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DENON

Hi-Fi AM-FM Stereo Receiver

For U.S.A., CANADA & ASIA Models

SERVICE MANUAL

MODEL DRA-325R

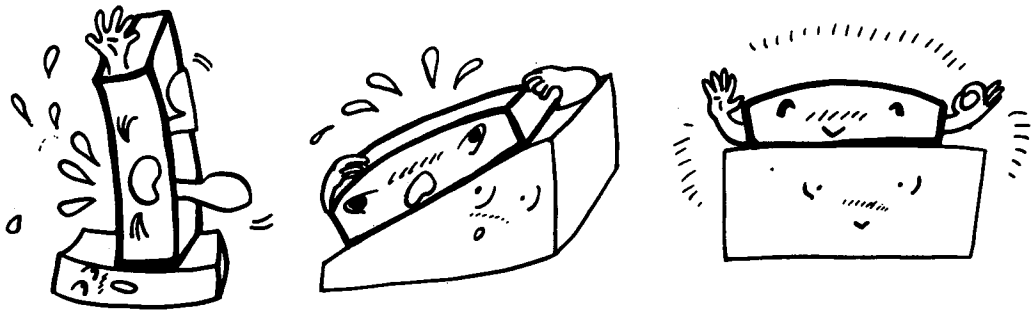
AM-FM STEREO RECEIVER

TABLE OF CONTENTS

NIPPON COLUMBIA CO., LTD.

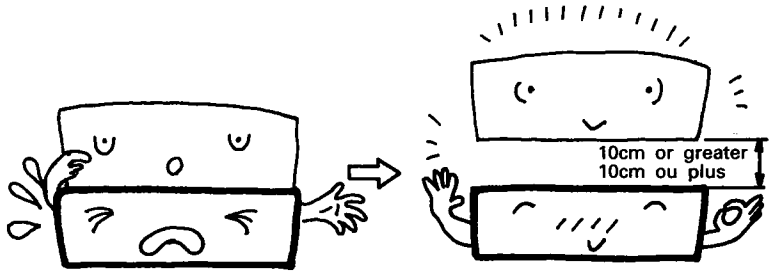
PRECAUTIONS FOR INSTALLATION
DRA-325R uses a newly developed heat emitting unit by employing heat pipes. Since the heat pipes contain a coolant, the DRA-325R must be set level or the desired heat emitting effect cannot be achieved. Always install this unit horizontally.

PRECAUTIONS DE MISE EN PLACE
Le DRA-325R emploie une unité thermique noubellement développée comportant des tuyaux thermiques. Ces tuyaux contenant un liquide réfrigérant toujours placer le DRA-325R en position horizontale, faute de quoi l'effet de radiation thermique ne pourra être obtenu. Toujours placer cet appareil en position horizontale.



PRECAUTIONS FOR INSTALLATION
Leave at least 10cm of space between this unit and any other component placed above.

PRECAUTIONS D'INSTALLATION
Prévoir un espace d'au moins 10cm entre l'unité et tout autre appareil se trouvant au-dessus.



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 voltge" 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.

CAUTION
TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION
POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions – The safety and operating instructions should be retained for future reference.

3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions – All operating and use instructions should be followed.

5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.

6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

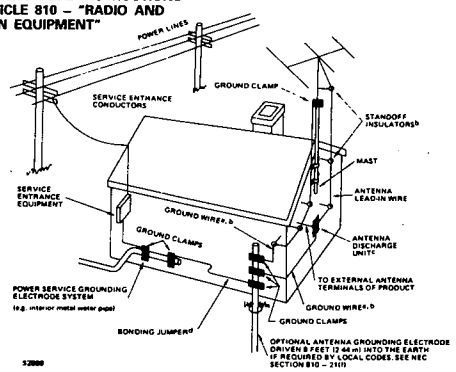
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Grounding or Polarization – The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

FIGURE A
EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 – "RADIO AND TELEVISION EQUIPMENT"



12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. Protective Attachment Plug – The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.

14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.

15. Power Lines – An outdoor antenna should be located away from power lines.

16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70–1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.

17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:

A. The power-supply cord or the plug has been damaged; or

B. Objects have fallen, or liquid has been spilled into the appliance; or

C. The appliance has been exposed to rain; or

D. The appliance does not appear to operate normally or exhibits a marked change in performance; or

E. The appliance has been dropped, or the enclosure damaged.

20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

[a] Use No. 10 AWG (5.3 mm^2) copper, No. 8 AWG (8.4 mm^2) aluminum, No. 17 AWG (1.0 mm^2) copper-clad steel or bronze wire, or larger, as a ground wire.

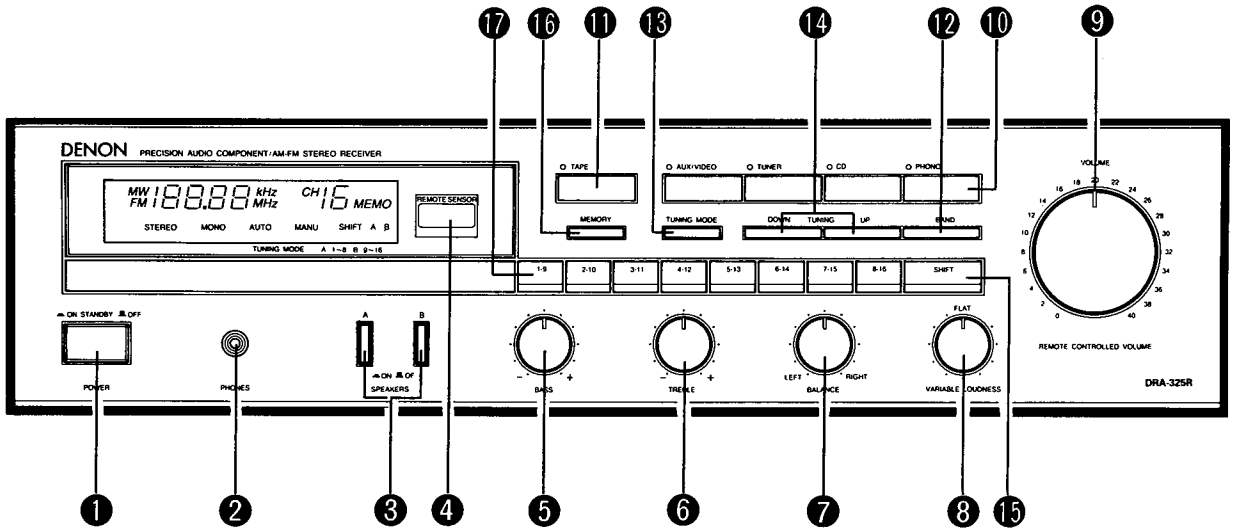
[b] Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4–6 feet (1.22–1.83 m) apart.

[c] Mount antenna discharge unit as close as possible to where lead-in enters house.

[d] Use jumper wire not smaller than No. 6 AWG (13.3 mm^2) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

NAME AND FUNCTION OF PARTS

FRONT PANEL



❶ POWER (Power Switch)
When the power cord is plugged into an AC power outlet, pressing this button once, the power is turned on and the DISPLAY lights. It takes a few seconds before sound is output, thanks to the built-in muting circuit, preventing audio output until the receiver has stabilized.

❷ PHONES (Headphones Jack)
Connect a pair of headphones (sold separately) to this jack for private listening.

❸ SPEAKERS (Speaker Selector Switches)
These switches are used to engage speaker system A and B. Both systems may be used simultaneously, provided your speakers have the correct impedance.
No sound is heard through the speakers when both switches are reset to the ■ position.

❹ 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.

❺ 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 100 Hz) is flat. Turn the control clockwise to increase the bass response and counter-clockwise to decrease it.

❻ 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 10,000 Hz) is flat. Turn the control clockwise to increase the treble response and counter-clockwise to decrease it.

❼ 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.

❽ 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.

❾ 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.

❿ 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.
- AUX/VIDEO: Use when playing back the audio from a Hi-Fi video, TV tuner, video disc player or other component connected to the AUX/VIDEO terminal.

* If a function switch is pressed quickly, the function may not actually change and no signal may be heard from the speakers for an instant. To avoid this, be sure to press function switches carefully.

⓫ **TAPE (Tape Monitor Switch)**
Press this switch (ON) to play TAPE and release (OFF) to play the source selected by the INPUT SELECTOR ⓾.

⓬ **BAND (Band Selector Switch)**
Press this switch to select the FM or AM (MW) band.

⓭ **TUNING MODE (Tuning Mode Switch)**
This switch allows selection between Auto Tuning and Manual Tuning.
AUTO TUNING: Pressing the UP key, the tuner will begin tuning to a higher frequency and pressing the DOWN key, it will begin tuning to a lower frequency until a broadcasting station is found.
MANUAL TUNING: Stations are tuned in manually by use of the UP and DOWN keys.

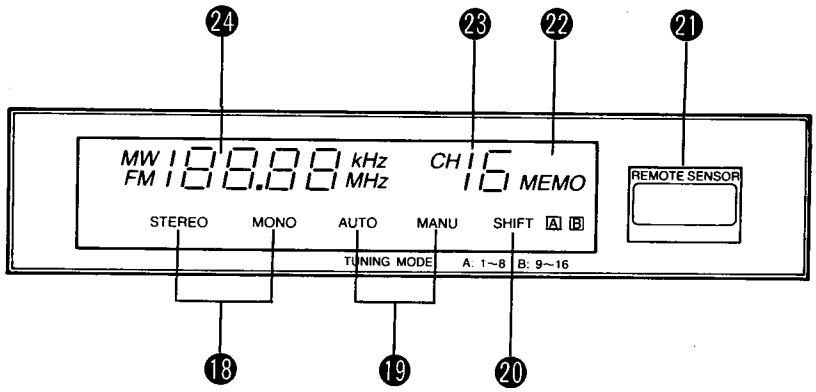
⓮ **TUNING (Tuning Buttons)**
Press these buttons to tune in a station. In the MANUAL TUNING mode, each press of the buttons will change the frequency in 100 kHz (50 kHz for Asia) steps on FM and 10 kHz (9 kHz for Asia) steps on AM.
Keeping one of these buttons pressed, the frequency will change until the button is released.
During the AUTO TUNING mode, pressing one of these buttons will affect station search up or down the band.

⓯ **SHIFT (Shift Button)**
Each time this button is pressed, the preset station range will be shifted between "1 ~ 8" and "9 ~ 16". (A: 1 ~ 8, B: 9 ~ 16)

⓰ **MEMORY (Memory Button)**
This switch is used to store the desired radio station on a PRESET CHANNEL button. When pressing this button, the MEMORY indicator lights for approximately 5 seconds. During this interval, the desired station can be stored in the memory.

⓱ **PRESET CHANNEL 1 ~ 16 (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 16 FM or AM stations into preset channels 1 ~ 8 and 9 ~ 16.
Once a radio has been memorized on a PRESET CHANNEL button, the same station can later be tuned in instantly simply by pressing the corresponding PRESET CHANNEL button.

DISPLAY



⓲ **STEREO/MONO (Stereo/Mono Indicator)**
The STEREO indicator will automatically light up when a stereo broadcast is received. The MONO indicator will light up when a broadcast is not being received or at the time of a monaural broadcast.

⓳ **TUNING MODE (AUTO/MANUAL)**
Pressing TUNING MODE ⓭ causes AUTO and MANU to light up alternately.

⓴ **SHIFT (Shift Indicator)**
The preset channel which is selected with the Shift Button ⓯ is displayed by the SHIFT A or B.

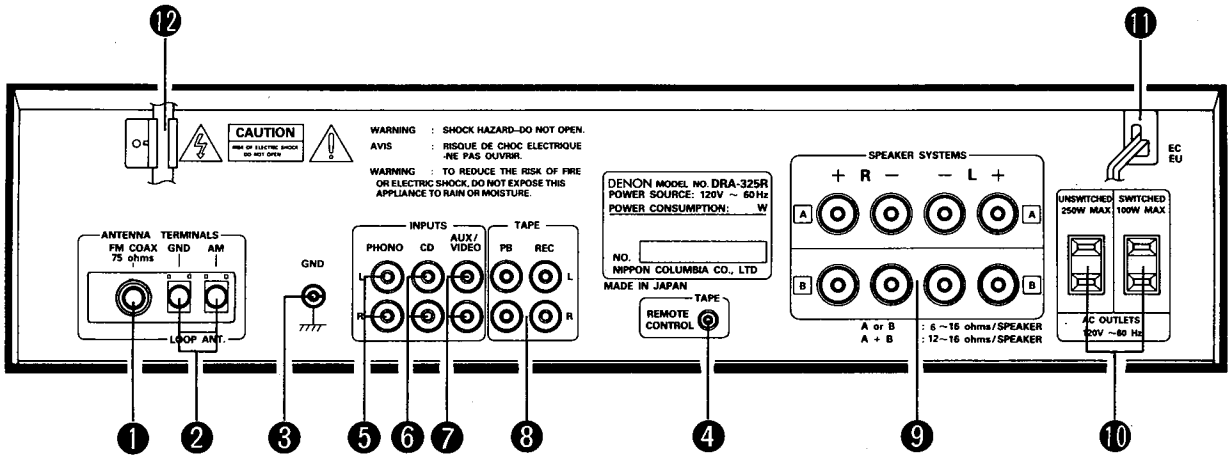
㉑ **REMOTE SENSOR (Remote Control Sensor)**
This sensor receives the infra-red light transmitted from the wireless remote control unit.
For remote control, point the wireless remote control unit towards the sensor.

