

DENON

Hi-Fi AM-FM Stereo Receiver

**For EUROPEAN
And U.K Models**

SERVICE MANUAL

MODEL DRA-565RD

MODEL DRA-365RD

AM-FM STEREO RECEIVER



DRA-565RD




DRA-365RD




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NIPPON COLUMBIA CO., LTD.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Konformitätserklärung

Die DENON Electronic GmbH
 Hatakestraße 32
 40880 Ratingen

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Antragsverordnung 608/1999 (Antragsart des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

PRECAUTIONS FOR INSTALLATION

Install DRA-565/365RD always horizontally. And leave at least 10 cm of space between this unit and other component placed above.

VORKEHRUNGEN FÜR DIE AUFSTELLUNG

Der DRA-565/365RD ist stets waagrecht aufzustellen. Außerdem muß ein Mindestabstand von 10 cm zwischen diesem Gerät und der Komponente gewährleistet werden, die darüber gestellt wird.

PRECAUTIONS D'INSTALLATION

Le DRA-565/365RD doit toujours être installé horizontalement. Et laisser au moins un espace de 10 cm entre cet appareil et l'autre composant placé au-dessus.

PRECAUZIONI PER L'INSTALLAZIONE

Il DRA-565/365RD viene sempre installato in modo orizzontale. Lasciate uno spazio di almeno 10 cm tra quest'unità e un eventuale componente sovrapposto.

PRECAUCIONES PARA LA INSTALACION

Instale siempre el DRA-565/365RD en posición horizontal. Asegúrese también de dejar un espacio de por lo menos 10 cm entre esta unidad y el componente que sea colocado encima.

VOORZORGSMAATREGELEN VOOR INSTALLATIE

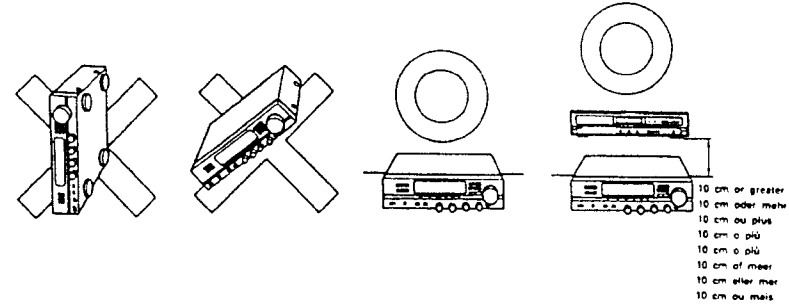
De DRA-565/365RD altijd horizontaal plaatsen. En minstens 10 cm ruimte laten tussen dit toestel en het andere component dat u erboven plaatst.

FÖRBEREDELSE FÖR INSTALLATION

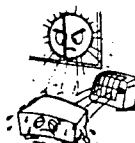


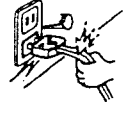
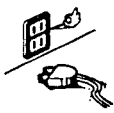
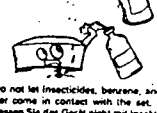
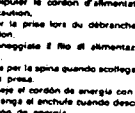

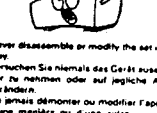
Installera alltid DRA-565/365RD horisontellt. Lämna åtminstone 10 cm mellan denna apparat och en annan komponent som placeras ovanpå.

PRECAUÇÕES PARA A INSTALAÇÃO

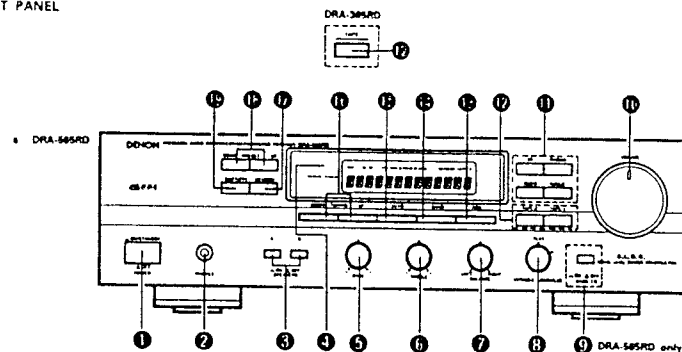
Instale sempre horizontalmente o DRA-565/365RD. E deixe pelo menos 10 cm de espaço entre esta unidade e o outro componente colocado acima.



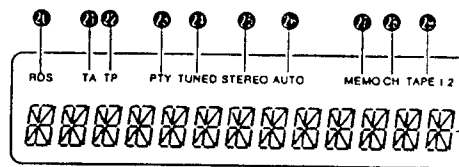
NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION
NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA
OBSERVAÇÕES QUANTO AO USO

 <ul style="list-style-type: none"> • Avoid high temperatures. Allow for sufficient heat dispersion when installed on a rack. • Vermeden Sie hoge temperaturen. Beachten Sie, daß eine ausreichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird. • Eviter des températures élevées. Tenez compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère. • Evitate di esporre l'unità a temperature alte. • Assicurarsi che ci sia un'adeguata dispersione del calore quando si installa l'unità in un mobile per componenti audio. • Evite altas temperaturas. Permita la suficiente dispersión del calor cuando está instalado en la consola. • Vermijd hoge temperaturen. Zorg voor een deeglijk hittevoer indien het apparaat op een rek wordt geplaatst. • Undvik höga temperaturer. Se til at der findes midlertidigt till god varmeledning ved monteringen i et rack. • Evite temperaturas altas. Condição suficiente dispersão de calor quando o equipamento for instalado numa prateleira. 	 <ul style="list-style-type: none"> • Keep the set free from moisture, water, and dust. • Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern. • Protéger l'appareil contre l'humidité, l'eau et la poussière. • Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere. • Mantenga el equipo libre de humedad, agua y polvo. • Laat geen vochtigheid, water of stof in het apparaat binnenvallen. • Utställ inte apparaten för fukt, vatten och damm. • Mantenha o aparelho livre de qualquer umidade, água ou pó. 	 <ul style="list-style-type: none"> • Do not let foreign objects in the set. • Keine fremden Gegenstände in das Gerät kommen lassen. • Ne pas laisser des objets étrangers dans l'appareil. • È importante che nessun oggetto è inserito all'interno dell'unità. • No deve objetos estranhos dentro del equipo. • Laat geen vreemde voorwerpen in dit apparaat vallen. • Se till att främmande föremål inte tränger in i apparaten. • Não deixe objetos estranhos no aparelho.
 <ul style="list-style-type: none"> • Handle the power cord carefully. Hold the plug when unplugging the cord. • Gehen Sie vorsichtig mit dem Netzkabel um. • Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen. • Manipuler le cordon d'alimentation avec précaution. • Tenir la prise lors du débranchement du cordon. • Manipolare il filo di alimentazione con cura. • Agre per la spina quando scollegate il cavo dalla presa. • Manège el cordón de energía con cuidado. Sostenga el enchufe cuando desconecte el cordon de energía. • Hanteer het netkabel voorzichtig. Houd het snoer bij de steeker vast wanneer deze moet worden aan- of losgeplaatst. • Hantera nätkabeln varsamt. Håll i kabeln när den kopplas från el uttaget. • Manuseie com cuidado o fio condutor de energia. Segure a tomada ao desconectar o fio. 	 <ul style="list-style-type: none"> • Unplug the power cord when not using the set for long periods of time. • Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker. • Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes. • Disconnetta il filo di alimentazione quando avrete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo. • Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo. • Haam altijd het netkabel uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt. • Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid. • Desligue o fio condutor de energia quando o aparelho não tiver que ser usado por um longo período. 	 <ul style="list-style-type: none"> • Do not let insecticides, benzene, and thinner come in contact with the set. • Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil. • Assicurarsi che l'unità non venga in contatto con insetticidi, benzina o solventi. • No permita el contacto de insecticidas, gasolina y diluyentes con el equipo. • Laat geen insecticidevrijdende middelen, benzine of ververdunner met dit apparaat in contact komen. • Se till att inte insektmedel på sprayburk, bensin och thinner kommer i kontakt med apparaten någgr. • Não permita que inseticidas, benzina e diluentes entrem em contacto com o aparelho.
 <ul style="list-style-type: none"> • Never obstruct the ventilation holes. • Die Belüftungöffnungen dürfen nicht verdeckt werden. • Ne pas obstruer les trous d'aération. • Non coprire i fori di ventilazione. • No obstruya los orificios de ventilación. • De ventilatieopeningen mogen niet worden beblokt. • Tapp inte till ventilationsöppningarna. • Não obstrua os orifícios de ventilação. 	 <p>(For sets with ventilation holes)</p> <ul style="list-style-type: none"> • Do not disassemble or modify the set in any way. • Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern. • Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre. • Non smontare mai, né modificare l'unità in nessun modo. • Nunca desarme o modifique el equipo de ninguna manera. • Nooit dit apparaat demonteren of op andere wijze modificeren. • Ta inte isär apparaten och försök inte bryga om den. • Nunca desmonte ou modifique o aparelho de alguma forma. 	 <ul style="list-style-type: none"> • Never disassemble or modify the set in any way. • Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern. • Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre. • Non smontare mai, né modificare l'unità in nessun modo. • Nunca desarme o modifique el equipo de ninguna manera. • Nooit dit apparaat demonteren of op andere wijze modificeren. • Ta inte isär apparaten och försök inte bryga om den. • Nunca desmonte ou modifique o aparelho de alguma forma.

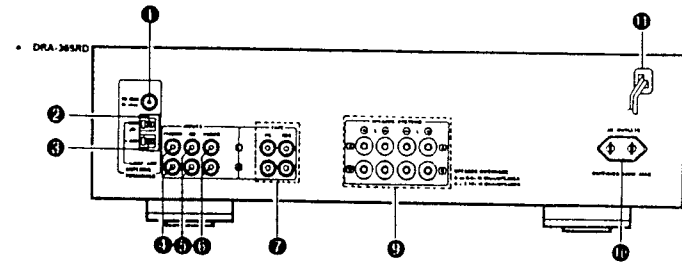
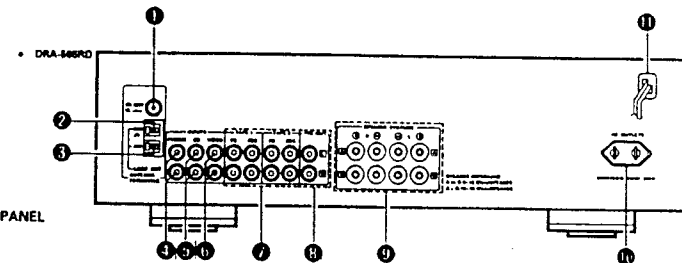
FRONT PANEL



DISPLAY



REAR PANEL



Please check the following items are included with the main unit in the carton:

- (1) Operating Instructions 1
- (2) AM Loop Antenna 1
- (3) FM Antenna 1
- (4) Remote Control RC-174 1
- (5) Batteries R6 (AA) 2

Bitte überprüfen Sie, ob die folgenden Teile vollständig in der Verpackung enthalten sind:

- (1) Bedienungsanleitung 1
- (2) AM-Rahmenantenne 1
- (3) UKW-Antenne 1
- (4) Fernbedienungsgerät RC-174 1
- (5) Trockenzelle-Batterie R6 (AA) 2

Veuillez contrôler que les articles suivants sont bien joints à l'appareil principal dans le carton:

- (1) Mode d'emploi 1
- (2) Antenne-cadre AM 1
- (3) Antenne FM 1
- (4) Télécommande RC-174 1
- (5) Piles de format R6 (AA) 2

Controllare che le parti seguenti si trovino imballate con l'apparecchio nella scatola di spedizione.

- (1) Istruzioni per l'uso 1
- (2) Antenna AM a telaio 1
- (3) Antenna FM 1
- (4) Telecomando RC-174 1
- (5) Batterie a secco R6 (AA) 2

Por favor verifique que los siguientes artículos son empacados en la caja pero separados de la unidad principal.

- (1) Instrucciones de operación 1
- (2) Antena AM de cuadro 1
- (3) Antena de FM 1
- (4) Unidad de control remoto RC-174 1
- (5) Pilas secas R6 (AA) 2

Kontroller de følgende accessories bij het hoofd toestel in de doos zijn verpakt:

- (1) Gebruiksaanwijzing 1
- (2) AM-raamantenne 1
- (3) FM-antenne 1
- (4) Afstandsbediening RC-174 1
- (5) R6 (AA) droge cel batterij 2

Kontrollera att följande tillbehör har packats ner i kartongen tillsammans med huvudenheten.

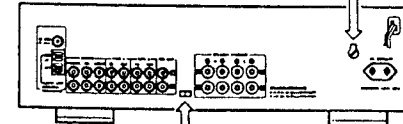
- (1) Bruksanvisning 1
- (2) Ramantenn för AM-bruk 1
- (3) FM-antenn 1
- (4) Fjärrkontroll RC-174 1
- (5) R6 (AA) torr batteri 2

Cartifique-se de que as seguintes peças estão incluídas na embalagem fora de unidade principal:

- (1) Instruções de operação 1
- (2) Antena de quadro AM 1
- (3) Antena FM 1
- (4) Controle remoto RC-174 1
- (5) Pilhas R6 (AA) 2

For multi-voltage models only:

- The desired voltage may be set with the VOLTAGE SELECTOR KNOB on the rear panel, using a screwdriver.
- Do not twist the VOLTAGE SELECTOR KNOB with excessive force as this may cause damage.
- If the VOLTAGE SELECTOR KNOB does not turn smoothly, please contact a qualified serviceman.



(The voltage is set to 220 V upon shipment from the factory.)

- FREQUENCY STEP (Frequency step switch)**
Set the FREQUENCY STEP switch as described below.
- In the U.S.A. and Canada - set the switch to 100 kHz / 10 kHz side. With this setting, the frequency varies in 100 kHz steps in the range of 87.5 to 108.0 MHz (FM) and in 10 kHz steps in 520 to 1710 kHz (AM).
 - Elsewhere - set the switch to 50 kHz / 9 kHz side. With this setting, the frequency varies in 50 kHz steps in the range of 87.50 to 108.0 MHz (FM) and in 9 kHz steps in 522 to 1811 kHz (AM).

DESIGNATIONS AND FUNCTIONS OF PANEL CONTROLS (Refer to Page 5.)

FRONT PANEL

- 1 **POWER (Power ON-STANDBY/OFF Switch)**
This switch turns the unit ON or OFF. There is a delay of approximately 3 seconds before the unit will operate after this power switch is turned ON. If the unit is turned OFF from the remote control, the unit will be in the STANDBY mode. When in the STANDBY mode, the unit can be turned ON with the power button on the remote control. If the unit will not be used for extended period, be sure to turn the unit OFF from the front panel power switch.
NOTE: This unit includes a STANDBY protection feature. This feature is designed to prevent accidental turn-on from the STANDBY mode in the event of a power failure. Should AC power be disconnected and then reconnected when the unit is in STANDBY mode, the unit will return to the STANDBY mode.
To turn the unit ON from the STANDBY mode without the remote control, operate the front panel power switch four times. The unit will then operate normally.
- 2 **PHONES (Headphones Jack)**
Connect a pair of headphones (sold separately) to this jack for private listening.
- 3 **SPEAKERS (Speaker selector switches)**
These switches are used to select speaker system A and B. No sound is heard through the speakers when both switches are reset to the [A] position.
- 4 **REMOTE SENSOR (Remote control sensor)**
This sensor receives the infra-red light transmitted from the wireless remote control unit. For remote control, point the wireless remote control unit towards the sensor.
- 5 **BASS (Bass control)**
Use this control to adjust the low-range response. When the control is set to the center position, the frequency characteristic curve (below 1,000 Hz) is flat. Turn the control clockwise to increase the bass response and counter-clockwise to decrease it.
- 6 **TREBLE (Treble control)**
Use this control to adjust the high-range response. When the control is set to the center position, the frequency characteristic curve (above 1,000 Hz) is flat. Turn the control clockwise to increase the treble response and counter-clockwise to decrease it.
- 7 **BALANCE (Balance control)**
Use this control to balance the volume levels between left and right channels. The volume levels in both channels are equal when the control is set to the center position.
- 8 **VARIABLE LOUDNESS (Loudness control)**
At low volumes, the human ear is less sensitive to low (BASS) and high (TREBLE) frequencies. Use this control to compensate for this deficiency when listening at low volume levels. Turn this control counter-clockwise until a natural balance of bass and treble sound has been restored.
- 9 **BASS EQ (DRA-565RD only)**
Press this button to switch the BASS EQ ON () for emphasis of bass sounds.
Use in conjunction with the bass adjustment of the tone control will provide further emphasis of bass sounds. Set this switch to OFF () when you wish to listen with a normal setting condition.
- 10 **VOLUME (Volume control)**
This knob is used to adjust the volume level of both channels.
Turn the knob clockwise to raise the volume and counter-clockwise to lower it.

- 11 **Input selector (Input selector buttons)**
These buttons are used to select the audio input source.
 - PHONO: Press to play a record on a record player connected to the PHONO input jacks.
 - CD: Press to listen to a compact disc player or another component connected to the CD input jacks.
 - TUNER: Press to listen to FM or AM programs.
 - VIDEO: Use when playing back the audio from a Hi-Fi video, video disc player or other component connected to the VIDEO terminal.
- 12 **Tape selector (Tape selector/monitor buttons) (DRA-565RD)**
TAPE-1: Press this button once, TAPE-1 indicator will light up and then you can play tape source on TAPE-1 terminal.
In this state you can copy TAPE-1 source to TAPE-2 terminal.
TAPE-2: Press this button once, TAPE-2 indicator will light up and then you can play tape or video source of TAPE-2 terminal.
Press again the button currently accessed, to play sources selected by input selector 11, indicator goes out.
- 13 **TAPE (Tape monitor button) (DRA-365RD)**
Press this button once, TAPE indicator will light up and then you can play tape source on the TAPE terminal.
Press again the button currently accessed, to play sources selected by input selector 11, indicator goes out.
- 14 **RDS button**
This button is used for the RDS search (refer to page 12) and PTY search (refer to page 12), and TP search (refer to page 12, 13) operations, and to input the station name (refer to page 12, 13).
- 15 **BAND (Band selector switch)**
Press this switch to select the FM or AM (MW) band.
- 16 **AUTO (Tuning mode button)**
This switches between auto and manual tuning.
Auto tuning: When the UP button is pressed, the radio is tuned automatically to a higher frequency. Press the DOWN button to tune to a lower frequency. Use this position to eliminate noise when no signals or weak signals are being received.
Manual tuning: In this position, the radio can be tuned manually. Reception is automatically manual when in the manual mode.
- 17 **TUNING (Tuning buttons)**
Use these to change the received frequency to a higher frequency (UP) or a lower frequency (DOWN).
When writing station names, use these buttons to select the letters. (Refer to Page 13).
- 18 **MEMORY (Memory button)**
This switch is used to store the desired radio station to a memory.
 - Presetting stations
After pressing the MEMORY button, press the SHIFT/PTY button to select the memory block, A to E. Now use the PRESET UP and DOWN buttons to specify the preset channel number. Press the MEMORY button again to store the station at the specified preset channel.

