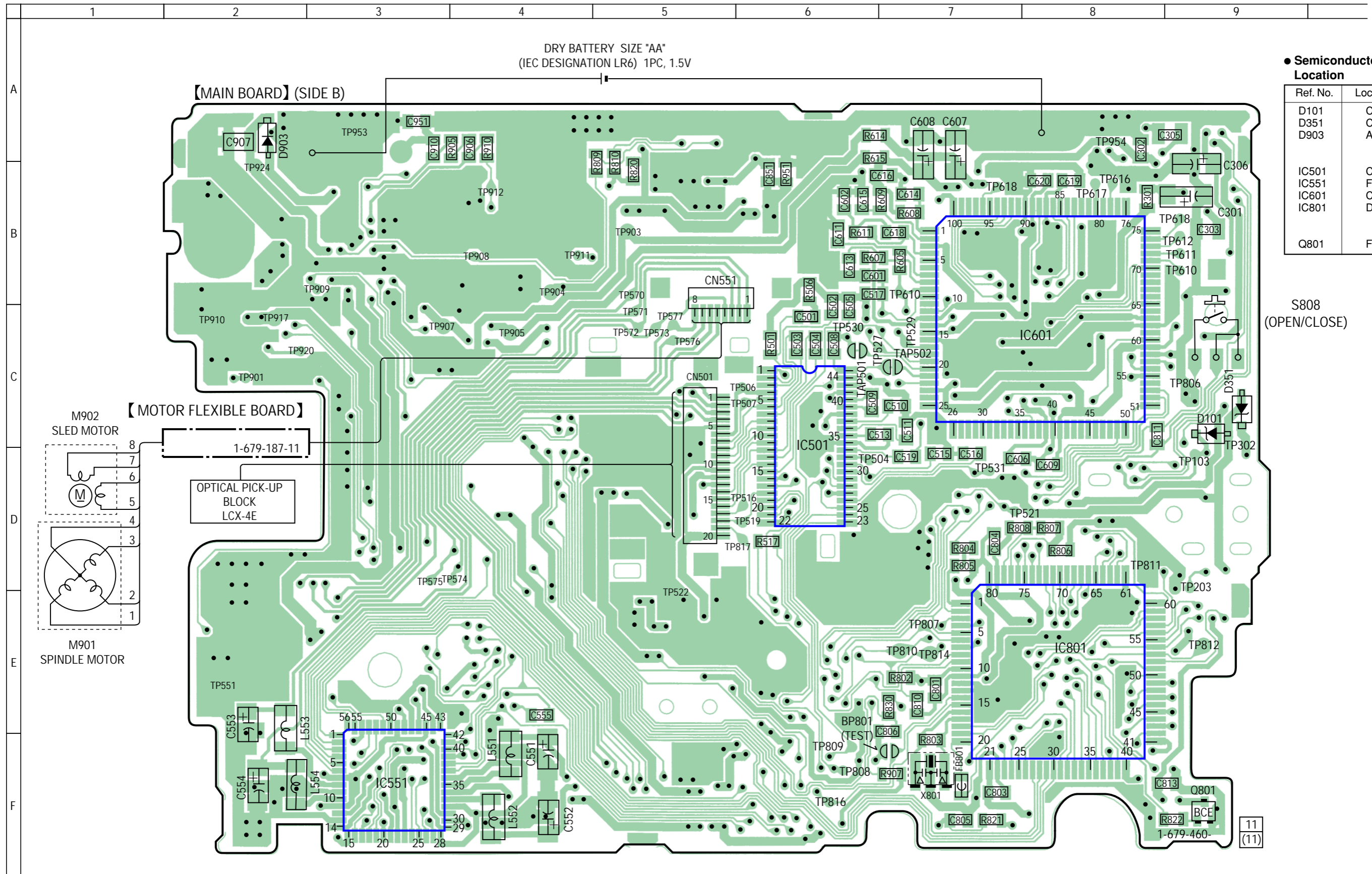
Pin No.	Pin name	I/O	Description
1	UNREG_MON	I	UNREG voltage monitor input (A/D input)
2	RF_VCMON	I	Reference voltage (1.2V) for adjusting power supply voltage input (A/D input)
3	RMC_KEY	I	Remote commander with phones key input (A/D input)
4	SET_KEY	I	Key on the set itself input (A/D input) S801-807 (STOP, FF/PB, REW/PB, VOL+, VOL-, PLAY MODE, DBB/AVLS key input
5	OPEN_CLS_SW	I	Upper panel open/close detection switch (S808) input L: Close, H: Open
6	RF_SMON	I	S-MON level input from SN761057DBT (IC501) (A/D input)
7	DSP_SMON3_LP	—	Not used (Fixed to L)
8	VL_MON	I	VL voltage monitor input from XPC18A32FCR2 (IC901) (A/D input)
9	XRESET	I	System reset signal input from XPC18A32FCR2 (IC901) (A/D input) L: Reset L is in while 500-600 msec after power turns on, and then turns to H.
10	AVDD	—	Power supply (2.48V) (For A/D conversion)
11	AVSS	—	Ground (For A/D conversion)
12, 13	TYPE0, 1	I	Initial setting for the model decision input (Bit 0, 1) Fixed to L.
14	XADJUST	I	Test mode setting input L: Test mode (Fixed to H normally)
15	HOLD_SW	I	HOLD switch (S809) input L: Off, H: On
16	XOUT	O	Main system clock (16.9344MHz) output
17	XIN	I	Main system clock (16.9344MHz) input
18	HP_MUTE	O	Muting on/off control signal output to phones amplifier (IC301) H: Muting on
19	HP_STBY	O	Standby on/off control signal output to phones amplifier (IC301) L: Standby, H: Amp. on
20	XCLK	O	Clock (16.9344MHz) output to LC89642-8B-E (IC601)
21	VDD	—	Power supply (+2.1V) (Digital system)
22	VSS	—	Ground (Digital system)
23	DSP_WRQB	I	SUBQ/ADIP read out request input from LC89642-8B-E (IC601) L: Request
24	DSP_INTB	I	SPP, servo status read out request input from LC89642-8B-E (IC601) L: Request
25	DSP_SMON3	I	Monitor signal 3 input from LC89642-8B-E (IC601)
26	DSP_CE	O	Chip enable output to LC89642-8B-E (IC601) H: Enable
27	PWR_FFCLR	O	Latch clear signal for start up signal to XPC18A32FCR2 (IC901) output H: Clear
28	PWR_SLEEP	O	System sleep control signal to XPC18A32FCR2 (IC901) output H: Sleep on
29	PWR_VLON	O	VL voltage control signal to XPC18A32FCR2 (IC901) output H: VL out on
30	PWR_CLKSEL	O	External sync. 2 division circuit control signal to XPC18A32FCR2 (IC901) output L: 2 division, H: No division
31	SBUS_CLK	O	SSB serial clock signal output to SN761057DBT (IC501)
32	SBUS_DATA	I/O	SSB serial data signal input/output to SN761057DBT (IC501)
33	PD_S1	O	PD-IC mode select signal output L: PIT, H: GRV
34	SLD_1_MON	I	Sled servo timing signal input from SC111257FCR2 (IC551)
35	SLD_2_MON	I	Sled servo timing signal input from SC111257FCR2 (IC551)
36	CLV_VCON	O	Spindle servo drive voltage control signal output to SC111257FCR2 (IC551)
37	SLD_VCON	O	Sled servo external voltage control signal output to SC111257FCR2 (IC551)
38	VC_VCON	O	PWM signal for VC voltage control signal to XPC18A32FCR2 (IC901) output
39	CLV_U_MON	I	Spindle servo (U) timing signal input from SC111257FCR2 (IC551)
40	VDD	—	Power supply (+2.1V) (Digital system)
41	VPP	—	Test (Fixed to L)
42	CLV_V_MON	I	Spindle servo (V) timing signal input from SC111257FCR2 (IC551)
43	CLV_W_MON	I	Spindle servo (W) timing signal input from SC111257FCR2 (IC551)
44	CLV_U_CON	O	Spindle servo (U) drive signal output to SC111257FCR2 (IC551)
45	CLV_V_CON	O	Spindle servo (V) drive signal output to SC111257FCR2 (IC551)

