

# DENON

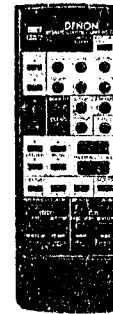
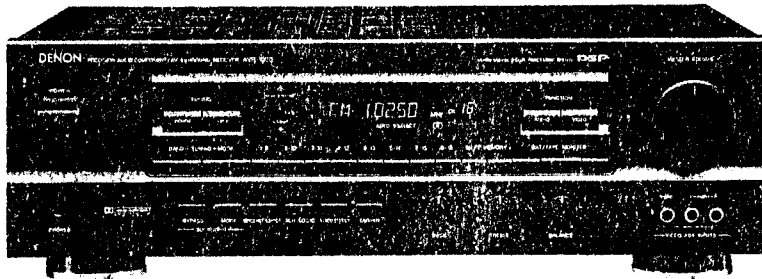
Hi-Fi AV Surround Receiver

**Europe Model**

## SERVICE MANUAL

# MODEL AVR-1000

## AV SURROUND RECEIVER



### CONTENTS

OPERATING INSTRUCTIONS .....	2-20
WIRE ARRANGEMENT .....	22
DISASSEMBLY .....	23
ADJUSTMENT .....	24-27
SEMICONDUCTORS .....	28-35
PRINTED WIRING BOARD .....	36-38
PRINTED WIRING BOARD PARTS LIST .....	39-44
BLOCK DIAGRAM .....	45
WIRING DIAGRAM .....	46
SCHEMATIC DIAGRAM .....	47-49
EXPLODED VIEW OF CHASSIS AND CABINET .....	50
PARTS LIST OF EXPLODED VIEW .....	51
REMOTE CONTROL UNIT .....	52
PARTS LIST .....	52
CORDS TABLE .....	52
SCHEMATIC DIAGRAM .....	52

# NIPPON COLUMBIA CO., LTD.

AVR-1000

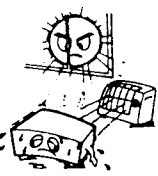

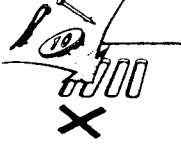
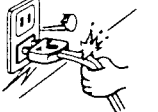
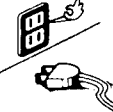

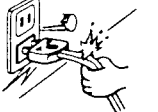


## SPECIFICATIONS

- **Audio Section**
  - (Power amplifier)** Front (main 2ch driven)
  - Rated output:** 70 W + 70 W (8 ohms, 20 Hz – 20 kHz with 0.08% THD)
  - (All properties shown are only for the power amplifier stage.) CENTER (center 1ch driven)
  - 70 W (8 ohms, 20 Hz – 20 kHz with 0.08% THD)
  - REAR (rear 2ch driven)
  - 20 W + 20 W (8 ohms, 1 kHz with 0.1% THD)
  - Output terminals:** Front: 6 to 16 ohms
  - Center: 6 to 16 ohms
  - Rear: 6 to 16 ohms
  - Line input (Each line input – FRONT SP OUT)**
  - Input sensitivity / impedance:** 150 mV / 47 k ohms PHONO (MM): 2.5 mV / 47 kohms
  - Frequency response:** 10 Hz to 50 kHz;  $\pm 3$  dB
  - Tone control range:** BASS:  $\pm 10$  dB at 100 Hz
  - TREBLE:  $\pm 10$  dB at 10 kHz
  - Signal-to-noise ratio** 92 dB
  - Phono equalizer (PHONO input – REC OUT)**
  - RIAA deviation:**  $\pm 1$  dB (20 Hz to 20 kHz)
  - Signal-to-noise ratio:** 74 dB (A weighting, with 5 mV input)
  - Rated output / Maximum output:** 150 mV / 8 V
  - Distortion factor:** 0.03% (1 kHz, 1 V)
- **Tuner Section**
  - [FM] (note:  $\mu$ V at 75 ohms, 0 dBf =  $1 \times 10^{-15}$  W)**
  - Receiving Range:** 87.50 MHz ~ 108.00 MHz
  - Usable Sensitivity (DIN):** 0.9  $\mu$ V (DIN)
  - 50 dB Quieting Sensitivity:** MONO 1.6  $\mu$ V
  - STEREO 23  $\mu$ V
  - Signal to Noise Ratio (IHF-A):** MONO 80 dB
  - STEREO 75 dB
  - Total Harmonic Distortion (at 1 kHz):** MONO 0.4%
  - STEREO 0.5%
  - [AM]**
  - Receiving Range:** 522 kHz ~ 1611 kHz
  - Usable Sensitivity:** 18  $\mu$ V
  - Signal to Noise Ratio:** 50 dB
- **Video Section**
  - Standard video jacks**
  - Input and output level / impedance:** 1 Vp-p / 75 ohms
  - Frequency response:** 3 Hz to 8 MHz +1, -3 dB
- **General**
  - Power supply:** AC 230 V, 50 Hz (for Europe model)
  - AC 240 V, 50 Hz (for U. K. model)
  - Power consumption:** 230 W
  - Maximum external dimensions:** 434 (W)  $\times$  142 (H)  $\times$  337 (D) mm (17-3/32"  $\times$  5-19/32"  $\times$  13-17/64")
  - Weight:** 9.6 kg (21 lbs 3 oz)
- **Remote control unit**
  - System remote control**
  - RC-167:** Total buttons: 41
  - DENON system code
  - CD player: 6 buttons
  - Cassette deck: 6 buttons
  - AVR-1000 fixed codes: 29 buttons
  - Batteries: R6P/AA Type (two batteries)
  - External dimensions: 60 (W)  $\times$  175 (H)  $\times$  18 (D) mm (2-23/64"  $\times$  6-57/64"  $\times$  45/64")
  - Weight: 120 g (Approx. 4 oz) (including batteries)

\* For purposes of improvement, specifications and design are subject to change without notice.

# 1 INTRODUCTION / EINFÜHRUNG / INTRODUÇÃO INTRODUZIONE / INTRODUCCIÓN / INLEIDING / INLEDNING

NOTE ON USE / HINWEISE ZUM GEBRAUCH / OBSERVATIONS RELATIVES A L'UTILISATION  
NOTE SULL'USO / NOTAS SOBRE EL USO / ALVORENS TE GEBRUIKEN / OBSERVERA

 <ul style="list-style-type: none"> <li>• Avoid high temperatures. Allow for sufficient heat dispersion when installed on a rack.</li> <li>• Vermeden Sie hohe Temperaturen. Beachten Sie, daß eine zureichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.</li> <li>• Eviter des températures élevées. Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.</li> <li>• Evitate di esporre l'unità a temperature alte. Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.</li> <li>• Evite altas temperaturas. Permita la suficiente dispersión del calor cuando está instalado en la consola.</li> <li>• Vermijd hoge temperaturen. Zorg voor een degelijk hiteafvoer indien het apparaat op een rek wordt geplaatst.</li> <li>• Undvik höga temperaturer. Se till att det finns möjlighet till god värmeavledning vid montering i ett rack.</li> </ul>	 <ul style="list-style-type: none"> <li>• Keep the set free from moisture, water, and dust.</li> <li>• Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.</li> <li>• Protéger l'appareil contre l'humidité, l'eau et la poussière.</li> <li>• Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.</li> <li>• Mantenga el equipo libre de humedad, agua y polvo.</li> <li>• Laat geen vochtigheid, water of stof in het apparaat binnendringen.</li> <li>• Utsatt inte apparaten för fukt, vatten och damm.</li> </ul>	 <ul style="list-style-type: none"> <li>• Do not let foreign objects in the set.</li> <li>• Keine fremden Gegenstände in das Gerät kommen lassen.</li> <li>• Ne pas laisser des objets étrangers dans l'appareil.</li> <li>• È importante che nessun oggetto è inserito all'interno dell'unità.</li> <li>• No deja objetos extraños dentro del equipo.</li> <li>• Laat geen vreemde voorwerpen in dit apparaat vallen.</li> <li>• Se till att främmande föremål inte tränger in i apparaten.</li> </ul>
 <ul style="list-style-type: none"> <li>• Handle the power cord carefully. Hold the plug when unplugging the cord.</li> <li>• Gehen Sie vorsichtig mit dem Netzkabel um. Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.</li> <li>• Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon.</li> <li>• Maneggiate il filo di alimentazione con cura. Agite per la spina quando scollegate il cavo dalla presa.</li> <li>• Maneje el cordón de energía con cuidado. Sostenga el enchufe cuando desconecte el cordón de energía.</li> <li>• Hanteer het netsnoer voorzichtig. Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld.</li> <li>• Håntera nätkabeln varsamt. Håll i kablarna när den kopplas från uttaget.</li> </ul>	 <ul style="list-style-type: none"> <li>• Unplug the power cord when not using the set for long periods of time.</li> <li>• Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.</li> <li>• Débrancher le cordon d'alimentation lors que l'appareil n'est pas utilisé pendant de longues périodes.</li> <li>• Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.</li> <li>• Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.</li> <li>• Neem altijd het netsnoer uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt.</li> <li>• Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid.</li> </ul>	 <ul style="list-style-type: none"> <li>• Do not let insecticides, benzene, and thinner come in contact with the set.</li> <li>• Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.</li> <li>• Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.</li> <li>• Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.</li> <li>• No permita el contacto de insecticidas, gasolina y diluyentes con el equipo.</li> <li>• Laat geen insectenverdelgende middelen, benzine of verfdunner met dit apparaat in contact komen.</li> <li>• Se till att inte insektsmedel på spraybruk, bensen och thinner kommer i kontakt med apparatens hölje.</li> </ul>
 <ul style="list-style-type: none"> <li>• Handle the power cord carefully. Hold the plug when unplugging the cord.</li> <li>• Gehen Sie vorsichtig mit dem Netzkabel um. Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.</li> <li>• Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon.</li> <li>• Maneggiate il filo di alimentazione con cura. Agite per la spina quando scollegate il cavo dalla presa.</li> <li>• Maneje el cordón de energía con cuidado. Sostenga el enchufe cuando desconecte el cordón de energía.</li> <li>• Hanteer het netsnoer voorzichtig. Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld.</li> <li>• Håntera nätkabeln varsamt. Håll i kablarna när den kopplas från uttaget.</li> </ul>	 <p>* (For sets with ventilation holes)</p> <ul style="list-style-type: none"> <li>• Do not obstruct the ventilation holes.</li> <li>• Die Belüftungsöffnungen dürfen nicht verdeckt werden.</li> <li>• Ne pas obstruer les trous d'aération.</li> <li>• Non coprire i fori di ventilazione.</li> <li>• No obstruya los orificios de ventilación.</li> <li>• De ventilatieopeningen mogen niet worden beblokkeerd.</li> <li>• Tapp inte till ventilationsöppningarna.</li> </ul>	 <ul style="list-style-type: none"> <li>• Never disassemble or modify the set in any way.</li> <li>• Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.</li> <li>• Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.</li> <li>• Non smontate mai, né modificate l'unità in nessun modo.</li> <li>• Nunca desarme o modifique el equipo de ninguna manera.</li> <li>• Noort dit apparaat demonteren of op andere wijze modifieren.</li> <li>• Ta inte isär apparaten och försök inte bygga om den.</li> </ul>

## • NUR FÜR EUROPÄISCHE MODELLE

### Konformitätserklärung

Die DENON Electronic GmbH  
Halskestraße 32  
4030 Ratingen 1

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

## • FOR UNITED KINGDOM MODEL ONLY

### CONNECTING THE MAINS PLUG:

This unit operates from a 240V ac 50 Hz mains supply.

Fit a proper mains plug to the mains lead of this equipment. If a 13 amp (BS1363) plug is used, a 5 amp fuse must be fitted. The 13 amp fuse supplied in a new plug must NOT be used. If any other type of plug is used, a 5 amp fuse must be fitted either in the plug or adaptor or at the distribution board.

### IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue: Neutral  
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

DO NOT MAKE ANY CONNECTION TO THE LARGER PIN MARKED WITH THE LETTER E OR BY THE SYMBOL  $\frac{E}{\square}$  OR COLOURED GREEN OR GREEN-AND-YELLOW.

Disconnect the mains plug from the supply socket when not in use.

"SERIAL NO. \_\_\_\_\_"

PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

4

## 2 NAMES OF PARTS (Front Panel)

### BEZEICHNUNG DER TEILE (Frontplatte)

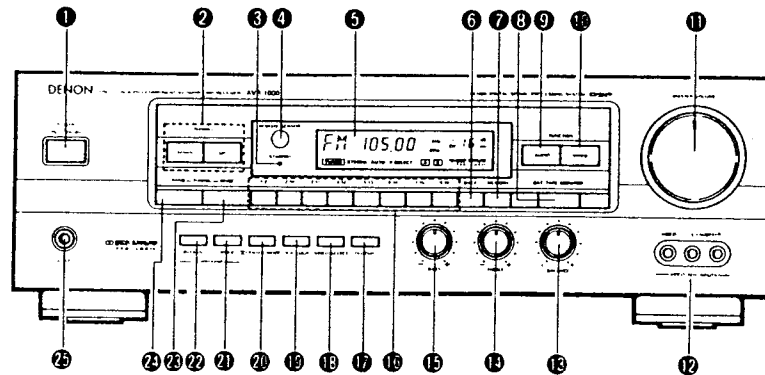
### NOMENCLATURE (Panneau avant)

### OMENCLATURA (Pannello anteriore)

## NOMBRE DE LAS PARTES (Panel delantero)

### NAMEN VAN ONDERDELEN (Voorpaneel)

### DE OLIKA DELARNAS NAMN (Frontpanel)



#### FOR ENGLISH READERS

- 1 POWER BUTTON
- 2 TUNING BUTTON
- 3 STANDBY LED
- 4 REMOTE CONTROL SENSOR
- 5 MFD (Multi-function fluorescent display)
- 6 SHIFT BUTTON
- 7 MEMORY BUTTON
- 8 DAT/TAPE MONITOR BUTTON
- 9 AUDIO FUNCTION BUTTON
- 10 VIDEO FUNCTION BUTTON
- 11 MASTER VOLUME control
- 12 VIDEO AUX INPUTS
- 13 BALANCE control
- 14 TREBLE control
- 15 BASS control
- 16 PRESET CHANNEL 1~16
- 17 OUTPUT BUTTON
- 18 VIDEO SELECT BUTTON
- 19 3CH. LOGIC BUTTON
- 20 [C] CENTER MODE BUTTON
- 21 SURROUND MODE BUTTON
- 22 BYPASS BUTTON
- 23 TUNING MODE BUTTON  
(Tuning Mode Selector Switch)
- 24 TUNING BAND BUTTON  
(Tuning Band Selector Switch)
- 25 PHONES JACK

#### FÜR DEUTSCHE LESER

- 1 Netztaete (POWER)
- 2 Abstimmtaete (TUNING)
- 3 STANDBY-LED
- 4 Fernbedienungssensor (REMOTE CONTROL SENSOR)
- 5 MFD (Multifunktions-Fluoreszenzdisplay)
- 6 Umschalttaete (SHIFT)
- 7 Speichertaste (MEMORY)
- 8 DAT-/Cassettendeck-Überwachungstaste (DAT/TAPE MONITOR)
- 9 AUDIO-Funktionstaste (AUDIO FUNCTION)
- 10 VIDEO-Funktionstaste (VIDEO FUNCTION)
- 11 Hauptlautstärkeregler (MASTER VOLUME)
- 12 Video-Zusatzeingänge (VIDEO AUX INPUT)
- 13 BALANCE-Regler (BALANCE)
- 14 Höhenregler (TREBLE)
- 15 Tiefenregler (BASS)
- 16 Vorwahlkanal-Taste (PRESET CHANNEL) (1~16)
- 17 Ausgangstaste (OUTPUT)
- 18 Video-Wahltaste (VIDEO SELECT)
- 19 3CH LOGIC-Taste
- 20 [C] Modus-Taste für die mittleren Lautsprecher (CENTER MODE)
- 21 Surround-Modus-Taste (SURROUND MODE)
- 22 Umgehungstaste (BYPASS)
- 23 Abstimm-Modus-Taste (TUNING MODE)  
(Abstimm-Modus-Wähler)
- 24 Wellenbereich-Wahltaste (TUNING BAND)  
(Wellenbereich-Wähler)
- 25 Kopfhörerbuchse (PHONES)

#### POUR LES LECTEURS FRANCAIS

- 1 TOUCHE D'ALIMENTATION (POWER)
- 2 TOUCHE DE SYNTONISATION (TUNING)
- 3 TEMOIN DE VEILLE (STANDBY LED)
- 4 DETECTEUR DE TELECOMMANDE (REMOTE CONTROL SENSOR)
- 5 MFD (Affichage fluorescent multi-fonction)
- 6 TOUCHE DE DECALAGE (SHIFT)
- 7 TOUCHE DE MEMOIRE (MEMORY)
- 8 TOUCHE DAT/CONTROLE DE BANDE (DAT/TAPE MONITOR)
- 9 TOUCHE DE FONCTION AUDIO (AUDIO FUNCTION)
- 10 TOUCHE DE FONCTION VIDEO (VIDEO FUNCTION)
- 11 Commande de VOLUME GLOBAL (MASTER VOLUME)
- 12 ENTREES AUXILIAIRES VIDEO (VIDEO AUX INPUTS)
- 13 Commande d'équilibre (BALANCE)
- 14 Commande des aigües (TREBLE)

#### PER IL LETTORE ITALIANO

- 1 Tasto di accensione (POWER)
- 2 Tasto di sintonizzazione (TUNING)
- 3 LED di attesa (STANDBY)
- 4 SENSORE DI CONTROLLO A DISTANZA (REMOTE CONTROL SENSOR)
- 5 Display MFD (display multifunzione fluorescente)
- 6 Tasto di spostamento (SHIFT)
- 7 Tasto di memorizzazione (MEMORY)
- 8 Tasto di monitoraggio della piastra DAT/piastra a cassette (DAT/TAPE MONITOR)
- 9 Tasto di funzione audio (AUDIO FUNCTION)
- 10 Tasto di funzione video (VIDEO FUNCTION)
- 11 Controllo del volume principale (MASTER VOLUME)
- 12 Prese di ingresso VIDEO AUX (VIDEO AUX INPUT)

#### PARA LECTORES DE ESPAÑOL

- 1 INTERRUPTOR DE ALIMENTACION (POWER)
- 2 BOTON DE SINTONIZACION (TUNING)
- 3 LED DE MODO DE ESPERA (STANDBY)
- 4 SENSOR DE CONTROL REMOTO (REMOTE CONTROL SENSOR)
- 5 MFD (visualizador fluorescente multifunción)
- 6 BOTON DE CAMBIO (SHIFT)
- 7 BOTON DE MEMORIA (MEMORY)
- 8 BOTON DAT/TAPE MONITOR (DAT/TAPE MONITOR)
- 9 BOTON SELECTOR DE ENTRADA DE AUDIO (AUDIO FUNCTION)
- 10 BOTON SELECTOR DE ENTRADA DE VIDEO (VIDEO FUNCTION)
- 11 Control principal de volumen (MASTER VOLUME)
- 12 ENTRADAS AUXILIARES DE VIDEO (VIDEO AUX INPUT)
- 13 Control de balance (BALANCE)

#### VOOR NEDERLANDSTALIGE LEZERS

- 1 Spanningstoets (POWER)
- 2 Afstemtoets (TUNING)
- 3 Standby-aanduiding (STANDBY LED)
- 4 Afstandsbedieningssensor (REMOTE CONTROL SENSOR)
- 5 MFD (Multifunctionele lichtgevende display)
- 6 Wisseltoets (SHIFT)
- 7 Geheugentoets (MEMORY)
- 8 DAT/bandmeeluisertoets (DAT/TAPE MONITOR)
- 9 Audiofunctietoets (AUDIO FUNCTION)
- 10 Videofunctietoets (VIDEO FUNCTION)
- 11 Hoofdvolumeregelaar (MASTER VOLUME)
- 12 Video AUX-ingangen (VIDEO AUX INPUT)
- 13 Balansregelaar (BALANCE)

#### FÖR SVENSKA LÄSARE

- 1 STRÖMBRYTARE (POWER)
- 2 AVSTÄMNINGSTANGENT (TUNING)
- 3 BEREDSKAPSIKATOR (STANDBY)
- 4 FJÄRRKONTROLLSENSOR (REMOTE CONTROL SENSOR)
- 5 MFD (Multidisply)
- 6 SKIFTTANGENT (SHIFT)
- 7 MINNESTANGENT (MEMORY)
- 8 DAT-/DÄCKVÄLJARE (DAT/TAPE MONITOR)
- 9 AUDIOFUNKTIONSVÄLJARE (AUDIO FUNCTION)
- 10 VIDEOFUNKTIONSVÄLJARE (VIDEO FUNCTION)
- 11 LJUDSTYRKEKONTROLL (MASTER VOLUME)
- 12 RESERVINGÄNGAR FÖR VIDEOBRUK (VIDEO AUX INPUT)

- 15 Commande de graves (BASS)
- 16 CANAL PREREGLE (PRESET CHANNEL) (1~16)
- 17 TOUCHE DE SORTIE (OUTPUT)
- 18 TOUCHE DE SELECTION VIDEO (VIDEO SELECT)
- 19 TOUCHE LOGIQUE 3 CANAUX (3CH. LOGIC)
- 20 TOUCHE DE MODE CENTRAL ([C] CENTER MODE)
- 21 TOUCHE DE MODE D'AMBIANCE (SURROUND MODE)
- 22 TOUCHE DE DERIVATION (BYPASS)
- 23 TOUCHE DE MODE DE SYNTONISATION (TUNING MODE)  
(Sélecteur de mode de syntonisation)
- 24 TOUCHE DE GAMME DE SYNTONISATION (TUNING BAND)  
(Sélecteur de gamme de syntonisation)
- 25 PRISE CASQUE (PHONES)

- 15 Controllo del bilanciamento (BALANCE)
- 16 Controllo degli acuti (TREBLE)
- 17 Controllo dei bassi (BASS)
- 18 Canale di preselezione (PRESET CHANNEL) (1~16)
- 19 Tasto di uscita (OUTPUT)
- 20 Tasto di selezione video (VIDEO SELECT)
- 21 Tasto 3CH. LOGIC
- 22 Tasto del modo centrale ([C] CENTER MODE)
- 23 Tasto del modo surround (SURROUND MODE)
- 24 Tasto BYPASS
- 25 Tasto del modo di sintonizzazione (TUNING MODE)
- 26 Tasto della banda di sintonizzazione (TUNING BAND SELECT)
- 27 Presa delle cuffie (PHONES)

- 15 Control de tonos agudos (TREBLE)
- 16 Control de tonos bajos (BASS)
- 17 BOTONES DE PRESINTONIZACION (PRESET CHANNEL) (1~16)
- 18 BOTON DE SALIDA (OUTPUT)
- 19 BOTON VIDEO SELECT
- 20 BOTON 3CH. LOGIC
- 21 BOTON SELECTOR DE MODO CENTRAL ([C] CENTER MODE)
- 22 BOTON SELECTOR DE MODO DE SONIDO ENVOLVENTE (SURROUND MODE)
- 23 BOTON DE OMISION (BYPASS)
- 24 Interruptor selector de modo de sintonización (TUNING MODE)
- 25 Interruptor selector de banda de sintonización (TUNING BAND)
- 26 CONECTOR PARA AURICULARES (PHONES)

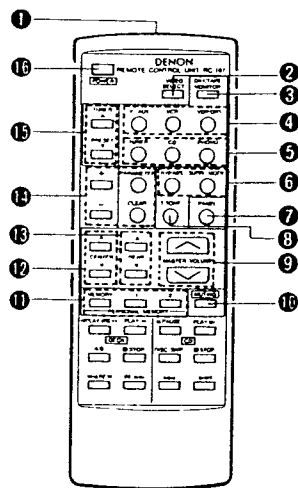
- 15 Hoge tonenregelaar (TREBLE)
- 16 Lage tonenregelaar (BASS)
- 17 Voorkeuzekanaal (PRESET CHANNEL) (1~16)
- 18 Uitgangstoets (OUTPUT)
- 19 Videokeuzetoets (VIDEO SELECT)
- 20 3-kanaals logic-toets (3CH. LOGIC)
- 21 Middenstandtoets ([C] CENTER MODE)
- 22 Surroundstandtoets (SURROUND MODE)
- 23 Skiptoets (BYPASS)
- 24 Afstemstandtoets (TUNING MODE)  
(Afstemstand-keuzeschakelaar)
- 25 Afstemgolfbandtoets (TUNING BAND)  
(Afstemgolfband-keuzeschakelaar)
- 26 Hoofdtelefoonaansluiting (PHONES)

- 15 BALANSKONTROLL (BALANCE)
- 16 DISKANTKONTROLL (TREBLE)
- 17 BASKONTROLL (BASS)
- 18 SNABBVALSTANGENTER (PRESET CHANNEL) (1~16)
- 19 HÖGTALAROMKOPPLARE (OUTPUT)
- 20 VIDEOVÄLJARE (VIDEO SELECT)
- 21 TANGENT FÖR 3-KANALSLOGIK (3CH. LOGIC)
- 22 MITTKANALSTANGENT ([C] CENTER MODE)
- 23 SURROUND-tangent (SURROUND MODE)
- 24 FÖRBKOPPLINGSTANGENT (BYPASS)
- 25 TANGENT FÖR VAL AV AVSTÄMNINGSMETOD (TUNING MODE)
- 26 FREKVENSBANDVÄLJARE (TUNING BAND)
- 27 HÖRLURSUTTAG (PHONES)

3

(Remote Control Unit)  
(Fernbedienungsgerät)  
(Télécommande)  
(Telecomando)

(Unidad de Control Remoto)  
(Afstandsbediening)  
(Fjärrkontroll)



#### FOR ENGLISH READERS

- 1 TRANSMITTING WINDOW
- 2 VIDEO SELECT BUTTON
- 3 DAT/TAPE MONITOR BUTTON
- 4 VIDEO FUNCTION BUTTON
- 5 AUDIO FUNCTION BUTTON
- 6 SURROUND BUTTON
- 7 ☆PANEL BUTTON
- 8 ☆TEST TONE BUTTON
- 9 MASTER VOLUME BUTTON
- 10 ☆MUTING BUTTON
- 11 ☆PERSONAL MEMORY BUTTON
- 12 ☆CENTER LEVEL ADJUSTMENT BUTTON
- 13 ☆REAR LEVEL ADJUSTMENT BUTTON
- 14 ☆DSP ADJUSTMENT BUTTON
- 15 TUNER PRESET BUTTON
- 16 POWER BUTTON

Buttons marked " ☆ " indicate functions only available on the remote control unit.

#### FÜR DEUTSCHE LESER

- 1 Übermittlungsfenster (TRANSMITTING WINDOW)
- 2 Video-Wahl Taste (VIDEO SELECT)
- 3 DAT-/Cassettendeck-Überwachungstaste (DAT/TAPE MONITOR)
- 4 VIDEO-Funktionstaste (VIDEO FUNCTION)
- 5 AUDIO-Funktionstaste (AUDIO FUNCTION)
- 6 SURROUND-Taste (SURROUND)
- 7 ☆Frontplatten-Schalter (PANEL)
- 8 ☆Testton-Taste (TEST TONE)
- 9 Hauptlautstärketaste (MASTER VOLUME)
- 10 ☆Stummschaltungstaste (MUTING)
- 11 ☆Taste für den persönlichen Speicher (PERSONAL MEMORY)
- 12 ☆Pegel-Einstelltaste für die mittleren Lautsprecher (CENTER LEVEL)
- 13 ☆Pegel-Einstelltaste für die hinteren Lautsprecher (REAR LEVEL)
- 14 ☆DSP-Einstelltaste (DSP ADJUSTMENT)
- 15 Tuner-Vorwahl Taste (TUNER PRESET)
- 16 Netz Taste (POWER)

Die mit " ☆ " markierten Tasten zeigen Funktionen an, die nur mit Hilfe des Fernbedienungsgerätes aktiviert werden können.

#### POUR LES LECTEURS FRANCAIS

- 1 FENETRE D'EMISSION (TRANSMITTING WINDOW)
- 2 TOUCHE DE SELECTION VIDEO (VIDEO SELECT)
- 3 TOUCHE DAT/CONTROLE DE BANDE (DAT/TAPE MONITOR)
- 4 TOUCHE DE FONCTION VIDEO (VIDEO FUNCTION)
- 5 TOUCHE DE FONCTION AUDIO (AUDIO FUNCTION)
- 6 TOUCHE D'AMBIANCE (SURROUND)
- 7 ☆TOUCHE DE PANNEAU (PANEL)
- 8 ☆TOUCHE DE TONALITE TEST (TEST TONE)
- 9 TOUCHE DE VOLUME GLOBAL (MASTER VOLUME)
- 10 ☆TOUCHE DE SOURDINE (MUTING)
- 11 ☆TOUCHE DE MEMOIRE PERSONNALISEE (PERSONAL MEMORY)

#### PER IL LETTORE ITALIANO

- 1 FINESTRELLA DI TRASMISSIONE (TRANSMITTING WINDOW)
- 2 TASTO DI SELEZIONE VIDEO (VIDEO SELECT)
- 3 TASTO DI MONITORAGGIO DELLA PIASTRA DAT/PIASTRA A CASSETTE (DAT/TAPE MONITOR)
- 4 TASTO DI FUNZIONE VIDEO (VIDEO FUNCTION)
- 5 TASTO DI FUNZIONE AUDIO (AUDIO FUNCTION)
- 6 TASTO SURROUND (SURROUND)
- 7 ☆TASTO DEL PANNELLO (PANEL)
- 8 ☆TASTO DEL TONO DI PROVA (TEST TONE)
- 9 TASTO DEL VOLUME PRINCIPALE (MASTER VOLUME)
- 10 ☆TASTO DI SILENZIAMENTO AUDIO (MUTING)
- 11 ☆TASTO DELLA MEMORIA PERSONALE (PERSONAL MEMORY)

#### PARA LECTORES DE ESPAÑOL

- 1 VENTANILLA TRANSMISORA (TRANSMITTING WINDOW)
- 2 BOTON VIDEO SELECT (VIDEO SELECT)
- 3 BOTON DAT/TAPE MONITOR (DAT/TAPE MONITOR)
- 4 BOTON SELECTOR DE ENTRADA DE VIDEO (VIDEO FUNCTION)
- 5 BOTON SELECTOR DE ENTRADA DE AUDIO (AUDIO FUNCTION)
- 6 BOTON DE SONIDO ENVOLVENTE (SURROUND)
- 7 ☆BOTON DE INDICACION EN VISUALIZADOR (PANEL)
- 8 ☆BOTON DE TONO DE PRUEBA (TEST TONE)
- 9 CONTROL PRINCIPAL DE VOLUMEN (MASTER VOLUME)
- 10 ☆BOTON DE SILENCIAMIENTO (MUTING)

#### VOOR NEDERLANDSTALIGE LEZERS

- 1 ZENDEVENSTERTJE (TRANSMITTING WINDOW)
- 2 Videokeuzetoets (VIDEO SELECT)
- 3 DAT-/bandmeeluistertoets (DAT/TAPE MONITOR)
- 4 Videofunktietoets (VIDEO FUNCTION)
- 5 Audiofunktietoets (AUDIO FUNCTION)
- 6 Surroundtoets (SURROUND)
- 7 ☆Paneeltoets (PANEL)
- 8 ☆Testtoets (TEST TONE)
- 9 Hoofdvolumetoets (MASTER VOLUME)
- 10 ☆Dempingtoets (MUTING)
- 11 ☆Persoonlijk geheugentoets (PERSONAL MEMORY)

#### FÖR SVENSKA LÄSARE

- 1 SÄNDARFÖNSTER (TRANSMITTING WINDOW)
- 2 VIDEOVÄLJARE (VIDEO SELECT)
- 3 DAT-/DÄCKVÄLJARE (DAT/TAPE MONITOR)
- 4 VIDEOFUNKTIONSVÄLJARE (VIDEO FUNCTION)
- 5 AUDIOFUNKTIONSVÄLJARE (AUDIO FUNCTION)
- 6 SURROUND-TANGENT (SURROUND)
- 7 ☆PANEL-TANGENT (PANEL)
- 8 ☆TESTTONTANGENT (TEST TONE)
- 9 LJUDSTYRKEKONTROLL (MASTER VOLUME)
- 10 ☆DÄMPTANGENT (MUTING)
- 11 ☆TANGENT FÖR ANVÄNDARMINNE (PERSONAL MEMORY)

- 1 ☆TOUCHE DE REGLAGE DE NIVEAU CENTRAL (CENTER LEVEL)
- 2 ☆TOUCHES DE REGLAGE DE NIVEAU ARRIERE (REAR LEVEL)
- 3 ☆TOUCHES DE REGLAGE DSP (DSP ADJUSTMENT)
- 4 TOUCHE DE PREREGLAGÉ DE TUNER (TUNER PRESET)
- 5 TOUCHE D'ALIMENTATION (POWER)

Les touches marquées " ☆ " indiquent des fonctions disponibles seulement sur la télécommande.