- 19 **Preset (Preset station buttons)**
These buttons are used for storing stations or recalling stations which have been preset. Using the SHIFT button you can preset a total of 40 FM or AM stations into preset channels.
Once a radio has been memorized, the same station can later be tuned in instantly simply by recalling the corresponding preset channel with PRESET UP or DOWN button.

DISPLAY

- 20 **RDS Indicator**
This lights when receiving RDS broadcasts, and flashes during the RDS search operations.
- 21 **TA Indicator**
This lights when receiving traffic announcements.
- 22 **TP indicator**
This flashes during the TP search operation and lights when TP stations are tuned in.
- 23 **PTY Indicator**
This flashes during the PTY (Programme type) search operation.
- 24 **TUNED indicator**
This lights when a station is properly tuned in.
- 25 **STEREO indicator**
This lights when receiving stereo broadcasts. It remains off when receiving AM broadcasts.
- 26 **AUTO indicator**
This indicates the tuning mode. It lights in the auto mode, and remains off in the manual mode.
NOTE:
 - TP (Traffic Programme)
 - Stations scheduled to broadcast traffic programmes
 - TA (Traffic Announcement)
 - Traffic information broadcasts

REAR PANEL

- 1 **FM ANT (FM antenna terminals)**
75-ohm coaxial cable can be connected to this terminal. For antenna connecting procedure, see the ANTENNA INSTALLATION.
- 2 **GND (Grounding terminal)**
The grounding wire of the turntable is connected here.
 - Hum or noise may be generated if the grounding wire is not connected.
- 3 **AM ANT (AM antenna terminals)**
Connect the attached AM loop antenna. (Refer to page 10 for connections).
Connect to this terminal when a medium wave outdoor antenna is used.
- 4 **PHONO (Phono input terminals)**
The output cord of the turntable is connected here. Since the input sensitivity of "PHONO" is extremely high, do not use the unit without the input pin cord. If used without this cord, the speakers may generate hum.
- 5 **CD**
The output cord of the CD player is connected here.
- 6 **VIDEO**
A VIDEO, such as a VCR or Video Disc may be connected here.
- 7 **TAPE-1, TAPE-2 (Tape deck playback/recording terminal) (DRA-565RD)**
Two tape decks or tape deck can be connected to these jacks for full-fledged playback, recording and tape dubbing operation.
 - TAPE (DRA-365RD)
Tape decks can be connected for full use including playing or copying.

- 8 **SHIFT/PTY button**
Use this button to select the memory blocks, A (1 to 8), B (1 to 8), C (1 to 8), D (1 to 8) or E (1 to 8).
For PTY search, use this button to select the program type.
When writing station names, use this button to set the writing position.

- 9 **MEMO indicator**
This indicator lights for approximately 10 seconds when the MEMORY button has been pressed and a station can be stored on a PRESET CHANNEL button.
This flashes continuously during the auto memory operation.
- 10 **CH indicator**
This lights when the preset channel number and shift mode (A, B, C, D or E) are displayed.
- 11 **TAPE-1/TAPE-2 indicator (DRA-565RD)**
The TAPE-1 indicator lights when the TAPE-1 source is selected with the tape selector buttons. The TAPE-2 indicator lights when the TAPE-2 source is selected.
The TAPE indicator (DRA-365RD)
The TAPE indicator lights when the TAPE source is selected with the tape selector buttons.
- 12 **Multi function display**
This displays the frequency, station name, programme type, etc.

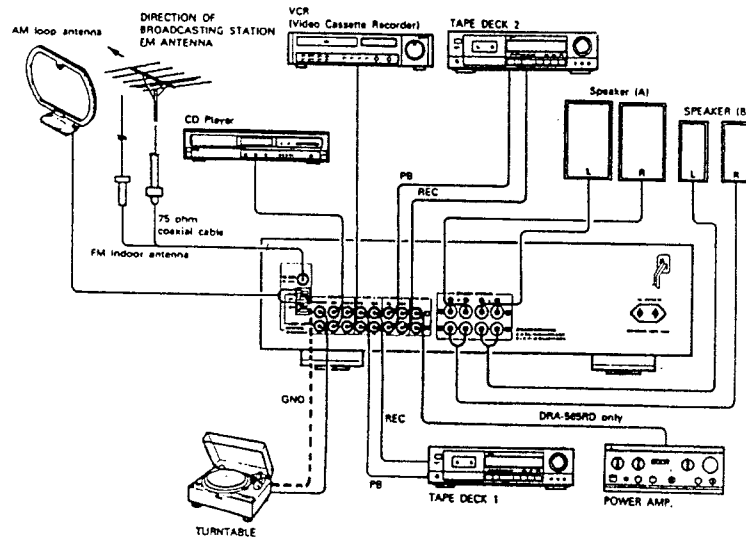
- 13 **PRE-OUT (DRA-565RD only)**
Output signals for power amplifiers are sent from these jacks.
The rated output is 2 volts.
- 14 **SPEAKER SYSTEMS (Speaker terminals)**
Two pairs of speakers A and B can be connected to these terminals.
- 15 **AC OUTLET (AC power outlets)**
This AC outlet is controlled by the power switch and Remote control unit (DRA-565RD), controlled by the power switch (DRA-365RD).
- 16 **AC CORD (Power cord)**
Connect this cord into the wall outlet.

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

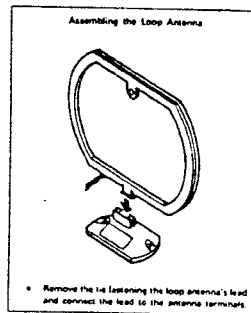
avoid this, keep the receiver as far away from other video components as possible, or place the AM loop antenna where noise is reduced. If the noise is not reduced, turn off the power of the video components when listening to AM broadcasts.

CONNECTIONS



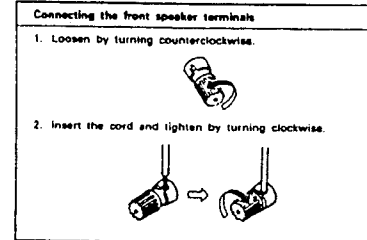
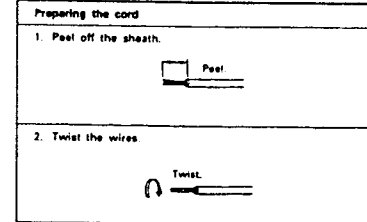
ANTENNA INSTALLATION

- **FM ANTENNA**
The supplied indoor 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 antenna 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 ohm coaxial cable (DC-2V, 5C-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.



SPEAKER CONNECTION

Confirm polarity (+, -) and left and right channels (L, R). Connect the speaker pairs to the SPEAKER terminals A or B on the back panel. Connections must be made with power cord disconnected.



- Notes on Connection**
- Do not plug the power cord into the AC wall outlet until all connections have been completed.
 - Make sure channels are correctly connected. Connect Left channels to Left channels and Right channels to Right channels. Follow the color markings of plugs and terminals to make sure mistakes are not made.
 - Connect all pin-plugs securely, pushing them completely into the jacks. Incomplete connections will cause noise generation.
 - Binding the connection cables to power cords, or running such cables close to power supply transformers will cause humming or noise, and should thus be avoided.

- Notes:**
- Do not connect two FM antennas simultaneously.
 - Even if an external AM antenna is used, do not disconnect the AM loop antenna.
 - Make sure AM loop antenna lead terminals do not touch metal parts of the panel.

CAUTION

Protective Circuit
This set is equipped with a high speed protective circuit. This circuit protects the internal circuitry from damage due to large currents flowing when the speaker jacks are not completely connected or when an output is generated by a short circuit.
This protective circuit's operation cuts off the output to the speakers. In such a case, be sure to turn the power to the set off and check the connections to the speakers. Then turn the power on again. After muting for several seconds, the set will operate normally.

Using the Various Functions

1. Presetting stations in the memory

The frequency and the name of the radio station (including names which you have input yourself), are also stored in the memory.

In particular, the various RDS functions can be used effectively when RDS stations are stored in the memory.

How to preset the memory

Press the MEMORY button . The "MEMO" indicator on the display lights. Next, use SHIFT/PTY button to select the memory block A, B, C, D or E. Now press the PRESET UP or DOWN button to specify the preset channel number, and then press the MEMORY button to store the station in the memory.

The preset channel numbers for the different memory blocks are as follows.

Memory block A	: 1 to 8
Memory block B	: 1 to 8
Memory block C	: 1 to 8
Memory block D	: 1 to 8
Memory block E	: 1 to 8

2. Auto Memory (FM only)

The DRA-565RD/DRA-365RD is equipped with an auto memory function.

Connect the antenna, set it so that stations can be received, then hold in the MEMORY button and press the POWER button to turn the power on. Stations for which the auto stop function operates are stored in the preset memory in the order A1 to A8, B1 to B8, and so on, through E8.

Channel A1 is tuned in after the auto memory operation is completed. Using this function makes it possible to find out the overall reception conditions of the receivable stations. The memory can be used effectively by recalling the channels in the preset memory and replacing stations whose reception is poor with stations whose reception is good, using the procedure described in 1 above.

3. Recalling preset stations

Use the SHIFT/PTY button to select memory block A, B, C, D or E, then press the PRESET UP or DOWN button to recall the station stored in the memory. If the PRESET UP or DOWN buttons are pressed without pressing the SHIFT/PTY button , the stations are recalled in the order A1 to A8, B1 to B8, and so on, through E8.

4. RDS search (for FM only)

Use this function to automatically tune to stations offering Radio Data Service. This operation is also possible by pressing the TUNER button on the remote control unit once when the function is set to the TUNER mode.

Operation	Display
1. Press the RDS button once.	RDS SEARCH
2. Press the PRESET UP or DOWN button .	"RDS SEARCH" flashes on the display.

(Preset memory channels A1 to E8 are being searched.) If no RDS station is found with the above operation, all the reception bands are searched. The station name is displayed after searching stops.

RDS search starts again.

If no other RDS station is found when all the frequencies are searched, "NO RDS" is displayed.)

5. PTY search (for FM only)

Use this function to find stations broadcasting a designated type of programme type (PTY).

This operation is also possible by pressing the TUNER button on the remote control unit twice when the function is set to the TUNER mode. Next, press the PANEL button on the remote control unit, select the PTY, then press the PRESET UP or DOWN buttons to start the PTY search function in the specified direction.

Operation	Display
1. Press the RDS button twice.	PTY SEARCH
2. Press the SHIFT/PTY button .	Programme type or PTY Designated programme type

(Always do this to designate the programme type if "PTY" is displayed in step 1.)

"PTY SEARCH" flashes on the display.

(Preset memory channels A1 to E8 are being searched.) If there is no station broadcasting the designated programme type with the above operation, all the reception bands are searched. The station name is displayed after searching stops.

PTY search starts again.

If no other station broadcasting the designated programme type is found when all the frequencies are searched, "NO PROGRAMME" is displayed.)

The programme types which can be displayed are listed on Page 13.

6. TP Search (for FM only)

This function is used to find stations scheduled to broadcast traffic programmes (TP stations).

This operation is also possible by pressing the TUNER button on the remote control unit three times when the function is set to the TUNER mode.

Operation	Display
1. Press the RDS button 3 times.	TP SEARCH
2. Press the PRESET UP or DOWN button .	"TP SEARCH" flashes on the display.

(Preset memory channels A1 to E8 are being searched.) If no TP station is found with the above operation, all the reception bands are searched. The station name is displayed after searching stops.

TP search starts again.

If no other TP station is found when all the frequencies are searched, "NO PROGRAMME" is displayed.)

7. Writing station names

You can write in station names yourself. (Up to 8 characters.) (Refer to the table of characters on page 13.)

Operation	Display
1. Press the RDS button 4 times.	First character flashes.
2. Use the TUNING and DOWN buttons to select the desired characters.	First letter flashes.

Use the SHIFT/PTY button to move to the next place.

After writing the entire station name, store it in the memory.

(Refer to page 8.)

RDS Emergency Alarm

"ALARM" will flash on the display when the unit receives the Emergency Programme Type Code (PTY31) from an RDS station.

This feature may not operate properly if the signal from the RDS station is too weak or is subjected to interference.

It is not possible to select the "ALARM" display from the PTY search mode.

8. Clearing station names

- Recall the station name you want to clear.
- Press the RDS button 4 times until the character at the first place flashes.
- Then press the SHIFT/PTY button for at least 2 seconds. The current station name will then be cleared.

Note: Station names must be stored in a preset memory to be retained. If the power is turned off, or if the band (AM/FM) is changed, the station name will be lost. Be sure to store the entered station name in a Preset Memory before changing the band or turning the power switch OFF.

The following programme types can be designated:

NEWS	NEWS	M.O.R. MUSIC	M.O.R. MUSIC
AFFAIRS	AFFAIRS	L-CLASSICS	LIGHT CLASSICS
INFORMATION	INFORMATION	S-CLASSICS	SERIOUS CLASSICS
SPORT	SPORT	OTHER MUSIC	OTHER MUSIC
EDUCATION	EDUCATION		
DRAMA	DRAMA		
CULTURE	CULTURE		
SCIENCE	SCIENCE		
VARIED	VARIED		
POP MUSIC	POP MUSIC		
ROCK MUSIC	ROCK MUSIC		

Table of characters

The characters are input in the order shown to the right. Use the TUNING buttons to select the desired characters.

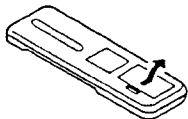
→ ABCDEFGHIJKLMNOPQRSTUVWXYZ
→ 0123456789C/D-*/:;'. / = SPACE

PLAYBACK USING THE REMOTE CONTROL

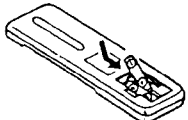
The accessory RC-174 remote control unit is used to control the RECEIVER from a distance.

(1) Inserting the dry cell batteries

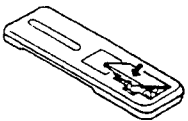
1. Remove the rear cover on the remote control unit.



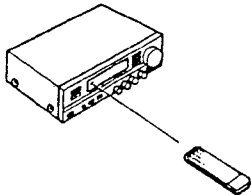
2. Insert two size "AA" (R6) dry cell batteries as shown in the diagram on the battery supply unit.



3. Replace the rear cover.



(2) Directions for use



Note on Operation

- Do not press the operating buttons on the receiver and the remote control unit at the same time. This will cause misoperation.
- Operation of the remote control unit will become less effective or erratic if the infrared remote control sensor on the receiver is exposed to strong light or if there are obstructions between the remote control unit and the sensor.
- In case you operate your VCR, TV or other components by remote control, do not operate buttons on two different remote control units at the same time. This will cause mis-operation.

Notes on Use of the Batteries

- The remote control unit uses size "AA" (R6) dry cell batteries.
- The batteries will need to be replaced approximately once a year. This will depend upon how often the remote control is used.
- If, in less than a year from the time new batteries were inserted, the remote control fails to operate the receiver from a near-by position, it is time to replace the batteries.
- Insert the batteries properly, following the diagram on the remote control battery supply unit, and making sure to align the plus and minus sides of each battery.
- Batteries are prone to damage and leakage. Therefore:
 - Do not combine new batteries with used ones.
 - Do not combine different types of batteries.
 - Do not jumper the opposite poles of the batteries, expose them to heat or break them open, or put them into open fire.
- When the remote control is not to be used for a long period of time, remove the batteries from the unit.
- If the batteries have leaked, remove any battery fluid from the inside of the battery supply unit by wiping it out thoroughly, and insert new batteries.

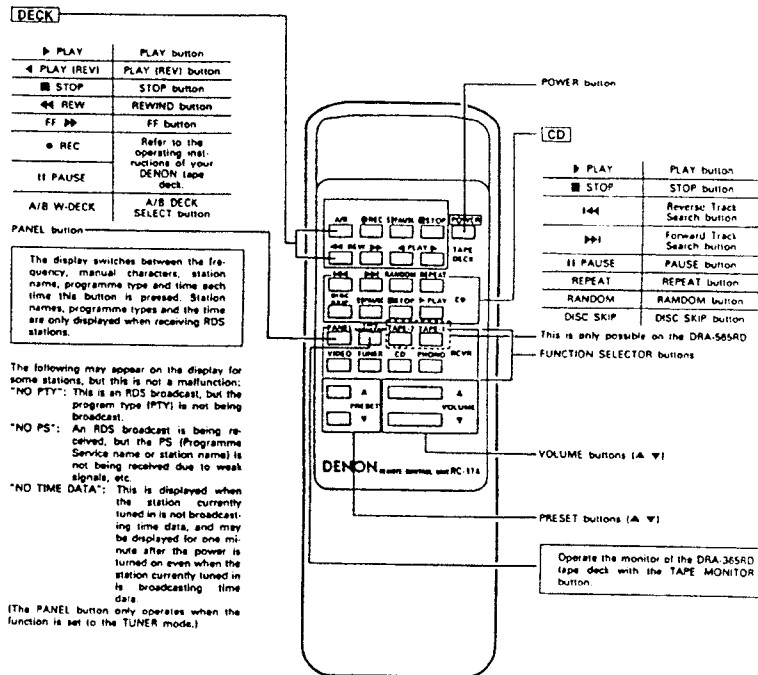
Besides being able to operate the DRA-565RD/365RD receiver with this remote control unit, you can also operate a DENON cassette deck and CD player from this handy full-system remote control unit.

