

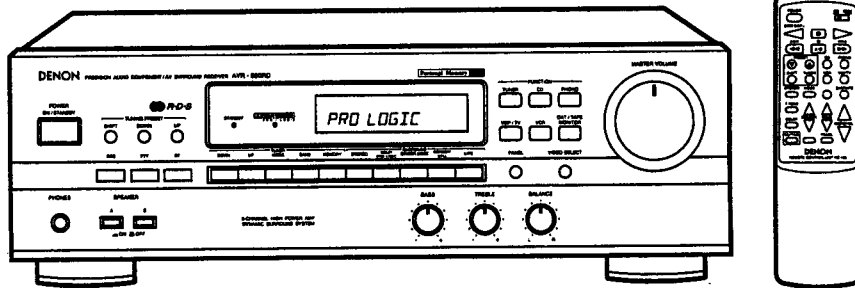
# DENON

Hi-Fi AV Surround Receiver

## SERVICE MANUAL

# MODEL AVR-950RD

### AV SURROUND RECEIVER



For servicing, refer to the service manual of AVR-900 already issued at the same time. This service manual is common to AVR-900 including operating instruction, exploded view, printed wiring board, schematic diagram etc. Also, it is mentioned to only difference for parts list of P.W. Board.

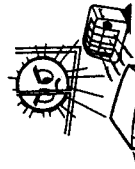
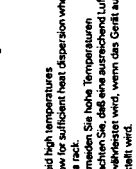

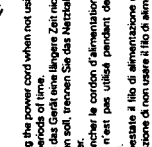
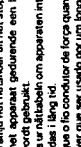
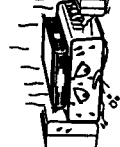
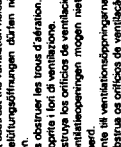

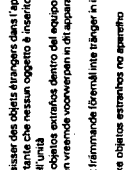

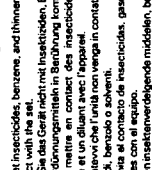
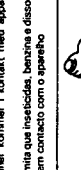

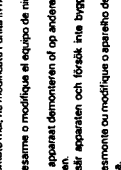
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## NIPPON COLUMBIA CO. LTD.

1 INTRODUCTION / EINFÜHRUNG / INTRODUCTION / 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 / OBSERVAÇÕES QUANTO AO USO

 <ul style="list-style-type: none"> <li>● Avoid high temperatures. Allow for sufficient heat dissipation when installed on a rack.</li> <li>● Beachten Sie das hohe Ausmaß der Luftumwälzung, wenn das Gerät auf ein Regal gestellt wird.</li> <li>● Éviter des températures élevées. Prévoir une dissipation de chaleur suffisante lorsque l'appareil est installé sur un socle.</li> <li>● Evitare di esporre l'unità a temperature alte.</li> <li>● Cuidado suficiente de dispersión de calor cuando el equipo se instala en un estante.</li> <li>● Vermeid hohe temperaturen. Zieh vor ein geeignetes Hitzespeicher einbauen, damit die Wärme abgeführt werden kann.</li> <li>● Se jal all linn madaltem, tall gaad äärmusvaheld- ning und monitoring'i etti reakt.</li> <li>● Evite temperaturas altas. Conceda suficiente dispersión de calor cuando o equipamento for instalado numa prateleira.</li> </ul>	 <ul style="list-style-type: none"> <li>● Keep the set free from moisture, water and dust. 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>● Utställ inte apparaten för fukt, vatten och damm.</li> <li>● Mantenha o aparelho livre de qualquer umidade, água ou poeira.</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 lorsque l'appareil n'est pas utilisé pendant de longues périodes.</li> <li>● Demontare il filo di alimentazione quando avete intenzione di non usare il ricevitore per un lungo periodo di tempo.</li> <li>● Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.</li> <li>● Nimm altijd het netkabel uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt.</li> <li>● Kopdu ar šaltakabli su aparatu nite kolmer at ar atvaidas ilāgu lūd.</li> <li>● Desligue o fio condutor de força quando o aparelho não estiver em uso por um longo período.</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>● E' importante che nessun oggetto è inserito all'interno del ricevitore.</li> <li>● No deje objetos extraños dentro del equipo.</li> <li>● Laat geen vreemde voorwerpen in het apparaat vallen.</li> <li>● Se tall all främmande föremål inte tillåter i apparaten.</li> <li>● Não deixe objetos estranhos no aparelho.</li> </ul>	 <ul style="list-style-type: none"> <li>● Do not let insecticide, 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 ou des diluants avec l'appareil.</li> <li>● Assicurarsi 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 insecticide, benzine of oplosmiddelen in contact met het apparaat.</li> <li>● Se tall all nite insektivaadid, bensina või lahutusvahetid kontakti aparatuuriga.</li> <li>● Não permita que inseticidas, benzina e dissolventes entrem em contacto com o aparelho.</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 quelconque.</li> <li>● Non smontare mai, né modificare l'unità in nessun modo.</li> <li>● Nunca desarme o modifique el equipo de ninguna manera.</li> <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 quelconque.</li> <li>● Non smontare mai, né modificare l'unità in nessun modo.</li> <li>● Nunca desarme o modifique el equipo de ninguna manera.</li> </ul>	 <ul style="list-style-type: none"> <li>● Do not obstruct the ventilation holes.</li> <li>● Die Belüftungöffnungen dürfen nicht verdeckt werden.</li> <li>● Ne pas obstruer les trous de ventilation.</li> <li>● Non coprire le fori di ventilazione.</li> <li>● Não obstrua as aberturas de ventilação.</li> <li>● Die ventilationsopeningen mogen niet worden bedekt.</li> <li>● Täp ei ole ventilatsioonipinnaga.</li> <li>● Não obstrua os orifícios de ventilação.</li> </ul>
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■ We greatly appreciate your purchase of the AVR-900/950RD.  
 ■ Model AVR-950RD has the same specifications as the AVR-900 except for the addition of the RDS broadcast reception function.  
 ■ To be sure you take maximum advantage of all the features the AVR-900/950RD 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.

■ Wir begrüßen Ihren Kauf des AVR-900/950RD außerordentlich.  
 ■ Das Modell AVR-950RD hat die gleichen technischen Daten wie das Modell AVR-900, mit Ausnahme der zusätzlichen RDS-Rundfunkempfangsfunktion.  
 ■ Lesen Sie sich diese Bedienungsanleitung sorgfältig durch und bedienen Sie die Anlage richtig, damit Sie alle Merkmale, die der AVR-900/950RD zu bieten hat, maximal ausnutzen können. Bewahren Sie diese Bedienungsanleitung gut auf, so daß Sie Ihnen bei eventuell auftretenden Fragen oder Störungen, jederzeit als Referenz zur Verfügung steht.

■ Nous vous remercions de l'achat de cet ampli-tuner AVR-900/950RD.  
 ■ Le modèle AVR-950RD possède les mêmes caractéristiques que le modèle AVR-900 sauf pour l'addition de la fonction de réception d'émission RDS.  
 ■ Prière de lire attentivement ce mode d'emploi afin d'obtenir la meilleure performance et une longue durée de vie sans problème de cet ampli-tuner AVR-900/950RD. S'assurer de conserver ce mode d'emploi pour s'y référer ultérieurement.

■ Apprezziamo veramente il fatto che voi avete acquistato l'AVR-900/950RD.  
 ■ Il modello AVR-950RD presenta le stesse caratteristiche del modello AVR-900 ad eccezione della funzione di ricezione delle stazioni RDS.  
 ■ Leggete questo manuale attentamente ed usate l'unità in modo corretto per ottenere le migliori prestazioni di tutte le caratteristiche dell'AVR-900/950RD. Tenete questo manuale in un luogo sicuro per futuri riferimenti in caso sorgessero dei dubbi.

■ Le estamos sinceramente agradecidos por su compra del AVR-900/950RD.  
 ■ El modelo AVR-950RD tiene las mismas especificaciones que el AVR-900, excepto por el hecho de que además incorpora la función de recepción de emisiones RDS.  
 ■ A fin de aprovechar plenamente las características del AVR-900/950RD, le detenidamente este manual de instrucciones antes de usar la unidad, asegúrese de operar la unidad correctamente, de acuerdo a las instrucciones. Conserve este manual para futuras consultas en caso de dudas o problemas.

■ Wij stellen het zeer op prijs dat u de AVR-900/950RD heeft gekocht.  
 ■ Het model AVR-950RD heeft dezelfde technische gegevens als de AVR-900, maar beschikt daarnaast ook over de functie voor ontvangst van RDS-uitzendingen.  
 ■ Om alle kenmerken die de AVR-900/950RD te bieden heeft optimaal te kunnen benutten, is het nodig dat u deze gebruiksaanwijzing nauwkeurig doorleest en dat u het toestel juist gebruikt. Houd de handleiding bij zodat u ze later kan raadplegen wanneer u vragen heeft of zich eventueel problemen voordoen.

■ Vi tackar dig för ditt val av AVR-900/950RD.  
 ■ Modell AVR-950RD har samma specifikationer som AVR-900 bortsett från att den också är försedd med RDS-funktioner för radiomottagning.  
 ■ Läs bruksanvisningen nog och följ föreskrifterna, så att du säkert kan utnyttja egenskaperna hos din AVR-900/950RD på bästa sätt. Behåll bruksanvisningen som hjälp i framtiden om frågor eller problem skulle uppstå.

**DECLARATION OF CONFORMITY**

We declare under our sole responsibility that the product AV surround receiver AVR-900/950RD to which this declaration relates is in conformity with the following standards: EN55013, EN55020, EN60565-2 and EN60565-3.

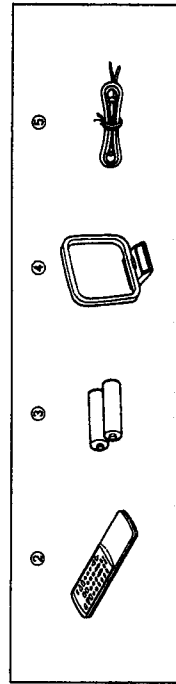
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**ACCESSORIES**

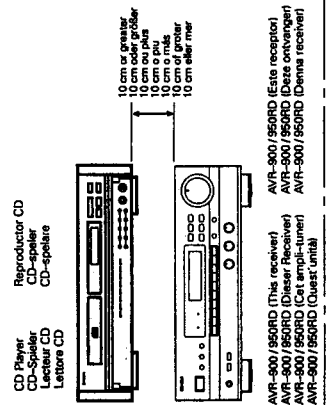
Check that the following parts are included in addition to the main unit:

- 1 Operating instructions
- 2 Remote control unit (RC-195)
- 3 RFP/AA batteries
- 4 AM loop antenna
- 5 FM indoor antenna



**"SERIAL NO.**  
**PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"**

**A note on stacking/Hinweis zum Aufeinanderstellen von Geräten/Remarque sur la juxtaposition/Nota sulla sovrapposizione/Aggiungimento/En opmerking t.v.m. het op elkaar plaatsen van de toestellen/Stapelung av utrustningen:**



- **PRECAUCIONES DURANTE LA INSTALACION**  
 El uso simultáneo de este receptor o de otros equipos que contengan microprocesadores, con un sintonizador o televisor, podrá causar interferencias en el sonido o imagen.  
 Si se enciende, como se indica en las siguientes medidas:  
 ● Instale el receptor tan lejos del sintonizador o televisor como sea posible.  
 ● Mantenga las líneas de antena del sintonizador o la TV tan lejos como sea posible del cable de alimentación del receptor o de los cables de conexión.  
 ● Este problema será especialmente frecuente al usar antenas interiores o cables alimentadores de 300 ohms. Le recomendamos emplear antenas exteriores y cables coaxiales de 75 Ω/ohmios.  
 A fin de mantener una buena ventilación, no instale otro componente AV directamente encima del receptor. Asegúrese de dejar un espacio de por lo menos 10 cm.

- **VOORZORGSMAATREGELEN BIJ DE INSTALLATIE**  
 Het gebruik van deze ontvanger of andere elektronische toestellen die microprocessors bevatten in combinatie met een tuner of een TV kan leiden tot storing in het geluid of het beeld.  
 Tref de volgende maatregelen als dit gebeurt:  
 ● Installeer de ontvanger zo ver mogelijk uit de buurt van de tuner of TV.  
 ● Houd de antennesdraden van de tuner of de TV zo ver mogelijk uit de buurt van het net snoer en de aansluitkabels van de ontvanger.  
 ● Dit probleem stelt zich vooral bij gebruik van binnenantennes of voedingsdraden van 300 ohm. Wij raden u aan gebruik te maken van buitenantennes en koaxkabels van 75 Ω/ohm.

Zet geen andere audio/video-komponent direct bovenop de ontvanger, met het oog op afkoelen van de apparatuur. Wij raden u aan een ruimte open te laten van minstens 10 cm.

- **SÄRSKILDA PUNKTER VID INSTALLATIONEN**  
 Om receiver eller annan elektronisk utrustning som innehåller mikroprocessor står påslagen alltför nära en tuner eller TV kan brus i ljud eller bild uppstå.  
 Om så får om detta händer:  
 ● Flytta receivern så långt som möjligt från tunern eller TV:n.  
 ● Dra tunerns eller TV:n:s antennkablar så långt som möjligt från receiverns nätsladd och signalkablar.  
 ● Problemet är särskilt märkbart vid användning av inomhusantenner eller 300 ohmsiga matarkablar. Vi rekommenderar därför utomhusantenn och 75 Ω/ohmiga koaxialkablar.  
 Med tanke på kylningen får ingen annan apparat ställas direkt på receivern. Se till att det finns ett mellanrum på minst 10 cm.

- **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:  
 ● 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. We recommend using outdoor antennas and 75 Ω/ohms 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.

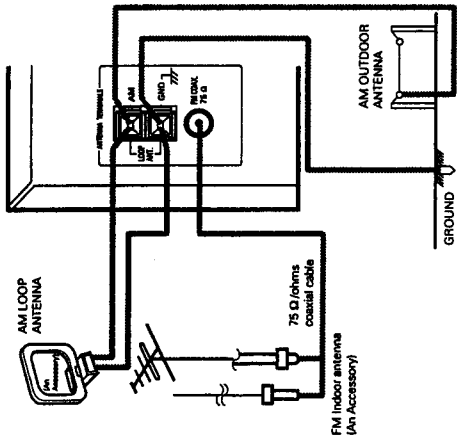
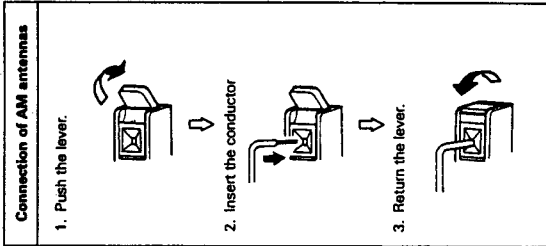
- **VORKEHRUNGEN ZUR INSTALLATION**  
 Wenn Sie diesen Receiver oder ein anderes elektronisches Gerät, das Mikroprozessoren beinhaltet, zusammen mit einem Tuner oder einem Fernsehgerät benutzen, so können daraus Ton- oder Bildstörungen resultieren.  
 Führen Sie in einem derartigen Fall die nachfolgend aufgeführten Schritte aus:  
 ● Installieren Sie den Receiver so weit wie möglich entfernt vom Tuner oder Fernsehgerät.  
 ● Halten Sie die Antennenleitungen des Tuners oder Fernsehgeräts soweit wie möglich vom Netzkabel und den Anschlusskabeln des Receivers entfernt.  
 ● Dieses Problem tritt besonders häufig bei der Verwendung von Innenantennen oder 300 Ohm Antennenleitungen auf. Wir empfehlen die Verwendung von 75Ω/Ohm Koaxialkabeln.  
 Stellen Sie kein anderes AV-Gerät direkt auf den Receiver, damit eine ausreichende Belüftung gewährleistet ist. Achten Sie darauf, daß stets ein Zwischenraum von mindestens 10 cm gegeben ist.

- **PRECAUTIONS D'INSTALLATION**  
 L'utilisation de cet ampli-tuner ou de tout autre appareil électronique à microprocesseur près d'un tuner ou d'un téléviseur peut produire des parasites dans le son ou l'image.  
 Si cela se produit, prendre les mesures suivantes:  
 ● Installer l'ampli-tuner aussi loin que possible du tuner ou du téléviseur.  
 ● Disposer les fils d'antenne du tuner et du téléviseur aussi loin que possible du cordon d'alimentation du récepteur et des câbles de connexion.  
 ● Du bruit et des parasites peuvent se produire en particulier lors de l'utilisation d'antennes intérieures ou de câbles d'alimentation de 300 ohms. L'utilisation d'antennes extérieures et de câbles coaxiaux de 75 Ω/ohms est recommandée.  
 Pour permettre la dissipation de la chaleur, ne pas placer un appareil audio/vidéo directement sur le dessus de l'ampli-tuner. Laisser un espace d'au moins 10 cm.