- 1 ☆TASTO DI REGOLAZIONE DEL LIVELLO CENTRALE (CENTER LEVEL)
- 2 ☆TASTO DI REGOLAZIONE DEL LIVELLO POSTERIORE (REAR LEVEL)
- 3 ☆TASTO DI REGOLAZIONE DEL DISPLAY (DSP ADJUSTMENT)
- 4 TASTO DI PRESELEZIONE DEL SINTONIZZATORE (TUNER PRESET)
- 5 TASTO DI ACCENSIONE (POWER)

I tasti che recano il marchio " ☆ " indicano funzioni che sono disponibili solo usando il telecomando.

- 1 ☆BOTON DE MEMORIA PERSONAL (PERSONAL MEMORY)
- 2 ☆BOTON DE AJUSTE DE NIVEL CENTRAL (CENTER LEVEL)
- 3 ☆BOTON DE AJUSTE DE NIVEL TRASERO (REAR LEVEL)
- 4 ☆BOTON DE AJUSTE DE DSP (DSP ADJUSTMENT)
- 5 BOTON DE PRESINTONIZACION (TUNER PRESET)
- 6 INTERRUPTOR DE ALIMENTACION (POWER)

Los botones marcados " ☆ " indican funciones sólo disponibles en la unidad de control remoto.

- 1 ☆Middenniveau-insteltoets (CENTER LEVEL)
- 2 ☆Achterniveau-insteltoets (REAR LEVEL)
- 3 ☆Insteltoets digitale geluidsprocessor (DSP ADJUSTMENT)
- 4 Tuner-voorkeuzetoets (TUNER PRESET)
- 5 Spanningtoets (POWER)

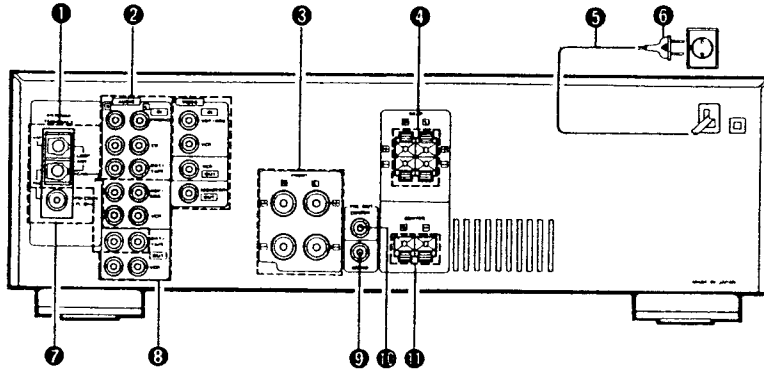
De met " ☆ " gemerkte toetsen duiden functies aan die enkel met de afstandsbediening kunnen worden gebruikt.

- 1 ☆JUSTERTANGENT FÖR MITTKANAL (CENTER LEVEL)
- 2 ☆JUSTERTANGENT FÖR BAKRE KANAL (REAR LEVEL)
- 3 ☆TANGENT FÖR JUSTERING AV SIGNALPROCESSORN (DSP ADJUSTMENT)
- 4 SNABBVÄLSTANGENT (TUNER PRESET)
- 5 STRÖMBRYTARE (POWER)

Tangenter märkta " ☆ " motsvarar funktioner som bara kan utnyttjas via fjärrkontrollen.

9  
(Rear Panel)  
(Rückseite)  
(Panneau arrière)  
(Pannello posteriore)

(Panel trasero)  
(Achterpaneel)  
(Bakpanelen)



## FOR ENGLISH READERS

- 1 AM ANTENNA TERMINALS
- 2 AUDIO INPUT/OUTPUT JACKS
- 3 FRONT SPEAKER TERMINALS
- 4 REAR SPEAKER TERMINALS
- 5 AC CORD
- 6 AC PLUG
- 7 FM ANTENNA TERMINALS
- 8 VIDEO INPUT/OUTPUT JACKS
- 9 MONO OUT JACK
- 10 PREOUT CENTER JACK
- 11 CENTER SPEAKER TERMINALS

## FÜR DEUTSCHE LESER

- 1 MW-Antennenklammern (AM ANTENNA)
- 2 AUDIO-Eingangsbuchsen / Ausgangsbuchsen (AUDIO INPUT/OUTPUT)
- 3 Klammern für die vorderen Lautsprecher (FRONT SPEAKER)
- 4 Klammern für die hinteren Lautsprecher (REAR SPEAKER)
- 5 Wechselstromkabel (AC CORD)
- 6 Wechselstromstecker (AC PLUG)
- 7 UKW-Antennenklammern (FM ANTENNA)
- 8 Video-Eingangsbuchsen / Ausgangsbuchsen (VIDEO INPUT/OUTPUT)
- 9 MONO-Ausgangsbuchse (MONO OUT)
- 10 Buchse für den Vorausgang der mittleren Lautsprecher (PREOUT CENTER)
- 11 Klammern für die mittleren Lautsprecher (CENTER SPEAKER)

## POUR LES LECTEURS FRANÇAIS

- 1 BORNES D'ANTENNE AM (AM ANTENNA)
- 2 PRISES D'ENTRÉE/SORTIE AUDIO (AUDIO INPUT/OUTPUT)
- 3 BORNES D'ENCEINTE FRONTALES (FRONT SPEAKER)
- 4 BORNES D'ENCEINTE ARRIÈRE (REAR SPEAKER)
- 5 CORDON SECTEUR (AC CORD)
- 6 FICHE SECTEUR (AC PLUG)

## PER IL LETTORE ITALIANO

- 1 TERMINALI DELL'ANTENNA AM (AM ANTENNA)
- 2 PRESE DI USCITA/INGRESSO AUDIO (AUDIO INPUT/OUTPUT)
- 3 TERMINALI DEGLI ALTOPARLANTI ANTERIORI (FRONT SPEAKER)
- 4 TERMINALI DEGLI ALTOPARLANTI POSTERIORI (REAR SPEAKER)
- 5 FILO CA (AC CORD)
- 6 SPINA CA (AC PLUG)

## PARA LECTORES DE ESPAÑOL

- 1 TERMINALES DE ANTENA DE AM (AM ANTENNA)
- 2 CONECTORES DE ENTRADA/SALIDA DE AUDIO (AUDIO INPUT/OUTPUT)
- 3 TERMINALES DE ALTAVOCES DELANTEROS (FRONT SPEAKERS)
- 4 TERMINALES DE ALTAVOCES TRASEROS (REAR SPEAKER)
- 5 CABLE DE ALIMENTACION DE CA (AC CORD)
- 6 CLAVIJA DE CA (AC PLUG)

## VOOR NEDERLANDSTALIGE LEZERS

- 1 AM-antenne-aansluitpunten (AM ANTENNA)
- 2 Audio-ingangs-/uitgangsaansluitingen (AUDIO INPUT/OUTPUT)
- 3 Voorste luidspreker-aansluitpunten (FRONT SPEAKER)
- 4 Achterste luidspreker-aansluitpunten (REAR SPEAKER)
- 5 Netsnoer (AC CORD)
- 6 Netstekker (AC PLUG)

## FÖR SVENSKA LÄSARE

- 1 ANSLUTNINGAR FÖR AM-ANTENN (AM ANTENNA)
- 2 AUDIOIN- OCH UTGÅNGAR (AUDIO IN/OUT)
- 3 FRÄMRE HÖGTALARUTGÅNGAR (FRONT SPEAKERS)
- 4 BAKRE HÖGTALARUTGÅNGAR (REAR SPEAKERS)
- 5 NÄTKABEL (AC CORD)
- 6 STICKPROPP (AC PLUG)

- 7 BORNES D'ANTENNE FM (FM ANTENNA)
- 8 PRISES D'ENTRÉE/SORTIE VIDEO (VIDEO INPUT/OUTPUT)
- 9 PRISE DE SORTIE MONO (MONO OUT)
- 10 PRISE DE SORTIE PREAMPLIFIÉE CENTRALE (PREOUT CENTER)
- 11 BORNES D'ENCEINTE CENTRALE (CENTER SPEAKER)

- 7 TERMINALI DELL'ANTENNA FM (FM ANTENNA)
- 8 PRESE DI INGRESSO/USCITA VIDEO (VIDEO INPUT/OUTPUT)
- 9 PRESA DI USCITA MONO (MONO OUT)
- 10 PRESA DI USCITA CENTRALE DEL PREAMPLIFICATORE (PREOUT CENTER)
- 11 TERMINALI DELL'ALTOPARLANTE CENTRALE (CENTER SPEAKER)

- 7 TERMINALES DE ANTENA DE FM (FM ANTENNA)
- 8 CONECTORES DE ENTRADA/SALIDA DE VIDEO (VIDEO INPUT/OUTPUT)
- 9 CONECTOR DE SALIDA MONOAURICULAR (MONO OUT)
- 10 CONECTOR DE SALIDA DE PREAMPLIFICADOR/CANAL CENTRAL (PREOUT CENTER)
- 11 TERMINALES DE ALTAVOZ CENTRAL (CENTER SPEAKER)

- 7 FM-antenne-aansluitpunten (FM ANTENNA)
- 8 Video-ingangs-/uitgangsaansluitingen (VIDEO INPUT/OUTPUT)
- 9 Mono-uitgangsaansluiting (MONO OUT)
- 10 Voorste uitgang middenaansluiting (PREOUT CENTER)
- 11 Middenluidspreker-aansluitpunten (CENTER SPEAKER)

- 7 ANSLUTNINGAR FÖR FM-ANTENN (FM ANTENNA)
- 8 VIDEOIN- OCH UTGÅNGAR (VIDEO IN/OUT)
- 9 MONOUTGÅNG (MONO OUT)
- 10 FÖRFÖRSTÄRKARUTGÅNG MITT (PREOUT CENTER)
- 11 MITTHÖGTALARUTGÅNGAR (CENTER SPEAKER)

● TABLE OF CONTENTS

1	Introduction .....	2	11	Surround Playback .....	14~17
	● Note on Use .....	2		● Using Dolby Pro Logic Surround .....	14~16
2	Names of Parts .....	3~5		● Other DSP Surround Modes .....	16
3	Remote Control Unit .....	7		● Using the Personal Memory .....	17
4	Multi Function Display (MFD) .....	7		● Operations Possible in the Various Surround Modes .....	17
5	Connections .....	8~10	12	Last Function Memory .....	17
6	Playback .....	11	13	Troubleshooting .....	18
	● Using the Muting Function .....	11	14	Initialization of the Microprocessor .....	18
7	Recording .....	12		● Initialization of the Individual Modes .....	18
8	Tape Monitor Function .....	12	15	Specifications .....	19
9	Using Headphones .....	12		DENON SERVICE NETWORK .....	104, 105
10	Listening to the Radio .....	13			

■ We greatly appreciate your purchase of the AVR-1000.  
 ■ To be sure you take maximum advantage of all the features the AVR-1000 has to offer, read these instructions carefully and use the set properly. Be sure to keep this manual for future reference should any questions or problems arise.

● ACCESSORIES

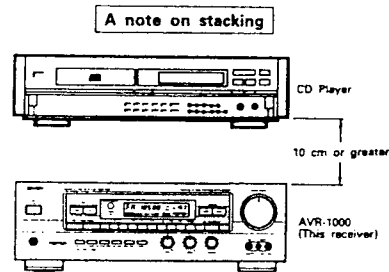
Check that the following parts are included in addition to the main unit:

① Operating instructions .....	1	② Warranty .....	1	⑤ AM loop antenna .....	1	⑥ FM indoor antenna .....	1
③ Remote control unit (RC-167) .....	1	④ R6P/AA batteries .....	2				

● INSTALLATION PRECAUTIONS

Using this receiver or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.  
 If this should happen, take the following steps:

- Install the receiver as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the receiver's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 ohm feeder lines. We recommend using outdoor antennas and 75 ohm coaxial cables.

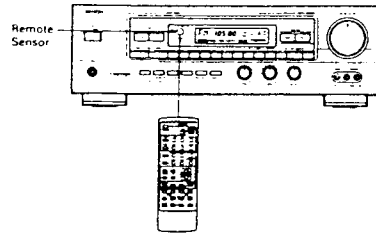


For cooling purposes, do not place another AV component directly on top of the receiver. Be sure to leave a space of at least 10 cm.

### 3 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

#### Range of operation of the remote control unit



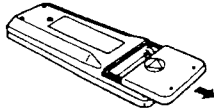
Point the remote control unit at the remote control sensor as shown on the diagram at the left.

#### NOTES

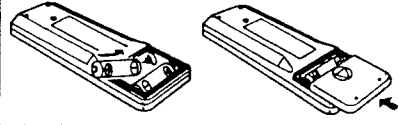
- The remote control unit can be used from a straight distance of approximately 7 meters, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

#### Inserting the batteries

1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case. Close the bottom cover until it clicks shut.



#### NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.

#### System codes

The system codes for Denon tape decks and CD players are set in this remote control unit.

#### Tape deck system buttons

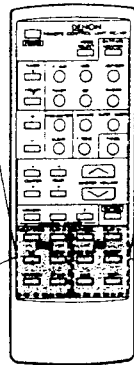
With these buttons, a Denon remote controllable tape deck can be controlled directly. For details, refer to the tape deck's operating instructions. Note that operation may not be possible for some models.

- Forward play
- Reverse play
- Stop
- Rewind
- Fast-forward
- Switching between decks A and B for double decks

#### CD system buttons

With these buttons, a Denon remote controllable CD player can be controlled directly. For details, refer to the CD player's operating instructions. Note that operation may not be possible for some models.

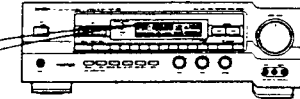
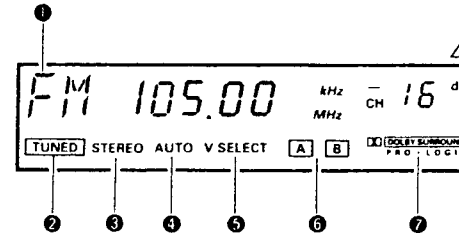
- Play
- Pause
- Stop
- Auto search (reverse and forward)
- CD changer, disc skip



### 4 MULTI FUNCTION DISPLAY (MFD)

The MFD indicates the operating modes when operations are performed and when PANEL button is pressed.

#### FLD (Fluorescent Light Display)



#### 1 MULTI FUNCTION DISPLAY

This displays a maximum of 9 characters. Normally the reception frequency is displayed when the function is set to tuner, and the surround mode is displayed when the function is set to other positions. The display also indicates various other information according to the buttons pressed.

#### 2 TUNED (TUNED indicator)

This indicator lights when broadcast signals are received.

#### 3 STEREO (Stereo Indicator)

The STEREO indicator will automatically light up when a stereo broadcast is received.

#### 4 AUTO TUNING (AUTO TUNING indicator)

This indicator lights when the auto tuning mode is selected by pressing the TUNING MODE button.

#### 5 V. SELECT (VIDEO INPUT SELECT indicator)

This indicator lights when the video monitor output is fixed in the video input select mode.

#### 6 SHIFT (A/B Indicator)

The preset channel which is selected with the Shift Button is displayed by the SHIFT [A] or [B].

#### 7 DOLBY SURROUND Indicator

This indicator lights when DOLBY PRO LOGIC is selected by pressing the SURROUND MODE button.

#### To check the settings of the different modes:

1. Press the PANEL button.



Remote control unit

Either hold the PANEL button in or press it repeatedly to display the settings for the different modes.

#### FLD OFF

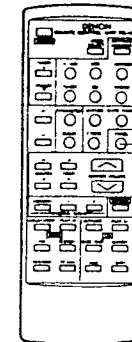
Turning the FLD off:

1. Press and hold in the PANEL button on the remote control unit.

(The FLD display changes continuously and finally turns off. Now when a button is pressed, the related display appears for a few seconds then turns off automatically.)

2. Turning the FLD back on:

Press the PANEL button on the remote control unit once again.



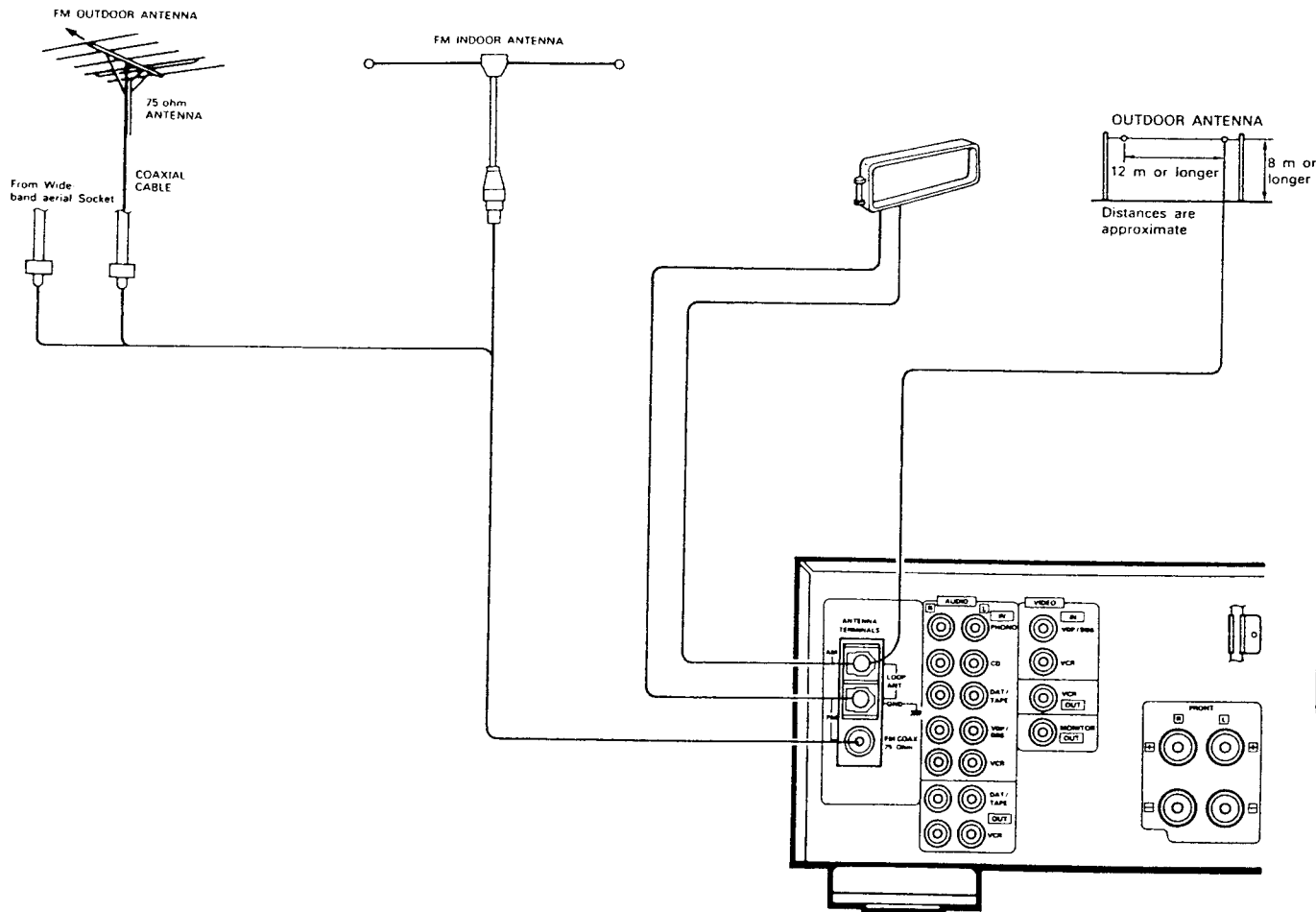


# 5 CONNECTIONS

- Always turn off the power of the various components when making connections. Also refer to the operating instructions for the other components.
- Do not plug in the power cord until all connections are completed.

## Connecting the antenna terminals

DIRECTION OF BROADCASTING STATION



**ANTENNA INSTALLATION**

- **FM ANTENNA**  
The supplied T-type indoor FM antenna (300 ohms) can be used inside wooden houses for receiving local FM stations and other strong FM signals. Stretch out the ends of the antenna and mount the antenna on the wall or ceiling where optimum reception is achieved. FM T-type antennas may not consistently ensure stable reception, due to environment changes. In such cases, the FM T-type antenna should only be used temporarily until an outdoor FM antenna has been installed.  
When connecting an outdoor FM antenna, the use of 75 ohm coaxial cable (3C-2V, 5C-2V) is strongly recommended. Using a 300-ohm feeder cable will cause noise and you will not be able to achieve the high sound quality the built-in tuner is capable of delivering.
- **AM ANTENNA**  
Attach the supplied AM loop antenna to the antenna holder on the back panel.  
Connect the leads to the AM and GND terminals. Also use the AM terminals for connecting an outdoor AM antenna (when making such a connection do not detach AM loop antenna).  
Adjust the loop antenna to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked, it is best to install an outdoor AM antenna.

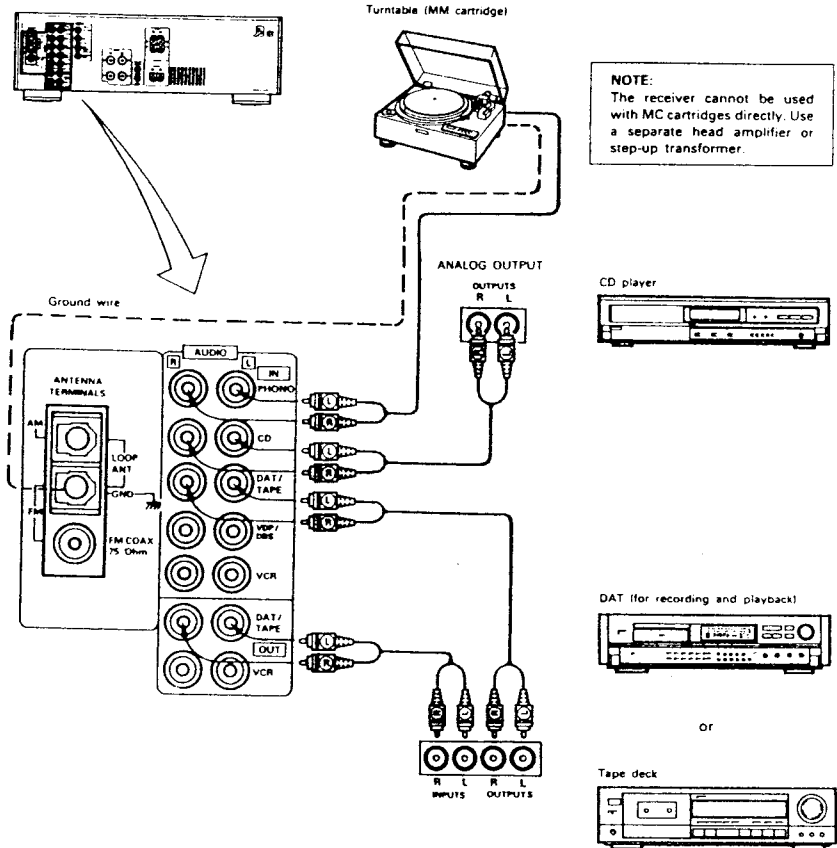
**NOTES**

- This receiver has a full back-up system. When the power is turned on, the INPUT SELECTOR buttons are set to the last mode set before the power was turned off.
- When using this receiver in close proximity to video equipment (TV, VCR, VDP, etc.), noise may be generated in AM broadcasts. To avoid this, keep the receiver as far away from other video components as possible, or detach the AM loop antenna from the antenna holder and place it where noise is reduced. If the noise is not reduced, turn off the power of the video components when listening to AM broadcasts.

**Note to CATV system installer:**  
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Audio Section

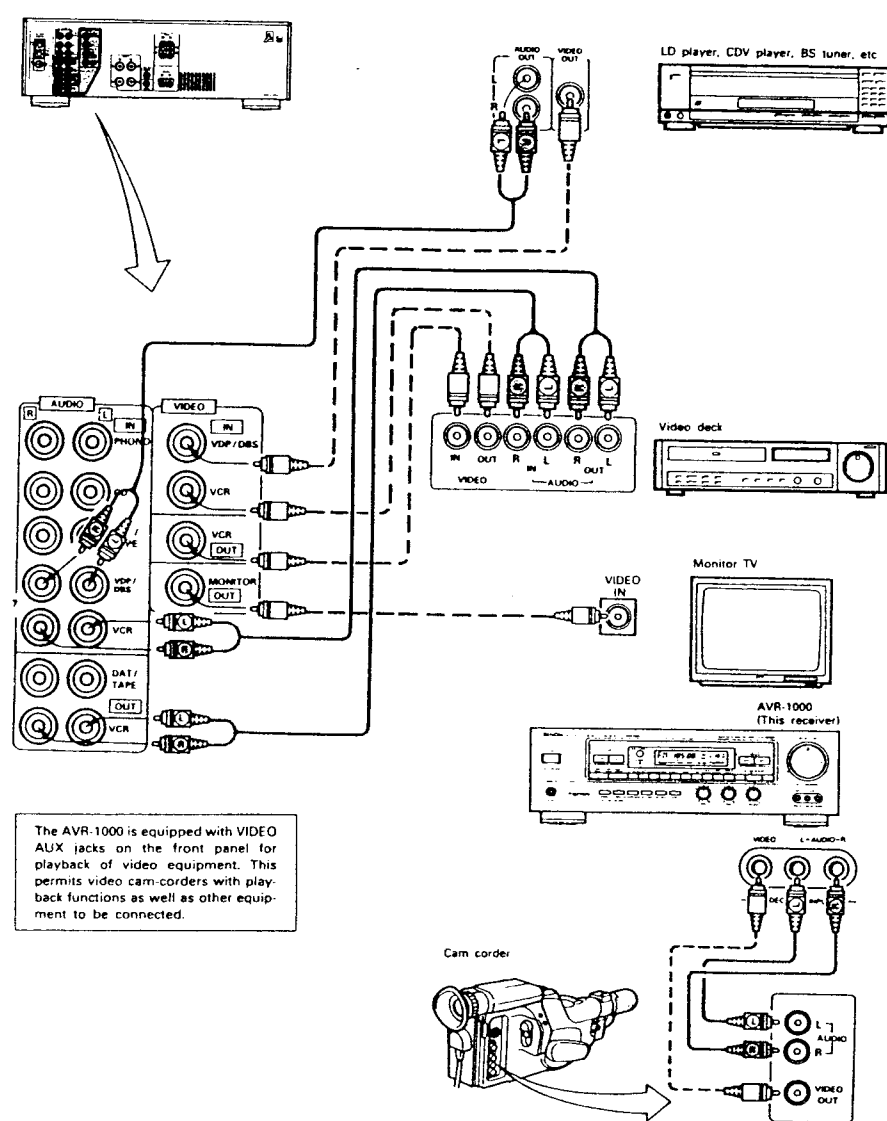
- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the AVR-1000 on. If this happens, turn on the power of the AVR-1000.



**NOTE:**  
The receiver cannot be used with MC cartridges directly. Use a separate head amplifier or step-up transformer.

Video Section

Continued





The AVR-1000 is equipped with VIDEO AUX jacks on the front panel for playback of video equipment. This permits video cam-corders with playback functions as well as other equipment to be connected.

**Speaker System Connections**


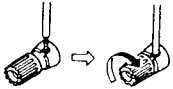
- This receiver can accommodate connections of a total of five speakers including one set of front speakers, one set of rear speakers, and one center speaker.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (+ with +, - with -). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.

- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.
- **Speaker impedance**
  - Speakers with an impedance of 6 to 16 ohms can be connected for use as front, center and rear speakers.
  - Using speakers with an impedance other than the specified one may result in damage. Be sure to use speakers of the specified impedance.

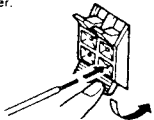
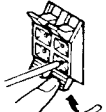
**Preparing the cord**

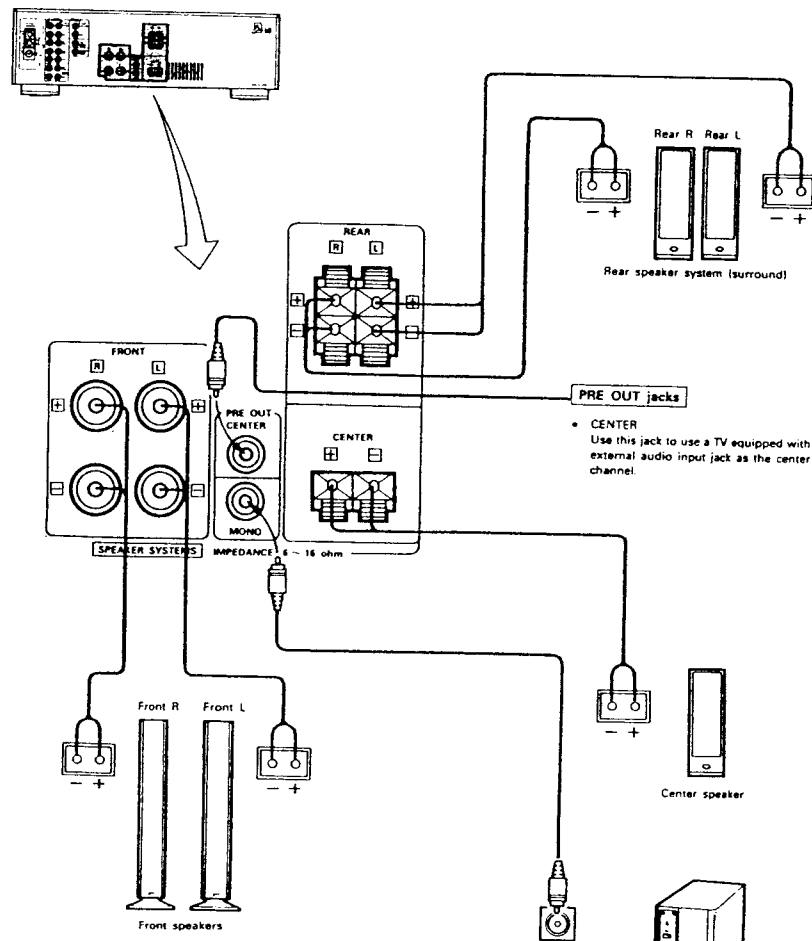
1. Peel off the sheath. 
2. Twist the wires. 

**Connecting the front speaker terminals**

1. Loosen by turning counterclockwise. 
2. Insert the cord and tighten by turning clockwise. 

**Connecting the center and rear speaker terminals.**

1. Press the lever. 
2. Insert the cord and release the lever. 



- **CENTER**  
Use this jack to use a TV equipped with external audio input jack as the center channel.

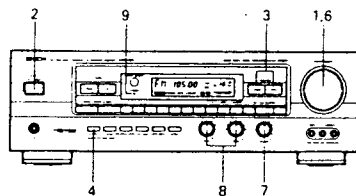
**Precautions when connecting speakers**  
If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

## 6 PLAYBACK

### ■ Preparations for Playback

Check the connections

- Check that all connections are proper, referring to the connections diagrams (pages 8 to 10).



### ■ Playing the program source (normal stereo playback)

<p>1. Set the MASTER VOLUME control to the minimum.</p> <p>Main unit</p>	<p>4. Press the BYPASS button.</p> <p>Main unit Remote control unit</p>
<p>2. Press the POWER button to turn the power on.</p> <p>The muting mode is set for several seconds, after which the STANDBY LED  flashes for several seconds.</p> <p>Main unit Remote control unit</p>	<p>5. Start playback of the program source.</p> <p>For instructions, refer to the source's operating instructions.</p>
<p>3. Select the source to be played.</p> <p><b>Audio function button</b></p> <p>Example:</p> <p>Main unit Remote control unit</p> <p>PHONO, CD or TUNER can be selected directly.</p> <p>The source switches as shown above MFD.</p>	<p>6. Adjust the volume.</p> <p>Main unit Remote control unit</p> <p>Turn the control clockwise to increase the volume, counterclockwise to decrease it.</p> <p>Press the  button to increase the volume, the  button to decrease it.</p>
<p><b>Video function button</b></p> <p>Example:</p> <p>Main unit Remote control unit</p> <p>VDP/DBS, VCR or V-AUX can be selected directly.</p> <p>The source switches as shown above MFD.</p>	<p>7. Adjust the left/right balance.</p> <p>Main unit</p> <p>Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.</p>
<p>8. Adjust the tone.</p> <p>Main unit Main unit</p> <p>Turn the control clockwise to increase the bass, counterclockwise to decrease it.</p> <p>Turn the control clockwise to increase the treble, counterclockwise to decrease it.</p>	<p>2. </p>

**NOTE:**  
The sound may be interrupted if switches are operated during playback. This is because the muting circuit is activated to prevent switching noise.

### ■ Simulcast playback (playing different video and audio sources simultaneously)

1. Follow steps 1 to 3 under "Playing the program source"

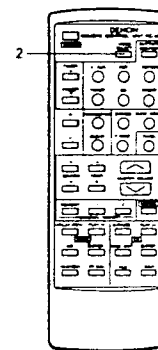
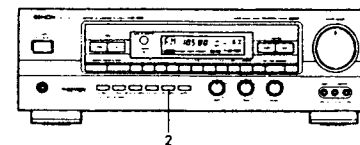
2. Select the desired video program source.