Remote Control Section

Full-system Remote Control Unit

The full-system remote control unit operates all major functions of the receiver such as function switching, volume control, and preset station selection. But that's not all! The same control pad can also control the major functions of a DENON CD player and cassette deck to create a remarkably ergonomic and versatile DENON system with all the quality sound reproduction that the devoted audiophile expects.

Remote Control Unit RC-174 supplied with DRA-565RD/365RD



The display switches between the frequency, manual characters, station name, programme type and time each time this button is pressed. Station names, programme types and the time are only displayed when receiving RDS stations.

The following may appear on the display for some stations, but this is not a malfunction: "NO PTY": This is an RDS broadcast, but the program type (PTY) is not being broadcast.

"NO PS": An RDS broadcast is being received, but the PS (Programme Service name or station name) is not being received due to weak signals, etc.

"NO TIME DATA": This is displayed when the station currently tuned in is not broadcasting time data, and may be displayed for one minute after the power is turned on even when the station currently tuned in is broadcasting time data.

[The PANEL button only operates when the function is set to the TUNER mode.]

- The RC-174 Remote Control Unit can control CD players and cassette decks made by DENON.
- Note that operation may not be possible for some models.
- Buttons are conveniently separated into groups, each group controlling one specific component. The groups are RECEIVER, CD and DECK.

For details on operating other components, refer to the instruction manuals for the CD player and/or cassette deck.

CAUTION:

- If the power is turned off with the remote control unit, the receiver is switched to the power stand-by state. If you are to be absent for a long period of time, be sure to turn the power off using the POWER switch on the receiver.
- A part of the digit of fluorescent display light while the receiver is in the power stand-by state.
- You may experience erratic operation of the remote control unit if it is operated in fluorescent light and direct sunlight, in particular if this light strikes the remote control sensor on the receiver. However, this is not a malfunction, and if this should happen, protect the sensor against such light.

TROUBLESHOOTING

1. Have all connections been made PROPERLY?
2. Have you followed all operational instructions correctly?
3. Check speaker and the turntable systems for proper operation.

When your unit does not seem to be operating correctly, first check the items in the following table. If the symptom does not correspond to any of the problems as shown below, turn off the power sources immediately and contact your DENON dealer.

Problem	Cause	Remedy
FM AND AM RECEPTION		
Radio program can not be received.	<ul style="list-style-type: none"> • Antenna connection is wrong. • A signal strength is weak. 	<ul style="list-style-type: none"> • Check the connection. • Check the antenna installation.
Noise is reproduced.	<ul style="list-style-type: none"> • A signal strength is weak. • Automobile ignition noise interferes with reception. • Other electrical equipment interferes with reception. 	<ul style="list-style-type: none"> • Install an outdoor antenna. • Keep the antenna away from the street. • Keep the equipment away from this set, or turn off the power of the other equipment.
The preset frequencies are erased.	<ul style="list-style-type: none"> • The memory back-up term (about 1 month) passed. 	<ul style="list-style-type: none"> • Preset again.
In automatic tuning, the frequency doesn't stop at the radio station.	<ul style="list-style-type: none"> • A signal strength is weak. 	<ul style="list-style-type: none"> • Use manual tuning.
In automatic tuning, it stops at the one step lower or higher frequency than the radio station.	<ul style="list-style-type: none"> • Noise or strong signal strength is received. 	<ul style="list-style-type: none"> • Use manual tuning for optimum reception.
PLAYBACK OF THE AUDIO EQUIPMENTS		
No sound is produced with power on.	<ul style="list-style-type: none"> • Input and speaker cords connection are wrong. • Speaker switch is off. • The INPUT SELECTOR buttons are in wrong position. • The protective circuit is operating. • The fuse has blown out. 	<ul style="list-style-type: none"> • Check the connection. • Turn on speaker switch. • Check these position. • Turn the power off once, check the connections to the speakers, then turn the power on again. • Ask your dealer, or the nearest DENON representative.
Audible hum when playing records.	<ul style="list-style-type: none"> • The input and grounding cords connection of the turntable are wrong. • The cords connection of the cartridge are wrong. • The interference from the nearby TV or radio transmission antenna. 	<ul style="list-style-type: none"> • Check the connection. • Check the connection. • Ask your dealer, or the nearest DENON representative.
Howling is produced when the volume control is turned up too high while playing records.	<ul style="list-style-type: none"> • The vibrations and sounds transmit from the speakers to the turntable. 	<ul style="list-style-type: none"> • Insulate the vibrations, or keep the speakers away from the turntable.
Cracking noise is produced when playing records.	<ul style="list-style-type: none"> • The record is stained with the dust. • The stylus tip of the cartridge is stained with the dust. • The cartridge is defective. 	<ul style="list-style-type: none"> • Clean the record. • Clean the stylus tip. • Try the other cartridge.

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Power Output: DRA-565RD: 80 W + 80 W (4 ohms, 1 kHz)
(DIN)
DRA-365RD: 62 W + 62 W (4 ohms, 1 kHz)
Power Bandwidth (BW): 10 Hz ~ 40 kHz (T.H.D. 0.15%, both channels driven into 8 ohms)

Total Harmonic Distortion: 0.03% (-3 dB at rated output, 8 ohms)
Frequency Response: PHONO RIAA Standard Curve (Recording Output)
MM 20 Hz ~ 20 kHz ±0.5 dB
CD, VIDEO, 20 Hz ~ 60 kHz ±1.5 dB (at 1W)
TAPE-1, TAPE-2 (DRA-565RD)
TAPE (DRA-365RD)

Input Sensitivity and Impedance:
PHONO MM 2.5 mV 47 k ohms
CD, VIDEO, 150 mV 25 k ohms
TAPE-1, TAPE-2 (DRA-565RD)
TAPE (DRA-365RD)

Maximum Input Level (at 1 kHz): PHONO MM 120 mV
Signal to Noise Ratio (IHF-A): PHONO MM 78 dB (at 5.0 mV input)
CD, VIDEO, 95 dB
TAPE-1, TAPE-2 (DRA-565RD)
TAPE (DRA-365RD)

Tone Controls: BASS ±10 dB at 100 Hz
TREBLE ±10 dB at 10 kHz
Loudness Control Effect: VARIABLE LOUDNESS at maximum position
50 Hz/10 kHz, +10 dB/+8 dB

PRE-OUT terminals (DRA-565RD only)
Rated output: 2 V (at 100 kohm load)

TUNER SECTION

(FM) (note: μV at 75 ohms, 0 dB/ -1 + 10⁻¹⁶ W)
Receiving Range: 87.5 ~ 108 MHz
Usable Sensitivity: 0.9 μV (10.3 dB)

Signal to Noise Ratio (IHF-A): MONO 82 dB
STEREO 78 dB
85 dB

Image Rejection: 55 dB
Selectivity (± 300 kHz): 55 dB

Frequency Response: 30 Hz ~ 15 kHz ± 0.2 dB
 ± 1.5 dB

Stereo Separation (at 1 kHz): 40 dB

[AM]
Receiving Range: 522 ~ 1611 kHz

Usable Sensitivity: 18 μV
Signal to Noise Ratio: 55 dB

General
Power Supply: AC 230V 50 Hz

Power Consumption: 145 W (DRA-565RD)
120 W (DRA-365RD)

Power Outlets: SWITCHED 100 W
Dimensions: 434 mm (W) x 130 mm (H)
x 312 mm (D) (DRA-565RD)
434 mm (W) x 120 mm (H)
x 312 mm (D) (DRA-365RD)

Weight: 7.2 kg (DRA-565RD)
6.0 kg (DRA-365RD)

REMOTE CONTROL UNIT
RC-174
Remote control system: Infrared pulse system
Power supply: 3V DC Two size "AA" (R6)
dry cell batteries

External dimensions: 80 mm W x 175 mm H
x 18 mm D

Weight: 120 g (includes batteries)

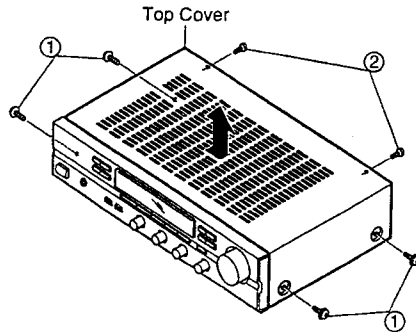
Design and specifications are subject to change without prior notice.

DISASSEMBLY

(To reassemble reverse disassembly)

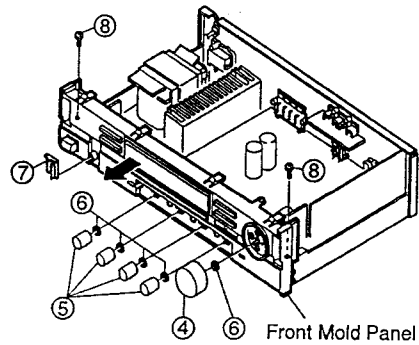
● Top Cover

Remove 4 screws ① and 2 screws ②.



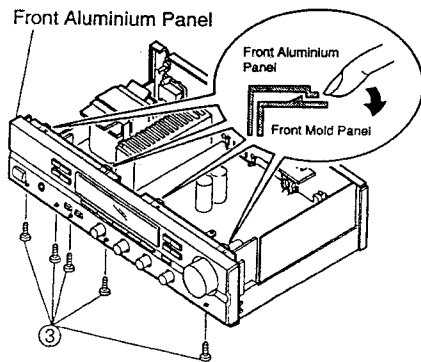
● Front Mold Panel

- (1) Pull out Volume knob ④ and 4 round knobs ⑤.
- (2) Remove 5 nuts ⑥ and Speed Nut ⑦.
- (3) Remove 2 screws ⑧.



● Front Aluminium Panel

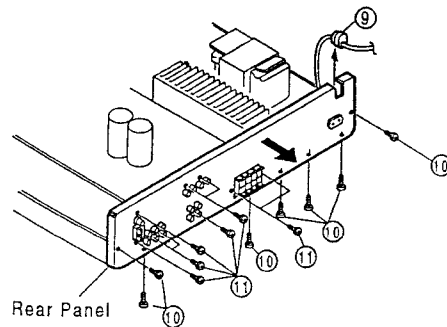
Remove 4 screws (365RD) 5 screws (565RD) ③ and undo hooks at 4 places.



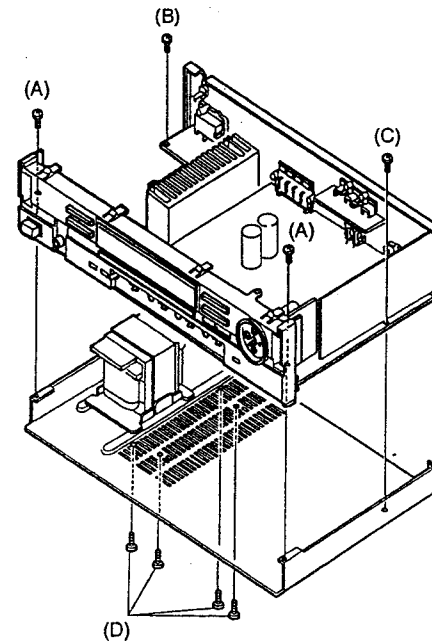
● Rear Panel

- (1) Disconnect cord bush ⑨.
- (2) Remove 7 screws ⑩, and 8 screws (365RD) 9 screws (565RD) ⑪.

*Screws 11 is tighten.

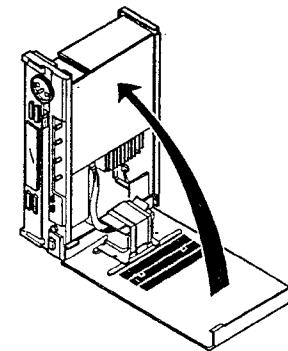


- Despite the transformer and PWB are connected with the wire, an arrangement clumper is relatively easy to remove at a time of service.

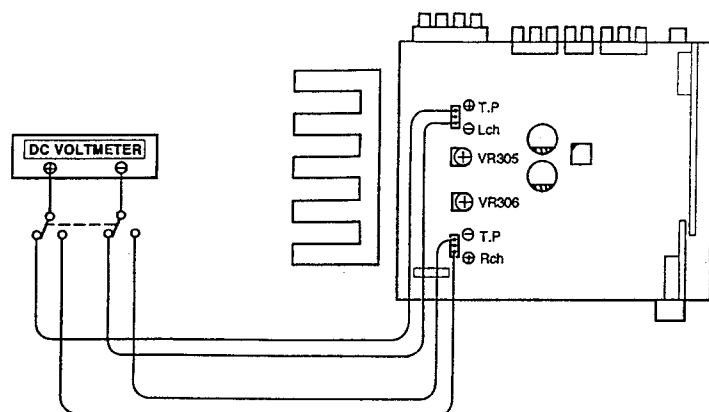


- (1) Disassemble Front Aluminium Panel (refer to previous Item 2).
- (2) Remove 4 screws (D) securing the Radiator to the Bottom Cover.
- (3) Unfasten 2 screws on the surface and 5 screws on the bottom of Rear Panel (refer to previous Item 4).
- (4) Remove 2 screws (A) securing the Inner Panel.
- (5) Untighten a screw (C) and detach Main PWB, remove a screw (B) and detach Power Supply PWB.
- (6) Remove arrangement clumper for the wire of Transformer.
- (7) Hold and lift the Back Panel and Inner Panel.

Checking is feasible by positioning the PWB upright.



METHOD OF ADJUSTMENTS

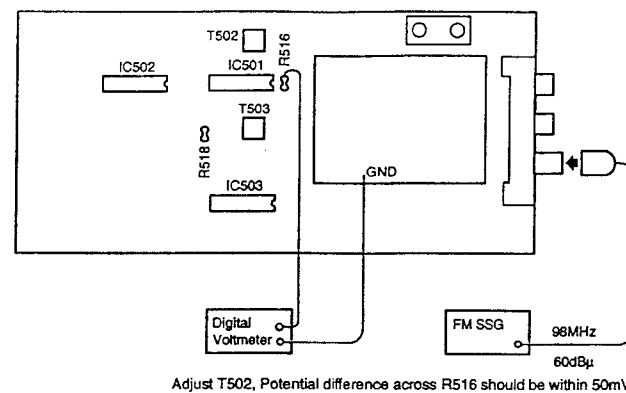


IDLING CURRENT

- (1) Set controls as follows.
 - POWER Switch → off ()
 - VOLUME Control → 0 (min.)
 - SPEAKERS → off ()
 - Temperature → 15°C ~ 30°C (59°F ~ 86°F)
 - VR305 and VR306 of the 1U-2718-1 (Main Unit) → MIN. ()
- (2) Connect DC Voltmeter to the T.P. Lch and T.P. Rch of the 1U-2718.
- (3) Turn the Power Switch on and rotate VR305 clockwise so that the DC Voltmeter reads 2.5 mV ±0.2 mV DC at the T.P. Lch. Follow the same procedure to VR306 for T.P. Rch.
- (4) Warm up for three minutes, then readjust VR305 and VR306 so that the DC Voltmeter reads 2.5 mV ±0.5 mV DC.
- (5) Warm up for 10 minutes, then readjust VR 305 and VR306 so that the DC Voltmeter reads 2.5 mV ±0.5 mV DC.

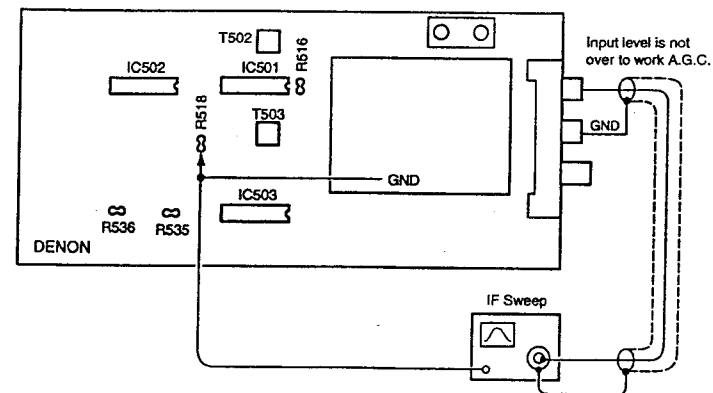
CONNECTINON DIAGRAM OF MEASURING INSTRUMENTS

● FM SECTION



Adjust T502, Potential difference across R516 should be within 50mV.

● AM SECTION

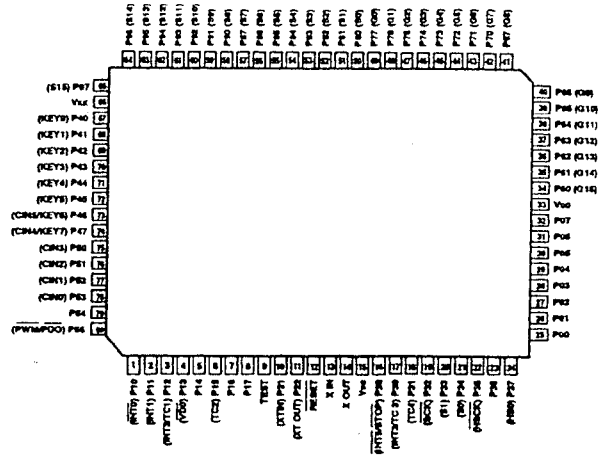
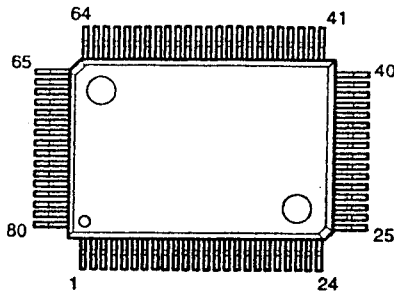


Adjust T503 for maximum height and best symmetry curve.

