371

DENON

AV Surround Amplifier

SERVICE MANUAL

MODEL AVC-3030

AV SURROUND AMPLIFIER

CONTENTS

NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

- **Audio Section**

(Power amplifier)
Rated output:
(All properties shown are only for the power amplifier stage.)

MAIN (main 2ch driven)
110 W + 110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)
CENTER (center 1ch driven)
110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)
REAR (rear 2ch driven)
35 W + 35 W (8 ohms, 1 kHz with 0.05% THD)

Frequency response: 5 Hz to 50 kHz (Main in – speaker out)
Rated input level / impedance: 1 V/47 k ohms (Main in – speaker out)
Signal-to-noise ratio: 120 dB (Main in – speaker out)
Output terminals: Main: A or B 6 to 16 ohms
A + B 12 to 16 ohms
Center: 6 to 16 ohms
Rear: 6 to 16 ohms

(Pre-amplifier)
Line input (Each line input – FRONT PRE OUT)
Input sensitivity / impedance: 150 mV/47 k ohms PHONO (MM): 2.5 mV / 47 kohms, CD DIRECT: 150 mV / 33 kohms
Frequency response: 5 Hz to 100 kHz: ±3 dB
5 Hz to 150 kHz: ±3 dB (CD DIRECT)
Tone control range: BASS: ±10 dB at 100 Hz
TREBLE: ±10 dB at 10 kHz
Signal-to-noise ratio (FRONT PRE OUT): 92 dB
95 dB (CD DIRECT)
Distortion factor: 0.01% 1 kHz 1 V (BYPASS mode)
0.003% 1 kHz 3 V (CD DIRECT)
Rated output / Maximum output: 1 V/8 V (common for FRONT, CENTER, REAR, MONO, each PRE OUT)
Maximum headphone output: 284 mW (8 ohms)
Phono equalizer (PHONO input – REC OUT)
RIAA deviation: ±1 dB (20 Hz to 20 kHz)
Signal-to-noise ratio: 76 dB (A weighting, with 5 mV input)
Rated output / Maximum output: 150 mV/8 V
Distortion factor: 0.03% (1 kHz, 3 V)

- **Video Section**

Standard video jacks
Input and output level / impedance: 1 Vp-p/75 ohms
Frequency response: 1 Hz to 10 MHz +0, –3 dB
S-video output jacks
Input and output level / impedance: Y (brightness) signal: 1 Vp-p/75 ohms
C (color) signal: 0.286 Vp-p/75 ohms
Frequency response: 1 Hz to 11 MHz +0, –3 dB

- **General**

Power supply: 120 V AC, 60 Hz
Power consumption: 5.5 A
Maximum external dimensions: 434 (W) × 184 (H) × 421 (D) mm (17-3/32" × 7-1/4" × 16-37/64")
Weight: 15.0 kg (33 lbs 2 oz)

- **Remote control unit (RC-162):**

System remote control with learning function
Total buttons: 62
DENON system code
DAT: 8 buttons
CD player: 8 buttons
Cassette deck: 8 buttons
Tuner: 2 buttons
VDP: 8 buttons
AVC-3030 fixed codes: 47 buttons
Learning buttons
System call buttons: 3 (maximum of 10 codes per button)
Program – AMP: 8 buttons
– AV: 58 buttons
Maximum total: 35 codes
Batteries: R6P/AA Type (two batteries)
External dimensions: 70 (W) × 215 (H) × 18 (D) mm (2-3/4" × 8-15/32" × 45/64")
Weight: 170 g (Approx. 6 oz) (including batteries)

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

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.

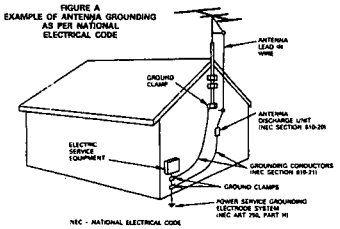
IMPORTANT SAFEGUARDS

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. Cleaning – Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments – Do not use attachments not recommended by the video product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this video product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. Accessories – Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

8A. 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.

9. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhere to.
10. Power Sources – This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.
11. Grounding or Polarization – This video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
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.

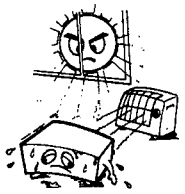
FIGURE A
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



NEC - NATIONAL ELECTRICAL CODE

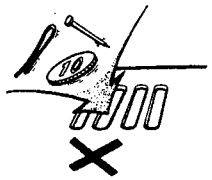
13. Outdoor Antenna Grounding – If an outside antenna or cable system is connectedto the video product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70–1984, 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.
14. Lightning – For added protection for this video product receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power-line surges.
15. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
16. Overloading – Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. Object and Liquid Entry – Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind of the video product.
18. Servicing – Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
19. Damage Requiring Service – Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen into the video product.
    c. If the video product has been exposed to rain or water.
    d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
    e. If the video product has been dropped or the cabinet has been damaged.
    f. When the video product exhibits a distinct change in performance – this indicates a need for service.
20. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
21. Safety Check – Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.

NOTE ON USE



Be careful of high temperatures
- Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance.

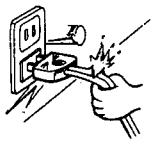
Caution on rack/cabinet installation
- Avoid installing the set in a closed-type rack.
- When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation.



Do not allow foreign matter into the equipment
- Be especially careful of needles, hair pins, and coins getting into the set.

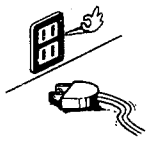
Caution on humidity, water, and dust
- Do not place the set in a location where there is high humidity or a lot of dust.
  Flower vases or other items containing water should not be placed on top of the set.

Care of the case
- Avoid the use of pesticides near the set as well as wiping the case with benzine, thinner or other solvents since they may cause a change in quality or color. Use a soft cloth when wiping away dirt and follow the instructions carefully when using chemically treated cloths.

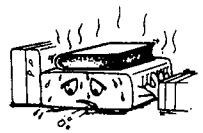


Care with the power cord
- When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it.

Do not open the case
- Opening the top cover or the bottom plate of the case and inserting your hand is dangerous. Do not open the case.
  If some trouble arises with the performance of the set, remove the power plug soon and contact the store where the set was purchased or a nearby dealer.



During your absence
- When not using the set for an extended period such as when taking a trip, be sure to disconnect the plug from the receptacle.

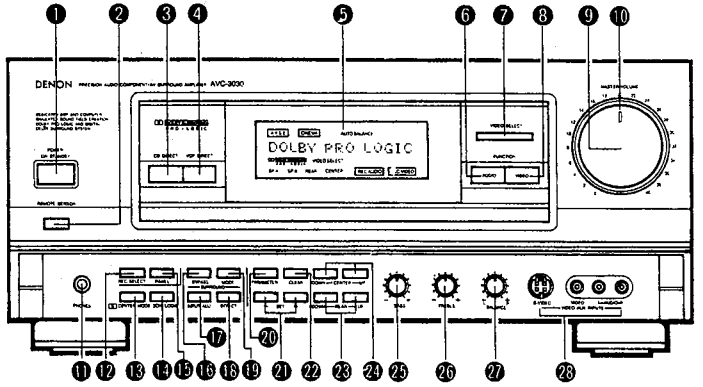


For sets with ventilation holes

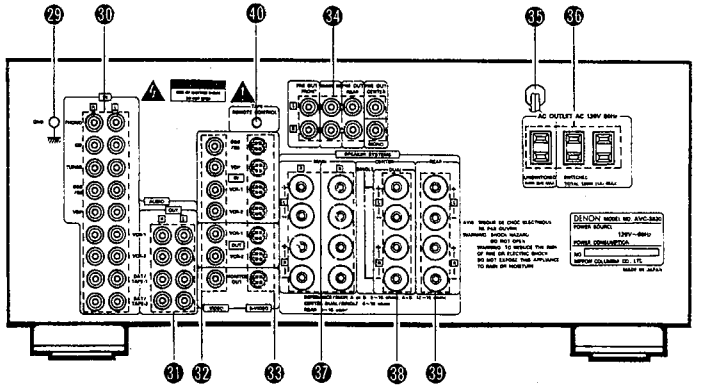
Do not block the ventilation holes of the set
- Blocking of the ventilation holes will lead to damage of the set.
- The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

PART NAMES AND FUNCTIONS (Refer to pages 14 ~ 17)

Front panel (❶ ~ ㉘)



Rear panel (㉙ ~ ㊵)



- **We greatly appreciate your purchase.**
- **Read these operating instructions carefully to obtain the best performance and a long, trouble-free life from this amplifier. Be sure to keep these operating instructions for future reference.**

– CONTENTS –

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

① Operating Instructions 1
② Remote control unit RC-162 1
③ R6P/AA batteries 2

1 BEFORE USING

Read the following cautions carefully before using the amplifier:

- Moving the set
  Be sure to unplug the power cord and disconnect other cords connecting the amplifier to other audio units before moving the amplifier to prevent damaging or short-circuiting the cords.
- Before turning on the power switch
  Check again to make sure that all connections are correct and that there are no problems with the connection cords. Be sure to turn the power STANDBY before disconnecting or connecting cords.
- Retain the operating instructions
  After reading this manual, store it in a safe place.
- The illustrations used in this manual may differ somewhat from the actual amplifier.

NOTICE

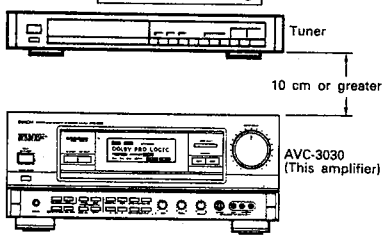
The DENON AVC-3030 is equipped with sophisticated heat detection circuitry to protect the unit from excessive heat. This protection circuit may be activated when the unit is operating at continuous high power conditions and/or inadequate ventilation.
When activated all signal outputs are muted and "PROTECTION!!" is indicated on the display.
If protection is activated, switch off unit and allow unit to cool, this action will reset protection device.
After cool down, turn on unit, it will operate normally.
Note: If unit does not receive adequate air circulation, move to location that will allow proper cooling.

2 INSTALLATION PRECAUTIONS

Using this amplifier or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.
If this should happen, take the following steps:

- Install the amplifier as far as possible from the tuner or TV set.
- Keep the antenna lines of the tuner or TV as far as possible from the amplifier's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 ohm feeder lines. We recommend using outdoor antennas and 75 ohm coaxial cables.

A note on stacking



For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

3 HANDLING PRECAUTIONS

- **Switching the input function when the input jacks are unconnected**
  Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.

- **Playback with Dolby Pro Logic**
  The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby surround. A different surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode should be used. Other modes will not provide a suitable effect.

- **Muting of the PRE OUT jacks**
  An electronic muting circuit has been connected to the PRE OUT jacks. This circuit greatly attenuates the output signal for approximately 6 seconds after the power has been switched on. Raising the volume during this operation will result in an extremely large output once the muting has ended, so volume adjustments should be made only after the completion of muting.

- **Rear output level while in the surround mode**
  The rear level will seem small for sources other than Dolby surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back such software with a surround mode, the mode should be set to something other than Dolby Pro Logic surround. The rear output level may seem small for software having a small rear signal, even Dolby surround sources.

- **Opening and closing the door**
  This amplifier is equipped with a door on the front panel. Press the "PUSH OPEN△" portion printed at the upper right edge of the door to release and open the door. Likewise, to close the door, press in the same manner until a click sound is heard.

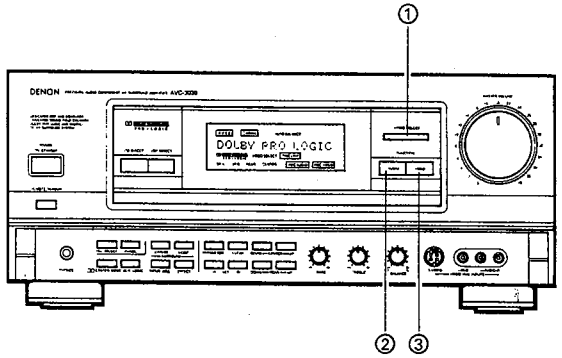
NOTE:
The door will open naturally once it has been released, but it may stop before fully opening. This is not a fault; just lightly push the door open.

4 INITIALIZATION OF THE MICROPROCESSOR

When the indication of the MFD display is not normal or when the operation of the unit does not shows the reasonable result, the initialization of the microprocessor is required by the following procedure.

1 Switch off the unit and remove the AC power cord from the wall outlet.
2 Hold the following 3 buttons of the main unit at the same time (as illustrated in the diagram below, ① VIDEO SELECT button, ② AUDIO FUNCTION button, and ③ VIDEO FUNCTION button) plug the power cord into the outlet.
3 Check that the entire MFD display is flashing with an interval of about 1 second, and release your fingers from the 3 buttons.
4 Switch on the unit and the microprocessor will be initialized. The input function is set to tuner with the bypass mode automatically.

NOTE:
- When the unit does not show the result of above 3 and 4, repeat the procedure from 1 again.
- When the microprocessor is initialized, all the previous setting of the unit is released and is set to the shipping condition from the manufacturer.



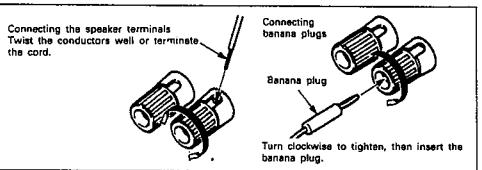
➡ Continued

5 CONNECTIONS

Speaker System Connections

- This amplifier can accommodate connections of a total of eight speakers including two sets of (front) main amplifier speakers (A and B), one set of rear speakers, and one or two center speakers.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (⊕ with ⊕, ⊖ with ⊖). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.
- **Speaker Impedance**
  - When speaker systems A and B are used separately, speakers with an impedance of from 6 to 16 ohms can be connected.
  - Be careful when using two pairs of front speakers (A + B) at the same time, since use of speakers with an impedance outside the range of 12 to 16 ohms will lead to damage.
  - Speakers with an impedance of 6 to 12 ohms can be connected for use as center and rear speakers.
  - The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.

①Peel off the insulation from the tip of the cord.
②Twist the conductors.
③Turn the speaker terminal counterclockwise to loosen it.
④Insert the exposed portion of wire completely and turn the terminal clockwise to tighten it.

