DENON

Hi-Fi AM-FM Stereo Receiver

For U.S.A. Model

SERVICE MANUAL

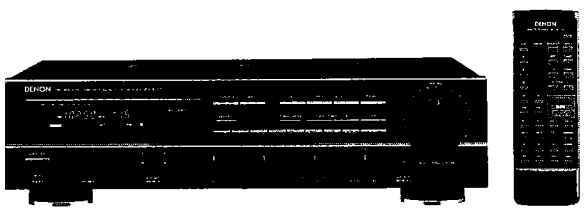
MODEL DRA-435R

Serial No. 25551 and after

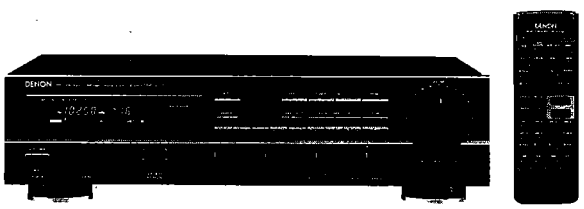
MODEL DRA-335R

Serial No. 38551 and after

AM-FM STEREO RECEIVER



DRA-435R RC-129



DRA-335R RC-129A

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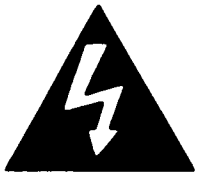


CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

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

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

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

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

CAUTION	ATTENTION
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.	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.

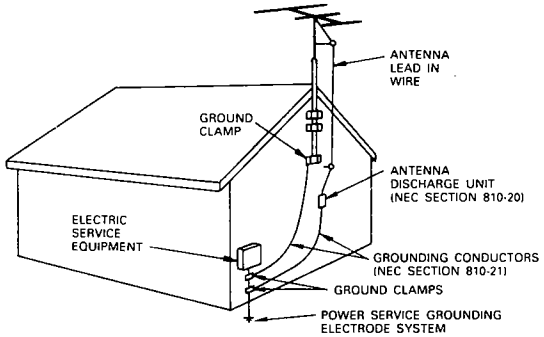
13. Protective Attachment Plug – The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement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

FIGURE A
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



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

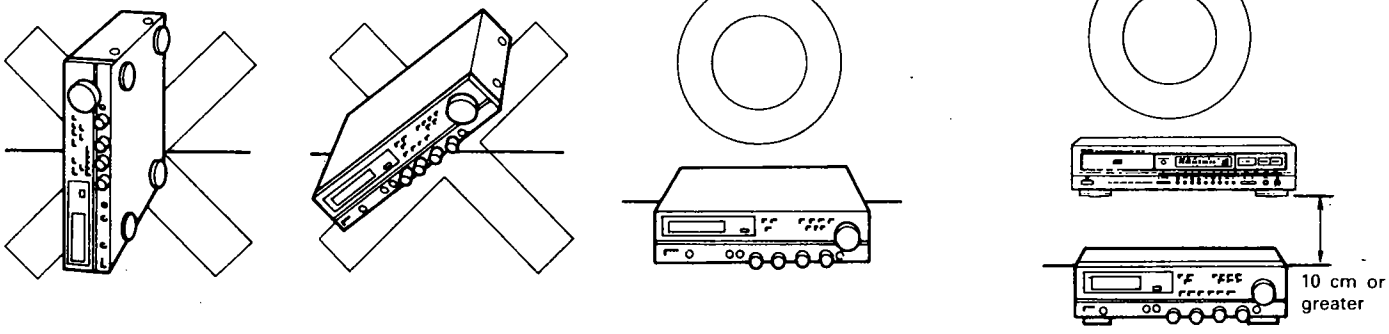
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or

    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

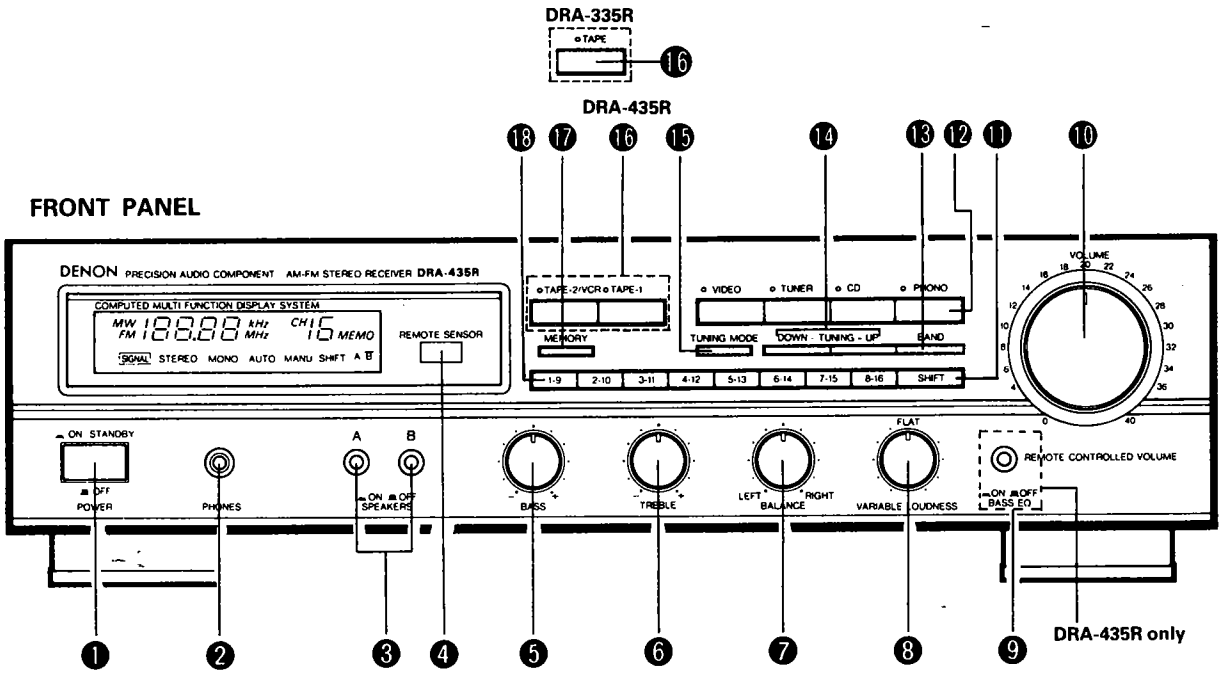
DRA-435R/335R always install horizontally. And leave at least 10 cm of space between this unit and other component placed above.



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



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.
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 1,000 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 1,000 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 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.

❿ 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.

⓫ 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)

⓬ 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.

⓭ **BAND (Band selector switch)**
Press this switch to select the FM or AM (MW) band.

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 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.

⓯ **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.

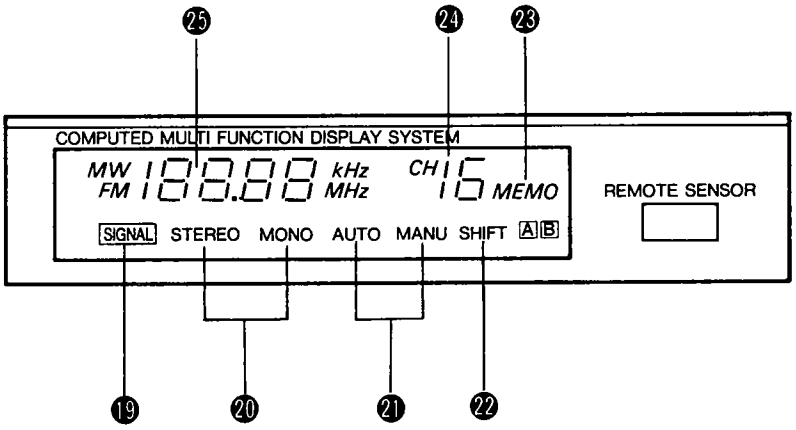
⓰ • **Tape selector (Tape selector/monitor buttons) (DRA-435R)**
TAPE-1: Press this button once, TAPE-1 indicator LED will light up and then you can play tape source on TAPE-1 terminal.
In this state you can copy TAPE-1 source to TAPE-2/VCR terminal.
TAPE-2/VCR: Press this button once, TAPE-2/VCR indicator 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 ⓬, 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 ⓬, indicator LED goes out.

⓱ **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.

⓲ **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



⓳ **SIGNAL (Signal indicator)**
This lights when a station is received.

⓴ **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 ⓯ causes AUTO and MANU to light up alternately.

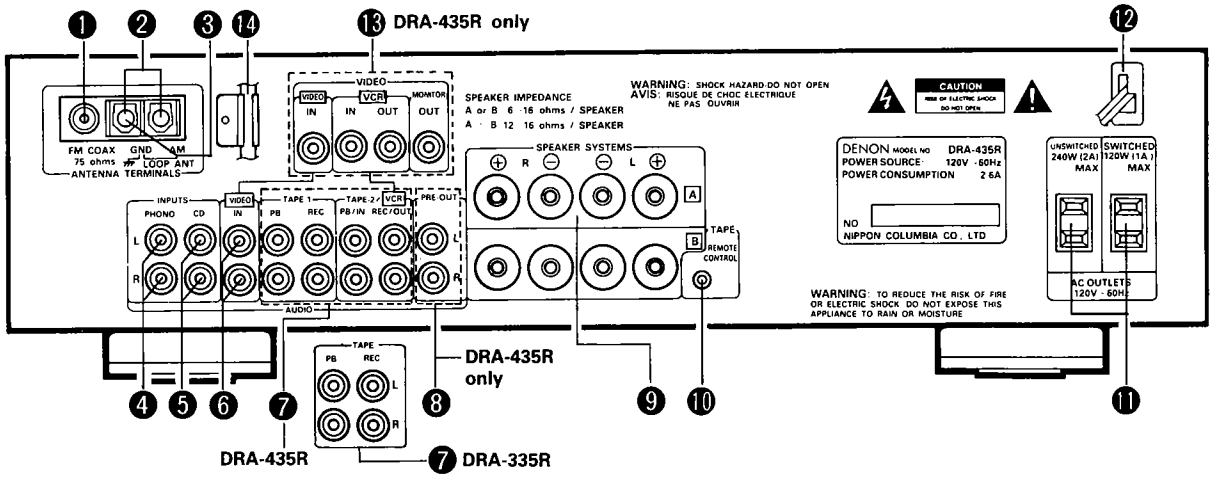
㉒ **SHIFT (Shift indicator)**
The preset channel which is selected with the Shift Button ⓫ is displayed by the SHIFT A or B.

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 ⓲, 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



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 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.

❺ CD
The output cord of the CD player is connected here.

❻ VIDEO
A VIDEO, such as a VCR or Video Disk may be connected here.

❼
- **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.

❽ 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.

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

❿ 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.

⓫ 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).

⓬ AC CORD (Power cord)
Connect this cord into the wall outlet.

⓭ 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.

⓮ 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.

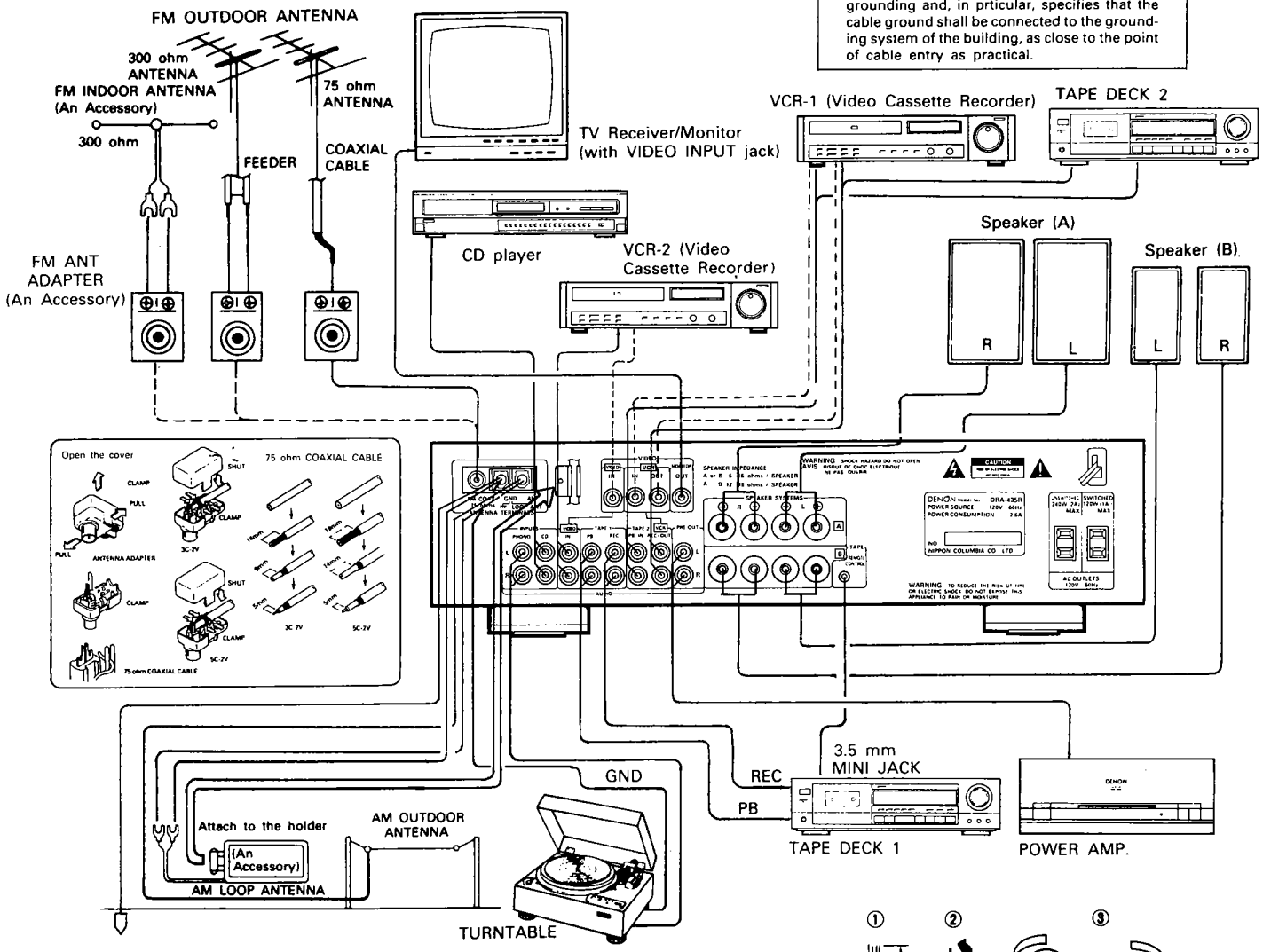
ANTENNA INSTALLATION

- **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

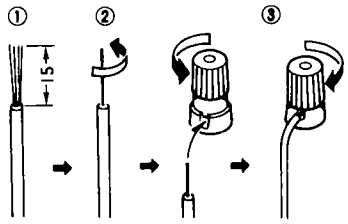
Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in prticular, specifies that the cable ground shall be connected to the grounding system of the building, as close to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

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.

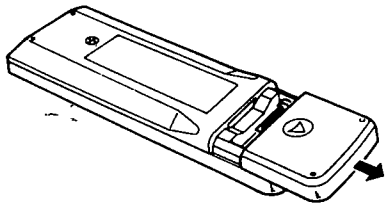
- This model has a last channel memory system. It stores the last channel used power off.
- This model is designed to store and retain the stations that have been previously registered in the memory, even if the tuner is deenergized temporarily. The memory can hold resistered data for approximately about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

PLAYBACK USING THE REMOTE CONTROL

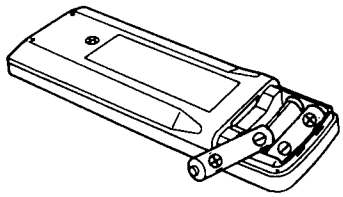
The accessory RC-129/RC-129A remote control unit is used to control the RECEIVER from a distance.