Main unit Remote control unit

VDP/DBS  
VCR  
V-AUX

The source switches as shown above.

3. Follow steps 4 to 8 under "Playing the program source"



**Canceling simulcast playback**

- Press the VIDEO SELECT button again.
- Press the video function button on the main unit or remote control unit.

### ■ Using the muting function

Use this to turn off the audio output temporarily.

1. Press the MUTING button.

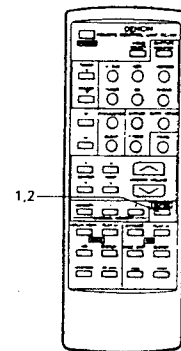
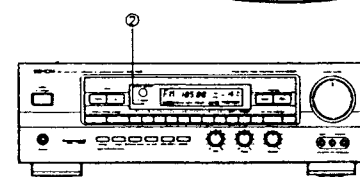
Remote control unit

This function can only be set from the remote control unit.

The STANDBY LED flashes when the muting function is set.

2. Press the MUTING button again.

The muting function is cancelled.



## 7 RECORDING

### Recording the program source (recording the source currently being monitored)

- Follow steps 1 to 3 under "Playing the program source".
- Start recording on the tape or video deck.  
For instructions, refer to the component's operating instructions.

**NOTES:**

- The audio signals selected with the audio or video function button are output from the DAT/TAPE REC OUT jacks.
- The recording source switches if the audio function, video function, personal memory "1" or "2" or tuner preset buttons are pressed during recording. Do not press these buttons during recording.

**Simultaneous recording**  
The signals of the source selected with the function selector button are output simultaneously to the DAT/TAPE and VCR REC OUT jacks. If a total of two tape and/or video decks are connected and set to the recording mode, the same source can be recorded simultaneously on both decks. In addition, if the TAPE MONITOR (DAT/TAPE) button is pressed, the audio signals from the tape deck are output to the VCR AUDIO REC OUT jacks.

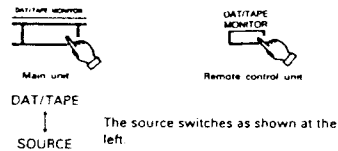
## 8 TAPE MONITOR FUNCTION

### When playing a DAT- or tape deck

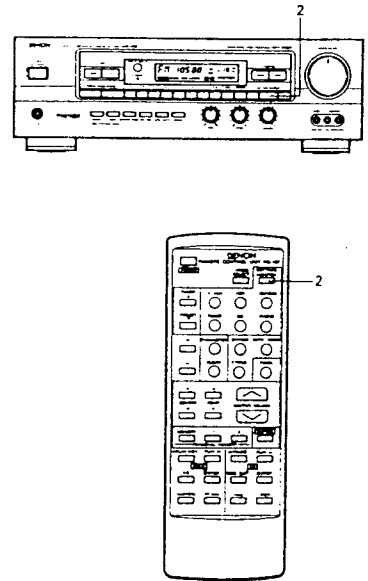
Use this function to switch between the DAT or tape deck and the input (source) selected with the audio or video function buttons.

- Follow steps 1 and 2 under "Playing the program source".

- Select the deck to be played.



- Follow steps 5 to 8 under "Playing the program source".



## 9 USING HEADPHONES

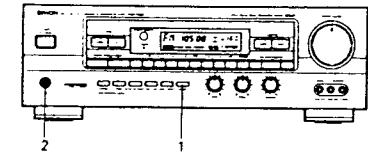
The sound from the speakers can be turned off using the OUTPUT button to listen to the sound over the headphones only, for example at night.

- Press the OUTPUT button.



"H/P ONLY" appears on the MFD.

- Insert the headphones' plug into the headphones' jack.



**Cancelling**  
Either press the OUTPUT button again or press the POWER button to turn off the power.

# 10 LISTENING TO THE RADIO

## Tuning

- Set the input function to "TUNER".
- Select the reception band.

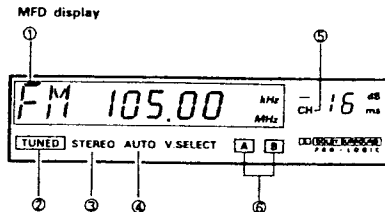
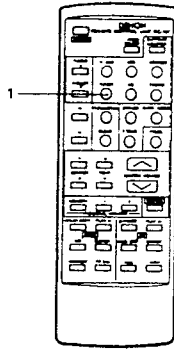
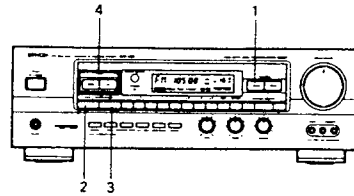
There is a change as shown at the left, and indication ① inside the MFD changes.
- Select the tuning mode.

The mode switches as shown at the left. When the auto mode is set, "AUTO" lights on the MFD ②.

MANUAL  
Set the auto mode for automatic tuning, the manual mode for manual tuning.
- Tune in the station.

In the manual tuning mode:  
Press the UP button once to increase the frequency by one step, the DOWN button once to decrease the frequency by one step. The frequency changes continuously when the buttons are held in.  
The "TUNED" indicator ② lights on the MFD when a station is tuned in.

In the auto tuning mode:  
When the UP or DOWN button is pressed, automatic searching begins, and searching stops when a station is tuned in.



- NOTES:**
- When in the auto tuning mode on the FM band, the "STEREO" indicator ③ lights on the MFD when a stereo broadcast is tuned in. At open frequencies, the noise is muted and the "TUNED" ② and "STEREO" ③ indicators turn off.
  - When the manual tuning mode is set, FM stereo broadcasts are received in monaural and the "STEREO" indicator ③ turns off.

## Storing stations at the preset buttons

- Follow steps 1 to 4 under "Tuning" to tune in a station.
- Press the MEMORY button.

The "CH" ④ indicator on the MFD flashes.
- Select the preset channels.

The channels switch as shown at the left, and the MFD display ④ also changes.  
When "A" is displayed, preset channels 1 to 8 can be preset, and when "B" is displayed, preset channels 9 to 16 can be preset.
- Press the preset number that you want to store to memory.

## Recalling stations with the preset buttons

First store stations at the preset buttons using the above procedure.

### 1 Using the buttons on the main unit

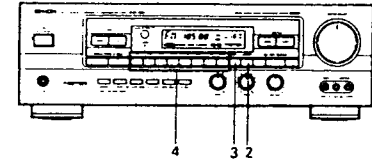
- Press the SHIFT button to select the preset channels.

Preset channels 1 to 8 can be recalled when "A" is displayed, preset channels 9 to 16 when "B" is displayed.
- Press the button for the station you want to recall.

### 2 Using the buttons on the remote control

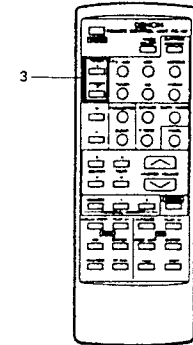
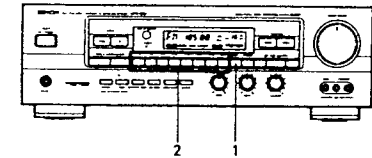
- Press the PRESET  $\Delta$  and  $\nabla$  buttons.

The preset channel switches as shown above.



**NOTES:**

- The preset memory standby mode is set for 6 seconds when the MEMORY button is pressed. When the MEMORY and SHIFT buttons are pressed, the preset memory standby mode is prolonged for 6 seconds. The preset memory standby mode turns off after 6 seconds.
- The preset memory standby mode is cancelled if any button other than preset buttons 1 to 8 (9 to 16), the MEMORY button or the SHIFT button is pressed.



# 11 SURROUND PLAYBACK

## DSP modes

The AVR-1000 is equipped with a DSP (Digital Signal Processor) for the surround processing of digital signals. The DSP lets you enjoy surround sound with a greater sense of reality to match the listening room or software.

- Surround playback using the DSP:  
In these mode, signals are output to the center and rear speakers as well for four- or five-channel playback.

The surround modes are as follows:

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround.
2	Wide Screen	Use this to enjoy program sources with the atmosphere of a movie theater, recorded in Dolby Surround.
3	Live	Use this to enjoy program sources with the atmosphere of a live performance, recorded in Dolby Surround.
4	Mono movie	In this mode, a sense of expansion is added to monaural audio sources. This mode is best suited for playing old movies or movie tapes recorded in monaural.
5	Classic concert	This mode simulates the sound of a large concert hall. It is suited for classical music, etc.
6	Rock concert	This mode is best for playing rock, popular music, etc.
7	Stadium	This mode simulates the sound field of an outdoor stadium.

- These effects may not be very pronounced for some sources. If this is the case, try other modes, not relying too much on their names, and find the mode you like best.
- To adjust the speaker balance for the different surround modes, first adjust for the Dolby Pro Logic Surround mode as explained on page 18, then use the position of the center level and rear level controls at this time as a guide to adjust the balance for that surround mode.

Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. number 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

## Using Dolby Pro Logic Surround

### Speaker disposition and the Dolby Pro Logic Center mode

Ideally, center speakers should be used when playing sources in Dolby Pro Logic Surround. Select the center mode according to your speaker system.

1. Set the Dolby Pro Logic mode.

Main unit Remote control unit

2. Select the center mode.

Main unit

→NORMAL ← PHANTOM  
← WIDE →

The mode changes as shown above.

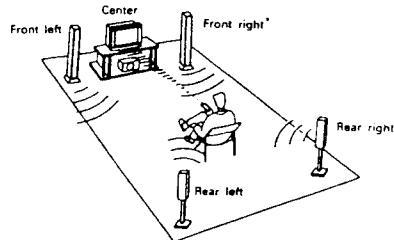
1 2

Also select the center mode according to your speaker system when using the Wide Screen and Live modes.

1

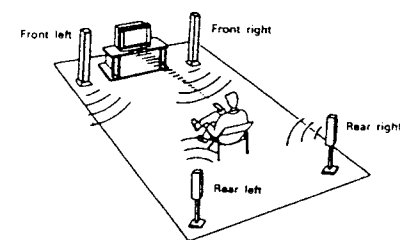
Once the center mode is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 18. In this case, reset the center mode.

### Center Mode



#### NORMAL mode

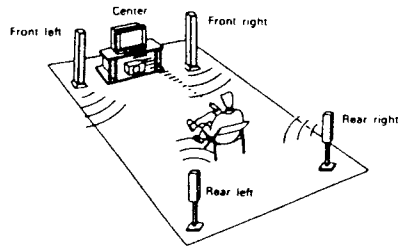
**Normal mode:** This mode is suited for an arrangement in which the center channel speaker is smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel output signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.



#### PHANTOM mode

**Phantom mode:** Use this mode when center channel speaker is not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

**Center Mode**



**WIDE mode**

**Wide mode:** This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

**• Dolby 3CH. Logic (three-channel logic mode)**

Select this mode when not using rear speakers.

- Set the Dolby Pro Logic mode.
 

Main unit

Remote control unit
- Press the 3CH. LOGIC button.
 

Main unit

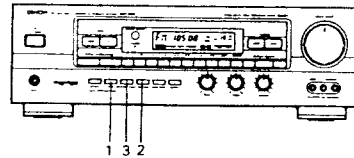
3CH LOGIC  
PRO LOGIC

The mode changes as shown at the left.
- Select the center mode according to your speaker system.
 

Main unit

NORMAL → WIDE

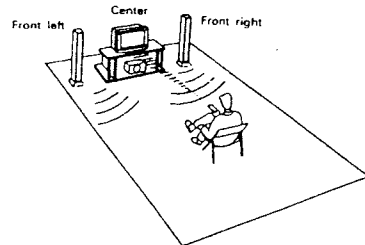
The mode changes as shown above.



**NOTE:**

The center mode cannot be set to the Phantom mode when the 3CH Logic mode is set.

**3CH. LOGIC MODE**

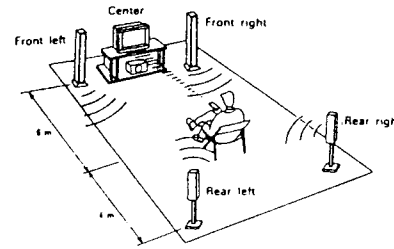


**3CH LOGIC**

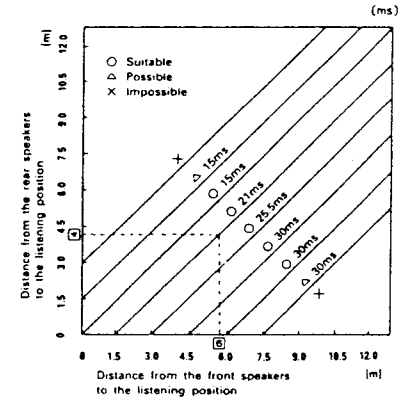
**Three-channel logic mode:** Use this mode when rear channel speakers are not used. The rear channel information is reproduced by the front speakers.

**• Setting the delay time**

The optimum delay time will differ depending on the listening position. Referring to the chart at right, set the optimum delay time for your room's space and seating position. For example, when the distance from the front speakers to the listening position is 6 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 21 ms. The variable range of the delay time differs depending on the mode. For details about the variable range, see Page 17.



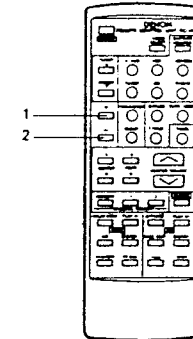
Listening position and optimum delay time for playback with Dolby Pro Logic surround



- To increase the delay time:
 

Remote control unit
- To decrease the delay time:
 

Remote control unit




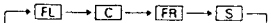
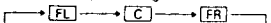




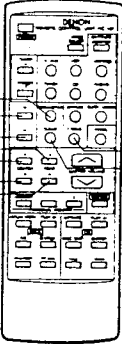




- The delay time can be set between the range of 15.0ms to 30ms in steps of 1.5ms.
- Once the delay time is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 18. In this case, reset the center mode.

→ Continued



• **Speaker volume adjustment and Dolby Pro Logic mode**

To obtain the maximum surround effect, use the test tones to adjust the volume and balance of the speakers for the best balance for the listening position and so that the sound from all the speakers is heard at the same level.

<p><b>Auto mode</b></p> <p>1. Press the T.TONE button.</p>  <p>Remote control unit</p> <p>Test tones are produced from the speakers in the order shown below, at 4 second intervals for the first two cycles, 2 second intervals after that.</p>  <p>For the Dolby 3CH Logic mode:</p> 	<p><b>Manual mode</b></p> <p>6. Switch to the manual mode.</p>  <p>Remote control unit</p> <p>Auto mode → manual mode The mode switches as shown above</p> <p>7. To emit the test tones in the clockwise direction.</p>  <p>Remote control unit</p> <p>8. To emit the test tones in the counterclockwise direction</p>  <p>Remote control unit</p> <p>9. Follow steps 2 to 5 for the auto mode to adjust the level of the different speakers.</p> <p><b>Canceling</b></p> <p>10. Press the T.TONE button again.</p>  <p>Remote control unit</p>	
<p>2. To increase the level of the center speaker:</p>  <p>Remote control unit</p> <p>3. To decrease the level of the center speaker:</p>  <p>Remote control unit</p> <p>4. To increase the level of the rear speakers:</p>  <p>Remote control unit</p> <p>5. To decrease the level of the rear speakers:</p>  <p>Remote control unit</p>		

**NOTES:**

- When the T.TONE button is pressed, the auto mode is set and test tones are produced starting from the front left channel.
- In the auto mode, the test tone will not move on to the next channel when it is being emitted from the center channel and the level of the center speakers is being adjusted, or when it is being emitted from the rear channel and the level of the rear speakers is being adjusted. It only moves on to the next channel approximately two seconds after the level key has been released.
- When the mode is switched from the auto mode to the manual mode, the test tone is emitted starting from the channel from which it was last being emitted in the auto mode.

The level of the center and rear channels can be adjusted from 0dB to -24dB in steps of 2dB.

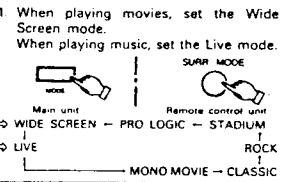
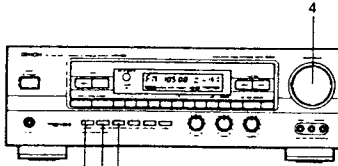
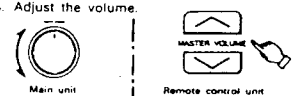




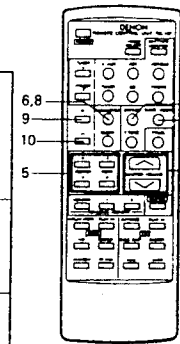
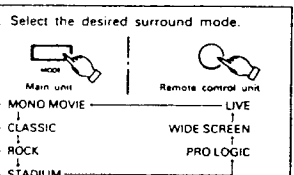
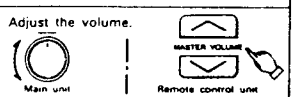
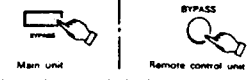
Once the level of the center and rear channels is set, there is no need to readjust it unless you change the speaker system or the listening room. However, when the CLEAR button is pressed, the mode changes as shown on the table on Page 18. In this case, reset the center mode.

In other surround modes, adjust the balance based on the adjustment made in the Dolby Pro Logic mode. The balance may not be optimum for some sources, so readjust it as necessary.

■ **Other DSP Surround Modes**

• **Using the directivity emphasis circuit and DSP surround**

Use this to play sources recorded in Dolby Stereo and Dolby Surround with even greater power. (The directivity emphasis circuit detects the signals with the dominant direction from the level and phase of the left and right channels and produces a sharp acoustic image and sense of direction.)


<p>1. When playing movies, set the Wide Screen mode. When playing music, set the Live mode.</p>  <p>Main unit</p> <p>Remote control unit</p> <p>MONO MOVIE — PRO LOGIC — STADIUM</p> <p>LIVE — CLASSIC — ROCK</p>	
<p>2. Set the center mode. Set to the center mode set in the Dolby Pro Logic mode.</p> <p>3. Start playing the movie or music.</p> <p>4. Adjust the volume.</p>  <p>Main unit</p> <p>Remote control unit</p>	<p><b>Adjusting the effect level</b></p> <p>8. Select the effect level mode.</p>  <p>Remote control unit</p> <p>DELAY — EFFECT LEVEL</p> <p>The parameter switches as shown above.</p> <p>9. To increase the effect level.</p>  <p>Remote control unit</p> <p>10. To decrease the effect level.</p>  <p>Remote control unit</p>
<p><b>Adjusting the delay time</b></p> <p>6. Select the delay time mode.</p>  <p>Remote control unit</p> <p>DELAY — EFFECT LEVEL</p> <p>The parameter switches as shown above.</p> <p>7. Set the delay time following the procedure on Page 15.</p>	
<p><b>DSP surround playback</b></p> <p>1. Select the desired surround mode.</p>  <p>Main unit</p> <p>Remote control unit</p> <p>MONO MOVIE — LIVE</p> <p>CLASSIC — WIDE SCREEN</p> <p>ROCK — PRO LOGIC</p> <p>STADIUM</p> <p>3. Play the desired software.</p> <p>4. Adjust the volume.</p>  <p>Main unit</p> <p>Remote control unit</p> <p>5. Adjust the level of the rear channel. Adjust the level according to the source, using the Dolby Pro Logic settings as reference.</p>	<p><b>Other adjustments</b></p> <p>11. Follow steps 6 to 8 under "Playing the program source" on Page 11.</p>
<p><b>To turn off the surround mode</b></p> <p>12. Press the BYPASS button.</p>  <p>Main unit</p> <p>Remote control unit</p> <p>Normal stereo playback resumes.</p>	

**Using the Personal Memory**

Surround mode settings and the input function can be stored at personal memory buttons "1" and "2", then recalled directly from any surround mode simply by pressing button "1" or "2".

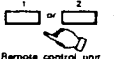
**1 Storing the setting in the personal memory**

1. Set the desired surround mode and input function.
2. Press the personal memory button.
 



Remote control unit

(The memory setting mode is set and the indicator on the MFD flashes.)
3. Press the desired personal memory button ("1" or "2").
 



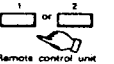
Remote control unit
4. "M 1 (2) SET" appears on the MFD indicating that the setting has been stored.

**NOTE:**

- The memory setting mode is set for 6 seconds. If any button other than personal memory button "1" or "2" is pressed, the memory setting mode is cancelled.

**2 Recalling the personal memory**

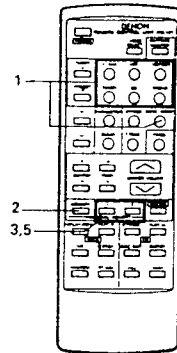
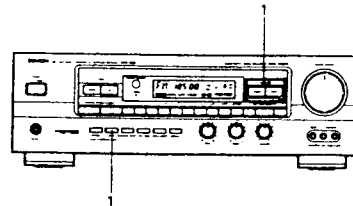
5. Press the personal memory button ("1" or "2") at which the desired setting was stored.
 



Remote control unit
6. The surround mode and input function switch automatically.

**NOTES:**

- Personal memory buttons "1" and "2" will not function during the tape monitor mode.
- The surround mode recalled with the PERSONAL MEMORY "1" or "2" button is the same as the mode selected with the surround mode button. Thus, if the parameters of the surround mode which was stored in the memory are cleared, when the mode is recalled it is set to the initial values.
- Upon shipment from the factory, the "WIDE SCREEN" mode is stored at personal memory "1", the "LIVE" mode at personal memory "2". The input function is set to VDP/DBS for both "1" and "2".
- Do not press personal memory buttons "1" or "2" buttons during recording on the cassette deck.



**Operations Possible in the Various Surround Modes**

The following is a list of the buttons and functions which can be operated during the different surround modes. Figures in parentheses indicate adjustment ranges

		OUTPUT	CENTER LEVEL	REAR LEVEL	CENTER MODE	3CH LOGIC	TEST TONE	DELAY TIME
BYPASS		○	X	X	△ <sup>1)</sup>	X	X	X
DOLBY PRO LOGIC	NORMAL	○	○ (0~-24dB)	○ (0~-24dB)	○	○	○	○ (15~30ms)
	PHANTOM	○	X	○ (0~-24dB)	○	X	○	○ (15~30ms)
	WIDE	○	○ (0~-24dB)	○ (0~-24dB)	○	○	○	○ (15~30ms)
DOLBY 3CH LOGIC	NORMAL	○	○ (0~-24dB)	X	○	○	○	X
	WIDE	○	○ (0~-24dB)	X	○	○	○	X
WIDE SCREEN & LIVE	NORMAL	○	○ (0~-24dB)	○ (0~-24dB)	○	X	X	○ (16~30ms)
	PHANTOM	○	X	○ (0~-24dB)	○	X	X	○ (16~30ms)
	WIDE	○	○ (0~-24dB)	○ (0~-24dB)	○	X	X	○ (16~30ms)
MONO MOVIE		○	X	○ (0~-24dB)	△ <sup>1)</sup>	X	X	X
CLASSIC CONCERT		○	X	○ (0~-24dB)	△ <sup>1)</sup>	X	X	X
ROCK CONCERT		○	X	○ (0~-24dB)	△ <sup>1)</sup>	X	X	X
STADIUM		○	X	○ (0~-24dB)	△ <sup>1)</sup>	X	X	X

		EFFECT LEVEL	CLR	PERSONAL <sup>2)</sup>		DAT/TAPE MONITOR
				"MEMORY"	"1" & "2"	
BYPASS		X	○	X	○	○
DOLBY PRO LOGIC	NORMAL	X	○	○	○	○
	PHANTOM	X	○	○	○	○
	WIDE	X	○	○	○	○
DOLBY 3CH LOGIC	NORMAL	X	○	○	○	○
	WIDE	X	○	○	○	○
WIDE SCREEN & LIVE	NORMAL	○ (5~15)	○	○	○	○
	PHANTOM	○ (5~15)	○	○	○	○
	WIDE	○ (5~15)	○	○	○	○
MONO MOVIE		○ (5~15)	○	○	○	○
CLASSIC CONCERT		○ (5~15)	○	○	○	○
ROCK CONCERT		○ (5~15)	○	○	○	○
STADIUM		○ (5~15)	○	○	○	○

○: Operation possible  
X: Operation not possible

<sup>1)</sup> Switches to the Dolby Pro (3CH) Logic mode for any modes other than Dolby Pro (3CH) Logic, Wide Screen and LIVE.  
<sup>2)</sup> Personal memory buttons MEMORY "1" and "2" will not function during the DAT/tape monitor mode.

• The sound may be distorted for some sources if the rear level or effect level is raised during surround playback. If this happens, lower the rear level and effect level.

**12 LAST FUNCTION MEMORY**

- This receiver is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is switched on.
- This receiver is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

# 13 TROUBLESHOOTING

If a problem should arise, first check the following:

1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?

If the receiver is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page	
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	MFD not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug.	5	
	MFD lit but sound not produced.	• Speaker cords not securely connected. • OUTPUT button is off. • Improper position of the audio function button. • Volume control set to minimum. • MUTING is on.	• Connect securely. • Press the OUTPUT button. • Set to a suitable position.  • Turn volume up to suitable level. • Switch off MUTING.	10 12 11 11	
	-PROTECT- display appears multi-function display	• Speaker terminals are short-circuited.  • Block the ventilation holes of the set.  • The unit is operating at continuous high power conditions and/or inadequate ventilation.	• Switch power off, connect speakers properly, then switch power back on. • Turn off the set's power, then ventilate it well to cool it down. • Once the set is cooled down, turn the power back on.  • Turn off the set's power, then ventilate it well to cool it down. • Once the set is cooled down, turn the power back on.	10  2, 6  2, 6	
	Sound produced only from one channel	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords. • Left/right balance is off.	• Connect securely. • Connect securely.  • Adjust balance knob properly.	10 8-9 11	
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords	• Check left and right connections.	9-10	
	Sound seems distorted	• Effect level parameter is high.  • Rear level is too high.	• Set the effect level parameter to lower level.  • Set the rear level to lower level.	16 16	
	Sound seems strange.	• DSP parameter settings are poor.	• Press the CLEAR button then adjust the DSP parameters.	16, 18	
	Personal memory function does not work.	• DAT/tape monitor mode set.	• Press the DAT/TAPE button to set the source	12	
	When playing records	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection • TV or radio transmission antenna nearby	• Connect securely. • Connect securely. • Contact your store of purchase.	9 9 -
		Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible.  • Use cushions to absorb speaker vibrations transmitted by floor. (If turntable is not equipped with insulators, use audio insulators (commonly available).)	- -
Sound is distorted		• Stylus pressure too weak • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.	- - -	
Volume is weak		• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.	9	
Remote control unit	Receiver does not operate properly when remote control unit is used.	• Batteries dead. • Remote control unit too far from receiver. • Obstacle between receiver and remote control unit. • Different button is being pressed. • "+" and "-" ends of battery inserted in reverse.	• Replace with new batteries. • Move closer. • Remove obstacle.  • Press the proper button. • Insert batteries properly.	7 7 7 7	

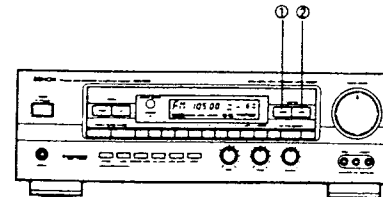
# 14 INITIALIZATION OF THE MICROPROCESSOR

When the indication of the MFD display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following 2 buttons of the main unit at the same time (as illustrated in the diagram below, ① AUDIO FUNCTION button, ② VIDEO FUNCTION button, and plug the power cord into the outlet.

3. Check that the entire MFD display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.
4. Switch on the unit and the microprocessor will be initialized. The input function is set to tuner with the bypass mode automatically.

NOTE: • When the unit does not show the result of above 3 and 4, repeat the procedure from 1 again.  
• When the microprocessor is initialized, all settings you have made are reset to the factory presettings.



Initial parameter values for the different modes

	OUTPUT	FRONT SP	CENTER SP/PRE	REAR SP	CENTER LEVEL	REAR LEVEL	CENTER MODE	3CH LOGIC	TEST TONE	DELAY TIME	EFFECT LEVEL
BYPASS	ON	ON	OFF	OFF	-	-	-	-	-	-	-
DOLBY PRO LOGIC	ON	ON	ON	ON	-12dB	-12dB	NORMAL	OFF	OFF	21msac	-
WIDE SCREEN	ON	ON	ON	ON	-12dB	-12dB	NORMAL	-	-	21msac	10
LIVE	ON	ON	ON	ON	-12dB	-12dB	NORMAL	-	-	21msac	10
MONO MOVIE	ON	ON	OFF	ON	-	-	-	-	-	-	10
CLASSIC CONCERT	ON	ON	OFF	ON	-	-12dB	-	-	-	-	10
ROCK CONCERT	ON	ON	OFF	ON	-	-12dB	-	-	-	-	10
STADIUM	ON	ON	OFF	ON	-	-12dB	-	-	-	-	10

SP: SPEAKER OUT  
PRE: PRE OUT

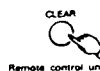
- INPUT FUNCTION : TUNER
- Reception band : FM
- Reception mode : AUTO
- Reception frequency : 87.50MHz

- PERSONAL MEMORY 1  
INPUT : VDP/DBS  
SURROUND MODE : WIDE SCREEN
- PERSONAL MEMORY 2  
INPUT : VDP/DBS  
SURROUND MODE : LIVE

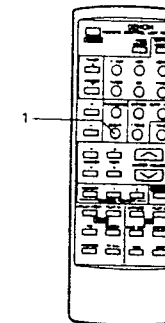
### Initialization of the Individual Modes

Use this to set the adjusted values back to the factory preset values.

1. Press the CLEAR button.



The values for the currently selected mode only are reset to the values shown on the above table.



## 15 SPECIFICATIONS

- **Audio Section**
  - (Power amplifier)**
  - Rated output:** Front (main 2ch driven) 70 W + 70 W (8 ohms, 20 Hz – 20 kHz with 0.08% THD)
  - (All properties shown are only for the power amplifier stage.) CENTER (center 1ch driven) 70 W (8 ohms, 20 Hz – 20 kHz with 0.08% THD)
  - REAR (rear 2ch driven) 20 W + 20 W (8 ohms, 1 kHz with 0.1% THD)
  - Output terminals:** Front: 6 to 16 ohms  
Center: 6 to 16 ohms  
Rear: 6 to 16 ohms
  - Line input (Each line input – FRONT SP OUT)**
  - Input sensitivity/impedance:** 150 mV/47 k ohms PHONO (MM): 2.5 mV / 47 kohms
  - Frequency response:** 10 Hz to 50 kHz:  $\pm 3$  dB
  - Tone control range:** BASS:  $\pm 10$  dB at 100 Hz  
TREBLE:  $\pm 10$  dB at 10 kHz
  - Signal-to-noise ratio:** 92 dB
  - Phono equalizer (PHONO input – REC OUT)**
  - RIAA deviation:**  $\pm 1$  dB (20 Hz to 20 kHz)
  - Signal-to-noise ratio:** 74 dB (A weighting, with 5 mV input)
  - Rated output/Maximum output:** 150 mV/8 V
  - Distortion factor:** 0.03% (1 kHz, 1 V)
- **Tuner Section**
  - [FM] (Note:  $\mu$ V at 75 ohms, 0 dB =  $1 \times 10^{-15}$  W)**
  - Receiving Range:** 87.50 MHz ~ 108.00 MHz
  - Usable Sensitivity (DIN):** 0.9  $\mu$ V (DIN)
  - 50 dB Quieting Sensitivity:** MONO 1.6  $\mu$ V  
STEREO 23  $\mu$ V
  - Signal to Noise Ratio (IHF-A):** MONO 80 dB  
STEREO 75 dB
  - Total Harmonic Distortion (at 1 kHz):** MONO 0.4%  
STEREO 0.5%
  - [AM]**
  - Receiving Range:** 522 kHz ~ 1611 kHz
  - Usable Sensitivity:** 18  $\mu$ V
  - Signal to Noise Ratio:** 50 dB
- **Video Section**
  - Standard video jacks**
  - Input and output level/impedance:** 1 Vp-p/75 ohms
  - Frequency response:** 3 Hz to 8 MHz +1, -3 dB
- **General**
  - Power supply:** AC 230 V, 50 Hz (for Europe model)  
AC 240 V, 50 Hz (for U.K. model)
  - Power consumption:** 230 W
  - Maximum external dimensions:** 434 (W) x 142 (H) x 337 (D) mm (17-3/32" x 5-19/32" x 13-17/64")
  - Weight:** 9.6 kg (21 lbs 3 oz)

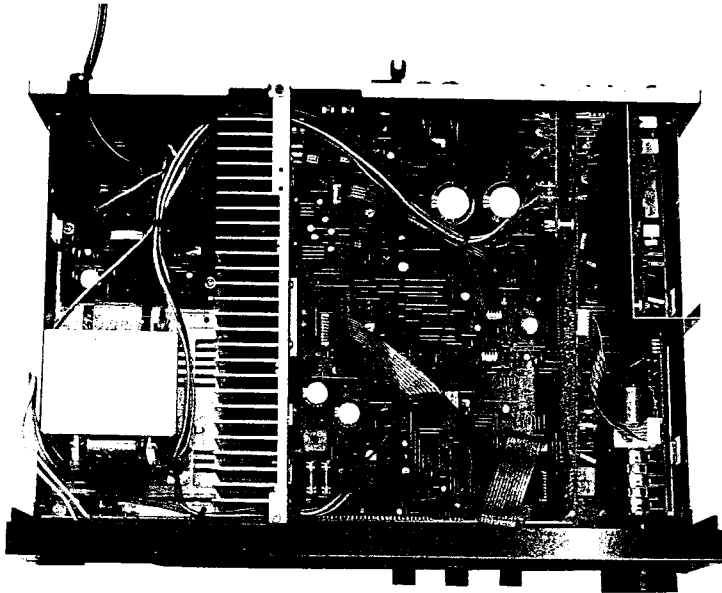
- **Remote control unit**
- System remote control RC-167:**

Total buttons:	41
DENON system code:	
CD player:	6 buttons
Cassette deck:	6 buttons
AVR-1000 fixed codes:	29 buttons
Batteries:	R6P/AA Type (two batteries)
External dimensions:	60 (W) x 175 (H) x 18 (D) mm (2-23/64" x 6-57/64" x 45/64")
Weight:	120 g (Approx. 4 oz) (including batteries)

\* For purposes of improvement, specifications and design are subject to change without notice.

