

DENON

Hi-Fi AM-FM Stereo Receiver

For U.S.A. Model

SERVICE MANUAL

MODEL DRA-435R

Serial No. 25551 and after

MODEL DRA-335R

Serial No. 38551 and after

AM-FM STEREO RECEIVER

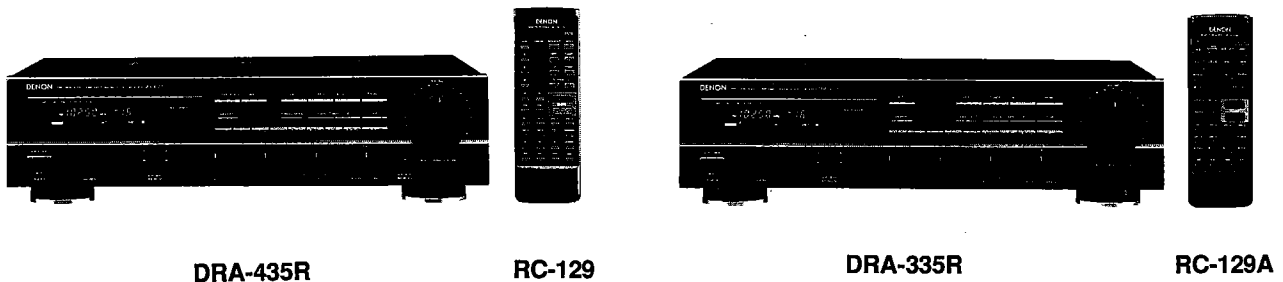
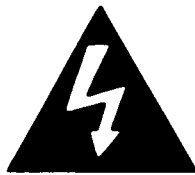


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NIPPON COLUMBIA CO., LTD.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICE-ABLE 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.

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.

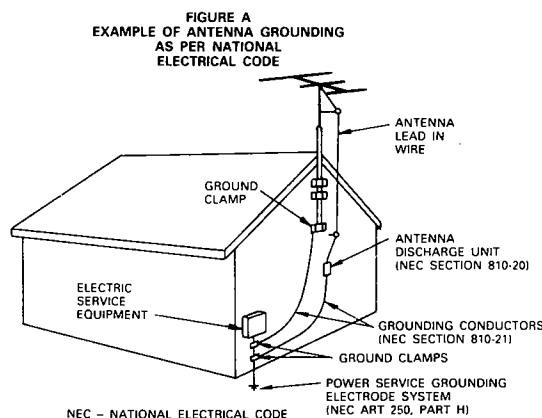
SAFETY INSTRUCTIONS

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.
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,



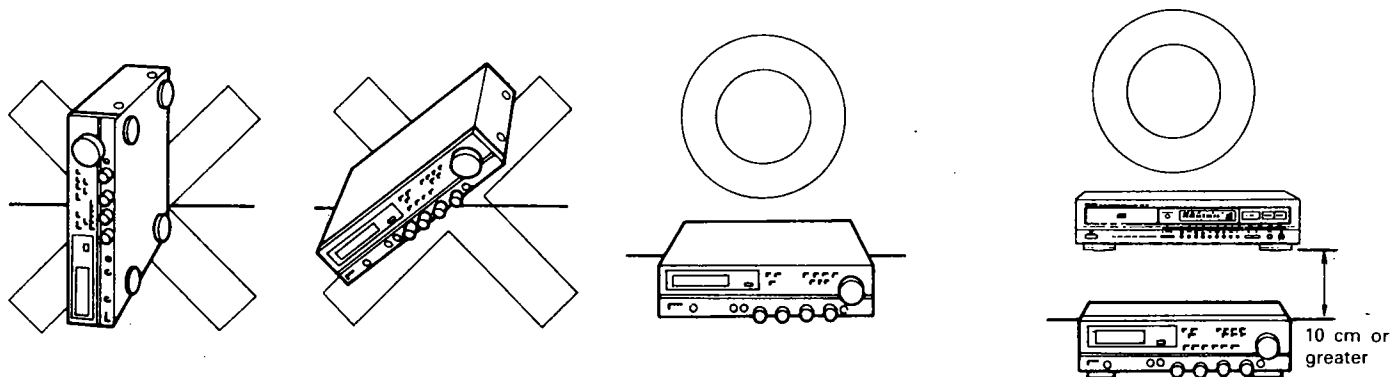
paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

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.



PRECAUTIONS FOR INSTALLATION

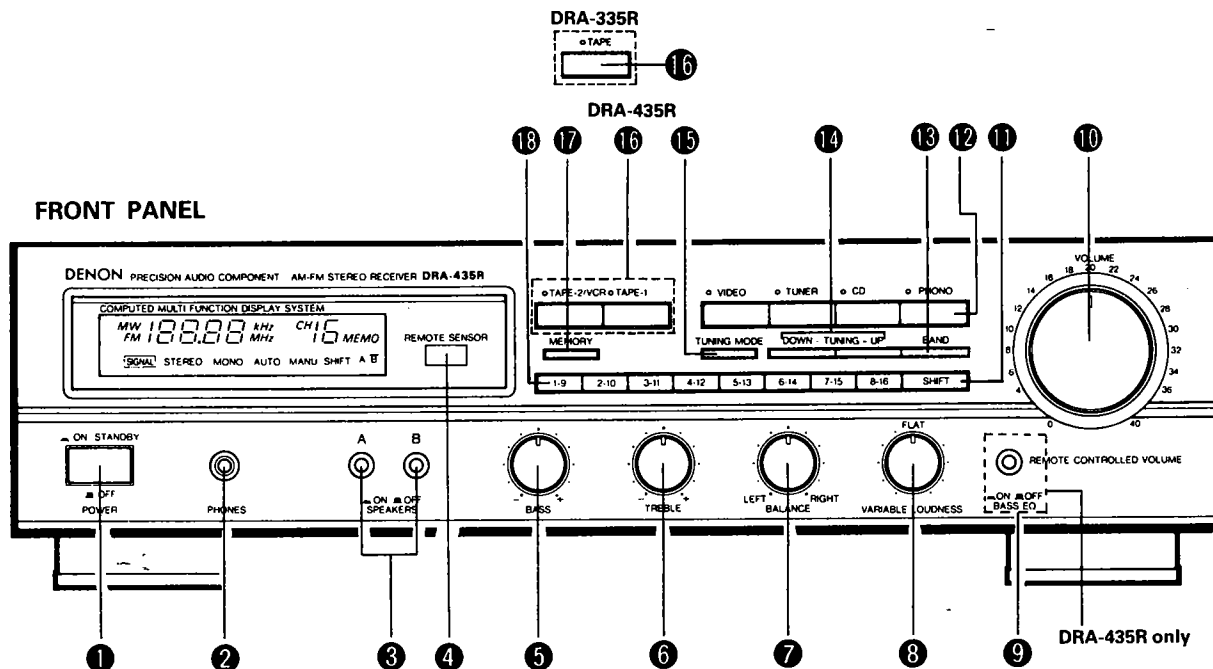
DRA-435R/335R always install horizontally. And leave at least 10 cm of space between this unit and other component placed above.



Please check to make sure 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) FM Antenna Adapter | 1 |
| (5) Remote Control RC-129/RC-129A | 1 |
| (6) Batteries R6 (AA) | 2 |

NAME AND FUNCTION OF PARTS

**1 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.

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 engage speaker system A and B. No sound is heard through the speakers when both switches are reset to the 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-435R 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 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)

12 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.

* 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.

- 13 BAND (Band selector switch)**
Press this switch to select the FM or AM (MW) band.
- 14 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 steps on FM and 10 kHz 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.
- 15 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.
- 16 Tape selector (Tape selector/monitor buttons) (DRA-435R)**
TAPE-1: Press this button once, TAPE-1 indicator LED 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/VCR terminal.

TAPE-2/VCR: Press this button once, TAPE-2/VCR indicator LED will light up and then you can play tape or video source of TAPE-2/VCR terminal.

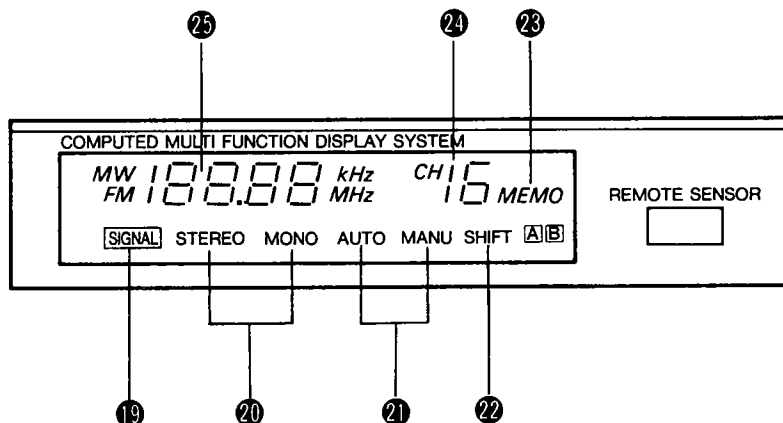
Press again the button currently accessed, to play sources selected by input selector 12, indicator LED goes out.

- TAPE (Tape monitor button) (DRA-335R)**
Press this button once, indicator LED will light up and then you can play tape source on the TAPE terminal. And press this button again to play sources selected by the input selector 12, indicator LED goes out.

- 17 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.

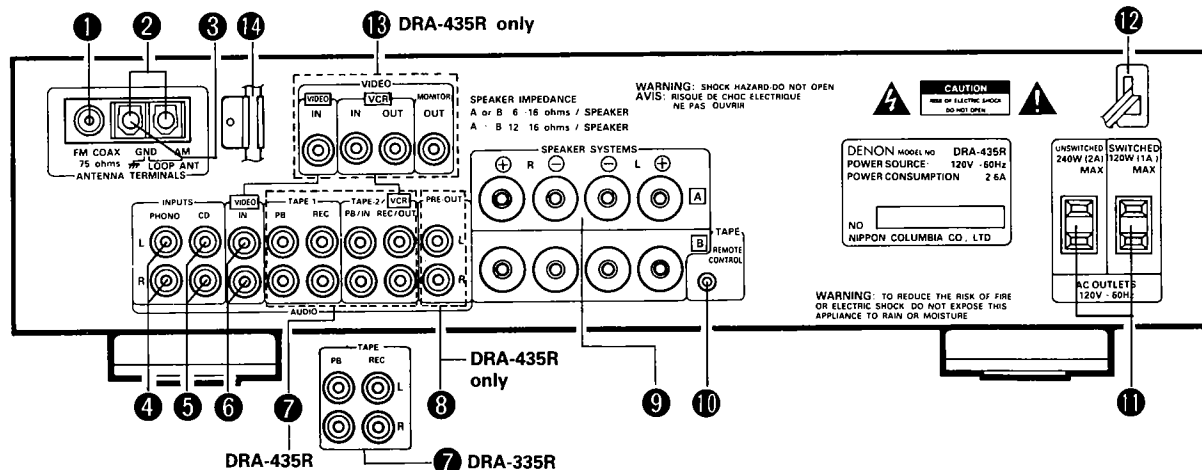
- 18 Preset channel 1 ~ 16 (Preset station buttons)**
These buttons are used for storing stations or recalling stations which have been preset. Using the SHIFT button you can preset a total of 16 FM or AM stations into preset channels 1 ~ 8 and 9 ~ 16.
Once a radio has been memorized on a PRESET CHANNEL button, the same station can later be tuned in instantly simply by pressing the corresponding PRESET CHANNEL button.

DISPLAY



- 19 SIGNAL (Signal indicator)**
This lights when a station is received.
- 20 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.
- 21 TUNING MODE (AUTO/MANUAL)**
Pressing TUNING MODE 15 causes AUTO and MANU to light up alternately.
- 22 SHIFT (Shift indicator)**
The preset channel which is selected with the Shift Button 11 is displayed by the SHIFT [A] or [B].
- 23 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.
- 24 CHANNEL (Preset channel display)**
When using the channel preset button 18, the channel is displayed and the frequency for that channel stored in memory is displayed in 25.
- 25 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



- 1 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.
- 2 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.
- 3 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.
- 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 Disk may be connected here.
- 7**
 - **TAPE-1, TAPE-2/VCR (Tape deck and/or VCR playback/recording terminal) (DRA-435R)**
Two tape decks or tape deck and VCR can be connected to these jacks for full-fledged playback, recording and tape dubbing operation.
 - **TAPE (DRA-335R)**
Tape decks can be connected for full use including playing or copying.
- 8 PRE-OUT (DRA-435R only)**
Output signals for power amplifiers are sent from these jacks. The rated output is 2 volts.
The signals do not pass through the bass and treble circuits.
- 9 SPEAKER SYSTEMS (Speaker terminals)**
Two pairs of speakers A and B can be connected to these terminals.
- 10 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.

- 11 AC OUTLET (AC power outlets)**
UNSWITCHED
This AC outlet is available independently of the power switch. The power capacity is a maximum of 240 W (2A).
SWITCHED
This AC outlet is controlled by the power switch. Maximum capacity is 120 W (1A).

- 12 AC CORD (Power cord)**
Connect this cord into the wall outlet.
- 13 VIDEO (Video input/output terminals) (DRA-435R only)**
As a full-featured AV center, this receiver makes possible connection of a TV monitor, VCR and/or a video disc player (Video) to these jacks. Use the Video INPUT SELECTOR buttons on the front panel to select the desired source for playback, recording or dubbing.
- 14 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.