- **PRECAUZIONI RIGUARDANTI L'INSTALLAZIONE**  
 L'uso di questo ricevitore, o di altri componenti elettronici che contengono dei microprocessori, contemporaneamente con un sintonizzatore o un televisore potrebbe causare la generazione di rumore nel suono o nell'immagine.  
 In tal caso, procedere come segue:  
 ● Installare il ricevitore il più lontano possibile dal sintonizzatore o dal televisore.  
 ● Tenete le linee dell'antenna del sintonizzatore o del televisore il più lontano possibile dal cavo di alimentazione del ricevitore e dai cavi di collegamento.  
 ● Questo problema si verifica spesso quando vengono usate delle antenne interne oppure dei fili alimentatori da 300 ohm. Vi raccomandiamo l'uso di antenne esterne e di cavi coassiali da 75 Ω/ohm.  
 Per motivi di raffreddamento, non collocare un altro componente AV direttamente sopra il ricevitore. Assicurare quindi lasciare uno spazio di almeno 10 cm tra le unità.

**2 CONNECTIONS**

**2-1 Connecting the antenna terminals**



**ANTENNA INSTALLATION**

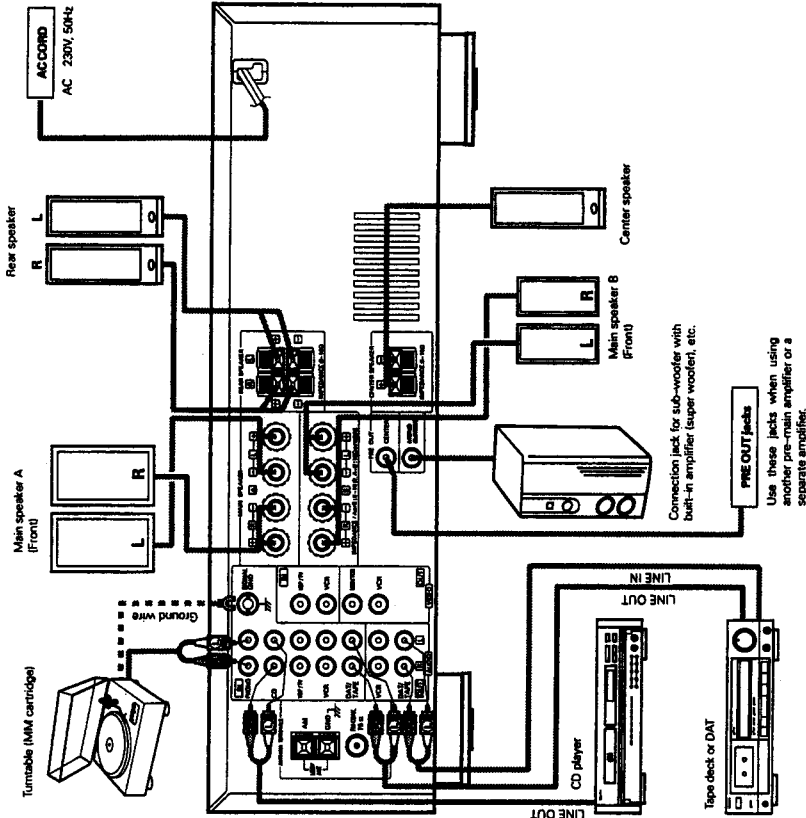
- **FM ANTENNA**  
The supplied FM antenna can be used inside wooden houses for receiving local FM stations and other strong FM signals. Stretch out the ends of the antenna and mount the antenna on the wall or ceiling where optimum reception is achieved. A indoor FM antennas may not consistently ensure stable reception, due to environment changes. In such cases, the indoor FM antenna should only be used temporarily until an outdoor FM antenna has been installed.  
When connecting an outdoor FM antenna, the use of 75  $\Omega$  Ohms coaxial cable (BC-2V, SC-2V) is strongly recommended.
  - **AM ANTENNA**  
Attach the supplied AM loop antenna even when using an outdoor AM antenna.  
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 disconnect the 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.

- 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-900/950RD on. If this happens, turn on the power of the AVR-900/950RD.

**2-2 Connecting the audio components**

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

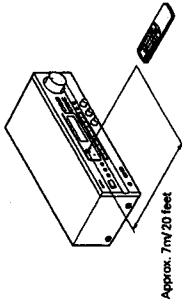


### 3 REMOTE CONTROL UNIT

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.

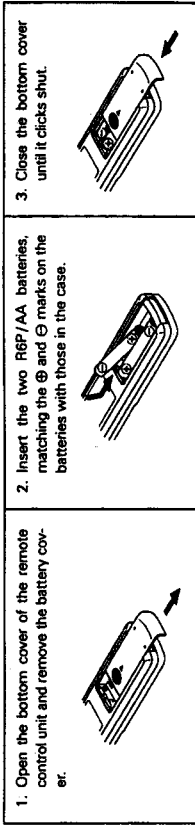


Approx. 7m/20 feet

#### NOTES:

- The remote control unit can be used from a straight distance of approximately 7 meters/20 feet, 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

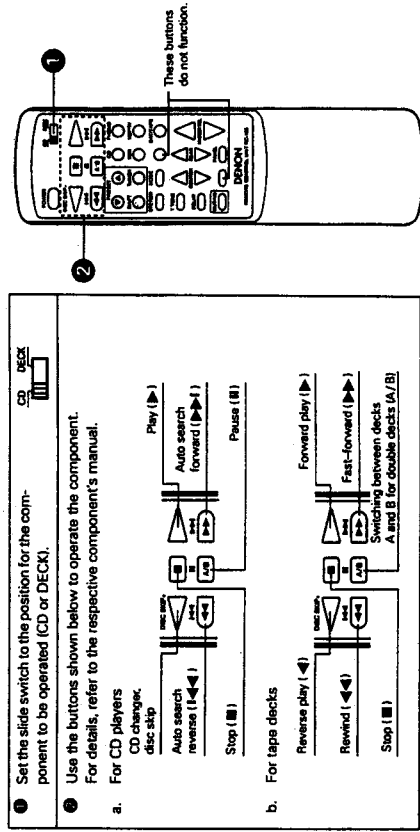


#### NOTES

- 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.
- Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.

#### System code buttons

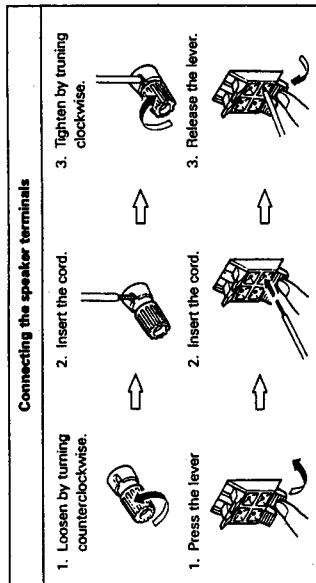
DENON remote-controllable audio components can be controlled using this unit's remote control unit. Note that some components, however, cannot be operated with this remote control unit.



- Set the slide switch to the position for the component to be operated (CD or DECK).
- Use the buttons shown below to operate the component. For details, refer to the respective component's manual.
  - For CD players:
    - Auto search reverse (⏮)
    - Auto search forward (⏭)
    - Play (▶)
    - CD change, disc skip (⏪)
    - Stop (■)
    - Pause (⏸)
  - For tape decks:
    - Reverse play (◀)
    - Rewind (⏮)
    - Stop (■)
    - Forward play (▶)
    - Fast-forward (⏭)
    - Switching between decks A and B for double decks (A/B)

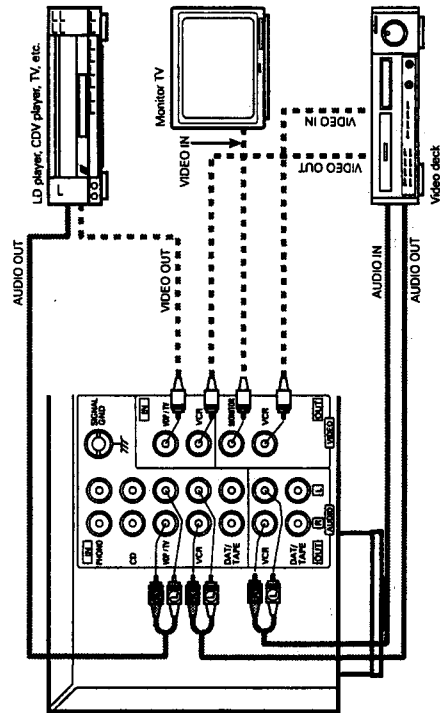
### 2-3 Speaker System Connections

- This receiver can accommodate connections of a total of seven speakers including two set of (front) main amplifier speakers (A and B), 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 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.







### 2-4 Connecting the video components

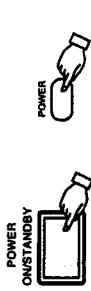
To connect the video signal, connect using a 75 Ω/ohms video signal cable cord. Using an improper cable can result in a drop in sound quality.



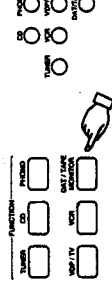


## 4 OPERATIONS


### 4-1 Preparations for Play Back

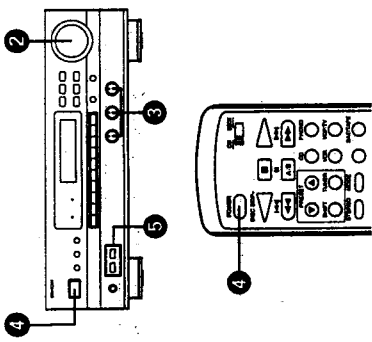
- Check that all connections are proper.
  - Set to the minimum position.
- MASTER VOLUME
- 
- Set to the center position.
- 
- 
- 
- Press the power button to turn the power on.



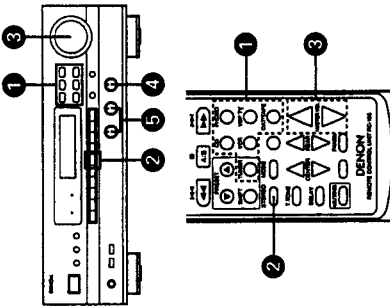
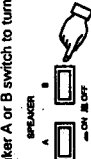
### 4-2 Playing the program source (Stereo play back)

- Select the source to be played.
- 
- Select the STEREO mode.
- 
- Adjust the MASTER VOLUME control.
- 

- Adjust the front left/right BALANCE.
- Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.
- 



- Select the front speakers.
- Press the speaker A or B switch to turn the speaker on.



- Adjust the BASS and TREBLE.




Turn the control clockwise to increase the bass, counter-clockwise to decrease it.

Turn the control clockwise to increase the treble, counter-clockwise to decrease it.

### 4-3 Simulcast playback

Use this switch to monitor a video source other than the audio source.

- Press and hold the VIDEO SELECT button until the desired source appears on the display.
- 
- The source switches as shown above.

- Canceling simulcast playback
- Press the VIDEO SELECT button once more.
- Select the VIDEO function.

### 4-4 Using the muting function

Use this to turn off the audio output temporarily.

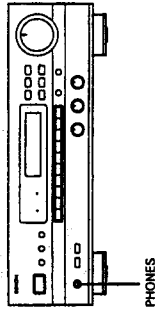
- Press the MUTING button.
- Canceling MUTING mode
- Press the MUTING button again.



This function can only be set from the remote control unit. The STANDBY LED flashes when the muting function is set.

### 4-5 Listen with headphones

Connect the headphones to the PHONES jacks. When listening with headphones privately, set A, B SPEAKER switches and the superwoofer's power switch to the OFF position and set the stereo surround mode.



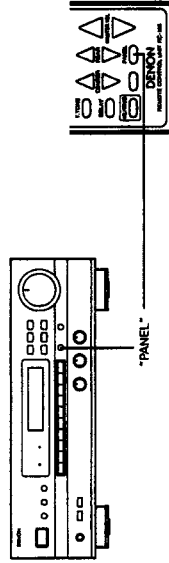
- Start recording on the tape or video deck.
- For instructions, refer to the component's operating instructions.

### 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.

### 4-7 Front panel display

Descriptions of the unit's operations are also displayed on the front panel display. In addition, the display can be switched to check the unit's operating status while playing a source by pressing the PANEL button.




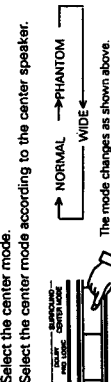




### 4-8 Using the surround function

Types of surround modes and their characteristics

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround or Dolby stereo.
2	CONCERT HALL	Use this setting to create the atmosphere of a concert hall. There will be no output from the center speaker.
3	LIVE	Use this setting to create the atmosphere of watching a live performance. There will be no output from the center speaker.

**Before using the surround function**

Make the following adjustments before using the surround function.

1. Set the Dolby Pro Logic mode. 
2. Select the center mode. Select the center mode according to the center speaker.  The mode changes as shown above.
3. Emit the test tone. 
4. Adjust the center and rear levels to set the volume of the speakers to the same level. 
5. Turn the test tone off. 
6. Adjust the delay time and seating position as necessary. 

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.



**Center Mode**

Set the center mode as described below, according to the type of center speaker being used.

**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 depth of the sound.

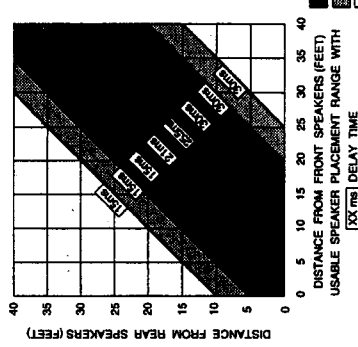
**Wide mode:** This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

**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.

**Delay Time**

The optimum delay time will differ depending on the listening position. Referring to the chart at left, 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 20 feet and that from the rear speakers to the listening position is 15 feet, the optimum delay time will be 21 ms.

The variable range of the delay time differs depending on the mode.



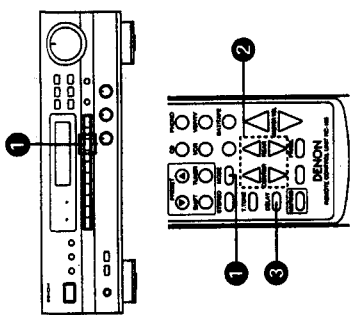
Legend for chart:  
 ■ PREFERRED  
 ■ ACCEPTABLE  
 □ NOT RECOMMENDED

**Personal Memory Plus function ... for EASY TO USE**

The AVR-900/950RD automatically stores the surround mode adding effects for all input sources. The corresponding surround mode is recalled automatically each time an input source is selected.

**Using the surround function**

1. Select the surround mode according to the input source. 
2. If necessary, adjust the levels. 
3. Adjust the parameters to the desired settings. 



Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under Canadian patent number 1,037,877. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

**Operating 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	TEST TONE	DELAY TIME
DOLBY PRO LOGIC	NORMAL	O (0--24dB)	O (0--24dB)	O	O	O (15--30ms)
	PHANTOM	x	O (0--24dB)	O	O	O (15--30ms)
	WIDE	O (0--24dB)	O (0--24dB)	O	O	O (15--30ms)
CONCERT HALL	O	x	O (0--24dB)	Δ <sup>1</sup>	x	O (0--33ms)
LIVE	O	x	O (0--24dB)	Δ <sup>1</sup>	x	O (0--33ms)

\*1 Switches to the Dolby Pro Logic from any modes other than Dolby Pro Logic. The level of the center and rear channels can be adjusted by 2 dB step. The delay time can be set by 1.5 ms step.

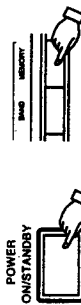
- The sound may be distorted for some sources if the rear level is raised during surround playback. If this happens, lower the rear level.

**5 LISTENING TO THE RADIO**

**5-1 Auto preset memory**

This unit is equipped with a function for automatically searching for FM broadcast stations and storing them in the preset memory.

1. Press the POWER button while holding in the MEMORY button. The unit automatically begins searching for FM broadcast stations.



2. When the first FM broadcast station is found, that station is stored in the preset memory at channel A1. Subsequent stations are automatically stored in order at preset channels A2 to A8, B1 to B8, C1 to C8, D1 to D8 and E1 to E8, for a maximum of 40 stations.

3. Channel A1 is tuned in after the auto preset memory operation is completed.

**NOTES:**

- If an FM station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then press it using the manual "Preset memory" operation.
- RDS stations are stored in the memory with priority.
- To interrupt this function, press the power button.

