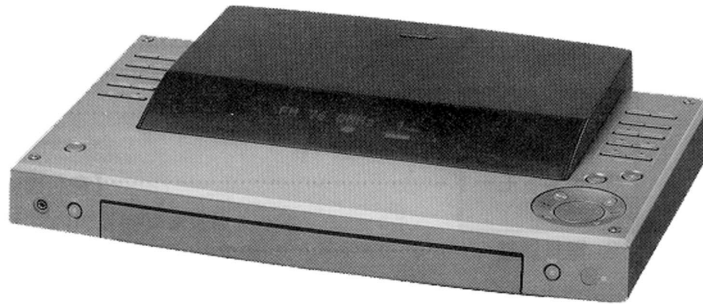


HCD-MJ1

SERVICE MANUAL

Ver 1.2 2003.12

US Model
Canadian Model
AEP Model
UK Model
E Model



- HCD-MJ1 is the tuner, CD amplifier and MDsection in MJ-L1.

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

CD Section	Model Name Using Similar Mechanism	HCD-D1/T1
	CD Mechanism Type	CDM13C-5BD19
	Base Unit Name	BU-5BD19
MD Section	Model Name Using Similaar Mechanism	NEW
	Mini Disc Mechanism Type	MDM-2ER

SPECIFICATIONS

CD ptayer section

System Compact disc and digital audio system
Laser Semiconductor laser ($\lambda=780$ nm)
Emission duration: continuous
Laser output
Max 44.6 μ W*
* This output is the value measured at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength
780 - 790 nm
Frequency response
2 Hz - 20 kHz

MiniDisc deck section

System MiniDisc digital audio system
Disc MiniDisc
Laser Semiconductor laser ($\lambda=780$ nm)
Laser output
Max 44.6 μ W*
* This output is the value measured at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Laser diode properties
Materi.II: GaAIAs
Revolutions (CLV)
Approx. 400 rpm to 900 rpm
Error correction
Adv.Inced Cross IntL•rleave Rced
Solomon Code (ACIRC)
Sampling frequency
44.1 kHz
Modulation system
EFM
(Eight-to-Fourteen Modula tion)
Number of channels
2 stereo channels
Frequency response
5 Hz - 20 kHz
Wow and fluttei
Below measurable limit

Tuner section

FM tuner section
Tuning range
US, Canadian model
: 87.5 - 108.0 MHz (100 kHz step)
Except US, Canadian model
: 87.5 - 108.0 MHz (50 kHz step)

Aerial FM Iead aerial
Aerial terminal
75 ohm unbalanced
Intermediate frequency
10.7 MHz

AM tuner section

Tuning range
US, Canadian model
: 530 - 1.710 kHz
(with the interval set at 10 kHz)
AEP, UK, German, Italian, Singapore,
Hong kong model
: 531 - 1.602 kHz
(with the interval set at 9 kHz)
Aerial AM Ioop aerial,
External aerial terminals
Intermediate frequency
450 kHz

Timer section

System Quartz lock system
Timer setting
One-minute step
Sleep timer
10-minute step. max. 90 minutes
- Continued on pag 2 -

FLAT COMPONENT SYSTEM

SONY®

Amplifier section

DIN power output

30 W + 30 W

(6 ohms at 1 kHz, DIN)

Continuous RMS power output

US, Canadian model :

30 W + 30 W

(6 ohms at 40Hz-16kHz, 1.0% THD)

35 W + 35 W

(6 ohms at 1kHz, 5% THD)

POPO 350W

Except US, Canadian model :

40 W + 40 W

(6 ohms at 1 kHz, 10% THD)

Music power output

70W+70W

(6 ohms at 1 kHz, 10% THD)

Inputs

TAPE (phono jacks):

voltage 250 mV

impedance 47 kilohms

Outputs

TAPE (phono jacks):

voltage 250 mV

impedance 1 kilohms

PHONES (stereo phone jack):

accepts headphones of 8 ohms

or more.

Supplied accessories

Sony RM-SMJI Remote (1)

Sony lithium battery. CR2025 (1)

FM lead aerial (1)

AM loop aerial (1)

Speaker cords (2)

General

Power requirements

Destination	Power requirements	Power consumption
US, Canadian model	120V AC,60Hz	95W
AEP, UK, German Italian model	220-230V AC, 50/60Hz	95W
E, Singapore, Hong Kong model	110-120V/ 220-240V AC, 50/60Hz Adjustable with the Voltage Selector	95W

Dimensions

Approx. 430 x 95 x 290 mm

(17 x 3³/₄ x 11 ¹/₂ inches) (w/h/d)

incl. projecting parts and controls

Mass

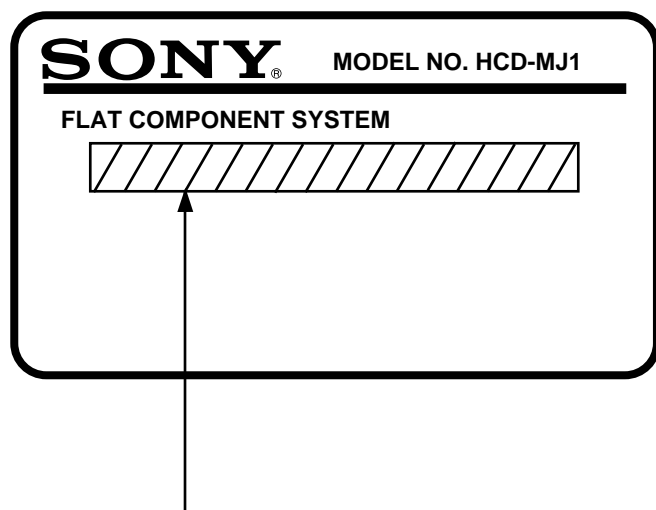
Approx. 7.0 kg (15 lb 7 oz)

Design and specifications are subject to
change without notice.

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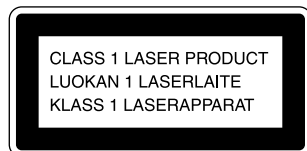
MODEL IDENTIFICATION



US, Canadian model : AC120V ~60Hz
 AEP, UK, German, Italian model : AC220-230V ~50/60Hz
 Hong kong, Singapore mdl : AC110-120V/AC220-240V ~50/60Hz

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

For customers in Europe



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASSLASER PRODUCT label is located on the rear exterior.

CAUTION	: INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSÅFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTINNA LASERSÄTEILYLLE.
VARNING	: LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URÖPPPLAD.
ADVARSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

CAUTION

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

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer : Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM

or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

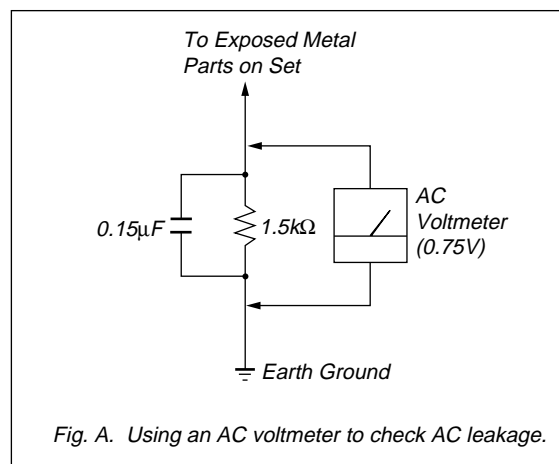


Fig. A. Using an AC voltmeter to check AC leakage.

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 NOTES

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

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

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

NOTES ON LASER DIODE EMISSION CHECK

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

ENTERING TEST MODE

When you press the **[DISP]** button, **[■]** button, and **[EDIT]** button at the same time, the system goes into key, fluorescent tube, jog and LED check mode.

● Fluorescent tube check

All the lights light up. Then, each time you press the **[ENTER]** button, the display mode changes as shown below.

→ All lit → partially lit 1 → partially lit 2 →

● LED check

When you turn the jog dial, the LEDs change from all lit to individually lit.

● Key check

The **[EDIT/NO]** button puts the system into key/jog check mode.

When you press a button, the number is counted up.

However, pressing a button again that you already pressed does not count up the number.

Turning the jog dial to the right increases the jog count display, turning the jog dial to the left decreases the jog count.

When you have pressed all the buttons and "KEY= OK" is displayed, pressing any button ends test mode.

Cautions when replacing IC121 and IC171 on the BD board

A change has been made from CXD2535BR due to a modification of IC121 on the BD board in this unit.

Accompanying this modification, a portion of the non-volatile memory of IC171 (XC24CO1S) has been changed.

Conversely, when IC121 has been replaced, use CXD2535BR and rewrite the contents of IC171.

Contents of non-volatile memories CXD2535BR

Address	CXD2535BR
15	93
2D	1A
2E	1A

Rewrite Procedure for Non-volatile Memory

- (1) With the power switched off and the power plug plugged into a socket, press the BASS/TREBLE button, CLOCK button, and MD button more than one at a time in order.
- (2) Rotate the JOG dial knob and display the "EEP MODE".
When you press the YES key, the display changes to show "EEP**@@".
(Here, ** indicates the address, and @@ indicates the data.)
- (3) Rotate the JOG dial knob and display the "EEP 15 @@".
- (4) When you press the CD SYNCHRO button, "EEP 15 @>@@" is displayed so then turn the JOG dial knob to show "EEP 15 @>93"
- (5) Press the YES key and "COMPLETE" will appear for a moment and data shown as "EEP 15 93" is being rewritten.
- (6) Rewrite address 2D and address 2E, into 1A using steps (3) to (5) above.
- (7) When all changes are complete, press the NO key and display "EEP MODE".
- (8) Press the REPEAT button. If no disc is loaded, the time is displayed, so unplug the power plug. If a disc is loaded, the disc is ejected, then the time is displayed. Unplug the power plug from the socket to end EEP rewrite mode. (See "How to end test mode" below.)

Note: Changes in the contents of non-volatile memory are not reflected until the power is switched off, then on.

HOW TO END TEST MODE

Method :

- 1 Press the REPEAT button.
- 2 If no disc is loaded, the time is displayed. If a disc is loaded, the disc is ejected, then the time is displayed.
- 3 Unplug the power plug from the socket.

SECTION 2

GENERAL

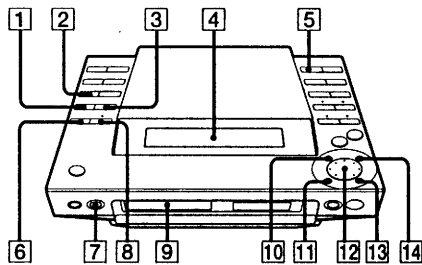
This section is extracted from instruction manual.






Index to Parts and Controls

Refer to the pages indicated in parentheses for how to use the controls.
Controls with an asterisk have built-in lamps on themselves.

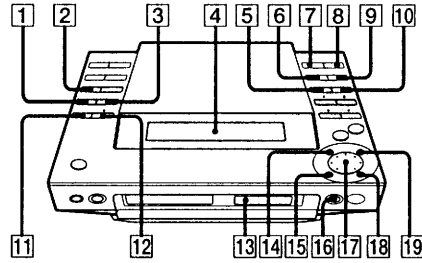
Front Panel






CD player section



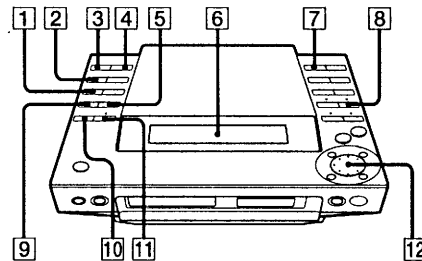
- 1 PLAY MODE button (9)
- 2 CHARACTER button (10)
- 3 REPEAT button (8)
- 4 Display window (7, 8)
- 5 DISPLAY button (8)
- 6 EDIT/NO button (10)
- 7 CD  (eject) button (7)
- 8 ENTER/YES button (9, 10)
- 9 Disc tray (7)
- 10  (play/pause) button (7)
- 11  (fast backward) button (8)
- 12 JOG dial (7)
- 13  (fast forward) button (8)
- 14  (stop) button (7)

MiniDisc deck section



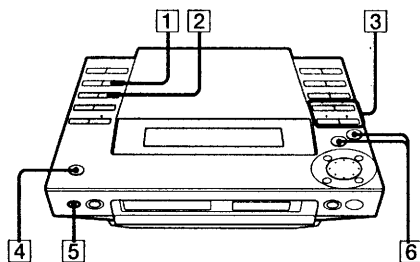
- 1 PLAY MODE button (13)
- 2 CHARACTER button (21)
- 3 REPEAT button (12)
- 4 Display window (11, 12)
- 5 REC PAUSE button (15)
- 6 CD SYNCHRO button (15)
- 7 DISPLAY button (12)
- 8 SCROLL button (12, 21)
- 9 REC button (16)
- 10 REC STOP button (15)
- 11 EDIT/NO button (15, 18)
- 12 ENTER/YES button (13, 15, 18)
- 13 Disc slot (11)
- 14  (play/pause) button (11)
- 15  (fast backward) button (12)
- 16 MD  (eject) button (11)
- 17 JOG dial (11)
- 18  (fast forward) button (12)
- 19  (stop) button (11)

Tuner section



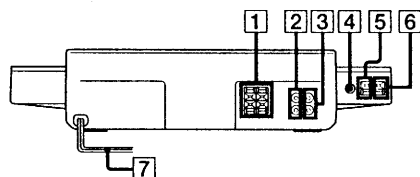
- 1 CHARACTER button (23)
- 2 CLOCK button (6)
- 3 TIMER SELECT button (27)
- 4 TIMER SET button (26)
- 5 STEREO/MONO button (22)
- 6 Display window (22)
- 7 DISPLAY button (24)
- 8 TUNER/BAND button (22)
- 9 TUNING button (22)
- 10 EDIT/NO button (23)
- 11 ENTER/YES button (23)
- 12 JOG dial (22)

Amplifier section



- 1 BASS/TREBLE button (25)
- 2 BALANCE button (25)
- 3 FUNCTION buttons
TAPE button (16, 28)
MD button (11, 18)
CD button (7, 16)
TUNER/BAND button (16, 22)
- 4 POWER switch (7, 27)
- 5 PHONES jack (25)
- 6 VOLUME +/- buttons (25)

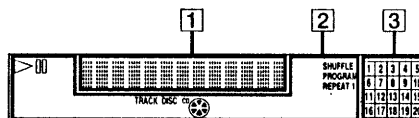
Rear Panel



- 1 SPEAKER connectors (4)
- 2 TAPE OUT jacks (28)
- 3 TAPE IN jacks (28)
- 4 FM 75 Ω COAXIAL connector (4)
- 5 \varnothing (earth) terminal (4)
- 6 AM terminal (4)
- 7 Mains lead (5)

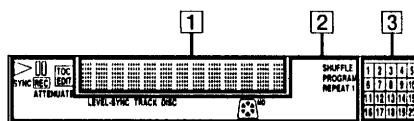
Display Window

CD player section



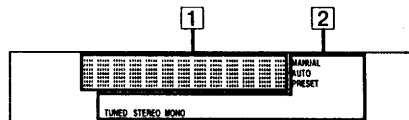
- 1 Playing time/track number indication (7)
- 2 CD indication
▷|| (play/pause) (7)
REPEAT 1 (8)
SHUFFLE (9)
PROGRAM (9)
DISC (7)
TRACK (7)
- 3 Music calendar (7)

MD deck section



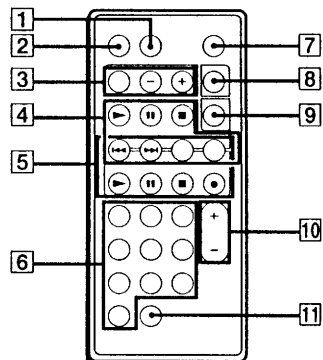
- 1 Playing time/track number/title indication (11)
- 2 MD indication
▷|| (play/pause) (11)
[REC] (15)
SYNC (synchro) (15)
LEVEL-SYNC (level synchro) (14)
[TOC] (TOC edit) (15)
REPEAT 1 (12)
SHUFFLE (13)
PROGRAM (13)
DISC (11)
TRACK (11)
- 3 Music calendar (11)

Tuner section



- 1 Frequency/time/station name indications (6, 22, 23, 26)
- 2 Tuner indications
TUNED (22)
STEREO MONO (22)
MANUAL (22)
AUTO (22)
PRESET (24)

Remote (RM-SMJ1)

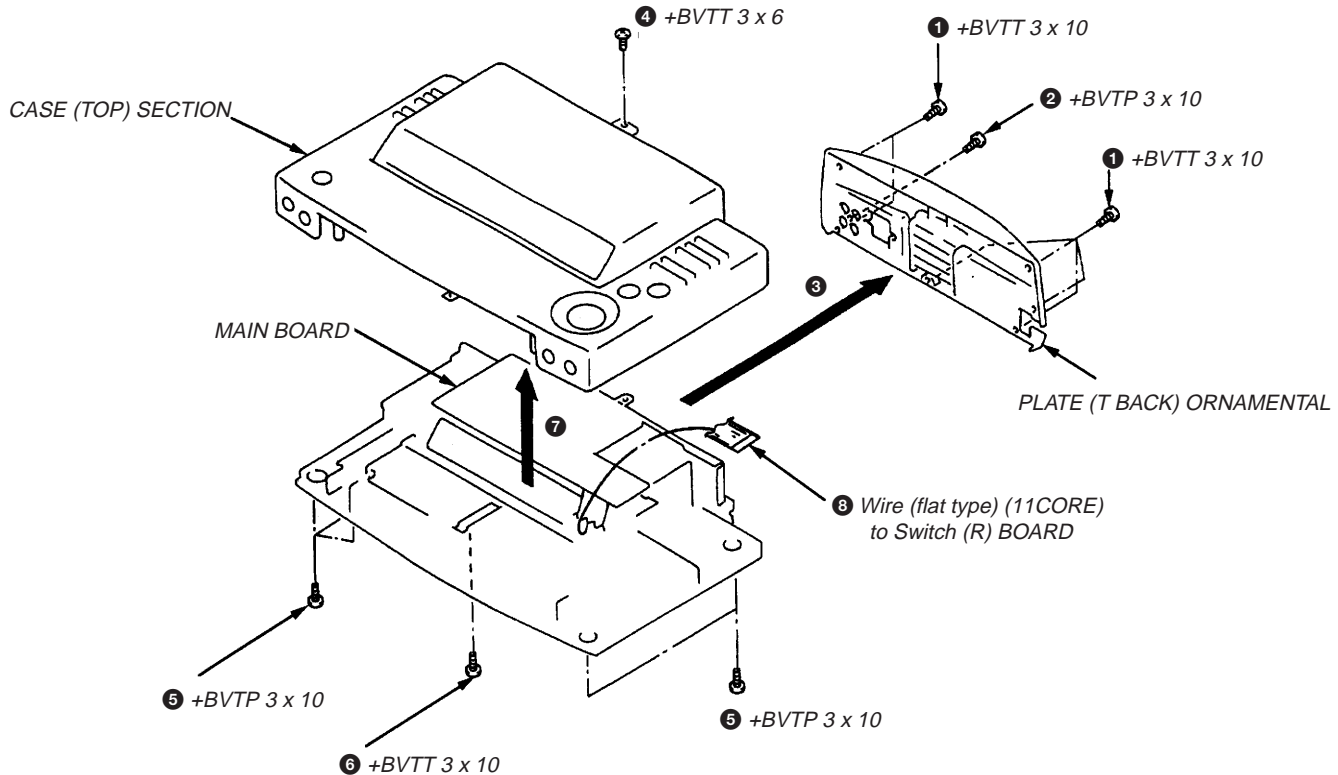


- 1 SLEEP button (26)
- 2 FUNCTION button (16)
- 3 Tuner operating buttons
BAND button (22)
PRESET + / - buttons (24)
- 4 CD operating buttons
▶ (play) button (7)
⏸ (pause) button (7)
■ (stop) button (7)
⏮ (search backward) button (7)
⏭ (search forward) button (7)
REPEAT button (8)
P.MODE (play mode) button (9)
- 5 MD operating buttons
▶ (play) button (11)
⏸ (pause) button (11)
■ (stop) button (11)
⏮ (search backward) button (11)
⏭ (search forward) button (11)
● REC button (16)
REPEAT button (12)
P.MODE (play mode) button (13)
- 6 Numeric buttons (7, 11, 24)
- 7 POWER button (7)
- 8 DISPLAY button (8, 12)
- 9 SCROLL button (12, 21)
- 10 VOL +/- buttons (25)
- 11 >10 button (7, 11, 24)

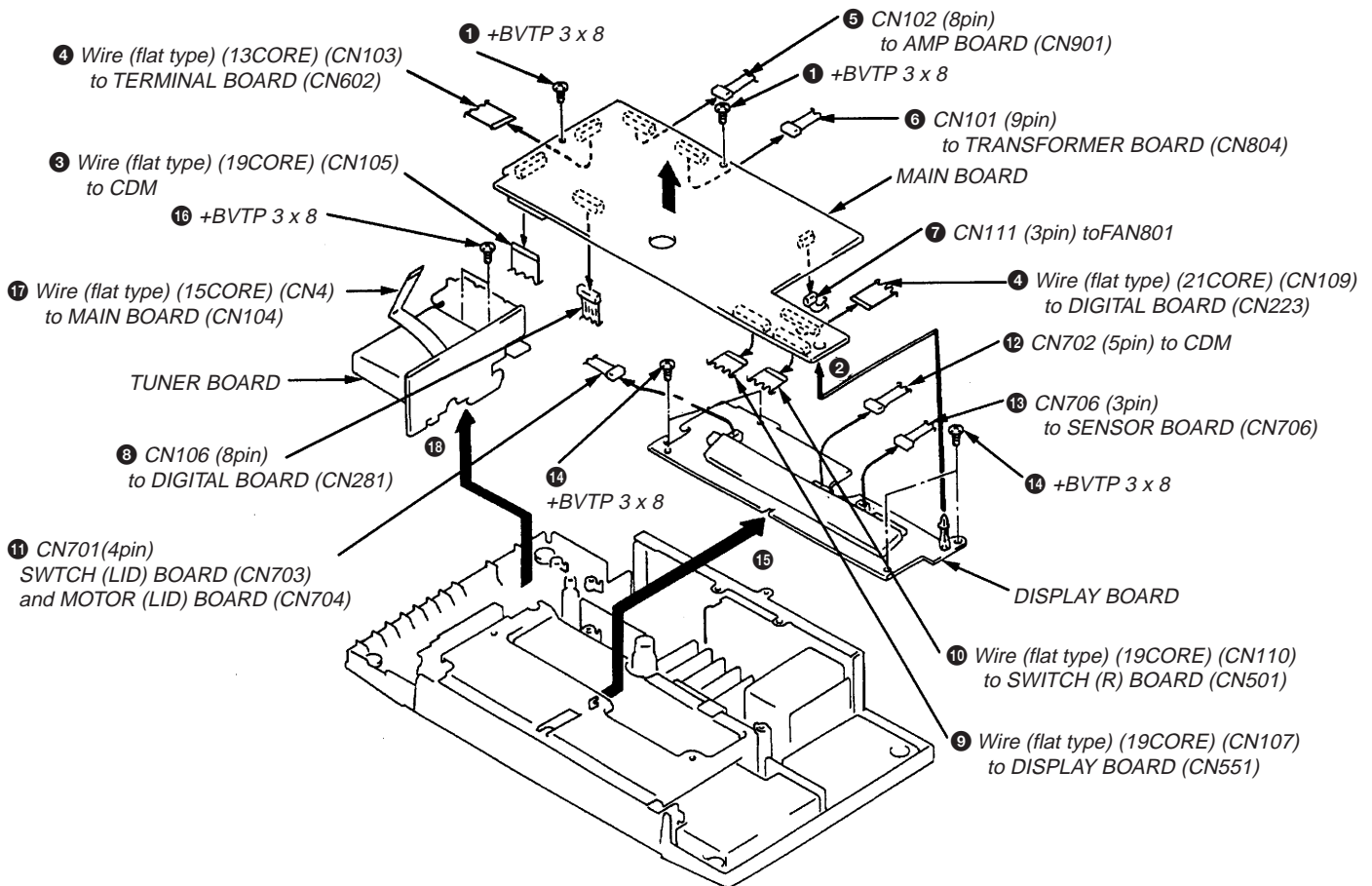
SECTION 3 DISASSEMBLY

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

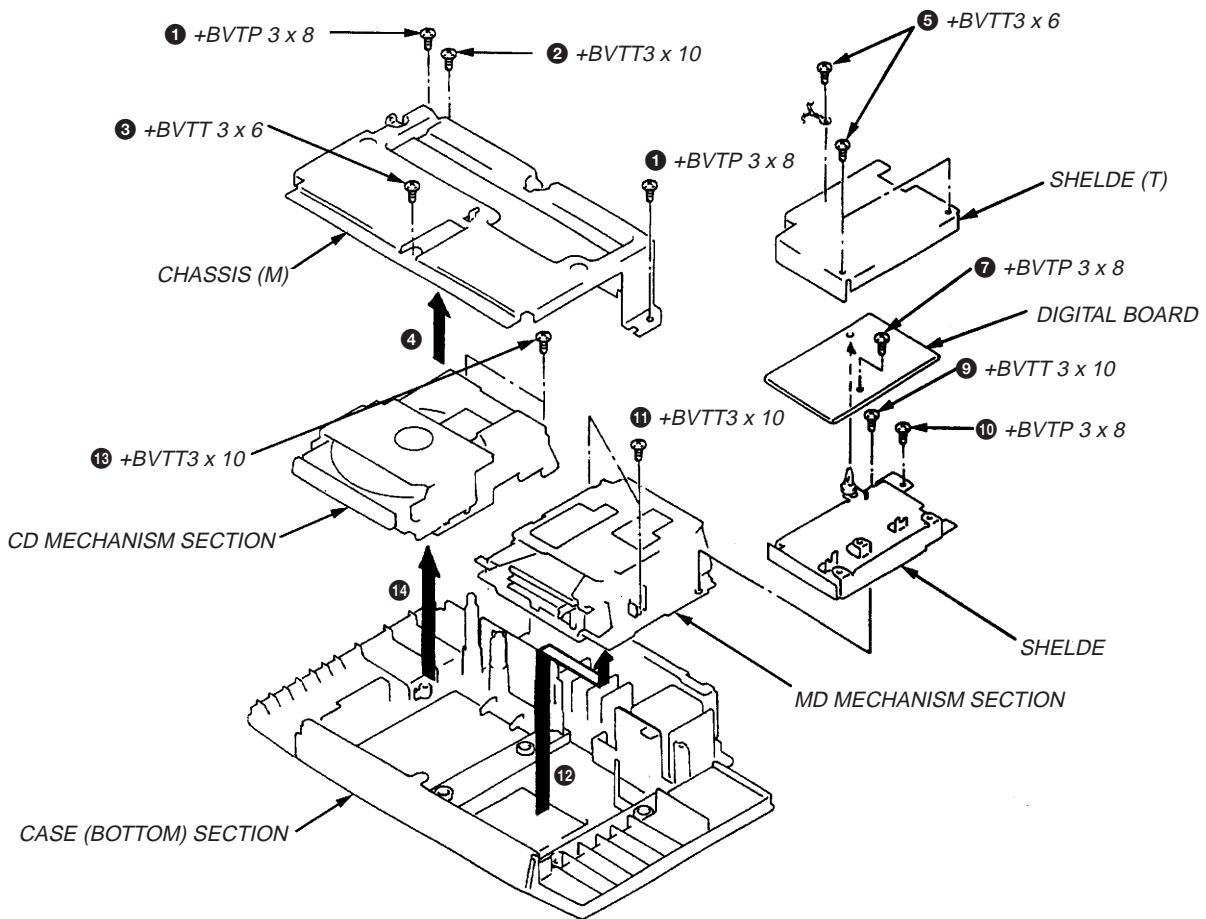
3-1. CASE (TOP) SECTION AND PLATE (T BACK) ORNAMENTEL REMOVAL



3-2. MAIN BOARD, TUNER BOARD AND DISPLAY BOARD REMOVAL

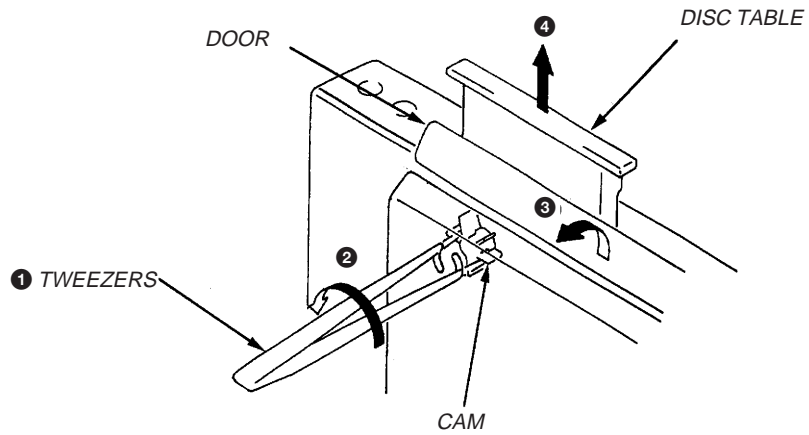


3-3. CD MECHANISM, MD MECHANISM AND DIGITAL BOARD REMOVAL



SECTION 4

DISC TABLE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF



SECTION 5 TEST MODE

5-1. How to enter the Test Mode

With the power switched off and the power plug plugged into a socket, press the BASS/TREBLE button, CLOCK button, and MD button more than one at a time in order.

5-2. How to Release the Test Mode

Press the REPEAT button.

5-3. Basic Operations of the Test Mode

All operations are performed using the JOG dial (Rotary Encoder) , YES (ENTR/TES)button, and NO (EDIT/ON)button. The functions of these keys are as follows.

Function	Contents
JOG dial	Changes parameters and modes.
YES button	Proceeds onto the next setp. inalizes input
NO button	Returns to previous step. Stops operations.

5-4. Selecting the Test Mode

Eight test modes are selected by turning the AMS knob.

Display	Contents
TEMP ADJUST	Temperature compnsation offset adjustment
LDPWR ADJUST	Laser power adjustment
EFBAL ADJUST	Traverse adjustment
FBIAS ADJUST	Focus bias adjustment
FBIAS CHECK	Focus bias check
CPLAY MODE	Continuous playback mode
CREC MODE	Continuous recording mode
EEP MODE	Non-volatile memory mode*

For detailed description of each adjustment mode, refer to 6. Electrical Adjustments.

If a different adjustment mode has been selected by mistake, press the NO button to exit from it.

* The EEP MODE is not used in servicing. If set accidentally, press the NO button immediately to exit it.

5-5-1. Operating the Continuous Playback Mode

1. Entering the continuous playback mode

- ① Set the disc in the unit (either MO or CD).
- ② Rotate the JOG dial and display “CPLAY MODE”.
- ③ Press the YES button to change the display “CPLAY IN”.
- ④ When access completes, the display changes to “C1 = : : : : : AD = : : :”

Note : The “ : : :” displayed are arbitrary numbers.

2. Changing the parts to be played back

- ① Press the YES button during continuous playback to change the display to “CPLAY MID”, “CPLAY OUT”.
When pressed another time, the parts to be playedback can be changed.
- ② When access completes, the display changes to “C1 = : : : : : AD = : : :”

Note : The “ : : :” displayed are arbitrary numbers.

3. Ending the continuous playback mode

- ① Press the No button. The display will change to “CPLAY MODE”.
- ② Press the MD  button and remove the disc.

Note 1 : The playback start addresses for IN, MID, and OUT are as follows.

Press the DISPIAY button twice to display thae address. Pressing the DISPIAY button again returns the display to

“C1 = : : : : : AD = : : :”

IN 40h cluster

MID 300h cluster

OUT 700h cluster

5-5-2. Operating the Continuous Recording Mode

1. Entering the continuous recording mode

- ① Set the MO disc in the unit.
- ② Rotate the JOG dial knob and display “CREC MODE”.
- ③ Press the YES button to change the display to “CREC IN”.
- ④ When access completes, the display changes to “CREC (⌘ ⌘ ⌘ ⌘) and **REC** lights up.


Note : The “⌘ ⌘” displayed are arbitrary numbers.

2. Changing the parts to be recorded

- ① When the YES button is pressed during continuous recording, the display changes to “CREC MID”, “CREC OUT” and **REC** goes off.
When pressed another time, the parts to be recorded can be changed.
- ② When access completes, the display changes to “CREC (⌘ ⌘ ⌘ ⌘) and **REC** lights up.

Note : The “⌘ ⌘” displayed are arbitrary numbers.

3. Ending the continuous recording mode

- ① Press the No button. The display change to CREC MODE” and **REC** goes off.
- ② Press the MD  button and remove the disc.

Note 1 : The recording start addresses for IN, MID, and OUT are as follows.

IN 40h cluster
MID 300h cluster
OUT 700h cluster

Note 2 : The No button can be used to stop recording anytime.

Note 3 : During the test mode, the erasing-protection tab will not be detected. Therefore be careful not to set the continuous recording mode when a disc not be erased is set in the unit.

Note 4 : Do not perform continuous recording for long periods of time above 5minutes.






Note 5 : During continuous recording, be careful not to apply vibration.


5-5-3. Non-Volatile Memory Mode (EEP MODE)

This mode reads and writes the contents of the non-volatile memory.