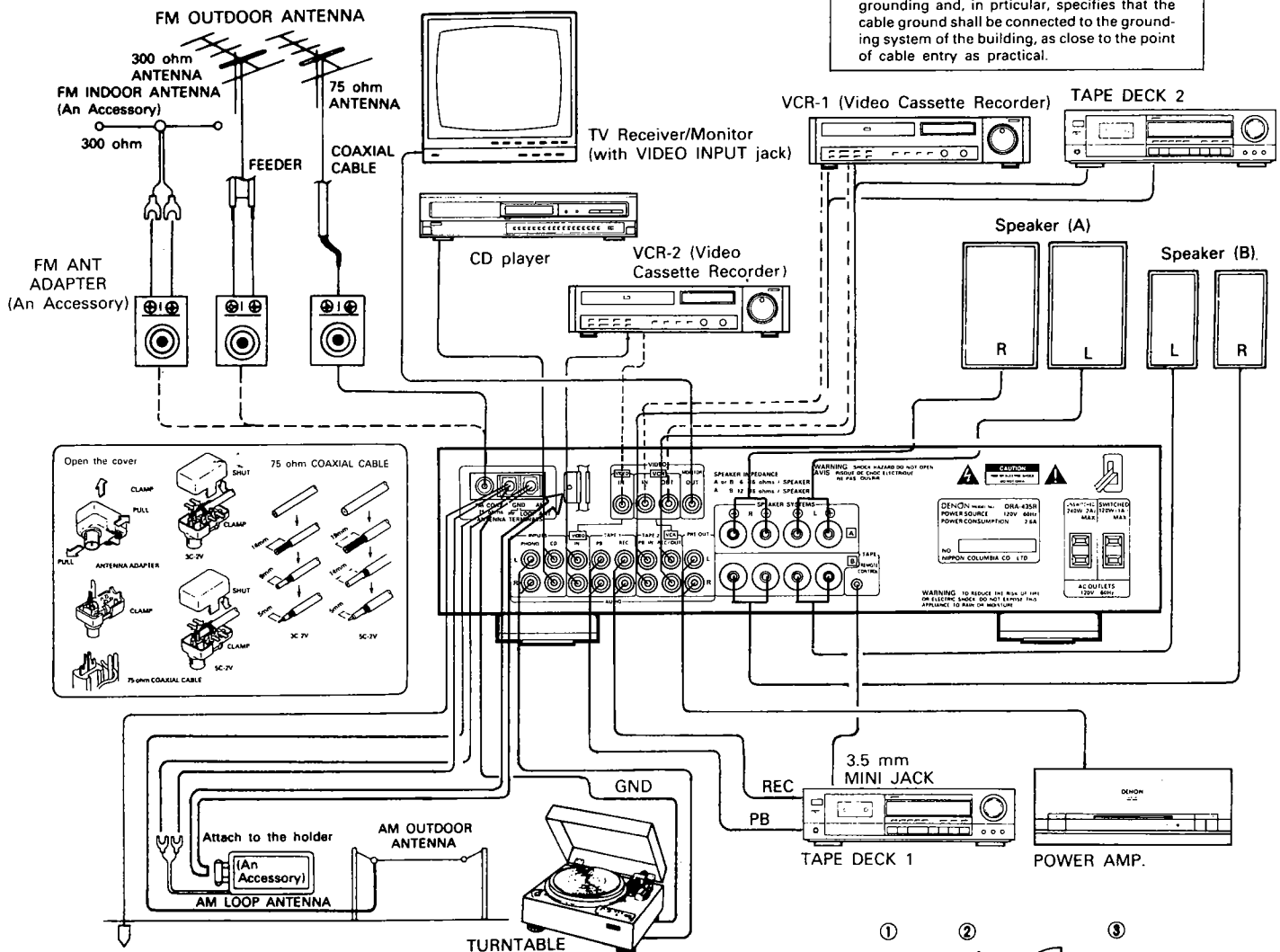
NOTES

- 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

Note to CATV system installer:

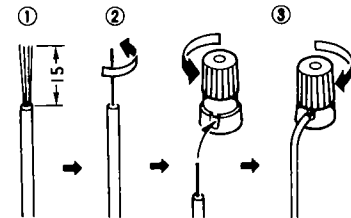
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



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 cord, 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 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.

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.

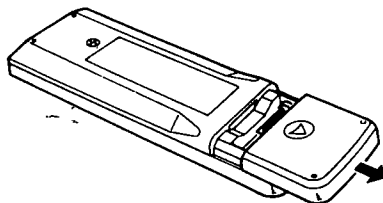
- This model has a last channel memory system. It stores the last channel used power off.
- This model is designed to store and retain the stations that have been previously registered in the memory, even if the tuner is deenergized temporarily. The memory can hold registered data for approximately about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

PLAYBACK USING THE REMOTE CONTROL

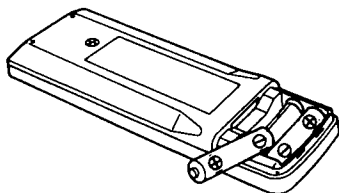
The accessory RC-129/RC-129A remote control unit is used to control the RECEIVER from a distance.

(1) Inserting the dry cell batteries

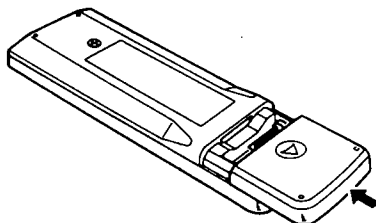
- 1 Remove the rear cover on the remote control unit.



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



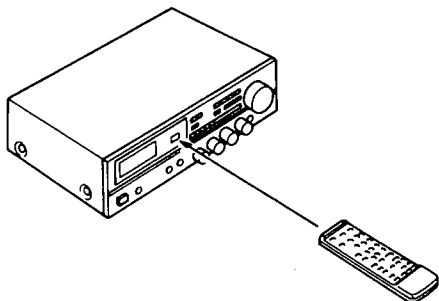
- 3 Replace the rear cover.



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.

(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-435R/335R 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

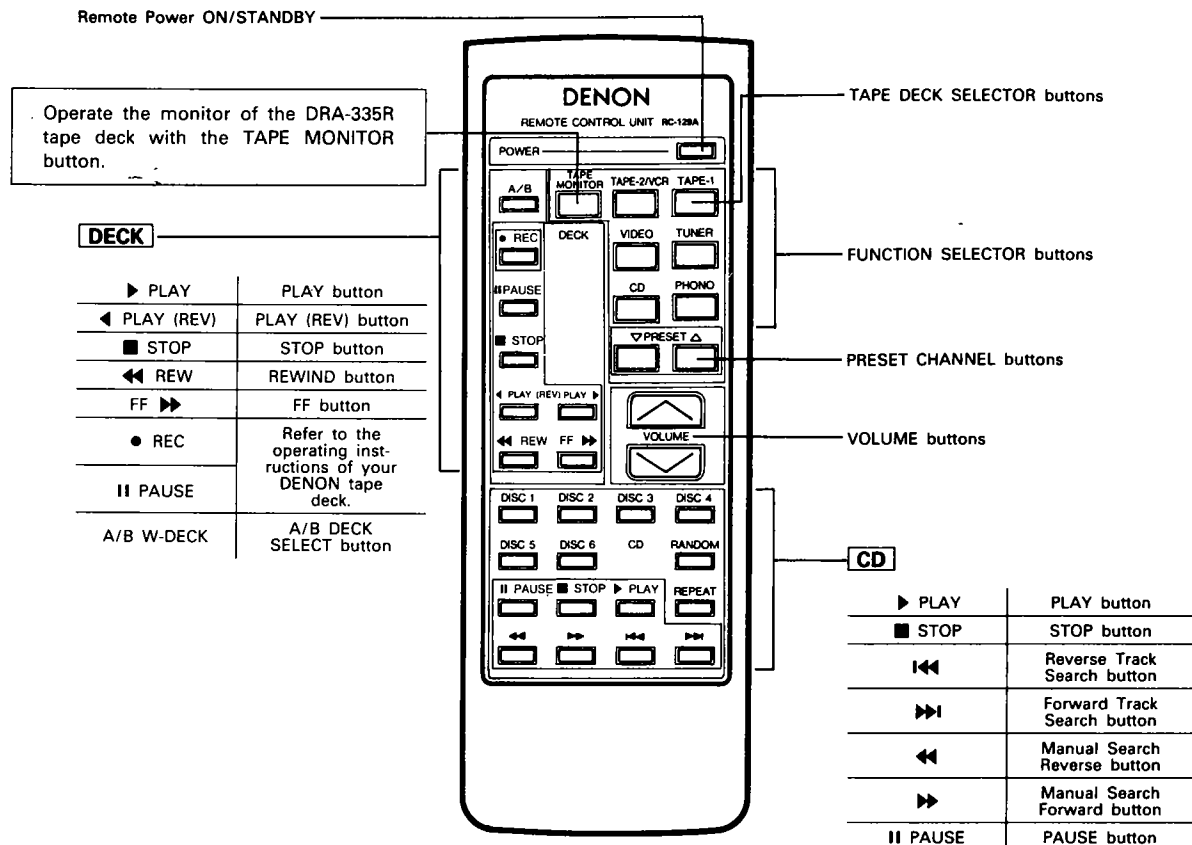
Full-system Remote Control Unit

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-435R/335R to create a remarkably ergonomic and versatile DENON system with all the quality sound reproduction that the devoted audiophile expects.

Remote Control Unit RC-129 supplied with DRA-435R

Remote Control Unit RC-129A supplied with DRA-335R

RECEIVER



- RC-129A differs from RC-129 with respect to the TAPE MONITOR button only.
- The RC-129/RC-129A Remote Control Unit can control all CD players (excluding the DCD-1800R) and cassette decks made by DENON.
- Buttons 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.

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Power Output: **DRA435R:** 55 watts per channel minimum RMS, both channels driven at 8 ohms from 20 Hz ~ 20 kHz no more than 0.05% total harmonic distortion.

DRA335R: 40 watts per channel minimum RMS, both channels driven at 8 ohms from 20 Hz ~ 20 kHz no more than 0.05% total harmonic distortion.

Power Bandwidth (IHF): 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 ~ 50 kHz ± 1.5 dB
 TAPE-1, (at 1W)
 TAPE-2/VCR

Input Sensitivity and Impedance: PHONO MM 2.5 mV 47 k ohms
 CD, VIDEO, 150 mV 29 k ohms
 TAPE-1, TAPE-2/VCR (DRA-435R)
 TAPE (DRA-335R)

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,

Tone Controls: BASS ± 10 dB at 100 Hz
 TREBLE ± 10 dB at 10 kHz
 TAPE-2/VCR

Loudness, Control Effect: VARIABLE LOUDNESS at 10 positions, 50 Hz/10 kHz, +10 dB/+5 dB

PRE-OUT terminals
Rated output: 2 V (at 100 kohms load)
(DRA-435R only)

VIDEO SECTION

Input terminal: VCR-IN, VIDEO 1 Vp-p/75 ohms
Output terminal: VCR-OUT, MONITOR 1 Vp-p/75 ohms
Frequency response: 5 Hz ~ 6 MHz ± 1.5 dB
(DRA-435R only)

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 0.1%
 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 $+0.2$ dB
 -1.5 dB

Stereo Separation (at 1 kHz): 40 dB

[AM]

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

General

Power Supply: AC 120V 60 Hz
Power Consumption: 2.6 A (DRA-435R)
 180 W (DRA-335R)
Power Outlets: SWITCHED 120 W (1A.)
 UNSWITCHED 240 W (2A.)
Dimensions: 434 mm (17-3/32")W $\times$ 120 mm
 (4-23/32")H $\times$ 312 mm (12-9/32")D
Weight: 6.7 kg (14 lbs 12 oz) (DRA-435R)
 6.4 kg (14 lbs 2 oz) (DRA-335R)

REMOTE CONTROL UNIT

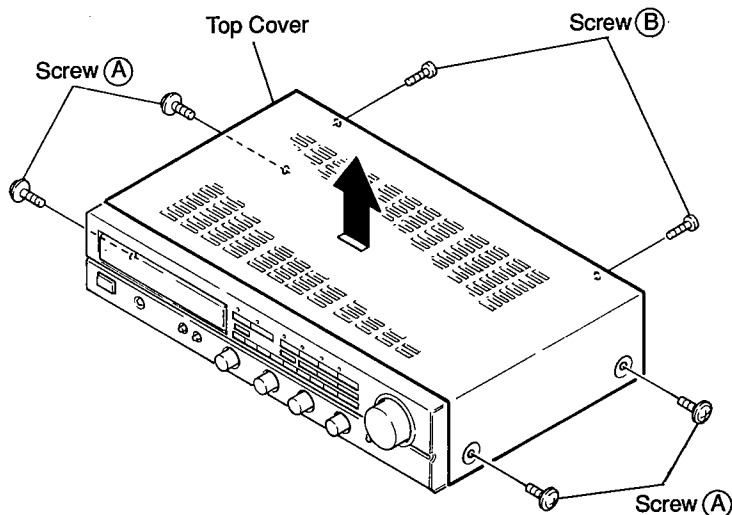
Remote control system: Infrared pulse system
Power supply: 3V DC Two size "AA" (R6)
 dry cell batteries
External dimensions: 60 mm (2-23/64")W $\times$ 175 mm (6-57/64")H
 $\times$ 18 mm (45/64")D
Weight: 120 g (4 oz) (Includes batteries)

Design and specifications are subject to change without prior notice.

REMOVAL OF EACH SECTION

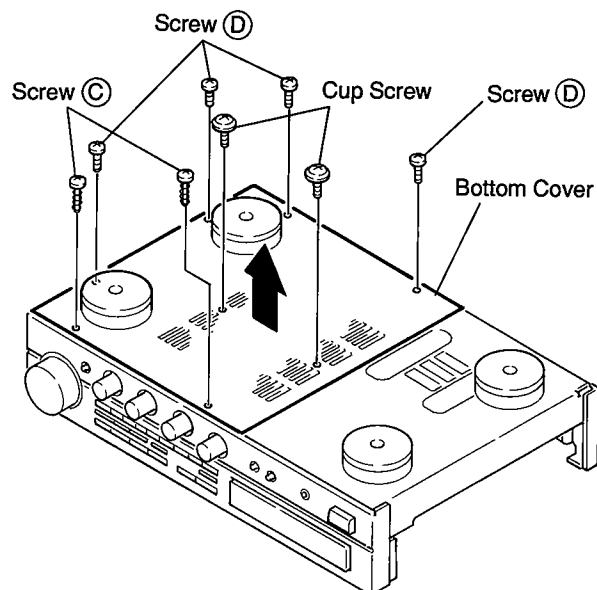
1. Top Cover

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



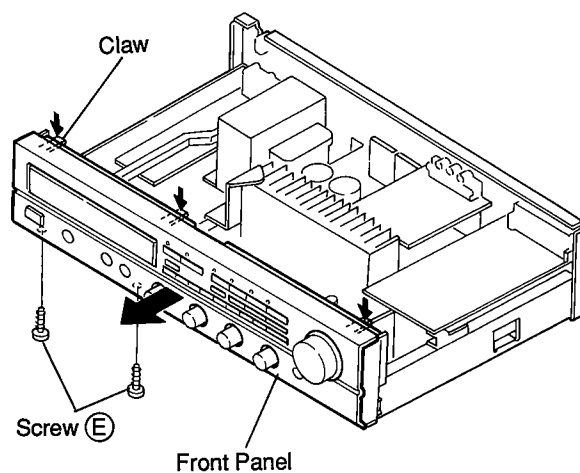
2. Bottom Cover

Remove 2 screws (C), 4 screws (D) and 2 Cup screws, and detach the Bottom Cover upward in the arrow direction.



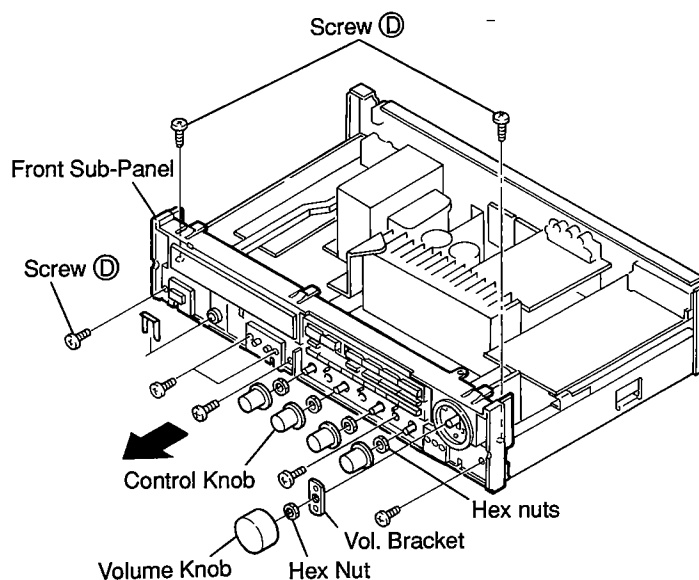
3. Front Panel

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



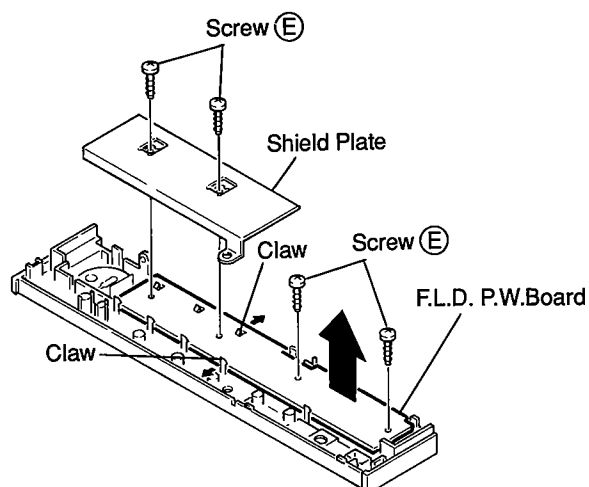
4. Front Sub-Panel

- 1) Pull out the Volume Knob and unfasten the hex nut.
- 2) Pull out 4 Control Knobs and unfasten 4 hex nuts.
- 3) Remove 8 screws ① and draw out the Front Sub-Panel as the arrow direction.