**WIRE ARRANGEMENT**

In case of wires require unclasp or loosening to move the location to perform adjustment or part replacement, be sure to rearrange them neatly to restore properly in the same location as they were originally placed, or causing to produce a noise may occasionally occur.

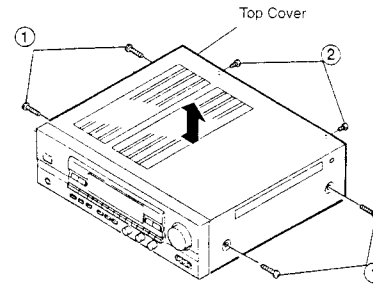


**DISASSEMBLY**

(To reassemble reverse disassembly)

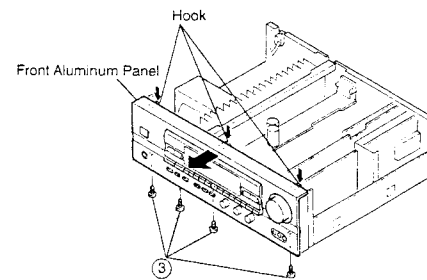
**1. Top Cover**

- (1) Remove 4 screws ① .
- (2) Remove 2 screws ② .



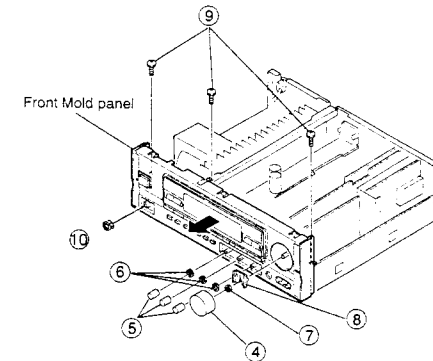
**2. Front Aluminium Panel**

Remove 4 screws ③ and undo hooks at 3 places.



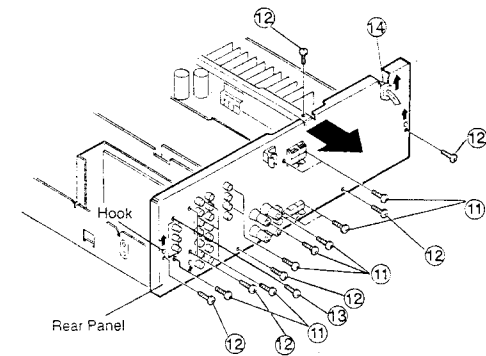
**3. Front Mold Panel**

- (1) Pull out Master Volume knob ④ and 3 round knobs ⑤ .
- (2) Remove nut ⑦ and 3 nut ⑥ and nut ⑩ and remove bracket ⑧ .
- (3) Remove 3 screws ⑨ .



**4. Rear Panel**

- (1) Disconnect cord bush ⑭ .
- (2) Remove 12 screws ⑪ earth screw ⑬ , and 6 screws ⑫ .
- (3) Remove hooks at 3 places in arrow direction.

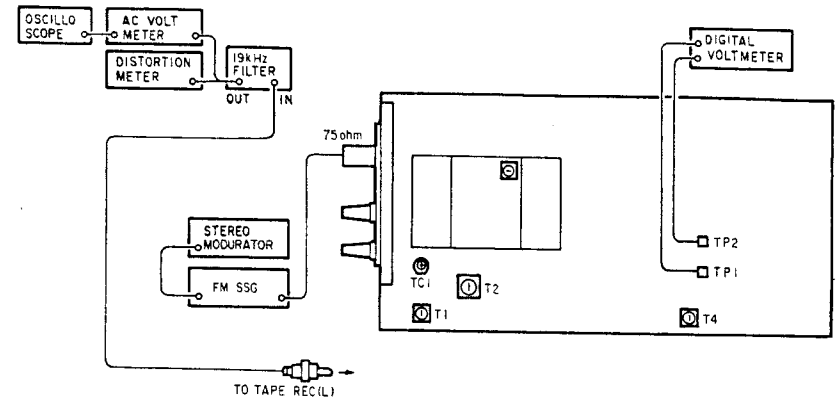


ADJUSTMENT

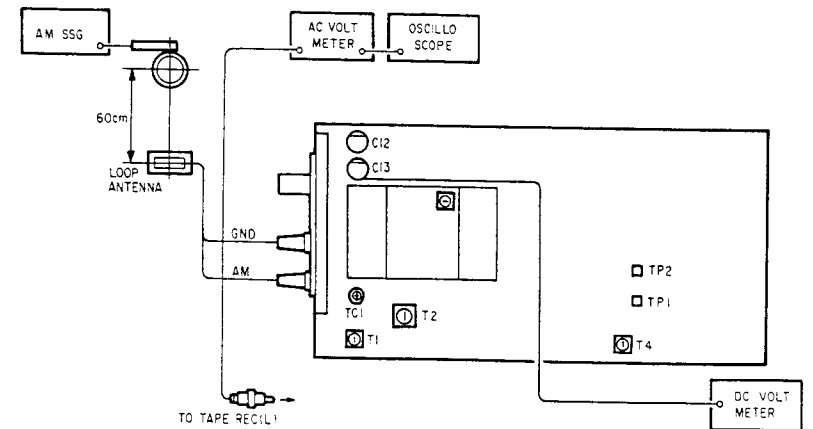
● TUNER SECTION

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

● FM



● AM



## FM/MPX ALIGNMENT

Table 1

Step	Alignment Item	Tuning Frequency Setting	Input				Output		Adjust		Remarks	
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points		Adjust to
1	Tuning Center	98.00MHz	FM SSG	98.00 MHz	60 dB $\mu$	None	Antenna Terminal	Digital Voltmeter	T.P. 1,2	T4	$\pm$ 50mV	Function : FM Mode : Auto

## AM ALIGNMENT

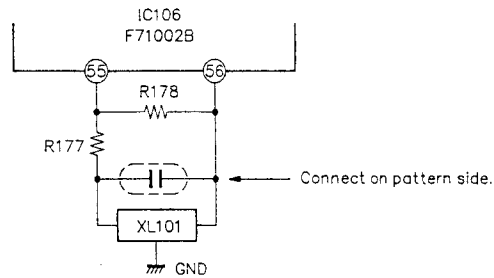
Step	Alignment Item	Tuning Frequency Setting	Input				Output		Adjust		Remarks	
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points		Adjust to
1	Receiving Band Alignment	522 KHz	AM SSG	522 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	C113 (+ Side) GND	T2	1.2 V $\pm$ 100mV	Function : AM
		1611 KHz	AM SSG	1611 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	C13 (+ Side) GND		less than 9.0V	Function : AM Check the Voltage
2	Tracking Alignment	603 KHz	AM SSG	603 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	TAPE REC (L) -1	T1	Maximum Output	Function : AM
		1404 KHz	AM SSG	1404 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	TAPE REC (C) -1	TC1	Maximum Output	Function : AM
3	Repeat 603 KHz and 1404 KHz to obtain maximum reading on Voltmeter.											

**Note :** Under reception of FM Broadcast using this unit at TUNER position, in case of receiving stations with specially low signal level, difficulty of reception may occur due to arisen beat hindrance by high frequency components from seldomly oscillating CPU or DSP.  
In case such matter happens, please exercise the following countermeasure to change frequency which arises the beat hindrance.

#### ● Countermeasure

1U-2615A-1

Add ceramic capacitor of degree of 3–10pF parallelly to oscillator of XL801, connected to IC801, pins ⑬ and ⑭ .



#### ● When beat occurs only in case of DSP mode.

1U-2617-1

Add ceramic capacitor of degree of 3–10pF parallelly to oscillator of XL101, connected to IC106, pins ⑤⑤ and ⑤⑥ .

#### ● Initiating (Memory clearing) Method

To clear memory contents of microcomputer and restore to the initial state, take the following steps:

1. Press power switch, turn off power of the unit, and set to standby mode.
2. Pull out power cord from wall outlet temporarily.
3. Insert power cord into outlet while simultaneously pressing two keys of AUDIO and VIDEO.
4. Press power switch to confirm that memory contents are cleared.

By completion of the above, the initial state is restored. In case the memory can not be cleared due to some reasons, repeat steps 1 through 3.

#### ● AUDIO SECTION

##### Idling Current (1U-2615A-1)

Required measurement equipment: DC Voltmeter

##### Arrangement

- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F).

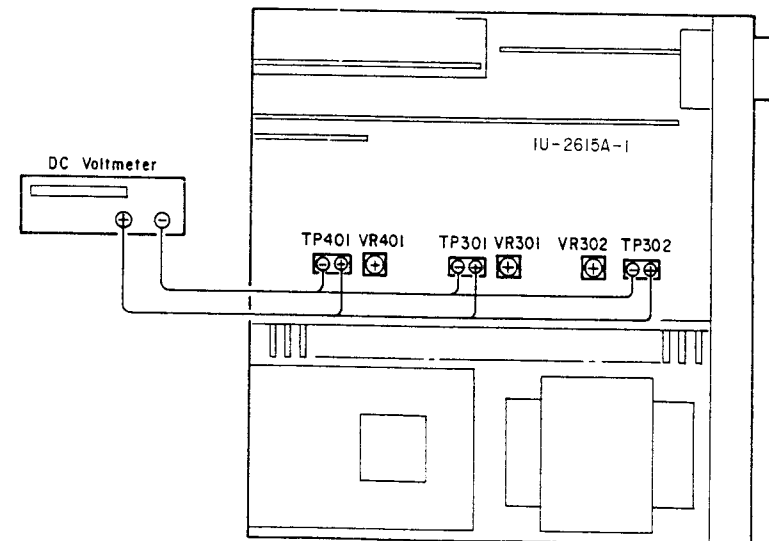
##### (2) Presetting

- POWER (Power source switch) → OFF
- MODE (Mode button) → BY PASS
- FUNCTION (Function button) → CD
- VOLUME (Volume control) → 0: fully counterclockwise ( ⤴ min.)
- CENTER VOLUME (Center volume control) → -12dB
- BASS, TREBLE (Tone control) → 0: (Controls to center)
- SPEAKERS (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

##### Adjustment

- (1) Remove top cover and set VR401, VR301 and VR302 of 1U-2615-1 (Main Unit) at counterclockwise fully.
- (2) Connect DC Voltmeter to test points (Lch T.P.301, Rch T.P.302, CENTER ch T.P.401).
- (3) Connect power cord to AC Line, and turn power switch "ON".
- (4) Allow 15 minutes, and turn VR301, VR302 and VR401 clockwise ( ⤵ ) and adjust the TEST POINTS voltage to 1.5 mV ± 0.5 mV DC.
- (5) After 2 minutes from preset, turn VR301, VR302 and VR401 to set the voltage to 3 mV ± 0.5mV DC.

1U-2615A-1 Main Unit (Component Side)





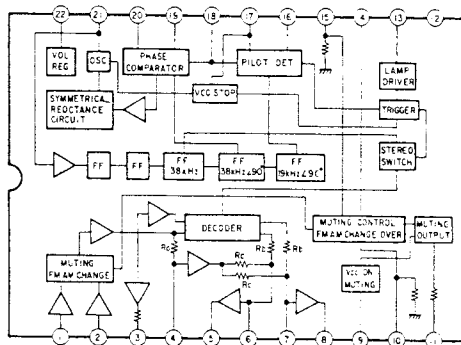
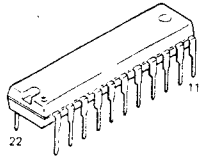
AVR-1000

SEMICONDUCTORS

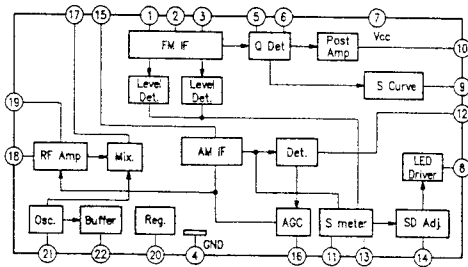
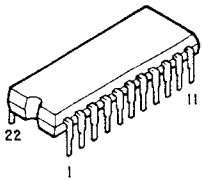
IC's

Note)  
 Indications before IC numbers denote P.W.B. Name.  
 MA : Main Amp P.W.B. Unit  
 RE : Rear Amp P.W.B. Unit  
 SU : Surround P.W.B. Unit

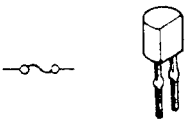
LA3401  
 (SU: IC002)



LA1265 (S)  
 (SU: IC001)

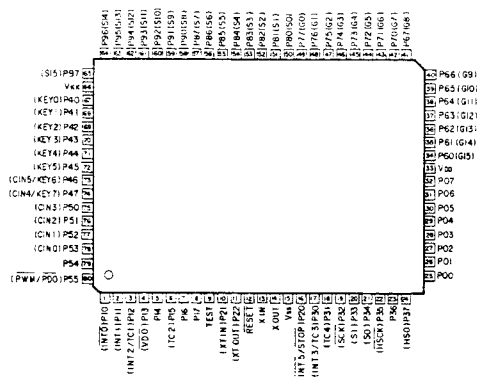
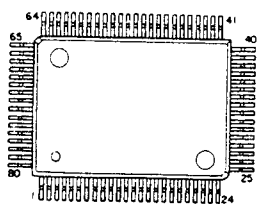


• IC PROTECTORS



ICP-N15 (RE : IC552, 503)  
 ICP-N20 (RE : IC505, 506)

TMP87CK70AF-6092  
(MA:IC801)



TMP87CK70AF Port Allocation Table Table 1 (1/4)

Pin	Terminal Name	IO	Logic	Initial Setting	Usage
1	P10(INT0)	I	L*	—	Power breakdown, Breakdown detect input (*L at Breakdown)
2	P11(INT1)	I	L*	—	PROTECTION: PROTECTION INPUT (*H at detect mode)
3	P12(INT2/TC1)	O	Sense	L	ST TUNER PLL Control (LM7001)
4	P13(DV0)	O	H*	L	TUNER MUTE (*H at MUTE mode)
5	P14	I	L*	—	TUNED SIGNAL input (*L at reception mode)
6	P15(TC2)	I	L*	—	STEREO SIGNAL input (*L at stereo reception mode)
7	P16	O	L*	L	(ST / MONO ; STEREO / MONO SHIFT (*L at stereo mode)
8	P17	O	—	L	Not used
9	TEST	I	—	—	Connect to GND
10	P21(XTIN)	O	—	L	Not used
11	P22(XTOUT)	O	—	L	Not used
12	RESET	I	L	—	RESET: Microcomputer reset input
13	XIN	I	—	—	Oscillator connection (8MHz)
14	XOUT	I	—	—	—
15	Vss	PW	—	—	0V (GND)
16	P20 (INT3/STCP)	O	—	L	Not used
17	P30 (INT3/TC3)	I	L	—	REMOTE: REMOTE controller optical signal input (*H at reset mode)
18	P31(TC4)	O	H	L	FL-RS
19	P32(SCK)	O	H	H	PL-DATA } FL Driver control (MSC *937)
20	P33(SI)	O	H	H	FL-CLK }

Table 1 (2/4)

Pin	Terminal Name	IO	Logic	Initial Setting	Usage
21	P34(SO)	O	L	LH	IC : DSP Initial clear (*L at reset mode)
22	P35(HSCK)	O	H	LH	BCK }
23	P36	O	H	L	WCK } DSP Control (F71002S)
24	P37(HSC)	O	H	LH	CD }
25	P00	O	H	L	CK }
26	P01	O	H	L	CE } Audio Input/Output, Surround
27	P02	O	H	L	DATA } (LC7821,7822)
28	P03	O	H	L	CK }
29	P04	O	H	H	DATA } Electronic Volume control (TC9176P)
30	P05	O	H	L	ST1 } CENTER CH
31	P06	O	—	L	Not used
32	P07	O	L*	LH	DSP POWER: DSP POWER ON/OFF (*H at ON)
33	Vcc	PW	—	—	+5V
34	P60(G15)	O	H	L	VOL_UP } Motor drive control
35	P61(G14)	O	H	L	VOL_DOWN } (LB1639)
36	P62(G13)	O	H*	H	LED : STANDBY LED (*H at lit time)
37	P63(G12)	O	L*	H	VCR-1 1NH (*H at inhibit mode)
38	P64(G11)	O	—	L	Not used
39	P65(G10)	O	—	L	Not used
40	P66(G9)	O	—	L	Not used

\* In AVR mode, ports within frame are set to output ports and set to "L". In each mode, unused ports are set to output ports depending on contents of initial setting. (P. ON state)

Table 1 (3/4)

Pin	Terminal Name	IO	Logic	Initial Setting	Usage
41	P67(G8)	O	—	L	Not used
42	P70(G7)	O	—	L	Not used
43	P71(G6)	O	—	L	Not used
44	P72(G5)	O	H	L	FRONT : Speaker relay control
45	P73(G4)	O	—	L	Not used
46	P74(G3)	O	H	L	SP-REAR : Speaker relay control
47	P75(G2)	O	H	L	SP-CENTER : Speaker relay control
48	P76(G1)	O	H	L	H/P, PRE MUTE : Premute control
49	P77(G0)	O	L*	H	H/P, PRE MUTE : (*L at Mute mode)
50	P80(S0)	O	H	L	POWER : Power relay control
51	P81(S1)	O	—	L	Not used
52	P82(S2)	O	—	L	Not used
53	P83(S3)	O	—	L	Not used
54	P84(S4)	O	—	L	Not used
55	P85(S5)	O	—	L	Not used
56	P86(S6)	O	—	L	Not used
57	P87(S7)	O	—	L	Not used
58	P90(S8)	O	—	L	Not used
59	P91(S9)	O	—	L	Not used
60	P92(S10)	O	—	L	Not used

\* In each mode, unused ports are set to output ports depending on contents of initial setting. (P.ON state)

Table 1 (4/4)

Pin	Terminal Name	IO	Logic	Initial Setting	Usage
61	P93(S11)	O	—	L	Not used
62	P94(S12)	O	—	L	Not used
63	P95(S13)	O	—	L	Not used
64	P96(S14)	O	—	L	Not used
65	P97(S15)	O	—	L	Not used
66	Vcc	PW	—	—	VCC -15V
67	P40(KEY0)	O	L	H	A } VIDEO INPUT CONTROL
68	P41(KEY1)	O	L	H	B } (BA7825, 7826)
69	P42(KEY2)	O	L	H	C } VIDEO REC OUT CONTROL
70	P43(KEY3)	O	L	H	D } (BA7825, 7826)
71	P44(KEY4)	O	L	H	E } VIDEO INPUT/REC CONTROL
72	P45(KEY5)	O	—	L	Not Used
73	P46(CIN5/KEY6)	O	—	L	Not Used
74	P47(CIN4/KEY7)	I	—	—	MCODE: A/D-AVR shift (A/D conversion input)
75	P50(CIN3)	I	—	—	Key 4
76	P51(CIN2)	I	—	—	Key 3 } UNIT KEY input
77	P52(CIN1)	I	—	—	Key 2 } (A/D conversion input)
78	P53(CIN0)	I	—	—	Key 1
79	P54	O	Serial	L	CK : TUNER PLL CONTROL (LM7001)
80	P55(PWM/PD0)	O	Serial	—	DATA: TUNER PLL Control (LM7001)

\* In AVR mode, ports within frame takes setting contents of Table 1-1. In each mode, unused ports are set to outputs ports depending on contents of initial setting. (P. ON state)

\* In AVR mode, ports within frame takes setting contents of Table 1-1. In each mode, unused ports are set to output ports depending on contents of initial setting. (P. ON state)

LC7821 (SU: IC102)  
LC7823 (SU: IC108)

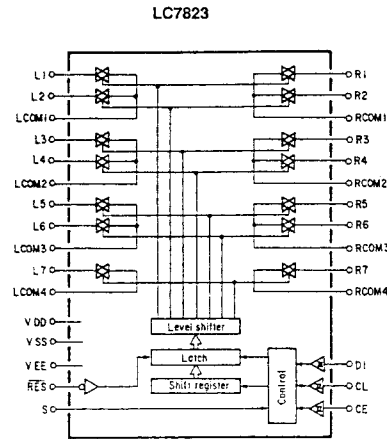
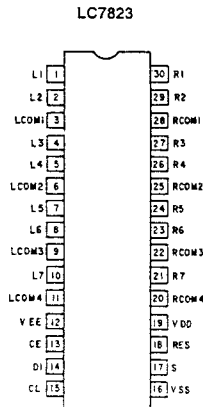
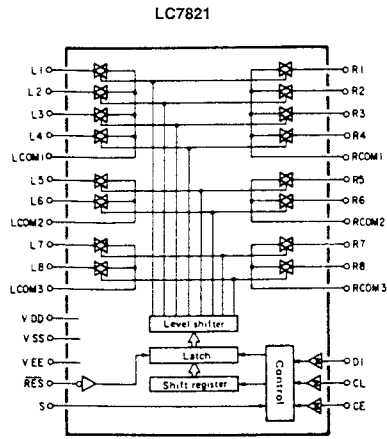
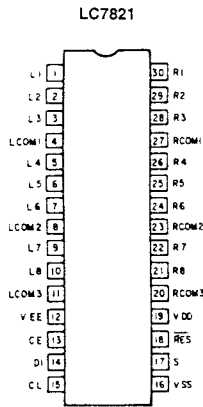
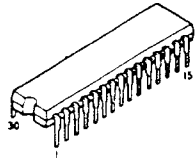


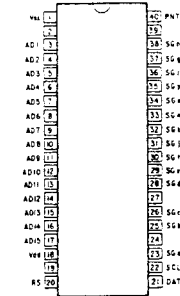
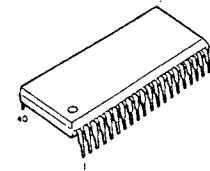
Table of LC7821, LC7823 Terminal Function

Table 2

Name of Terminal	I/O	Equivalent Internal Circuit	Function of Terminal																																
V <sub>DD</sub> , V <sub>SS</sub> , V <sub>EE</sub>			Power terminal.																																
L1 - L8, R1 - R8 LCOM1 - LCOM4, BCOM1 - BCOM4		Refer to block diagram	In/Out terminal of analog switch.																																
CL, DI, CE	I		Serial data input terminal (Schmidt buffer). CL = Clock input terminal. DI = Data input terminal. CE = Chip enable terminal.																																
S	I		Selection terminal for using of two. Address will be shifted as per below table when switching S terminal to L or H. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th rowspan="2">Name of Item</th> <th rowspan="2">S Terminal</th> <th colspan="4">Address</th> </tr> <tr> <th>A0</th> <th>A1</th> <th>A2</th> <th>A3</th> </tr> </thead> <tbody> <tr> <td rowspan="2">LC7821</td> <td>L</td> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>H</td> <td>1</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td rowspan="2">LC7823</td> <td>L</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>H</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	Name of Item	S Terminal	Address				A0	A1	A2	A3	LC7821	L	0	1	0	1	H	1	1	0	1	LC7823	L	0	1	1	1	H	1	1	1	1
Name of Item	S Terminal	Address																																	
		A0	A1	A2	A3																														
LC7821	L	0	1	0	1																														
	H	1	1	0	1																														
LC7823	L	0	1	1	1																														
	H	1	1	1	1																														
RES	I		Reset terminal. Condition of analog switch is not fixed at the time of turning on the power. When shift this terminal to L, all analog switches become OFF.																																

MSC1937-01 (RE:IC702)

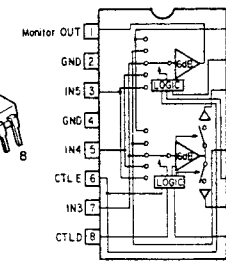
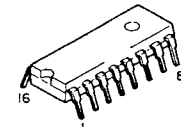
Table 3



Pin No.	Terminal Function
1	Power Supply (+5V)
3	Digit 1 Output
7	—
17	Digit 17 Output
18	GND
19	—
20	POWER-ON-RESET
21	Data Input
22	Shift Clock Input
23	Segment a Output
24	—
25	—
26	—
27	—
28	—
29	—
30	—
31	—
32	—
33	—
34	—
35	—
36	—
37	—
38	Segment h Output
39	—
40	POINT Output

BA7625 (RE: IC601)

Table 4



A	B	E	MONITOR OUT
L	L	*	IN 1
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

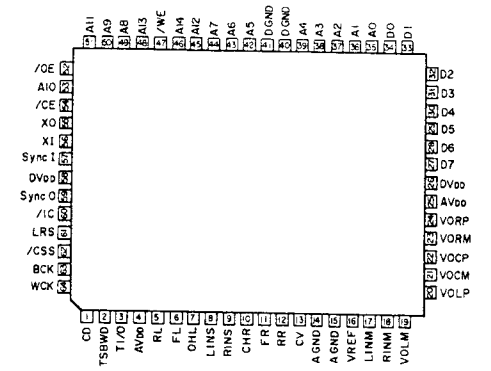
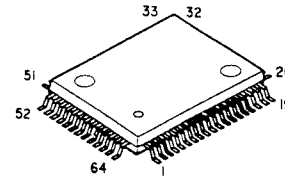
C	D	E	V OUT 1
L	L	*	—
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

C	D	E	V OUT 2
L	L	*	IN 1
H	L	*	—
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

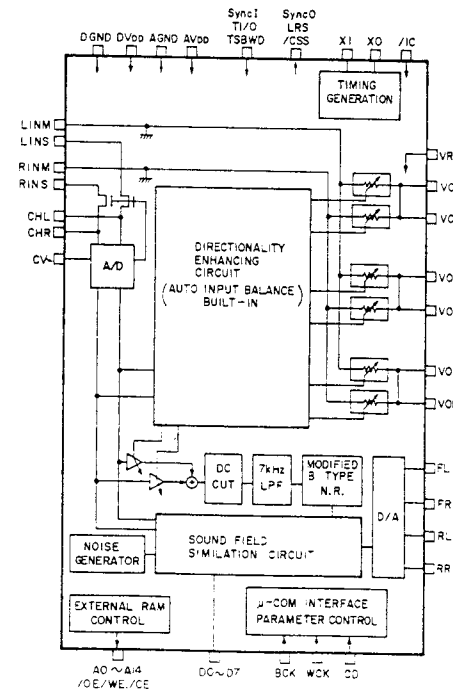
Note 1: \* mark means that feasible for either H or L.  
Note 2: Each input terminal is provided with sink chip clamp.

Truth value table

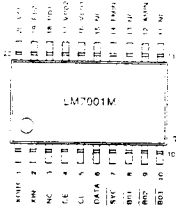
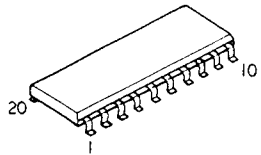
F71002B  
(SU: IC106)



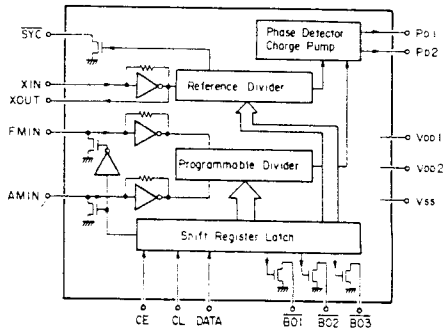
BLOCK DIAGRAM



LM7001M  
(SU: IC003)



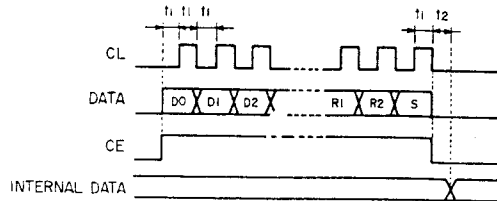
• (NC) pin : Use at opened.



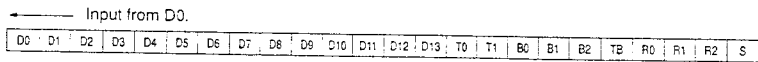
Terminal Description

- SYC : Clock for controller (400 kHz)
- XIN, XOUT : X'tal OSC (7.2MHz)
- FMIN, AMIN : Station oscillation signal input.
- CE, CL, DATA : Data input.
- BO1, BO2, BO3: Band data output. BO1 is feasible for time base output (8Hz).
- VDD1, VDD2, VSS: Power supply. (VDD2 is for back-up)
- PO1, PO2 : Charge pump output.

Data input



$t_1 > 1.5 \mu s$  (X'tal at 7.2MHz)  
 $t_2 < 1.5 \mu s$



(1) D0 (LSB)–D13 (MSB) : Frequency dividend data  
For FMIN, use D0–D13; for AMIN, use D4–D13.