### 5-2 Auto tuning

- 1 Set the input function to "TUNER".



- 2 Watching the display, press the BAND button to select the desired band (AM or FM).



- 3 Press the MODE button to set the auto tuning mode.



"AUTO" appears on the display.

If tuning does not stop at the desired station, use the "Manual tuning" operation.

### 5-3 Manual tuning

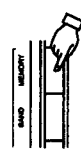
- 1 Set the input function to "TUNER".
- 2 Watching the display, press the BAND button to select the desired band (AM or FM).
- 3 Press the MODE button to set the manual tuning mode. Check that the display's "AUTO" indicator turns off.

#### NOTES:

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

### 5-4 Preset memory

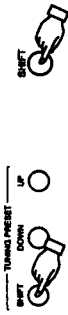
- 1 Use the "Auto tuning" or "Manual tuning" operation to tune in the station to be preset in the memory.
- 2 Press the MEMORY button.
- 3 Press the SHIFT button and select the desired memory block (A to E).
- 4 Press the PRESET UP or DOWN button to select the desired preset channel (1 to 8).



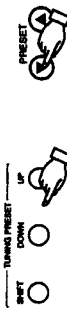
To preset other channels, repeat steps 3 to 5. A total of 40 broadcast stations can be preset — 8 stations (channels 1 to 8) in each of blocks A to E.

### 5-5 Recalling preset stations

- 1 Watching the display, press the SHIFT button to select the preset memory block.



- 2 Watching the display, press the PRESET UP or DOWN button to select the desired preset channel.



### 5-6 RDS (Radio Data System) (for AVR-950RD only)

RDS (works only on the FM band) is a broadcasting service which allows station to send additional information along with the regular radio program signal.

The following three types of RDS information can be received on this unit:

#### Program Type (PTY)

PTY identifies the type of RDS program. The program types and their displays are as follows:

NEWS	(News)	VARIED	(Varied)
AFFAIRS	(Current Affairs)	POP M	(Pop Music)
INFO	(Information)	ROCK M	(Rock Music)
SPORT	(Sports)	MOR M	(M.O.R. Music)
EDUCATE	(Education)	LIGHT M	(Light Classics)
DRAMA	(Drama)	CLASSICS	(Serious Classics)
CULTURE	(Culture)	OTHER M	(Other Music)
SCIENCE	(Science)		

#### Traffic Program (TP)

TP identifies programs that carry traffic announcements. This allows you to easily find out the latest traffic conditions in your area before you leaving home.

#### Radio Text (RT)

RT allows the RDS station to send text messages that appear on the display.

### 5-7 RDS search (for AVR-950RD only)

Use this function to automatically tune to FM stations that provide RDS service.

- 1 Set the input function to "TUNER".



- 2 Press the RDS button until "RDS SEARCH" appears on the display.



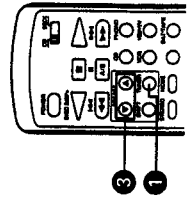
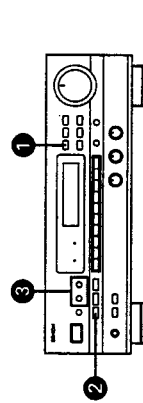
- 3 Press the PRESET UP or DOWN button to automatically begin the RDS search operation.



- 4 When a broadcast station is found, that station's name appears on the display.

- 5 To continue searching, repeat step 3. If no other RDS station is found when all the frequencies are searched, "NO RDS" is displayed.

If no RDS stations is found with above operation, all the respection band are searched.

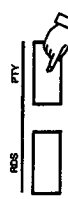




**5-8 PTY search (for AVR-950RD only)**

Use this function to find RDS stations broadcasting a designated program type (PTY). For a description of each program type, refer to "Program Type (PTY)".

- 1 Set the input function to "TUNER".
- 2 Press the RDS button until "PTY SEARCH" appears on the display.
- 3 Watching the display, press the PTY button to call out the desired program type.
- 4 Press the PRESET UP or DOWN button to automatically begin the PTY search operation.



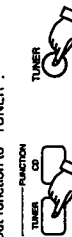
If there is no station broadcasting the designated programme type with above operation, all the reception bands are searched.

- 5 The station name is displayed on the display after searching stops.
- 6 To continue searching, repeat step 4. If no other station broadcasting the designated programme type is found when all the frequencies are searched, "NO PROGRAMME" is displayed on the display.

**5-9 TP search (for AVR-950RD only)**

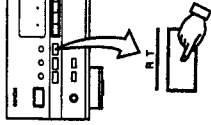
Use this function to find RDS station broadcasting traffic programme (TP stations).

- 1 Set the input function to "TUNER".
  - 2 Press the RDS button until "TP SEARCH" appears on the display.
  - 3 Press the PRESET UP or DOWN button TP search begins.
- If no TP station is found with above operation, all the reception bands are searched.
- 4 The station name is displayed after searching stops.
  - 5 To continue searching, repeat step 3. If no other TP station is found when all the frequencies are searched, "NO PROGRAMME" is displayed.



**5-10 RT (Radio Txt) (for AVR-950RD only)**

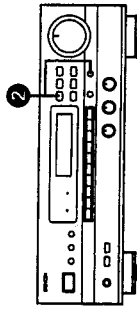
"RT" appears on the display when radio text data is received. When the RT button is pressed while receiving an RDS broadcast station, the text data broadcast from the station is displayed. To turn the display off, press the RT button again. If no text data is being broadcast, "NO TEXT DATA" is displayed.



**6 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 TUNER button and VIDEO SELECT button, and plug the power cord into the outlet.
- 3 Check that the entire 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.



**7 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.

## 8 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
DISPLAY not lit and sound not produced when power switch is turned on.	<ul style="list-style-type: none"> <li>Power cord not plugged in securely.</li> </ul>	<ul style="list-style-type: none"> <li>Check the insertion of the power cord plug.</li> </ul>	4
DISPLAY lit but sound not produced.	<ul style="list-style-type: none"> <li>Speaker cords not securely connected.</li> <li>Speaker switch is off.</li> <li>Improper position of the audio function button.</li> <li>Remote control set to minimum.</li> <li>MUTING is on.</li> </ul>	<ul style="list-style-type: none"> <li>Connect securely.</li> <li>Turn on speaker switch.</li> <li>Set to a suitable position.</li> <li>Turn volume up to suitable level.</li> <li>Switch off MUTING.</li> </ul>	4, 5 6 6 6 6
-PROTECT- display appears.	<ul style="list-style-type: none"> <li>Speaker terminals are short-circuited.</li> <li>Block the ventilation holes of the set.</li> </ul>	<ul style="list-style-type: none"> <li>Switch power off, connect speakers properly, then switch power back on.</li> <li>Turn off the set's power, then ventilate it well to cool it down.</li> <li>Once the set is cooled down, turn the power back on.</li> <li>Turn off the set's power, then ventilate it well to cool it down.</li> <li>Once the set is cooled down, turn the power back on.</li> </ul>	4
Sound produced only from one channel.	<ul style="list-style-type: none"> <li>Incomplete connection of speaker cords.</li> <li>Incomplete connection of input/output cords.</li> <li>Left/right balance is off.</li> </ul>	<ul style="list-style-type: none"> <li>Connect securely.</li> <li>Connect securely.</li> <li>Adjust balance knob properly.</li> </ul>	4 4, 5 6
Positions of instruments reversed during stereo playback.	<ul style="list-style-type: none"> <li>Reverse connections of left and right speakers or left and right input/output cords.</li> </ul>	<ul style="list-style-type: none"> <li>Check left and right connections.</li> </ul>	—
Sound seems distorted.	<ul style="list-style-type: none"> <li>Rear level is too high.</li> </ul>	<ul style="list-style-type: none"> <li>Set the rear level to lower level.</li> </ul>	7
Humming noise produced when record is playing.	<ul style="list-style-type: none"> <li>Ground wire of turntable not connected properly.</li> <li>Incomplete PHONO jack connection.</li> <li>TV or radio transmission antenna nearby.</li> </ul>	<ul style="list-style-type: none"> <li>Connect securely.</li> <li>Connect securely.</li> <li>Contact your store of purchase.</li> </ul>	4 4 —
Howling noise produced when volume is high.	<ul style="list-style-type: none"> <li>Turntable and speaker systems too close together.</li> <li>Room is unstable and vibrates easily.</li> </ul>	<ul style="list-style-type: none"> <li>Separate as much as possible.</li> <li>Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).</li> </ul>	—
Sound is distorted.	<ul style="list-style-type: none"> <li>Stylus pressure too weak.</li> <li>Dust or dirt on stylus.</li> <li>Cartridge defective.</li> </ul>	<ul style="list-style-type: none"> <li>Apply proper stylus pressure.</li> <li>Check stylus.</li> <li>Replace cartridge.</li> </ul>	— — —
Volume is weak.	<ul style="list-style-type: none"> <li>MC cartridge being used.</li> </ul>	<ul style="list-style-type: none"> <li>Replace with MM cartridge or use a head amplifier or step-up transformer.</li> </ul>	4
Receiver does not operate properly when remote control unit is used.	<ul style="list-style-type: none"> <li>Batteries dead.</li> <li>Remote control unit too far from receiver.</li> <li>Obstacle between receiver and remote control unit.</li> <li>Different button is being pressed.</li> <li>⊕ and ⊖ ends of battery inserted in reverse.</li> </ul>	<ul style="list-style-type: none"> <li>Replace with new batteries.</li> <li>Move closer.</li> <li>Remove obstacle.</li> <li>Press the proper button.</li> <li>Insert batteries properly.</li> </ul>	5 5 5 5

Common problems arising when listening to the CD, records, tapes, and broadcasts, etc.

## 9 SPECIFICATION

- **Audio Section**  
(Power amplifier)  
**Rated output:** FRONT (main 2ch driven) [AVR-950RD] 80 W + 60 W 65 W + 65 W (8 Ω/ohms, 20 Hz - 20 kHz with 0.08% T.H.D.)  
CENTER (center 1ch driven) 60 W 65 W (8 Ω/ohms, 20 Hz - 20 kHz with 0.08% T.H.D.)  
REAR (rear 2ch driven) 15 W + 15 W 15 W + 15 W (8 Ω/ohms, 1 kHz with 0.3% T.H.D.)  
**Output terminals:** Front: 8 to 16 Ω/ohms Center: 8 to 16 Ω/ohms Rear: 8 to 16 Ω/ohms
- **(Pre-amplifier)**  
**Line input (Each line input - FRONT SP OUT)**  
**Input sensitivity / Impedance:** 150 mV/47 kΩ/kohms PHONO (MM): 2.5 mV/47 kΩ/kohms  
**Frequency response:** 10 Hz to 50 kHz: ± 3 dB  
**Tone control range:** BASS: ± 10 dB at 100 Hz TREBLE: ± 10 dB at 10 kHz
- **Signal-to-noise ratio:** 92 dB (STEREO)  
**Phono equalizer (PHONO input - REC OUT)** ± 10B (20 Hz to 20 kHz)  
**RIAA deviation:** 74 dB IA weighting, with 5 mV input  
**Signal-to-noise ratio:** 150 mV/8 V  
**Rated output / Maximum output:** 150 mV/8 V  
**Distortion factor:** 0.03% (1 kHz, 1 V)
- **Tuner Section**  
**Receiving Range:** [FM] (note: μV at 75 Ω/ohms, 0 dBf = 1 × 10<sup>-15</sup> W) 87.50 MHz ~ 108.00 MHz [AM] 522 kHz ~ 1611 kHz  
**Usable Sensitivity:** 1.0 μV (11.2 dB)  
**50 dB Quieting Sensitivity:** MONO 1.6 μV (15.3 dB) STEREO 23 μV (38.5 dB)  
**Signal to Noise Ratio (HF-A):** MONO 80 dB STEREO 75 dB  
**Total Harmonic Distortion (at 1 kHz):** MONO 0.4% STEREO 0.5%
- **Video Section**  
**Standard video jacks**  
**Input and output level / impedance:** 1 Vp-p/75 Ω/ohms  
**Frequency response:** 2 Hz to 8 MHz +0, -3 dB
- **General**  
**Power supply:** AC 230 V, 50 Hz  
**Power consumption:** 200 W (AVR-900) 220 W (AVR-950RD)  
**Maximum external dimensions:** 434 (W) × 142 (H) × 303 (D) mm (17-3/32" × 5-19/32" × 11-15/16")  
**Weight:** 7.7 kg (17 lbs)
- **Remote control unit**  
**System remote control amplifier or step-up transformer:** RC-195:  
Total buttons: 28  
DENON system code  
CD player: 6 buttons (SWITCHED)  
Cassette deck: 6 buttons  
Batteries: R6P/AA Type (two batteries) AVR-900/950RD fixed codes: 22 buttons  
51 (W) × 175 (H) × 18.5 (D) mm (2" × 6-57/64" × 47/64")  
Weight: 100 g (Approx. 3.5 oz) (including batteries)

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

## PARTS LIST OF P. W. BOARD

Note. Refer to the service manual of AVR-900 for parts list of P.W.Board as the following.

Part Name	Part No.	Reference Page
Main Amp.	1U-2865	Page 24-25
Input & Surround	1U-2867	Page 26-27
Tuner & Volume	1U-2889	Page 27-28
FLD & Video	1U-2883	Page 29
Rear Amp.	1U-2866	Page 30

### 1U-2865D MAIN AMP P.W.B. UNIT ASS'Y (Same as 1U-2865 except the following.)

Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC911	262 1701 906	IC :SAA6579T	Add
IC912	262 1929 908	IC LC7074M-TE-R	Add
D911	276 0616 907	Diode 1SS252	Add
<b>RESISTORS GROUP</b>			
R375	241 2398 984	Carbon 1.3kohm 1/4W	Change
<b>CAPACITORS GROUP</b>			
C351,352	254 6200 003	Electrolytic 10000µF/56V	Change
C428	255 1264 982	Film 0.0047µF/50V	Add
C911,912	253 4537 908	Ceramic 27pF/50V	Add
C913	254 4254 909	Electrolytic 10µF/16V	Add
C914	254 4260 951	Electrolytic 2.2µF/50V	Add
C915	253 1179 990	Ceramic 560pF/50V	Add
C918	254 4254 909	Electrolytic 10µF/16V	Add
C919	253 1181 904	Ceramic 0.01µF/50V	Add
<b>OTHERS PARTS GROUP</b>			
XT911	399 0178 007	Crystal (4.332MHz)	Add
XT912	399 0261 901	CO.DCRHTP4.00M	Add
CN14A	205 0375 042	14P Connector Base (KR-PH)	Change

### 1U-2866A REAR AMP P.W.B. UNIT ASS'Y (Same as 1U-2866 except the following.)

Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC501,502	263 0855 005	IC :SI-18725	Change
<b>RESISTORS GROUP</b>			
△ R557	242 0073 000	Metallic 2.2Mohm 1/2W	Delete
<b>CAPACITORS GROUP</b>			
C361-364	255 1265 907	Film 6800pF/50V	Add
C513,514	255 1264 982	Film 4700pF/50V	Add
C517,518	254 4257 713	Electrolytic 3300µF/35V	Change
C531,532	253 1179 903	Ceramic 100pF/50V	Change
C559	253 8014 702	Film 0.1µF/400V	Change
<b>OTHERS PARTS GROUP</b>			
	203 0640 001	1P SIN Cord Ass'y	Delete
	203 0640 014	1P SIN Cord Ass'y	Delete
△	203 3841 008	AC Outlet (2P)	Delete
	205 0606 025	2P Wrapping Terminal	Add
F011,012	206 1076 000	Fuse 5.0A	Delete
F001	206 1076 026	Fuse 8.0A	Delete
F002	206 1075 056	Fuse 3.15A	Change
△	233 8058 012	Power Trans	Change
	415 0299 000	Condenser Cover	Add

**1U-2867A INPUT & SURROUND P.W.B. UNIT ASS'Y**  
(Same as 1U-2867 except the following.)

Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC101	263 0896 909	IC NJM2068MD	Change
<b>RESISTORS GROUP</b>			
J101,102	241 2400 911	Carbon 4.7kohm 1/4W	Add
<b>CAPACITORS GROUP</b>			
C105,106	257 0004 961	Ceramic 100pF/50V (Chip)	Add
C121~128	257 0004 903	Ceramic 56pF/50V (Chip)	Add
C147,148	257 0004 961	Ceramic 100pF/50V (Chip)	Add
C281,282	255 1264 908	Film 0.001μF/50V	Add
<b>OTHERS PARTS GROUP</b>			
LF101,102	235 9003 002	FTZ Choke Coil	Add