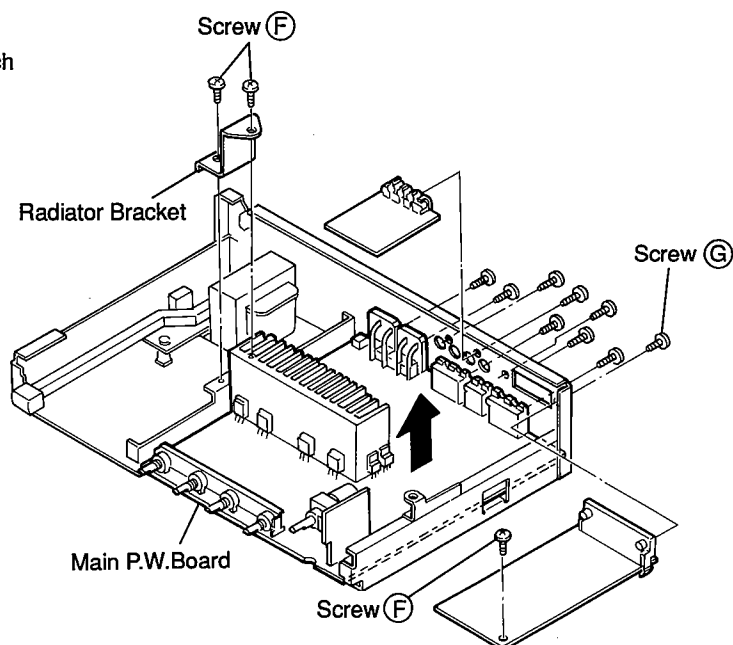
5. F.L.D. P.W.Board

- 1) Remove 4 screws ②.
- 2) Removing 8 claws downward, and draw out the F.L.D. P.W.Board as the arrow shows.

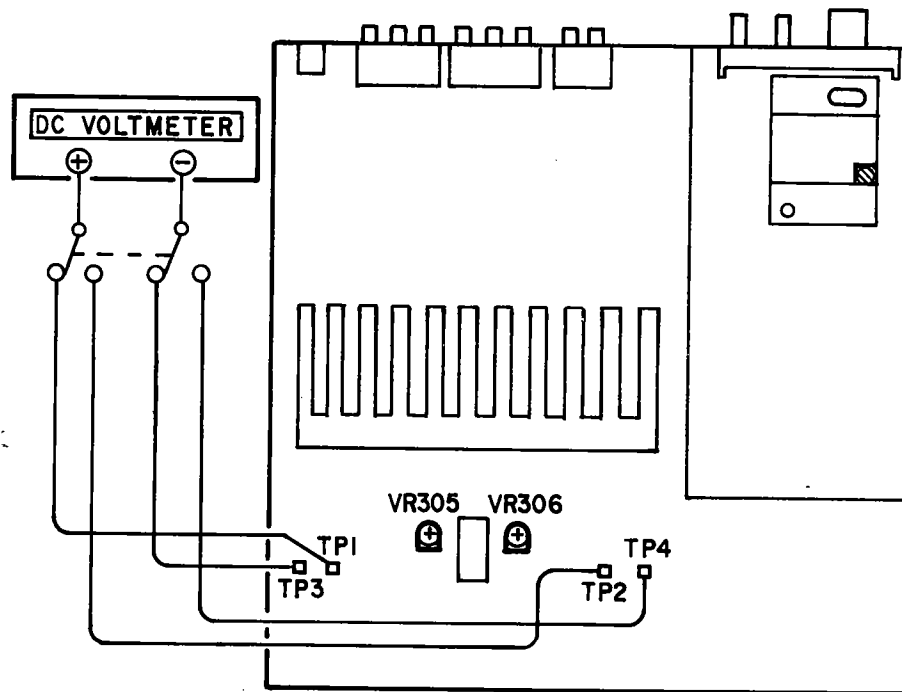


6. Main P.W.Board

Remove 2 screws ③ and 10 screws ④, and detach the Main P.W.Board as per the arrow direction.



METHOD OF ADJUSTMENTS



1. 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-2345-1 (DRA-435R) (1U-2344-1, DRA-335R) (MAIN Unit) → Center

Power Supply → AC 120 V ±1%, 60 Hz.

- (2) Connect Digital Voltmeter to the test points 1 (+), 3 (-) and 2 (+), 4 (-) of the 1U-2345-1(DRA-435R) (1U-2344-1, DRA-335R).
- (3) Turn the Power Switch on and rotate VR305 clockwise so that the Digital Voltmeter reads $5.0 \text{ mV} \pm 0.2 \text{ mV DC}$ at the test point 1, 3. Follow the same procedure to VR306 for test point 2, 4.
- (4) Warm up for three minutes, then readjust VR305 and VR306 so that the Digital Voltmeter reads $5.0 \text{ mV} \pm 0.5 \text{ mV DC}$.
- (5) Warm up for 10 minutes, then readjust VR305 and VR306 so that the Digital Voltmeter reads $5.0 \text{ mV} \pm 0.5 \text{ mV DC}$.

Table 1

FM/MPX ALIGNMENT

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 dB μ	None	Antenna Terminal	Digital Voltmeter	T.P. by IC 601	T603	± 50 mV	Function: FM Mode: Auto
2	Distortion (Stereo)	98 MHz	FM SSG Stereo (L)	98 MHz	60 dB μ	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

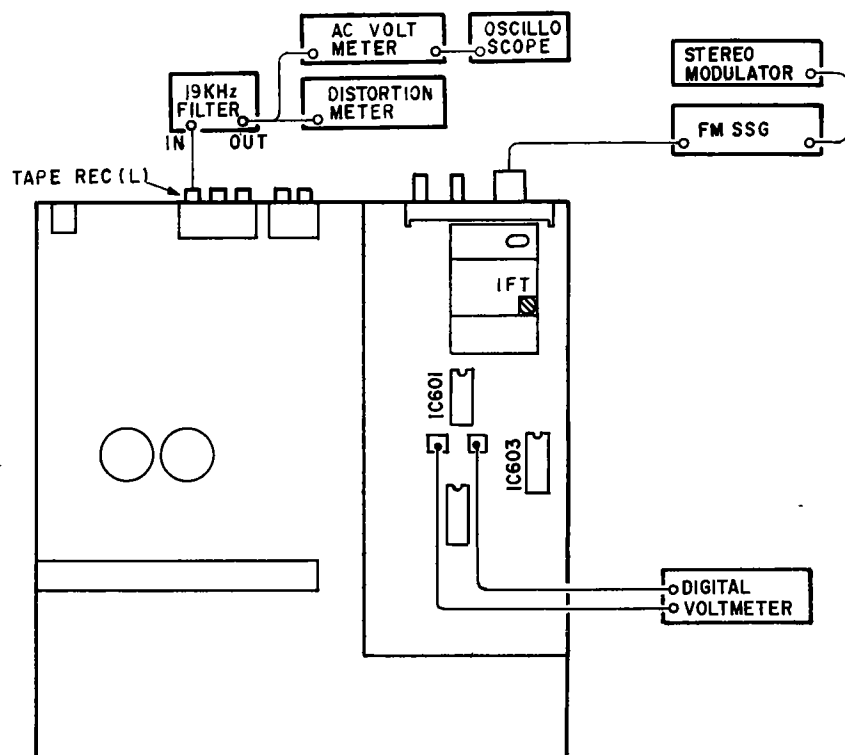
Table 2

AM ALIGNMENT

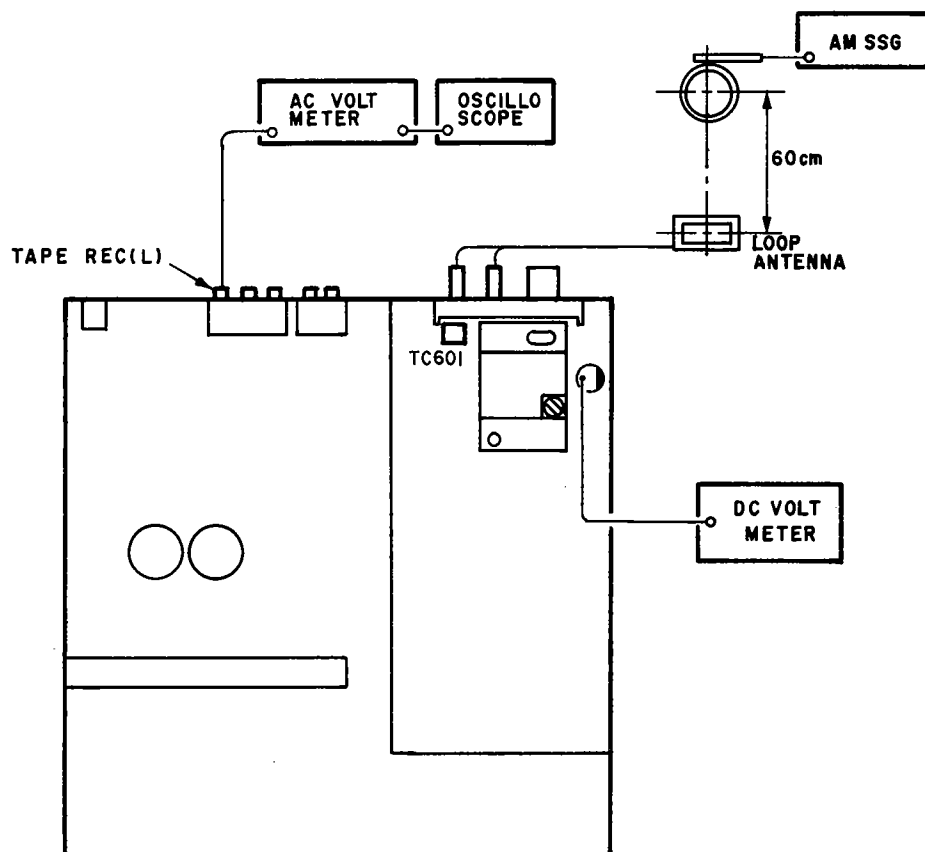
Step	Alignmet Item	Tuning Frequency Setting	Input				Output			Adjust		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	Receiving Band Alignment	520 KHz	AM SSG	520 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	C636 GND	T602	1.0 V ± 20 mV	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)	T601	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)	TC601	Maximum Output	Function: AM

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

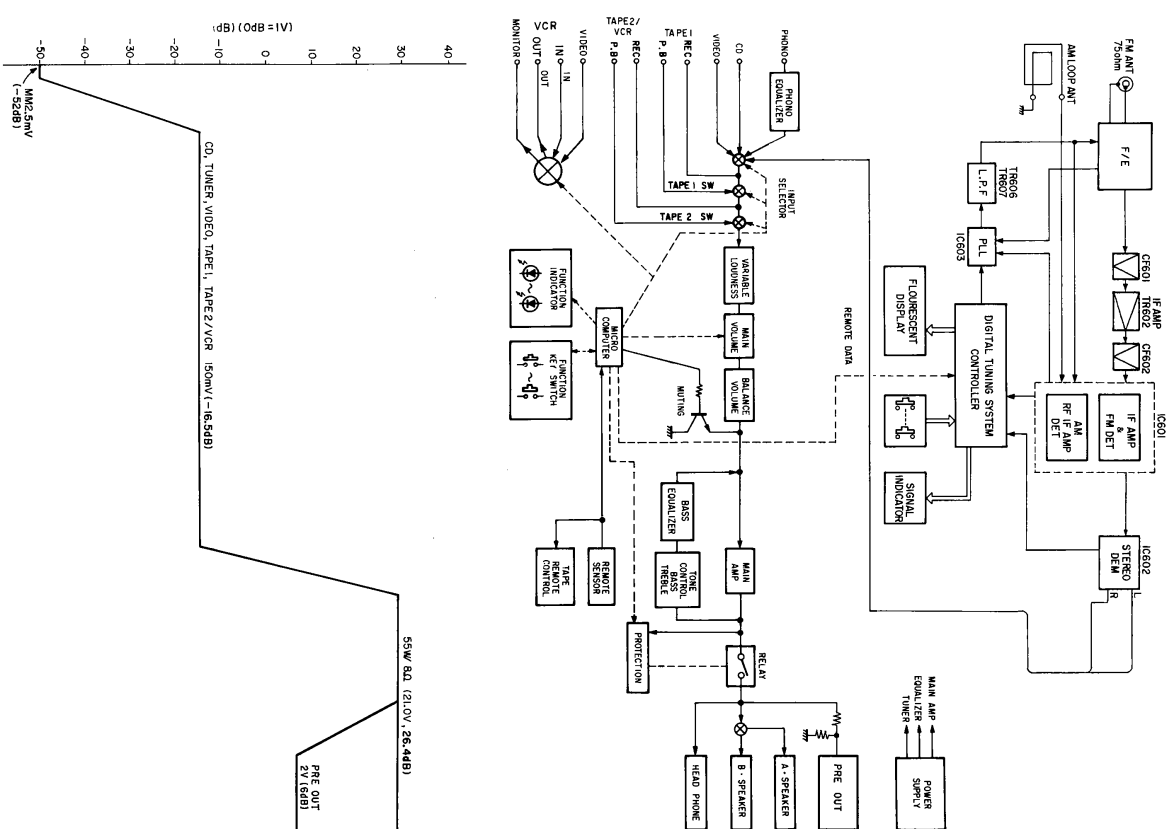
• FM



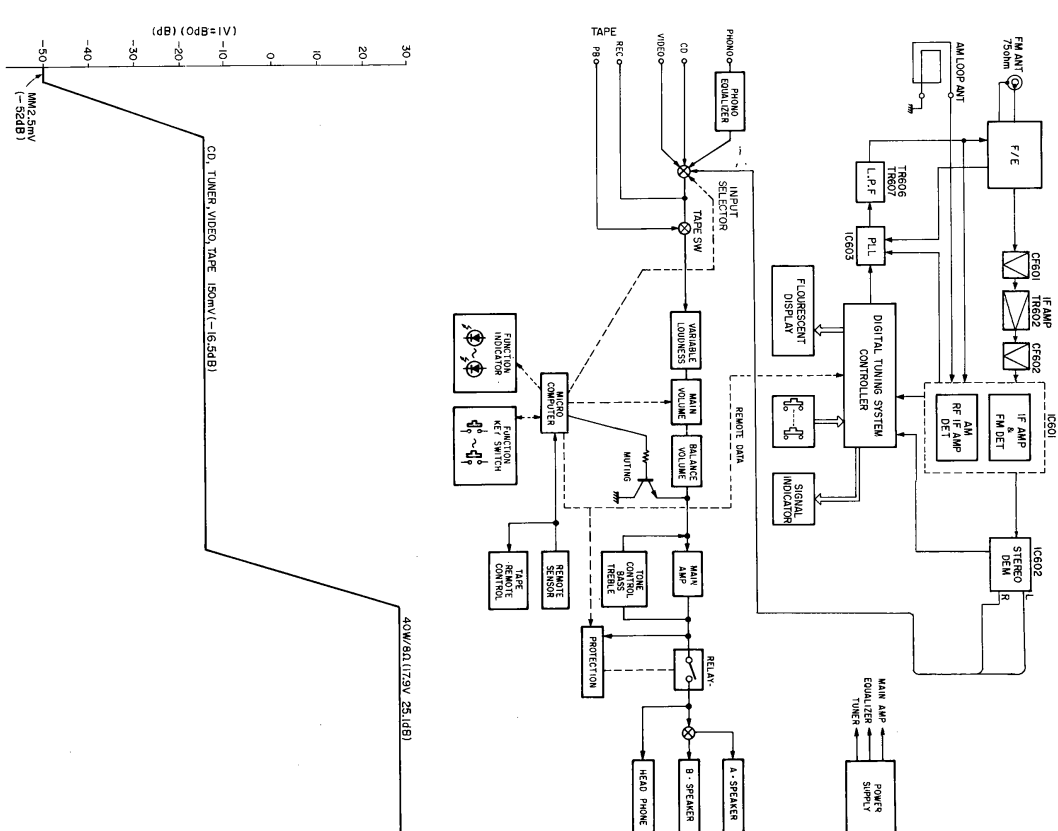
• AM



BLOCK/LEVEL DIAGRAM (DRA-435R)