㉒ **MEMORY (Memory Indicator)**
This indicator lights for approximately 5 seconds when the MEMORY button has been pressed and a station can be stored on a PRESET CHANNEL button.

㉓ **CHANNEL (Preset Channel Display)**
When using the channel preset button ⓱, the channel is displayed and the frequency for that channel stored in memory is displayed in ㉔.

㉔ **FREQUENCY DISPLAY (Frequency Indicator)**
The frequency is displayed in numerals. It is displayed in MHz for FM and in kHz for AM (MW).

BACK PANEL



❶ **FM ANT (FM Antenna Terminals)**
Both 75-ohm coaxial cable and 300-ohm feeder can be connected to this terminal. For antenna connecting procedure, see the ANTENNA INSTALLATION.

❷ **AM ANT (AM Antenna Terminals)**
Connect the attached AM loop antenna. (Refer to page 7 for connections).
Connect to this terminal when a medium wave outdoor antenna is used.

❸ **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.

❹ **TAPE/REMOTE CONTROL**
This terminal is exclusively used for sending the remote control signals to the tape deck. Connect it with a 3.5mm mini-jack cord.

> **Note:**
> Do not hook up a headphones or microphone jack cord. Use this jack to connect a Denon cassette deck with a remote control jack (wired).
> If the cassette deck does not have this jack, wired remote control is not possible.

❺ **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.

❻ **CD**
The output cord of the CD player is connected here.

❼ **AUX/VIDEO**
An AUX/VIDEO, such as a VCR or Video Disk may be connected here.

❽ **TAPE (Audio Playback and Recording Terminals)**
Tape decks can be connected for full use including playing or copying.

❾ **SPEAKER SYSTEMS (Speaker Terminals)**
Two pairs of speakers A and B can be connected to these terminals.

❿ **AC OUTLET (AC Power Outlets)**
UNSWITCHED
This power outlet is available independently of the power switch. The power capacity is a maximum of 250 W.
SWITCHED
This AC outlet is controlled by the power switch. Maximum capaicty is 100 W.

⓫ **AC CORD (Power Cord)**
Connect this cord into the wall outlet.

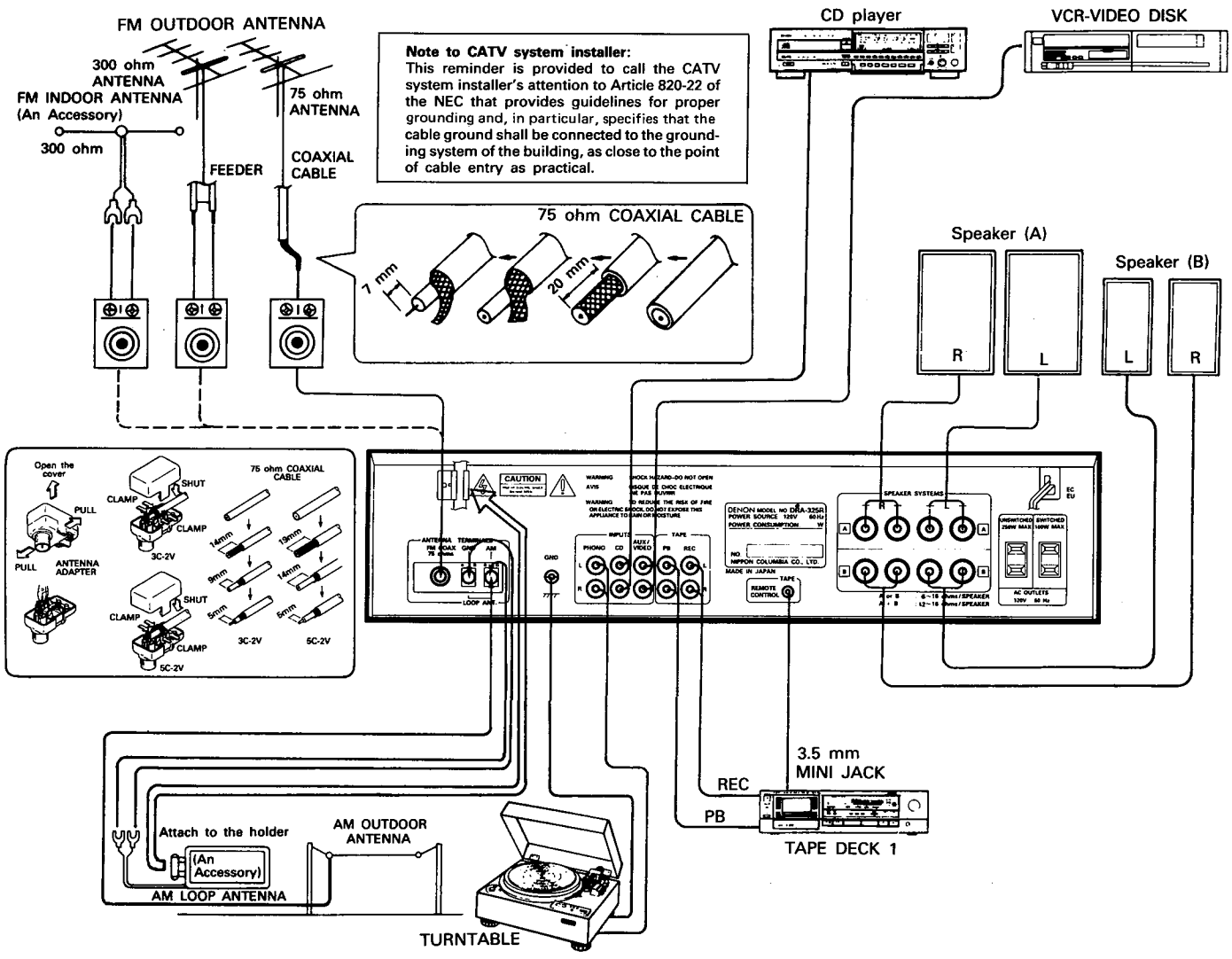
⓬ **AM LOOP ANT (AM Loop Antenna)**
Correctly connect the AM loop antenna to the antenna terminal. Broadcasting cannot be received when the connection is incomplete.
Adjust the antenna for optimum reception while receiving the medium wave broadcasting. Do not place a pin cord, SP cord or electric cord near the antenna. This may cause noise generation.

ANTENNA INSTALLATION

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

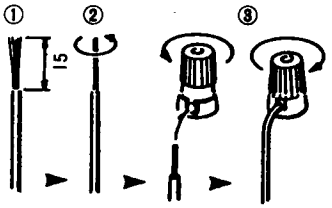
CONNECTIONS



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.

1. Peel off the sheathing from the end of the cord.
2. Twist the wire strands.
3. Loosen the speaker terminal, insert the wire lead portion of the code, and then tighten the terminals.



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 completly 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.
- The PHONO input jacks are extremely sensitive. Avoid using the power amplifier if no connection has been made to these jacks, as this otherwise may cause low humming from the speakers when the power-amplifier is on. In case a record player is not used, short-circuit the jacks by inserting a jumper pin into them.

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.

HOW TO PRESET THE STATION

1. Set the BAND SELECT button to "AM" or "FM", and press the TUNING button to tune the desired station.
2. Specify the preset buttons 1 ~ 8 or 9 ~ 16 by the SHIFT button.
3. Press the MEMORY buttons and MEMORY indicator lights for about 5 seconds. During this time, press one of the eight PRESET channel buttons.
4. The channel corresponding to the pressed button is displayed and the indicated frequency is stored in memory for that channel.

NOTE: If preset button is inoperative with MEMORY illuminated, press MEMORY and preset buttons again.

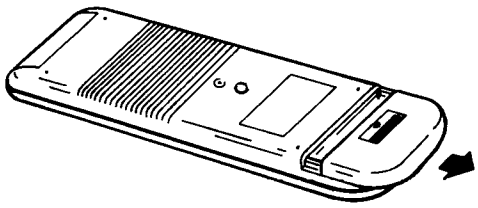
- This model has a last channel memory system. It stores the last channel used power off.
- This model is designed to store and retain the stations that have been previously registered in the memory, even if the tuner is deenergized temporarily. The memory can hold resistered data for approximately about a month [Temperature: 68°F (20° C), relative humidity: 65%]. If the memory is erased reset the preset data.

PLAYBACK USING THE REMOTE CONTROL

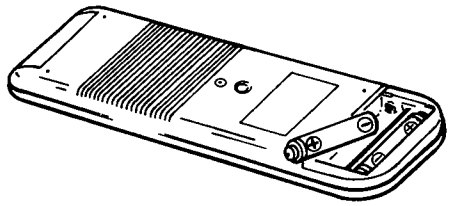
The accessory RC-113 remote control unit is used to control the RECEIVER from a distance.

(1) Inserting the dry cell batteries

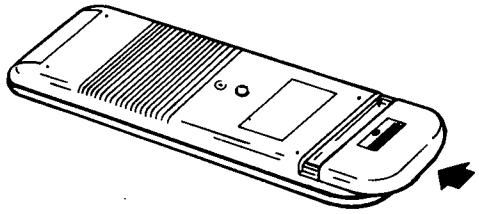
1 Remove the rear cover on the remote control unit.



2 Insert two size "AAA" (R03) dry cell batteries as shown in the diagram on the battery supply unit.



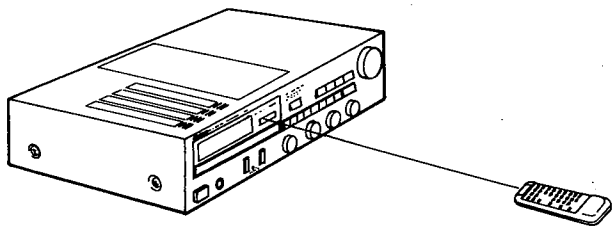
3 Replace the rear cover.



Notes on Use of the Batteries

- The remote control unit uses size "AAA" (R03) 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.

(2) Directions for use



- Operate the remote control unit while pointing it towards the remote control sensor on the receiver as shown in the diagram left.
- The remote control unit can be used at distances up to about 8 meters in a straight line from the receiver. This distance will decrease if there are obstructions blocking the infra-red light transmission or if the remote control unit is not directed straight at the receiver.

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.

Besides being able to operate the DRA-325R 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.

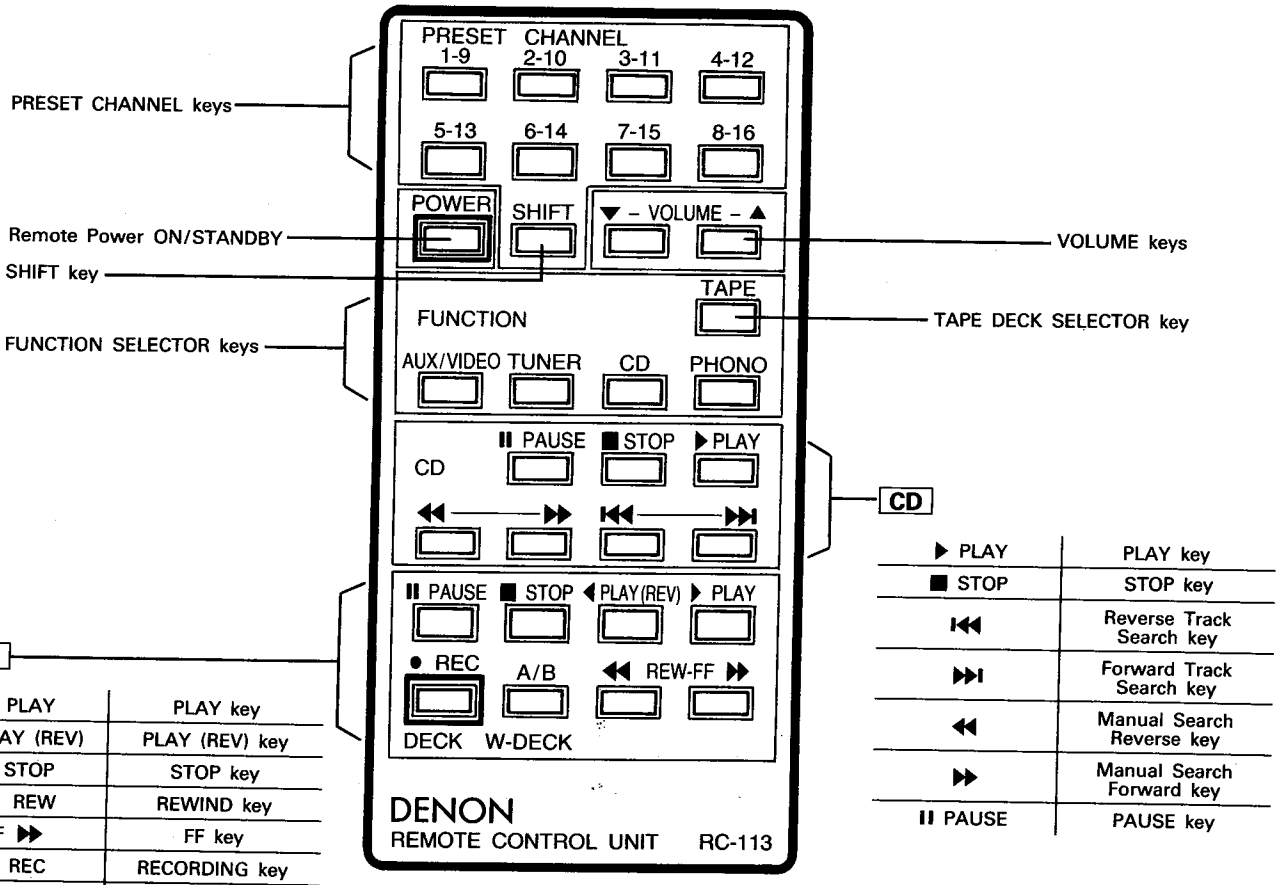
Remote Control Section

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 when combined with the DRA-325R to create a remarkably ergonomic and versatile DENON system with all the quality sound reproduction that the devoted audiophile expects.