SEMICONDUCTORS

● IC's

TMP87CM71F (IC601)

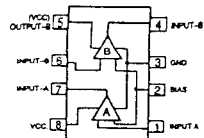
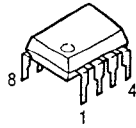


TMP87CM71F Port Allocation Table

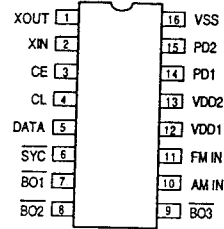
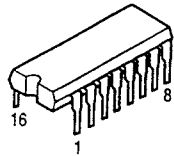
Pin No.	Symbol	IO	Logic	Initial Setting	Function
1	STOP	I	L	—	Power down detection ("L" = at power down).
2	MUTE (A)	I	—	—	MUTE (A) output ("H" = MUTE)
3	RDS	I	Serial	—	RDS data (start) input.
4	RES	O	L	H	LC7074 reset output.
5	GND	I	Serial	—	Not used.
6	FCK	O	Serial	L	Function control output (LC7821) for F-CK.
7	FDA	O	Serial	L	Function control output (LC7821) for F-DATA.
8	FSTB	O	H	L	Function control output (LC7821) for F-STB.
9	GND	I	—	—	Connect to GND.
10	SD	I	L	—	Tuned signal input ("L" = at tuned in).
11	GND	I	—	—	Not used.
12	RESET	I	L	—	Reset input.
13	XIN	I	—	—	Oscillation circuit (4MHz).
14	XOUT	I	—	—	Oscillation circuit (4MHz).
15	Vss	PW	—	—	GND
16	GND	I	—	—	GND
17	REM	I	L	—	Remote control signal input.
18	ST	I	L	—	Stereo signal input ("L" = at stereo).
19	RCK	I	Serial	—	RDS data (clock) input.
20	RDA	I	Serial	—	RDS data (data) input.
21	GND	I	—	—	Not used.
22	PCK	O	Serial	L	LM7001 control output for PLL-CK (CL).
23	PDA	O	Serial	L	LM7001 control output for PLL-DATA (DATA).
24	PSTB	O	H	L	LM7001 control output for PLL-STB (CE).
25	GND	O	—	L	GND
26	GND	O	—	L	GND
27	A/M	O	L	L	AUTO/MANUAL control.
28	GND	I	—	—	Not used.
29	P.OF	O	H	L	Power control output ("H" = ON).
30	VR-UP	O	H	L	Power volume control output (LB1639 ON = at "H").
31	VR-D	O	H	L	Power volume control output (LB1639 ON = at "H").
32	SP-R	O	H	L	Speaker relay control output (ON = at "H").
33	Vcc	PW	—	—	+5V
34	GND	I	—	—	GND
35	GND	I	—	—	GND
36	1G	O	—	—	FL tube control output for 1G.
37	2G	O	—	—	FL tube control output for 2G.
38	3G	O	—	—	FL tube control output for 3G.
39	4G	O	—	—	FL tube control output for 4G.

Pin No.	Symbol	IO	Logic	Initial Setting	Function
40	5G	O	—	—	FL tube control output for 5G.
41	6G	O	—	—	FL Tube control output for 6G.
42	7G	O	—	—	FL Tube control output for 7G.
43	8G	O	—	—	FL Tube control output for 8G.
44	9G	O	—	—	FL Tube control output for 9G.
45	10G	O	—	—	FL Tube control output for 10G.
46	11G	O	—	—	FL Tube control output for 11G.
47	12G	O	—	—	FL Tube control output for 12G.
48	13G	O	—	—	FL Tube control output for 13G.
49	14G	O	—	—	FL Tube control output for 14G.
50	S0 (a)	O	—	—	FL Tube control output for P(a).
51	S1 (b)	O	—	—	FL Tube control output for P(b).
52	S2 (c)	O	—	—	FL Tube control output for P(c).
53	S3 (d)	O	—	—	FL Tube control output for P(d).
54	S4 (e)	O	—	—	FL Tube control output for P(e).
55	S5 (f)	O	—	—	FL Tube control output for P(f).
56	S6 (g)	O	—	—	FL Tube control output for P(g).
57	S7 (h)	O	—	—	FL Tube control output for P(h).
58	S8 (i)	O	—	—	FL Tube control output for P(i).
59	S9 (k)	O	—	—	FL Tube control output for P(k).
60	S10 (m)	O	—	—	FL Tube control output for P(m).
61	S11 (n)	O	—	—	FL Tube control output for p(n).
62	S12 (p)	O	—	—	FL Tube control output for P(p).
63	S13 (q)	O	—	—	FL Tube control output for P(q).
64	S14 (r)	O	—	—	FL Tube control output for P(r).
65	S15 (s)	O	—	—	FL Tube control output for P(s).
66	Vkk	PW	—	—	-15V
67					
68	GND	I	—	—	GND
69					
70					
71	VA	O	L	H	Video In/Out control ("L" = at selection) BV4066.
72	VB	O	L	H	Video In/Out control ("L" = at selection) BV4066.
73	K1	I	—	—	Key input (A/D conversion input).
74	K2	I	—	—	Key input (A/D conversion input).
75	K3	I	—	—	Key input (A/D conversion input).
76	K4	I	—	—	Key input (A/D conversion input).
77	VER	I	—	—	Forwarding country setting.
78	VER	I	—	—	Specification setting.
79	MUTE (T)	O	H	H	MUTE output ("H" = MUTE).
80	GND	I	—	—	GND

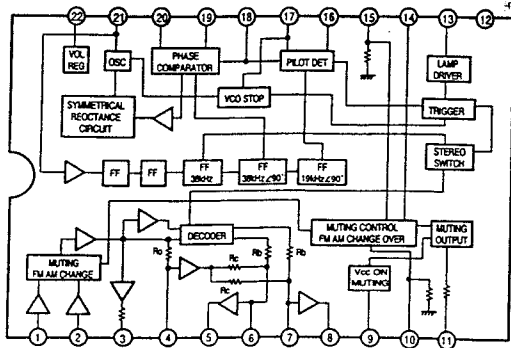
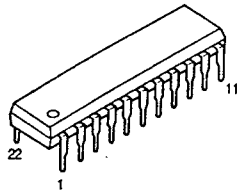
BA4558 (IC101)



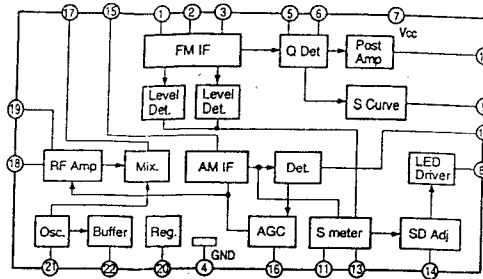
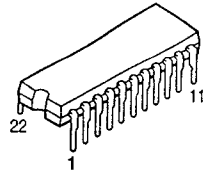
LM7001 (IC503)



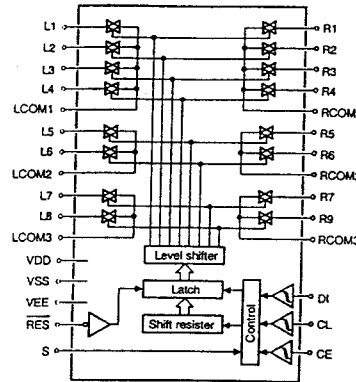
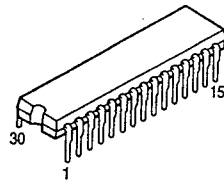
LA3401 (IC502)



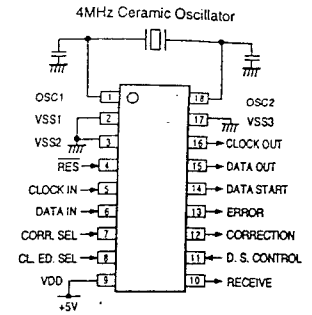
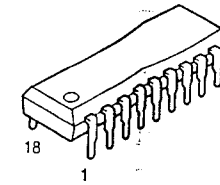
LA1265 (S) (IC501)



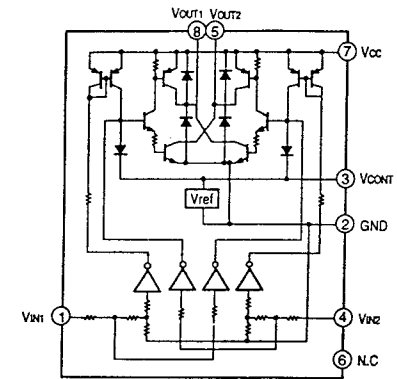
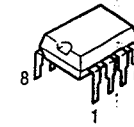
LC7821 (IC102)



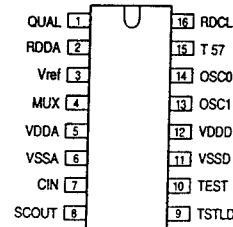
LC7074 (IC602)



LB1639 (IC201)

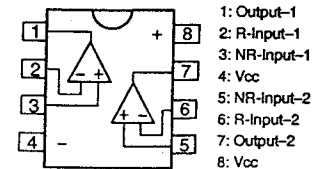
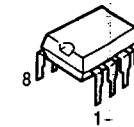


SAA6579T (IC601)



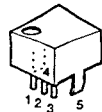
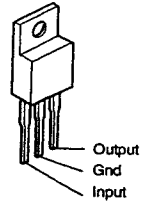
Pin No.	Symbol	Description
1	QUAL	Quality indication output.
2	RDDA	RDS data output.
3	Vref	Reference voltage output (0.5 VDDA).
4	MUX	Multiplex signal input.
5	VDDA	+5 V supply voltage for analog part.
6	VSSA	Ground for analog part (0 V).
7	CIN	Subcarrier input to comparator.
8	SCOUT	Subcarrier output of reconstruction filter.
9	TSTLD	Test control.
10	TEST	Test enable.
11	VSSD	Ground for digital part (0 V).
12	VDDD	+5 V supply voltage for digital part.
13	OSCI	Oscillator input.
14	OSCO	Oscillator output.
15	T 57	57 kHz clock signal output.
16	RDCL	RDS clock output.

BA15218 (IC301)

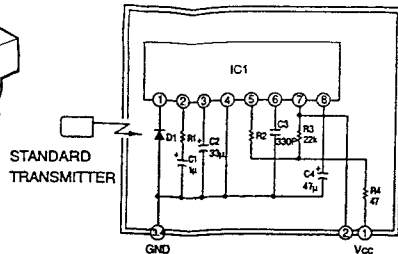


NJM78M12FA
(IC504)
NJM7806FA
(IC401)

SBX1610-52 (REMOTE SENSOR)



1. Vcc
2. Output
3. GND
4. Case Fin
5. Case Fin



- IC1 : CX20106A Chip
D1 : PIN Photo Diode Chip
C1, C2, C4 : Aluminum Electrolytic Capacitor
C3 : SL Characteristic ±5%
R1 : Gain Adjuster
R2 : fo Adjust ±1% USE
R3, R4 : ± 5%

● TRANSISTORS

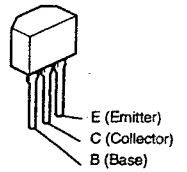
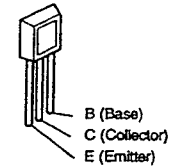
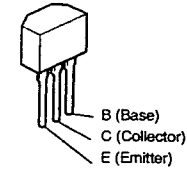
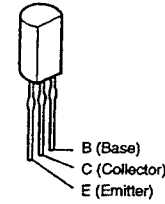
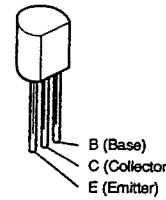
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2SA1515(R)
2SC1815(Y)
2SC1841(E/F)

2SB647A(C)
2SB1041(R)
2SD667A(C)

2SA933S(S)
2SA1038S(S/E)
2SC1740S(E)
2SC1740SLN(E)
2SC2058(Q)
2SC2389S(S/E)

2SB1328(P)
2SD2004(P)

2SK161(GR)



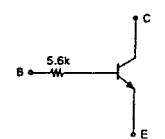
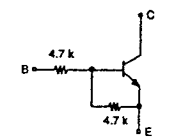
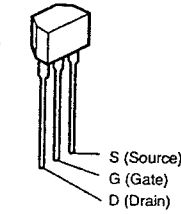
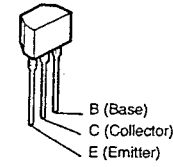
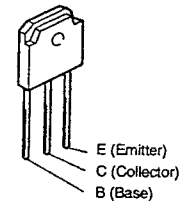
2SA1489(O/P/Y)(Z)
2SA1491(O/P/Y)(Z)
2SC3853(O/P/Y)(Z)
2SC3855(O/P/Y)(Z)

DTA143ES(4.7K-4.7K)
DTA114ES(10K-10K)
DTB123ES
DTC143ES(4.7K-4.7K)
RN-1241(A/B)
DTC144ES(47K-47K)

2SK365 (BL/GR)

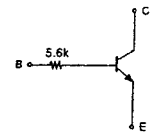
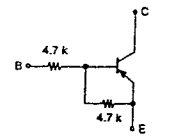
DTC143ES

RN1241



DTA143ES

DTB123ES

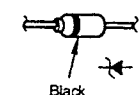
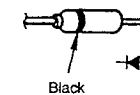
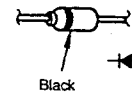


● DIODES & LED

1SS252

1S2471

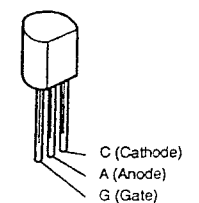
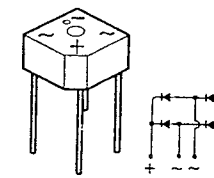
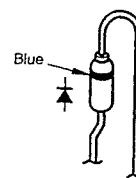
MTZJ3.3A MTZJ7.5C
MTZJ6.2A MTZJ8.2B
MTZJ6.8C MTZJ27D



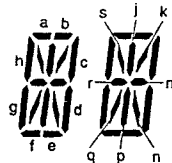
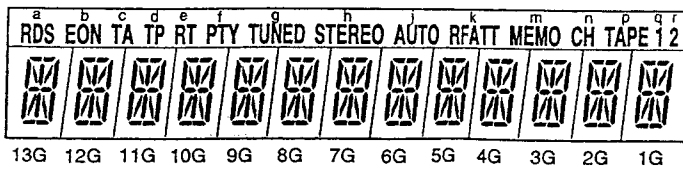
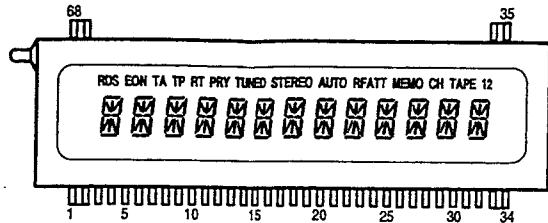
1SR35-200A

S4VB20

SFOR1A42



FLD (FIP14AM7R)



TERMINAL CONNECTION
(UPPER)

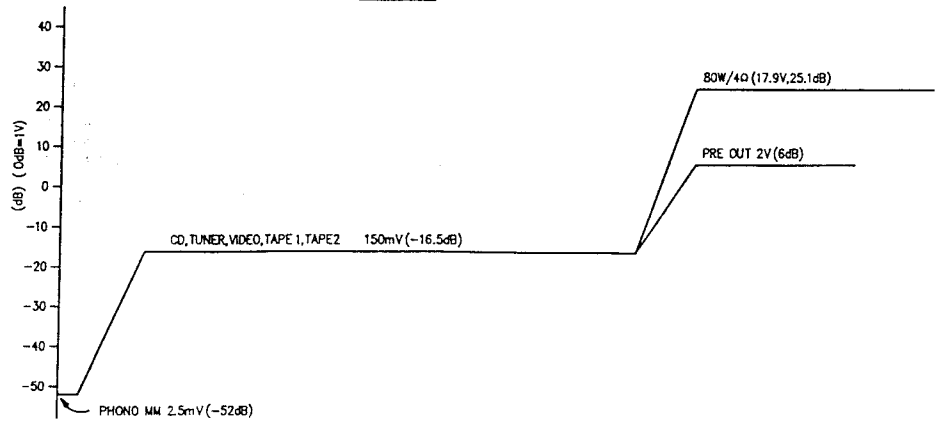
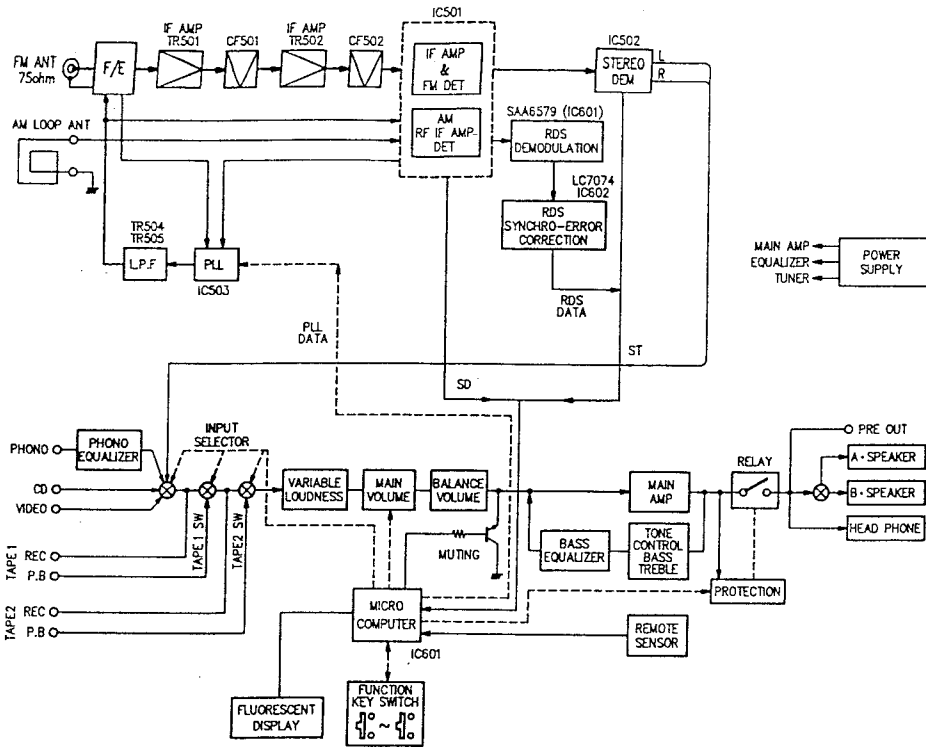
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ELECTRODE	F1	F1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP				
TERMINAL NO.				51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	
ELECTRODE				NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	F2	F2