It is not used in servicing. If set accidentally, press the No button immediately to exit it.

5-6. Functions of Other buttons

Function	Contents
	Sets continuous playback when pressed in the STOP state. When pressed during continuous playback, the tracking servo turns ON/OFF.
	Stops continuous playback and continuous recording.
	The sled moves to the outer circumference only when this is pressed.
	The sled moves to the inner circumference only when this is pressed.
	Turns recording ON/OFF when pressed during continuous playback.
SCROLL	Switches between the pit and groove modes when pressed.
DISPLAY	Switches the display when pressed. Returns to previous step. Stops operations.

Note : The erasing-protection tab is not detected during the test mode. Recording will start regardless of the position of the erasing-protection tab when the  (REC) button is pressed.

5-7. Test Mode Displays

Each time the DISPLAY button is pressed, the display changes in the following order.

MODE display→Error rate display→Address display

1. MODE display

Displays “TEMP ADJUST”, “CPLAY MODE”, etc.

2. Address display

Addresses are displayed as follows.

h = □□□□ s = □□□□ (MO pit and CD)

h = □□□□ a = □□□□ (MO groove)

h = Header address

s = SUBQ address

a = ADIP address

* A ‘_’ display appears when the address cannot be loaded.

3. Error rate display

Error rates are displayed as follows.

C1 = □□□□ AD = □□□□

C1 = Indicates C1 error


AD = Indicates ADER

5-8. Meanings of Other Displays

Display	Contents		
	Light	Off	Blinkig
▶	During continuous playback	STOP	
▶II	Tracking servo OFF	Tracking servo ON	
REC	Recording mode ON	Recording mode OFF	
SYNC	CLV LOCK	CLV UNLOCK	
TRACK	Pit	Groove	
DISC	High refiection	Low refiection	
LEVEL-SYNC	CLV-S	CLV-A	
MEMORY	ABCD adjustment completed		
SHUFFLE	(Focus auto gain successful Tracking auto gain successful)		(Focus auto gain successful Tracking auto gain failed)

5-9. Precautions for Use of Test Mode

- ② As loading related operations will be performed regardless of the test mode operations being performed, be sure to check that the disc is stopped before setting and removing it.

Even if the MD  button is pressed while the disc is rotating during continuous playback, continuous recording, etc., the disc will not stop rotating.

Therefore, it will be ejected while rotating.

* Always press the NO button before pressing the MD  button.

- ② The erasing-protection tab is not detected in the test mode. Therefore, when modes which output the recording laser power such as continuous recording mode and traverse adjustment mode, etc. are set, the recorded contents will be erased regardless of the position of the tab. When using a disc that is not to be erased in the test mode, be careful not enter the continuous recording mode and traverse adjustment mode.

SECTION 6

ELECTRICAL ADJUSTMENTS

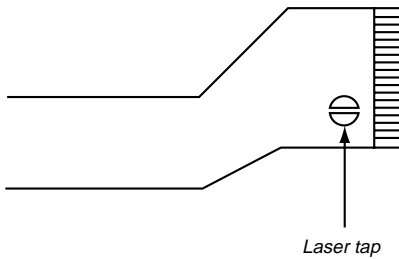
PRECAUTION

6-1. Precautions for Checking Laser Diode Emission

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eye-sight.

6-2. Precautions for Use of optical pickup (KMS-210A)

As the laser diode in the optical pickup is easily damaged by static electricity, solder the laser tap of the flexible board when using it. Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also take adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pickup flexible board

6-3. Precautions for Adjustments

1) when replacing the following parts, perform the adjustments and checks with O in the order shown in the following table.

	Optical pickup	BD (MD) BOARD		
		IC171	D101	IC101,IC121,IC191
1. Temperature compensation offset adjustment	X	O	O	O
2. Laser power adjustment	O	X	X	O
3. Traverse adjustment	O	O	X	O
4. Focus bias adjustment	O	O	X	O
5. Error rate check	O	O	X	O

2) Set the test mode when performing adjustments.

After completing the adjustments, exit the test mode.

3) Perform the adjustments in the order shown.

4) Use the following tools and measuring devices.

- Test disc (CD) TDYS-1 (Parts No. 4-963-646-01)
- Laser power meter LPM-8001 (Parts No. J-2501-046-A)
- Oscilloscope
- Digital voltmeter
- Thermometer

5) When observing several signals on the oscilloscope, etc., make sure that VC and GND do not connect inside the oscilloscope. (VC and GND will become short-circuited)

6) Do not move RV105 of the BD (MD) board. When replacing it, adjust to the mechanical center of the semi-fixed resistor.

6-4. Creating MO Continuously Recorded Disc

* This disc is used in focus bias adjustment and error rate check.

The following describes how to create a MO continuous recording disc.

1. Insert a MO disc (blank disc) commercially available.
2. Rotate the JOG dial and display "CREC MODE".
3. Press the YES button and display "CREC IN".
4. Press the YES button again to display "CREC MID".
"CREC (0300)" is displayed for a moment and recording starts.
5. Complete recording within 5 minutes.
6. Press the NO button and stop recording
7. Press the MD button and remove the MO disc.

The above has been how to create a continuous recording data for the focus bias adjustment and error rate check.

Note :

- Be careful not to apply vibration during continuous recording.

6-5. Temperature Compensation Offset Adjustment

Save the temperature data at that time in the non-volatile memory as 25°C reference data.

Note :

1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22°C to 28°C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

Adjusting Method :

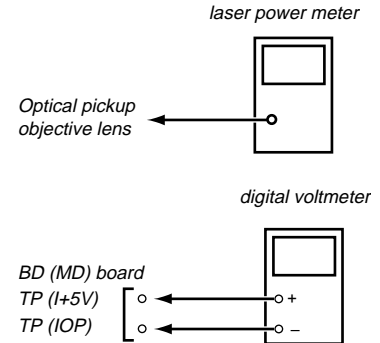
1. Rotate the JOG dial and display "TEMP ADJUST".
2. Press the YES button and select the "TEMP ADJUST" mode.
3. "TEMP = ∴ ∴" and the current temperature data will be displayed
4. To save the data, press the YES button.
When not saving the data, press the NO button.
5. When the YES button is pressed, "TEMP = ∴ ∴ SAVE" will be displayed for some time, followed by "TEMP ADJUST".
When the NO button is pressed, "TEMP ADJUST" will be displayed.

Specifications :

The temperature should be within "TEMP = EO" to "TEMP = IF".

4-6. Laser Power Adjustment

Connection :



Adjusting Method :

1. Set the laser power meter on the objective lens of the optical pickup.
(When it cannot be set properly, press the ◀◀ button or ▶▶ button and move the optical pickup.)
Connect the digital voltmeter to TP (IOP) and TP (I+5V).
2. Rotate the JOG dial and display "LDPWR ADJUST".
(Laser power : For adjustment)
3. Press the YES button twice and display "LD \$ 4B = 3.5mW".
4. Adjust RV102 of the BD (MD) board so that the reading of the laser power meter becomes $3.4 \pm_{-0}^{+0.1}$ mW.
5. Press the YES button and display "LD \$ 96 = 7.0mW".
(Laser power : MO writing)
6. Check that the laser power meter and digital voltmeter readings satisfy the specified value.

Specification :

Laser power meter reading	: 7.0 ± 0.3 mW
Digital voltmeter reading	: Optical pickup displayed value $\pm 10\%$

(Optical pickup label)

KMS210A
27X40
B0825

IOP = 82.5mA in this case

$IOP (mA) = \text{Digital voltmeter reading (mV)} / 1(\Omega)$

7. Press the YES button and display "LD \$ 0F = 0.7mW".
(Laser power : MO reading)
8. Check that the laser power meter at this time satisfies the specified value.

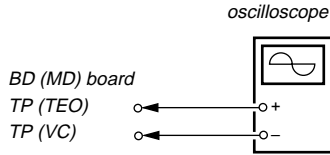
Specification :

Laser power meter reading : 0.70 ± 0.1 mW

9. Press the NO button and display "LDPWR ADJUST", and stop laser emission.
(The NO button is effective at all times to stop the laser emission.)

6-7. Traverse Adjustment

Connection :



Adjusting Method :

1. Connect an oscilloscope to TP (TEO) and TP (VC) of the BD (MD) board.
2. Load a MO disc (any available on the market).
3. Press the ◀ button or ▶ button and move the optical pickup outside the pit.
4. Rotate the JOG dial and display "EFBAL ADJUST".
5. Press the YES button and display "EFBAL MO-W".
(Laser power WRITE power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Adjust RV101 of the BD (MD) board so that the waveform of the oscilloscope becomes the specified value.
(MO groove write power traverse adjustment)

(Traverse Waveform)



Specification : $A = B$

7. Press the YES button and display "EFB = \$ ∷ MO-R".
(Laser power : MO reading)
8. Rotate the JOG dial so that waveforms of the oscilloscope becomes the specified value.
(When the JOG dial is rotated, the ∷ of "EFB = ∷" changes and the waveform changes.) In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.
(MO groove read power traverse adjustment)

(Traverse Waveform)



Specification : $A = B$

9. Press the YES button, display "EFB = \$ ∷ SAVE" for a moment and save the adjustment results in the non-volatile memory.
Next "EFBAL MO-P" is displayed.
10. Press the YES button and display "EFB = \$ ∷ MO-P".
The optical pickup moves to the pit area automatically and servo is imposed.

11. Rotate the JOG dial until the waveforms of the oscilloscope moves closer to the specified value.

In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)



Specification : $A = B$

12. Press the YES button, display "EFB = ∷ SAVE" for a moment and save the adjustment results in the non-volatile memory.
Next "EFBAL CD" is displayed. The disc stops rotating automatically.
13. Press the MD button and remove the MO disc.
14. Load the test disc TDYS-1.
15. Press the YES button and display "EFB = ∷ CD". Servo is imposed automatically.
16. Rotate the JOG dial so that the waveforms of the oscilloscope moves closer to the specified value.
In this adjustment, waveform varies at intervals of approx. 3%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)

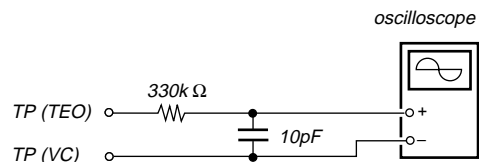


Specification : $A = B$

17. Press the YES button, display "EFB = \$ ∷ SAVE" for a moment and save the adjustment results in the non-volatile memory.
Next "EFBAL ADJUST" is displayed.
18. Press the MD button and remove the test disc TDYS-1.

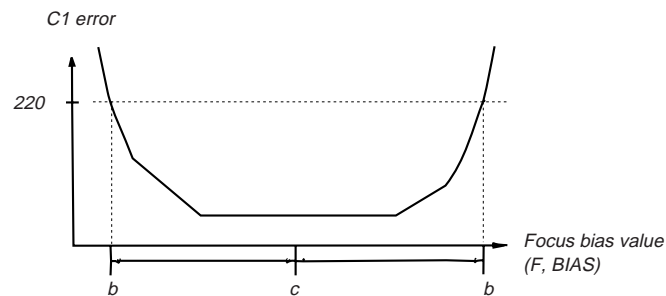
Note 1) Data will be erased during MO reading if a recorded disc is used in this adjustment.

Note 2) If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



Adjusting Method :

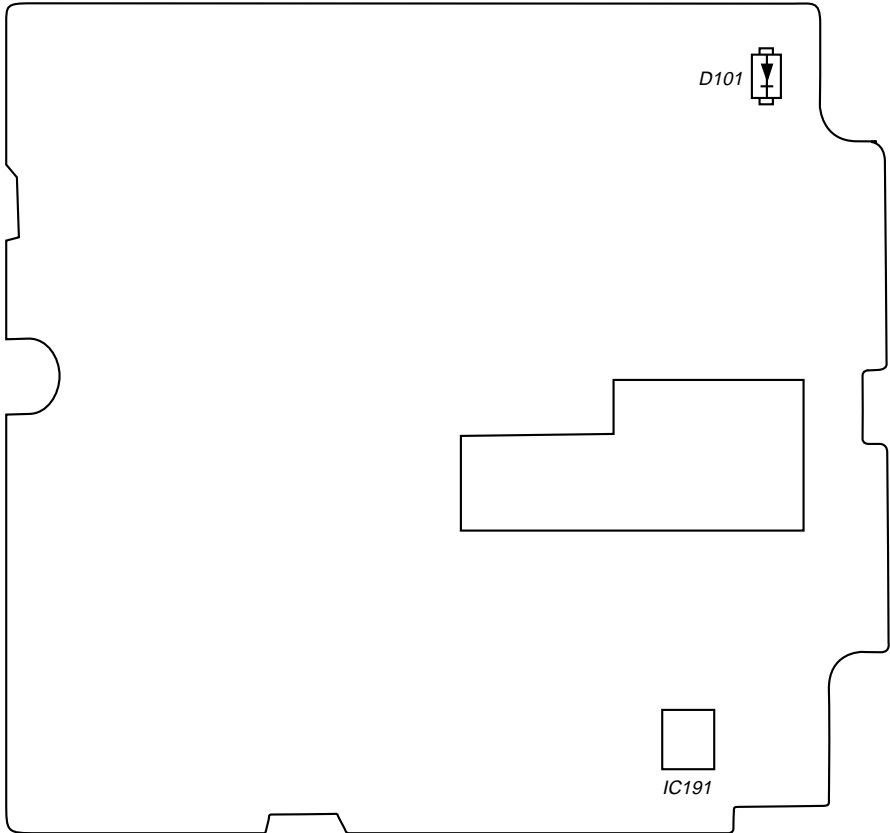
- Note 2 :** As the C1 error rate changes, perform the adjustment using the average value.



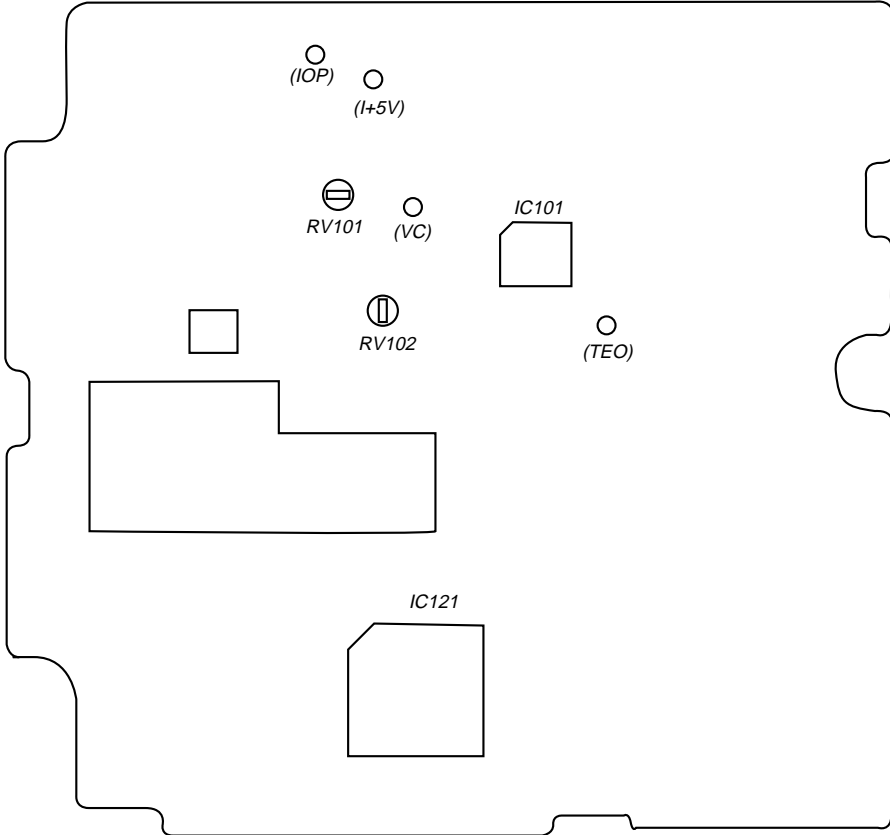
6-9-1. CD Error Rate Check

Note 1 : If the CI error and ADER are above 00 at points a or b, the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

6-11. Adjusting Points and Connecting Points
[BD (MD) BOARD] (Component side)



[BD (MD) BOARD] (Conductor side)



TUNER SECTION

As a front-end (TB1) is difficult to repair if faulty, replace it with new one.

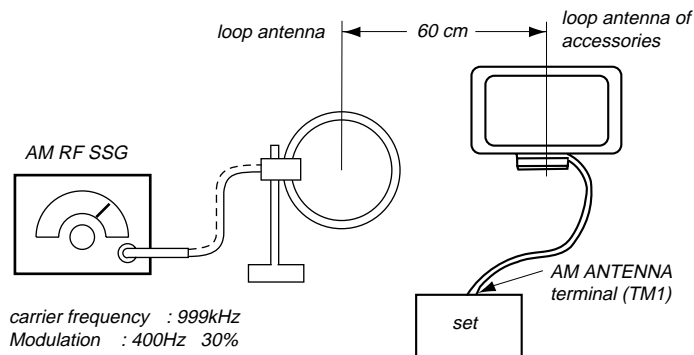
But AEP, UK, German, and Italian model are please note, however, that the following adjustments are possible:

AM Section Adjustment

AM Tuned Indication Lighting Level Adjustment

Band : AM

Setting :



Procedure :

1. Set AM RF SSG output level to 81dBμ so that the input level becomes 55dBμ.
2. Tune the set to 999kHz .
3. Adjust RV(AM TUNED LEVEL ADJUSTMENT) so that the TUNED light up.

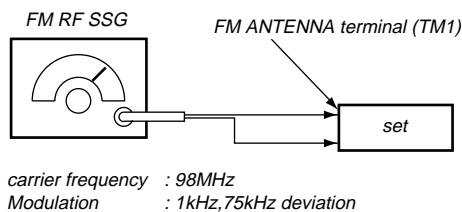
Adjustment Location : TB1 (TUNER board)

FM Section Adjustment

FM Tuned Indication Lighting Level Adjustment

Band : FW

Setting :



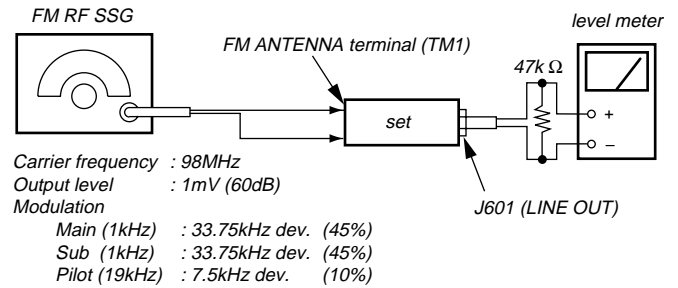
Procedure :

1. Supply a 17.8 μV (25dBμ) 98MHz signal to the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV(FM TUNED LEVEL ADJUSTMENT) so that the TUNED light up.

Adjustment Location : TB1 (TUNER board)

FM Stereo Separation Adjustment

Setting :



Procedure :

Turn the set to 98MHz.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ [Ⓐ] Adjust RV (FM STEREO SEPARATION ADJUSTMENT) for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ [Ⓒ] Adjust RV (FM STEREO SEPARATION ADJUSTMENT) for minimum reading.

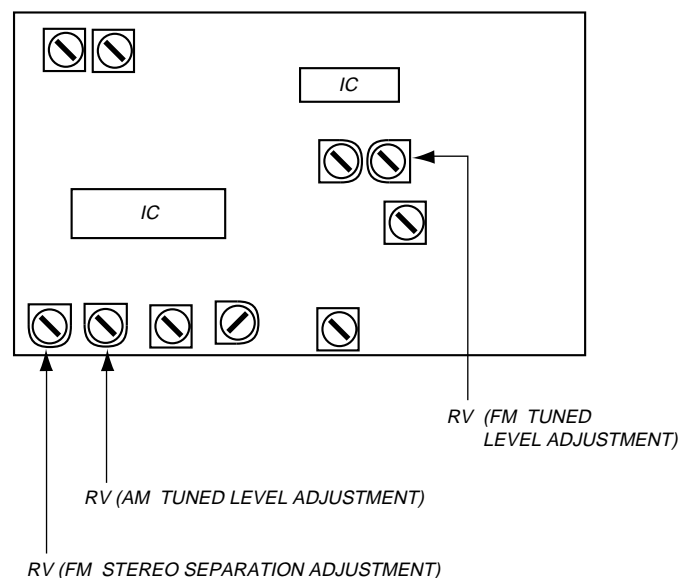
L-CH Stereo separation : Ⓐ - Ⓑ

R-CH Stereo separation : Ⓒ - Ⓓ

The separations of both channels should be equal.

Adjustment Location : TB1 (TUNER board)

[TB1 TUNER BOARD] (Conductor side)



CD SECTION

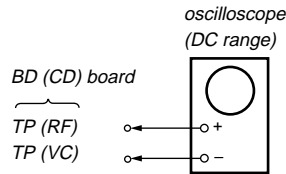
NOTE :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

Focus Bias Adjustment

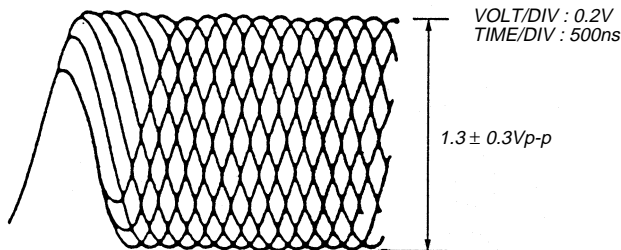
This adjustment is to be done when the optical block is replaced.

Adjustment procedure :



1. Connect oscilloscope to test point TP (VC) and TP (RF) on BD (CD) board.
2. Connect TP ADJ (IC301 ②8 pin) to ground with lead wire on Main board.
3. Turned power switch ON. (Stop mode)
4. Put disc (YEDS-18) in and press the ►|| button.
5. Press the ►|| button (Tracking servo ON).
6. Adjust RV101 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
A good eye pattern means that the diamond shape () in the center of the waveform can be clearly distinguished.
7. After adjustment, remove the lead wire connected in step 2.

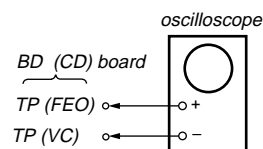
● RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

Adjustment Location : BD (CD) board. (see page 13)

S-Curve Check

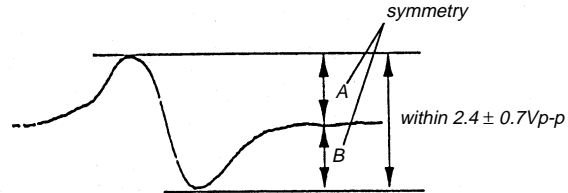


Procedure :

1. Connect oscilloscope to test point TP (VC) and TP (FEO) on BD (CD) board.

2. Connect between test point TP (FOK) and GND by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $2.4 \pm 0.7V_{p-p}$.

S-curve waveform

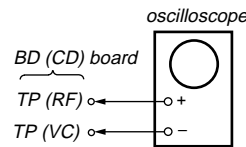


6. After check, remove the lead wire connected in step 2.

Note : ● Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
● Take sweep time as long as possible and light up the brightness to obtain best waveform.

Adjustment Location : BD (CD) board. (see page 13)

RF Level Check



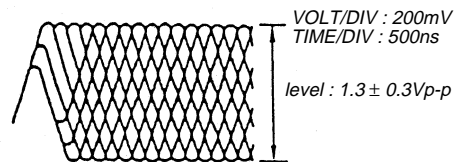
Procedure :

1. Connect oscilloscope to test point TP (VC) and TP (RF) on BD (CD) board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and press the ►|| button.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

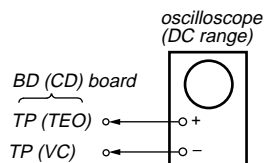
Clear RF signal waveform means that the shape “◊” can be clearly distinguished at the center of the waveform.

● RF signal waveform



Adjustment Location : BD (CD) board. (see page 13)

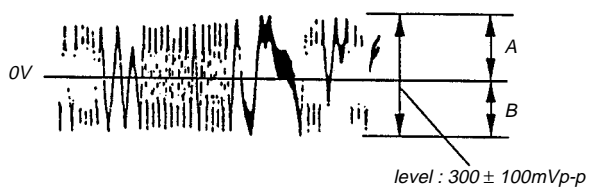
E-F Balance Check



Procedure :

1. Connect TP ADJ (IC301 ②8 pin) to ground with lead wire on Main board.
2. Connect oscilloscope to test point TP (VC) and TP (TEO) on BD (CD) board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and press the ▶|| button.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse waveform



$$\text{specified value : } \bullet \frac{A-B}{2(A+B)} \times 100 = \text{less than } \pm 7\%$$

$$\bullet A+B = 300 \pm 100\text{mVp-p}$$

6. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

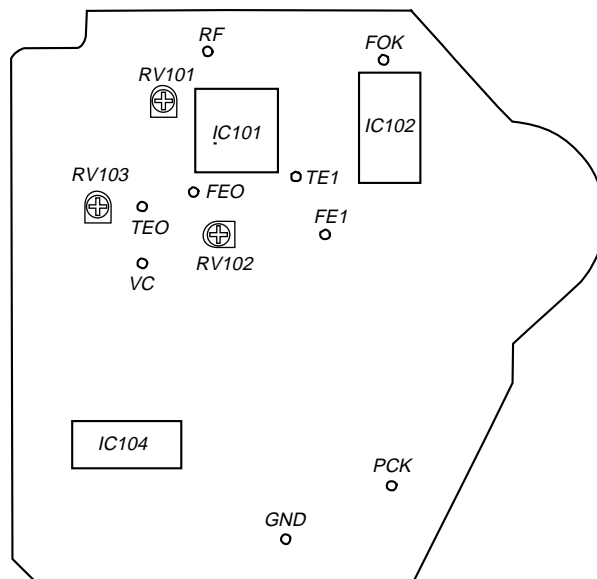
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location

[BD (CD) BOARD] (Conductor side)



SECTION 7

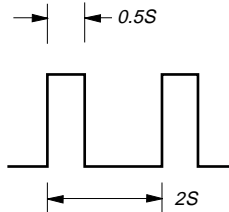
EXPLANATION OF IC TERMINALS

IC101 RF AMP (CXA1981AR)

Pin No.	Pin name	I/O	Description
1	VC	O	Output terminal for the center point voltage (+1.4V) generated.
2 – 7	A – F	I	Signal input from detector circuit in the optical pick-up block.
8	FI	I	Signal (–) input of the operational amplifier for F signal.
9	FO	O	Signal output of the operational amplifier for F signal.
10	PD	I	Front monitor. Connected to the photo diode.
11	APCREF	I	Input terminal for the setting of laser power.
12	TEMPI	I	Terminal for the connection to temperature sensor.
13	GND	–	Ground terminal.
14	AAPC	O	LD amplifier output terminal of APC circuit.
15	DAPC	O	Not used. (Open)
16	TEMPR	O	Output terminal of the reference voltage for temperature sensor.
17	XRST	I	Reset signal input from the system controller (IC201). When reset : “L”
18	SWDT	I	Write data signal input from the system controller (IC201).
19	SCLK	I	Clock signal input from the system controller (IC201).
20	XLAT	I	Latch signal input from the system controller (IC201).
21	VREF	O	Reference voltage output. Not used this set (Open)
22	TENV	O	Not used. (Open)
23	THLD	I	Not used. (Connected to the VC)
24	VCC	–	Power supply terminal. (+5V)
25	TFIL	I	Not used. (Open)
26	TE	O	Tracking error signal output to CXD2535BR (IC121).
27	TLB	I	Input terminal of the adder signal to tracking error.
28	CSLED	I	Terminal for the sled error lowpass filter.
29	SE	O	Sled error signal output to CXD2535BR (IC121).
30	ADFM	O	FM signal output terminal of the ADIP.
31	ADIN	I	Input terminal by AC coupling is FM signal of the ADIP.
32	ADAGC	I	External capacitor connect terminal for AGC of the ADIP.
33	ADFG	O	ADIP double turned FM signal output to CXD2535BR (IC121). (22.05kHz±1kHz)
34	AUX	O	Sub signal output to CXD2535BR (IC121).
35	FE	O	Focus error signal output to CXD2535BR (IC121).
36	FLB	I	Not used. (Open)
37	ABCD	O	Light amount signal output to CXD2535BR (IC121).
38	BOTM	O	Light amount bottom hold signal output to CXD2535BR (IC121).
39	PEAK	O	Light amount peak hold signal output to CXD2535BR (IC121).
40	PFAGC	I	External capacitor connect terminal of AGC circuit for the RF.
41	RF	O	Playback EFM RF signal output to CXD2535BR (IC121).
42	ISCT	I	Setting terminal for the internal circuit constant. 22kHz, BPF center frequency
43	AGCT	I	Input terminal by AC coupling is RF signal.
44	RFO	O	RF signal output terminal.
45	MORFI	I	Input terminal by AC coupling is RF signal of the MO.
46	MORFO	O	RF signal output terminal of the MO.
47,48	I,J	I	Signal input from detector circuit in the optical pick-up block.

IC201 SYSTEM CONTROLLER (M37610MD-068FP)

Pin No.	Pin name	I/O	Description
1	C. SET1	I	Not used this set. (Fixed at “L”)
2	C. SET0	I	Not used this set. (Fixed at “L”)
3	KEY3	I	Key input terminal. Not used this set (Fixed at “L”)
4 – 6	KEY2–KEY0	I	Key input terminal. Not used this set (Fixed at “L”)
7		I	Not used this set. (Fixed at “L”)
8	XINT	I	Interruption status input from CXD2536R (IC271).
9	SENS	I	Internal status (SENSE) input from CXD2535BR (IC121).
10	SHCK	I	Track jump signal input from CXD2535BR (IC121).
11	AUBK	I	Audio bus signal input. (Not used this set)
12	S/A	O	Sircs remote controller/audio bus selection signal output. (Not used this set)
13	BEEP SW	I	Not used this set. (Fixed at “L”)
14	REC/OTHER	O	When recording : “L”, Other : “H” (Not used this set).
15	BEEP	O	Buzzer signal output. (Not used this set)
16	F. BIAS/C2	I	Not used this set. (Fixed at “L”)
17	GND (CNVSS)	–	Ground terminal.
18	SYSTEM RST	I	System reset signal input. “H” after several hundred ms of “L” after power start-up.
19	XIN T	I	Not used this set. (Fixed at “L”)
20	XOUT T	O	Not used this set. (Fixed at “L”)
21	GND	–	Ground terminal.
22	XIN	I	8MHz crystal oscillator input.
23	XOUT	O	8MHz crystal oscillator output.
24	+5V	–	Power supply terminal. (+5V)
25	STB	O	Strobe signal output to the power supply circuit. When power ON : “H”, When standby : “L”
26, 27	MIC SW	I	Not used this set. (Fixed at “L”)
28	BUS OUT	O	Not used this set. (Fixed at “L”)
29		I	Not used this set. (Fixed at “L”)
30, 31	LED2, LED1	I	Not used this set. (Fixed at “L”)
32	LED0	O	Not used this set. (Fixed at “L”)
33	C1	I	Not used this set. (Fixed at “L”)
34	ADER	I	Not used this set. (Fixed at “L”)
35	N. C.	I	Not used this set. (Fixed at “L”)
36	MASTER/SLAVE	I	Not used this set. (Fixed at “H”)
37, 38	JOG1, JOG0	I	Not used this set. (Fixed at “L”)
39	SDA	I/O	Backup memory (IC171) data bus.
40	SCL	O	Clock signal output to the Backup memory (IC171).
41	POWER DOWN	I	Power down detection input. Normally : “H” input
42	REMOCON	I	Remote control signal input. Not used this set (Fixed at “L”)
43	ATSY	I	ATP address sync or sub-code Q sync (SCOR) input from CXD2535BR (IC121). “L” every 13.3msec, Almost “H”
44	DQSY	I	Input the U-bit CD format sub-code Q sync (SCOR) of the digital in from CXD2535BR (IC121). “L” every 13.3msec, Almost “H”
45 – 48		I	Not used this set. (Fixed at “L”)
49	SCLK	O	Clock signal output to the serial bus.