Remote Control Unit RC-113 supplied with DRA-325R

RECEIVER



▶ PLAY	PLAY key
◀ PLAY (REV)	PLAY (REV) key
■ STOP	STOP key
◀◀ REW	REWIND key
FF ▶▶	FF key
● REC	RECORDING key
II PAUSE	REC PAUSE/ MUTE key
A/B W-DECK	A/B DECK SELECT key

▶ PLAY	PLAY key
■ STOP	STOP key
⏮	Reverse Track Search key
⏭	Forward Track Search key
◀◀	Manual Search Reverse key
▶▶	Manual Search Forward key
II PAUSE	PAUSE key

- The RC-113 Remote Control Unit can control all CD players (excluding the DCD-1800R) and cassette decks made by DENON.
- Keys are conveniently separated into groups, each group controlling one specific component. The groups are RECEIVER, FUNCTION, 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.
- The LED indicators of Input selector or Tape monitor 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.

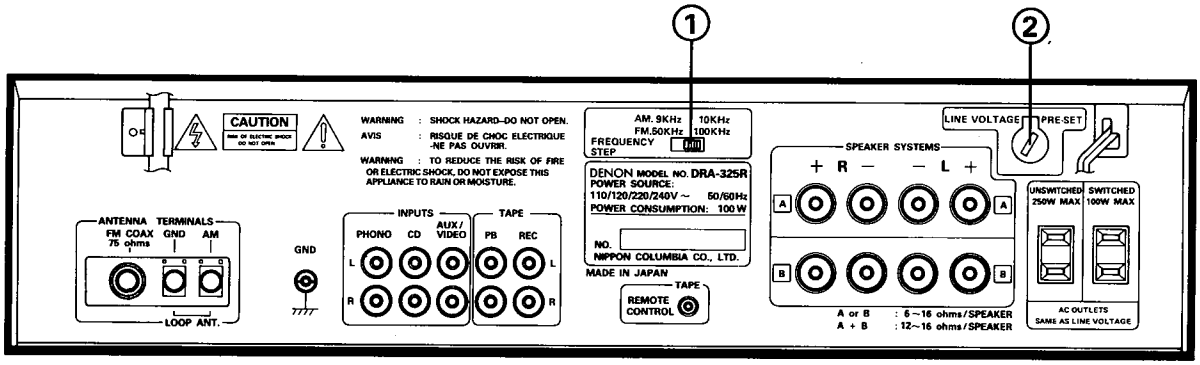
TROUBLESHOOTING

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.	• Antenna connection is wrong. • A signal strength is weak.	• Check the connection. • Check the antenna installation.
Noise is reproduced.	• A signal strength is weak. • Automobile ignition noise interferes with reception. • Other electrical equipment interferes with reception.	• 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.	• The memory back-up term (about 1 month) passed.	• Preset again.
In automatic tuning, the frequency doesn't stop at the radio station.	• A signal strength is weak.	• Use manual tuning
In automatic tuning, it stops at the one step lower or higher frequency than the radio station.	• Noise or strong signal strength is received.	• Use manual tuning for optimum reception.
PLAYBACK OF THE AUDIO EQUIPMENTS		
No sound is produced with power on.	• 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.	• 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.	• 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.	• 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.	• The vibrations and sounds transmit from the speakers to the turntable.	• Insulate the vibrations, or keep the speakers away from the turntable.
Cracking noise is produced when playing records.	• The record is stained with the dust. • The stylus tip of the cartridge is stained with the dust. • The cartridge is defective.	• Clean the record. • Clean the stylus tip. • Try the other cartridge.

FOR ASIA MODEL ONLY



1. Setting the frequency step.

Set the FREQUENCY STEP switch as described below.

- In the U.S.A. and Canada – set the switch to the right 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 the left side.
  With this setting, the frequency varies in 50 kHz steps in the range of 87.50 to 108.00 MHz (FM) and in 9 kHz steps in 522 to 1611 kHz (AM).

2. Setting the line voltage (Power Supply: AC 110/120/220/240 V 50/60 Hz)

- The customer can set the VOLTAGE SELECTOR KNOB on the back panel for appropriate line voltage by using a screwdriver.
- Do not use excessive force in setting the VOLTAGE SELECTOR KNOB – you may damage it.
- If the VOLTAGE SELECTOR KNOB does not turn smoothly, call qualified service personnel.

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Power Output:	**DRA-325R:** 40 watts per channel minimum RMS, both channels driven into 8 ohms from 20 Hz ~ 20 kHz, no more than 0.05% THD.	
Power Bandwidth (IHF):	10 Hz~40 kHz (0.15% THD, 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, TAPE	20 Hz ~ 50 kHz ±1.5 dB
	AUX/VIDEO	(at 1 W)
Input Sensitivity and Impedance:		
PHONO MM	2.5 mV	47 k ohms
CD, TAPE AUX/VIDEO	150 mV	29 k ohms
Maximum Input Level (at 1 kHz):	PHONO MM	150 mV
Signal to Noise Ratio (IHF-A):		
PHONO MM	78 dB at 5.0 mV input	
CD, TAPE AUX/VIDEO	95 dB	
Tone Controls:	BASS	±10 dB at 100 Hz
	TREBLE	±10 dB at 10 kHz
Loudness, Control Effect:	VARIABLE LOUDNESS, 10 position – 50 Hz: +10 dB, 10 kHz: +5 dB	

TUNER SECTION

[FM] (note: µV at 75 ohms, 0 dBf = 1 × 10^{-15} W)

Receiving Range:	87.5 ~ 108 MHz	
Usable Sensitivity:	0.9 µV (10.3 dBf)	
50 dB Quieting Sensitivity:	MONO	1.6 µV (15.3 dBf)
	STEREO	23 µV (38.5 dBf)
Signal to Noise Ratio (IHF-A):		
	MONO	82 dB
	STEREO	78 dB
Total Harmonic Distortion (at 1 kHz):	MONO	0.10%
	STEREO	0.15%
Capture Ratio:	1.5 dB	
Image Rejection:	42 dB	
AM Suppression:	50 dB	
Selectivity (±400 kHz):	55 dB	
Frequency Response:	30 Hz ~ 15 kHz	$^{+0.5}_{-1.5}$ dB
Stereo Separation (at 1 kHz):	40 dB	

[AM (MW)]

Receiving Range:	520 ~ 1710 kHz
Usable Sensitivity:	18 µV
Signal to Noise Ratio:	55 dB

GENERAL

Power Supply:	AC 120V, 60 Hz (U.S.A. & Canada Model) AC 110/120/220/240 V, 50/60 Hz (Asia Model)
Power Consumption:	180 W (U.S.A. & Canada Model) 100 W (Asia Model)
Power Outlets:	SWITCHED 100 W UNSWITCHED 250 W
Dimensions:	434 mm (17-3/32")W × 120 mm (4-23/32")H × 311.5 mm (12-17/64")D
Weight:	6.8 kg (15 lbs)

REMOTE CONTROL UNIT RC-113

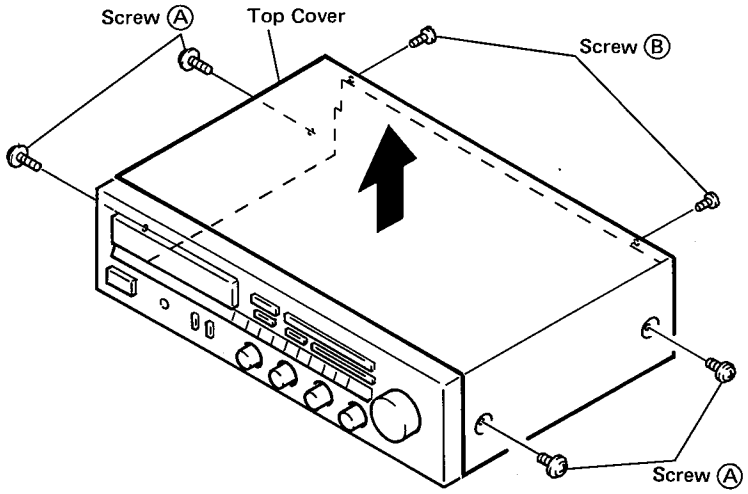
Remote control system:	Infrared pulse system
Power supply:	3V DC Two size "AAA" (R03) dry cell batteries
External dimensions:	60 mm (2-23/64")W × 165 mm (6-31/64")H × 16 mm (5/8")D
Weight:	80 g (about 2 oz) (Including batteries)

Design and specifications are subject to change without prior notice.

REMOVAL OF EACH SECTION

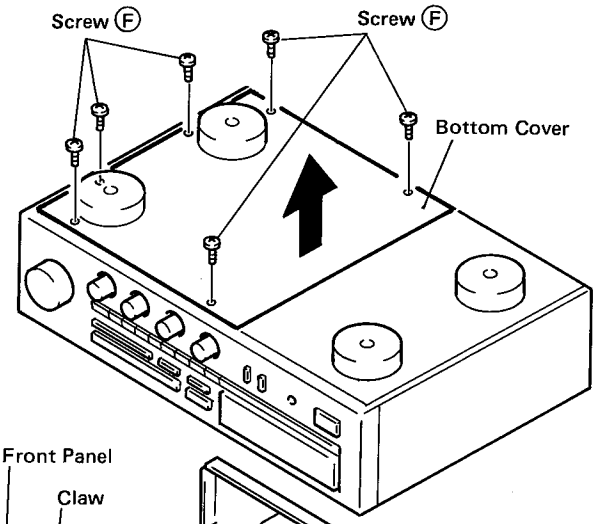
1. Top Cover

Remove 4 screws Ⓐ and 2 screws Ⓑ. And detach the Top Cover upward in the arrow direction.



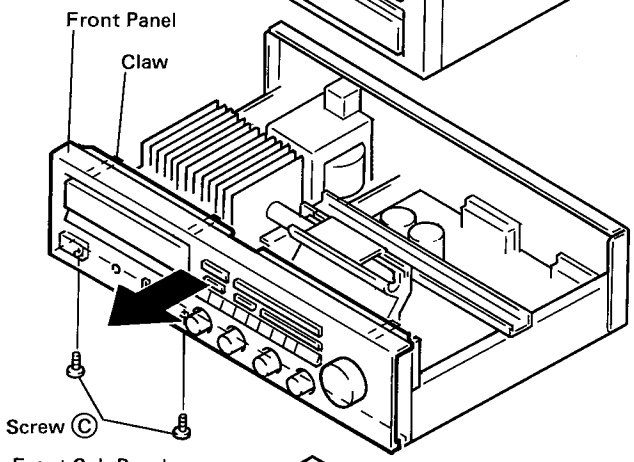
2. Bottom Cover

Remove 6 screws Ⓕ and detach the Bottom Cover upward in the arrow direction.