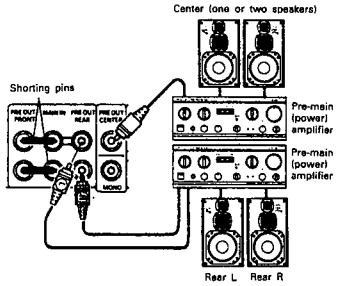


Speaker connections using the PRE OUT and MAIN IN jacks

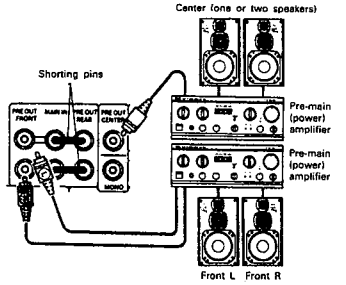
These jacks are used when a separate pre-main (power) amplifier is used to amplify the front, rear, and center sounds.

Using a second pre-main (power) amplifier **Use the included short pin, inserting it fully.**

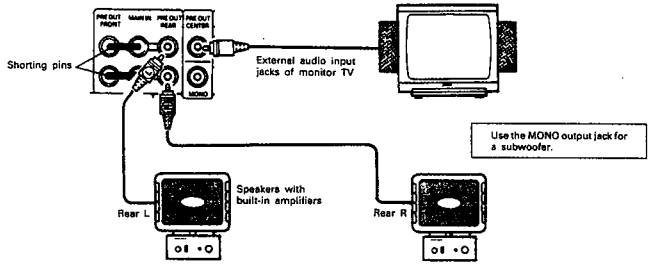
1 When using different amplifiers for the rear and center channels.



2 When using the built-in main amplifier for the rear channel, another amplifier for the front channel.



3 Using other equipment



➡ Continued

Audio Section

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- **Use the AC OUTLETS for audio equipment only. Do not use them for hair driers, etc.**
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.

Connecting a turntable

Plug the output cable of the turntable into the PHONO jack of the amplifier, the L plug into the left (L) jack and the right plug into the right (R) jack.
If the turntable is equipped with a ground wire, connect it to the GND terminal.
* If hum or other noise is produced when the ground wire is connected, disconnect it.

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

Connecting a CD player

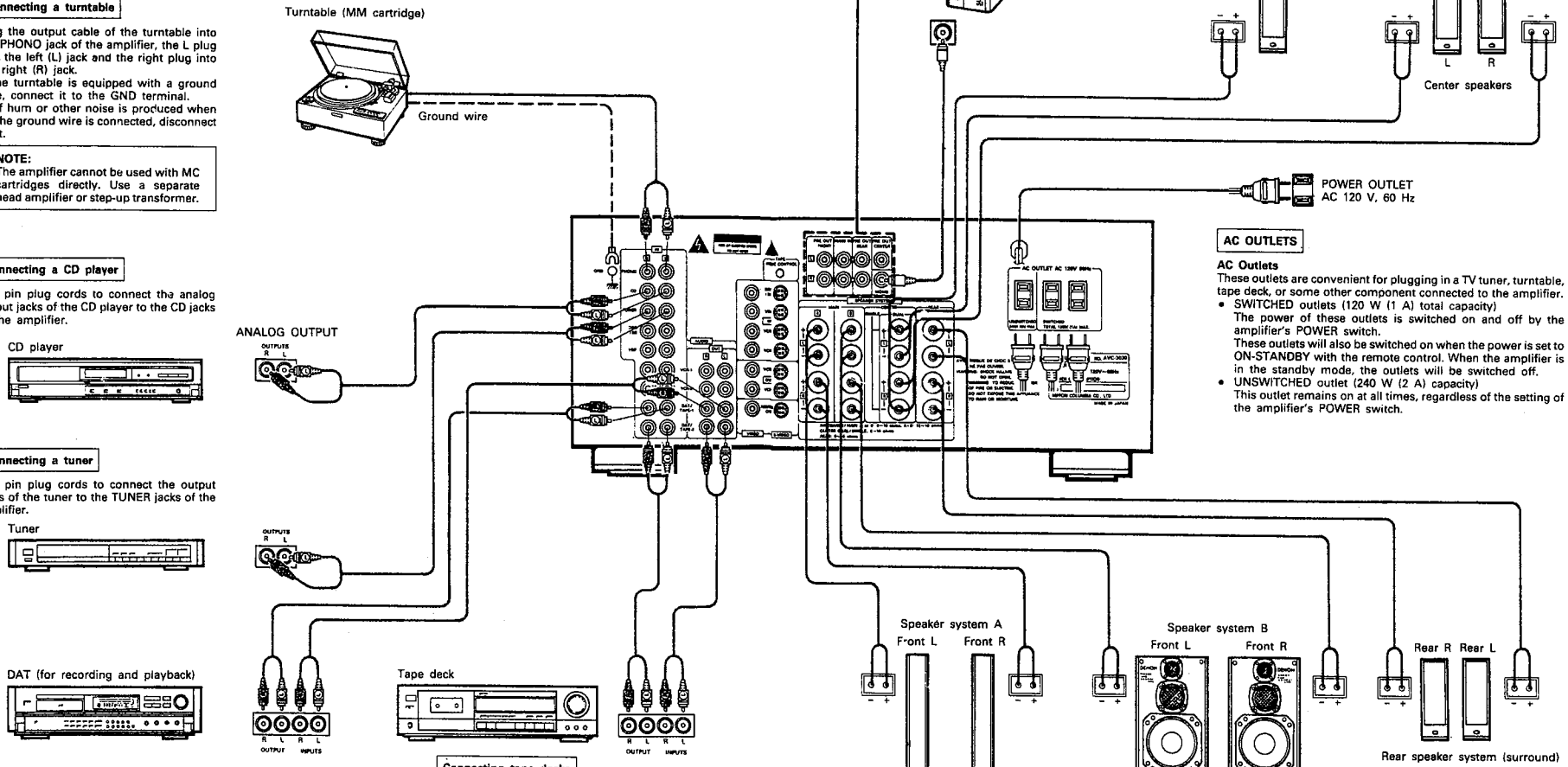
Use pin plug cords to connect the analog output jacks of the CD player to the CD jacks of the amplifier.

Connecting a tuner

Use pin plug cords to connect the output jacks of the tuner to the TUNER jacks of the amplifier.

Connecting a DAT (Digital Audio Tape Recorder)

Connections for recording: Connect the DAT's analog recording input jacks (LINE IN or REC) to the amplifier's tape recording (OUTPUT) jacks using pin plug cords.
Connections for playback: Connect the DAT's analog playback output jacks (LINE OUT or PB) to the amplifier's tape playback (INPUT) jacks using pin plug cords.



Connecting tape decks

Connections for recording: Connect the tape deck's recording input jacks (LINE IN or REC) to the amplifier's tape recording (OUTPUT) jacks using pin plug cords.
Connections for playback: Connect the tape deck's playback output jacks (LINE OUT or PB) to the amplifier's tape playback (INPUT) jacks using pin plug cords.

Connecting speaker systems

Connect the speaker systems for the left channel (the left side as seen from the front) to the L terminals, and the speaker systems for the right channel to the R terminals.

For a single center output (when only using one speaker for the center channel), connect the speaker to the L (left) "+" terminal and the R (right) "–" terminal.

When two speakers are connected as dual center outputs a better effect will be obtained when speakers having uniform characteristics are used.

AC OUTLETS

AC Outlets
These outlets are convenient for plugging in a TV tuner, turntable, tape deck, or some other component connected to the amplifier.
- SWITCHED outlets (120 W (1 A) total capacity)
  The power of these outlets is switched on and off by the amplifier's POWER switch.
  These outlets will also be switched on when the power is set to ON-STANDBY with the remote control. When the amplifier is in the standby mode, the outlets will be switched off.
- UNSWITCHED outlet (240 W (2 A) capacity)
  This outlet remains on at all times, regardless of the setting of the amplifier's POWER switch.

- **Precautions when connecting speakers**
  If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

Video Section

Connecting a BS tuner

- Connect the BS tuner's S-output jack to the amplifier's S-VIDEO DBS/BS-IN jack using an S-jack connection cord.
- Connect the BS tuner's video output jack to the amplifier's VIDEO (yellow) DBS/BS-IN jack using a 75-ohm video coaxial cable pin plug cord.
- Connect the BS tuner's analog audio output jacks to the amplifier's AUDIO DBS/BS-IN jacks using pin plug cords.

Connecting a video disc player (VDP)

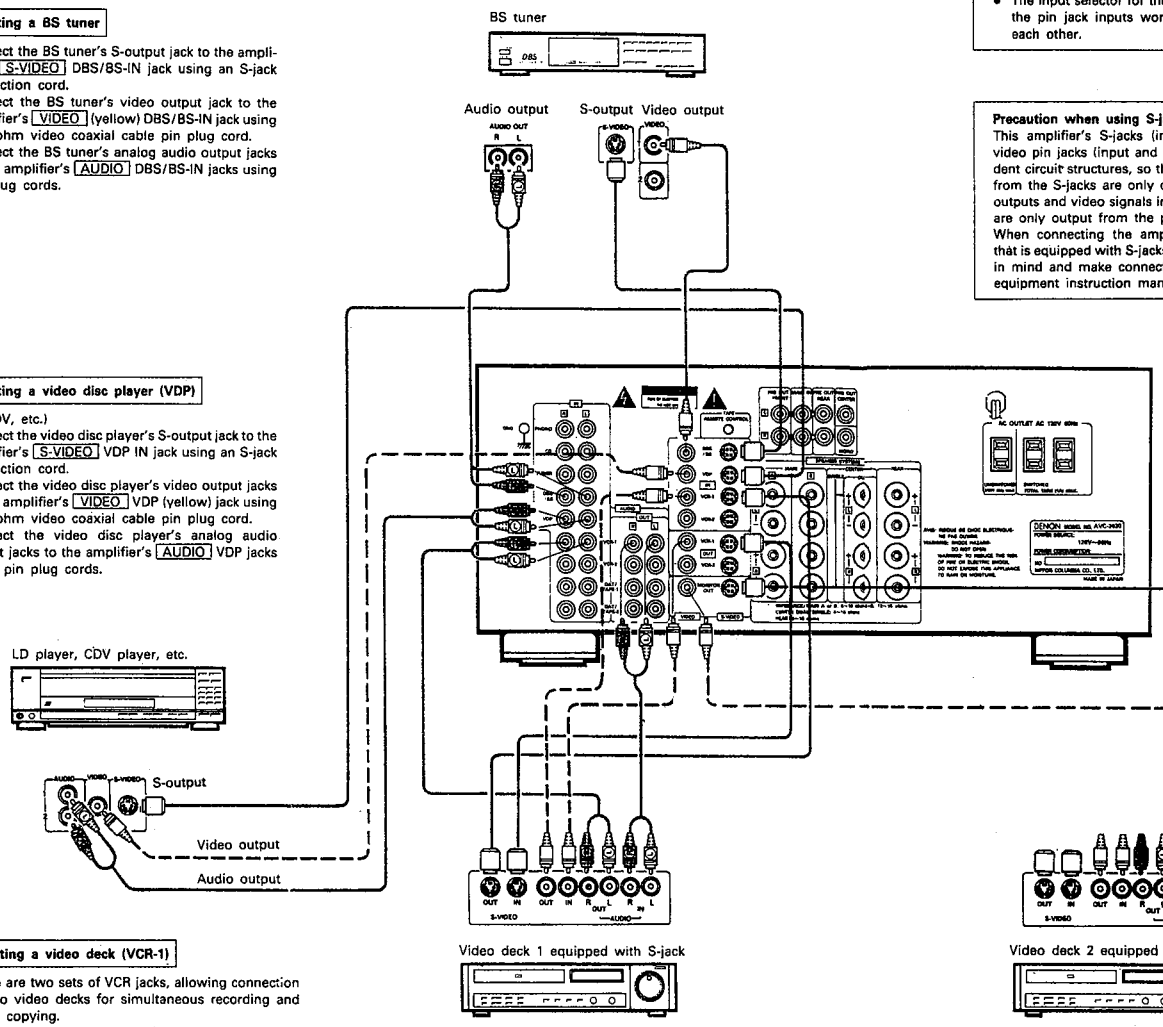
(VDP, CDV, etc.)

- Connect the video disc player's S-output jack to the amplifier's S-VIDEO VDP IN jack using an S-jack connection cord.
- Connect the video disc player's video output jacks to the amplifier's VIDEO VDP (yellow) jack using a 75-ohm video coaxial cable pin plug cord.
- Connect the video disc player's analog audio output jacks to the amplifier's AUDIO VDP jacks using pin plug cords.

Connecting a video deck (VCR-1)

- There are two sets of VCR jacks, allowing connection of two video decks for simultaneous recording and video copying.
- Connect the VCR S-output jack to the amplifier's S-VIDEO in jack using a S-jack connecton cord.

Connections for video input and output:
Connect the VCR video output jack to the amplifier's VIDEO (yellow) VCR-1 IN jack and the VCR video input jack to the amplifier's VIDEO (yellow) VCR-1 OUT jack using 75-ohm video coaxial cable pin plug cords.



Connecting the audio input and output jacks

- Connect the video deck's audio output jacks to the amplifier's AUDIO VCR-1 IN jacks and the video deck's audio input jacks to the amplifier's AUDIO VCR-1 OUT jacks using pin plug cords.
- A second video deck may be connected to the VCR-2 jacks in the same way.

Connect to VCR-2 jacks in the same way as for video deck 1.

A note on the S input jacks

- The input selector for the S inputs and that for the pin jack inputs work in conjunction with each other.

Precaution when using S-jacks

This amplifier's S-jacks (input and output) and video pin jacks (input and output) have independent circuit structures, so that video signals input from the S-jacks are only output from the S-jack outputs and video signals input from the pin jacks are only output from the pin jack outputs.
When connecting the amplifier with equipment that is equipped with S-jacks, keep the above point in mind and make connections according to the equipment instruction manuals.

The AVC-3030 is equipped with VIDEO AUX jacks on the front panel for playback of video equipment. This permits video cam-corders with playback functions as well as other equipment to be connected.
The connection method is the same as that for the VDP.

