

# MDX-C5960R/C5970/C5970R

## SERVICE MANUAL

Ver 1.1 2001.03



Photo: MDX-C5960R

German Model  
MDX-C5960R

US Model  
Canadian Model

E Model  
MDX-C5970

AEP Model  
UK Model  
MDX-C5970R

Model Name Using Similar Mechanism	MDX-C7900/C7900R
Base Mechanism Type	MG-164N-138
Optical Pick-Up Name	KMS-241B/J1NP

### SPECIFICATIONS

#### Specifications

##### AUDIO POWER SPECIFICATIONS (US models)

**POWER OUTPUT AND TOTAL HARMONIC DISTORTION**  
17 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

##### Other specifications

###### MD player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 W*

\* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

###### Tuner section

<b>FM</b>	
Tuning range	87.5 – 107.9 MHz (C5970) 87.5 – 108.0 MHz (C5960R/C5970R)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	9 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.7 % (stereo), 0.4 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

###### AM (C5970)

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 $\mu$ V

###### MW/LW (C5960R/C5970R)

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	MW: 30 $\mu$ V LW: 50 $\mu$ V

– Continued on next page –

## FM/AM (MW/LW) MINIDISC PLAYER

9-926-428-12 Sony Corporation  
2001C0500-1 Audio Entertainment Group  
© 2001.3 General Engineering Dept.

# SONY®

## Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	35 W × 4 (at 4 ohms)

## General

Outputs	Line outputs (1) (C5960R) Line outputs (2) (C5970/C5970R) Power antenna relay control lead Power amplifier control lead Telephone ATT control lead (C5970/C5970R) Illumination control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 184 mm (7 <sup>1</sup> / <sub>8</sub> × 2 × 7 <sup>1</sup> / <sub>4</sub> ) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 162 mm (7 <sup>1</sup> / <sub>4</sub> × 2 <sup>1</sup> / <sub>8</sub> × 6 <sup>1</sup> / <sub>2</sub> ) (w/h/d)
Mass	Approx. 1.2 kg (2 lb 10 oz)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

U.S. and foreign patents licensed from Dolby laboratories Licensing Corporation.

Design and specifications are subject to change without notice.

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

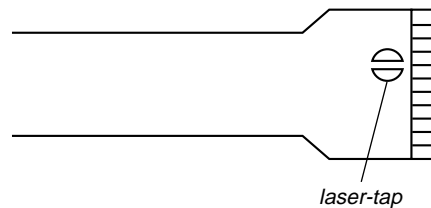
The flexible board is easily damaged and should be handled with care.

## NOTES ON LASER DIODE EMISSION CHECK

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

## NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KMS-241B/J1NP).

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



OPTICAL PICK-UP FLEXIBLE BOARD

## Notes on chip component replacement

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

## Flexible Circuit Board Repairing

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

## CAUTION

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

## 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.

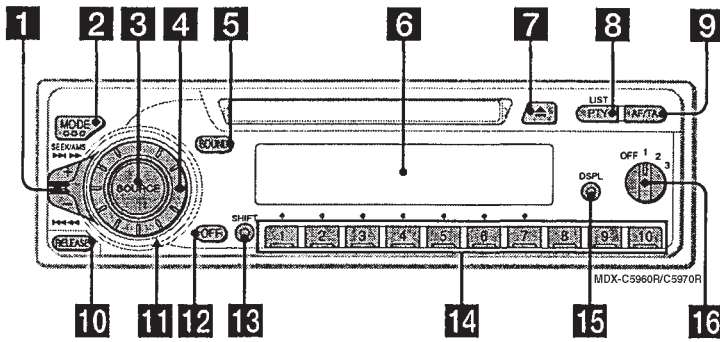
## TABLE OF CONTENTS

<b>1. GENERAL</b>	
Location of controls .....	4
Resetting the unit .....	5
Detaching the front panel .....	5
Labelling the rotary commander.....	5
Using the rotary commander .....	5
Adjusting the sound characteristics .....	5
Attenuating the sound .....	5
Changing the sound and display settings .....	5
Boosting the bass sound.....	5
Installation .....	6
Connections .....	7
<b>2. DISASSEMBLY</b> .....	10
<b>3. ELECTRICAL ADJUSTMENTS</b> .....	16
Test Mode .....	16
MD Section .....	16
Tuner Section .....	16
<b>4. DIAGRAMS</b>	
4-1. Block Diagram – SERVO Section – .....	19
4-2. Block Diagram – TUNER Section – .....	21
4-3. Block Diagram – MAIN Section – .....	23
4-4. Block Diagram – DISPLAY/KEY CONTROL Section – .....	25
4-5. Block Diagram – BUS CONTROL/ POWER SUPPLY Section – .....	27
4-6. Notes for Printed Wiring Boards and Schematic Diagrams .....	29
4-7. Printed Wiring Board – SERVO Board – .....	31
4-8. Schematic Diagram – SERVO Board (1/3) – .....	33
4-9. Schematic Diagram – SERVO Board (2/3) – .....	35
4-10. Schematic Diagram – SERVO Board (3/3) – .....	37
4-11. Printed Wiring Board – MAIN Board (Component Side) – .....	39
4-12. Printed Wiring Board – MAIN Board (Conductor Side) – .....	41
4-13. Schematic Diagram – MAIN Board (1/4) – .....	43
4-14. Schematic Diagram – MAIN Board (2/4) – .....	45
4-15. Schematic Diagram – MAIN Board (3/4) – .....	47
4-16. Schematic Diagram – MAIN Board (4/4) – .....	49
4-17. Printed Wiring Board – KEY Board – .....	51
4-18. Schematic Diagram – KEY Board – .....	53
4-19. IC Pin Function Description .....	62
<b>5. EXPLODED VIEWS</b> .....	72
<b>6. ELECTRICAL PARTS LIST</b> .....	76

# SECTION 1 GENERAL

This section is extracted from instruction manual.

## Location of controls



Refer to the pages for details.

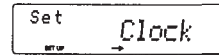
- 1** SEEK/AMS (seek/Automatic Music Sensor/manual search) control 8, 10, 12, 15, 20, 22
- 2** MODE (band/unit select) button 9, 10, 19, 21
- 3** SOURCE (source select) button 7, 8, 9, 10, 13, 19, 21
- 4** Dial (volume/bass/treble/left-right/front-rear) 7, 17, 21
- 5** SOUND button 17
- 6** Display window
- 7** ▲ (eject) button 7
- 8** PTY/LIST button (C5960R/C5970R) LIST button (C5970)  
Disc Memo 21  
List-up 22  
RDS Programme 15
- 9** AF/TA button 12, 13, 14 (C5960R/C5970R) DSPL (display mode change) button (C5970)
- 10** RELEASE (front panel release) button 6, 24
- 11** Reset button (located on the front side of the unit behind by the front panel) 6
- 12** OFF button 6, 7
- 13** SHIFT button  
PLAY MODE 9, 10, 11, 12, 14, 22, 23  
REP 9, 20  
SET UP 7, 8, 15, 18, 19  
SHUF 9, 20
- 14** During radio reception:  
Number buttons 10, 13, 14  
During CD/MD playback:  
Direct disc selection buttons 20
- 15** DSPL (display mode change) button 8, 11, 19, 21, 22 (C5960R/C5970R)
- 16** D-BASS control 18

## Setting the clock

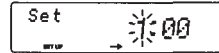
The clock uses a 24-hour digital indication.

Example: Set the clock to 10:08

- 1** Press (SHIFT), then press (2) (SET UP) repeatedly until "Clock" appears.

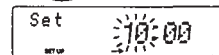


- 1** Press (4) (→).

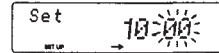


The hour indication flashes.

- 2** Set the hour.

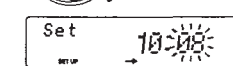


- 3** Press (4) (→).

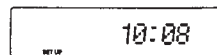


The minute indication flashes.

- 4** Set the minute.



- 2** Press (SHIFT).



The clock starts.

- 3** Press (SHIFT).  
After the mode setting is complete, the display goes back to normal playback mode.

## Getting Started

### Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.  
Remove the front panel and press the reset button with a pointed object, such as a ballpoint pen.

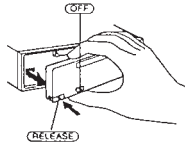


**Reset button**  
Pressing the reset button will erase the clock setting and some memorized functions.

### Detaching the front panel

You can detach the front panel of this unit to prevent the unit from being stolen.

- 1 Press **OFF**.
- 2 Press **RELEASE**, then slide the front panel a little to the left, and pull it off towards you.

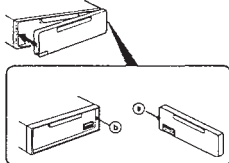


**Note**

- Be sure not to drop the panel when detaching it from the unit.
- If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.
- When carrying the front panel with you, use the supplied front panel case.

### Attaching the front panel

Attach part ① of the front panel to part ② of the unit as illustrated and push the left side into position until it clicks.



**Notes**

- Be sure not to attach the front panel upside down.
- Do not press the front panel too hard against the unit when attaching it.
- Do not press too hard or put excessive pressure on the display windows of the front panel.
- Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight or where there may be a considerable rise in temperature.

### Caution alarm

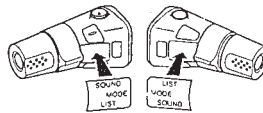
If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds.

## Other Functions

You can also control this unit with an optional rotary commander.

### Labelling the rotary commander

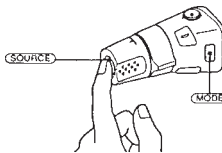
Depending on how you mount the rotary commander, attach the appropriate label as shown in the illustration below.



### Using the rotary commander

The rotary commander works by pressing buttons and/or rotating controls. You can control an optional CD or MD unit with the rotary commander.

#### By pressing buttons (the SOURCE and MODE buttons)



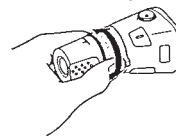
Each time you press **SOURCE**, the source changes as follows:  
Tuner → CD\* → MD

Pressing **MODE** changes the operation in the following ways:

- Tuner: FM1 → FM2 → MW → LW
- CD unit: CD1 → CD2 → ...
- MD unit: MD1 → MD2 → ...

\* If the corresponding optional equipment is not connected, this item will not appear.

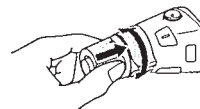
#### By rotating the control (the SEEK/AMS control)



Rotate the control and release it to:

- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to find a specific station.

#### By pushing in and rotating the control (the PRESET/DISC control)

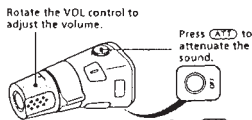


Push in and rotate the control to:

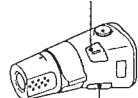
- Receive the stations memorised on the number buttons.
- Change the disc.

6

### Other operations



\* Press **SOUND** to adjust the volume and sound menu.

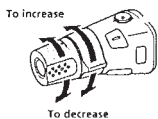


Press **LIST** to:

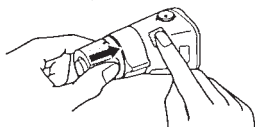
- Display the memorised names.
- Display the programme type.

### Changing the operative direction

The operative direction of controls is factory-set as in the illustration below.



If you need to mount the rotary commander on the right hand side of the steering column, you can reverse the operative direction.



Press **SOUND** for two seconds while pushing the VOL control.

**Tip**  
You can also change the operative direction of these controls with the unit (page 18).

## Adjusting the sound characteristics

You can adjust the bass, treble, balance and fader. Each source can store the bass and treble levels respectively.

- 1 Select the item you want to adjust by pressing **SOUND** repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (left-right) → FAD (front-rear)

- 2 Adjust the selected item by rotating the dial. Adjust within three seconds after selecting the item. (After three seconds, the dial functions reverts to the volume control.)

## Attenuating the sound

Press **ATT** on the optional rotary commander.  
"ATT on" flashes momentarily.

To restore the previous volume level, press **ATT** again.

**Tip**  
The unit decreases the volume automatically when a telephone call comes in (Telephone-ATT function).

16

## Changing the sound and display settings

You can set:

- Clock (page 7).
- CT (Clock Time) (page 15).
- D.Info (Dual Information) → to display the clock and the play mode at the same time (on) or to display the information alternately (off).
- Dimmer → to change the brightness of the display.
  - Select "Auto" to dim the display only when you turn the lights on.
  - Select "on" to dim the display.
  - Select "off" to deactivate Dimmer.
- Contrast → to adjust the contrast if the indications in the display are not recognizable because of the unit's installed position.
- Beep → to turn on or off the beeps.
- RM (Rotary Commander) → to change the operative direction of the controls of the rotary commander.
  - Select "norm" to use the rotary commander in the factory-set position.
  - Select "rev" when you mount the rotary commander on the right side of the steering column.
- M.dspl (Motion display) → to turn the motion display 1, 2, or off.
- A.Scr1 (Auto Scroll) (page 8, 19).

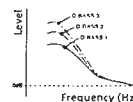
- 1 Press **SHIFT**.
- 2 Press **SET UP** repeatedly until the desired item appears. Each time you press **SET UP**, the item changes as follows:  
Clock → CT → D.Info\* → Dimmer → Contrast → Beep → RM → M.dspl → A.Scr1\*  
\* When no MD or CD is playing, this item will not appear.

**Note**  
The displayed item will differ depending on the source.

- 3 Press **←** to select the desired setting (Example: on or off). For the "Contrast" setting, pressing **↔** makes the contrast higher, and pressing **→** makes the contrast lower.
- 4 Press **SHIFT**. After the mode setting is complete, the display returns to normal playback mode.

## Boosting the bass sound — D.bass

You can enjoy a clear and powerful bass sound. The D-bass function boosts the low frequency signal with a sharper curve than conventional bass boost. You can hear the bass line more clearly even while the vocal volume remains the same. You can emphasize and adjust the bass sound easily with the D-bass control.



### Adjusting the bass curve

Turn the D-BASS control to adjust the bass level (1, 2 or 3). "D-BASS" appears in the display.

To cancel, turn the dial to the OFF position.

**Note**  
If the bass sound becomes distorted, adjust the D-bass control or volume.

17

18

# Installation

## Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be made only by service technicians.
- Choose the installation location carefully so the unit will not hamper the driver during driving.
- Avoid installing the unit in areas subject to dust, dirt, excessive vibration, or high temperatures, such as in direct sunlight or near heater ducts.
- Use only the supplied mounting hardware for a safe and secure installation.

## Mounting angle adjustment

Adjust the mounting angle to less than 20°.

# Instalación

## Precauciones

- No toque los cuatro orificios de la superficie superior de la unidad. Estos orificios son para ajustes del sintonizador que solamente deberán realizar técnicos de reparación.
- Elija cuidadosamente el lugar de instalación de forma que la unidad no interfiera en las funciones normales de conducción.
- Evite instalar la unidad donde pueda quedar sometida a altas temperaturas, como a la luz solar directa o al aire de calefacción, o a polvo, suciedad, o vibraciones excesivas.
- Para realizar una instalación segura y firme, utilice solamente la ferretería de montaje suministrada.

## Ajuste del ángulo de montaje

Ajuste el ángulo de montaje a menos de 20°.

# Montering

## Säkerhetsföreskrifter

- Låt de fyra hålen på bilstereons ovansida vara. De är till för radiojusteringar som endast får utföras av fackkunniga tekniker.
- Var noga när du väljer var i bilen du monterar bilstereon, så att den inte sitter i vägen när du kör.
- Montera inte bilstereon där den utsätts för värme, t.ex. solsken eller varmluft, eller där den utsätts för damm, smuts och/eller vibrationer.
- Använd endast de medföljande monteringsföremålen för att vara säker på att bilstereon monteras på ett säkert och korrekt sätt.

## Tillåten monteringsvinkel

Monteringsvinkeln får inte vara större än 20 grader.

# Instalação

## Precações

- Não altere indevidamente os quatro orifícios da superfície da parte superior do aparelho. Estes servem para regulações do sintonizador que devem ser efectuadas somente por técnicos qualificados.
- Escolha com cuidado um local apropriado para a montagem do aparelho, para que este não interfira com as manobras necessárias à condução do veículo.
- Evite instalar o aparelho onde possa estar sujeito a altas temperaturas, como em locais expostos directamente à luz do sol, ao ar quente dos aquecimentos, ou sujeitos a pó, sujidade ou vibração excessiva.
- Para efectuar uma instalação segura utilize unicamente o material de montagem fornecido.

## Ajuste do ângulo de montagem

Ajuste o ângulo de montagem a menos de 20°.

## How to detach and attach the front panel

Before installing the unit, detach the front panel.

### A To detach

Before detaching the front panel, be sure to press OFF. Press RELEASE, then slide the front panel a little to the left, and pull it off towards you.

### B To attach

Attach part ① of the front panel to part ② of the unit as illustrated and push the left side into position until it clicks.

## Forma de extraer e instalar el panel frontal

Antes de instalar la unidad, extraiga el panel frontal.

### A Para extraerlo

Antes de extraer el panel frontal, asegúrese de pulsar OFF. Pulse RELEASE, deslice el panel ligeramente hacia la izquierda y tire de él hacia fuera.

### B Para instalarlo

Fije la parte ① del panel frontal a la parte ② de la unidad tal como muestra la ilustración y ejerza presión sobre el lado izquierdo hasta oír un chasquido.

## Ta loss/fästa frontpanelen

Ta loss frontpanelen innan du monterar bilstereon.

### A Ta loss frontpanelen

Se till att enheten är avstängd innan du tar bort frontpanelen. Tryck på OFF. Tryck sedan på RELEASE och skjut frontpanelen lite åt vänster medan du drar den mot dig.

### B Fästa frontpanelen

Sätt fast del ① på frontpanelen på del ② på enheten enligt bilden och tryck på den vänstra sidan tills det klickar till.

## Para retirar e colocar o painel frontal

Retire o painel frontal antes de iniciar a instalação do aparelho.

### A Para retirar

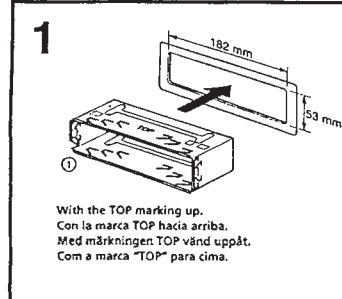
Antes de retirar o painel frontal, tem de carregar em OFF. Carregue em RELEASE, faça deslizar o painel um pouco para a esquerda e puxe-o para si.

### B Para colocar

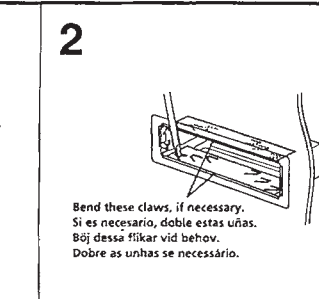
Encaixe a parte ① do painel frontal na parte ② do aparelho, como se mostra na figura, fazendo pressão sobre o painel até ouvir um estalido.



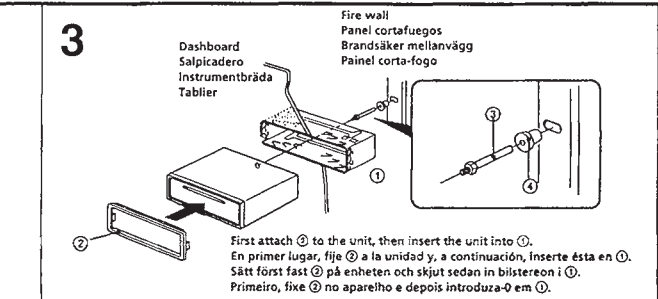
## Installation in the dashboard



## Instalación en el salpicadero



## Montera på instrumentbrädan



## Connection diagram

For connecting two or more changers, the source selector XA-C30 (optional) is necessary.

## Diagrama de conexiones

Si desea conectar dos o más cambiadores, necesitará el selector de fuente XA-C30 (opcional).

## Kopplingschema

För anslutning av två eller flera växlare krävs växlaren XA-C30 (tillval).

## Diagrama de ligações

Para ligar um ou mais permutadores, é necessário o selector de fonte XA-C30 (opcional).

## Equipment used in illustrations (not supplied)

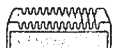
### Equipo utilizado en las ilustraciones (no suministrado)

### Utrustning som visas i illustrationer (medföljer inte)

### Equipamento utilizado nas ilustrações (não fornecido)



Front speakers  
Altavoces delanteros  
Framre högtalare  
Altifalantes dianteiros



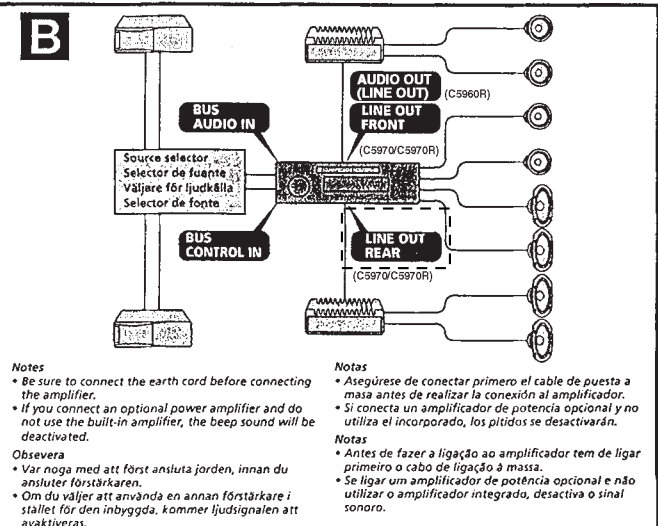
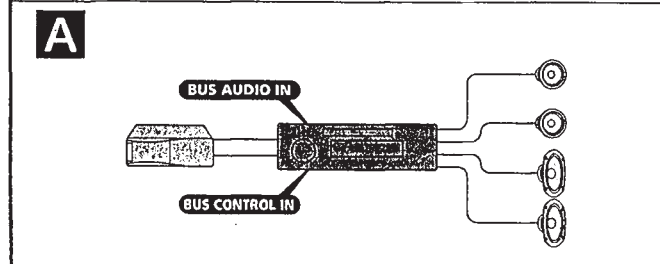
Power amplifier  
Amplificador de potencia  
Effektförstärkare  
Amplificador de potencia



Rear speakers  
Altavoces traseros  
Bakre högtalare  
Altifalantes traseiros



CD/MD changer  
Cambiador de CD/MD  
CD/MD-skivväxlare  
Permutador CD/MD



# Connections

## Cautions

- This unit is designed for negative earth 12 V DC operation only.
- Be careful not to pinch any wires between a screw and the body of the car or this unit or between any moving parts such as the seat ralling, etc.
- Connect the power connecting cord (C) to the unit and speakers before connecting it to the auxiliary power connector.
- Run all earth wires to a common earth point.
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.
- Connecting this unit may cause some car battery wear when your car has no ACC (accessory) position on the ignition key switch. In this case, please consult your nearest Sony dealer.

## Notes of connection example

### Note on the control leads

- The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the AF (Alternative Frequency) or the TA (Traffic Announcement) functions.
- A power aerial without a relay box cannot be used with this unit.

### Warning

If you have a power aerial without a relay box, connecting this unit with the supplied power connecting cord (C) may damage the aerial.

### Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition switch is turned off.

### Notes on speaker connection

- Before connecting the speakers, turn the unit off.
- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.
- Do not attempt to connect the speakers in parallel.
- Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Be sure to connect passive speakers to these terminals.

## Reset button

When the installation and connections are complete, be sure to press the reset button with a ballpoint pen etc.

## Återställningsknappen

Kom ihåg att använda en penna eller något annat spetsigt föremål för att trycka på återställningsknappen när anslutningen och monteringen är klar.



# Conexiones

## Precauciones

- Esta unidad ha sido diseñada para alimentación solamente con 12 V CC, negativo a masa.
- Tenga cuidado de no atrapar ningún cable entre algún tornillo y la carrocería del automóvil o esta unidad o entre las partes móviles, como por ejemplo los railes del asiento, etc.
- Conecte el cable de conexión de alimentación (C) a la unidad y a los altavoces antes de hacerlo al conector de alimentación auxiliar.
- Conecte todos los conductores de puesta a masa a un punto común.
- Conecte el cable amarillo a un circuito libre del automóvil que tenga una capacidad superior a la del fusible de la unidad. Si conecta esta unidad en serie con otros componentes estereofónicos, el circuito del automóvil al que se encuentren conectados debe tener una capacidad superior a la de la suma de las capacidades de los fusibles de cada componente. Si ningún circuito del automóvil tiene una capacidad tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si el automóvil no dispone de ningún circuito para conectar esta unidad, conéctela a un circuito del mismo con capacidad superior a la del fusible de la unidad, de forma que si se funde el fusible de ésta, no se interrumpa ningún otro circuito.
- La conexión de esta unidad puede producir cierta descarga de la batería si el automóvil no dispone de posición ACC (accesorios) en el interruptor de la llave de encendido. En este caso, consulte con el proveedor Sony más próximo.

## Notas de ejemplo de conexiones

### Nota sobre conductores de control

- El conductor de control de la antena motorizada (azul) suministrará +12 V CC cuando conecte la alimentación del sintonizador, o cuando active la función de frecuencia alternativa (AF) o la de anuncios de tráfico (TA).
- Con esta unidad no podrá utilizarse una antena motorizada sin caja de relés.

### Advertencia

Si dispone de una antena motorizada sin dispositivo de relé, la conexión de esta unidad con el cable de conexión de alimentación (C) suministrado puede dañar la antena.

### Conexión para protección de la memoria

Si conecta el conductor de entrada de alimentación amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque ponga la llave de encendido en la posición de apagado.

### Notas sobre la conexión de los altavoces

- Antes de conectar los altavoces, desconecte la alimentación de la unidad.
- Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.
- No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.
- No intente conectar los altavoces en paralelo.
- No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciera, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.

## Botón de reposición

Cuando finalice la instalación y las conexiones, cerciórese de pulsar el botón de reposición con un bolígrafo, etc.

## Botão de reinicialização

Quando terminar a instalação e as ligações, não se esqueça de carregar no botão de reinicialização com a ponta de uma caneta esferográfica etc.

# Anslutning

## Säkerhetsföreskrifter

- Denna bilstereo är endast avsedd för anslutning till ett negativt jordat, 12 V bilbatteri.
- Var noga med att inga kablar kläms mellan någon skruv eller att de blir klämda mellan röriga delar som Lex. bilsätet.
- Anslut strömkabeln (C) till enheten och högtalarna innan du ansluter den till den yttre strömanslutningen.
- Dra samtliga jordledningar till en och samma jordningspunkt.
- Anslut den gula kabeln till en ledig bilkrets som har en säkring med ett högre amperetal än vad enheten kräver. Om du seriekopplar denna enhet med andra stereokomponenter, måste den bilkrets de är kopplade till ha en säkring med en högre amperetal än summan av de enskilda komponenternas strömförbrukning. Om det inte finns någon bilkrets som har en säkring med ett lika högt amperetal som enheten kräver, ska du ansluta enheten direkt till batteriet. Om det inte finns några bilkretsar att ansluta denna enhet till ska du ansluta enheten till en strömkrets som har en säkring med ett högre amperetal än enhetens säkring på ett sätt som gör att det inte blir avbrott i några andra kretsar om enhetens säkring smälter.
- När du ansluter den här enheten kan det hända att bilbatteriet laddas ur snabbare om bilens ländlås saknar det speciella läget för tillbehör, ACC.
- I så fall bör du ta kontakt med din närmaste Sony-återförsäljare.

## Att observera angående anslutningsexemplet

### Att observera angående olika styrkablar

- Motorantennens styrkabel ANT REM (blå) leder 12 V likström när bilradion slås på eller när du aktiverar alternativ frekvenser (AF) eller trafikmeddelanden (TA).
- En motorantenn utan styrreläddosa kan inte anslutas till denna bilstereo.

### Varning

När du ansluter den gula, ingående strömkabeln antennen skadas om du ansluter enheten med den medföljande strömkabeln (C).

### Anslutning för minnesstöd

När du ansluter den gula, ingående strömkabeln försörjs minneskretsen med ström hela tiden, även när tändlåset slås ifrån.

### Att observera angående högtalarnas anslutning

- Slå av bilstereon innan du ansluter högtalarna.
- Anslut endast högtalare, vars impedans varierar från 4 till 8 ohm och som har tillräcklig effekthanteringskapacitet för att skydda högtalarna mot skador.
- Anslut inte något av högtalaruttagen till bilens chassi. Anslut inte heller uttagen på höger högtalare till uttagen på vänster högtalare.
- Anslut inte högtalarna parallellt.
- Anslut inte aktiva högtalare (med inbyggda slutsteg) till bilstereons högtalaruttag, eftersom de kan skada de aktiva högtalarna. Var noga med att bara ansluta passiva högtalare till dessa uttag.

# Ligações

## Advertência

- Este aparelho foi projectado para funcionar somente com corrente contínua de 12 V com negativo à massa.
- Tenha cuidado para que os fios não fiquem entalados entre os parafusos e a carroceria do automóvel ou a caixa do aparelho nem entre as peças móveis, por exemplo, as calhas dos bancos, etc.
- Ligue o cabo de alimentação de corrente (C) ao aparelho e aos altifalantes antes de o ligar ao conector de corrente auxiliar.
- Ligue todos os cabos de massa num ponto de massa comum.
- Ligue o cabo amarelo a um circuito livre do automóvel com uma capacidade nominal superior à do fusível do aparelho. Se ligar este aparelho em série com outros componentes estéreo, o circuito do automóvel a que estão ligados deve ter uma capacidade nominal superior à soma da capacidade dos fusíveis de cada componente. Se nenhum circuito do automóvel tiver uma capacidade tão alta como a do fusível do aparelho, ligue o aparelho directamente à bateria. Se o automóvel não tiver nenhum circuito disponível para ligação do aparelho, ligue-o a um circuito com uma capacidade superior à do fusível do aparelho para que se o fusível se fundir, nenhum dos outros circuitos seja cortado.
- A ligação deste aparelho pode provocar o desgaste da bateria se a chave de ignição do automóvel não tiver a posição ACC (acessórios). Nesse caso, entre em contacto com o agente da Sony mais próximo.

## Notas sobre o exemplo de ligação

### Nota sobre os fios de controlo

- O fio de controlo da antena eléctrica (azul) fornece uma corrente contínua (CC) de +12 V quando se liga o sintonizador ou se activa a função AF (Frequência Alternativa) ou TA (Informações de Tráfego).
- Não pode utilizar uma antena eléctrica sem caixa de relé com este aparelho.

### Atenção

Se a antena eléctrica não tiver uma caixa de relé, o facto de ligar este aparelho com o cabo de alimentação (C) fornecido, pode provocar danos na antena.

Ligação para alimentação contínua da memória Quando, o fio amarelo de entrada de alimentação for ligado, os circuitos de memória ficarão com alimentação contínua, mesmo se a chave de ignição estiver desligada.

### Notas sobre a ligação dos altifalantes

- Antes de ligar os altifalantes, desligue o aparelho.
- Utilize altifalantes com impedância de 4 a 8 ohm, e com capacidade admissível de potência adequada. Caso contrário, os altifalantes poderão sofrer avarias.
- Não ligue os terminais do sistema de altifalantes ao chassi do automóvel, e não ligue os terminais do altifalante direito aos terminais do altifalante esquerdo.
- Não tente ligar os altifalantes em paralelo.
- Não ligue nenhum sistema de altifalantes activos (com amplificadores incorporados) aos terminais dos altifalantes do aparelho. Caso o faça, poderá avariar o sistema de altifalantes activos. Portanto, não se esqueça de ligar altifalantes passivos a estes terminais.

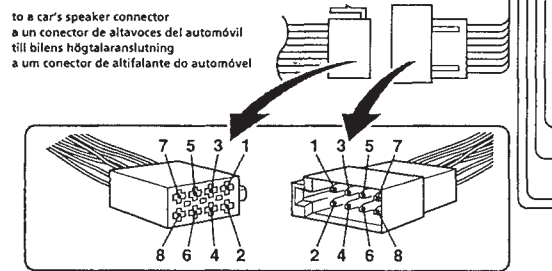
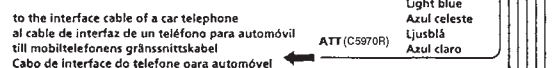
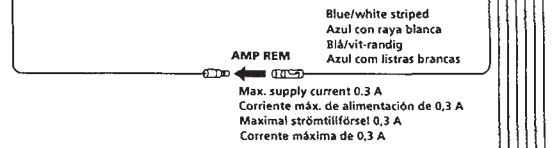
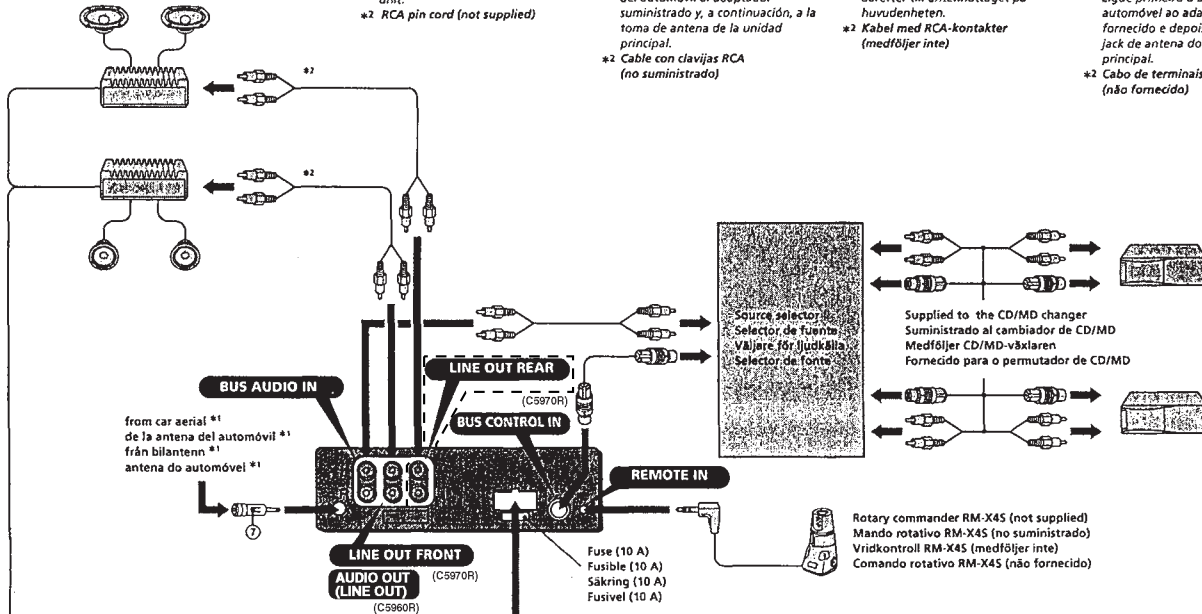
**Connection example**  
**Ejemplo de conexiones**  
**Anslutningarna enligt exemplet**  
**Exemplo de ligações**  
**(C5960R/C5970R)**

\*1 Note for the aerial connecting  
 If your car aerial is an ISO  
 (International Organization for  
 Standardization) type, use the  
 supplied adapter (Ⓞ) to connect it.  
 First connect the car aerial to the  
 supplied adapter, then connect it  
 to the aerial jack of the master  
 unit.  
 \*2 RCA pin cord (not supplied)

\*1 Nota sobre la conexión de la  
 antena  
 Si la antena del automóvil es del  
 tipo ISO (International  
 Organization for Standardization),  
 emplee el adaptador suministrado  
 (Ⓞ) para conectarla.  
 En primer lugar, conecte la antena  
 del automóvil al adaptador  
 suministrado y, a continuación, a la  
 toma de antena de la unidad  
 principal.  
 \*2 Cable con clavijas RCA  
 (no suministrado)

\*1 Angående antennanslutning  
 Om bilantennen är av ISO-typ  
 (International Organization for  
 Standardization), använd den  
 medföljande adapter (Ⓞ) för att  
 ansluta den.  
 Anslut först bilantennen till  
 medföljande adapter och  
 därefter till antennuttaget på  
 huvudenheten.  
 \*2 Kabel med RCA-kontakter  
 (medföljer inte)

\*1 Nota referente à ligação da  
 antena  
 Se a antena do automóvel for  
 uma antena de tipo ISO  
 (International Organization for  
 Standardization), utilize o  
 adaptador fornecido (Ⓞ) para fazer  
 a ligação respectiva.  
 Ligue primeiro a antena do  
 automóvel ao adaptador  
 fornecido e depois à ficha tipo  
 jack de antena do sistema  
 principal.  
 \*2 Cabo de terminais RCA  
 (não fornecido)

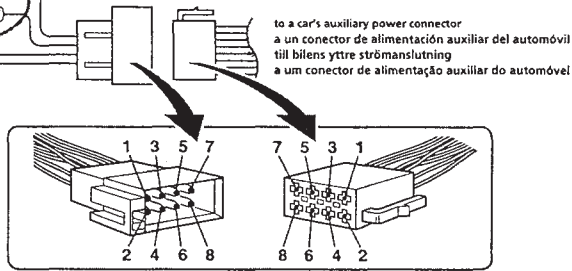


**WARNING**  
 Auxiliary power connectors may vary depending on the car. Be sure to check the power connection sheet supplied with the unit. Improper connections may damage your car. If the supplied power connecting cord can not be used with your car, consult your nearest Sony dealer.

**ADVERTENCIA**  
 Los conectores de alimentación auxiliar pueden variar en función del automóvil. Asegúrese de consultar el diagrama de conexión de alimentación suministrado con la unidad. Las conexiones incorrectas pueden dañar el automóvil. Si no es posible utilizar con el automóvil el cable de conexión de alimentación suministrado, póngase en contacto con el proveedor Sony más próximo.

**WARNING**  
 Typen av yttre strömanslutning varierar från bil till bil. Kontrollera kopplingskemat som medföljer enheten så att du ansluter på rätt sätt. Felaktig anslutning kan skada bilen. Kontakta närmaste Sony-återförsäljare om den medföljande strömkabeln inte passar till din bil.

**ATENÇÃO**  
 Os conectores de corrente auxiliares podem variar de carro para carro. Não se esqueça de verificar o diagrama de ligação de corrente fornecido com o aparelho. As ligações mal executadas podem danificar o seu carro. Se não puder utilizar o cabo de alimentação fornecido com o seu carro, contacte o agente Sony da sua zona.