**1U-2883E FLD & VIDEO P.W.B. UNIT ASS'Y**  
(Same as 1U-2883 except the following.)

Ref. No.	Part No.	Part Name	Remarks
<b>RESISTORS GROUP</b>			
R706	241 2399 967	Carbon 3kohm 1/4W	Add
JV83	241 2398 955	Carbon 1kohm 1/4W	Add
<b>OTHERS PARTS GROUP</b>			
SW705~707	212 4788 002	Tact Switch	Add
CN14A	204 6554 000	14P PH-SAN Connector Cord	Change

**1U-2889D TUNER & VOLUME P.W.B. UNIT ASS'Y**  
(Same as 1U-2889 except the following.)

Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>			
IC004	261 0079 005	IC FM Front End (U)	Change
TR001	275 0051 909	Transistor 2SK161(GR)	Add
<b>RESISTORS GROUP</b>			
R002	241 2400 937	Carbon 5.6kohm 1/4W	Add
R004	241 2400 995	Carbon 10kohm 1/4W	Add
R005	241 2397 969	Carbon 390kohm 1/4W	Change
R006	241 2397 943	Carbon 330kohm 1/4W	Add
R022	241 2402 935	Carbon 39kohm 1/4W	Change
R023	241 2399 909	Carbon 1.6kohm 1/4W	Add
R032	241 2403 989	Carbon 160kohm 1/4W	Add
R035	241 2403 989	Carbon 160kohm 1/4W	Add
R037,038	241 2403 934	Carbon 100kohm 1/4W	Change
R039,040	241 2399 912	Carbon 1.8kohm 1/4W	Change
R041,042	241 2399 970	Carbon 3.3kohm 1/4W	Change
R050	241 2396 928	Carbon 1kohm 1/4W	Add
<b>CAPACITORS GROUP</b>			
C006	253 1181 904	Ceramic 0.01μF/50V	Add
C023	253 4538 949	Ceramic 100pF/50V	Delete
C026	254 4254 912	Electrolytic 22μF/16V	Add
C053,054	253 4448 903	Ceramic 330pF/50V	Change
C055	253 4538 965	Ceramic 120pF/50V	Add
C266	253 1180 934	Ceramic 1200pF/50V	Change
<b>OTHERS PARTS GROUP</b>			
LF001	232 9010 009	Anti Birdie Filter	Add
LF002,003	232 0085 004	:LPF	Add
CF001	261 0146 006	FMCFSK107M2-A	Change

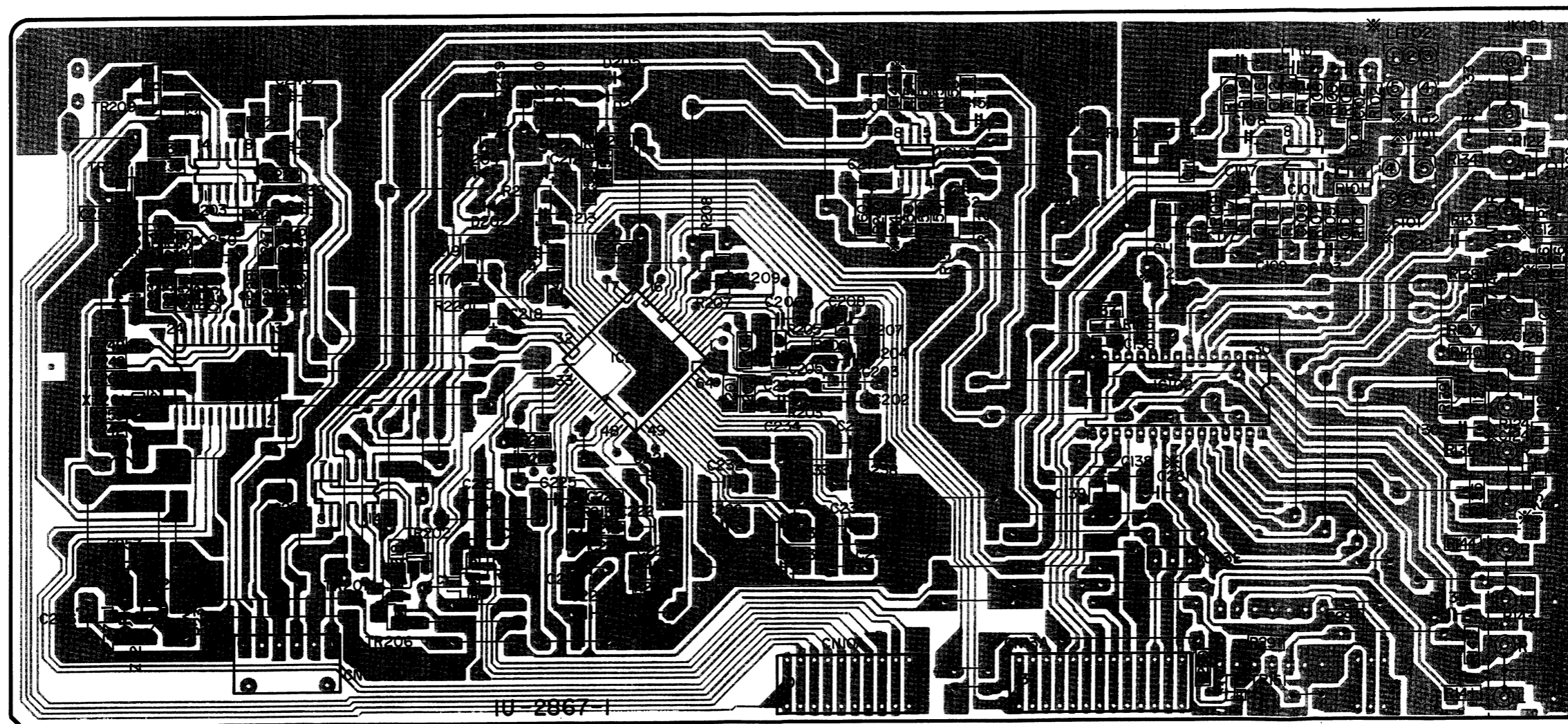
PRINTED WIRING BOARD

1 2 3 4 5 6 7 8

1U-2867 A INPUT AND SURROUND P.W.B. ASS'Y

IC101	○
J101, 102	○
C105, 106	○
C121-128	○
C147, 148	○
C281, 282	○
LF101, 102	○

Note:  
 ○ : Used  
 X : Not used



A  
B  
C  
D  
E

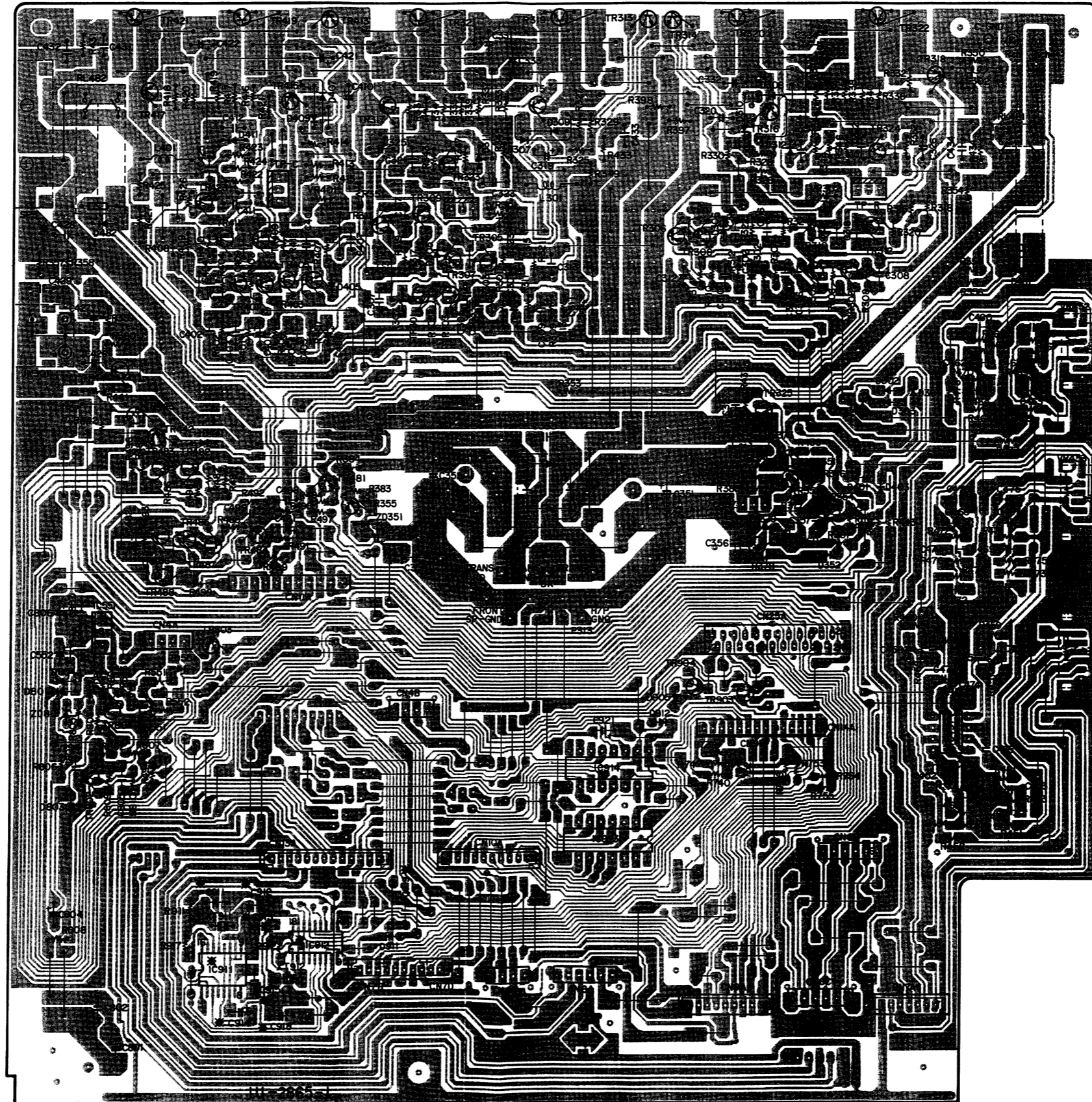
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1U-2865 D MAIN AMP. P.W.B. UNIT ASS'Y