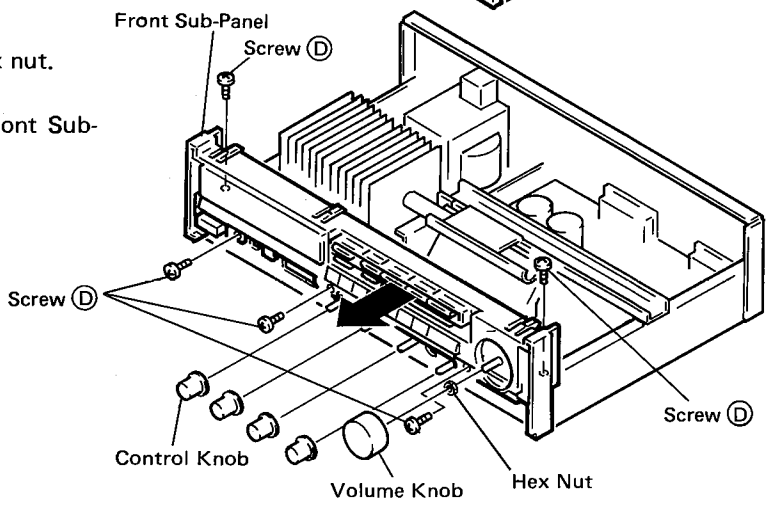
3. Front Panel

1) Remove 2 screws Ⓒ out of the Bottom Panel.
2) Pushing 3 claws downward, and draw out the Front Panel frontward as the arrow shows.



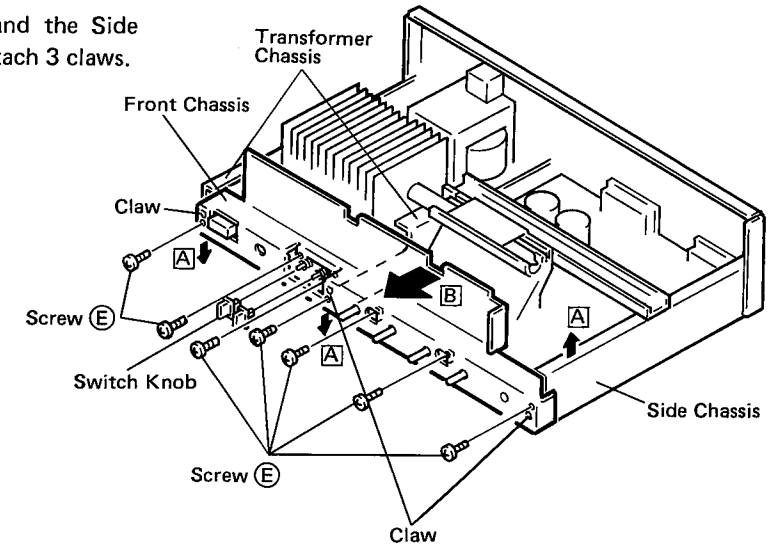
4. Front Sub-Panel

1) Pull out the Volume Knob and unfasten the hex nut.
2) Pull out 4 Control Knobs.
3) Remove 5 screws Ⓓ and draw out the Front Sub-Panel as the arrow direction.



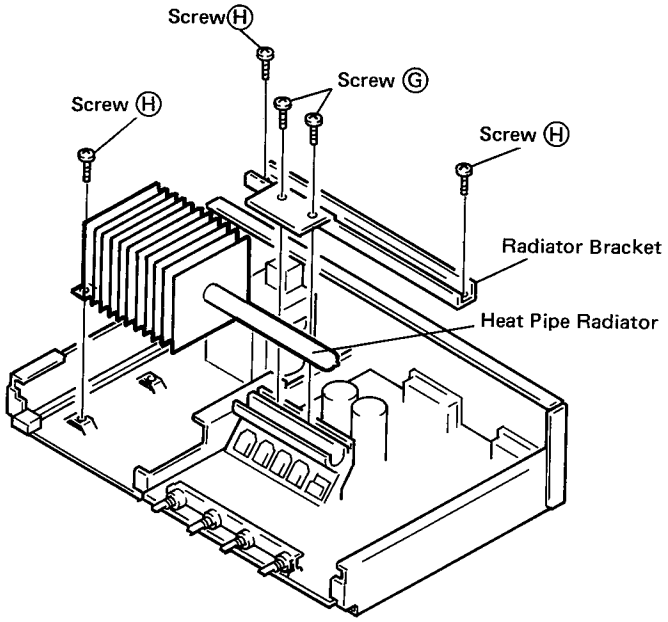
5. Front Chassis

1) Remove 2 Switch Knobs.
2) Remove 7 screws Ⓔ.
3) Drawing both the Transformer Chassis and the Side Chassis out as the arrow [A] shows, and detach 3 claws.
4) Pull out the Front Chassis as the arrow [B]



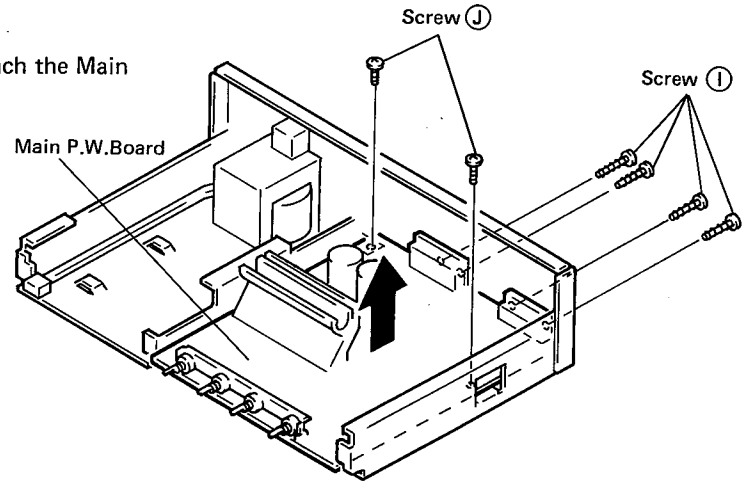
6. Heat Pipe Radiator

Remove 2 screws Ⓖ and 3 screws Ⓗ. Detach the Heat Pipe Radiator and the Radiator Bracket.

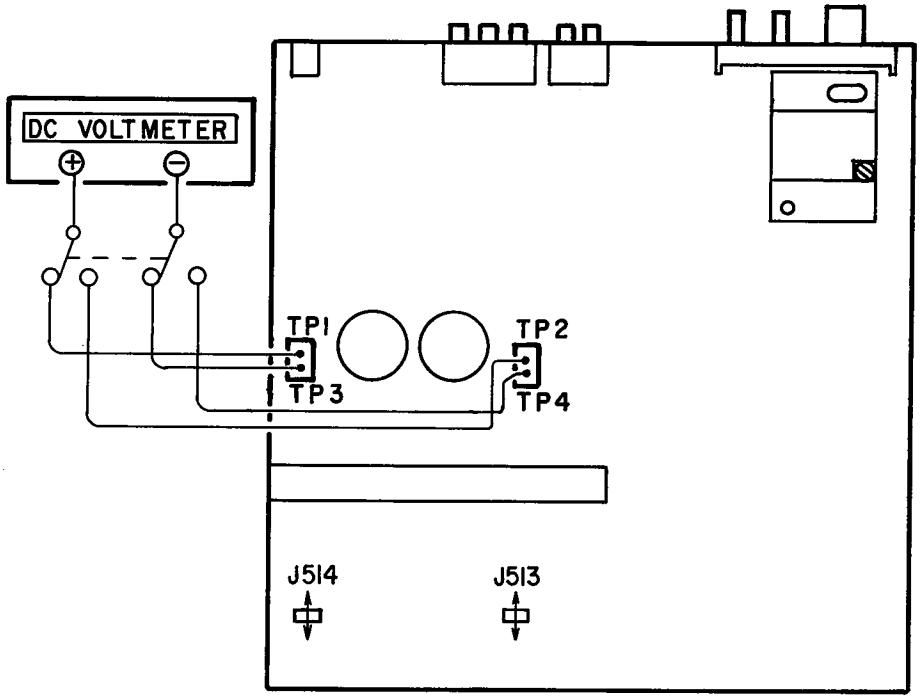


7. Main P.W.Board

Remove 4 screws Ⓘ and 2 screws Ⓙ, and detach the Main P.W.Board as per the arrow direction.



METHOD OF ADJUSTMENTS



IDLE CURRENT ADJUSTMENT

1. Keep the unit away from direct wind blown by an air-conditioner and an electric fan, and keep the unit under normal conditions. Adjust the range of ambient temperature to 15 – 30°C (59 – 86°F).
2. Set the following switches as follows:
   POWER (power switch) to off
   VOLUME (VOLUME CONTROL) to 0 (↶)
   Speakers (speaker terminal) to no load (speakers disconnected)
3. Remove the top cover and connect a DC digital voltmeter to the test points (between the positive terminal TP1 ⊕ and the negative terminal TP3 ⊖ (L ch), and between the positive terminal TP2 ⊕ and the negative terminal TP4 ⊖ (R ch)).
4. Connect the power source cord to an AC wall outlet and turn on the power switch, read and confirm the measured value after 3 minutes to be within a tolerance of 2 mV~50 mV (DC). If that measured value should be 2mV (DC) or less, disconnect jumper wire J513 (R ch) and J514 (L ch) respectively.

FM/MPX ALIGNMENT

Table 1

Step	Alignment Item	Tuning Frequency Setting	Input					Output		Adjust		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	Tuning Center	98 MHz	FM SSG, MoNo	98 MHz	60 dBμ	None	Antenna Terminal	Digital Voltmeter	T.P. 6, 5	T504	±50mV	Function: FM Mode: Auto
2	Distortion (Mono)	98 MHz	FM SSG, Mono	98 MHz	60 dBμ	1 kHz 100%	Antenna Terminal	Distortion Meter	TAPE REC (L)	T503	Minimum Distortion	Function: FM Mode: Auto
3	Distortion (Stereo)	98 MHz	FM SSG Stereo (L)	98 MHz	60 dBμ	Main: 1 kHz L-ch 90% Pilot: 10%	Antenna Terminal	Distortion Meter	TAPE REC (L)	IFT on Front End	Minimum Distortion	Function: FM Mode: Auto
4	Noise Center & Distortion	Repeat 1, 2 and 3 to obtain minimum distortion and same time indicating ±50mV on Digital Voltmeter.										