1	Purple Púrpura Violetto Violeta	Speaker, Rear, Right Altavoz, parte posterior, derecho Högtalare, bakre, höger Altifalante, Parte de trás, Direito	5	White Blanco Vit Branco	Speaker, Front, Left Altavoz, parte frontal, izquierdo Högtalare, främre, vänster Altifalante, Parte da frente, Esquerdo
2		Speaker, Rear, Right Altavoz, parte posterior, derecho Högtalare, bakre, höger Altifalante, Parte de trás, Direito	6		Speaker, Front, Left Altavoz, parte frontal, izquierdo Högtalare, främre, vänster Altifalante, Parte da frente, Esquerdo
3	Grey Gris Griå Cinza	Speaker, Front, Right Altavoz, parte frontal, derecho Högtalare, främre, höger Altifalante, Parte da frente, Direito	7	Green Verde Grön Verde	Speaker, Rear, Left Altavoz, parte posterior, izquierdo Högtalare, bakre, vänster Altifalante, Parte de trás, Esquerdo
4		Speaker, Front, Right Altavoz, parte frontal, derecho Högtalare, främre, höger Altifalante, Parte da frente, Direito	8		Speaker, Rear, Left Altavoz, parte posterior, izquierdo Högtalare, bakre, vänster Altifalante, Parte de trás, Esquerdo

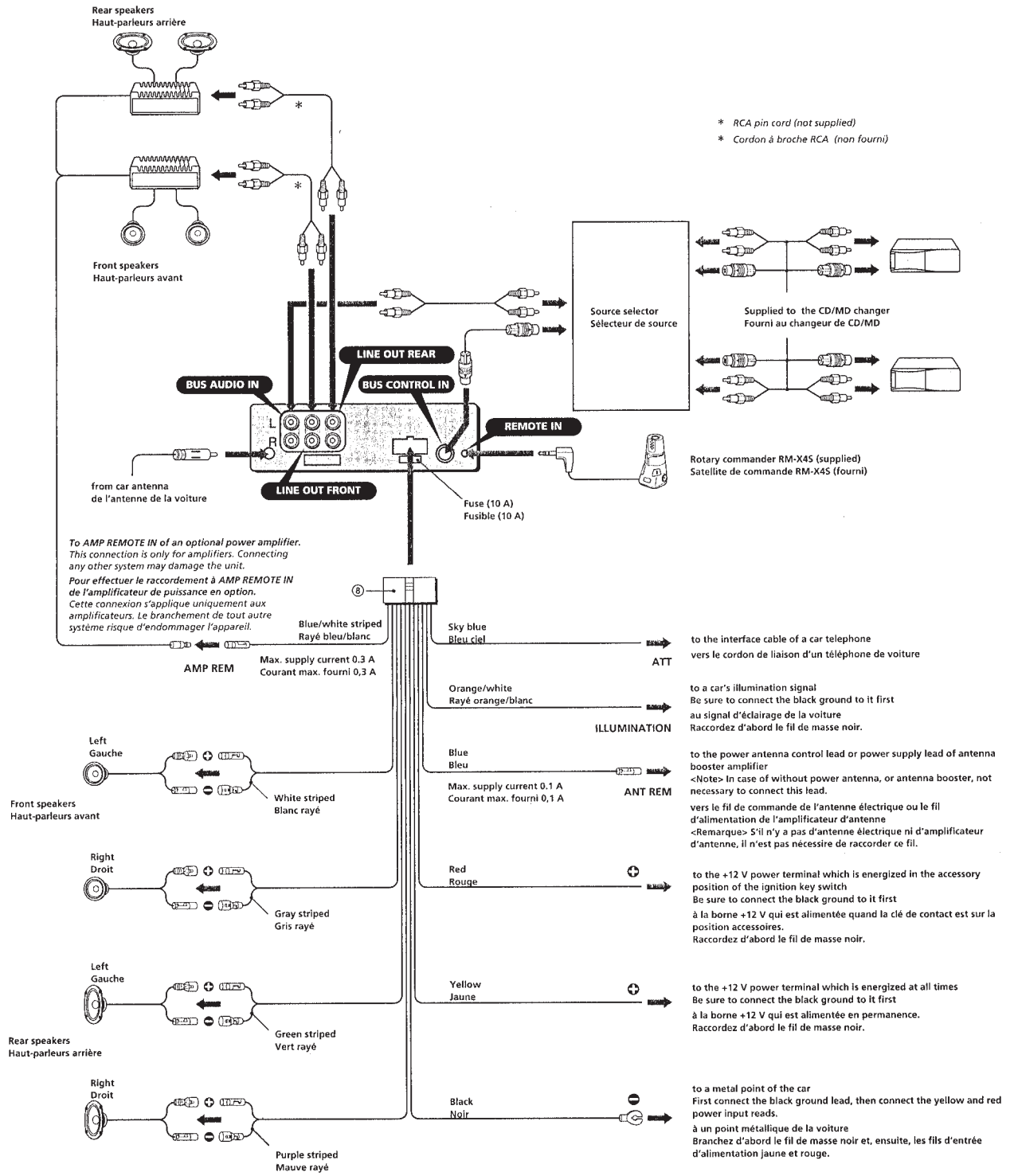
Negative polarity positions 2, 4, 6, and 8 have striped cords.  
 Las posiciones de polaridad negativa 2, 4, 6 y 8 tienen cables con raya.  
 De negativa polpositionerna 2, 4, 6 och 8 har randiga kablar.  
 As posições 2, 4, 6 e 8 (polaridade negativa) têm cabos às riscas.

4	Yellow Amarillo Gul Amarelo	continuous power supply suministro de alimentación continua kontinuerlig strömförsörjning alimentação de corrente contínua	6	Red Rojo Röd Vermelho	switched power supply suministro conmutado de alimentación switchad strömförsörjning alimentação de corrente comutada
5	Blue Azul Blå Azul	power aerial control control de antena motorizada motorantenn antena eléctrica	8	Black Negro Svart Preto	earth toma de tierra jord Terra

Positions 1, 2, 3, and 6 do not have pins.  
 Las posiciones 1, 2, 3 y 6 no disponen de pines.  
 Positionerna 1, 2, 3 och 6 saknar stift.  
 As posições 1, 2, 3 e 6 não têm pinos.



**Connection Example**  
**Exemple de connexion**  
**(C5970)**



**Notes on the control leads**  
 • The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner.  
 • A power antenna without relay box cannot be used with this unit.

**Memory hold connection**  
 When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

**Notes on speaker connection**  
 • Before connecting the speakers, turn the unit off.  
 • Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.  
 • Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.  
 • Do not attempt to connect the speakers in parallel.  
 • Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.

**Remarques sur les fils de contrôle**  
 • Le fil de contrôle de l'antenne électrique (bleu) fournit une tension continue de +12 V quand vous mettez l'appareil sous tension.  
 • Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.

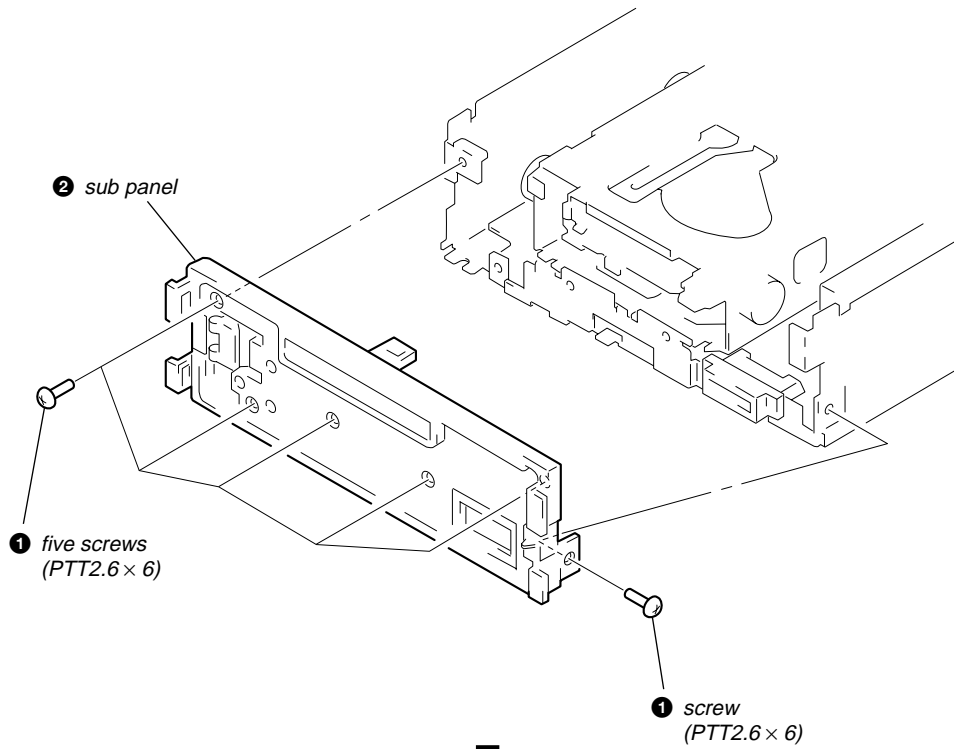
**Connexion pour la conservation de la mémoire**  
 Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

**Remarques sur la connexion des haut-parleurs**  
 • Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.  
 • Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.  
 • Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.  
 • Ne pas tenter de raccorder les haut-parleurs en parallèle.  
 • Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veillez à raccorder des haut-parleurs passifs à ces bornes.

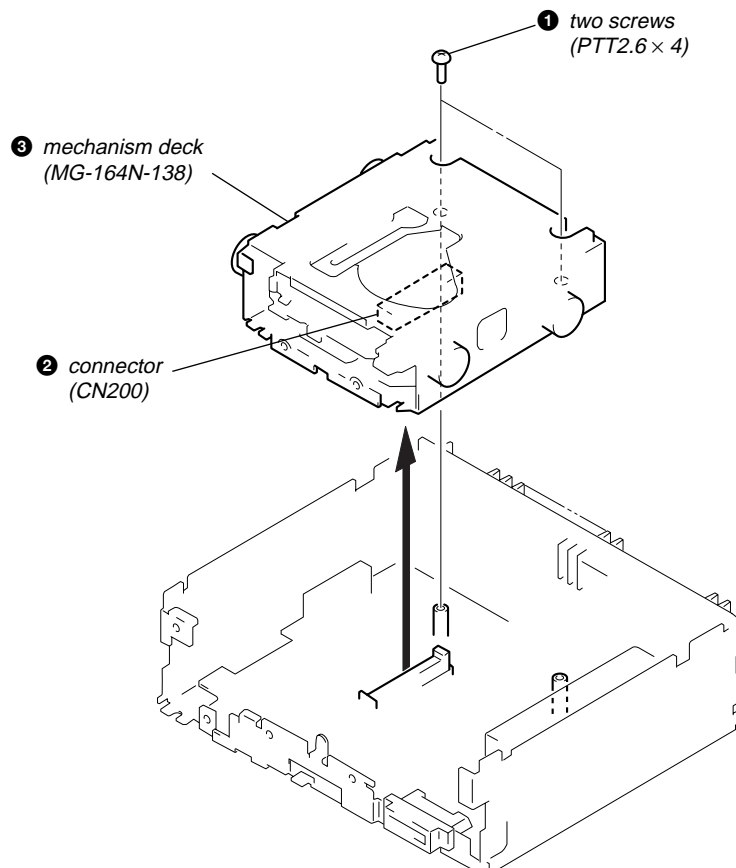
## SECTION 2 DISASSEMBLY

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

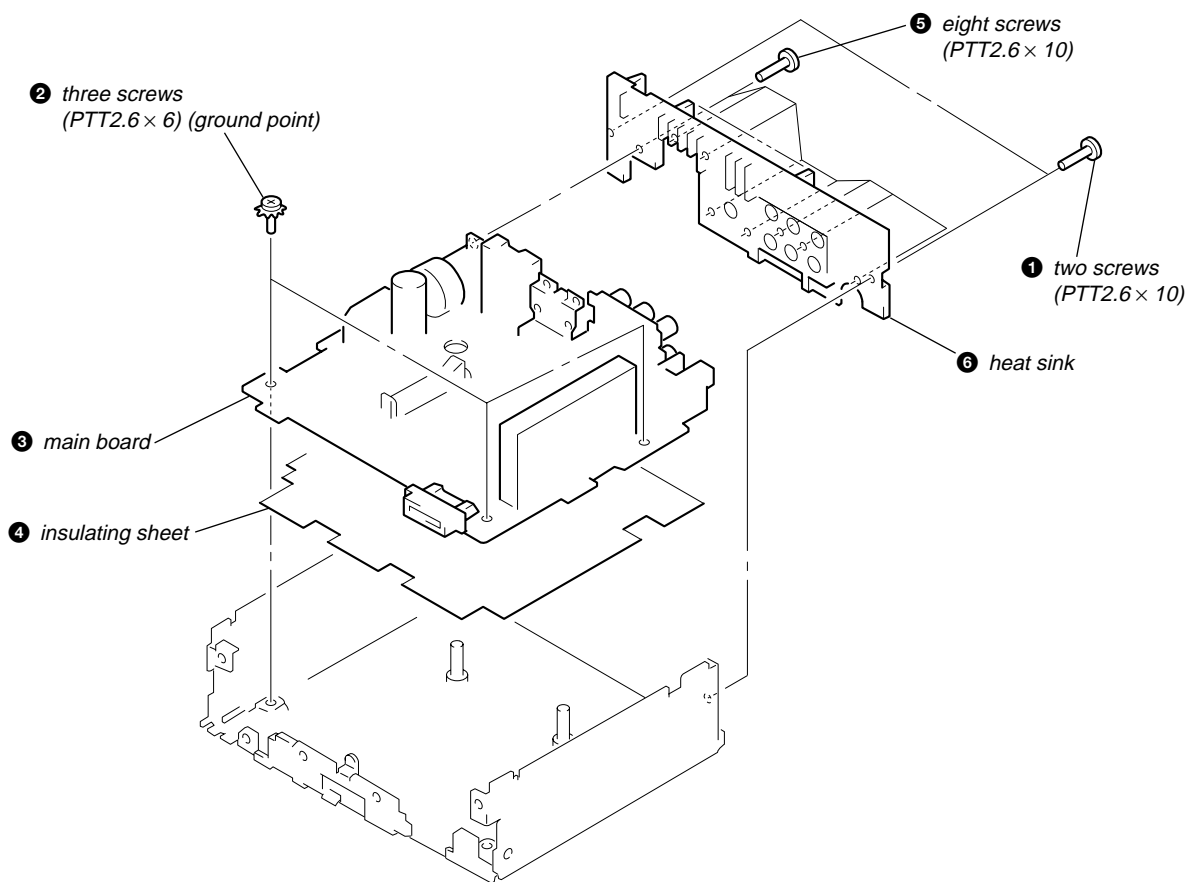
### SUB PANEL



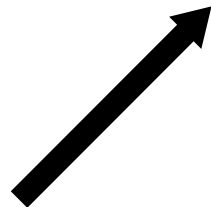
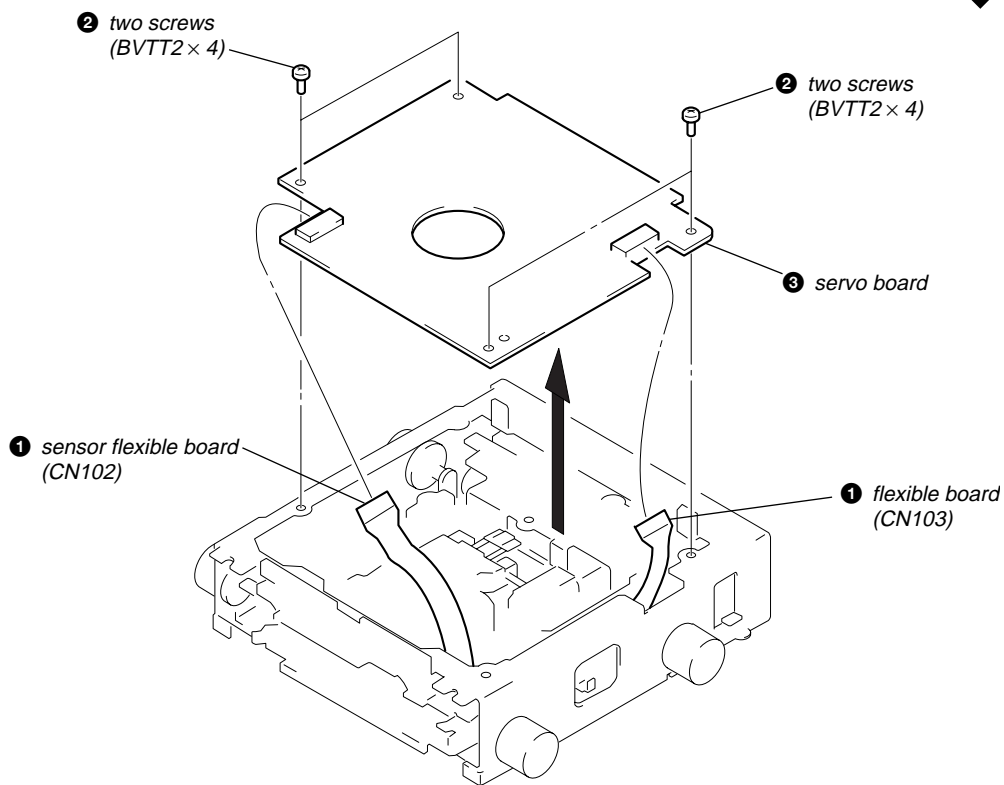
### MECHANISM DECK (MG-164N-138)



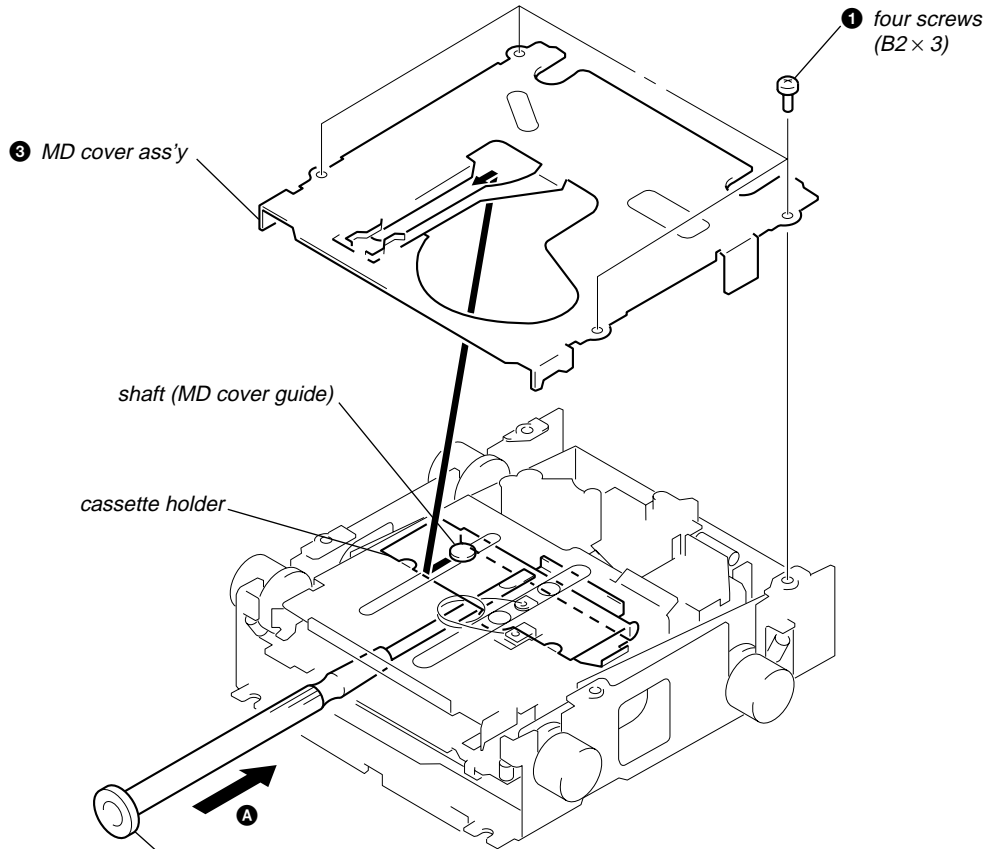
### MAIN BOARD, HEAT SINK



### SERVO BOARD



## MD COVER ASS'Y

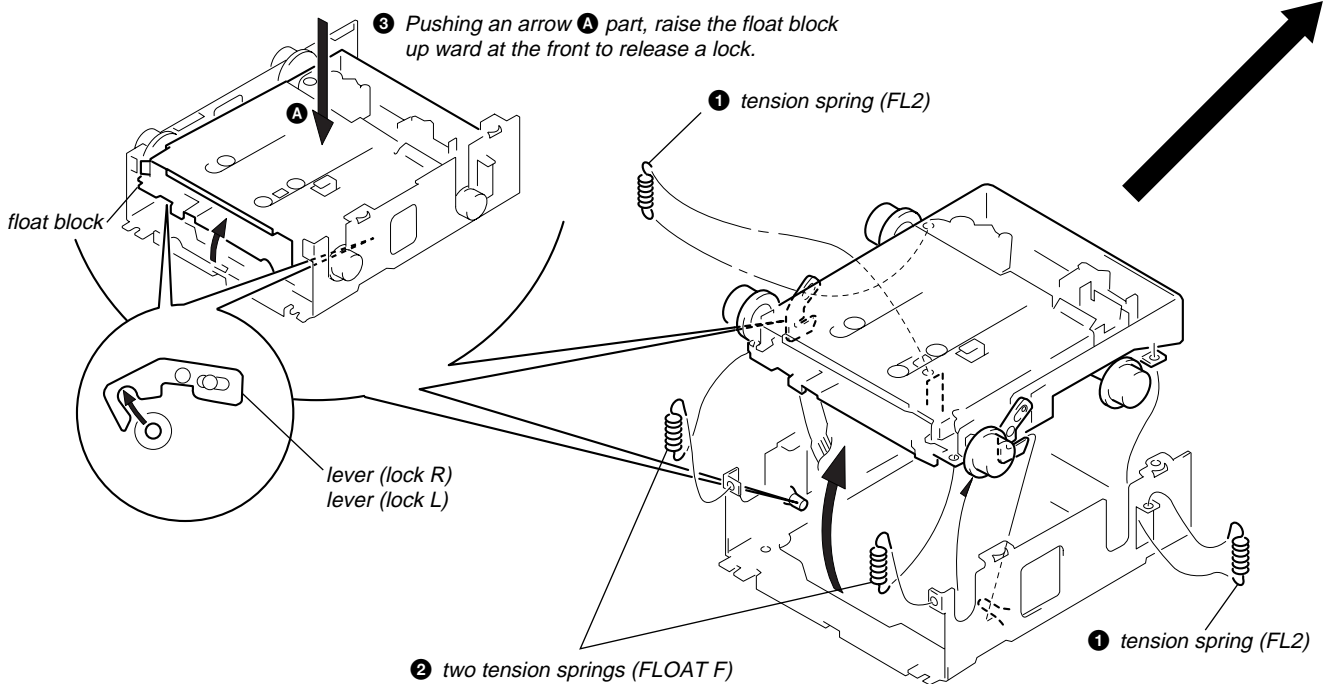


② Pushing the Cassette Holder toward the direction A with a screwdriver, etc., disengage the Shaft (MD Cover Guide) from the slot in the MD Cover Assy.

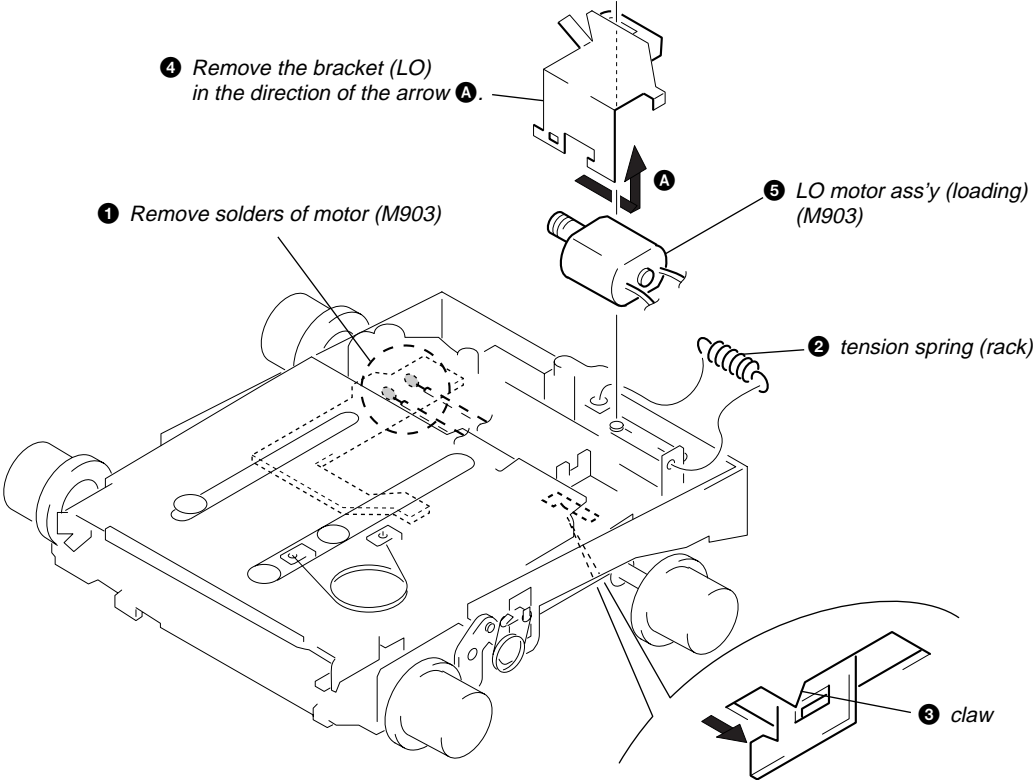
**Note:** Take care not to scratch the optical Pick-up when pushing the Cassette Holder with a screwdriver, etc.



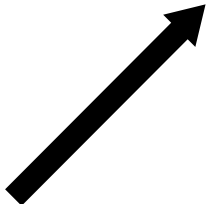
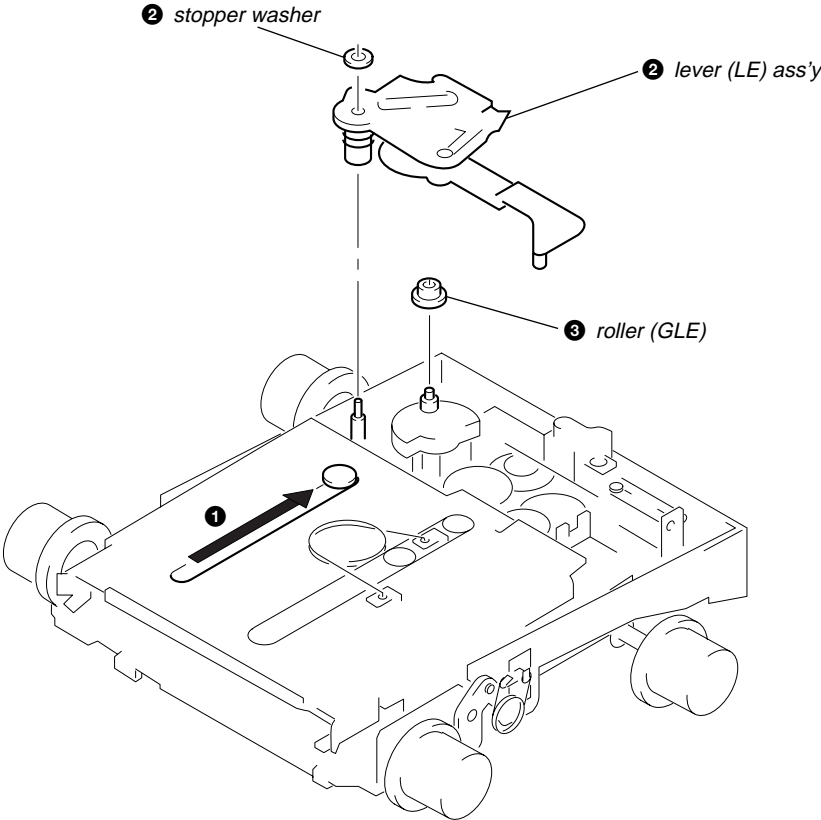
## FLOAT BLOCK



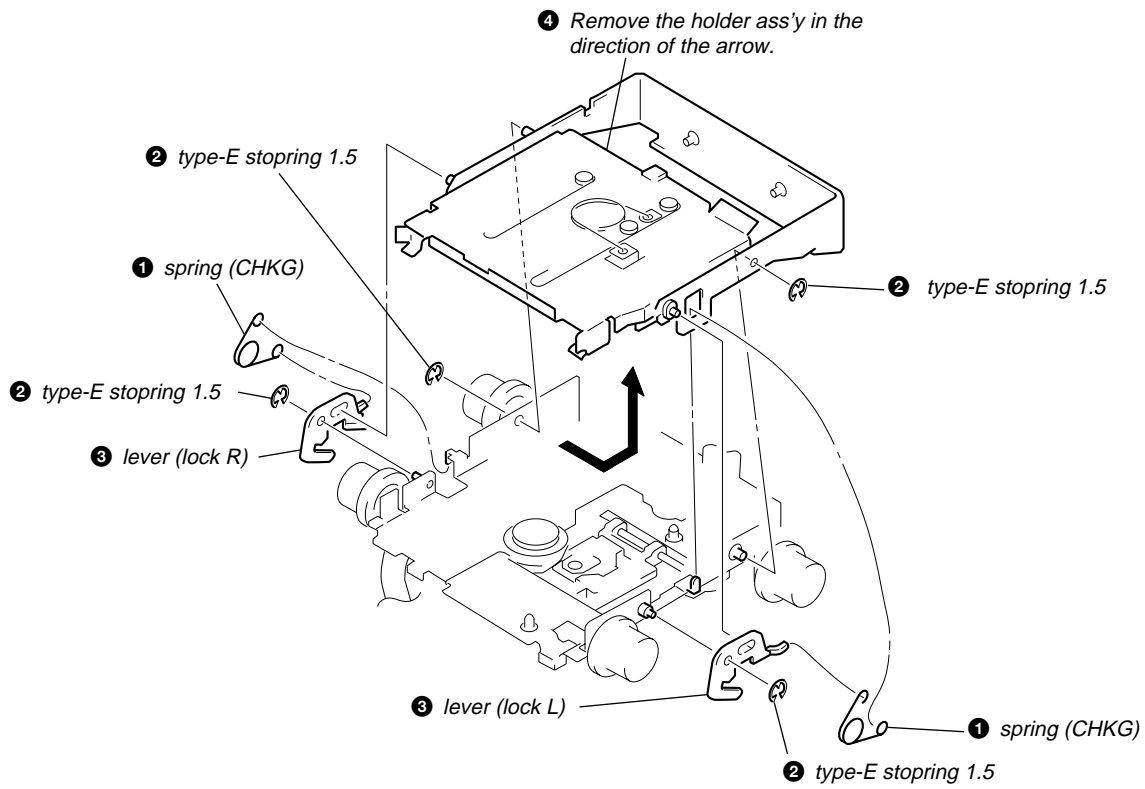
**LO MOTOR ASS'Y (LOADING) (M903)**



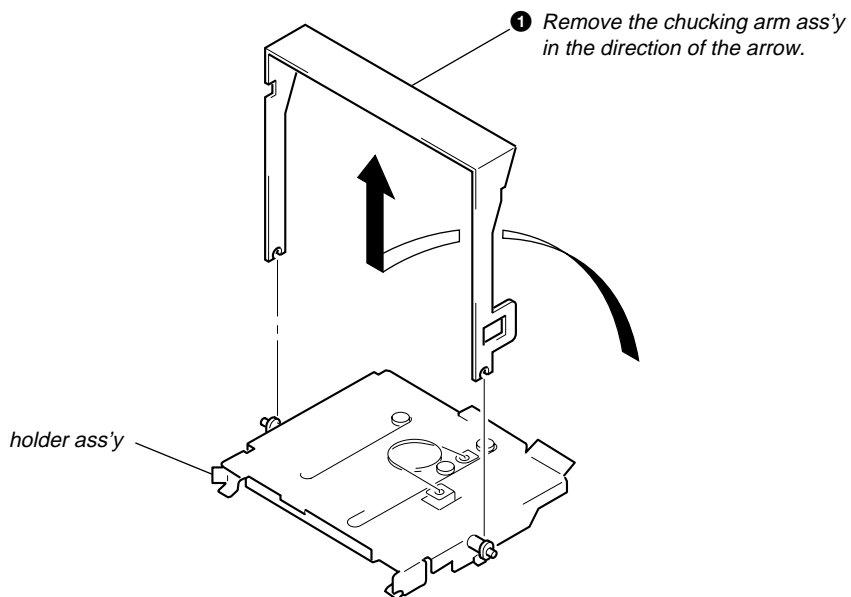
**LEVER (LE) ASS'Y**



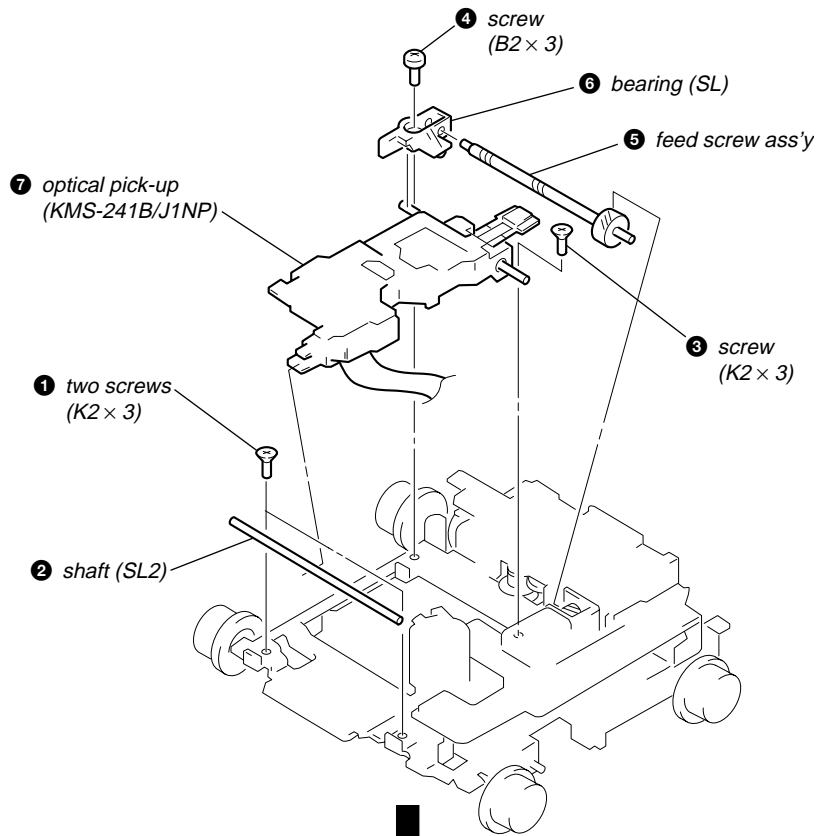
## HOLDER ASS'Y



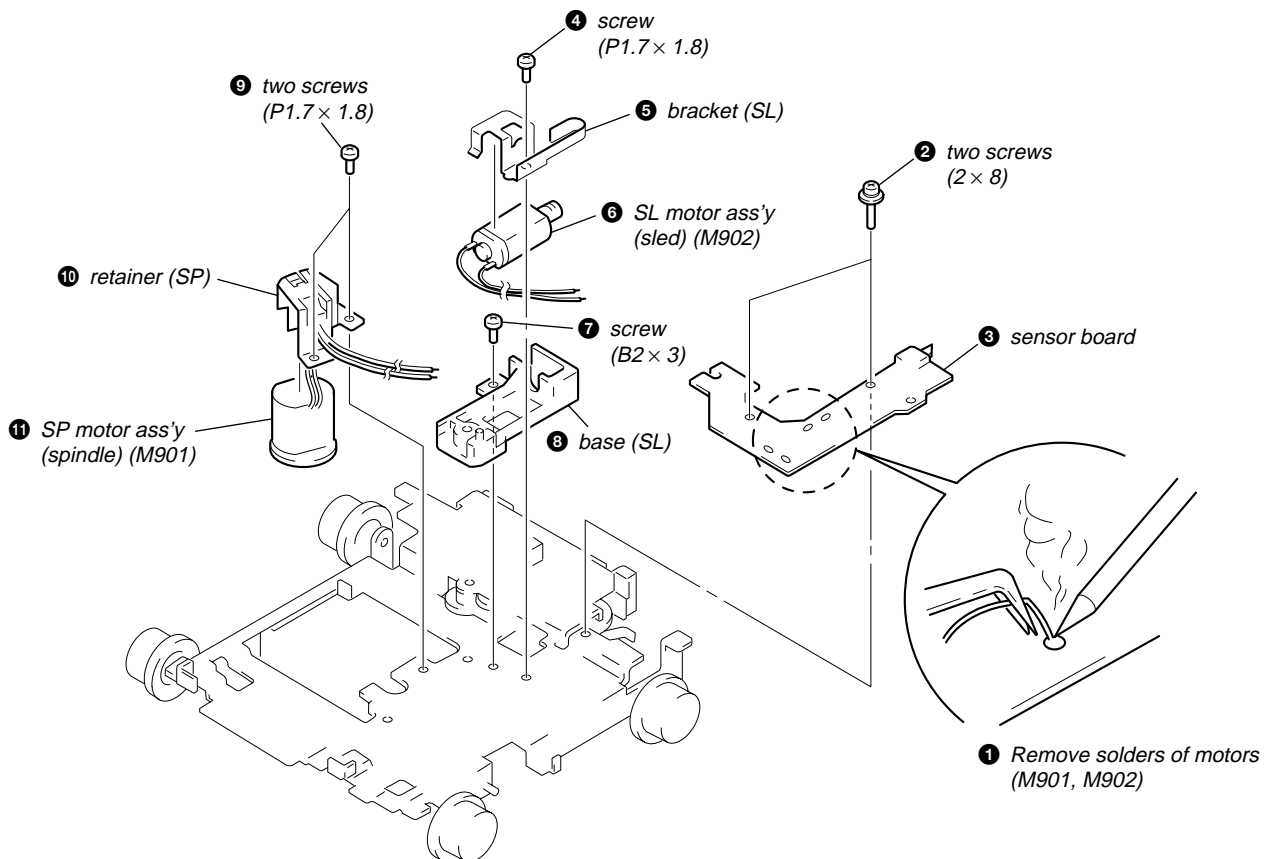
## CHUCKING ARM ASS'Y



**OPTICAL PICK-UP (KMS-241B/J1NP)**



**SL MOTOR ASS'Y (SLED) (M902), SP MOTOR ASS'Y (SPINDLE) (M901)**



## SECTION 3 ELECTRICAL ADJUSTMENTS

### TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM (MW) Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Turn ON the regulated power supply. (The clock is displayed)  
**Note:** Press the **[OFF]** button, if the clock is not displayed.
2. Push the preset **[4]** button.
3. Push the preset **[5]** button.
4. Press the preset **[1]** button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test mode>

1. Push the **[OFF]** button.

See the adjustment location from on page 18 for the adjustment.

### MD SECTION

MD section adjustments are done automatically in this set.