Pin No.	Pin name	I/O	Description
46	CLV_W_CON	O	Spindle servo (W) drive signal output to SC111257FCR2 (IC551)
47	SLED_1R_CON	O	Sled motor control signal output to SC111257FCR2 (IC551)
48	SLED_1F_CON	O	Sled motor control signal output to SC111257FCR2 (IC551)
49	SLED_2R_CON	O	Sled motor control signal output to SC111257FCR2 (IC551)
50	SLED_2F_CON	O	Sled motor control signal output to SC111257FCR2 (IC551)
51	BEEP	O	Beep sound drive signal output to phones amplifier (IC301)
52	NV_XCS	O	Chip select signal output to EEPROM (IC802)
53	RMC_DTCK	I/O	TSB serial communication data input/output to/from remote commander with phones
54	SIO2_CLK	O	Serial clock signal output to LC89642-8B-E (IC601) and EEPROM (IC802)
55	SIO3_DI	I	Read data input from LC89642-8B-E (IC601) and EEPROM (IC802)
56	SIO3_DO	O	Write data output to LC89642-8B-E (IC601) and EEPROM (IC802)
57	DSP_VP	I	CLV servo lock decision signal input from LC89642-8B-E (IC601)
58	VL_VCON	O	PWM signal for VL voltage control signal to XPC18A32FCR2 (IC901) output
59	PWR_CLK	O	External sync. clock (176.4kHz) signal to XPC18A32FCR2 (IC901) output
60	SEG0	O	LCD segment output
61	VSS	—	Ground (Digital system)
62-72	SEG1-11	O	LCD segment output
73-76	COM0-3	O	LCD common output
77-79	VL1, 2, LVDD	I	LCD drive level power supply input
80	VSS	—	Ground (Digital system)

5-2. BLOCK DIAGRAMS



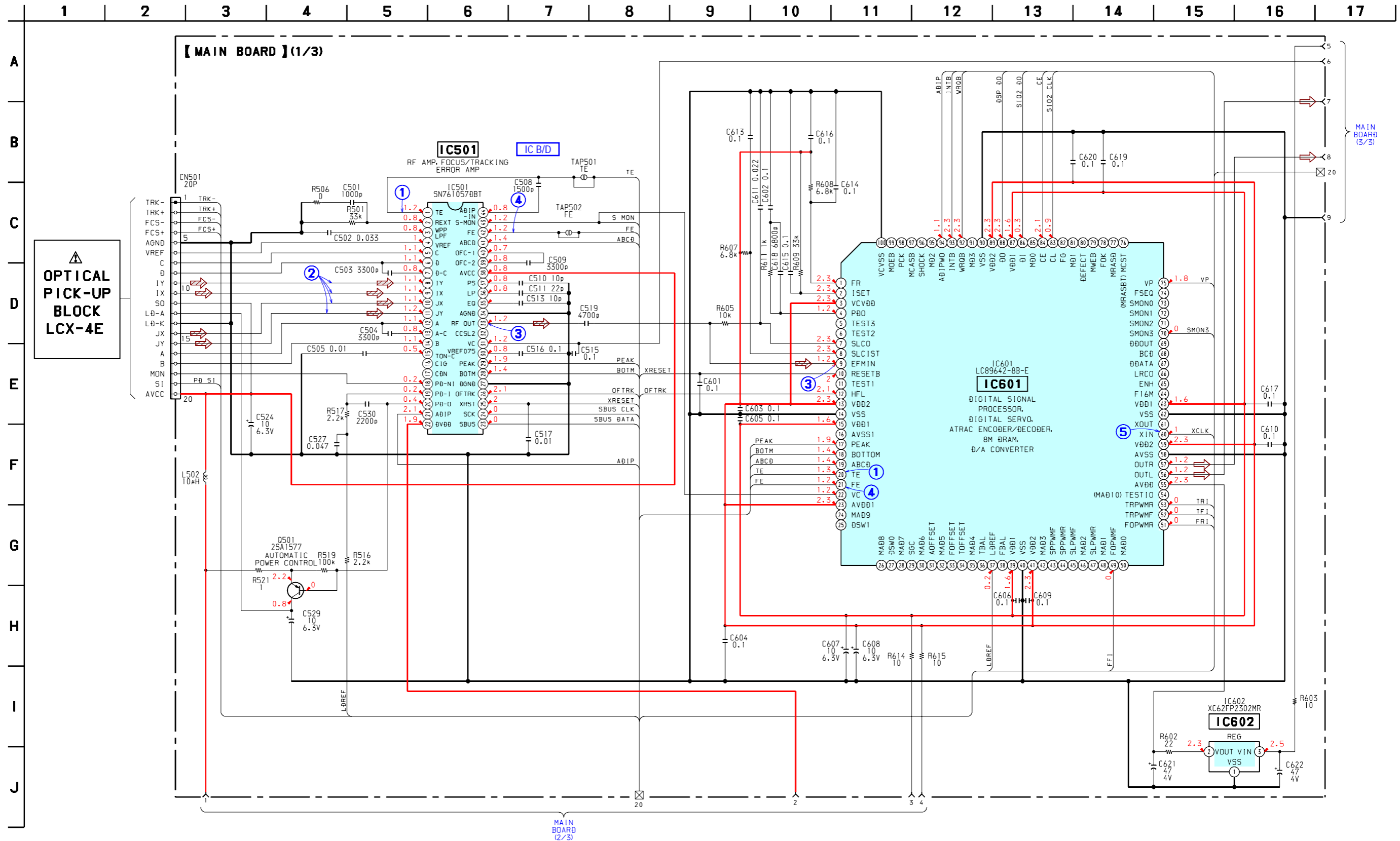
5-3. PRINTED WIRING BOARDS – MAIN SECTION (1/2) – ● Refer to page 24 for Notes.