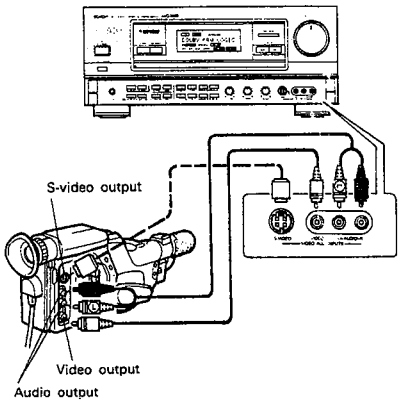
Connecting cam corder (V-AUX)

Connections for video input and output:

- Connect the cam corder's video output jack to the amplifier's VIDEO (yellow) V-AUX IN jack and the cam corder's video input jack to the amplifier's VIDEO (yellow) V-AUX OUT jack using 75-ohm video coaxial cable pin plug cords.

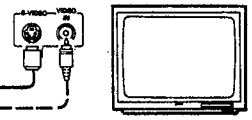
Connecting the audio input and output jacks

- Connect the cam corder's audio output jacks to the amplifier's AUDIO V-AUX IN jacks and the cam corder's audio input jacks to the amplifier's AUDIO V-AUX OUT jacks using pin plug cords.



Connecting a monitor TV

- Connect the TV's S-video input jack to the amplifier's S-VIDEO MONITOR OUT jack using an S-jack connection cord.
- Connect the TV's video input jack to the amplifier's VIDEO MONITOR OUT jack using a 75-ohm video coaxial cable pin plug cord.



Connecting the S-jacks

Connect the video deck's S-output jack to the amplifier's S-VIDEO IN jack and the video deck's S-input jack to the amplifier's S-VIDEO OUT jack using S-jack connection cords.

6 PART NAMES AND FUNCTIONS

(Refer to the figures on page 5.)

❶ POWER switch

• ON

When this switch is pressed once, the power turns on and the MASTER VOLUME LED ⓾ flashes. (The muting circuit is activated while "MUTING" is flashing to prevent noise when the POWER switch is operated.) After several seconds, the LED stops flashing, remaining lit and the muting circuit turns off. The set is now in the normal operating mode.

• STANDBY

When the POWER switch is pressed once again, the power turns off and the standby mode is set. The MASTER VOLUME LED ⓾ remains lit. In addition, when the power turns off, the power supply from the SWITCHED AC outlets on the rear panel also turns off.

❷ REMOTE SENSOR

This is where the signals from the wireless remote control unit are received.

Point the remote control unit (RC-162) at this sensor when operating it.

❸ CD DIRECT button

This button is used to enjoy the audio signals input from the component connected to the CD jacks on the rear panel with higher sound quality. In the CD direct mode, the audio signals bypass such circuitry as the surround and tone control circuits, and are output directly to the front speakers for higher sound quality.

※ Cancelling the CD direct mode

When in the CD direct mode, either press the CD DIRECT button once again, or press the AUDIO FUNCTION selector button ❻ or VIDEO FUNCTION selector button ❽ or BYPASS button ⓰ or SURROUND MODE selector button ⓳ to cancel the CD direct mode.

❹ VDP DIRECT button

This button is used to enjoy the audio signals input from the component connected to the VDP jacks on the rear panel with higher sound quality.

In the VDP direct mode, the audio signals bypass such circuitry as the surround and tone control circuits, and are output directly to the front speakers for higher sound quality.

※ Cancelling the VDP direct mode

When in the VDP direct mode, either press the VDP DIRECT button once again, or press the VIDEO FUNCTION selector button ❽ or AUDIO FUNCTION selector button ❻ or SURROUND MODE selector button ⓳ or BYPASS button ⓰ to cancel the VDP direct mode.

NOTE:

When the CD or VDP DIRECT button ❸ or ❹ is selected, the output of signals to the audio and video output jacks is automatically prohibited, so the REC SELECT (independent audio/video recording) and VIDEO SELECT (independent video signal selector) buttons do not work. Also, if the REC SELECT button ⓬ is selected, the CD and VDP DIRECT buttons ❸ and ❹ will not function.

❺ MFD (multi-function fluorescent display)

Information such as the surround mode and the input and output are displayed here when the power is turned on.

Normally the surround mode is displayed. If another button is pressed, a display pertaining to that button is shown for approximately 5 seconds (this time differs according to the display), after which the surround mode is once again displayed.

Refer to pages 18 to 21 for details on the MFD displays.

❻ AUDIO FUNCTION selector button

This button is used to switch the audio input. Press this button repeatedly or hold it in to change the input in the following order:

PHONO → CD → TUNER → DAT/TAPE-1 → DAT/TAPE-2 → PHONO

(All the video outputs are off unless a video function is selected with the VIDEO SELECT button or the REC SELECT button.)

➡ Continued

❼ VIDEO SELECT

(independent video signal selector) button

This button is used to select the video signal independently of the audio signal. When pressed once, the video selector function turns on. When the button is held in, the video input signal changes in the order shown below. Release the button when the desired video input signal is displayed on the MFD or on the monitor screen. After this is done, the video signal will not change even if the AUDIO FUNCTION selector button ❻ is pressed and the audio input is changed.

To cancel the independent video signal selection mode, either press the VIDEO SELECT button again, or press the VIDEO FUNCTION selector button ❽.

DBS/BS → VDP → VCR-1 → V.AUX. → VCR-2 → DBS/BS

❽ VIDEO FUNCTION selector button

This button is used to switch the video input. Press this button repeatedly or hold it in to change the input in the following order:

DBS/BS → VDP → VCR-1 → V.AUX. → VCR-2 → DBS/BS

❾ MASTER VOLUME control

Turn the control clockwise (↻) to increase the volume, counterclockwise (↺) to decrease it.

❿ MASTER VOLUME LED

This LED remains lit when the set is in the normal operating mode or in the standby mode, and flashes when in the muting mode.

⓫ PHONES jack

This jack is for connecting headphones.

To cut the sound from the speakers, either turn off the output (speakers) from the remote control unit or turn off the output of the component connected to the PRE OUT jacks.

⓬ REC SELECT

(independent recording output selector) button

This button makes it possible to select the audio or video recording mode independently of the mode selected with the FUNCTION selector buttons. It selects the audio recording signals output to the DAT/TAPE-1, DAT/TAPE-2, VCR-1 and VCR-2 audio output jacks, and the video (and audio) recording signals output to the VCR-1 and VCR-2 output jacks.

For the audio recording output, normally the signal input selected with the FUNCTION selector buttons is output to the recording output side, but when this button is used, signals from input jacks other than the ones selected with the FUNCTION selector buttons can be selected.

In addition, for the video (and audio) recording output, normally the video (and audio) signals selected with the VIDEO FUNCTION selector button ❽ are output to the recording output side, but when this button is used, input signals other than the ones selected with the VIDEO FUNCTION selector button can be selected.

When this button is pressed once, the independent recording output selection function turns on. When the button is held in, the video and audio recording output changes in the order shown below. Release the button when the desired video and audio recording output is displayed on the MFD or on the monitor screen.

Press the REC SELECT button again to cancel the independent recording output selection mode.

PHONO → CD → TUNER → DAT/TAPE-1 → VDP → DBS/BS → DAT/TAPE-2 → VCR-1 → VCR-2 → V.AUX → PHONO

If the CD DIRECT or the VDP DIRECT button is selected, the audio and video recording output is automatically prohibited, so it is advisable to use the REC SELECT button ⓬ to prevent accidentally interrupting the recording.

⓭ CENTER MODE selector button

This button is used to select the center mode when in the Dolby Pro Logic, WIDE SCREEN or LIVE modes. Select the mode according to the speaker system you are using.

① NORMAL → ② PHANTOM → ③ WIDE → ① NORMAL

The mode switches as follows in the Dolby 3CH Logic mode:

① NORMAL ↔ ② WIDE

* In the WIDE SCREEN and LIVE modes, the center mode only changes when the adaptive matrix is on.
* If this button is pressed in a mode other Dolby Pro Logic, live, wide screen or CD DIRECT, VDP DIRECT, the Dolby Pro Logic mode is set automatically.

For details, refer to pages 38 and 39.

⑭ 3CH. LOGIC
(three-channel logic) button
This button only functions when in the Dolby Pro Logic mode. When pressed again, the three-channel logic mode turns off and the normal Pro Logic mode is set.
The 3CH. LOGIC key does not function when in the Dolby Pro Logic Phantom mode.
For details, refer to page 39.

⑮ PANEL button
Pressing this button provides a display of the current operating condition on the multifunction display.
Pressing this button will switch the multifunction display.
For details, see Pages 18 to 21.

⑯ BYPASS (surround bypass) button
When this button is pressed, the surround mode is bypassed and the normal stereo sound is produced. No signals are output to the rear channel.
If the SURROUND MODE button is pressed when in the bypass mode, the mode returns to the mode which was set before the bypass mode was turned on.
* In the initial setting the center output is turned off.

⑰ INPUT ADJ.
(input level adjustment selector) button
This function makes it possible to increase the input level by +6dB, and is used when playing a source with a low input level, such as the tuner.
For details, refer to page 33.

⑱ EFFECT selector button
This button turns the effect of the DSP (digital signal processor) on and off. When turned off, only direct sounds are played on the front left and right speakers. This function can be used to check the effect of the sound processor.
* The effect turns back on if this button is pressed once again when the effect is off, or when a parameter is selected and data is changed with the "–" or "+" keys.
* If the power is turned off when the effect is off, that mode is stored in the memory, so only the direct sound is played when the power is turned back on.

⑲ SURROUND MODE selector button
Use this button to select the surround mode.
Either press it repeatedly or hold it in to change the surround mode in the order shown at the top right of this page.
For details, refer to pages 33 to 34.

↓
DOLBY PRO LOGIC
↓
WIDE SCREEN
↓
LIVE
↓
MONO MOVIE
↓
CLASSIC CONCERT
↓
ROCK CONCERT
↓
CHURCH
↓
JAZZ
↓
STADIUM
↓
MATRIX

⑳ PARAMETER
(DSP parameter selector) button
Use this to select the parameter.
For details, refer to pages 35 to 37.

㉑ "–" and "+" SET
(parameter setting) buttons
Use these to change the parameter selected with the PARAMETER button ⑳.
For details, refer to pages 35 to 36.

㉒ CLEAR (user preset clear) button
When this button is pressed, the parameters for the selected mode are reset to the values preset upon shipment from the factory.
For details, refer to page 47.

㉓ REAR (rear speaker volume adjust) buttons
Use these to adjust the volume of the rear (surround) speakers.
Press the UP button to increase the volume, the DOWN button to decrease the volume.
The volume changes while the button is held in, and stops changing when the button is released. The volume change is indicated on the MFD or monitor screen. These buttons do not function when in the bypass mode, the CD or VDP direct modes, or the Dolby 3ch. Logic mode.

➡ Continued

㉔ CENTER
(center speaker volume adjust) buttons
Use these buttons to adjust the volume of the center (surround) speaker.
Press the UP button to increase the volume, the DOWN button to decrease the volume.
The volume changes while the button is held in, and stops changing when the button is released. The volume change is indicated on the MFD or monitor screen. These buttons only function when in the bypass, Dolby Pro (3ch.) Logic normal or wide modes, and in the normal and wide modes with the adaptive matrix on when in the WIDE SCREEN and LIVE modes.

㉕ BASS control
Use this to adjust the bass sound of the front speaker output or PRE-OUT FRONT jacks. The bass sound is emphasized when turned clockwise (↷) from the center position, reduced when turned counterclockwise (↶) from the center position.

㉖ TREBLE control
Use this to adjust the treble sound of the front speaker output or PRE-OUT FRONT jacks. The treble sound is emphasized when turned clockwise (↷) from the center position, reduced when turned counterclockwise (↶) from the center position.

㉗ BALANCE control
Use this to adjust the left/right balance of the front speakers (PRE-OUT FRONT jacks).
* This control does not function in the CD direct and VDP direct modes.

㉘ VIDEO AUX INPUTS
These are auxiliary inputs for connecting video cameras or other AV equipment.
S-VIDEO: Connect the S-jack output of the other component here.
VIDEO: Connect the video output of the other component here. (Use a 75 ohm coaxial cable pin-plug cord.)
AUDIO L and R: Connect the audio output of the other component here.

㉙ GND (ground) terminal
Connect the ground wire of the record player here.

㉚ AUDIO IN (audio input) jacks

㉛ AUDIO OUT (audio output) jacks

㉜ VIDEO (video input/output) jacks

㉝ S-VIDEO (video input/output) jacks

㉞ PRE OUT
(FRONT, CENTER, REAR and MONO) jacks
Refer to page 9.
Connect the monaural audio input jack of a separately sold subwoofer or TV here.

㉟ AC cord (power cord)

㊱ AC OUTLETS
Refer to page 11.

㊲ MAIN SPEAKER SYSTEMS terminals

㊳ CENTER SPEAKER SYSTEMS terminals

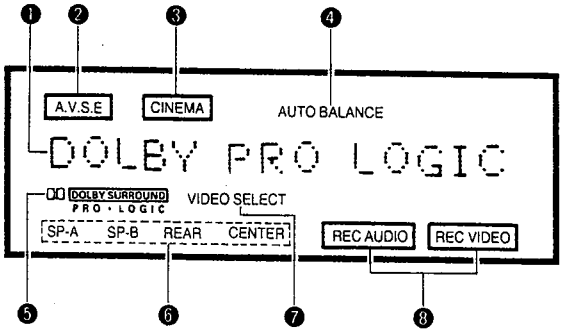
Note on the center speaker terminals:
The center channel output on the AVC-3030 is dual center compatible, so two center speakers can be used. The Pro Logic surround effect can be obtained with a single center channel speaker, but connecting two speakers with similar performance are connected to the L and R terminals creates a more effective dual center channel output.
For details, refer to pages 10 and 11.

㊴ REAR SPEAKER SYSTEMS terminals

㊵ 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.

Display



❶ **Multi-function fluorescent display**
A maximum of 16 letters are displayed.
The mode to which this display is set changes successively each time the PANEL button on the remote control unit is pressed.
Normally, the display is set to the surround mode.

❷ **A.V.S.E. indicator**
This lights when the A.V.S.E button on the remote control unit is pressed. When pressed again, the indicator turns off.

❸ **CINEMA indicator**
This lights when the CINEMA button on the remote control unit is pressed. When pressed again, the indicator turns off.

❹ **"AUTO BALANCE" indicator**
This lights when the adaptive matrix is on when the Dolby Pro Logic, theater and live surround modes are set.