### TUNER SECTION

0 dB=1  $\mu$ V

#### Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

#### Note:

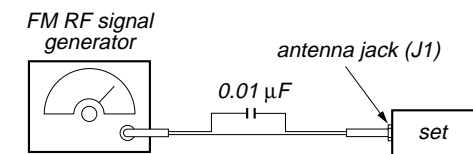
Adjust the tuner section in the sequence shown below.

1. FM Auto Scan/Stop Level Adjustment.
2. FM Stereo Separation Adjustmnet.
3. AM (MW) Auto Scan/Stop Level Adjustment.
4. RDS S-Meter Adjustment. (MDX-C5960R/5970R)

### FM Auto Scan/Stop Level Adjustment

#### Setting:

**[SOURCE]** button: FM  
FREQUENCY SELECT switch: FM 200 k (E model)

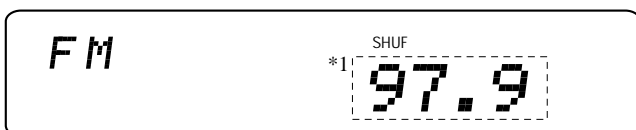


Carrier frequency: 97.9 MHz (MDX-C5970)  
98.0 MHz (MDX-C5960R/C5970R)  
Output level : 22 dB (12.6  $\mu$ V)  
Mode : mono  
Modulation : 1 kHz, 22.5 kHz deviation (30%)

#### Procedure:

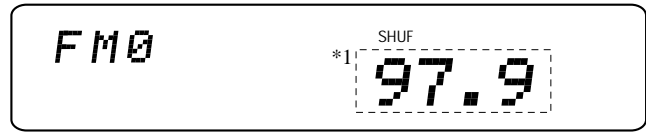
1. Set to the test mode.
2. Push the **[SOURCE]** button and set to FM.

Display



3. Adjust with the volume RV2 on TU1 so that the "FM" indication turns to "FM0" indication on the display window.  
But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display



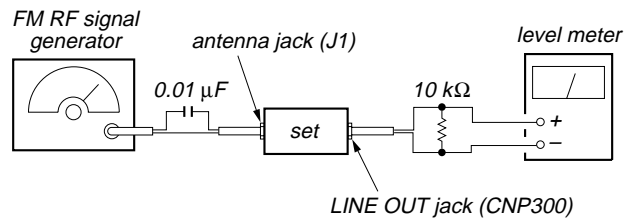
\*1: MDX-C5960R/C5970R indicate "98.00".

**Adjustment Location:** See page 18.

### FM Stereo Separation Adjustment

#### Setting:

**[SOURCE]** button: FM  
FREQUENCY SELECT switch: FM 200 k (E model)



		MDX-C5970	MDX-C5960R/ C5970R
Carrier frequency		97.9 MHz	98.0 MHz
Output level		60 dB (1 mV)	70 dB (3.2 mV)
Mode		stereo	stereo
Modulation	main	1 kHz, 33.75 kHz deviation (45%)	1 kHz, 16.25 kHz deviation (21.7%)
	sub	1 kHz, 33.75 kHz deviation (45%)	1 kHz, 16.25 kHz deviation (21.7%)
	19 kHz pilot	7.5 kHz deviation (10%)	7.5 kHz deviation (10%)

#### Procedure:

FM Stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation: Ⓐ-Ⓑ

R-CH Stereo separation: Ⓒ-Ⓓ

The separations of both channels should be equal.

**Specification:** Separation more than 30 dB

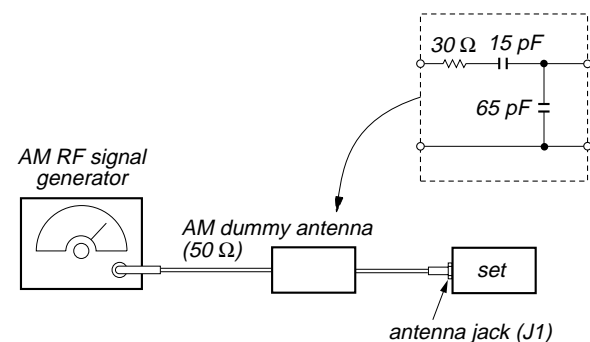
**Adjustment Location:** See page 18.



### AM (MW) Auto Scan/Stop Level Adjustment

#### Setting:

- [MODE] button (MDX-C5970): AM
- [MODE] button (MDX-C5960R/C5970R): MW
- FREQUENCY SELECT switch: AM 10 k (E model)

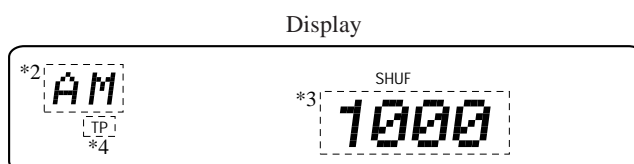


Carrier frequency: 1000 kHz (MDX-C5970)  
999 kHz (MDX-C5960R/5970R)

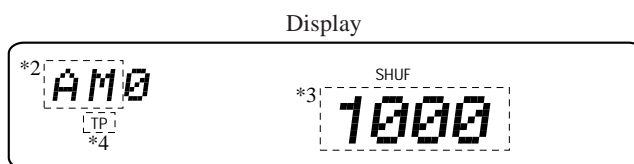
30% amplitude modulation by  
1 kHz signal  
Output level : 33 dB (44.7 μV)

#### Procedure:

1. Set to the test mode. (See page 16)
2. Push the [SOURCE] button and set to FM.
3. Push the [MODE] button and set to AM (MDX-C5970) or MW (MDX-C5960R/C5970R).



4. Adjust with the volume RV1 on TU1 so that the "AM" or "MW" indication turns to "AM0" or "MW0" indication on the display window.  
But, in case of already indicated "AM0" or "MW0", turn the RV1 so that put out light "0" indication and adjustment.



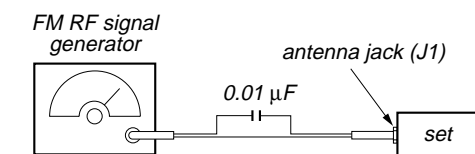
- \*2: MDX-C5960R/C5970R indicate "MW".
- \*3: MDX-C5960R/C5970R indicate "999".
- \*4: Only MDX-C5960R/C5970R indicate.

Adjustment Location: See page 18.

### RDS S-Meter Adjustment (MDX-C5960R/C5970R)

#### Setting:

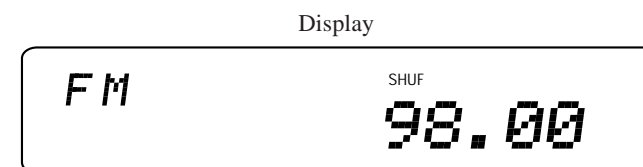
- [SOURCE] button: FM



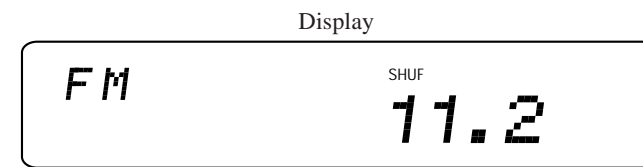
Carrier frequency: 98.0 MHz  
Output level : 35 dB (56.2 μV)  
Mode : mono  
Modulation : no modulation

#### Procedure:

1. Set to the test mode. (See page 16)
2. Push the [SOURCE] button and set to FM.



3. Push the preset [10] button.
4. Adjust RV1 on MAIN board so that the display indication is "11.2".

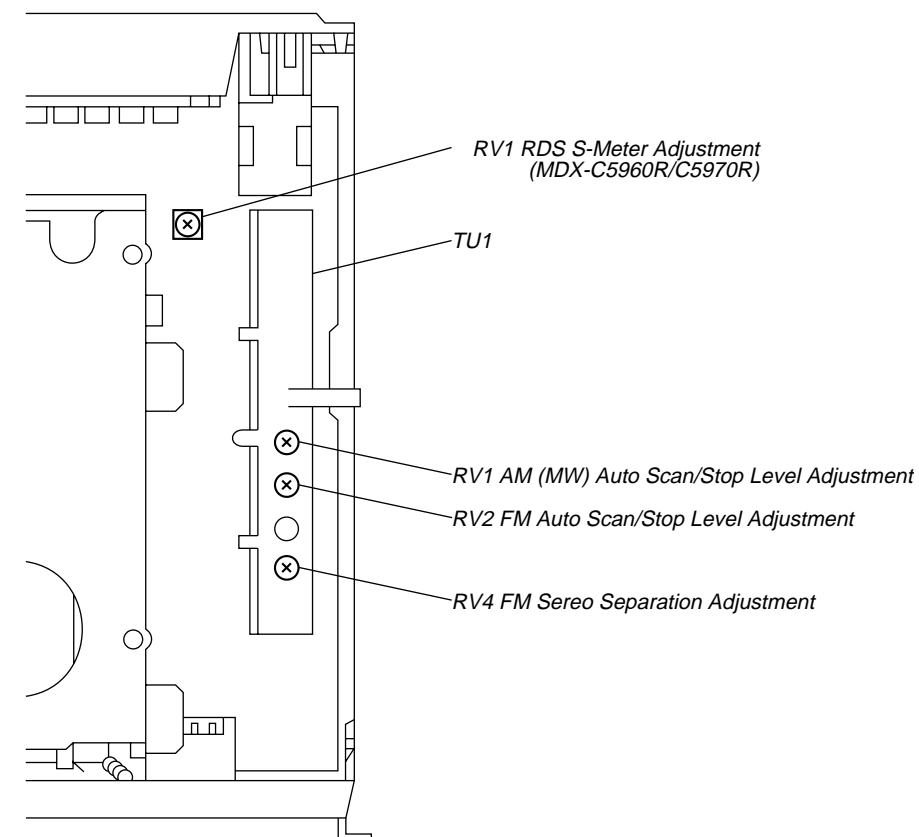


Specification: Display indication : 10.8 to 11.6

Adjustment Location: See page 18.

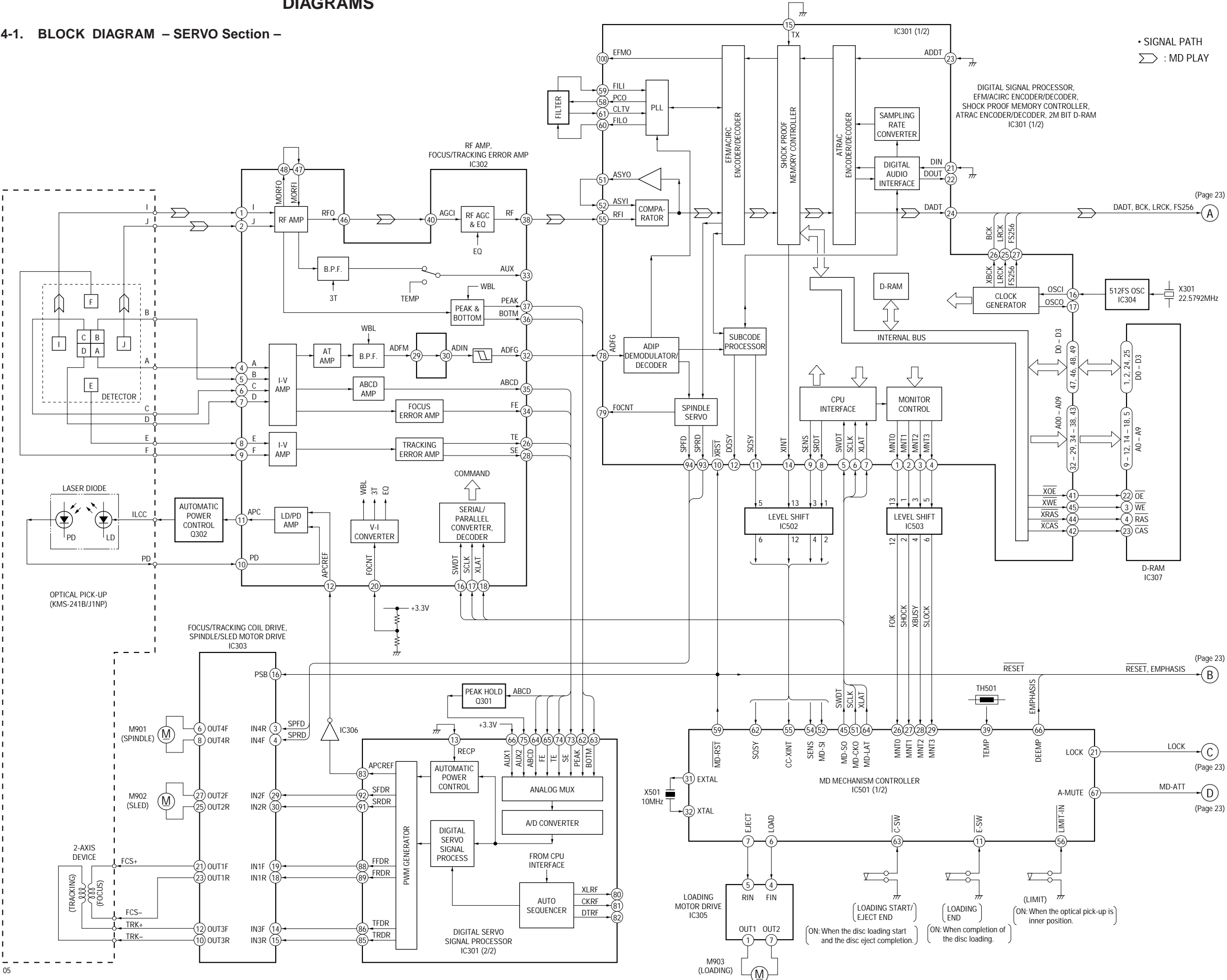
### Adjustment Location:

– SET UPPER VIEW –



SECTION 4  
DIAGRAMS

4-1. BLOCK DIAGRAM - SERVO Section -



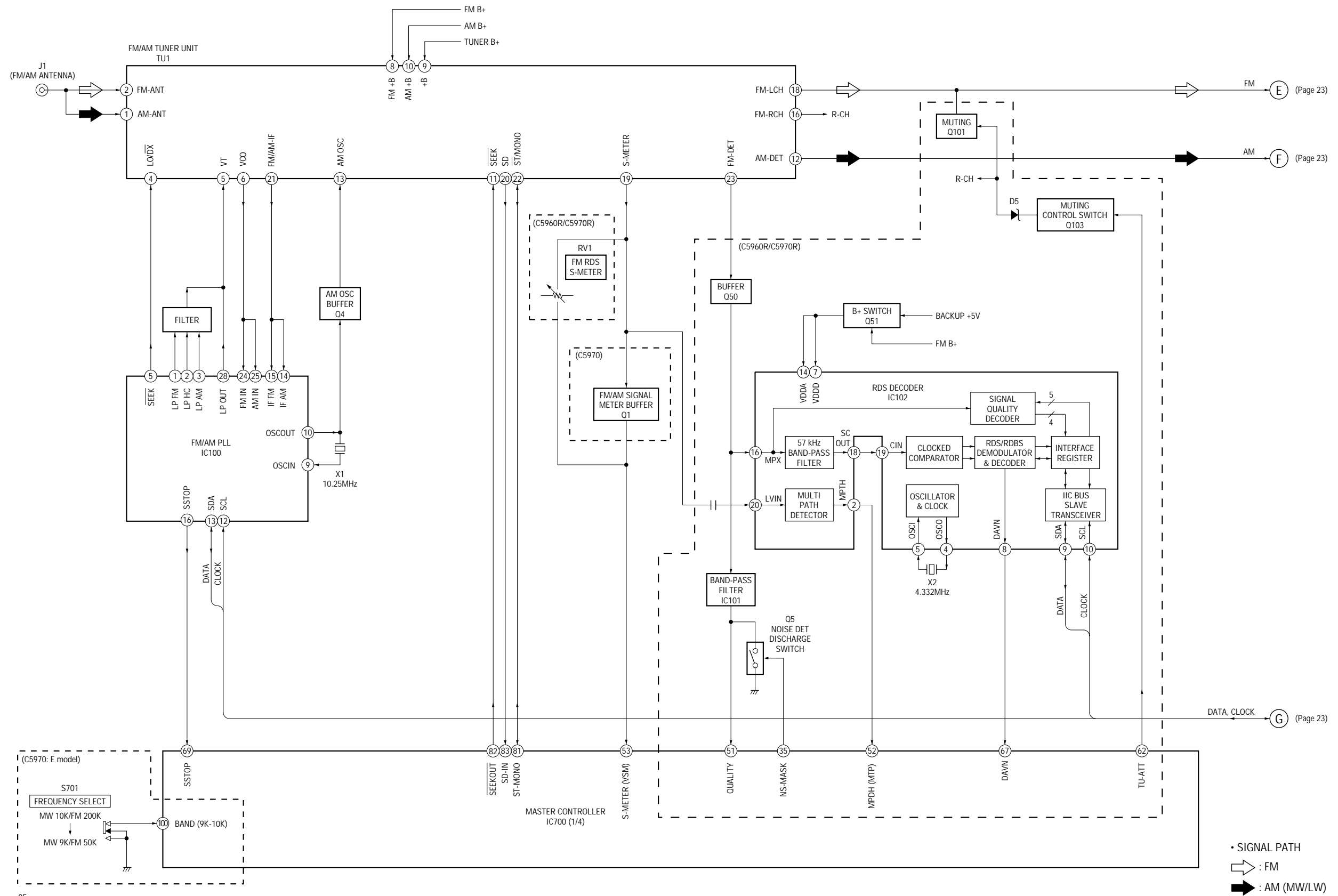
(Page 23)

(Page 23)

(Page 23)

(Page 23)

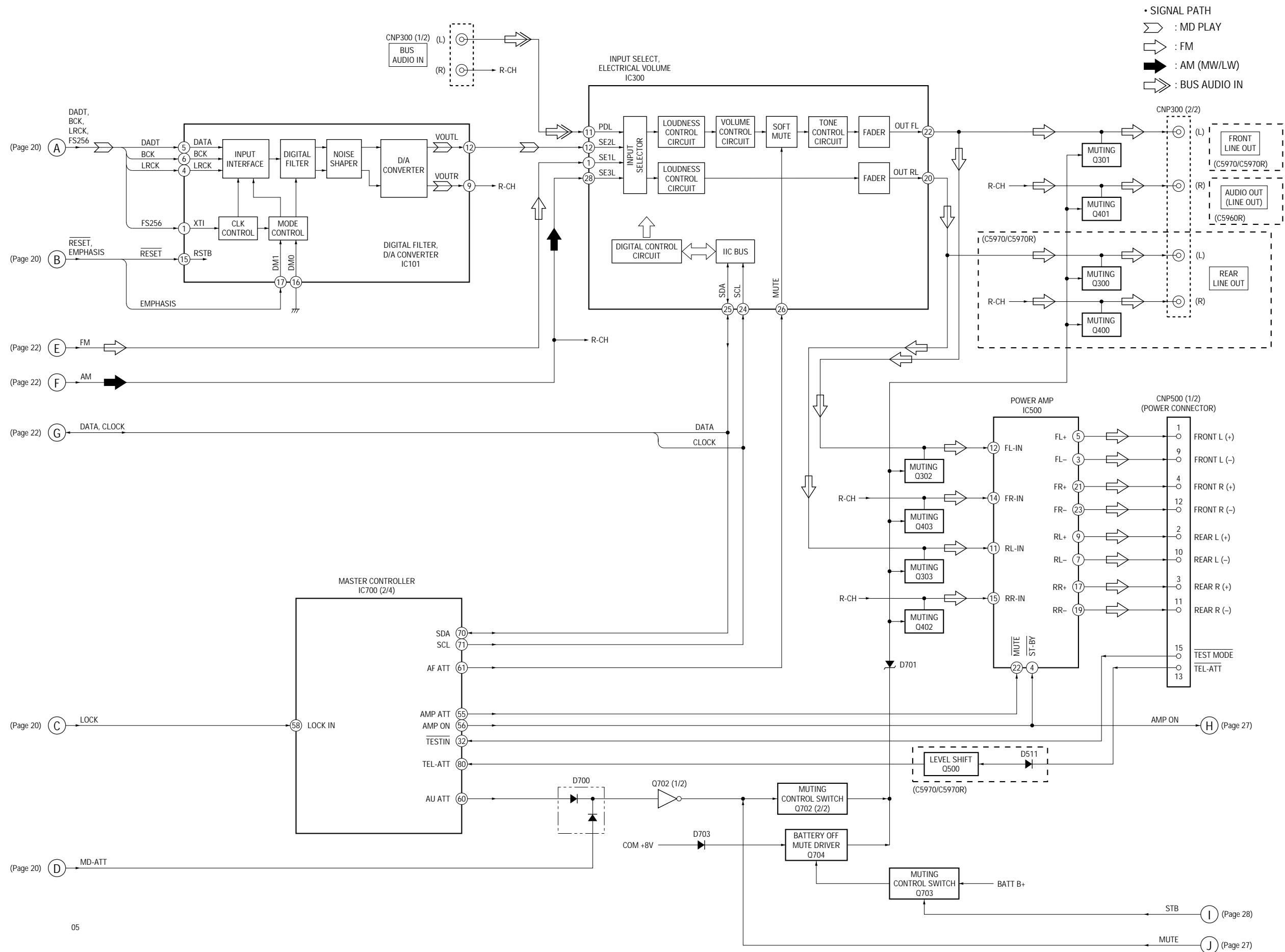
4-2. BLOCK DIAGRAM – TUNER Section –



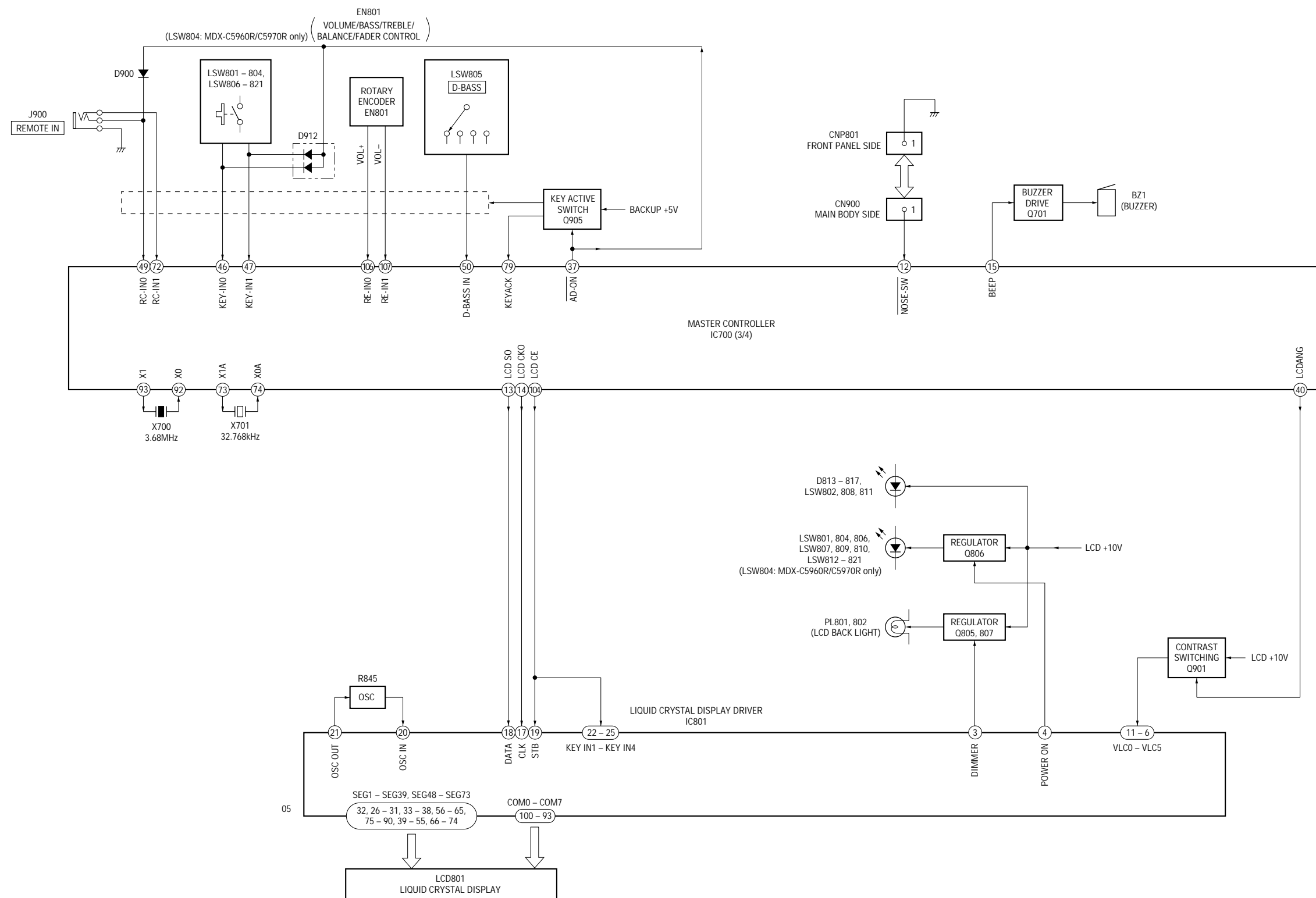
05

• SIGNAL PATH  
 ⇨ : FM  
 → : AM (MW/LW)

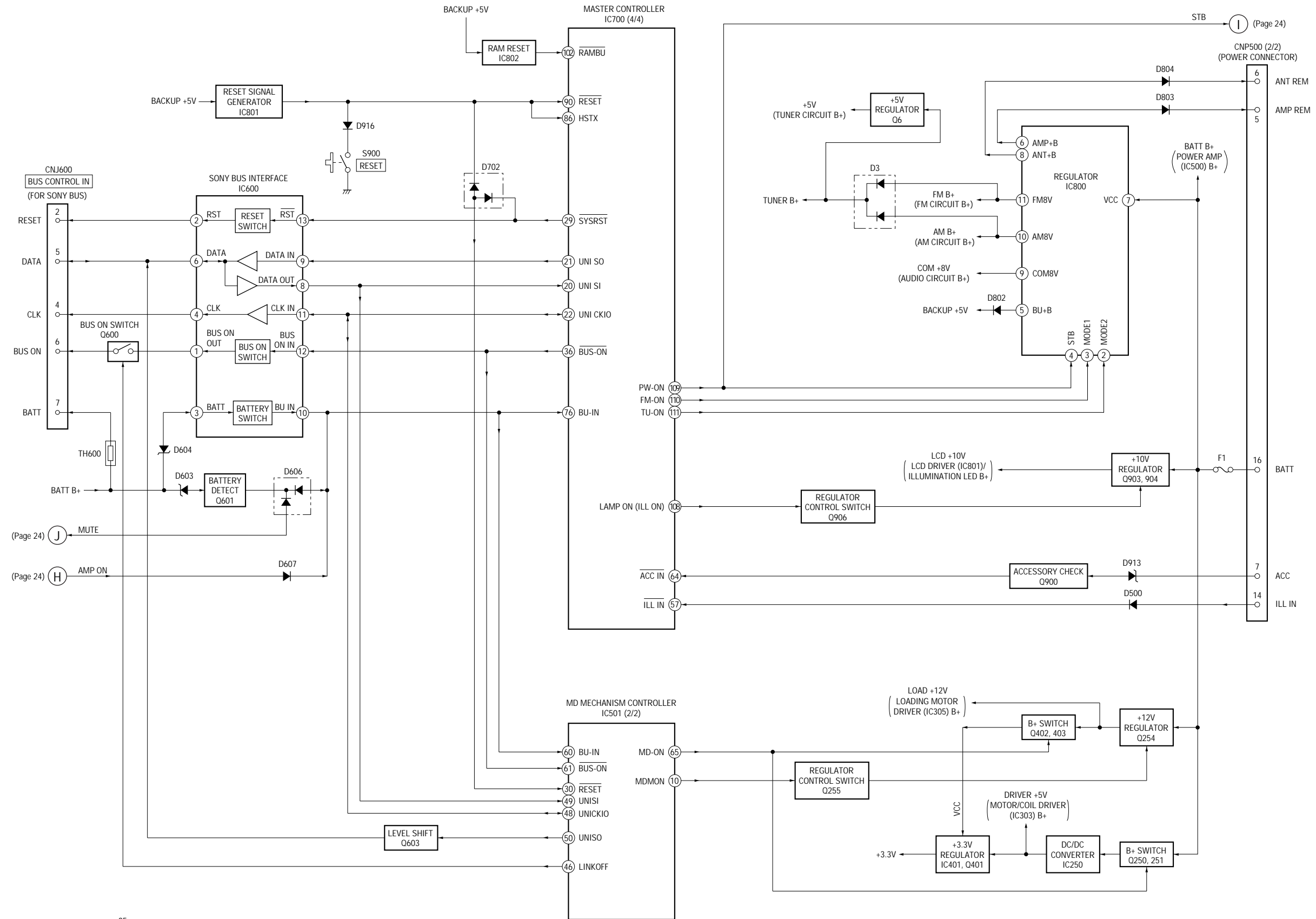
4-3. BLOCK DIAGRAM – MAIN Section –



4-4. BLOCK DIAGRAM – DISPLAY/KEY CONTROL Section –








4-5. BLOCK DIAGRAM – BUS CONTROL/POWER SUPPLY Section –



05

#### 4-6. NOTES FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS



##### Note on Printed Wiring Board:




-  : parts extracted from the component side.
-  : parts extracted from the conductor side.
-  : Through hole.
-  : internal component.
-  : Pattern from the side which enables seeing.







(The other layers' patterns are not indicated.)

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

##### Note on Schematic Diagram:

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

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

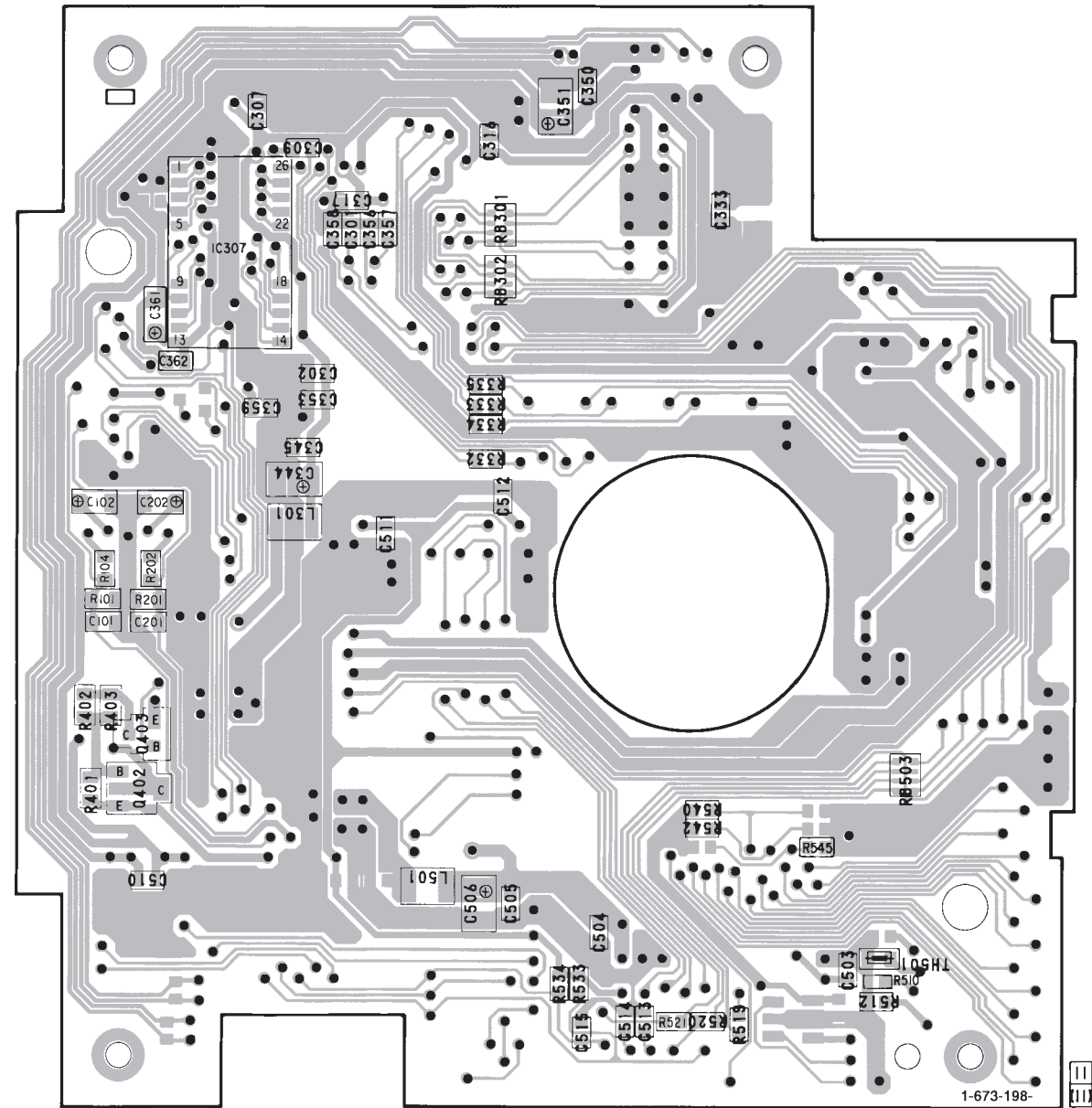
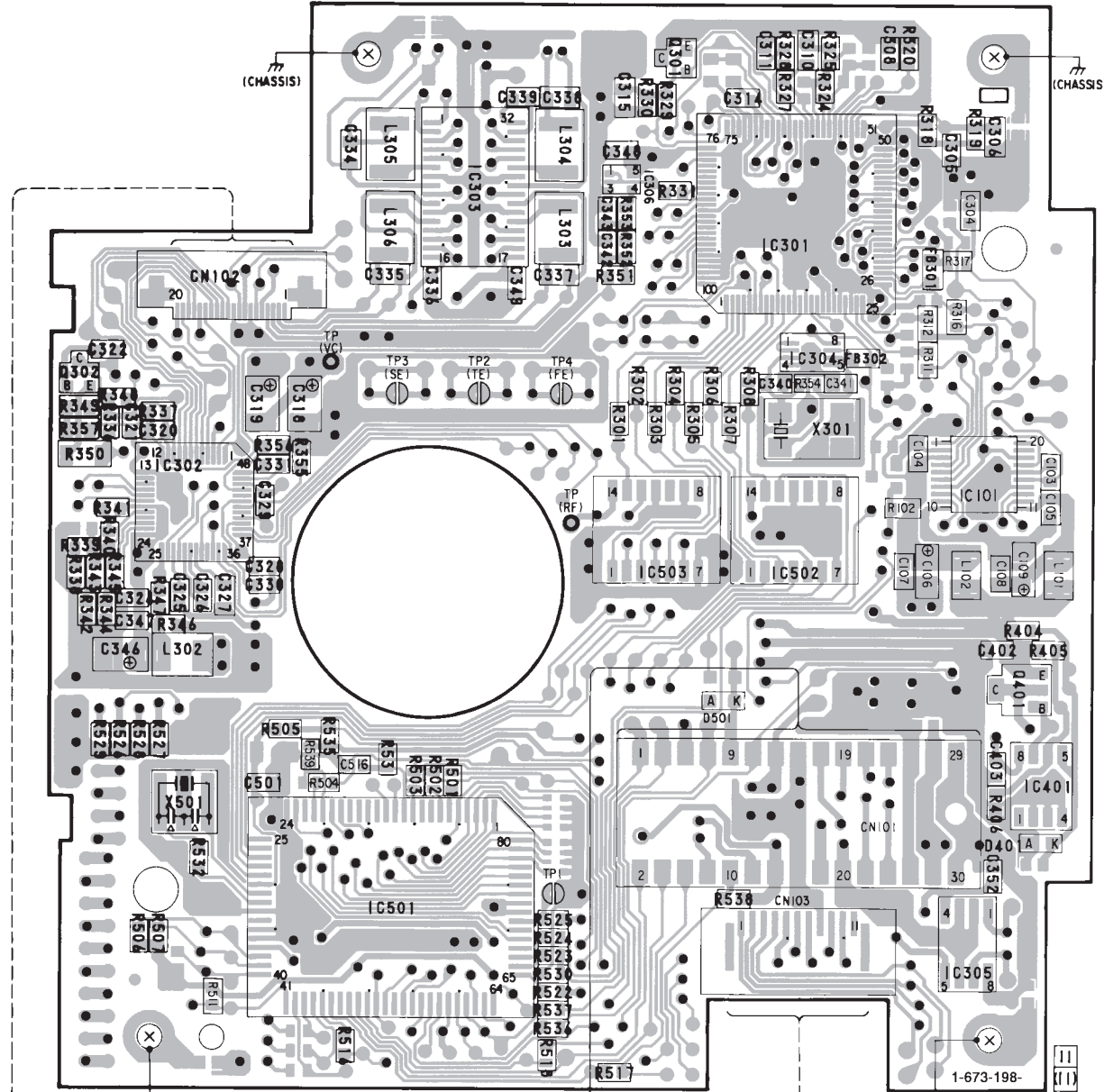
-  : B+ Line.
-  : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  -  : FM
  -  : AM (MW/LW)
  -  : BUS AUDIO IN
  -  : MD PLAY
- Abbreviation
  - CND : Canadian model.
  - G : German model.