(LOWER)

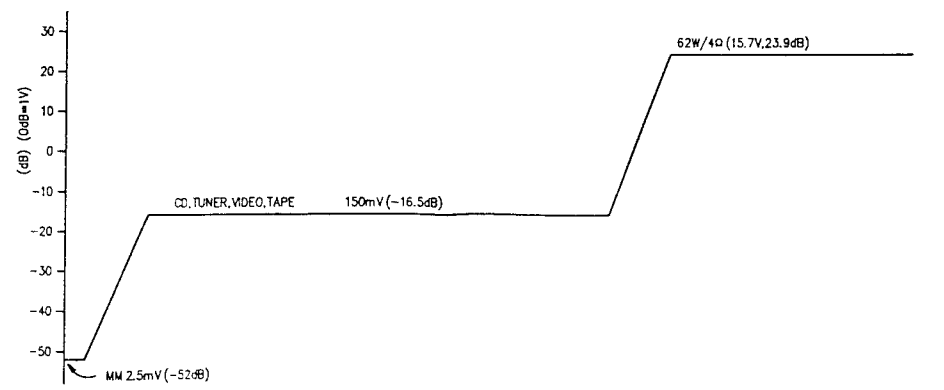
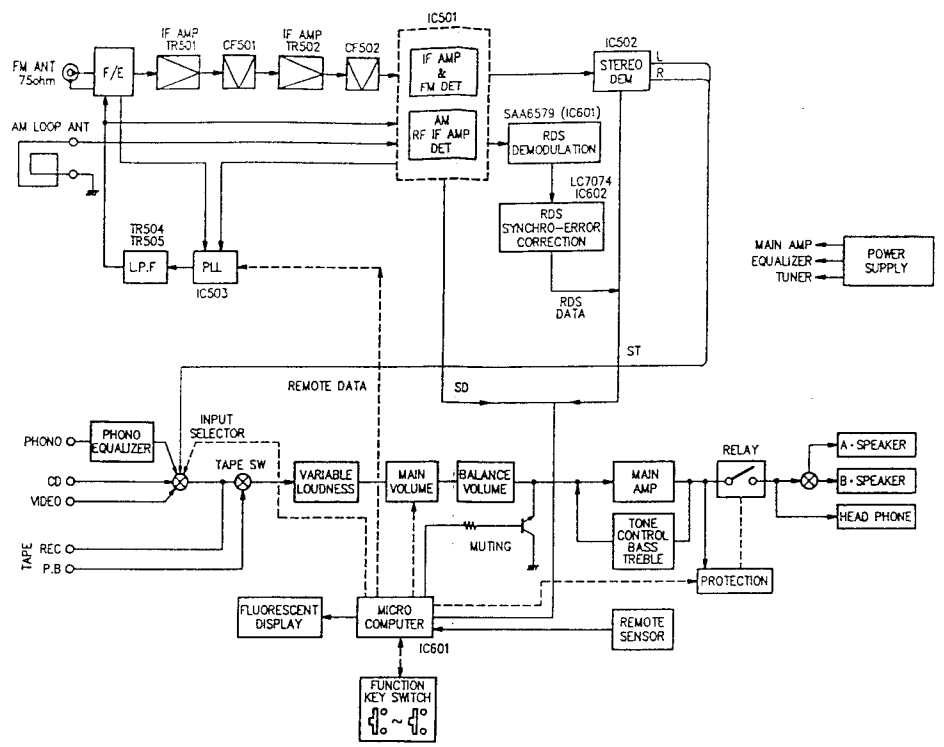
TERMINAL NO.					18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
ELECTRODE					P	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	F2	F2
TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
ELECTRODE	F1	F1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P				

Notes : F : Filament NP : No. Pin
G : Grid
P : Anode

BLOCK/LEVEL DIAGRAM (DRA-565RD)



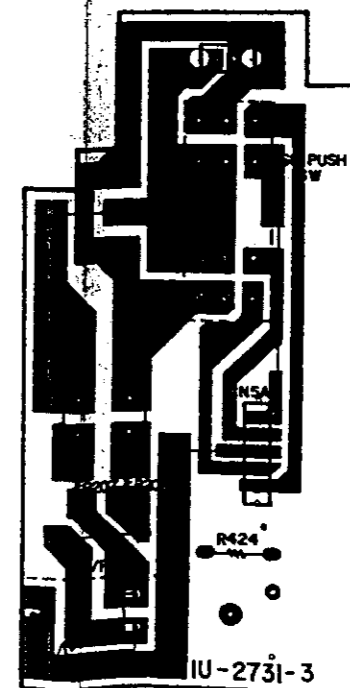
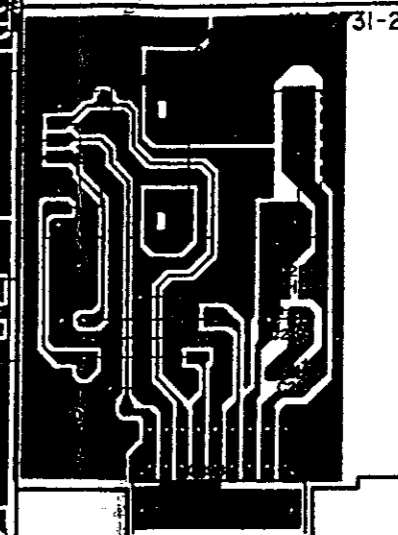
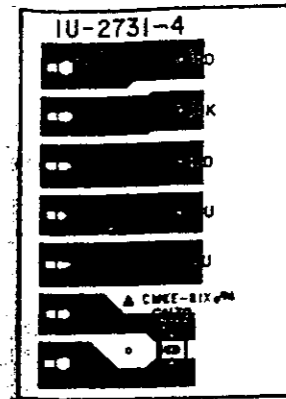
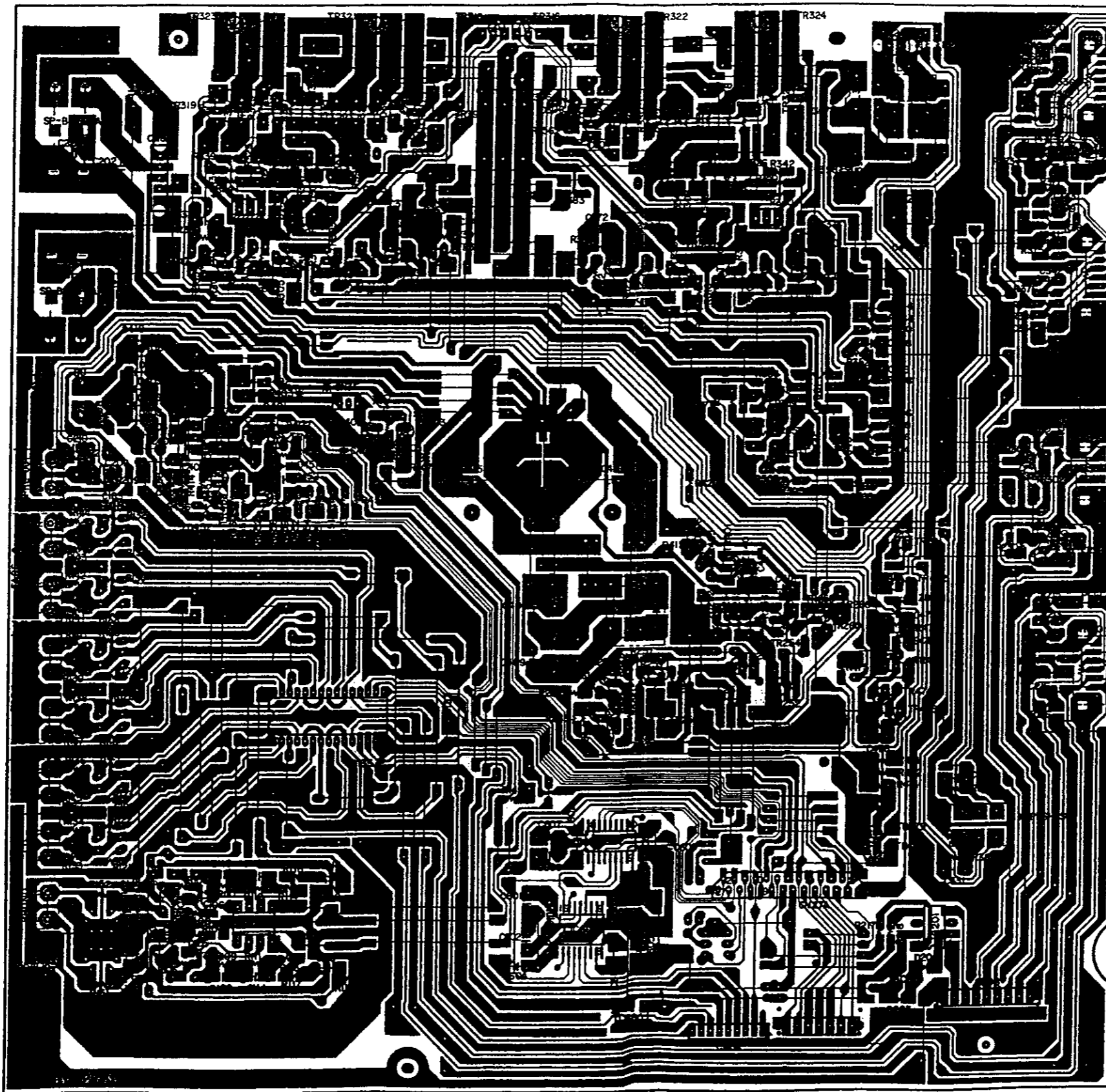
BLOCK/LEVEL DIAGRAM (DRA-365RD)



PRINTED WIRING BOARD PATTERNS

1 2 3 4 5 6 7 8

1U-2731B MAIN UNIT (DRA-565RD)



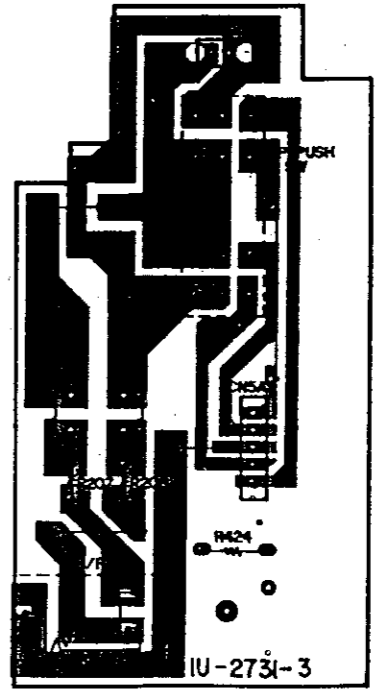
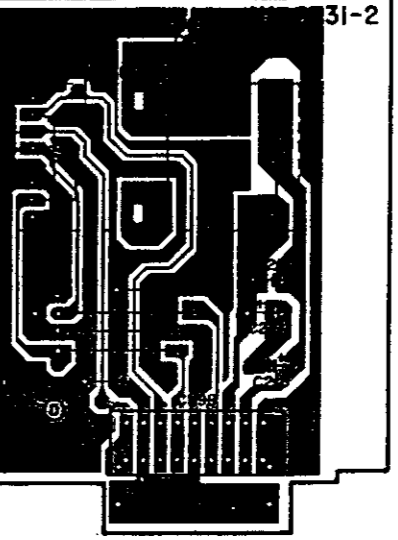
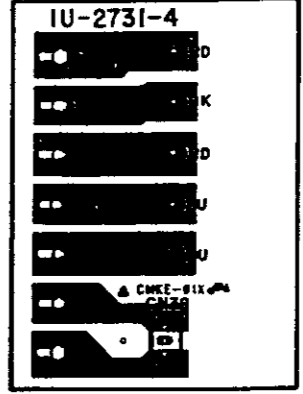
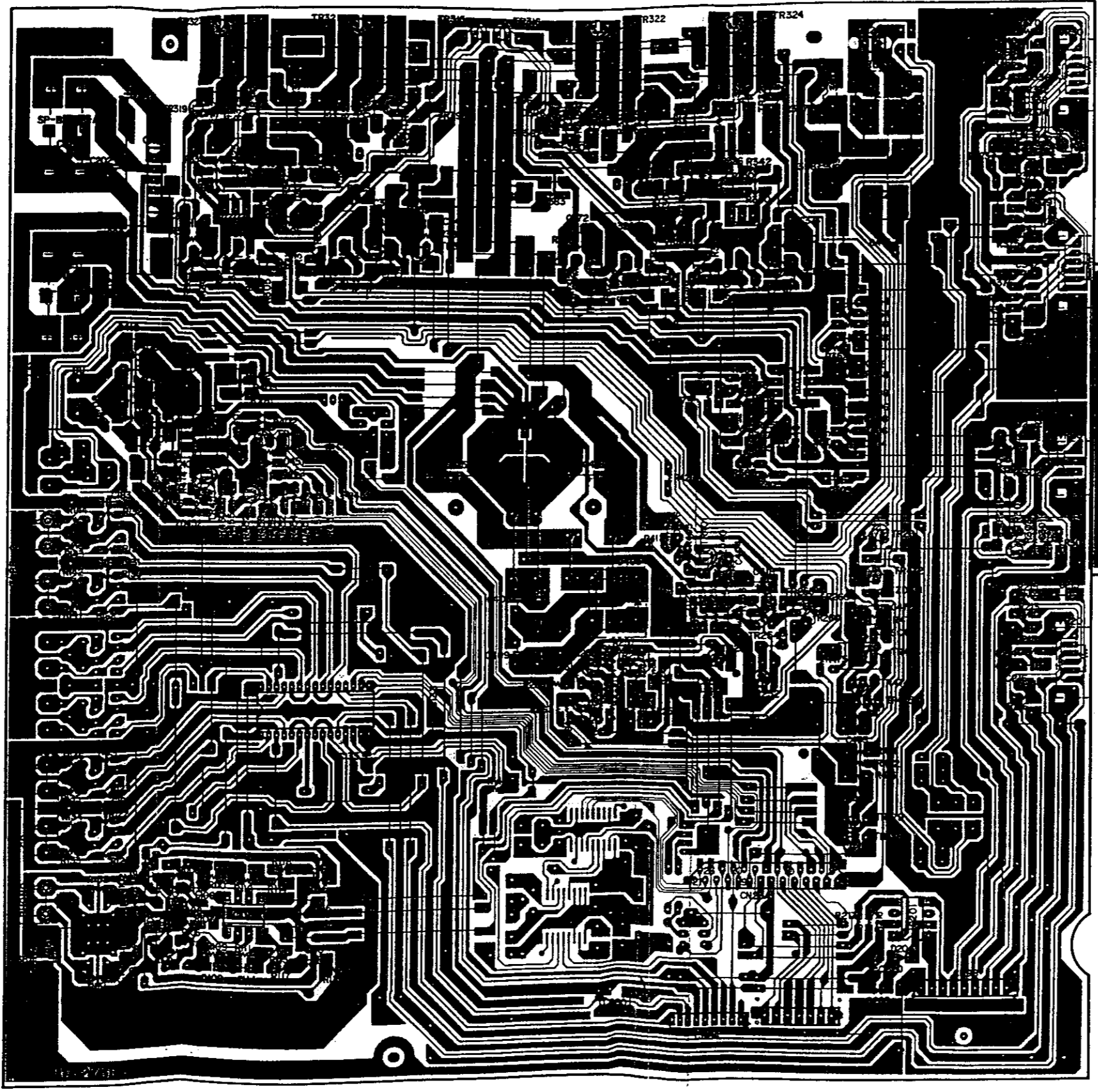
*
CN3F
TR402
TR403
C405
R402
R403
R406
R407
Europe Model Only
(Except For U.K.)