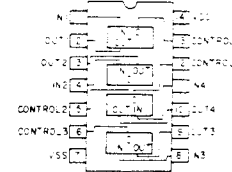
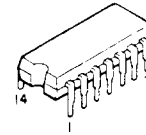
D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	T0	T1	B0	B1	B2	TB	R0	R1	R2	S
1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	1								
LSB													MSB										
x	x	x	x	0	0	0	0	0	1	0	1	1	1										
LSB													MSB										

→ FMIN Frequency dividend number = 14853

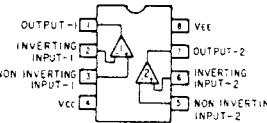
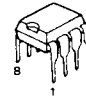
→ AMIN Frequency dividend number = 928

(2) T0, T1 : For test of LSt(0.0)

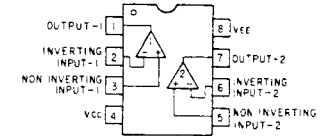
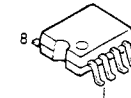
LC4966  
(SU: IC103)



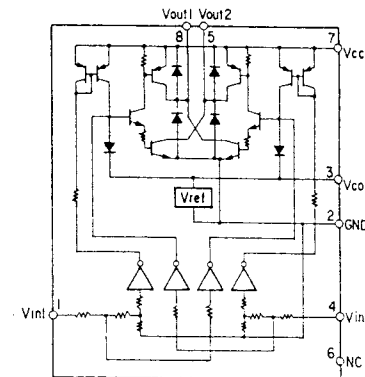
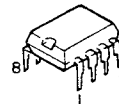
BA4558  
(MA: IC451)



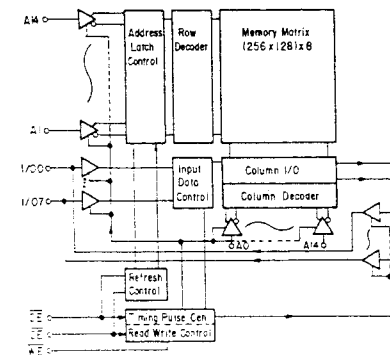
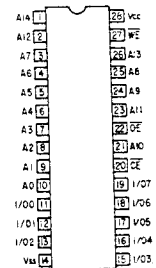
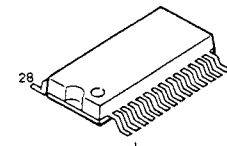
BA4558F (SU: IC101, 104, 105,  
115 – 117, 253, 255, 257)  
NJM2082M (SU: IC109, 110, 113, 114)  
NJM5532MD (SU: IC111, 112)  
NJM2068MD (SU: IC101)



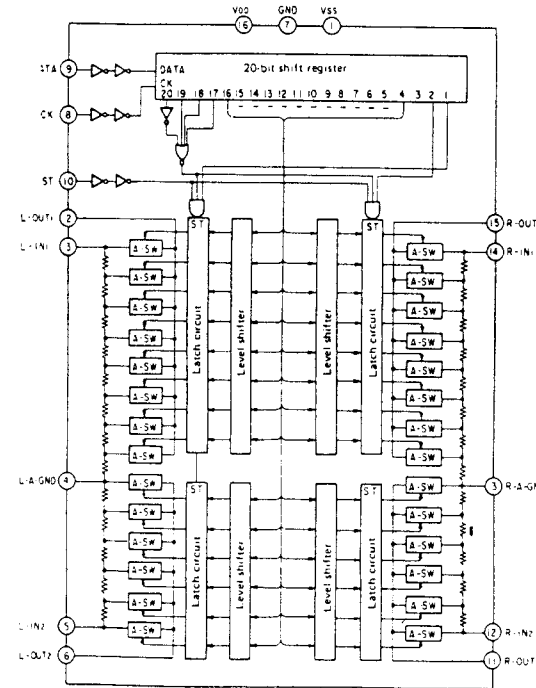
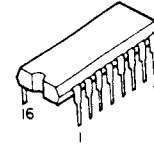
LB1639 (SU: IC255)



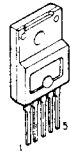
HM65256BLFP-10T  
(SU: IC107)



TC9176P (SU: IC251)



SI-18752 (RE: IC501, 502)



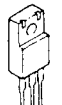
- 1. +IN
- 2. -IN
- 3. -VEE
- 4. Output
- 5. +Vcc

NJM7805FA(S) (RE: IC507, 602)  
 NJM7815FA(S) (RE: IC503)  
 NJM7806FA(S) (RE: IC551)



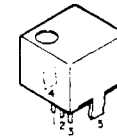
Output  
 GND  
 Input

NJM7915FA (RE: IC504)

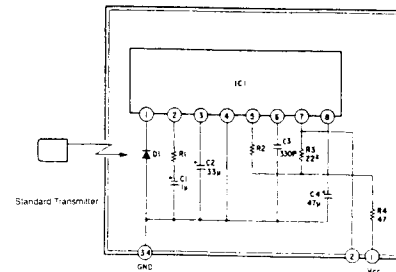


Output  
 Input  
 GND

• OTHERS  
 SBX1510-52 (Remote Control Receiver)  
 (RE: IC701)



- 1. Vcc
- 2. Output
- 3. GND
- 4. Case fin
- 5. Case fin



- IC1 : CX20106A chip
- D1 : Pin photodiode chip
- C1, C2, C4 : Aluminum electrolytic capacitor
- C3 : SL characteristic  $\pm 5\%$
- R1 : Gain control resistor
- R2 : fo control resistor (using  $\pm 1\%$ )
- R (Other than above items) :  $\pm 5\%$



AVR-1000

PRINTED WIRING BOARD (Pattern side)

1 2 3 4

1U-2615A MAIN AMP. UNIT ASS'Y

IU-2615A-1

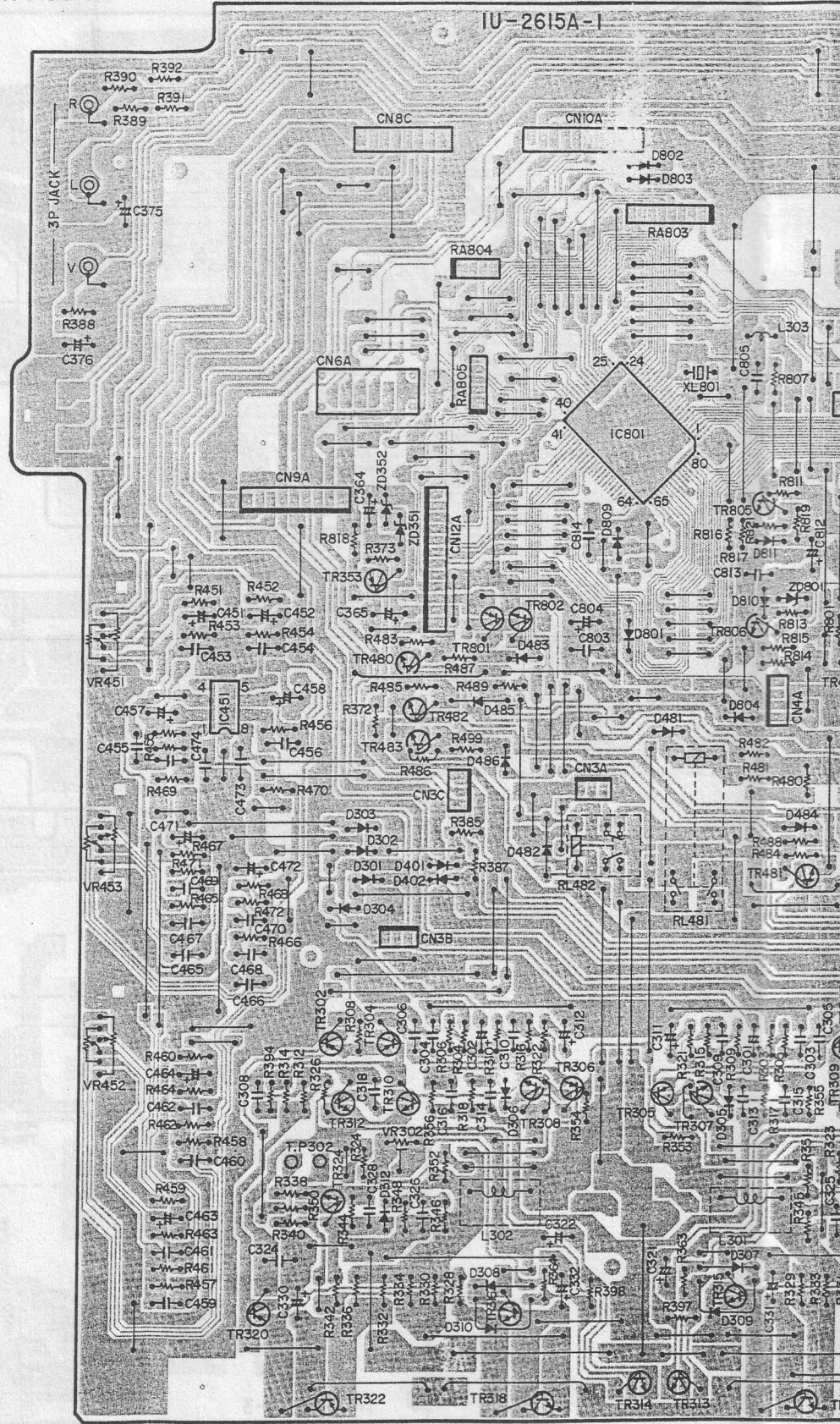
A

B

C

D

E





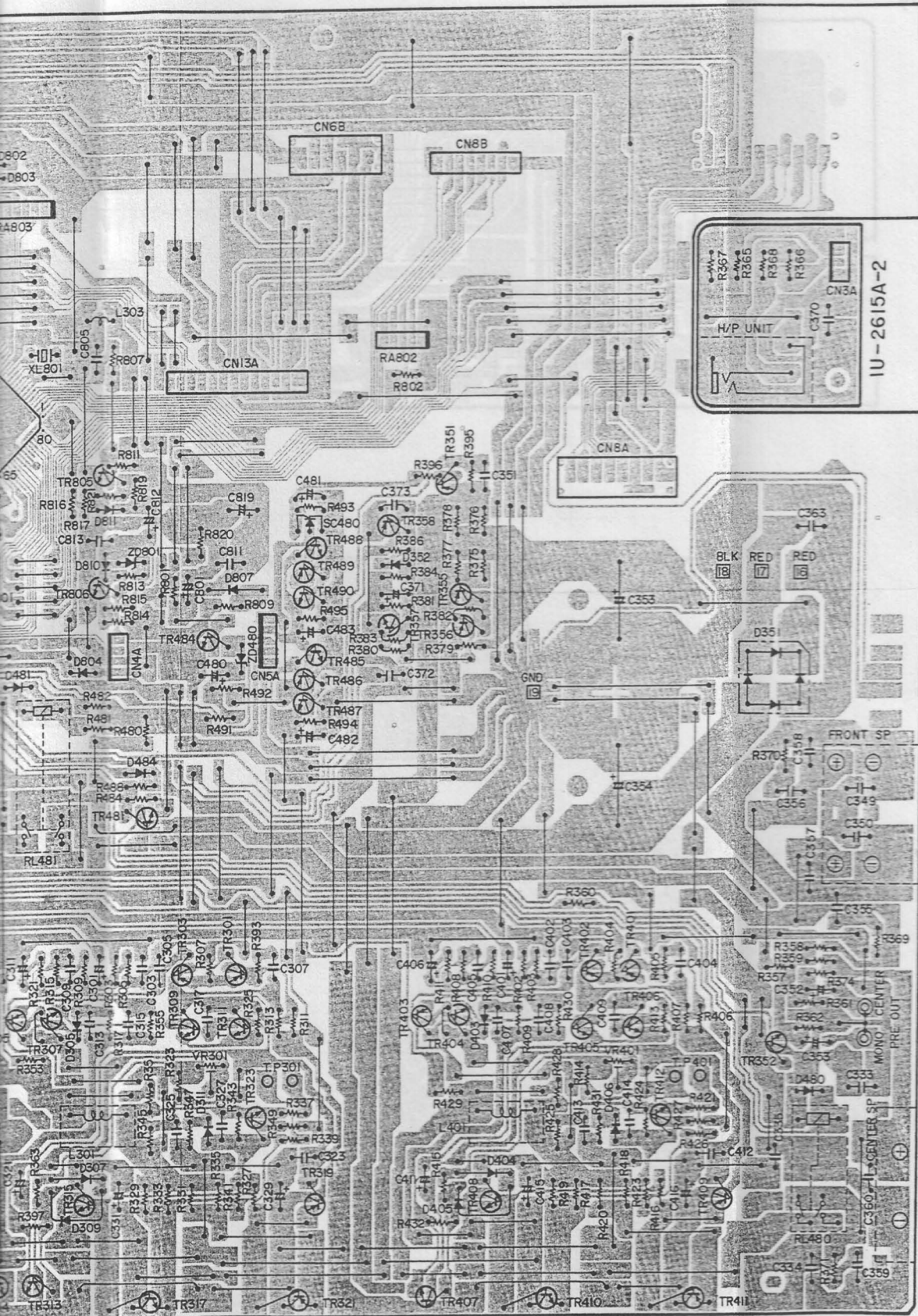
4

5

6

7

8



1

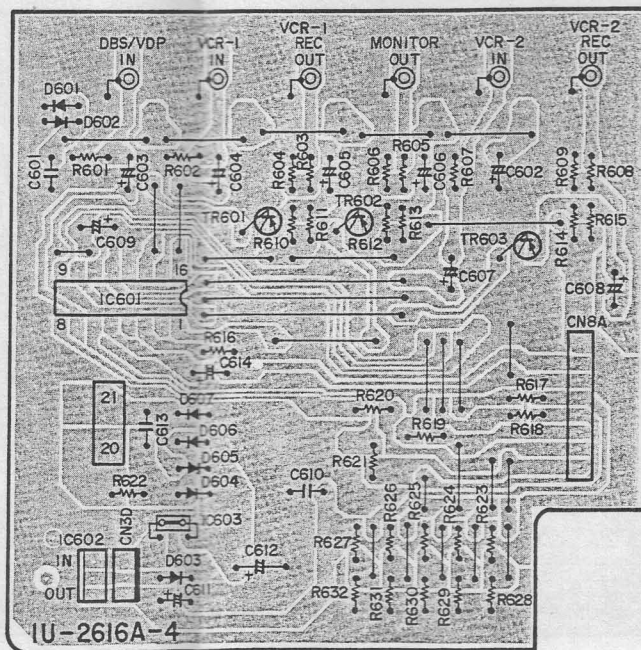
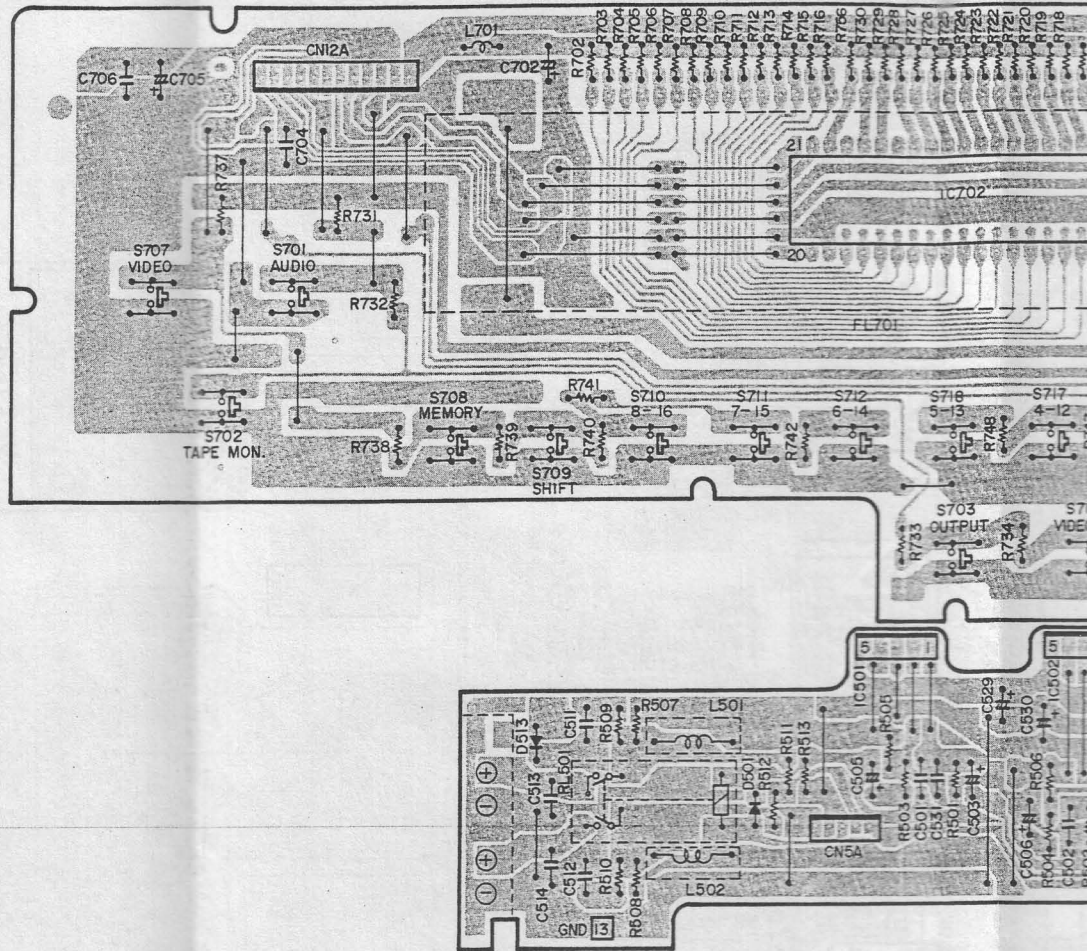
2

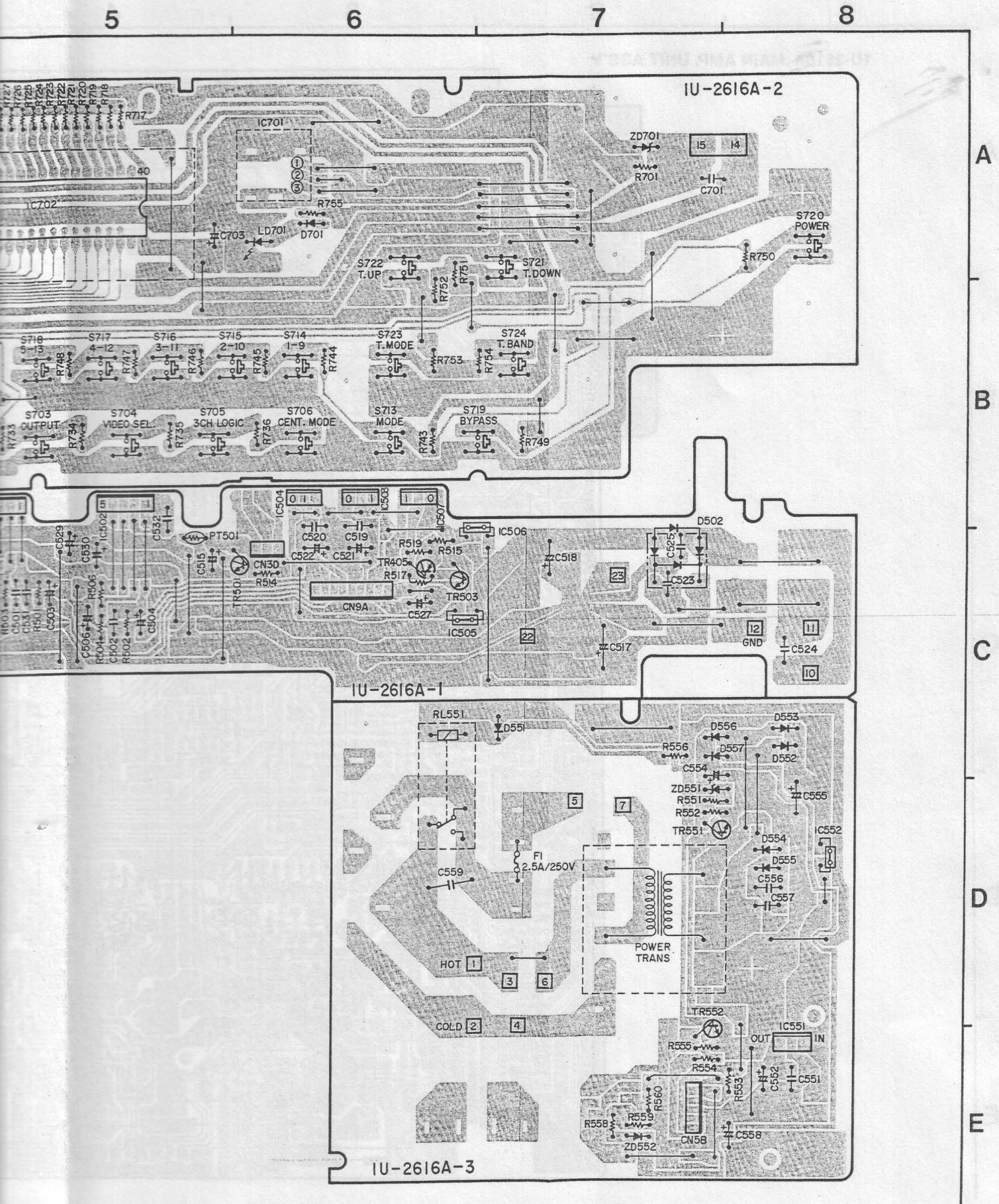
3

4

5

1U-2616A REAR AMP. UNIT ASS'Y





A

B

C

D

E

1U-2617A SURROUND UNIT ASS'Y

A

B

C

D

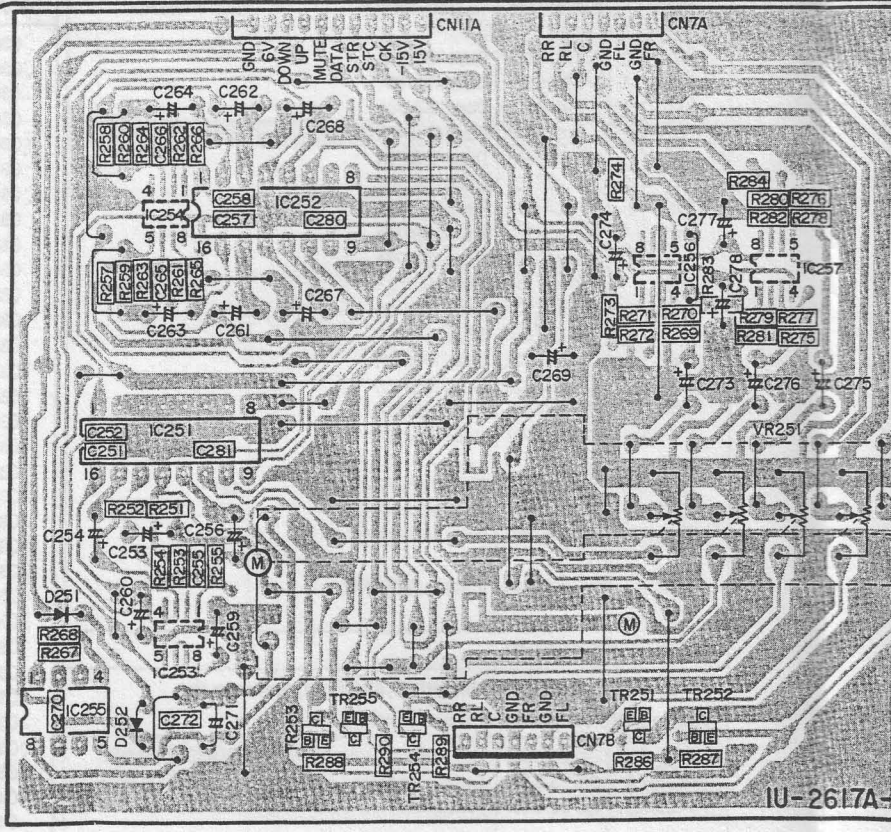
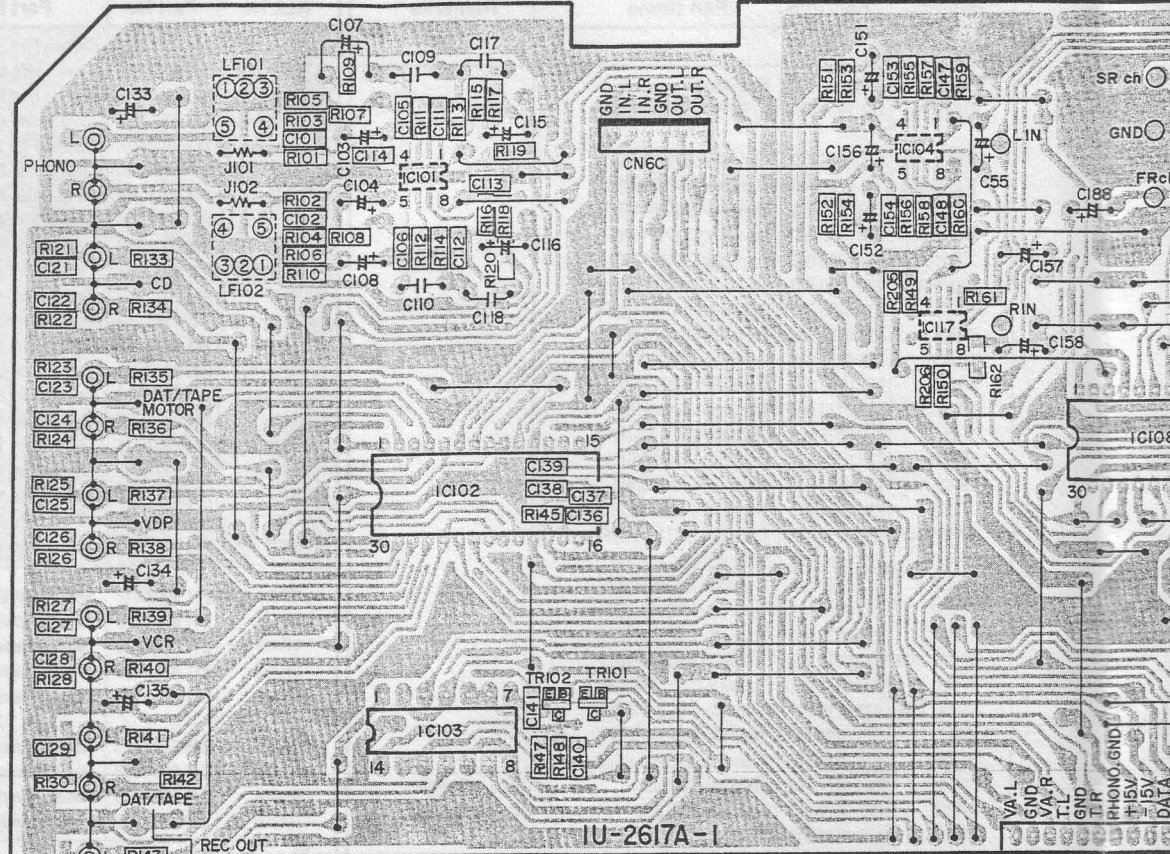
E

1

2

3

4





**NOTE FOR PARTS LIST**

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "1" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

**WARNING:**

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

● **Resistors**

Ex.: RN 14K 2E 182 G FR  
 Type Shape and performance Power Resistance Allowable error Others

RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metal oxide film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

• Resistance

1 8 2 ⇒ 1800 ohm = 1.8 kohm  
 Indicates number of zeros after effective number.  
 2-digit effective number.

• Units: ohm

1 R 2 ⇒ 1.2 ohm  
 1-digit effective number.  
 2-digit effective number, decimal point indicated by R.

• Units: ohm

● **Capacitors**

Ex.: CE 04W 1H 2R2 M BP  
 Type Shape and performance Dielectric strength Capacity Allowable error Others

CE : Aluminum foil electrolytic	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolytic	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolytic	1C : 16V	J : ±5%	HR : Ripple-resistant type
CO : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80%	U : UL part
CP : Oil	2A : 100V	-20%	C : CSA part
CM : mica	2B : 125V	P : +100%	W : UL-CSA type
CF : metallized	2C : 160V	-0%	F : Lead wire forming
CH : metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

• Capacity (electrolyte only)

2 2 2 ⇒ 2200µF  
 Indicates number of zeros after effective number.  
 2-digit effective number.

• Units: µF.

2 R 2 ⇒ 2.2µF  
 1-digit effective number.  
 2-digit effective number, decimal point indicated by R.

• Units: µF.

• Capacity (except electrolyte)

2 0 2 ⇒ 2200pF = 0.0022µF  
 (More than 2) Indicates number of zeros after effective number.  
 2-digit effective number.

• Units: µF.

2 0 1 ⇒ 220pF  
 (0 or 1) Indicates number of zeros after effective number.  
 2-digit effective number.

• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

## AVR-1000

P.W.B. ASS'Y PARTS LIST  
1U-2615A MAIN AMP. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS</b>							
IC451	263 0322 004	IC BA4558		△ R327,328	241 2378 920	Carbon Film 220ohm 1/4W(NB)	RD14B2E221JNBS
IC801	262 1839 001	IC TMP87CK70AF-6092	μ-com	△ R329-336	244 2043 982	Metal Oxide 0.22ohm 1W(NB)	RS14B3AR22JNBS(S)
TR301-304	271 0094 919	Transistor 2SA970(BL)		△ R341-344	241 2380 950	Carbon Film 2kohm 1/4W(NB)	RD14B2E202JNB
TR305,306	271 0131 924	Transistor 2SA988(E/F)		△ R345,346	244 2051 987	Metal Oxide 4.7ohm 1W(NB)	RS14B3A4R7JNBS(S)
TR307-312	273 0235 923	Transistor 2SC1841(E/F)		△ R355,356	241 2377 976	Carbon Film 130ohm 1/4W(NB)	RD14B2E131JNBS
TR313,314	273 0198 905	Transistor 2SC1815(Y)		△ R365-368	244 2051 958	Metal Oxide 220ohm 1W(NB)	RS14B3A221JNBS(S)
TR315,316	274 0060 900	Transistor 2SD667A(C)		△ R369-371	244 2051 987	Metal Oxide 4.7ohm 1W(NB)	RS14B3A4R7JNBS(S)
TR319,320	272 0053 908	Transistor 2SB647A(C)		△ R372	241 2376 964	Carbon Film 47ohm 1/4W(NB)	RD14B2E470JNBS
TR323,324	273 0235 923	Transistor 2SC1841(E/F)		△ R375-378	244 2043 982	Metal Oxide 0.22ohm 1W(NB)	RS14B3AR22JNBS(S)
TR351	271 0131 924	Transistor 2SA988(E/F)		△ R406,407	241 2380 963	Carbon Film 2.2kohm 1/4W(NB)	RD14B2E222JNBS
TR352	273 0253 918	Transistor 2SC2878(A/B)		△ R408	241 2377 976	Carbon Film 130ohm 1/4W(NB)	RD14B2E131JNBS
TR353	272 0053 908	Transistor 2SB647A(C)		△ R413	241 2315 967	Fusible 68ohm 1/4W(NB)	RD14B2E680GFRS
TR355,356	271 0131 924	Transistor 2SA988(E/F)		△ R416	241 2378 920	Carbon Film 220ohm 1/4W(NB)	RD14B2E221JNBS
TR357	273 0235 923	Transistor 2SC1841(E/F)		△ R417-420	244 2043 982	Metal Oxide 0.22ohm 1W(NB)	RS14B3AR22JNBS(S)
TR358	271 0131 924	Transistor 2SA988(E/F)		△ R423,424	241 2380 950	Carbon Film 2kohm 1/4W(NB)	RD14B2E202JNBS
TR401,402	271 0094 919	Transistor 2SA970(BL)		△ R425	244 2051 987	Metal Oxide 4.7ohm 1W(NB)	RS14B3A4R7JNBS(S)
TR403	271 0131 924	Transistor 2SA988(E/F)		△ R430	241 2377 976	Carbon Film 130ohm 1/4W(NB)	RD14B2E131JNBS
TR404-406	273 0235 923	Transistor 2SC1841(E/F)		△ R480,481	241 2377 963	Carbon Film 120ohm 1/4W(NB)	RD14B2E121JNBS
TR407	273 0198 002	Transistor 2SC1815(Y)		△ R482	244 2051 974	Metal Oxide 1kohm 1W(NB)	RS14B3A102JNBS(S)
TR408	274 0060 900	Transistor 2SD667A(C)		△ R491	244 2050 988	Metal Oxide 2kohm 1W(NB)	RS14B3A202JNBS(S)
TR409	272 0053 908	Transistor 2SB647A(C)		△ R809	241 2387 940	Carbon Film 4.7ohm 1/4W(NB)	RD14B2E4R7JNBS
TR412	273 0235 923	Transistor 2SC1841(E/F)		VR301,302	211 6093 912	Semi Fixed VR 4.7kohm	V06PB472
TR480-485	273 0317 906	Transistor 2SC2458(BL)		VR401	211 6093 912	Semi Fixed VR 4.7kohm	V06PB472
TR486	271 0191 906	Transistor 2SA1048(GR)		VR451	211 0798 006	Variable Resistor 100kohm	Balance
TR487,488	273 0317 906	Transistor 2SC2458(BL)		VR452	211 0797 010	Variable Resistor 30kohm	Bass
TR489	271 0191 906	Transistor 2SA1048(GR)		VR453	211 0797 007	Variable Resistor 5kohm	Treble
TR490	273 0317 906	Transistor 2SC2458(BL)		RA802	246 2052 005	Resistor Array 10kohm × 4	RK99=103JP4
TR801	269 0024 902	Transistor RN2201	Built in Resistor	RA803	246 2054 003	Resistor Array 10kohm × 7	RK99=103JP7
TR802	269 0029 907	Transistor RN1204	Built in Resistor	RA804	246 2076 023	Resistor Array 1.5kohm × 3	RK99=152JP3
TR805	273 0198 918	Transistor 2SC1815(BL)		RA805	246 2052 018	Resistor Array 4.7kohm × 4	RK99=472JP5
TR806	269 0023 903	Transistor RN1201	Built in Resistor	<b>CAPACITORS GROUP</b>			
D301-306	276 0432 903	Diode 1SS270A		C301,302	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
D307-310	276 0049 914	Diode 1S2076A		C303,304	253 1179 903	Ceramic 100pF/50V	CK45B1H101K
D311-312	276 0432 903	Diode 1SS270A		C305,306	253 1179 945	Ceramic 220pF/50V	CK45B1H221K
△ D351	276 0424 005	Diode 4D4B42(LC1)	Bridge	C307,308	255 1264 966	Plastic Film 0.0033μF/50V	CQ93M1H332J(B)
D352	276 0432 903	Diode 1SS270A		C309,310	253 4536 983	Ceramic 22pF/50V	CC45SL1H220J
D401-403	276 0432 903	Diode 1SS270A		C311,312	254 4256 952	Electrolytic 220μF/25V	CE04W1E221M
D404,405	276 0049 914	Diode 1S2076A		C313-316	255 1264 908	Plastic Film 0.001μF/50V	CQ93M1H102J(B)
D406	276 0432 903	Diode 1SS270A		C317,318	253 4470 900	Ceramic 10pF/500V	CC45SL2H100D
D480,481	276 0432 903	Diode 1SS270A		C321,322	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
D482	276 0049 914	Diode 1S2076A		C323,324	253 1128 909	Ceramic 220pF/500V	CK45B2H221K
D483,484	276 0432 903	Diode 1SS270A		C325,326	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
D485	276 0049 914	Diode 1S2076A		C327,328	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
D486	276 0432 903	Diode 1SS270A		C329-332	254 4262 904	Electrolytic 4.7μF/63V	CE04W1J4R7M
D801-804	276 0432 903	Diode 1SS270A		C333-335	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z
D807	276 0049 914	Diode 1S2076A		C349,350	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z
D809-811	276 0432 903	Diode 1SS270A		C351	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
ZD351,352	276 0473 904	Zener Diode HZS12A-1	12V	C352,353	254 4254 941	Electrolytic 100μF/16V	CE04W1C101M
ZD480	276 0466 908	Zener Diode HZS7C-1	7V	C353,354	254 4374 708	Electrolytic 8200μF/56V	CE04W=822MC(DL)
ZD801	276 0454 907	Zener Diode HZS3C-1	3V	C355,356	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
SC480	279 0016 904	Thyrister SF0R1A42		C357,358	255 1264 982	Plastic Film 0.0047μF/50V	CQ93M1H472J(B)
<b>RESISTORS GROUP</b>				C359	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
(Not included Carbon Film ±5%1/4W Type. Refer to the Schematic Diagram for those Parts.)				C360	255 1264 982	Plastic Film 0.0047μF/50V	CQ93M1H472J(B)
△ R311-314	241 2380 963	Carbon Film 2.2kohm 1/4W(NB)	RD14B2E222JNBS	C361	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
△ R317,318	241 2377 976	Carbon Film 130ohm 1/4W(NB)	RD14B2E131JNBS	C363	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K
△ R325,326	241 2315 967	Fusible 68ohm 1/4W(NB)	RD14B2E680GFRS	C363	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K
				C364,365	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
				C370	253 1182 903	Ceramic 0.047μF/50V	CK45F=473Z
				C371	254 4258 918	Electrolytic 10μF/35V	CE04W1V100M
				C372,373	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
				C375,376	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
				C401	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
				C402	253 1179 903	Ceramic 100pF/50V	CK45B1H101K