❺ **"DOLBY SURROUND" indicator**
This lights when the SURROUND MODE button is pressed and the Dolby Pro Logic mode is selected.

❻ **Output channel indicators**
These indicate the speaker channel(s) to which signals are currently being output.
* None of these indicators lights when all the speakers are turned off.

❼ **VIDEO SELECT indicator**
This indicates that video input signals have been selected independently of the audio input signals.

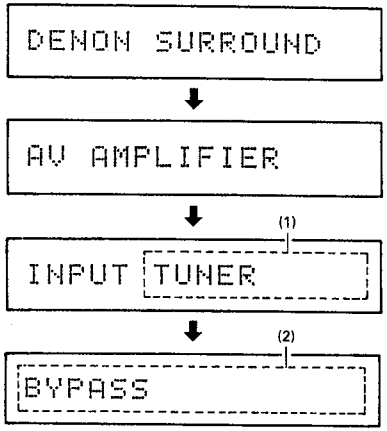
❽ **Recording select indicators**
REC AUDIO lights when one of positions PHONO through DAT/TAPE-2 is selected with the REC SELECT button, and both REC AUDIO and REC VIDEO light when one of positions DBS/BS through V.AUX is selected.

➔ Continued

Multi-function fluorescent Display (MFD)
The multi-function fluorescent display indicates the status of the mode which has been operated by pressing the buttons on the front panel or on the remote control unit.

Display pattern examples

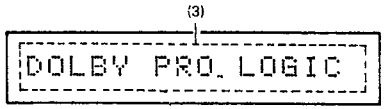
1. When the power is turned on



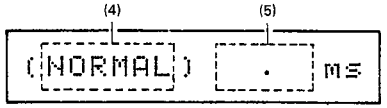
(1) The function name is displayed.

(2) The surround mode name is displayed.

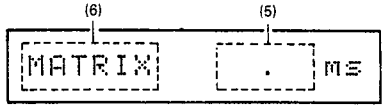
2. Surround mode display



(3) "DOLBY PRO LOGIC", "DOLBY 3CH.LOGIC", "WIDE SCREEN", "LIVE", "MONO MOVIE", "CLASSIC CONCERT", "ROCK CONCERT", "CHURCH", "JAZZ", "STADIUM" or "BYPASS" is displayed.

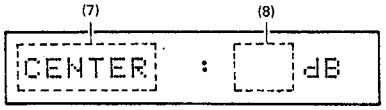


(4) "NORMAL", "PHANTOM" or "WIDE" is displayed.
* These are not displayed in modes not using the Dolby center modes or when the adaptive matrix is off in the WIDE SCREEN or LIVE modes.
(5) The delay time is displayed.
* The delay time is not displayed in the Dolby 3ch. Logic mode or any surround modes other than the ones shown above, the CD direct, the VDP direct.



(6) "MATRIX" is displayed.
"DELAY" is displayed when the adaptive matrix is off in the WIDE SCREEN or LIVE modes.

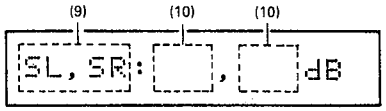
3. Center level display



(7) "CENTER" is displayed when the one of the CENTER buttons is pressed.
(8) The level is displayed in steps of 2dB, from –48dB (minimum) to 0dB (maximum).

NOTE:
This is not displayed in modes in which no signals are output to the center speaker(s).

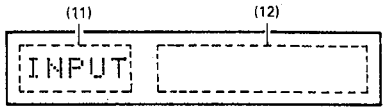
4. Rear level and balance display



(9) This is displayed when one of the REAR buttons is pressed.
(10) The level is displayed in steps of 2dB, from –48dB (minimum) to 0dB (maximum).

NOTE:
This is not displayed in modes in which no signals are output to the rear speakers.

5. Input display



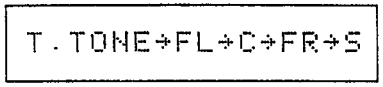
(11) "INPUT" is displayed when one of the FUNCTION buttons (AUDIO or VIDEO) is pressed, and the name of the function is displayed in section (12). If the video signal has already been selected with the VIDEO SELECT button, the audio input and video input are displayed for 3 seconds when the AUDIO FUNCTION button is pressed.

6. Recording output display

(13) "REC" is displayed when the REC SELECT button is pressed.
(14) The name of the function ("PHONO", "CD", "TUNER", "DAT/TAPE-1", "DAT/TAPE-2", "DBS/BS", "VDP", "VCR-1", "VCR-2", or "V-AUX") is displayed. Normally the source is displayed.
When the recording output selection function is off and the video selection function is on, the source is displayed for the audio output and the selected signal ("DBS/BS", "VDP", "VCR-1", "VCR-2", or "V-AUX") is displayed for the video output.

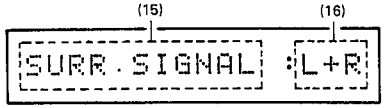
➡ Continued

7. Test tone display



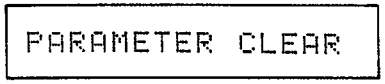
This is displayed when the T.TONE button on the remote control unit is pressed.
The arrow moves as the output changes.
This message is displayed until the test tone function is turned off.

8. DSP parameter display



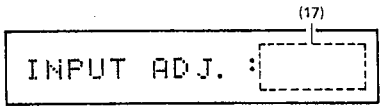
(15) The following are displayed in modes for which the PARAMETER key is effective;
"SURR.SIGNAL"
"ADAPT.MATRIX"
"7kHz L.P.F."
"SOUND SIM."
"INIT.DELAY"
"ROOM SIZE"
"EFFECT LEVEL"
"EFFECT"
(16) The parameter settings are displayed here.

9. Clear display



This is displayed when the CLEAR button is pressed.
* This is not displayed in the CD direct, VDP direct modes.

10. Input level adjustment display

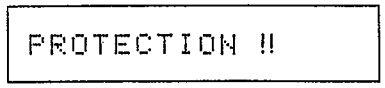


This is displayed when the INPUT ADJ. button is pressed, and the level (0dB or +6dB) is displayed at section (17).
* This is not displayed in the CD direct, VDP direct modes.

11. Muting display

This is displayed when the MUTING button on the included remote control unit is pressed, and remains displayed until the muting function turns off.

12. Protection display



This is displayed when the protection circuit is on. For details, refer to page 30.

13. No display (MFD off)

Use this when you do not need or do not want to use the MFD.
When the PANEL key on the remote control unit is pressed and held in, the display on the MFD changes continuously and finally turns off. After this is done, when a button is pressed, the corresponding display appears for several seconds, but the MFD then automatically turns back off. To turn the MFD back to the normal display mode, press the PANEL button on the remote control unit once again.

7 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Cautions for batteries

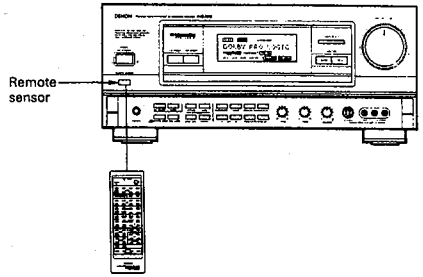
- Use R6P/AA batteries in the remote control unit.
- Replace the batteries with new ones approximately once each year, though this depends on the frequency with which the remote control unit is operated.
- If the remote control unit does not operate from close to the main unit, replace the batteries with new ones, even if less than one year has passed since the new batteries were inserted.
- Be sure that the ⊕ and ⊖ ends of the batteries match the marks on the battery case of the remote control unit.
- Replace weak batteries as soon as possible.
- Do not mix new batteries with used ones.
- Do not use batteries of different types together. Note that some batteries of the same shape and size may provide different performance.
- Some batteries are rechargeable, others are not. Read the battery instructions carefully.
- Do not connect the ⊕ and ⊖ ends of the batteries directly with metal objects. (Do not short-circuit the batteries.)
- Do not disassemble, heat, or dispose of batteries in a fire. If the batteries should leak, carefully wipe off any fluid from the battery case, then insert new batteries.

■ Using the remote control unit

The remote control unit uses highly linear infrared rays. Point it at the amplifier's remote sensor when operating it. The amplifier will not operate if the remote sensor is covered or if there is an obstacle between the remote control unit and the sensor.

Also note that strong light shining on the remote sensor may result in mistaken operations. In addition, using the amplifier near neon signs which generate pulse type noise may result in mistaken operations, so keep the amplifier as far as possible from such neon signs.

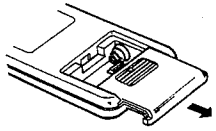
■ Range of operation of the remote control unit



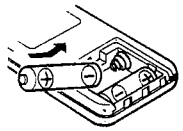
Point the remote control unit at the remote sensor when operating it, as shown on the diagram.

The remote control unit can be used at a direct distance of approximately 7 meters from the main unit, though this distance will be shorter if there is an obstacle between the remote control unit and main unit or if the remote control unit is operated from an angle.

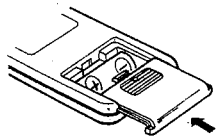
1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.



3. Close the bottom cover until it clicks shut.



■ A note on battery replacement

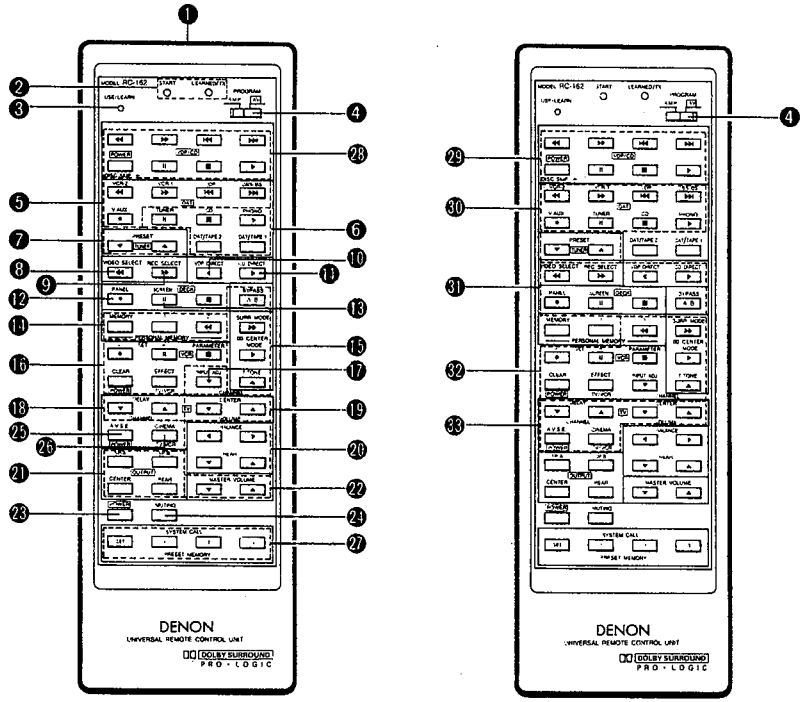
Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.

The codes that have been learned may be lost if removed batteries are not replaced within about 5 minutes.

➡ Continued

Part names and functions of the remote control unit

AVC-3030 codes **System codes**



AVC-3030 Codes

Use with the PROGRAM switch ❹ set to the AMP side.

❶ **Transmitting window**
The remote control signals (infrared rays) are sent from this window.

❷ **Indicator section (START, LEARNED/TX)**

❸ **USE/LEARN (normal use/learn mode) selector button**
Press this button with the tip of a pen, etc., to set the learn mode. Both the START and LEARNED/TX indicators in the indicator section ❷ flash and codes can be learned.

❹ **PROGRAM switch**

❺ **Video input selector buttons**
This can only be set from the remote control unit. These buttons are used to select the video input signals directly. They select the input signals and switch the video signals.
- DBS/BS: Use this to play the BS tuner connected to the DBS/BS jacks.
- VDP: Use this to play the VDP connected to the VDP jacks.
- VCR-1: Use this to play the video deck connected to the VCR-1 jacks.
- VCR-2: Use this to play the video deck connected to the VCR-2 jacks.
- V. AUX: Use this to play the cam corder with playback function, etc., connected to the V-AUX jacks on the front panel.

❻ **Audio input selector buttons**
This can only be set from the remote control unit. These buttons select the audio input signal directly.
- PHONO: Use this to play the record player connected to the PHONO jacks.
- CD: Use this to play the CD player connected to the CD jacks.
- TUNER: Use this to play the tuner.
- DAT/TAPE-1: Use this to play the DAT or tape deck connected to the DAT/TAPE-1 jacks.
- DAT/TAPE-2: Use this to play the DAT or tape deck connected to the DAT/TAPE-2 jacks.

❼ **TUNER PRESET ▼ and ▲ buttons**
With these buttons, a Denon remote controllable tuner can be controlled directly.
For details, refer to the tuner's operating instructions. Note that operation may not be possible for some models.
- ▲ : Preset (preset channel up)
- ▼ : Preset (preset channel down)

❽ **VIDEO SELECT button**
(Same function as on amplifier.)

❾ **REC SELECT button**
(Same function as on amplifier.)

❿ **VDP DIRECT button**
(Same function as on amplifier.)

⓫ **CD DIRECT button**
(Same function as on amplifier.)

⓬ **PANEL button**
When this button is pressed, the current settings are displayed on the MFD. Operate this button to switch the on-screen display.
For details on the MFD, refer to pages 18 to 21.
* This button does not function in the test tone and muting modes.

⓭ **SCREEN button**
This can only be set from the remote control unit. When this button is pressed, the current settings are displayed on the monitor screen.
Operate this button to switch the on-screen display.
For details on the on-screen display, refer to pages 48 and 49.
* This button does not function in the TEST TONE, MUTING, CD direct and VDP direct modes.

⓮ **PERSONAL MEMORY function**
Your favorite surround mode and input function can be stored at "PERSONAL :1" and "PERSONAL :2", then recalled directly from any other playback mode by pressing the PERSONAL "1" or "2" button on the remote control unit.
- **Storing**
  ① Use the surround mode button to select the desired surround mode, and the INPUT FUNCTION button to select the desired input function.
  ② Press the PERSONAL MEMORY button to set the memory mode. "PERSONAL" flashes (for six seconds.)
  ③ Next press the button at which you want to store the information (PERSONAL "1" or "2"). If any other button is pressed, the memory mode is cancelled.
  ④ "MEMORY 1(2) SET" is displayed, and the selected surround mode and input function are stored in the memory.