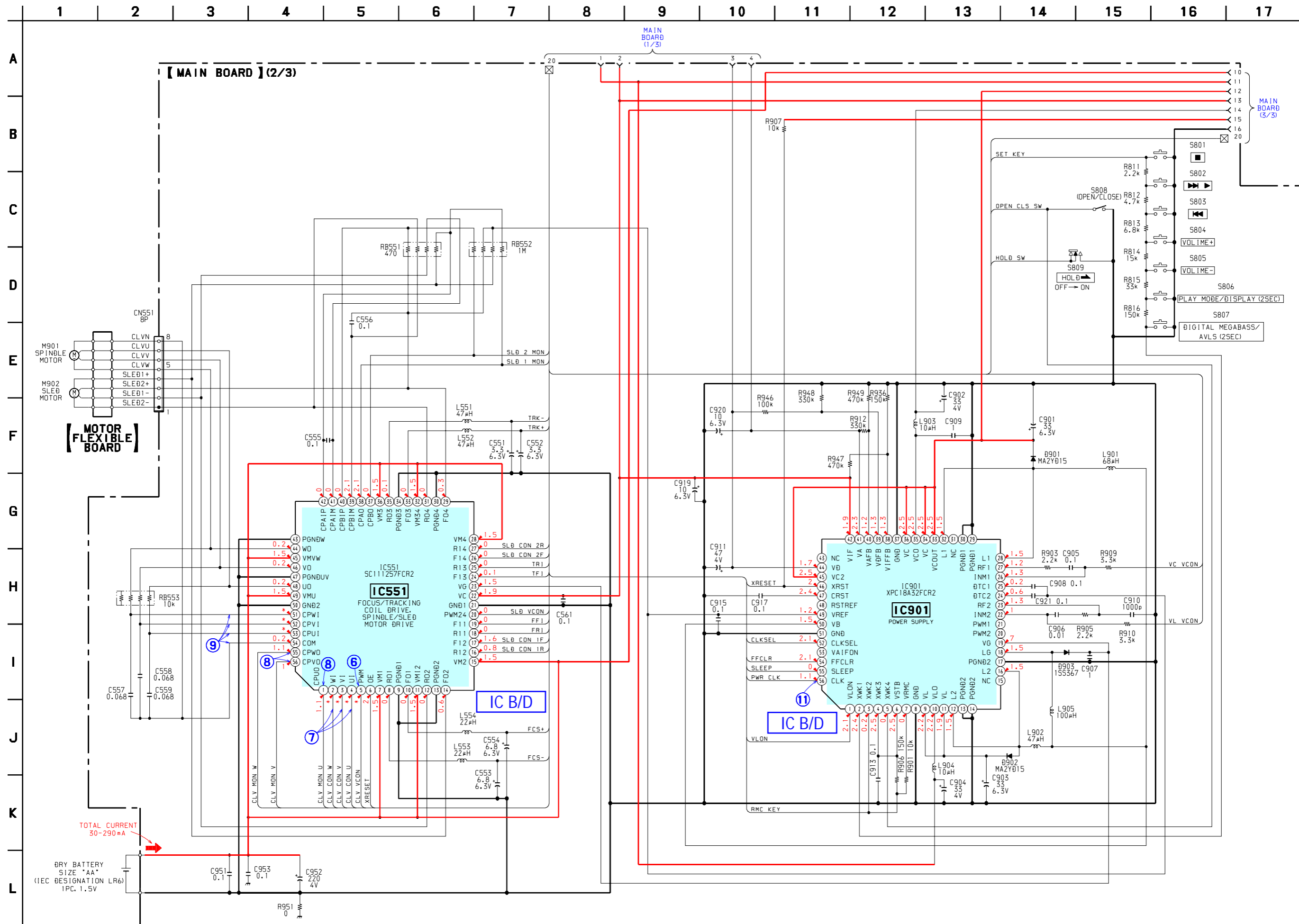
● Semiconductor Location

Ref. No.	Location
D101	C-9
D351	C-9
D903	A-2
IC501	C-6
IC551	F-3
IC601	C-8
IC801	D-8
Q801	F-9

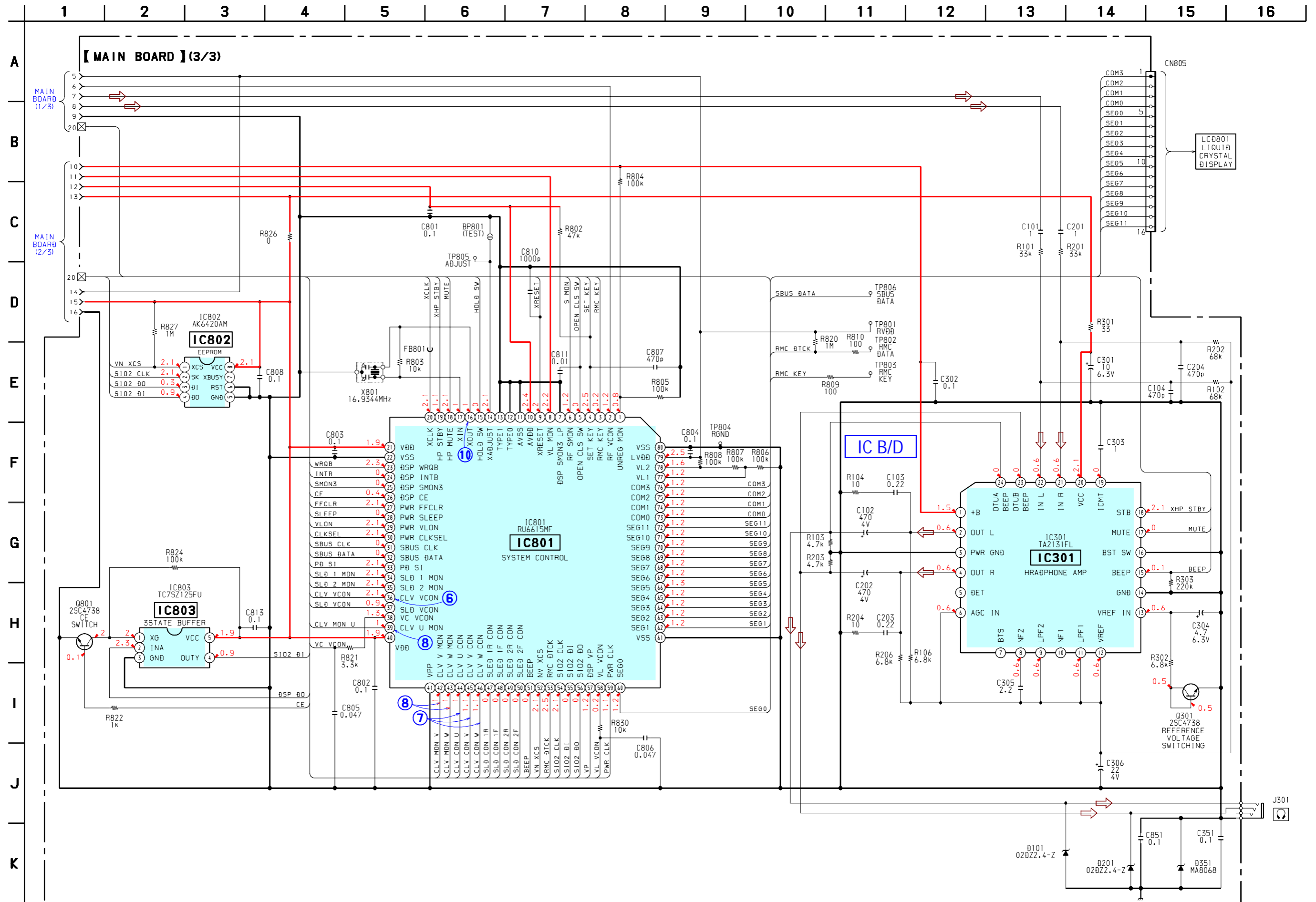
5-5. SCHEMATIC DIAGRAM – MAIN SECTION (1/3) – Refer to page 24 for Notes. Refer to page 26 – 28 for IC Block Diagrams. Refer to page 25 for Waveforms.