Pin No.	Pin name	I/O	Description
50	SWDT	O	Write data signal output to the serial bus.
51	SRDT	I	Read data signal input to the serial bus.
52		I	Connected to the pin ⑤.
53	FLCLK	O	Serial clock signal output to the display driver (IC701). Not used this set (Fixed at “L”)
54	FLDATA	O	Serial data signal output to the display driver (IC701). Not used this set (Fixed at “L”)
55	FLCS	O	Chip select signal output to the display driver (IC701). Not used this set (Fixed at “L”)
56		I	Not used. (Fixed at “L”)
57	TEST0	I	Terminal for test. (Fixed at “L”)
58	TEST1	O	Reset signal output to CXD2536R (IC271).
59, 60		I	Not used. (Fixed at “L”)
61	AFAST	I	Not used this set. (Fixed at “L”)
62	$\overline{16/18}$	I	16bit/18bit selector. “H” : 16bit
63	LDON	O	Laser ON/OFF control signal output. When laser ON : “H”
64	P/GROOVE	I	PIT/GROOVE detection input. “H” : Disc for playing and TOC area. Not used this set (Fixed at “L”)
65	FOK	I	Focus OK signal input from CXD2535BR (IC121). “H” is input when the focus is applied.
66	MON	I	Not used this set. (Input and the pull-down)
67	LOCK	O	Not used this set. (Output and the pull-down)
68	WRPWR	O	Laser power selection signal output to the optical pick-up block and CXD2535BR (IC121).
69	DIG RST	O	Reset signal output to CXA1981R (IC101), CXD2535BR (IC121), and the motor driver (IC151). When reset : “L”
70	DA RST	O	Reset signal output to D/A converter (IC341) and the A/D converter (IC301). When reset : “L”
71, 72	SCMD 1, SCMD 0	O	Serial command control mode signal output to CXD2536R (IC271).
73	MOD	O	<p>Laser modulation selection signal output. When playback power : “L”, When stop : “H” When recording power :</p> 
74	REC/PB	O	Recording/playback selection signal output to CXD2535BR (IC121). When recording : “H”, When playback : “L”
75	WR/MN	O	Write/monitor mode selection signal output to CXD2536R (IC271).
76	SCTX	O	Writing data transmission timing output to CXD2536R (IC271). Used together with the magnetic field head ON/OFF output.
77	XLATCH	O	Latch signal output to the serial bus.
78	DFLATCH	O	Latch signal output to the D/A converter (IC341).
79	DFMUTE	O	Muting signal output. Not used this set. (Connected to the Ground)

Pin No.	Pin name	I/O	Description
80	AMUTE	O	Line out muting signal output.
81	LDOUT	O	Loading motor (M191) control output. *1
82	LDIN	O	Loading motor (M191) control output. *1
83	CHKIN	I	Detection signal input from the chucking in switch (S193). When chucking : “L”
84	INSW	I	Detection signal input from the loading in switch (S192). “L” at the position where the head descends, Others : “H”
85	OUTSW	I	Detection signal input from the loading out switch (S191). “L” at the position of load out, Others : “H”
86	PROTECT	I	Rec proof detection signal input from the protect detector switch (S102-1). When protect : “H”
87	REFLECT	I	Disc reflection rate detection signal input from the reflect detector switch (S102-2). “H” : Low reflection rate disc
88	LIMIT IN	I	Detection signal input from the limit in switch (S101). When sled limit in : “L”
89	232C. 4	O	UART data transmission request signal output to mPD78052G (IC301)
90	232C. 3	I	UART data transmission request signal input from mPD78052G (IC301)
91	232C. 2	I	UART data input from mPD78052GC (IC301)
92	232C. 1	O	UART data output to mPD78052GC (IC301)
93-96		O	Not used (Fixed at “L”).
97	AVSS (AGND)	—	Ground terminal.
98	VREF (+5V)	I	Reference voltage input (+5V)
99	TIMER REC/PLAY	I	Timer record /time playback/time OFF selection signal input terminal. When timer recording : “H”, When timer playback : “L”, When timer OFF : Center point voltage (+2.5V) Not used this set (Fixed at “L”)
100	INPUT SELECT	I	Analog/digital in selection signal input terminal When analog in : “L”, When digital in : “H” Not used this set (Fixed at “L”)

* 1 Loading motor control

Terminal \ Mode	IN	OUT	BRAKE
LDIN pin ⑧②	“H”	“L”	“H”
LDOUT pin ⑧①	“L”	“H”	“H”

IC271 SHCCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER (CXD2536R)

Pin No.	Pin name	I/O	Description
1	VDD	–	Power supply terminal. (+5V)
2	SWDT	I	Write data signal input from the system controller (IC201).
3	SCK	I	Serial clock signal input from the system controller (IC201).
4	XLAT	I	Serial latch signal input from the system controller (IC201).
5	SRDT	O	Read data signal output to the system controller (IC201).
6	SENSE	O	Internal status (SENSE) output to the system controller (IC201).
7	SCMD0	I	Serial command control mode input from the system controller. (Fixed at “H”)
8	SCMD1	I	Serial command control mode input from the system controller. (Fixed at “H”)
9	XINT	O	Interruption status output to the system controller (IC201).
10	RCPB	I	Record/playback selection signal input. Not used this set. (Fixed at “L”)
11	WRMN	I	Write/monitor mode selection signal input from the system controller (IC201).
12	TX	–	Writing data transmission timing input from the system controller (IC201). Used together with the magnetic field head ON/OFF output.
13	VSS	–	Ground terminal.
14	SICK	I	Chip reserve terminal. (Fixed at “L”)
15	IDSL	I	Chip reserve terminal. (Fixed at “L”)
16	XILT	I	Chip reserve terminal. (Fixed at “H”)
17	XRST	I	Reset signal input from the system controller (IC201). When reset : “L”
18–21	TS0–TS3	I	Test input terminal. (Fixed at “L”)
22	EXIR	I	Chip reserve terminal. (Fixed at “L”)
23	SASL	I	Single use the block selection. “L” : ATRAC, “H” : RAM Controller (Fixed at “L”)
24	SNGL	I	Normally fixed at “L”, Fixed at “H” when the ATRAC or RAM controller is single used. (Fixed at “L”)
25	VSS	–	Ground terminal.
26	AIRCPB	O	Record/playback mode signal output terminal of the ATRAC or external audio block. Not used this set.
27	XRQ	I/O	XRQ signal input/output terminal of the ATRAC interface. Not used this set.
28	ADTO	I/O	Decoder data signal input/output terminal of the ATRAC. Not used this set.
29	ADTI	I/O	Encoder data signal input/output terminal of the ATRAC. Not used this set.
30	XALT	I/O	XALT signal input/output terminal of the ATRAC interface. Not used this set.
31	ACK	I/O	ACK signal input/output terminal of the ATRAC interface. Not used this set.
32	AC2	I/O	Error data signal input/output terminal of the ATRAC interface. Not used this set.
33	LCHST	I/O	Lch Start data signal input/output terminal of the ATRAC interface. Not used this set.
34	EXE	I/O	EXE signal input/output terminal of the ATRAC interface. Not used this set.
35	MUTE	I/O	MUTE signal input/output terminal of the ATRAC interface. Not used this set.
36	OSCO	O	45MHz clock oscillation output. (45MHz)
37	OSCI	I	45MHz clock oscillation input. (45MHz)
38	VSS	–	Ground terminal.
39	ATT	I/O	ATT signal input/output terminal of the ATRAC interface. Not used this set.
40	F86	O	11.6msec timing signal output terminal of the ATRAC block. Not used this set.
41	DOUT	O	Monitor/audio decode data signal output to the D/A converter (IC281).
42	ADIN	I	Recoding data signal input from the D/A converter (IC261).
43	ABCK	O	Bit clock signal output to the A/D, D/A converter (IC261, 281).
44	ALRCK	O	L/R clock signal output to the A/D, D/A converter (IC261, 281).
45-47	SA2-SA0	O	Address signal output. Not used this set (OPEN)
48,49	A11,A10	O	Address signal output. Not used this set

Pin No.	Pin name	I/O	Description
50	VSS	–	Ground terminal.
51	VDD	–	Power supply terminal. (+5V)
52– 55	A03– A00	O	Address signal output to the RAM (IC222)
56– 60	A04– A08	O	Address signal output to the RAM (IC222)
61	XOE	O	Output enable control signal output to the RAM (IC222).
62	XCAS	O	Column address strobe signal output to the RAM (IC222).
63	VSS	–	Ground terminal.
64	XCS	O	Chip select signal output. Not used this set
65	A09	O	Address signal output to the RAM (IC222).
66	XRAS	O	Row address strobe signal output to the RAM (IC222).
67	XWE	O	Write enable control signal output to the RAM (IC222).
68,69	D1, D0	I/O	RAM (IC222) data bus.
70,71	D2,D3	I/O	RAM (IC222) data bus.
72–74	D4–D6	I/O	Data bus. Not used this set (OPEN)
75	VSS	–	Ground terminal.
76	D7	I/O	Data bus. Not used this set (OPEN)
77	ERR	I/O	Input/output terminal of the error (C2PO) data signal to the external RAM. Not used this set (OPEN)
78	EXTC2R	I	External RAM selection signal input for the error data writing. (When “H” : External RAM) (Fixed at “L”).
79	BUSY	O	BUSY signal output of the RAM access. Not used this set (OPEN)
80	EMP	O	Empty or before the full of the ATRAC data. (When DSC=ASC+1 : “H”). Not used this set.
81	FUL	O	Full or before the empty of the ATRAC data. (When ASC=DSC+1 : “H”). Not used this set.
82	EQL	O	Empty of the ATRACK data. (when DSC=ASC : “H”). Not used this set.
83	MDLK	O	Indicate the main/sub of the recording or playback data. (When sub and linking : “H” , When the main : “L”). Not used this set.
84	CPSY	O	Interpolation sync signal output. Not used this set.
85	CTMD0	O	DSC counter mode output. Not used this set.
86	CTMD1	O	DSC counter mode output. Not used this set.
87	SPO	O	System clock (512Fs=22.5792MHz) signal output to CXD2535BR (IC121).
88	VSS	–	Ground terminal.
89	MDSY	O	Sync detection signal output of the main data. Not used this set.
90	LRCK	I	L/R clock (44.1kHz) signal input from CXD2535BR (IC121).
91	BCK	I	Bit clock (2.8224MHz) signal input from CXD2535BR (IC121).
92	C2PO	I	C2PO (indicate the error mode of the data) signal input from CXD2535BR (IC121). When playback : C2PO (“H”), When digital recording : D. IN-Vflag, When analog recording : “L”
93	DATA	I/O	When recording : Record audio data signal output to CXD2535BR (IC121). When playback : playback audio data signal input from CXD2535BR (IC121).
94	DIDT	I	16-bit data input terminal for the digital audio in from the CXD2535BR(IC121).
95	DODT	O	16-bit data output terminal for the digital audio out from the CXD2535BR (IC121).
96	DIRCPB	O	Disc drive, Record or playback mode output of the EFM encoder/decoder. Not used this set (Open)
97	MIN	I	Defect ON/OFF selection signal input from CXD2535BR (IC121).
98	SPOSL	I	IN/OUT selection input terminal of the pin ⑧. (“L” : IN, “H” : OUT) (Fixed at “H”)
99	MCKT1	O	Internal master clock signal output terminal of the RAM controller. Not used this set.
100	VSS	–	Ground terminal.

IC301 MASTER CONTROL (μPD78058GC-243-3B9)

Pin No.	Pin name	I/O	Description
1	LID SW	I	LID switch input (OPEN, CLOSE, SHUT switch).
2	MD RESET	I	Reset input for MD.
3		I	CADY sensor input terminal.
4	AVSS	–	Ground.
5	LID-OPEN	O	LID motor control output (open direction).
6	LID CLS	O	LID motor control output (close direction).
7		–	Not used.
8	DATA IN	I	Serial data input from MD.
9	DATA OUT	O	Serial data output to MD.
10	CTS	I	Clock input from ⑧ , ⑨ pin.
11	RTS	O	Clock output to ⑧ , ⑨ pin.
12	SDATA	O	Serial data output to FL driver.
13	SCK	O	Clock output to FL driver.
14	$\overline{\text{CS}}$	O	Chip selector output to FL driver.
15	REST	O	Reset output to FL driver.
16	SUBQ	I	SUB “Q” input from CD.
17	OPEN	–	Not used.
18	SQCLK	O	SUB “Q” clock output to CD.
19	CCLOCK	O	Master clock output to CD.
20	DATA	O	Data output to CD.
21	XLT	O	Latch output to CD.
22	DFLATCH	O	Latch output to CD digital filter.
23	FCSSW	O	output to Focus SW.
24	A MUTE	–	Not used.
25	BDRST	O	Reset output to CD.
26	$\overline{\text{CD POWER}}$	O	CD Block Power ON/OFF. (“H” : ACT)
27	SENS	I	Sens input from CD.
28	ADJ	I	Terminal for test mode. (“L” : Test mode)
29	IN SW	I	LOAD IN Switch input. (close)
30	OUT SW	I	LOAD OUT Switch input. (open)
31	LOD IN	O	Loading Motor drive output. (open direction)
32	LOD OUT	O	Loading Motor drive output. (close direction)
33	VSS	–	Ground.
34		–	Not used. (open)
35		–	Not used. (open)
36	$\overline{\text{SYS POWER}}$	O	System power ON / OFF control. (“L” : power ON)
37		–	Not used.
38	$\overline{\text{ST POWER}}$	O	ST Power ON / OFF control. (“L” : ST ON)
39	$\overline{\text{TAPE}}$	–	Not used.
40		–	Not used.
41		–	Not used.
42	STEREO	I	Stereo Signal input from ST block.
43	TUNED	I	Tuned Signal input from ST block.
44	DATA IN	I	Serial data input from ST block.
45	DATA OUT	O	Serial data output to ST block.
46	CLOCK	I/O	Clock input / output of the ST block.

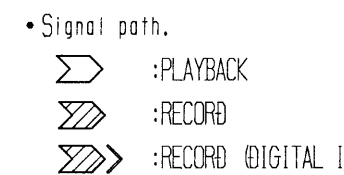
Pin No.	Pin name	I/O	Description
47	CE	O	Chip enable output to ST block.
48	CE	O	Chip enable output to IC101 (CXA1946Q).
49	CLOCK	O	Clock output to IC101 (CXA1946Q).
50	DATA	O	Serial data output to IC101 (CXA1946Q).
51	TA MUTE	O	Mute signal output to AMP. “L” : Mute
52	AUX ATT	O	Attenuation output for when AUX input. “L” : ATT
53	MIC DET	–	Not used.
54	CLEAR	O	Reset output to LED driver.
55	LATCH	O	Latch output to LED driver.
56	CLOCK	O	Clock output to LED driver.
57	DATA	O	Data output to LED driver.
58	SIRCS	I	SIRCS signal input terminal.
59	AC-DET	I	AC detection terminal.
60	CST	I	System reset terminal.
61	AUB I	–	Not used. (Ground connection)
62	AUB O	–	Not used. (Ground connection)
63	ENC	I	Input terminal from encoder.
64	ENC	I	Input terminal from encoder.
65			Not used.
66	FAN	I	FAN input terminal.
67	SCOR	I	SCOR input from BD.
68	VDD	–	Power supply. (+5 V)
69	X2	O	MICOM clock output terminal. (5.0 MHz)
70	X1	I	MICOM clock input terminal. (5.0 MHz)
71	GND	–	Ground.
72	XT2	O	Clock output for timer. (3.0 kHz)
73	XT1	I	Clock input for timer. (3.0 kHz)
74	AVDD	–	Power supply for Analog. (+5 V)
75	AVREFO	–	Reference Voltage output for Analog. (+5 V)
76	K0	I	Key input.
77	K1	I	Key input.
78	K2	I	Key input.
79	K3	I	Key input.
80	VER	I	Input terminal for Virsion Select.

The schematic diagram illustrates the internal circuitry of a CD player, organized into several functional sections:

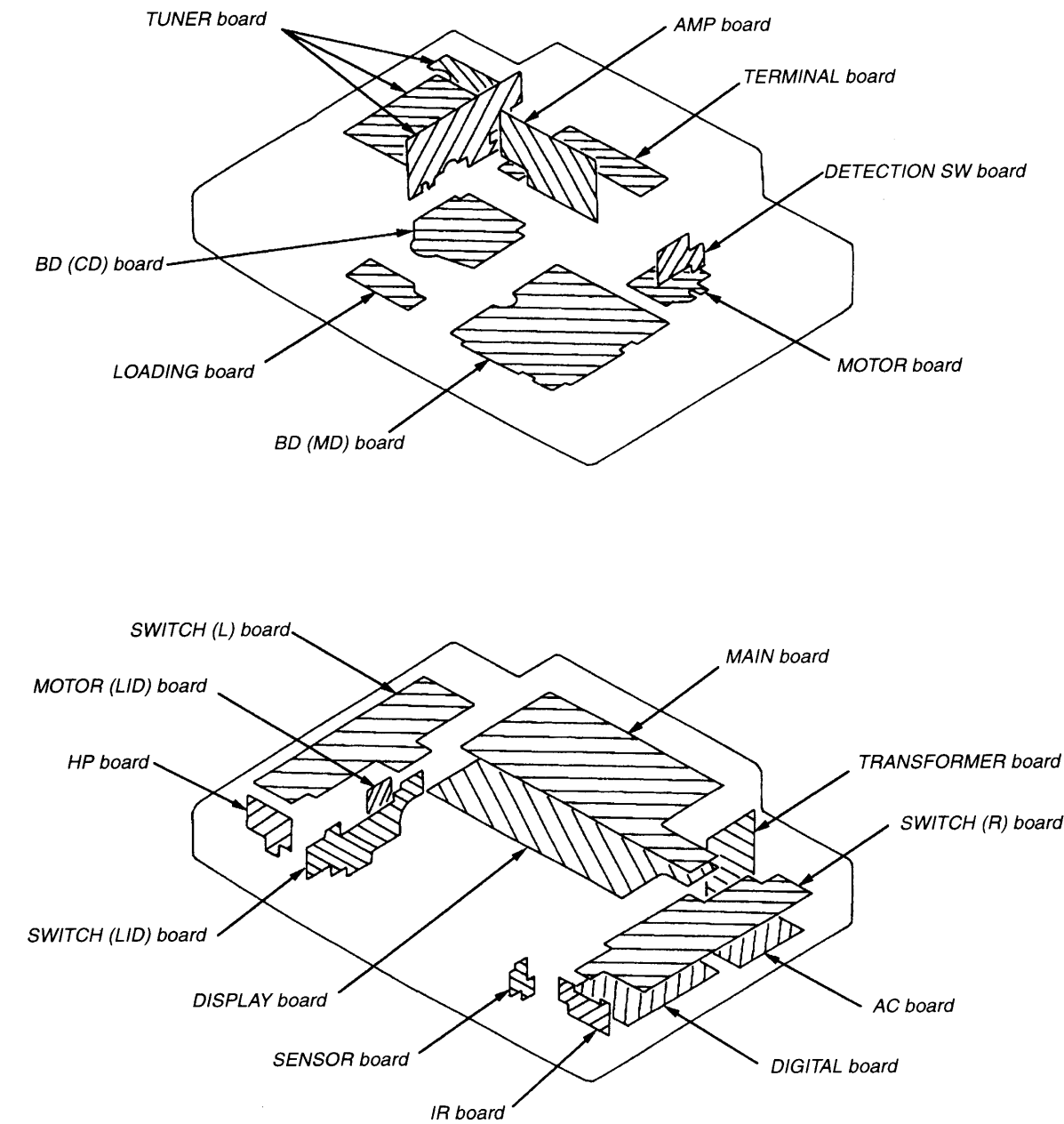
- Input Section (Page 36):** Shows the antenna input (FM750) and line input (J401) connected to the input select IC101.
- Optical Pick-Up Block:** Details the laser diode (LD101), detector, and tracking/focus servo mechanisms.
- Digital Signal Processor (IC103):** The central processing unit that handles the digital data from the disc.
- Digital Filter & A Converter (IC104):** Converts the digital signal into an analog format.
- Master Control (IC501, IC502):** Manages the overall system, including the reset switch (Q856) and various control signals.
- Power Supply:** Includes the power transformer (T801), rectifiers, and voltage regulators for +5V, +12V, and -12V.
- Motor Drive:** Controls the sled motor (M103) and spindle motor (M104) for disc transport and rotation.
- Output Section:** Features the power amplifier (IC901), power on/off switch (Q941), and the final output to the speakers.

Legend:

- Signal path:**
 - ▶ :PLAYBACK MD
 - ▨ :RECORD MD
 - ▨ :RECORD DIGITAL IN
 - :FM
 - :CD
 - :TAPE (IN)
 - :TAPE (OUT)
- Abbreviation:**
 - CND:Canadian model.
 - G :German model.
 - IT :Italian model.
 - SP :Singapore model.
 - HK :Hong Kong model.



8-3. CIRCUIT BOARDS LOCATION



● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D301	E-16	IC821	B-12
D631	G-2	IC831	C-13
D641	G-4	IC851	D-12
D642	G-4	IC852	E-13
D801	B-10	IC901	C-3
D811	B-12	Q121	B-7
D812	B-12	Q122	D-10
D813	B-13	Q131	C-6
D814	B-13	Q132	C-10
D815	E-9	Q133	C-7
D821	C-14	Q221	B-6
D822	E-10	Q231	C-6
D825	D-12	Q233	C-7
D826	E-13	Q631	G-2
D841	C-12	Q811	C-11
D842	C-11	Q812	C-11
D851	D-12	Q821	C-12
D852	D-13	Q822	C-11
D853	D-13	Q823	D-11
D854	D-13	Q841	B-12
D855	D-13	Q842	B-12
D856	E-12	Q851	E-13
D861	B-12	Q852	D-12
D862	B-12	Q871	D-14
D863	C-12	Q872	D-14
D871	D-14	Q873	C-14
D872	D-14	Q874	D-14
D901	B-4	Q901	B-4
D951	B-4	Q921	B-5
D9001	I-7	Q922	B-5
D9002	H-9	Q923	A-5
		Q924	B-4
		Q925	A-4
IC001	A-14	Q931	C-5
IC002	B-14	Q932	B-5
IC101	C-8	Q941	A-3
IC301	E-10	Q951	B-4
IC811	C-11		

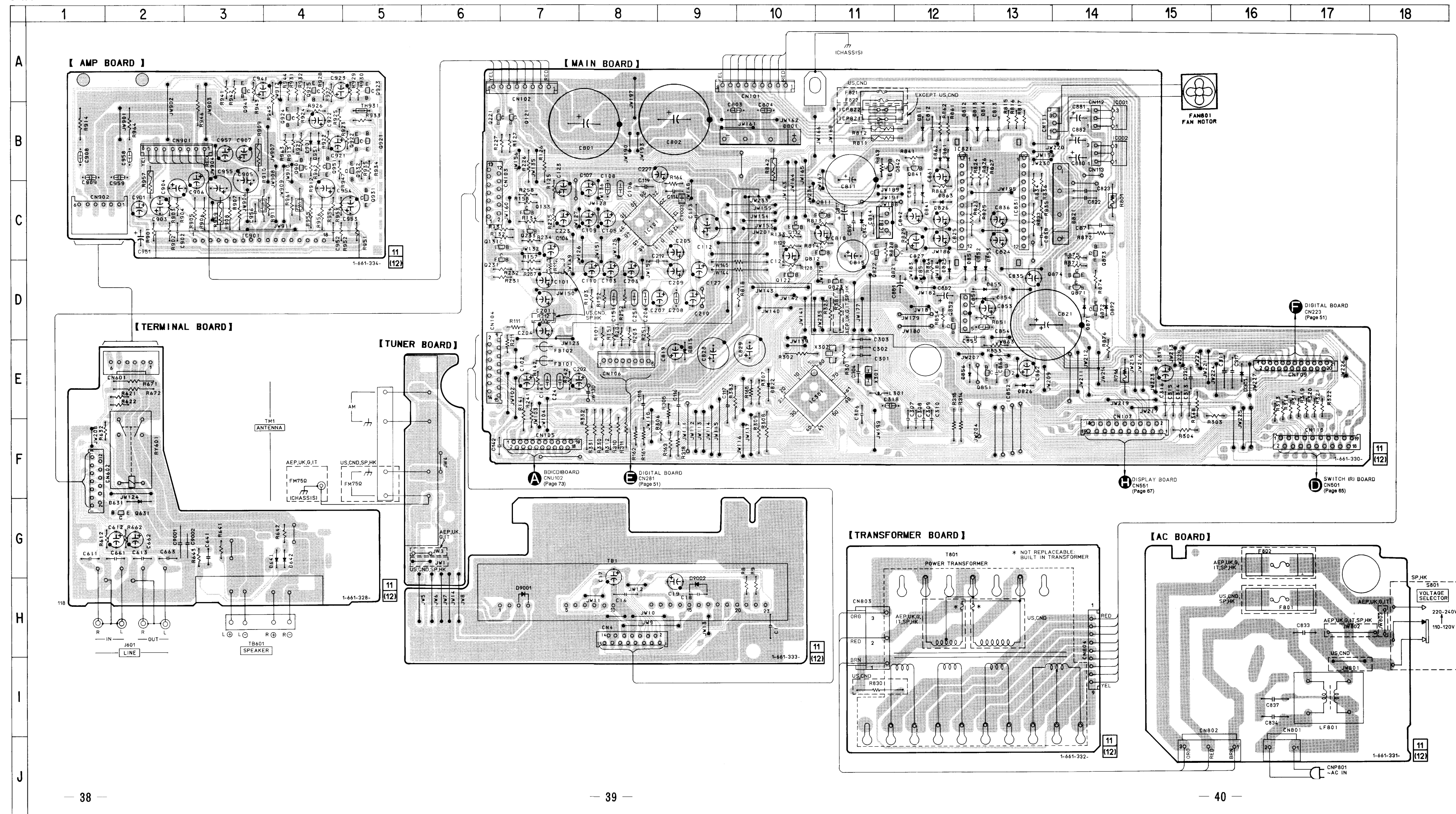
Note:

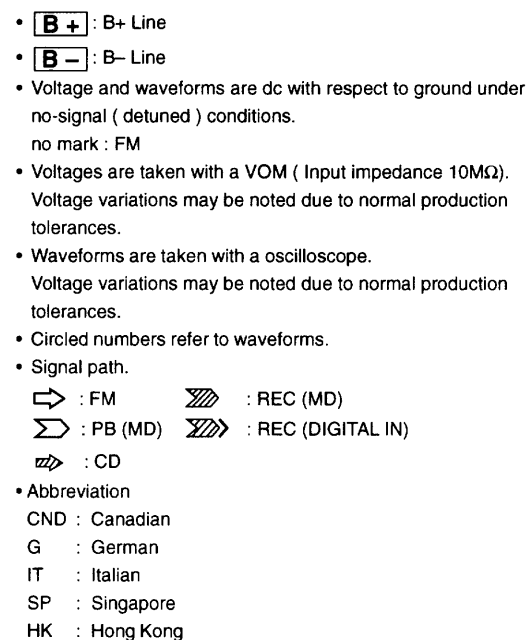
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)

Abbreviation

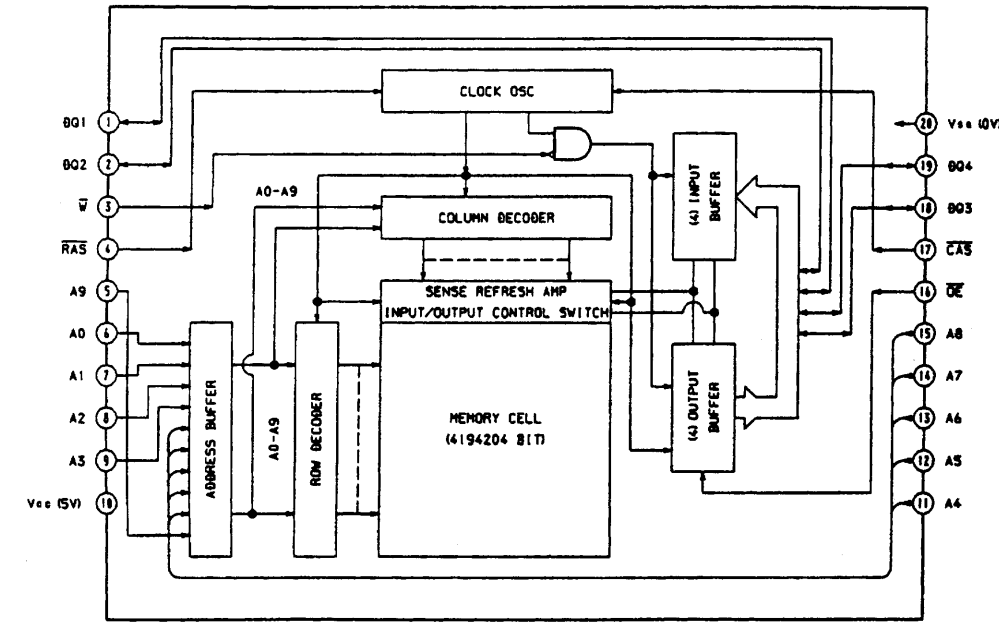
CND : Canadian
G : German
IT : Italian
SP : Singapore
HK : Hong Kong

8-4. PRINTED WIRING BOARDS – MAIN SECTION –

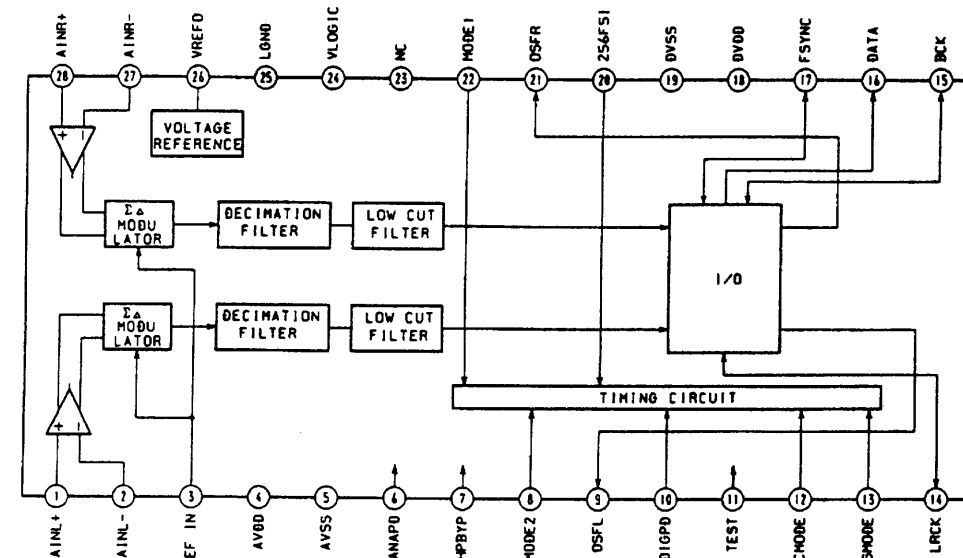




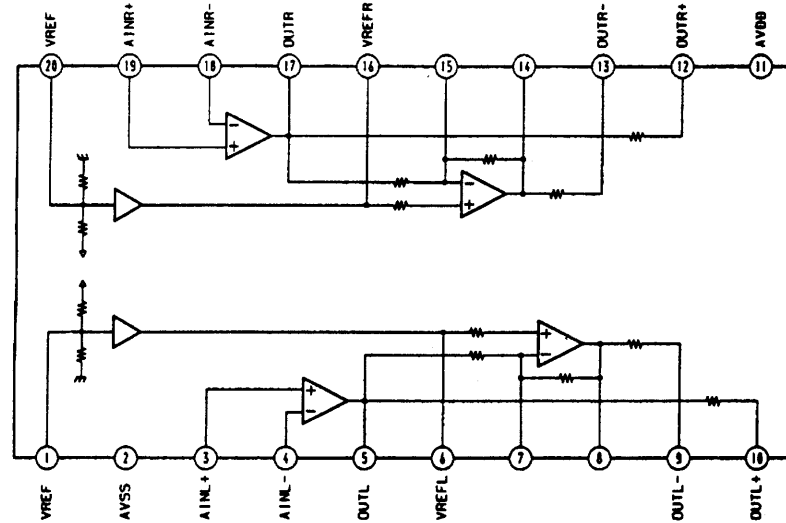
IC272 M5M44400BJ-7-L2



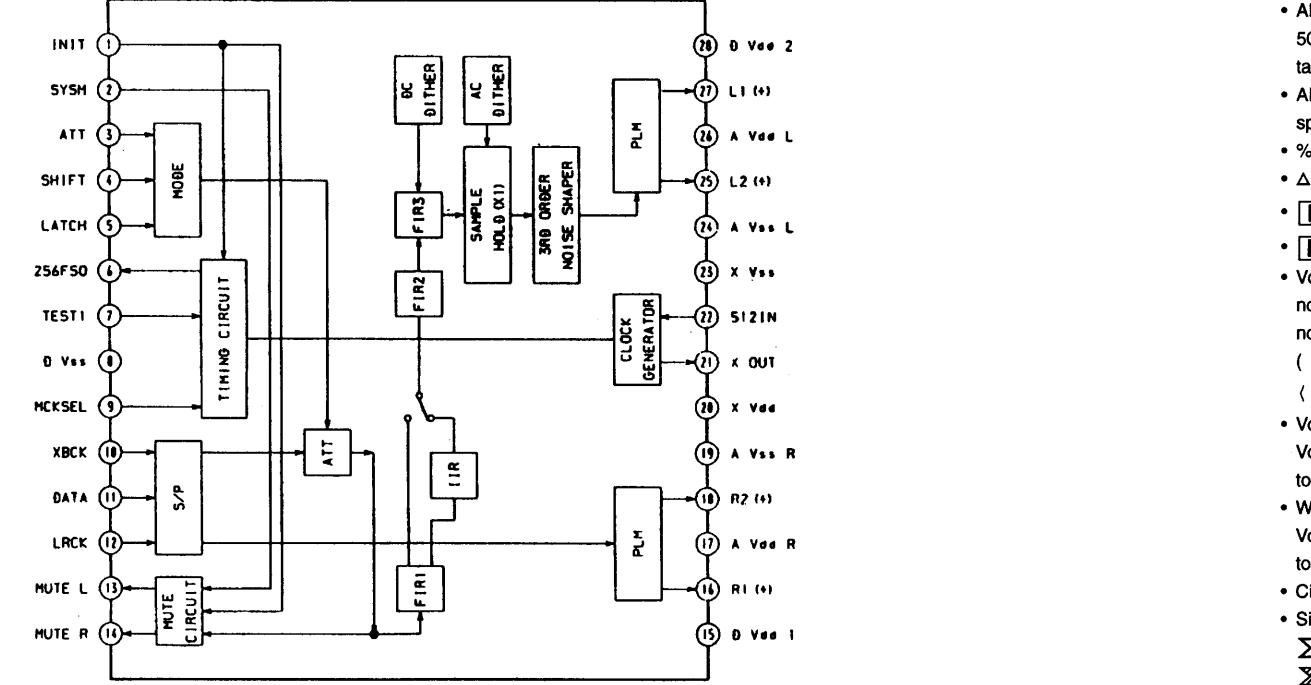
IC301 CXD8566M



IC302 CXA8054M



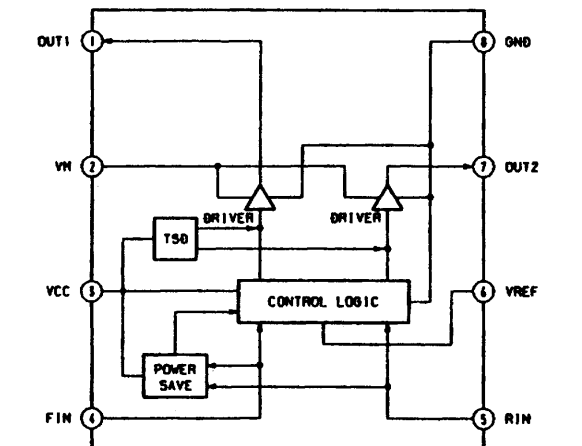
IC341 CXD8567AM



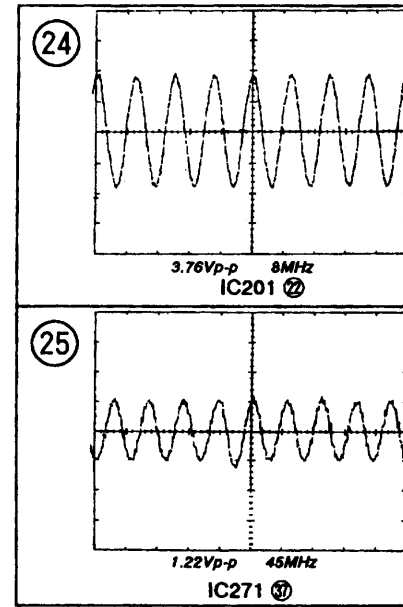
Note :