## 1U-2616A REAR AMP. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks	
C403	253 1179 945	Ceramic 220pF/50V	CK45B1H221K	<b>SEMICONDUCTORS</b>				
C404	255 1264 966	Plastic Film 0.0033μF/50V	CQ93M1H332J(B)	IC501	263 0855 005	IC SI-18752		
C405	253 4536 983	Ceramic 22pF/50V	CC45SL1H220J	IC502	263 0855 005	IC SI-18752		
C406	254 4256 952	Electrolytic 220μF/25V	CE04W1E221M	IC503	263 0812 006	IC NJM7815FA(S)	Regulator +15V	
C407,408	255 1264 908	Plastic Film 0.001μF/50V	CQ93M1H102J(B)	IC504	263 0561 001	IC NJM7915FA	Regulator -15V	
C409	253 4470 900	Ceramic 10pF/500V	CC45SL2H100D	IC505	268 0074 904	IC ICP-N20	IC Protector 20V	
C411	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	IC506	268 0074 904	IC ICP-N20	IC Protector 20V	
C412	253 1128 909	Ceramic 220pF/500V	CK45B2H221K	IC507	263 0809 006	IC NJM7805FA(S)	Regulator +5V	
C413	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J	IC551	263 0793 002	IC NJM7806FA(S)	Regulator +6V	
C414	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)	IC552	268 0073 905	IC ICP-N15	IC Protector 15V	
C415,416	254 4262 904	Electrolytic 4.7μF/63V	CE04W1J4R7M	IC601	263 0856 004	IC BA7625		
C451,452	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	IC602	263 0809 006	IC NJM7805FA(S)	Regulator +5V	
C453-456	253 1179 903	Ceramic 100pF/50V	CK45B1H101K	IC603	268 0073 905	IC ICP-N15	IC Protector 15V	
C457,458	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M	IC701	499 0150 008	IC SBX1610-52	Remocon Receiver	
C459,460	255 1264 908	Plastic Film 0.001μF/50V	CQ93M1H102J(B)	IC702	262 1564 004	IC MSC1937-01	μ-com	
C461,462	256 1034 995	Metalized 0.15μF/50V	CF93A1H154J	TR501	273 0198 918	Transistor 2SC1815(BL)		
C463,464	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M	TR503	269 0023 903	Transistor RN1201	Built in Resistor	
C465,466	255 1264 937	Plastic Film 0.0018μF/50V	CQ93M1H182J(B)	TR504	272 0053 908	Transistor 2SB647A(C)		
C467,468	255 1265 949	Plastic Film 0.012μF/50V	CQ93M1H123J(B)	TR551,552	273 0317 906	Transistor 2SC2458(BL)		
C469,470	256 1034 953	Metalized 0.068μF/50V	CF93A1H683J	TR601,602	271 0102 924	Transistor 2SA1015(GR)		
C471,472	254 4260 935	Electrolytic 0.47μF/50V	CE04W1HR47M	D501	276 0432 903	Diode 1SS270A		
C473	256 1034 937	Metalized 0.047μF/50V	CF93A1H473J	△ D502	276 0305 001	Diode S4VB20	Bridge	
C474	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223Z	D551	276 0432 903	Diode 1SS270A		
C480	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M	D552-557	276 0553 905	Diode 1SR35-200A		
C481	254 4260 993	Electrolytic 22μF/50V	CE04W1H220M	D601-603	276 0432 903	Diode 1SS270A		
C482,483	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331M	D604-607	276 0548 910	Diode DSM1D2(Type-3)		
C803	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z	D701	276 0432 903	Diode 1SS270A		
C804	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M	ZD551	276 0465 909	Zener Diode HZS7B-1	7V	
C805	256 1034 982	Metalized 0.12μF/50V	CF93A1H124J	ZD701	276 0467 907	Zener Diode HZS9A-1	9V	
C811	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z	PT501	279 0034 067	Thermistor		
C812	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M			PTH9M04BB22TS2F333		
C813	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)	LD701	393 9434 906	LED SEL1210S	Red	
C814	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z	FL701	393 4131 000	FLD FIP14PM8		
C819	254 4250 783	Electrolytic 3300μF/6.3V	CE04W0J332MC					
<b>OTHER GROUP</b>				<b>Q'ty</b>				
	--	(P.W.Board)		(1)				
L301,302	235 0068 004	Inductor 1mH		2				
L303	235 0060 989	Inductor 120mH		1				
L401	235 0068 004	Inductor 1 mH		1				
RL480	214 0167 005	Relay(G5Z-2A)		1				
RL481	214 9003 005	Relay		1				
RL482	214 0162 000	Relay(A12W-K)		1				
XL801	399 0191 903	Ceramic Resonator	CST4.00MGW19MGW	1				
	204 8354 004	Headphone Jack		1				
	205 0551 002	4P Terminal	Front	1				
	205 0695 007	2P Push Terminal(V-1)	Center	1				
	204 8404 006	3P Pin Jack	V-AUX	1				
	205 0315 002	2P Connector Base	Pre-Out	1				
	415 0309 071	PVC Tube(L=10)		6				
CN3A	205 0343 032	3P Conn. Base(KR-PH)		2				
CN4A	205 0343 045	4P Conn. Base(KR-PH)		1				
CN5A	205 0343 058	5P Conn. Base(KR-PH)		1				
CN6A,6B	205 0696 064	JL Connector(BT-E)		2				
CN8A	205 0696 080	JL Connector(BT-E)		1				
CN8B,8C	205 0535 002	8P Conn. Base		1				
CN9A	205 0343 090	9P Conn. Base(KR-PH)		1				
CN10A	205 0535 057	10P Conn. Base		1				
CN12A	205 0375 026	12P Conn. Base(KR-PH)		1				
CN13A	205 0707 005	13P Conn. Base		1				
<b>RESISTORS GROUP</b>								
<b>(Not included Carbon Film ±5%/1/4W Type. Refer to the Schematic Diagram for those Parts.)</b>								
△ R509,510	244 2051 987	Metal Oxide 4.7ohm 1W(NB)				RS14B3A4R7JNBS(S)		
△ R513	241 2377 963	Carbon Film 120ohm 1/4W(NB)				RD14B2E121JNBS		
△ R515	241 2387 940	Carbon Film 4.7ohm 1/4W(NB)				RD14B2E4R7JNBS		
△ R556	241 2375 978	Carbon Film 20ohm 1/4W(NB)				RD14B2E200JNBS		
△ R557	242 0073 000	Carbon Composit 2.2Mohm 1/2W				RC05GF2H225K		
△ R622	241 2387 908	Carbon Composit 1ohm 1/4W(NB)				RD14B2E010JNBS		
<b>CAPACITORS GROUP</b>								
C501,502	253 1179 903	Ceramic 100pF/50V	CK45B1H101K					
C503,504	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2M					
C505,506	254 4254 938	Electrolytic 47μF/16V	CE04W1C470M					
C511,512	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J					
C513,514	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z					
C515	254 4254 909	Electrolytic 10μF/16V	CE04W1C109M					
C517,518	254 4259 014	Electrolytic 3300μF/35V	CE04W1V332M					
C519,520	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z					
C521,522	254 4258 918	Electrolytic 10μF/35V	CE04W1V100M					
C524	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K					
C529,530	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M					
C531, 532	253 1179 903	Ceramic 100pF/50V	CK45B1H101K					
C533	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z					
C534	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M					



AVR-1000

## 1U-2617A SURROUND UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
C551	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C552	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C554	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C555	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
C556,557	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C558	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
⚠ C559	253 8014 702	Ceramic 0.01μF/400V(AC)	CK45F2GAC103MC
C601	253 9039 906	BC Ceramic 0.1μF/25V	CK45=1E104Z
C602	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C603,604	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C605,606	254 4250 958	Electrolytic 470μF/6.3V	CE04W0J471M
C609	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M
C610	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C611	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M
C612	254 4254 792	Electrolytic 2200μF/16V	CE04W1C222MC
C613	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103Z
C614	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7M
C701	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J
C702	254 4261 921	Electrolytic 100μF/50V	CE04W1H101M
C703	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331M
C704	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103Z

## OTHER GROUP

Ref. No.	Part No.	Part Name	Remarks	Q'ty
	—	(P.W.Board)		(1)
L501,502	235 0068 004	Inductor 1 mH		2
L701	235 0060 989	Inductor 120 mH		1
RL501	214 0167 005	Relay(G5Z-2A)	Rear	1
⚠ RL551	214 0120 013	Relay(TV-8)	Pri.	1
S701-724	212 4388 907	Tact Switch		24
⚠	233 6058 009	Power Trans(Mini)		1
	202 0022 008	Fuse Holder		2
⚠ F001	216 1015 032	Fuse 2.5A (250V)	Fuse Pri.	1
	513 0018 062	Fuse Label		1
	204 0209 004	4P Pin Jack(C-GND)	Video	1
	205 0292 003	4P Push Terminal	Rear	1
	205 0075 025	2P Terminal		2
	205 0692 000	2P Wrapping Terminal	for AC Cord	1
CN4A	205 0343 045	4P Conn. Base(KR-PH)		1
CN5A	205 0343 058	5P Conn. Base(KR-PH)		1
CN8A	205 0748 080	JL Connector(R)-8 P		1
CN9A	205 0343 090	9 P Conn. Base(KR-PH)		1
CN12A	205 0375 026	12 P Conn. Base(KR-PH)		1
	203 0552 005	1P Contact Ass'y		1
	415 0299 000	Condenser Cover		1
	415 0309 000	P.V.C. Tube (L=15)		2

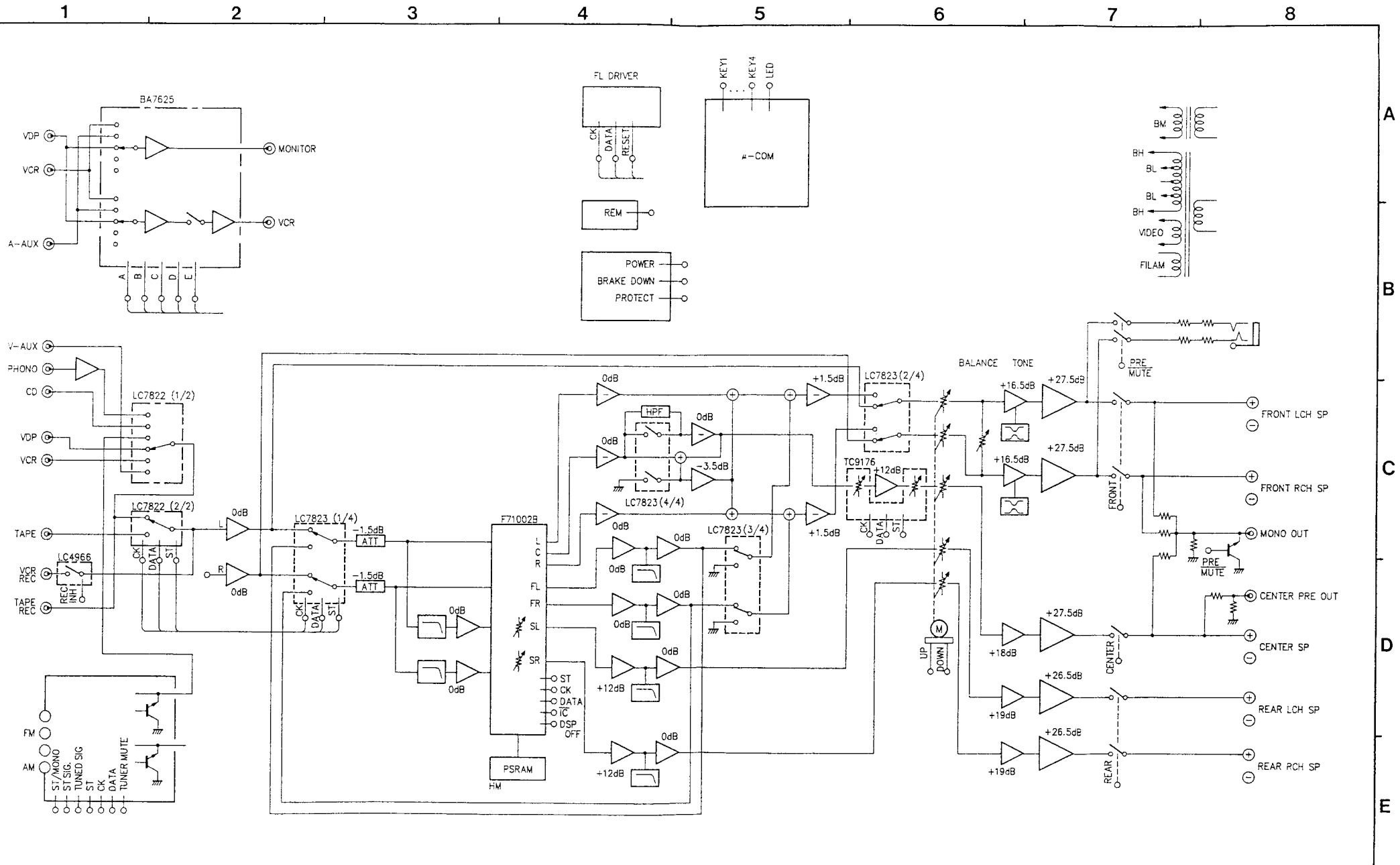
Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS</b>			
IC001	263 0891 001	IC LA1265(S)	
IC002	263 0439 007	IC LA3401	
IC003	263 0791 907	IC LM7001M	
IC101	263 0896 909	IC NJM2068MD	
IC102	262 1227 008	IC LC7821	
IC103	263 0359 006	IC LC4966	
IC104,105	263 0672 903	IC BA4558F	
IC106	262 1609 105	IC F71002B	
IC107	262 1610 000	IC HM65256BLFP-10T	μ-com
IC108	262 1229 006	IC LC7823	
IC109,110	263 0892 903	IC NJM2082M	
IC111,112	263 0898 907	IC NJM5532MD	
IC113,114	263 0892 903	IC NJM2082M	
IC115-117	263 0672 903	IC BA4558F	
IC251	262 0625 009	IC TC9176P	
IC253	263 0672 903	IC BA4558F	
IC255	263 0476 002	IC LB1639	
IC256,257	263 0672 903	IC BA4558F	
TR001	275 0074 902	FET 2SK211-Y/GR	
TR002	273 0411 909	Transistor 2SC2996-Y	
TR003,004	269 0114 906	Transistor RN2402	Built in Resistor
TR005	273 0403 904	Transistor 2SC2712-Y/GR	
TR006	275 0075 901	FET 2SK209-Y/GR	
TR007,008	269 0066 902	Transistor DTC323TK	Built in Resistor
TR009	269 0085 909	Transistor DTC144TK	Built in Resistor
TR010	269 0086 908	Transistor DTA114TK	Built in Resistor
TR011	274 0060 900	Transistor 2SD667A(C)	
TR101	269 0054 901	Transistor DTC144EK	Built in Resistor
D001-003	276 0432 903	Diode 1SS270A	
D004,005	276 0302 004	Varactor SVC321SPA-D-2	
D006	276 0432 903	Diode 1SS270A	
D101-109	276 0432 903	Diode 1SS270A	
D251,252	276 0432 903	Diode 1SS270A	
ZD001	276 0474 903	Zener Diode HZS12B-1	12V
<b>RESISTORS GROUP</b>			
<b>(Not included Carbon Film ±5%/1/4W Type. Refer to the Schematic Diagram for those Parts.)</b>			
R001	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B-102J
R002	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B-562J
R003	247 0004 906	Chip Carbon 39ohm 1/10W	RM73B-390J
R004	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B-103J
R005	247 0006 946	Chip Carbon 390ohm 1/10W	RM73B-391J
R006	247 0006 920	Chip Carbon 330ohm 1/10W	RM73B-331J
R007	247 0009 901	Chip Carbon 4.7kohm 1/10W	RM73B-472J
R008	247 0006 920	Chip Carbon 330ohm 1/10W	RM73B-331J
R009	247 0005 989	Chip Carbon 220ohm 1/10W	RM73B-221J
R010	247 0008 902	Chip Carbon 1.8kohm 1/10W	RM73B-182J
R011	247 0006 920	Chip Carbon 330ohm 1/10W	RM73B-331J
R012,013	247 0012 927	Chip Carbon 100kohm 1/10W	RM73B-104J
R014	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B-101J
R015	247 0009 969	Chip Carbon 8.2kohm 1/10W	RM73B-822J
R016	247 0008 986	Chip Carbon 3.9kohm 1/10W	RM73B-392J
R017	247 0006 946	Chip Carbon 390ohm 1/10W	RM73B-391J
R018	247 0005 947	Chip Carbon 150ohm 1/10W	RM73B-151J
R019	247 0005 921	Chip Carbon 120ohm 1/10W	RM73B-121J
R020	247 0010 929	Chip Carbon 15kohm 1/10W	RM73B-153J
R021	247 0005 921	Chip Carbon 120ohm 1/10W	RM73B-121J
R022	247 0011 928	Chip Carbon 39kohm 1/10W	RM73B-393J

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
R023	247 0007 961	Chip Carbon 1.2kohm 1/10W	RM73B--122J	R223,224	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R024	247 0009 972	Chip Carbon 9.1kohm 1/10W	RM73B--912J	R225,226	247 0011 944	Chip Carbon 47kohm 1/10W	RM73B--473J
R025,026	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	R227,228	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R027	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J	R229,230	247 0011 944	Chip Carbon 47kohm 1/10W	RM73B--473J
R028	247 0009 969	Chip Carbon 8.2kohm 1/10W	RM73B--822J	R231--236	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J
R029	247 0011 986	Chip Carbon 68kohm 1/10W	RM73B--683J	R237,238	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R030	247 0011 928	Chip Carbon 39kohm 1/10W	RM73B--393J	R251	247 0012 927	Chip Carbon 100kohm 1/10W	RM73B--104J
R031	247 0011 973	Chip Carbon 62kohm 1/10W	RM73B--623J	R252	247 0013 900	Chip Carbon 220kohm 1/10W	RM73B--224J
R032	247 0012 969	Chip Carbon 150kohm 1/10W	RM73B--154J	R253	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J
R033,034	247 0012 998	Chip Carbon 200kohm 1/10W	RM73B--204J	R254	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J
R035	247 0012 969	Chip Carbon 150kohm 1/10W	RM73B--154J	R255	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R036	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J	R267,268	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J
R037,038	247 0012 927	Chip Carbon 100kohm 1/10W	RM73B--104J	R269	247 0013 984	Chip Carbon 470kohm 1/10W	RM73B--474J
R039-042	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J	R270	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R043	247 0010 961	Chip Carbon 22kohm 1/10W	RM73B--223J	R271	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J
R044,045	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	R272	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J
R046	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J	R273	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R047	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	R275,276	247 0013 984	Chip Carbon 470kohm 1/10W	RM73B--474J
R081	247 1018 904	Chip Carbon 0ohm 1/8W	RM73B2B0R0K	R277,278	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R083	247 1018 904	Chip Carbon 0ohm 1/8W	RM73B2B0R0K	R279,280	247 0009 969	Chip Carbon 8.2kohm 1/10W	RM73B--822J
R085-092	247 1018 904	Chip Carbon 0ohm 1/8W	RM73B2B0R0K	R281,282	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J
R093-098	247 1018 904	Chip Carbon 0ohm 1/8W	RM73B2B0R0K	R283,284	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J
R101,102	247 0006 946	Chip Carbon 390ohm 1/10W	RM73B--391J	VR251	211 0637 002	Variable Resister100kohm	
R103,104	247 0011 986	Chip Carbon 68kohm 1/10W	RM73B--683J	<b>CAPACITORS GROUP</b>			
R105,106	247 0012 969	Chip Carbon 150kohm 1/10W	RM73B--154J	C001-003	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R107,108	247 0004 922	Chip Carbon 47ohm 1/10W	RM73B--470J	C004	257 0002 989	Chip Ceramic 18pF/50V	CC73SL1H180J
R109,110	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J	C005	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
R111,112	247 0014 909	Chip Carbon 560kohm 1/10W	RM73B--564J	C006-008	257 0012 966	Chip Cerz.nic 0.01µF/50V	CK73F1H103Z
R113,114	247 0011 944	Chip Carbon 47kohm 1/10W	RM73B--473J	C009	255 4201 942	Plastic Film 390pF/50V	CQ93P1H391J
R115,116	247 0003 949	Chip Carbon 22ohm 1/10W	RM73B--220J	C011	254 3056 917	Electrolytic 1µF/50V (Bipole)	CE04D1H010MBP
R117,118	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J	C012	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
R119,120	247 0013 984	Chip Carbon 470kohm 1/10W	RM73B--474J	C013	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M
R121-132	247 0015 966	Chip Carbon 2.7Mohm 1/10W	RM73B--275J	C014	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z
R133-144	247 0006 962	Chip Carbon 470ohm 1/10W	RM73B--471J	C016	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
R145,146	247 0014 925	Chip Carbon 680kohm 1/10W	RM73B--684J	C017,018	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R147,148	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C019	254 4260 935	Electrolytic 0.47µF/50V	CE04W1HR47M
R149,150	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J	C020	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R151,152	247 0006 962	Chip Carbon 470ohm 1/10W	RM73B--471J	C021	254 4260 980	Electrolytic 10µF/50V	CE04W1H100M
R153,154	247 0011 973	Chip Carbon 62kohm 1/10W	RM73B--623J	C022	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z
R155,156	247 0013 984	Chip Carbon 470kohm 1/10W	RM73B--474J	C023	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J
R157-160	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J	C024	256 1034 940	Metalized 0.056µF/50V	CF93A1H563J
R161-164	247 0004 922	Chip Carbon 47ohm 1/10W	RM73B--470J	C025	254 4254 912	Electrolytic 22µF/16V	CE04W1C220M
R165,166	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C026	254 4259 912	Electrolytic 22µF/16V	CE04W1C220M
R167-170	247 0009 901	Chip Carbon 4.7kohm 1/10W	RM73B--472J	C027	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M
R171-174	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J	C028	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R175,176	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C029	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R177	247 0005 989	Chip Carbon 220ohm 1/10W	RM73B--221J	C033,034	257 0002 976	Chip Ceramic 16pF/50V	CC73SL1H160J
R178	247 0014 967	Chip Carbon 1 Mohm 1/10W	RM73B--105J	C035	256 1034 937	Metalized 0.047µF/50V	CF93A1H473J
R179-182	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C036,037	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R183,184	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J	C038	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
R185,186	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C039	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R187	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J	C040	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R188	247 0014 967	Chip Carbon 1 Mohm 1/10W	RM73B--105J	C041	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M
R189	247 0009 927	Chip Carbon 5.6kohm 1/10W	RM73B--562J	C042	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R190-192	247 0009 943	Chip Carbon 6.8kohm 1/10W	RM73B--682J	C043	254 4260 919	Electrolytic 0.22µF/50V	CE04W1HR22M
R194-198	247 0009 943	Chip Carbon 6.8kohm 1/10W	RM73B--682J	C044	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R199	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J	C045	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R201,202	247 0009 943	Chip Carbon 6.8kohm 1/10W	RM73B--682J	C046,047	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M
R203,204	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J	C048	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R205,206	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J	C049	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z
R207-210	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J	C050	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M
R211,212	247 0005 905	Chip Carbon 100ohm 1/10W	RM73B--101J				
R213,214	247 0007 945	Chip Carbon 1kohm 1/10W	RM73B--102J				
R215,216	247 0008 960	Chip Carbon 3.3kohm 1/10W	RM73B--332J				
R217-222	247 0009 985	Chip Carbon 10kohm 1/10W	RM73B--103J				

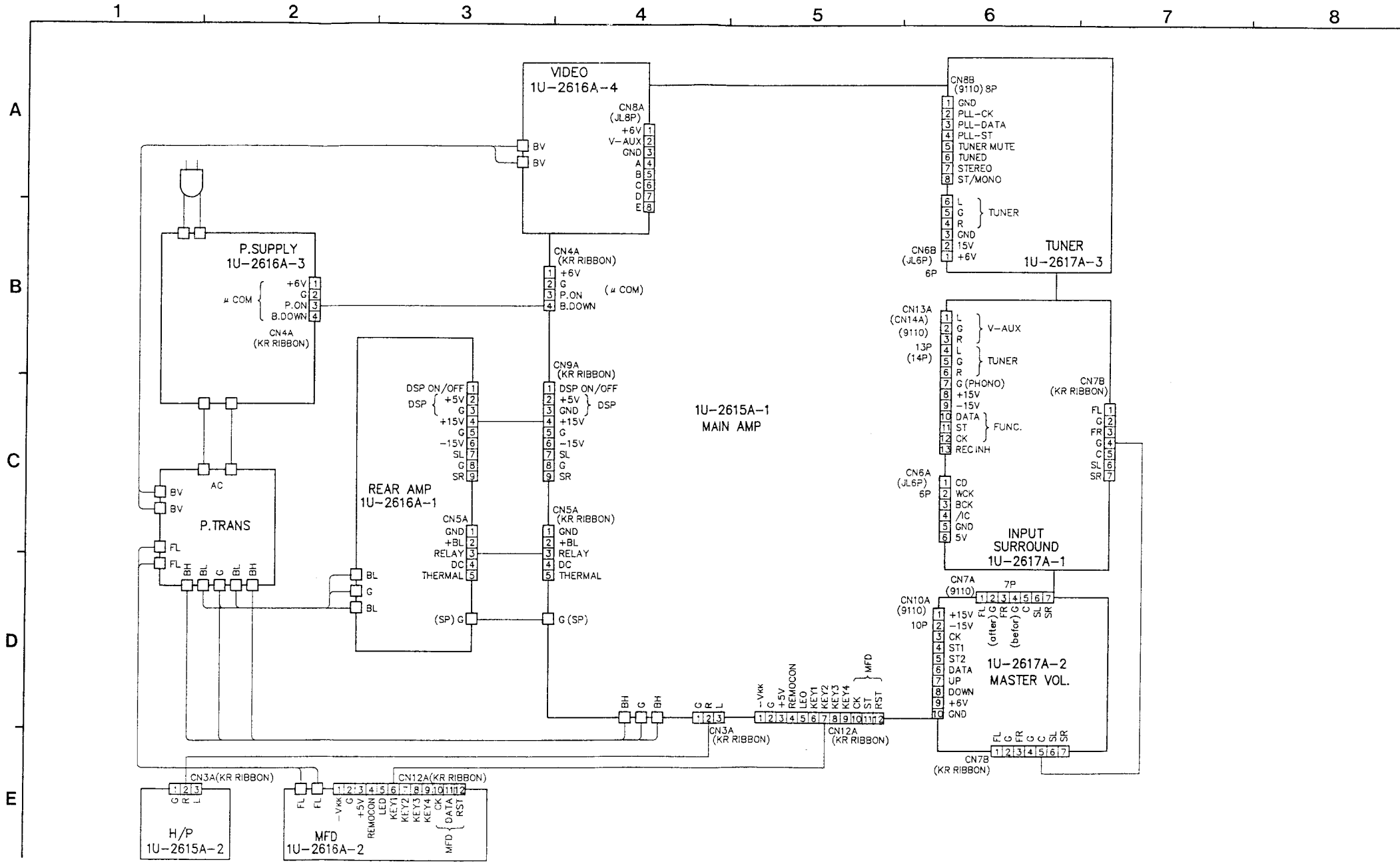
## AVR-1000

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks	Q'ty
C051	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M	C233,234	257 9039 003	Ceramic 0.1µF/25V	CK45=1H104Z	
C052	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	C251,252	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z	
C053,054	257 0005 986	Chip Ceramic 330pF/50V	CC73SL1H331J	C253,254	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	
C056,057	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z	C255	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	
C059-061	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z	C256	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	
C063	254 4254 909	Electrolytic 100µF/16V	CE04W1C101M	C269	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M	
C101,102	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J	C270	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z	
C103,104	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	C271	254 3056 917	Electrolytic 1µF/50V	CE04D1H010MBP	
C105,106	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J			(Bipole)		
C107,108	254 4254 925	Electrolytic 33µF/16V	CE04W1C330M	C272	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z	
C109,110	255 1264 995	Plastic Film 0.005µF/50V	CQ93M1H562J(B)	C273	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	
C111,112	257 0009 908	Chip Ceramic 1500pF/50V	CK73B1H152K	C275,276	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	
C113,114	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z	C277,278	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M	
C115,116	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M					
C121-128	257 0004 903	Chip Ceramic 56pF/50V	CC73SL1H560J	TC001	213 0041 034	Trimmer Condenser		1
C133-135	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M					
C136-138	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z					
C139	257 0009 924	Chip Ceramic 220pF/50V	CK73B1H222K					
C140,141	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z					
C142-144	257 0012 982	Chip Ceramic 0.022µF/50V	CK73F1H223Z					
C145,146	254 4261 918	Electrolytic 47µF/50V	CE04W1H470M			(P.W.Board)		1
C147,148	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	CF001	261 0064 007	Ceramic Filter SFT10.7MS2		1
C149,150	255 1264 908	Plastic Film 0.01µF/50V	CQ93M1H103(B)	CF002	261 0064 007	Ceramic Filter SFT10.7MS2		1
C151,152	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	CF003	261 0031 001	Ceramic Filter BFU450C4		1
C153,154	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	CF004	261 0079 005	Ceramic Filter CSB456F11		1
C157,158	254 4260 951	Electrolytic 2.2µF/50V	CE04W1H2R2M	CF005	261 0116 007	Ceramic Filter SFU450B3		1
C159,160	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M					
C161	254 4254 941	Electrolytic 100µF/16V	CE04W1C101M	L101	235 0060 989	Inductor 120 µH		1
C162	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z	LF001	232 0159 008	Anti Birdie Filter		1
C163	254 4252 930	Electrolytic 100µF/10V	CE04W1A101M	LF002,003	232 0085 004	Low Pass Filter		2
C164	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J	LF101	235 9003 002	FTZ Choke Coil		1
C165	254 4254 938	Electrolytic 47µF/16V	CE04W1C470M	LF102	235 9003 002	FTZ Choke Coil		1
C166	257 0006 927	Chip Ceramic 470pF/50V	CC73SL1H471J	LF103	232 0168 002	LC Filter		1
C167	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	LF104	232 0168 002	LC Filter		1
C168	257 0012 966	Chip Ceramic 0.01µF/50V	CK73F1H103Z					
C169,170	255 1264 966	Plastic Film 0.0033µF/50V	CQ93M1H332J(B)	XL001	399 0075 003	Crystal 7.2 MHz		1
C171	254 4250 932	Electrolytic 220µF/6.3V	CE04W10J221M	XL101	399 0209 905	Ceramic Resonator	CST11.2MTW040	1
C172	257 0014 935	Chip Ceramic 0.1µF/25V	CK73F1E104Z					
C173	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102k	T001	231 1127 007	MW Ant. Trans		1
C175,176	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	T002	231 1118 003	MW Osc. Coil		1
C177,178	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	T003	231 1138 009	AM IFT		1
C179,180	254 4258 905	Electrolytic 4.7µF/35V	CE04W1V4R7M	T004	231 2085 009	FM Det. Trans		1
C181	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M					
C182	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	FE001	205 0433 007	3P Ant. Terminal (DIN)		1
C183	254 4258 905	Electrolytic 4.7µF/35V	CE04W1V4R7M		216 0065 006	Front End		1
C184	256 1035 936	Metalized 0.33µF/50V	CF93A1H334J		204 8313 003	4P Pin Jack(S-GND)		2
C185,186	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J		204 8346 009	6P Pin Jack(S-GND)		1
C187,188	254 4254 909	Electrolytic 10µF/16V	CE04W1C100M	CN6A	205 0748 064	JL Connector(R)		1
C189	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	CN6B	205 0748 064	JL Connector(R)		1
C191-194	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	CN8B	205 0536 001	8P Conn. Socket		1
C196	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J	CN8C	205 0536 001	8P Conn. Socket		1
C198	254 4260 948	Electrolytic 1µF/50V	CE04W1H010M	CN7B	205 0343 074	7P Conn. Base(KR-PH)		2
C203,204	253 1126 901	Plastic Film 150pF/500V	CK45B2H151K	CN10A	205 0536 056	10P Conn. Socket		1
C205,206	257 0009 908	Chip Ceramic 1500pF/50V	CK73B1H152K	CN13A	205 0708 004	13P Conn. Socket		1
C207,208	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J		203 0426 005	1P Conn. Cord Assy		
C209,210	257 0009 953	Chip Ceramic 3900pF/50V	CK73B1H392K		415 0309 013	P.V.C. Tube (L=10)		6
C211,212	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M		461 0415 007	Rubber Sheet		1
C215,216	253 4488 905	Ceramic 56pF/500V	CC45SL2H560J		414 0695 009	Shield Plate		1
C217,218	254 4260 906	Electrolytic 0.1µF/50V	CE04W1H0R1M					
C219,220	257 0009 908	Chip Ceramic 1500pF/50V	CK73B1H152K					
C221,222	257 0005 944	Chip Ceramic 220pF/50V	CC73SL1H221J					
C223,224	257 0009 953	Chip Ceramic 3900pF/50V	CK73B1H392K					
C229	253 1004 007	Ceramic 100pF/50V	CK45B1H101K					
C230	253 1124 903	Ceramic 100pF/500V	CK45B2H101K					
C231,232	253 1004 007	Ceramic 0.001µF/50V	CK45B1H102K					