1 2 3 4 5 6 7 8 9 10 11 12

A  
B  
C  
D  
E  
F  
F  
G  
H  
I  
J

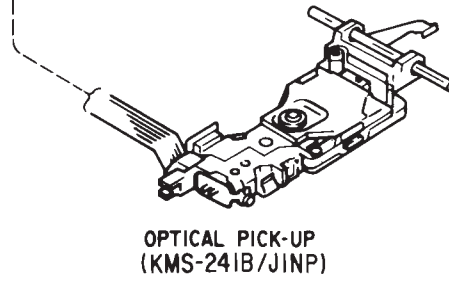
【SERVO BOARD】 (COMPONENT SIDE)

【SERVO BOARD】 (CONDUCTOR SIDE)

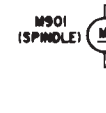


**A**  
MAIN BOARD  
CN20C  
(Page 41)

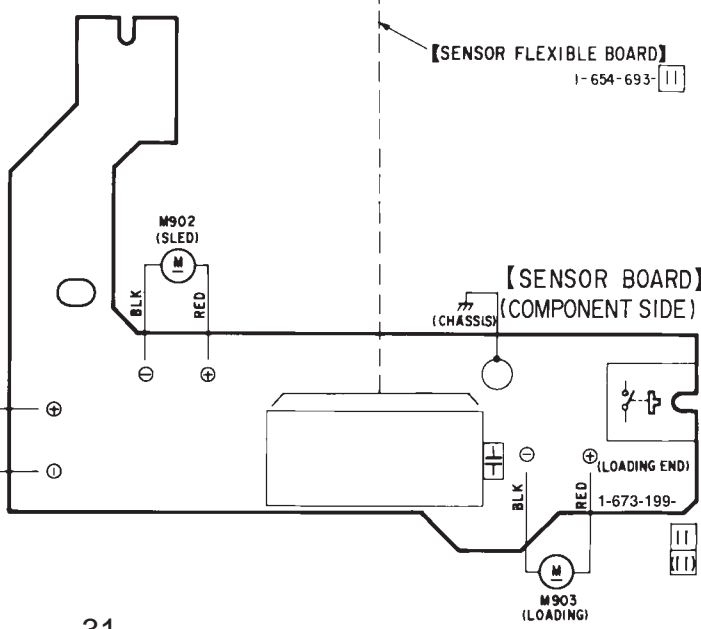
【SENSOR FLEXIBLE BOARD】  
1-654-693-111



OPTICAL PICK-UP  
(KMS-241B/JINP)

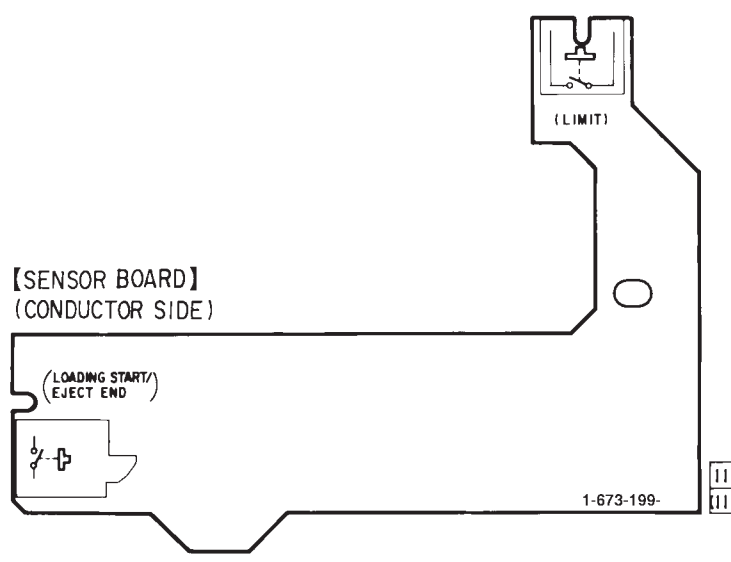


M901 (SPINDLE)



【SENSOR BOARD】  
(COMPONENT SIDE)

【SENSOR BOARD】  
(CONDUCTOR SIDE)



• Semiconductor Location

Ref. No.	Location
D401	E-6
D501	E-4
IC301	B-5
IC302	C-2
IC303	B-3
IC304	C-5
IC305	F-6
IC306	B-4
IC307	B-8
IC401	E-6
IC501	F-3
IC502	D-5
IC503	D-4
Q301	A-4
Q302	C-1
Q401	D-6
Q402	E-7
Q403	E-7



4-8. SCHEMATIC DIAGRAM – SERVO Board (1/3) –

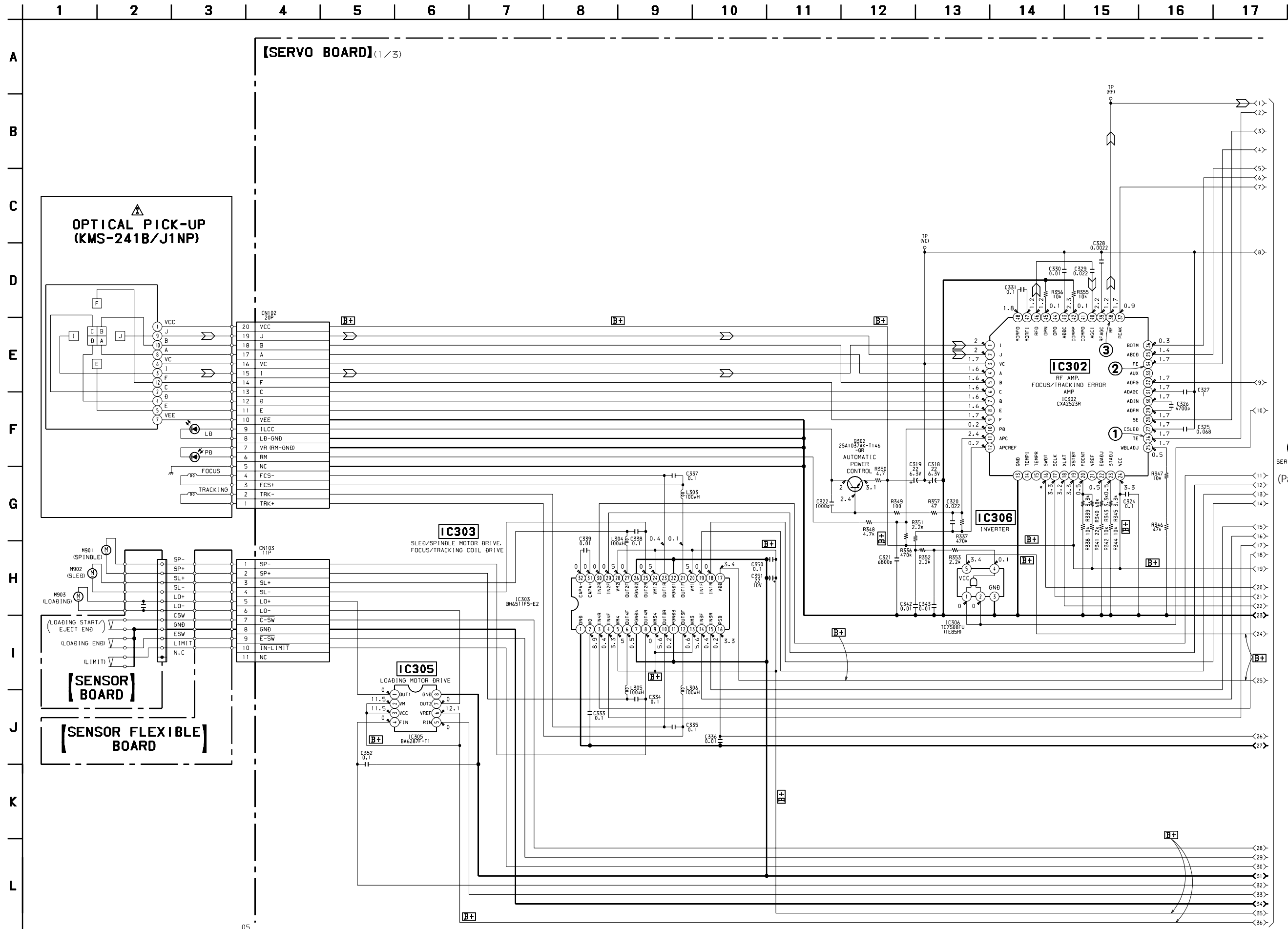
• See page 55 for Waveforms. • See page 58 for IC Block Diagrams.

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

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

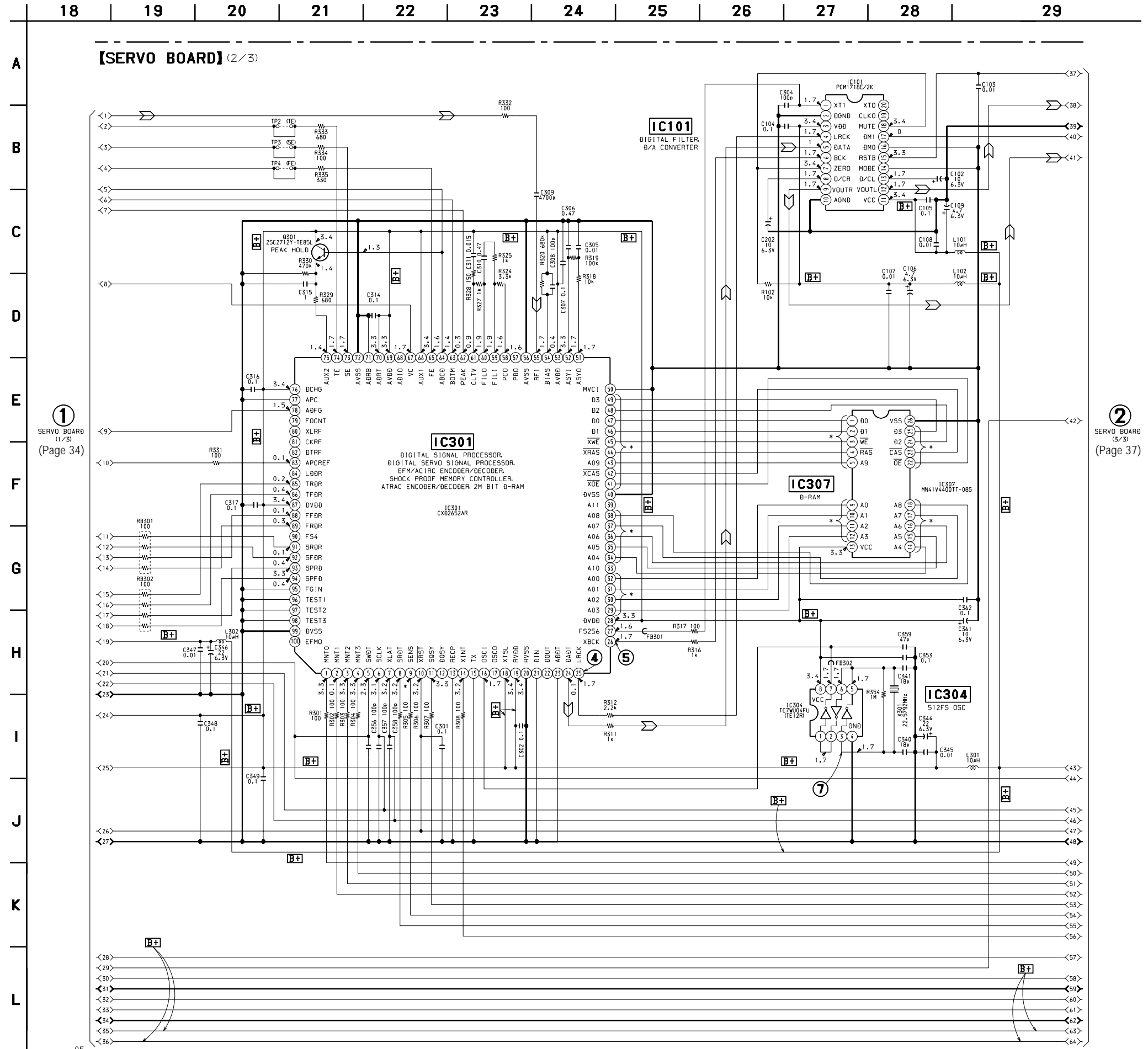
• Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark : MD PLAY

\* : Impossible to measure



1 SERVO BOARD (2/3) (Page 35)

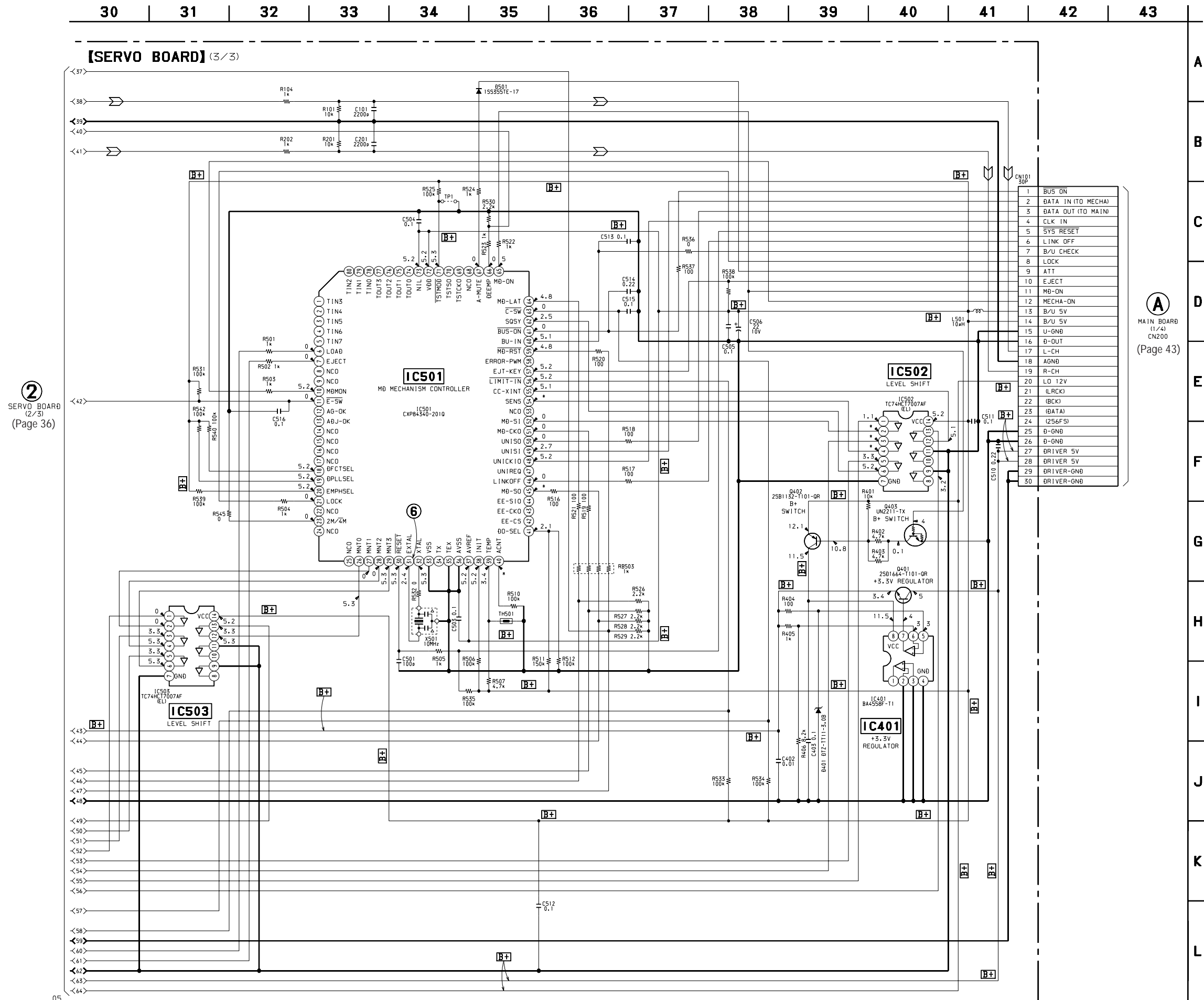
4-9. SCHEMATIC DIAGRAM – SERVO Board (2/3) – • See page 55 for Waveforms. • See page 57 for IC Block Diagrams.



• Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark : MD PLAY  
\* : Impossible to measure

4-10. SCHEMATIC DIAGRAM – SERVO Board (3/3) – • See page 55 for Waveforms.

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark : MD PLAY
- \* : Impossible to measure



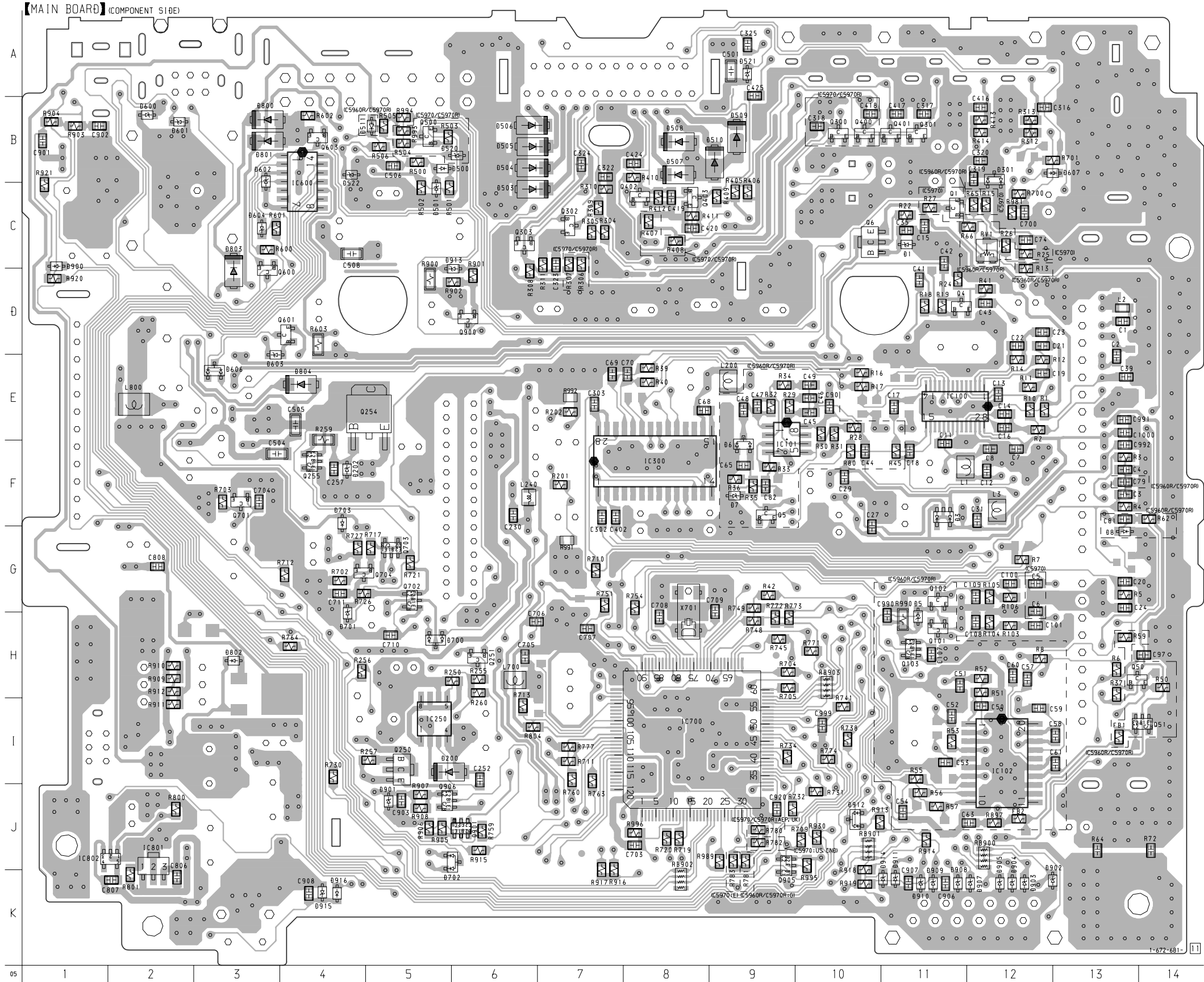
2 SERVO BOARD (2/3) (Page 36)

A MAIN BOARD (1/4) CN200 (Page 43)

4-11. PRINTED WIRING BOARD – MAIN Board (Component Side) –

• Semiconductor Location (Component Side)

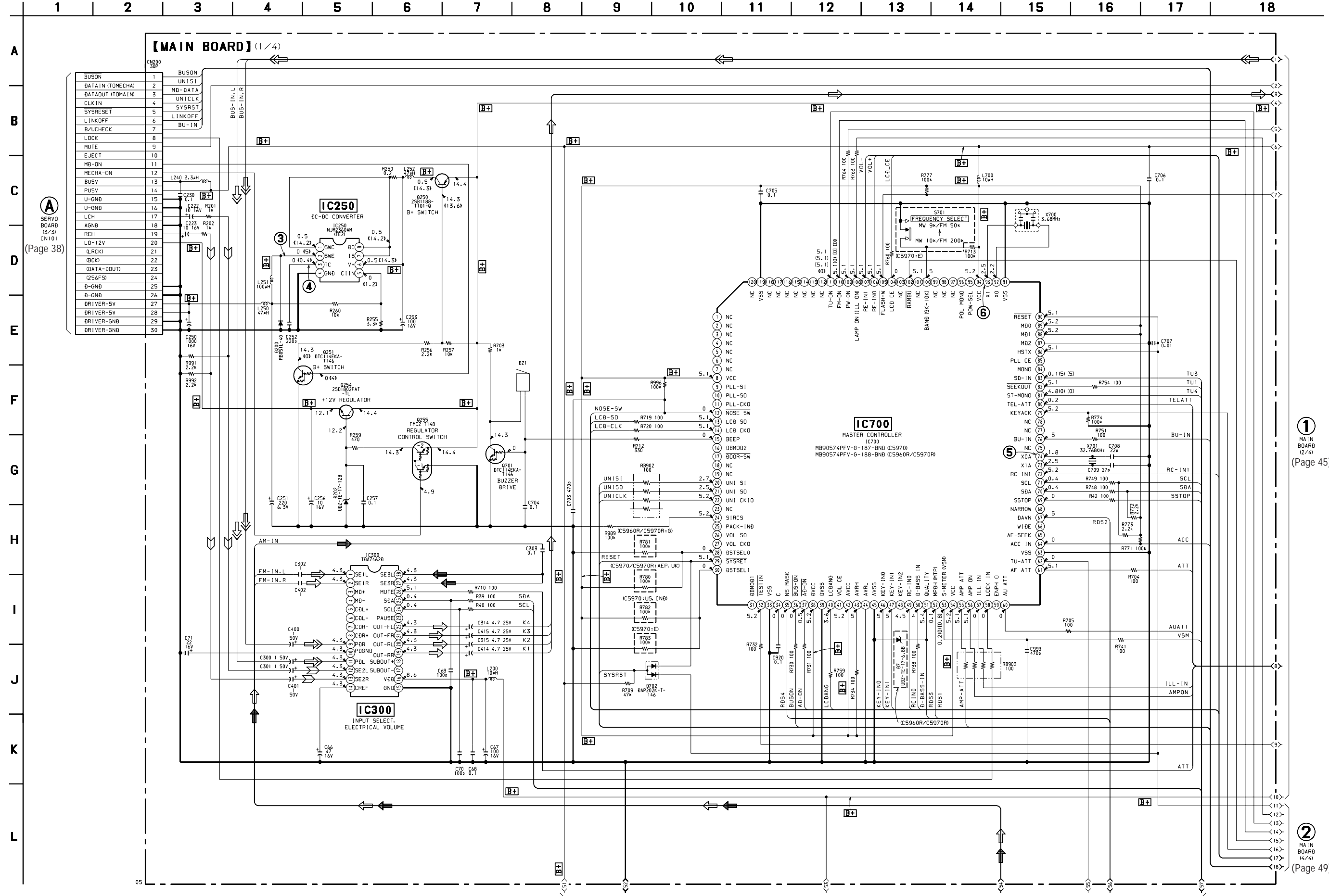
Ref. No.	Location	Ref. No.	Location
D1	C-11	D912	J-10
D3	F-11	D913	C-6
D5	H-11	D914	K-11
D6	F-9	D915	K-4
D7	F-9	D916	K-4
D8	G-13		
D200	I-5	IC100	E-11
D202	F-4	IC101	E-9
D301	B-12	IC102	I-12
D500	B-5	IC250	I-5
D501	C-5	IC300	F-8
D503	C-6	IC600	B-4
D504	B-6	IC700	I-8
D505	B-6	IC801	J-2
D506	B-6	IC802	J-2
D507	B-8		
D508	B-8	Q1	C-11
D509	B-9	Q4	D-11
D510	B-9	Q5	F-9
D511	B-5	Q6	C-10
D520	B-6	Q50	H-13
D521	A-9	Q51	I-14
D522	B-4	Q101	H-11
D600	B-2	Q102	G-11
D601	B-2	Q103	H-11
D602	B-3	Q250	I-5
D603	E-3	Q251	H-6
D604	E-3	Q254	E-5
D606	E-3	Q255	F-4
D607	B-13	Q300	B-10
D700	H-5	Q301	B-11
D701	H-4	Q302	C-7
D702	J-6	Q303	C-6
D703	F-4	Q400	B-10
D800	B-3	Q401	B-11
D801	B-3	Q402	C-8
D802	H-3	Q403	C-8
D803	D-3	Q500	B-5
D804	E-4	Q600	D-3
D900	C-1	Q601	D-4
D901	J-5	Q603	B-4
D902	K-12	Q701	F-3
D903	K-12	Q702	G-5
D904	K-12	Q703	G-5
D905	K-12	Q704	G-4
D907	K-12	Q900	D-6
D908	K-11	Q901	J-6
D909	K-11	Q905	J-9
D910	K-11	Q906	J-5
D911	K-11		





• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark : FM  
( ) : AM (MW)  
[ ] : LW  
<< >> : MD PLAY

4-13. SCHEMATIC DIAGRAM – MAIN Board (1/4) – • See page 55 for Waveforms. • See page 60 for IC Block Diagrams.



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

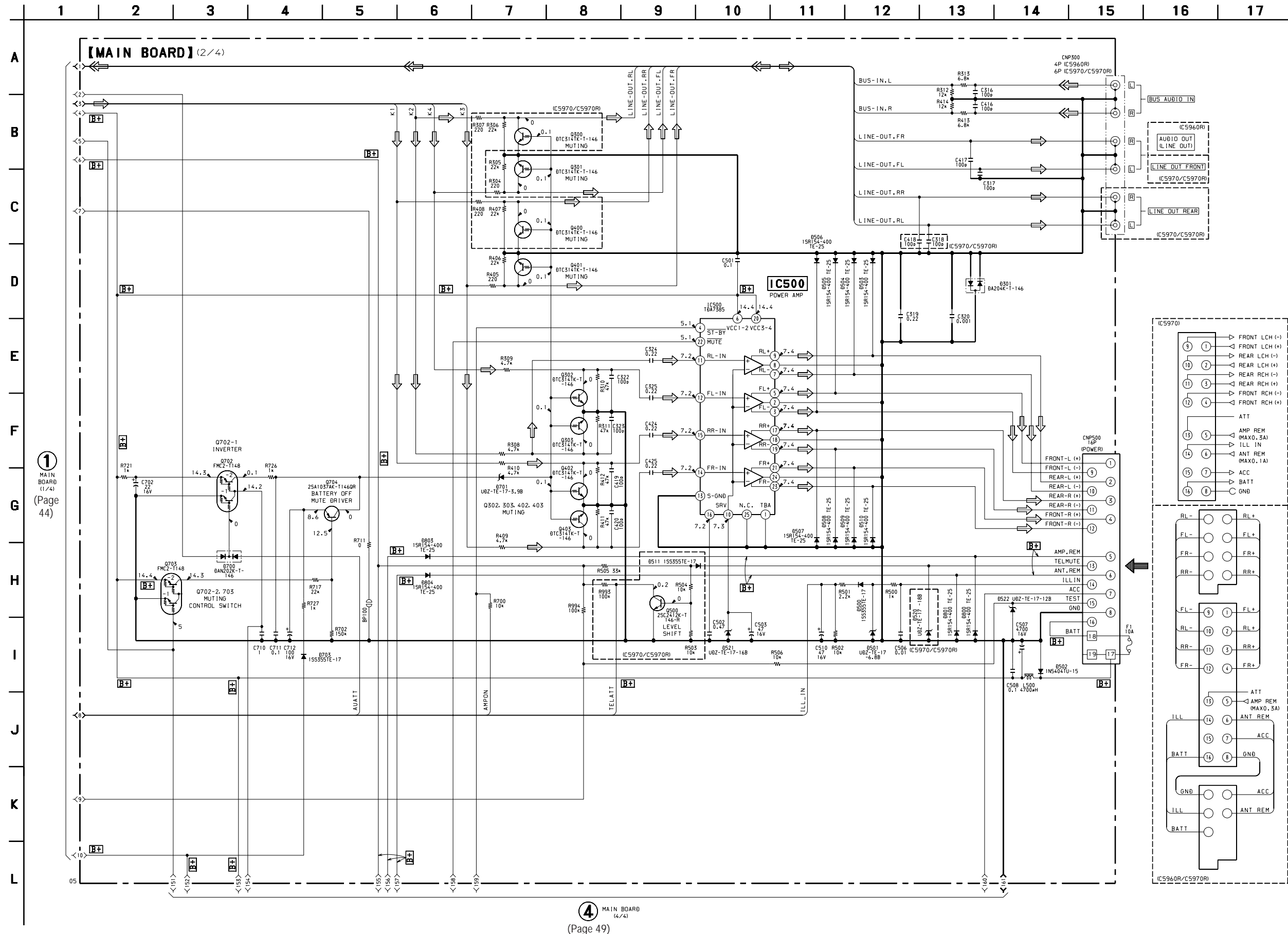
(Page 38)

(Page 45)

(Page 49)

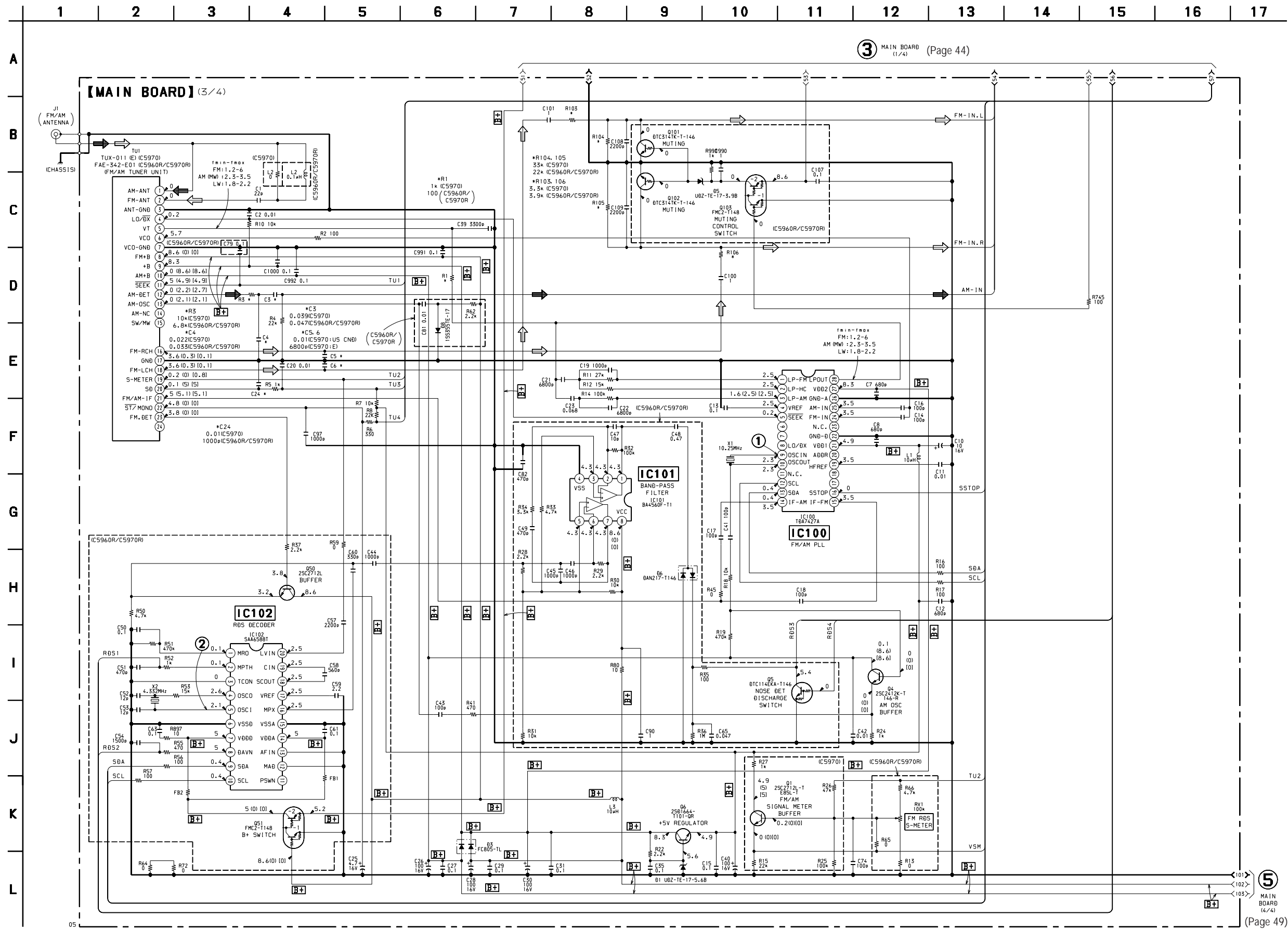
(Page 48)

4-14. SCHEMATIC DIAGRAM – MAIN Board (2/4) –



• Voltages are dc with respect to ground under no-signal (detuned) conditions.  
 no mark : FM

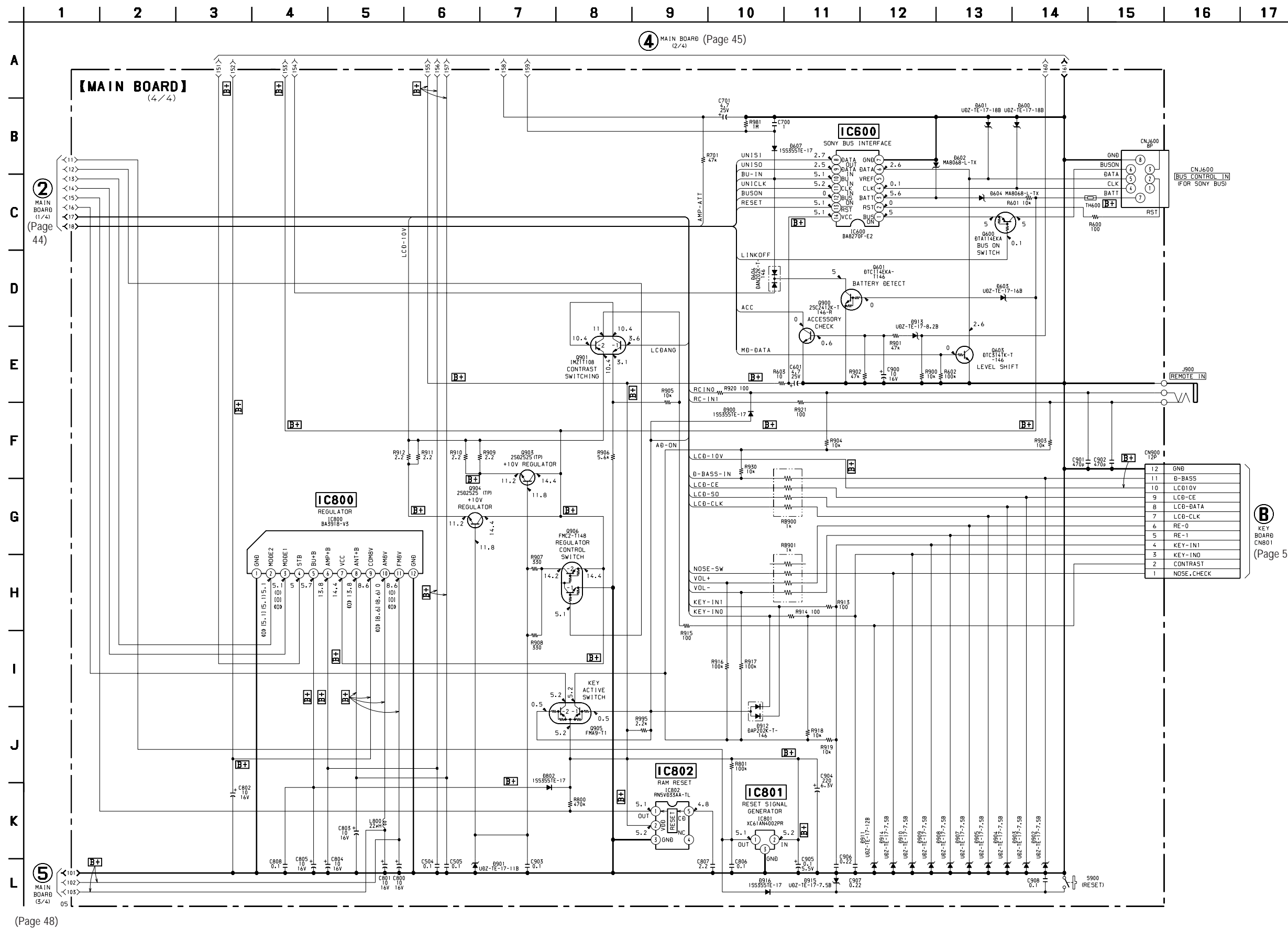
4-15. SCHEMATIC DIAGRAM – MAIN Board (3/4) – • See page 55 for Waveforms. • See page 60 for IC Block Diagrams.



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
 no mark : FM  
 ( ) : AM (MW)  
 [ ] : LW



4-16. SCHEMATIC DIAGRAM – MAIN Board (4/4) – • See page 61 for IC Block Diagrams.