A
B
C
D
E

1 2 3 4 5 6 7 8

1U-2731 MAIN UNIT (DRA-365RD)

A
B
C
D
E

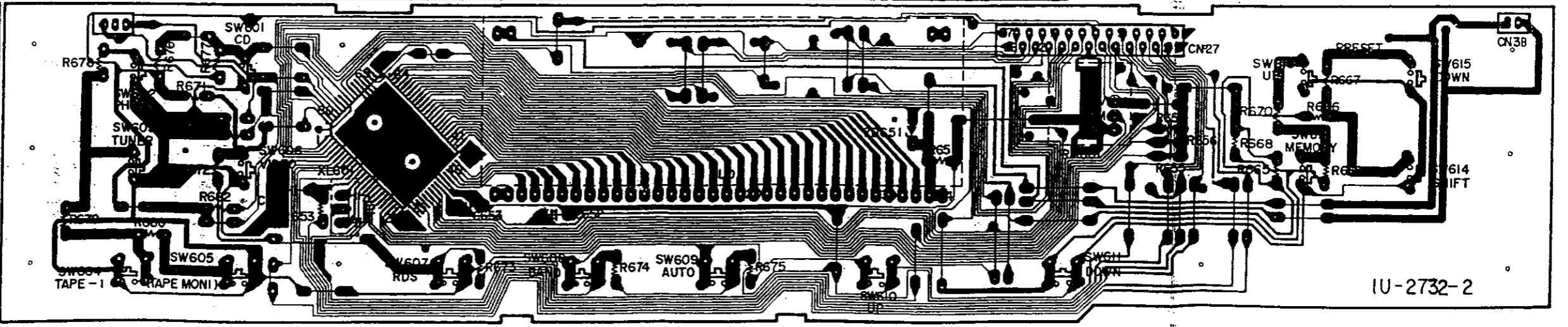
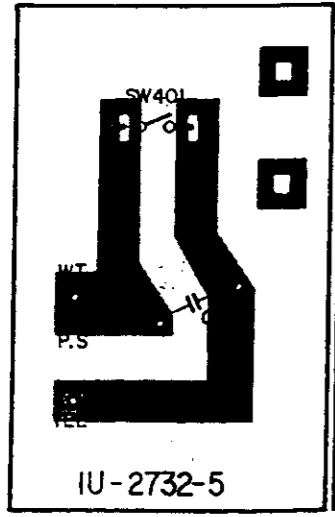
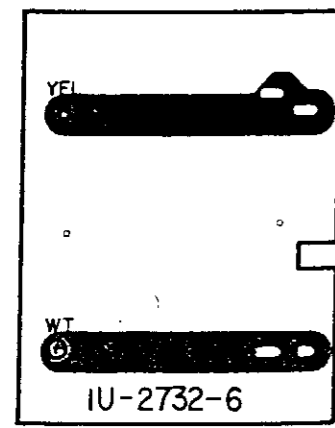
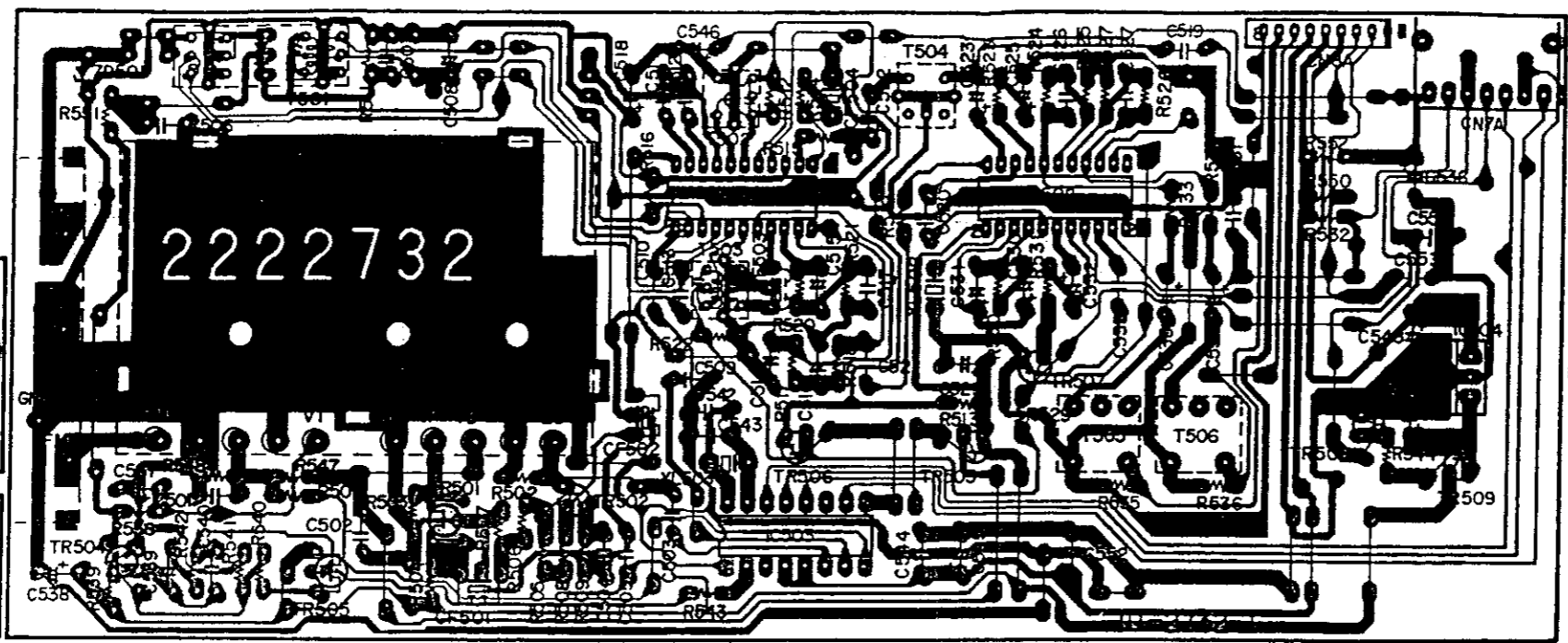
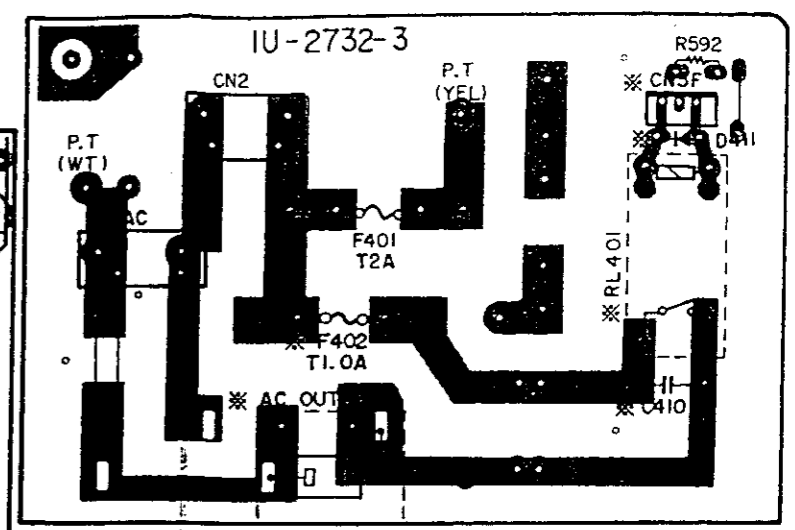


1 2 3 4 5 6 7 8

1U-2732B TUNER & DISPLAY (DRA-565RD)

CN3F
F402
D411
RL401
C410
AC OUTLET

※
Europe Model Only
(Except For U.K.)



A
B
C
D
E

1 2 3 4 5 6 7 8

1U-2732 TUNER & DISPLAY UNIT (DRA-365RD)

* F402 } Europe Model Only
AC OUTLET } (Except For U.K.)

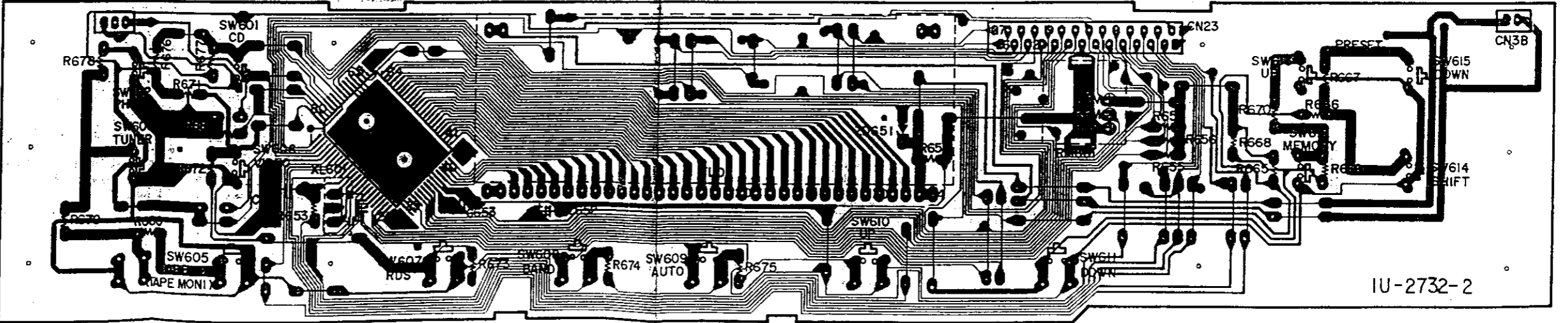
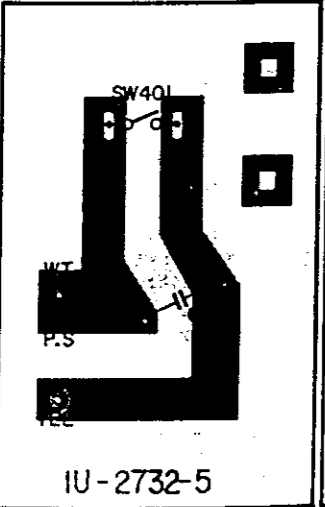
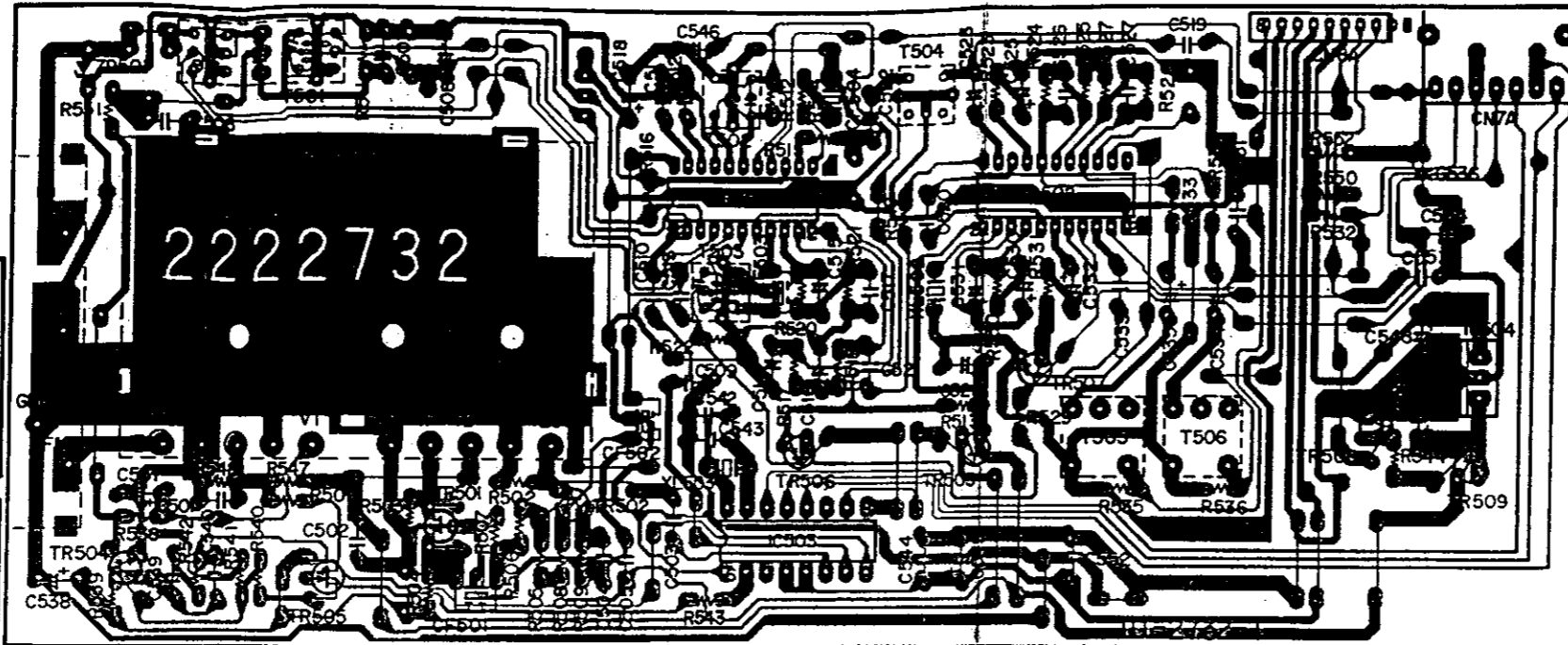
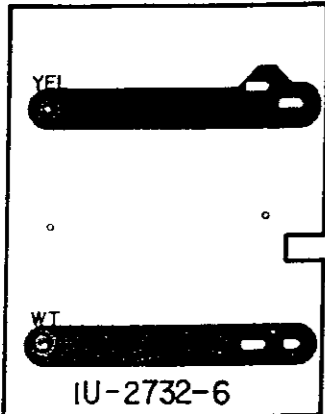
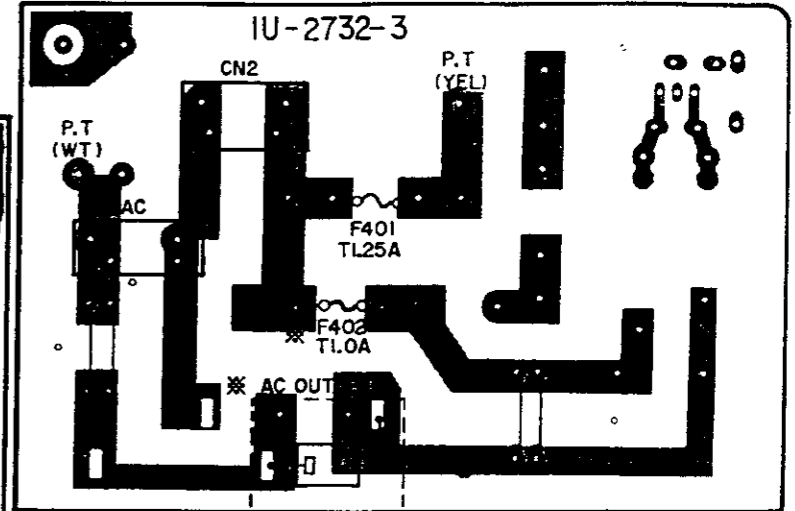
A