(1) Inserting the dry cell batteries

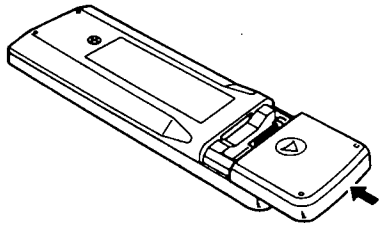
1 Remove the rear cover on the remote control unit.



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



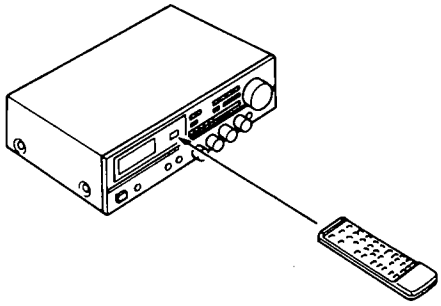
3 Replace the rear cover.



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.

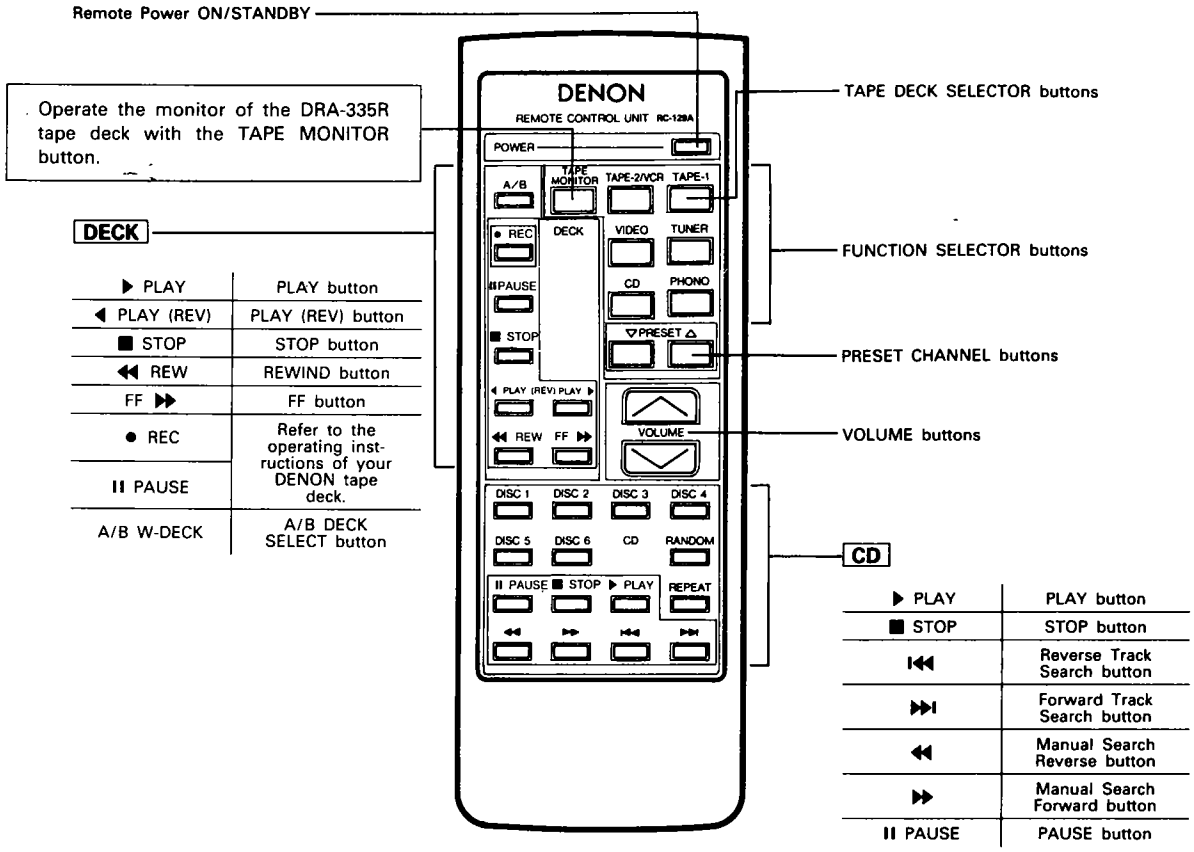
Remote Control Section

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



▶ PLAY	PLAY button
◀ PLAY (REV)	PLAY (REV) button
■ STOP	STOP button
◀◀ REW	REWIND button
FF ▶▶	FF button
● REC	Refer to the operating instructions of your DENON tape deck.
II PAUSE	
A/B W-DECK	A/B DECK SELECT button

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

- 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 respresentative.
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, TAPE-1, TAPE-2/VCR	20 Hz ~ 50 kHz ±1.5 dB (at 1W)

Input Sensitivity and Impedance:

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

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, TAPE-1,	95 dB

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: (DRA-435R only)	5 Hz ~ 6 MHz ±1.5 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	0.1%
	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 $^{+0.2}_{-1.5}$ 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 × 120 mm (4-23/32")H × 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 RC-129/RC-129A

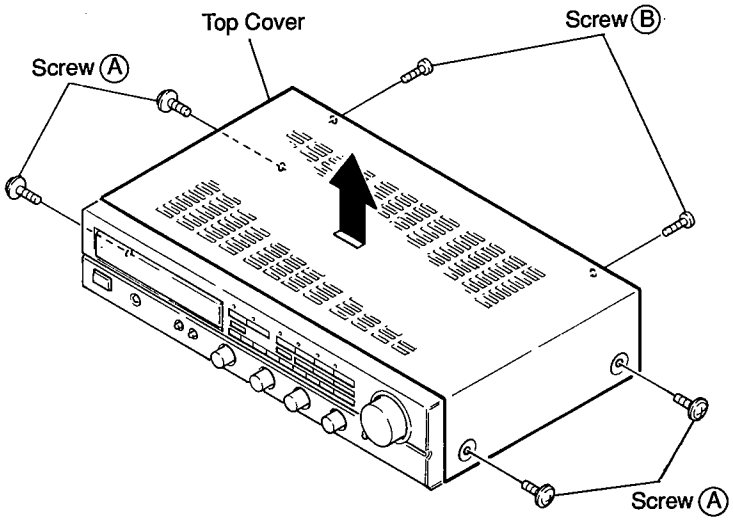
Remote control system:	Infrared pulse system
Power supply:	3V DC Two size "AA" (R6) dry cell batteries
External dimensions:	60 mm (2-23/64")W × 175 mm (6-57/64")H × 18 mm (45/64")D
Weight:	120 g (4 oz) (Includes batteries)

Design and specifications are subject to change without prior notice.

REMOVAL OF EACH SECTION

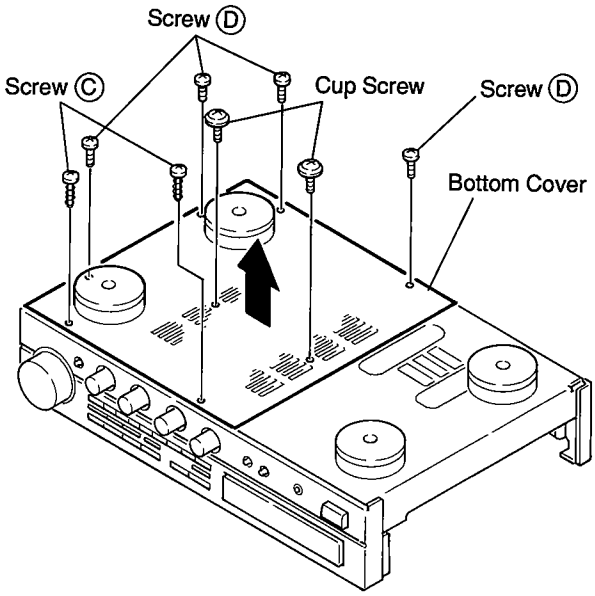
1. Top Cover

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



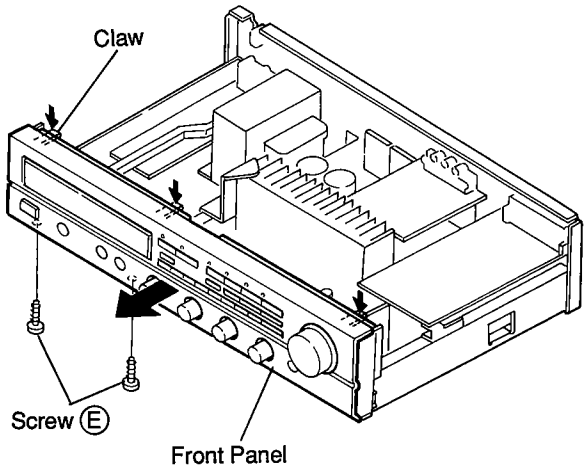
2. Bottom Cover

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



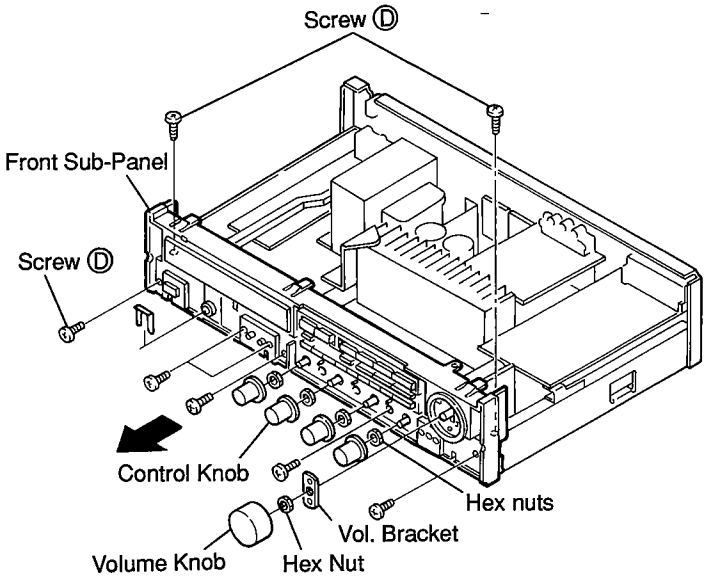
3. Front Panel

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.



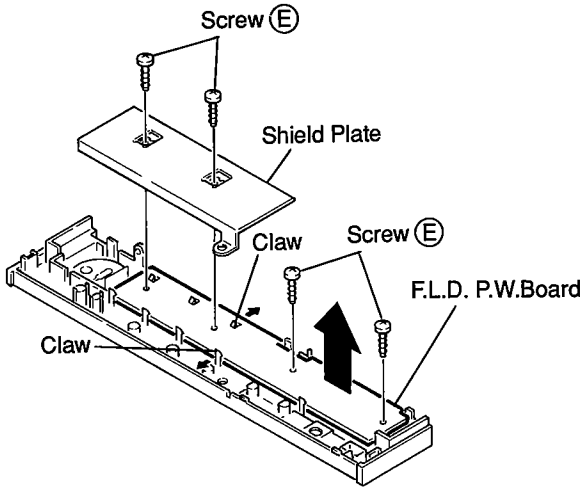
4. Front Sub-Panel

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



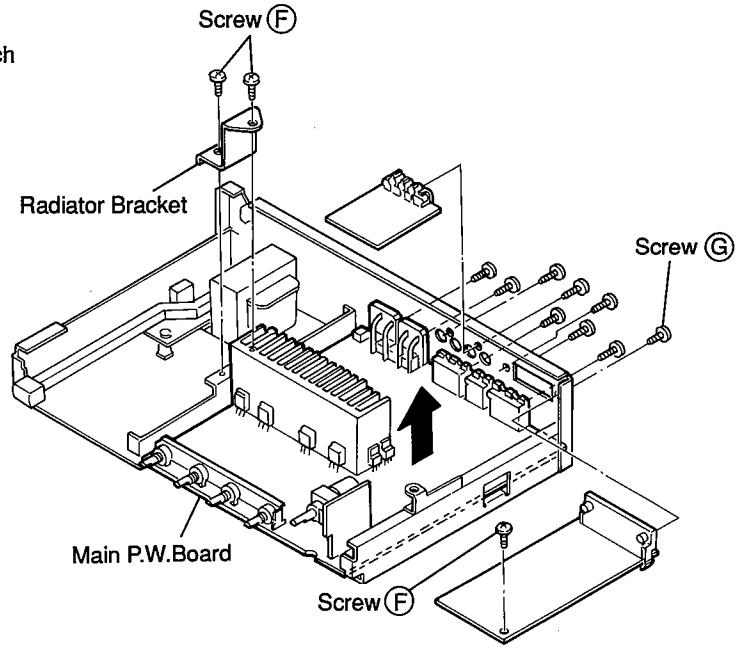
5. F.L.D. P.W.Board

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

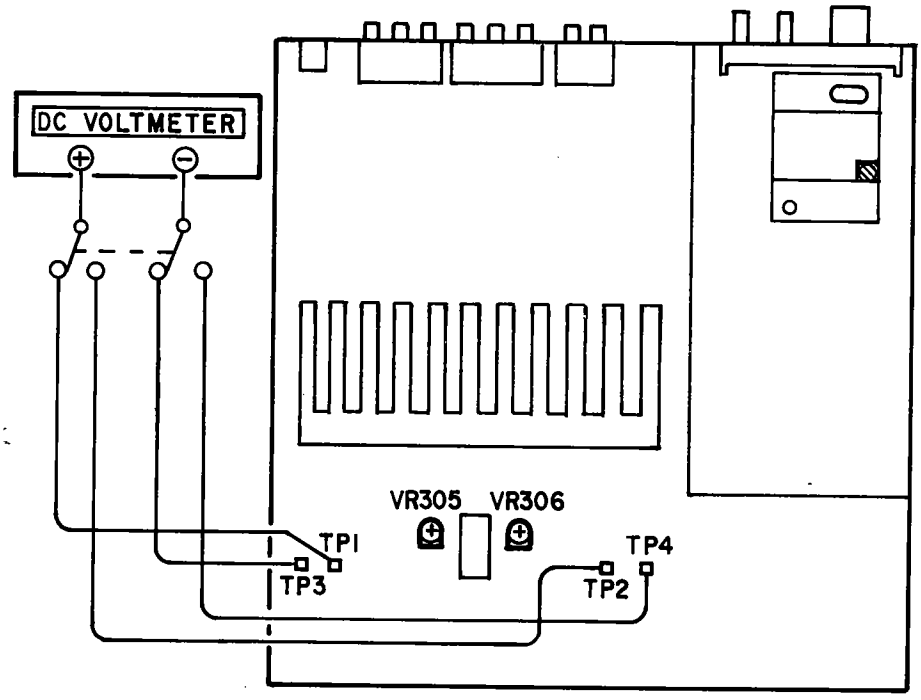


6. Main P.W.Board

Remove 2 screws Ⓕ and 10 screws Ⓖ, 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 mV ± 0.2 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 mV ± 0.5 mV DC.
(5) Warm up for 10 minutes, then readjust VR305 and VR306 so that the Digital Voltmeter reads 5.0mV ± 0.5mV DC.