BLOCK/LEVEL DIAGRAM (DRA-335R)



PARTS LIST OF EXPLODED VIEW (DRA-435R)

Ref. No.	Part No.	Part Name	Remarks	Qty
①-1	1U-2345A	MAIN UNIT		1
①-1-1		POWER SW UNIT		
①-1-2		VOLUME UNIT		
①-1-3		SP SW UNIT		
②-1	1U2346A	H/P UNIT		1
②-2	1U2347A	M-COM UNIT		1
②-3	1U2347A	TUNER UNIT		1
②-4	1U2348A	VIDEO UNIT		1
⑤-5	105 1011 005	BACK PANEL		1
⑤-6	411 0855 219	SIDE CHASSIS		1
⑤-7	445 0056 008	CORD BUSH		1
⑤-8	206 2090 002	AC CORD (POLARIZED)		1
⑤-9	146 0925 009	ANTENNA HOLDER		1
⑤-10	233 5829 019	POWER TRANS.		1
⑤-11	204 8354 004	HEAD PHONE JACK		1
⑤-12	212 1045 007	2P PUSH SWITCH (SP)		1
⑤-13	212 1045 007	1P PUSH SWITCH (SP)		1
⑤-14	146 1166 401	INNER PANEL		1
⑤-15	113 1367 103	PUSH BUTTON (FUNCTION)		1
⑤-16	113 1368 306	PUSH BUTTON (PRESET)		1
⑤-17	113 1356 004	PUSH BUTTON (MARU)		1
⑤-18	212 4388 907	TACT SWITCH		1
⑤-19	212 1075 006	POWER SWITCH		20
⑤-20	393 4043 004	F.I.D (F/P-101M)		1
⑤-21	499 0150 008	REMOTE SENSOR		1
⑤-22	414 0592 005	SHIELD PLATE	(SBX1610-52)	1
⑤-23	461 0501 005	RUBBER SHEET		1
⑤-24	412 3048 107	VOL. BRACKET		1
⑤-25	414 0580 004	SHIELD PLATE		1
⑤-26	412 3433 000	BRACKET (TUNER)		1
⑤-27	112 0647 009	VOLUME KNOB		1
⑤-28	112 0646 000	MARU KNOB (S)		4
⑤-29	144 2029 114	FRONT PANEL ASS'Y		1
⑤-30	113 1185 402	POWER BUTTON ASS'Y		1
⑤-31	105 1010 103	BOTTOM COVER		1
⑤-32	104 0194 001	FOOT ASSY		4
⑤-33	102 0426 142	TOP COVER		1
⑤-34	461 0501 005	RUBBER SHEET		4
⑤-35	122 0146 015	HIMERON SHEET		2
⑤-36	461 0397 086	SPACER RUBBER		1
⑤-37	411 1141 100	TRANS CHASSIS		1
⑤-38	214 0142 004	RELAY (T1/5)	RL401	1
⑤-39	214 0129 001	RELAY (H2/U)	RL401	1
⑤-40	206 1046 027	FUSE 9A	FS01	1
⑤-41	204 8260 004	MINI JACK		1
⑤-42	205 0433 010	ANT. TERMINAL (F)		1
⑤-43	205 0472 013	8P SP TERMINAL		1
⑤-44	203 3941 008	AC OUTLET (2P)		1
⑤-45	204 8278 009	6P PIN JACK (S-GND)		1
⑤-46	201 8266 008	4P PIN JACK (S-GND)		2
⑤-47	204 8309 004	4P PIN JACK (C-GND)		1
⑤-48	216 0064 007	FRONT END	VIDEO	1
⑤-49	412 3432 001	RADIATOR BRACKET		1
⑤-50	417 0400 028	POWER RADIATOR		1
⑤-51	254 4374 708	8200uF Electrolytic Cap	C503, 504	2
⑤-52	273 0399 002	Transistor	2SC3855	2
⑤-53	271 0240 006	Transistor	2SC3855	2
⑤-54	274 0136 012	Transistor	(O/PV) (Z)	2
⑤-55	272 0093 010	Transistor	2SA1491	2
⑤-56	211 0586 007	INSULATING SHEET	2SB1274 (R/S)1	4
⑤-57	211 0586 001	VARIABLE 100k Ω m	VR251	1

PARTS LIST OF EXPLODED VIEW (DRA-335R)

Ref. No.	Part No.	Part Name	Remarks	Qty
①-1	1U-2344A	MAIN UNIT		1
①-1-1		POWER SW UNIT		
①-1-2		VOLUME UNIT		
①-1-3		SP SW UNIT		
②-1	1U2346B	H/P UNIT		1
②-2	1U2347A	M-COM UNIT		1
②-3	1U2347A	TUNER UNIT		1
②-4	1U2348A	VIDEO UNIT		1
⑤-5	105 1011 018	BACK PANEL		1
⑤-6	411 0855 219	SIDE CHASSIS		1
⑤-7	445 0056 008	CORD BUSH		1
⑤-8	206 2090 002	AC CORD (POLARIZED)		1
⑤-9	146 0925 009	ANTENNA HOLDER		1
⑤-10	233 5829 019	POWER TRANS.		1
⑤-11	204 8354 004	HEAD PHONE JACK		1
⑤-12	212 1045 007	2P PUSH SWITCH (SP)		1
⑤-13	212 1045 007	1P PUSH SWITCH (SP)		1
⑤-14	146 1166 401	INNER PANEL		1
⑤-15	113 1367 103	PUSH BUTTON (FUNCTION)		1
⑤-16	113 1368 306	PUSH BUTTON (PRESET)		1
⑤-17	113 1356 004	PUSH BUTTON (MARU)		1
⑤-18	212 4388 907	TACT SWITCH		1
⑤-19	212 1075 006	POWER SWITCH		19
⑤-20	393 4043 004	F.I.D (F/P-101M)		1
⑤-21	499 0150 008	REMOTE SENSOR		1
⑤-22	414 0592 005	SHIELD PLATE	(SBX1610-52)	1
⑤-23	461 0501 005	RUBBER SHEET		1
⑤-24	412 3048 107	VOL. BRACKET		1
⑤-25	414 0580 004	SHIELD PLATE		1
⑤-26	412 3433 000	BRACKET (TUNER)		1
⑤-27	112 0647 009	VOLUME KNOB		1
⑤-28	112 0646 000	MARU KNOB (S)		4
⑤-29	144 2029 101	FRONT PANEL ASS'Y		1
⑤-30	113 1185 402	POWER BUTTON ASS'Y		1
⑤-31	105 1010 103	BOTTOM COVER		1
⑤-32	104 0194 001	FOOT ASSY		4
⑤-33	102 0426 142	TOP COVER		1
⑤-34	461 0501 005	RUBBER SHEET		4
⑤-35	122 0146 015	HIMERON SHEET		2
⑤-36	461 0397 073	SPACER RUBBER		1
⑤-37	411 1141 100	TRANS CHASSIS		1
⑤-38	214 0129 002	RELAY (H2/U)	RL401	1
⑤-39	206 1046 027	FUSE 4A	FS01	1
⑤-40	204 8260 004	MINI JACK		1
⑤-41	205 0433 010	ANT. TERMINAL (F)		1
⑤-42	205 0472 013	8P SP TERMINAL		1
⑤-43	203 3941 008	AC OUTLET (2P)		1
⑤-44	204 8278 009	6P PIN JACK (S-GND)		1
⑤-45	201 8266 008	4P PIN JACK (S-GND)		1
⑤-46	204 8309 004	4P PIN JACK (C-GND)		1
⑤-47	216 0064 007	FRONT END		1
⑤-48	412 3434 009	RADIATOR BRACKET		1
⑤-49	417 0400 028	POWER RADIATOR		1
⑤-50	252 4355 002	6800uF Electrolytic Cap	C503, C504	2
⑤-51	273 0397 004	Transistor	2SC3853	2
⑤-52	271 0239 004	Transistor	(O/PV) (Z)	2
⑤-53	274 0136 012	Transistor	2SA1491	2
⑤-54	211 0586 007	INSULATING SHEET		4
⑤-55	211 0586 001	VARIABLE 100k Ω m		1
⑤-56	211 0586 003	VARIABLE		1
⑤-57	211 0586 001	VARIABLE		1
⑤-58	211 0586 003	VARIABLE		1

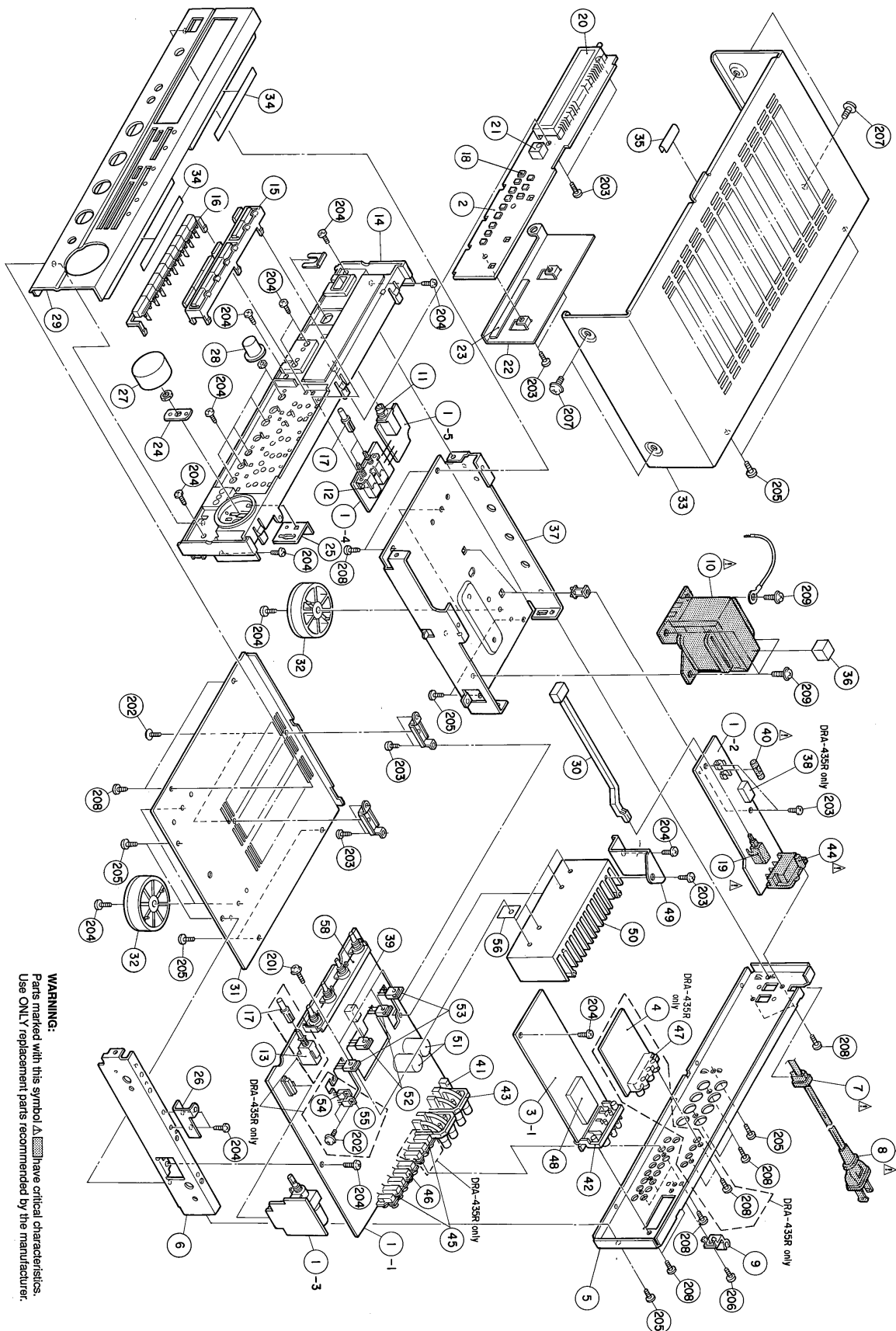
Ref. No.	Part No.	Part Name	Remarks	Qty
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⑤-60	211 0586 003	VARIABLE		1
⑤-61	211 0586 003	VARIABLE		1
⑤-62	211 0586 003	VARIABLE		1
⑤-63	211 0586 003	VARIABLE		1
⑤-64	211 0586 003	VARIABLE		1
⑤-65	211 0586 003	VARIABLE		1
⑤-66	211 0586 003	VARIABLE		1
⑤-67	211 0586 003	VARIABLE		1
⑤-68	211 0586 003	VARIABLE		1
⑤-69	211 0586 003	VARIABLE		1
⑤-70	211 0586 003	VARIABLE		1
⑤-71	211 0586 003	VARIABLE		1
⑤-72	211 0586 003	VARIABLE		1
⑤-73	211 0586 003	VARIABLE		1
⑤-74	211 0586 003	VARIABLE		1
⑤-75	211 0586 003	VARIABLE		1
⑤-76	211 0586 003	VARIABLE		1
⑤-77	211 0586 003	VARIABLE		1
⑤-78	211 0586 003	VARIABLE		1
⑤-79	211 0586 003	VARIABLE		1
⑤-80	211 0586 003	VARIABLE		1
⑤-81	211 0586 003	VARIABLE		1
⑤-82	211 0586 003	VARIABLE		1
⑤-83	211 0586 003	VARIABLE		1
⑤-84	211 0586 003	VARIABLE		1
⑤-85	211 0586 003	VARIABLE		1
⑤-86	211 0586 003	VARIABLE		1
⑤-87	211 0586 003	VARIABLE		1
⑤-88	211 0586 003	VARIABLE		1
⑤-89	211 0586 003	VARIABLE		1
⑤-90	211 0586 003	VARIABLE		1
⑤-91	211 0586 003	VARIABLE		1
⑤-92	211 0586 003	VARIABLE		1
⑤-93	211 0586 003	VARIABLE		1
⑤-94	211 0586 003	VARIABLE		1
⑤-95	211 0586 003	VARIABLE		1
⑤-96	211 0586 003	VARIABLE		1
⑤-97	211 0586 003	VARIABLE		1
⑤-98	211 0586 003	VARIABLE		1
⑤-99	211 0586 003	VARIABLE		1
⑤-100	211 0586 003	VARIABLE		1