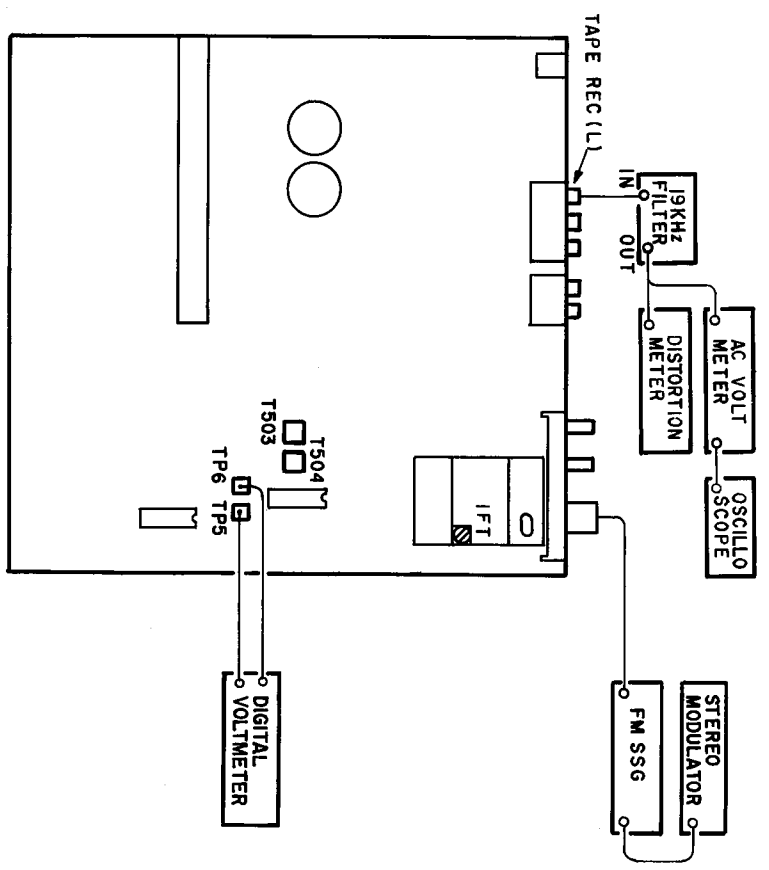
AM ALIGNMENT

Table 2

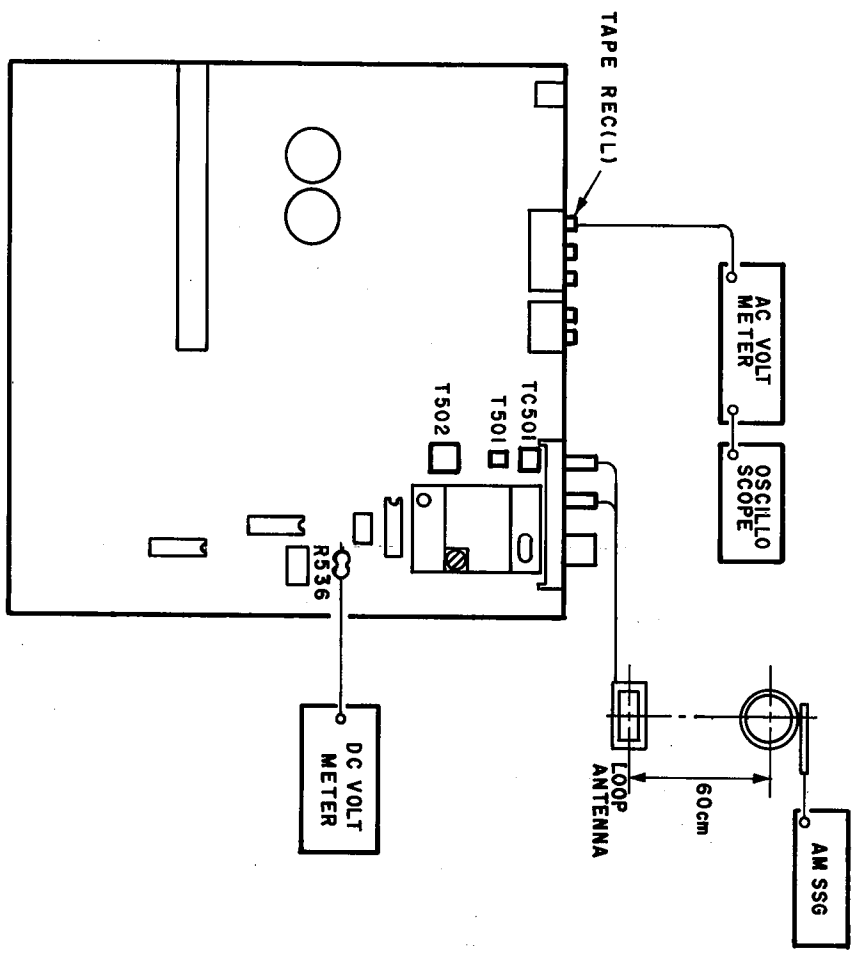
Step	Alignment Item	Tuning Frequency Setting	Input					Output		Adjust		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	Receiving Band Alignment	520 kHz	AM SSG	520 kHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	R536 GND	T502	1.0V ±20mV	Function: AM
2	Tracking Alignment	600 kHz	AM SSG	600 kHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	TAPE REC (L)	T501	Maximum Output	Function: AM
		1400 kHz	AM SSG	1400 kHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	TAPE REC (L)	TC501	Maximum Output	Function: AM

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

• FM



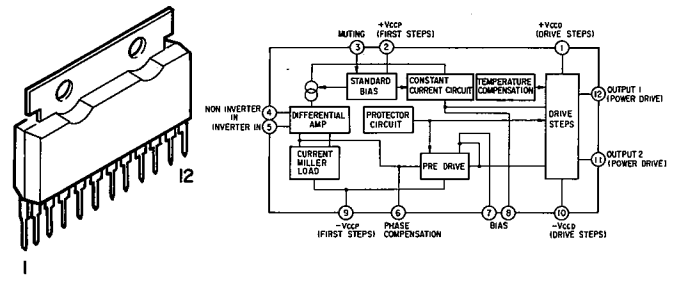
• AM



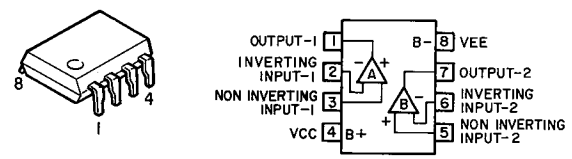
SEMICONDUCTORS

• ICs

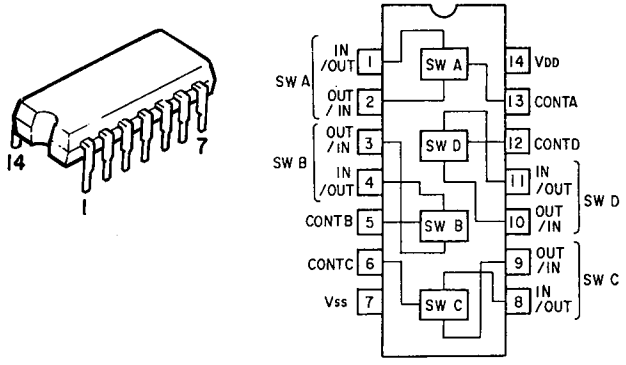
μPC1225H



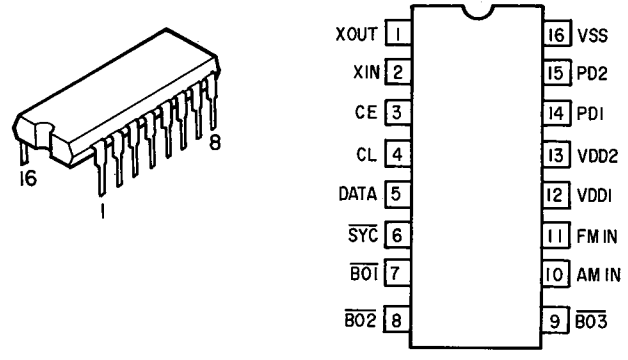
M-5218P
(Mitubishi)



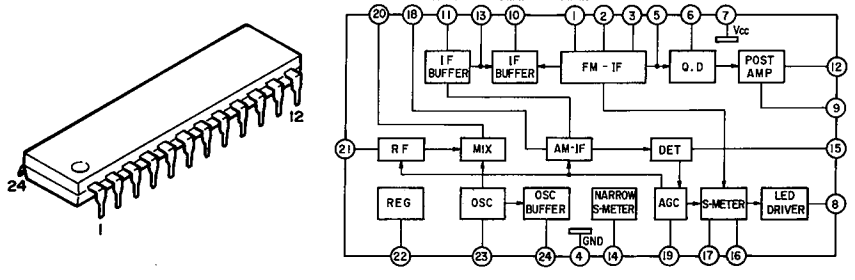
LC4966



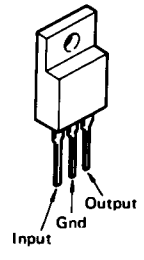
LM7001



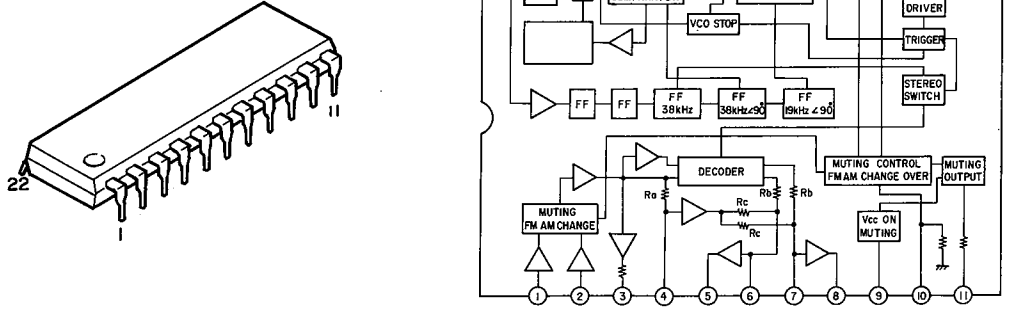
LA1266



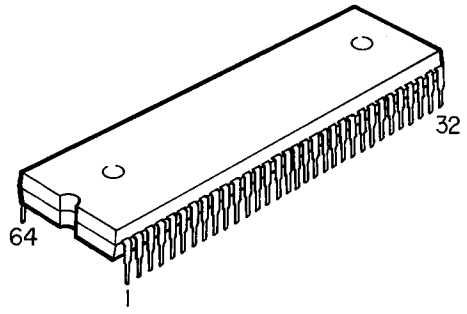
L78M06ML
NJM78M12FA

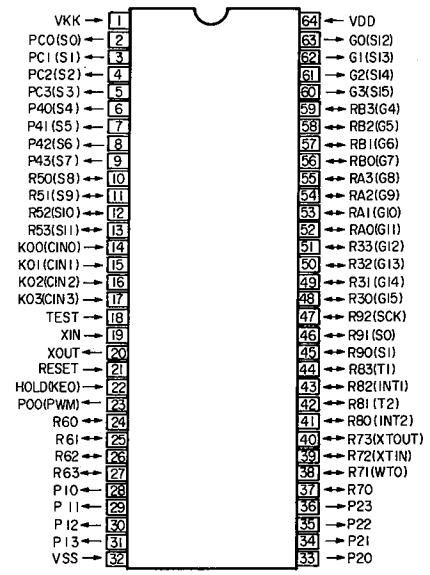


LA3401

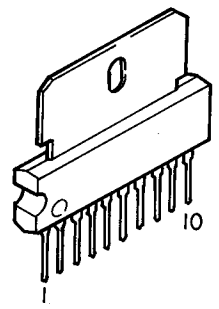


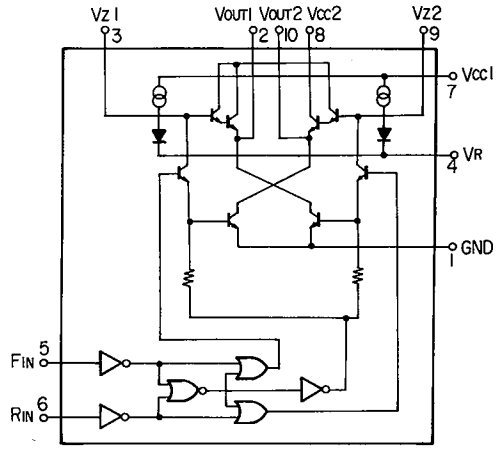
TMP47C670N



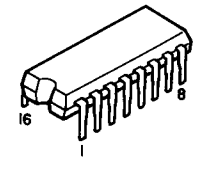


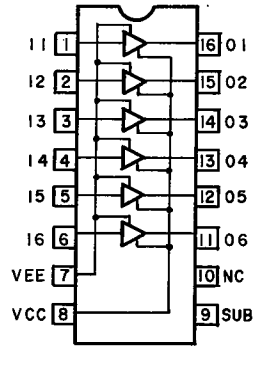
BA6109

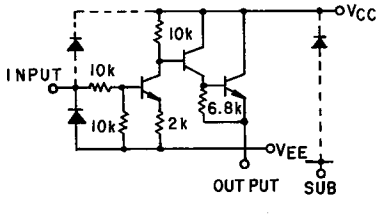




TD62706P

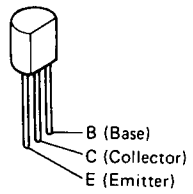




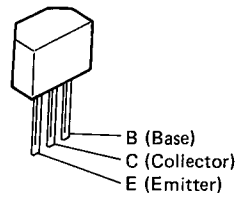


● Transistors

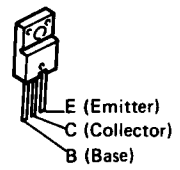
2SA970(BL/GR)
2SC1841(E/F)
2SC2240(BL/GR)
2SC2878(A/B)



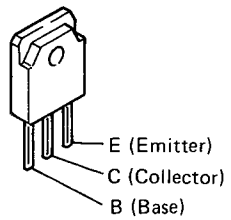
2SA1048(Y/GR)
2SC2458(Y/GR)
2SC2458(BL)
2SC2839(E)



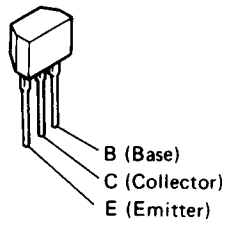
2SC3851(Y)/(G)
2SA1488(Y)/(G)



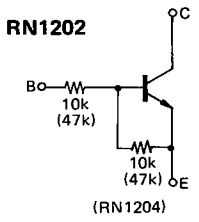
2SA1489(O/P/Y)(Z)
2SC3853(O/P/Y)(Z)



RN1202(10k-10k)
RN1204(47k-47k)
RN2202(10k-10k)
RN2204(47k-47k)

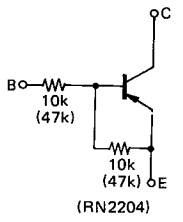


RN1202



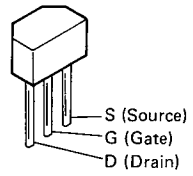
(RN1204)

RN2202



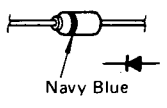
(RN2204)

2SK365(BL/GR)

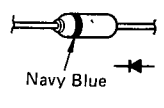


● Diodes & LED

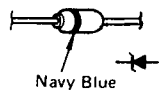
1SS270A



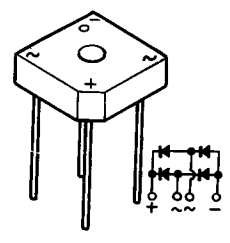
1S2076A



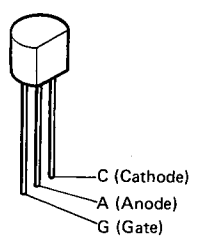
HZS6B-1 HZS16-3
HZS27-2 HZS6C-1
HZS27-1 HZS7B-2