NOTE:
- The surround mode recalled with the PERSONAL MEMORY "1" or "2" button is the same as the mode selected with the surround mode button. Thus, if the parameters of the surround mode which was stored in the memory are cleared, when the mode is recalled it is set to the initial values.
- Upon shipment from the factory, the "WIDE SCREEN" mode is stored at personal memory "1", the "LIVE" mode at personal memory "2".
- Item related to personal memory are not displayed on screen.

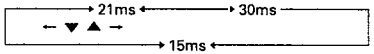
➡ Continued

⓯ **SURROUND MODE button**
- **BYPASS (Surround bypass) button**
- **SURR. MODE (Surroung mode) button**
- **DD CENTER MODE Selector button**
  (Same function as on amplifier.)
- **T.TONE (test tone) button**
  This can only be set from the remote control unit. To obtain the maximum Dolby Pro Logic surround effect, the volume of all the speakers must be adjusted to the same level. When this button is pressed, test tones are produced from each of the speakers in the following order:
  → Front left → Center → Front right → Rear →
  In addition, there are two modes, auto and manual. The speaker volume balance can be adjusted in either of these modes.
  For details, refer to page 39.

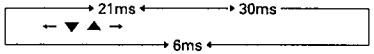
⓰ **DSP parameter adjustment buttons**
(Same functions as on amplifier.)
- **EFFECT selector button**
- **PARAMETER (DSP parameter selector) button**
- **CLEAR (User preset clear) button**
- **"–" and "+" SET button**

⓱ **INPUT ADJ. button (input level adjustment selector) button**
(Same function as on amplifier.)

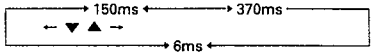
⓲ **DELAY time buttons**
This can only be set from the remote control unit. When these buttons are pressed, the delay time changes in steps of 1.5ms from 6ms to 60ms, 10.0ms from 60ms to 370ms.
The delay time increases when the ▲ button is pressed.
The delay time decreases when the ▼ button is pressed.
In the Dolby Pro Logic mode:
(setting range – 15.0ms to 30.0ms)



In the wide screen and live modes:
(setting range – 6.0ms to 30.0ms)



In the matrix mode:
(setting range – 6.0ms to 370.0ms)



⓳ **CENTER level adjustment buttons**
(Same function as on amplifier.)

⓴ **REAR Speaker adjustment buttons**
- **REAR level adjustment buttons**
  (Same function as on amplifier.)
- **BALANCE adjustment buttons**
  This can only be set from the remote control unit. Use these to adjust the output balance of the rear speakers.
  When the ◀ button (left) is pressed, the volume of the right rear speaker decreases.
  When the ▶ button (right) is pressed, the volume of the left rear speaker decreases.

㉑ **OUTPUT (speaker output selector) buttons**
This can only be set from the remote control unit. Use these buttons to turn the speaker outputs on and off.
The settings are displayed on the MFD and on-screen display.
- SP-A: The speaker systems connected to the FRONT MAIN "A" speaker output terminals operate.
- SP-B: The speaker systems connected to the FRONT MAIN "B" speaker output terminals operate.
- CENTER: The speaker system(s) connected to the CENTER speaker output terminals and the PRE OUT CENTER terminal operate(s).
- REAR: The speaker systems connected to the REAR speaker output terminals and the PRE OUT REAR terminal operate.

㉒ **MASTER VOLUME buttons**
These button functions in the same way as the MASTER VOLUME control on the main unit.
When the ▲ button is pressed, the MASTER VOLUME control on the main unit turns clockwise and the overall volume increases.
When the ▼ button is pressed, the MASTER VOLUME control on the main unit turns counterclockwise and the overall volume decreases.

㉓ **POWER button**
(Same function as on amplifier.)

㉔ **MUTING button**
This can only be set from the remote control unit. When this button is pressed, the output from the PRE OUT jacks and SYSTEM SPEAKERS terminals is cut. The MASTER VOLUME LED flashes when the muting mode is set. Press this button again to cancel the muting mode.

㉕ **A.V.S.E (Bass correction button)**
This button is used to emphasize the bass range of the fromt speakers.
Setting this switch to ON when using movie video software provides even greater impressiveness. Use this function as desires.
* This button cannot be used in the CD direct mode and the VDP direct mode.

㉖ **CINEMA (Treble correction button)**
This button is used when playing back movie video software and the speech portion is felt to be harsh upon the ears.
This function attenuates the treble range of the center speaker.
* This button cannot be used in the CD direct mode and the VDP direct mode.

㉗ **SYSTEM CALL buttons**
This can only be set from the remote control unit.
For details, refer to page 27.

AVC-3030 Code Buttons

㉘

When the PROGRAM switch ❹ is set to the AMP side:

㉘ **VDP system buttons**
With these buttons, a Denon remote controllable LD player can be controlled directly.
For details, refer to the LD player's operating instructions. Note that operation may not be possible for some models.

POWER : Power on/off
▶ : Play
II : Pause
■ : Stop
◀◀ and ▶▶ : Manual search (reverse and forward)
⏮ and ⏭ : Auto search (reverse and forward)

㉙ ~ ㉝

When the PROGRAM switch ❹ is set to the AV side:

㉙ **CD system buttons**
With these buttons, a Denon remote controllable CD player can be controlled directly.
For details, refer to the CD player's operating instructions. Note that operation may not be possible for some models.

▶ : Play
II : Pause
■ : Stop
◀◀ and ▶▶ : Manual search (reverse and forward)
⏮ and ⏭ : Auto search (reverse and forward)
DISC SKIP + : CD changer, disc skip

㉚ **DAT system buttons**
With these buttons, a Denon remote controllable DAT can be controlled directly.
For details, refer to the DAT's operating instructions. Note that operation may not be possible for some models.

▶ : Play
II : Pause
■ : Stop
● : Record
◀◀ and ▶▶ : Manual search (reverse and forward)
⏮ and ⏭ : Auto search (reverse and forward)

㉛ **Tape deck system buttons**
With these buttons, a Denon remote controllable tape deck can be controlled directly.
For details, refer to the tape deck's operating instructions. Note that operation may not be possible for some models.

▶ : Forward play
◀ : Reverse play
II : Pause
■ : Stop
● : Record
◀◀ : Rewind
▶▶ : Fast-forward
A/B : Switching between decks A and B for double decks

㉜ **VCR system buttons**
No system codes are stored here.

㉝ **TV system buttons**
No system codes are stored here.

➡ Continued

System Call Buttons

The system call function is a function which allows you to store a series of remote control operations consisting of the operations of up to a maximum of ten buttons, then perform this series of operations by pressing a single button.

Storing the System Call Operations

1. Press the SET button.
   The START LED in the indicator section flashes.
2. Set the PROGRAM switch ❹ to the desired side, then press the buttons for the system call operations in the order you want to send the signals (up to a maximum of ten buttons). The LEARNED/TX LED lights each time a button is pressed.
   It is not possible to store the codes of more than ten buttons. If the button which has been pressed is a non-storable button or if an 11th button is pressed, the START LED will turn off while that button is pressed.
3. Press one of buttons 1 to 3 at which you want to store the system call series.
4. The START LED turns off. The system call series has now been stored.
5. Three system call series can be stored, one each at buttons 1 to 3.

To continue storing another series, repeat steps 1 to 4.

NOTE:
Signals are sent from the remote control unit when buttons are pressed while storing the system call series, so prevent the components from operating by covering the transmitting window, etc.

Clearing the System Call Series

1. Press the SET button. The START LED starts flashing.
2. Press the button, 1 to 3, which you want to clear.
3. The START LED turns off and the system call series is cleared.
4. To clear another button, repeat steps 1 to 3.

Using the System Call Buttons

1. Press the desired button, 1 to 3, once.
2. The LEARNED/TX LED lights, and the remote control codes are sent in the order in which they were stored at a speed of approximately one second per code.
3. The LEARNED/TX LED turns off once all the codes have been sent.

Remote Control Unit Learning Function

Follow the procedures explained below to use the remote control unit's learning function.

Operation

1. Press the USE/LEARN (normal use/learn mode) selector button ❸ with the tip of a pen, etc., to set the learn mode. Both the START and LEARNED/TX indicators in the indicator section ❷ flash, indicating that codes can be "learned".
2. Set the PROGRAM switch ❹ to the desired side, AMP or AV.
3. Point the heads (transmitting window) of the RC-162 and the other remote control unit at each other at a distance of approximately 5cm.
4. Press the button on the RC-162 at which you want to store the code for one or two seconds, then release it. The LEDs stop flashing, and only the START LED remains lit.
   (If a non-learnable button is pressed or if two or more buttons are pressed, both the LEDs will stop flashing, remaining lit, when the button(s) is (are) released.)
5. Check that the START LED ❷ is lit, then press in the button on the other remote control unit whose code you want to store in the RC-162.
6. When the START LED ❷ turns off and the LEARNED LED lights, release the button. That code is now stored. Both LEDs once again start flashing. This operation can now be repeated to store other codes in the RC-162.

NOTE:
- If the code was not stored in the RC-162, the LEARNED LED will light after the START LED turns off. For a very limited number of models, codes cannot be stored in the RC-162.
- If after the START LED lights both LEDs start flashing rapidly, this means that the memory is full. The code you just tried to store in the RC-162 was not registered.
  To store a different code at a certain button, first used the "Resetting Procedure".

7. To store codes at other buttons, repeat steps 4 to 6.
8. After you finish storing all the codes you want, press the USE/LEARN (normal use/learn mode) selector button ❸ again. Both LEDs stop flashing and the sending (use) mode is set.
   Check that the stored codes work properly.

Learnable buttons:

When the PROGRAM switch is at the AMP side ..... 8 buttons
When the PROGRAM switch is at the AV side ..... 58 buttons
Maximum of 35 codes in 66 buttons

NOTE:
Depending on the types of codes stored, it may not be possible to store 35 codes.

Resetting (Clearing) Procedure

1. Press the USE/LEARN (normal use/learn mode) selector button ❸ with the tip of a pen, etc., to set the learn mode.
2. Set the PROGRAM switch ❹ to the side whose codes you want to clear, AMP or AV.
3. Press the POWER button ㉘ and REAR ▼ button ⑳ simultaneously, and hold them in for at least four seconds.
4. When both the START and LEARNED LEDs ❷ light simultaneously, all the learned codes for the selected source are cleared.

Remote Control Operation

1. Check that both the LEDs are off. If they are flashing or lit, press the USE/LEARN (normal use/learn mode) selector button ❸ so that the LEDs turn off.
2. When a button at which a code was "learned" is pressed, the LEARNED/TX LED lights and the remote control code is sent.

Preset Memory

The VDP ㉙, VCR ㉗ and TV ㉖ system buttons can be preset to system codes of other manufacturers instead of to the Denon component system codes. For some components, operation is possible simply by registering the manufacturer, without using the learning function.

Registering the Preset System Codes

1. Set the PROGRAM switch to the side to be preset.
   AMP ..... VDP ㉙
   AV ..... VCR ㉗ or TV ㉖
2. Press and hold in the POWER button for the source to be preset.
3. While pressing the POWER button, first press the SYSTEM CALL button, [1], [2] or [3], for the A block. (Select the proper SYSTEM CALL button from Table 1.) The LEARNED/TX LED ❷ now flashes.
4. Now press and hold in the POWER button and press the button for the B block, as shown on Table 1.
5. The LEARNED/TX LED turns off and the preset system codes have been registered.

NOTE:
Signals are sent from the remote control unit when buttons are pressed while registering the preset system codes, so prevent the components from operating by covering the transmitting window, etc. In addition, the learning function has priority over the preset memory. If codes have been stored with the learning function at any one of the VDP ㉙, VCR ㉗ or TV ㉖ keys, they will remain stored even if the preset memory codes are registered.

Some models even of applicable manufacturers use different formats, in which case operation is not possible. In such cases, using the learning function.

Table 1 Combinations of Preset System Codes for Different Manufacturers

"VCR"

B block \ A block	[1] button	[2] button	[3] button
CENTER VOL. ▼	SONY A	MITSUBISHI A	TOSHIBA
CENTER VOL. ▲	SONY B	MITSUBISHI B	—
REAR BAL. ◀	SONY C	MITSUBISHI C	VICTOR
REAR BAL. ▶	—	—	—
REAR VOL. ▼	PANASONIC A	—	HITACHI
REAR VOL. ▲	PANASONIC B	—	—
MASTER VOL. ▼	SHARP	SANYO	RCA
MASTER VOL. ▲	—	—	—

"TV"

B block \ A block	[1] button	[2] button	[3] button
CENTER VOL. ▼	SONY	MITSUBISHI	TOSHIBA
CENTER VOL. ▲	—	—	—
REAR BAL. ◀	—	—	VICTOR
REAR BAL. ▶	—	—	—
REAR VOL. ▼	PANASONIC A	—	HITACHI
REAR VOL. ▲	PANASONIC B	—	—
MASTER VOL. ▼	SHARP	SANYO	—
MASTER VOL. ▲	—	—	—

"VDP"

B block \ A block	[1] button	[2] button	[3] button
CENTER VOL. ▼	SONY A	DENON A	—
CENTER VOL. ▲	SONY B	DENON B	—
REAR BAL. ◀	SONY C	DENON C	—
REAR BAL. ▶	—	—	—
REAR VOL. ▼	PANASONIC	—	—
REAR VOL. ▲	—	—	—
MASTER VOL. ▼	PIONEER	SANYO	PHILIPS
MASTER VOL. ▲	—	—	MAGNAVOX

8 OPERATION

Preparations for playback

1. Checking connections

- Referring to the connection diagrams (Pages 9 to 13) check to make sure that the connections are made properly.
- Check that the left and right speakers are connected properly and also that the polarity (⊕ , ⊖) is correct.
- Check that the left and right sides of the pin plug cords are connected properly.
- Check that each cord is securely connected
- Check that each cord is of the proper type.

2. Checking the positions of the controls
(See Pages 14 to 17 for a reference to the circled numbers.)

- Turn the MASTER VOLUME control fully counterclockwise to the "0" position.
- Set the BALANCE ⓱, BASS ⓳, and TREBLE ⓰ controls to their center positions.