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. by IC 601	T603	±50 mV	Function: FM Mode: Auto
2	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

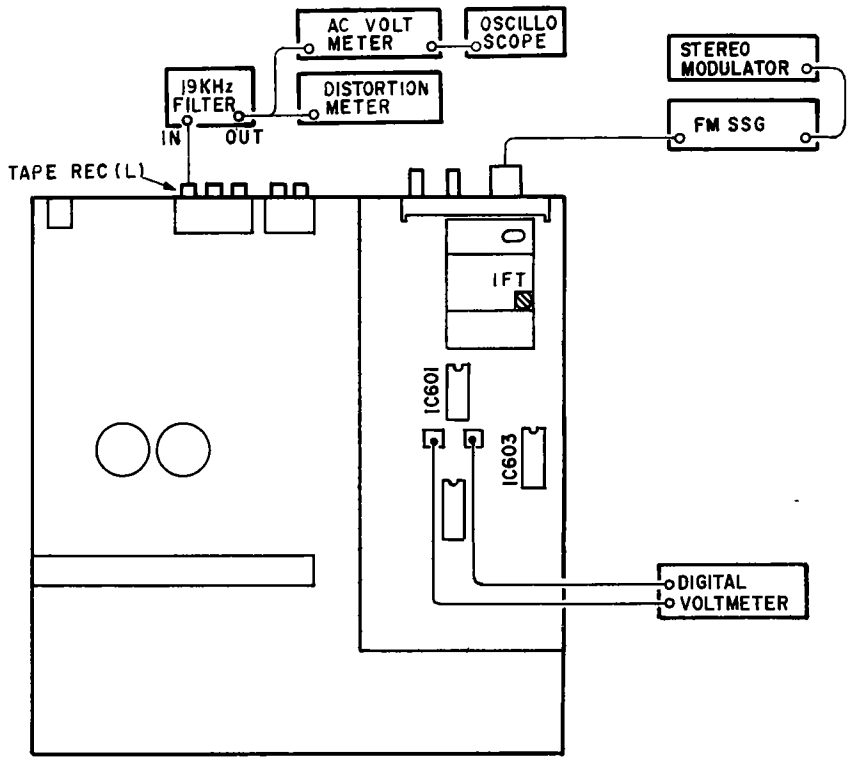
AM ALIGNMENT

Table 2

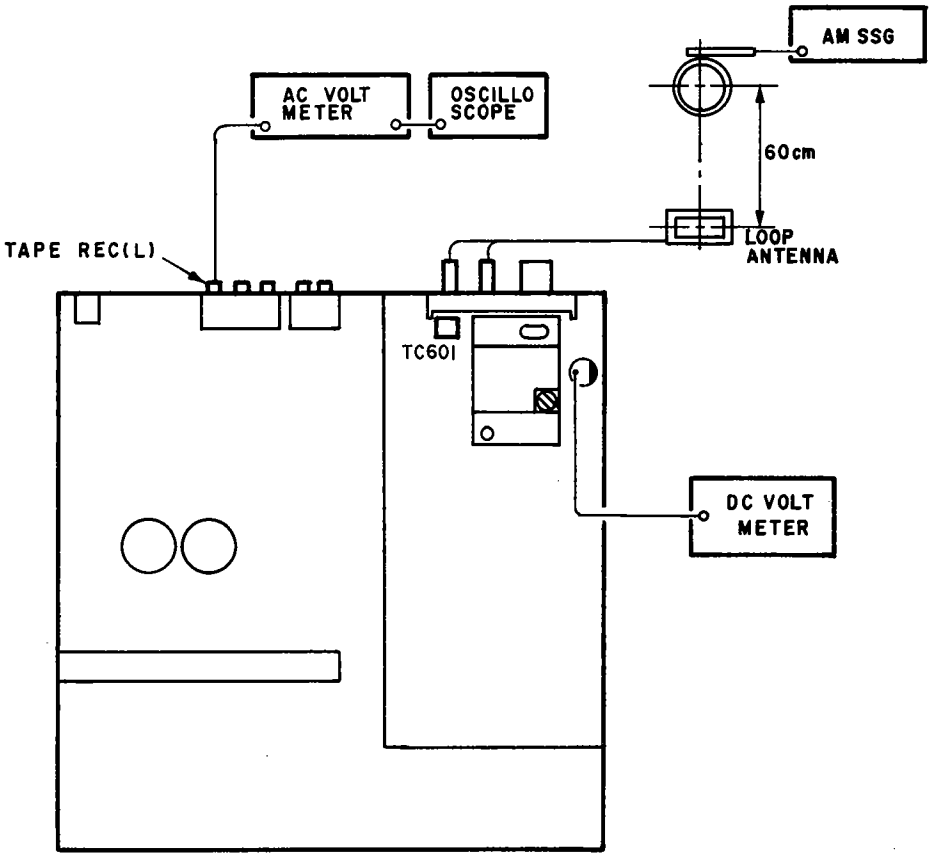
Step	Alignmet Item	Tuning Frequency Setting	Input					Output		Adjust		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	Receving Band Alignment	520 KHz	AM SSG	520 KHz	Input Level is not over to work A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	C636 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

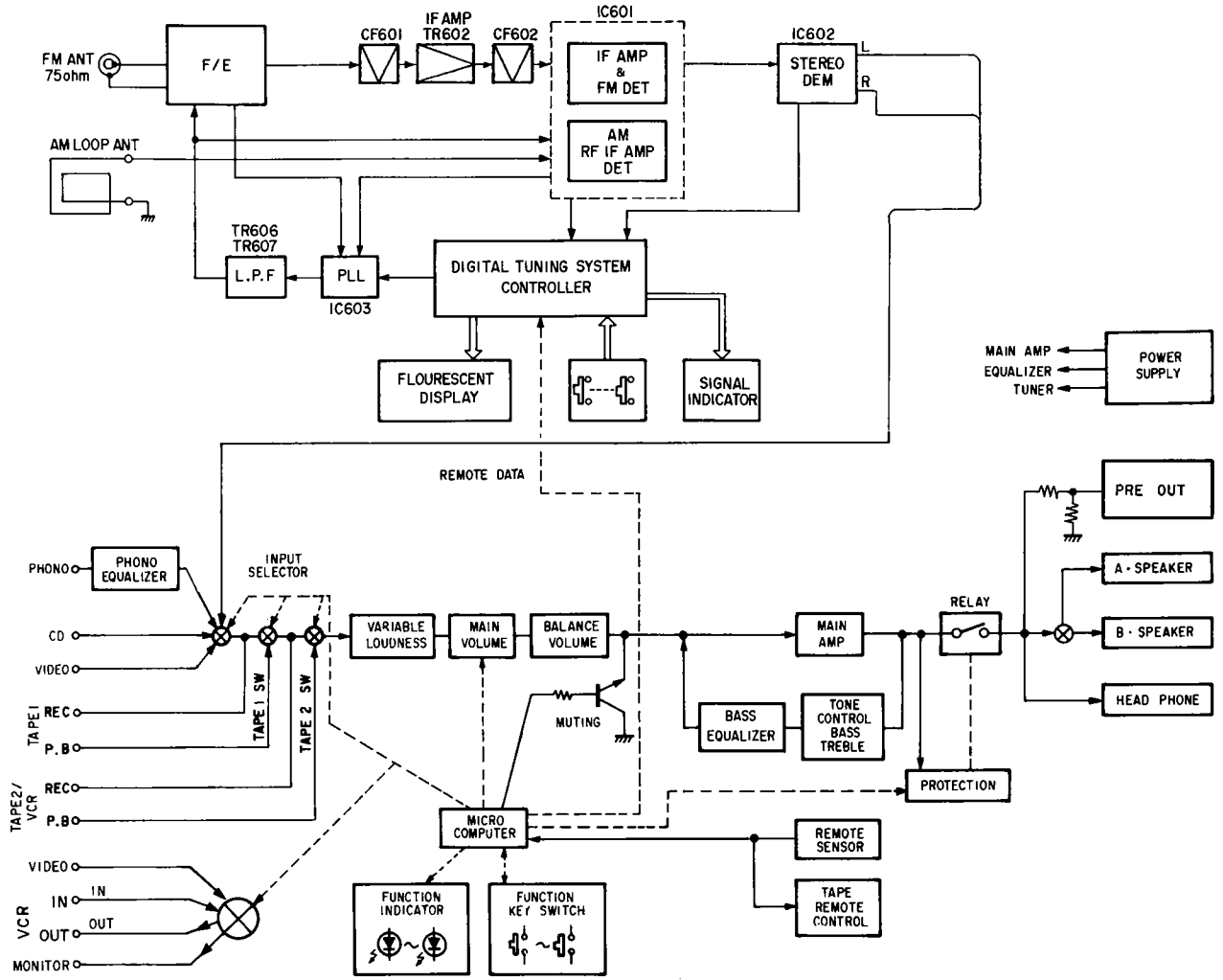
- FM

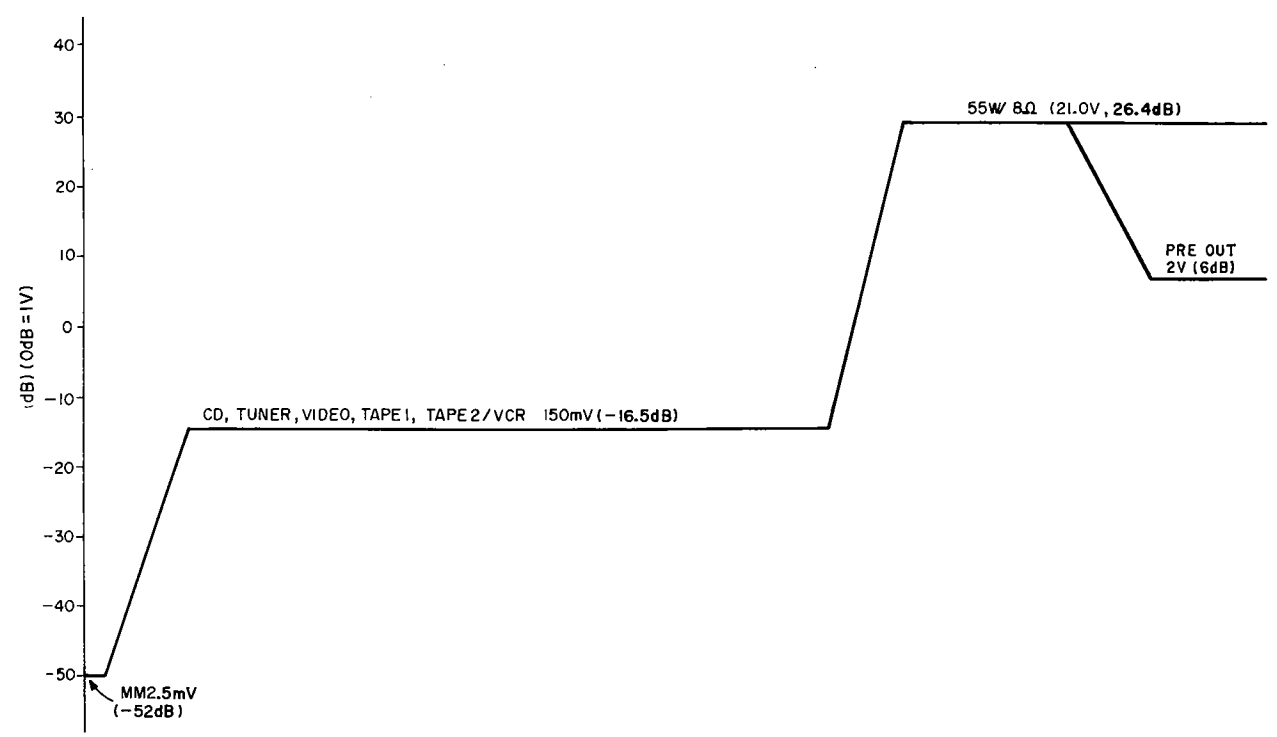


- AM

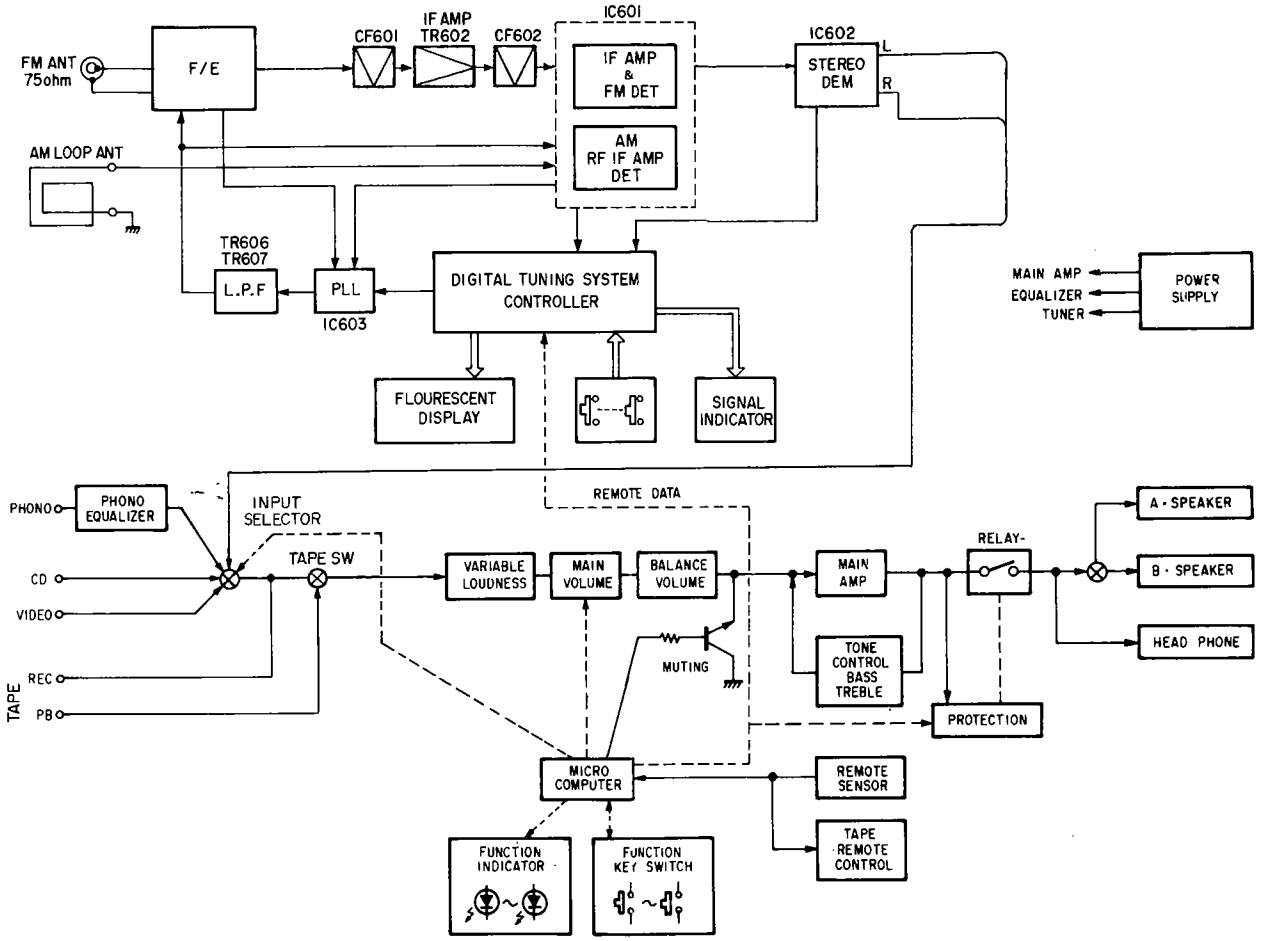


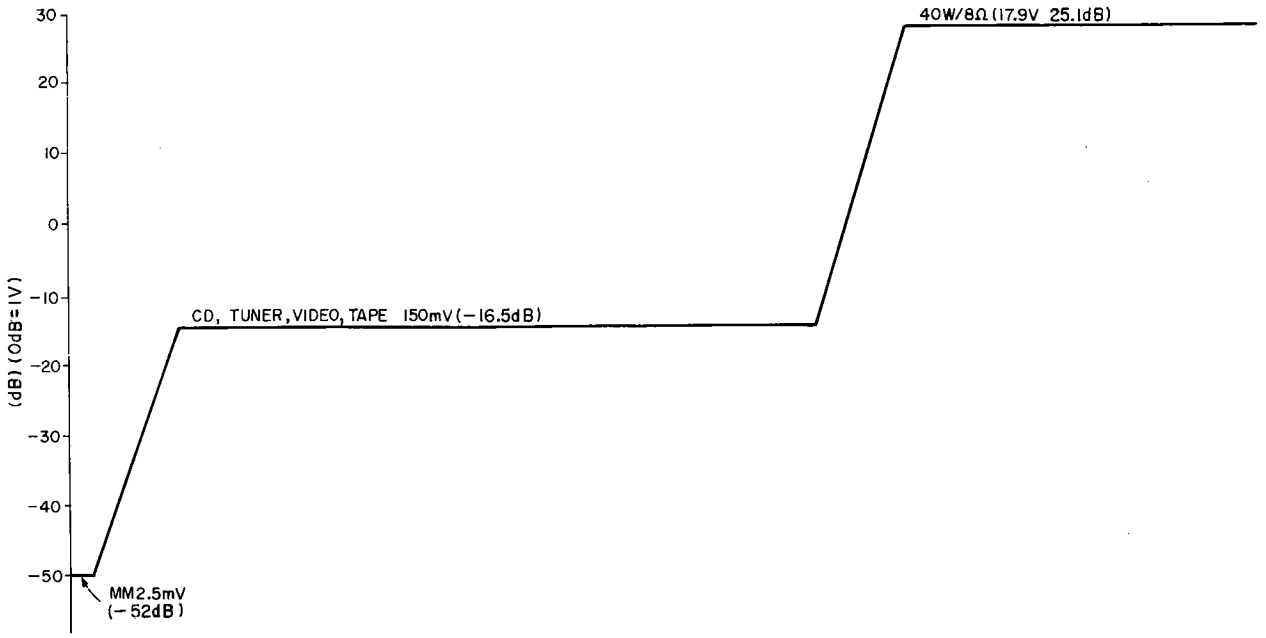
BLOCK/LEVEL DIAGRAM (DRA-435R)