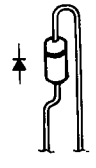
S4VB20



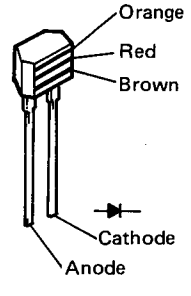
SF0R1A42



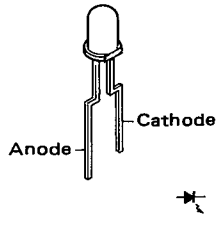
DSM1D2
(TYPE3)



SVC321D2-S



SEL-2210R(TP-2)



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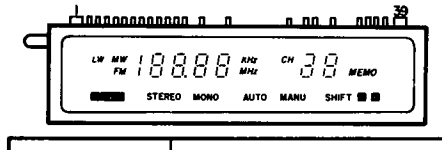
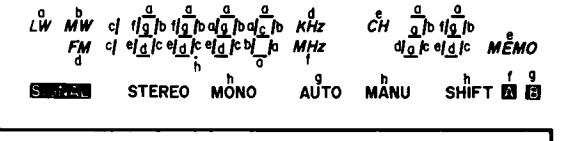
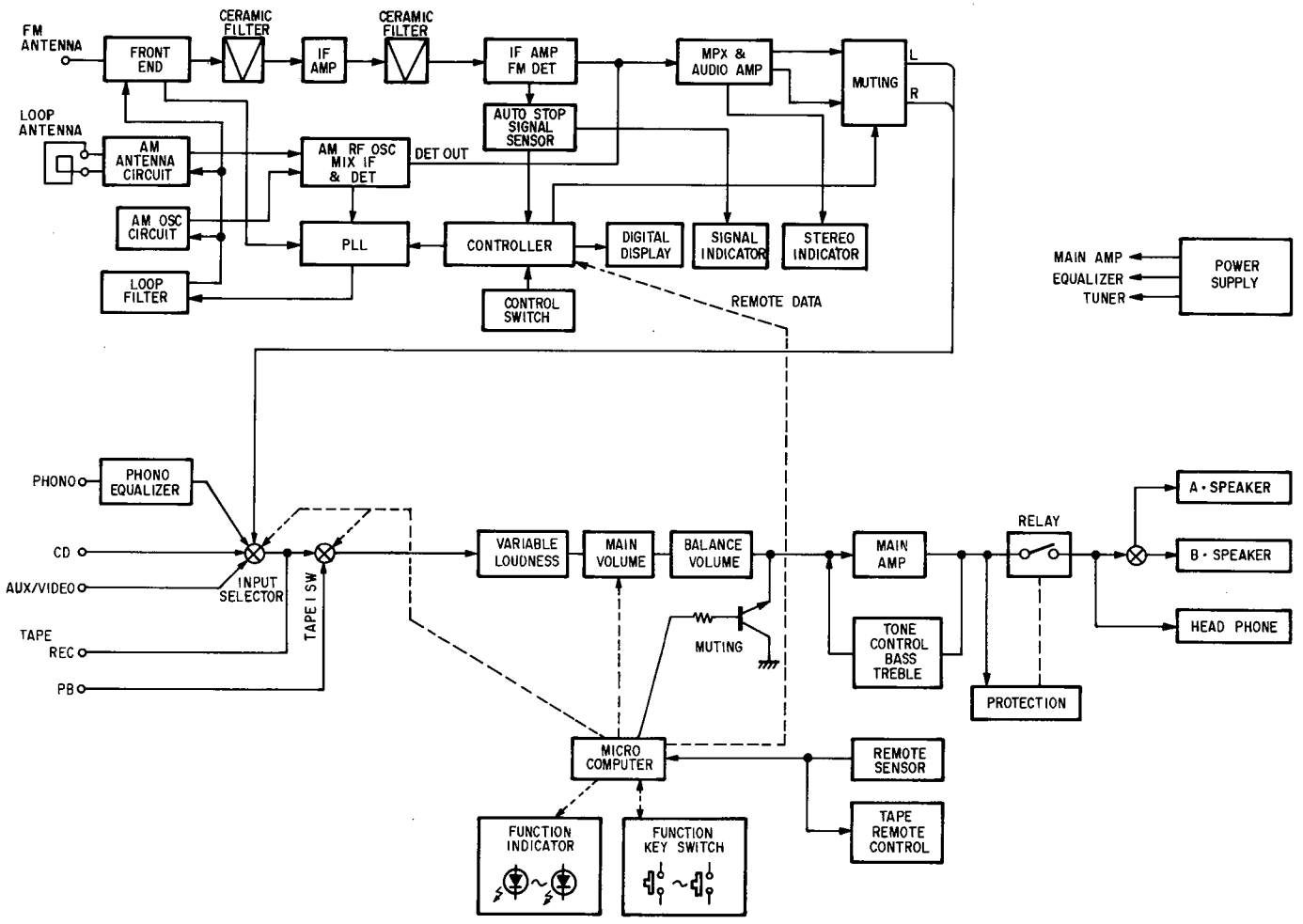




TERMINAL NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELECTRODE	F	F	BG	P(h)	P(g)	P(f)	P(e)	P(d)	BG	P(c)	7G	P(b)	P(a)	6G	NP	5G	NP	NP	4G	NP
TERMINAL NO	21	22	23	24	25	16	27	28	29	30	31	32	33	34	35	36	37	38	39	
ELECTRODE	NP	NP	NP	NP	NP	4G	NP	P (Z)	3G	NP	2G	NP	NP	P (Z)	1G	P (Stere)	P (Signa)	F	F	

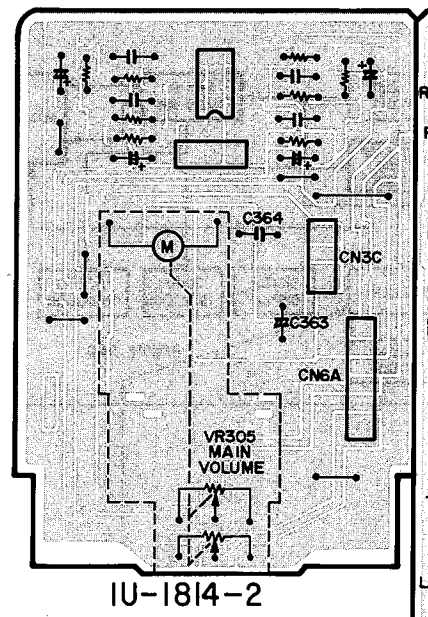
Notes F: Filament NP: No Pin
G Grid
P Anode