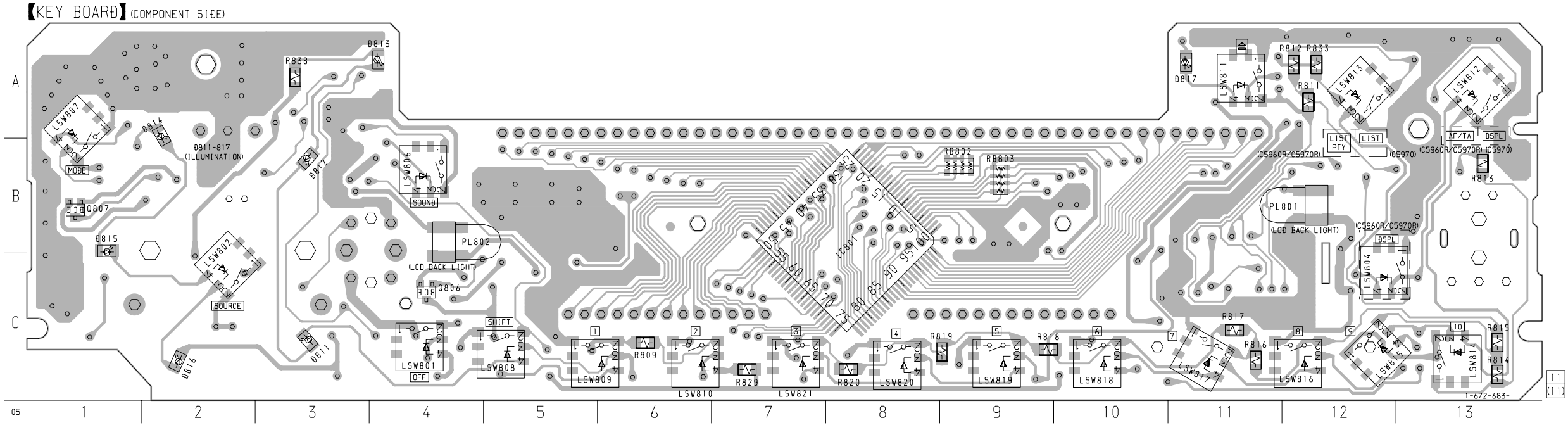
(Page 48)

- Voltages are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- ( ) : AM (MW)
- [ ] : LW
- << >> : MD PLAY

4-17. PRINTED WIRING BOARD – KEY Board –

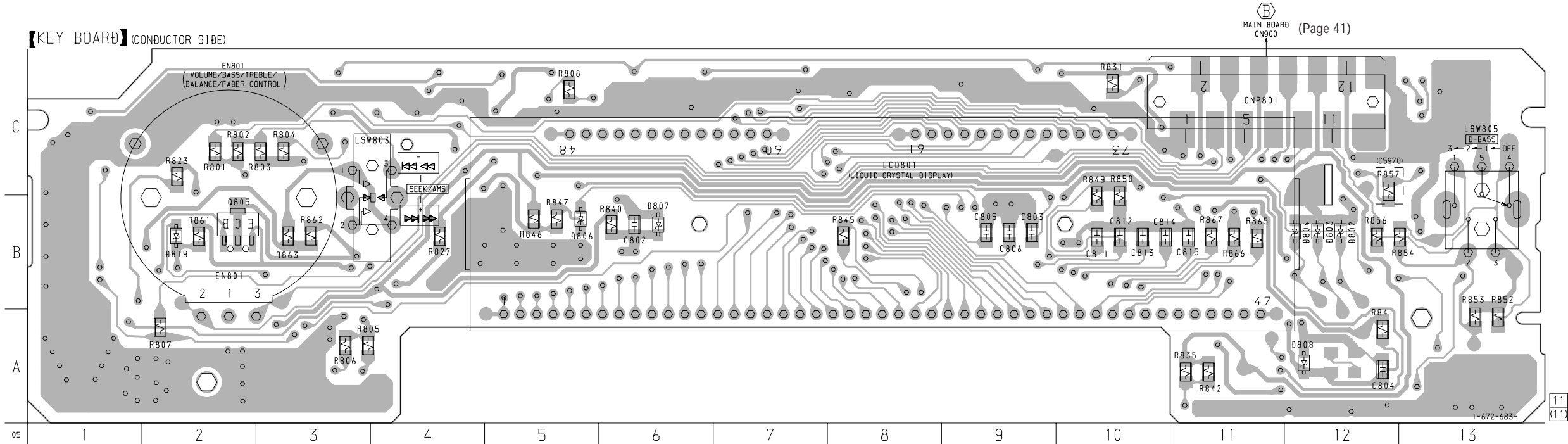
• Semiconductor Location (Component Side)

Ref. No.	Location
D811	C-3
D812	B-3
D813	A-4
D814	A-2
D815	B-1
D816	C-2
D817	A-11
IC801	B-8
Q806	C-4
Q807	B-1

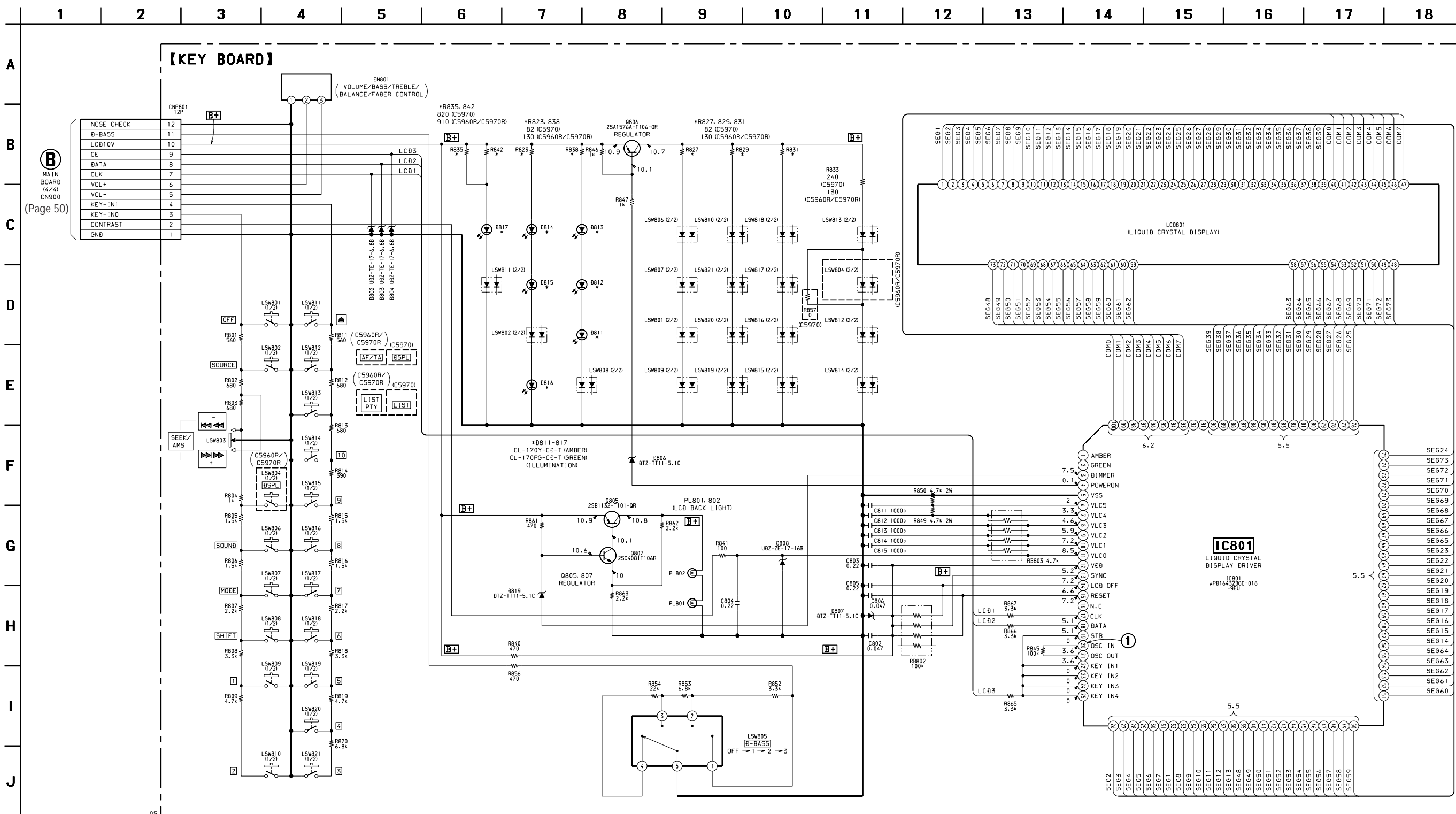


• Semiconductor Location (Conductor Side)

Ref. No.	Location
D802	B-12
D803	B-12
D804	B-12
D806	B-5
D807	B-6
D808	A-12
D819	B-2
Q805	B-2



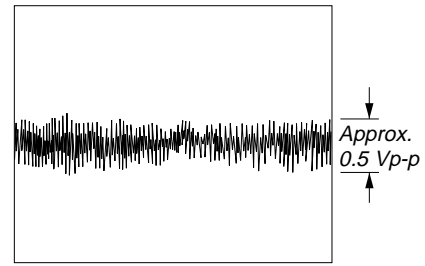
4-18. SCHEMATIC DIAGRAM – KEY Board – • See page 56 for Waveforms.



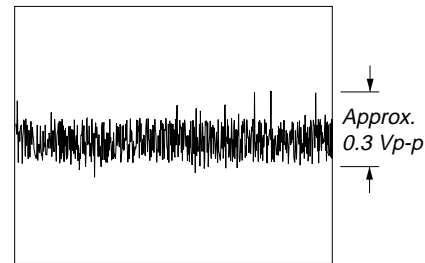
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.  
no mark : FM

• Waveforms  
– SERVO Board –

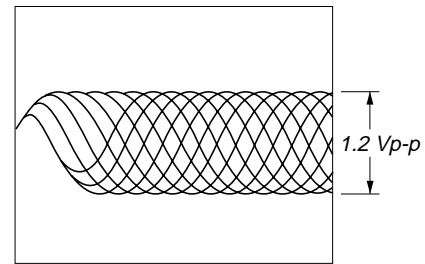
① IC302 ②⑥ (TE) (MD PLAY Mode)



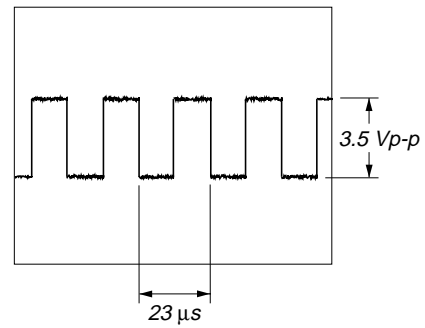
② IC302 ③④ (FE) (MD PLAY Mode)



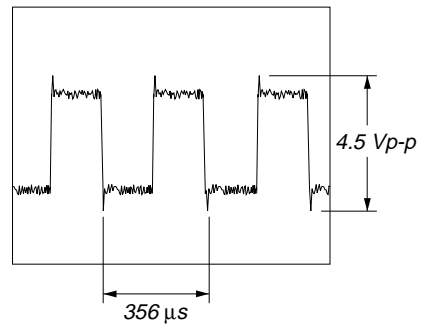
③ IC302 ③⑧ (RF) (MD PLAY Mode)



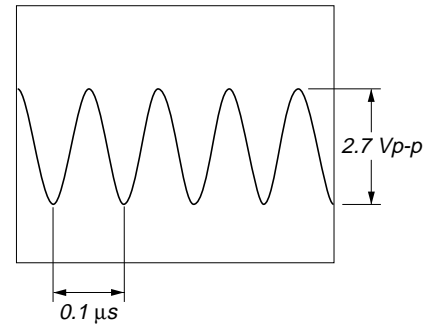
④ IC301 ②⑤ (LRCK) (MD PLAY Mode)



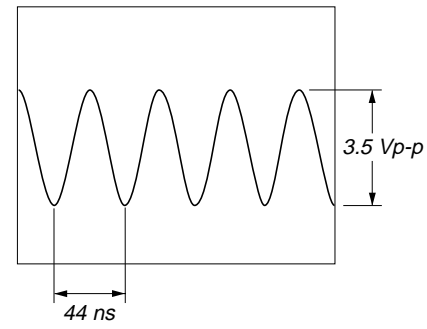
⑤ IC301 ②⑥ (XBCK) (MD PLAY Mode)



⑥ IC501 ③① (EXTAL) (MD PLAY Mode)

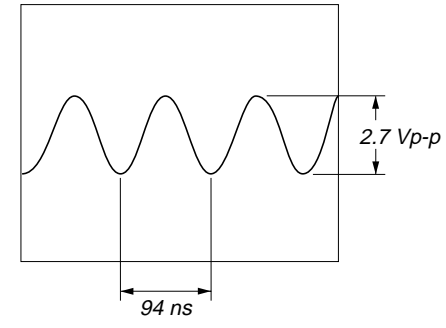


⑦ IC304 ③ (IN) (MD PLAY Mode)

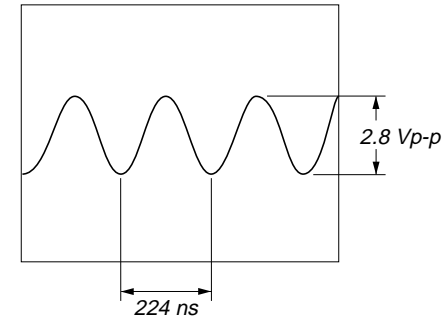


– MAIN Board –

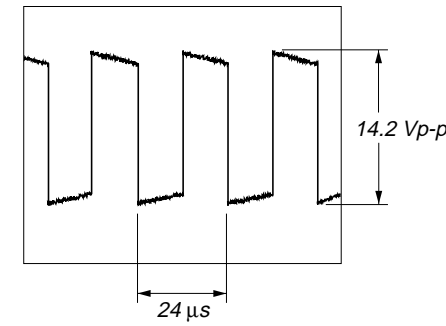
① IC100 ③ (OSC IN) (FM/AM (MW) Mode)



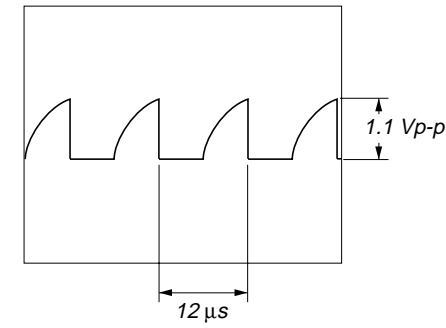
② IC102 ⑤ (OSC1) (FM Mode)



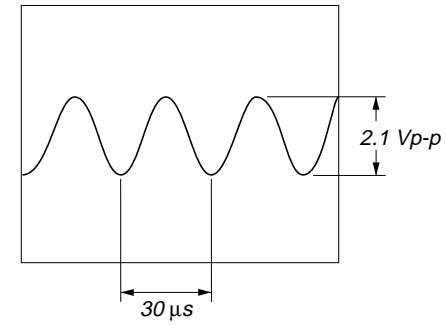
③ IC250 ② (SWE) (MD PLAY Mode)



④ IC250 ③ (TC) (MD PLAY Mode)

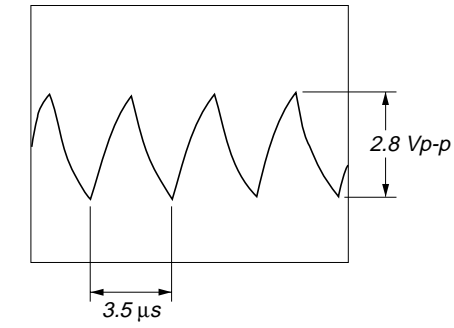


⑤ IC700 ⑦④ (XOA)

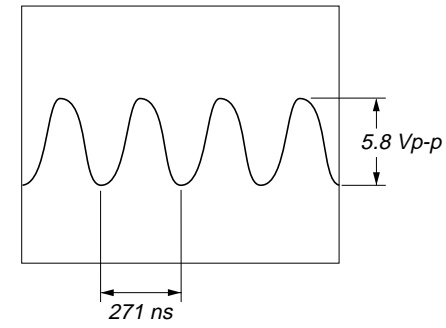


– KEY Board –

① IC801 ②⑩ (OSC IN)

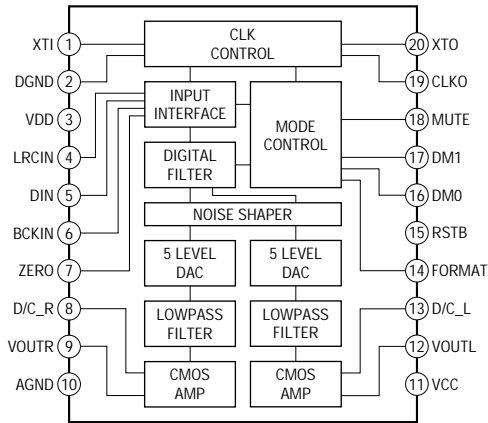


⑥ IC700 ⑧③ (X1)

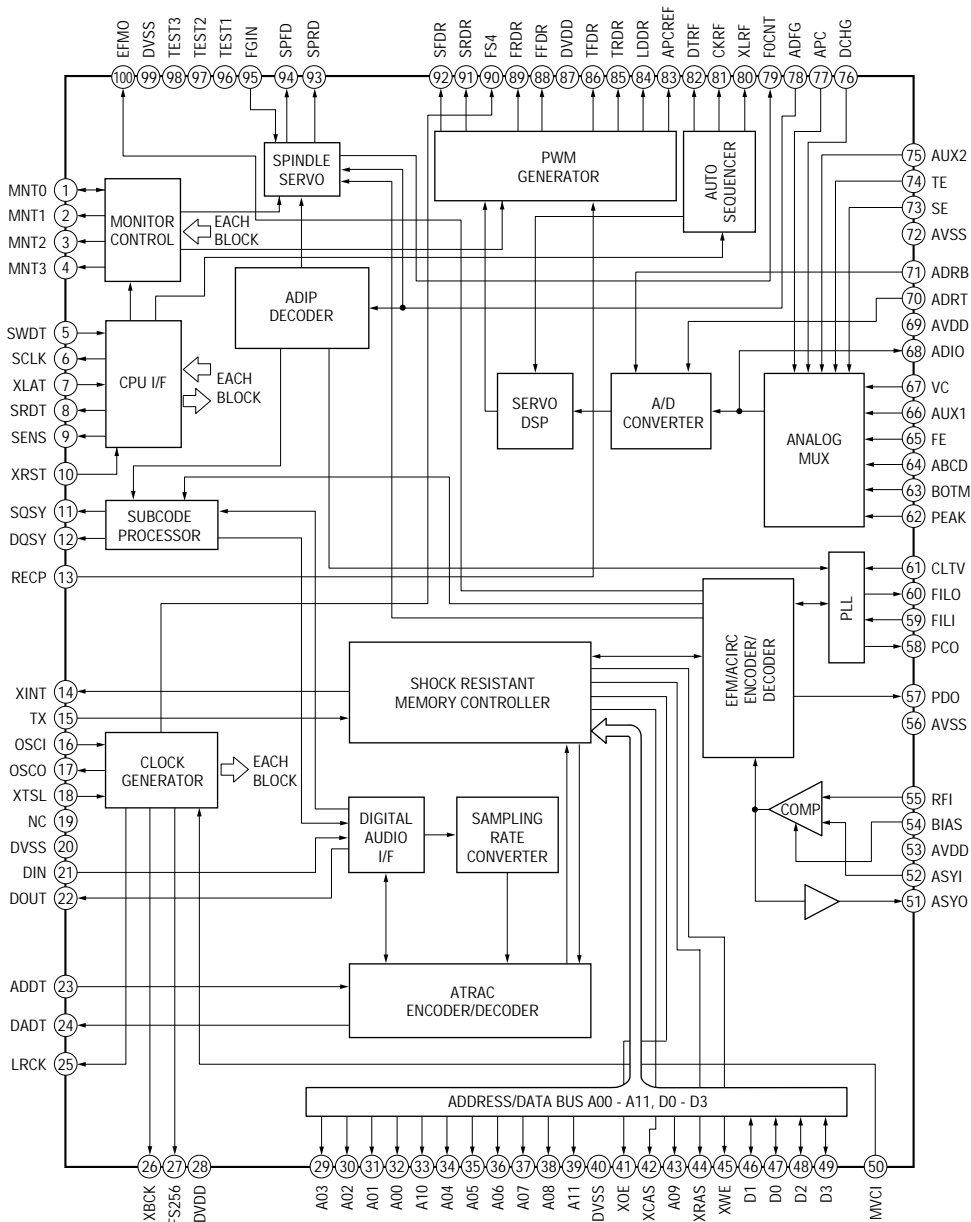


• IC Block Diagrams  
– SERVO Board –

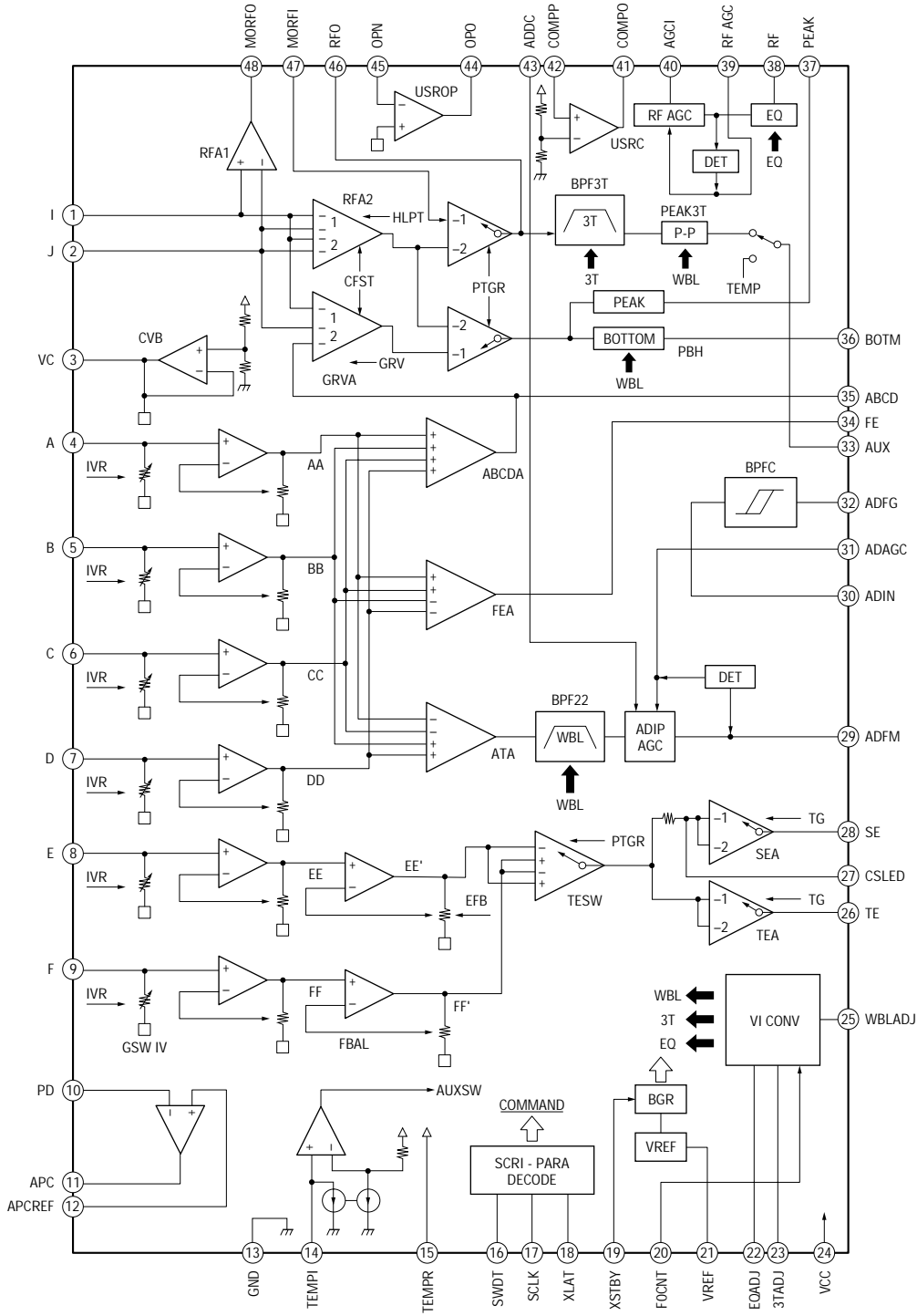
IC101 PCM1718E/2K



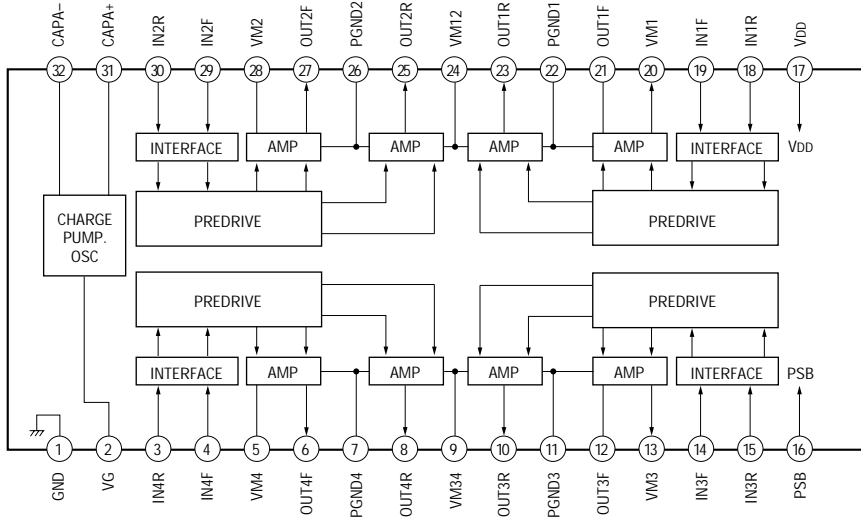
IC301 CXD2652AR



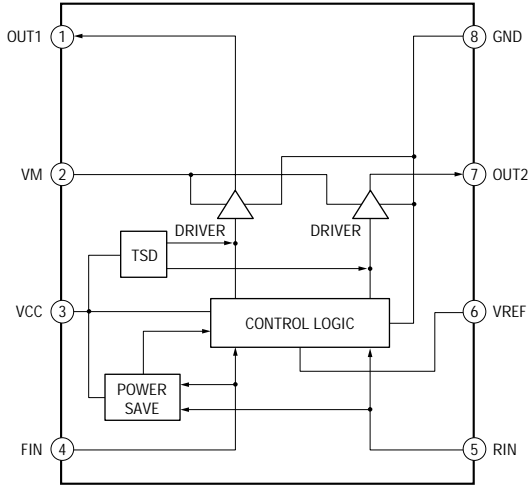
IC302 CXA2523R



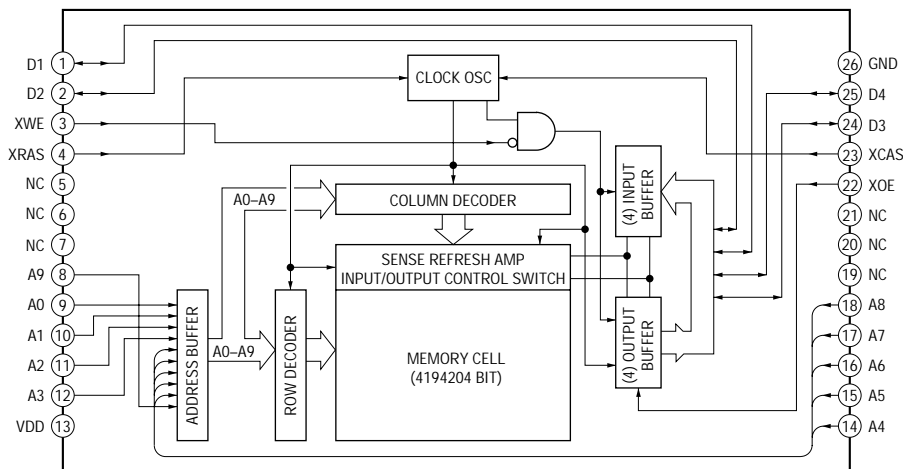
**IC303 BH6511FS-E2**



**IC305 BA6287F**

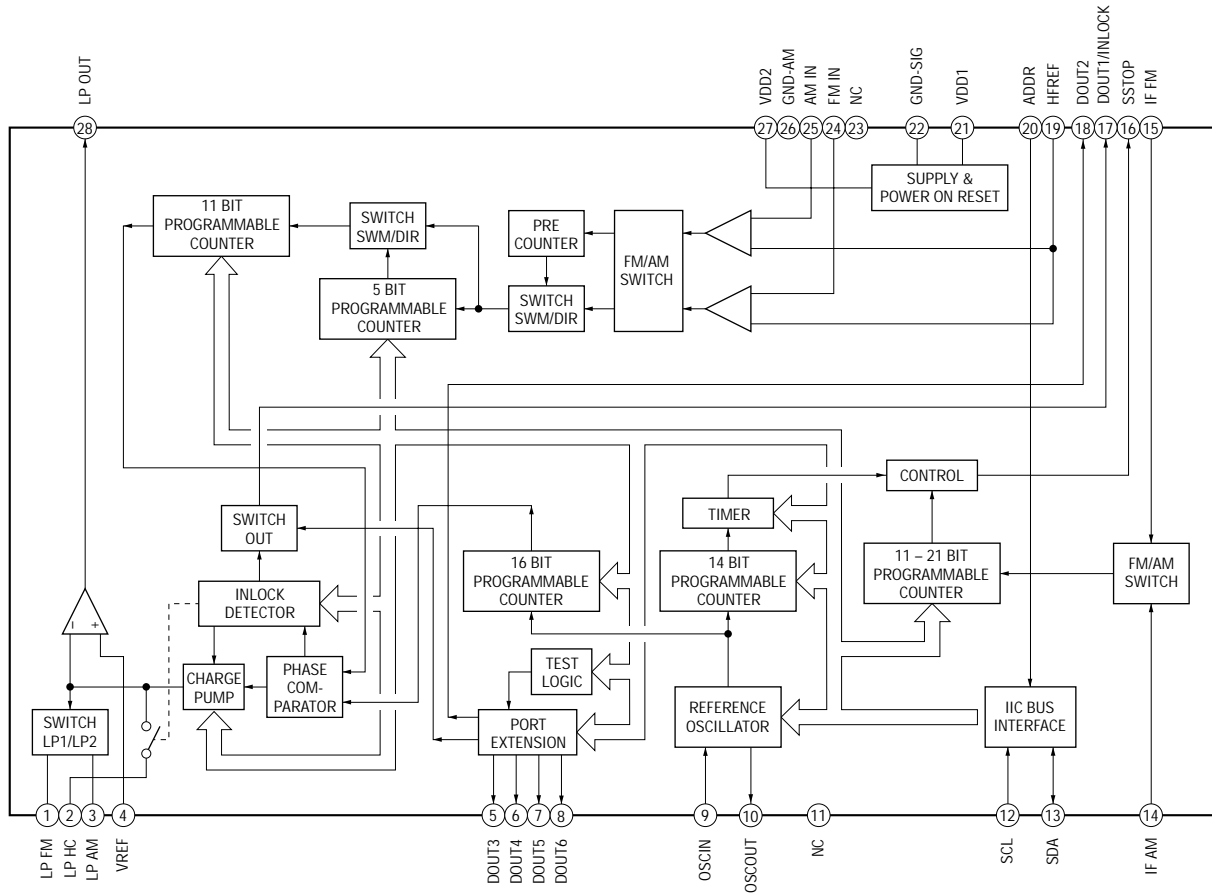


**IC307 MN41V4400TT-08S**

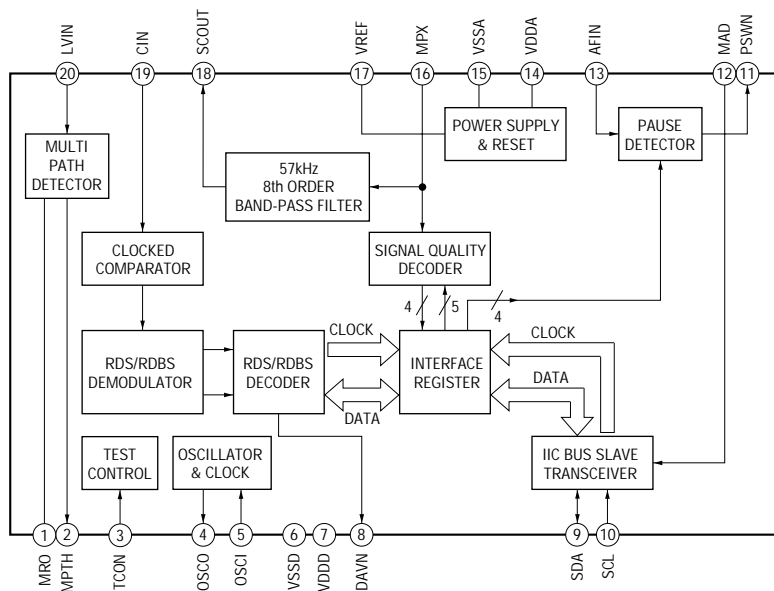


– MAIN Board –

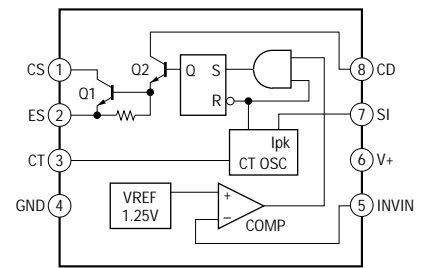
IC100 TDA7427AD



IC102 SAA6588T-118 (MDX-C5960R/C5970R)

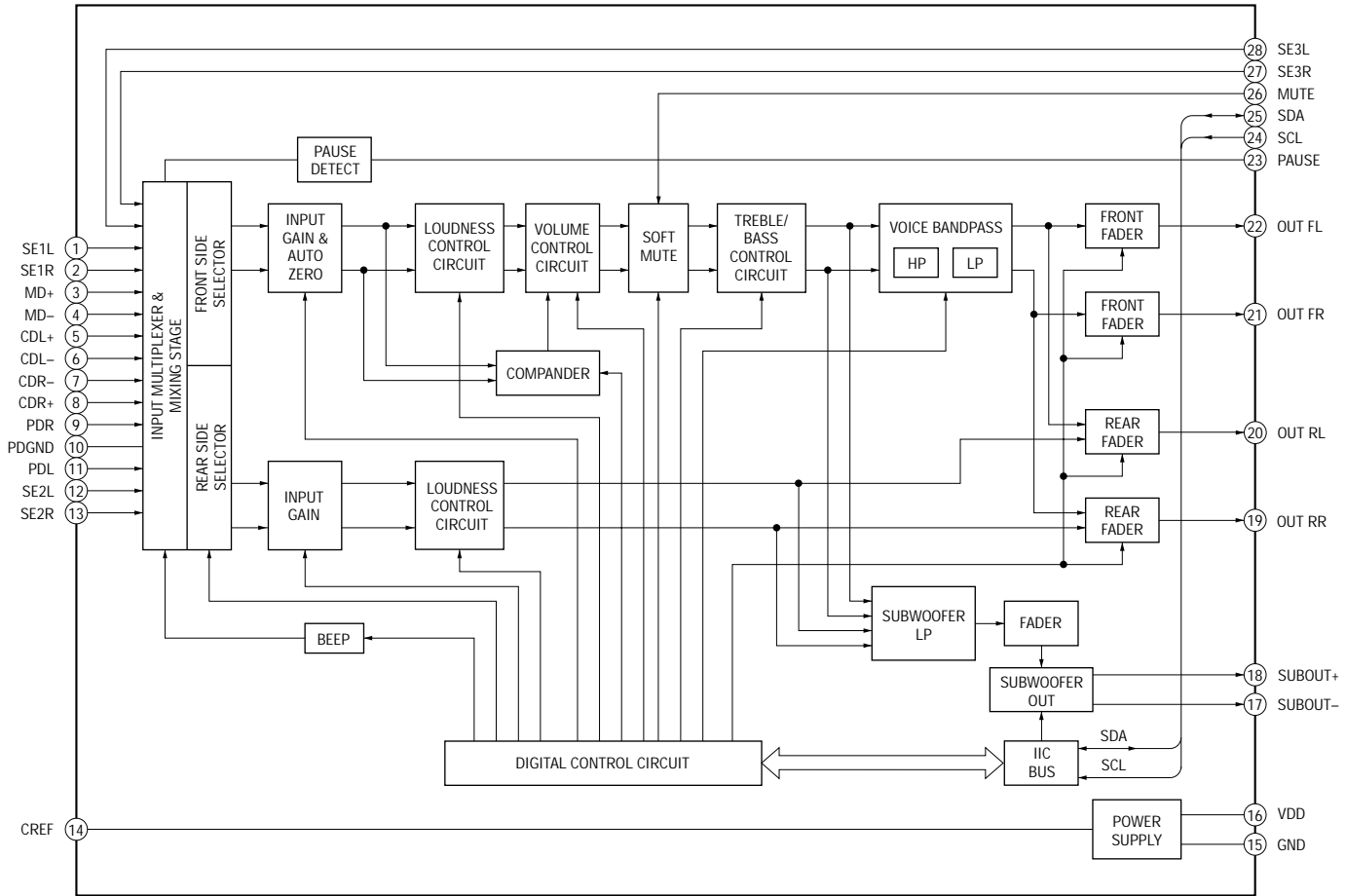


IC250 NJM2360AM (TE2)

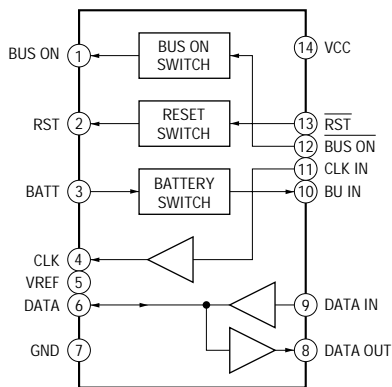




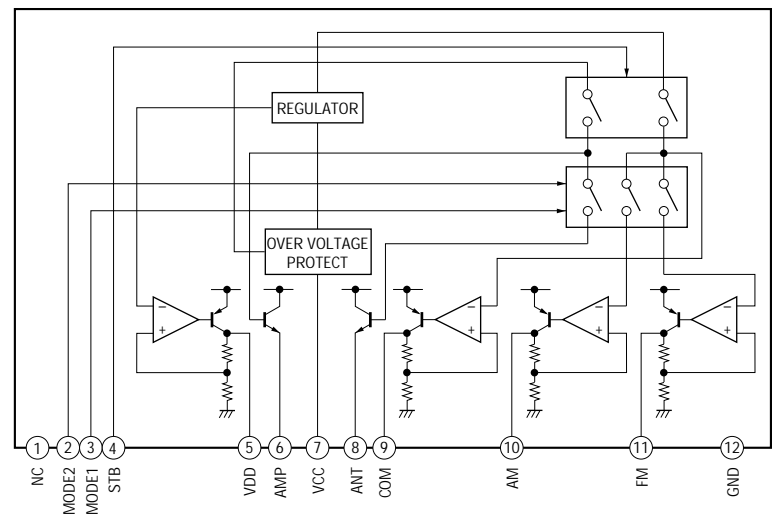
**IC300 TDA7462D013TR**



**IC600 BA8270F-E2**



**IC800 BA3918-V3**



#### 4-19. IC PIN FUNCTION DESCRIPTION

##### • SERVO BOARD IC301 CXD2652AR

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, 2M BIT D-RAM)

Pin No.	Pin Name	I/O	Function
1	MNT0	O	Focus OK signal output to the MD mechanism controller (IC501) “H” is output when focus is on (“L”: NG)
2	MNT1	O	Track jump detection signal output to the MD mechanism controller (IC501)
3	MNT2	O	Busy monitor signal output to the MD mechanism controller (IC501)
4	MNT3	O	Spindle servo lock status monitor signal output to the MD mechanism controller (IC501)
5	SWDT	I	Writing serial data signal input from the MD mechanism controller (IC501)
6	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
7	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
8	SRDT	O (3)	Reading serial data signal output to the MD mechanism controller (IC501)
9	SENS	O (3)	Internal status (SENSE) output to the MD mechanism controller (IC501)
10	$\overline{\text{XRST}}$	I	Reset signal input from the MD mechanism controller (IC501) “L”: reset
11	SQSY	O	Subcode Q sync (SCOR) output to the MD mechanism controller (IC501) “L” is output every 13.3 msec Almost all, “H” is output
12	DQSY	O	Digital In U-bit CD format subcode Q sync (SCOR) output terminal “L” is output every 13.3 msec Almost all, “H” is output Not used (open)
13	RECP	I	Laser power selection signal input terminal “L”: playback mode, “H”: recording mode (fixed at “L” in this set)
14	XINT	O	Interrupt status output to the MD mechanism controller (IC501)
15	TX	I	Recording data output enable signal input terminal Writing data transmission timing input (Also serves as the magnetic head on/off output) Not used (fixed at “L”)
16	OSCI	I	System clock signal (512Fs=22.5792 MHz) input from the oscillator circuit
17	OSCO	O	System clock signal (512Fs=22.5792 MHz) output terminal Not used (open)
18	XTSL	I	Input terminal for the system clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “H” in this set)
19	RVDD	—	Power supply terminal (+3.3V) (digital system)
20	RVSS	—	Ground terminal (digital system)
21	DIN	I	Digital audio signal input terminal when recording mode Not used (fixed at “L”)
22	DOUT	O	Digital audio signal output terminal when playback mode Not used (open)
23	ADDT	I	Recording data input terminal Not used (fixed at “L”)
24	DADT	O	Playback data output to the PCM1718E (IC101)
25	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the PCM1718E (IC101)
26	XBCK	O	Bit clock signal (2.8224 MHz) output to the PCM1718E (IC101)
27	FS256	O	Clock signal (11.2896 MHz) output to the PCM1718E (IC101)
28	DVDD	—	Power supply terminal (+3.3V) (digital system)
29 to 32	A03 to A00	O	Address signal output to the D-RAM (IC307)
33	A10	O	Address signal output to the external D-RAM Not used (open)
34 to 38	A04 to A08	O	Address signal output to the D-RAM (IC307)
39	A11	O	Address signal output to the external D-RAM Not used (open)
40	DVSS	—	Ground terminal (digital system)
41	$\overline{\text{XOE}}$	O	Output enable signal output to the D-RAM (IC307) “L” active
42	$\overline{\text{XCAS}}$	O	Column address strobe signal output to the D-RAM (IC307) “L” active
43	A09	O	Address signal output to the D-RAM (IC307)
44	$\overline{\text{XRAS}}$	O	Row address strobe signal output to the D-RAM (IC307) “L” active
45	$\overline{\text{XWE}}$	O	Write enable signal output to the D-RAM (IC307) “L” active

Pin No.	Pin Name	I/O	Function
46	D1	I/O	Two-way data bus with the D-RAM (IC307)
47	D0	I/O	
48	D2	I/O	
49	D3	I/O	
50	MVCI	I	Digital in PLL oscillation input from the external VCO Not used (fixed at "L")
51	ASYO	O	Playback EFM full-swing output terminal
52	ASYI	I (A)	Playback EFM asymmetry comparator voltage input terminal
53	AVDD	—	Power supply terminal (+3.3V) (analog system)
54	BIAS	I (A)	Playback EFM asymmetry circuit constant current input terminal
55	RFI	I (A)	Playback EFM RF signal input from the CXA2523R (IC302)
56	AVSS	—	Ground terminal (analog system)
57	PDO	O (3)	Phase comparison output for clock playback analog PLL of the playback EFM Not used (open)
58	PCO	O (3)	Phase comparison output for master clock of the recording/playback EFM master PLL
59	FILI	I (A)	Filter input for master clock of the recording/playback master PLL
60	FILO	O (A)	Filter output for master clock of the recording/playback master PLL
61	CLTV	I (A)	Internal VCO control voltage input of the recording/playback master PLL
62	PEAK	I (A)	Light amount signal (RF/ABCD) peak hold input from the CXA2523R (IC302)
63	BOTM	I (A)	Light amount signal (RF/ABCD) bottom hold input from the CXA2523R (IC302)
64	ABCD	I (A)	Light amount signal (ABCD) input from the CXA2523R (IC302)
65	FE	I (A)	Focus error signal input from the CXA2523R (IC302)
66	AUX1	I (A)	Auxiliary signal (I <sub>3</sub> signal/temperature signal) input terminal Not used (fixed at "H")
67	VC	I (A)	Middle point voltage (+1.65V) input from the CXA2523R (IC302)
68	ADIO	O (A)	Monitor output of the A/D converter input signal Not used (open)
69	AVDD	—	Power supply terminal (+3.3V) (analog system)
70	ADRT	I (A)	A/D converter operational range upper limit voltage input terminal (fixed at "H" in this set)
71	ADRB	I (A)	A/D converter operational range lower limit voltage input terminal (fixed at "L" in this set)
72	AVSS	—	Ground terminal (analog system)
73	SE	I (A)	Sled error signal input from the CXA2523R (IC302)
74	TE	I (A)	Tracking error signal input from the CXA2523R (IC302)
75	AUX2	I (A)	Auxiliary signal input terminal Light amount signal input from the CXA2523R (IC302)
76	DCHG	I (A)	Connected to the +3.3V power supply
77	APC	I (A)	Error signal input for the laser automatic power control Not used (fixed at "L")
78	ADFG	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the CXA2523R (IC302)
79	F0CNT	O	Filter f <sub>0</sub> control signal output terminal Not used (open)
80	XLRF	O	Serial data latch pulse signal output terminal Not used (open)
81	CKRF	O	Serial data transfer clock signal output terminal Not used (open)
82	DTRF	O	Writing serial data output terminal Not used (open)
83	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
84	LDDR	O	PWM signal output for the laser automatic power control Not used (open)
85	TRDR	O	Tracking servo drive PWM signal (-) output to the BH6511FS (IC303)
86	TFDR	O	Tracking servo drive PWM signal (+) output to the BH6511FS (IC303)
87	DVDD	—	Power supply terminal (+3.3V) (digital system)
88	FFDR	O	Focus servo drive PWM signal (+) output to the BH6511FS (IC303)
89	FRDR	O	Focus servo drive PWM signal (-) output to the BH6511FS (IC303)
90	FS4	O	Clock signal (176.4 kHz) output terminal (X'tal system) Not used (open)
91	SRDR	O	Sled servo drive PWM signal (-) output to the BH6511FS (IC303)

Pin No.	Pin Name	I/O	Function
92	SFDR	O	Sled servo drive PWM signal (+) output to the BH6511FS (IC303)
93	SPRD	O	Spindle servo drive PWM signal (-) output to the BH6511FS (IC303)
94	SPFD	O	Spindle servo drive PWM signal (+) output to the BH6511FS (IC303)
95	FGIN	I	Not used (fixed at "L")
96	TEST1	I	Input terminal for the test (fixed at "L")
97	TEST2	I	
98	TEST3	I	
99	DVSS	—	Ground terminal (digital system)
100	EFMO	O	EFM signal output terminal when recording mode Not used (open)

\* I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O.