BLOCK/LEVEL DIAGRAM (DRA-335R)





PARTS LIST OF EXPLODED VIEW (DRA-435R)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
⊙ 1	1U-2345A	MAIN UNIT		1
1-1		MAIN UNIT		
1-2		POWER SW UNIT		
1-3		VOLUME UNIT		
1-4		SP SW UNIT		
1-5		H/P UNIT		
⊙ 2	1U2346A	MI-COM UNIT		1
⊙ 3	1U2347A	TUNER UNIT		1
3-1		TUNER UNIT		
⊙ 4	1U2348A	VIDEO UNIT		1
⊙ 5	105 1011 005	BACK PANEL		1
⊙ 6	411 0855 219	SIDE CHASSIS		1
⚠ 7	445 0056 008	CORD BUSH		1
⚠ 8	206 2060 002	AC CORD (POLARIZED)		1
⊙ 9	146 0925 009	ANTENNA HOLDER		1
⚠ 10	233 5829 019	POWER TRANS		1
11	204 8354 004	HEAD PHONE JACK		1
12	212 1045 007	2P PUSH SWITCH (SP)		1
13	212 1074 007	1P PUSH SWITCH		1
⊙ 14	146 1166 401	INNER PANEL		1
15	113 1367 103	PUSH BUTTON (FUNCTION)		1
16	113 1368 306	PUSH BUTTON (PRESET)		1
17	113 1356 004	PUSH BUTTON (MARU)		3
18	212 4388 907	TACT SWITCH		20
⚠ 19	212 1075 006	POWER SWITCH	SW501	1
20	393 4043 004	FLD (FIP10TM7)		1
21	499 0150 008	REMOTE SENSOR	(SBX1610-52)	1
⊙ 22	414 0592 005	SHIELD PLATE		1
⊙ 23	461 0501 005	RUBBER SHEET		1
⊙ 24	412 3048 107	VOL.BRACKET		1
⊙ 25	414 0580 004	SHIELD PLATE		1
⊙ 26	412 3433 000	BRACKET (TUNER)		1
27	112 0647 009	VOLUME KNOB		1
28	112 0646 000	MARU KNOB (S)		4
⊙ 29	144 2029 114	FRONT PANEL ASS'Y		1
30	113 1185 042	POWER BUTTON ASS'Y		1
⊙ 31	105 1010 103	BOTTOM COVER		1
32	104 0194 001	FOOT ASS'Y		4
⊙ 33	102 0426 142	TOP COVER		1
⊙ 34	461 0501 005	RUBBER SHEET		2
⊙ 35	122 0146 015	HIMERON SHEET		1
⊙ 36	461 0397 086	SPACER RUBBER		1
⊙ 37	411 1141 100	TRANS CHASSIS		1
⚠ 38	214 0142 004	RELAY (TV-5)	RL501	1
39	214 0129 001	RELAY (HD2TU)	RL401	1
⚠ 40	206 1046 027	FUSE 5A	F501	1
41	204 8260 004	MINI JACK		1
42	205 0433 010	ANT TERMINAL (F)		1
43	205 0472 013	8P SP TERMINAL		1
⚠ 44	203 3941 008	AC OUTLET (2P)		1
45	204 8278 009	6P PIN JACK (S-GND)		2
46	201 8266 008	4P PIN JACK (S-GND)		1
47	204 8309 004	4P PIN JACK (C-GND)	VIDEO	1
48	216 0064 007	FRONT END		1
⊙ 49	412 3432 001	RADIATOR BRACKET		1
⊙ 50	417 0400 028	POWER RADIATOR		1
51	254 4374 708	8200μF Electrolytic Cap	C503, 504	2
52	273 0389 002	Transistor	2SC3855 (O/P/Y) (Z)	2
53	271 0240 006	Transistor	2SA1491 (O/P/Y) (Z)	2
54	274 0136 012	Transistor	2SD1913 (R/S)	1
55	272 0093 010	Transistor	2SB1274 (R/S)	1
56	415 0234 007	INSULATING SHEET		4
57	211 0586 001	VARIABLE 100kohm	VR251	1
58	211 0665 003	VARIABLE		1
SCREWS AND NUTS				
201	473 8007 009	CUP SCREW 3×12		4
202	473 8007 025	CUP SCREW 3×8		4
203	473 7508 017	TAPPING SCREW 3×10 (P)	Black	11
204	473 7002 018	TAPPING SCREW 3×8 (S)		17
205	473 7015 018	TAPPING SCREW 3×8 (S)	Black	11
206	473 7006 027	TAPPING SCREW 3×10 (S)	Black	1
207	477 0263 005	3P SWELLING SCREW	Black	4
208	477 0064 107	FIXING SCREW	Black	15
209	473 7002 018	TAPPING SCREW		4
PACKING AND ACCESSORIES (not included EXPLODED VIEW)				
301	505 8006 019	ENVELOPE		1
302	511 2239 007	OPERATING INSTRUCTIONS		1
303	515 0418 505	DAI WARRANTY FORM 4		1
304	231 1129 005	AM LOOP ANTENNA		1
305	395 0019 009	FM ANTENNA		1
306	529 0079 008	FM ANTENNA ADAPTOR		1
307	499 0165 103	REMOTE CONTROL UNIT	(RC-129)	1
308	505 9102 006	POLY COVER		1
309	504 9102 003	STYRENE PAPER		1
310	504 0092 060	STYRENE PAPER		1
311	503 0777 104	CUSHION		2
312	502 0741 043	PAD		1
313	501 1448 025	CARTON CASE		1

PARTS LIST OF EXPLODED VIEW (DRA-335R)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
⊙ 1	1U-2344A	MAIN UNIT		1
1-1		MAIN UNIT		
1-2		POWER SW UNIT		
1-3		VOLUME UNIT		
1-4		SP SW UNIT		
1-5		H/P UNIT		
⊙ 2	1U2346B	MI-COM UNIT		1
⊙ 3	1U2347A	TUNER UNIT		1
3-1		TUNER UNIT		
4	—	—		
⊙ 5	105 1011 018	BACK PANEL		1
⊙ 6	411 0855 219	SIDE CHASSIS		1
⚠ 7	445 0056 008	CORD BUSH		1
⚠ 8	206 2060 002	AC CORD (POLARIZED)		1
9	146 0925 009	ANTENNA HOLDER		1
⚠ 10	233 5825 013	POWER TRANS		1
11	204 8354 004	HEAD PHONE JACK		1
12	212 1045 007	2P PUSH SWITCH (SP)		1
13	—	—		
⊙ 14	146 1166 401	INNER PANEL		1
15	113 1367 103	PUSH BUTTON (FUNCTION)		1
16	113 1368 306	PUSH BUTTON (PRESET)		1
17	113 1356 004	PUSH BUTTON (MARU)		2
18	212 4388 907	TACT SWITCH		19
⚠ 19	212 1075 006	POWER SWITCH	SW501	1
20	393 4043 004	FLD (FIP10TM7)		1
21	499 0150 008	REMOTE SENSOR	(SBX1610-52)	1
⊙ 22	414 0592 005	SHIELD PLATE		1
⊙ 23	461 0501 005	RUBBER SHEET		1
⊙ 24	412 3048 107	VOL.BRACKET		1
⊙ 25	414 0580 004	SHIELD PLATE		1
⊙ 26	412 3433 000	BRACKET (TUNER)		1
27	112 0647 009	VOLUME KNOB		1
28	112 0646 000	MARU KNOB (S)		4
⊙ 29	144 2029 101	FRONT PANEL ASS'Y		1
30	113 1185 402	POWER BUTTON ASS'Y		1
⊙ 31	105 1010 103	BOTTOM COVER		1
32	104 0194 001	FOOT ASS'Y		4
⊙ 33	102 0426 142	TOP COVER		1
⊙ 34	461 0501 005	RUBBER SHEET		2
⊙ 35	122 0146 015	HIMERON SHEET		1
⊙ 36	461 0397 073	SPACER RUBBER		1
⊙ 37	411 1141 100	TRANS CHASSIS		1
38	—	—		
39	214 0128 002	RELAY (HD2TU)	RL401	1
⚠ 40	206 1039 092	FUSE 4A	F501	1
41	204 8260 004	MINI JACK		1
42	205 0433 010	ANT TERMINAL (F)		1
43	205 0472 013	8P SP TERMINAL		1
⚠ 44	203 3941 008	AC OUTLET (2P)		1
45	204 8278 009	6P PIN JACK (S-GND)		1
46	201 8266 008	4P PIN JACK (S-GND)		1
47	—	—		
48	216 0064 007	FRONT END		1
⊙ 49	412 3434 009	RADIATOR BRACKET		1
⊙ 50	417 0400 002	POWER RADIATOR		1
51	252 4355 002	6800μF Electrolytic Cap	C503, C504	2
52	273 0387 004	TRANSISTOR	2SC3853 (O/P/Y) (Z)	2
53	271 0239 004	TRANSISTOR	2SA1489 (O/P/Y) (Z)	2
54	—	—		
55	—	—		
56	415 0234 007	INSULATING SHEET		4
57	211 0586 001	VARIABLE 100kohm		1
58	211 0665 003	VARIABLE		1
SCREWS AND NUTS				
201	473 8007 009	CUP SCREW 3×12		4
202	473 8007 025	CUP SCREW 3×8		4
203	473 7508 017	TAPPING SCREW 3×10 (P)	Black	11
204	473 7002 018	TAPPING SCREW 3×8 (S)		17
205	473 7015 018	TAPPING SCREW 3×8 (S)	Black	11
206	473 7006 027	TAPPING SCREW 3×10 (S)	Black	1
207	477 0263 005	3P SWELLING SCREW	Black	4
208	477 0064 107	FIXING SCREW		12
209	473 7002 018	TAPPING SCREW 4×6(S)		4
PACKING AND ACCESSORIES (not included EXPLODED VIEW)				
301	505 8006 019	ENVELOPE		1
302	511 2239 007	OPERATING INSTRUCTIONS		1
303	515 0418 505	DAI WARRANTY HOME 4		1
304	231 1129 005	AM LOOP ANTENNA		1
305	395 0019 009	FM ANTENNA		1
306	529 0079 008	FM ANTENNA ADAPTOR		1
307	499 0196 004	REMOTE CONTROL UNIT	(RC129A)	1
308	505 9102 006	POLY COVER		1
309	504 9102 003	STYRENE PAPER		1
310	504 0092 060	STYRENE PAPER		1
311	503 0777 104	CUSHION		2
312	502 0741 043	PAD		1
313	501 1448 038	CARTON CASE		1

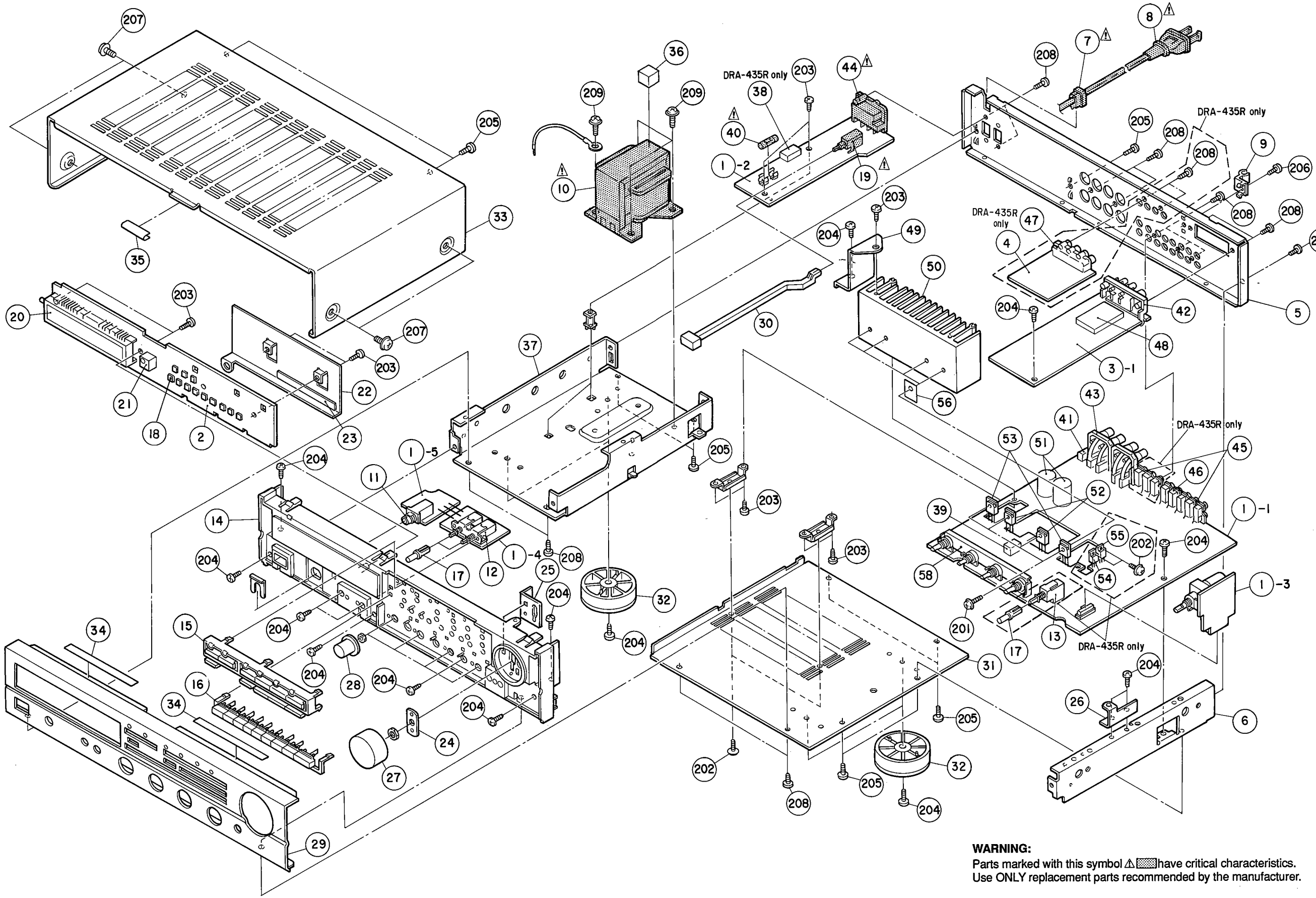
NOTE FOR PARTS LIST

- 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 "l" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark " ★ " is not illustrated in the exploded view.