5-6. SCHEMATIC DIAGRAM – MAIN SECTION (2/3) – Refer to page 24 for Notes. Refer to page 26 – 28 for IC Block Diagrams. Refer to page 25 for Waveforms.



5-7. SCHEMATIC DIAGRAM – MAIN SECTION (3/3) – • Refer to page 24 for Notes. • Refer to page 26 – 28 for IC Block Diagrams. • Refer to page 25 for Waveforms.



Note on Printed Wiring Boards: MAIN SECTION




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

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

Note on Schematic Diagram: MAIN SECTION

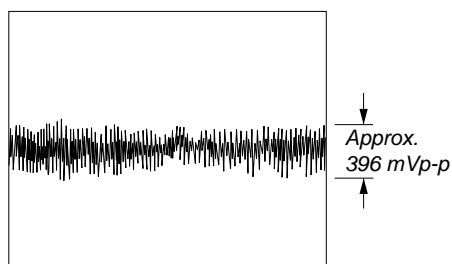
- All capacitors are in μF unless otherwise noted. pF: $\mu\mu\text{F}$
50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{ W}$ or less unless otherwise specified.
- \triangle : internal component.

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

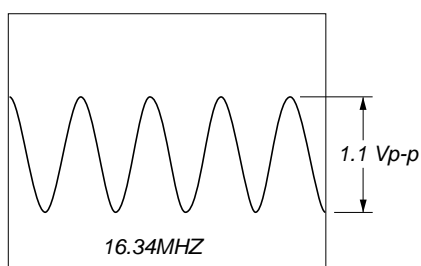
-  : B+ Line.
- Power voltage is dc 1.5V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : PLAY
- Voltages are taken with a VOM (Input impedance 10 M Ω).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 : Analog
 : Digital

• Waveforms

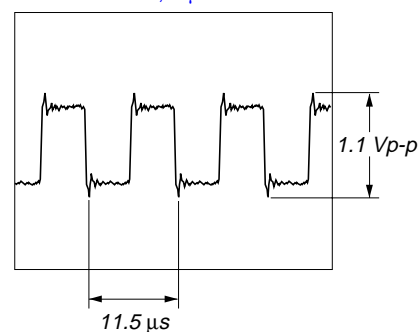
1 IC501 ① (TE), IC601 ⑳ (TE)
(PLAY Mode)
200 mV/DIV, 1 μ s/DIV



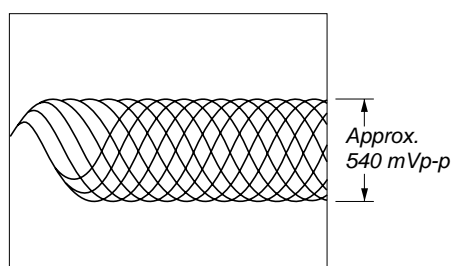
5 IC601 ⑥⑩ (XIN)
400 mV/DIV, 20 ns/DIV



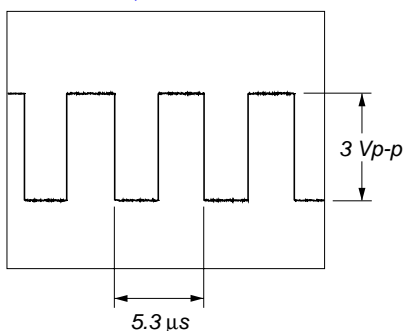
9 IC551 ⑤①, ⑤②, ⑤③, ⑤④ (COM, CPWI,
CPVI, CPUI)
400 mV/DIV, 5 μ s/DIV



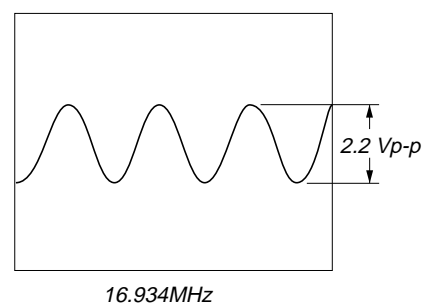
2 IC501 ⑧, ⑨, ⑩, ⑪ (IY, IX, JX, JY)
(PLAY Mode)
200 mV/DIV, 500 ns/DIV



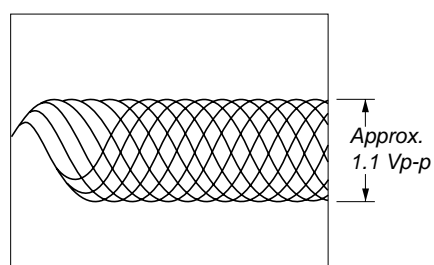
6 IC551 ⑤ (PWM), IC801 ③⑥
(CLV V CON) (PLAY Mode)
1 V/DIV, 2 μ s/DIV



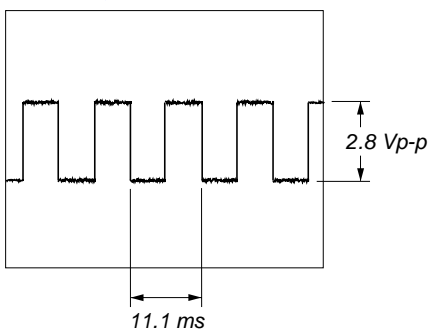
10 IC801 ⑩ (XOUT)
1 V/DIV, 20 ns/DIV



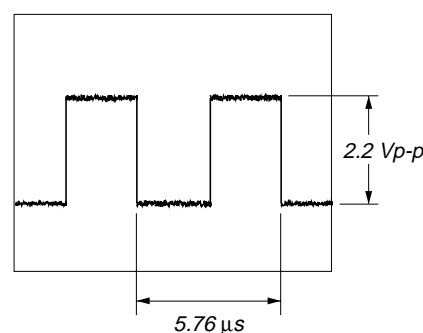
3 IC501 ③③ (RF), IC601 ⑨ (EFMIN)
(PLAY Mode)
400 mV/DIV, 1 μ s/DIV