IC911, 912	○
D911	○
C428	○
C911~915	○
C918, 919	○
XT911, 912	○

Note:  
○ : Used  
X : Not used

A  
B  
C  
D  
E



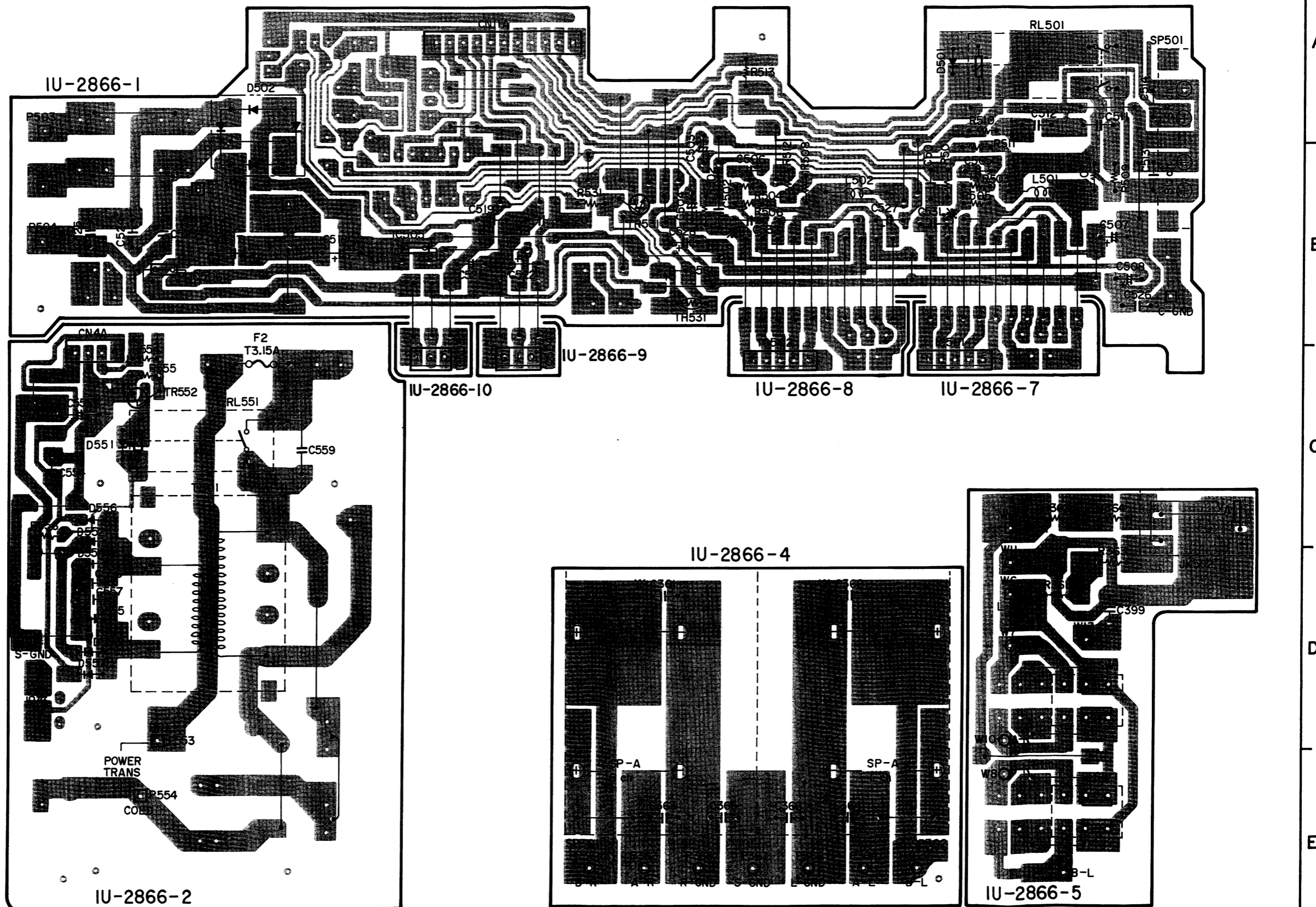
1 2 3 4 5 6 7 8

1U-2866 A REAR AMP. P.W.B. UNIT ASS'Y

1U-2866 A

R557	X
C361-364	○
C513, 514	○
C531, 532	○
F011, 012	X
F001	X
AC outlet	X

Note:  
○ : Used  
X : Not used

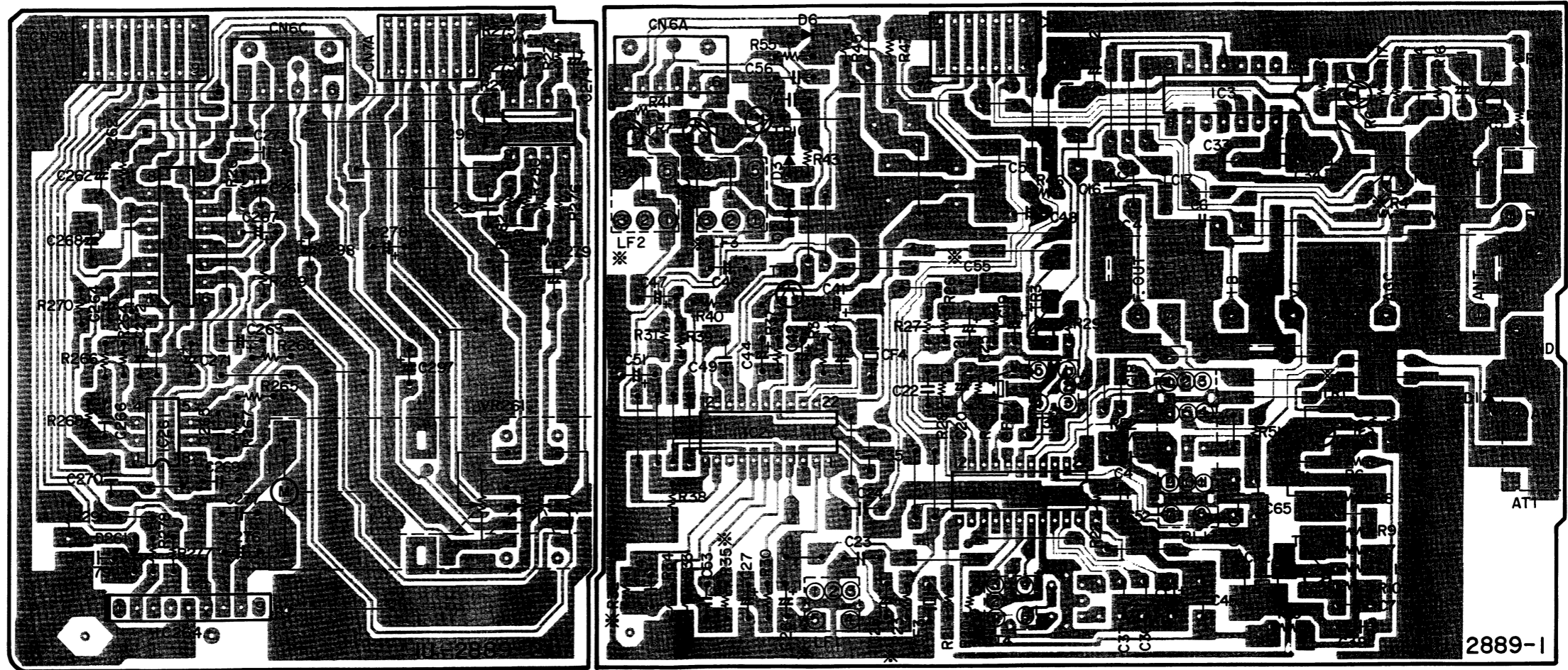


1 2 3 4 5 6 7 8

1U-2889 D TUNER AND VOLUME P.W.B. UNIT ASS'Y

TR001	○
R023	○
R032	○
R035	○
C055	○
LF001	○
LF002	○
LF003	○

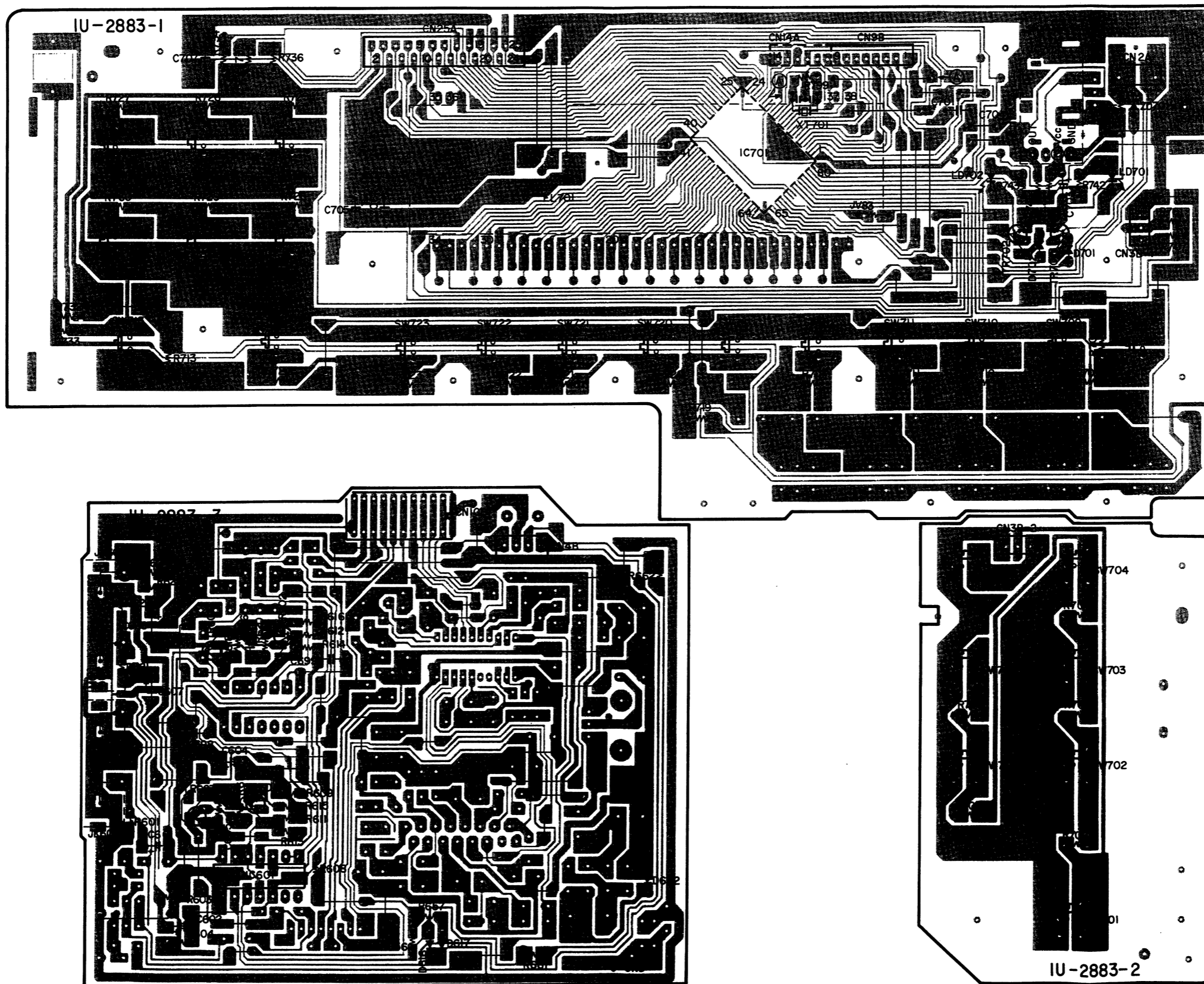
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 X : Not used





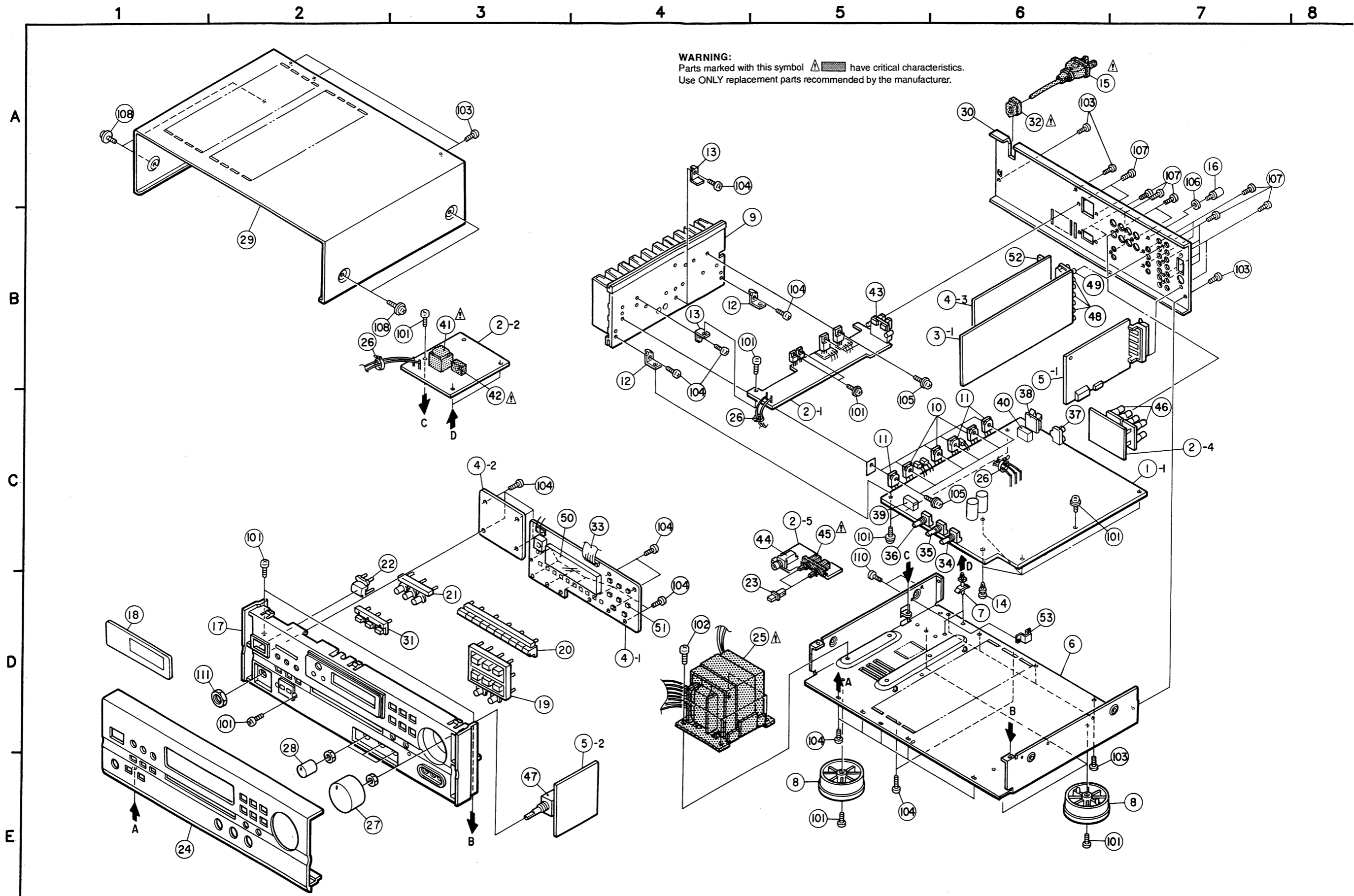
1 2 3 4 5 6 7 8

1U-2883 E FLD AND VIDEO P.W.B. UNIT ASS'Y



A  
B  
C  
D  
E

EXPLODED VIEW



**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-2865 D	Main Amp. P.W.B. Unit Ass'y		1	46	205 0952 009	4P Speaker Terminal		2
1-1	—	Main Amp. P.W.B. Unit			47	211 0858 001	Variable Resistor 100kohm	VR261	1
2	1U-2866 A	Rear Amp. P.W.B. Unit Ass'y		1	48	204 8497 000	4P Pin Jack (GND)(K)	JK101~103	3
2-1	—	Rear Amp. P.W.B. Unit			49	204 8509 008	2P Pin Jack (C-GND)	JK104	1
2-2	—	Power Supply P.W.B. Unit			50	393 4155 002	FLD (FIP14AM7R)	FL701	1
2-4	—	Front SP. P.W.B. Unit			51	212 4788 002	Tact Switch	SW701~704, 708~713, 719~730	25
2-5	—	H/P and SP. P.W.B. Unit			52	204 8468 000	2P Pin Jack	JK601,602	2
3	1U-2867 A	Input and Surround P.W.B. Unit Ass'y		1	53	412 2955 107	Side Bracket		1
3-1	—	Input and Surround P.W.B. Unit			★	513 2236 006	Label		
4	1U-2883 E	FLD and Video P.W.B. Unit Ass'y		1	<b>SCRWES</b>				
4-1	—	FLD P.W.B. Unit			101	473 7002 018	Screw 3x8 (S)		14
4-2	—	Tact S.W P.W.B. Unit			102	473 7004 016	Screw 4x6 (S)		4
4-3	—	Video P.W.B. Unit			103	473 7015 018	Screw 3x8 (S) BK		10
5	1U-2889 D	Tuner and Volume P.W.B. Unit Ass'y		1	104	473 7500 044	Screw 3x8 (P) BK		33
5-1	—	Tuner P.W.B. Unit			105	473 8007 009	Screw 3x12 cup		8
5-2	—	Volume P.W.B. Unit			106	477 0018 001	Washer(P-87)		1
6	411 1334 108	Main Chassis		1	107	477 0064 107	Fixing Screw		17
7	443 0518 016	P.W.B. Holder		2	108	477 0263 005	3P Swelling Screw		4
8	104 0282 007	*Foot Ass'y		4	109	477 0096 007	Push Rivet	Europe Model	8
9	417 0513 009	*Power Radiator		1	110	473 7015 005	Screw 3x6 (S)		2
10	273 0389 002	2SC3855(O/P/Y)(Z)		3	111	475 6124 003	12 Nut		1
11	271 0240 006	2SA1491(O/P/Y)(Z)		3	<b>PACKING &amp; ACCESSORIES</b>				
12	412 4000 005	*P.W.B. Bracket(A)		2	Ref. No.	Part No.	Part Name	Remarks	Q'ty
13	412 3766 007	*L Bracket		2		231 0922 009	AM Lope Antenne		1
14	412 2814 002	Card Spacer (L=8)		4		394 0038 003	Battery (GER6M)		2
▲	206 2063 009	AC Cord With Plug	Europe Model	1		395 0023 008	:*FM Antenne Ass'y		1
▲	206 2132 008	AC Cord With Plug	U.K. Model	1		399 0292 006	Remoto Control Unit	RC195	1
16	205 0071 016	Terminal Ass'y		1		501 1887 013	Carton Case		1
17	146 1574 103	Inner Panel		1		503 1190 007	Cushion		2
18	143 0942 009	Window		1		504 0092 086	Stylen Paper	(700x600xT1)	1
19	113 1753 005	Tact Knob (A)		1		504 0168 004	AC Protect Sheet	U.K. Model	1
20	113 1692 001	*Function Knob		1		505 0075 006	Cabinet Cover	(750x350)	1
21	113 1743 002	Tact Knob (3 Key)		1		505 8006 019	Envelope		1
22	113 1636 106	*Push Knob (P)		1		511 2800 009	Instructions Manual		1
23	113 1558 006	Push Knob (KAKU)		2		513 1349 004	Thermal Carbon Film		1
24	144 2451 012	Front Panel		1		513 1389 006	Control Card Base		1
▲	253 0178 002	Power Trans		1		515 0671 229	S.S. List		1
26	445 8004 007	Wire Clamper		5		513 2446 003	China Label (E)	Europe Model	
27	112 0761 008	*Volume Knob		1		513 2447 002	China Label (F)	Europe Model	
28	112 0762 007	*Knob		3					
29	102 0565 003	Top Cover		1					
30	105 1167 111	Back Panel		1					
★	113 1759 009	Tact Knob (13x5)-3		1					
▲	445 0056 006	Cord Bush		1					
33	009 0105 012	25P FFC Cable		1					
34	211 0798 103	Variable Resistor 100kohm	VR451	1					
35	211 0797 117	Variable Resistor 30kohm	VR452	1					
36	211 0797 133	Variable RESISTOR 10kohm	VR453	1					
37	204 8509 011	2P Pin Jack (C-GND)	JK301	1					
38	205 0971 006	2P Push Terminal	SP003	1					
39	214 0129 001	Relay (DH2TU)	RL481	1					
40	214 0187 001	Relay (DH24D2-OS(M)-2)	RL482	1					
▲	233 6058 012	Power Trans (Mini)		1					
▲	214 0186 000	Relay (VS-12MBNF-SM2)(TV-B)	RL551	1					
43	205 0972 005	4P Push Terminal		1					
44	204 8503 004	:Headphone Jack		1					
▲	212 4778 009	2P Push Switch	SW001	1					