WARNING:

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

EXPLODED VIEW OF CHASSIS AND CABINET (DRA-435R/335R)



NOTE FOR PARTS LIST

- Part indicated with the mark " ⊛ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- 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.: RN 14K 2E 182 G FR

Type	Shape and performance	Power	Resistance	Allowable error	Others
RD : Carbon RC : Fixed RS : Metallic film RW : Winding RN : Metal film RK : Metal mixture		2B : 1/4W 2E : 1/2W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W		F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse resistor F : Lead wire forming

Resistance
1 8 2 ⇨ 1800Ω = 1.8kΩ
- 2: Indicates number of zeros after effective number
- 1 8: 2-digit effective number, decimal point indicated by R.
- Units: Ω

• Capacitors

Ex.: CE 04W 1H 2R2 M BP

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

Capacity
2 R 2 ⇨ 2.2μF
- 2: 1-digit effective number, decimal point indicated by R.
- R 2: 2-digit effective number, decimal point indicated by R.

- Units: μF, (for P, pF (μμF)
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PRINTED WIRING BOARD PARTS LIST

1U-2345A MAIN UNIT (DRA-435RPU)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	263 0774 005	IC RC4558D-D(RAY)	
IC201	262 0699 006	IC TC9164N	
IC251	263 0476 002	IC LB1639	
IC605	263 0793 002	IC NJM7806FA(S)	
TR201	269 0107 900	Transistor RN1241(A/B)	
TR202,203	269 0025 901	Transistor RN1202(10K-10K)	
TR301,302	269 0107 900	Transistor RN1241(A/B)	
TR303~306	271 0094 919	Transistor 2SA970(BL)	
TR307~312	273 0235 923	Transistor 2SC1841-T(E/F)	
TR313,314	271 0131 924	Transistor 2SA988-T(F/E)	
TR315,316	273 0198 918	Transistor 2SC1815(BL)	
TR317,318	272 0107 906	Transistor 2SB1328(P)	
TR319,320	274 0151 903	Transistor 2SD2004(P)	
TR321,322	271 0240 006	Transistor 2SA1491 (O/P/Y)(Z)	
TR323,324	273 0389 002	Transistor 2SC3855 (O/P/Y)(Z)	
TR325,326	273 0235 923	Transistor 2SC1841-T(E/F)	
TR331,332	271 0131 924	Transistor 2SA988-T(F/E)	
TR401	273 0317 906	Transistor 2SC2458(BL)	
TR402	271 0191 906	Transistor 2SA1048(GR)	
TR403	273 0317 906	Transistor 2SC2458(BL)	
TR404	269 0029 907	Transistor RN1204(47K/47K)	
TR405	269 0107 900	Transistor RN1241(A/B)	
TR406	271 0131 924	Transistor 2SA988-T(F/E)	
TR407,408	273 0235 923	Transistor 2SC1841-T(E/F)	
TR411	269 0030 909	Transistor RN2204(47K/47K)	
TR412	269 0029 907	Transistor RN1204(47K/47K)	
TR413	274 0136 012	Transistor 2SD1913(R/S)	
TR415	273 0235 923	Transistor 2SC1841-T(E/F)	
TR416	271 0094 919	Transistor 2SA970(BL)	
TR417	272 0093 010	Transistor 2SB1274(R/S)	
TR419	273 0187 916	Transistor 2SC2240(BL)	
TR501	271 0131 924	Transistor 2SA988-T(F/E)	
TR502,503	273 0317 906	Transistor 2SC2458(BL)	
TR614	271 0191 906	Transistor 2SA1048(GR)	
TR615,616	273 0317 906	Transistor 2SC2458(BL)	
TR617	269 0029 907	Transistor RN1204(47K/47K)	
D209,210	276 0432 903	Diode 1SS270A	
D301,302	276 0432 903	Diode 1SS270A	
D303~306	276 0049 914	Diode 1S2076A	
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	
D431	276 0553 905	Diode 1SR35-200A	
D491,492	276 0432 903	Diode 1SS270A	
D501,502	276 0553 905	Diode 1SR35-200A	
D503	276 0432 903	Diode 1SS270A	
D504,505	276 0553 905	Diode 1SR35-200A	
D506,507	276 0553 905	Diode 1SR35-200A	
D508	276 0432 903	Diode 1SS270A	
D509	276 0305 001	Diode S4VB20	
D604	276 0432 903	Diode 1SS270A	
D605	276 0049 914	Diode 1S2076A	
D606	276 0553 905	Diode 1SR35-200A	
D607,608	276 0432 903	Diode 1SS270A	
D609	276 0432 903	Diode 1SS270A	
ZD401	276 0465 925	Zener Diode HZS7B-3TD	
ZD403,404	276 0477 926	Zener Diode HZS16-3TD	
ZD501	276 0482 911	Zener Diode HZS27-2TD	
ZD502	276 0582 905	Zener Diode HZS9A2LTD	
ZD601	276 0582 905	Zener Diode HZS9A2LTD	
SC401	279 0016 904	Thyristor SF0R1A42	
RESISTORS GROUP (Not included Carbon Film ±5% 1/4W)			
R253~256	244 2050 933	Metallic 180ohm, 1W	RS14B3A181JST(S)
R311~314	241 2380 963	Carbon 2.2kohm, 1/4W	RD14B2E222JNBST
R341,342	241 2377 976	Carbon 130ohm, 1/4W	RD14B2E131JNBST
R347,348	241 2377 905	Carbon 68ohm, 1/4W	RD14B2E680JNBST
R353,354	241 2378 920	Carbon 220ohm, 1/4W	RD14B2E221JNBST
R355~362	244 2043 982	Metallic 0.22ohm, 1W	RS14B3AR22JST(S)
R367~370	241 2379 987	Carbon 1kohm, 1/4W	RD14B2E102JNBST
R381,382	241 2387 940	Carbon 4.7ohm, 1/4W	RD14B2E4R7JNBST
R383,384	241 2432 905	Carbon 470ohm, 1/4W	RD14B2E471JNBPT
R391,392	241 2377 976	Carbon 130ohm, 1/4W	RD14B2E131JNBST
R409	244 2051 990	Metallic 4.7kohm, 1W	RS14B3A472JST(S)
R431,432	241 2387 940	Carbon 4.7ohm, 1/4W	RD14B2E4R7JNBST
R433	244 2052 973	Metallic 560ohm, 1W	RS14B3A561JST(S)
R451	244 2043 908	Metallic 680ohm, 1W	RS14B3A681JST(S)
R503	241 2387 908	Carbon 1ohm, 1/4W	RD14B2E010JNBST
R504	241 2379 903	Carbon 470ohm, 1/4W	RD14B2E471JNBST
R508	242 0073 000	Fixed 2.2Mohm, 1/2W	RC05GF2H225K
R509	244 2043 924	Metallic 68ohm, 1W	RS14B3A680JST(S)
R519~522	244 2043 937	Metallic 10ohm, 1W	RS14B3A100JST(S)
R588	244 2051 961	Metallic 100ohm, 1W	RS14B3A101JST(S)
R681	244 2051 987	Metallic 4.7ohm, 1W	RS14B3A4R7JST(S)
VR201, 301~303	211 0665 003	Variable	V1604V20F—K
VR251	211 0586 001	Variable 100kohm	V1620V25FB104R
VR305,306	211 6064 048	SemiFixed 5kohm	V06PB502
CAPACITORS GROUP			
C101,102	253 1179 929	Ceramic 150pF/50V	CK45B1H151KT(DD-3)
C103,104	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C105,106	254 4254 925	Electrolytic 33μF/16V	CE04W1C330MT(SME)
C107,108	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C109,110	255 1209 905	Film 0.0056μF/50V	CQ93M1H562JT
C111,112	253 1180 947	Ceramic 0.0015μF/50V	CK45B1H152KT(DD-3)
C113,114	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C115,117	253 1181 917	Ceramic 0.022μF/50V	CK45B1H223ZT(DD-3)
C121	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C201,202	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C203,204	253 1179 990	Ceramic 560pF/50V	CK45B1H561KT(DD-3)
C205,206	255 1216 901	Film 0.022μF/50V	CQ93M1H223JT
C207~209	253 1148 905	Ceramic 0.022μF/50V	CK45F1H223ZT

Ref. No.	Part No.	Part Name	Remarks
C210	253 4412 900	Ceramic 10pF/50V	CC45SL1H100DT
C211	253 1148 905	Ceramic 0.022μF/50V	CK45F1H223ZT
C271	254 4252 927	Electrolytic 47μF/10V	CE04W1A470MT(SME)
C272	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C273,274	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C281~283	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C301,302	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33MT(SME)
C303~306	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C307,308	253 1180 921	Ceramic 0.001μF/50V	CK45B1H102KT(DD-3)
C309,310	254 4396 906	Electrolytic 100μF/63V	CE04W1J101MT(SMG)
C311,312	254 4254 925	Electrolytic 33μF/16V	CE04W1C330MT(SME)
C313,314	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C315,316	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C317,318	255 1217 900	Film 0.027μF/50V	CQ93M1H273JT
C319,320	256 1034 982	Metalized 0.12μF/50V	CF93A1H124JT
C321,322	255 1202 902	Film 0.0015μF/50V	CQ93M1H152JT
C323,324	255 1212 905	Film 0.01μF/50V	CQ93M1H103JT
C327,328	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT(DD-3)
C329,330	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C331,332	253 4478 902	Ceramic 22pF/500V	CC45SL2H220JT
C341,342	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C343,344	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C349~352	254 4263 945	Electrolytic 1μF/100V	CE04W2A010MT(SME)
C361,362	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C369,370	253 4537 908	Ceramic 27pF/50V	CC45SL1H270JT(DD-3)
C371,372	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT(DD-3)
C373,374	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C401	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331MT(SME)
C403	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7MT(SME)
C404	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C405	254 4260 980	Electrolytic 10μF/50V	CE04W1H100MT(SME)
C406	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C407,408	254 4260 980	Electrolytic 10μF/50V	CE04W1H100MT(SME)
C409,410	254 4256 907	Electrolytic 10μF/25V	CE04W1E100MT(SME)
C501,502	253 1151 905	Ceramic 0.0047μF/500V	CK45E2H472PT
C503,504	254 4374 708	Electrolytic 8200μF/	CE04W==822MC(DL)
C505	254 4263 958	Electrolytic 2.2μF/100V	CE04W2A2R2MT(SME)
C506,507	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C508	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C509	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
C510	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C511~514	255 1208 906	Film 0.0047μF/50V	CQ93M1H472JT
C515,516	253 8014 702	Ceramic 0.01μF/400V AC	CK45F2GAC103MC
C517	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C519~522	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
C523	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C643	259 0007 702	For Back up 8200μF	SB CAP==822=C
C644	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C645	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC(SME)
C646	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C647	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2MT(SME)
C670	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
C851,852	255 1210 907	Film 0.0068μF/50V	CQ93M1H682JT

Ref. No.	Part No.	Part Name	Remarks
OTHERS PARTS GROUP			
RL401	214 0129 001	RELAY(DH2TU)	
RL501	214 0142 004	RELAY(TV-5)	
F501	206 1046 027	FUSE 5A	
SW501	212 1075 006	POWER SWITCH	
	204 8260 004	MINI JACK	
	205 0472 013	8P SP TERMINAL	
	204 8354 004	HEAD PHONE JACK	
	212 1045 007	2P PUSH SWITCH(SP)	
	212 1074 007	1P PUSH SWITCH	
	203 3941 008	AC OUTLET (2P)	
	204 8278 009	6P PIN JACK (S-GND)	
	204 8266 008	4P PIN JACK (S-GND)	
	417 0400 028	POWER RADIATOR	
	205 0233 032	3P EH CONNECTOR BASE	
	205 0185 054	5P WIRE HOLDER	
	205 0185 025	2P WIRE HOLDER	
	205 0697 089	JL CONNECTOR(F-E)	
	205 0696 080	JL CONNECTOR(BT-E)	
	205 0343 087	8P CONN.BASE(KR-HP)	
	205 0375 013	11P CONN.BASE(KR-HP)	
	002 0012 052	2C RIBBON CABLE	
	002 0041 007	5C RIBBON CABLE	
	203 4791 011	3P EH-SCN CON CORD	
	204 0309 015	6P EH-SCN CON CORD	
	203 6306 064	4P KR-DA CON CORD	
	203 0494 008	1P CONTACT ASS'Y	
	203 0482 036	1P SIN CON CORD	

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

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC101	263 0774 005	IC RC4558D-D(RAY)	
IC201	262 0699 006	IC TC9164N	
IC251	263 0476 002	IC LB1639	
IC605	263 0793 002	IC NJM7806FA(S)	
TR201	269 0107 900	Transistor RN1241(A/B)	
TR202,203	269 0025 901	Transistor RN1202(10K-10K)	
TR301,302	269 0107 900	Transistor RN1241(A/B)	
TR303~306	271 0094 919	Transistor 2SA970(BL)	
TR307~312	273 0235 923	Transistor 2SC1841-T(E/F)	
TR313,314	271 0131 924	Transistor 2SA988-T(F/E)	
TR315,316	273 0198 918	Transistor 2SC1815(BL)	
TR317,318	272 0053 908	Transistor 2SB647A(C)	
TR319,320	274 0060 007	Transistor 2SD667A(C)	
TR321,322	271 0239 004	Transistor 2SA1489 (O/P/Y)(Z)	
TR323,324	273 0387 004	Transistor 2SC3853 (O/P/Y)(Z)	
TR325,326	273 0235 923	Transistor 2SC1841-T(E/F)	
TR331,332	271 0191 906	Transistor 2SA1048(GR)	
TR401	273 0317 906	Transistor 2SC2458(BL)	
TR402	271 0191 906	Transistor 2SA1048(GR)	
TR403	273 0317 906	Transistor 2SC2458(BL)	
TR404	269 0029 907	Transistor RN1204(47K/47K)	
TR405	269 0107 900	Transistor RN1241(A/B)	
TR406	271 0191 906	Transistor 2SA1048(GR)	
TR407,408	273 0317 906	Transistor 2SC2458(BL)	
TR411	269 0030 909	Transistor RN2204(47K/47K)	
TR412	269 0029 907	Transistor RN1204(47K/47K)	
TR413	274 0151 903	Transistor 2SD2004(P)	
TR415	273 0317 906	Transistor 2SC2458(BL)	
TR416	271 0094 919	Transistor 2SA970(BL)	
TR417	274 0107 906	Transistor 2SB1328(P)	
TR419	273 0187 916	Transistor 2SC2240(BL)	
TR501	271 0191 906	Transistor 2SA1048(GR)	
TR614	271 0191 906	Transistor 2SA1048(GR)	
TR615,616	273 0317 906	Transistor 2SC2458(BL)	
TR617	269 0029 907	Transistor RN1204(47K/47K)	
D209,210	276 0432 903	Diode 1SS270A	
D301,302	276 0432 903	Diode 1SS270A	
D303~306	276 0049 914	Diode 1S2076A	
D307,308	276 0432 903	Diode 1SS270A	
D401~403	276 0432 903	Diode 1SS270A	
D431	276 0432 903	Diode 1SS270A	
D501,502	276 0553 905	Diode 1SR35-200A	
D503	276 0432 903	Diode 1SS270A	
D504~507	276 0553 905	Diode 1SR35-200A	
D509	276 0305 001	Diode S4VB20	
D604	276 0432 903	Diode 1SS270A	
D605	276 0049 914	Diode 1S2076A	
D606	276 0553 905	Diode 1SR35-200A	
D607~609	276 0432 903	Diode 1SS270A	
ZD401	276 0465 925	Zener Diode HZS7B-3TD	
ZD403,404	276 0477 926	Zener Diode HZS16-3TD	
ZD501	276 0482 911	Zener Diode HZS27-2TD	
ZD502	276 0582 905	Zener Diode HZS9A2LTD	
ZD601	276 0582 905	Zener Diode HZS9A2LTD	
SC401	279 0016 904	Thyristor SF0R1A42	