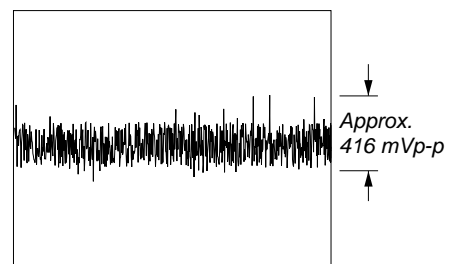
7 IC551 ②, ③, ④
IC801 ④④, ④⑤, ④⑥ (CLV U CON,
CLV V CON, CLV W CON)
(PLAY Mode)
1 V/DIV, 5 ms/DIV



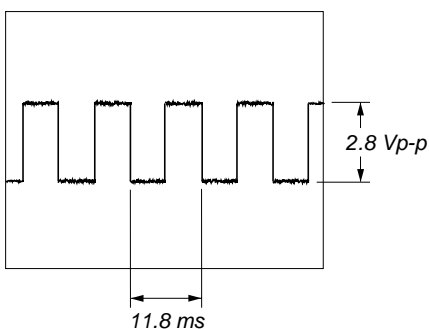
11 IC901 ⑥⑥ (CLK)
1 V/DIV, 2 μ s/DIV



4 IC501 ④② (FE), IC601 ②① (FE)
(PLAY Mode)
200 mV/DIV, 1 μ s/DIV

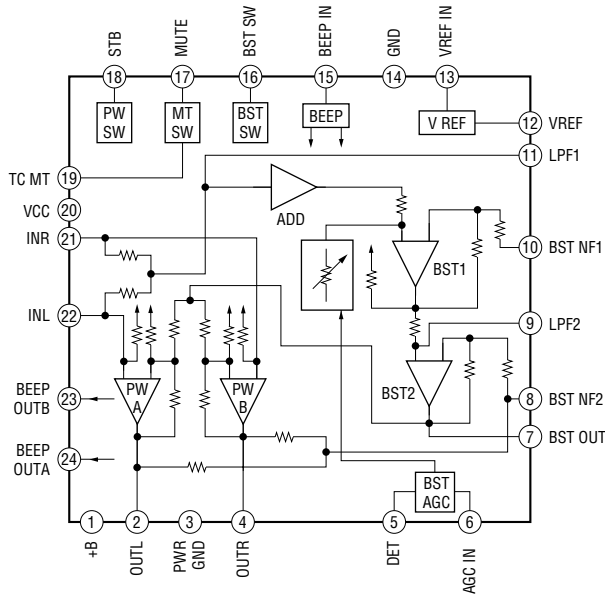


8 IC551 ①, ⑥⑤, ⑥⑥ (CPUO, CPWO, CPVO)
IC801 ③⑨, ④②, ④③ (CLV U MON, CLV V MON,
CLV W MON)
1 V/DIV, 5 ms/DIV

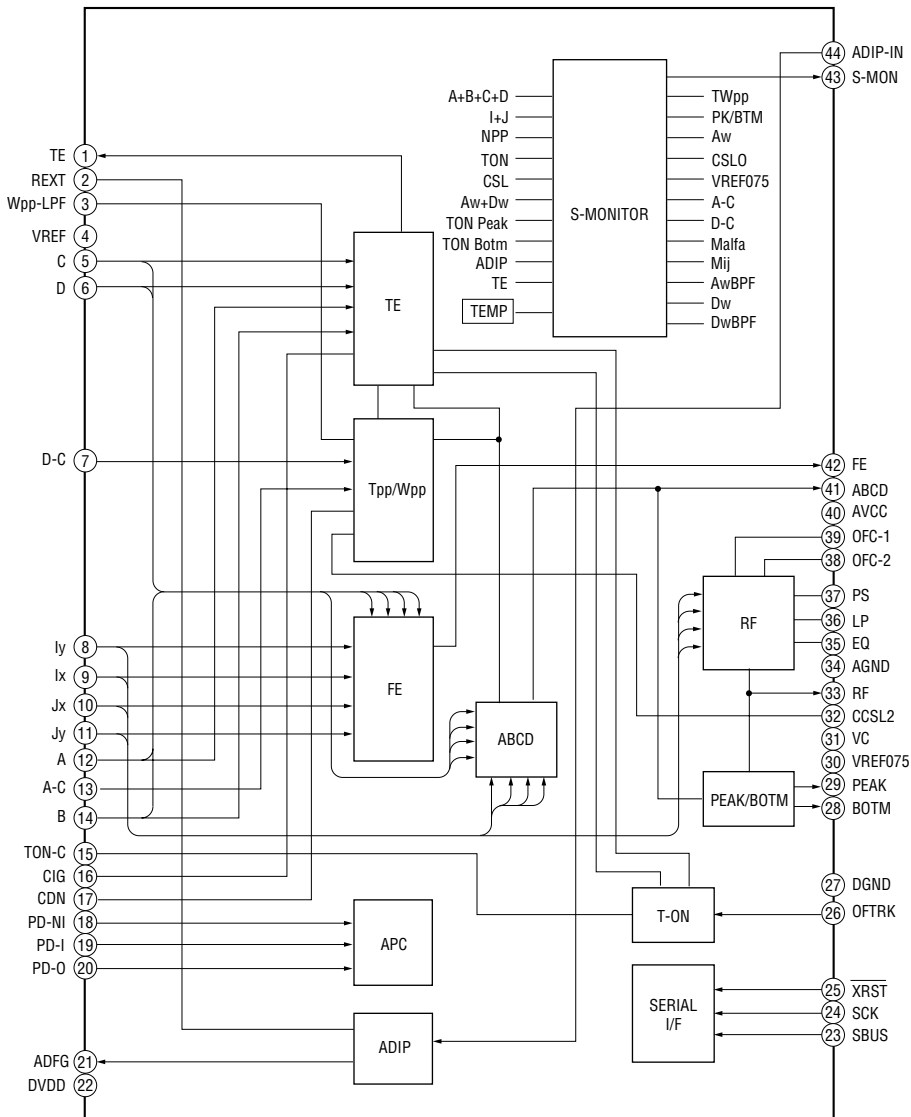


• IC BLOCK DIAGRAMS

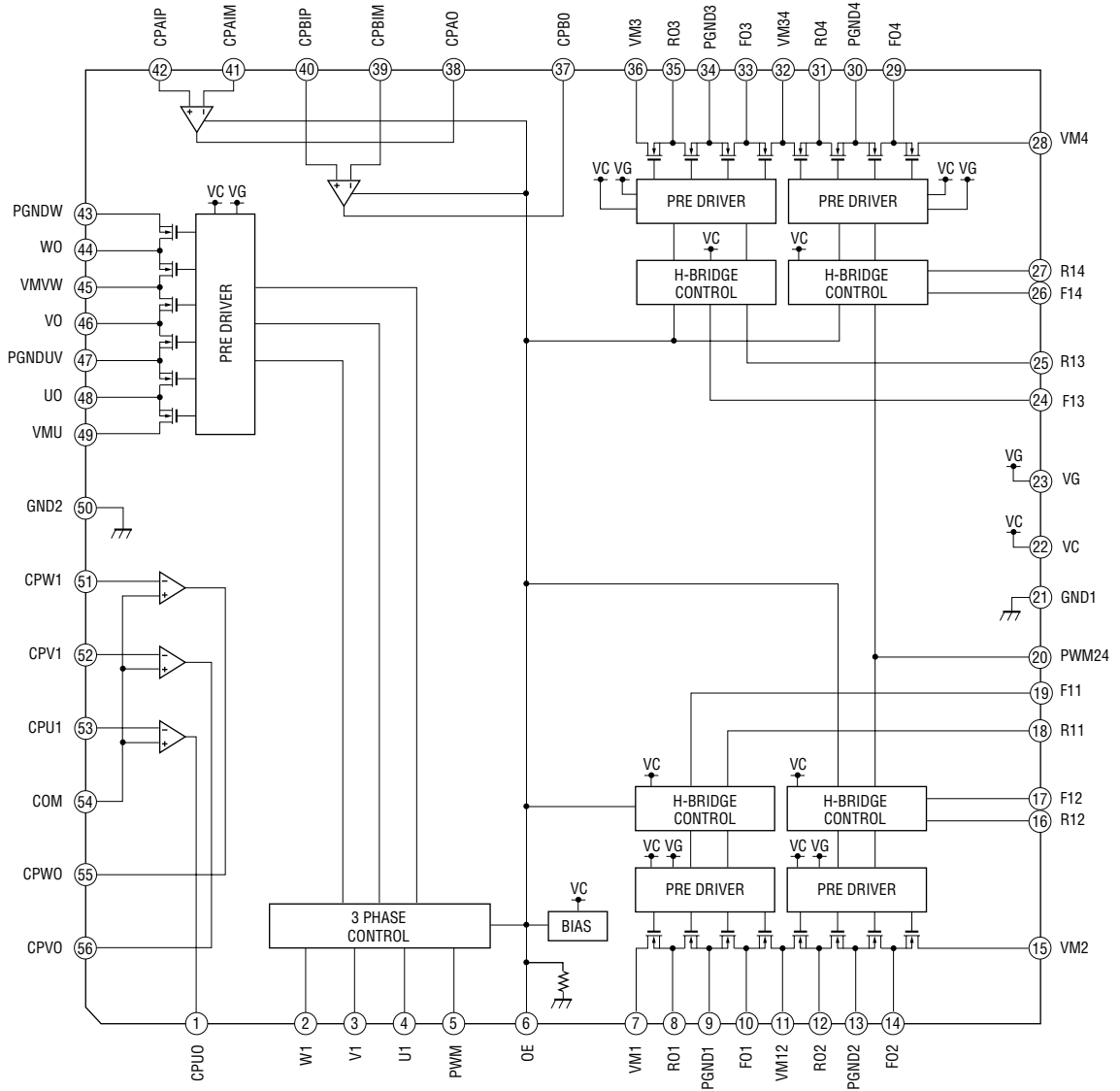
IC301 TA2131FL-EL