BLOCK DIAGRAM



WIRING DIAGRAM



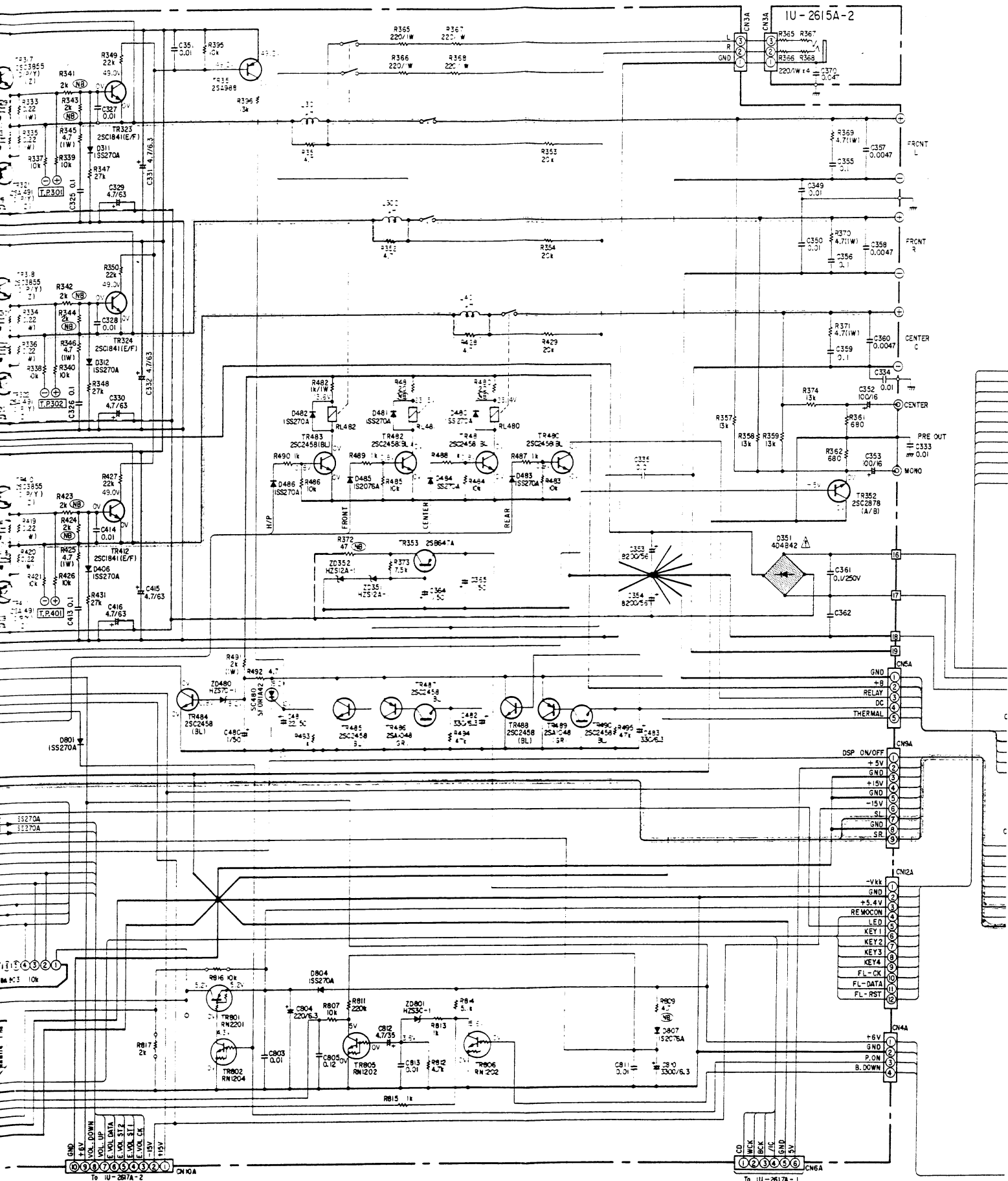


5

6

7

8

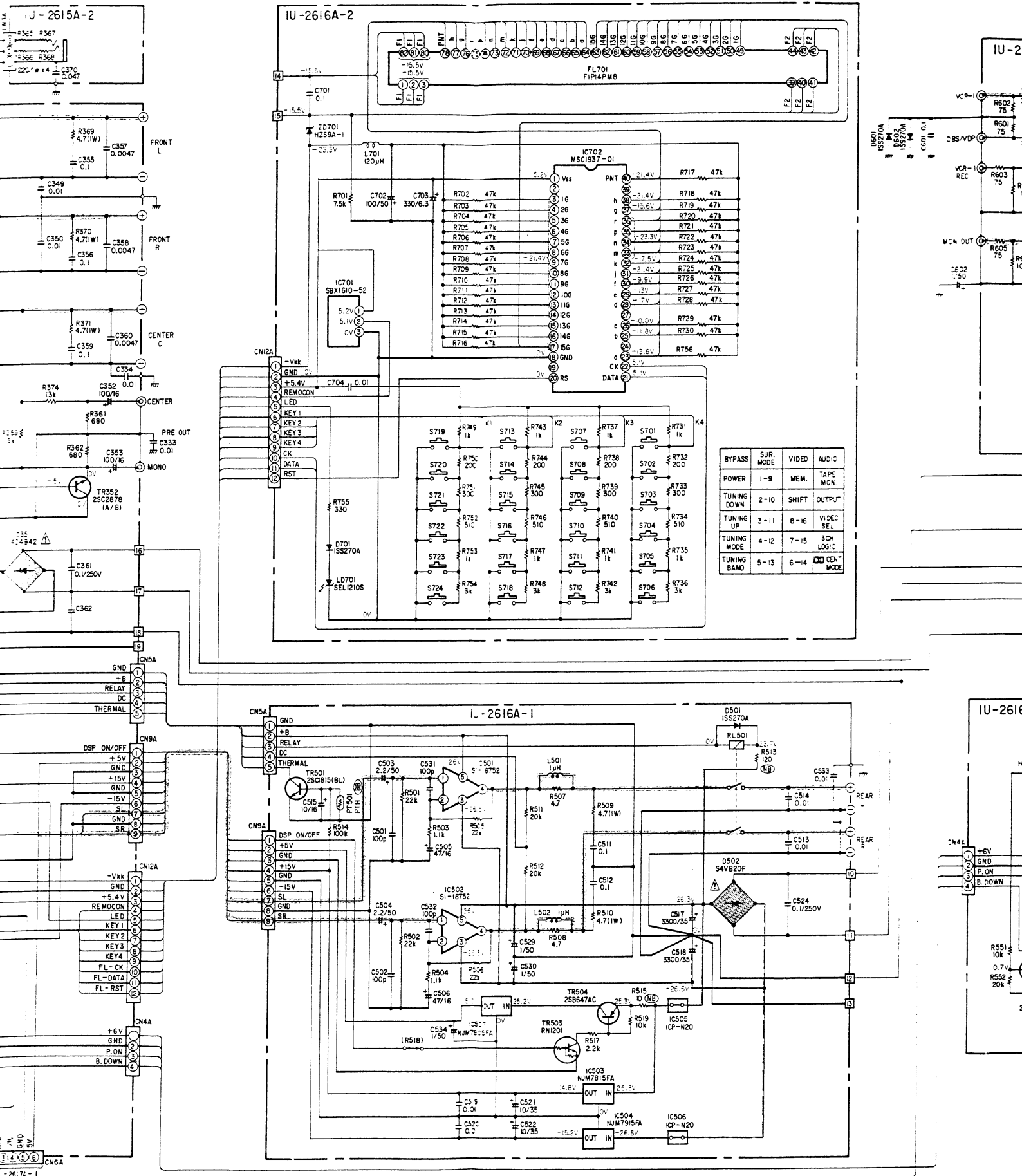


8

9

10

11



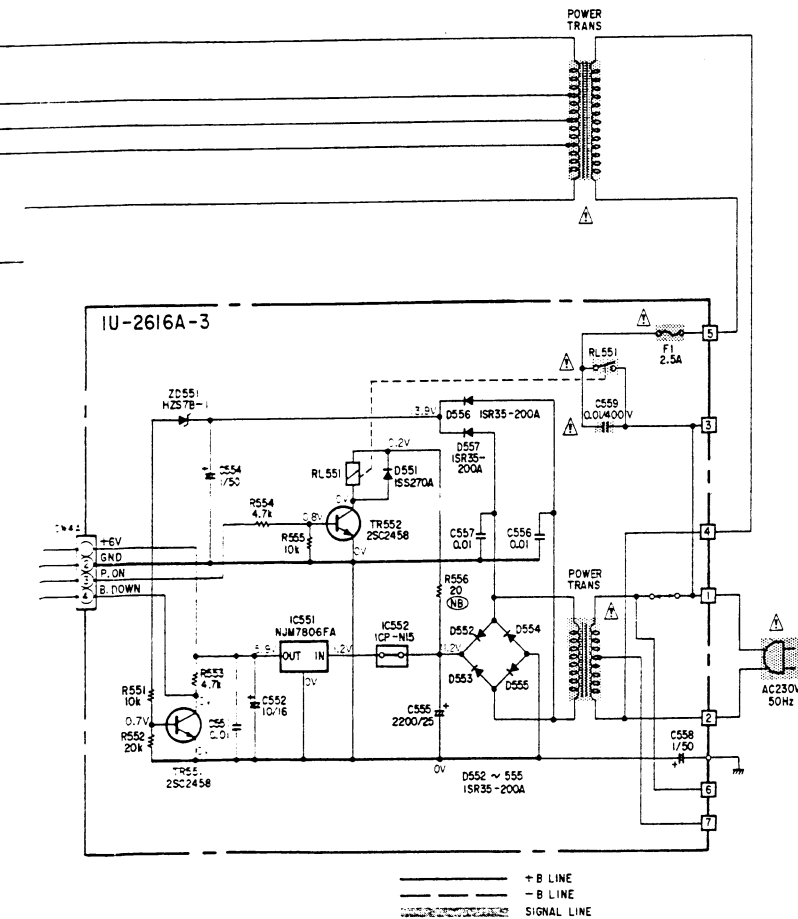
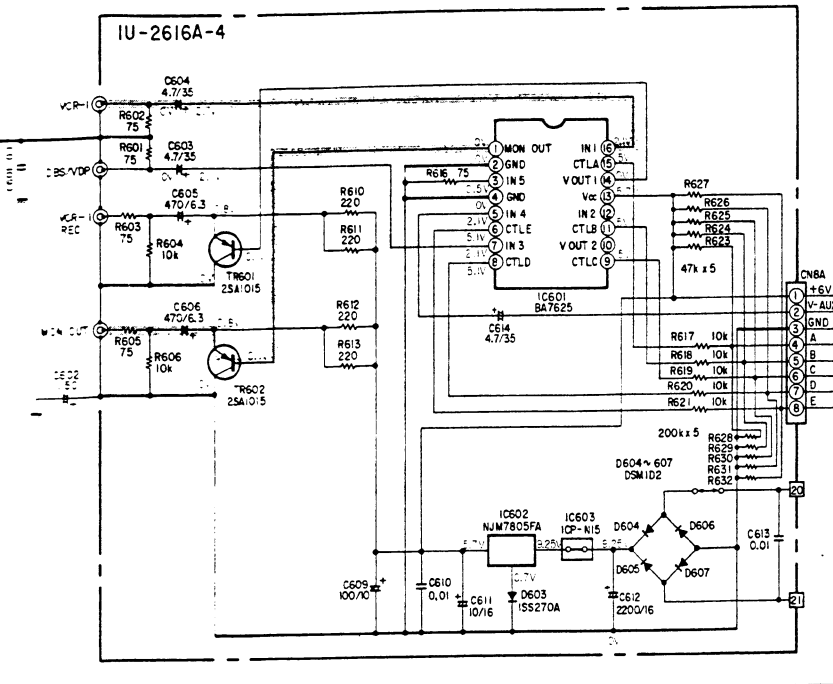


12

13

14

15



**NOTES**


ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**WARNING:**

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

**CAUTION:**

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

**WARNING:**

DO NOT return the unit to the customer until the problem is located and corrected.

A

B

C

D

E

SCHEMATIC DIAGRAM-2/3

1 2 3 4

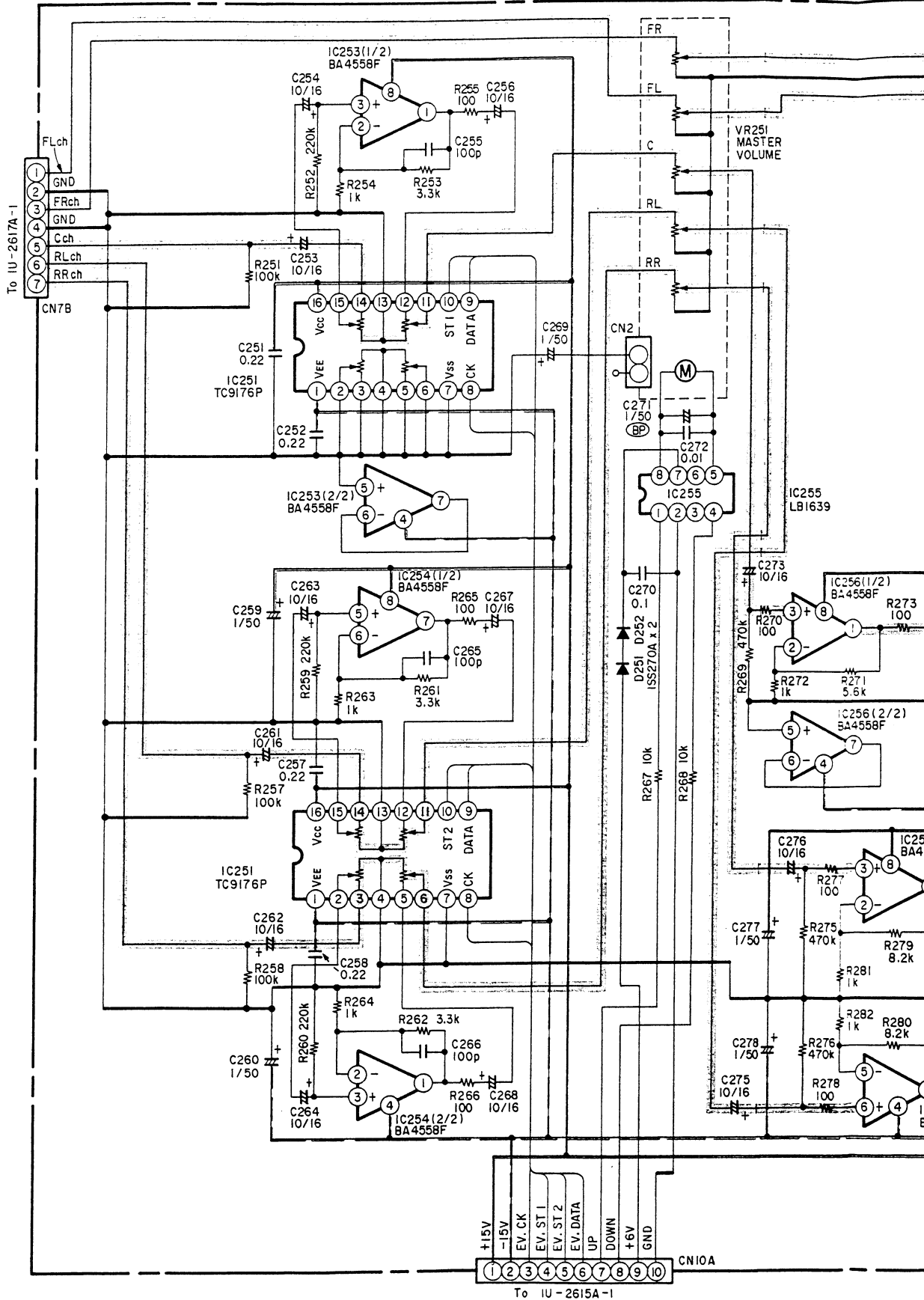
A

B

C

D

E

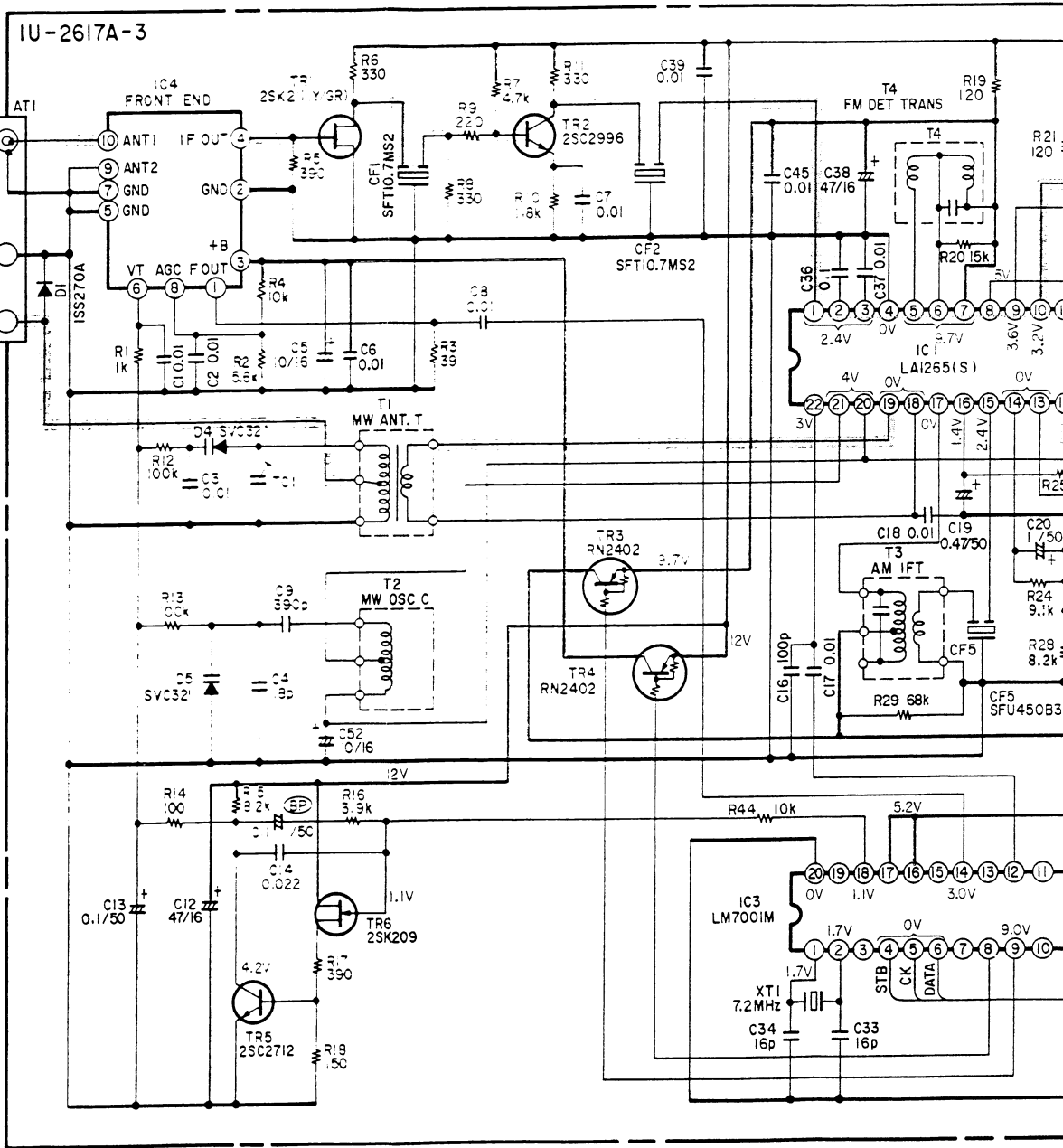
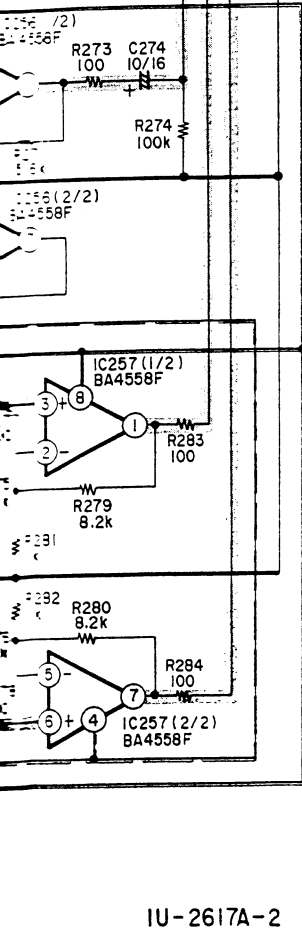
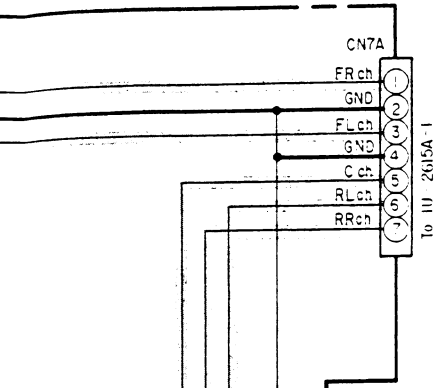


5

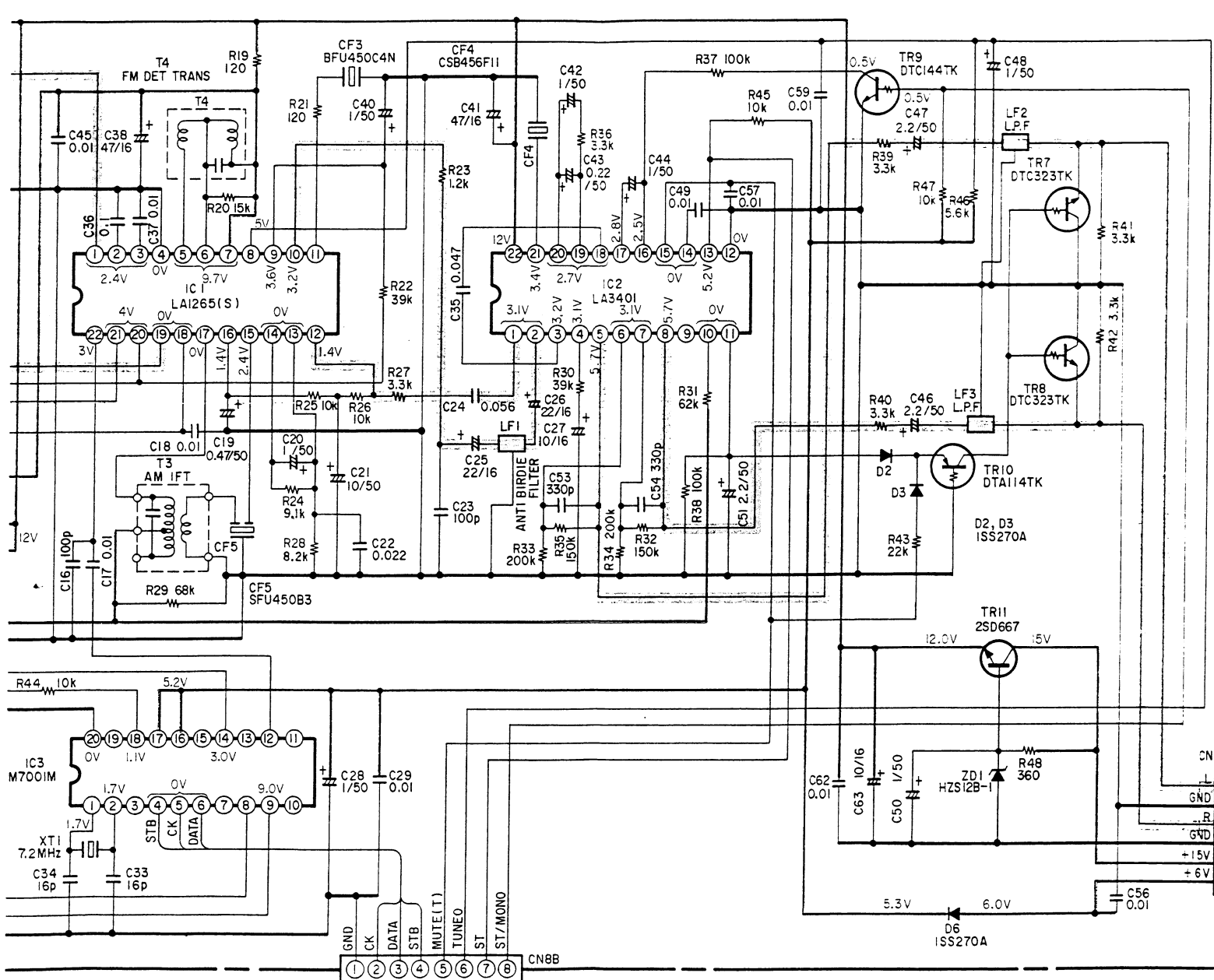
6

7

8



IU-2617A-2



To IU-2615A-1

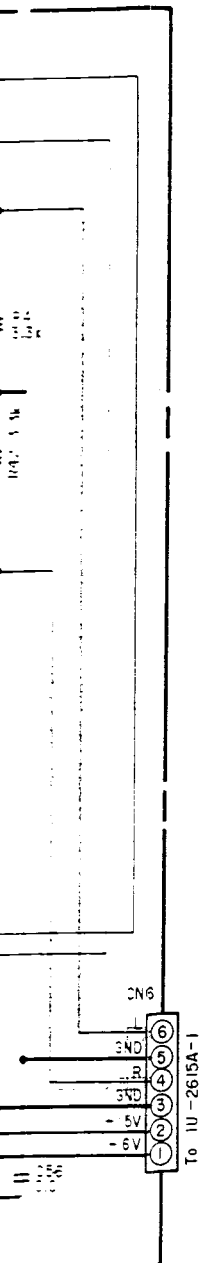
- + B LINE
- - - - - B LINE
- FM SIGNAL LINE
- AM SIGNAL LINE

12

13

14

15

**NOTES**

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM  
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT  
 CONDITION.  
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR  
 NOTICE.

**WARNING:**

Parts marked with this symbol  have critical characteristics.  
 Use ONLY replacement parts recommended by the manufacturer.