**MEMO:**

# SCHEMATIC DIAGRAM

1

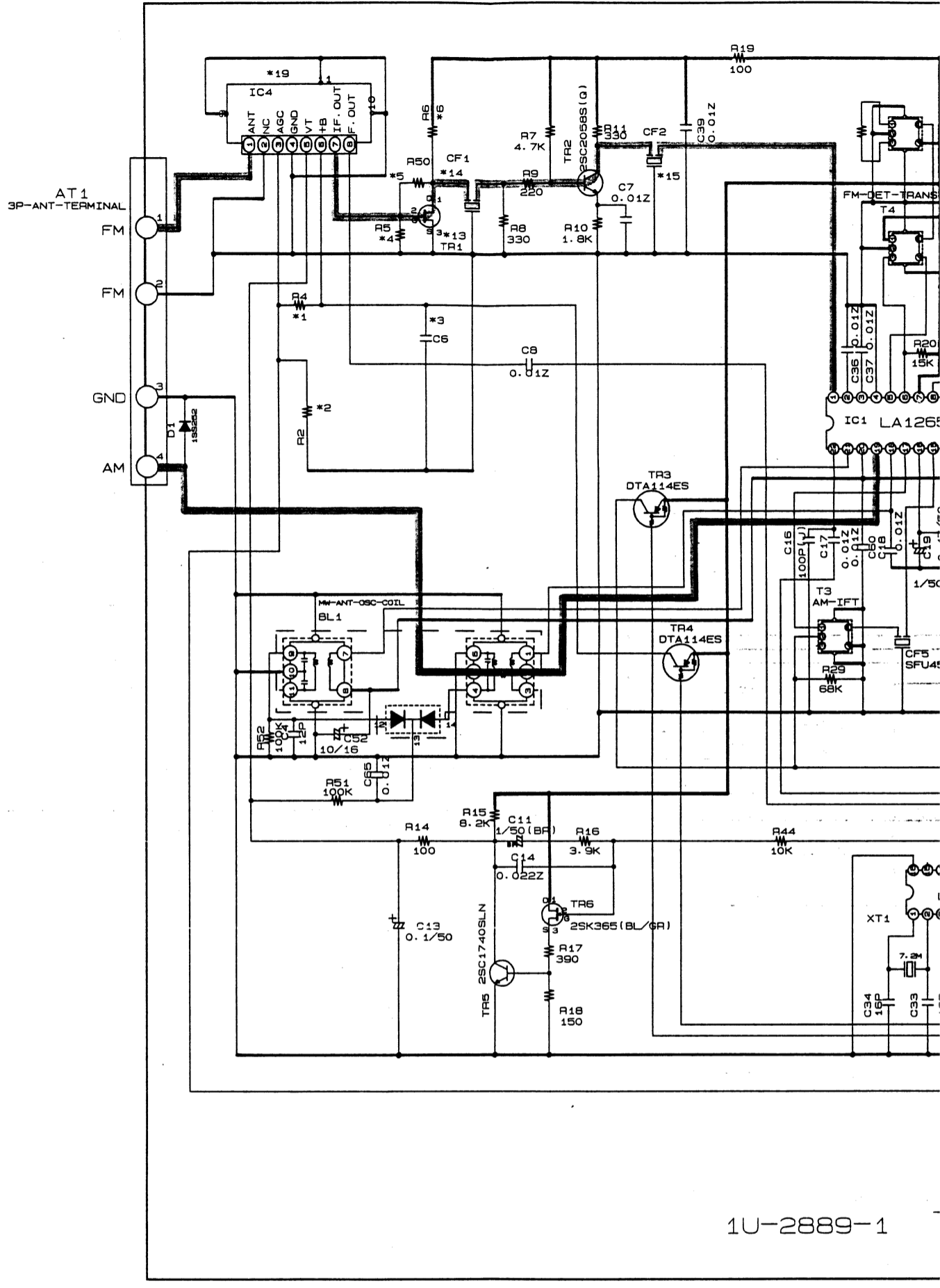
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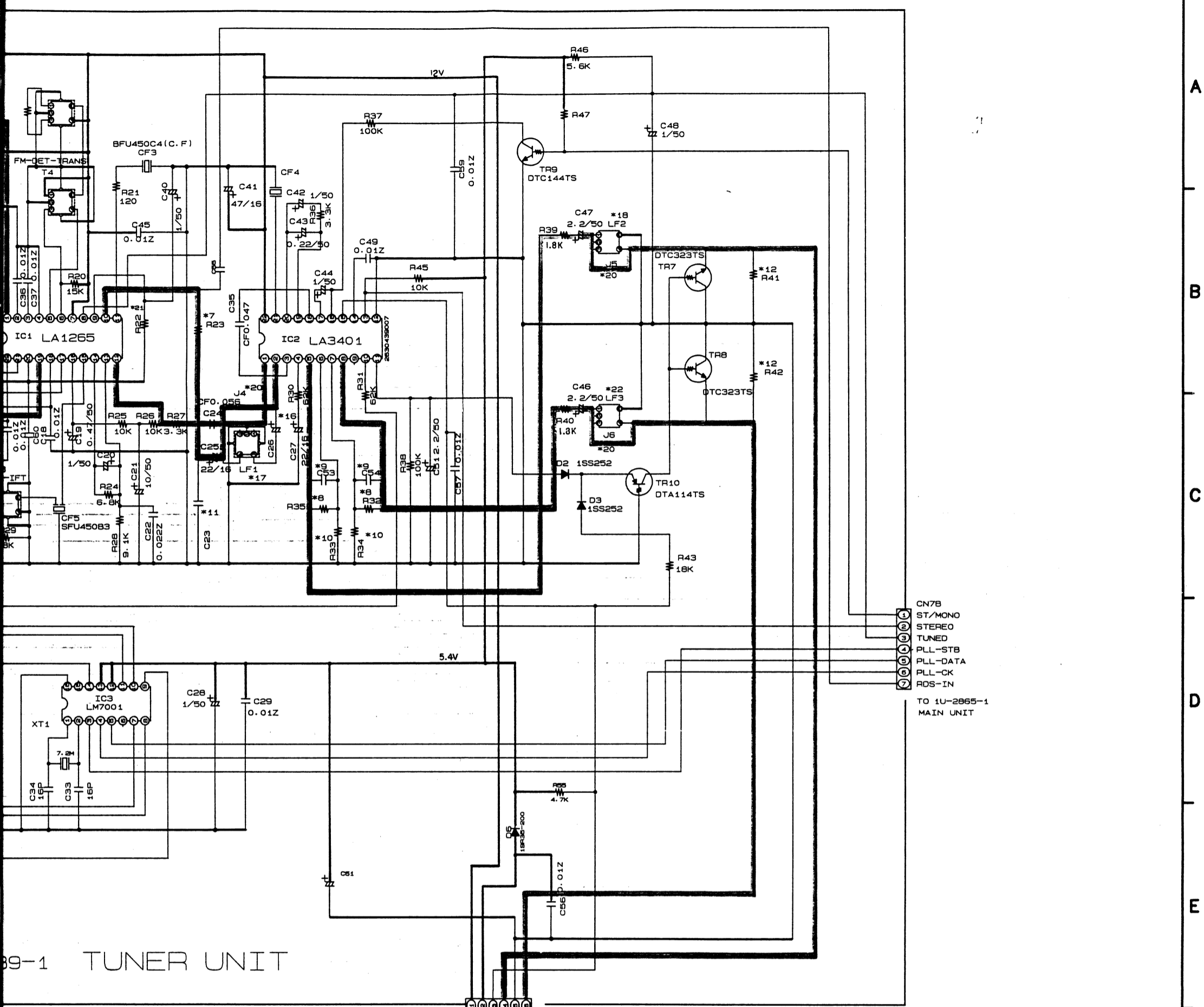
6



1U-2889-1

		900E3	900E1	900E2/EK
*1	R4	---	---	10K
2	R2	---	---	5.6K
3	C6	---	---	CK0.01
4	R5	1K	1K	390
5	R50	100	100	---
6	R6	---	---	330
7	R23	JUMPER	JUMPER	1.6K
8	R32, 35	100K	100K	160K
9	C53, 54	CC750P	CC750P	CC330P
10	R33, 34	120K	120K	200K
11	C23	CC100P	CC100P	---
12	R41, 42	6.8K	6.8K	4.7K
13	TR1	---	---	2SK161
14	CF1	CFSK107M1-A	CFSK107M1-A	CFSK107M2-A
15	CF2	CFSK107M2-A	CFSK107M2-A	CFSK107M2-A
16	C26	---	---	22/16
17	LF1	---	---	ANTI-BIRDIE FILTER
18	LF2, 3	---	---	LFP
19	IC4	F/E 2160102008	F/E 2160102008	F/E 2160079005
20	J4, 5, 6	JUMPER	JUMPER	---
21	R22	18K	39K	39K
22	LF4	---	---	2329010009
23	C55	---	---	CC120P

6 7 8 9 10 11



89-1 TUNER UNIT

900E2/EK	950RDE2/EK
K	10K
6K	5.6K
0.01	CK0.01
30	390
30	330
6K	1.2K
10K	100K
330P	CC330P
100K	200K
7K	4.7K
SK161	2SK161
FSK107M2-A	CFSK107M2-A
FSK107M2-A	CFSK107M2-A
1/16	22/16
ANTI-BIRDIE FILTER	ANTI-BIRDIE FILTER
F	LPF
F/E	F/E
160079005	2160065006
39K	39K
29010009	2329010009
CCI20P	CC120P

12V  
5V  
TU-MUTE  
J  
GND  
CN5A  
TO 1U-2865-1  
MAIN UNIT

— +B LINE  
— SIGNAL LINE

**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  
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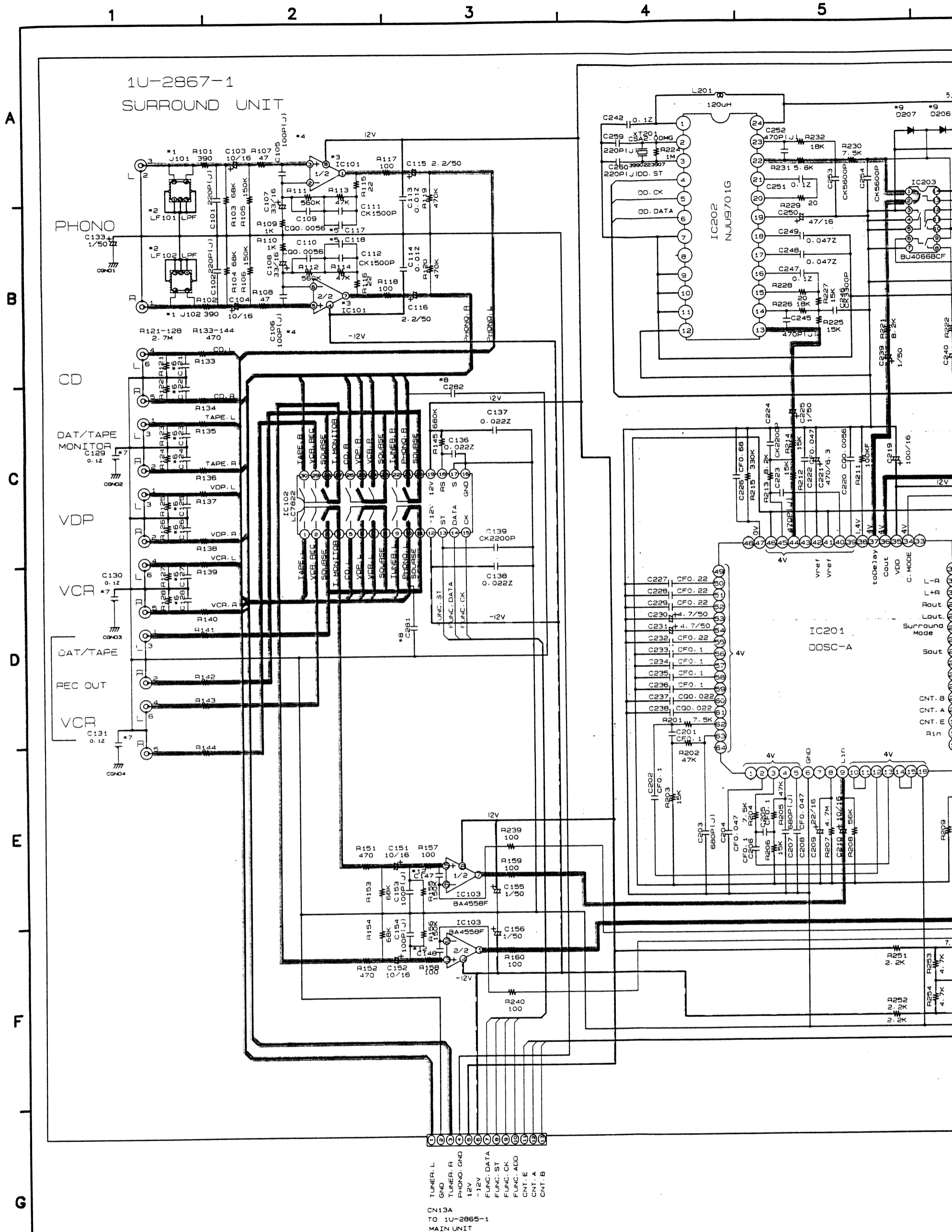
**WARNING:**  
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A  
B  
C  
D  
E  
F  
G  
H

SCHEMATIC DIAGRAM

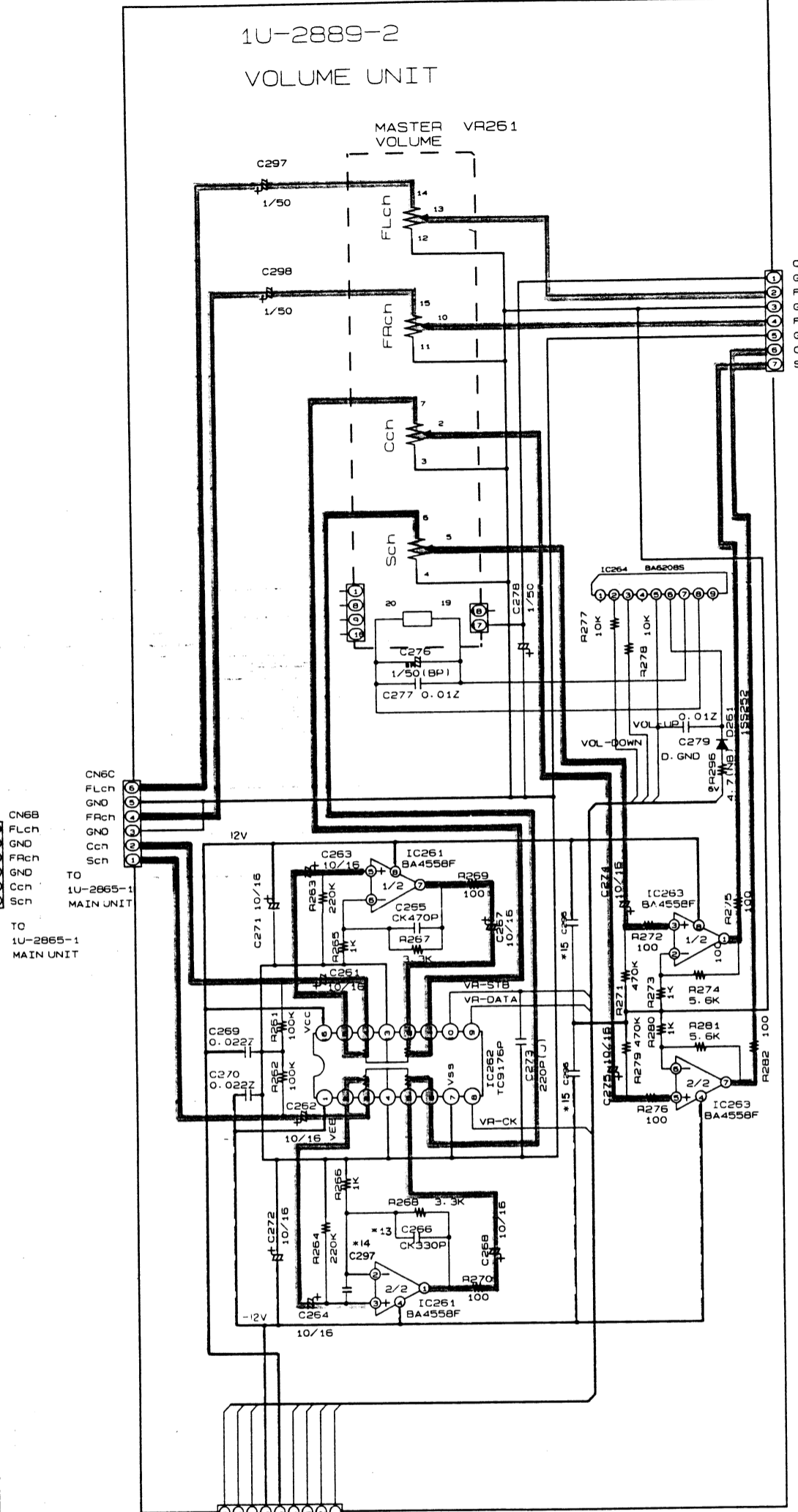
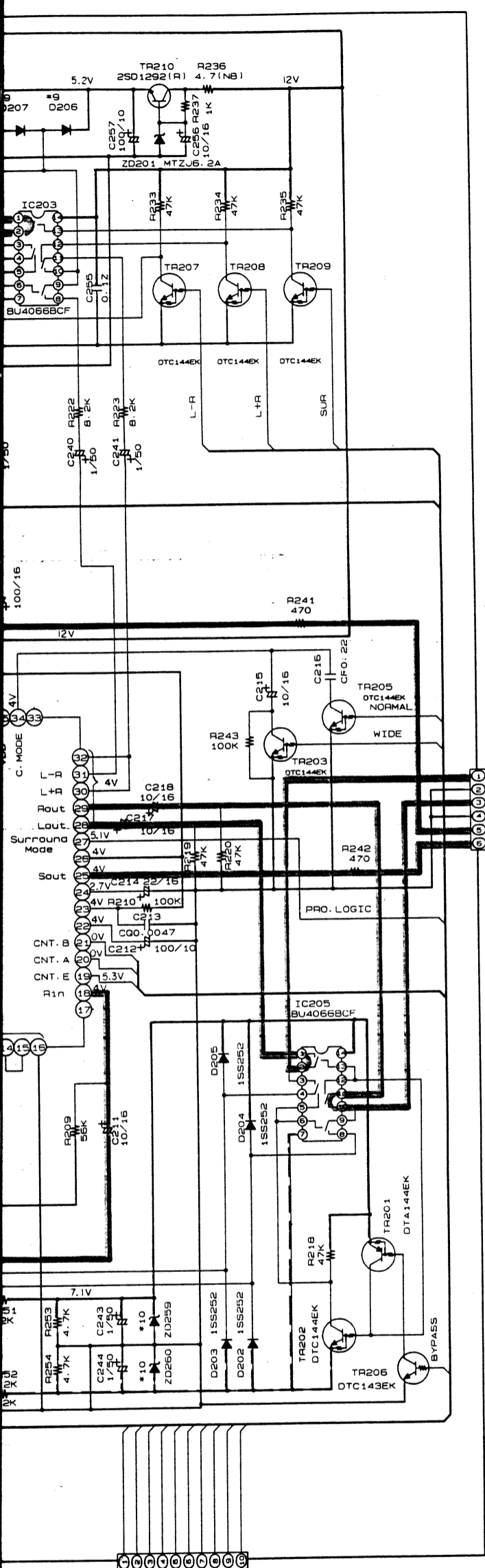