NOTE FOR PARTS LIST

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

WARNING:

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



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

NOTE FOR PARTS LIST

- Part indicated with the mark "⊗" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
 - When ordering of part, clearly indicate "T" and "R" (i) to avoid mis-supplying.
 - Ordering part without stating its part number can not be supplied.
 - Part indicated with the mark "✕" is not illustrated in the exploded view.
 - Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list, except parts for non-burning (N.B.), audio equipment. (Refer to the Schematic Diagram for those parts.)
- WARNING:**
Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

Resistors

Ex:	1K	2E	182	G	FR
Type	Shape	Power Resist.	Power Resist.	Others	Others
Formance	1/4W	1/2W	1/2W	1/2W	1/2W
Resistance	1K	2E	182	G	FR
	Indicates number of zeros after effective number				
	Units: Ω				

Capacitors

Ex:	0.1W	1H	2R2	M	BP
Type	Shape	Dielectric	Capacity	Others	Others
Formance	1/4W	1/2W	1/2W	1/2W	1/2W
Capacity	0.1W	1H	2R2	M	BP
	Indicates number of zeros after effective number				
	Units: Ω				

PRINTED WIRING BOARD PARTS LIST
1U-2345A MAIN UNIT (DRA-435RP)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCATORS GROUP			
IC101	263 0774 005	IC RC4558D-DI(RV)	
IC201	262 0699 006	IC TC914N	
IC251	263 0476 002	IC LB169	
IC265	263 0733 002	IC NM7236(FAS)	
TR201	269 0107 900	Transistor RU1241(AE)	
TR202,203	269 0025 901	Transistor RU120210K-10K	
TR301,302	269 0107 900	Transistor RU1241(AE)	
TR303-306	271 0084 919	Transistor 2S8070(UL)	
TR307-312	273 0235 923	Transistor 2SC1841-T(EF)	
TR313-314	271 0191 924	Transistor 2S8088-T(EF)	
TR315,316	273 0198 918	Transistor 2SC1818(UL)	
TR317,318	272 0107 906	Transistor 2SB1328(P)	
TR319,320	274 0151 903	Transistor 2SD2004(P)	
TR321,322	271 0240 908	Transistor 2SA1491 (OPV)1/2	
TR323,324	273 0235 923	Transistor 2SC3855 (OPV)1/2	
TR331,332	271 0191 924	Transistor 2SC1841-T(EF)	
TR401	273 0235 923	Transistor 2S8088-T(EF)	
TR402	271 0191 906	Transistor 2SA1048(GR)	
TR403	273 0235 923	Transistor 2SC3855(UL)	
TR404	269 0029 907	Transistor RU120447N(47N)	
TR405	269 0107 900	Transistor RU1241(AE)	
TR406	271 0191 924	Transistor 2S8088-T(EF)	
TR407,408	273 0235 923	Transistor 2SC1841-T(EF)	
TR411	269 0029 907	Transistor RU120447N(47N)	
TR412	269 0029 907	Transistor RU120447N(47N)	
TR413	274 0156 012	Transistor 2SD1914(P)	
TR415	273 0235 923	Transistor 2SC1841-T(EF)	
TR416	271 0084 919	Transistor 2S8070(UL)	
TR417	272 0083 910	Transistor 2SB124(FAS)	
TR419	273 0187 916	Transistor 2SC240(UL)	
TR501	271 0191 924	Transistor 2S8088-T(EF)	
TR502,503	273 0235 923	Transistor 2SC3855(UL)	
TR504	271 0191 906	Transistor 2SA1048(GR)	
TR517	269 0029 907	Transistor RU120447N(47N)	
D203,210	276 0432 903	Diode 1SS270A	
D301,302	276 0432 903	Diode 1SS270A	
D303-306	276 0432 903	Diode 1SS270A	
D307,308	276 0432 903	Diode 1SS270A	
D401	276 0432 903	Diode 1SS270A	
D402	276 0432 903	Diode 1SS270A	
D403	276 0432 903	Diode 1SS270A	
D41	276 0553 905	Diode 1SR55-200A	
D41,482	276 0432 903	Diode 1SR55-200A	
D501,502	276 0553 905	Diode 1SR55-200A	
D503	276 0432 903	Diode 1SS270A	
D504,505	276 0553 905	Diode 1SR55-200A	
D506,507	276 0553 905	Diode 1SR55-200A	
D508	276 0432 903	Diode 1SS270A	
D509	276 0305 901	Diode 5A16B0	
D504	276 0432 903	Diode 1SS270A	
D505	276 0432 903	Diode 1SS270A	
D506	276 0553 905	Diode 1SR55-200A	
RESISTORS GROUP (Not included Carbon Film ±5% 1/4W)			
R253-255	244 2050 933	Resistor 1800Ω, 1W	RS1483A1818(USTS)
R311-314	241 2380 933	Carbon 220Ω, 1/4W	RD1483E2221(NBST)
R341,342	241 2377 976	Carbon 680Ω, 1/4W	RD1483E6801(NBST)
R343,344	241 2377 976	Carbon 680Ω, 1/4W	RD1483E6801(NBST)
R353,354	241 2377 976	Carbon 220Ω, 1/4W	RD1483E2221(NBST)
R355-362	244 2053 982	Carbon 100Ω, 1/4W	RD1483A1001(NBST)
R367-370	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R381,382	241 2377 976	Carbon 470Ω, 1/4W	RD1483E4701(NBST)
R383,384	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R391,392	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R409	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
R413,32	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R433	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
R451	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
R503	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R504	241 2377 976	Carbon 100Ω, 1/4W	RD1483E1001(NBST)
R508	242 0073 000	Fixed 220Ω, 1/2W	RC455F2222R
R519-322	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
R568	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
R681	244 2053 982	Carbon 100Ω, 1/4W	RS1483A1001(NBST)
VR201, 301-303	211 0655 003	Variable	VR1604V20F-K
VR251	211 0655 001	Variable 1000Ω	VR1604V25F104R
VR303,305	211 0655 004	Variable 500Ω	VR1604V30F50R
CAPACITORS GROUP			
C101,102	253 1179 929	Ceramic 150pF,50V	CK455F150150V
C103,104	254 4254 929	Ceramic 100pF,50V	CE455F100150V
C105,106	254 4254 929	Ceramic 100pF,50V	CE455F100150V
C107,108	253 4538 948	Ceramic 100pF,50V	CE455F100150V
C109,110	253 1209 905	Ceramic 100pF,50V	CE455F100150V
C111,112	253 1180 947	Ceramic 100pF,50V	CE455F100150V
C113,114	254 4254 929	Ceramic 100pF,50V	CE455F100150V
C115,117	253 1181 917	Ceramic 100pF,50V	CE455F100150V
C121	254 4254 948	Ceramic 100pF,50V	CE455F100150V
C201,202	253 1181 917	Ceramic 100pF,50V	CE455F100150V
C203,204	253 1179 980	Ceramic 100pF,50V	CE455F100150V
C205,206	255 1216 901	Film 0.022μF,50V	CK455F02222F
C207-209	253 1148 905	Ceramic 0.022μF,50V	CK455F02222F

1U-2344A MAIN UNIT (DRA-335RPU)

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C210	253 4412 900	Ceramic 100F/50V	CC45SL1H100T	OTHERS PARTS GROUP			
C211	253 1148 905	Ceramic 0.022uF/50V	CC45SL1H100T	RL401	214 0123 001	RELAY(HE2U)	
C271	254 4252 927	Electrolytic 4.7uF/10V	CE45WH1470M(SME)	RL501	214 0142 004	RELAY(TV-5)	
C272	253 1181 917	Ceramic 0.022uF/50V	CC45WH1222ZT(DD-3)	F501	205 1046 027	FUSE 5A	
C273/274	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(SME)	SW501	212 1075 006	POWER SWITCH	
C281-283	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)		204 8260 004	MINI JACK	
C301-302	254 4260 922	Electrolytic 0.33uF/50V	CE45WH100M(SME)				
C303-306	253 4258 948	Ceramic 100pF/50V	CC45SL1H101T(DD-3)				
C307-310	253 1180 921	Ceramic 0.001uF/50V	CC45SL1H102KT(DD-3)		205 0472 013	8P SP TERMINAL	
C309/310	254 4256 906	Electrolytic 100uF/35V	CE45WH100M(SME)		204 8354 004	HEAD PHONE JACK	
C311-312	254 4254 905	Electrolytic 33uF/16V	CE45WH100M(SME)		212 1045 007	2P PUSH SWITCH(S/P)	
C313/314	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)		212 1074 007	1P PUSH SWITCH	
C315/316	253 4258 948	Ceramic 100pF/50V	CC45SL1H101T(DD-3)		203 3841 008	AC OUTLET (2P)	
C317/318	253 1217 900	Film 0.022uF/50V	CC45SL1H102KT(DD-3)		204 8278 009	6P PIN JACK (S-AND)	
C319/320	253 1034 902	Metallized 0.12uF/50V	CC45SL1H124T		204 8266 008	4P PIN JACK (S-AND)	
C321-322	255 1022 902	Film 0.001uF/50V	CC45SL1H152T		205 0233 032	POWER RADIATOR	
C323-324	255 1212 905	Film 0.01uF/50V	CC45SL1H103T		205 0165 054	2P WIRE HOLDER	
C327-328	253 1179 945	Ceramic 220pF/50V	CC45WH102KT(DD-3)		205 0165 025	2P WIRE HOLDER	
C329/330	253 1181 904	Ceramic 0.01uF/50V	CC45WH102KT(DD-3)		205 0997 009	1L CONNECTOR(F-E)	
C331-332	253 4478 902	Ceramic 220pF/50V	CC45SL1H124T		205 0996 080	1L CONNECTOR(B-E)	
C341-342	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)		205 0943 087	8P CONN BASE(RH-HP)	
C343/344	253 1181 917	Ceramic 0.022uF/50V	CC45WH1222ZT(DD-3)		203 0375 013	11P CONN BASE(RH-HP)	
C346-352	254 4263 945	Electrolytic 1uF/100V	CE45WH100M(SME)		002 0012 052	2C RIBBON CABLE	
C361-362	253 4258 948	Ceramic 100pF/50V	CC45SL1H101T(DD-3)		002 0041 007	5C RIBBON CABLE	
C369/370	253 4257 908	Electrolytic 220pF/50V	CC45SL1H201T(DD-3)		203 4791 011	3P EH-SCN CON CORP	
C371-372	253 1179 945	Ceramic 220pF/50V	CC45WH102KT(DD-3)		204 0099 015	4P EH-SCN CON CORP	
C373/374	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)		203 8006 004	1P CONTCCT ASSY	
C401	254 4250 945	Electrolytic 330uF/6.3V	CE45WH100M(SME)		203 9494 008	1P SN CON CORP	
C403	254 4260 977	Electrolytic 4.7uF/50V	CE45WH100M(SME)		203 0482 036		
C404	253 1181 904	Electrolytic 0.01uF/50V	CC45WH102KT(DD-3)				
C405	254 4260 980	Electrolytic 10uF/50V	CE45WH100M(SME)				
C406	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)				
C407-408	254 4260 980	Electrolytic 1uF/50V	CE45WH100M(SME)				
C409-410	254 4256 907	Electrolytic 10uF/25V	CE45WH100M(SME)				
C501-502	253 1151 905	Ceramic 0.0001uF/50V	CC45E2H127T				
C503/504	254 4274 708	Electrolytic 820uF/10V	CE45WH1222ZT(DD-3)				
C505	254 4263 908	Electrolytic 2.2uF/10V	CC45WH102KT(DD-3)				
C506/507	253 1181 904	Ceramic 0.01uF/50V	CC45WH102KT(DD-3)				
C508	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)				
C509	256 1034 979	Metallized 0.1uF/50V	CC45WH104T				
C510	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)				
C511-514	255 1208 906	Film 0.0001uF/50V	CC45WH1072T				
C515-516	253 8014 702	Ceramic 0.01uF/400V AC	CC45F2GAC10M(C)				
C517	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(SME)				
C519-522	256 1034 979	Metallized 0.1uF/50V	CC45WH104T				
C523	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)				
C543	259 0007 702	For Back up 820uF/5V	SS CAP--822-C				
C544	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(SME)				
C545	254 4254 909	Electrolytic 220uF/25V	CE45WH100M(SME)				
C546	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(SME)				
C547	254 4260 948	Electrolytic 2.2uF/50V	CE45WH100M(SME)				
C570	256 1034 979	Metallized 0.1uF/50V	CC45WH104T				
C581-582	255 1210 907	Film 0.0008uF/50V	CC45WH1082T				