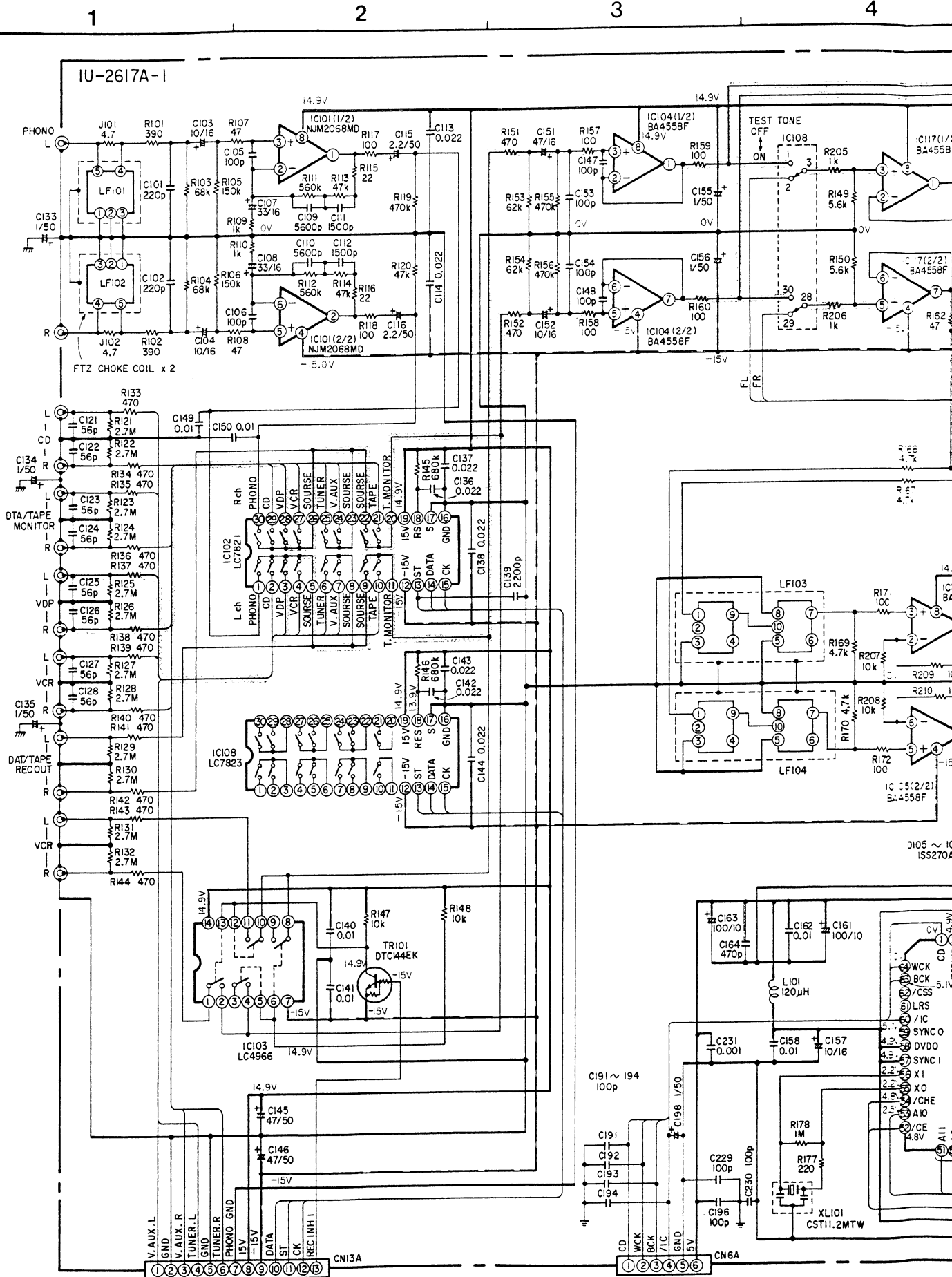
**CAUTION:**

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

**WARNING:**

DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM-3/3

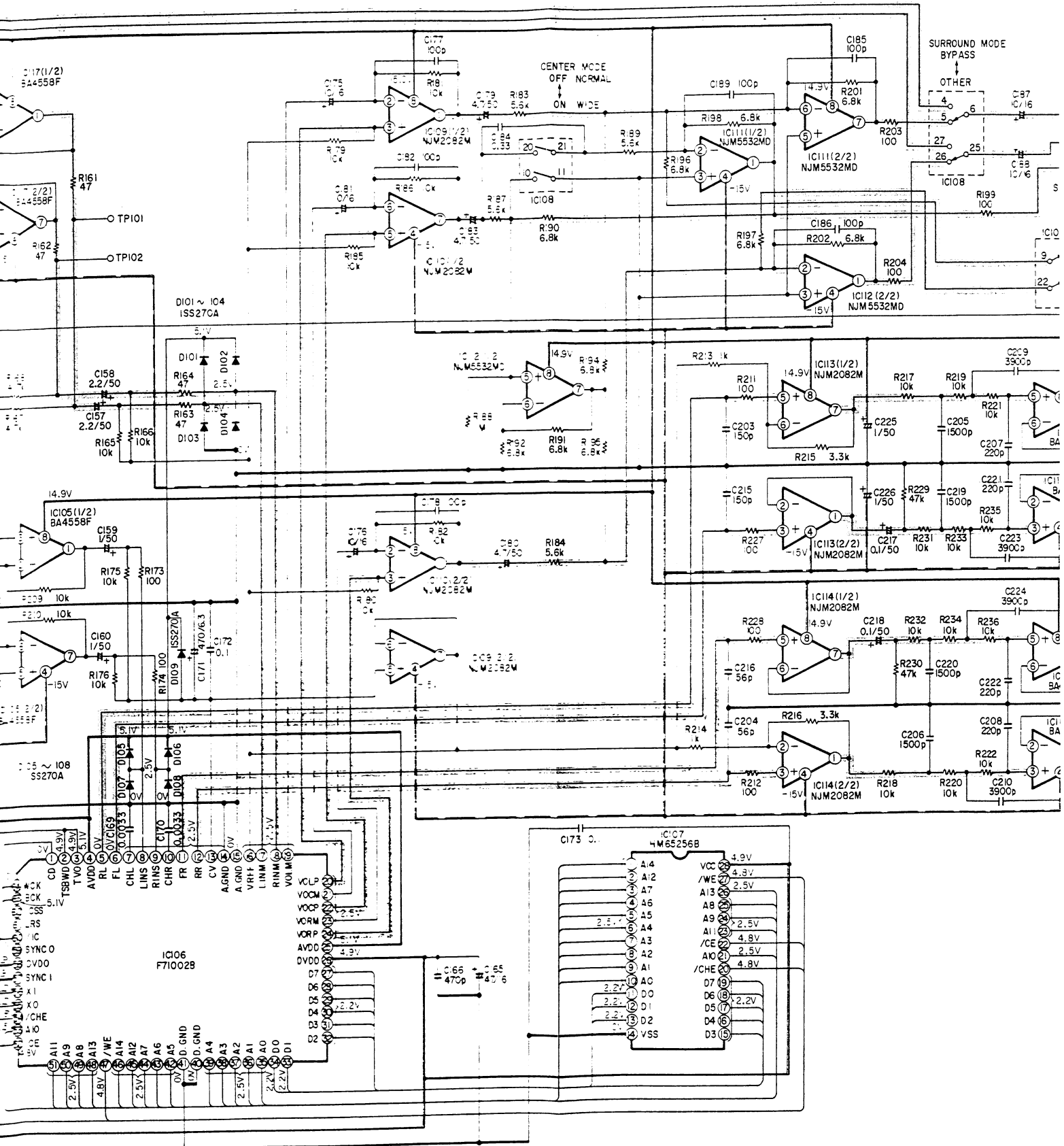


5

6

7

8

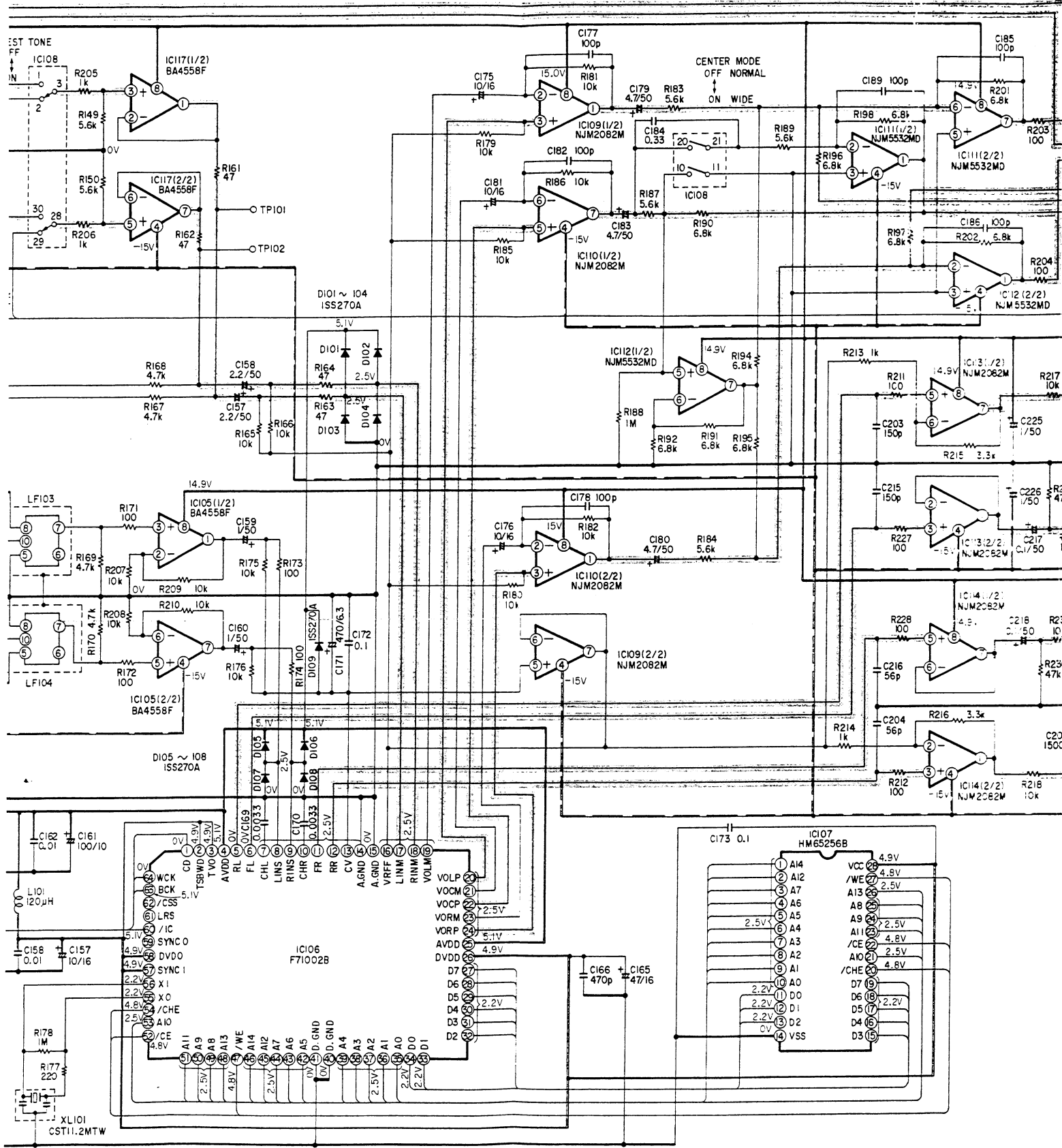


4

5

6

7



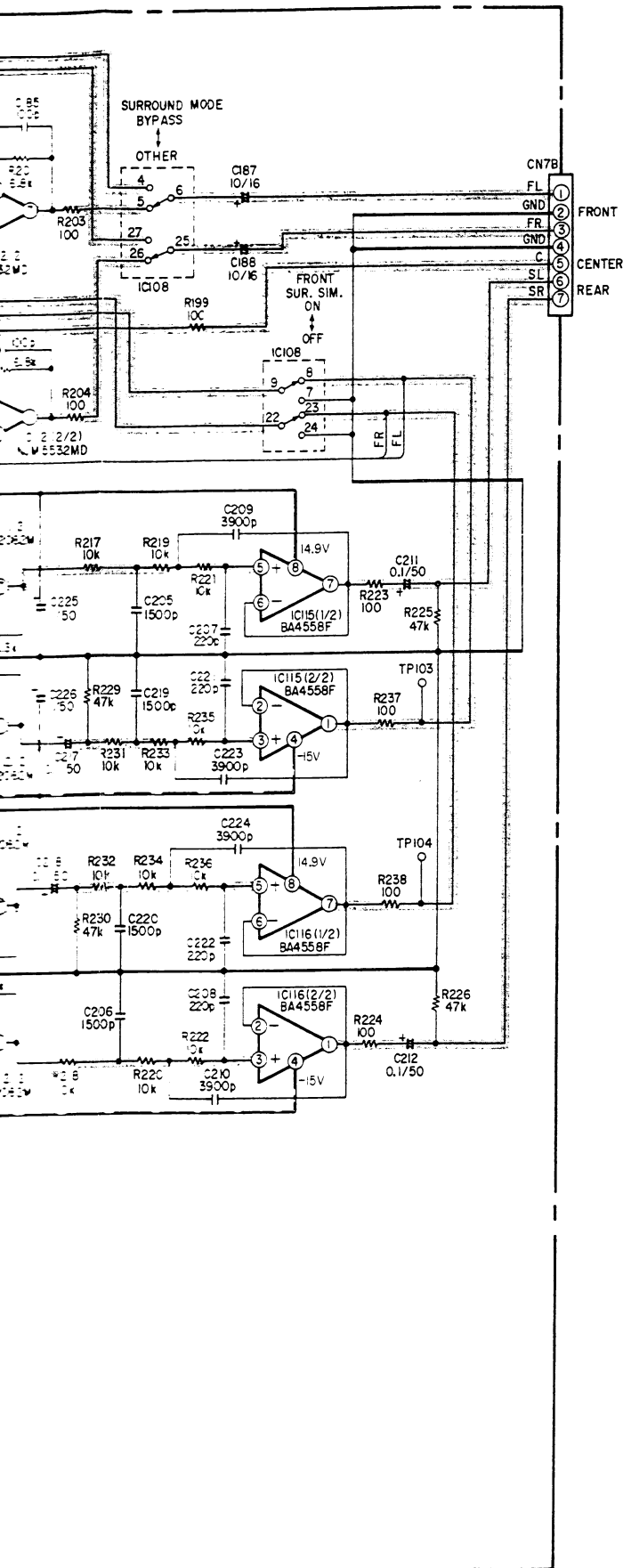


8

9

10

11



A

B

C

D

E

**NOTES**


ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD

EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.

CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**WARNING:**

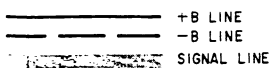
Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

**CAUTION:**

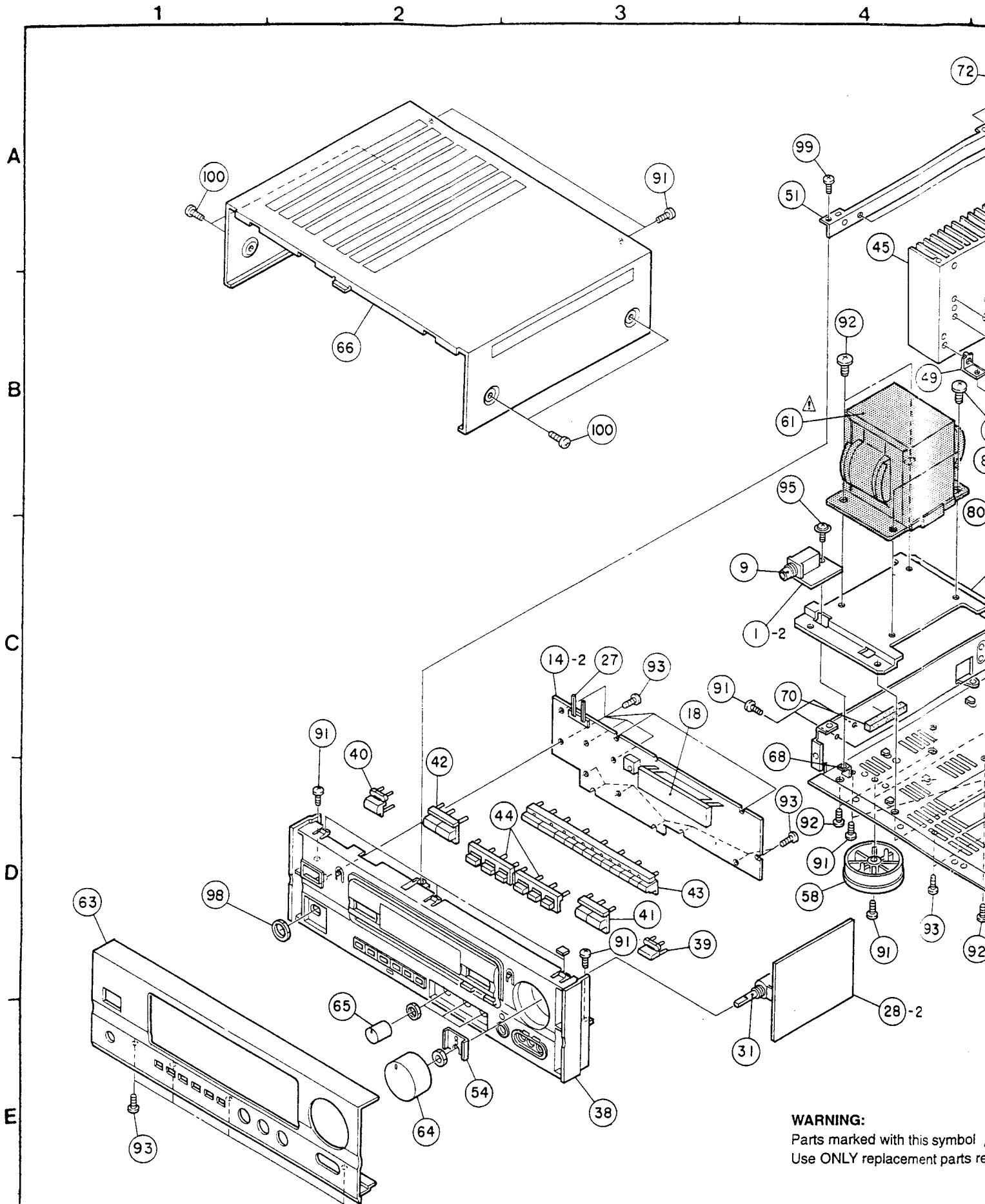
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

**WARNING:**

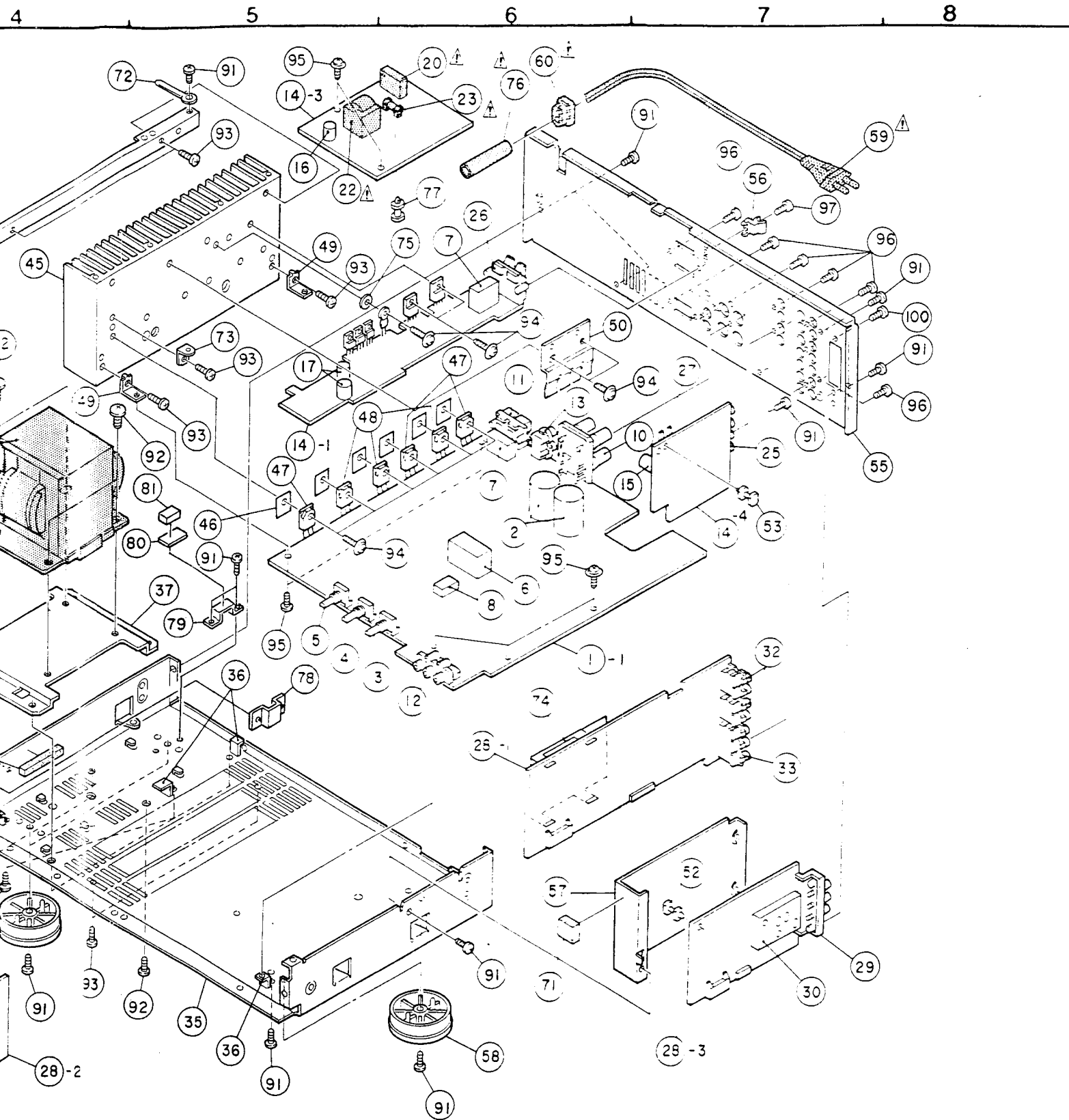
DO NOT return the unit to the customer until the problem is located and corrected.



### EXPLODED VIEW OF CHASSIS AND CABINET



**WARNING:**  
Parts marked with this symbol ▲  
Use ONLY replacement parts re

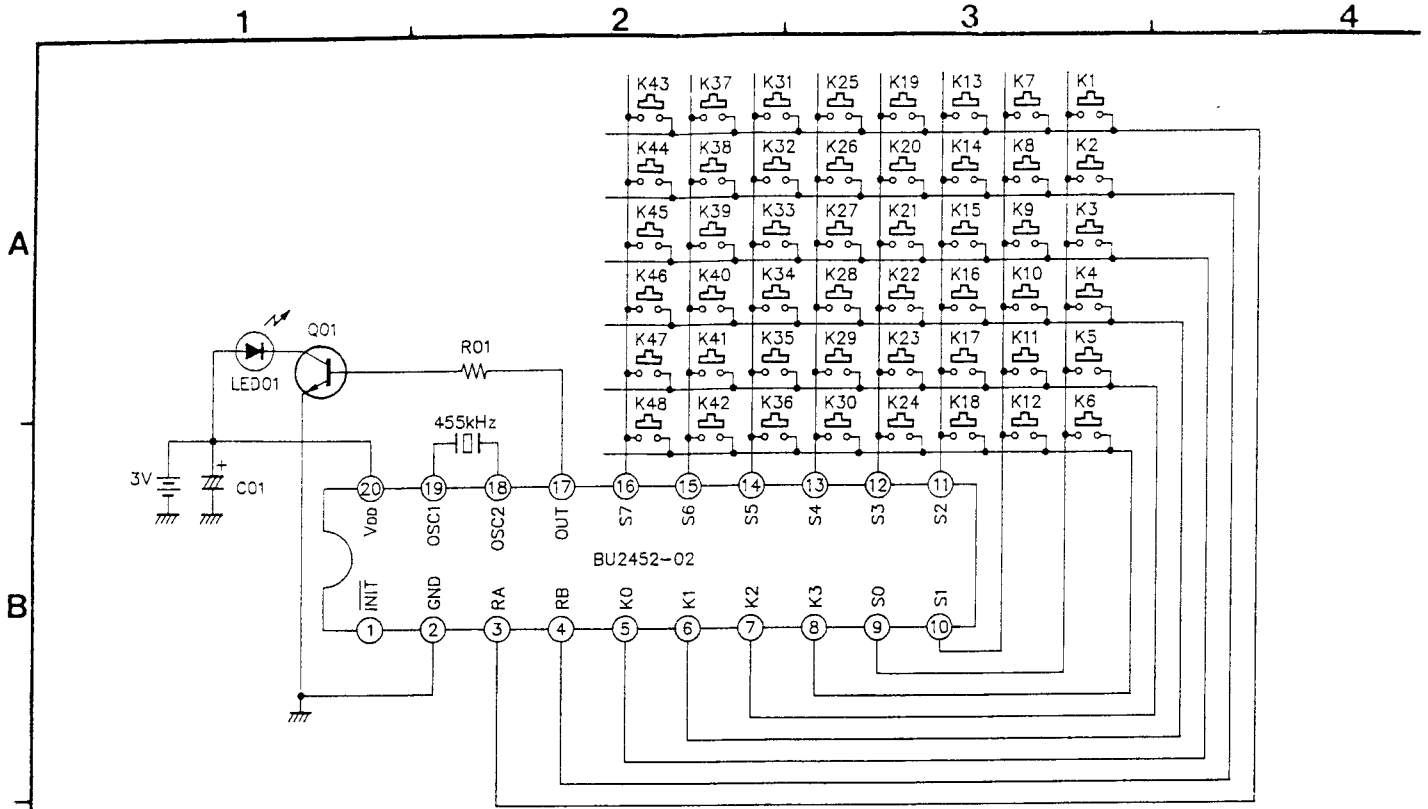


▲ ▨  
marked with this symbol ▲ ▨ have critical characteristics.  
ONLY replacement parts recommended by the manufacturer.

## PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	1U-2615A	Main Amp. Unit Ass'y		1 <sup>S</sup>	52	412 2814 044	Card Spacer(L=6)		1
-1-1	—	Main Amp. Unit		(1)	53	412 2814 028	Card Spacer(L=10)		1
-1-2	—	Headphone Unit		(1)	54	412 2897 100	VR. Bracket		1
2	254 4374 708	Chemicon 8200µF/56V	C353,354	2	55	105 1093 117	Rear Panel		1
3	211 0798 006	Variable Resistor 100kohm	Balance	1	56	146 0925 009	Ant. Holder		1
4	211 0797 010	Variable Resistor 30 kohm	Bass	1	57	414 0692 002	Shield Cover		1
5	211 0797 007	Variable Resistor 5 kohm	Treble	1	58	104 0194 108	Foot Ass'y		2
6	214 9003 005	Relay	RL481	1	59	206 2063 009	AC Cord(with Plug)		1
7	214 0167 000	Relay(G5Z-2A)	RL480,501	2	60	445 0056 008	Cord Bush		1
8	214 0162 000	Relay(A12W-K)	RL482	1	61	233 6065 005	Power Trans		1
9	204 8354 004	Headphone Jack		1	62	445 8004 007	Wire Clamper		13
10	205 0551 002	4P Terminal	Front	1	63	144 2321 100	Front Panel		1
11	205 0695 007	2P Push Terminal (V-1)	Center	1	64	112 0569 242	VR. Knob Ass'y		1
12	204 8404 006	3P Pin Jack	V-AUX	1	65	112 0685 100	Knob(Round)		3
13	205 0315 002	2P Connector Base		1	66	102 0314 128	Top Cover		1
14	1U-2616A	Rear Amp. Unit Ass'y		1 <sup>S</sup>	67	513 2151 000	caution Label (A)		1
-14-1	—	Rear Amp. Unit		(1)	68	412 3705 000	Earth Bracket		1
-14-2	—	MFD Unit		(1)	69	513 2152 009	Caution Label (B)		1
-14-3	—	Power Supply Unit		(1)	70	461 0818 002	Rubber Sheet	60 × 10 × T10	1
-14-4	—	Video Unit		(1)	71	461 0114 010	Cushion	20 × 20 × T10	1
15	254 4254 792	Chemicon 2200µF/16V	C612	1	72	445 0048 003	Cord Holder (L=76)		1
16	254 4256 790	Chemicon 2200µF/25V	C555	1	73	412 3724 007	L Bracket		1
17	254 4259 014	Chemicon 3300µF/35V	C517, 518	2	74	414 0695 009	Shield Plate		1
18	393 4131 000	FLD(FIP14PM8)		1	75	415 0505 008	F.S. Washer		1
19	—	—		—	76	415 0364 032	U.L. Tube (φ 8.3)		1
20	214 0120 013	Relay(TV-8)		1	77	412 2814 057	Card Spacer (L=12)		1
21	—	—		—	78	412 2955 107	Side Bracket		1
22	233 6058 009	Power Trans(Mini)		1	79	412 3769 004	Bracket		1
23	216 1015 032	Fuse 2.5A/250V	F001	1	80	415 0445 061	Insulating Sheet		1
24	—	—		—	81	461 0830 006	Rubber Sheet		1
25	204 8309 004	4P Pin Jack(C-GND)		1	<b>SCREWS</b>				
26	205 0592 003	4P Push Terminal		1	91	473 7015 018	Tapping Screw(S)3×8	Black	21
27	205 0075 025	2P Terminal		2	92	473 7007 000	Tapping Screw(S)4×8	Black	3
28	1U-2617A	Surround Unit Ass'y		1 <sup>S</sup>	93	473 7501 001	Tapping Screw(P)3×10		26
-28-1	—	Surround Unit		(1)	94	473 8007 009	Cup Screw 3×12		12
-28-2	—	Volume Unit		(1)	95	473 8007 025	Cup Screw 3×8		8
-28-3	—	Tuner Unit		(1)	96	477 0064 107	Fixing Screw		13
29	205 0433 007	3P Ant. Terminal (DIN)		1	97	473 7006 027	Tapping Screw(S) 3×10	Black	1
30	216 0065 006	Front End	FE001	1	98	475 6102 009	12Nut	attached	1
31	211 0637 002	Variable Resistor 100kohm	VR251	1	99	475 7500 015	Tapping Screw(P) 3×8		1
32	204 8313 003	4P Pin Jack(S-GND)		2	100	477 0263 005	3P switching Screw		1
33	204 8346 009	6P Pin Jack(S-GND)		1	<b>PACKING &amp; ACCESORIES</b>				
34	—	—		—	101	504 0092 060	Stylen Paper	for AC cord	1
35	411 1256 309	Main Chassis		1	102	504 9102 029	Stylen Paper	for Set	1
36	412 3702 003	P.W.B Bracket		4	103	505 9102 019	Poly Cover		1
37	412 3715 003	Trans Bracket		1	104	503 1096 004	Cushion		2
38	146 1464 417	Inner Panel Ass'y		1	105	GEN 2487-1	Envelope Sub Ass'y		1 <sup>S</sup>
39	113 1465 047	Push Knob(P)		1	105-1	505 8006 019	Envelope		(1)
40	113 1292 207	Push Knob(P)		1	105-2	511 2532 005	Inst. Manual		(1)
41	113 1535 087	Function Knob(B)		1	105-3	399 0210 004	Remote Control	RC-167	(1)
42	113 1535 090	Function Knob(B)		1	105-4	—	Battery		(2)
43	113 1566 140	Pre-set Knob		1	105-5	231 1129 005	Loop Antenna		(1)
44	113 1454 207	Tact Knob		2	105-6	395 0021 000	FM Ant. Ass'y		(1)
45	417 0479 208	Power Radiator		1	106	501 1709 007	Carton Case		1
46	415 0234 007	Insulating Sheet		6	107	502 0741 048	Pad		1
47	271 0240 006	Transistor 2SA1491(O/P/Y)(Z)	TR321,322,411	3	108	—	—		—
48	273 0389 002	Transistor 2SC3855(O/P/Y)(Z)	TR317,318,410	3					
49	412 3225 108	P.W.B Bracket(A)		2					
50	412 3314 200	Spring Plate(A)		1					
51	412 3526 302	Radiator Bracket		1					

SCHEMATIC DIAGRAM (RC-167)



SPECIFICATIONS

- When each Key is pressed double transmission is not performed.  
When one side is released from double pressed state, transmit code on unreleased side.

NOTES

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM  
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

REMOTE CONTROL UNIT ASS'Y

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
<b>SEMICONDUCTORS GROUP</b>				
IC1	—	IC BU2462-02	μ-Com	
Q1	—	Transistor 2SC3377 (Q/R)		
or	273 0195 908	Transistor 2SC2060 (Q/R)		
LED1	—	LED SE303ARF-CX/Y	Infrared	
or	—	LED SID1K10CXM	Infrared	
<b>RESISTORS GROUP</b>				
R1	241 2397 901	Carbon Resistor 220ohm, 1/10W	RD14B2E221J(S)	
<b>CAPACITORS GROUP</b>				
C1	254 4213 021	Electrolytic 47μF/6.3V	CE04W0J470M	
<b>OTHER GROUP</b>				
X1	—	(P.W. Boardd) Ceramic Resonator	CSB455EB	(1) 1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1		Case Top Ass'y		1
2		Panel		1
3		Switch Rubber		1
4	9H3 1000 146	Case Bottom Ass'y		1
5	9H3 1000 147	Cover Battery		1
6	—	Tapping Screw 2.6 × 12		1
7	—	Filter		1
8	9H3 1000 151	Spring Coil		1
9	9H3 1000 152	Spring Coil		1
10	9H3 1000 125	Poly Cover	85 × 250	1
11	9H3 1000 156	P.W.B. Unit Ass'y		1 <sup>S</sup>

## CORDS TABLE

KEY No.	System address					Custom code						Extension	Mask	Judgment	Remarks	Item No.1	Item No.2	Item No.3	
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14		K	RC-167		
K1	0	1	0	0	0	0	1	1	0	1	1	1	1	0	0	CENTER ▼	○		
K2	0	1	0	0	0	0	0	1	0	1	1	1	1	0	0	REAR ▼	○		
K3	0	0	1	1	0	1	0	0	1	0	1	0	1	0	0	MEMOLY	○		
K4	0	0	1	1	0	0	1	0	1	0	1	0	1	0	0	1	○		
K5	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	DISC SKIP	○		
K6	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	VDP/D&S	○		
K7	0	1	0	0	0	1	0	1	0	1	1	1	1	0	0	CENTER ▲	○		
K8	0	1	0	0	0	1	1	0	0	1	1	1	1	0	0	REAR ▲	○		
K9	0	1	0	0	0	0	1	0	0	1	1	1	1	0	0	MASTER VOLUME ▼	○		
K10	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	CD PLAY (▶)	○		
K11	0	0	1	0	0	0	1	1	1	1	0	1	0	0	0	DECK STOP (■)	○		
K12	0	1	0	0	0	1	1	0	0	0	0	1	1	0	0	PHONO	○		
K13	0	0	1	1	0	0	0	1	0	0	1	0	1	0	0	SET - (DELAY -)	○		
K14	0	0	1	1	0	0	1	0	0	0	1	0	1	0	0	CLEAR	○		
K15	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	MASTER VOLUME ▲	○		
K16	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0	CD STOP (■)	○		
K17	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0	DECK A/B	○		
K18	0	1	0	0	0	0	1	0	0	1	0	1	1	0	0	DAT/TAPE MONITER	○		
K19	0	0	1	1	0	1	1	0	0	0	1	0	1	0	0	SET + (DELAY +)	○		
K20	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	PARAMETER	○		
K21	0	1	0	0	0	1	1	1	0	0	0	1	1	0	0	BYPASS	○		
K22	0	0	1	1	0	1	1	0	1	0	1	0	1	0	0	2	○		
K23	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	AUTO SERCH + (⏪)	○		
K24	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	SURROUND MODE	○		
K25	0	0	1	1	0	1	0	1	0	1	0	1	1	0	0	PRESET ▼	○		
K26	0	1	0	0	0	1	0	1	0	0	0	1	1	0	0	TUNER	○		
K27	0	1	0	0	0	0	1	0	1	0	1	1	1	0	0	T. TONE	○		
K28	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	CD PAUSE (  )	○		
K29	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	AUTO SERCH - (⏩)	○		
K30	0	1	0	0	0	0	1	1	1	1	0	1	1	0	0	PANEL	○		
K31	0	0	1	1	0	0	1	1	0	1	0	1	1	0	0	PRESET ▲	○		
K32	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	VIDEO SELECT	○		
K33	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	CD	○		
K34	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	DECK PLAY (▶)	○		
K35	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0	DECK FF (▶▶)	○		
K36	0	1	0	0	0	0	0	0	0	1	1	1	1	0	0	MUTING	○		
K37	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	POWER	○		
K38	0	1	0	0	0	0	0	1	1	0	0	1	1	0	0	V. AUX	○		
K39	0	1	0	0	0	1	0	1	1	0	0	1	1	0	0	VCR	○		
K40	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	DECK PLAY (REV ◀)	○		
K41	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0	DECK REW (◀◀)	○		
K42	0	1	0	0	0	0	1	1	1	0	0	1	1	0	0	VCR-2	○		
K43	0	1	0	0	0	1	1	0	0	1	0	1	1	0	0	DAT/TAPE-2			
K44	0	0	1	1	0	0	0	1	1	0	0	0	1	0	0	CD-DILECT			
K45	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	◀◀ CENTER MODE			
K46	0	0	1	1	0	0	1	1	0	0	1	0	1	0	0	EFFECT			
K47	0	1	0	0	0	1	0	0	1	1	0	1	1	0	0	A.V.S.E			
K48	0	1	0	0	0	1	0	1	0	1	0	1	1	0	0	CINEMA			

## NOTE FOR PARTS LIST

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

## WARNING:

Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.