BLOCK DIAGRAM

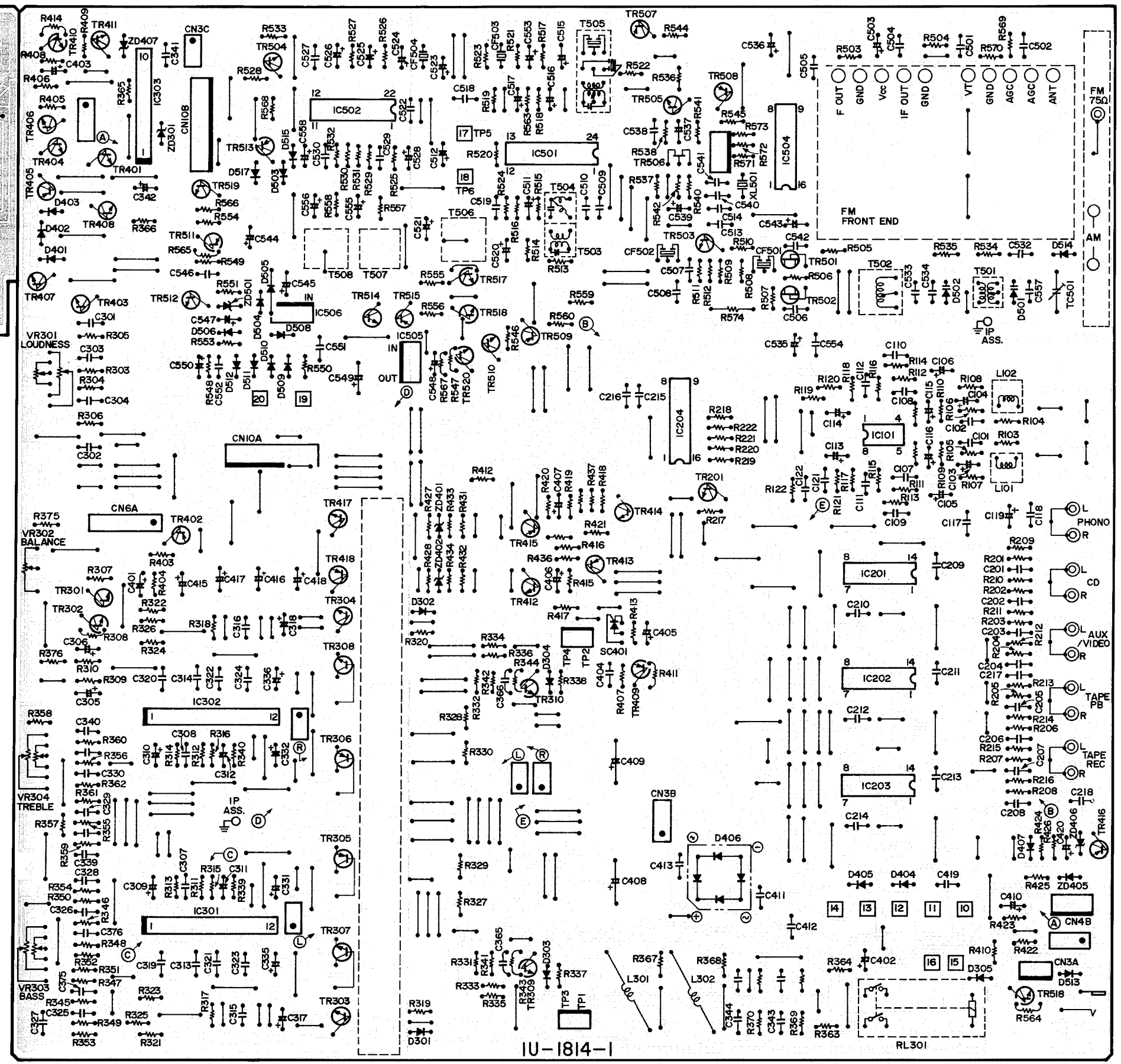


PRINTED WIRING BOARD PATTERNS

1U-1814 AMP TUNER UNIT

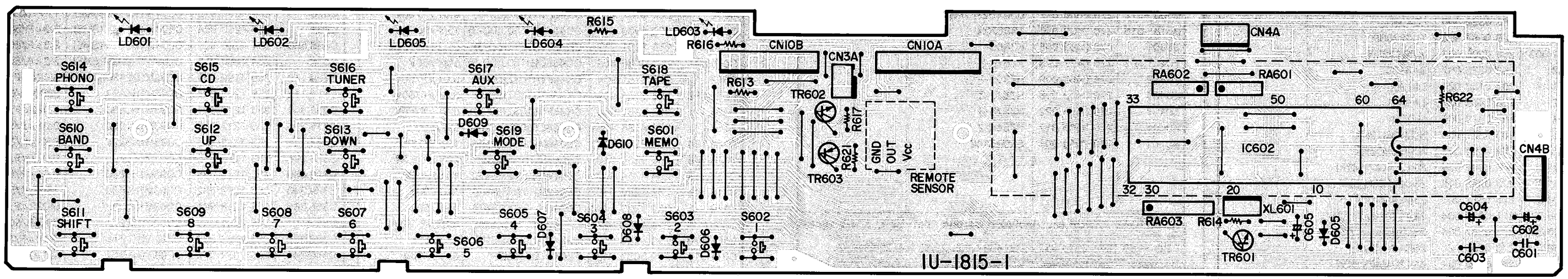


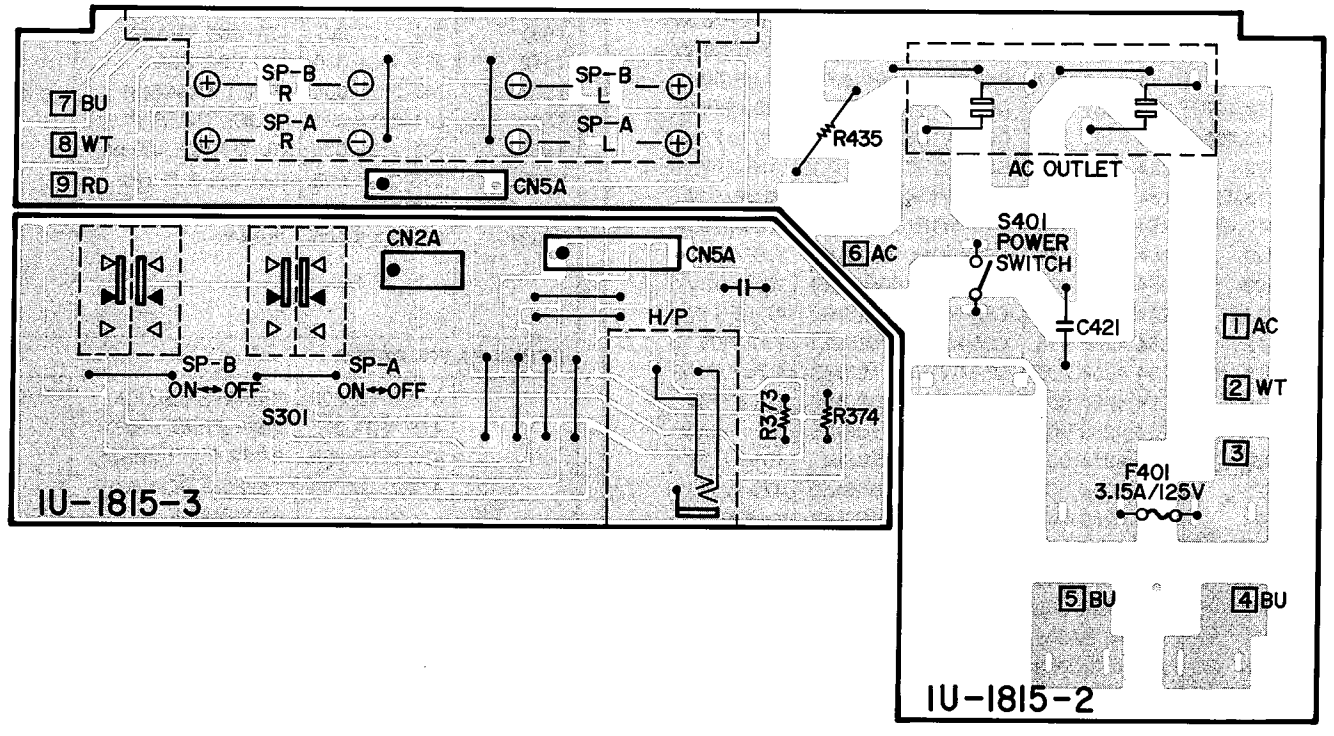
1U-1814-2



1U-1814-1

1U-1815 DISPLAY UNIT





PRINTED WIRING BOARD PARTS LIST
1U-1814 AMP TUNER UNIT PARTS LIST

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

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	263 0257 001	M5218P	
IC201～203	263 0359 006	LC4966	
IC204	268 0082 006	TD62706P	
IC301,302	263 0206 007	μPC1225H	
IC303	262 0326 007	BA6109	
IC501	263 0438 008	LA1266	
IC502	263 0439 007	LA3401	
IC504	262 0719 009	LM7001	
IC505	263 0571 004	NJM78M12FA	
IC506	263 0586 002	NJM78M06FA	
TR201	269 0029 004	RN1204(47k-47k)	
TR301,302	273 0253 015	2SC2878(A/B)	
TR303,304	273 0317 003	2SC2458(BL)	
TR305,306	271 0239 004	2SA1489(O/P/Y)(Z)	
TR307,308	273 0387 004	2SC3853(O/P/Y)(Z)	
TR309,310	273 0235 020	2SC1841(E/F)	
TR401	269 0029 004	RN1204(47k-47k)	
TR402	269 0030 006	RN2204(47k-47k)	
TR403	269 0029 004	RN1204(47k-47k)	
TR404	273 0317 003	2SC2458(BL)	
TR405	271 0191 003	2SA1048(GR)	
TR406	273 0317 003	2SC2458(BL)	
TR407	273 0253 015	2SC2878(A/B)	
TR408	269 0029 004	RN1204(47k-47k)	
TR409	271 0191 003	2SA1048(GR)	
TR410,411	273 0317 003	2SC2458(BL)	
TR412	273 0338 008	2SC3851(Y)/(G)	
TR413	271 0094 032	2SA970(BL/GR)	
TR414	273 0187 039	2SC2240(BL/GR)	
TR415	271 0206 008	2SA1488(Y)/(G)	
TR416	271 0102 034	2SA1015(GR/Y)	
TR417	273 0338 008	2SC3851(Y)/(G)	
TR418	271 0206 008	2SA1488(Y)/(G)	
TR503	273 0357 005	2SC2839(E)	
TR504,505	273 0222 004	2SC2458(Y/GR)	
TR506	275 0053 004	2SK365(BL/GR)	
TR507,508	271 0191 003	2SA1048(GR)	
TR509	271 0102 034	2SA1015(GR/Y)	
TR510	273 0222 004	2SC2458(Y/GR)	
TR511	271 0191 003	2SA1048(GR)	
TR512	273 0222 004	2SC2458(Y/GR)	
TR513	269 0030 006	RN2204(47k-47k)	
TR514	269 0029 004	RN1204(47k-47k)	
TR515	269 0030 006	RN2204(47k-47k)	
TR517	273 0253 015	2SC2878(A/B)	
TR518	273 0253 015	2SC2878(A/B)	
TR519	273 0317 003	2SC2458(BL)	
TR520	273 0222 004	2SC2458(Y/GR)	
TR521	269 0029 004	RN1204(47k-47k)	
D301～305	276 0432 000	1SS270A	
D401～403	276 0432 000	1SS270A	
D404,405	276 0548 017	DSM1D2(TYPE-3)	
D406	276 0305 001	S4VB20	
D407	276 0432 000	1SS270A	
D501,502	276 0302 004	SVC321D2-SP	or Equivalent
D503,504	276 0432 000	1SS270A	

Ref. No.	Part No.	Part Name	Remarks
D505	276 0049 008	1S2076	
D506,507	276 0432 000	1SS270A	
D508～512	276 0548 017	DSM1D2(TYPE-3)	
D513～516	276 0432 000	1SS270A	
ZD301	276 0463 008	HZS6C-1	
ZD401,402	276 0477 023	HZS16-3	
ZD405	276 0462 009	HZS6B-1	
ZD406	276 0482 018	HZS27-2	
ZD407	276 0465 022	HZS7B-3	
ZD501	276 0467 017	HZS9A-2	
SC401	279 0016 001	SF0R1A42	
RESISTORS GROUP (not included Carbon Film ±5%, 1/4W type)			
R327～330	244 2043 982	RS14B3AR22JST(S)	0.22ohm,1W
⚠ R331,332	241 2379 987	RD14B2E102JNBST	1kohm,1/4W
⚠ R341,342	241 2378 988	RD14B2E391JNBST	390ohm,1/4W
⚠ R366	241 2375 907	RD14B2E100JNBST	10ohm,1/4W
R369,370	244 2043 937	RS14B3A100JST(S)	10ohm,1W
R409	244 2051 990	RS14B3A472JST(S)	4.7kohm,1W
R410	244 2051 929	RS14B3A821JST(S)	820ohm,1W
⚠ R417	241 2387 908	RD14B2E010JNBST	1ohm,1/4W
⚠ R421	241 2387 908	RD14B2E010JNBST	1ohm,1/4W
⚠ R424	241 2379 903	RD14B2E471JNBST	470ohm,1/4W
⚠ R550	241 2387 908	RD14B2E010JNBST	1ohm,1/4W
VR301～304	211 0522 007	V1604V20F····K	LOUD. BALANCE BASS. TREBLE
VR305	211 0586 001	V1620V25FB104R	MOTOR VOL. 100kohm
CAPACITORS GROUP			
TC501	213 0022 008	TRIMMER CONDENCER	
C101,102	253 1179 929	CK45B1H151K(DD-3)	150pF/50V
C107,108	253 4538 949	CC45SL1H101J(DD-3)	100pF/50V
C117,118	253 1181 917	CK45F1H223Z(DD-3)	0.022μF/50V
C123	253 9036 006	CK45=1E104Z	0.1μF/25V
C209～216	253 1181 917	CK45F1H223Z(DD-3)	0.022μF/50V
C217,218	253 9036 909	CK45=1E104Z	0.1μF/25V
C301,302	253 1179 990	CK45B1H561K(DD-3)	560pF/50V
C307,308	253 4538 949	CC45SL1H101J(DD-3)	100pF/50V
C313,314	253 4536 983	CC45SL1H220J(DD-3)	22pF/50V
C319,320	253 4538 949	CC45SL1H101J(DD-3)	100pF/50V
C321,322	253 1179 929	CK45B1H151K(DD-3)	150pF/50V
C341	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C364	253 1181 917	CK45F1H223Z(DD-3)	0.022μF/50V
C375,376	253 4538 949	CC45SL1H101J(DD-3)	100pF/50V
C404	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C412,413	253 1151 905	CK45E2H472P	4700pF/500V
C422	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C501	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C504～510	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C513	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C519	253 4538 965	CC45SL1H121J(DD-3)	120pF/50V

Ref. No.	Part No.	Part Name	Remarks
C527	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C529,530	253 4457 907	CC45SL1H751J	750pF/50V
C532	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C534	253 4536 941	CC45SL1H150J(DD-3)	15pF/50V
C538	253 1181 917	CK45F1H223Z(DD-3)	0.022μF/50V
C540,541	253 4536 954	CC45SL1H160J(DD-3)	16pF/50V
C542	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C551,552	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C554	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C557	253 4535 968	CC45SL1H060D(DD-3)	6pF/50V
C103,104	254 4254 909	CE04W1C100M(SME)	10μF/16V
C105,106	254 4250 929	CE04W0J101M(SME)	100μF/6.3V
C113,114	254 4254 909	CE04W1C100M(SME)	10μF/16V
C115,116	254 4260 948	CE04W1H010M(SME)	1μF/50V
C119	254 4260 948	CE04W1H010M(SME)	1μF/50V
C305,306	254 4260 922	CE04W1HR33M(SME)	0.33μF/50V
C309,310	254 4260 948	CE04W1H010M(SME)	1μF/50V
C311,312	254 3053 923	CE04D1C330MBP (SME)	33μF/16V
C317,318	254 4254 909	CE04W1C100M(SME)	10μF/16V
C331,332	254 4260 980	CE04W1H100M(SME)	10μF/50V
C335,336	254 4260 980	CE04W1H100M(SME)	10μF/50V
C342	254 4261 921	CE04W1H101M(SME)	100μF/50V
C363	254 3056 917	CE04D1H010MBP (SME)	1μF/50V
C401	254 4260 948	CE04W1H010M(SME)	1μF/50V
C402	254 4250 945	CE04W0J331M(SME)	330μF/6.3V
C403	254 4260 977	CE04W1H4R7M(SME)	4.7μF/50V
C405	254 4260 980	CE04W1H100M(SME)	10μF/50V
C406,407	254 4261 921	CE04W1H101M(SME)	100μF/50V
C408,409	254 6147 001	CE68W1H682M(DL)	6800μF/50V
C410	254 4260 948	CE04W1H010M(SME)	1μF/50V
C415,416	254 4261 918	CE04W1H470M(SME)	47μF/50V
C417,418	254 4256 949	CE04W1E101M(SME)	100μF/25V
C420	254 4260 948	CE04W1H010M(SME)	1μF/50V
C503	254 4254 909	CE04W1C100M(SME)	10μF/16V
C511	254 4254 938	CE04W1C470M(SME)	47μF/16V
C512	254 4260 948	CE04W1H010M(SME)	1μF/50V
C515	254 4258 905	CE04W1V4R7M(SME)	4.7μF/35V
C516	254 4254 909	CE04W1C100M(SME)	10μF/16V
C517	254 4260 906	CE04W1H0R1M(SME)	0.1μF/50V
C520	254 4254 909	CE04W1C100M(SME)	10μF/16V
C523	254 4254 938	CE04W1C470M(SME)	47μF/16V
C524	254 4260 948	CE04W1H010M(SME)	1μF/50V
C525	254 4260 919	CE04W1HR22M(SME)	0.22μF/50V
C526	254 4260 948	CE04W1H010M(SME)	1μF/50V
C528	254 4254 909	CE04W1C100M(SME)	10μF/16V
C531	254 4258 905	CE04W1V4R7M(SME)	4.7μF/35V
C535	254 4254 938	CE04W1C470M(SME)	47μF/16V
C536	254 4260 906	CE04W1H0R1M(SME)	0.1μF/50V
C537	254 3056 917	CE04D1H010MBP (SME)	1μF/50V
C539	254 4254 938	CE04W1C470M(SME)	47μF/16V
C543	254 4260 948	CE04W1H010M(SME)	1μF/50V
C545	254 4254 909	CE04W1C100M(SME)	10μF/16V
C547	254 4260 948	CE04W1H010M(SME)	1μF/50V
C548	254 4254 909	CE04W1C100M(SME)	10μF/16V