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CN7A  
GND(C) TO  
FLch 1U-2865-1  
GND MAIN UNIT  
FRch  
GND  
Cch  
Scn

CN6C  
FLch  
GND  
FRch  
GND  
Cch  
Scn  
TO  
1U-2865-1  
MAIN UNIT

TO  
1U-2865-1  
MAIN UNIT

VR-DATA  
VR-STB  
VR-CK  
-12V  
12V  
VOL-DOWN  
VOL-UP  
5V  
D. GND

CN5A  
TO 1U-2865-1  
MAIN UNIT

— +B LINE  
- - - -B LINE  
— SIGNAL LINE

BYPASS  
PRO. LOGIC  
NORMAL  
WIDE  
DD. DATA  
DD. CK  
DD. ST  
SUR  
L+R  
L-R

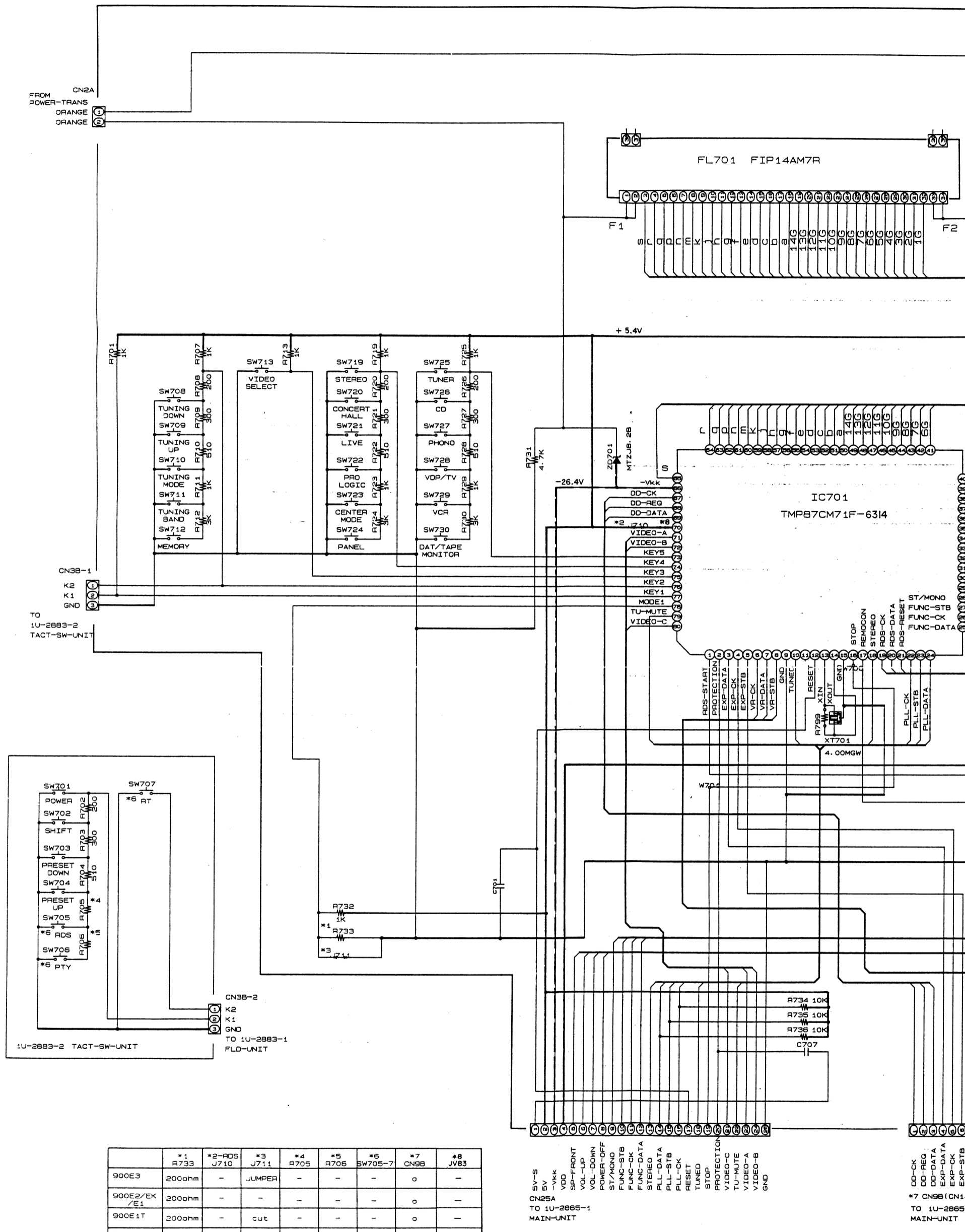
CN10A  
TO 1U-2865-1  
MAIN UNIT

	*1	*2	*3	*4	*5	*6	*7	*8	*9	*10	*11	*12	*13	*14	*15
	J101 J102	LF101 LF102	IC101	C105 C106	C117 C118	C121-128	C129-131	C281 C282	D206 D207	ZD259 ZD260	CN3C	C147 C148	C266	C297	C296
900 E3	JW		BA4558F											CK330P	
900 E2/EK/E1	4.7K	FTZ-COIL	NJM-2068MD	100P		CC56p		C00.001				100p	CK1200P	47p	
950RD E2/EK	4.7K	FTZ-COIL	NJM-2068MD	100P		CC56p		C00.001				100p	CK1200P	47p	



# SCHEMATIC DIAGRAM

1 | 2 | 3 | 4 | 5 | 6

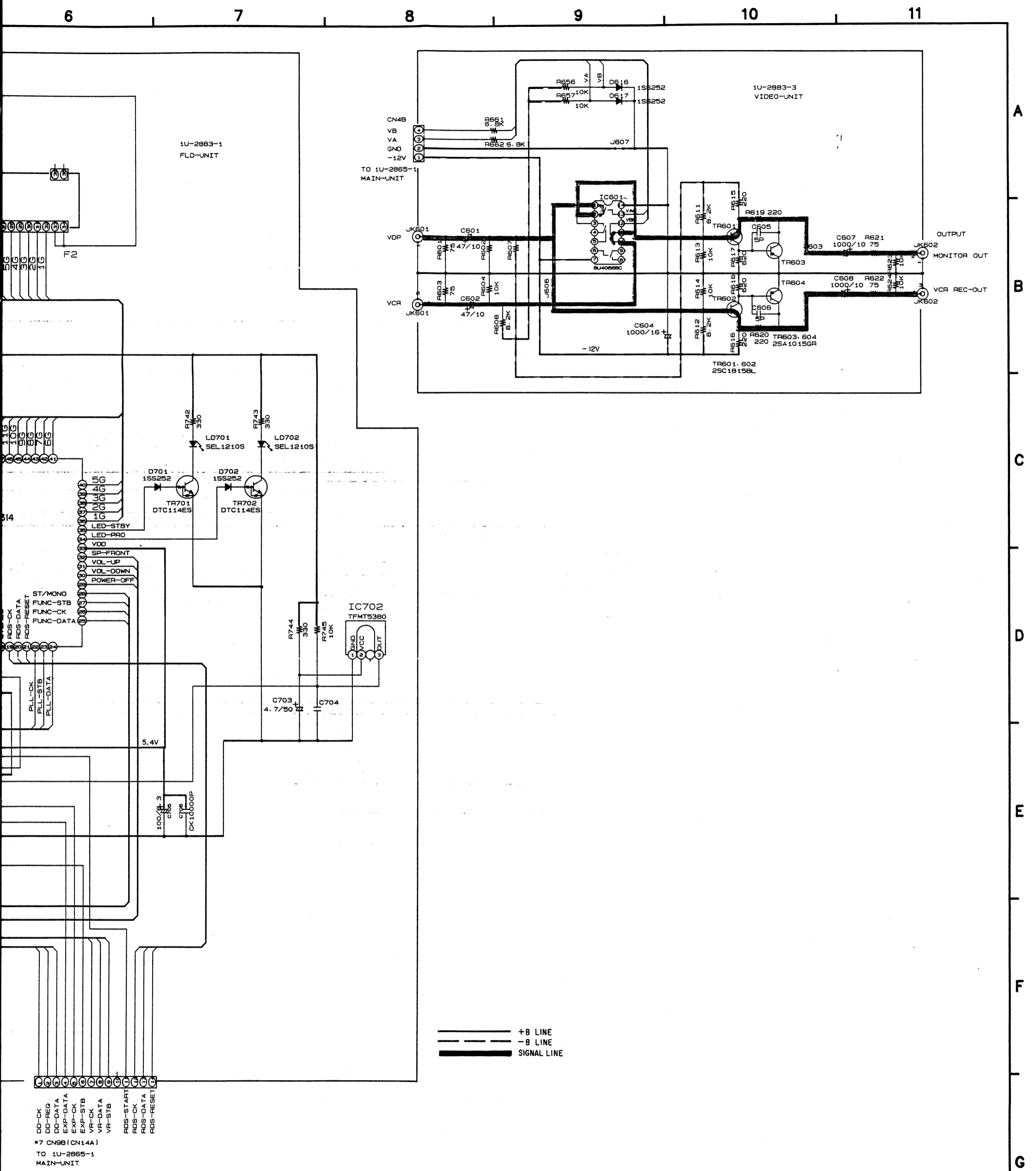


	*1	*2-RDS	*3	*4	*5	*6	*7	*8
900E3	R733	J710	J711	R705	R706	SW705-7	CN9B	JV83
900E2/EK/E1	200ohm	-	-	-	-	-	o	-
900E1T	200ohm	-	cut	-	-	-	o	-
950RD E2/EK	200ohm	JUMPER	-	1K	3K	SWITCH	CN14A	1K ohm

5V-S  
5V  
-VKK  
VDD  
SP-FRONT  
VOL-UP  
VOL-DOWN  
POWER-OFF  
ST/MONO  
FUNC-STB  
FUNC-CK  
FUNC-DATA  
STEREO  
PLL-DATA  
PLL-STB  
PLL-CK  
RESET  
TUNED  
STOP  
PROTECTION  
VIDEO-C  
TU-MUTE  
VIDEO-A  
VIDEO-B  
GND

CN25A  
TO 1U-2885-1  
MAIN-UNIT

\*7 CN9B (CN14)  
TO 1U-2885-1  
MAIN-UNIT



DO-CK  
DO-REG  
DO-DATA  
EXP-CK  
EXP-DATA  
VR-CK  
VR-DATA  
VR-STB  
RDS-START  
RDS-CK  
RDS-DATA  
RDS-RESET

\*7 CN9B (CN14A)  
TO 1U-2885-1  
MAIN-UNIT

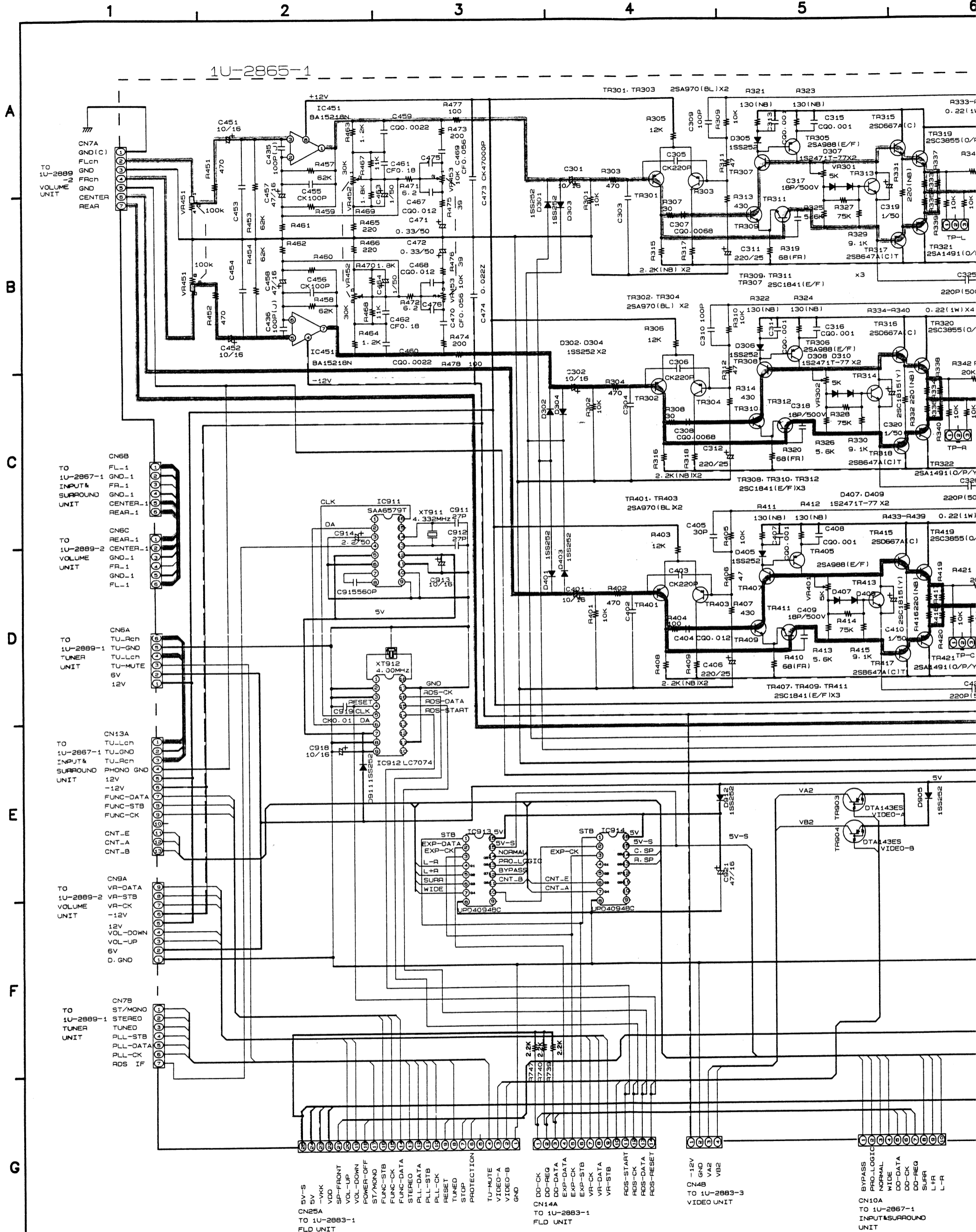
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SCHEMATIC DIAGRAM