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP (Not included Carbon Film ±5% 1/4W)			
R255,256	244 2052 931	Metallic 390ohm, 1W	RS14B3A391JST(S)
R311~314	241 2380 963	Carbon 2.2kohm, 1/4W	RD14B2E222JNBST
R341,342	241 2377 976	Carbon 130ohm, 1/4W	RD14B2E131JNBST
R347,348	241 2377 905	Carbon 68ohm, 1/4W	RD14B2E680JNBST
R353,354	241 2378 920	Carbon 220ohm, 1/4W	RD14B2E221JNBST
R355~358	244 2043 982	Metallic 0.22ohm, 1W	RS14B3AR22JST(S)
R367,368	241 2379 987	Carbon 1kohm, 1/4W	RD14B2E102JNBST
R369,370	241 2378 962	Carbon 330ohm, 1/4W	RD14B2E331JNBST
R381,382	241 2387 940	Carbon 4.7ohm, 1/4W	RD14B2E4R7JNBST
R383,384	241 2432 905	Carbon 470ohm, 1/4W	RD14B2E471JNBPT
R391,392	241 2377 976	Carbon 130ohm, 1/4W	RD14B2E131JNBST
R409	244 2051 990	Metallic 4.7kohm, 1W	RS14B3A472JST(S)
R431,432	241 2387 940	Carbon 4.7ohm, 1/4W	RD14B2E4R7JNBST
R433	244 2052 973	Metallic 560ohm, 1W	RS14B3A561JST(S)
R451	244 2052 931	Metallic 390ohm, 1W	RS14B3A391JST(S)
R503	241 2387 908	Carbon 1ohm, 1/4W	RD14B2E010JNBST
R504	241 2379 903	Carbon 470ohm, 1/4W	RD14B2E471JNBST
R508	242 0073 000	Fixed 2.2Mohm, 1/2W	RC05GF2H225K
R519~522	244 2043 937	Metallic 10ohm, 1W	RS14B3A100JST(S)
R681	244 2051 987	Metallic 4.7ohm, 1W	RS14B3A4R7JST(S)
VR201 301~303	211 0665 003	Variable	V1604V20F----K
VR251	211 0586 001	Variable 100kohm	V1620V25FB104R
VR305,306	211 6064 048	SemiFixed 5kohm	V06PB502
CAPACITORS GROUP			
C101,102	253 1179 929	Ceramic 150pF/50V	CK45B1H151KT(DD-3)
C103,104	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C105,106	254 4254 925	Electrolytic 33μF/16V	CE04W1C330MT(SME)
C107,108	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C109,110	255 1209 905	Film 0.0056μF/50V	CQ93M1H562JT
C111,112	253 1180 947	Ceramic 0.0015μF/50V	CK45B1H152KT(DD-3)
C113,114	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C115,117	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C121	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C201,202	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C203,204	253 1179 990	Ceramic 560pF/50V	CK45B1H561KT(DD-3)
C205,206	255 1216 901	Film 0.022μF/50V	CQ93M1H223JT
C207,209	253 1148 905	Ceramic 0.022μF/50V	CK45F1H223ZT
C210	253 4412 900	Ceramic 10pF/50V	CC45SL1H100DT
C211	253 1148 905	Ceramic 0.022μF/50V	CK45F1H223ZT
C271	254 4252 927	Electrolytic 47μF/10V	CE04W1A470MT(SME)
C272	253 1181 917	Ceramic 0.022μF/50V	CK45B1H223ZT(DD-3)
C273,274	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C281~283	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C301,302	254 4260 922	Electrolytic 0.33μF/50V	CE04W1HR33MT(SME)
C303~306	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)

Ref. No.	Part No.	Part Name	Remarks
C307,308	253 1180 921	Ceramic 0.001μF/50V	CK45B1H102KT(DD-3)
C309,310	254 4261 918	Electrolytic 47μF/50V	CE04W1H470MT(SME)
C311,312	254 4254 925	Electrolytic 33μF/16V	CE04W1C330MT(SME)
C313,314	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C315,316	253 4538 949	Ceramic 100pF/50V	CC45SL1H101JT(DD-3)
C317,318	255 1217 900	Film 0.027μF/50V	CQ93M1H273JT
C319,320	256 1034 982	Metalized 0.12μF/50V	CF93A1H124JT
C321,322	255 1202 902	Film 0.0015μF/50V	CQ93M1H152JT
C323,324	255 1212 905	Film 0.01μF/50V	CQ93M1H103JT
C327,328	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT(DD-3)
C329,330	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C331,332	253 4478 902	Ceramic 22pF/500V	CC45SL2H220JT
C341,342	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C343,344	253 1181 917	Ceramic 0.022μF/50V	CK45F1H223ZT(DD-3)
C349~352	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C369,370	253 4537 908	Ceramic 27pF/50V	CC45SL1H270JT(DD-3)
C371,372	253 1179 945	Ceramic 220pF/50V	CK45B1H221KT(DD-3)
C373,374	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C401	254 4250 945	Electrolytic 330μF/6.3V	CE04W0J331MT(SME)
C403	254 4260 977	Electrolytic 4.7μF/50V	CE04W1H4R7MT(SME)
C404	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C405	254 4260 980	Electrolytic 10μF/50V	CE04W1H100MT(SME)
C406	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C407,408	254 4260 980	Electrolytic 10μF/50V	CE04W1H100MT(SME)
C409,410	254 4256 949	Electrolytic 100μF/50V	CE04W1H101MT(SME)
C501,502	253 1151 905	Ceramic 0.047μF/500V	CK45E2H472PT
C503,504	254 4355 002	Electrolytic 6800μF/50V	CE04W1H682MDL
C505	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2MT(SME)
C506,507	253 1181 904	Ceramic 0.01μF/50V	CK45F1H103ZT(DD-3)
C508	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C509	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
C510	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C511~514	255 1208 906	Film 0.0047μF/50V	CQ93M1H472JT
C515	253 8014 702	Ceramic 0.01μF/400V AC	CK45F2GAC103MC
C519~522	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
C523	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C643	259 0007 702	For Back up 8200μF	SB CAP==822=C
C644	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT(SME)
C645	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC(SME)
C646	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C647	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2MT(SME)
C670	256 1034 979	Metalized 0.1μF/50V	CF93A1H104JT
OTHERS PARTS GROUP			
RL401	214 0128 002	RELAY (DH24D2)	
F501	206 1039 092	FUSE 4A	
SW501	212 1075 006	POWER SWITCH	
	204 8260 004	MINI JACK	
	205 0472 013	8P SP TERMINAL (EAEK)	
	204 8354 004	HEAD PHONE JACK	
	212 1045 007	2P PUSH SWITCH(SP)	
	203 3941 008	AC OUTLET (2P)	
	204 8278 009	6P PIN JACK (S-GND)	
	204 8266 008	4P PIN JACK (S-GND)	
	417 0400 002	POWER RADIATOR	

Ref. No.	Part No.	Part Name	Remarks
	205 0185 054	5P WIRE HOLDER	
	205 0185 025	2P WIRE HOLDER	
	205 0697 089	JL CONNECTOR(F-E)	
	205 0696 080	JL CONNECTOR(BT-E)	
	205 0343 087	8P CONN.BASE(KR-PH)	
	205 0375 013	11P CONN.BASE(KR-PH)	
	002 0012 052	2C RIBBON CABLE	
	002 0041 007	5C RIBBON CABLE	
	204 0309 015	6P EH-SCN CON CORD	
	203 0494 008	1P CONTACT ASS'Y	
	203 0482 036	1P SIN CON CORD	

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

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC701	262 1396 104	IC TMP47C670N-1222	
TR701	269 0025 901	Transistor RN1202(10K-10K)	
TR702	269 0026 900	Transistor RN2202(10K-10K)	
TR703	273 0222 907	Transistor 2SC2458(Y/GR)	
D702~707	276 0432 903	Diode 1SS270A	
D713	276 0432 903	Diode 1SS270A	
D715	276 0432 903	Diode 1SS270A	
D716~718	276 0049 914	Diode 1S2076A	
D720	276 0049 914	Diode 1S2076A	
LD701~706	393 9416 908	LED SEL-2210R	
RESISTORS GROUP (Not included Cabon Film ±5% 1/4W)			
RA701	246 2053 004	Array 10kohm x5	RK99==103JP5
RA702	246 2054 003	Array 10kohm x7	RK99==103JP7
CAPACITORS GROUP			
C701	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C703	254 4250 055	Electrolytic 470μF/6.3V	CE04W0J471M (SME)
C704	254 4258 950	Electrolytic 100μF/35V	CE04W1V101MT(SME)
C706	253 4412 900	Ceramic 10pF/50V	CC45SL1H100DT
C707	254 4196 902	Electrolytic 0.1μF/50V	CE04W1H0R1MT(SRA)
C710	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103ZT
OTHER PARTS GROUP			
S701~720	212 4388 907	TACT SWITCH	
XL701	399 9018 003	CST 4.00 MGW	
	393 4043 004	FLD (FIP10TM7)	
	499 0150 008	REMOTE SENSOR	SBX1610-52
	204 2514 002	8P PH-PH CON CORD	
	204 6307 011	11P KR-KR CON CORD	
	204 2431 059	9P KR-KR CON CORD	
	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-2346B MI CON UNIT (DRA-335RPU)

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC701	262 1396 104	IC TMP47C670N-1222	
TR701	269 0025 901	Transistor RN1202(10K-10K)	
TR702	269 0026 900	Transistor RN2202(10K-10K)	
TR703	273 0222 907	Transistor 2SC2458(Y/GR)	
TR704	269 0025 901	Transistor RN1202(10K-10K)	
D702~707	276 0432 903	Diode 1SS270A	
D715	276 0432 903	Diode 1SS270A	
D716~718	276 0049 914	Diode 1S2076A	
D720	276 0049 914	Diode 1S2076A	
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 2053 004	Array 10Kohm x5	RK99==103JP5
RA702	246 2054 003	Array 10Kohm x7	RK99==103JP7
CAPACITORS GROUP			
C701	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT(SME)
C703	254 4250 055	Electrolytic 470μF/6.3V	CE04W0J471M(SME)
C704	254 4258 950	Electrolytic 100μF/35V	CE04W1V101MT(SME)
C706	253 4412 900	Ceramic 10pF/50V	CC45SL1H100DT
C710	253 1146 907	Ceramic 0.01μF/50V	CK45F1H103ZT
OTHER PARTS GROUP			
S701~717	212 4388 907	TACT SWITCH	
S719,720	212 4388 907	TACT SWITCH	
XL701	399 9018 003	CST 4.00 MGW	
	393 4043 004	FLD (FIP10TM7)	
	499 0150 008	REMOTE SENSOR	SBX1610-52
	204 2514 002	8P PH-PH CON CORD	
	204 6307 011	11P KR-KR CON CORD	
	204 2431 059	9P KR-KR CON CORD	
	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 SVC321SPA-D-2	
D601	276 0467 910	Zener Diode HZS9A-2TD	
RESISTORS GROUP (Not included Cabon Film ±5% 1/4W)			
R601	247 0004 906	Chip 39ohm, 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
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 10μF/16V	CE04W1C100MT (SME)
C602-607	257 0012 966	Ceramic-chip 0.01μF/50V	CK73F1H103ZT
C608	254 4254 938	Electrolytic 47μF/16V	CE04W1C470MT (SME)
C609	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C610	257 0012 982	Ceramic-chip 0.022μF/50V	CK73F1H223ZT
C611	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C612	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3MT (SME)
C613	254 4258 905	Electrolytic 4.7μF/35V	CE04W1V4R7MT (SME)
C614,615	257 0012 966	Ceramic-chip 0.01μF/50V	CK73F1H103ZT
C616	256 1034 940	Metalizedd 0.056μF/50V	CF93A1H563JT
C618	254 4254 912	Electrolytic 22μF/16V	CE04W1C220MT (SME)
C619	256 1034 937	Metalizedd 0.047μF/50V	CF93A1H473JT
C620	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT (SME)
C621,622	257 0006 972	Ceramic-chip 750pF/50V	CC73SL1H751JT
C623	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C624	257 0012 966	Ceramic-chip 0.01μF/50V	CK73F1H103ZT
C625.626	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C627	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22MT (SME)
C628	254 4254 938	Electrolytic 47μF/16V	CE04W1C470MT (SME)
C629,630	254 4260 951	Electrolytic 2.2μF/50V	CE04W1H2R2MT (SME)
C631	257 0012 966	Ceramic-chip 0.01μF/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 47μF/16V	CE04W1C470MT (SME)
C636	254 4260 906	Electrolytic 0.1μF/50V	CE04W1H0R1MT (SME)
C637	254 3056 917	Electrolytic 1μF/50V (Bipole)	CE04D1H010MBPT (SME)
C638	257 0012 966	Ceramic-chip 0.01μF/50V	CK73F1H103ZT
C639	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M (SME)
C640,641	257 0002 976	Ceramic-chip 16pF/50V	CC73SL1H160JT
C642	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT (SME)
C650	257 0012 982	Ceramic-chip 0.022μF/50V	CK73F1H223ZT
C651	257 0004 961	Ceramic-chip 100pF/50V	CC73SL1H101JT
C652	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C656	254 3056 917	Electrolytic 1μF/50V (Bipole)	CE04D1H010MBPT (SME)
C660	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT (SME)
C661	257 0004 961	Ceramic-chip 100pF/50V	CC73SL1H101JT
C662	254 4260 980	Electrolytic 10μF/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	

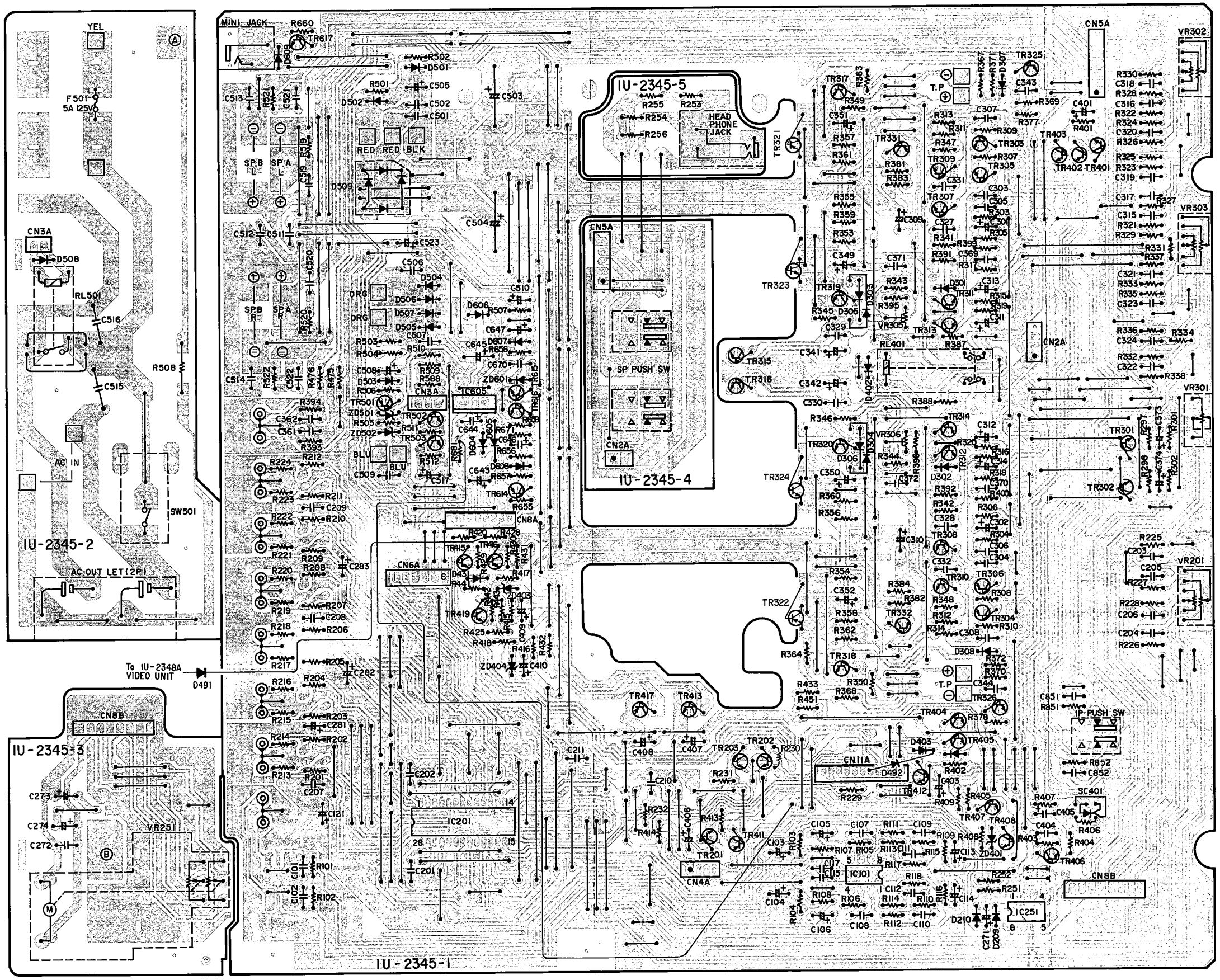
Ref. No.	Part No.	Part Name	Remarks
T602	231 4901 000	MW OSC COIL	
T603	231 2085 009	FM DET TRANS	
T604	231 1138 009	AM IFT	
	205 0433 010	ANT. TERMINAL(F)	
	216 0064 007	FRONT END	
	205 0233 061	6P EH CONNECTOR BASE	
	205 0343 090	9P CONN.BASE(KR-PH)	
	203 0504 024	1P CONTACT ASS'Y	