After making the above checks, press POWER switch ❶ to switch on the power.
The amplifier will be operable when the LED of the MASTER VOLUME control stops flashing after several seconds of muting.

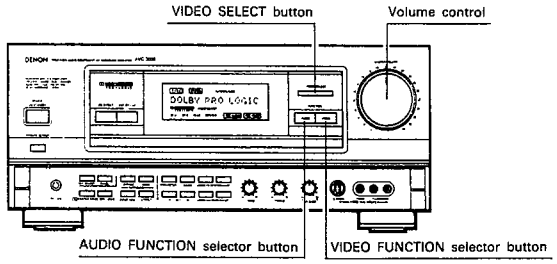
Note on playback
The sound will be interrupted if one of the FUNCTION selector buttons ❻ ❽ is pressed during playback. This is due to the operation of the muting circuit which prevents noise from being amplified at the time of switching, and is not a malfunction.

- When using the accompanying remote control unit, press the corresponding button.
For details, see Page 22 of Section 7 REMOTE CONTROL UNIT.

Protection Circuit
This amplifier is provided with a high-speed protection circuit. This circuit protects the internal circuitry from large currents which may be created by the output signals when the speaker terminals are not completely connected or are short-circuited.
The operation of this protection circuit automatically cuts off the output to the speakers and displays "PROTECTION!" on the multi-function display. If this should happen be sure to unplug the power cord, check the speaker connections, then plug in the power cord and switch on the power again. If, after another check, the "PROTECTION!" display comes on again, contact your store of purchase.

➡ Continued

Playback



1. Playing a program source
(Normal playback)

1 Select the desired program source by pressing the AUDIO FUNCTION selector button or the VIDEO FUNCTION selector button.

- AUDIO FUNCTION SELECTOR
(Setting the program source)

Program source	AUDIO FUNCTION SELECTOR
To listen to a record	PHONO
To listen to a CD	CD
To listen to FM or AM broadcasts	TUNER
To listen to the DAT or tape deck connected to the DAT/TAPE-1 jacks	DAT/TAPE-1
To listen to the DAT or tape deck connected to the DAT/TAPE-2 jacks	DAT/TAPE-2

- VIDEO FUNCTION SELECTOR
(Setting the video program source)

Video program source	VIDEO FUNCTION SELECTOR
To watch a satellite broadcast	DBS/BS
To watch the video disc player connected to the VDP jacks	VDP
To watch the video deck connected to the VCR-1 jacks	VCR-1
To watch the video deck connected to the VCR-2 jacks	VCR-2
To watch the video camcorder equipped with playback function or another component connected to the (front panel) VIDEO-AUX jacks	V-AUX

MFD display

2 Begin playback of the program source.
For operating details, see the manual of the respective component.

3 Adjust the volume and tone.

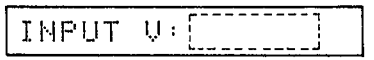
2. Simulcast playback
(Playing video and audio sources)

1 Select the program source you wish to listen to with the AUDIO FUNCTION selector or the VIDEO FUNCTION selector.

MFD display

2 Hold down the VIDEO SELECT button for the video program source you wish to watch.

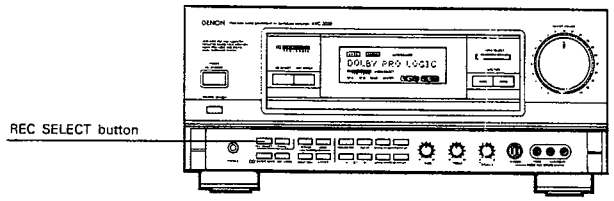
MFD display



3 Begin playback of the program source.
For operating details, see the manual of the respective component.

4 Adjust the volume and tone.
* Note that when the VIDEO FUNCTION button is again used to select the video program source during Simulcast playback, the Simulcast playback will be cancelled automatically.

Recording (Audio and Video)



1. Recording program sources
(Recording the sound and picture of the source currently being monitored)

Follow the playback instructions for program sources (page 31).

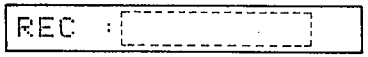
Simultaneous Recording (audio or video)
The signals of the source selected with the FUNCTION selector button are output simultaneously from the DAT/TAPE-1, DAT/TAPE-2, VCR-1 and VCR-2 REC OUT jacks. If a total of four decks – two tape decks and two video decks – are connected and all four are set to the recording mode, the same source can be recorded simultaneously on all for decks.

2. Recording program sources independently and copying tapes (copying videos independently)
[Recording sounds (pictures) other than the ones currently being monitored]

1 Press in the REC SELECT (independent recording selector) button, then release the button when the program source you want to record is displayed. The display changes in the following order:

PHONO → CD → TUNER → DAT/TAPE-1 → V.AUX → VCR-2 → VCR-1 → VDP → DBS/BS → DAT/TAPE-2 →

MFD display



* If "PHONO", "CD", "TUNER", "DAT/TAPE-1" or "DAT/TAPE-2" is selected, no video signals will be output to the video REC OUT jacks.

2 Start playback of the program source you want to record.

3 Start recording on the tape deck, DAT (analog) or video deck.
For instructions on operation, refer to the manual for the corresponding component.
* This mode is cancelled if the REC SELECT button is pressed again.
* This is not possible in the CD or the VDP direct mode.

Monitoring the Recording

The actual recorded sound can be monitored when recording on a three-headed tape deck.
To monitor the sound being recorded on the tape, after performing the above settings, use the AUDIO FUNCTION selector button to select the position, DAT/TAPE-1 or DAT/TAPE-2, to which the three-headed tape deck is connected.

➡ Continued

Operations in the Different Modes

			SP-A	SP-B	CENTER SP/PRE*1	REAR SP/PRE*1	CENTER LEVEL	REAR LEVEL	REAR BAL.	CENTER MODE	TEST TONE	DELAY TIME	SURR. SIGNAL	A. MATRIX
CD DIRECT, VDP DIRECT			○	○	×	×	×	×	×	×	×	×	×	×
BYPASS			○	○	○	×	○	×	×	△*2	×	×	×	×
DOLBY PRO LOGIC		NORMAL	○	○	○	○	○	○	○	○	○	○	×	×
		PHANTOM	○	○	×	○	×	○	○	○	○	○	×	×
		WIDE	○	○	○	○	○	○	○	○	○	○	×	×
DOLBY 3CH. LOGIC		NORMAL	○	○	○	×	○	×	×	○	○	×	×	×
		WIDE	○	○	○	×	○	×	×	○	○	×	×	×
WIDE SCREEN & LIVE	A. MATRIX ON	NORMAL	○	○	○	○	○	○	○	○	×	○	○	○
		PHANTOM	○	○	×	○	×	○	○	○	×	○	○	○
		WIDE	○	○	○	○	○	○	○	○	×	○	○	○
	A. MATRIX OFF (S.SIG.L+R, L-R)		○	○	×	○	×	○	○	×	×	○	○	△*3
MONO MOVIE			○	○	×	○	×	○	○	△*2	×	×	×	×
CLASSIC CONCERT			○	○	×	○	×	○	○	△*2	×	×	×	×
ROCK CONCERT			○	○	×	○	×	○	○	△*2	×	×	×	×
CHURCH			○	○	×	○	×	○	○	△*2	×	×	×	×
JAZZ			○	○	×	○	×	○	○	△*2	×	×	×	×
STADIUM			○	○	×	○	×	○	○	△*2	×	×	×	×
MATRIX			○	○	×	○	×	○	○	△*2	×	○	×	×

			7kHz L.P.F.	SOUND SIM.	INIT. DELAY	ROOM SIZE	EFFECT LEVEL	EFFECT ON/OFF	A.V.S.E.	CINEMA	INPUT ADJ.	CLR
CD DIRECT, VDP DIRECT			×	×	×	×	×	×	×	×	×	×
BYPASS			×	×	×	×	×	×	○	○	○	○
DOLBY PRO LOGIC		NORMAL	×	×	×	×	×	×	○	○	○	○
		PHANTOM	×	×	×	×	×	×	○	○	○	○
		WIDE	×	×	×	×	×	×	○	○	○	○
DOLBY 3CH. LOGIC		NORMAL	×	×	×	×	×	×	○	○	○	○
		WIDE	×	×	×	×	×	×	○	○	○	○
WIDE SCREEN & LIVE	A. MATRIX ON	NORMAL	○	○	×	△*4	△*4	×	○	○	○	○
		PHANTOM	○	○	×	△*4	△*4	×	○	○	○	○
		WIDE	○	○	×	△*4	△*4	×	○	○	○	○
	A. MATRIX OFF (S.SIG.L+R, L-R)		○	○	×	△*4	△*4	×	○	○	○	○
MONO MOVIE			×	×	○	○	○	○	○	○	○	○
CLASSIC CONCERT			×	×	○	○	○	○	○	○	○	○
ROCK CONCERT			×	×	○	○	○	○	○	○	○	○
CHURCH			×	×	○	○	○	○	○	○	○	○
JAZZ			×	×	○	○	○	○	○	○	○	○
STADIUM			×	×	○	○	○	○	○	○	○	○
MATRIX			×	×	×	×	×	×	○	○	○	○

○: Operation possible
×: Operation not possible

*1 When the power is turned on and when switching from other modes, the center and rear speaker pre-outputs are automatically turned on, even if they were off. In the bypass mode, however, the center speaker pre-outputs do not change.
*2 Switches to the Dolby Pro (3CH.) Logic mode for any modes other than CD direct, VDP direct, Dolby Pro (3CH.) Logic, Wide Screen and LIVE.
*3 Only when the surround signal parameter is set to "L-R".
*4 Only when the sound simulation parameter is set to "ON".

Operating the INPUT ADJ. button
For low input sources such as records or the tuner, if the INPUT ADJ. button is pressed and the attenuator is set to +6dB when listening to low input sources, the result is quality sound with an improved SN ratio.
* If the sound seems distorted when set to +6dB, set it back to 0dB.
* This input level setting (on or off) setting for the different input functions is automatically stored in the memory.
* This operation is not possible for the CD and the VDP direct mode.

9 USING THE DSP (DIGITAL SOUND PROCESSOR)

DSP Modes

The AVC-3030 includes a DSP (Digital Signal Processor) for adjusting the sound field using digital signals. This DSP offers an excellent S/N ratio, channel separation, distortion characteristic, etc. The various parameters can be set according to conditions in the listening room to create a more realistic sound.
The sound field processing modes are as follows:

1. Modes not using the DSP
- Bypass: In this mode, the surround mode (DSP) is bypassed and the normal stereo sound is produced.
- CD direct and VDP direct:
  In these mode, the CD input signals are sent directly to the output jacks. (No signals are output to the center and rear channels.)

2. Modes using the DSP
- Surround modes: In these modes, signals are output to the center and rear speakers as well for four- or five-channel playback.

The surround modes are as follows:

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround.
2	Wide Screen	Use this to enjoy program sources with the atmosphere of a movie theater, recorded in Dolby Surround.
3	Live	Use this to enjoy program sources with the atmosphere of a live performance, recorded in Dolby Surround.
4	Mono movie	In this mode, a sense of expansion is added to monaural audio sources. This mode is effective for old movies, bilingual TV movies, or monaural music sources.
5	Classic concert	This mode simulates the sound of a large concert hall. It is suited for classical music, etc.
6	Rock concert	This mode is best for playing rock, popular music, etc.
7	Church	Use this mode when playing religious music, pipe organ music, etc.
8	Jazz	This mode recreates the sound of a live music house with a low ceiling and strong vibrations.
9	Stadium	This mode simulates the sound field of an outdoor stadium.
10	Matrix	Use this to create a sense of expansion with sources recorded in stereo. The differential components of the input signals are output from the rear channel.

*** These effects may not be very pronounced for some sources. If this is the case, try other modes, not relying too much on their names, and find the mode you like best. Also, if the sound seems distorted, Either lower the effect level or press the CLEAR button and readjust the parameters.**

*** To adjust the speaker balance for the different surround modes, first adjust for the Dolby Pro Logic Surround mode as explained on page 38, then use the position of the center level and rear level controls at this time as a guide to adjust the balance for that surround mode.**

➡ Continued

Parameters

The parameters are important data when using the DSP, and the parameters which can be used differ according to the DSP mode. (Refer to page 37 for a table of the usable parameters.)
The various parameters are preset upon shipment from the factory, but can be changed to suit your own tastes.

1. Independent functions (buttons)
In each DSP mode, there are some functions which can be used, others which cannot.

(1) DELAY (▲ up and ▼ down) buttons
These adjust the delay time of the rear speaker signals. [Remote control unit]

(2) T.TONE (on/off) button
When pressed, test tones are emitted for adjusting the level, balance of the different channels.
(For details, refer to page 39.) [Remote control unit]

(3) EFFECT button
This is a parameter which turns the DSP on and off.
When turned off, only the direct sounds are produced, as in the bypass mode.
Use this to check the effect of the DSP. [Main unit and remote control unit]

MFD display

2. PARAMETER button
Use this button to select the parameter.
The normal procedure for setting parameters is to first select the parameter with the PARAMETER button, then use the [+] and [−] buttons to set the selected parameter.
If no button is pressed for approximately 15 seconds, the parameter setting mode is automatically cancelled.

(1) Initial delay
This parameter sets the distance (delay time) from the sound source to the reflecting walls.
The larger the value, the further away the sound source seems.

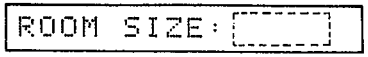
[−] [+]
0 ~ 50msec
(10msec STEP)

MFD display

(2) Room size
This parameter sets the time interval between the initial reflected sounds.
The larger the value, the larger the sound field seems to be, and the greater the sense of expansion.

[−] [+]
0.4 ~ 2.0
(0.2 STEP)

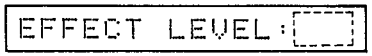
MFD display



(3) Effect level
This parameter adjusts the level of the reflected sound.
The larger the value, the greater the level of the reflected sound.

⊟ ⊞
0 ~ 15

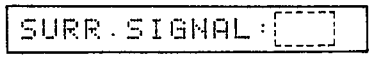
MFD display



(4) Surround signal
This parameter is only for the WIDE SCREEN and LIVE modes.
Select the surround input signal.