B

C

D

E



WIRING DIAGRAM

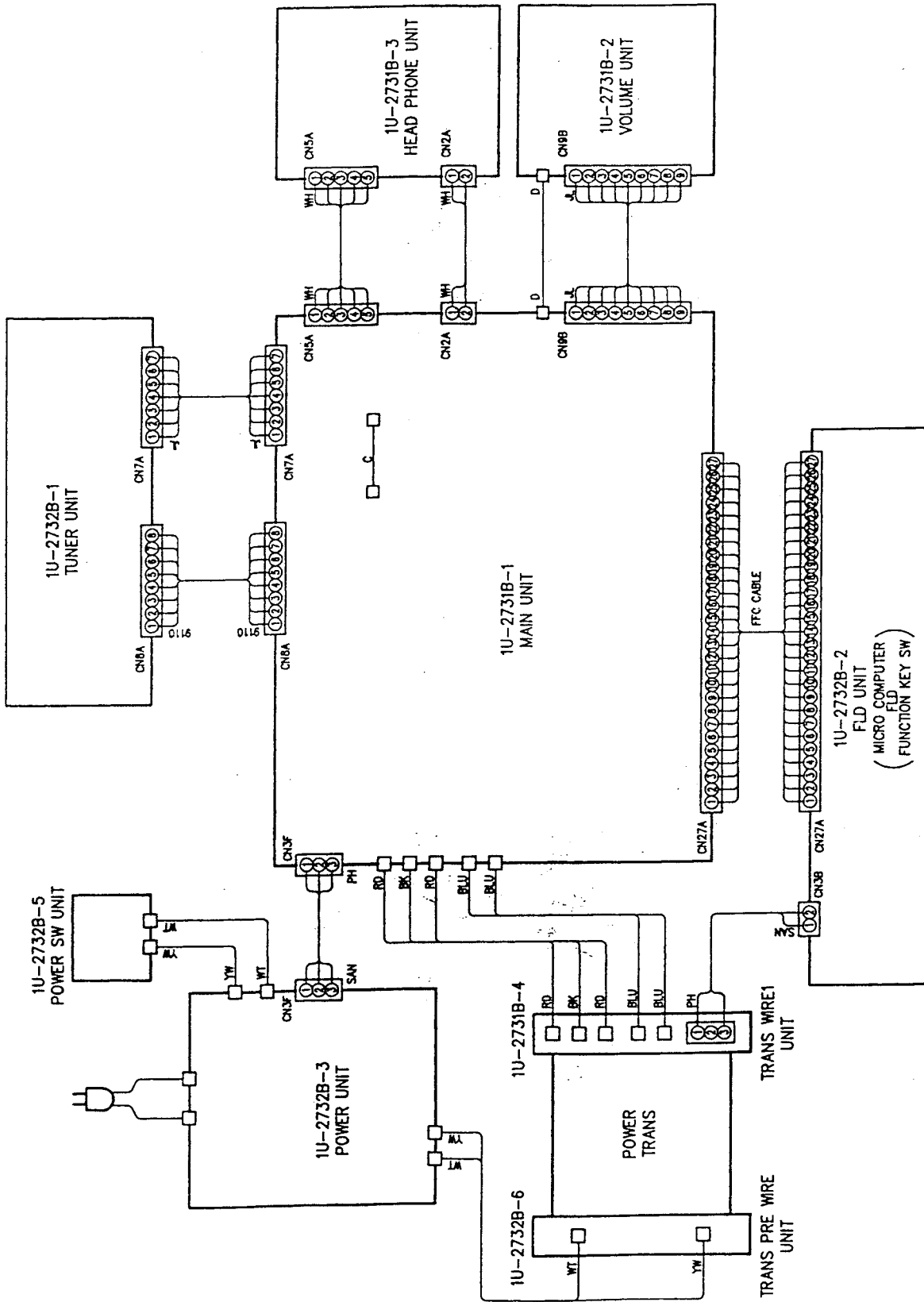
1

2

3

4

DRA-565RD



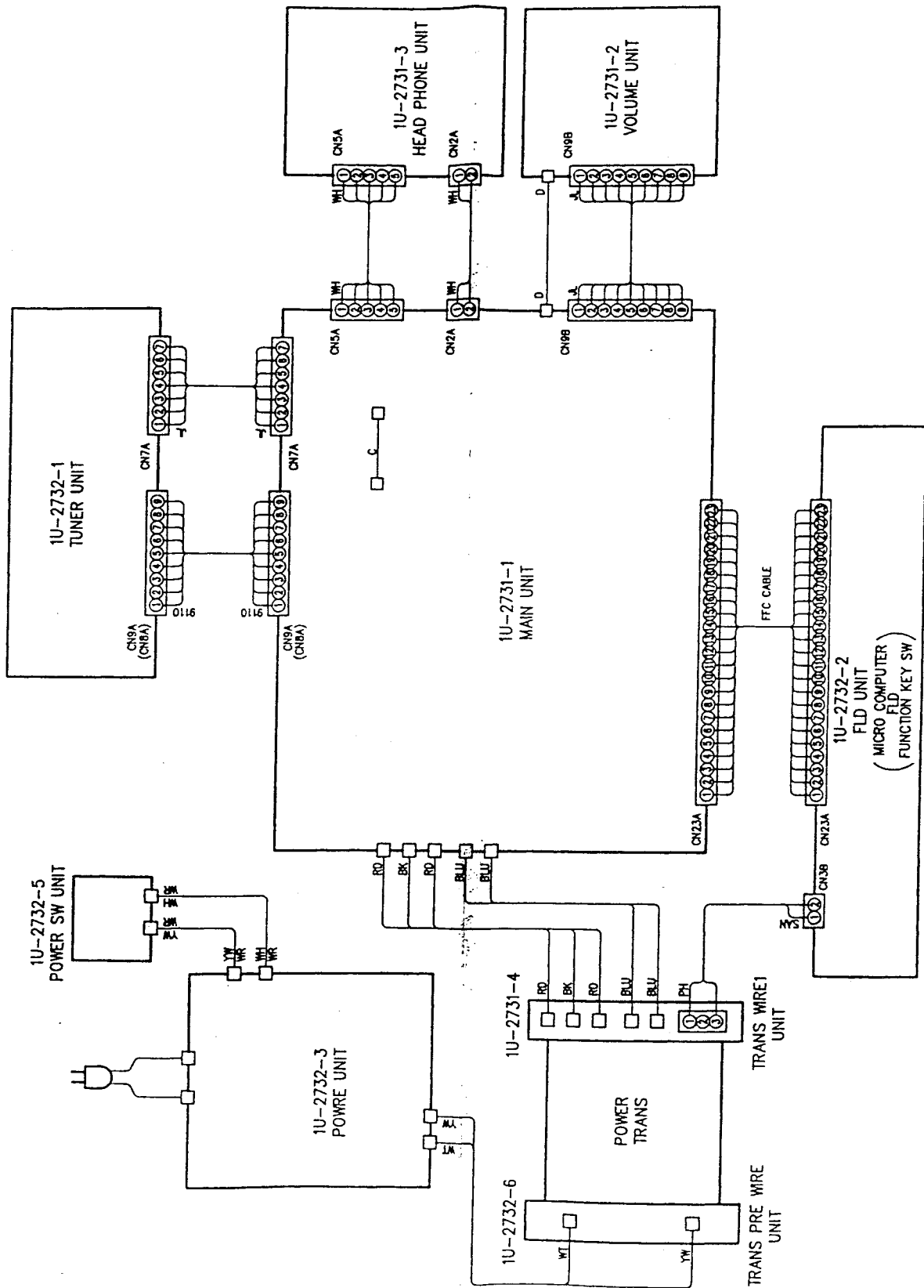
5

6

7

8

DRA-365RD



A

B

C

D

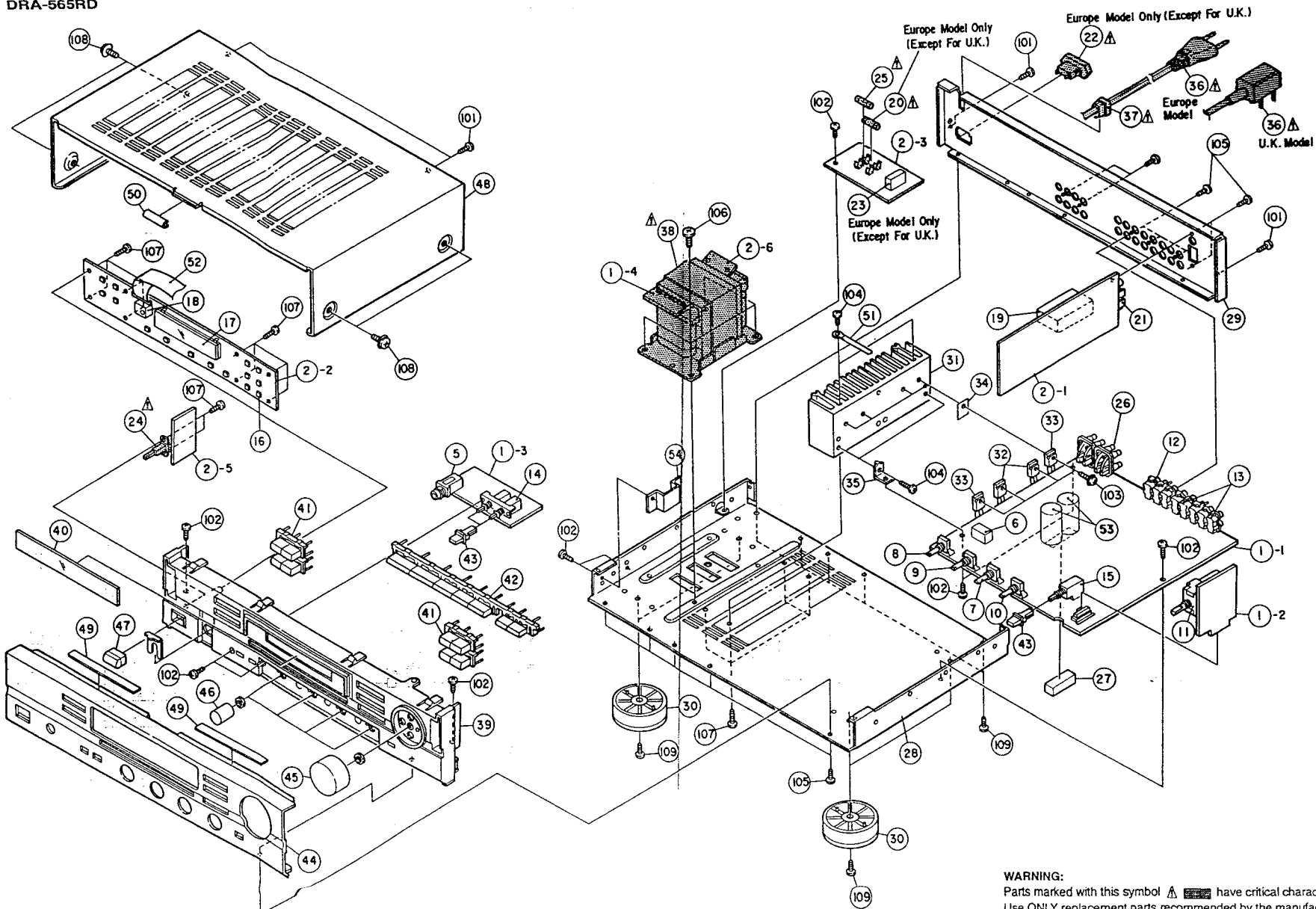
E

EXPLODED VIEW OF CHASSIS AND CABINET

1 2 3 4 5 6 7 8

DRA-565RD

A
B
C
D
E



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

PARTS LIST EXPLODED VIEW (DRA-565RD)

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	1U-2731 B	MAIN UNIT ASSY		1	48	102 0520 129	TOP COVER		1
1-1	---	MAIN UNIT			49	461 0769 009	RUBBER SHEET		2
1-2	---	VOLUME UNIT			50	122 0146 015	HIMERON SHEET		1
1-3	---	HEAD PHONE UNIT			51	445 0048 003	CORD HOLDER (L=76)		2
1-4	---	TRANS WIRE 1 UNIT			52	009 0112 005	Z7P FFC CORD		1
2	1U-2732 B	TUNER/DISPLAY UNIT ASSY		1	53	254 4374 708	ELECTROLYTIC 8200µF56V		1
2-1	---	TUNER UNIT			54	412 2955 107	SIDE BRACKET		1
2-2	---	DISPLAY UNIT			SCREWS				
2-3	---	POWER UNIT			101	473 7015 018	TAPING SCREW 3x8 (S)	Black	4
2-5	---	POWER SW UNIT			102	473 7002 018	TAPING SCREW 3x8 (S)		10
2-6	---	TRANS PRE WIRE UNIT			103	473 8007 009	CUP SCREW 3x12		4
5	204 8354 004	HEAD PHONE JACK		1	104	473 7501 001	TAPING SCREW 3x10 (P)		3
6	214 9003 005	RELAY	RL471	1	105	477 0064 107	FDNG SCREW 3x10	Black	12
7	211 0827 003	VARIABLE	VR251	2	106	473 7004 016	TAPING SCREW 4x6 (S)		4
8	211 0828 002	VARIABLE	VR301	1	107	473 7508 017	TAPING SCREW 3x10 (P)	Black	14
9	211 0829 001	VARIABLE	VR303	1	108	477 0263 005	3P SWELLING SCREW		4
10	211 0830 003	VARIABLE	VR201	1	109	473 7002 005	TAPING SCREW 3x8 (S)		9
11	211 0831 002	VARIABLE	VR102	1	PACKING AND ACCESSORIES (not included EXPLODED view)				
12	204 8466 002	4 PIN JACK		1	505 9125 009	POLY COVER		1	
13	204 8467 001	6P PIN JACK		2	511 2637 007	OPERATING INSTRUCTION		1	
14	212 4778 009	2P PUSH SWITCH		1	231 1314 003	AM LOOP ANTENNA		1	
15	212 1074 007	1P PUSH SWITCH	SW601-615	1	395 0023 008	FM ANTENNA ASSY		1	
16	212 5604 910	TACT SWITCH		15	399 0242 001	REMOTE CONTROL UNIT	RC-174	1	
17	303 4155 002	FLD	PIP14AM7R	1	505 0131 050	CABINET COVER		1	
18	499 0150 008	REMOTE SENSOR	SBX1610-52	1	504 0125 005	STYRENE PAPER	For AC CORD	1	
19	218 0065 006	FRONT END		1	503 1140 002	CUSHION		2	
20	206 1015 029	FUSE 1A	F402 Europe Model Only (Except for U.K.)	1	502 0741 056	PAD	U.K. Model Only	1	
21	205 0847 004	3P ANTENNA TERMINAL		1	501 1783 010	CARTON CASE	Europe Model	1	
22	213 3942 007	AC OUTLET		1	501 1783 023	CARTON CASE	U.K. Model	1	
23	214 0176 009	RELAY(GSP-1)	RL401 Europe Model (Except for U.K.)	1					
24	212 1030 009	POWER SWITCH(IV-5)		1					
25	206 1015 081	FUSE 2A	F401 Europe Model Only (Except for U.K.)	1					
26	205 0484 001	8P SPEAKER TERMINAL	Europe Model	1					
27	461 0539 022	RUBBER SHEET	U.K. Model	1					
28	411 1285 006	MAIN CHASSIS		1					
29	105 1136 029	REAR PANEL	Europe Model	1					
30	104 0194 108	FOOT ASSY	U.K. Model	1					
31	417 0498 205	POWER RADIATOR		4					
32	273 0389 002	TRANSISTOR	TR321,322	2					
33	271 0240 006	TRANSISTOR	TR323,324	2					
34	415 0234 007	INSULATING SHEET		4					
35	412 3767 006	P.W.B. BRACKET		2					
36	208 2091 000	AC CORD WITH CONNECTOR	Europe Model	1					
37	445 0056 009	CORD BUSH	U.K. Model	1					
38	229 6116 006	POWER TRANS		1					
39	146 1495 127	INNER PANEL		1					
40	143 0880 006	WINDOW		1					
41	113 1679 008	BUTTON(4KEY)		2					
42	113 1680 107	BUTTON(7KEY)		1					
43	113 1558 006	PUSH BUTTON(KAKU)		3					
44	144 2370 119	FRONT PANEL		1					
45	112 0647 009	VOLUME KNOB		1					
46	112 0739 001	KNOB(MARU)		4					
47	113 9213 000	POWER BUTTON ASSY		1					

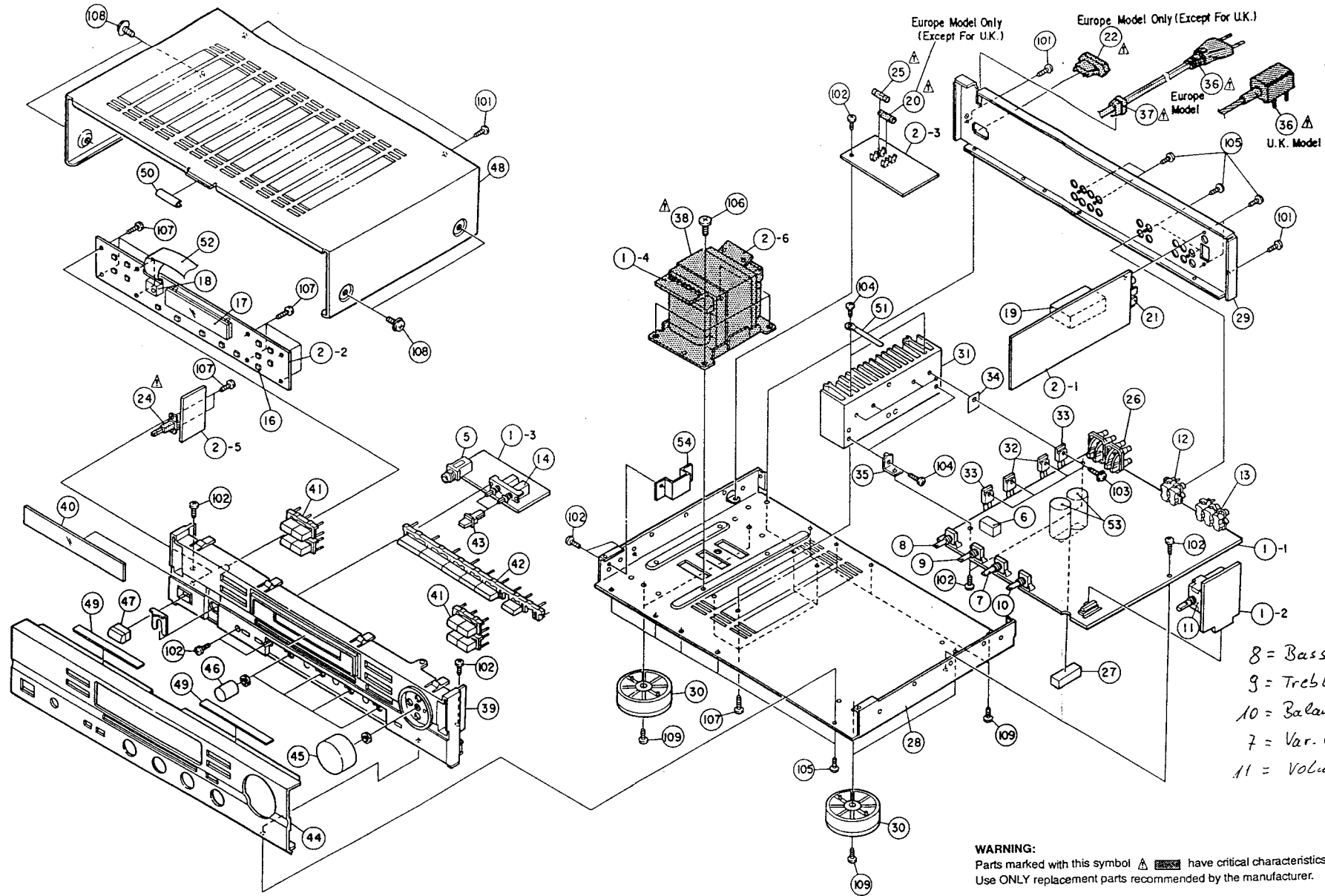
PARTS LIST EXPLODED VIEW (DRA-365RD)

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	1U-2731	MAIN UNIT ASSY		1	50	122 0146 015	HIMERON SHEET		1
1-1	---	MAIN UNIT			51	445 0048 003	CORD HOLDER (L=76)		1
1-2	---	VOLUME UNIT			52	009 0112 005	27P PFC CORD		1
1-3	---	HEAD PHONE UNIT			53	254 4355 002	ELECTROLYTIC 6800µF/50V		2
1-4	---	TRANS WIRE 1 UNIT			54	412 2855 107	SIDE BRACKET		1
2	1U-2732	TUNER/DISPLAY UNIT ASSY		1	SCREWS				
2-1	---	TUNER UNIT			101	473 7015 018	TAPING SCREW 3x8 (S)	Black	4
2-2	---	DISPLAY UNIT			102	473 7002 018	TAPING SCREW 3x8 (S)		10
2-3	---	POWER UNIT			103	473 8007 009	CUP SCREW 3x12		4
2-5	---	POWER SW UNIT			104	473 7501 001	TAPING SCREW 3x10 (P)		2
2-6	---	TRANS PRE WIRE UNIT			105	477 0064 107	FIXING SCREW 3x10	Black	10
5	204 8354 004	HEAD PHONE JACK		1	106	473 7004 016	TAPING SCREW 4x8 (S)		4
6	214 9003 005	RELAY	FL471	1	107	473 7508 017	TAPING SCREW 3x10 (P)	Black	14
7	211 0627 003	VARIABLE <i>Var. Loud.</i>	VR251	2	108	477 0263 005	3P SWELLING SCREW		4
8	211 0628 002	VARIABLE <i>Bass</i>	VR301	1	109	473 7002 005	TAPING SCREW 3x8 (S)		9
9	211 0629 001	VARIABLE <i>Treble</i>	VR303	1	PACKING AND ACCESSORIES (not included EXPLODED view)				
10	211 0630 003	VARIABLE <i>Bal.Loud</i>	VR201	1	505 9125 009	POLY COVER			1
11	211 0631 002	VARIABLE <i>Volume</i>	VR102	1	511 2637 007	OPERATING INSTRUCTION			1
12	204 8466 002	4P PIN JACK		1	231 1914 003	AM LOOP ANTENNA			1
13	204 8467 001	6P PIN JACK		2	395 0023 008	FM ANTENNA ASSY			1
14	212 4778 009	2P PUSH SWITCH		1	399 0242 001	REMOTE CONTROL UNIT	RC-174		1
15	---	---		1	505 0131 050	CABINET COVER			1
16	212 5604 910	TACT SWITCH		14	504 0125 005	STYRENE PAPER	For AC CORD		1
17	393 4155 002	FLD	FB14AM7R	1	503 0939 007	CUSHION			2
18	499 0150 008	REMOTE SENSOR	SBX1610-52	1	502 0741 056	PAD	U.K. Model Only		1
19	216 0065 006	FRONT END		1	501 1782 011	CARTON CASE	Europe Model		1
20	206 2061 000	AC CORD WITH CONNECTOR	Europe Model Only (Except for U.K.)	1	501 1782 024	CARTON CASE	U.K. Model		1
21	205 0647 004	3P ANTENNA TERMINAL		1					
22	223 3942 007	AC OUTLET	Europe Model Only (Except for U.K.)	1					
23	---	---		1					
24	212 3030 009	POWER SWITCH (TV-5)		1					
25	206 2061 000	AC CORD WITH CONNECTOR	Europe Model	1					
26	205 0484 001	8P SPEAKER TERMINAL	U.K. Model	1					
27	205 0472 013	8P SPEAKER TERMINAL	U.K. Model	1					
28	461 0539 022	RUBBER SHEET		1					
29	411 1285 006	MAIN CHASSIS		1					
30	105 1135 020	REAR PANEL	Europe Model	1					
31	105 1136 033	REAR PANEL	U.K. Model	1					
32	104 0194 108	FOOT ASSY		4					
33	417 0498 218	POWER RADIATOR		2					
34	273 0396 005	TRANSISTOR	TR321,322	2					
35	271 0237 006	TRANSISTOR	TR323,324	2					
36	2SA1490(OP/YX/Z)	TRANSISTOR		2					
37	415 0234 007	INSULATING SHEET		4					
38	412 3767 006	P.W.B. BRACKET		2					
39	206 2061 000	AC CORD WITH CONNECTOR	Europe Model	1					
40	206 2109 002	AC CORD WITH CONNECTOR	U.K. Model	1					
41	445 0056 006	CORD BUSH		1					
42	233 6115 007	POWER TRANS		1					
43	146 1493 129	INNER PANEL		1					
44	143 0880 006	WINDOW		1					
45	113 1679 008	BUTTON(4KEY)		2					
46	113 1680 110	BUTTON(6KEY)		1					
47	---	---		3					
48	144 2369 010	FRONT PANEL		1					
49	112 0647 009	VOLUME KNOB		1					
50	112 0739 001	KNOB(MARU)		4					
51	113 9213 000	POWER BUTTON ASSY		1					
52	102 0426 223	TOP COVER		1					
53	461 0769 009	RUBBER SHEET		2					