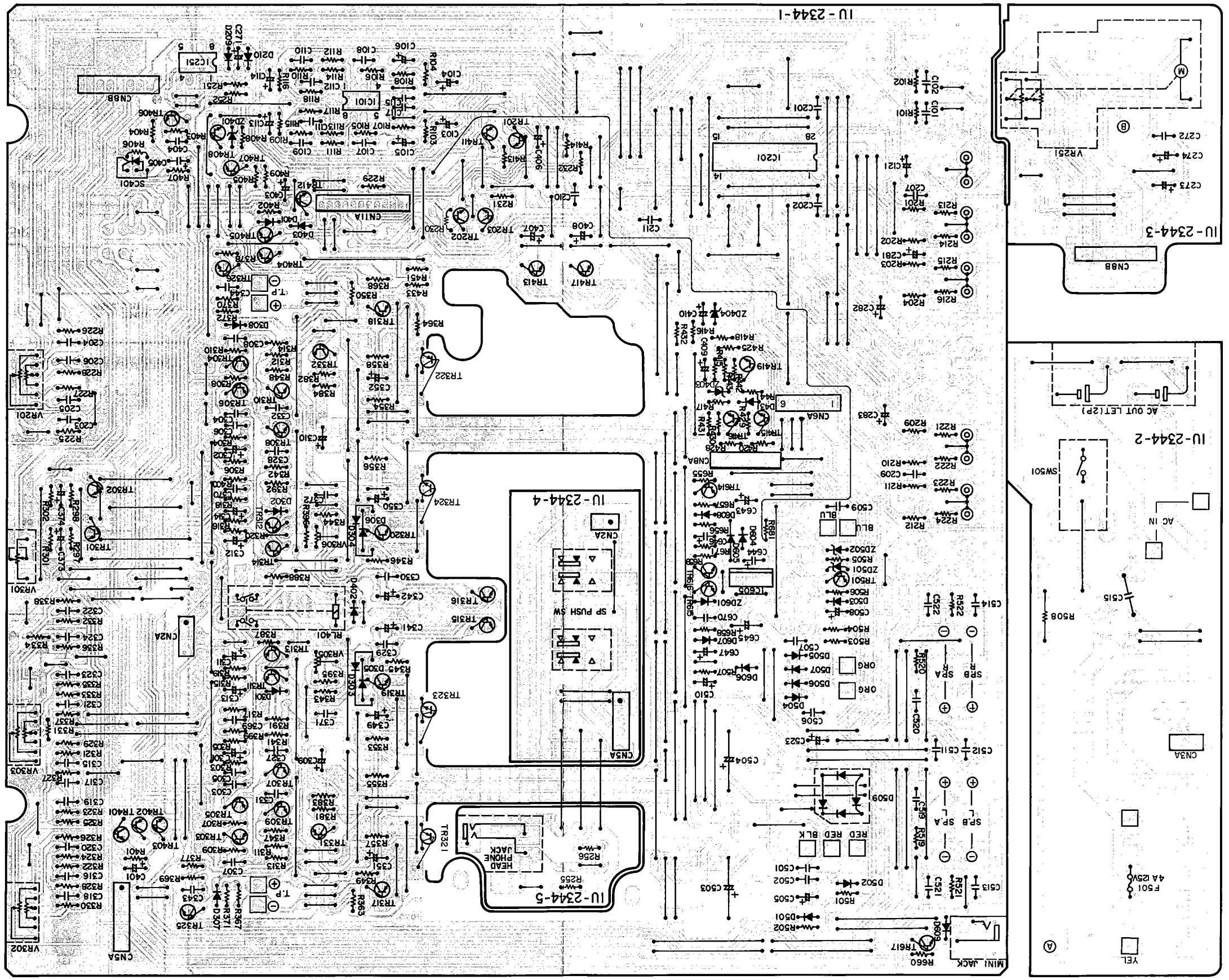
1U-2384A VIDEO UNIT (DRA-435RPU)

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 ±5% 1/4w)			
R819,820	244 2052 960	Metallic 220ohm, 1W	RS14B3A221JST(S)
CAPACITORS GROUP			
C801	254 4254 941	Electrolytic 100μF/16V	CE04W1C101MT (SME)
C802	254 4327 904	Electrolytic 1000μF/6.3V	CE04W0J102MT (SMG)
C803	254 4254 941	Electrolytic 100μF/16V	CE04W1C101MT (SME)
C805,806	254 4254 912	Electrolytic 22μF/16V	CE04W1C220MT (SME)
C807,808	254 4254 909	Electrolytic 10μF/16V	CE04W1C100MT (SME)
C809	254 4260 948	Electrolytic 1μF/50V	CE04W1H010MT (SME)
C814	254 4327 904	Electrolytic 1000μF/6.3V	CE04W0J102MT (SMG)
OTHERS PARTS GROUP			
	205 0343 045	4P CONN.BASE(KR-PH)	
	204 8309 004	4P PIN JACK (C-GND)	

PRINTED WIRING BOARD PATTERNS

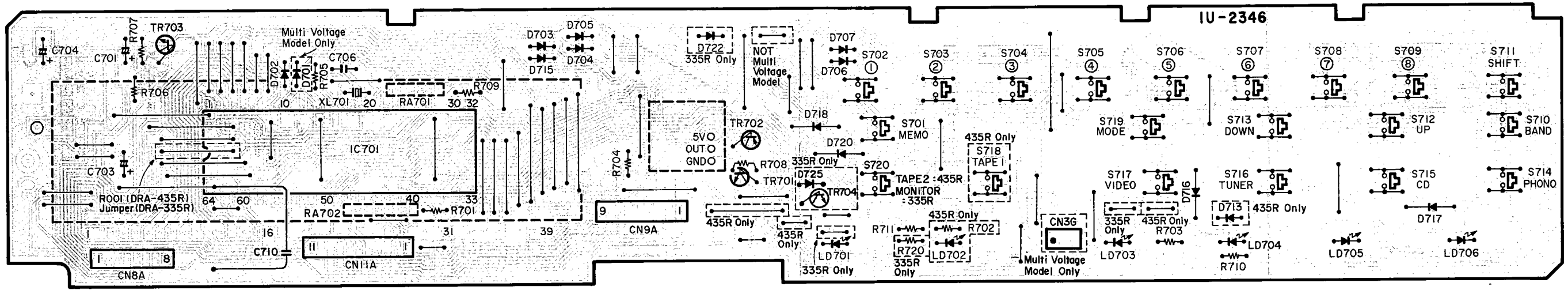
1U-2345A MAIN UNIT (DRA-435R)



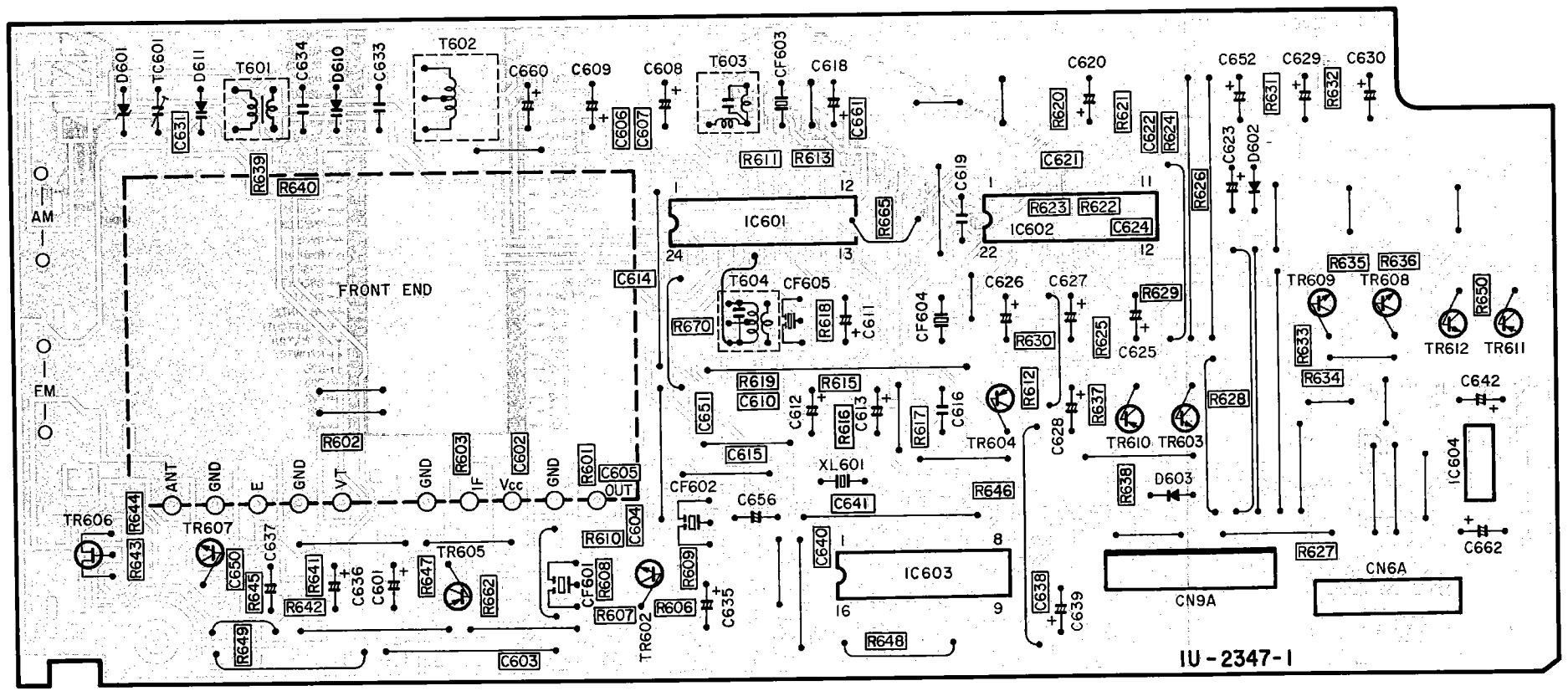


IU-2344A MAIN UNIT (DRA-335R)

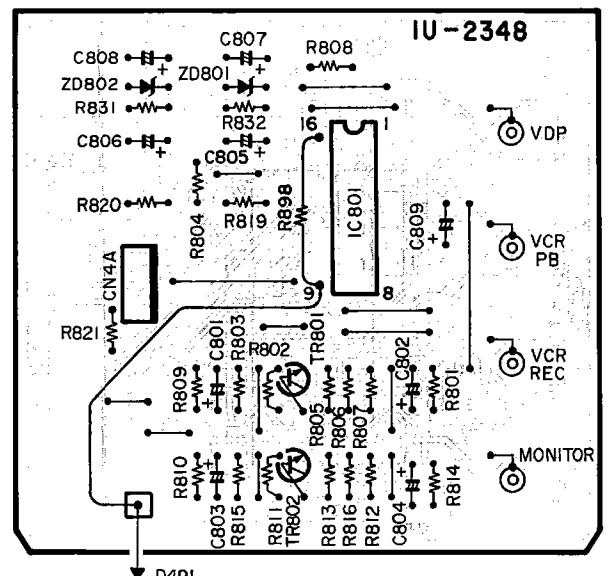
1U-2346A MI-COM UNIT (DRA-435R/335R)



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



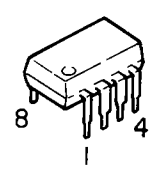
1U-2348A VIDEO UNIT (DRA-435R)

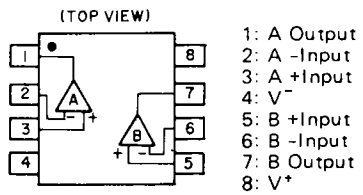


SEMICONDUCTORS

- **IC's**

RC4558DD





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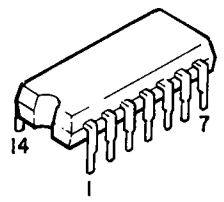
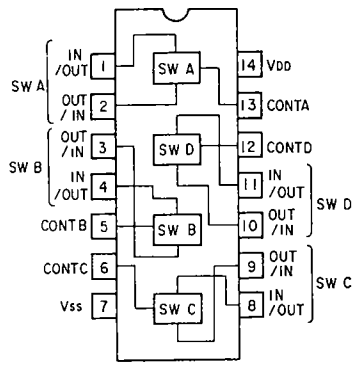
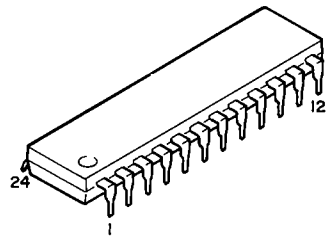
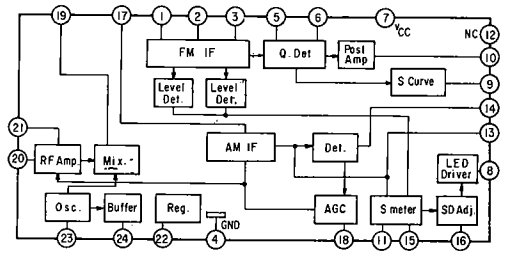




LA1267





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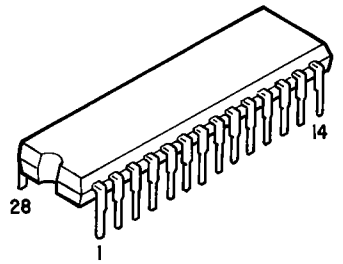