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCATORS GROUP			
IC101	263 0774 005	IC RC455SD-D(RAW)	
IC201	262 0699 005	IC TC09164N	
IC251	263 0476 002	IC LB1659	
IC305	263 0739 002	IC NLM17906(FAS)	
TR201	269 0107 900	Transistor RN124T(A/B)	
TR202,203	269 0025 901	Transistor RN1202(10K-100)	
TR301-302	269 0107 900	Transistor RN124T(A/B)	
TR303-306	271 0054 919	Transistor 2SA970(BL)	
TR307-312	273 0235 823	Transistor 2SC1941-1(T/F)	
TR313,314	271 0131 824	Transistor 2SA988-1(T/F)	
TR315,316	273 0198 918	Transistor 2SC1815(BL)	
TR317,318	272 0053 908	Transistor 2SB947(A/C)	
TR319,320	274 0050 007	Transistor 2SD67(A/C)	
TR321-322	271 0239 004	Transistor 2SA1048(GH)	
TR323,324	273 0307 004	Transistor 2SC3883 (O/P)/VZ	
TR325,326	273 0235 823	Transistor 2SC1941-1(T/F)	
TR331-332	271 0191 905	Transistor 2SA1048(GH)	
TR401	273 0317 905	Transistor 2SC246(BL)	
TR402	271 0191 905	Transistor 2SA1048(GH)	
TR403	273 0317 905	Transistor 2SC246(BL)	
TR404	269 0029 907	Transistor RN1204T(K/K)/VZ	
TR405	269 0107 900	Transistor RN124T(A/B)	
TR406	271 0191 905	Transistor 2SA1048(GH)	
TR407,408	273 0317 905	Transistor 2SC246(BL)	
TR411	269 0029 909	Transistor RN1204T(K/K)/VZ	
TR412	269 0029 907	Transistor RN1204T(K/K)/VZ	
TR413	274 0151 903	Transistor 2SD204(P)	
TR415	273 0317 905	Transistor 2SC246(BL)	
TR416	271 0054 919	Transistor 2SA970(BL)	
TR417	274 0107 905	Transistor 2SB1328(P)	
TR419	273 0187 916	Transistor 2SC2240(BL)	
TR501	271 0191 905	Transistor 2SA1048(GH)	
TR614	271 0191 905	Transistor 2SA1048(GH)	
TR615,616	273 0317 905	Transistor 2SC246(BL)	
TR617	269 0029 907	Transistor RN1204T(K/K)/VZ	
DI203,210	276 0432 903	Diode 1SS270A	
DI201,202	276 0432 903	Diode 1SS270A	
DI203-306	276 0049 914	Diode 1SS270A	
DI207,208	276 0432 903	Diode 1SS270A	
DI201-403	276 0432 903	Diode 1SS270A	
DI401	276 0432 903	Diode 1SS270A	
DI501,502	276 0535 905	Diode 1SR55-200A	
DI503	276 0432 903	Diode 1SS270A	
DI504-507	276 0535 905	Diode 1SR55-200A	
DI509	276 0095 001	Diode 5A1V820	
DI604	276 0432 903	Diode 1SS270A	
DI605	276 0049 914	Diode 1SS270A	
DI606	276 0535 905	Diode 1SR55-200A	
DI607-609	276 0432 903	Diode 1SS270A	
ZD401	276 0665 925	Zener Diode HZ57B-31D	
ZD403,404	276 0477 926	Zener Diode HZ5B-6.31D	
ZD501	276 0482 911	Zener Diode HZ52T-21D	
RESISTORS GROUP (Not Included Carbon Film ±5% 1/4W)			
R255,256	244 2052 931	Metall 330ohm, 1W	RS-483A93(JST/S)
R311-314	241 2380 953	Carbon 2.2ohm, 1/4W	RD-4B2E22JUNBST
R341-342	241 2377 976	Carbon 130ohm, 1/4W	RD-4B2E13JUNBST
R347,348	241 2377 905	Carbon 80ohm, 1/4W	RD-4B2E80JUNBST
R353-354	241 2378 920	Carbon 220ohm, 1/4W	RD-4B2E22JUNBST
R355-358	244 2043 962	Metall 0.22ohm, 1W	RS-4B3A92(JST/S)
R359-368	241 2379 907	Carbon 10ohm, 1/4W	RD-4B2E10JUNBST
R369-370	241 2378 962	Carbon 330ohm, 1/4W	RD-4B2E33JUNBST
R381,382	241 2387 940	Carbon 4.7ohm, 1/4W	RD-4B2E47JUNBST
R383-384	241 2432 905	Carbon 470ohm, 1/4W	RD-4B2E47JUNBST
R391-392	241 2377 976	Carbon 130ohm, 1/4W	RD-4B2E13JUNBST
R409	244 2051 990	Metall 4.7ohm, 1W	RS-4B3A91(JST/S)
R431,432	244 2352 973	Carbon 4.7ohm, 1/4W	RD-4B2E47JUNBST
R433	244 2352 973	Metall 500ohm, 1W	RS-4B3A95(JST/S)
R451	244 2352 931	Metall 300ohm, 1W	RS-4B3A93(JST/S)
R453	241 2387 908	Carbon 10ohm, 1/4W	RD-4B2E10JUNBST
R454	241 2379 903	Carbon 470ohm, 1/4W	RD-4B2E47JUNBST
R455	244 2073 000	Fixed 2.2Mohm, 1/2W	RS-05G92H25K
R519-522	244 2043 937	Metall 10ohm, 1W	RS-4B3A10(JST/S)
R681	244 2351 997	Metall 4.7ohm, 1W	RS-4B3A91(JST/S)
VR201	211 0655 003	Variable	V1694V20F--K
VR251	211 0586 001	Variable 10Kohm	V1820V25F104R
VR305,306	211 6094 046	SemiFixed 50ohm	V06P5052
CAPACITORS GROUP			
C101-102	253 1179 929	Ceramic 150pF/50V	CC45SL1H151KT(DD-3)
C103-104	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(TSME)
C105-106	254 4254 925	Electrolytic 33uF/16V	CE45WH100M(TSME)
C107-108	253 1209 905	Ceramic 100pF/50V	CC45SL1H101T(DD-3)
C109-110	253 1209 905	Film 0.005uF/50V	CC038M1H52ZT
C111-112	253 1180 947	Ceramic 0.001uF/50V	CC45SL1H52KT(DD-3)
C113,114	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(TSME)
C115,117	253 1181 917	Ceramic 0.022uF/50V	CC45SL1H22ZT(DD-3)
C121	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(TSME)
C201-202	253 1181 917	Ceramic 0.022uF/50V	CC45SL1H22ZT(DD-3)
C203-204	253 1179 990	Ceramic 500pF/50V	CC45SL1H51KT(DD-3)
C205-206	253 1216 901	Film 0.022uF/50V	CC038M1H23ZT
C207-209	253 1148 905	Ceramic 0.022uF/50V	CC45SL1H22ZT
C210	253 4412 900	Ceramic 100F/50V	CC45SL1H100T
C211	253 1148 905	Ceramic 0.022uF/50V	CC45SL1H100T
C271	254 4258 927	Electrolytic 4.7uF/10V	CE45WH1470M(TSME)
C272	253 1181 917	Electrolytic 10uF/16V	CE45WH100M(TSME)
C273/274	254 4254 909	Electrolytic 10uF/16V	CE45WH100M(TSME)
C281-283	254 4260 948	Electrolytic 1uF/50V	CE45WH100M(TSME)
C301-302	254 4260 922	Electrolytic 0.33uF/50V	CE45WH1H33MT(SME)
C303-306	253 4259 949	Ceramic 100pF/50V	CC45SL1H101T(DD-3)

Ref. No.	Part No.	Part Name	Remarks
C307,308	253 1181 921	Ceramic 0.001µF50V	CK45B1H10K2(TD-3)
C309,310	254 4281 918	Electrolytic 47µF50V	CE6AW1H10MT(SME)
C311,312	254 4281 925	Electrolytic 33µF16V	CE6AW1C30MT(SME)
C313,314	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C315,316	253 4281 949	Ceramic 100pF50V	CC45SL1H10(TD-3)
C317,318	255 1171 900	Film 0.027µF50V	CF39A1H12JLT
C319,320	255 1021 982	Metallized 0.12µF50V	CF39A1H12JLT
C321,322	255 1212 902	Film 0.0015µF50V	CF39A1H12JLT
C323,324	255 1212 902	Film 0.01µF50V	CF39A1H10JLT
C327,328	253 1171 945	Ceramic 220pF50V	CC45B1H2(KTD-3)
C329,330	253 1181 904	Ceramic 0.01µF50V	CC45SL1H2JLT
C331,332	253 4271 902	Ceramic 22pF50V	CC45SL1H2JLT
C341,342	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C343,344	253 1181 917	Ceramic 0.022µF50V	CC45F1H22K2(TD-3)
C346-352	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C359,370	253 4537 908	Ceramic 27pF50V	CC45B1H2(KTD-3)
C371,372	253 1171 945	Ceramic 220pF50V	CC45B1H2(KTD-3)
C373,374	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C401	254 4281 945	Electrolytic 330µF6.3V	CE6AW1H10MT(SME)
C403	254 4281 977	Electrolytic 4.7µF50V	CE6AW1H6T(MT(SME)
C404	253 1181 904	Ceramic 0.01µF50V	CC45F1H10K2(TD-3)
C405	254 4281 980	Electrolytic 10µF50V	CE6AW1H10MT(SME)
C406	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C407,408	254 4281 980	Electrolytic 10µF50V	CE6AW1H10MT(SME)
C408,410	254 4281 948	Electrolytic 10µF50V	CE6AW1H10MT(SME)
C501,502	253 1181 905	Ceramic 0.047µF50V	CC45E2H47P2T
C503,504	254 4281 002	Electrolytic 680µF50V	CE6AW1H82NDL
C505	254 4281 951	Electrolytic 2.2µF50V	CE6AW1H22MT(SME)
C506,507	253 1181 904	Ceramic 0.01µF50V	CC45F1H10K2(TD-3)
C508	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C509	256 1021 979	Metallized 0.1µF50V	CF39A1H10JLT
C510	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C511-514	255 1208 906	Film 0.0047µF50V	CF39A1H47JLT
C515	253 8014 702	Ceramic 0.01µF400V AC	CC69P3AC10MC
C516-522	256 1021 979	Metallized 0.1µF50V	CF39A1H10JLT
C523	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C543	253 0007 702	For Back up 820µF	SS CAP--822-C
C544	254 4281 909	Electrolytic 10µF16V	CE6AW1C10MT(SME)
C545	254 4281 790	Electrolytic 2200µF50V	CE6AW1E22AC(SME)
C546	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
C547	254 4281 951	Electrolytic 2.2µF50V	CE6AW1H22MT(SME)
C570	256 1021 979	Metallized 0.1µF50V	CF39A1H10JLT

OTHERS PARTS GROUP

RL401	214 0121 002	RELAY (DH24D2)	
F501	206 1039 082	FUSE 4A	
SW501	212 1075 006	POWER SWITCH	
	204 8280 004	MINI JACK	
	205 0472 013	8P SP TERMINAL (EAE)	
	204 8554 004	HEAD PHONE JACK	
	212 1045 007	2P PUSH SWITCH(SP)	
	203 8941 008	AC OUTLET (2P)	
	204 8278 009	8P PIN JACK (S-GND)	
	204 8285 008	4P PIN JACK (S-GND)	
	417 0940 002	POWER RADIATOR	

Ref. No.	Part No.	Part Name	Remarks
	205 0185 054	SP WIRE HOLDER	
	205 0897 025	1L CONNECTOR(F-E)	
	205 0936 080	1L CONNECTOR(B-E)	
	205 0943 087	8P CONN.(BASE(R-PH))	
	205 0975 013	11P CONN.(BASE(R-PH))	
	002 0071 052	2C RIBBON CABLE	
	002 0041 007	5C RIBBON CABLE	
	204 0391 015	8P BNC CON COORD	
	203 0948 008	1P CONTACT ASSY	
	203 0942 006	1P SNI CON COORD	

1U-2346A MI CON UNIT (DRA-435RP)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCATORS GROUP			
IC701	262 1396 104	IC 1M47630NM-1222	
TR701	269 0025 901	Transistor RN1202(10K-10K)	
TR702	269 0028 900	Transistor RN2021(10K-10K)	
TR703	273 0222 907	Transistor SSC246(VGR)	
D702-707	276 0432 903	Diode 1SS270A	
D713	276 0432 903	Diode 1SS270A	
D715	276 0432 903	Diode 1SS270A	
D716-718	276 0048 914	Diode 1SS270A	
D720	276 0048 914	Diode 1SS270A	
LD701-706	393 9416 908	LED SEL-2210R	
RESISTORS GROUP (Not included Cabon Film ±5% 1/4W)			
RA701	246 2553 004	Array 10Kohm x5	RK99--103JPS
RA702	246 2554 003	Array 10Kohm x7	RK99--103JPT
CAPACITORS GROUP			
CT01	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
CT03	254 4281 055	Electrolytic 470µF6.3V	CE6AW0471M(SME)
CT04	254 4281 980	Electrolytic 100µF35V	CE6AW1Y10MT(SME)
CT06	253 4412 900	Ceramic 10pF50V	CC45SL1H100DT
CT07	254 4198 902	Electrolytic 0.1µF50V	CE6AW1H0RT(SPA)
CT10	253 1146 907	Ceramic 0.01µF50V	CC45F1H10K2T
OTHER PARTS GROUP			
ST01-720	212 4388 907	TACT SWITCH	
XL701	399 9018 003	CST 4.00 MW	
	399 4043 003	F.LD (FIP-01M7)	
	499 0150 008	REMOTE SENSOR	SBK1610-52
	204 2514 002	8P PH-PH CON COORD	
	204 6307 011	11P KR-KR CON COORD	
	204 2431 059	9P KR-KR CON COORD	
	205 0375 013	11P CON BASE(R-PH)	
	205 0343 009	9P CON BASE(R-PH)	
	205 0343 007	8P CON BASE(R-PH)	

1U-2346B MI CON UNIT (DRA-335RP)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCATORS GROUP			
IC701	262 1396 104	IC 1M47630NM-1222	
TR701	269 0025 901	Transistor RN1202(10K-10K)	
TR702	269 0028 900	Transistor RN2021(10K-10K)	
TR703	273 0222 907	Transistor SSC246(VGR)	
TR704	269 0025 901	Transistor RN1202(10K-10K)	
D702-707	276 0432 903	Diode 1SS270A	
D715	276 0432 903	Diode 1SS270A	
D716-718	276 0048 914	Diode 1SS270A	
D720	276 0048 914	Diode 1SS270A	
D722	276 0432 903	Diode 1SS270A	
D725	276 0432 903	Diode 1SS270A	
LD701	393 9416 908	LED SEL-2210R	
LD703-706	393 9416 908	LED SEL-2210R	
RESISTORS GROUP (Not included Cabon Film ±5% 1/4W)			
RA701	246 2553 004	Array 10Kohm x5	RK99--103JPS
RA702	246 2554 003	Array 10Kohm x7	RK99--103JPT
CAPACITORS GROUP			
CT01	254 4281 948	Electrolytic 1µF50V	CE6AW1H10MT(SME)
CT03	254 4281 055	Electrolytic 470µF6.3V	CE6AW0471M(SME)
CT04	254 4281 980	Electrolytic 100µF35V	CE6AW1Y10MT(SME)
CT06	253 4412 900	Ceramic 10pF50V	CC45SL1H100DT
CT10	253 1146 907	Ceramic 0.01µF50V	CC45F1H10K2T
OTHER PARTS GROUP			
ST01-717	212 4388 907	TACT SWITCH	
ST19-720	212 4388 907	TACT SWITCH	
XL701	399 9018 003	CST 4.00 MW	
	399 4043 003	F.LD (FIP-01M7)	
	499 0150 008	REMOTE SENSOR	SBK1610-52
	204 2514 002	8P PH-PH CON COORD	
	204 6307 011	11P KR-KR CON COORD	
	204 2431 059	9P KR-KR CON COORD	
	205 0375 013	11P CON BASE (KR-PH)	
	205 0343 090	9P CON BASE (KR-PH)	
	205 0343 087	8P CON BASE (KR-PH)	