• SERVO BOARD IC302 CXA2523R (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.65V) generation output terminal
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input from the optical pick-up block laser diode
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor Not used (open)
15	TEMPR	O	Output terminal for a temperature sensor reference voltage Not used (open)
16	SWDT	I	Writing serial data input from the MD mechanism controller (IC501)
17	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
18	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
19	<u>XSTBY</u>	I	Standby signal input terminal “L”: standby (fixed at “H” in this set)
20	FOCNT	I	Center frequency control voltage input terminal of internal circuit (BPF22, BPF3T, EQ) input terminal
21	VREF	O	Reference voltage output terminal Not used (open)
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+3.3V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output to the CXD2652AR (IC301)
27	CSLED	I	Connected to the external capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output to the CXD2652AR (IC301)
29	ADFM	O	FM signal output of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex signal (22.05 kHz $\pm$ 1 kHz) output to the CXD2652AR (IC301)
33	AUX	O	Auxiliary signal (I <sub>3</sub> signal/temperature signal) output terminal Not used (open)
34	FE	O	Focus error signal output to the CXD2652AR (IC301)
35	ABCD	O	Light amount signal (ABCD) output to the CXD2652AR (IC301)
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2652AR (IC301)
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2652AR (IC301)
38	RF	O	Playback EFM RF signal output to the CXD2652AR (IC301)
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used (open)
42	COMPP	I	User comparator input terminal Not used (fixed at “L”)
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used (open)
45	OPN	I	User operational amplifier inversion input terminal Not used (fixed at “L”)
46	RFO	O	RF signal output terminal
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output terminal

• SERVO BOARD IC501 CXP84340-201Q (MD MECHANISM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1 to 5	TIN3 to TIN7	I/O	Input of the 4×8 matrix test keys (“L” is always output, except in test mode) Not used (open)
6	LOAD	O	Loading motor control signal output to the motor driver (IC305) “H” active *1
7	EJECT	O	Loading motor control signal output to the motor driver (IC305) “H” active *1
8, 9	NCO	O	Not used (open)
10	MDMON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply and loading motor drive (IC305) power supply “H”: power on
11	$\overline{\text{E-SW}}$	I	Inputs the disc loading completion detect switch detection signal “L”: When completed of the disc loading operation
12	AG-OK	O	Output of aging status in test mode “L”: under aging, “H”: aging completed Not used (open)
13	ADJ-OK	O	Output of status when aging completed in test mode “L”: aging NG, “H”: aging OK Not used (open)
14 to 17	NCO	O	Not used (open)
18	DFCTSEL	I	Select whether defect function is used for the CXD2652AR (IC301) “L”: used this function , “H”: not used this function (fixed at “H” in this set)
19	DPLLSEL	I	Select whether digital PLL function is used for the CXD2652AR (IC301) “L”: used this function , “H”: not used this function (fixed at “H” in this set)
20	EMPHSEL	I	Select whether emphasis signal output from pin or unilink data “L”: outputs from both pin and unilink data, “H”: output from pin only (fixed at “H” in this set)
21	LOCK	O	Mini-disc lock detection signal output to the master controller (IC700) “H”: lock
22	NCO	O	Not used (open)
23	2M/4M	I	Select whether D-RAM capacitance 2M bit or 4M bit “L”: 4M bit (external D-RAM) , “H”: 2M bit (internal D-RAM of CXD2652AR) (fixed at “L” in this set)
24, 25	NCO	O	Not used (open)
26	MNT0	I	Focus OK signal input from the CXD2652AR (IC301) “H” is input when focus is on (“L”: NG)
27	MNT1	I	Track jump detection signal input from the CXD2652AR (IC301)
28	MNT2	I	Busy monitor signal input from the CXD2652AR (IC301)
29	MNT3	I	Spindle servo lock status monitor signal input from the CXD2652AR (IC301)
30	$\overline{\text{RESET}}$	I	System reset signal input from the master controller (IC700), reset signal generator (IC801) and reset switch (S900) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
31	EXTAL	O	Main system clock output terminal (10 MHz)
32	XTAL	I	Main system clock input terminal (10 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal (32.768 kHz) Not used (open)
35	TEX	I	Sub system clock input terminal (32.768 kHz) Not used (fixed at “L”)
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage input terminal (+5V) (for A/D converter)
38	INIT	I	Initial reset signal input terminal (A/D input) (fixed at “H”)
39	TEMP	I	Temperature sensor (TH501) input terminal (A/D input)
40	ACNT	I	Select the number of load/eject aging times (A/D input) 0H – 54H (30 times), 55H – 0A9H (20 times), 0AAH – 0FFH (10 times)
41	DO-SEL	I	Select the digital output bits (A/D input)
42	EE-CS	O	Chip select signal output to the external EEPROM device Not used (open)
43	EE-CKO	O	Serial data transfer clock signal output to the external EEPROM device Not used (open)
44	EE-SIO	I/O	Two way data bus with the external EEPROM device Not used (open)
45	MD-SO	O	Writing serial data signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
46	LINKOFF	O	Unilink on/off control signal output for the SONY bus “L”: link on, “H”: link off

Pin No.	Pin Name	I/O	Function
47	UNIREQ	O	Data request signal output terminal (for SONY bus) “H”: request on Not used (open)
48	UNICKIO	I/O	Serial clock signal input from the master controller (IC700) or serial clock signal output to the SONY bus interface (IC600) and master controller (IC700) (for SONY bus)
49	UNISI	I	Serial data input from the SONY bus interface (IC600)
50	UNISO	O	Serial data output to the SONY bus interface (IC600)
51	MD-CKO	O	Serial data transfer clock signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
52	MD-SI	I	Reading serial data signal input from the CXD2652AR (IC301)
53	NCO	O	Not used (open)
54	SENS	I	Internal status (SENSE) input from the CXD2652AR (IC301)
55	CC-XINT	I	Interrupt status input from the CXD2652AR (IC301)
56	$\overline{\text{LIMIT-IN}}$	I	Detection input from the sled limit-in detect switch The optical pick-up is inner position when “L”
57	EJT-KEY	I	Eject request signal input terminal “L”: eject on Not used (fixed at “H”)
58	ERROR-PWM	O	PWM error monitor output terminal (C1 and ATER is output when test mode) Not used (open)
59	$\overline{\text{MD-RST}}$	O	Reset signal output to the PCM1718E (IC101), CXD2652AR (IC301) and BH6511FS (IC303) “L”: reset
60	BU-IN	I	Battery detect signal input from the SONY bus interface (IC600) and battery check circuit “H”: battery on
61	$\overline{\text{BUS-ON}}$	I	SONY bus on/off control signal input from the master controller (IC700) “L”: bus on
62	SQSY	I	Subcode Q sync (SCOR) input from the CXD2652AR (IC301) “L” is input every 13.3 msec Almost all, “H” is input
63	$\overline{\text{C-SW}}$	I	Inputs the disc loading start or disc eject completion detect switch detection signal “L”: When start or eject completed of the disc loading operation
64	MD-LAT	O	Serial data latch pulse signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
65	MD-ON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply “H”: power on
66	DEEMP	O	Emphasis on/off control signal output to the PCM1718E (IC101) “H”: emphasis on
67	A-MUTE	O	Audio muting on/off control signal output terminal
68	NCO	O	Not used (open)
69	TSTCKO	O	Output of clock signal for the test mode display Not used (open)
70	TSTSO	O	Output of data for the test mode display Not used (open)
71	$\overline{\text{TSTMOD}}$	I	Setting terminal for the test mode “L”: test mode, “H”: normal mode
72	VCC	—	Power supply terminal (+5V)
73	NIL	I	Not used (fixed at “H”)
74 to 77	TOUT0 to TOUT3	O	Output of the 4×8 matrix test keys Not used (open)
78 to 80	TIN0 to TIN2	I/O	Input of the 4×8 matrix test keys (“L” is always output, except in test mode) Not used (open)

\*1 Loading motor (M903) control

Terminal \ Operation	IN	OUT	BRAKE	STOP
LOAD (pin ⑥)	“H”	“L”	“H”	“L”
EJECT (pin ⑦)	“L”	“H”	“H”	“L”

• **MAIN BOARD IC700 (MASTER CONTROLLER)**  
**MB90574PFV-G-188-BND (MDX-C5960R/C5970R) MB90574PFV-G-187-BND (MDX-C5970)**

Pin No.	Pin Name	I/O	Function
1 to 7	NC	O	Not used (open)
8	VCC	—	Power supply terminal (+5V)
9	PLL SI	I	PLL serial data input terminal Not used (open)
10	PLL SO	O	PLL serial data output terminal Not used (open)
11	PLL CKO	O	PLL serial data transfer clock signal output terminal Not used (open)
12	<u>NOSE-SW</u>	I	Front panel block remove/attach detection signal input terminal “L”: front panel is attached
13	LCD SO	O	Serial data output to the liquid crystal display driver (IC801)
14	LCD CKO	O	Serial data transfer clock signal output to the liquid crystal display driver (IC801)
15	BEEP	O	Beep sound drive signal output terminal
16	DBMOD2	O	D-BASS mode control signal output terminal Not used (open)
17	<u>DOOR-SW</u>	I	Front panel open/close detection signal input “L” is input when the front panel is closed Not used (open)
18, 19	NC	O	Not used (open)
20	UNI SI	I	Serial data input from the SONY bus interface (IC600)
21	UNI SO	O	Serial data output to the SONY bus interface (IC600)
22	UNI CKIO	I/O	Serial clock signal output to the MD mechanism controller (IC501) and SONY bus interface (IC600) or serial clock signal input from the MD mechanism controller (IC501) (for SONY bus)
23	NC	O	Not used (open)
24	SIRCS	I	Sircs remote control signal input terminal Not used (fixed at “L”)
25	PACK-IND	O	LED drive signal output of the MD disc slot illumination and ▲ indicator “H”: LED on “H” is output to turn on LED when front panel is opened Not used (open)
26	VOL SO	O	Serial data output for the electrical volume Not used (open)
27	VOL CKO	O	Serial data transfer clock signal output for the electrical volume Not used (open)
28	DSTSEL0	I	Destination setting terminal (Except German models: fixed at “H”, German model: fixed at “L”)
29	<u>SYRST</u>	O	System reset signal output to the MD mechanism controller (IC501) and SONY bus interface (IC600) “L”: reset
30	DSTSEL1	I	Destination setting terminal (US, Canadian models: fixed at “H”, E model: fixed at “L”)
31	DBMOD1	O	D-BASS mode control signal output terminal Not used (open)
32	<u>TESTIN</u>	I	Setting terminal for the test mode “L”: test mode, Normally: fixed at “H”
33	VSS	—	Ground terminal
34	C	—	Connected to coupling capacitor for the power supply
35	NS-MASK	O	Discharge control signal output for the noise detection circuit “H”: discharge Used for the MDX-C5960R/C5970R only (MDX-C5970: Not used (open))
36	<u>BUS-ON</u>	O	Bus on/off control signal output to the MD mechanism controller (IC501) and SONY bus interface (IC600) “L”: bus on
37	<u>AD-ON</u>	O	A/D converter power control signal output terminal When the KEYACK (pin 79) that controls reference voltage power for key A/D conversion input is active, “L” is output from this terminal to enable the input
38	DVCC	—	Power supply terminal (+5V) (for D/A converter)
39	DVSS	—	Ground terminal (for D/A converter)
40	LCDANG	O	View field angle control signal is output when front panel is fully opened “H”: front panel is fully opened
41	VOL CE	O	Chip enable signal output for the electrical volume Not used (open)
42	AVCC	—	Power supply terminal (+5V) (for A/D converter)



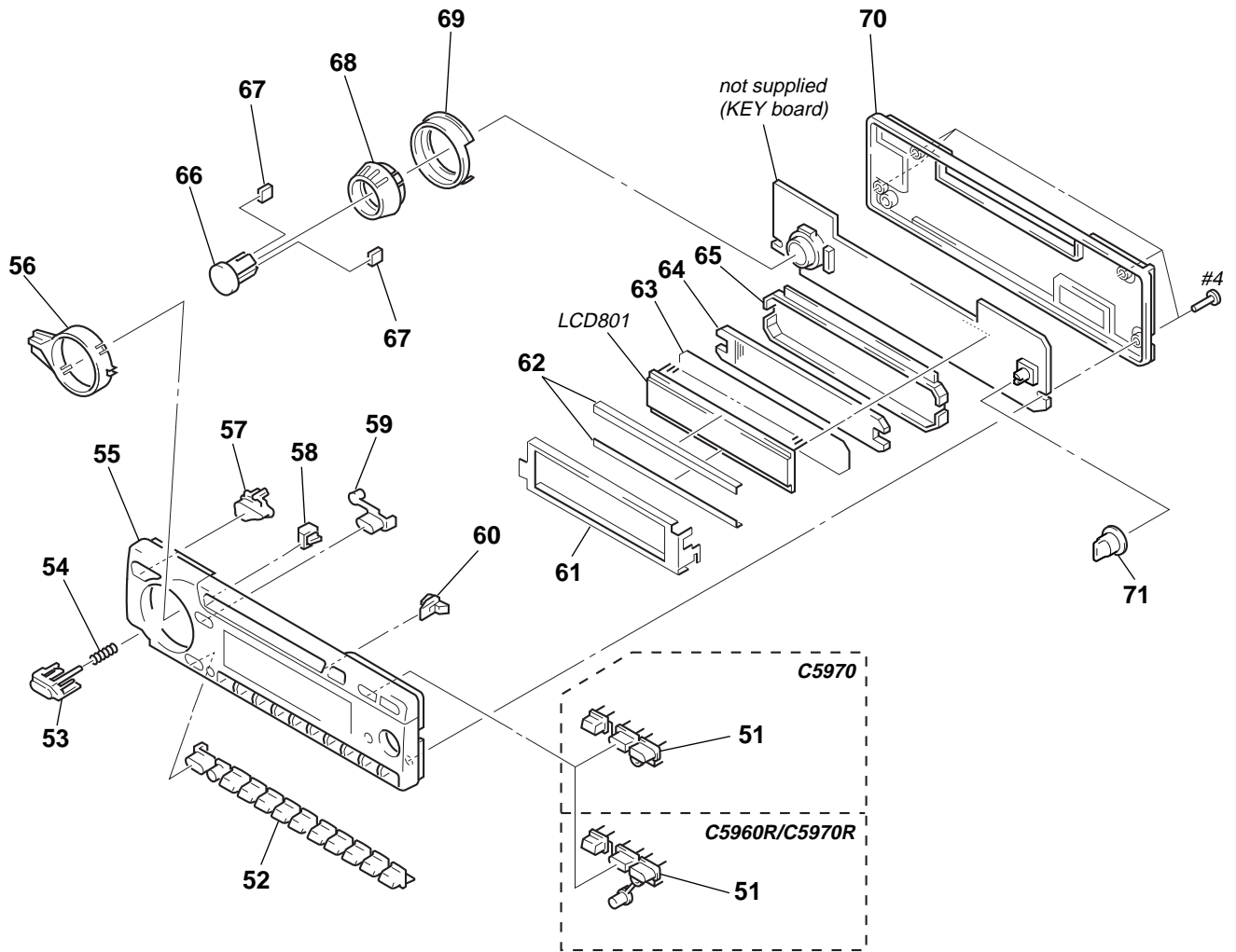
Pin No.	Pin Name	I/O	Function
43	AVRH	I	Reference voltage (+5V) input terminal (for A/D converter)
44	AVRL	I	Reference voltage (0V) input terminal (for A/D converter)
45	AVSS	—	Ground terminal (for A/D converter)
46	KEY-IN0	I	Key input terminal (A/D input) (LSW801 to LSW804, LSW806 to LSW810) OFF, SOURCE, SEEK/AMS $\blacktriangleright\blacktriangleright\blacktriangleright + \blacktriangleleft\blacktriangleleft\blacktriangleleft$ -, DSPL, SOUND, MODE, SHIFT, 1, 2 keys input (LSW804 DSPL: MDX-C5960R/C5970R only)
47	KEY-IN1	I	Key input terminal (A/D input) (LSW811 to LSW821) $\blacktriangle$ , AF/TA (MDX-C5960R/C5970R) DSPL (MDX-C5970), LIST PTY (MDX-C5960R/ C5970R) LIST (MDX-C5970), 10 to 3 keys input
48	KEY-IN2	I	Key input terminal (A/D input) Not used (open)
49	RC-IN0	I	Rotary remote commander key input terminal (A/D input)
50	D-BASS IN	I	D-BASS switch (LSW805) input terminal (A/D input)
51	QUALITY	I	Noise level detection signal input at SEEK mode (A/D input) Used for the MDX-C5960R/C5970R only (MDX-C5970: Not used (open))
52	MPDH (MTP)	I	Multi-path detection signal input from the RDS decoder (IC102) (A/D input) Used for the MDX-C5960R/C5970R only (MDX-C5970: Not used (open))
53	S-METER (VSM)	I	FM and AM signal meter voltage detection input from the FM/AM tuner unit (TU1) (A/D input)
54	VCC	—	Power supply terminal (+5V)
55	AMP ATT	O	Power amp muting on/off control signal output to the power amplifier (IC500) “L”: muting on
56	AMP ON	O	Standby on/off control signal output to the power amplifier (IC500) “L”: standby mode, “H”: amp on
57	$\overline{\text{ILL IN}}$	I	Auto dimmer control illumination line detection signal input terminal “L” is input at dimmer detection
58	LOCK IN	I	Mini-disc lock detection signal input from the MD mechanism controller (IC501) “H”: lock
59	EMPH ON	O	Emphasis control signal output terminal Not used (open)
60	AU ATT	O	Audio line muting on/off control signal output terminal “H”: muting on
61	AF ATT	O	Preamp muting on/off control signal output to the electrical volume (IC300) “H”: muting on
62	TU-ATT	O	Muting on/off control signal output of the FM tuner signal “H”: muting on Used for the MDX-C5960R/C5970R only (MDX-C5970: Not used (open))
63	VSS	—	Ground terminal
64	$\overline{\text{ACC IN}}$	I	Accessory detect signal input terminal “L”: accessory on
65	AF-SEEK	O	PLL low-pass filter time constant selection signal output at AF SEEK “H” is output when AF SEEK Not used (open)
66	WIDE	O	IF band select signal output terminal “H”: wide mode In receiving FM signals, interference noise from adjacent stations is removed by narrowing the IF band automatically in the tuner unit so as to raise the selectivity, but in this case, the distortion may increase and accordingly, the IF band is widened forcibly Not used (open)
67	DAVN	I	Data transmit completed detect signal input from the RDS decoder (IC102) “H” active Used for the MDX-C5960R/C5970R only (MDX-C5970: Not used (open))
68	NARROW	O	Narrow select signal output terminal “H” active Not used (open)
69	SSTOP	I	IF counter request signal input from the FM/AM PLL (IC100)
70	SDA	I/O	Two-way data bus with the FM/AM PLL (IC100), RDS decoder (IC102) and electrical volume (IC300) (RDS decoder is MDX-C5960R/C5970R only)
71	SCL	O	Bus clock signal output to the FM/AM PLL (IC100), RDS decoder (IC102) and electrical volume (IC300) (RDS decoder is MDX-C5960R/C5970R only)
72	RC-IN1	I	Rotary remote commander shift key input terminal “L”: shift
73	X1A	O	Sub system clock output terminal (32.768 kHz)
74	X0A	I	Sub system clock input terminal (32.768 kHz)

Pin No.	Pin Name	I/O	Function
75	NC	O	Not used (open)
76	BU-IN	I	Battery detect signal input from the SONY bus interface (IC600) and battery detect circuit “L” is input at low voltage
77, 78	NC	O	Not used (open)
79	KEYACK	I	Input of acknowledge signal for the key entry Acknowledge signal is input to accept function and eject keys in the power off status On at input of “H”
80	TEL-ATT	I	Telephone muting signal input terminal At input of “H”, the signal is attenuated by –20 dB Used for the MDX-C5970/C5970R only (MDX-C5960R: fixed at “H”)
81	ST-MONO	I/O	FM stereo broadcasting detection signal input from the FM/AM tuner unit (TU1), or forced monaural control signal output to the FM/AM tuner unit (TU1) “L” is input in the FM stereo mode, or “L” is output in the forced monaural mode
82	<u>SEEKOUT</u>	O	Seek control signal output to the FM/AM tuner unit (TU1) AM mode: Used for IF count output/SD output request/AGC cut at SEEK or BTM FM mode: Used for SD speed up at SEEK, BTM, or AF “L” is output at tuner off
83	SD-IN	I	Station detector detect input from the FM/AM tuner unit (TU1) Stop level for SEEK, BTM, etc. is determined SD is present at input of “H”
84	MONO	O	Not used (open)
85	PLL CE	O	PLL serial chip enable signal output terminal Not used (open)
86	HSTX	I	Hardware standby input terminal “L”: hardware standby mode Reset signal input in this set
87	MD2	I	Setting terminal for the CPU operational mode (fixed at “L” in this set)
88	MD1	I	Setting terminal for the CPU operational mode (fixed at “H” in this set)
89	MD0	I	Setting terminal for the CPU operational mode (fixed at “H” in this set)
90	<u>RESET</u>	I	System reset signal input from the reset signal generator (IC801) and reset switch (S900) “L”: reset “L” is input for several 100 msec after power on, then it changes to “H”
91	VSS	—	Ground terminal
92	X0	I	Main system clock input terminal (3.68 MHz)
93	X1	O	Main system clock output terminal (3.68 MHz)
94	VCC	—	Power supply terminal (+5V)
95	POW-SEL	I	Power select switch input terminal “L”: off (halt mode), “H”: on (operation mode) Not used (open)
96	POL MONO	I	Polar monaural detection signal input terminal Not used (open)
97 to 99	NC	O	Not used (open)
100	BAND (9K-10K)	I	Frequency select switch (S701) input terminal “L”: MW10k step/FM 200k step, “H”: MW 9k step/FM 50k step Used for the E model only (Except E models: fixed at “H”)
101	NC	O	Not used (open)
102	<u>RAMBU</u>	I	Internal RAM reset detection signal input from the RN5VD23AA (IC802) Input terminal to check that RAM data are not destroyed due to low voltage This checking is made within 100 msec after reset
103	NC	O	Not used (open)
104	LCD CE	O	Chip enable signal output to the liquid crystal display driver (IC801) “H” active
105	<u>FLASH-W</u>	I	Internal flash memory data write mode detection signal input terminal “L”: data write mode Not used (fixed at “H” in this set)
106	RE-IN0	I	Dial pulse input of the rotary encoder (EN801)
107	RE-IN1	I	(for VOLUME/BASS/TREBLE/BALANCE/FADER control)
108	LAMP ON (ILL ON)	O	Power on/off control signal output of the illumination LED and liquid crystal display driver (IC801) “H”: power on
109	PW-ON	O	Main system power supply on/off control signal output to the BA3918 (IC800) “H”: power on
110	FM-ON	O	FM system power supply on/off control signal output to the BA3918 (IC800) “L”: AM power on, “H”: FM power on

Pin No.	Pin Name	I/O	Function
111	TU-ON	O	Tuner system power supply on/off control signal output to the BA3918 (IC800) “H”: tuner power on
112 to 118	NC	O	Not used (open)
119	VSS	—	Ground terminal
120	NC	O	Not used (open)

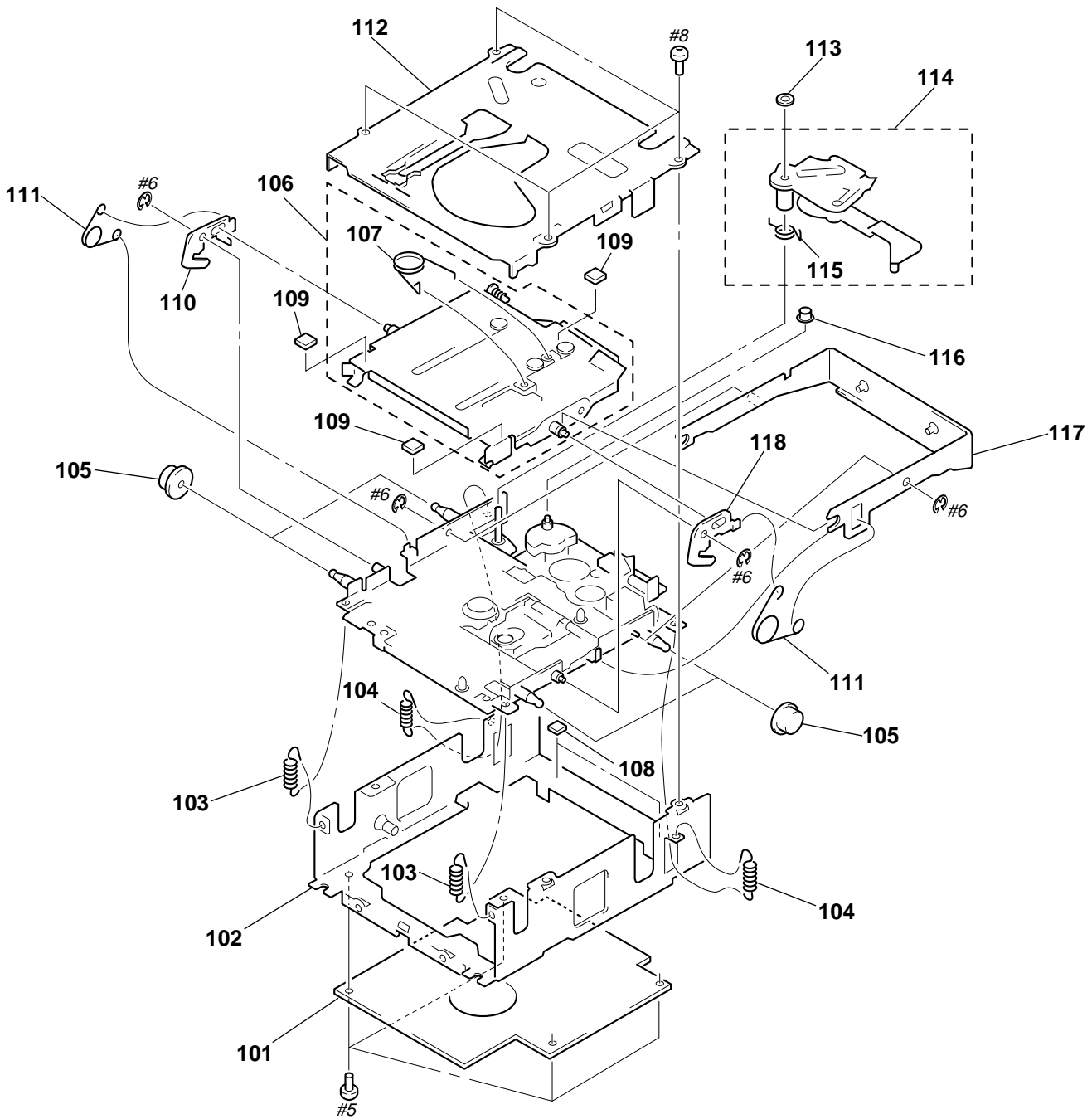


(2) FRONT PANEL SECTION



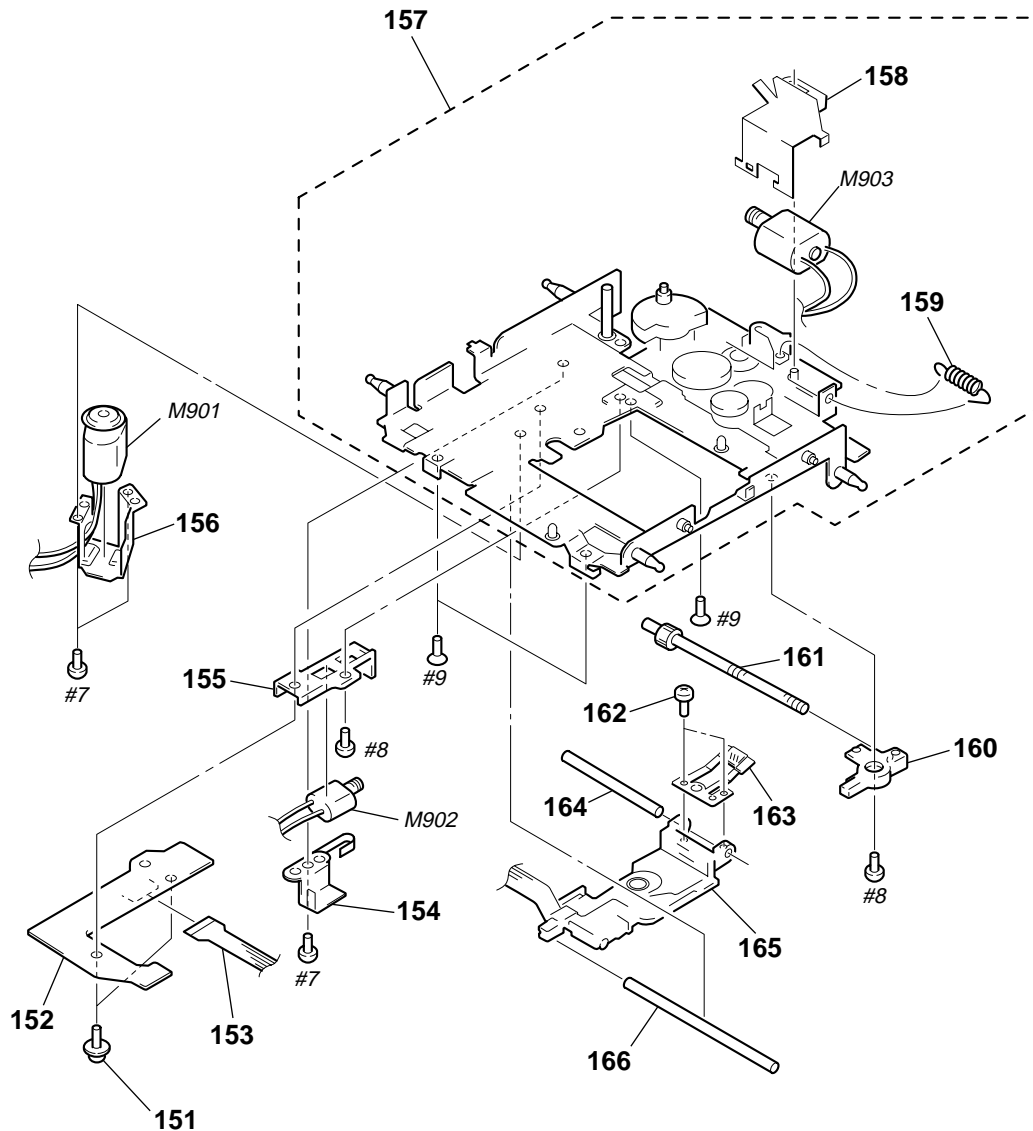
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-033-694-01	BUTTON (EJ) (▲. LIST. DSPL) (C5970)		59	3-023-616-11	BUTTON (SOUND)	
51	3-033-714-01	BUTTON (EJ) (▲. PTY. AF/TA. DSPL) (C5960R/C5970R)		60	3-033-705-01	PLATE (R), LIGHT GUIDE	
52	3-023-611-03	BUTTON (10KEY) (OFF. SHIFT. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10)		* 61	3-033-706-01	PLATE (LCD), GROUND	
53	3-023-617-31	BUTTON (RELEASE) (C5970/C5970R)		* 62	3-023-621-02	SHEET (LCD)	
53	3-023-617-41	BUTTON (RELEASE) (C5960R)		* 63	3-033-696-01	SHEET (LCD), DIFFUSION	
54	3-008-667-01	SPRING (RELEASE)		* 64	3-023-609-01	PLATE (LCD), LIGHT GUIDE	
55	X-3376-943-1	PANEL ASSY, FRONT (C5970)		* 65	3-033-707-01	HOLDER (LCD)	
55	X-3377-403-1	PANEL ASSY, FRONT (C5970R)		66	3-023-626-21	BUTTON (SOURCE)	
55	X-3377-404-1	PANEL ASSY, FRONT (C5960R)		* 67	3-026-158-01	SPACER (SOURCE)	
56	3-033-695-01	KNOB (AMS) (+. -) (C5970/C5970R)		68	3-023-612-21	KNOB (VOL)	
56	3-033-695-11	KNOB (AMS) (+. -) (C5960R)		69	3-033-715-01	RING, LIGHT GUIDE	
57	3-023-629-01	BUTTON (MODE)		70	3-033-697-01	PANEL, BACK	
58	3-033-704-01	PLATE (L), LIGHT GUIDE		71	3-023-625-11	KNOB (D) (C5970/C5970R)	
				71	3-023-625-21	KNOB (D) (C5960R)	
				LCD801	1-803-502-21	DISPLAY PANEL, LIQUID CRYSTAL	