- All capacitors are in μF unless otherwise noted; pF, μM , μF , 50WV 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.
- % : indicates tolerance.
- Δ : internal component.
- **[B+]** : B+ Line
- **[B-]** : B-Line
- Voltage and waveforms are dc with respect to ground unless no-signal (detuned) conditions.
- no mark : STOP (MD) () : LOAD IN
- () : PB (MD) \ll \gg : LOAD OUT
- { : REC (MD)
- Voltages are taken with a VOM (input impedance 10M Ω).
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \gg : PB (MD)
- \gg : REC (MD)
- \gg : REC (DIGITAL IN)

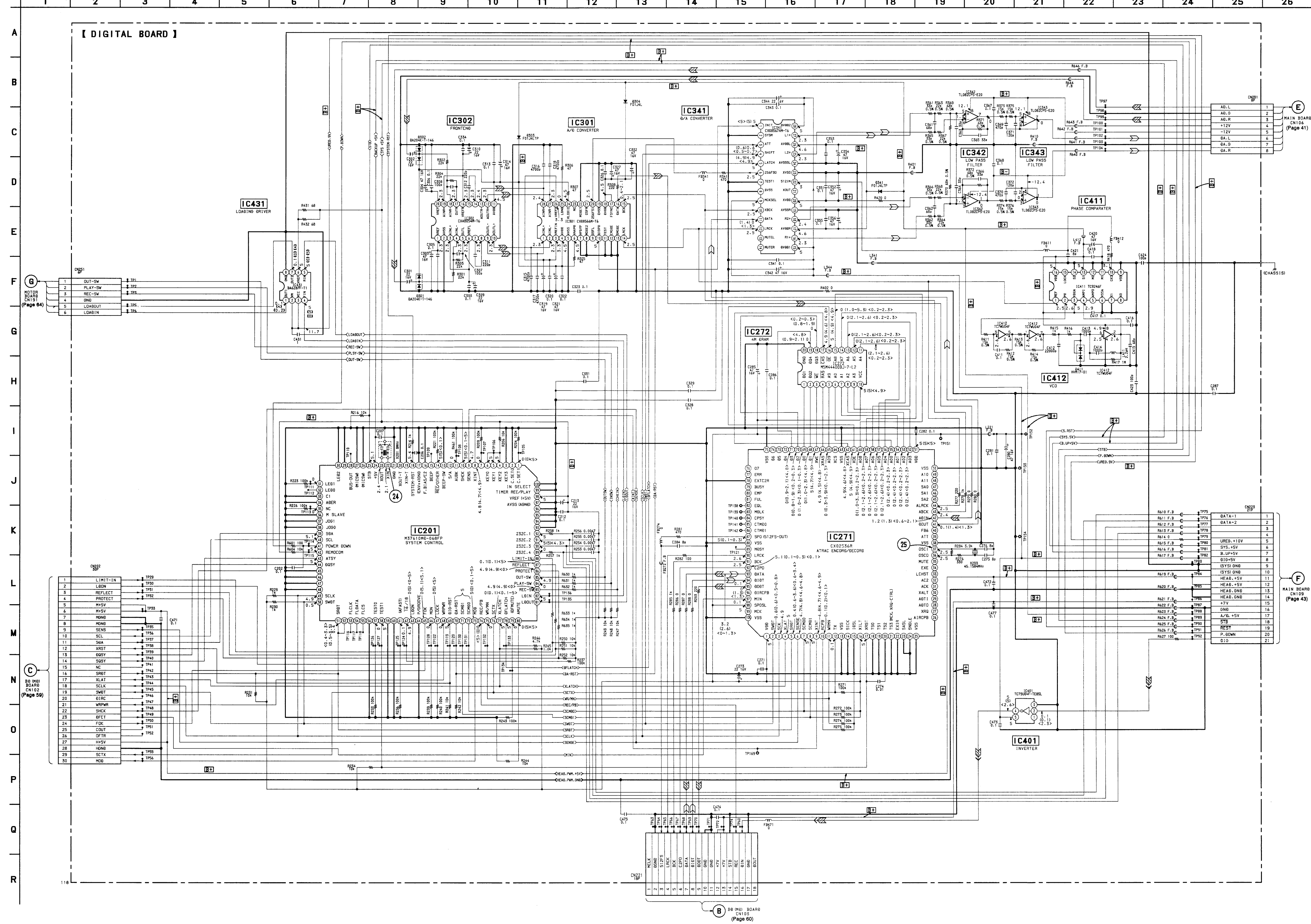
IC431 BA6287F

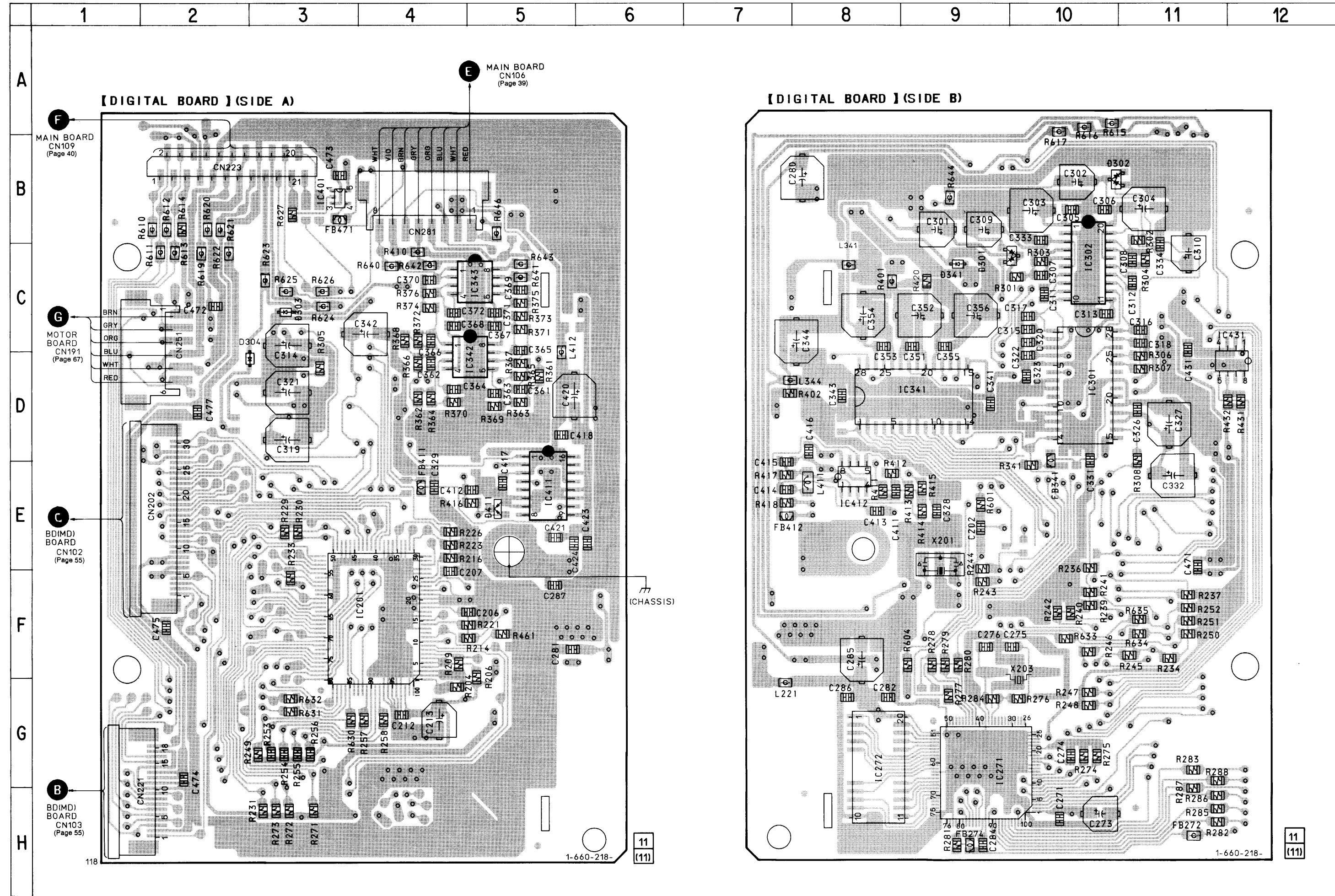


● WAVEFORMS – DIGITAL SECTION ●



C DIAGRAM – DIGITAL SECTION –





● SEMICONDUCTOR LOCATION

Ref. No.	Location
D301	C-10
D302	B-10
D303	C-3
D304	D-3
D341	C-9
D411	E-5
IC201	F-4
IC271	G-9
IC272	G-8
IC301	D-10
IC302	C-10
IC341	D-9
IC342	D-5
IC343	C-5
IC401	B-3
IC411	E-5
IC412	E-8
IC431	D-12

Note:

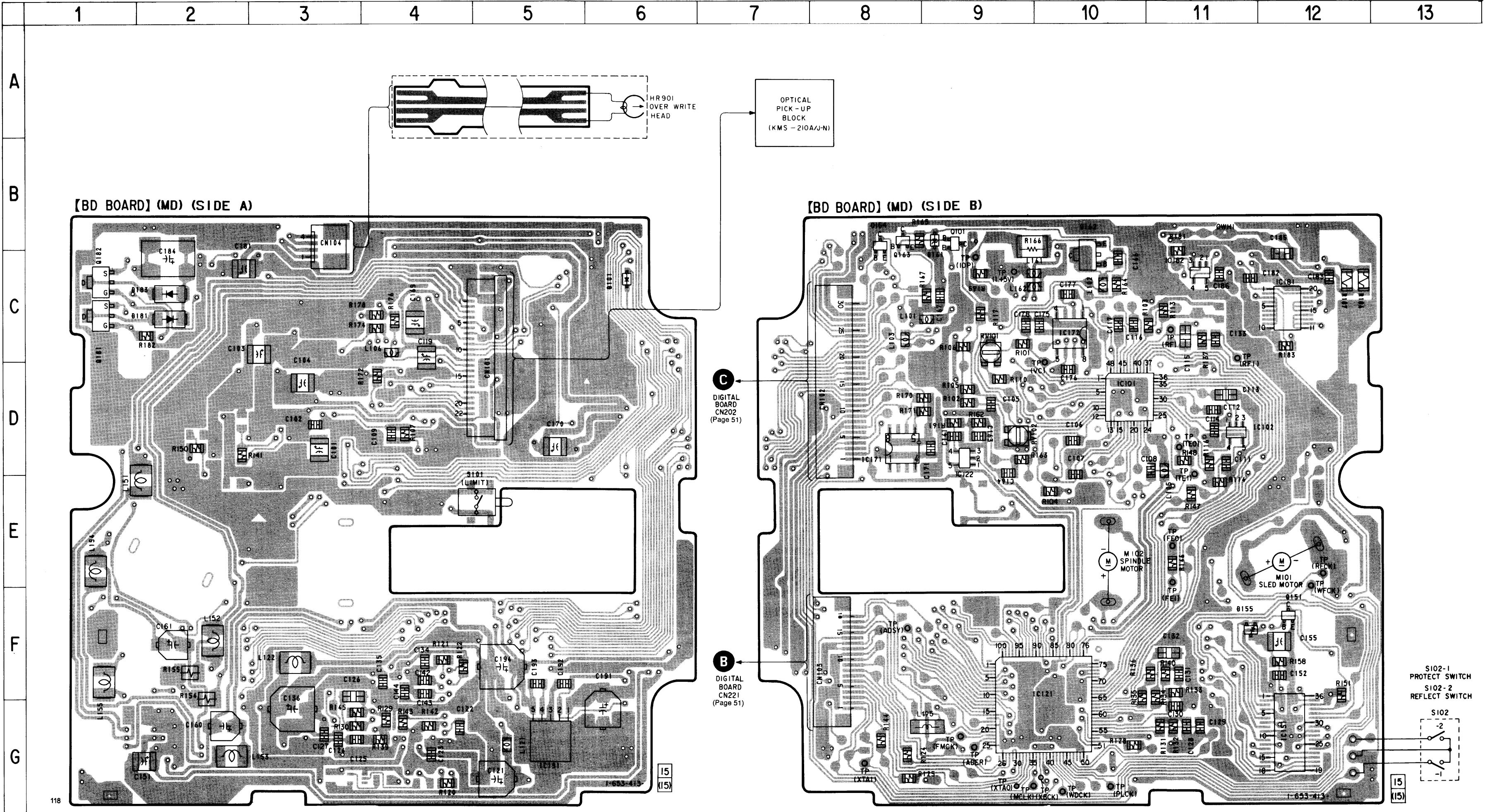
- : parts extracted from the conductor side.
- : Through hole.
- △ : internal component.
- Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)

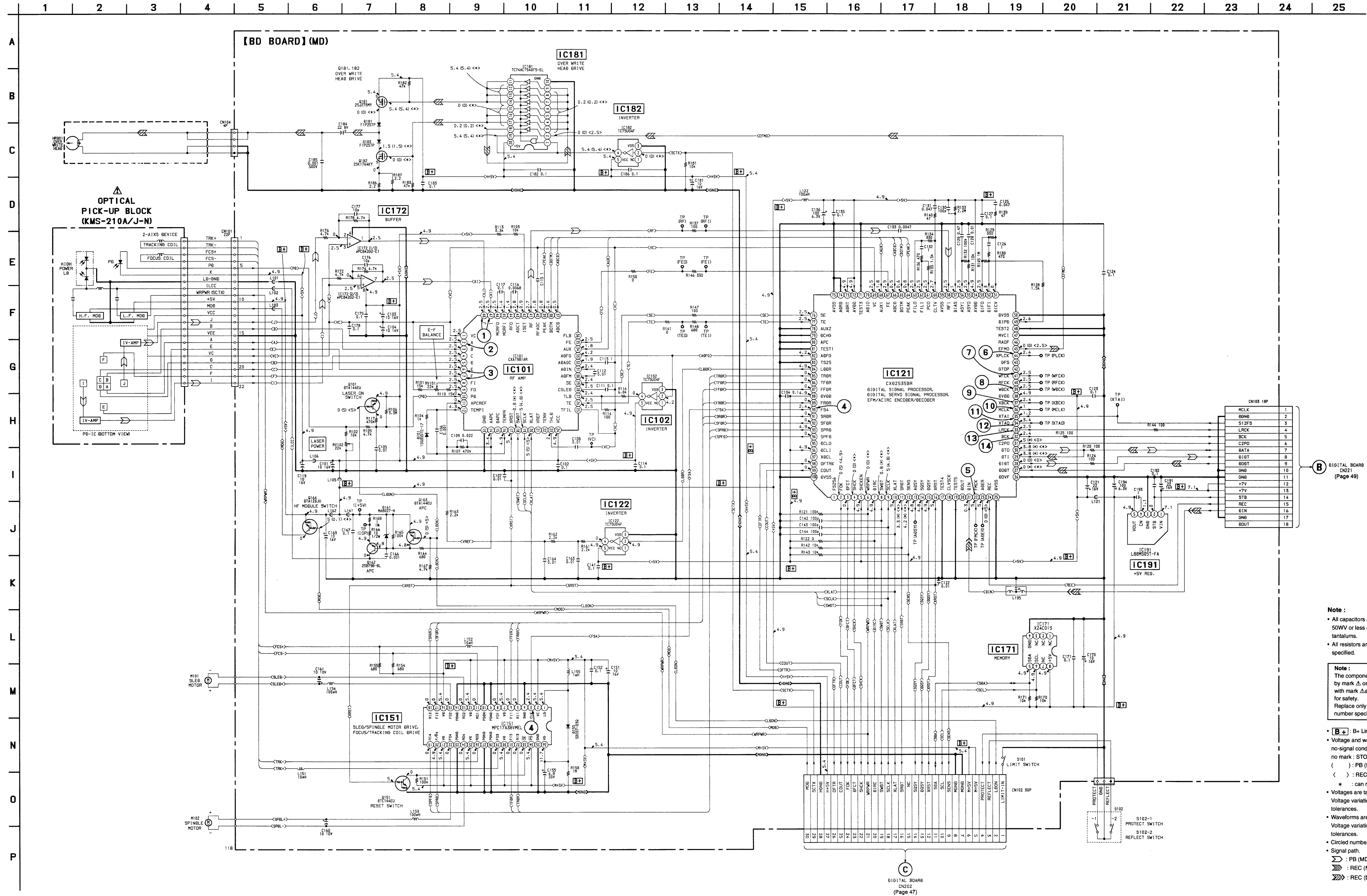
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D101	C-6
D155	F-11
D161	B-9
D181	C-2
D183	C-2
IC101	D-10
IC102	D-11
IC121	G-10
IC122	D-9
IC151	G-12
IC171	D-8
IC172	C-10
IC181	C-12
IC182	C-11
IC191	G-5
Q101	B-9
Q151	F-12
Q162	C-10
Q163	B-8
Q164	B-8
Q181	C-1
Q182	C-1

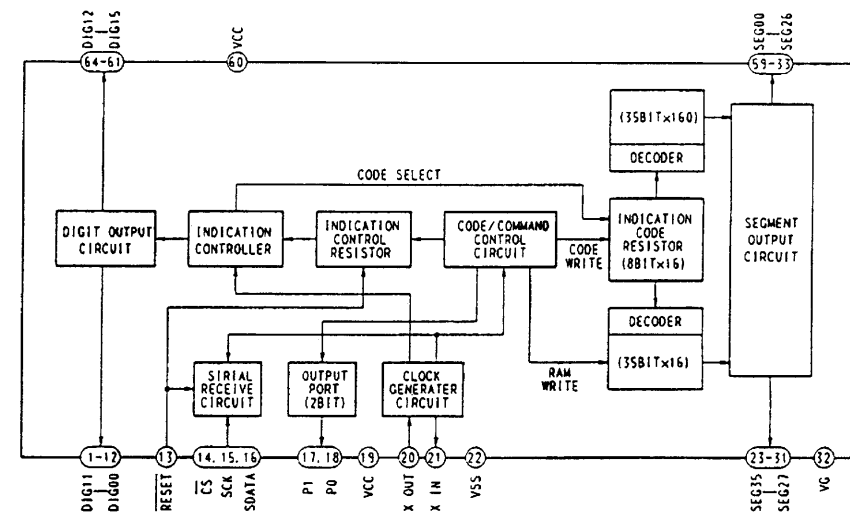
Note:

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

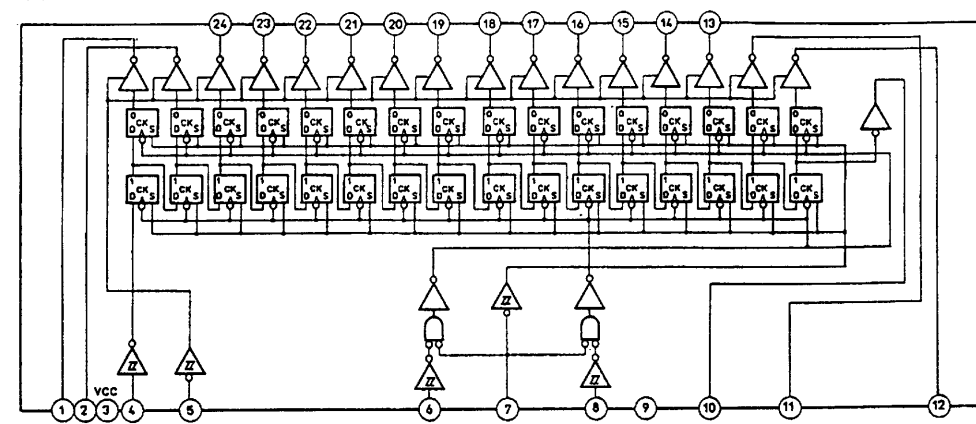




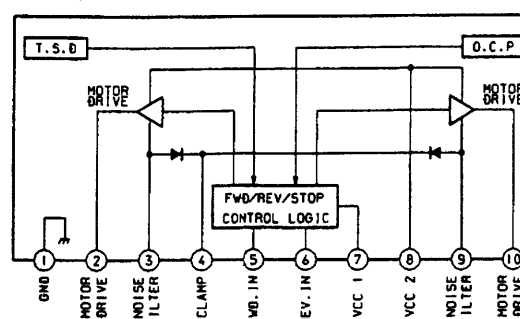
IC501 M66004M8FP



IC502 M66311FP



IC701, 702 LB1641



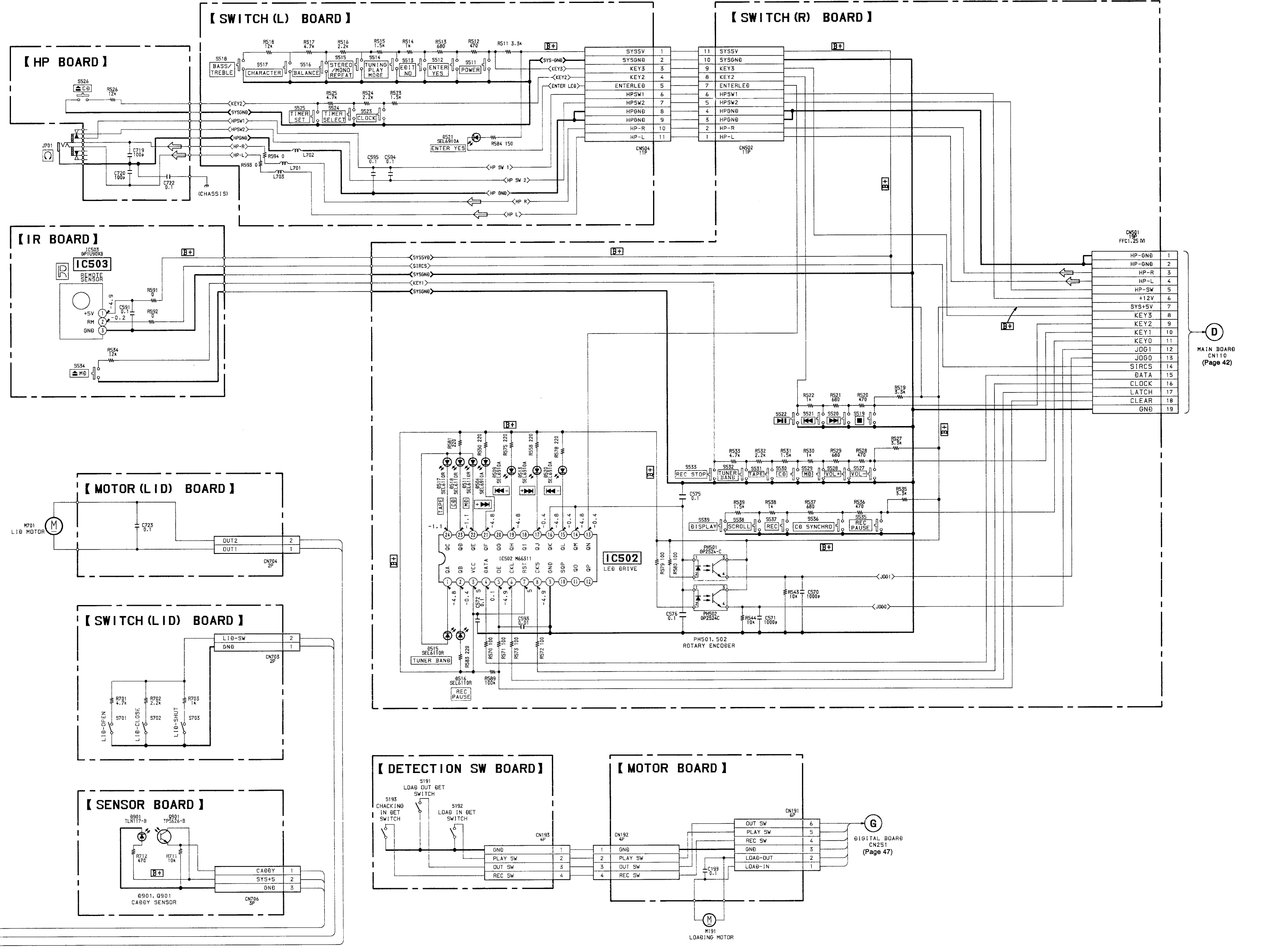
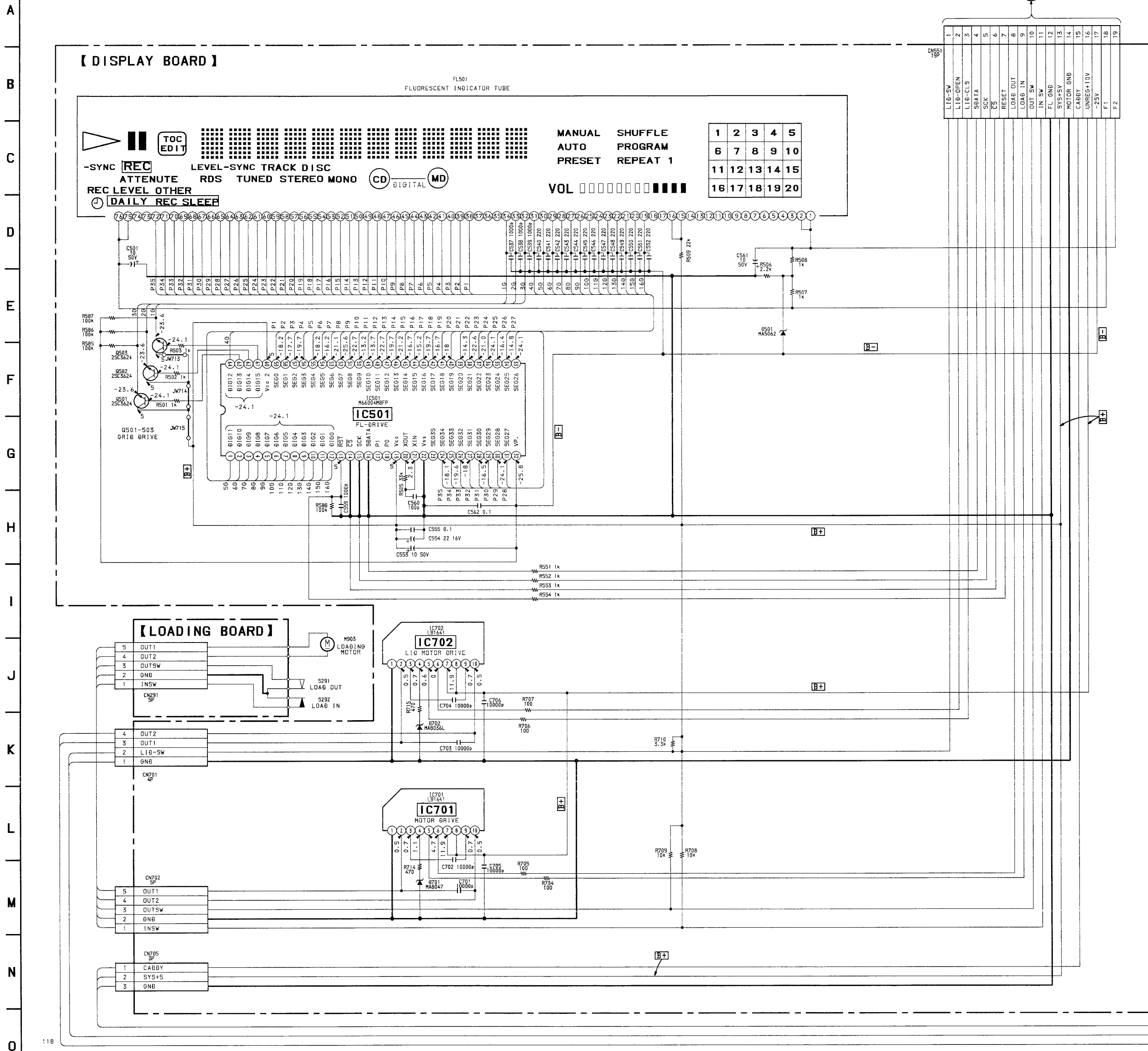
Note :

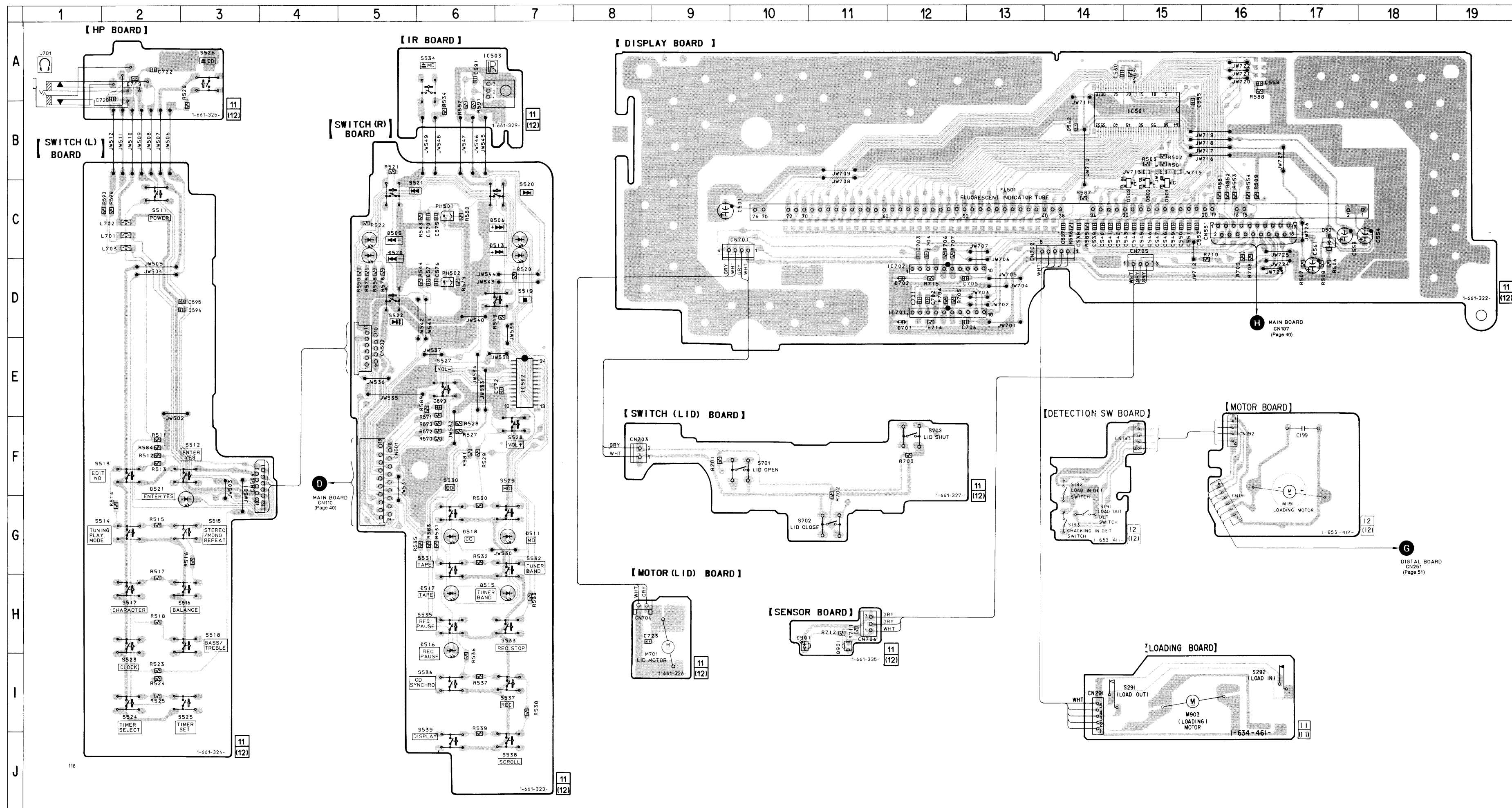
- All capacitors are in μF unless otherwise noted. pF: μF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : panel designation.
- B+ : B+ Line
- B- : B- Line
- Voltage are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM

- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- \Rightarrow : FM
- Abbreviation
- CND : Canadian
- G : German
- IT : Italian
- SP : Singapore
- HK : Hong Kong

8-10. SCHEMATIC DIAGRAM – DISPLAY SECTION –

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----





● SEMICONDUCTOR LOCATION

Ref. No.	Location
D501	C-17
D506	C-7
D509	C-5
D511	G-7
D513	C-7
D515	H-7
D516	H-6
D517	H-6
D518	G-6
D520	C-5
D521	G-3
D701	D-12
D702	D-12
D901	H-10
IC501	A-15
IC502	E-7
IC503	A-7
IC701	D-12
IC702	D-12
PH501	C-6
PH502	D-6
Q501	B-15
Q502	B-15
Q503	B-15
Q901	H-11

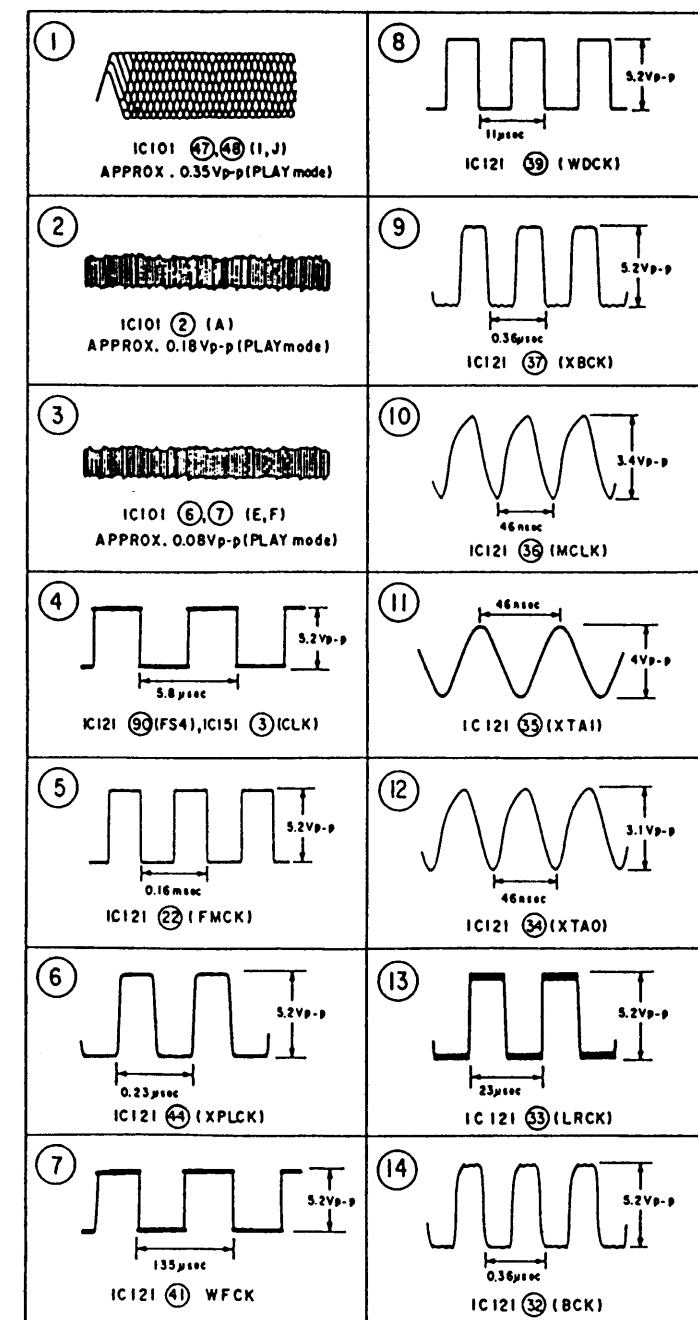
Note:

- : 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)

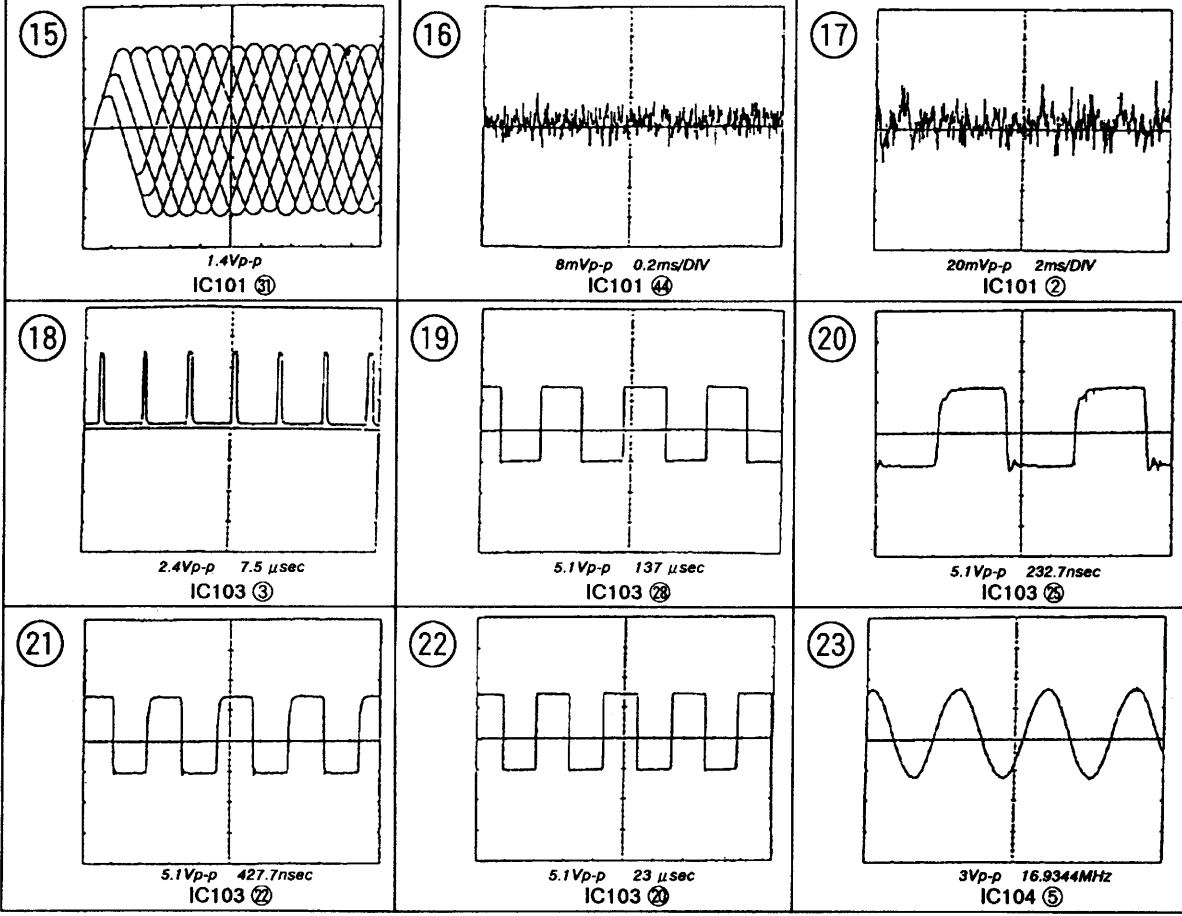
• Abbreviation

CND : Canadian
G : German
IT : Italian
SP : Singapore
HK : Hong Kong

● WAVEFORMS - BD : MD SECTION -



● WAVEFORMS - BD : CD SECTION -

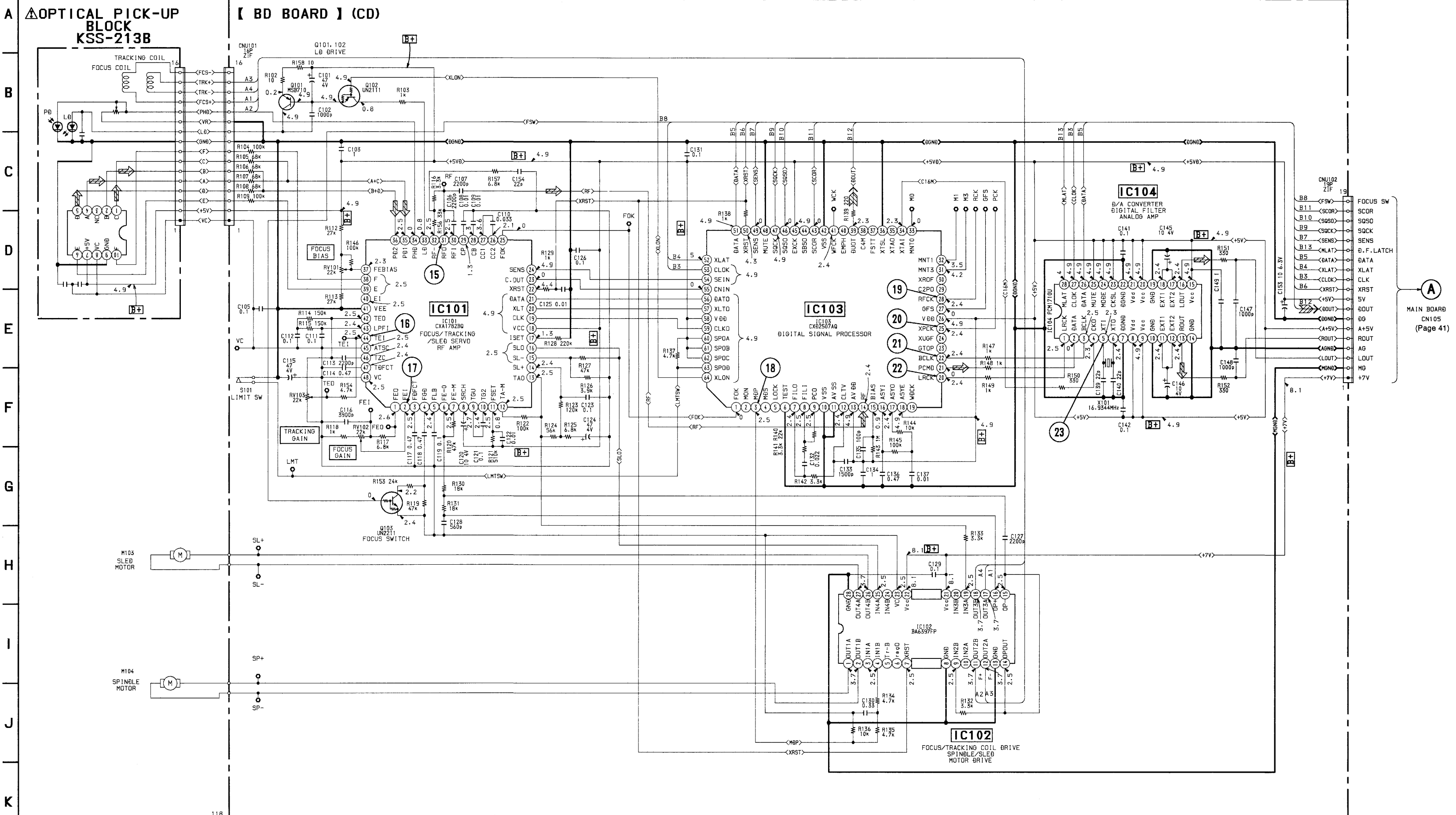


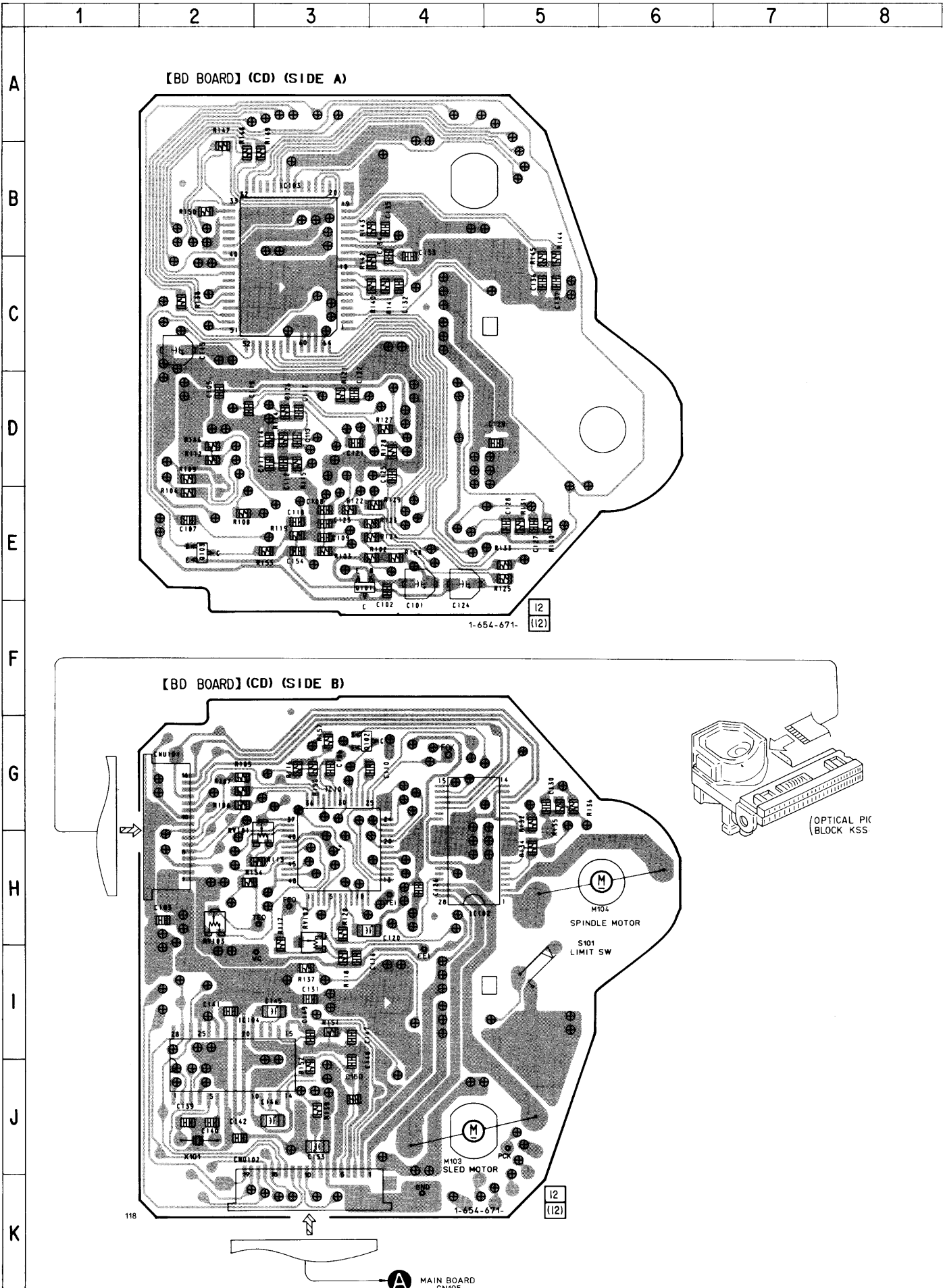
Note :

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

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

- **B+** : B+ Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : PB (CD)
- Voltages are taken with a VOM (Input impedance 10M 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.
 : REC (DIGITAL IN) : CD





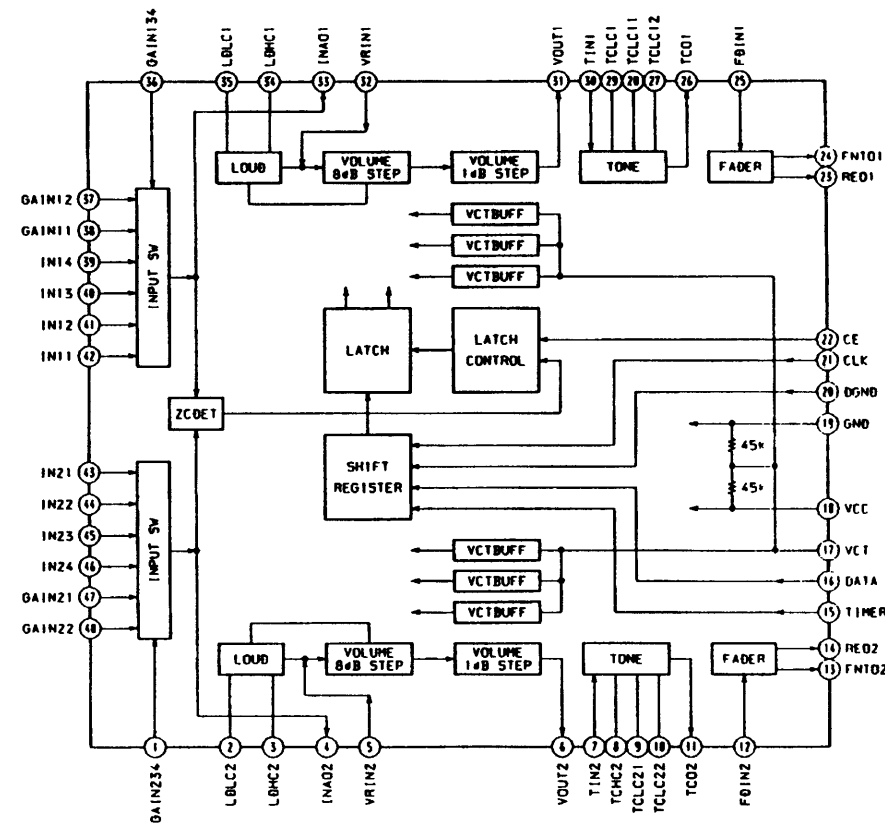
● SEMICONDUCTOR LOCATION

Ref. No.	Location
IC101	H-3
IC102	H-4
IC103	B-3
IC104	J-2
Q101	E-3
Q102	G-3
Q103	E-2

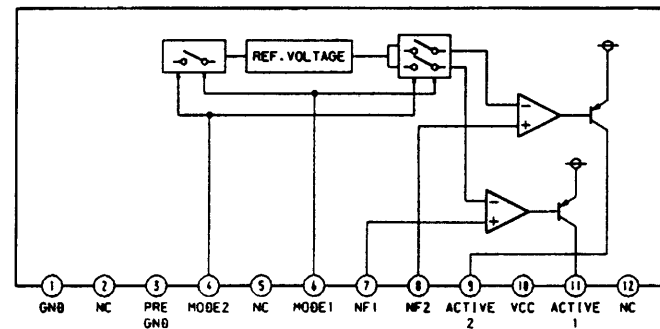
Note:

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

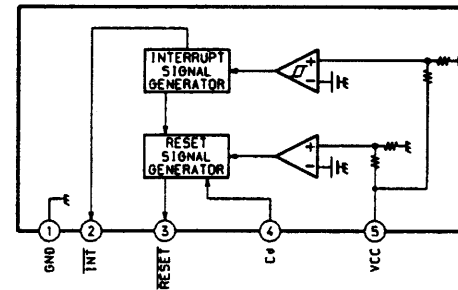
8-14. IC BLOCK DIAGRAM
- MAIN SECTION -
IC101 CXA1946AQ



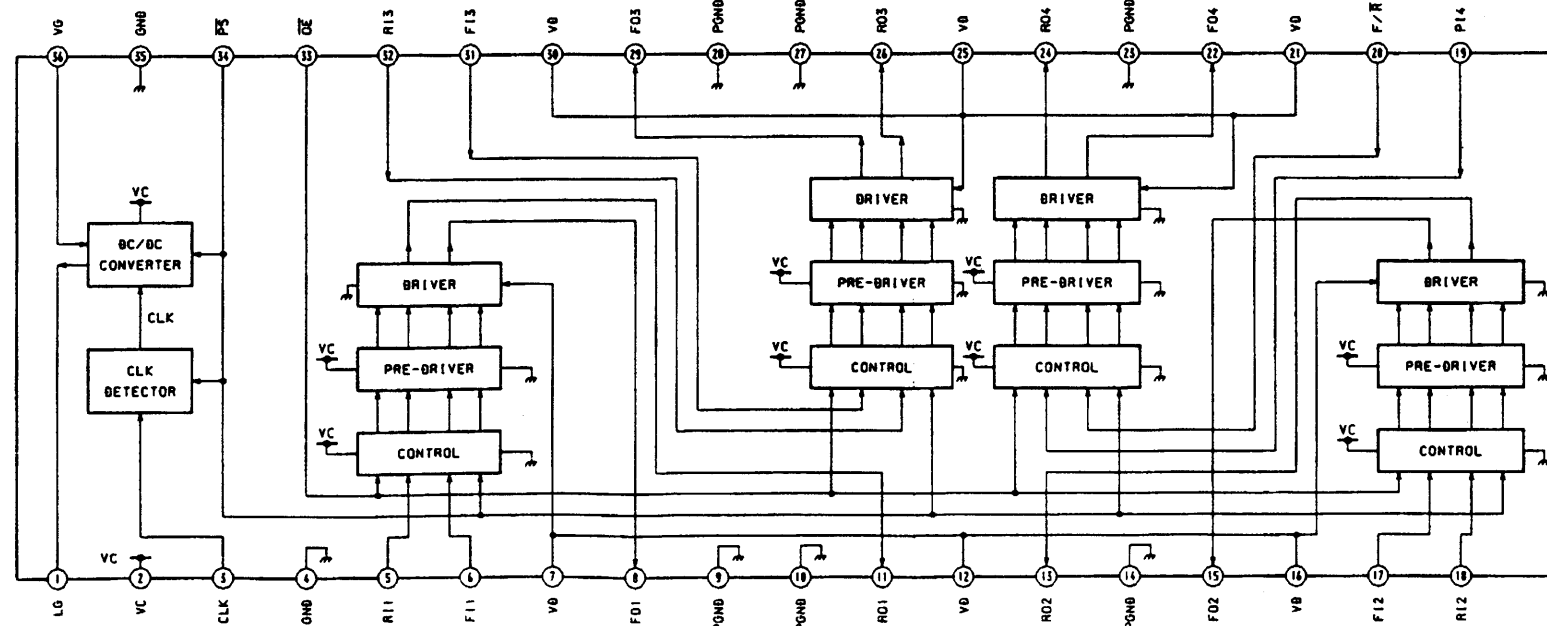
IC821, 831 BA3960



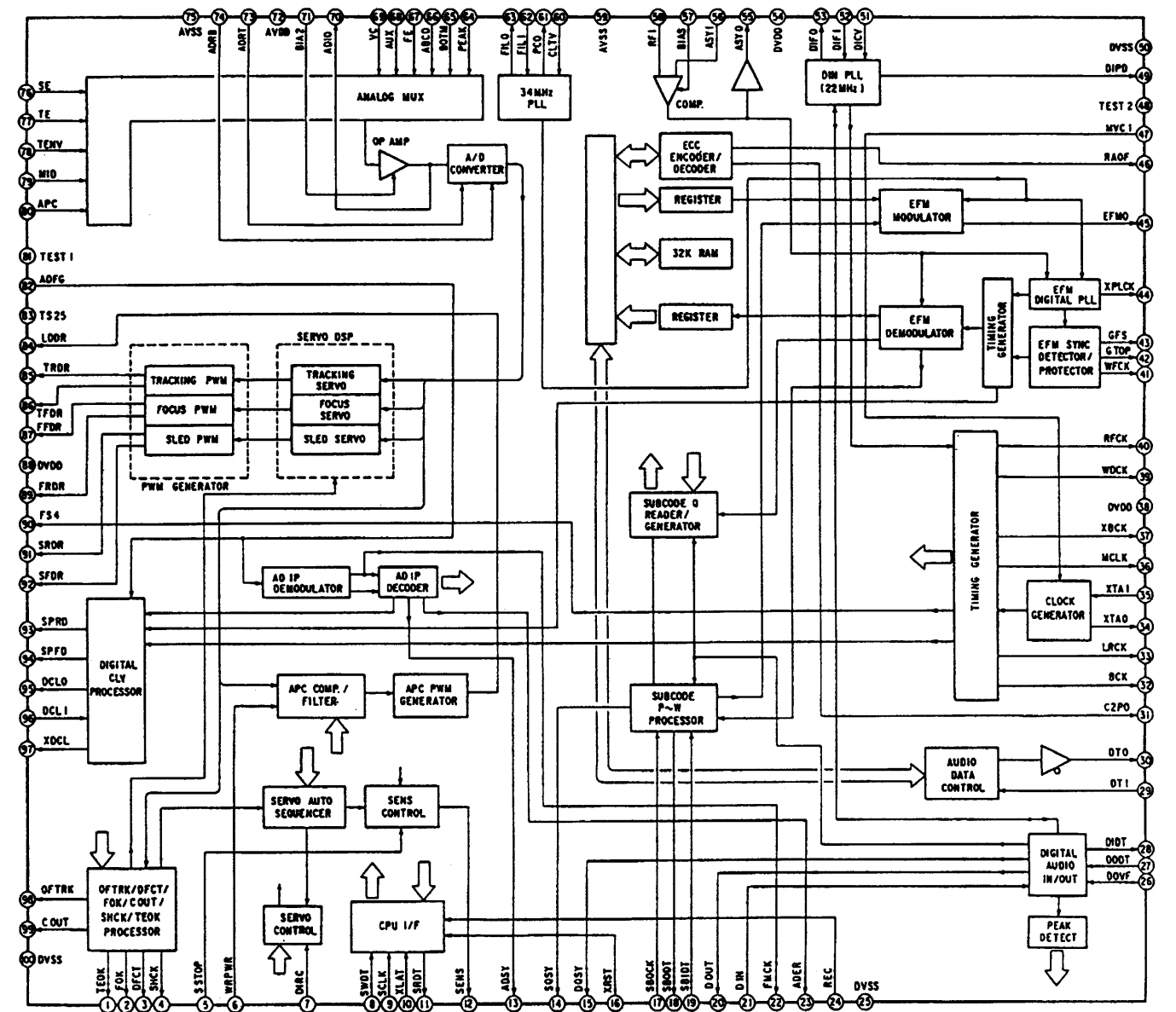
IC851 M62005L



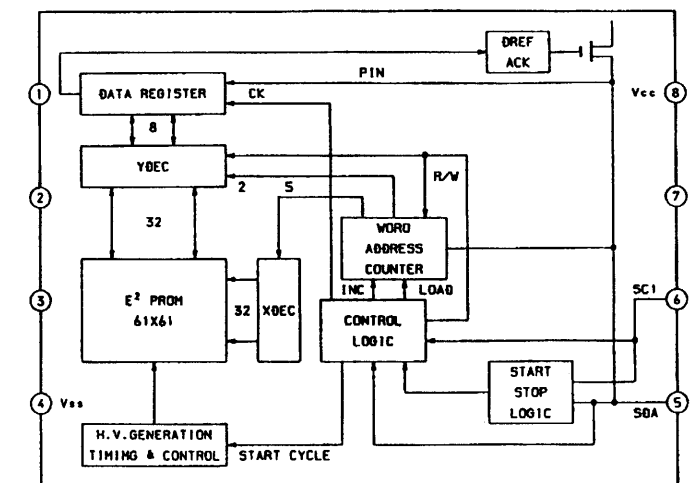
IC151 MPC17A38VMEL



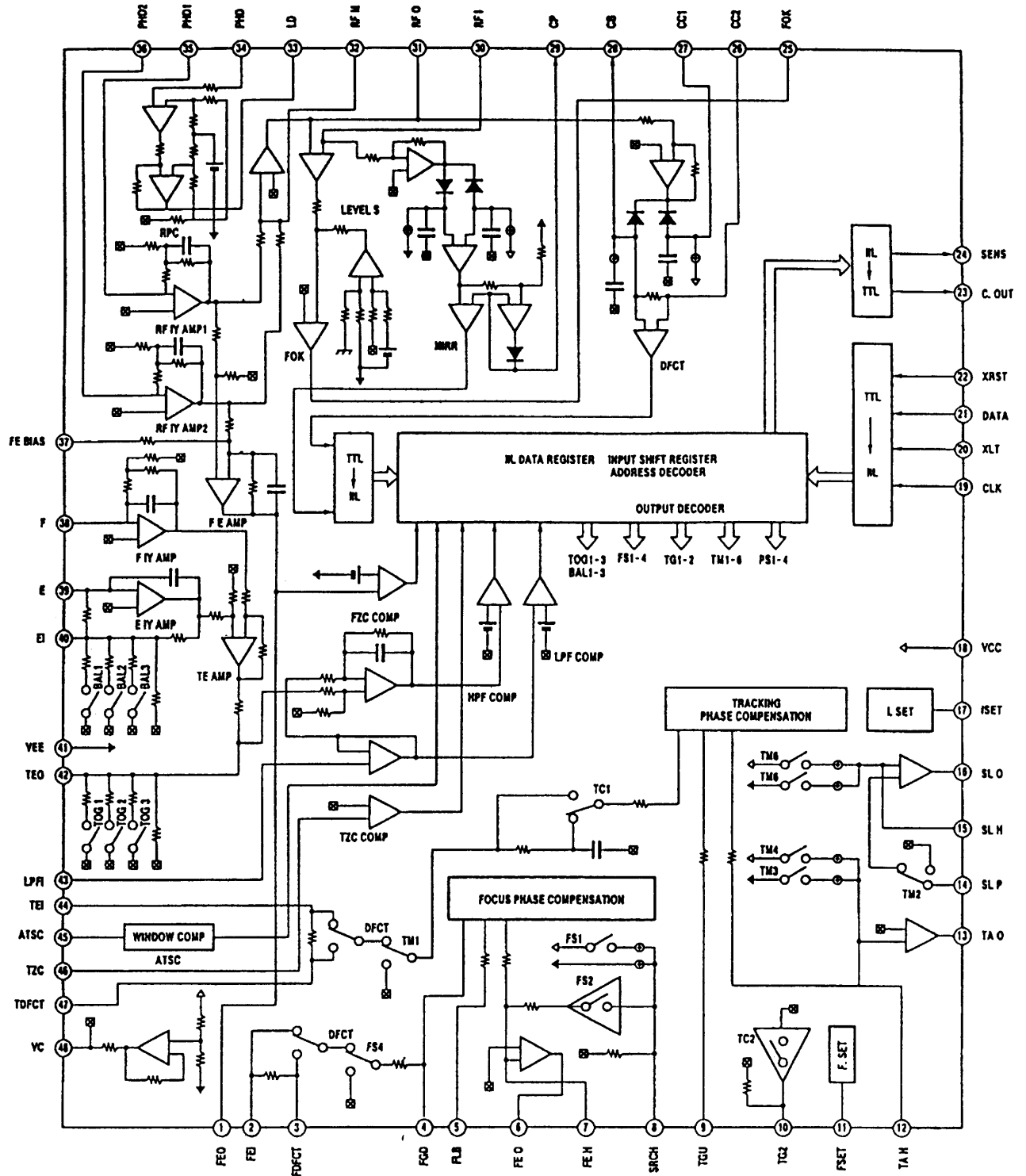
- MD SECTION -
IC121 CXD2535BR



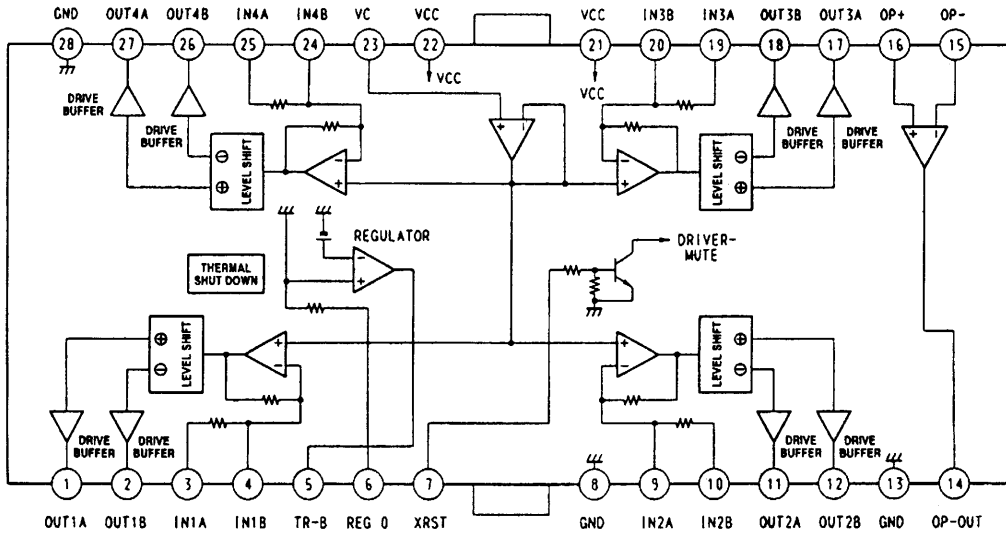
IC171 X24C01S



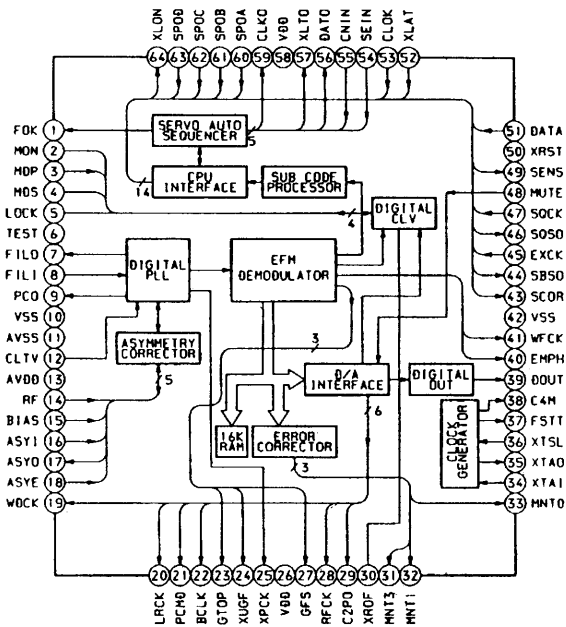
— CD SECTION —
IC101 CXA1782BQ



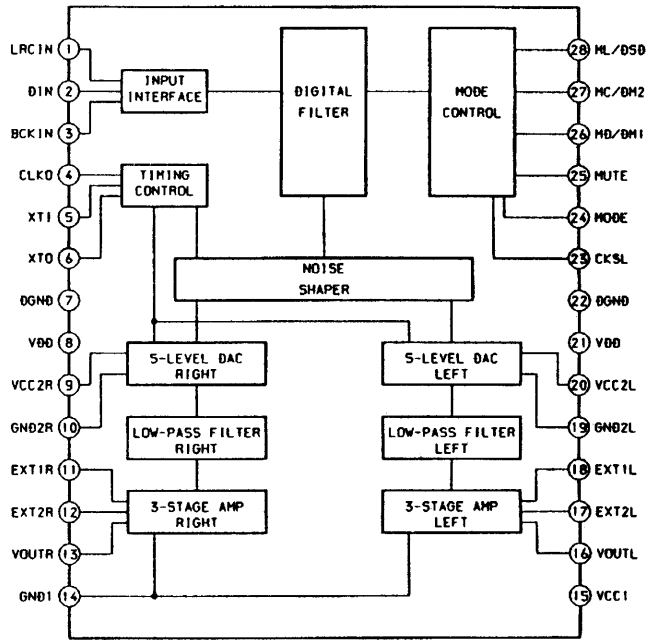
IC102 BA6397FP



IC103 CXD2507AQ



IC104 PCM1710U-B



SECTION 9 EXPLODED VIEWS

NOTE :