1U-2347A TUNER UNIT (DRA-435RPU/335RPU)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC601	263 0831 003	IC LA1267S	
IC602	263 0439 007	IC LA3401	
IC603	262 0719 009	IC LM7001	
IC604	263 0801 004	IC NJM7812FA(S)	
TR602	273 0357 908	Transistor 2SC2839(E)	
TR603	273 0222 907	Transistor 2SC2458(Y/GR)	
TR604,605	271 0191 906	Transistor 2SA1048(GR)	
TR606	275 0048 912	Transistor 2SK381(B)/(C)	
TR607	273 0222 907	Transistor 2SC2458(Y/GR)	
TR608,609	273 0253 918	Transistor 2SC2878(A/B)	
TR610	271 0191 906	Transistor 2SA1048(GR)	
TR611	271 0102 937	Transistor 2SA1015(GR/Y)	
TR612	269 0029 907	Transistor RN1204(47K-47K)	
D602,603	276 0432 903	Diode 1SS270A	
D610,611	276 0302 004	Diode SVC321 SPA-D-2	
D601	276 0467 910	Zener Diode HZS9A-2TD	
RESISTORS GROUP (Not included Cabon Film $\pm 5\%$ 1/4W)			
R601	247 0004 906	Chip 390ohm, 1/10W	RM73B-390J
R602	247 0007 945	Chip 1kohm, 1/10W	RM73B-102J
R603	247 0006 946	Chip 390ohm, 1/10W	RM73B-391J
R606	247 0009 901	Chip 4.7kohm, 1/10W	RM73B-472J
R607	247 0005 989	Chip 220ohm, 1/10W	RM73B-221J
R608,609	247 0006 920	Chip 330ohm, 1/10W	RM73B-331J
R610	247 0008 960	Chip 3.3kohm, 1/10W	RM73B-332J
R611	247 0010 929	Chip 15kohm, 1/10W	RM73B-153J
R612	247 0005 921	Chip 120ohm, 1/10W	RM73B-121J
R613	247 0004 980	Chip 82ohm, 1/10W	RM73B-820J
R615,616	247 0009 985	Chip 10kohm, 1/10W	RM73B-103J
R617	247 0008 960	Chip 3.3kohm, 1/10W	RM73B-332J
R618	247 0008 957	Chip 3kohm, 1/10W	RM73B-302J
R619	247 0009 998	Chip 11kohm, 1/10W	RM73B-113J
R620	247 0011 973	Chip 62kohm, 1/10W	RM73B-623J
R621	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R622,623	247 0012 943	Chip 120kohm, 1/10W	RM73B-124J
R624	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R625	247 0011 915	Chip 36kohm, 1/10W	RM73B-363J
R626	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R627	247 0007 945	Chip 1kohm, 1/10W	RM73B-102J
R628,629	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R630-632	247 0008 960	Chip 3.3kohm, 1/10W	RM73B-332J
R633,634	247 0007 945	Chip 1kohm, 1/10W	RM73B-102J
R635,636	247 0009 943	Chip 6.8kohm, 1/10W	RM73B-682J
R637	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R638	247 0010 961	Chip 22kohm, 1/10W	RM73B-223J
R639,640	247 0012 927	Chip 100kohm, 1/10W	RM73B-104J
R641	247 0005 905	Chip 100ohm, 1/10W	RM73B-101J
R642	247 0010 961	Chip 22kohm, 1/10W	RM73B-223J
R643	247 0006 962	Chip 470ohm, 1/10W	RM73B-471J
R644	247 0006 975	Chip 510ohm, 1/10W	RM73B-511J
R645	247 0007 916	Chip 750ohm, 1/10W	RM73B-751J
R646,647	247 0009 985	Chip 10kohm, 1/10W	RM73B-103J

Ref. No.	Part No.	Part Name	Remarks
R648	247 0015 940	Chip 2.2Mohm, 1/10W	RM73B-225J
R649	247 0009 969	Chip 8.2kohm, 1/10W	RM73B-822J
R650	247 0007 903	Chip 680ohm, 1/10W	RM73B-681J
R662	247 0005 905	Chip 100ohm, 1/10W	RM73B-101J
R665	247 0010 945	Chip 18kohm, 1/10W	RM73B-183J
R670	247 0011 986	Chip 68kohm, 1/10W	RM73B-683J
CAPACITORS GROUP			
C601	254 4254 909	Electrolytic 10 μ F/16V	CE04W1C100MT (SME)
C602-607	257 0012 966	Ceramic-chip 0.01 μ F/50V	CK73F1H103ZT
C608	254 4254 938	Electrolytic 47 μ F/16V	CE04W1C470MT (SME)
C609	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C610	257 0012 982	Ceramic-chip 0.022 μ F/50V	CK73F1H223ZT
C611	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C612	254 4260 964	Electrolytic 3.3 μ F/50V	CE04W1H3R3MT (SME)
C613	254 4258 905	Electrolytic 4.7 μ F/35V	CE04W1V4R7MT (SME)
C614,615	257 0012 966	Ceramic-chip 0.01 μ F/50V	CK73F1H103ZT
C616	256 1034 940	Metalizedd 0.056 μ F/50V	CF93A1H563JT
C618	254 4254 912	Electrolytic 22 μ F/16V	CE04W1C220MT (SME)
C619	256 1034 937	Metalizedd 0.047 μ F/50V	CF93A1H473JT
C620	254 4254 909	Electrolytic 10 μ F/16V	CE04W1C100MT (SME)
C621,622	257 0006 972	Ceramic-chip 750pF/50V	CC73SL1H751JT
C623	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C624	257 0012 966	Ceramic-chip 0.01 μ F/50V	CK73F1H103ZT
C625,626	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C627	254 4260 919	Electrolytic 0.22 μ F/50V	CE04W1HR22MT (SME)
C628	254 4254 938	Electrolytic 47 μ F/16V	CE04W1C470MT (SME)
C629,630	254 4260 951	Electrolytic 2.2 μ F/50V	CE04W1H2R2MT (SME)
C631	257 0012 966	Ceramic-chip 0.01 μ F/50V	CK73F1H103ZT
C633	255 4201 942	Film 390pF/50V	CQ93P1H391JT
C634	253 4536 941	Ceramic 15pF/50V	CC45SL1H150JT(DD-3)
C635	254 4254 938	Electrolytic 47 μ F/16V	CE04W1C470MT (SME)
C636	254 4260 906	Electrolytic 0.1 μ F/50V	CE04W1H0R1MT (SME)
C637	254 3056 917	Electrolytic 1 μ F/50V (Bipole)	CE04D1H010MBPT (SME)
C638	257 0012 966	Ceramic-chip 0.01 μ F/50V	CK73F1H103ZT
C639	254 4260 045	Electrolytic 1 μ F/50V	CE04W1H010M (SME)
C640,641	257 0002 976	Ceramic-chip 16pF/50V	CC73SL1H160JT
C642	254 4254 909	Electrolytic 10 μ F/16V	CE04W1C100MT (SME)
C650	257 0012 982	Ceramic-chip 0.022 μ F/50V	CK73F1H223ZT
C651	257 0004 961	Ceramic-chip 100pF/50V	CC73SL1H101JT
C652	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C656	254 3056 917	Electrolytic 1 μ F/50V (Bipole)	CE04D1H010MBPT (SME)
C660	254 4254 909	Electrolytic 10 μ F/16V	CE04W1C100MT (SME)
C661	257 0004 961	Ceramic-chip 100pF/50V	CC73SL1H101JT
C662	254 4260 980	Electrolytic 10 μ F/50V	CE04W1H100MT (SME)
OTHERS PARTS GROUP			
CF601,602	261 0025 004	CERAMIC FILTOR	
CF603	261 0031 001	BFU450C4 (C.F)	
CF604	261 0079 005	CSB456F11	
CF605	261 0116 007	SFU450B3	
XL601	399 0075 003	X-TAL(7.2MHZ)	
TC601	213 0041 034	TRIMMER CONDENCER	
T601	231 1127 007	MW ANT TRANS	

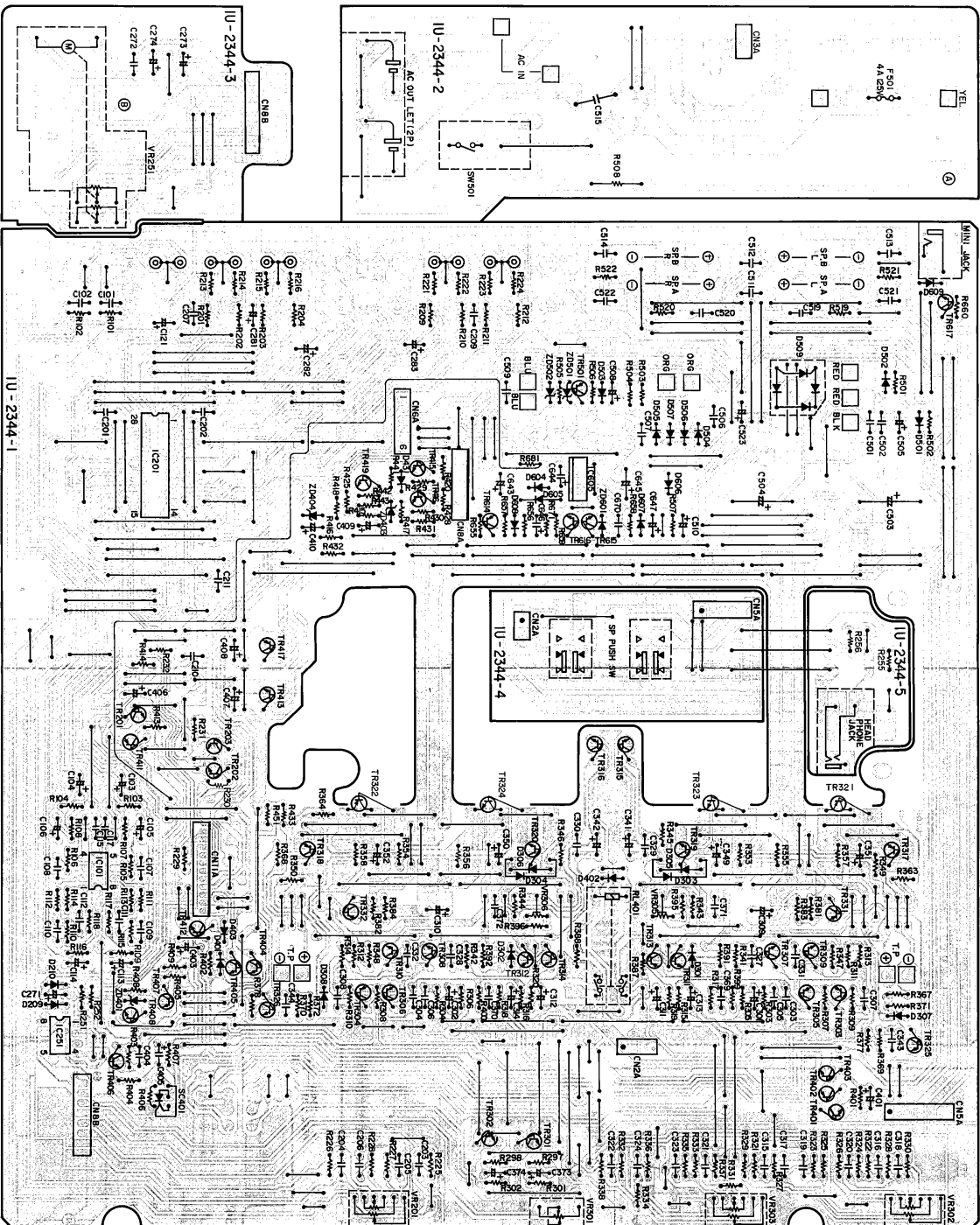
1U-2384A VIDEO UNIT (DRA-435RPU)

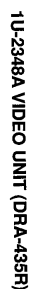
Ref. No.	Part No.	Part Name	Remarks
T602	231 4901 000	MW OSC COIL	
T603	231 2085 009	FM DET TRANS	
T604	231 1138 009	AM IFT	
	205 0433 010	ANT. TERMINAL(F)	
	216 0064 007	FRONT END	
	205 0233 061	6P EH CONNECTOR BASE	
	205 0343 090	9P CONN.BASE(KR-PH)	
	203 0504 024	1P CONTACT ASS'Y	

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC801	262 0628 006	IC HD14052BP	
TR801,802	273 0198 918	Transistor 2SC1815(BL)	
ZD801,802	276 0460 917	Zener Diode HZS5C-2	
RESISTORS GROUP(Not included Carbon Film $\pm 5\%$ 1/4w)			
R819,820	244 2052 960	Metallic 220ohm, 1W	RS14B3A221JST(S)
CAPACITORS GROUP			
C801	254 4254 941	Electrolytic 100 μ F/16V	CE04W1C101MT (SME)
C802	254 4327 904	Electrolytic 1000 μ F/6.3V	CE04W0J102MT (SMG)
C803	254 4254 941	Electrolytic 100 μ F/16V	CE04W1C101MT (SME)
C805,806	254 4254 912	Electrolytic 22 μ F/16V	CE04W1C220MT (SME)
C807,808	254 4254 909	Electrolytic 10 μ F/16V	CE04W1C100MT (SME)
C809	254 4260 948	Electrolytic 1 μ F/50V	CE04W1H010MT (SME)
C814	254 4327 904	Electrolytic 1000 μ F/6.3V	CE04W0J102MT (SMG)
OTHERS PARTS GROUP			
	205 0343 045	4P CONN.BASE(KR-PH)	
	204 8309 004	4P PIN JACK (C-GND)	



1U-2344A MAIN UNIT (DRA-335R)

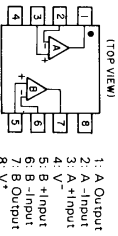




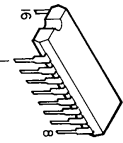
SEMICONDUCTORS

• IC's

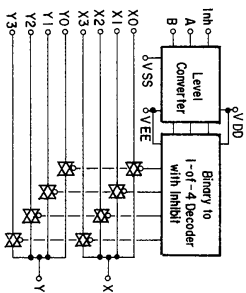
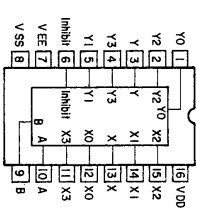
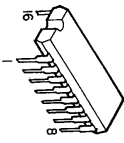
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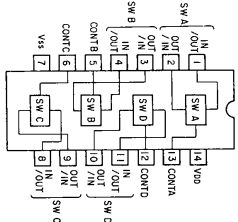
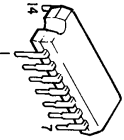
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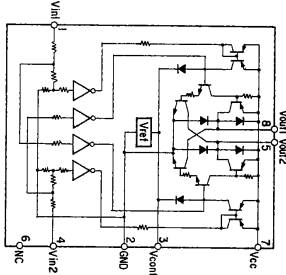
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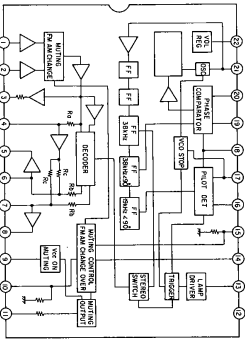
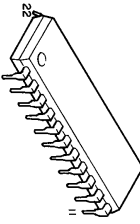
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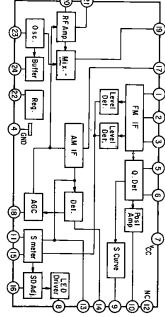
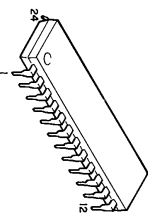
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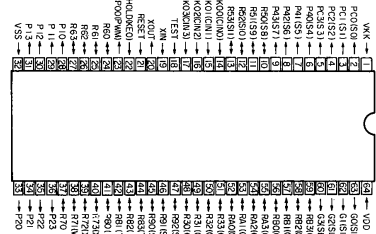
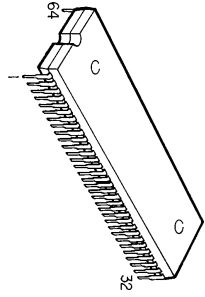
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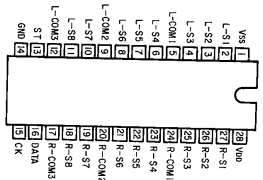
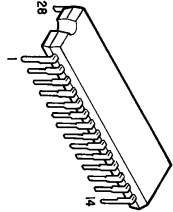
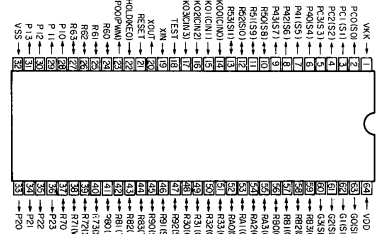
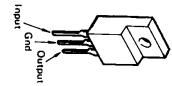
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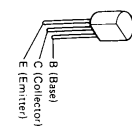