**(3) MECHANISM DECK SECTION-1  
(MG-164N-138)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	A-3317-459-A	SERVO BOARD, COMPLETE		* 110	3-032-712-01	LEVER (LOCK R)	
* 102	X-3376-799-1	CHASSIS ASSY, MD		111	3-919-281-01	SPRING (CHUCKING)	
103	3-032-714-01	SPRING (FLOAT F), TENSION		* 112	X-3376-800-1	COVER ASSY, MD	
104	3-921-111-01	SPRING (FL 2), TENSION		113	3-035-932-01	WASHER, STOPPER	
105	3-919-273-01	DAMPER, OIL		* 114	X-3376-797-1	LEVER (LE) ASSY	
* 106	X-3376-796-1	HOLDER ASSY		115	3-032-707-01	SPRING (LEVER LE)	
107	3-032-682-01	SPRING (HOLDER)		116	3-925-034-01	ROLLER (GLE)	
* 108	3-034-301-01	CUSHION (EJ2)		* 117	X-3376-798-1	ARM ASSY, CHUCKING	
* 109	3-034-302-01	CUSHION (EJ3)		* 118	3-032-711-01	LEVER (LOCK L)	

**(4) MECHANISM DECK SECTION-2  
(MG-164N-138)**



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	2-626-617-01	SCREW (2X8)		161	X-3373-213-1	SCREW ASSY, FEED	
152	A-3317-457-A	SENSOR BOARD, COMPLETE		162	3-703-816-32	SCREW (M1.4X1.6), SPECIAL HEAD	
153	1-654-693-11	SENSOR FLEXIBLE BOARD		163	3-010-091-01	SPRING (SL FEED)	
154	3-919-283-01	BRACKET (SL)		164	3-919-293-01	SHAFT (SL)	
* 155	3-032-704-01	BASE (SL)		$\triangle$ 165	8-583-046-05	OPTICAL PICK-UP KMS-241B/J1RP	
156	3-919-297-01	RETAINER (SP)		166	3-920-537-01	SHAFT (SL 2)	
157	A-3301-750-A	CHASSIS (OP) ASSY		M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
158	3-032-660-01	BRACKET (LO)		M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
159	3-032-669-01	SPRING (RACK), TENSION		M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)	
* 160	3-032-705-01	BEARING (SL)					

**KEY**

**SECTION 6  
ELECTRICAL PARTS LIST**

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- **SEMICONDUCTORS**  
In each case, u:  $\mu$ , for example:  
uA. . :  $\mu$ A. .      uPA. . :  $\mu$ PA. .  
uPB. . :  $\mu$ PB. .    uPC. . :  $\mu$ PC. .  
uPD. . :  $\mu$ PD. .
- **CAPACITORS**  
uF:  $\mu$ F
- **COILS**  
uH:  $\mu$ H

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

Les composants identifiés par une marque  $\Delta$  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
		KEY BOARD *****		D814	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
*	3-023-609-01	PLATE (LCD), LIGHT GUIDE		D815	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
*	3-023-621-02	SHEET (LCD)					
*	3-033-696-01	SHEET (LCD), DIFFUSION		D815	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
*	3-033-706-01	PLATE (LCD), GROUND		D816	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
*	3-033-707-01	HOLDER (LCD)		D816	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
		< CAPACITOR >		D816	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
C802	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V	D817	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
C803	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V	D817	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
C804	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V				
C805	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V	D819	8-719-977-00	DIODE DTZ5.1C	
C806	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V			< ROTARY ENCODER >	
C811	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	EN801	1-475-014-11	ENCODER, ROTARY (VOLUME/BASS/TREBLE/ BALANCE/FADER CONTROL)	
C812	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V			< IC >	
C813	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	IC801	8-759-496-75	IC uPD16432BGC-018-9EU	
C814	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V			< LIQUID CRYSTAL DISPLAY >	
C815	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	LCD801	1-803-502-21	DISPLAY PANEL, LIQUID CRYSTAL	
		< CONNECTOR >				< SWITCH >	
CNP801	1-764-423-11	PIN, CONNECTOR 12P		LSW801	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (OFF)	
		< DIODE >		LSW801	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (OFF)	
D802	8-719-056-83	DIODE UDZ-TE-17-6.8B		LSW802	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (SOURCE)	
D803	8-719-056-83	DIODE UDZ-TE-17-6.8B		LSW802	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (SOURCE)	
D804	8-719-056-83	DIODE UDZ-TE-17-6.8B		LSW803	1-771-290-11	SWITCH, SLIDE (- ◀◀◀ ◀◀ ◀ ▶▶▶ ▶▶▶ +: SEEK/AMS)	
D806	8-719-977-00	DIODE DTZ5.1C		LSW804	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (DSPL) (C5960R/C5970R)	
D807	8-719-977-00	DIODE DTZ5.1C		LSW804	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (DSPL) (C5970R)	
D808	8-719-978-69	DIODE DTZ-TT11-16B		LSW805	1-762-937-11	SWITCH, ROTARY (D-BASS)	
D811	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)		LSW806	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (SOUND)	
D811	8-719-033-14	LED CL-170PG-CD-T(GREEN) (ILLUMINATION)					
D812	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					
D812	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)					
D813	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					
D813	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)					
D814	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					



**KEY**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
LSW806	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(SOUND)	LSW821	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(3)
LSW807	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(MODE)	LSW821	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(3)
LSW807	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(MODE)			< PILOT LAMP >	
LSW808	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(SHIFT)	PL801	1-517-630-31	LAMP, PILOT (LCD BACK LIGHT)	
LSW808	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(SHIFT)	PL802	1-517-630-31	LAMP, PILOT (LCD BACK LIGHT)	
LSW809	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(1)			< TRANSISTOR >	
LSW809	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(1)	Q805	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
LSW810	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(2)	Q806	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
LSW810	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(2)	Q807	8-729-905-35	TRANSISTOR 2SC4081T106R	
LSW811	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(▲)			< RESISTOR >	
LSW811	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(▲)	R801	1-208-431-11	RES, CHIP 560	2% 1/10W
LSW812	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(AF/TA) (C5960R/C5970R)	R802	1-216-647-11	METAL CHIP 680	0.5% 1/10W
LSW812	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(AF/TA) (C5970R)	R803	1-216-647-11	METAL CHIP 680	0.5% 1/10W
LSW812	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(DSPL) (C5970)	R804	1-216-651-11	METAL CHIP 1K	0.5% 1/10W
LSW813	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(LIST, PTY) (C5960R/C5970R)	R805	1-216-655-11	METAL CHIP 1.5K	0.5% 1/10W
LSW813	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(LIST, PTY) (C5970R)	R806	1-216-655-11	METAL CHIP 1.5K	0.5% 1/10W
LSW813	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(LIST) (C5970R)	R807	1-216-659-11	METAL CHIP 2.2K	0.5% 1/10W
LSW814	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(10)	R808	1-216-663-11	METAL CHIP 3.3K	0.5% 1/10W
LSW814	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(10)	R809	1-216-667-11	METAL CHIP 4.7K	0.5% 1/10W
LSW815	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(9)	R811	1-208-431-11	RES, CHIP 560	2% 1/10W
LSW815	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(9)	R812	1-216-647-11	METAL CHIP 680	0.5% 1/10W
LSW816	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(8)	R813	1-216-647-11	METAL CHIP 680	0.5% 1/10W
LSW816	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(8)	R814	1-208-427-11	RES, CHIP 390	2% 1/10W
LSW817	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(7)	R815	1-208-441-11	RES, CHIP 1.5K	2% 1/10W
LSW817	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(7)	R816	1-216-655-11	METAL CHIP 1.5K	0.5% 1/10W
LSW818	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(6)	R817	1-208-445-11	RES, CHIP 2.2K	2% 1/10W
LSW818	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(6)	R818	1-208-449-11	RES, CHIP 3.3K	2% 1/10W
LSW819	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(5)	R819	1-208-453-11	RES, CHIP 4.7K	2% 1/10W
LSW819	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(5)	R820	1-208-458-11	RES, CHIP 6.8K	2% 1/10W
LSW820	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER)	(4)	R823	1-216-023-00	RES, CHIP 82	5% 1/10W (C5970)
LSW820	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN)	(4)	R823	1-216-028-00	METAL CHIP 130	5% 1/10W (C5960R/C5970R)
				R827	1-216-023-00	RES, CHIP 82	5% 1/10W (C5970)
				R827	1-216-028-00	METAL CHIP 130	5% 1/10W (C5960R/C5970R)
				R829	1-216-023-00	RES, CHIP 82	5% 1/10W (C5970)
				R829	1-216-028-00	METAL CHIP 130	5% 1/10W (C5960R/C5970R)
				R831	1-216-023-00	RES, CHIP 82	5% 1/10W (C5970)
				R831	1-216-028-00	METAL CHIP 130	5% 1/10W (C5960R/C5970R)
				R833	1-216-028-00	METAL CHIP 130	5% 1/10W (C5960R/C5970R)
				R833	1-216-034-00	RES, CHIP 240	5% 1/10W (C5970)
				R835	1-216-047-00	RES, CHIP 820	5% 1/10W (C5970)
				R835	1-216-048-00	METAL CHIP 910	5% 1/10W (C5960R/C5970R)

**KEY**

**MAIN**

Ref. No.	Part No.	Description	Remark
R838	1-216-023-00	RES, CHIP	82 5% 1/10W (C5970)
R838	1-216-028-00	METAL CHIP	130 5% 1/10W (C5960R/C5970R)
R840	1-216-041-00	METAL CHIP	470 5% 1/10W
R841	1-216-025-00	RES, CHIP	100 5% 1/10W
R842	1-216-047-00	RES, CHIP	820 5% 1/10W (C5970)
R842	1-216-048-00	METAL CHIP	910 5% 1/10W (C5960R/C5970R)
R845	1-216-699-11	METAL CHIP	100K 0.5% 1/10W
R846	1-216-651-11	METAL CHIP	1K 0.5% 1/10W
R847	1-216-651-11	METAL CHIP	1K 0.5% 1/10W
R849	1-216-667-11	METAL CHIP	4.7K 0.5% 1/10W
R850	1-216-667-11	METAL CHIP	4.7K 0.5% 1/10W
R852	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R853	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R854	1-216-081-00	METAL CHIP	22K 5% 1/10W
R856	1-216-041-00	METAL CHIP	470 5% 1/10W
R857	1-216-295-00	SHORT	0 (C5970)
R861	1-216-041-00	METAL CHIP	470 5% 1/10W
R862	1-216-659-11	METAL CHIP	2.2K 0.5% 1/10W
R863	1-208-445-11	RES, CHIP	2.2K 10% 1/10W
R865	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R866	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R867	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
< CONPOSITION CIRCUIT BLOCK >			
RB802	1-233-810-21	RES, NETWORK 100K (3216)	
RB803	1-233-414-11	RES, CHIP NETWORK 4.7K (3216)	
*****			
*	A-3294-572-A	MAIN BOARD, COMPLETE	(C5970: US, Canadian)
*	A-3294-654-A	MAIN BOARD, COMPLETE	(C5970: E)
*	A-3294-670-A	MAIN BOARD, COMPLETE	(C5970R: AEP, UK)
*	A-3294-680-A	MAIN BOARD, COMPLETE	(C5970R: German)
*	A-3294-681-A	MAIN BOARD, COMPLETE	(C5960R)
*****			
*	3-011-078-01	BRACKET (POWER IC)	
*	3-022-317-01	BRACKET (AMP)	
*	3-023-604-01	HEAT SINK (C5970/C5970R)	
*	3-023-604-11	HEAT SINK (C5960R)	
	7-685-794-09	SCREW +PTT 2.6X10 (S)	
< BUZZER >			
BZ1	1-504-920-11	BUZZER	
< CAPACITOR/RESISTOR >			
C1	1-163-235-11	CERAMIC CHIP	22PF 5% 50V
C2	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V
C3	1-162-587-11	CERAMIC CHIP	0.039uF 10% 25V (C5970)
C3	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V (C5960R/C5970R)
C4	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V (C5970)
C4	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V (C5960R/C5970R)

Ref. No.	Part No.	Description	Remark
C5	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V (C5970: E)
C5	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V (C5970: US, Canadian)
C6	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V (C5970: E)
C6	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V (C5970: US, Canadian)
C7	1-163-137-00	CERAMIC CHIP	680PF 5% 50V
C8	1-163-137-00	CERAMIC CHIP	680PF 5% 50V
C10	1-126-791-11	ELECT	10uF 20% 16V
C11	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V
C12	1-163-137-00	CERAMIC CHIP	680PF 5% 50V
C13	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C14	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C15	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C16	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C17	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C18	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C19	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V
C20	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V
C21	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C22	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C23	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V
C24	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (C5960R/C5970R)
C24	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V (C5970)
C25	1-126-794-11	ELECT	4.7uF 20% 25V
C26	1-126-382-11	ELECT	100uF 20% 16V
C27	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C28	1-126-382-11	ELECT	100uF 20% 16V
C29	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C30	1-126-382-11	ELECT	100uF 20% 16V
C31	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C35	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C39	1-163-015-11	CERAMIC CHIP	0.0033uF 10% 50V
C40	1-126-382-11	ELECT	100uF 20% 16V
C41	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C42	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V
C43	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C44	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V (C5960R/C5970R)
C45	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V (C5960R/C5970R)
C46	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V (C5960R/C5970R)
C47	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V (C5960R/C5970R)
C48	1-107-823-11	CERAMIC CHIP	0.47uF 10% 16V (C5960R/C5970R)
C49	1-163-133-11	CERAMIC CHIP	470PF 5% 50V (C5960R/C5970R)
C50	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (C5960R/C5970R)
C51	1-163-133-00	CERAMIC CHIP	470PF 5% 50V (C5960R/C5970R)
C52	1-163-229-11	CERAMIC CHIP	12PF 5% 50V (C5960R/C5970R)

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C53	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	C318	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
					(C5960R/C5970R)						(C5970/C5970R)
C54	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	C319	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
					(C5960R/C5970R)	C320	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C57	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	C322	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
					(C5960R/C5970R)	C323	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C58	1-163-135-00	CERAMIC CHIP	560PF	5%	50V						
					(C5960R/C5970R)	C324	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C59	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C325	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
					(C5960R/C5970R)	C400	1-115-871-11	ELECT	1uF	20%	50V
						C401	1-115-871-11	ELECT	1uF	20%	50V
C60	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	C402	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
					(C5960R/C5970R)						
C61	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C414	1-126-794-11	ELECT	4.7uF	20%	25V
					(C5960R/C5970R)	C415	1-126-794-11	ELECT	4.7uF	20%	25V
C63	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C416	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
					(C5960R/C5970R)	C417	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C65	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	C418	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
					(C5960R/C5970R)						(C5970/C5970R)
C66	1-126-786-11	ELECT	47uF	20%	16V						
C67	1-126-382-11	ELECT	100uF	20%	16V	C419	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C68	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C420	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C69	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C424	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C70	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C425	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C71	1-126-514-11	ELECT	22uF	20%	16V	C501	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
C74	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C502	1-115-334-11	FILM	0.47uF	5%	50V
C79	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C503	1-126-786-11	ELECT	47uF	20%	16V
					(C5960R/C5970R)	C504	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
C81	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V	C505	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
					(C5960R/C5970R)	C506	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C82	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	C507	1-126-016-11	ELECT	4700uF	20%	16V
					(C5960R/C5970R)	C508	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
C90	1-164-346-11	CERAMIC CHIP	1uF		16V	C510	1-126-786-11	ELECT	47uF	20%	16V
					(C5960R/C5970R)	C601	1-126-794-11	ELECT	4.7uF	20%	25V
C97	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	C700	1-164-346-11	CERAMIC CHIP	1uF		16V
C100	1-109-982-11	CERAMIC CHIP	1uF	10%	10V						
C101	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C701	1-126-794-11	ELECT	4.7uF	20%	25V
						C702	1-126-514-11	ELECT	22uF	20%	16V
C107	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C703	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
					(C5960R/C5970R)	C704	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C108	1-163-013-11	CERAMIC CHIP	0.0022uF	10%	50V	C705	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
					(C5960R/C5970R)						
C109	1-163-013-11	CERAMIC CHIP	0.0022uF	10%	50V	C706	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
					(C5960R/C5970R)	C707	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C222	1-126-791-11	ELECT	10uF	20%	16V	C708	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C223	1-126-791-11	ELECT	10uF	20%	16V	C709	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
						C710	1-164-346-11	CERAMIC CHIP	1uF		16V
C230	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V						
C250	1-126-767-11	ELECT	1000uF	20%	16V	C711	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C251	1-124-635-00	ELECT	220uF	20%	6.3V	C712	1-126-382-11	ELECT	100uF	20%	16V
C252	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	C800	1-126-791-11	ELECT	10uF	20%	16V
C253	1-126-382-11	ELECT	100uF	20%	16V	C801	1-126-791-11	ELECT	10uF	20%	16V
						C802	1-126-791-11	ELECT	10uF	20%	16V
C256	1-126-791-11	ELECT	10uF	20%	16V						
C257	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C803	1-126-791-11	ELECT	10uF	20%	16V
C300	1-115-871-11	ELECT	1uF	20%	50V	C804	1-126-791-11	ELECT	10uF	20%	16V
C301	1-115-871-11	ELECT	1uF	20%	50V	C805	1-126-791-11	ELECT	10uF	20%	16V
C302	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	C806	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
						C807	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C303	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V						
C314	1-126-794-11	ELECT	4.7uF	20%	25V	C808	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C315	1-126-794-11	ELECT	4.7uF	20%	25V	C900	1-126-791-11	ELECT	10uF	20%	16V
C316	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C901	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C317	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	C902	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
						C903	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
						C904	1-124-635-00	ELECT	220uF	20%	6.3V

# MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C905	1-125-710-11	DOUBLE LAYER	0.1F	5.5V	D702	8-719-914-44	DIODE DAP202K
C906	1-164-489-11	CERAMIC CHIP	0.22uF	10% 16V	D703	8-719-988-61	DIODE 1SS355TE-17
C907	1-164-489-11	CERAMIC CHIP	0.22uF	10% 16V	D800	8-719-053-18	DIODE 1SR154-400TE-25
C908	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	D802	8-719-988-61	DIODE 1SS355TE-17
C920	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	D801	8-719-053-18	DIODE 1SR154-400TE-25
C990	1-164-346-11	CERAMIC CHIP	1uF	16V	D803	8-719-053-18	DIODE 1SR154-400TE-25
			(C5960R/C5970R)		D804	8-719-053-18	DIODE 1SR154-400TE-25
C991	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	D900	8-719-988-61	DIODE 1SS355TE-17
C992	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	D901	8-719-056-88	DIODE UDZ-TE-17-11B
C999	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	D902	8-719-056-84	DIODE UDZ-TE-17-7.5B
C1000	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	D903	8-719-056-84	DIODE UDZ-TE-17-7.5B
		< CONNECTOR >					
CN200	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P					
CN900	1-764-422-11	PLUG, CONNECTOR 12P					
CNJ600	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)					
		< JACK/CONNECTOR >					
CNP300	1-774-699-12	JACK, PIN 4P (BUS AUDIO IN, AUDIO OUT) (C5960R)					
CNP300	1-774-700-11	JACK, PIN 6P (BUS AUDIO IN, LINE OUT FRONT, LINE OUT REAR) (C5970/C5970R)					
CNP500	1-774-701-11	PIN, CONNECTOR 16P					
		< DIODE >					
D1	8-719-158-15	DIODE	RD5.6S-B				
D3	8-719-981-59	DIODE	FC805				
D5	8-719-422-12	DIODE	MA8039 (C5960R/C5970R)				
D6	8-719-987-69	DIODE	DAN217 (C5960R/C5970R)				
D7	8-719-056-83	DIODE	UDZ-TE-17-6.8B (C5960R/C5970R)				
D8	8-719-988-61	DIODE	1SS355TE-17 (C5960R/C5970R)				
D200	8-719-066-98	DIODE	RB051L-40TE25				
D202	8-719-158-49	DIODE	RD12SB2				
D301	8-719-914-42	DIODE	DA204K				
D500	8-719-988-61	DIODE	1SS355TE-17				
D501	8-719-056-83	DIODE	UDZ-TE-17-6.8B				
D502	8-719-052-59	DIODE	1N5404TU-15				
D503	8-719-053-18	DIODE	1SR154-400TE-25				
D504	8-719-053-18	DIODE	1SR154-400TE-25				
D505	8-719-053-18	DIODE	1SR154-400TE-25				
D506	8-719-053-18	DIODE	1SR154-400TE-25				
D507	8-719-053-18	DIODE	1SR154-400TE-25				
D508	8-719-053-18	DIODE	1SR154-400TE-25				
D509	8-719-053-18	DIODE	1SR154-400TE-25				
D510	8-719-053-18	DIODE	1SR154-400TE-25				
D511	8-719-988-61	DIODE	1SS355TE-17 (C5970/C5970R)				
D520	8-719-056-93	DIODE	UDZ-TE-17-18B (C5970/C5970R)				
D521	8-719-978-69	DIODE	DTZ-TT11-16B				
D522	8-719-158-49	DIODE	RD12SB2				
D600	8-719-056-93	DIODE	UDZ-TE-17-18B				
D601	8-719-056-93	DIODE	UDZ-TE-17-18B				
D602	8-719-017-62	DIODE	MA8068-L-TX				
D603	8-719-978-69	DIODE	DTZ-TT11-16B				
D604	8-719-017-62	DIODE	MA8068-L-TX				
D606	8-719-914-43	DIODE	DAN202K				
D607	8-719-988-61	DIODE	1SS355TE-17				
D700	8-719-914-43	DIODE	DAN202K				
D701	8-719-422-12	DIODE	MA8039				
		< FUSE >					
F1	1-532-877-11	FUSE (BLADE TYPE)	(AUTO FUSE) 10A				
		< FERRITE BEAD >					
FB1	1-414-233-22	INDUCTOR CHIP	0uH (C5960R/C5970R)				
FB2	1-414-233-22	INDUCTOR CHIP	0uH (C5960R/C5970R)				
		< IC >					
IC100	8-759-586-54	IC	TDA7427AD				
IC101	8-759-924-46	IC	BA4560F (C5960R/C5970R)				
IC102	8-759-492-59	IC	SAA6588T-118 (C5960R/C5970R)				
IC250	8-759-337-67	IC	NJM2360AM (TE2)				
IC300	8-759-572-10	IC	TDA7462D013TR				
IC500	8-759-572-08	IC	TDA7385				
IC600	8-759-449-89	IC	BA8270F-E2				
IC700	8-759-581-72	IC	MB90574PFV-G-187-BND (C5970)				
IC700	8-759-581-74	IC	MB90574PFV-G-188-BND (C5960R/C5970R)				
IC800	8-759-347-50	IC	BA3918-V3				
IC801	8-759-363-81	IC	XC61AN4002PR				
IC802	8-759-495-76	IC	RN5VD33AA-TL				
		< JACK >					
J1	1-785-503-11	JACK (ANT)	(FM/AM ANTENNA)				
J900	1-566-822-41	JACK (REMOTE IN)					
		< COIL/SHORT >					
L1	1-412-058-11	INDUCTOR CHIP	10uH				
L2	1-216-295-00	SHORT	0 (C5970)				
L2	1-410-981-31	INDUCTOR CHIP	0.1uH (C5960R/5970R)				
L3	1-412-058-11	INDUCTOR CHIP	10uH				
L200	1-412-058-11	INDUCTOR CHIP	10uH				
L240	1-412-945-11	INDUCTOR	3.3uH				

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L250	1-412-533-21	INDUCTOR 47uH		R4	1-216-081-00	METAL CHIP 22K	5% 1/10W
L251	1-412-537-31	INDUCTOR 100uH		R5	1-216-049-11	RES,CHIP 1K	5% 1/10W
L252	1-412-533-21	INDUCTOR 47uH		R6	1-216-037-00	METAL CHIP 330	5% 1/10W
L500	1-416-712-21	COIL, CHOKE 0.5A		R7	1-216-073-00	METAL CHIP 10K	5% 1/10W
L700	1-412-058-11	INDUCTOR CHIP 10uH		R8	1-216-081-00	METAL CHIP 22K	5% 1/10W (C5960R/C5970R)
L800	1-469-086-21	INDUCTOR 22uH		R10	1-216-073-00	METAL CHIP 10K	5% 1/10W
		< TRANSISTOR >		R11	1-216-083-00	METAL CHIP 27K	5% 1/10W
Q1	8-729-230-49	TRANSISTOR 2SC2712-YG (C5970)		R12	1-216-077-00	METAL CHIP 15K	5% 1/10W
Q4	8-729-620-06	TRANSISTOR 2SC3052-EF		R13	1-216-295-00	SHORT 0	(C5960R/C5970R)
Q5	8-729-900-53	TRANSISTOR DTC114EK (C5960R/C5970R)		R14	1-216-097-00	RES,CHIP 100K	5% 1/10W
Q6	8-729-920-85	TRANSISTOR 2SD1664-QR		R15	1-216-081-00	METAL CHIP 22K	5% 1/10W (C5970)
Q50	8-729-230-49	TRANSISTOR 2SC2712-YG (C5960R/C5970R)		R16	1-216-025-00	RES,CHIP 100	5% 1/10W
Q51	8-729-921-25	TRANSISTOR FMC2 (C5960R/C5970R)		R17	1-216-025-00	RES,CHIP 100	5% 1/10W
Q101	8-729-920-21	TRANSISTOR DTC314TKH04 (C5960R/C5970R)		R18	1-216-073-00	METAL CHIP 10K	5% 1/10W
Q102	8-729-920-21	TRANSISTOR DTC314TKH04 (C5960R/C5970R)		R19	1-216-113-00	METAL CHIP 470K	5% 1/10W
Q103	8-729-921-25	TRANSISTOR FMC2 (C5960R/C5970R)		R22	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
Q250	8-729-903-95	TRANSISTOR 2SB1188-T101-Q		R24	1-216-049-11	RES,CHIP 1K	5% 1/10W
Q251	8-729-900-53	TRANSISTOR DTC114EK		R25	1-216-097-00	RES,CHIP 100K	5% 1/10W (C5970)
Q254	8-729-807-12	TRANSISTOR 2SD1802-S		R26	1-216-089-00	RES,CHIP 47K	5% 1/10W (C5970)
Q255	8-729-921-25	TRANSISTOR FMC2		R27	1-216-049-11	RES,CHIP 1K	5% 1/10W (C5970)
Q300	8-729-920-21	TRANSISTOR DTC314TKH04 (C5970/C5970R)		R28	1-216-057-00	METAL CHIP 2.2K	5% 1/10W (C5960R/C5970R)
Q301	8-729-920-21	TRANSISTOR DTC314TKH04		R29	1-216-057-00	METAL CHIP 2.2K	5% 1/10W (C5960R/C5970R)
Q302	8-729-920-21	TRANSISTOR DTC314TKH04		R30	1-216-073-00	METAL CHIP 10K	5% 1/10W (C5960R/C5970R)
Q303	8-729-920-21	TRANSISTOR DTC314TKH04		R31	1-216-073-00	METAL CHIP 10K	5% 1/10W (C5960R/C5970R)
Q400	8-729-920-21	TRANSISTOR DTC314TKH04 (C5970/C5970R)		R32	1-216-097-00	RES,CHIP 100K	5% 1/10W (C5960R/C5970R)
Q401	8-729-920-21	TRANSISTOR DTC314TKH04		R33	1-216-065-00	RES,CHIP 4.7K	5% 1/10W (C5960R/C5970R)
Q402	8-729-920-21	TRANSISTOR DTC314TKH04		R34	1-216-061-00	METAL CHIP 3.3K	5% 1/10W (C5960R/C5970R)
Q403	8-729-920-21	TRANSISTOR DTC314TKH04		R35	1-216-025-00	RES,CHIP 100	5% 1/10W (C5960R/C5970R)
Q500	8-729-620-06	TRANSISTOR 2SC3052-EF (C5970/C5970R)		R36	1-216-121-00	RES,CHIP 1M	5% 1/10W (C5960R/C5970R)
Q600	8-729-027-23	TRANSISTOR DTA114EKA-T146		R37	1-216-057-00	METAL CHIP 2.2K	5% 1/10W (C5960R/C5970R)
Q601	8-729-900-53	TRANSISTOR DTC114EK		R39	1-216-025-00	RES,CHIP 100	5% 1/10W
Q603	8-729-920-21	TRANSISTOR DTC314TKH04		R40	1-216-025-00	RES,CHIP 100	5% 1/10W
Q701	8-729-900-53	TRANSISTOR DTC114EK		R41	1-216-041-00	METAL CHIP 470	5% 1/10W
Q702	8-729-921-25	TRANSISTOR FMC2		R42	1-216-025-00	RES,CHIP 100	5% 1/10W
Q703	8-729-921-25	TRANSISTOR FMC2		R45	1-216-295-00	SHORT 0	
Q704	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		R50	1-216-065-00	RES,CHIP 4.7K	5% 1/10W (C5960R/C5970R)
Q900	8-729-620-06	TRANSISTOR 2SC3052-EF		R51	1-216-113-00	METAL CHIP 470K	5% 1/10W (C5960R/C5970R)
Q901	8-729-907-46	TRANSISTOR IMZ1		R52	1-216-049-11	RES,CHIP 1K	5% 1/10W (C5960R/C5970R)
Q903	8-729-026-68	TRANSISTOR 2SD2525 (TP)		R53	1-216-077-00	METAL CHIP 15K	5% 1/10W (C5960R/C5970R)
Q904	8-729-026-68	TRANSISTOR 2SD2525 (TP)		R55	1-216-041-00	METAL CHIP 470	5% 1/10W (C5960R/C5970R)
Q905	8-729-924-73	TRANSISTOR FMA9					
Q906	8-729-921-25	TRANSISTOR FMC2					
		< RESISTOR >					
R1	1-216-025-00	RES,CHIP 100	5% 1/10W (C5960R/C5970R)	R51	1-216-113-00	METAL CHIP 470K	5% 1/10W (C5960R/C5970R)
R1	1-216-049-11	RES,CHIP 1K	5% 1/10W (C5970)	R52	1-216-049-11	RES,CHIP 1K	5% 1/10W (C5960R/C5970R)
R2	1-216-025-00	RES,CHIP 100	5% 1/10W	R53	1-216-077-00	METAL CHIP 15K	5% 1/10W (C5960R/C5970R)
R3	1-216-073-11	METAL CHIP 10K	5% 1/10W (C5970)	R55	1-216-041-00	METAL CHIP 470	5% 1/10W (C5960R/C5970R)
R3	1-216-069-11	METAL CHIP 6.8K	5% 1/10W (C5960R/C5970R)				

**MAIN**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R56	1-216-025-00	RES,CHIP	100 5% 1/10W (C5960R/C5970R)	R414	1-216-075-00	METAL CHIP	12K 5% 1/10W
R57	1-216-025-00	RES,CHIP	100 5% 1/10W (C5960R/C5970R)	R500	1-216-049-11	RES,CHIP	1K 5% 1/10W
R59	1-216-295-00	SHORT	0 (C5960R/C5970R)	R501	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R62	1-216-057-00	METAL CHIP	2.2K 5% 1/10W (C5960R/C5970R)	R502	1-216-073-00	METAL CHIP	10K 5% 1/10W
R64	1-216-295-00	SHORT	0	R503	1-216-073-00	METAL CHIP	10K 5% 1/10W (C5970/C5970R)
R65	1-216-295-00	SHORT	0 (C5960R/C5970R)	R504	1-216-073-00	METAL CHIP	10K 5% 1/10W (C5970/C5970R)
R66	1-216-065-00	RES,CHIP	4.7K 5% 1/10W (C5960R/C5970R)	R505	1-216-085-00	METAL CHIP	33K 5% 1/10W
R72	1-216-295-00	SHORT	0	R506	1-216-073-00	METAL CHIP	10K 5% 1/10W
R80	1-216-001-00	METAL CHIP	10 5% 1/10W (C5960R/C5970R)	R600	1-216-025-00	RES,CHIP	100 5% 1/10W
R103	1-216-061-11	METAL CHIP	3.3K 5% 1/10W (C5970)	R601	1-216-073-00	METAL CHIP	10K 5% 1/10W
R103	1-216-063-11	RES,CHIP	3.9K 5% 1/10W (C5960R/C5970R)	R602	1-216-097-00	RES,CHIP	100K 5% 1/10W
R104	1-216-081-00	METAL CHIP	22K 5% 1/10W (C5960R/C5970R)	R603	1-216-150-00	RES,CHIP	10 5% 1/8W
R104	1-216-085-00	METAL CHIP	33K 5% 1/10W (C5970)	R700	1-216-073-00	METAL CHIP	10K 5% 1/10W
R105	1-216-081-00	METAL CHIP	22K 5% 1/10W (C5960R/C5970R)	R701	1-216-089-00	RES,CHIP	47K 5% 1/10W
R105	1-216-085-00	METAL CHIP	33K 5% 1/10W (C5970)	R702	1-216-101-00	METAL CHIP	150K 5% 1/10W
R106	1-216-061-00	METAL CHIP	3.3K 5% 1/10W (C5970)	R703	1-216-049-11	RES,CHIP	1K 5% 1/10W
R106	1-216-063-11	RES,CHIP	3.9K 5% 1/10W (C5960R/C5970R)	R704	1-216-025-00	RES,CHIP	100 5% 1/10W
R201	1-216-049-11	RES,CHIP	1K 5% 1/10W	R705	1-216-025-00	RES,CHIP	100 5% 1/10W
R202	1-216-049-11	RES,CHIP	1K 5% 1/10W	R709	1-216-089-00	RES,CHIP	47K 5% 1/10W
R250	1-219-986-11	RES,CHIP	0.2 1% 1/4W	R710	1-216-025-00	RES,CHIP	100 5% 1/10W
R255	1-216-663-11	METAL CHIP	3.3K 0.5% 1/10W	R711	1-216-295-00	SHORT	0
R256	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	R712	1-216-037-00	METAL CHIP	330 5% 1/10W
R257	1-216-073-00	METAL CHIP	10K 5% 1/10W	R713	1-216-097-00	RES,CHIP	100K 5% 1/10W
R259	1-216-190-00	RES,CHIP	470 5% 1/8W	R717	1-216-081-00	METAL CHIP	22K 5% 1/10W
R260	1-216-675-11	METAL CHIP	10K 0.5% 1/10W	R719	1-216-025-00	RES,CHIP	100 5% 1/10W
R304	1-216-033-00	METAL CHIP	220 5% 1/10W	R720	1-216-025-00	RES,CHIP	100 5% 1/10W
R305	1-216-081-00	METAL CHIP	22K 5% 1/10W	R721	1-216-049-11	RES,CHIP	1K 5% 1/10W
R306	1-216-081-00	METAL CHIP	22K 5% 1/10W (C5970/C5970R)	R726	1-216-049-11	RES,CHIP	1K 5% 1/10W
R307	1-216-033-00	METAL CHIP	220 5% 1/10W (C5970/C5970R)	R727	1-216-049-11	RES,CHIP	1K 5% 1/10W
R308	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	R730	1-216-025-00	RES,CHIP	100 5% 1/10W
R309	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	R731	1-216-025-00	RES,CHIP	100 5% 1/10W
R310	1-216-089-00	RES,CHIP	47K 5% 1/10W	R732	1-216-025-00	RES,CHIP	100 5% 1/10W
R311	1-216-089-00	RES,CHIP	47K 5% 1/10W	R734	1-216-025-00	RES,CHIP	100 5% 1/10W
R312	1-216-075-00	METAL CHIP	12K 5% 1/10W	R738	1-216-025-00	RES,CHIP	100 5% 1/10W
R313	1-216-069-11	RES,CHIP	6.8K 5% 1/10W	R741	1-216-025-00	RES,CHIP	100 5% 1/10W
R405	1-216-033-00	METAL CHIP	220 5% 1/10W	R745	1-216-025-00	RES,CHIP	100 5% 1/10W
R406	1-216-081-00	METAL CHIP	22K 5% 1/10W	R748	1-216-025-00	RES,CHIP	100 5% 1/10W
R407	1-216-081-00	METAL CHIP	22K 5% 1/10W (C5970/C5970R)	R749	1-216-025-00	RES,CHIP	100 5% 1/10W
R408	1-216-033-00	METAL CHIP	220 5% 1/10W (C5970/C5970R)	R751	1-216-025-00	RES,CHIP	100 5% 1/10W
R409	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	R754	1-216-025-00	RES,CHIP	100 5% 1/10W
R410	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	R759	1-216-025-00	RES,CHIP	100 5% 1/10W
R411	1-216-089-00	RES,CHIP	47K 5% 1/10W	R760	1-216-025-00	RES,CHIP	100 5% 1/10W
R412	1-216-089-00	RES,CHIP	47K 5% 1/10W	R763	1-216-025-00	RES,CHIP	100 5% 1/10W
R413	1-216-069-11	RES,CHIP	6.8K 5% 1/10W	R764	1-216-025-00	RES,CHIP	100 5% 1/10W
				R771	1-216-097-00	RES,CHIP	100K 5% 1/10W
				R772	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
				R773	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
				R774	1-216-097-00	RES,CHIP	100K 5% 1/10W
				R777	1-216-097-00	RES,CHIP	100K 5% 1/10W
				R780	1-216-097-00	RES,CHIP	100K 5% 1/10W (C5970/C5970R: AEP, UK)
				R781	1-216-097-00	RES,CHIP	100K 5% 1/10W (C5960R/C5970R: German)
				R782	1-216-097-00	RES,CHIP	100K 5% 1/10W (C5970: US, Canadian)

MAIN

SENSOR

SERVO

Ref. No.	Part No.	Description	Remark
R783	1-216-097-00	RES,CHIP	100K 5% 1/10W (C5970: E)
R800	1-216-113-00	METAL CHIP	470K 5% 1/10W
R801	1-216-097-00	RES,CHIP	100K 5% 1/10W
R897	1-216-001-00	METAL CHIP	10 5% 1/10W (C5960R/C5970R)
R900	1-216-222-00	RES,CHIP	10K 5% 1/8W
R901	1-216-089-00	RES,CHIP	47K 5% 1/10W
R902	1-216-089-00	RES,CHIP	47K 5% 1/10W
R903	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R904	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R905	1-216-073-00	METAL CHIP	10K 5% 1/10W
R906	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R907	1-216-037-00	METAL CHIP	330 5% 1/10W
R908	1-216-037-00	METAL CHIP	330 5% 1/10W
R909	1-216-298-00	METAL CHIP	2.2 5% 1/10W
R910	1-216-298-00	METAL CHIP	2.2 5% 1/10W
R911	1-216-298-00	METAL CHIP	2.2 5% 1/10W
R912	1-216-298-00	METAL CHIP	2.2 5% 1/10W
R913	1-216-025-00	RES,CHIP	100 5% 1/10W
R914	1-216-025-00	RES,CHIP	100 5% 1/10W
R915	1-216-025-00	RES,CHIP	100 5% 1/10W
R916	1-216-097-00	RES,CHIP	100K 5% 1/10W
R917	1-216-097-00	RES,CHIP	100K 5% 1/10W
R918	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R919	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R920	1-216-025-00	RES,CHIP	100 5% 1/10W
R921	1-216-025-00	RES,CHIP	100 5% 1/10W
R930	1-216-073-00	METAL CHIP	10K 5% 1/10W
R981	1-216-121-00	RES,CHIP	1M 5% 1/10W
R989	1-216-097-00	RES,CHIP	100K 5% 1/10W
R990	1-216-198-00	RES,CHIP	1K 5% 1/8W (C5960R/C5970R)
R991	1-216-081-00	METAL CHIP	22K 5% 1/10W
R992	1-216-081-00	METAL CHIP	22K 5% 1/10W
R993	1-216-097-00	RES,CHIP	100K 5% 1/10W (C5970/C5970R)
R994	1-216-097-00	RES,CHIP	100K 5% 1/10W
R995	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R996	1-216-097-00	RES,CHIP	100K 5% 1/10W
< COMPOSITION CIRCUIT BLOCK >			
RB900	1-233-412-11	RES, CHIP NETWORK 1K (3216)	
RB901	1-233-412-11	RES, CHIP NETWORK 1K (3216)	
RB902	1-233-576-11	RES, CHIP NETWORK 100	
RB903	1-233-576-11	RES, CHIP NETWORK 100	
< VARIABLE RESISTOR >			
RV1	1-223-589-11	RES, ADJ, CARBON 100K (C5960R/C5970R)	
< SWITCH >			
S701	1-572-552-21	SWITCH, SLIDE (FREQUENCY SELECT) (C5970: E)	
S900	1-692-431-21	SWITCH, TACTILE (RESET)	
< THERMISTOR >			
TH600	1-801-792-21	THERMISTOR, POSITIVE	