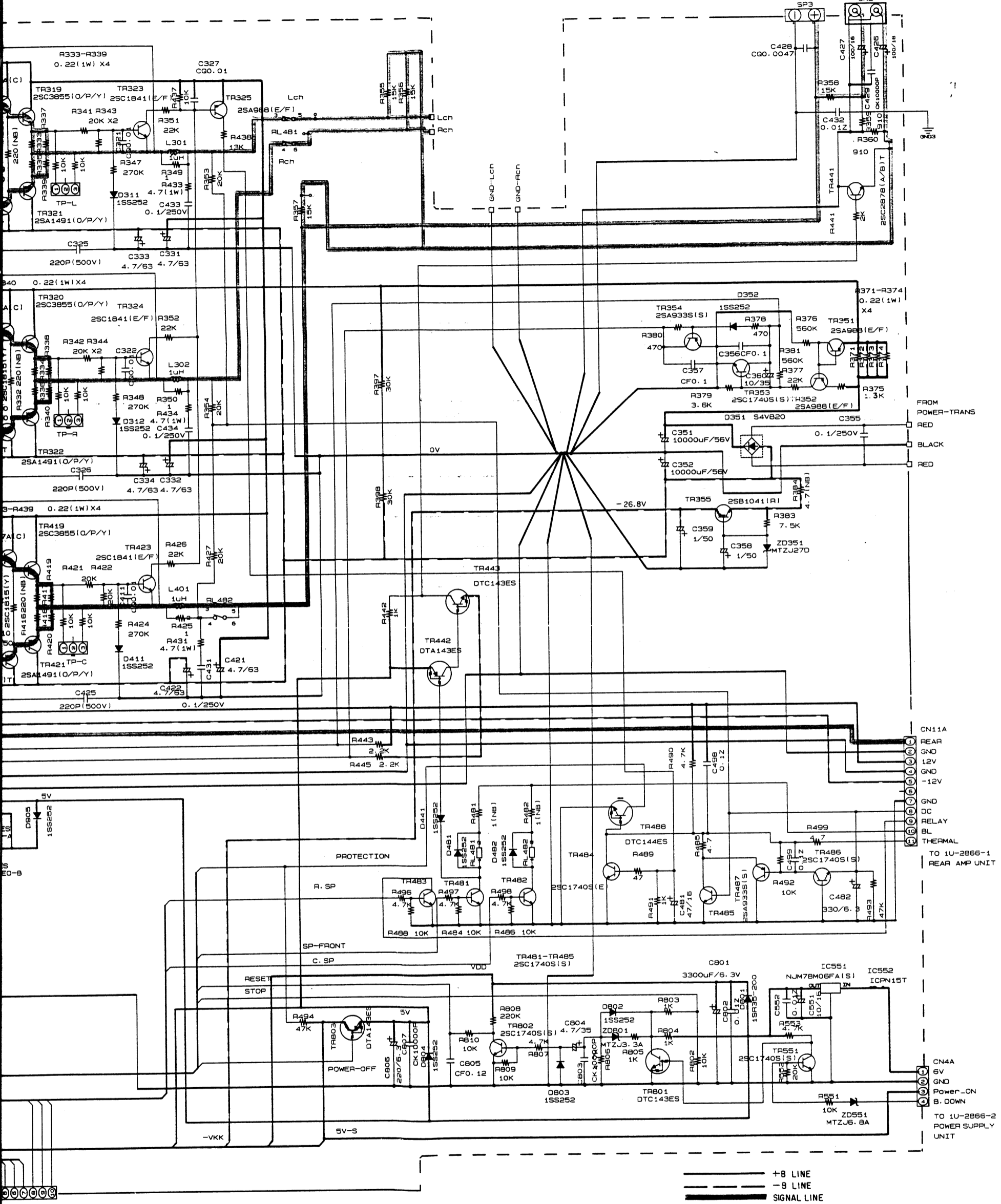
**WARNING:**  
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CENTERMONO



————— +B LINE  
 - - - - - -B LINE  
 ————— SIGNAL LINE

DD-DATA  
 DD-CK  
 DD-REG  
 SUPP  
 L-R  
 L-R

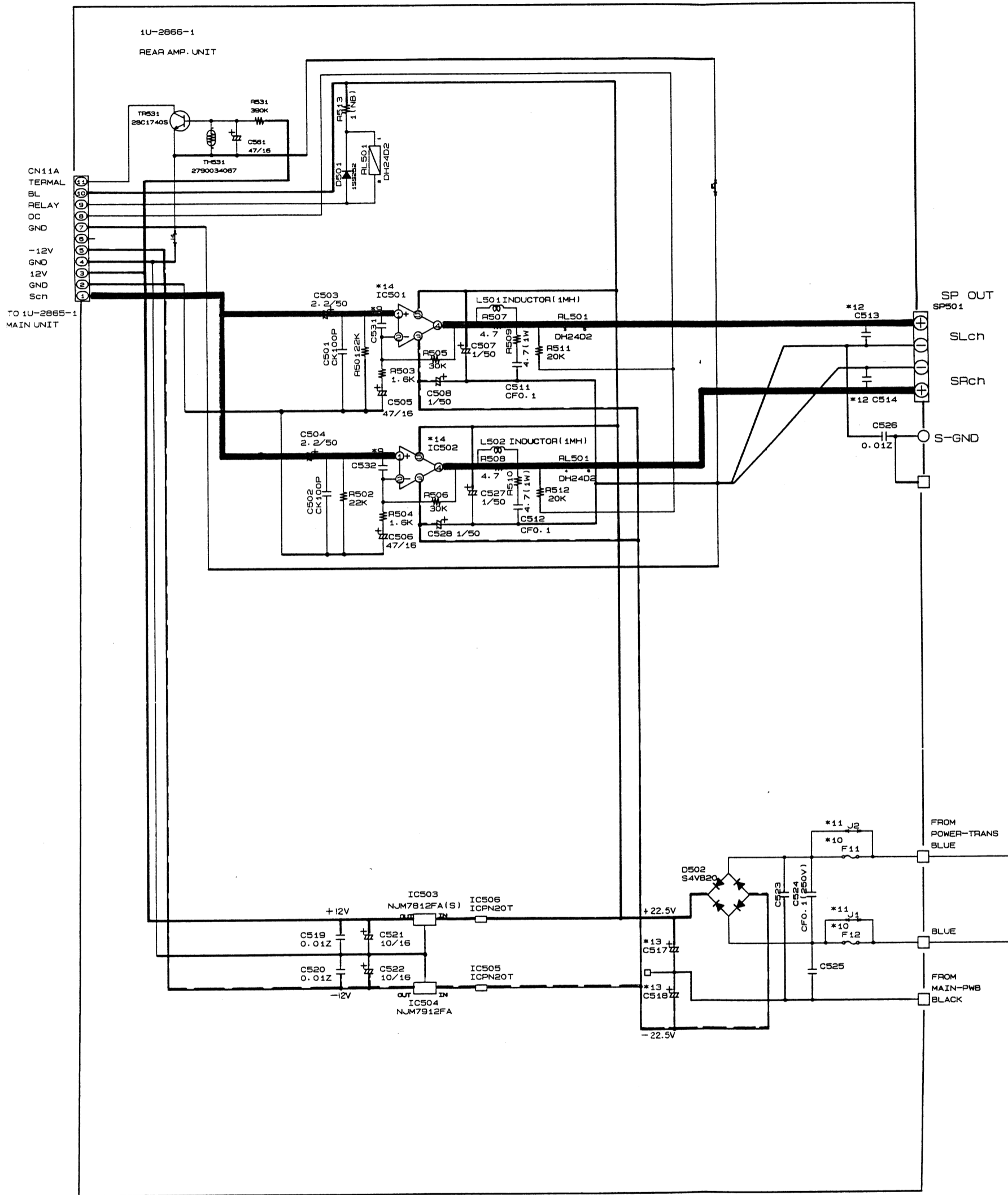
67-1  
 GROUND

FROM POWER-TRANS  
 RED  
 BLACK  
 RED  
 CN11A  
 REAR  
 GND  
 12V  
 GND  
 -12V  
 GND  
 DC  
 RELAY  
 BL  
 THERMAL  
 TO 1U-2866-1  
 REAR AMP UNIT

CN4A  
 6V  
 GND  
 Power\_ON  
 B. DOWN  
 TO 1U-2866-2  
 POWER SUPPLY  
 UNIT

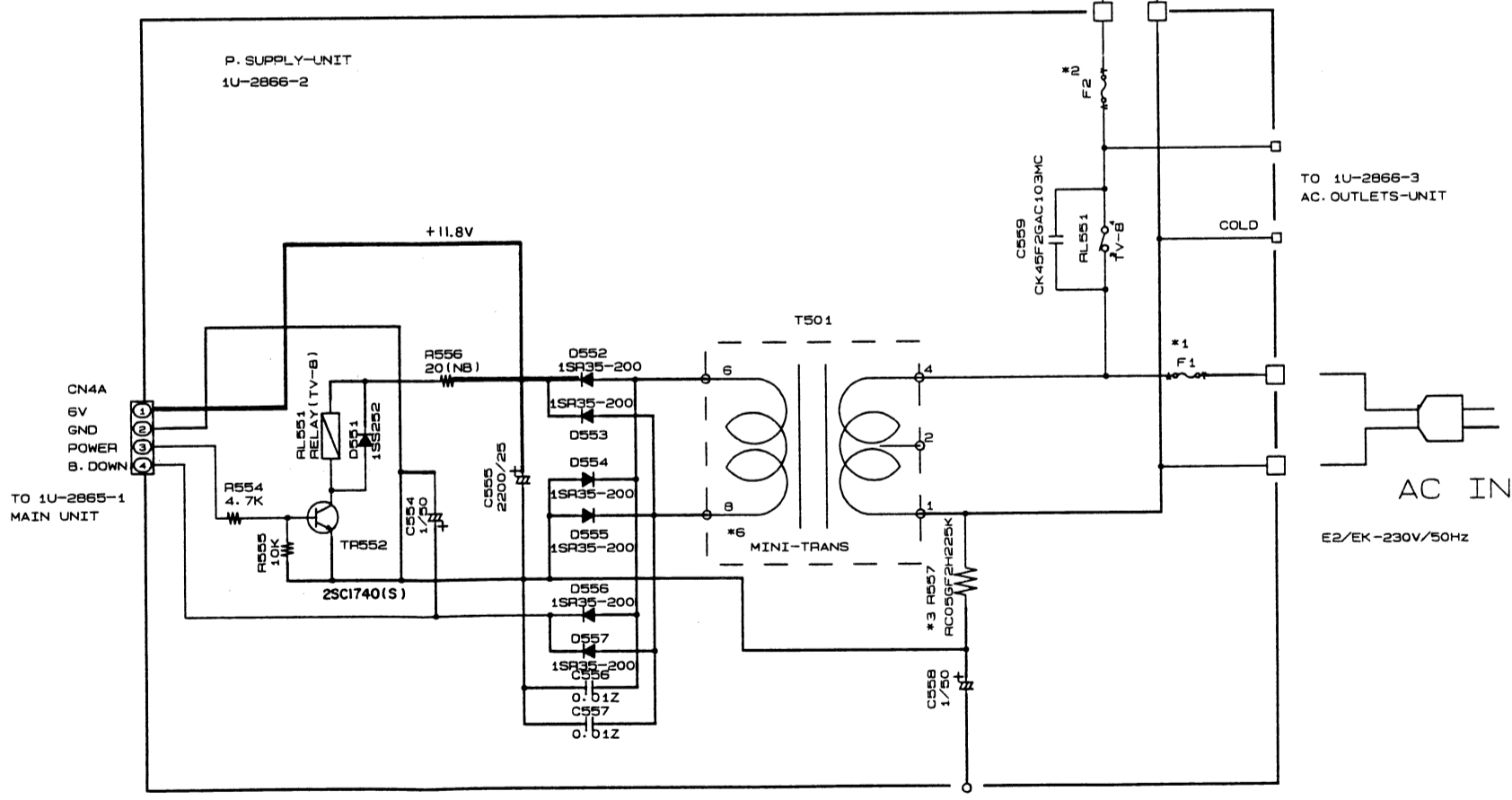
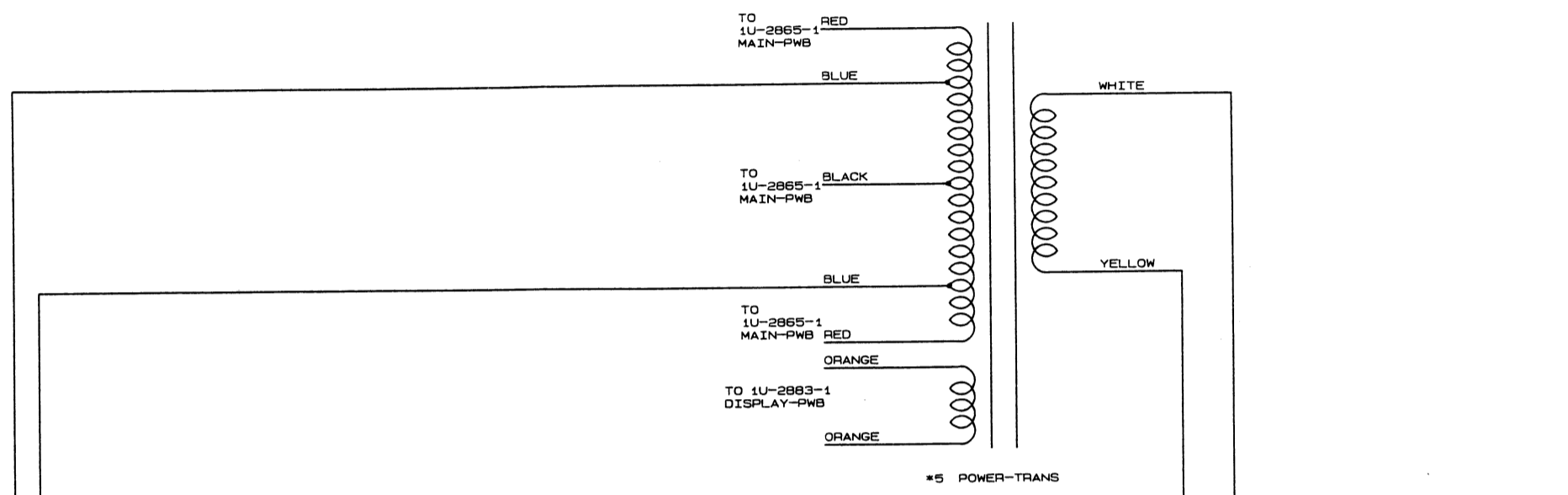
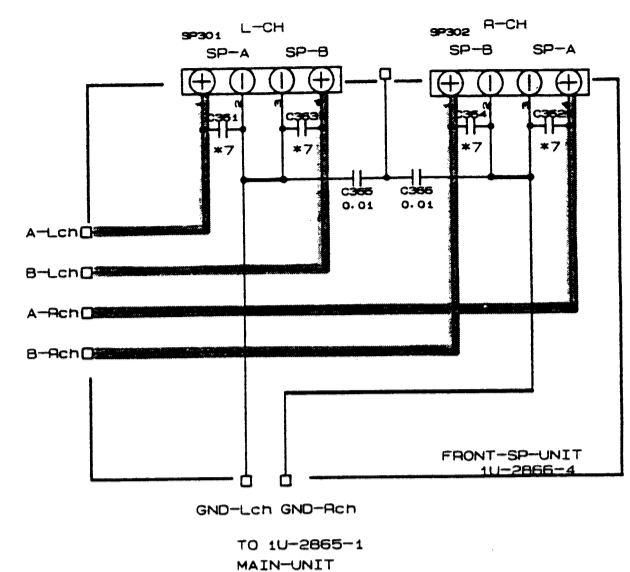
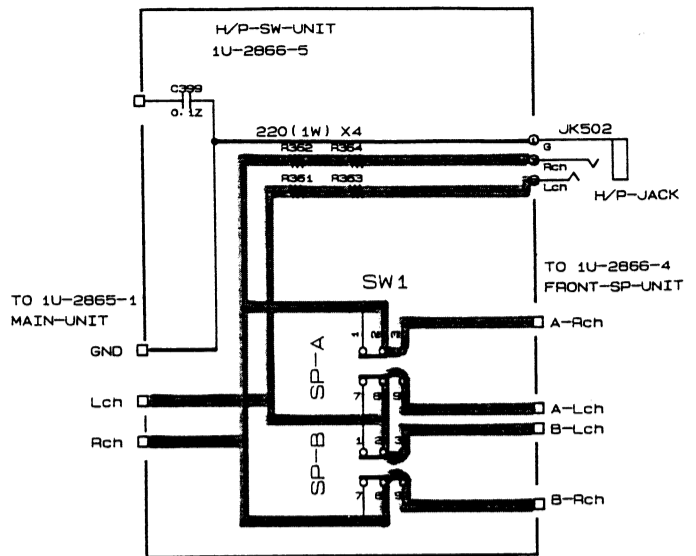
# SCHEMATIC DIAGRAM

1                      2                      3                      4                      5                      6



	*9	*10	*11	*12	*13	*14
	C531 C532	F11 F12	J1 J2	C513 C514	C517 C518	IC501 IC502
900 E3	-	5A /250V	-	-	3300uF/25V	SI-18751
900/950 E2/EK E1	CK100P	-	0	004700P	3300uF/35V	SI-18752

6 7 8 9 10 11



	#1	#2	#3	#4	#5	#6	#7
	F1	F2	RELAY	AC OUTLETS	POWER TRANS	MINI-TRANS	SW361-364
900 C3	6A / 250V	5.3A / 250V	2.2M	0	2336178004	2336073000	-
900 E2/EK	JUMPER	2.5A / 250V	-	-	2336178002	2336058012	026800P
950RD E2/EK	JUMPER	3.15A / 250V	-	-	2336178002	2336058012	026800P

--- +B LINE  
 --- -B LINE  
 ——— SIGNAL LINE

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