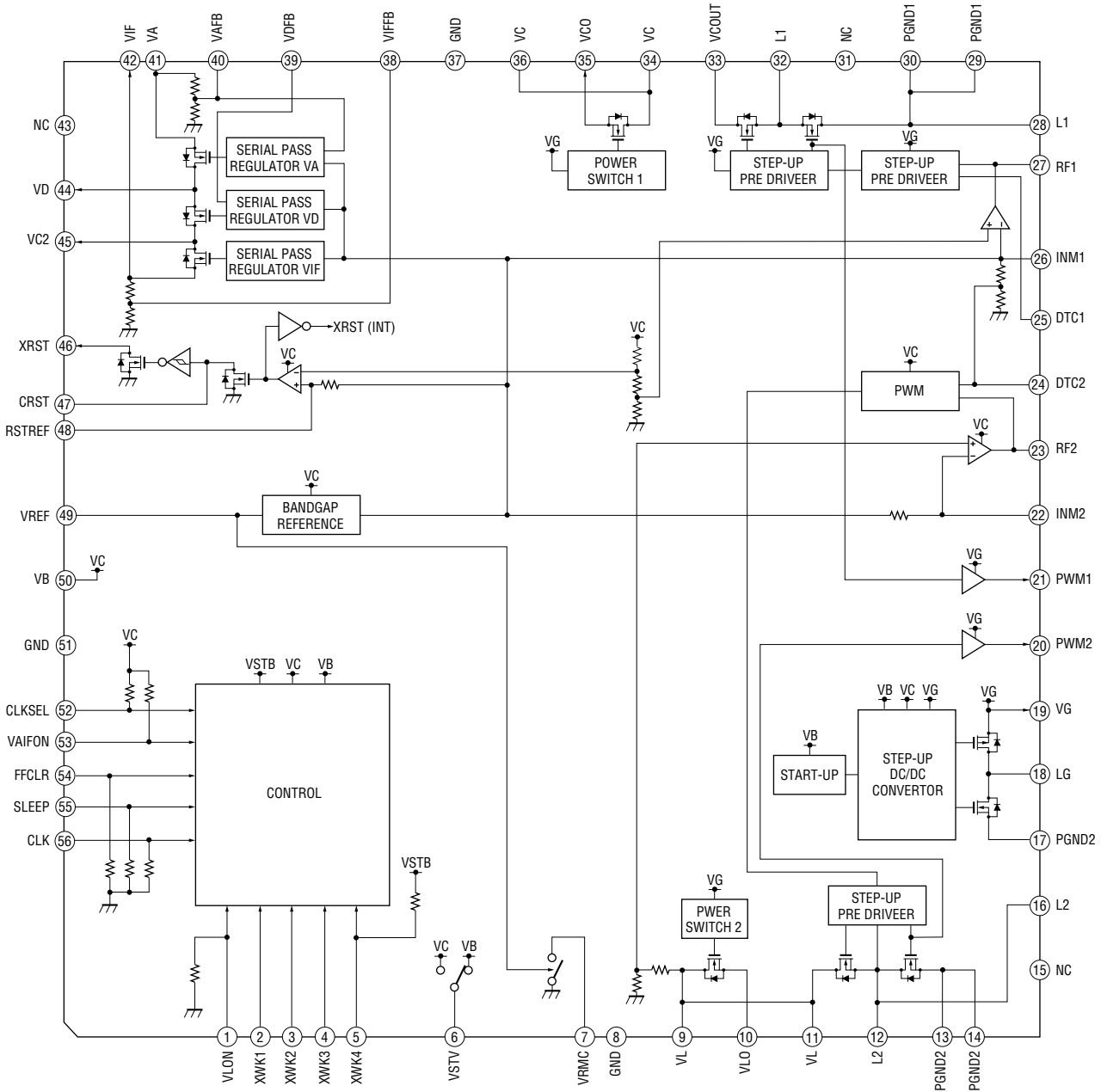
IC501 SN761057DBT



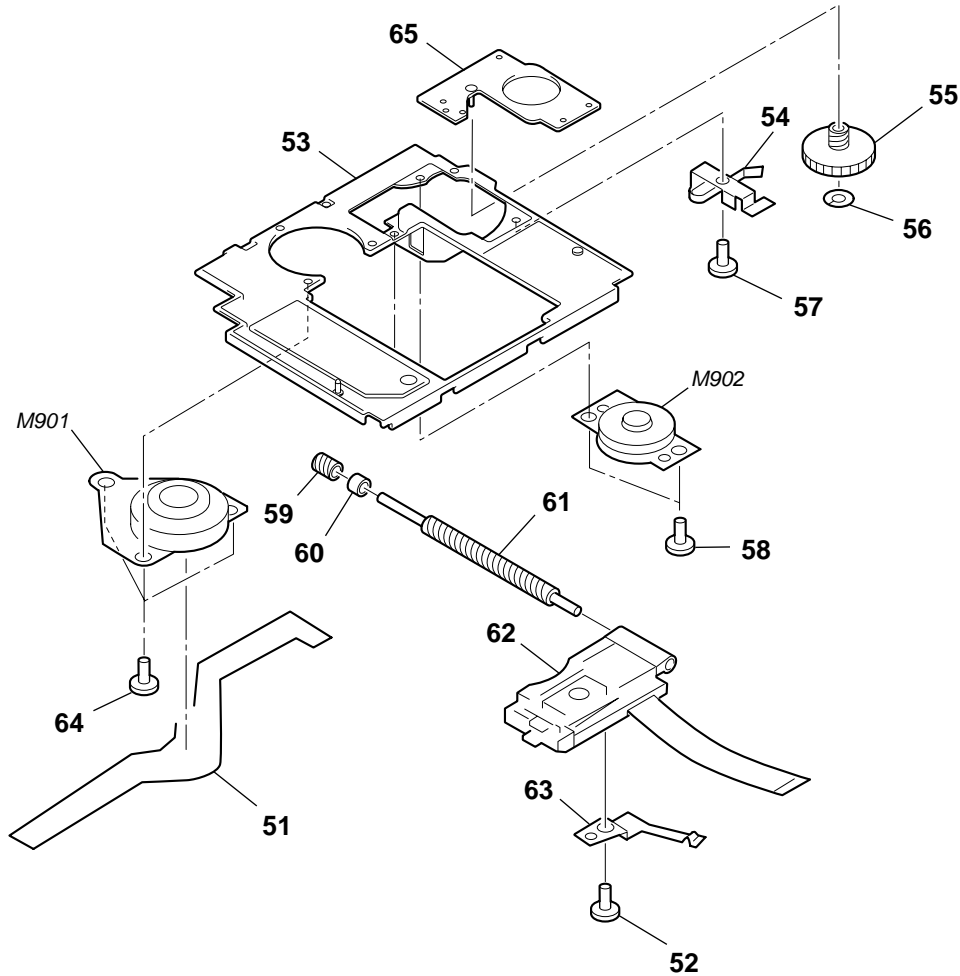
IC551 SC111257FCR2



IC901 XPC18A32FCR2



6-2. MECHANISM DECK SECTION
(MT-MZE300-176)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	1-679-187-11	MOTOR FLEXIBLE BOARD		60	4-222-204-01	BEARING (N)	
52	3-222-392-01	SCREW (M1.4), TAPPING		61	4-222-203-01	SCREW, LEAD	
53	3-223-833-01	CHASSIS		\triangle 62	X-3379-869-1	OPTICAL PICK-UP ASSY (LCX-4E)	
54	3-224-779-01	SPRING, THRUST DETENT		63	3-222-391-01	SPRING (M), RACK	
55	4-222-216-01	GEAR (SA)		64	3-225-278-11	SCREW, TAPPING	
56	3-338-645-51	WASHER		65	X-3379-529-1	BASE ASSY, MOTOR	
57	4-218-233-13	SCREW (1.7), MI		M901	8-835-706-01	MOTOR, DC SSM18A (SPINDLE)	
58	4-218-233-01	SCREW (1.4), MI		M902	1-763-399-11	MOTOR, DC (SLED)	
59	4-222-208-01	GEAR (SB)				(INCLUDING PULLEY GEAR)	

MAIN

**SECTION 7
ELECTRICAL PARTS LIST**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A.... , uPA.... : μ PA....
uPB.... : μ PB.... , uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
CND : Canadian
FR : French
EE : East European
CH : Chinese