Ref. No.	Part No.	Description	Remark
< TUNER >			
TU1	A-3220-693-A	TUNER UNIT TUX-011(E) (FM/AM) (C5970)	
TU1	1-693-440-11	TUNER UNIT FAE342-E01 (FM/MW/LW) (C5960R/C5970R)	
< VIBRATOR >			
X1	1-781-258-11	VIBRATOR, CRYSTAL (10.25MHz)	
X2	1-579-242-11	VIBRATOR, CRYSTAL (4.332MHz) (C5960R/C5970R)	
X700	1-767-833-21	VIBRATOR, CERAMIC (3.68MHz)	
X701	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)	
*****			
A-3317-457-A SENSOR BOARD, COMPLETE *****			
For the parts on the SENSOR board, replace the entire mounted board. *****			
* A-3317-459-A SERVO BOARD, COMPLETE *****			
< CAPACITOR >			
C101	1-104-543-11	FILM CHIP	0.0022uF 5% 50V
C102	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C103	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C104	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C105	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C106	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
C107	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C108	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C109	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
C201	1-104-543-11	FILM CHIP	0.0022uF 5% 50V
C202	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C301	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C302	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C304	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C305	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C306	1-107-823-11	CERAMIC CHIP	0.47uF 10% 16V
C307	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C308	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C309	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C310	1-107-823-11	CERAMIC CHIP	0.47uF 10% 16V
C311	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V
C314	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C315	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C316	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C317	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C318	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V
C319	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V
C320	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C321	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V
C322	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C324	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C325	1-110-563-11	CERAMIC CHIP	0.068uF 10% 16V
C326	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C327	1-109-982-11	CERAMIC CHIP	1uF 10% 10V
C328	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
C329	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V

# SERVO

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C330	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V			< IC >	
C331	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V				
C333	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	IC101	8-759-571-84	IC PCM1718E/2K	
C334	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	IC301	8-752-384-47	IC CXD2652AR	
C335	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	IC302	8-752-074-77	IC CXA2523R	
C336	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	IC303	8-759-430-25	IC BH6511FS-E2	
C337	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	IC304	8-759-096-87	IC TC7WU04FU (TE12R)	
C338	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	IC305	8-759-040-83	IC BA6287F	
C339	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	IC306	8-759-058-62	IC TC7S08FU (TE85R)	
C340	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	IC307	8-759-368-16	IC MN41V4400TT-08S	
C341	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	IC401	8-759-909-71	IC BA4558F	
C342	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	IC501	8-752-898-83	IC CXP84340-201Q	
C343	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	IC502	8-759-238-47	IC TC74HCT7007AF (EL)	
C344	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	IC503	8-759-238-47	IC TC74HCT7007AF (EL)	
C345	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V			< COIL >	
C346	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	L101	1-412-058-11	INDUCTOR CHIP 10uH	
C347	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	L102	1-412-058-11	INDUCTOR CHIP 10uH	
C348	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L301	1-412-058-11	INDUCTOR CHIP 10uH	
C349	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L302	1-412-058-11	INDUCTOR CHIP 10uH	
C350	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L303	1-412-039-51	INDUCTOR CHIP 100uH	
C351	1-104-852-11	TANTAL. CHIP	22uF 20% 10V	L304	1-412-039-51	INDUCTOR CHIP 100uH	
C352	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L305	1-412-039-51	INDUCTOR CHIP 100uH	
C353	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	L306	1-412-039-51	INDUCTOR CHIP 100uH	
C356	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	L501	1-412-058-11	INDUCTOR CHIP 10uH	
C357	1-162-927-11	CERAMIC CHIP	100PF 5% 50V			< TRANSISTOR >	
C358	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	Q301	8-729-230-49	TRANSISTOR 2SC2712-YG	
C359	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	Q302	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
C361	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	Q401	8-729-920-85	TRANSISTOR 2SD1664-QR	
C362	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	Q402	8-729-106-60	TRANSISTOR 2SB1115A	
C402	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	Q403	8-729-421-22	TRANSISTOR UN2211	
C403	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V			< RESISTOR >	
C501	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	R101	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C503	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R102	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C504	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R104	1-216-049-11	RES,CHIP 1K 5% 1/10W	
C505	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C506	1-104-852-11	TANTAL. CHIP	22uF 20% 10V	R202	1-216-049-11	RES,CHIP 1K 5% 1/10W	
C510	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V	R301	1-216-809-11	METAL CHIP 100 5% 1/16W	
C511	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R302	1-216-809-11	METAL CHIP 100 5% 1/16W	
C512	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R303	1-216-809-11	METAL CHIP 100 5% 1/16W	
C513	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R304	1-216-809-11	METAL CHIP 100 5% 1/16W	
C514	1-115-467-11	CERAMIC CHIP	0.22uF 10% 10V	R305	1-216-809-11	METAL CHIP 100 5% 1/16W	
C515	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R306	1-216-809-11	METAL CHIP 100 5% 1/16W	
C516	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	R307	1-216-809-11	METAL CHIP 100 5% 1/16W	
		< CONNECTOR >		R308	1-216-809-11	METAL CHIP 100 5% 1/16W	
CN101	1-779-389-21	HOUSING,CONNECTOR (PC BOARD) 30P		R311	1-216-821-11	METAL CHIP 1K 5% 1/16W	
CN102	1-573-929-11	CONNECTOR, FFC/FPC (ZIF) 20P		R312	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
CN103	1-764-439-21	CONNECTOR, FPC 11P		R316	1-216-821-11	METAL CHIP 1K 5% 1/16W	
		< DIODE >		R317	1-216-809-11	METAL CHIP 100 5% 1/16W	
D401	8-719-157-93	DIODE RD3.0SB2		R318	1-216-833-11	METAL CHIP 10K 5% 1/16W	
D501	8-719-988-61	DIODE 1SS355TE-17		R319	1-216-845-11	METAL CHIP 100K 5% 1/16W	
		< FERRITE BEAD >		R320	1-216-855-11	METAL CHIP 680K 5% 1/16W	
FB301	1-414-235-11	INDUCTOR CHIP 0uH		R324	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
FB302	1-414-760-21	INDUCTOR CHIP 0uH		R325	1-216-821-11	METAL CHIP 1K 5% 1/16W	
				R327	1-216-821-11	METAL CHIP 1K 5% 1/16W	
				R328	1-216-811-11	METAL CHIP 150 5% 1/16W	
				R329	1-216-819-11	METAL CHIP 680 5% 1/16W	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R330	1-216-853-11	METAL CHIP	470K 5% 1/16W	R530	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R331	1-216-809-11	METAL CHIP	100 5% 1/16W	R531	1-216-845-11	METAL CHIP	100K 5% 1/16W
R332	1-216-809-11	METAL CHIP	100 5% 1/16W	R532	1-216-864-11	METAL CHIP	0 5% 1/16W
R333	1-216-819-11	METAL CHIP	680 5% 1/16W	R533	1-216-845-11	METAL CHIP	100K 5% 1/16W
R334	1-216-809-11	METAL CHIP	100 5% 1/16W	R534	1-216-845-11	METAL CHIP	100K 5% 1/16W
R335	1-216-815-11	METAL CHIP	330 5% 1/16W	R535	1-216-845-11	METAL CHIP	100K 5% 1/16W
R336	1-216-853-11	METAL CHIP	470K 5% 1/16W	R536	1-216-864-11	METAL CHIP	0 5% 1/16W
R337	1-216-853-11	METAL CHIP	470K 5% 1/16W	R537	1-216-809-11	METAL CHIP	100 5% 1/16W
R338	1-216-833-11	METAL CHIP	10K 5% 1/16W	R538	1-216-845-11	METAL CHIP	100K 5% 1/16W
R339	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R539	1-216-845-11	METAL CHIP	100K 5% 1/16W
R340	1-216-843-11	METAL CHIP	68K 5% 1/16W	R540	1-216-845-11	METAL CHIP	100K 5% 1/16W
R341	1-216-837-11	METAL CHIP	22K 5% 1/16W	R542	1-216-845-11	METAL CHIP	100K 5% 1/16W
R342	1-216-833-11	METAL CHIP	10K 5% 1/16W	R545	1-216-864-11	METAL CHIP	0 5% 1/16W
R343	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	< CONPOSITION CIRCUIT BLOCK >			
R344	1-216-833-11	METAL CHIP	10K 5% 1/16W	RB301	1-233-576-11	RES, CHIP NETWORK 100	
R345	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	RB302	1-233-576-11	RES, CHIP NETWORK 100	
R346	1-216-841-11	METAL CHIP	47K 5% 1/16W	RB503	1-233-412-11	RES, CHIP NETWORK 1K (3216)	
R347	1-216-833-11	METAL CHIP	10K 5% 1/16W	< THERMISTOR >			
R348	1-218-708-11	METAL CHIP	4.7K 0.5% 1/16W	TH501	1-810-421-11	THERMISTOR NTH5G36B103K01TE	
R349	1-216-025-00	RES,CHIP	100 5% 1/10W	< VIBRATOR >			
R350	1-216-142-00	RES,CHIP	4.7 5% 1/8W	X301	1-767-429-21	VIBRATOR, CRYSTAL (22.5792MHz)	
R351	1-218-700-11	METAL CHIP	2.2K 0.5% 1/16W	X501	1-760-365-11	VIBRATOR, CERAMIC (10MHz)	
R352	1-218-700-11	METAL CHIP	2.2K 0.5% 1/16W	*****			
R353	1-218-700-11	METAL CHIP	2.2K 0.5% 1/16W	MISCELLANEOUS			
R354	1-216-857-11	METAL CHIP	1M 5% 1/16W	*****			
R355	1-216-833-11	METAL CHIP	10K 5% 1/16W	16	1-776-207-72	CORD (WITH CONNECTOR) (POWER) (C5970)	
R356	1-216-833-11	METAL CHIP	10K 5% 1/16W	16	1-776-527-71	CORD (WITH CONNECTOR) (ISO) (POWER) (C5970R)	
R357	1-216-017-00	RES,CHIP	47 5% 1/10W	16	1-776-527-91	CORD (WITH CONNECTOR) (ISO) (POWER) (C5960R)	
R401	1-216-073-00	METAL CHIP	10K 5% 1/10W	153	1-654-693-11	SENSOR FLEXIBLE BOARD	
R402	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	△165	8-583-046-05	OPTICAL PICK-UP KMS-241B/J1RP	
R403	1-216-065-00	RES,CHIP	4.7K 5% 1/10W	LCD801	1-803-502-21	DISPLAY PANEL, LIQUID CRYSTAL	
R404	1-216-809-11	METAL CHIP	100 5% 1/16W	M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
R405	1-218-692-11	METAL CHIP	1K 0.5% 1/16W	M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
R406	1-218-714-11	METAL CHIP	8.2K 0.5% 1/16W	M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)	
R501	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R502	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R503	1-216-821-11	METAL CHIP	1K 5% 1/16W	HARDWARE LIST			
R504	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R505	1-216-821-11	METAL CHIP	1K 5% 1/16W	#1	7-621-772-10	SCREW +B 2X4	
R506	1-216-845-11	METAL CHIP	100K 5% 1/16W	#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
R507	1-218-708-11	METAL CHIP	4.7K 0.5% 1/16W	#3	7-685-794-09	SCREW +PTT 2.6X10 (S)	
R510	1-216-845-11	METAL CHIP	100K 5% 1/16W	#4	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
R511	1-216-847-11	METAL CHIP	150K 5% 1/16W	#5	7-685-851-04	SCREW +BVTT 2X4 (S)	
R512	1-216-845-11	METAL CHIP	100K 5% 1/16W	#6	7-624-102-04	STOP RING 1.5, TYPE-E	
R516	1-216-809-11	METAL CHIP	100 5% 1/16W	#7	7-627-852-37	PRECISION SCREW +P 1.7X1.8 TYPE3	
R517	1-216-809-11	METAL CHIP	100 5% 1/16W	#8	7-621-772-08	SCREW +B 2X3	
R518	1-216-809-11	METAL CHIP	100 5% 1/16W	#9	7-621-555-10	SCREW +K 2X3	
R519	1-216-809-11	METAL CHIP	100 5% 1/16W	*****			
R520	1-216-809-11	METAL CHIP	100 5% 1/16W	*****			
R521	1-216-809-11	METAL CHIP	100 5% 1/16W	*****			
R522	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R523	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R524	1-216-821-11	METAL CHIP	1K 5% 1/16W	*****			
R525	1-216-845-11	METAL CHIP	100K 5% 1/16W	*****			
R526	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	*****			
R527	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	*****			
R528	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	*****			
R529	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	*****			

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

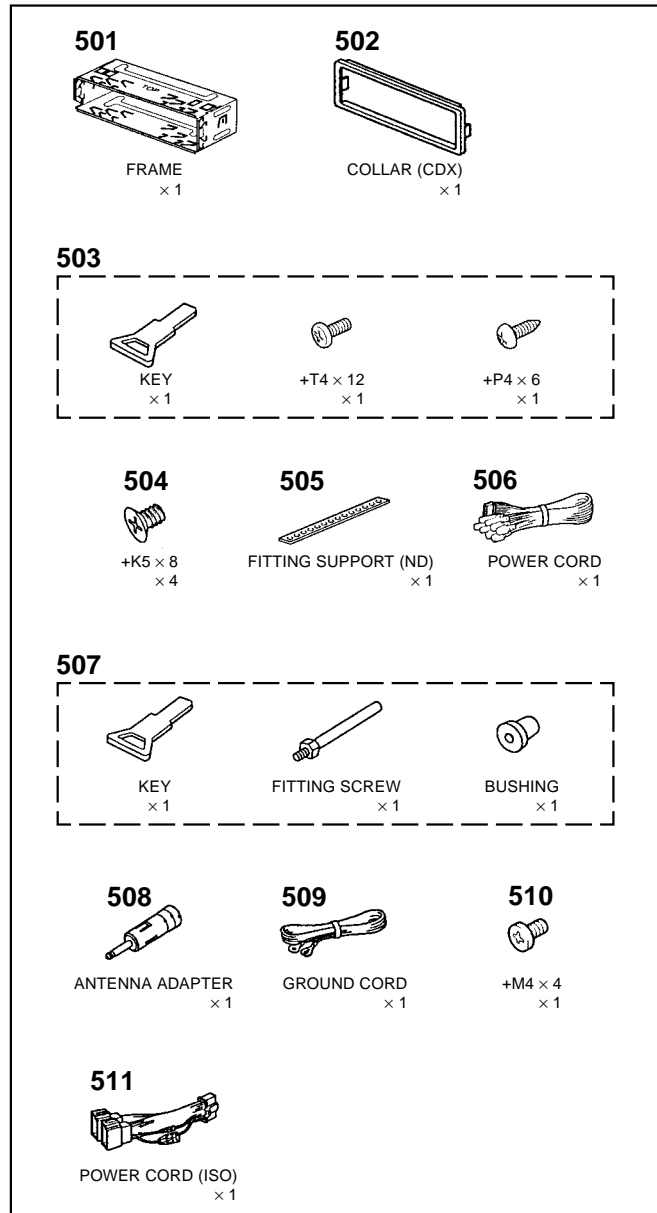
# MDX-C5960R/C5970/C5970R

Ref. No.	Part No.	Description	Remark
<b>ACCESSORIES &amp; PACKING MATERIALS</b>			
*****			
3-865-831-11	MANUAL, INSTRUCTION	(ENGLISH) (C5970: US, Canadian)	
3-865-831-21	MANUAL, INSTRUCTION	(FRENCH) (C5970: Canadian)	
3-865-831-31	MANUAL, INSTRUCTION	(ENGLISH, SPANISH, CHINESE) (C5970: E)	
3-865-832-11	MANUAL, INSTRUCTION, INSTALL	(ENGLISH, FRENCH) (C5970: US, Canadian)	
3-865-832-21	MANUAL, INSTRUCTION, INSTALL	(ENGLISH, SPANISH, CHINESE) (C5970: E)	
3-865-833-11	MANUAL, INSTRUCTION	(ENGLISH, SPANISH, SWEDISH, PORTUGUESE) (C5970R: AEP, UK)	
3-865-833-21	MANUAL, INSTRUCTION	(GERMAN, RUSSIAN) (C5970R: German)	
3-865-833-31	MANUAL, INSTRUCTION	(FRENCH, GERMAN, DUTCH, ITALIAN) (C5960R/C5970R: AEP)	
3-865-834-11	MANUAL, INSTRUCTION, INSTALL	(ENGLISH, SPANISH, SWEDISH, PORTUGUESE) (C5970R: AEP, UK)	
3-865-834-21	MANUAL, INSTRUCTION, INSTALL	(FRENCH, GERMAN, DUTCH, ITALIAN, RUSSIAN) (C5960R/C5970R: AEP, German)	

X-3373-926-1 CASE ASSY (XR)

\*\*\*\*\*

Ref. No.	Part No.	Description	Remark
<b>PARTS FOR INSTALLATION AND CONNECTION</b>			
*****			
501	3-009-613-21	FRAME	
502	3-932-910-11	COLLAR (CDX)	
503	X-3370-076-1	SCREW ASSY (U. KEY), FITTING	(C5970: US, Canadian)
504	3-934-325-01	SCREW, +K (5X8) TAPPING (C5970)	
505	3-924-961-01	SUPPORT (ND), FITTING (C5970)	
506	1-776-207-72	CORD (WITH CONNECTOR) (POWER) (C5970)	
507	X-3370-077-1	SCREW ASSY (AE. KEY), FITTING	(C5960R/C5970: E/C5970R)
508	1-465-459-21	ADAPTER, ANTENNA (C5960R/C5970R)	
509	1-775-543-31	CORD, GROUND	
510	3-344-561-21	SCREW (M4X4)	
511	1-776-527-71	CORD (WITH CONNECTOR) (ISO) (POWER)	(C5970R)
511	1-776-527-91	CORD (WITH CONNECTOR) (ISO) (POWER)	(C5960R)



# MDX-C5960R/C5970/C5970R

## KEY

### ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA. . . :  $\mu$ A. . .      uPA. . . :  $\mu$ PA. . .  
uPB. . . :  $\mu$ PB. . .    uPC. . . :  $\mu$ PC. . .  
uPD. . . :  $\mu$ PD. . .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H
- Abbreviation  
GREEN : Illumination color  
AMBER : Illumination color

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

**SONY**

## SERVICE MANUAL

German Model  
MDX-C5960R  
US Model  
Canadian Model  
E Model  
MDX-C5970  
AEP Model  
UK Model  
MDX-C5970R

## SUPPLEMENT-1

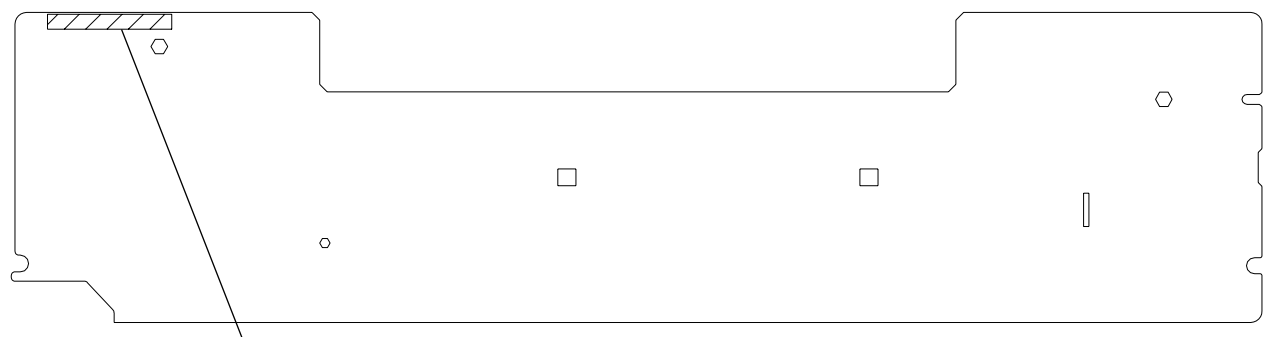
File this supplement with the service manual.

**Subject: Key board Modification**

(ECN-CSB00612)

### NEW/FORMER DISCRIMINATION

#### [KEY BOARD] – Component Side –



Former: 1-672-683-11  
New : 1-674-668-11

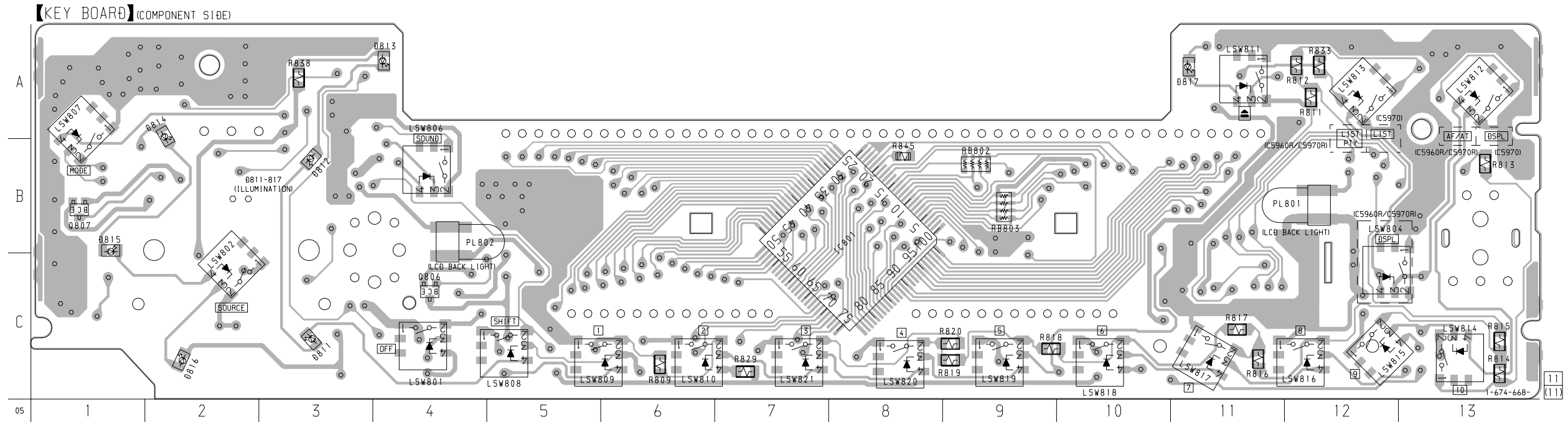
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		KEY BOARD *****		D814	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
*	3-023-609-01	PLATE (LCD), LIGHT GUIDE		D814	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
*	3-023-621-02	SHEET (LCD)		D815	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
*	3-033-721-03	SHEET (LCD), DIFFUSION (C5960R/C5970R)		D815	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
*	3-033-721-11	SHEET (LCD), DIFFUSION (C5970)		D816	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
*	3-033-706-01	PLATE (LCD), GROUND		D816	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
*	3-033-707-01	HOLDER (LCD)		D816	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
		< CAPACITOR >		D817	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)	
C802	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V		D817	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)	
C803	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		D819	8-719-977-00	DIODE DTZ5.1C	
C804	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V				< ROTARY ENCODER >	
C805	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		EN801	1-475-014-11	ENCODER, ROTARY (VOLUME/BASS/TREBLE/ BALANCE/FADER CONTROL)	
C806	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V				< IC >	
C811	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		IC801	8-759-496-75	IC uPD16432BGC-018-9EU	
C812	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V				< LIQUID CRYSTAL DISPLAY >	
C813	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		LCD801	1-803-502-21	DISPLAY PANEL, LIQUID CRYSTAL	
C814	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V				< SWITCH >	
C815	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		LSW801	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (OFF)	
		< CONNECTOR >		LSW801	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (OFF)	
CNP801	1-764-423-11	PIN, CONNECTOR 12P		LSW802	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (SOURCE)	
		< DIODE >		LSW802	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (SOURCE)	
D802	8-719-069-57	DIODE UDZS-TE17-6.8B		LSW803	1-771-290-11	SWITCH, SLIDE (- <<<<<< >>>>>> +: SEEK/AMS)	
D803	8-719-069-57	DIODE UDZS-TE17-6.8B		LSW804	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (DSPL) (C5960R/C5970R)	
D804	8-719-069-57	DIODE UDZS-TE17-6.8B		LSW804	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (DSPL) (C5970)	
D806	8-719-977-00	DIODE DTZ5.1C		LSW805	1-762-937-11	SWITCH, ROTARY (D-BASS)	
D807	8-719-977-00	DIODE DTZ5.1C					
D808	8-719-978-69	DIODE DTZ-TT11-16B					
D811	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					
D811	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)					
D812	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					
D812	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)					
D813	8-719-033-13	LED CL-170Y-CD-T (AMBER) (ILLUMINATION)					
D813	8-719-033-14	LED CL-170PG-CD-T (GREEN) (ILLUMINATION)					

Continued on page 4.

PRINTED WIRING BOARD – KEY Board –

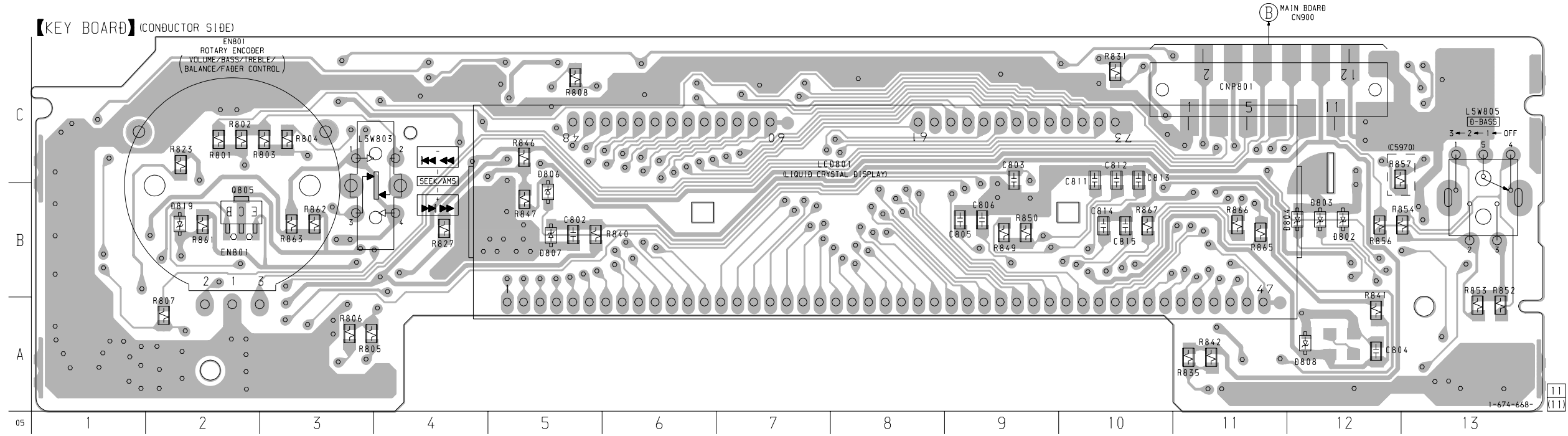
• Semiconductor Location (Component Side)

Ref. No.	Location
D811	C-3
D812	B-3
D813	A-4
D814	A-2
D815	B-1
D816	C-2
D817	A-11
IC801	B-8
Q806	C-4
Q807	B-1



• Semiconductor Location (Conductor Side)

Ref. No.	Location
D802	B-12
D803	B-12
D804	B-12
D806	B-5
D807	B-5
D808	A-12
D819	B-2
Q805	B-2

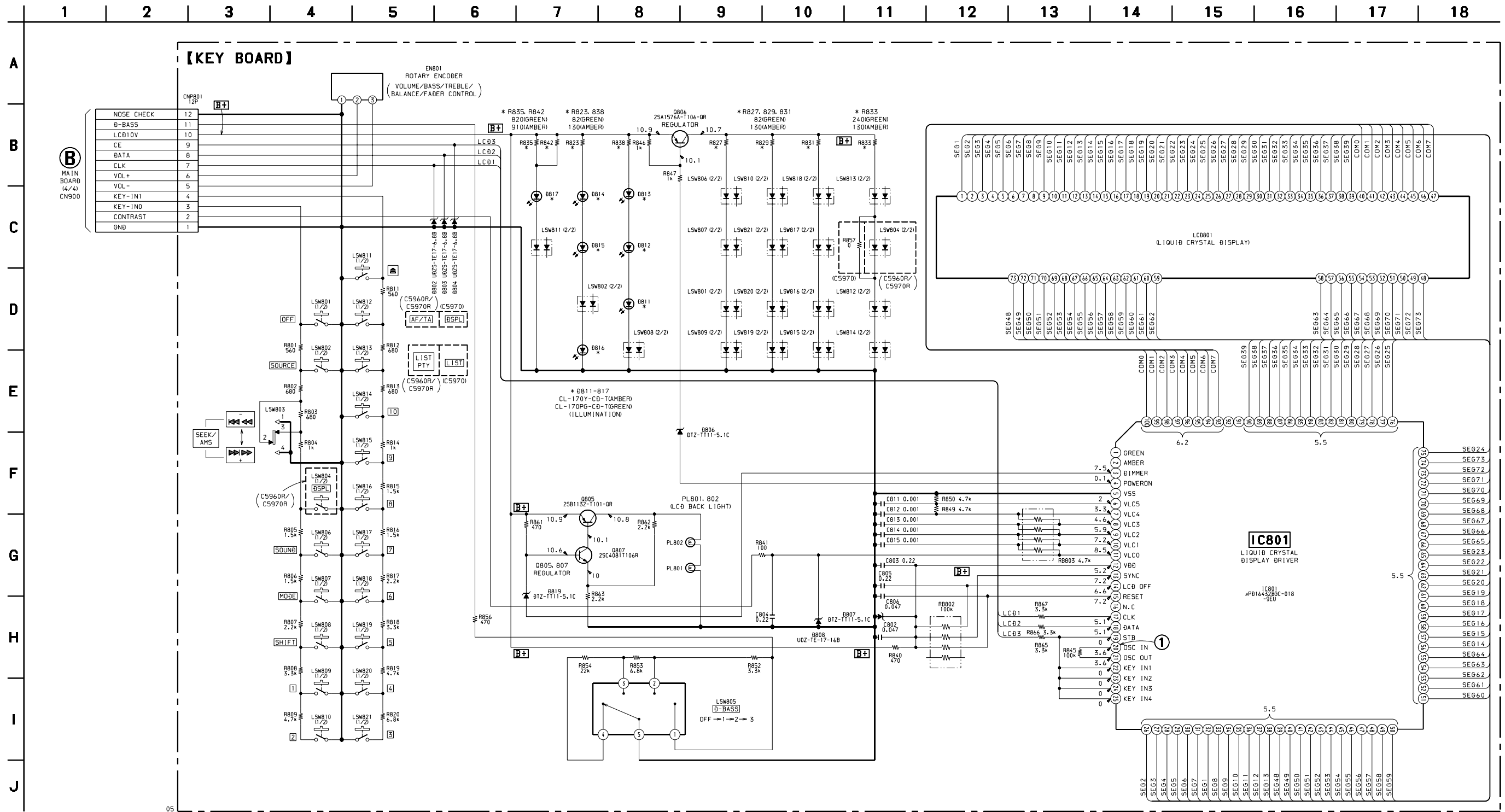


Note on Printed Wiring Board:

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

Caution:  
 Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.  
 Parts face side: Parts on the parts face side seen from the parts face are indicated.

SCHEMATIC DIAGRAM - KEY Board -



Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- [ ] : panel designation.
- [B+] : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.

- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : FM
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation GREEN : Illumination color AMBER : Illumination color

MDX-C5960R/C5970/C5970R

KEY

KEY

Continued from page 1.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
LSW806	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (SOUND)		LSW821	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (3)	
LSW806	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (SOUND)				< PILOT LAMP >	
LSW807	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (MODE)		PL801	1-517-630-31	LAMP, PILOT (LCD BACK LIGHT)	
LSW807	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (MODE)		PL802	1-517-630-31	LAMP, PILOT (LCD BACK LIGHT)	
LSW808	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (SHIFT)				< TRANSISTOR >	
LSW808	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (SHIFT)		Q805	8-729-106-60	TRANSISTOR 2SB1115A-YQ	
LSW809	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (1)		Q806	8-729-026-53	TRANSISTOR 2SA1576A-T106-QR	
LSW809	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (1)		Q807	8-729-905-35	TRANSISTOR 2SC4081T106R	
						< RESISTOR >	
LSW810	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (2)		R801	1-208-776-11	RES, CHIP 560 0.5% 1/10W	
LSW810	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (2)		R802	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
LSW811	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (▲)		R803	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
LSW811	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (▲)		R804	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
LSW812	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (AF/TA) (C5960R/C5970R)		R805	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
LSW812	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (AF/TA) (C5970R)		R806	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
LSW812	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (DSPL) (C5970)		R807	1-216-659-11	METAL CHIP 2.2K 0.5% 1/10W	
LSW813	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (LIST, PTY) (C5960R/C5970R)		R808	1-216-663-11	METAL CHIP 3.3K 0.5% 1/10W	
LSW813	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (LIST, PTY) (C5970R)		R809	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
LSW813	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (LIST) (C5970)		R810	1-216-667-11	RES, CHIP 4.7K 0.5% 1/10W	
LSW814	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (10)		R811	1-208-776-11	RES, CHIP 560 0.5% 1/10W	
LSW814	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (10)		R812	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
LSW815	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (9)		R813	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
LSW815	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (9)		R814	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
LSW816	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (8)		R815	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
LSW816	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (8)		R816	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
LSW817	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (7)		R817	1-216-659-11	RES, CHIP 2.2K 0.5% 1/10W	
LSW817	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (7)		R818	1-216-663-11	RES, CHIP 3.3K 0.5% 1/10W	
LSW818	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (6)		R819	1-216-667-11	RES, CHIP 4.7K 0.5% 1/10W	
LSW818	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (6)		R820	1-216-671-11	RES, CHIP 6.8K 0.5% 1/10W	
LSW819	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (5)		R821	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
LSW819	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (5)		R822	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
LSW820	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (4)		R823	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
LSW820	1-762-619-21	SWITCH, KEY BOARD (WITH LED) (GREEN) (4)		R824	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
LSW821	1-762-617-21	SWITCH, KEY BOARD (WITH LED) (AMBER) (3)		R825	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R826	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R827	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R828	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R829	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R830	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R831	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R832	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R833	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R834	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R835	1-216-047-00	RES, CHIP 820 5% 1/10W (GREEN)	
				R836	1-216-048-00	METAL CHIP 910 5% 1/10W (AMBER)	
				R837	1-216-023-00	RES, CHIP 82 5% 1/10W (GREEN)	
				R838	1-216-028-00	METAL CHIP 130 5% 1/10W (AMBER)	
				R839	1-216-041-00	METAL CHIP 470 5% 1/10W	
				R840	1-216-025-00	RES, CHIP 100 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R842	1-216-047-00	RES, CHIP 820 5%	1/10W (GREEN)
R842	1-216-048-00	METAL CHIP 910 5%	1/10W (AMBER)
R845	1-218-895-11	METAL CHIP 100K 0.5%	1/16W
R846	1-216-651-11	METAL CHIP 1K 0.5%	1/10W
R847	1-216-651-11	METAL CHIP 1K 0.5%	1/10W
R849	1-216-667-11	METAL CHIP 4.7K 0.5%	1/10W
R850	1-216-667-11	METAL CHIP 4.7K 0.5%	1/10W
R852	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R853	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R854	1-216-081-00	METAL CHIP 22K 5%	1/10W
R856	1-216-041-00	METAL CHIP 470 5%	1/10W
R857	1-216-295-00	SHORT 0 (GREEN)	
R861	1-216-041-00	METAL CHIP 470 5%	1/10W
R862	1-216-659-11	METAL CHIP 2.2K 0.5%	1/10W
R863	1-216-659-11	METAL CHIP 2.2K 0.5%	1/10W
R865	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R866	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R867	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
		< COMPOSITION CIRCUIT BLOCK >	
RB802	1-233-810-21	RES, NETWORK 100K (3216)	
RB803	1-233-414-11	RES, CHIP NETWORK 4.7K (3216)	

EXPLODED VIEWS

Page	FORMER	NEW																								
73																										
	<table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>* 63</td> <td>3-033-696-01</td> <td>SHEET (LCD), DIFFUSION</td> <td></td> </tr> </tbody> </table>	Ref. No.	Part No.	Description	Remark	* 63	3-033-696-01	SHEET (LCD), DIFFUSION		<table border="1"> <thead> <tr> <th>Ref. No.</th> <th>Part No.</th> <th>Description</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>* 63</td> <td>3-033-721-03</td> <td>SHEET, DIFFUSION (LCD) (C5960R/C5970R)</td> <td></td> </tr> <tr> <td>* 63</td> <td>3-033-721-11</td> <td>SHEET, DIFFUSION (LCD) (C5970)</td> <td></td> </tr> <tr> <td>* 72</td> <td>3-037-916-01</td> <td>SHEET (LCD)</td> <td></td> </tr> </tbody> </table>	Ref. No.	Part No.	Description	Remark	* 63	3-033-721-03	SHEET, DIFFUSION (LCD) (C5960R/C5970R)		* 63	3-033-721-11	SHEET, DIFFUSION (LCD) (C5970)		* 72	3-037-916-01	SHEET (LCD)	
Ref. No.	Part No.	Description	Remark																							
* 63	3-033-696-01	SHEET (LCD), DIFFUSION																								
Ref. No.	Part No.	Description	Remark																							
* 63	3-033-721-03	SHEET, DIFFUSION (LCD) (C5960R/C5970R)																								
* 63	3-033-721-11	SHEET, DIFFUSION (LCD) (C5970)																								
* 72	3-037-916-01	SHEET (LCD)																								

• Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

MEMO