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

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

● Abbreviation

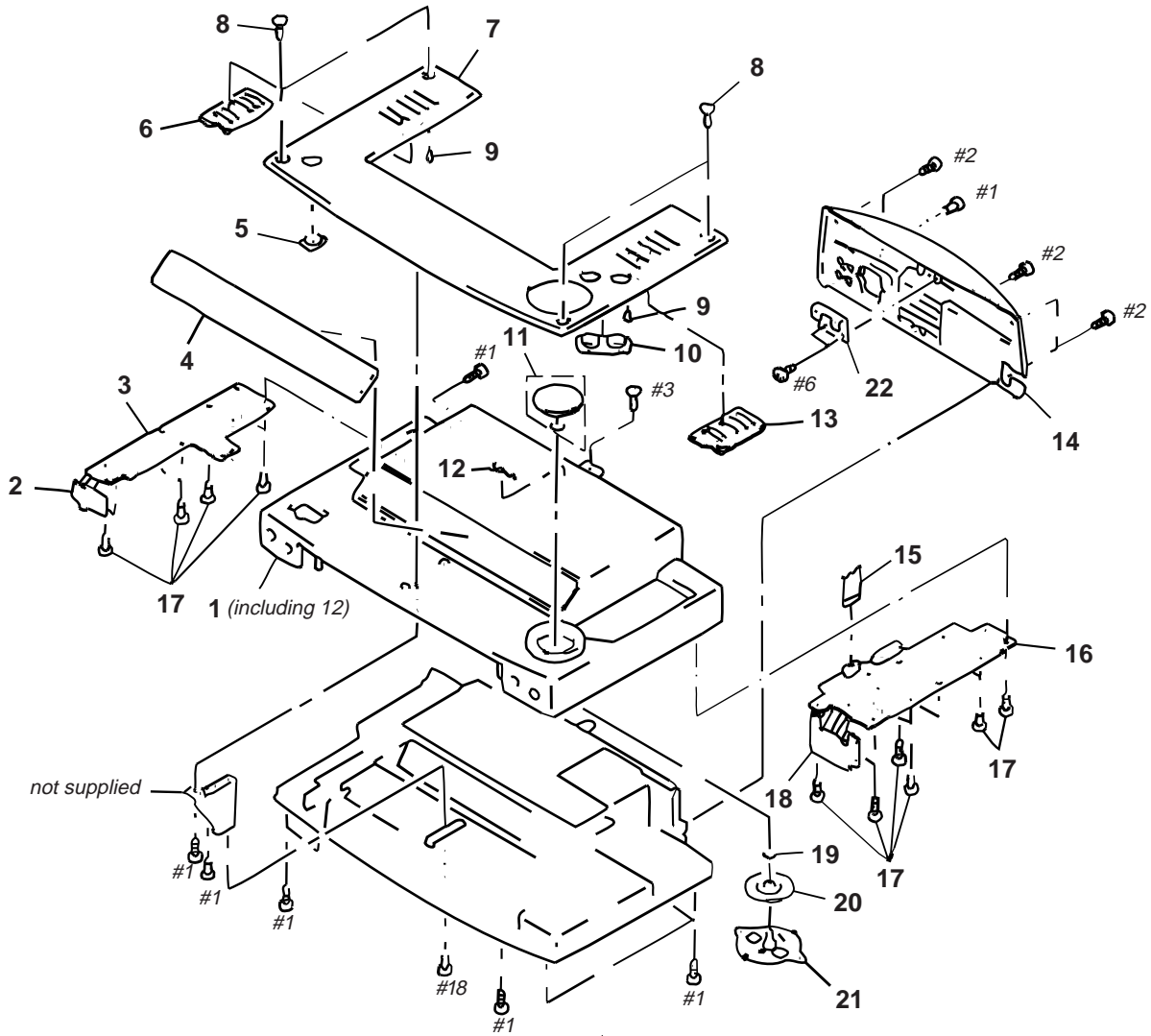
CND : Canadian SP : Singapore
HK : Hong Kong G : German
IT : Italian

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

Replace only with part number specified.

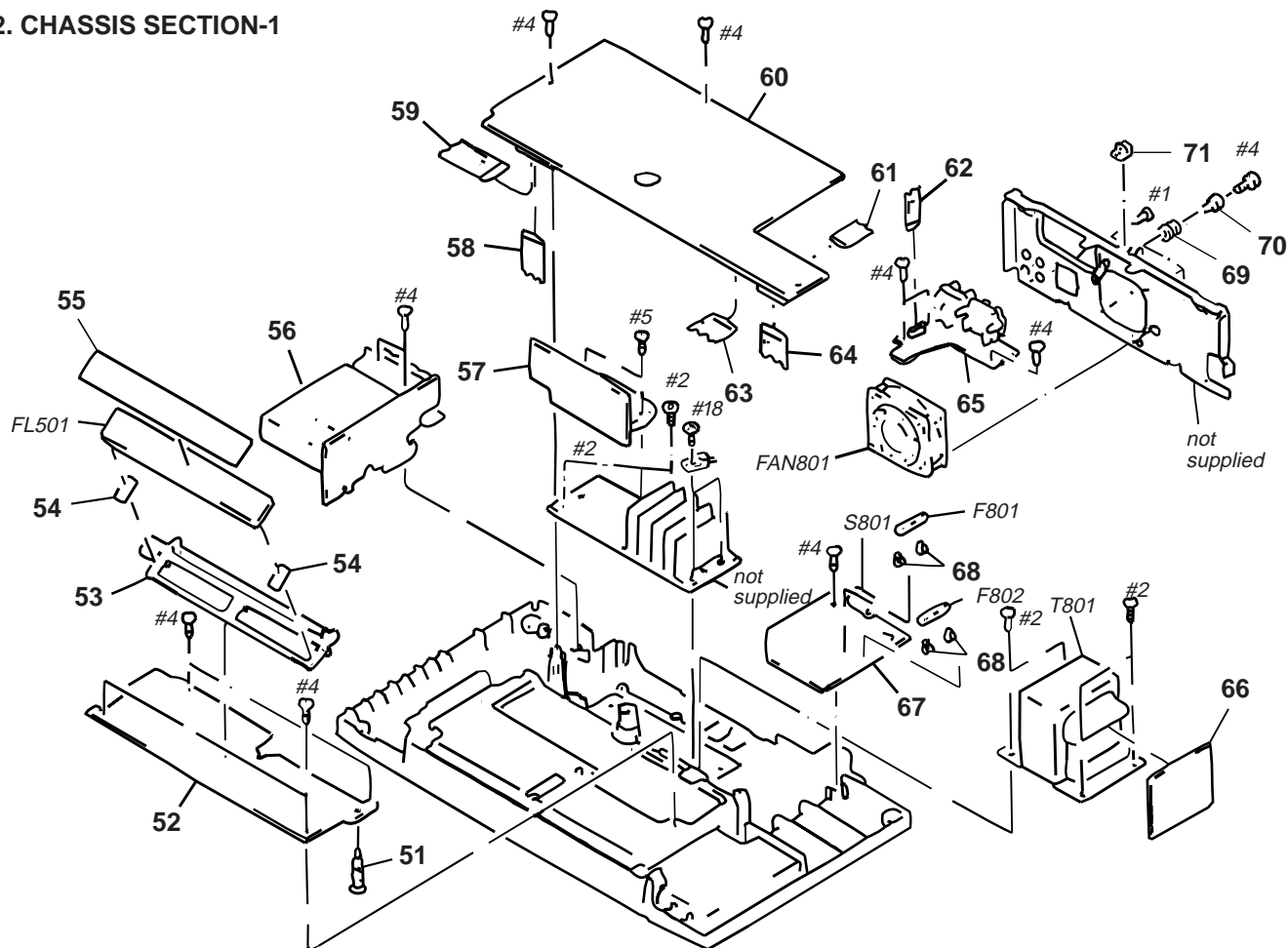
Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

9-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-4947-203-1	CASE (TOP) ASSY (US,CND)		11	X-4947-291-1	KNOB (JOG) ASSY	
1	X-4947-204-1	CASE (TOP) ASSY (AEP,UK,G,IT)		12	4-942-567-01	EMBLEM (NO.4), SONY	
* 1	X-4947-205-1	CASE (TOP) ASSY (HK,SP)		13	X-4947-045-1	BUTTON (BAND) ASSY	
* 2	1-661-325-11	HP BOARD		* 14	4-980-506-01	PLATE (T BACK), ORNAMENTAL	
* 3	1-661-324-11	SWITCH (L) BOARD		15	1-777-137-11	WIRE (FLAT TYPE) (11CORE)	
4	4-980-513-01	PLATE, INDICATION		* 16	1-661-323-11	SWITCH (R) BOARD	
5	X-4947-046-1	BUTTON (POWER) ASSY		17	4-951-620-01	SCREW (2.6X8), +BVTP	
6	X-4947-044-1	BUTTON (MODE) ASSY		* 18	1-661-329-11	IR BOARD	
7	4-980-512-01	PLATE, ORNAMENTAL		19	4-981-608-11	WASHER, SLIT	
8	4-982-457-01	SCREW, HEXAGON HOLE TAPPING		20	X-4946-857-1	ROTOR ASSY	
9	4-980-519-01	INDICATOR (FUN)		21	X-4946-856-1	PLATE (JOG) ASSY	
10	X-4947-047-1	BUTTON (VOL) ASSY		22	4-983-312-01	BRACKET (T BACK)	

9-2. CHASSIS SECTION-1

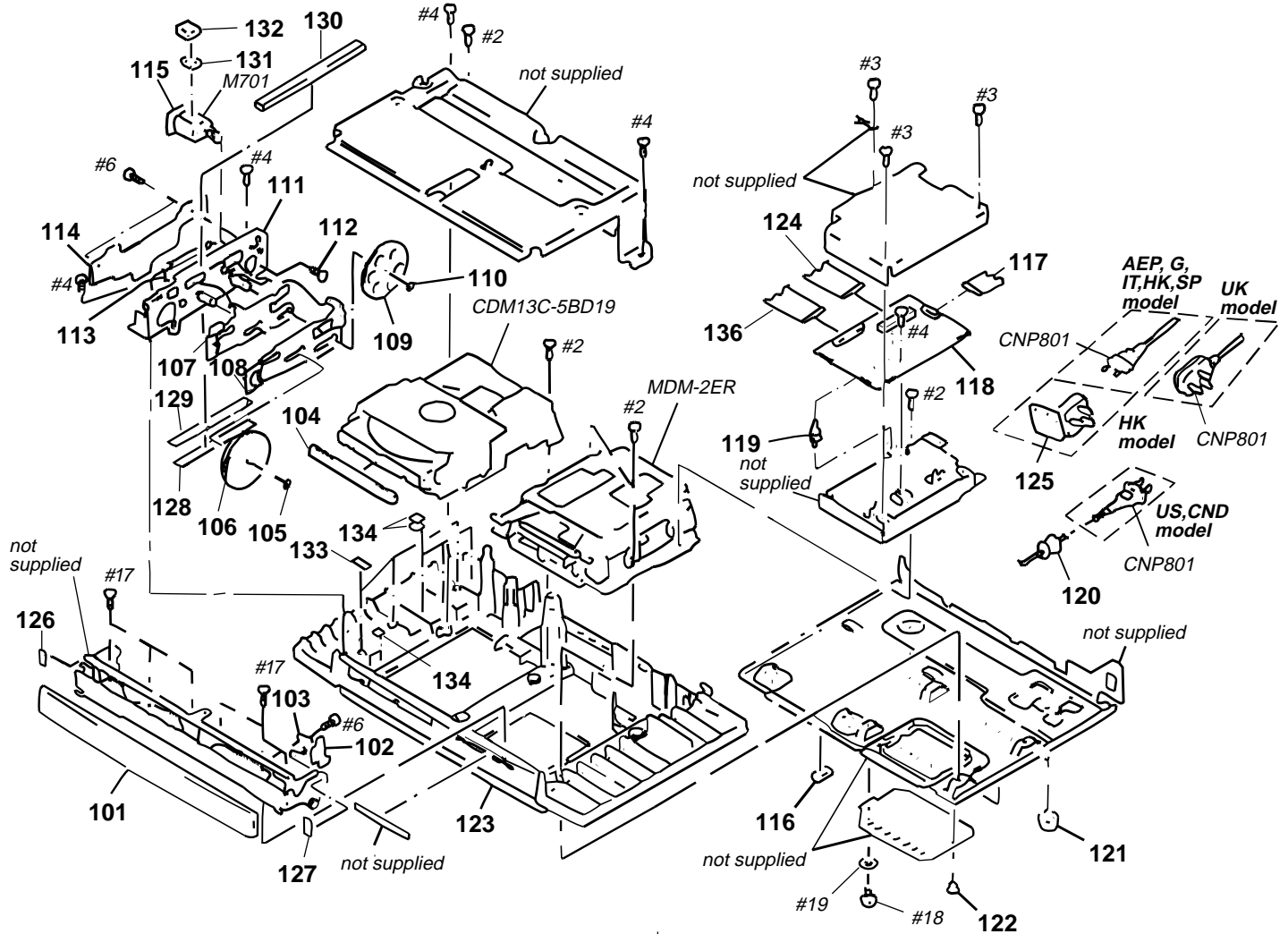


Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	4-982-455-01	HOLDER, PC BOARD		63	1-773-106-11	WIRE (FLAT TYPE) (19 CORE)	
* 52	1-661-322-11	DISPLAY BOARD		64	1-773-117-11	WIRE (FLAT TYPE) (19 CORE)	
* 53	4-980-523-01	HOLDER (FL)		* 65	1-661-328-11	TERMINAL BOARD	
* 54	4-955-901-01	CUSHION (FL)		* 66	1-661-332-11	TRANSFORMER BOARD	
* 55	4-980-522-01	FILTER		* 67	1-661-331-11	AC BOARD	
* 56	1-661-333-11	TUNER BOARD		68	1-533-293-11	FUSE HOLDER	
* 57	A-4390-522-A	AMP BOARD, COMPLETE (US)		* 69	4-888-798-11	BUSHING, RUBBER	
* 57	A-4390-538-A	AMP BOARD, COMPLETE (AEP,G,IT)		* 70	4-983-696-01	COLLAR	
* 57	A-4390-554-A	AMP BOARD, COMPLETE (HK,SP)		* 71	4-617-314-01	CLAMP	
* 57	A-4390-719-A	AMP BOARD, COMPLETE (CND)		△ F801	1-533-296-11	FUSE, GLASS CYLINDRICAL (2A 125V)(US,CND)	
* 57	A-4390-735-A	AMP BOARD, COMPLETE (UK)		△ F801	1-532-259-00	FUSE, TIME LAG (T1.6AL 250V)(SP,HK)	
58	1-777-033-11	WIRE (FLAT TYPE) (19 CORE)		△ F802	1-532-215-00	FUSE, TIME LAG (T0.8AL 250V)	
59	1-773-004-11	WIRE (FLAT TYPE) (15 CORE)					(AEP,UK,G,IT,SP,HK)
* 60	A-4390-518-A	MAIN BOARD, COMPLETE (US)		FAN801	1-698-651-11	FAN, D.C.	
* 60	A-4390-534-A	MAIN BOARD, COMPLETE (AEP,G,IT)		FL501	1-517-520-11	INDICATOR TUBE, FLUORESCENT	
* 60	A-4390-550-A	MAIN BOARD, COMPLETE (HK,SP)		△ S801	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE	
* 60	A-4390-715-A	MAIN BOARD, COMPLETE (CND)		△ T801	1-429-661-11	TRANSFORMER, POWER (AEP,UK,G,IT)	
* 60	A-4390-731-A	MAIN BOARD, COMPLETE (UK)		△ T801	1-429-662-11	TRANSFORMER, POWER (SP,HK)	
61	1-777-291-11	WIRE (FLAT TYPE) (21 CORE)		△ T801	1-429-663-11	TRANSFORMER, POWER (US,CND)	
62	1-769-974-11	WIRE (FLAT TYPE) (13 CORE)					

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.

9-3. CHASSIS SECTION-2



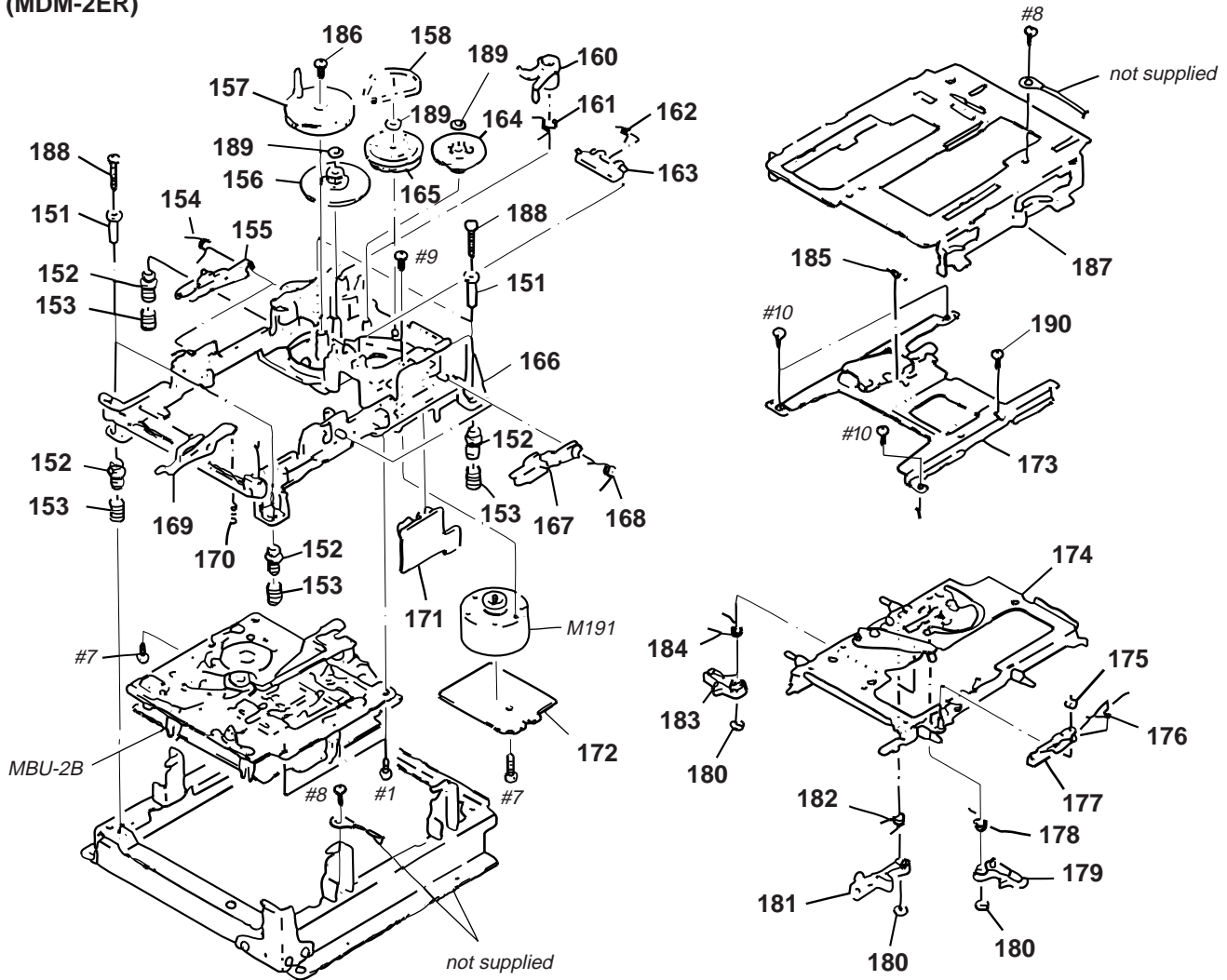
Ref. No.	Part No.	Description	Remark
101	X-4946-828-1	LID ASSY	
* 102	1-661-335-11	SENSOR BOARD	
* 103	4-980-529-01	HOLDER (SENSOR)	
104	4-980-520-01	PANEL, CD	
105	4-981-608-11	WASHER, SLIT	
106	4-980-496-01	GEAR (CAM)	
* 107	4-980-492-01	PLATE (CL)	
* 108	X-4946-826-1	CHASSIS (LD) ASSY	
109	4-980-495-01	GEAR (C)	
110	4-981-608-01	WASHER, SLIT	
* 111	X-4946-830-1	PLATE (OP) ASSY	
112	4-965-659-01	SCREW (+B 2X2.2)	
113	4-982-456-01	SPRING, TENSION	
* 114	1-661-327-11	SWITCH (LID) BOARD	
* 115	1-661-326-11	MOTOR (LID) BOARD	
116	4-984-379-01	CUSHION (FOOT)	
117	1-777-291-11	WIRE (FLAT TYPE) (21 CORE)	
* 118	A-4390-532-A	DIGITAL BOARD, COMPLETE (US)	
* 118	A-4390-548-A	DIGITAL BOARD, COMPLETE (AEP,G,IT)	
* 118	A-4390-564-A	DIGITAL BOARD, COMPLETE (HK,SP)	
* 118	A-4390-729-A	DIGITAL BOARD, COMPLETE (CND)	
* 118	A-4390-745-A	DIGITAL BOARD, COMPLETE (UK)	
119	4-924-098-21	HOLDER, PC BOARD	
* 120	3-703-244-00	BUSHING (2104), CORD	
121	4-981-393-01	FOOT	
122	3-531-576-11	RIVET	
* 123	4-980-505-01	CASE (BOTTOM)	
124	1-769-118-11	WIRE (FLAT TYPE) (30 CORE)	

Ref. No.	Part No.	Description	Remark
△125	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P(HK)	
* 126	4-983-700-01	CUSHION (L)	
127	4-949-303-41	SPACER	
* 128	4-983-697-01	PLATE (LD)	
* 129	4-983-708-01	RUBBER (C)	
* 130	4-983-703-01	CUSHION (T)	
* 131	4-983-705-01	RUBBER	
* 132	4-983-702-11	CUSHION (M)	
* 133	4-983-701-01	CUSHION (B)	
* 134	4-983-707-01	RUBBER (B)	
136	1-769-119-11	WIRE (FLAT TYPE) (18 CORE)	
△CNP801	1-575-651-31	CORD, POWER (AEP,G,IT,SP,HK)	
△CNP801	1-775-789-11	CORD, POWER (US,CND)	
△CNP801	1-696-570-21	CORD, POWER (UK)	
M701	X-4947-281-1	LID MOTOR, ASSY	
#2	7-685-873-09	SCREW +BVTT 3X10 (S)	
#3	7-685-871-01	SCREW +BVTT 3X6 (S)	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#6	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
#17	7-685-546-19	SCREW +BTP 3X8 TYPE2 N-S	
#18	7-685-874-09	SCREW +BVTT 3X12 (S)	
#19	7-623-422-07	LW3, TYPE B	

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.

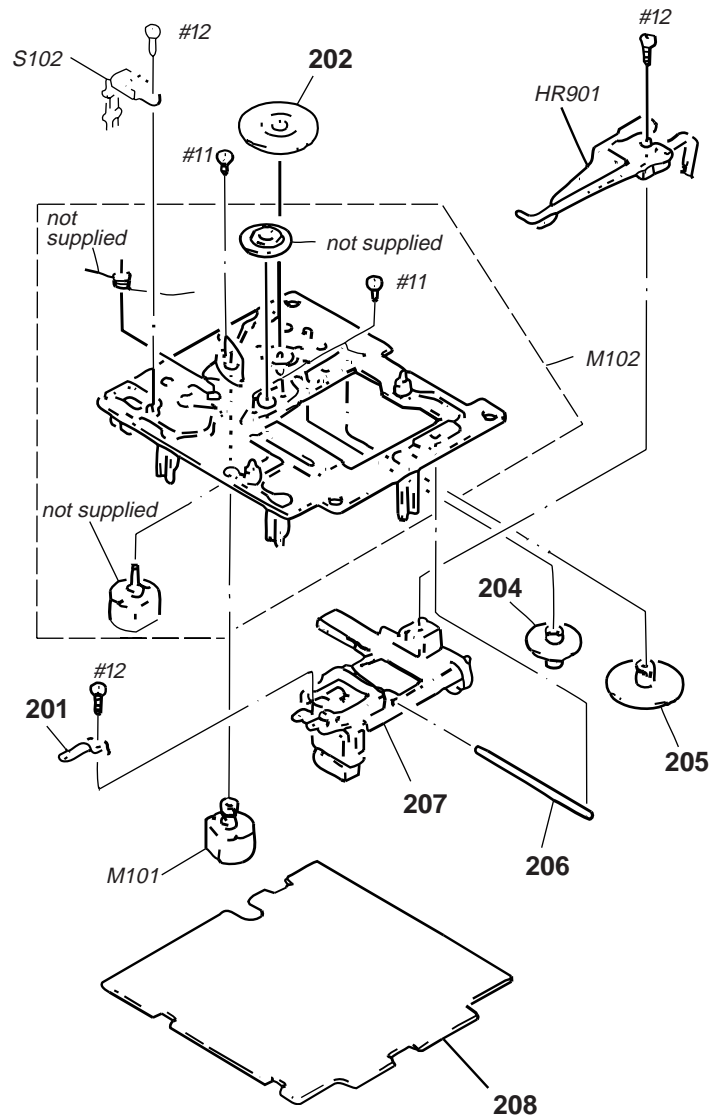
9-4. MD MECHANISM SECTION (MDM-2ER)



Ref. No.	Part No.	Description	Remark
151	4-983-100-01	COLLAR (DAMPER)	
152	4-967-671-01	INSULATOR (MD)	
153	4-967-673-01	SPRING, COMPRESSION	
154	4-967-668-01	SPRING (UDL), TORSION	
155	4-967-667-01	LEVER (UDL)	
156	4-977-610-01	GEAR (BD-B)	
157	X-4945-069-1	CAM ASSY	
158	4-967-656-01	BELT (BD)	
160	4-967-637-01	LEVER (SLM)	
161	4-984-426-01	SPRING (SLM), TORSION	
162	4-968-273-01	SPRING (OWH), TORSION	
163	4-968-272-01	LEVER (OWH)	
164	4-977-609-01	GEAR (BD-A)	
165	4-957-794-01	PULLEY (GEAR 1)	
* 166	X-4945-068-1	BASE (BD) ASSY	
167	4-967-669-01	LEVER (UDR)	
168	4-967-670-01	SPRING (UDR), TORSION	
169	4-979-400-01	LEVER (DOOR)	
170	4-970-710-01	SPRING, COMPRESSION	
* 171	1-653-411-11	DETECTION SW BOARD	

Ref. No.	Part No.	Description	Remark
* 172	1-653-412-11	MOTOR BOARD	
173	A-4672-087-A	BRACKET (LVO) ASSY	
174	X-4947-136-2	HOLDER ASSY	
175	4-968-919-11	WASHER, STOPPER	
176	4-967-646-01	SPRING (SHT), TORSION	
177	4-967-645-01	LEVER (SHT)	
178	4-983-106-02	SPRING (LM), TORSION	
179	4-967-639-01	LEVER (LM)	
180	4-968-919-01	WASHER, STOPPER	
181	4-967-641-01	LEVER (L)	
182	4-967-642-01	SPRING (L), TORSION	
183	4-982-040-01	LEVER (LOCK)	
184	4-982-099-01	SPRING (LOCK), TORSION	
185	4-971-743-02	SPRING, TENSION	
186	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 187	X-4945-872-1	SLIDER (M) ASSY	
188	4-972-910-01	SCREW (2.6X18), +B	
189	7-621-770-67	SCREW +PWH 2.6X6	
190	7-621-255-25	SCREW +PTT 2X4 (S)	
M191	A-4660-646-A	MOTOR (LOADING) ASSY	

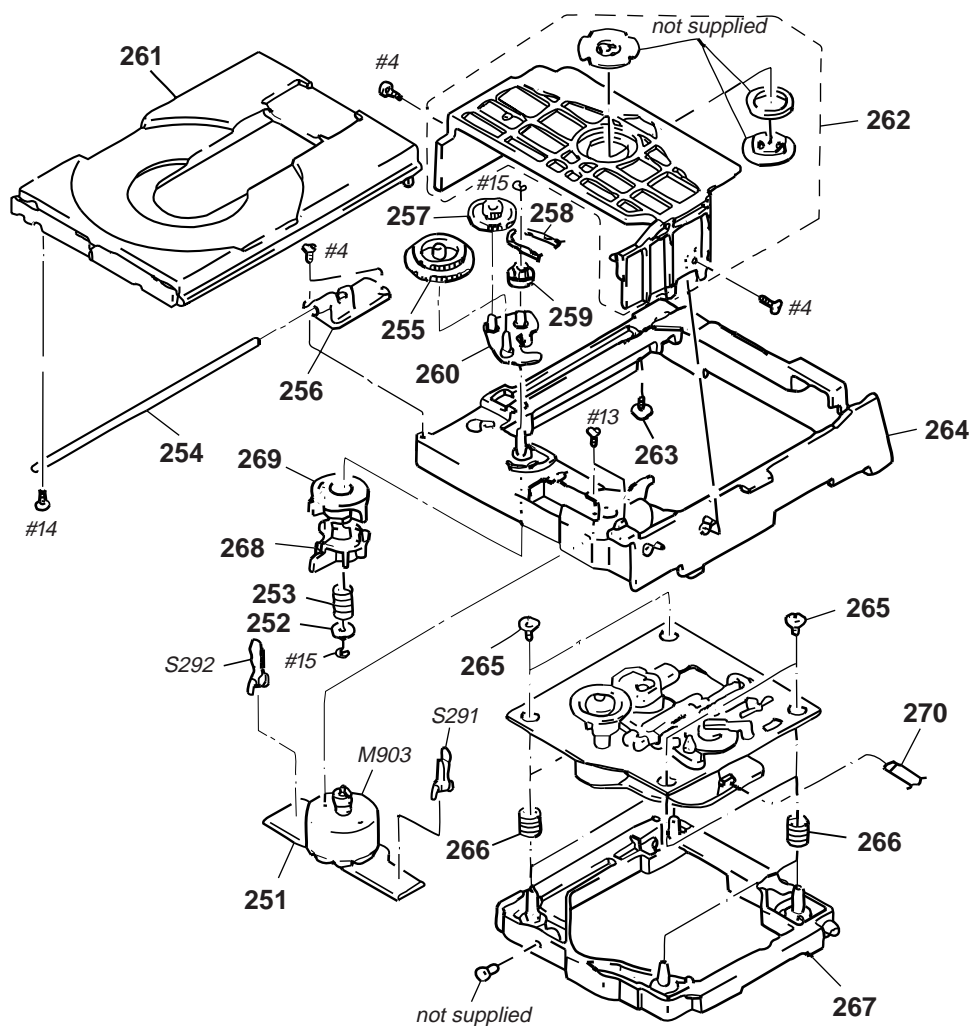
9-5. BASE UNIT SECTION (MD) (MBU-2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 201	1-634-461-11	LOADING BOARD		* 208	A-4673-809-A	BD(MD)BOARD, COMPLETE	
202	4-967-675-01	GEAR (SL-A)		HR901	1-500-304-21	HEAD, OVER LIGHT (RF322-74A)	
204	4-967-676-01	GEAR (SL-B)		M101	A-4660-651-A	MOTOR (SLED) ASSY	
205	4-967-677-01	GEAR (SL-C)		M102	A-4660-650-A	CHASSIS ASSY, BU	
206	4-967-678-01	SHAFT (OP)		S102	1-762-148-11	SWITCH, PUSH (2 KEY) (PROTECT/REFLECT SWITCH)	
△ 207	8-583-009-11	OPTICAL PICK-UP KMS-210A/J-N (MD)					