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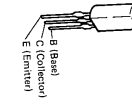
NJM7812FA(S)
NJM7805FA(S)

• Transistors -

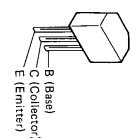
2SA1015(V/G/R)
2SA970(BL)
2SC1841(E/F)
2SC2240(BL)
2SC2878(A/B)
2SC1815(BL)
2SA988(E/F)



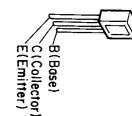
2SB647(A/C)



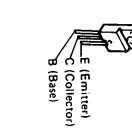
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2SC2458(V/G/R)
2SC2458(BL)
2SC2839(E)



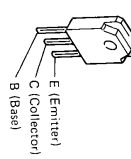
2SB1328(P)
2SD2004(P)



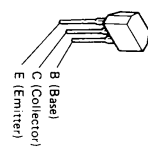
2SB1274(R/S)
2SD1913(R/S)



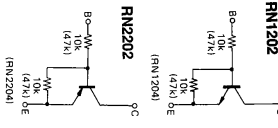
2SA1489(O/P/V/Z)
2SA1491(O/P/V/Z)
2SC3853(O/P/V/Z)
2SC3855(O/P/V/Z)



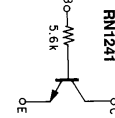
RN1202(10K-10K)
RN1204(47K-47K)
RN2202(10K-10K)
RN2204(47K-47K)
RN1241(A/B)



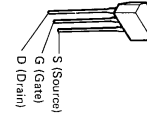
RN1202



RN1241



2SK381(B/C)

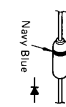


• Diodes & LED

1SS270A



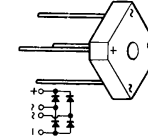
1S2076A



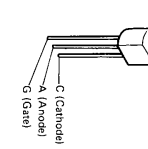
HZS9A-2 HZSFC-2
HZS27-2 HZS7B-3
HZS16-3



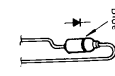
SAVB20



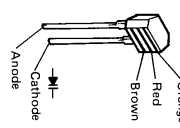
SFOR1A42



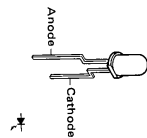
1SR35-200A



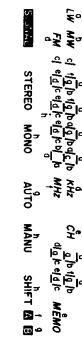
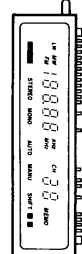
SY/C321SPA-D-2



SEL-2210R(TP-2)



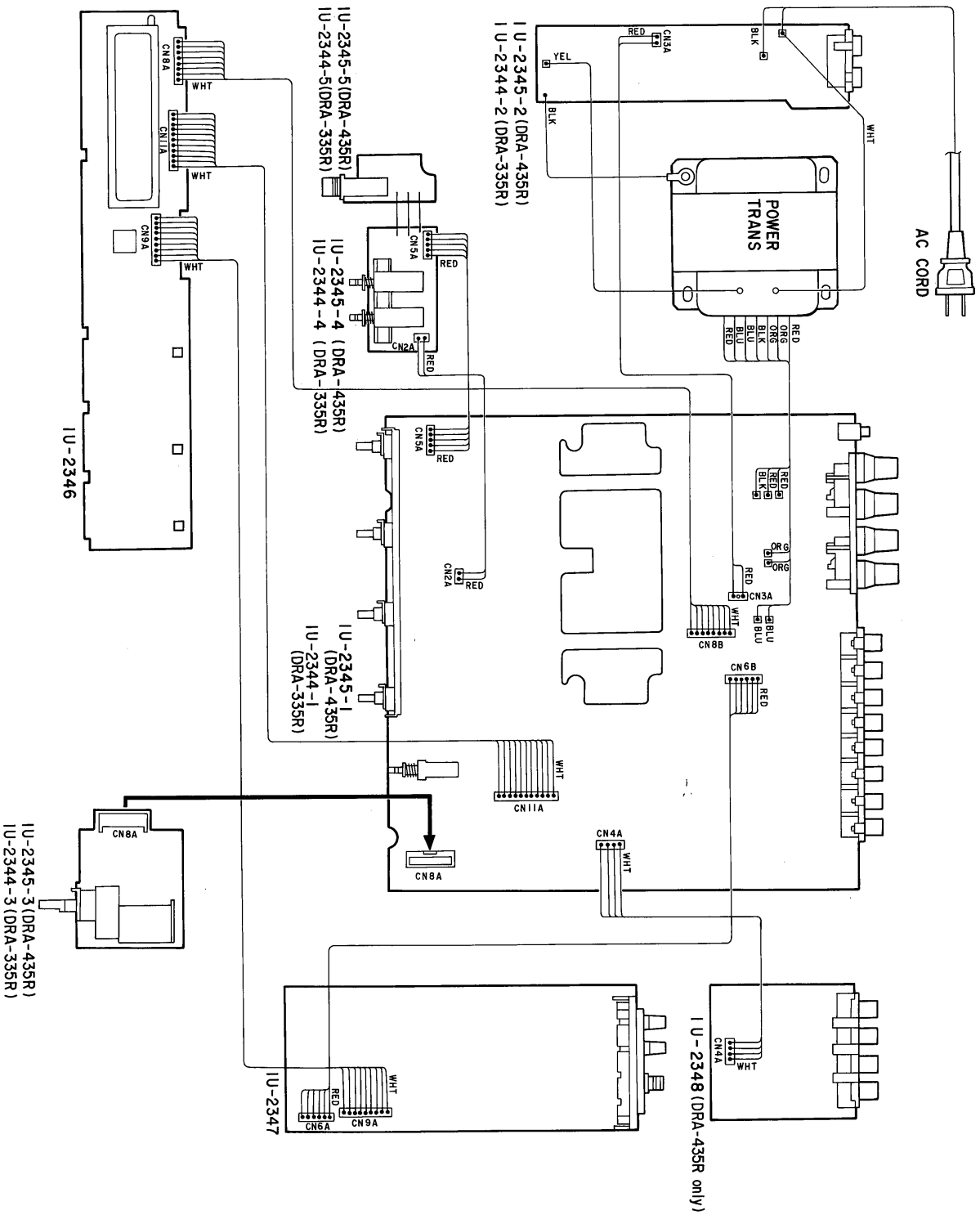
F.LD(FP10TM7)



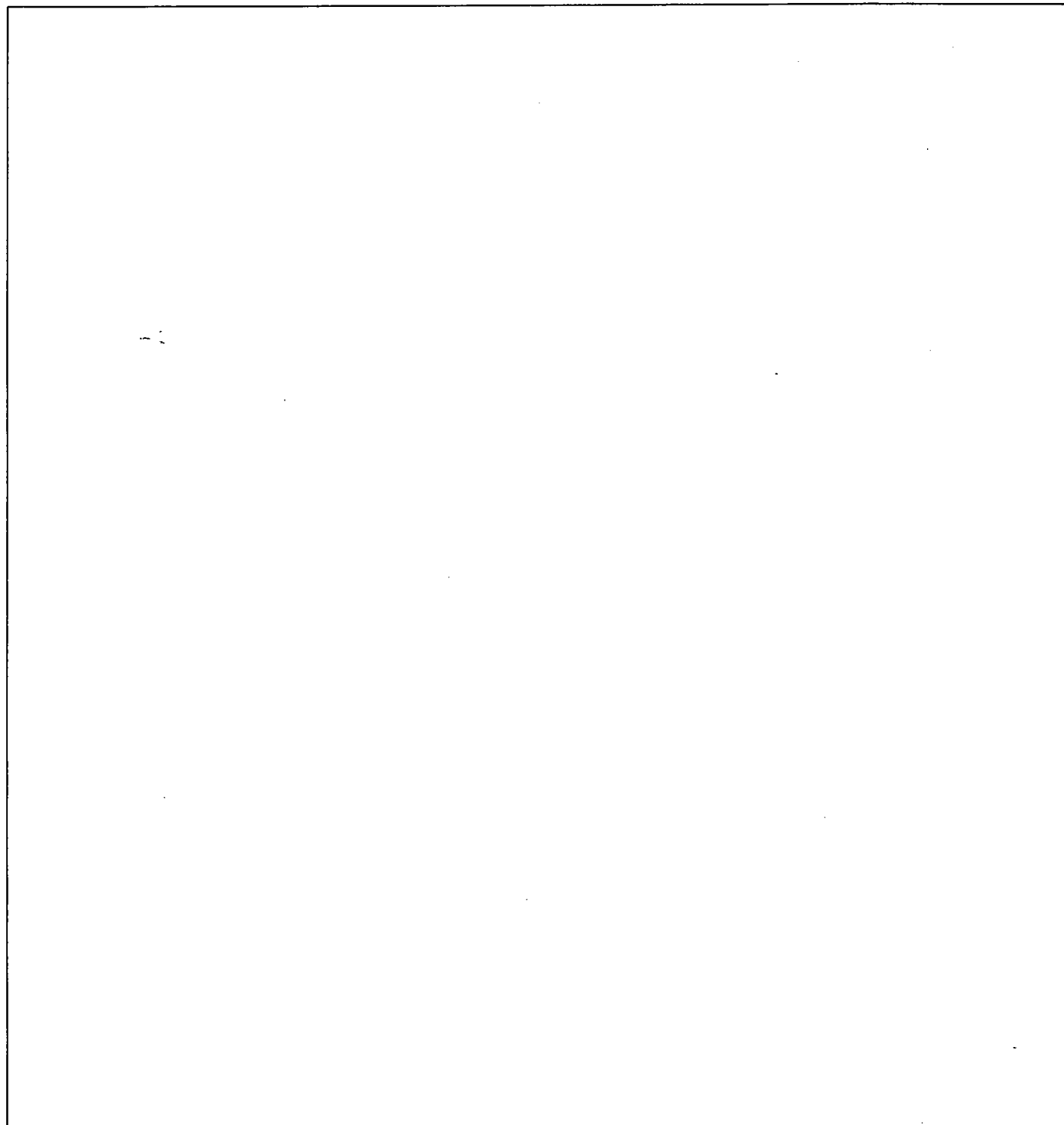
TERMINAL NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELECTRODE	F	BG	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH	PH
TERMINAL NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
ELECTRODE	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Notes: F Filament NP No Pin
G Grid
P Anode

WIRING DIAGRAM

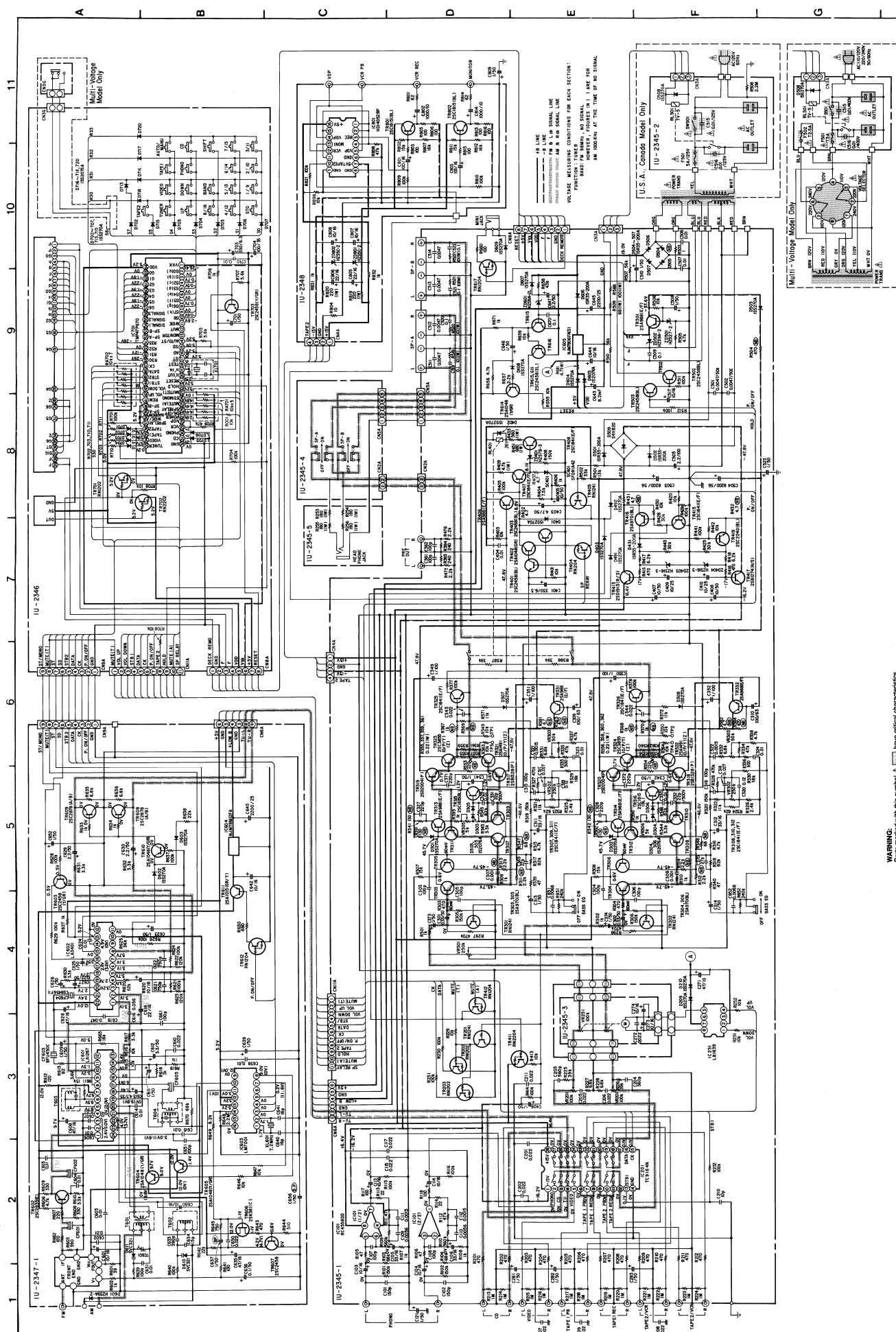


DENON



NIPPON COLUMBIA CO., LTD.

14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107-11 JAPAN
TEL: 03 (3584) 8111
TLX: JAPANOLA J22591
CABLE: NIPPONCOLUMBIA TOKYO



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

CONCLUSIONS

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

defective.

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