EXPLODED VIEW OF CHASSIS AND CABINET


1 2 3 4 5 6 7 8

DRA-365RD



A
B
C
D
E

8 = Bass
9 = Treble
10 = Balance
7 = Var. Loud.
11 = Volume

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

SCHEMATIC DIAGRAM (for DRA-565RD)

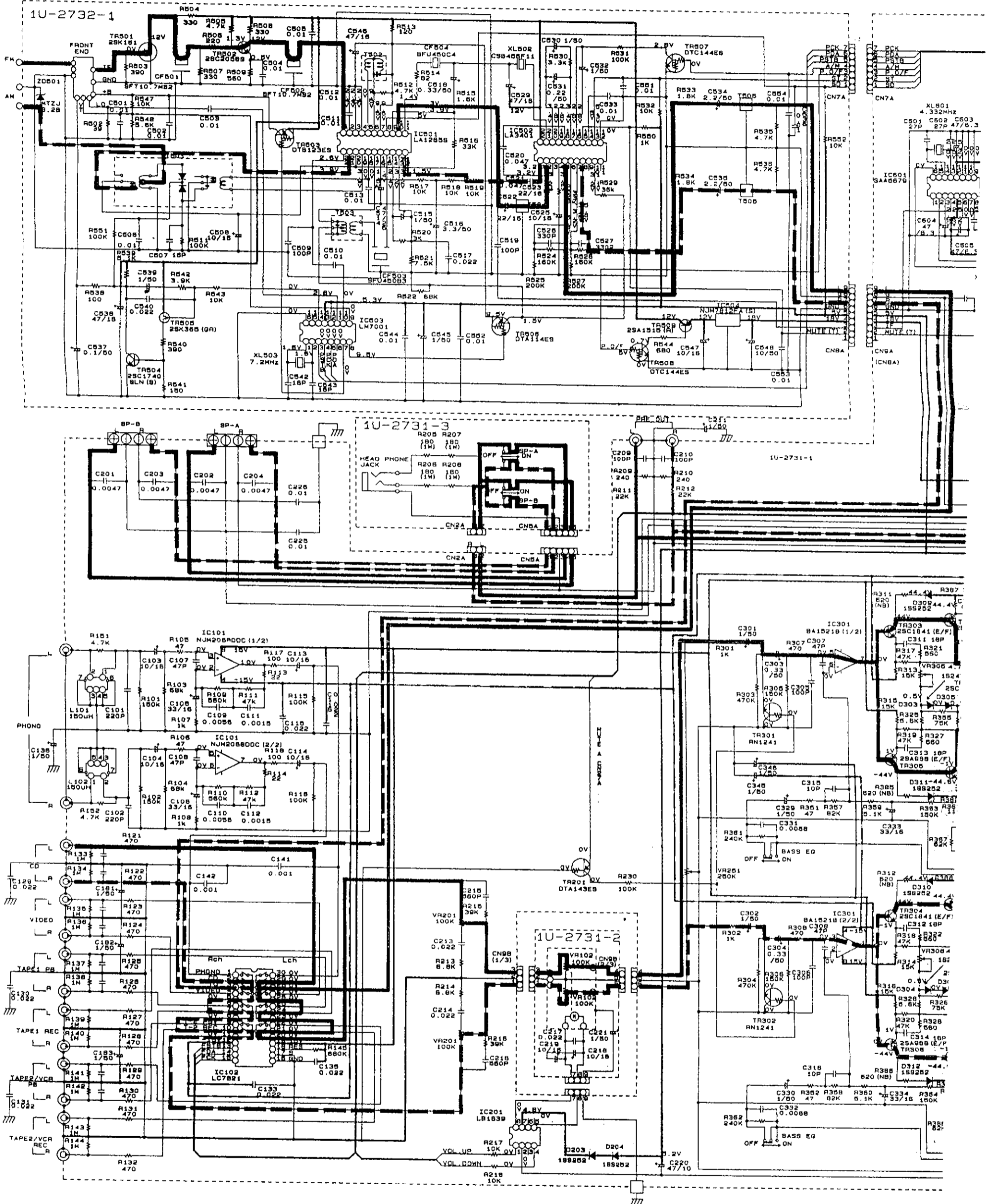
10

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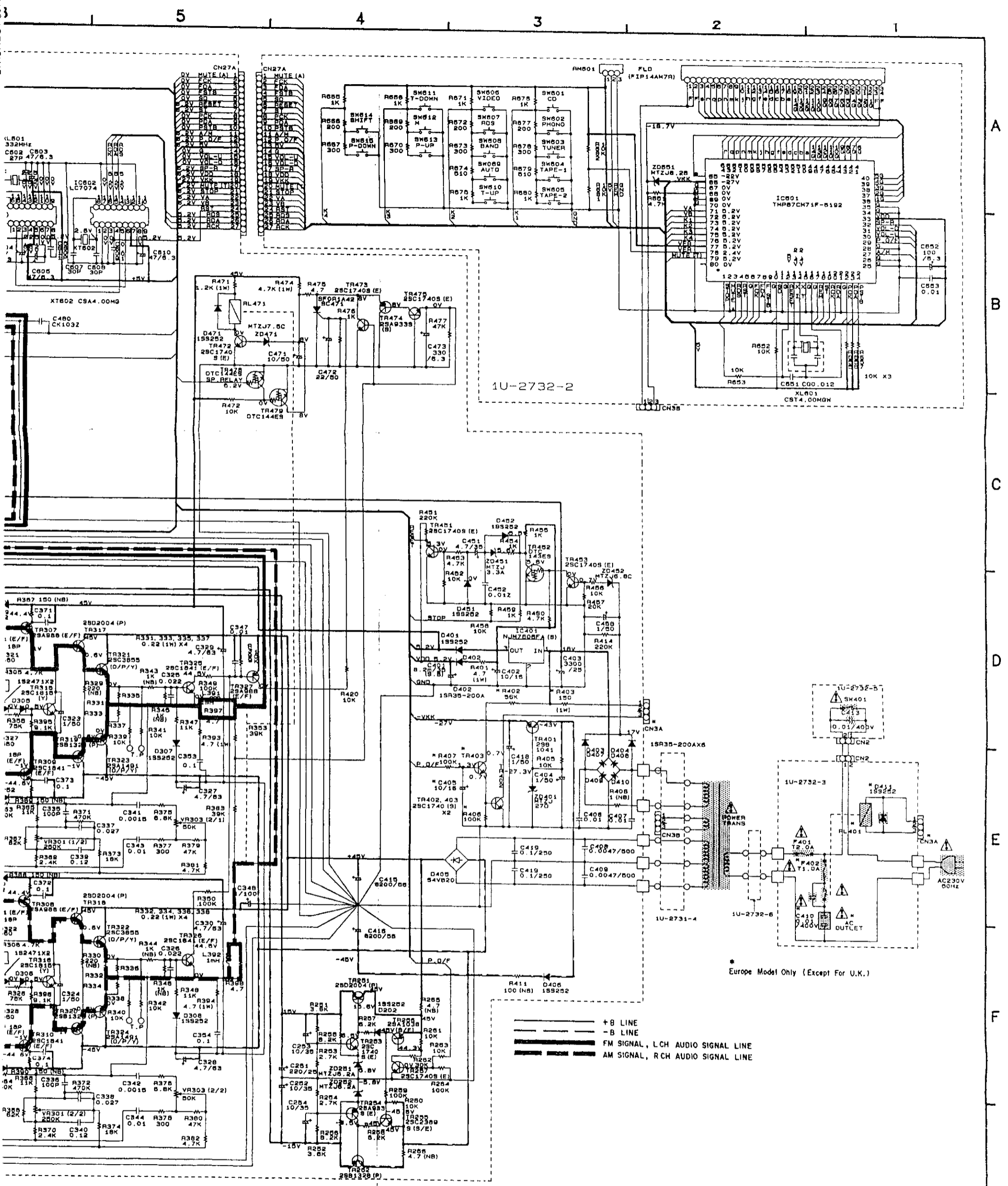
WARNING:
 Parts marked with this symbol have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
 Before returning the unit to the customer, make sure you make either (leakage current exceeds 0.5 millamps, or if the resistance from chassis

WARNING:
 DO NOT return the unit to the customer until the problem is located

NOTES:
 Circuit and parts are subject to change without prior notice.

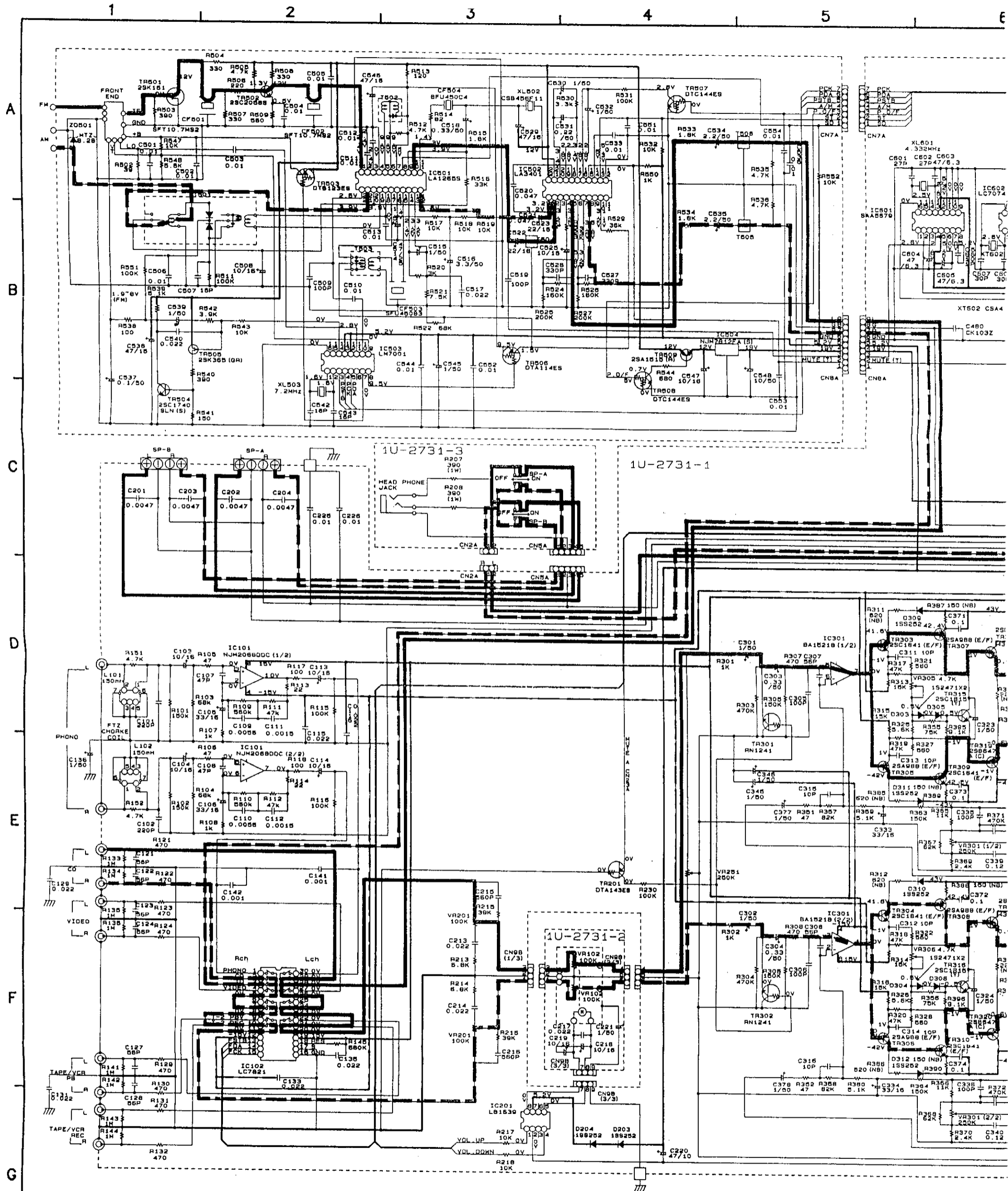
DENC-30-96 DRUCK17



for (1) a leakage current check or (2) a line to chassis resistance check. If the chassis resistance to either side of the power cord is less than 240 kohms, the unit is defective and corrected.

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.

SCHEMATIC DIAGRAM (for DRA-365RD)



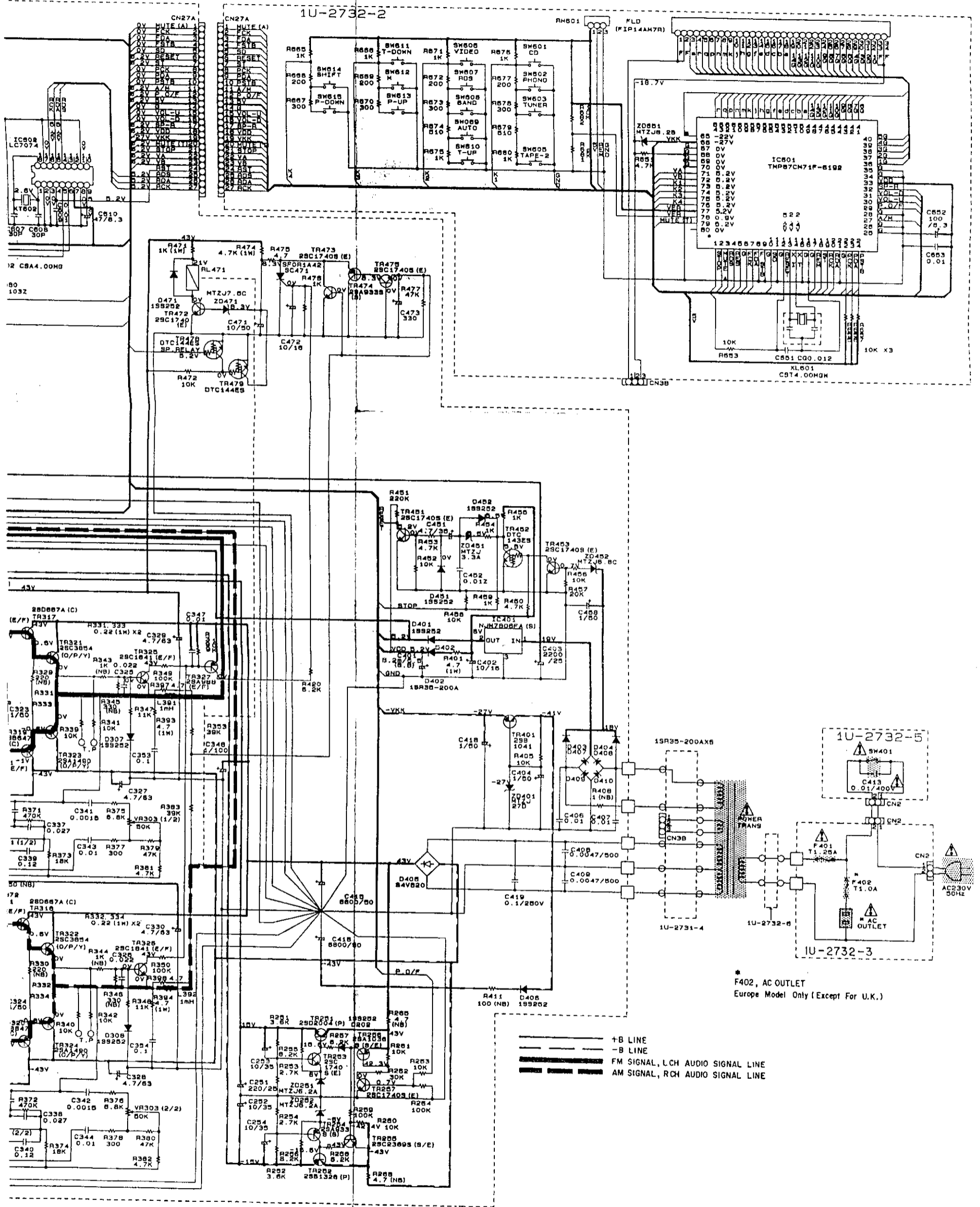
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 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
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- - - - - +B LINE
 - - - - - -B LINE
 - - - - - FM SIGNAL, LCH AUDIO SIGNAL LINE
 - - - - - AM SIGNAL, RCH AUDIO SIGNAL LINE

local characteristics.
 manufacturer.
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* F402, AC OUTLET
Europe Model Only (Except For U.K.)