Ref. No.	Part No.	Part Name	Remarks
C549	254 4256 790	CE04W1E222MC (SME)	2200μF/25V
C550	254 4260 948	CE04W1H010M(SME)	1μF/50V
C553	254 4260 964	CE04W1H3R3M(SME)	3.3μF/50V
C555,556	254 4260 951	CE04W1H2R2M(SME)	2.2μF/50V
C558	254 4260 951	CE04W1H2R2M(SME)	2.2μF/50V
C109,110	255 4199 999	CQ92M1H243J(MRZ)	0.024μF/50V
C111,112	255 1210 907	CQ93M1H682J	6800pF/50V
C303,304	255 1216 901	CQ93M1H223J	0.022μF/50V
C315,316	255 1212 905	CQ93M1H103J	0.01μF/50V
C323,324	255 1206 908	CQ93M1H332J	3300pF/50V
C325,326	255 1217 900	CQ93M1H273J	0.027μF/50V
C329,330	255 1212 905	CQ93M1H103J	0.01μF/50V
C339,340	255 1202 902	CQ93M1H152J	1500pF/50V
C365,366	255 1216 901	CQ93M1H223J	0.022μF/50V
C533	255 4201 942	CQ93P1H391J	390pF/50V
C327,328	256 1034 982	CF93A1H124J	0.12μF/50V
C343,344	256 1034 979	CF93A1H104J	0.1μF/50V
C419	256 1034 979	CF93A1H104J	0.1μF/50V
C518	256 1034 940	CF93A1H563J	0.056μF/50V
C522	256 1034 937	CF93A1H473J	0.047μF/50V
C544	259 0007 003	SBCAP==822=	
RELAY, COIL, TRANS GROUP			Q'ty
T501	231 1127 007	MW ANT TRANS	1
T502	231 4901 000	MW OSC COIL	1
T503	231 2077 004	IF DET TRANS(S)	1
T504	231 2076 005	IF DET TRANS(P)	1
T505	231 1132 005	AM IFT (SFL450J3)	1
L301,302	235 0067 005	INDUCTOR (1μH)	2
XL501	399 0075 003	X-TAL (7.2MHz)	1
RL301	214 9003 005	RELAY	1
OTHER PARTS GROUP			
	417 0362 205	RADIATOR BLOCK	1
	415 0234 007	INSULATING SHEET	4
	473 8007 009	3×12 CUP SCREW	6
	473 7500 044	TAPPING SCREW(P) 3×8 BLACK	2
	216 0064 007	FRONT END	1
CF501,502	261 0025 004	CERAMIC FILTER	1
CF503	261 0031 001	BFU450C4	1
CF504	261 0079 005	CSB456F11	1
	204 8278 009	6P PIN JACK(S-GND)	1
	204 8266 008	4P PIN JACK(S-GND)	1
	204 8260 004	MINI JACK	1
	205 0433 010	ANT. TERMINAL(F)	1
	205 0185 025	2P WIRE HOLDER	5
	205 0185 038	3P WIRE HOLDER	3
	205 0185 067	6P WIRE HOLDER	1
	205 0190 036	3P NH CONN. BASE	2
	205 0233 032	3P EH CONN. BASE	1
	205 0233 061	6P EH CONN. BASE	1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
	205 0343 032	3P CONN. BASE (KR-PH)		1
	205 0343 045	4P CONN. BASE (KR-PH)		1
	205 0321 041	4P CONN. BASE(RED)		1
	205 0375 000	10P CONN. BASE (KR-PH)		1
	205 0321 009	10P CONN. BASE (RED)		1
	203 0322 073	1P CONTACT Ass'y		1

1U-1815 DISPLAY UNIT PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC602	262 1143 001	TMP47C670N-1287	
TR601	273 0222 004	2SC2458(Y/GR)	
TR602	269 0025 008	RN1202(10k-10k)	
TR603	269 0026 007	RN2202(10k-10k)	
D605~610	276 0432 000	1SS270A	
LD601~605	393 9416 005	SEL-2210R(TP2)	
RESISTORS GROUP			
R373,374	244 2052 931	RS14B3A391JST(S)	390ohm,1W ±5%
R435	242 0073 000	RC05GF2H225K	2.2Mohm,1/2W ±10%
R613	241 2403 031	RD14B2E104JT(5)	100kohm,1/4W ±5%
R614	241 2400 034	RD14B2E562JT(5)	5.6kohm,1/4W ±5%
R615,616	241 2397 040	RD14B2E331JT(5)	330ohm,1/4W ±5%
R617	241 2400 092	RD14B2E103JT(5)	10kohm,1/4W ±5%
R621	241 2400 092	RD14B2E103JT(5)	10kohm,1/4W ±5%
R622	241 2398 052	RD14B2E102JT(5)	1kohm,1/4W ±5%
R998,999	241 2400 092	RD14B2E103JT(5)	10kohm,1/4W ±5%
RA601	246 2052 005	RK99==103JP4	10kohm
RA602	246 2053 004	RK99==103JP5	10kohm
RA603	246 2054 003	RK99==103JP7	10kohm
CAPACITORS GROUP			
C359~362	255 1120 084	CQ93M1H472J	4700pF/50V
C421	253 8014 702	CK45F2GAC103MC	0.01μF/400V AC
C601	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C602	254 4250 042	CE04W0J331M(SME)	330μF/6.3V
C603	253 1181 904	CK45F1H103Z(DD-3)	0.01μF/50V
C604	254 4258 057	CE04W1V101M(SME)	100μF/35V
C605	254 4260 045	CE04W1H010M(SME)	1μF/50V
SWITCHES GROUP			
S301	212 1012 001	2P PUSH SW	SPEAKER
⚠ S401	212 4686 007	POWER SW(TV-5)	
S601~619	212 4388 907	TACT SWITCH	
OTHER PARTS GROUP			Q'ty
	393 4043 004	FLD (FIP10TM7)	1
	412 2268 302	FLD BRACKET	1
	499 0088 002	QH3031HO	1
XL601	399 0034 002	CST 4.00MG	1
F401	206 1039 089	FUSE 3.15A	1
	202 0022 008	FUSE HOLDER	2
	203 3941 008	AC OUTLET(2P)	1

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

Ref. No.	Part No.	Part Name	Remarks	Q'ty
	204 8167 000	HEADPHONES JACK		1
	205 0472 000	8P SP TERMINAL	U.S.A.	1
	205 0185 025	2P WIRE HOLDER		1
	205 0185 054	5P WIRE HOLDER		2
	205 0343 032	3P CONN. BASE (KR-PH)		1
	205 0343 045	4P CONN. BASE (KR-PH)		1
	205 0321 041	4P CONN. BASE(RED)		1
	205 0375 000	10P CONN. BASE (KR-PH)		1
	205 0321 009	10P CONN. BASE (RED)		1

1U-1814C AMP TUNER UNIT PARTS LIST (for ASIA)

[Same as 1U-1814 (for U.S.A.) except the followings.]

Ref. No.	Part No.	Part Name	Remarks		
CAPACITORS GROUP					
C529,530	253 4453 901	CC45SL1H511JT	510pF/50V	C	
SWITCH					
S510	212 4293 005	SLID SWITCH		A	
OTHER PARTS					Q'ty
	205 0321 038	3P CONN. BASE (RED)		A	1

NOTE: A:ADD C:CHANGE D:DELETE

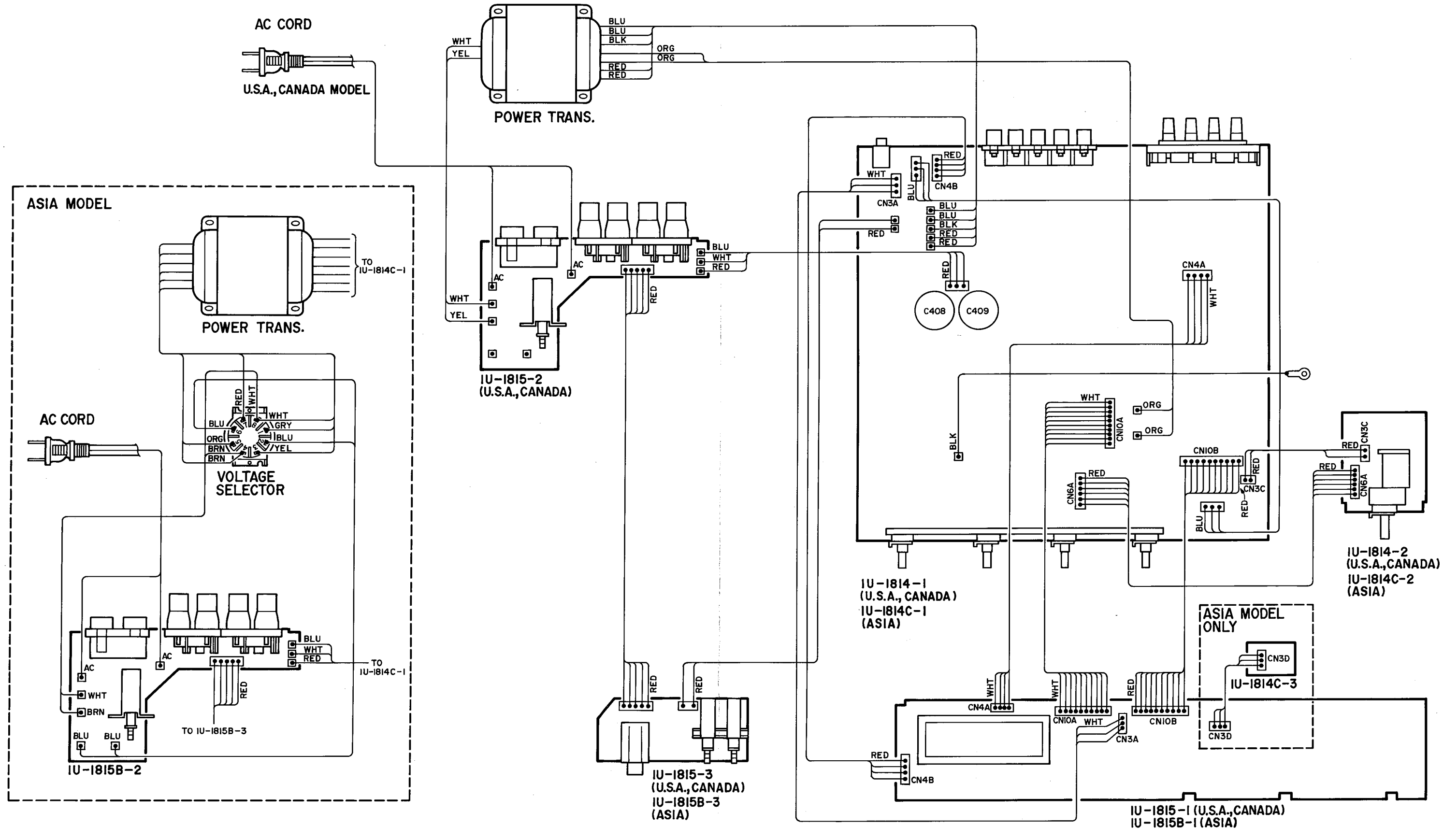
1U-1815B DISPLAY UNIT PARTS LIST (for ASIA)

[Same as 1U-1815 (for U.S.A.) except the followings.]

Ref. No.	Part No.	Part Name	Remarks		
SEMICONDUCTORS GROUP					
D601	276 0432 000	1SS270A		A	
D612	276 0432 000	1SS270A		A	
RESISTORS GROUP (not included Carbon Film ±5%, 1/4W type)					
R435	242 0073 000	RC05GF2H225K	2.2Mohm ½W ±10%	D	
OTHER PARTS GROUP					Q'ty
	415 0299 000	CONDENSER COVER	C-421	A	1
F402	206 1015 016	FUSE (1.25A)		A	1
	202 0022 008	FUSE HOLDER		C	4
	513 1451 073	FUSE LAVEL	F402 1.25A, 250V	A	1
	205 0321 038	3P CONN.BASE (RED)	CN3D	A	1

NOTE : A:ADD C:CHANGE D:DELETE

WIRING DIAGRAM



ADDENDUM LIST

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

Ref. No.	Part Name & Description	Part No.				
		CANADA	ASIA			
1	AMP TUNER UNIT	1U-1814	1U-1814C			
2	DISPLAY UNIT	1U-1815	1U-1815B			
9	BACK PANEL	1050826204	1050826233			
⚠ 12	AC CORD (POLARIZED)	2062060002	—			
	AC CORD	—	2006031026			
⚠ 16	POWER TRANS	2335730001	2335732009			
⚠ 62	VOLTAGE SEL SWITCH	—	2129555007			
63	PRESET LABEL	—	5158030008			
101	TAPPING SCREW(S) (BLACK) 3×6	4737002034(14)	4737002034(16)			
112	CROSS-RECESSED HEAD MACHINE SCREW 2.6×4	—	4713201024(2)			
	UL LABEL	—	—			
203	DAI WARRANTY HOME	—	—			
	DCI WARRANTY	5150388004	—			
215	INST. SHEET	—	5111845007			

Note 1. See addendum list above for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list.
2. ★ marked not included EXPLODED VIEW OF CHASSIS AND CABINET.
3. This list is prepared based on U.S.A. BLACK VERSION.

DENON

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