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

Les composants identifiés par une marque Δ sont critiques 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	Ref. No.	Part No.	Description	Remark
*	A-3323-668-A	MAIN BOARD, COMPLETE *****		C553	1-135-211-11	TANTAL. CHIP 6.8uF	20% 6.3V
	1-694-743-11	CONDUCTIVE BOARD, CONNECTION		C554	1-135-211-11	TANTAL. CHIP 6.8uF	20% 6.3V
*	3-226-523-01	HOLDER, LCD		C555	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
	3-229-530-01	SHEET, SHIELD		C556	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
		< CAPACITOR >		C557	1-110-563-11	CERAMIC CHIP 0.068uF	10% 16V
C101	1-109-982-11	CERAMIC CHIP 1uF	10% 10V	C558	1-110-563-11	CERAMIC CHIP 0.068uF	10% 16V
C102	1-119-944-22	ELECT 470uF	20% 4V	C559	1-110-563-11	CERAMIC CHIP 0.068uF	10% 16V
C103	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V	C561	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C104	1-162-962-11	CERAMIC CHIP 470PF	10% 50V	C601	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C201	1-109-982-11	CERAMIC CHIP 1uF	10% 10V	C602	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C202	1-119-944-22	ELECT 470uF	20% 4V	C603	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C203	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V	C604	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C204	1-162-962-11	CERAMIC CHIP 470PF	10% 50V	C605	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C301	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C606	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C302	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C607	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C303	1-109-982-11	CERAMIC CHIP 1uF	10% 10V	C608	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C304	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	C609	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C305	1-125-838-11	CERAMIC CHIP 2.2uF	10% 6.3V	C610	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C306	1-104-847-11	TANTAL. CHIP 22uF	20% 4V	C611	1-164-227-11	CERAMIC CHIP 0.022uF	10% 25V
C351	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C613	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C501	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	C614	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C502	1-164-677-11	CERAMIC CHIP 0.033uF	10% 16V	C615	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V
C503	1-162-967-11	CERAMIC CHIP 0.0033uF	10% 50V	C616	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C504	1-162-967-11	CERAMIC CHIP 0.0033uF	10% 50V	C617	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C505	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C618	1-162-969-11	CERAMIC CHIP 0.0068uF	10% 25V
C508	1-162-965-11	CERAMIC CHIP 0.0015uF	10% 50V	C619	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C509	1-162-967-11	CERAMIC CHIP 0.0033uF	10% 50V	C620	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C510	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	C621	1-131-862-91	TANTAL. CHIP 47uF	20% 4V
C511	1-162-919-11	CERAMIC CHIP 22PF	5% 50V	C622	1-131-862-91	TANTAL. CHIP 47uF	20% 4V
C513	1-162-915-11	CERAMIC CHIP 10PF	0.5PF 50V	C801	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C515	1-164-156-11	CERAMIC CHIP 0.1uF	25V	C802	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C516	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	C803	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C517	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V	C804	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C519	1-162-968-11	CERAMIC CHIP 0.0047uF	10% 50V	C805	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V
C524	1-117-920-11	TANTAL. CHIP 10uF	20% 6.3V	C806	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V
C527	1-165-176-11	CERAMIC CHIP 0.047uF	10% 16V	C807	1-162-962-11	CERAMIC CHIP 470PF	10% 50V
C529	1-117-920-11	TANTAL. CHIP 10uF	20% 6.3V	C808	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C530	1-162-966-11	CERAMIC CHIP 0.0022uF	10% 50V	C810	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V
C551	1-104-912-11	TANTAL. CHIP 3.3uF	20% 6.3V	C811	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V
C552	1-104-912-11	TANTAL. CHIP 3.3uF	20% 6.3V	C813	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C851	1-164-156-11	CERAMIC CHIP 0.1uF	25V
				C901	1-104-752-11	TANTAL. CHIP 33uF	20% 6.3V
				C902	1-119-749-11	TANTAL. CHIP 33uF	20% 4V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C903	1-104-752-11	TANTAL. CHIP 33uF	20% 6.3V	L903	1-414-398-11	INDUCTOR 10uH	
C904	1-119-749-11	TANTAL. CHIP 33uF	20% 4V	L904	1-414-398-11	INDUCTOR 10uH	
C905	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	L905	1-412-032-11	INDUCTOR CHIP 100uH	
C906	1-162-970-11	CERAMIC CHIP 0.01uF	10% 25V			< LIQUID CRYSTAL DISPLAY >	
C907	1-109-982-11	CERAMIC CHIP 1uF	10% 10V	LCD801	1-804-162-11	DISPLAY PANEL, LIQUID CRYSTAL	
C908	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V			< TRANSISTOR >	
C909	1-109-982-11	CERAMIC CHIP 1uF	10% 10V				
C910	1-162-964-11	CERAMIC CHIP 0.001uF	10% 50V	Q301	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).SO	
C911	1-107-811-11	TANTAL. CHIP 47uF	20% 4V	Q501	8-729-922-10	TRANSISTOR 2SA1577-QR	
C913	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	Q801	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).SO	
C915	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V			< RESISTOR >	
C917	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V				
C919	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	R101	1-216-839-11	METAL CHIP 33K 5% 1/16W	
C920	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	R102	1-216-843-11	METAL CHIP 68K 5% 1/16W	
C921	1-107-826-11	CERAMIC CHIP 0.1uF	10% 16V	R103	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
C951	1-164-156-11	CERAMIC CHIP 0.1uF	25V	R104	1-216-797-11	METAL CHIP 10 5% 1/16W	
C952	1-113-690-11	ELECT CHIP 220uF	20% 4V	R106	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
C953	1-164-156-11	CERAMIC CHIP 0.1uF	25V				
		< CONNECTOR >		R201	1-216-839-11	METAL CHIP 33K 5% 1/16W	
* CN501	1-778-168-11	CONNECTOR, FFC/FPC (ZIF) 20P		R202	1-216-843-11	METAL CHIP 68K 5% 1/16W	
* CN551	1-815-284-21	CONNECTOR, FPC (ZIF) 8P		R203	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
		< DIODE >		R204	1-216-797-11	METAL CHIP 10 5% 1/16W	
D101	8-719-056-72	DIODE UDZ-TE-17-2.4B		R206	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
D201	8-719-056-72	DIODE UDZ-TE-17-2.4B					
D351	8-719-017-58	DIODE MA8068		R301	1-216-803-11	METAL CHIP 33 5% 1/16W	
D901	8-719-081-33	DIODE MA2YD1500LSO		R302	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
D902	8-719-081-33	DIODE MA2YD1500LSO		R303	1-216-849-11	METAL CHIP 220K 5% 1/16W	
D903	8-719-049-09	DIODE 1SS367-T3SONY		R501	1-216-839-11	METAL CHIP 33K 5% 1/16W	
		< FERRITE BEAD >		R506	1-216-864-91	SHORT 0	
FB801	1-414-226-21	FERRITE 0uH					
		< IC >		R516	1-218-855-11	METAL CHIP 2.2K 0.5% 1/16W	
IC301	8-759-598-15	IC TA2131FL(EL)		R517	1-218-855-11	METAL CHIP 2.2K 0.5% 1/16W	
IC501	8-759-689-67	IC SN761057DBT		R519	1-216-845-11	METAL CHIP 100K 5% 1/16W	
IC551	8-759-698-62	IC SC111257FCR2		R521	1-218-446-11	METAL CHIP 1 5% 1/16W	
IC601	8-759-697-82	IC LC89642-8B-E		R602	1-216-801-11	METAL CHIP 22 5% 1/16W	
IC602	8-759-834-07	IC XC62FP2302MR					
IC801	6-700-663-01	IC RU6615MF-0005		R603	1-216-797-11	METAL CHIP 10 5% 1/16W	
IC802	8-759-468-72	IC AK6420AM-E2		R605	1-216-833-11	METAL CHIP 10K 5% 1/16W	
IC803	8-759-592-49	IC TC7SZ125FU(TE85R)		R607	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
IC901	8-759-698-61	IC XPC18A32FCR2		R608	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
		< JACK >		R609	1-216-839-11	METAL CHIP 33K 5% 1/16W	
J301	1-794-084-31	JACK					
		< COIL >		R611	1-216-821-11	METAL CHIP 1K 5% 1/16W	
L502	1-469-570-21	INDUCTOR 10uH		R614	1-216-797-11	METAL CHIP 10 5% 1/16W	
L551	1-410-389-31	INDUCTOR CHIP 47uH		R615	1-216-797-11	METAL CHIP 10 5% 1/16W	
L552	1-410-389-31	INDUCTOR CHIP 47uH		R802	1-216-841-11	METAL CHIP 47K 5% 1/16W	
L553	1-414-400-41	INDUCTOR 22uH		R803	1-216-833-11	METAL CHIP 10K 5% 1/16W	
L554	1-414-400-41	INDUCTOR 22uH					
L901	1-419-258-21	INDUCTOR 68uH		R804	1-218-895-11	METAL CHIP 100K 0.5% 1/16W	
L902	1-419-646-21	INDUCTOR 47uH		R805	1-218-895-11	METAL CHIP 100K 0.5% 1/16W	
				R806	1-216-845-11	METAL CHIP 100K 5% 1/16W	
				R807	1-216-845-11	METAL CHIP 100K 5% 1/16W	
				R808	1-216-845-11	METAL CHIP 100K 5% 1/16W	
				R809	1-216-809-11	METAL CHIP 100 5% 1/16W	
				R810	1-216-809-11	METAL CHIP 100 5% 1/16W	
				R811	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
				R812	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
				R813	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
				R814	1-216-835-11	METAL CHIP 15K 5% 1/16W	
				R815	1-216-839-11	METAL CHIP 33K 5% 1/16W	
				R816	1-216-847-11	METAL CHIP 150K 5% 1/16W	
				R820	1-216-857-11	METAL CHIP 1M 5% 1/16W	
				R821	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	