⊟ ⊞
L–R ⟷ L+R

MFD display



(5) Adaptive matrix
This parameter is only for the WIDE SCREEN and LIVE modes.
The adaptive matrix is a function for emphasizing a sense of movement and positioning.
This turns the adaptive matrix, which is necessary for emphasizing the directivity, on and off.
Normally leave it on, but for sources with which emphasizing the directivity seems unnatural, turn it off.

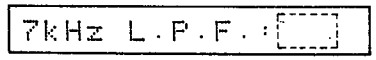
⊟ ⊞
OFF ⟷ ON

MFD display

(6) 7kHz L.P.F. (low-pass filter)
This parameter is only for the WIDE SCREEN and LIVE modes.
This filter reduces the high frequencies in the reflected sound, cutting all frequencies of 7kHz and above.

⊟ ⊞
OFF ⟷ ON

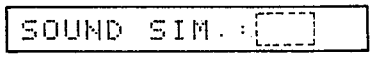
MFD display



(7) Sound simulation
This parameter is only for the WIDE SCREEN and LIVE modes.
This parameter turns various types of sound field simulations on and off. When turned off, only the direct, unprocessed signals are produced.
* If the power is turned off when the SOUND SIM. parameter set to "OFF", only the sound will be played when the power is turned back on.

⊟ ⊞
OFF ⟷ ON

MFD display



➡ Continued

DSP Parameter Table

Parameter \ Mode	DOLBY PRO LOGIC	WIDE SCREEN	LIVE	MONO MOVIE	CLASSIC CONCERT	ROCK CONCERT	CHURCH	JAZZ	STADIUM	MATRIX
Independent functions										
(1) DELAY	O	O	O	×	×	×	×	×	×	O
(2) TEST TONE	O	×	×	×	×	×	×	×	×	×
(2) EFFECT	×	×	×	O	O	O	O	O	O	×
PARAMETER										
(1) INIT. DELAY	×	×	×	O	O	O	O	O	O	×
(2) ROOM SIZE	×	O	O	O	O	O	O	O	O	×
(3) EFFECT LEVEL	×	O	O	O	O	O	O	O	O	×
(4) SURROUND SIGNAL	×	O	O	×	×	×	×	×	×	×
(5) ADAPTIVE MATRIX	×	O	O	×	×	×	×	×	×	×
(6) 7kHz L.P.F.	×	O	O	×	×	×	×	×	×	×
(7) SOUND SIM.	×	O	O	×	×	×	×	×	×	×

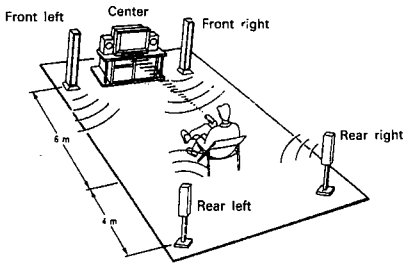
Parameters which can be used for the different modes are stored, except for the test tone function.

NOTE:
The sound is interrupted momentarily when the delay, initial delay, room size and effect level parameters are changed, but this is normal.
For some playback sources, noise may be generated if the DSP parameters are changed.

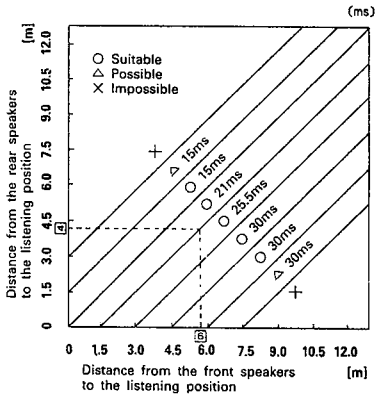
DOLBY PRO LOGIC SURROUND

- **Setting the delay time**

The optimum delay time will differ depending on the listening position. Referring to the chart at right, set the optimum delay time for your room's space and setting position. For example, when the distance from the front speakers to the listening position is 4 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 21 ms.
The variable range of the delay time differs depending on the mode.
For details about the variable range, see Page 25.

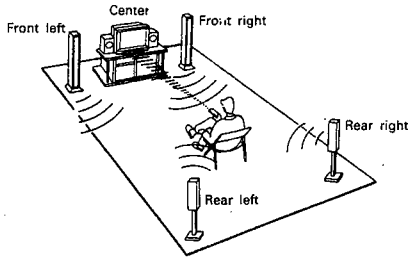


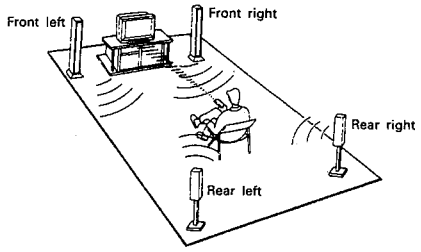
Listening position and optimum delay time for playback with Dolby Pro Logic surround



- **Speaker arrangement and Dolby Pro Logic and the center mode**

Ideally, center speakers are used for playback of Dolby Pro Logic surround.





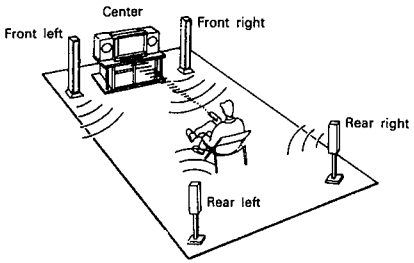
NORMAL mode

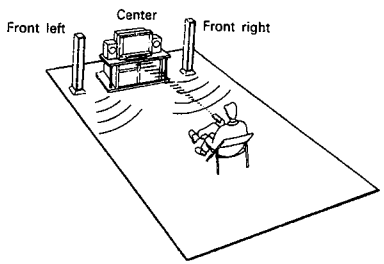
Normal mode: This mode is suited for an arrangement in which the center channel speakers are smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel outputs signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.

PHANTOM mode

Phantom mode: Use this mode when center channel speakers are not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

➡ Continued





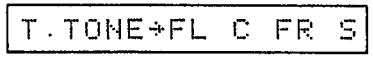
WIDE mode

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

Test Tones

This function emits test signals for adjusting the levels of the different channels for Dolby Pro Logic surround. When the T.TONE button on the remote control unit is pressed, test tones are emitted from the speakers, starting from the front left speaker.
Before playing sources recorded in Dolby Pro Logic surround, arrange the speakers as shown on the diagram above, then use the test tones to adjust the balance between the volumes of the speakers to achieve the most appropriate balance for the listening position, and adjust so that the level of the sound from all the speakers seems to be the same.
To stop emitting the test tones, press the T.TONE button once again. There are two test tone patterns, automatic and manual, selected with the PARAMETER button.
In addition, enjoy other surround modes using the volume balance adjusted in the Dolby Pro Logic mode as the basis. For some playback sources the volume balance may not be optimal, so readjust it to suit your tastes.

MFD display



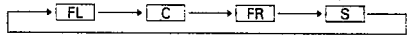
FL : Front left channel
C : Center channel
FR : Front right channel
S : Rear channels

3CH. LOGIC

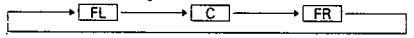
Three-channel logic mode: Use this mode when rear channel speakers are not used. The rear channel information is reproduced by the front speakers.
NOTE: The Phantom mode cannot be set when in the 3CH. Logic mode.

Automatic mode

The test tones are emitted in the order shown below, at four second intervals the first two times around, two second intervals from the third time around on.



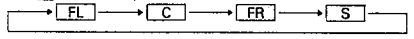
(In the Dolby 3ch. Logic mode:)



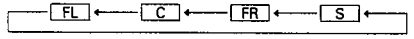
* The test tone is always emitted from the front left channel first.
* The tone will not switch to the next channel when adjusting the center level for the center channel output or when adjusting the rear level or rear balance for the rear channel output. The tone switches to the next channel two seconds after the level key is released.

Manual mode

In this mode, the channels from which the test tones are emitted are selected manually.
Use the [−] and [+] buttons to select the channels.
The test tones are emitted in the following order each time the [+] button is pressed:



The test tones are emitted in the following order each time the [−] button is pressed:



* When switched from the automatic mode to the manual mode, test tones are emitted starting from the channel from which they were being output in the automatic mode.

DSP Operation

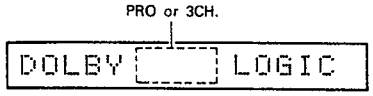
1. Surround modes – four-channel and five-channel playback modes

SURROUND MODE button — Main unit and remote control unit

The DSP surround mode switches in order each time this button is pressed.

(1) Dolby Pro Logic and 3ch. Logic
Modes for playing program sources recorded in Dolby surround

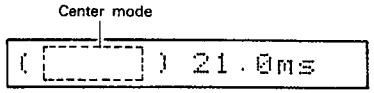
MFD display



①CENTER MODE button — Main unit and remote control unit

Set the Dolby center mode according to the center speaker(s) being used.
Refer to pages 38 to 39.

MFD display



②T.TONE button — Remote control unit

Use this to adjust the speaker levels and balance.
Refer to page 39.

PARAMETER button — Main unit and remote control unit

Automatic mode ⟷ manual mode (Refer to page 39.)

③DELAY buttons (▲ and ▼) — Remote control unit

Use these to set the delay time (between 15 and 30msec).

④Start playing the source.

⑤A.V.S.E. button — Remote control unit

CINEMA button — Remote control unit

Set these to suit your tastes.
(Refer to page 25.)

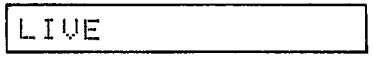
➡ Continued

(2) WIDE SCREEN

MFD display

LIVE

MFD display



- The usable parameters are the same for the above two modes.

①CENTER MODE button — Main unit and remote control unit

Same as for the Dolby Pro Logic mode.

②PARAMETER button — Main unit and remote control unit

Use this to select and set the parameters.

→ Surround signal → Adaptive matrix → 7kHz L.P.F. →
Effect level ← Room size ← Sound simulation ←

Refer to pages 35 to 37.

- The adaptive matrix (on/off) can only be turned on when the surround signal parameter is set to "L–R". If the surround signal parameter is set to "L+R", the adaptive matrix is automatically set to "OFF". If the surround signal parameter is set back to "L–R", the adaptive matrix remains set to "OFF", even if it was set to "ON" before. In addition, the room size and effect level parameters can only be set when the sound simulator parameter is set to "ON".

③DELAY buttons (▲ and ▼) — Remote control unit

Use these to set the delay time (between 6.0 and 30.0msec).

④Start playing the source.

⑤A.V.S.E. button — Remote control unit

CINEMA button — Remote control unit

Set these to suit your tastes.
(Refer to page 25.)

(3) **MFD display**

Mono movie → MONO MOVIE
↓
Classic concert → CLASSIC CONCERT
↓
Rock concert → ROCK CONCERT
↓
Church → CHURCH
↓
Jazz → JAZZ
↓
Stadium → STADIUM

- The usable parameters are the same for the above six DSP surround modes.
- Set the parameters according to the DSP surround mode.
- Even if the parameters are set to the same values for all the surround modes, there are also internally fixed parameters, so the effects created with the various modes will be different.

①PARAMETER button — Main unit and remote control unit

Use this to select and set the parameters.

→ Initial delay → Room size → Effect level →

(Refer to pages 35 to 37.)

②Start playing the source.

③EFFECT button — Main unit and remote control unit

Use this to check the effect.

④A.V.S.E. button — Remote control unit

CINEMA button — Remote control unit

Set these to suit your tastes.
(Refer to page 25.)

MFD display

(4) Matrix → MATRIX

①DELAY buttons (▲ and ▼) — Remote control unit

Use these to set the delay time (between 6.0 and 370.0msec).

②Start playing the source.

③A.V.S.E. button — Remote control unit

CINEMA button — Remote control unit

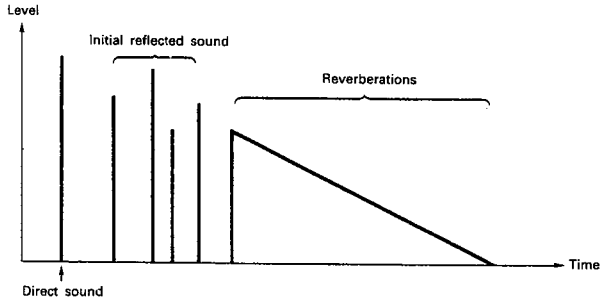
Set these to suit your tastes.
(Refer to page 25.)

➡ Continued

Technical Advice

1. "Sound field"

The sounds we hear normally or in concert halls, etc., does not only consist of sounds heard directly from the sound source (direct sound). Sound disperses in all directions and is reflect repeatedly off the walls and ceilings, and these reflected sounds reach our ears with a certain delay.
Reflected sounds can be classified into two main categories. The first is initial reflected sound, and this is sound which we hear after it has reflected once or a few times off of walls. This creates an echo-like effect, but as the time difference with respect to the direct sound is short, we do not perceive this initial reflected sound as a distinct sound. Rather, it has the effect of increasing the sense of expansion or depth of the direct sound. The second category of reflected sound is called reverberations. These are sounds which reach our ears after an elaborate series of reflections. These reverberations are responsible for the richness of the overall sound.
These different sounds can be graphed as follows:



The above is only one example. Actually the reflected sound takes on a particular form depending on the environment surrounding the sound source, that is such conditions as the size of the room, the distance to the walls, the shape and material of the walls, and our position within the room. This reflected sound combines with the direct sound, and we recognize as it as the particular sound to the listening environment. This particular sound is called the sound field. Normally we hear it without paying special attention to it.
The AVC-3030 uses an advanced DSP (digital signal processor) to create various sound fields.