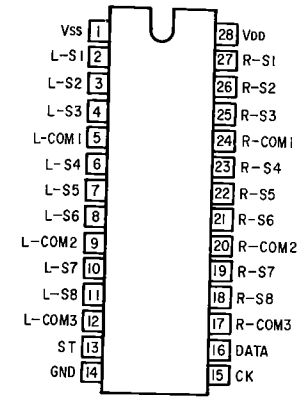

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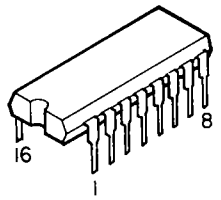
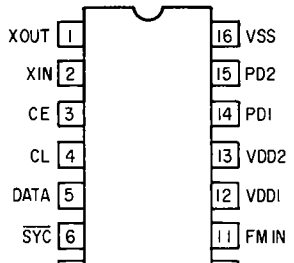
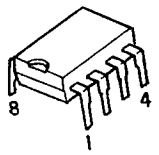
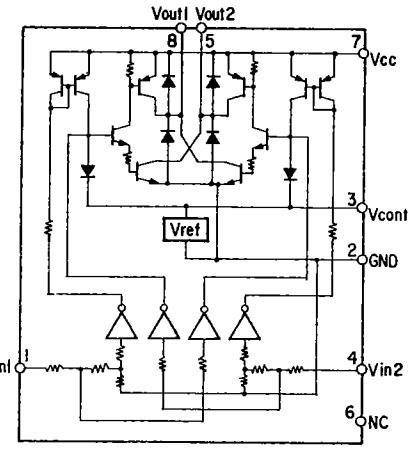




LB1639





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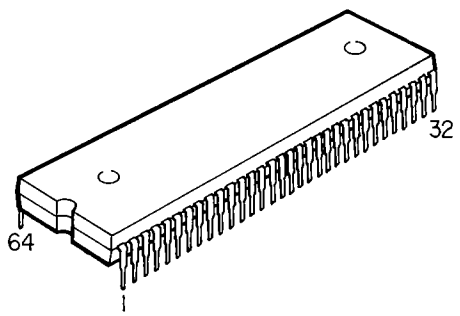

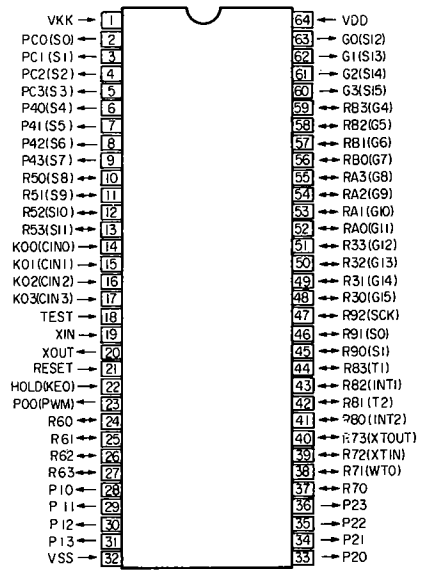

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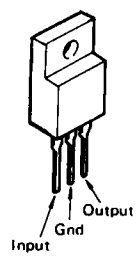
NJM7806FA(S)



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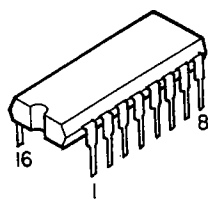

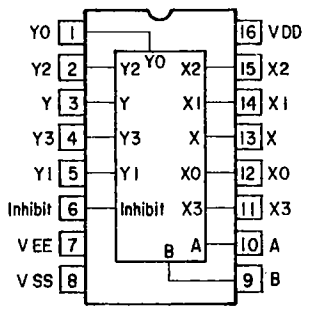

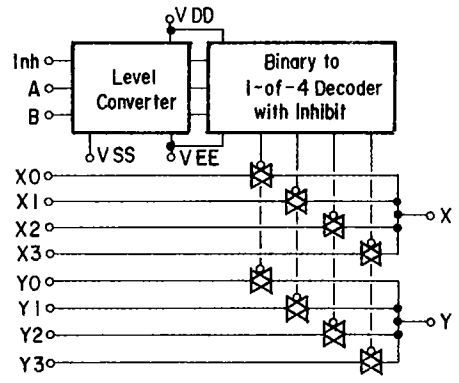

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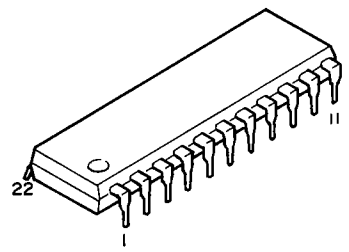
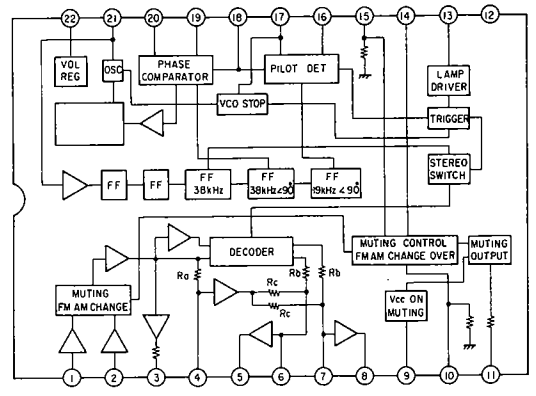
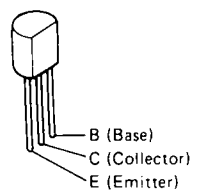


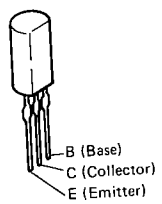


• Transistors

2SA1015(Y/GR)
2SA970(BL)
2SC1841(E/F)
2SC2240(BL)
2SC2878(A/B)
2SC1815(BL)
2SA988(E/F)



2SB647A(C)



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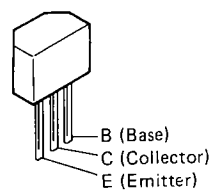
2SC2839(E)



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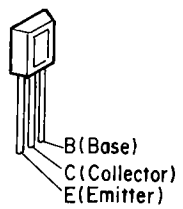
2SD2004(P)



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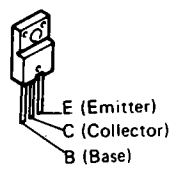
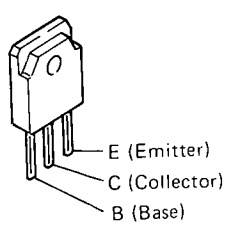
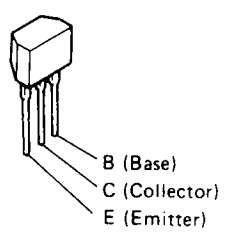
2SD1913(R/S)



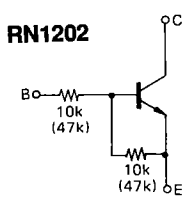
2SA1489(O/P/Y)(Z)
2SA1491(O/P/Y)(Z)
2SC3853(O/P/Y)(Z)
2SC3855(O/P/Y)(Z)



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

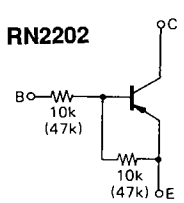


RN1202



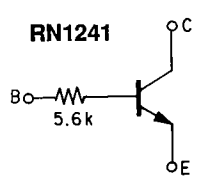
(RN1204)

RN2202



(RN2204)

RN1241



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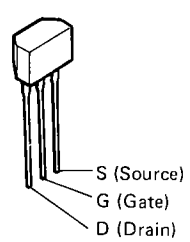
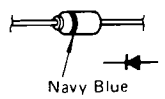
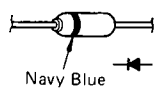


• Diodes & LED

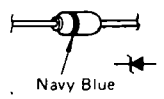
1SS270A



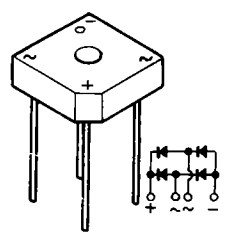
1S2076A



HZS9A-2 HZS5C-2
HZS27-2 HZS7B-3
HZS16-3



S4VB20



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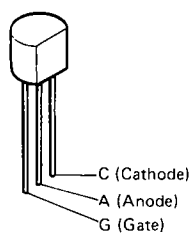

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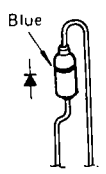

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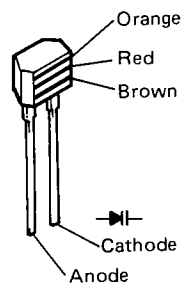
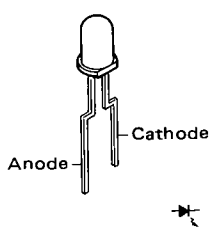
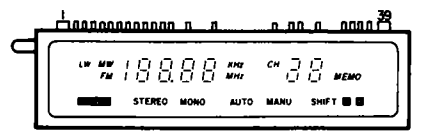


SEL-2210R(TP-2)



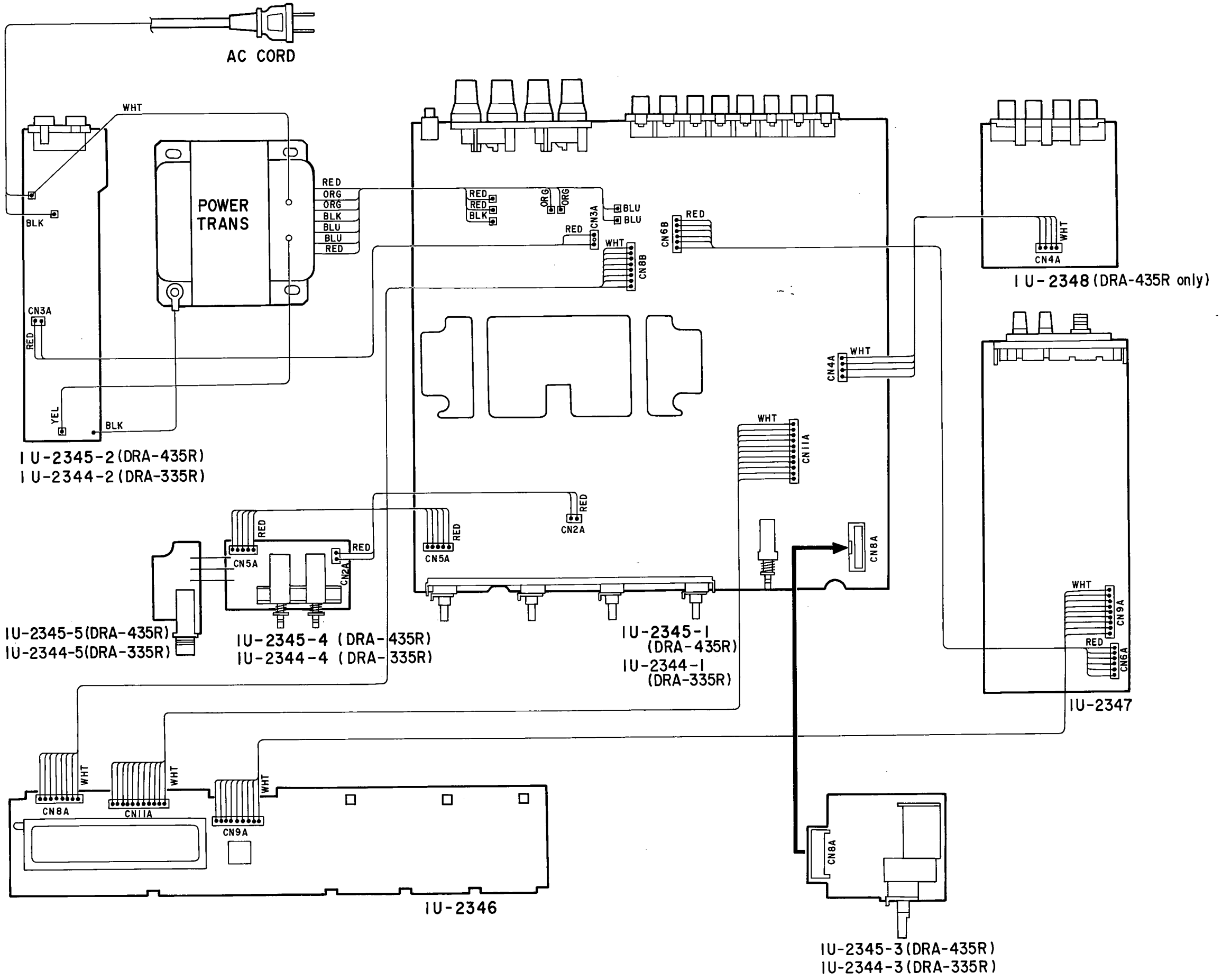
FLD(FIP10TM7)



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

WIRING DIAGRAM



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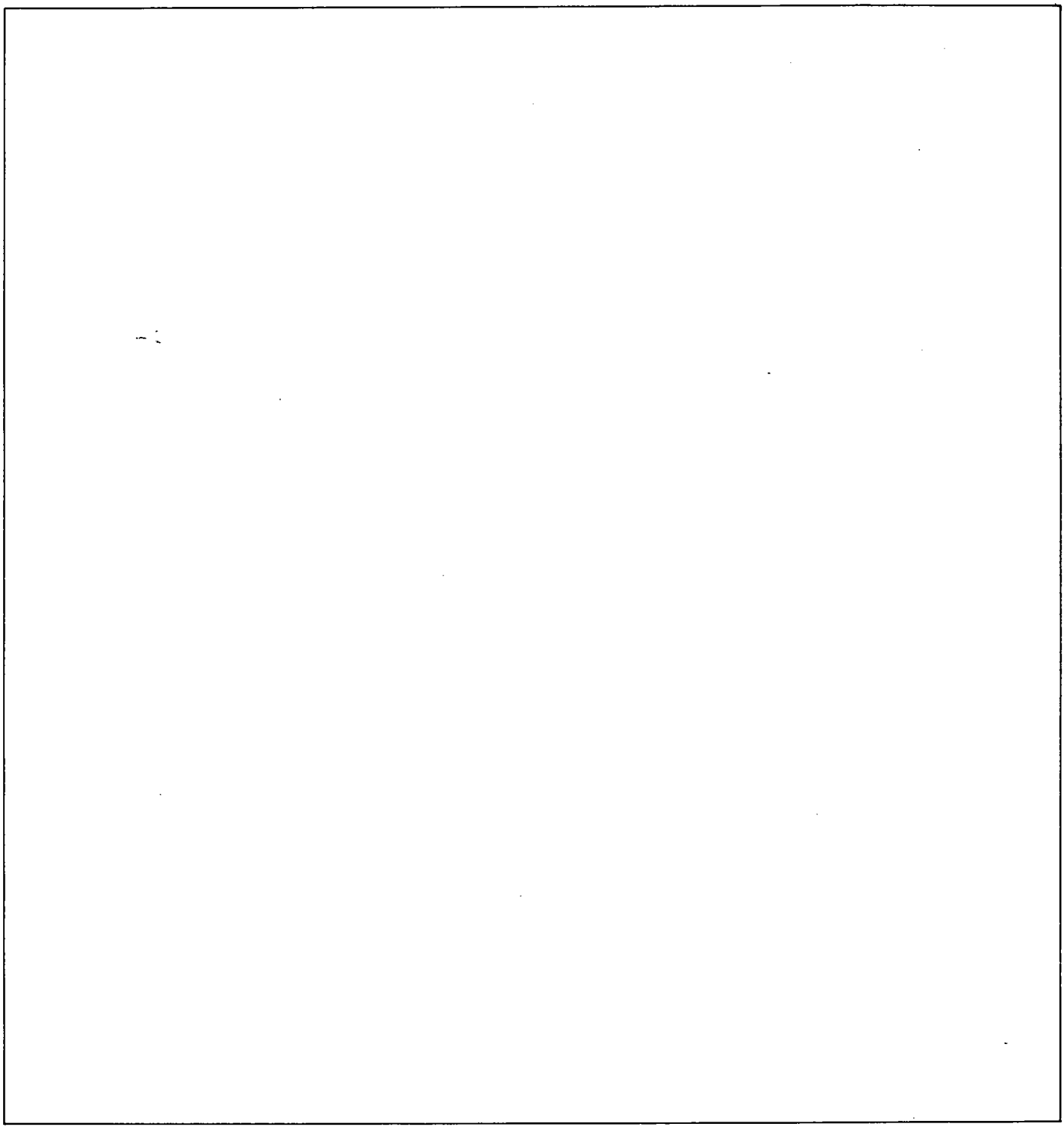

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