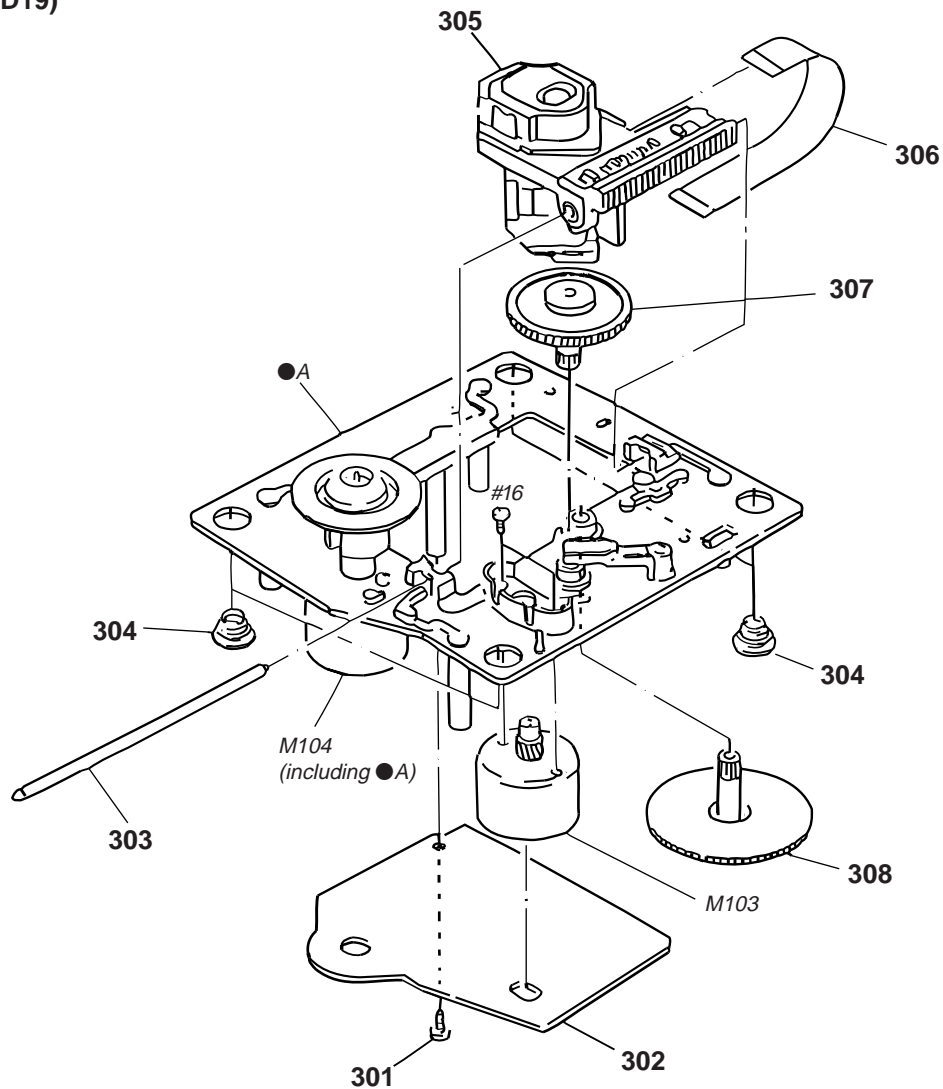
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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9-6. CD MECHANISM SECTION-1
(CDM-5BD19)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	4-967-679-01	SPRING (OP), LEAF		* 263	4-917-583-21	BRACKET, YOKE	
252	4-927-654-01	WASHER (LIMITER)		* 264	X-4946-208-2	CHASSIS (MD) ASSY	
253	3-659-338-00	SPRING, COMPRESSION		265	4-933-134-01	SCREW (+PTPWH M2.6X6)	
254	4-929-764-01	SHAFT (TABLE GUIDE)		266	4-958-593-01	SPRING (BU), COMPRESSION	
255	4-927-620-01	GEAR (P)		267	4-929-747-01	HOLDER (BU)	
256	4-944-006-11	BEARING		268	4-929-727-01	CAM (A)	
257	4-927-628-01	GEAR (C)		269	4-929-729-01	CAM (B)	
258	4-927-649-01	BELT		270	1-777-033-11	WIRE (FLAT TYPE) (19 CORE)	
259	4-929-724-01	PULLEY (B)		M903	A-4608-362-A	MOTOR (L)ASSY (LOADING)	
260	X-4947-265-1	ARM ASSY, SWING		S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
261	4-944-012-01	TABLE, DISC		S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	
262	A-4604-752-A	HOLDER (MG) ASSY					

9-7. CD MECHANISM SECTION-2 (CDM-5BD19)



Ref. No.	Part No.	Description	Remark
301	4-951-620-01	SCREW (2.6X8), +BVTP	
* 302	A-4673-402-A	BD (CD) BOARD, COMPLETE	
303	4-917-565-01	SHAFT, SLED	
304	4-951-940-01	INSULATOR (BU)	
△ 305	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N (CD)	

Ref. No.	Part No.	Description	Remark
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
307	4-917-567-01	GEAR (M)	
308	4-917-564-01	GEAR (P), FLATNESS	
M103	X-4917-504-1	MOTOR, ASSY(CD)(SLED MOTOR)	
M104	X-4917-523-4	MOTOR, ASSY(CD)(SPINDLE MOTOR)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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SECTION 10

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 SP : Singapore
HK : Hong Kong G : German
IT : Italian

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			
*	1-661-331-11	AC BOARD *****					C902	1-162-282-31	CERAMIC	100PF	10%	50V	
	1-533-293-11	FUSE HOLDER					C903	1-126-964-11	ELECT	10uF	20%	50V	
		< CAPACITOR >					C904	1-126-967-11	ELECT	47uF	20%	50V	
Δ C833	1-115-377-61	CERAMIC	3300PF	20%	250V		C905	1-126-052-11	ELECT	100uF	20%	50V	
Δ C834	1-115-377-61	CERAMIC	3300PF	20%	250V		C906	1-126-964-11	ELECT	10uF	20%	50V	
Δ C837	1-115-377-61	CERAMIC	3300PF	20%	250V		C907	1-126-964-11	ELECT	10uF	20%	50V	
		< CONNECTOR >					C908	1-136-165-00	FILM	0.1uF	5%	50V	
CN801	1-564-321-00	PIN, CONNECTOR 2P					C909	1-136-165-00	FILM	0.1uF	5%	50V	
* CN802	1-564-687-11	PIN, CONNECTOR 3P					C921	1-126-923-11	ELECT	220uF	20%	10V	
		< FUSE >					C922	1-124-903-11	ELECT	1uF	20%	50V	
Δ F801	1-533-296-11	FUSE, GLASS CYLINDRICAL (2A 125V)(US,CND)					C923	1-126-964-11	ELECT	10uF	20%	50V	
Δ F801	1-532-259-00	FUSE, TIME LAG (T1.6AL 250V)(SP,HK)					C941	1-124-903-11	ELECT	1uF	20%	50V	
Δ F802	1-532-215-00	FUSE, TIME LAG (T0.8AL 250V) (AEP,UK,G,IT,SP,HK)					C951	1-126-964-11	ELECT	10uF	20%	50V	
		< LINE FILTER >					C952	1-162-282-31	CERAMIC	100PF	10%	50V	
Δ LF801	1-411-910-11	TRANSFORMER, LINE FILTER					C953	1-126-964-11	ELECT	10uF	20%	50V	
		< SWITCH >					C954	1-126-967-11	ELECT	47uF	20%	50V	
Δ S801	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(SP,HK)					C955	1-126-052-11	ELECT	100uF	20%	50V	
*****							C956	1-164-159-21	CERAMIC	0.1uF		50V	
*	A-4390-522-A	AMP BOARD, COMPLETE (US)					C957	1-126-964-11	ELECT	10uF		50V	
*	A-4390-538-A	AMP BOARD, COMPLETE (AEP,G,IT)					C958	1-136-165-00	FILM	0.1uF	5%	50V	
*	A-4390-554-A	AMP BOARD, COMPLETE (SP,HK)					C959	1-136-165-00	FILM	0.1uF	5%	50V	
*	A-4390-719-A	AMP BOARD, COMPLETE (CND)							< CONNECTOR >				
*	A-4390-735-A	AMP BOARD, COMPLETE (UK) *****					CN901	1-564-511-11	PLUG, CONNECTOR 8P				
		< CAPACITOR >					CN902	1-770-726-11	CONNECTOR, BOARD TO BOARD 6P				
C901	1-126-964-11	ELECT	10uF	20%	50V				< DIODE >				
							D901	8-719-987-63	DIODE 1N4148M				
							D951	8-719-987-63	DIODE 1N4148M				
									< IC >				
							IC901	8-749-900-96	IC STK-4142MK2				
									< TRANSISTOR >				
							Q901	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
							Q921	8-729-620-05	TRANSISTOR 2SC2603-EF				

Ref. No.	Part No.	Description					Remark	Ref. No.	Part No.	Description					Remark	
Q922	8-729-620-05	TRANSISTOR	2SC2603-EF						△ R957	1-217-637-00	FUSIBLE	1	5%	1/4W	F	
Q923	8-729-620-05	TRANSISTOR	2SC2603-EF						△ R959	1-212-881-11	FUSIBLE	100	5%	1/4W	F	
Q924	8-729-119-76	TRANSISTOR	2SA1175-HFE						△ R960	1-217-151-00	METAL PLATE	0.22				F
Q925	8-729-620-05	TRANSISTOR	2SC2603-EF						R961	1-249-417-11	CARBON	1K	5%	1/4W		
Q931	8-729-620-05	TRANSISTOR	2SC2603-EF						R962	1-249-431-11	CARBON	15K	5%	1/4W		
Q932	8-729-422-73	TRANSISTOR	UN4212						R963	1-249-441-11	CARBON	100K	5%	1/4W		
Q941	8-729-620-05	TRANSISTOR	2SC2603-EF						R964	1-260-076-11	CARBON	10	5%	1/2W		
Q951	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA						< THERMISTOR >							
< RESISTOR >																
TH931 1-807-796-11 THERMISTOR																

R901	1-249-417-11	CARBON	1K	5%	1/4W											
R902	1-249-438-11	CARBON	56K	5%	1/4W											
R903	1-249-415-11	CARBON	680	5%	1/4W			*	A-4673-402-A	BD(CD) BOARD, COMPLETE						
R904	1-249-438-11	CARBON	56K	5%	1/4W					*****						
R905	1-260-103-11	CARBON	2.2K	5%	1/2W					< CAPACITOR >						
R906	1-260-103-11	CARBON	2.2K	5%	1/2W											
R907	1-260-099-11	CARBON	1K	5%	1/2W			C101	1-126-607-11	ELECT CHIP	47uF	20%	4V			
R908	1-260-099-11	CARBON	1K	5%	1/2W			C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V			
△ R909	1-212-881-11	FUSIBLE	100	5%	1/4W	F		C103	1-164-346-11	CERAMIC CHIP	1uF		16V			
△ R910	1-217-151-00	METAL PLATE	0.22			F		C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R911	1-249-417-11	CARBON	1K	5%	1/4W			C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V			
R912	1-249-431-11	CARBON	15K	5%	1/4W			C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V			
R913	1-249-441-11	CARBON	100K	5%	1/4W			C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V			
R914	1-260-076-11	CARBON	10	5%	1/2W			C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V			
R921	1-249-438-11	CARBON	56K	5%	1/4W			C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V			
R922	1-249-437-11	CARBON	47K	5%	1/4W			C111	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R923	1-249-441-11	CARBON	100K	5%	1/4W			C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R924	1-249-429-11	CARBON	10K	5%	1/4W			C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V			
R925	1-249-441-11	CARBON	100K	5%	1/4W			C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V			
R926	1-249-429-11	CARBON	10K	5%	1/4W			C115	1-126-607-11	ELECT CHIP	47uF	20%	4V			
R927	1-249-441-11	CARBON	100K	5%	1/4W			C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V			
R928	1-249-441-11	CARBON	100K	5%	1/4W			C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V			
R929	1-249-429-11	CARBON	10K	5%	1/4W			C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V			
R930	1-249-441-11	CARBON	100K	5%	1/4W			C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R931	1-249-429-11	CARBON	10K	5%	1/4W			C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V			
R932	1-249-429-11	CARBON	10K	5%	1/4W			C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R933	1-249-439-11	CARBON	68K	5%	1/4W			C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V			
R934	1-249-441-11	CARBON	100K	5%	1/4W			C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R935	1-249-441-11	CARBON	100K	5%	1/4W			C124	1-126-607-11	ELECT CHIP	47uF	20%	4V			
R941	1-249-429-11	CARBON	10K	5%	1/4W			C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V			
R942	1-249-441-11	CARBON	100K	5%	1/4W			C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R943	1-247-807-31	CARBON	100	5%	1/4W			C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V			
R944	1-249-437-11	CARBON	47K	5%	1/4W			C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V			
R945	1-249-437-11	CARBON	47K	5%	1/4W			C129	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R946	1-249-441-11	CARBON	100K	5%	1/4W			C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V			
R947	1-249-429-11	CARBON	10K	5%	1/4W			C131	1-163-038-91	CERAMIC CHIP	0.1uF		25V			
R951	1-249-417-11	CARBON	1K	5%	1/4W			C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V			
R952	1-249-438-11	CARBON	56K	5%	1/4W			C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V			
R953	1-249-415-11	CARBON	680	5%	1/4W			C134	1-164-346-11	CERAMIC CHIP	1uF		16V			
R954	1-249-438-11	CARBON	56K	5%	1/4W			C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V			
R955	1-260-103-11	CARBON	2.2K	5%	1/2W			C136	1-164-005-11	CERAMIC CHIP	0.47uF		25V			
R956	1-260-103-11	CARBON	2.2K	5%	1/2W			C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V			

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BD (CD)

BD (MD)

Ref. No.	Part No.	Description	Remark		
C139	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C140	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C145	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C147	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C148	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C150	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
< CONNECTOR >					
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P			
< IC >					
IC101	8-752-069-56	IC CXA1782BQ			
IC102	8-759-291-06	IC BA6397FP			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
< TRANSISTOR >					
Q101	8-729-010-08	TRANSISTOR MSB710-R			
Q102	8-729-424-08	TRANSISTOR UN2111			
Q103	8-729-421-22	TRANSISTOR UN2211			
< RESISTOR >					
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-093-00	METAL CHIP	68K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-083-00	METAL CHIP	27K	5%	1/10W
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL CHIP	220	5%	1/10W
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R143	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R146	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R147	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R148	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R150	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W
R152	1-216-037-00	METAL CHIP	330	5%	1/10W
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W
< VARIABLE RESISTOR >					
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K (FOCUS BIAS)			
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
RV103	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
< SWITCH >					
S101	1-572-085-11	SWITCH, LEAF (LIMIT SWITCH)			
< VIBRATOR >					
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			

*	A-4673-809-A	BD(MD) BOARD, COMPLETE			

< CAPACITOR >					
C101	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C104	1-104-913-11	TANTAL. CHIP	10uF	20%	16V

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C183	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	C184	1-107-836-11	ELECT CHIP	22uF	20%	8V
C107	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C186	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C191	1-126-395-11	ELECT	22uF	20%	16V
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C192	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C193	1-164-346-11	CERAMIC CHIP	1uF		16V
C113	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	C194	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C114	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< CONNECTOR >					
C115	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	CN101	1-766-508-11	CONNECTOR, FFC/FPC (ZIF) 22P			
C116	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	CN102	1-766-510-21	CONNECTOR, FFC/FPC 30P			
C117	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	CN103	1-766-509-21	CONNECTOR, FFC/FPC 18P			
C119	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	CN104	1-766-898-21	HOUSING, CONNECTOR(PC BOARD)4P			
C121	1-126-395-11	ELECT	22uF	20%	16V	< DIODE >					
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V	D101	8-719-988-62	DIODE 1SS355			
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D155	8-719-031-17	DIODE 1SS322-TE85L			
C124	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D161	8-719-421-15	DIODE MA8027-L			
C125	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V	D181	8-719-033-60	DIODE F1P2STP			
C126	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	D183	8-719-033-60	DIODE F1P2STP			
C127	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< IC >					
C128	1-164-232-11	CERAMIC CHIP	0.01uF		50V	IC101	8-752-072-68	IC CXA1981AR			
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	IC102	8-759-243-19	IC TC7SU04F			
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	IC121	8-752-375-36	IC CXD2535BR			
C131	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V	IC122	8-759-243-19	IC TC7SU04F			
C132	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	IC151	8-759-179-60	IC MPC17A38VMEL			
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	IC171	8-759-504-12	IC X24C01S			
C134	1-163-038-91	CERAMIC CHIP	0.1uF		25V	IC172	8-759-149-73	IC uPC842G2			
C135	1-163-038-91	CERAMIC CHIP	0.1uF		25V	IC181	8-759-095-65	IC TC74ACT540FS			
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	IC182	8-759-243-19	IC TC7SU04F			
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V	IC191	8-759-822-99	IC L88MS05T-FA			
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	< COIL >					
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	L101	1-414-234-11	INDUCTOR, FERRITE BEAD			
C151	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	L102	1-414-234-11	INDUCTOR, FERRITE BEAD			
C152	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L103	1-414-234-11	INDUCTOR, FERRITE BEAD			
C155	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V	L105	1-414-234-11	INDUCTOR, FERRITE BEAD			
C160	1-104-601-11	ELECT CHIP	10uF	20%	10V	L106	1-414-234-11	INDUCTOR, FERRITE BEAD			
C161	1-104-601-11	ELECT CHIP	10uF	20%	10V	L121	1-414-234-11	INDUCTOR, FERRITE BEAD			
C163	1-164-232-11	CERAMIC CHIP	0.01uF		50V	L122	1-412-039-51	INDUCTOR CHIP 100uH			
C164	1-164-232-11	CERAMIC CHIP	0.01uF		50V	L151	1-412-622-51	INDUCTOR 10uH			
C166	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	L152	1-412-622-51	INDUCTOR 10uH			
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L153	1-412-039-51	INDUCTOR CHIP 100uH			
C169	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	L154	1-412-039-51	INDUCTOR CHIP 100uH			
C170	1-104-913-11	TANTAL. CHIP	10uF	20%	16V	L155	1-410-980-51	INDUCTOR CHIP 1mH			
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L161	1-414-234-11	INDUCTOR, FERRITE BEAD			
C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L162	1-414-234-11	INDUCTOR, FERRITE BEAD			
C176	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	L195	1-233-316-21	FILTER, CHIP EMI			
C177	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	< TRANSISTOR >					
C178	1-163-038-91	CERAMIC CHIP	0.1uF		25V	Q101	8-729-905-12	TRANSISTOR DTA144EU			
C181	1-104-913-11	TANTAL. CHIP	10uF	20%	16V						
C182	1-163-038-91	CERAMIC CHIP	0.1uF		25V						

BD (MD)

DETECTION SW

DIGITAL

Ref. No.	Part No.	Description	Remark			
Q151	8-729-905-18	TRANSISTOR	DTC144EU			
Q162	8-729-101-07	TRANSISTOR	2SB798-DL			
Q163	8-729-905-12	TRANSISTOR	DTA144EU			
Q164	8-729-924-19	TRANSISTOR	DTA123JU			
Q181	8-729-018-75	TRANSISTOR	2SJ278MY			
Q182	8-729-017-65	TRANSISTOR	2SK1764KY			
< RESISTOR >						
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R104	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R106	1-216-133-00	METAL CHIP	3.3M	5%	1/10W	
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R110	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R113	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R114	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R116	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R117	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R120	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R121	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R122	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R124	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R125	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R128	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R129	1-216-037-00	METAL CHIP	330	5%	1/10W	
R130	1-216-041-00	METAL CHIP	470	5%	1/10W	
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R132	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R133	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R134	1-216-037-00	METAL CHIP	330	5%	1/10W	
R135	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R136	1-216-041-00	METAL CHIP	470	5%	1/10W	
R137	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R139	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R140	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R141	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R144	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R145	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R146	1-216-037-00	METAL CHIP	330	5%	1/10W	
R147	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R148	1-216-045-00	METAL CHIP	680	5%	1/10W	
R150	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R151	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R154	1-220-262-11	METAL GLAZE	680	5%	1/4W	
R155	1-220-262-11	METAL GLAZE	680	5%	1/4W	
R158	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R162	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	

Ref. No.	Part No.	Description	Remark			
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R164	1-216-045-00	METAL CHIP	680	5%	1/10W	
R165	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R166	1-220-250-11	METAL GLAZE	10	5%	1/2W	
R167	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R169	1-219-724-11	METAL CHIP	1	1%	1/4W	
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R172	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R174	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R176	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R178	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R181	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R182	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R183	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R186	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R187	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
< VARIABLE RESISTOR >						
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K (E-F BALANCE)				
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K (LASER POWER)				
< SWITCH >						
S101	1-572-467-41	SWITCH, PUSH (1 KEY)(LIMIT SWITCH)				

*	1-653-411-11	DETECTION SW BOARD				

< CONNECTOR >						
CN193	1-770-010-21	CONNECTOR, BOARD TO BOARD 4P				
< SWITCH >						
S191	1-762-149-11	SWITCH, PUSH (1 KEY) (LOAD OUT DET)				
S192	1-762-149-11	SWITCH, PUSH (1 KEY) (LOAD IN DET)				
S193	1-762-149-11	SWITCH, PUSH (1 KEY) (CHACKING IN DET)				

*	A-4390-532-A	DIGITAL BOARD, COMPLETE (US)				
*	A-4390-548-A	DIGITAL BOARD, COMPLETE (AEP,G,IT)				
*	A-4390-564-A	DIGITAL BOARD, COMPLETE (SP,HK)				
*	A-4390-729-A	DIGITAL BOARD, COMPLETE (CND)				
*	A-4390-745-A	DIGITAL BOARD, COMPLETE (UK)				

< CAPACITOR >						
C202	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C206	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C207	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C212	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C213	1-126-395-11	ELECT	22uF	20%	16V	
C271	1-163-038-91	CERAMIC CHIP	0.1uF		25V	

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
C273	1-126-395-11	ELECT	22uF	20%	16V	C361	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C274	1-163-031-11	CERAMIC CHIP	0.01uF		50V	C362	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C275	1-163-091-00	CERAMIC CHIP	8PF		50V						
C276	1-163-091-00	CERAMIC CHIP	8PF		50V	C363	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
						C364	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C280	1-126-204-11	ELECT CHIP	47uF	20%	16V	C365	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C281	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C366	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C282	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C367	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C284	1-163-091-00	CERAMIC CHIP	8PF		50V						
C285	1-126-204-11	ELECT CHIP	47uF	20%	16V	C368	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C369	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C286	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C370	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C287	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C371	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C301	1-126-395-11	ELECT	22uF	20%	16V	C372	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C302	1-126-395-11	ELECT	22uF	20%	16V						
C303	1-126-204-11	ELECT CHIP	47uF	20%	16V	C411	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
						C412	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C304	1-126-204-11	ELECT CHIP	47uF	20%	16V	C413	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C414	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C415	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C307	1-163-117-00	CERAMIC CHIP	100PF	5%	50V						
C308	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C416	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C417	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C309	1-126-395-11	ELECT	22uF	20%	16V	C418	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C310	1-126-395-11	ELECT	22uF	20%	16V	C420	1-126-204-11	ELECT CHIP	47uF	20%	16V
C311	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	C421	1-163-091-00	CERAMIC CHIP	8PF		50V
C312	1-163-001-11	CERAMIC CHIP	220PF	10%	50V						
C313	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C423	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
						C424	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C314	1-126-204-11	ELECT CHIP	47uF	20%	16V	C431	1-164-346-11	CERAMIC CHIP	1uF		16V
C315	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C471	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C316	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C472	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C317	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V						
C318	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C473	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C474	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C319	1-126-204-11	ELECT CHIP	47uF	20%	16V	C475	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C320	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C477	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C321	1-126-204-11	ELECT CHIP	47uF	20%	16V						
C322	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< CONNECTOR >					
C323	1-163-038-91	CERAMIC CHIP	0.1uF		25V	CN202	1-774-031-21	CONNECTOR, FFC/FPC 30P			
						CN221	1-774-030-21	CONNECTOR, FFC/FPC 18P			
C326	1-163-038-91	CERAMIC CHIP	0.1uF		25V	CN223	1-774-333-21	CONNECTOR, FFC/FPC 21P			
C327	1-126-204-11	ELECT CHIP	47uF	20%	16V	CN251	1-774-180-11	PIN, CONNECTOR (PC BOARD) 6P			
C328	1-163-038-91	CERAMIC CHIP	0.1uF		25V	CN281	1-774-863-11	PIN, CONNECTOR (PC BOARD) 8P			
C329	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C331	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< DIODE >					
						D301	8-719-914-42	DIODE DA204K			
C332	1-126-204-11	ELECT CHIP	47uF	20%	16V	D302	8-719-914-42	DIODE DA204K			
C333	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D303	8-719-056-15	DIODE F01J4L			
C334	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D304	8-719-056-15	DIODE F01J4L			
C341	1-163-038-91	CERAMIC CHIP	0.1uF		25V	D341	8-719-056-15	DIODE F01J4L			
C342	1-126-204-11	ELECT CHIP	47uF	20%	16V						
						D411	8-719-974-98	DIODE HVM17-01			
C343	1-163-038-91	CERAMIC CHIP	0.1uF		25V	< FERRITE BEAD >					
C344	1-126-395-11	ELECT CHIP	22uF	20%	16V	FB272	1-550-907-21	BEAD, FERRITE (CHIP)			
C351	1-163-038-91	CERAMIC CHIP	0.1uF		25V	FB274	1-216-295-91	METAL GLAZE	0	5%	1/10W
C352	1-126-204-11	ELECT CHIP	47uF	20%	16V	FB341	1-216-295-91	METAL GLAZE	0	5%	1/10W
C353	1-163-038-91	CERAMIC CHIP	0.1uF		25V	FB411	1-216-295-91	METAL GLAZE	0	5%	1/10W
C354	1-126-204-11	ELECT CHIP	47uF	20%	16V						
C355	1-163-038-91	CERAMIC CHIP	0.1uF		25V						
C356	1-126-204-11	ELECT CHIP	47uF	20%	16V						

DIGITAL

Ref. No.	Part No.	Description	Remark		
FB412	1-216-295-91	METAL GLAZE 0	5%	1/10W	
FB471	1-216-295-91	METAL GLAZE 0	5%	1/10W	
< IC >					
IC201	8-759-394-99	IC M37610MD-068FP			
IC271	8-752-371-17	IC CXD2536R			
IC272	8-759-382-21	IC M5M44400BJ-7-L2			
IC301	8-759-352-63	IC CXD8566M			
IC302	8-759-352-59	IC CXA8054M			
IC341	8-759-362-47	IC CXD8567AM			
IC342	8-759-981-48	IC TL082M			
IC343	8-759-981-48	IC TL082M			
IC401	8-759-243-19	IC TC7SU04F			
IC411	8-759-158-96	IC TC9246F-TP1			
IC412	8-759-242-70	IC TC7WU04F			
IC431	8-759-040-83	IC BA6287F			
< COIL >					
L221	1-550-907-21	BEAD, FERRITE (CHIP)			
L341	1-550-907-21	BEAD, FERRITE (CHIP)			
L344	1-550-907-21	BEAD, FERRITE (CHIP)			
L411	1-412-332-41	INDUCTOR 2.2uH			
L412	1-550-907-21	BEAD, FERRITE (CHIP)			
< RESISTOR >					
R204	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R206	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R209	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R214	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R216	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R221	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R223	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R226	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R229	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R230	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R231	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R233	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R234	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R236	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R237	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R239	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R240	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R241	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R242	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R243	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R244	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R245	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R246	1-216-065-00	METAL CHIP 4.7K	5%	1/10W	
R247	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R248	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R249	1-216-073-00	METAL CHIP 10K	5%	1/10W	

Ref. No.	Part No.	Description	Remark		
R250	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R251	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R252	1-216-073-00	METAL CHIP 10K	5%	1/10W	
R253	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	
R254	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	
R255	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	
R256	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	
R257	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R258	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R271	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R272	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R273	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R274	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R275	1-216-097-91	METAL GLAZE 100K	5%	1/10W	
R276	1-216-037-00	METAL CHIP 330	5%	1/10W	
R277	1-216-033-00	METAL CHIP 220	5%	1/10W	
R278	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R279	1-216-295-91	METAL GLAZE 0	5%	1/10W	
R280	1-216-295-91	METAL GLAZE 0	5%	1/10W	
R281	1-216-041-00	METAL CHIP 470	5%	1/10W	
R282	1-216-025-91	METAL GLAZE 100	5%	1/10W	
R283	1-216-033-00	METAL CHIP 220	5%	1/10W	
R284	1-216-063-91	METAL GLAZE 3.9K	5%	1/10W	
R285	1-216-049-91	METAL GLAZE 1K	5%	1/10W	
R286	1-216-295-91	METAL GLAZE 0	5%	1/10W	
R287	1-216-295-91	METAL GLAZE 0	5%	1/10W	
R288	1-216-295-91	METAL GLAZE 0	5%	1/10W	
R301	1-216-081-00	METAL CHIP 22K	5%	1/10W	
R302	1-216-081-00	METAL CHIP 22K	5%	1/10W	
R303	1-216-081-00	METAL CHIP 22K	5%	1/10W	
R304	1-216-081-00	METAL CHIP 22K	5%	1/10W	
R305	1-216-017-91	METAL GLAZE 47	5%	1/10W	
R306	1-216-017-91	METAL GLAZE 47	5%	1/10W	
R307	1-216-017-91	METAL GLAZE 47	5%	1/10W	
R308	1-216-033-00	METAL CHIP 220	5%	1/10W	
R341	1-216-041-00	METAL GLAZE 470	5%	1/10W	
R361	1-216-687-11	METAL CHIP 33K	0.5%	1/10W	
R362	1-216-687-11	METAL CHIP 33K	0.5%	1/10W	
R363	1-208-814-11	METAL CHIP 22K	0.50%	1/10W	
R364	1-208-814-11	METAL CHIP 22K	0.50%	1/10W	
R365	1-216-687-11	METAL CHIP 33K	0.5%	1/10W	
R366	1-216-687-11	METAL CHIP 33K	0.5%	1/10W	
R367	1-208-814-11	METAL CHIP 22K	0.50%	1/10W	
R368	1-208-814-11	METAL CHIP 22K	0.50%	1/10W	
R369	1-216-695-11	METAL CHIP 68K	0.5%	1/10W	
R370	1-216-695-11	METAL CHIP 68K	0.5%	1/10W	
R371	1-216-695-11	METAL CHIP 68K	0.5%	1/10W	
R372	1-216-695-11	METAL CHIP 68K	0.5%	1/10W	
R373	1-208-810-11	METAL CHIP 15K	0.50%	1/10W	
R374	1-208-810-11	METAL CHIP 15K	0.50%	1/10W	
R375	1-208-810-11	METAL CHIP 15K	0.50%	1/10W	
R376	1-208-810-11	METAL CHIP 15K	0.50%	1/10W	

Ref. No.	Part No.	Description	Remark
R401	1-550-907-21	BEAD, FERRITE (CHIP)	
R402	1-216-295-91	METAL GLAZE 0	5% 1/10W
R410	1-550-907-21	BEAD, FERRITE (CHIP)	
R411	1-208-810-11	METAL CHIP 15K	0.50% 1/10W
R412	1-208-810-11	METAL CHIP 15K	0.50% 1/10W
R413	1-208-810-11	METAL CHIP 15K	0.50% 1/10W
R414	1-208-810-11	METAL CHIP 15K	0.50% 1/10W
R415	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R416	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R417	1-216-121-91	METAL GLAZE 1M	5% 1/10W
R418	1-216-041-00	METAL GLAZE 470	5% 1/10W
R420	1-216-295-91	METAL GLAZE 0	5% 1/10W
R431	1-216-021-00	METAL CHIP 68	5% 1/10W
R432	1-216-021-00	METAL CHIP 68	5% 1/10W
R461	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R601	1-216-025-91	METAL GLAZE 100	5% 1/10W
R604	1-216-073-00	METAL CHIP 10K	5% 1/10W
R610	1-550-907-21	BEAD, FERRITE (CHIP)	
R611	1-550-907-21	BEAD, FERRITE (CHIP)	
R612	1-550-907-21	BEAD, FERRITE (CHIP)	
R613	1-550-907-21	BEAD, FERRITE (CHIP)	
R614	1-216-295-91	METAL GLAZE 0	5% 1/10W
R615	1-550-907-21	BEAD, FERRITE (CHIP)	
R616	1-550-907-21	BEAD, FERRITE (CHIP)	
R617	1-550-907-21	BEAD, FERRITE (CHIP)	
R619	1-550-907-21	BEAD, FERRITE (CHIP)	
R620	1-550-907-21	BEAD, FERRITE (CHIP)	
R621	1-550-907-21	BEAD, FERRITE (CHIP)	
R623	1-550-907-21	BEAD, FERRITE (CHIP)	
R624	1-550-907-21	BEAD, FERRITE (CHIP)	
R625	1-550-907-21	BEAD, FERRITE (CHIP)	
R626	1-550-907-21	BEAD, FERRITE (CHIP)	
R627	1-216-025-91	METAL GLAZE 100	5% 1/10W
R630	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R631	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R632	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R633	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R634	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R635	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R640	1-550-907-21	BEAD, FERRITE (CHIP)	
R641	1-550-907-21	BEAD, FERRITE (CHIP)	
R642	1-550-907-21	BEAD, FERRITE (CHIP)	
R643	1-550-907-21	BEAD, FERRITE (CHIP)	
R644	1-550-907-21	BEAD, FERRITE (CHIP)	
R646	1-550-907-21	BEAD, FERRITE (CHIP)	
< VIBRATOR >			
X201	1-760-493-11	VIBRATOR, CERAMIC (CHIP TYPE)(8MHz)	
X203	1-760-841-11	VIBRATOR, CRYSTAL (45.1584MHz)	

Ref. No.	Part No.	Description	Remark
*	1-661-322-11	DISPLAY BOARD *****	
*	4-980-523-01	HOLDER (FL) < CAPACITOR >	
C501	1-124-261-00	ELECT 10uF	20% 50V
C537	1-163-025-11	CERAMIC CHIP 0.001uF	50V
C538	1-163-025-11	CERAMIC CHIP 0.001uF	50V
C539	1-163-025-11	CERAMIC CHIP 0.001uF	50V
C540	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C541	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C542	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C543	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C544	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C545	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C546	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C547	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C548	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C549	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C550	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C551	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C552	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C553	1-124-261-00	ELECT 10uF	20% 50V
C554	1-124-234-00	ELECT 22uF	20% 16V
C555	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C559	1-163-025-11	CERAMIC CHIP 0.001uF	50V
C560	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C561	1-124-261-00	ELECT 10uF	20% 50V
C562	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C701	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C702	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C703	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C704	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C705	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C706	1-163-031-11	CERAMIC CHIP 0.01uF	50V
< CONNECTOR >			
CN551	1-568-802-11	SOCKET, CONNECTOR 19P	
* CN701	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN702	1-564-339-00	PIN, CONNECTOR 5P	
* CN705	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
< DIODE >			
D501	8-719-045-69	DIODE MA5062-(TX)	
D701	8-719-422-31	DIODE MA8047-M	
D702	8-719-421-36	DIODE MA8036-L	
< INDICATOR TUBE >			
FL501	1-517-520-11	INDICATOR TUBE, FLUORESCENT	

Ref. No.	Part No.	Description	Remark			
< IC >						
IC501	8-759-297-23	IC M66004M8FP				
IC701	8-759-822-09	IC LB1641				
IC702	8-759-822-09	IC LB1641				
< JUMPER RESISTOR >						
JW713	1-216-295-91	CONDUCTOR, CHIP				
JW714	1-216-295-91	CONDUCTOR, CHIP				
JW715	1-216-295-91	CONDUCTOR, CHIP				
< TRANSISTOR >						
Q501	8-729-107-43	TRANSISTOR 2SC3624-L18				
Q502	8-729-107-43	TRANSISTOR 2SC3624-L18				
Q503	8-729-107-43	TRANSISTOR 2SC3624-L18				
< RESISTOR >						
R501	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R502	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R503	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R505	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R506	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R507	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R508	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R509	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R551	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R552	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R553	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R554	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R585	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R586	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R587	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R588	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R704	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R705	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R706	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R707	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R710	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R714	1-216-041-00	METAL CHIP	470	5%	1/10W	
R715	1-216-041-00	METAL CHIP	470	5%	1/10W	

*	1-661-325-11	HP BOARD				

< CAPACITOR >						
C719	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C720	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C722	1-165-319-11	CERAMIC CHIP	0.1uF		50V	


Ref. No.	Part No.	Description	Remark			
< JACK >						
J701	1-691-293-41	JACK (㊦)				
< RESISTOR >						
R526	1-216-075-00	METAL CHIP	12K	5%	1/10W	
< SWITCH >						
S526	1-554-303-21	SWITCH, TACTILE (㊦ CD)	*****			
*	1-661-329-11	IR BOARD	*****			
< CAPACITOR >						
C591	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
< IC >						
IC503	8-749-923-80	IC GP1U90XB				
< RESISTOR >						
R534	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R591	1-216-295-91	CONDUCTOR,	CHIP			
R592	1-216-295-91	CONDUCTOR,	CHIP			
< SWITCH >						
S534	1-554-303-21	SWITCH, TACTILE (㊦ MD)	*****			
*	1-634-461-11	LOADING BOARD	*****			
< CONNECTOR >						
* CN291	1-564-498-11	PIN, CONNECTOR 5P				
< SWITCH >						
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)				
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	*****			
*	A-4390-518-A	MAIN BOARD, COMPLETE (US)				
*	A-4390-534-A	MAIN BOARD, COMPLETE (AEP,G,IT)				
*	A-4390-550-A	MAIN BOARD, COMPLETE (SP,HK)				
*	A-4390-715-A	MAIN BOARD, COMPLETE (CND)				
*	A-4390-731-A	MAIN BOARD, COMPLETE (UK)	*****			
	1-537-770-21	TERMINAL BOARD, GROUND				
< CAPACITOR >						
C101	1-126-059-11	ELECT	10uF	20%	63V	
C102	1-126-059-11	ELECT	10uF	20%	63V	
C103	1-124-907-11	ELECT	10uF	20%	50V	

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C104	1-124-907-11	ELECT	10uF	20%	50V	C320	1-164-159-21	CERAMIC	0.1uF		50V
C105	1-126-059-11	ELECT	10uF	20%	63V	C801	1-126-224-11	ELECT	4700uF	20%	42V
						C802	1-126-224-11	ELECT	4700uF	20%	42V
C106	1-137-367-11	FILM	0.0033uF	5%	50V	C803	1-136-165-00	FILM	0.1uF	5%	50V
C107	1-126-059-11	ELECT	10uF	20%	63V	C804	1-136-165-00	FILM	0.1uF	5%	50V
C108	1-136-171-00	FILM	0.33uF	5%	50V						
C109	1-126-059-11	ELECT	10uF	20%	63V	C811	1-126-943-11	ELECT	2200uF	20%	25V
C110	1-124-907-11	ELECT	10uF	20%	50V	C812	1-164-159-21	CERAMIC	0.1uF		50V
						C813	1-164-159-21	CERAMIC	0.1uF		50V
C112	1-126-059-11	ELECT	10uF	20%	63V	C814	1-164-159-21	CERAMIC	0.1uF		50V
C113	1-164-159-21	CERAMIC	0.1uF		50V	C815	1-126-941-11	ELECT	470uF	20%	16V
C114	1-162-306-11	CERAMIC	0.01uF	30%	16V						
C115	1-162-306-11	CERAMIC	0.01uF	30%	16V	C816	1-164-159-21	CERAMIC	0.1uF		50V
C116	1-162-306-11	CERAMIC	0.01uF	30%	16V	C817	1-124-907-11	ELECT	10uF	20%	50V
						C818	1-104-664-11	ELECT	47uF	20%	25V
C117	1-164-159-21	CERAMIC	0.1uF		50V	C819	1-124-907-11	ELECT	10uF	20%	50V
C119	1-164-159-21	CERAMIC	0.1uF		50V	C821	1-115-582-11	ELECT	27000uF	20%	16
C123	1-126-059-11	ELECT	10uF	20%	63V						
C124	1-124-907-11	ELECT	10uF	20%	50V	C822	1-164-159-21	CERAMIC	0.1uF		50V
C127	1-124-907-11	ELECT	10uF	20%	50V	C823	1-164-159-21	CERAMIC	0.1uF		50V
						C824	1-104-664-11	ELECT	47uF	20%	25V
C141	1-130-479-00	FILM	0.0047uF	5%	50V	C825	1-124-443-00	ELECT	100uF	20%	10V
C142	1-164-159-21	CERAMIC	0.1uF		50V	C826	1-124-443-00	ELECT	100uF	20%	10V
C151	1-130-475-00	FILM	0.0022uF	5%	50V						
C201	1-124-907-11	ELECT	10uF	20%	50V	C827	1-126-059-11	ELECT	10uF	20%	63V
C202	1-126-059-11	ELECT	10uF	20%	63V	C828	1-124-443-00	ELECT	100uF	20%	10V
						C829	1-124-472-11	ELECT	470uF	20%	10V
C203	1-124-907-11	ELECT	10uF	20%	50V	C835	1-124-443-00	ELECT	100uF	20%	10V
C204	1-124-907-11	ELECT	10uF	20%	50V	C836	1-124-443-00	ELECT	100uF	20%	10V
C205	1-126-059-11	ELECT	10uF	20%	63V						
C206	1-137-367-11	FILM	0.0033uF	5%	50V	C838	1-164-159-21	CERAMIC	0.1uF		50V
C207	1-126-059-11	ELECT	10uF	20%	63V	C841	1-164-159-21	CERAMIC	0.1uF		50V
						C842	1-124-907-11	ELECT	10uF	20%	50V
C208	1-136-171-00	FILM	0.33uF	5%	50V	C851	1-125-507-11	CAPACITOR	0.22F		5.5V
C209	1-126-059-11	ELECT	10uF	20%	63V	C852	1-110-489-11	CAPACITOR	1F		5.5V
C210	1-124-907-11	ELECT	10uF	20%	50V						
C219	1-164-159-21	CERAMIC	0.1uF		50V	C853	1-124-443-00	ELECT	100uF	20%	10V
C223	1-126-059-11	ELECT	10uF	20%	63V	C854	1-136-165-00	FILM	0.1uF	5%	50V
						C855	1-164-159-21	CERAMIC	0.1uF		50V
C227	1-124-907-11	ELECT	10uF	20%	50V	C861	1-104-665-11	ELECT	100uF	20%	16V
C241	1-130-479-00	FILM	0.0047uF	5%	50V	C862	1-124-903-11	ELECT	1uF	20%	50V
C251	1-130-475-00	FILM	0.0022uF	5%	50V						
C301	1-162-206-31	CERAMIC	20PF	5%	50V	C863	1-162-294-31	CERAMIC	0.001uF	10%	50V
C302	1-162-206-31	CERAMIC	20PF	5%	50V	C871	1-164-159-21	CERAMIC	0.1uF		50V
						C880	1-124-261-00	ELECT	10uF	20%	50V
C303	1-164-159-21	CERAMIC	0.1uF		50V	C881	1-124-261-00	ELECT	10uF	20%	50V
C304	1-164-159-21	CERAMIC	0.1uF		50V	C882	1-124-261-00	ELECT	10uF	20%	50V
C306	1-164-159-21	CERAMIC	0.1uF		50V						
C307	1-164-159-21	CERAMIC	0.1uF		50V	C9003	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C308	1-164-159-21	CERAMIC	0.1uF		50V						
						< CONNECTOR >					
C309	1-164-159-21	CERAMIC	0.1uF		50V	* CN101	1-564-512-11	PLUG, CONNECTOR 9P			
C310	1-164-159-21	CERAMIC	0.1uF		50V	CN102	1-564-511-11	PLUG, CONNECTOR 8P			
C311	1-164-159-21	CERAMIC	0.1uF		50V	* CN103	1-568-856-11	SOCKET, CONNECTOR 13P			
C313	1-162-294-31	CERAMIC	0.001uF	10%	50V	* CN104	1-568-834-11	SOCKET, CONNECTOR 15P			
C314	1-162-294-31	CERAMIC	0.001uF	10%	50V	CN105	1-770-067-11	CONNECTOR, FFC/FPC 19P			
C315	1-162-294-31	CERAMIC	0.001uF	10%	50V	* CN106	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
C316	1-162-294-31	CERAMIC	0.001uF	10%	50V	CN107	1-568-802-11	SOCKET, CONNECTOR 19P			
C317	1-162-282-31	CERAMIC	100PF	10%	50V	CN109	1-770-649-11	CONNECTOR, FFC/FPC 21P			
C318	1-136-177-00	FILM	1uF	5%	50V	CN110	1-568-802-11	SOCKET, CONNECTOR 19P			
C319	1-124-907-11	ELECT	10uF	20%	50V						

MAIN

Ref. No.	Part No.	Description	Remark
CN111	1-564-506-11	PLUG, CONNECTOR 3P	
* CN112	1-564-506-11	PLUG, CONNECTOR 3P	
* CN113	1-564-506-11	PLUG, CONNECTOR 3P	
< DIODE >			
D301	8-719-987-63	DIODE 1N4148M	
D801	8-719-500-56	DIODE D3SBA20	
D811	8-719-200-82	DIODE 11ES2	
D812	8-719-200-82	DIODE 11ES2	
D813	8-719-200-82	DIODE 11ES2	
D814	8-719-200-82	DIODE 11ES2	
D815	8-719-010-39	DIODE UZ-5.1BSC	
D821	8-719-500-56	DIODE D3SBA20	
D822	8-719-987-63	DIODE 1N4148M	
D825	8-719-200-82	DIODE 11ES2	
D826	8-719-987-63	DIODE 1N4148M	
D841	8-719-934-13	DIODE HZS24-1L	
D842	8-719-910-25	DIODE HZ12B2L	
D851	8-719-200-82	DIODE 11ES2	
D852	8-719-200-82	DIODE 11ES2	
D853	8-719-200-82	DIODE 11ES2	
D854	8-719-987-63	DIODE 1N4148M	
D855	8-719-987-63	DIODE 1N4148M	
D856	8-719-987-63	DIODE 1N4148M	
D861	8-719-987-63	DIODE 1N4148M	
D862	8-719-987-63	DIODE 1N4148M	
D863	8-719-987-63	DIODE 1N4148M	
D871	8-719-987-63	DIODE 1N4148M	
D872	8-719-987-63	DIODE 1N4148M	
< FERRITE BEAD >			
FB101	1-410-397-21	FERRITE BEAD 1.1uH	
FB102	1-410-397-21	FERRITE BEAD 1.1uH	
< FUSE >			
△F821	1-532-782-11	FUSE, MICHRO (4A 125V)(US,CND)	
△F822	1-532-782-11	FUSE, MICHRO (4A 125V)(US,CND)	
< IC >			
IC001	8-759-390-50	IC uPC2408AHF	
IC002	8-759-390-50	IC uPC2408AHF	
IC101	8-752-074-41	IC CXA1946AQ	
IC301	8-759-426-06	IC uPD78058GC-243-3B9	
IC811	8-759-604-39	IC M5F78M12	
IC821	8-759-290-19	IC BA3960	
IC831	8-759-290-19	IC BA3960	
IC851	8-759-327-15	IC M62005L	
IC852	8-759-165-80	IC PST600C-T	
< IC LINK >			
△ICP821	1-532-845-21	LINC, IC (4A 250V)(AEP,UK,G,IT,SP,HK)	

Ref. No.	Part No.	Description	Remark
△ICP822	1-532-845-21	LINC, IC (4A 250V)(AEP,UK,G,IT,SP,HK)	
< JUMPER RESISTOR >			
JW130	1-162-306-11	CERAMIC 0.01uF 30% 16V	
JW144	1-249-429-11	CARBON 10K 5% 1/4W	
JW145	1-249-429-11	CARBON 10K 5% 1/4W	
JW240	1-410-509-11	INDUCTOR 10uH	
< COIL >			
L301	1-410-521-11	INDUCTOR 100uH	
< TRANSISTOR >			
Q121	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q122	8-729-900-63	TRANSISTOR DTA124ES	
Q131	8-729-422-73	TRANSISTOR UN4212	
Q132	8-729-900-63	TRANSISTOR DTA124ES	
Q133	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q221	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q231	8-729-422-73	TRANSISTOR UN4212	
Q233	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q811	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q812	8-729-900-63	TRANSISTOR DTA124ES	
Q821	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q822	8-729-900-63	TRANSISTOR DTA124ES	
Q823	8-729-900-63	TRANSISTOR DTA124ES	
Q841	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q842	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q851	8-729-422-73	TRANSISTOR UN4212	
Q852	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q871	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q872	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q873	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q874	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
R101	1-249-441-11	CARBON 100K 5% 1/4W	
R103	1-247-807-31	CARBON 100 5% 1/4W	
R111	1-249-417-11	CARBON 1K 5% 1/4W	
R112	1-249-419-11	CARBON 1.5K 5% 1/4W	
R125	1-249-429-11	CARBON 10K 5% 1/4W	(US,CND,SP,HK)
R126	1-249-417-11	CARBON 1K 5% 1/4W	
R127	1-249-417-11	CARBON 1K 5% 1/4W	
R128	1-249-417-11	CARBON 1K 5% 1/4W	
R129	1-249-441-11	CARBON 100K 5% 1/4W	
R131	1-249-429-11	CARBON 10K 5% 1/4W	
R132	1-249-429-11	CARBON 10K 5% 1/4W	
R133	1-249-441-11	CARBON 100K 5% 1/4W	
R134	1-249-417-11	CARBON 1K 5% 1/4W	
R141	1-249-415-11	CARBON 680 5% 1/4W	
R142	1-249-431-11	CARBON 15K 5% 1/4W	

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

MOTOR

MOTOR (LID)

SENSOR

SWITCH (L)

SWITCH (LID)

Ref. No.	Part No.	Description	Remark
*	1-653-412-11	MOTOR BOARD *****	
		< CAPACITOR >	
C199	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN191	1-568-944-11	PIN, CONNECTOR 6P	
CN192	1-770-011-41	CONNECTOR, BOARD TO BOARD 4P	

*	1-661-326-11	MOTOR (LID) BOARD *****	
		< CAPACITOR >	
C723	1-165-319-11	CERAMIC CHIP 0.1uF	50V
		< CONNECTOR >	
* CN704	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	

*	1-661-335-11	SENSOR BOARD *****	
*	4-980-529-01	HOLDER (SENSOR)	
		< CONNECTOR >	
* CN706	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< DIODE >	
D901	8-719-029-95	DIODE TLN117	
		< TRANSISTOR >	
Q901	8-729-018-23	TRANSISTOR TPS626	
		< RESISTOR >	
R711	1-216-073-00	METAL CHIP 10K	5% 1/10W
R712	1-216-041-00	METAL CHIP 470	5% 1/10W

*	1-661-324-11	SWITCH (L) BOARD *****	
		< CAPACITOR >	
C594	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C595	1-163-038-91	CERAMIC CHIP 0.1uF	25V
		< CONNECTOR >	
* CN504	1-770-642-11	CONNECTOR, FFC/FPC 11P	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D521	8-719-048-97	DIODE SEL6910A-TP5 (ENTER YES)	
		< COIL >	
L701	1-216-296-91	CONDUCTOR, CHIP	
L702	1-216-296-91	CONDUCTOR, CHIP	
L703	1-216-296-91	CONDUCTOR, CHIP	
		< RESISTOR >	
R511	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R512	1-216-041-00	METAL CHIP 470	5% 1/10W
R513	1-216-045-00	METAL CHIP 680	5% 1/10W
R514	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R515	1-216-053-00	METAL CHIP 1.5K	5% 1/10W
R516	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R517	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R518	1-216-075-00	METAL CHIP 12K	5% 1/10W
R523	1-216-053-00	METAL CHIP 1.5K	5% 1/10W
R524	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R525	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R584	1-216-029-00	METAL CHIP 150	5% 1/10W
R593	1-216-295-91	METAL GLAZE 0	5% 1/10W
R594	1-216-295-92	METAL GLAZE 0	5% 1/10W
		< SWITCH >	
S511	1-554-303-21	SWITCH, TACTILE (POWER)	
S512	1-554-303-21	SWITCH, TACTILE (ENTER YES)	
S513	1-554-303-21	SWITCH, TACTILE (EDIT NO)	
S514	1-554-303-21	SWITCH, TACTILE (TUNING PLAY MODE)	
S515	1-554-303-21	SWITCH, TACTILE (STEREO/MONO REPEAT)	
S516	1-554-303-21	SWITCH, TACTILE (BALANCE)	
S517	1-554-303-21	SWITCH, TACTILE (CHARACTER)	
S518	1-554-303-21	SWITCH, TACTILE (BASS/TREBLE)	
S523	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S524	1-554-303-21	SWITCH, TACTILE (TIMER SELECT)	
S525	1-554-303-21	SWITCH, TACTILE (TIMER SET)	

*	1-661-327-11	SWITCH (LID) BOARD *****	
		< CONNECTOR >	
* CN703	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
		< RESISTOR >	
R701	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R702	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R703	1-216-049-91	METAL GLAZE 1K	5% 1/10W
		< SWITCH >	
S701	1-762-010-11	SWITCH, LEVER (LID OPEN)	

SWITCH (LID)						SWITCH (R)				TERMINAL			
Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark		
S702	1-762-010-11	SWITCH, LEVER (LID CLOSE)				R538	1-216-049-91	METAL GLAZE	1K	5%	1/10W		
S703	1-762-010-11	SWITCH, LEVER (LID SHUT)											

*	1-661-323-11	SWITCH (R) BOARD				R539	1-216-053-00	METAL CHIP	1.5K	5%	1/10W		
		*****				R543	1-216-073-00	METAL CHIP	10K	5%	1/10W		
		< CAPACITOR >				R544	1-216-073-00	METAL CHIP	10K	5%	1/10W		
C570	1-163-025-11	CERAMIC CHIP	0.001uF	50V		R550	1-216-033-00	METAL CHIP	220	5%	1/10W		
C571	1-163-025-11	CERAMIC CHIP	0.001uF	50V		R558	1-216-033-00	METAL CHIP	220	5%	1/10W		
C572	1-165-319-11	CERAMIC CHIP	0.1uF	50V									
C575	1-165-319-11	CERAMIC CHIP	0.1uF	50V		R570	1-216-025-91	METAL GLAZE	100	5%	1/10W		
C576	1-165-319-11	CERAMIC CHIP	0.1uF	50V		R571	1-216-025-91	METAL GLAZE	100	5%	1/10W		
C593	1-163-031-11	CERAMIC CHIP	0.01uF	50V		R572	1-216-025-91	METAL GLAZE	100	5%	1/10W		
		< CONNECTOR >				R573	1-216-025-91	METAL GLAZE	100	5%	1/10W		
* CN501	1-568-862-11	SOCKET, CONNECTOR 19P				R575	1-216-033-00	METAL CHIP	220	5%	1/10W		
CN502	1-774-758-11	CONNECTOR, FFC/FPC 11P											
		< DIODE >				R578	1-216-033-00	METAL CHIP	220	5%	1/10W		
D506	8-719-048-97	LED	SEL6910A-TP5 (+▶▶▶I)			R579	1-216-025-91	METAL GLAZE	100	5%	1/10W		
D509	8-719-048-97	LED	SEL6910A-TP5 (I◀◀◀-)			R580	1-216-025-91	METAL GLAZE	100	5%	1/10W		
D511	8-719-032-38	LED	SEL6110R-TP5 (MD)			R581	1-216-033-00	METAL CHIP	220	5%	1/10W		
D513	8-719-048-97	LED	SEL6910A-TP5 (+▶▶▶I)			R583	1-216-033-00	METAL CHIP	220	5%	1/10W		
D515	8-719-032-38	LED	SEL6110R-TP5 (TUNER BAND)										
D516	8-719-048-97	LED	SEL6910A-TP5 (REC PAUSE)			R589	1-216-097-91	METAL GLAZE	100K	5%	1/10W		
D517	8-719-032-38	LED	SEL6110R-TP5 (TAPE)										
D518	8-719-032-38	LED	SEL6110R-TP5 (CD)										
D520	8-719-048-97	LED	SEL6910A-TP5 (I◀◀◀-)										
		< IC >											
IC502	8-759-636-56	IC M66311FP											
		< PHOTO INTERRUPTER >											
PH501	8-719-980-75	PHOTO INTRRUPTER GP2S24-C											
PH502	8-719-980-75	PHOTO INTRRUPTER GP2S24-C											
		< RESISTOR >											
R519	1-216-061-00	METAL CHIP	3.3K	5%	1/10W								
R520	1-216-041-00	METAL CHIP	470	5%	1/10W								
R521	1-216-045-00	METAL CHIP	680	5%	1/10W								
R522	1-216-049-91	METAL GLAZE	1K	5%	1/10W								
R527	1-216-061-00	METAL CHIP	3.3K	5%	1/10W								
R528	1-216-041-00	METAL CHIP	470	5%	1/10W								
R529	1-216-045-00	METAL CHIP	680	5%	1/10W								
R530	1-216-049-91	METAL GLAZE	1K	5%	1/10W								
R531	1-216-053-00	METAL CHIP	1.5K	5%	1/10W								
R532	1-216-057-00	METAL CHIP	2.2K	5%	1/10W								
R533	1-216-065-00	METAL CHIP	4.7K	5%	1/10W								
R535	1-216-061-00	METAL CHIP	3.3K	5%	1/10W								
R536	1-216-041-00	METAL CHIP	470	5%	1/10W								
R537	1-216-045-00	METAL CHIP	680	5%	1/10W								
								</					

TERMINAL

TRANSFORMER

TUNER

Ref. No.	Part No.	Description	Remark			
< CONNECTOR >						
CN601	1-770-722-11	CONNECTOR, BOARD TO BOARD 6P				
* CN602	1-568-832-11	SOCKET, CONNECTOR 13P				
< DIODE >						
D631	8-719-987-63	DIODE 1N4148M				
D641	8-719-987-63	DIODE 1N4148M				
D642	8-719-987-63	DIODE 1N4148M				
< JACK >						
J601	1-770-720-11	JACK, PIN 4P (LINE IN/OUT)				
< TRANSISTOR >						
Q631	8-729-620-05	TRANSISTOR 2SC2603-EF				
< RESISTOR >						
R612	1-249-441-11	CARBON	100K	5%	1/4W	
R621	1-249-417-11	CARBON	1K	5%	1/4W	
R622	1-249-417-11	CARBON	1K	5%	1/4W	
R632	1-249-429-11	CARBON	10K	5%	1/4W	
R641	1-249-441-11	CARBON	100K	5%	1/4W	
R642	1-249-441-11	CARBON	100K	5%	1/4W	
R643	1-249-441-11	CARBON	100K	5%	1/4W	
R662	1-249-441-11	CARBON	100K	5%	1/4W	
R671	1-249-417-11	CARBON	1K	5%	1/4W	
R672	1-249-417-11	CARBON	1K	5%	1/4W	
< RELAY >						
RY601	1-515-921-11	RELAY (12V)				
< TERMINAL >						
TB601	1-694-091-11	TERMINAL BOARD (SPEAKER)				

*	1-661-332-11	TRANSFORMER BOARD				

< CONNECTOR >						
* CN803	1-580-445-11	PIN, CONNECTOR 3P				
* CN804	1-564-512-11	PLUG, CONNECTOR 9P				
< RESISTOR >						
△ R830	1-202-725-00	SOLID	3.3M	10%	1/2W	(US,CND)
< TRANSFORMER >						
△ T801	1-429-663-11	TRANSFORMER POWER (US,CND)				
△ T801	1-429-661-11	TRANSFORMER POWER (AEP,UK,G,IT)				
△ T801	1-429-662-11	TRANSFORMER POWER (SP,HK)				

Ref. No.	Part No.	Description	Remark		
*	1-661-333-11	TUNER BOARD *****			
< CAPACITOR >					
C1	1-136-177-00	FILM	1uF	5%	50V
C16	1-162-306-11	CERAMIC	0.01uF	30%	16V
C17	1-124-907-11	ELECT	10uF	20%	50V
C18	1-162-306-11	CERAMIC	0.01uF	30%	16V
C19	1-124-261-00	ELECT	10uF	20%	50V
< CONNECTOR >					
* CN4	1-568-834-11	SOCKET, CONNECTOR 15P			
< DIODE >					
D9001	8-719-987-63	DIODE 1N4148M			
D9002	8-719-987-63	DIODE 1N4148M			
< RESISTOR >					
R8	1-249-429-11	CARBON	10K	5%	1/4W
R9	1-249-421-11	CARBON	2.2K	5%	1/4W
< TERMINAL >					
TB1	1-233-592-11	TUNER (US,CND,SP,HK)			
TB1	1-693-287-11	TUNER (AEP,UK,G,IT)			
< TERMINAL >					
TM1	1-537-238-21	TERMINAL BOARD (ANTENNA)(US,CND,SP,HK)			
TM1	1-537-488-11	TERMINAL BOARD (ANTENNA)(AEP,UK,G,IT)			

MISCELLANEOUS					

15	1-777-137-11	WIRE (FLAT TYPE) (11CORE)			
58	1-777-033-11	WIRE (FLAT TYPE) (19 CORE)			
59	1-773-004-11	WIRE (FLAT TYPE) (15 CORE)			
61	1-777-291-11	WIRE (FLAT TYPE) (21 CORE)			
62	1-769-974-11	WIRE (FLAT TYPE) (13 CORE)			
63	1-773-106-11	WIRE (FLAT TYPE) (19 CORE)			
64	1-773-117-11	WIRE (FLAT TYPE) (19 CORE)			
68	1-533-293-11	FUSE HOLDER			
117	1-777-291-11	WIRE (FLAT TYPE) (21 CORE)			
124	1-769-118-11	WIRE (FLAT TYPE) (30 CORE)			
△125	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P(HK)			
136	1-769-119-11	WIRE (FLAT TYPE) (18 CORE)			
△207	8-583-009-11	OPTICAL PICK-UP KMS-210A/J-N (MD)			
270	1-777-033-11	WIRE (FLAT TYPE) (19 CORE)			
△305	8-848-367-11	OPTICAL PICK-UP KSS-213B/K-N (CD)			
306	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)			
△ CNP801	1-575-651-31	CORD, POWER (AEP,G,IT,SP,HK)			
△ CNP801	1-696-570-21	CORD, POWER (UK)			
△ CNP801	1-775-789-11	CORD, POWER (US,CND)			
△ F801	1-533-296-11	FUSE,GLASS CYLINDRICAL (2A 125V)(US,CND)			
△ F801	1-532-259-00	FUSE, TIME LAG (T1.6AL 250V)(SP,HK)			

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
△ F802	1-532-215-00	FUSE, TIME LAG (T0.8AL 250V) (AEP,UK,G,IT,SP,HK)	
FAN801	1-698-651-11	FAN, D.C.	
HR901	1-500-304-21	HEAD, OVER LIGHT (RF322-74A)	
M101	A-4660-651-A	MOTOR (SLED) ASSY	
M102	A-4660-650-A	CHASSIS ASSY, BU	
M103	X-4917-504-1	MOTOR, ASSY(CD)(SLED MOTOR)	
M104	X-4917-523-4	MOTOR, ASSY(CD)(SPINDLE MOTOR)	
M701	X-4947-281-1	LID MOTOR,ASSY	
M191	A-4660-646-A	MOTOR (LOADING) ASSY	
M903	A-4608-362-A	MOTOR (L)ASSY	
S102	1-762-148-11	SWITCH, PUSH (2 KEY) (PROTECT/REFLECT SEITCH)	
S801	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)(SP,HK)	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	
△ T801	1-429-663-11	TRANSFORMER POWER (US,CND)	
△ T801	1-429-661-11	TRANSFORMER POWER (AEP,UK,G,IT)	
△ T801	1-429-662-11	TRANSFORMER POWER (SP,HK)	

ACCESSORIES & PACKING MATERIALS			

*	4-941-548-01	LABEL, CLASS (1)(EXCEPT US,CND)	
*	4-981-825-01	CUSHION (RIGHT)	
*	4-981-826-01	CUSHION (LEFT)	

HARDWARE LIST			

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-685-873-09	SCREW +BVTT 3X10 (S)	
#3	7-685-871-01	SCREW +BVTT 3X6 (S)	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S	
#6	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
#7	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
#8	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
#9	7-621-775-20	SCREW +B 2.6X5	
#10	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#11	7-627-852-08	SCREW,PRECISION +P 1.7X2.5	
#12	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
#13	7-621-775-10	SCREW +B 2.6X4	
#14	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#15	7-624-105-04	STOP RING 2.3, TYPE -E	
#16	7-621-255-15	SCREW +P 2X3	
#17	7-685-546-19	SCREW +BTP 3X8 TYPE2 N-S	
#18	7-685-874-09	SCREW +BVTT 3X12 (S)	
#19	7-623-422-07	LW3, TYPE B	

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