2. DSP sound fields

We now have access to many types of music and movie sources, including LDs, CD, videos, satellite broadcasts, and so on. In most cases, some sort of sound field has already been added to these sound sources. For live recordings, of course, but also for studio recordings, the reflected sounds are recorded along with the direct sound. But when we listen to them, we sometimes feel we would like a richer sound, or for example that we would like to recreate the exciting sense of presence at a live concert. By adding the DSP sound fields to the sources, we can create a more real sound with greater atmosphere.
The sound fields created by the DSP are created based on the sound source. Because of this, some adjustments are necessary to achieve an effect which fits the source, including the sound field already included in the source. The AVC-3030 offers various parameters so that the user can make these adjustments. Values have already been preset for the different parameters in the various modes upon shipment from the factory, they can be adjusted to create your own original sound fields.
The parameters which the AVC-3030 includes for adjusting the sound field are as follows:

①Initial delay
②Room size
③Effect level
④Effect
⑤7kHz L.P.F. (low-pass filter)

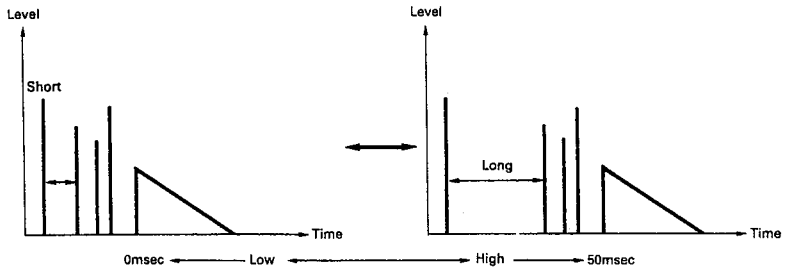
➡ Continued

3. Description of parameters

(1) Initial delay

This parameter sets the distance (delay) time from the sound source to the reflecting walls.

Variable range: 0 to 50msec (in 10msec steps)



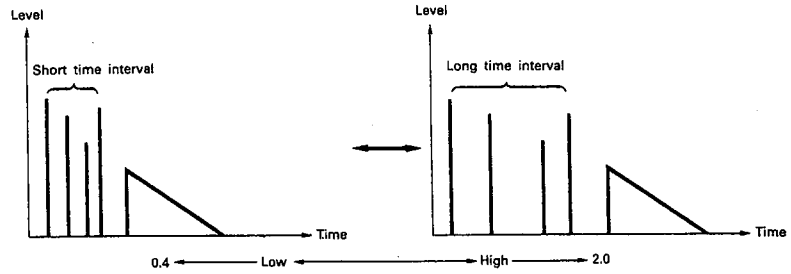
This adjusts the time difference between the direct sound and the initial reflected sound. Think of it like changing the distance from the sound source to the wall behind the stage.

The higher the value, the deeper the stage seems to be.

(2) Room size

This parameter sets the time interval between initial reflected sounds.

Variable range: 0.4 to 2.0 (in 0.2 steps)



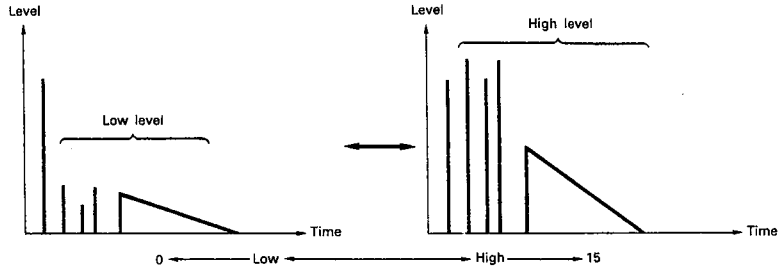
This parameter controls the size of the room. The higher this value, the greater the time interval between initial reflected sounds, and the greater the time difference between the direct sound and the initial reflected sounds. In other words, the time until which the sound reaches the listeners ears after reflecting off walls increases, as if the size of the room increased. Inversely, the lower the value, the smaller the room. This parameter has a strong effect, so if changed the sound may seem unnatural with some sources. If so, either lower the effect level or decrease the room size parameter.

(3) Effect level

This parameter adjusts the level of the reflected sound.

The higher the value, the greater the level of the reflected sound.

Variable range: 0 to 15



Normally the number of reflected sounds runs from several sounds to several tens of sounds, and specific data is set for each of these in the different modes. For some sources, the level of the reflected sound may be too high, making the sound harsh to listen to. In other cases, the effect will be too low and not perceivable. In such cases, use this parameter to change the overall level of the reflected sounds without changing the balance between the level of the different reflected sounds, that is without changing the specific character of the sound field.

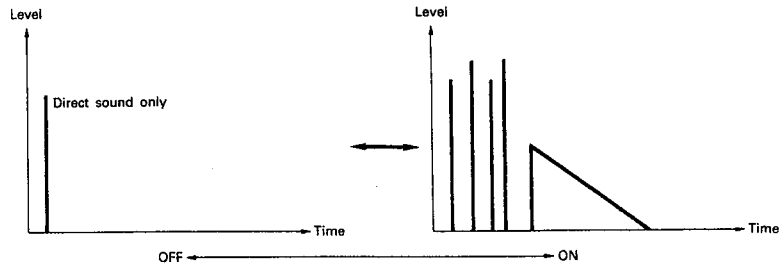
If this parameter is set too high or too low, the resulting sound may be bizarre. At level 0, in particular, there is no reflected sound at all.

Lower the effect level if the sound seems distorted.

(4) Effect

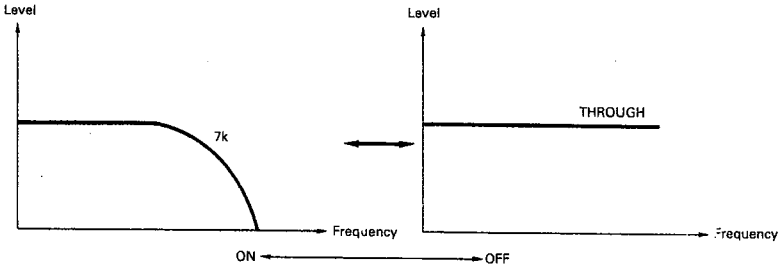
This parameter turns the DSP sound field effect on and off.

When turned off, the sound is the same as in the bypass mode, and only the direct sound is played.



This parameter is used to check the effect of the DSP sound field. When turned off, only the direct sound is produced, and no reflected sounds are heard, regardless of the settings of the other parameters. The DSP sound field effect can be turned on and off without changing other parameters, making it easy to check the effect. The effect parameter turns back on automatically if other parameters are changed when the effect parameter is turned off.

(5) 7kHz L.P.F. (low-pass filter)
This filter cuts the high frequency range of reflected sounds.
All frequencies of 7kHz and higher are cut.
When the filter is turned off, all the frequencies are produced (this is the "through" mode).



Use this to change the quality of the reflected sounds.
When turned off, the sound is as if the room has hard, concrete walls, and when turned on, the sound becomes softer.

4. Creating original sound fields

Here we offer a general example of how to create original sound fields.

(1) Select the surround mode to use as the base.

(2) Adjust the room size and initial delay parameters.
First adjust the room size parameter. At this stage, roughly determine the size of the sound field. After roughly adjusting the room size parameter, adjust the initial delay parameter. If the room size and initial delay values are too high, the result may be an unnatural sound for some sources. Find the sound you like.

(3) Adjust the 7kHz L.P.F. (for the WIDE SCREEN and LIVE modes only)
Use the 7kHz L.P.F. to determine the quality of the reflected sound.

(4) Overall adjustment
Use the effect level parameter to adjust the balance between the direct sound and the reflected sound. The atmosphere changes substantially just by changing this balance.
If you cannot achieve the desired effect, try returning to the previous step. In particular, the relationship between steps 2 and 1 is important, so it may be a good idea to try something else. Sometimes you might discover surprising effects through different combinations.
The preset modes have been given names indicating sound fields appropriate for different types of music sources, but when creating your own original sound fields there is no need to worry too much about these names. To create a sound field to your liking, it may be best to try different variations.
* Press the CLEAR button to start over from scratch.

5. Initial settings of parameters

The initial settings of the different parameters are as shown below.
When the CLEAR button is pressed, the settings are all reset to these values.

	SP-A	SP-B	CENTER SP/PRE	REAR SP/PRE	CENTER LEVEL	REAR LEVEL*1	CENTER MODE	3CH. LOGIC	TEST TONE	DELAY TIME
BYPASS	ON	OFF	OFF	OFF	–12dB	–	–	–	–	–
DOLBY PRO LOGIC	ON	OFF	ON	ON	–12dB	–12dB	NORMAL	OFF	OFF	21msec
WIDE SCREEN	ON	OFF	ON	ON	–12dB	–12dB	NORMAL	–	–	21msec
LIVE	ON	OFF	ON	ON	–12dB	–12dB	NORMAL	–	–	21msec
MONO MOVIE	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
CLASSIC CONCERT	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
ROCK CONCERT	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
CHURCH	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
JAZZ	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
STADIUM	ON	OFF	OFF	ON	–	–12dB	–	–	–	–
MATRIX	ON	OFF	OFF	ON	–	–12dB	–	–	–	21msec

	SURR. SIGNAL	A. MATRIX	7kHz L.P.F.	SOUND SIM.	INIT DELAY	ROOM SIZE	EFFECT LEVEL	EFFECT ON/OFF	AVSE	CINEMA
BYPASS	–	–	–	–	–	–	–	–	OFF	OFF
DOLBY PRO LOGIC	–	–	–	–	–	–	–	–	OFF	OFF
WIDE SCREEN	L–R	ON	ON	ON	–	1.0	10	–	OFF	OFF
LIVE	L–R	ON	ON	ON	–	1.0	10	–	OFF	OFF
MONO MOVIE	–	–	–	–	0msec	1.0	10	ON	OFF	OFF
CLASSIC CONCERT	–	–	–	–	0msec	1.0	10	ON	OFF	OFF
ROCK CONCERT	–	–	–	–	0msec	1.0	10	ON	OFF	OFF
CHURCH	–	–	–	–	0msec	1.0	10	ON	OFF	OFF
JAZZ	–	–	–	–	0msec	1.0	10	ON	OFF	OFF
STADIUM	–	–	–	–	0msec	1.6	10	ON	OFF	OFF
MATRIX	–	–	–	–	–	–	–	–	OFF	OFF

*1: Both the left and right rear channels are set to –12dB.

10 ON-SCREEN DISPLAY

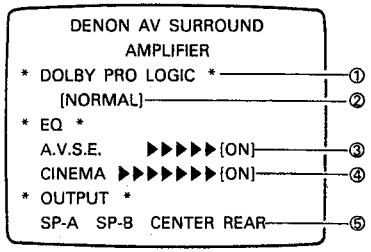
If the SCREEN button on the remote control unit is pressed when the power is turned on, the operating modes are displayed on the monitor TV's screen when buttons are operated, etc.
The displays shown below appear on the screen when the power is turned on and the SCREEN button is operated. The mode changes between screen 1, screen 2, screen 3, screen 4 and off each time the SCREEN button is pressed.
When the power is turned on, screens 1 to 3 are displayed for approximately 7 seconds, after which the on-screen display automatically turns off.
When other buttons are pressed, messages related to the button that was pressed are displayed for approximately 5 seconds, then automatically turn off.
(The normal picture is displayed under the message, but if no picture is being input, the background turns a color which is internally produced.)

NOTES:

- The on-screen display signals are not output to the S-VIDEO MONITOR OUT jacks or the video output jacks for recording.
- If a video source is selected but no video signals are being input (when a color background is displayed), the color background turns off after the message is displayed.

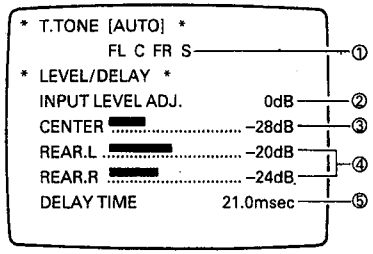
The following screens are examples of displays.

Screen 1 Surround mode display



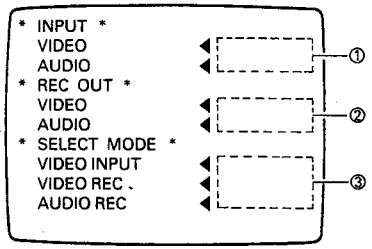
①Surround mode
②Center mode
③A.V.S.E. setting (on/off)
④Cinema setting (on/off)
⑤Output indicators
These indicators are displayed when signals are being output to these channels.

Screen 2 Level display, etc.



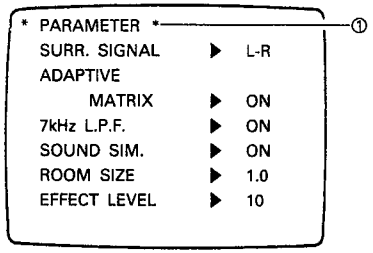
①Test tone display
This is displayed when the test tone mode is set.
②Input level adjustment
0dB/+6dB
③Center level
The level is displayed by a bar graph and by the decibel (dB) value.
If the level is increased, the bar becomes longer.
④Rear level and balance
The levels are displayed by a bar graph and by the decibel (dB) value.
If the level is increased, the bar becomes longer.
⑤Delay time
This displays the delay time.

Screen 3 Input/output display



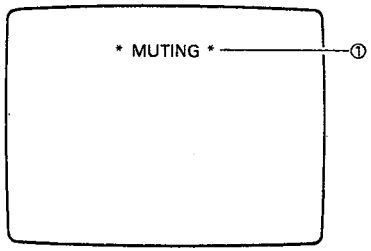
①Input selector display
The set input is displayed here.
②Recording output selector
This indicates the recording output.
③Select mode display
This is displayed when a select mode such as the recording output select or video select mode is set.

Screen 4 Parameter display, etc.



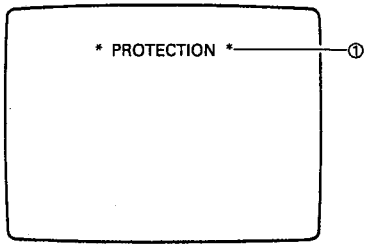
①Parameter display
This indicates the DSP parameters.
Displayed for approximately 15 seconds.

Other 1



①Muting display
This flashes when in the muting mode.

Other 2



①Protection circuit display
This flashes when the protection circuit is activated.
For details, refer to page 30.

11 LAST FUNCTION MEMORY

- This amplifier is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off.
  This function eliminates the need to perform complicated resettings when the power is switched on.
- This amplifier is also equipped with a back-up memory. This function provides approximately one month of memory storage with the power cord disconnected.

12 TROUBLESHOOTING

If a problem should arise, first check the following:
1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?
If the amplifier is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common problems arising when listening to the CD, records, tapes, and FM broadcasts	LED not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug.	11
	LED lit but sound not produced.	• Speaker cords not securely connected. • OUTPUT button is off.	• Connect securely. • Select SP-A, SP-B, CENTER, or REAR of the remote control's OUTPUT button.	9~11 25
		• Improper position of the audio input selection button.	• Set to a suitable position.	5, 14~17
		• Volume control set to minimum. • MUTING is on.	• Turn volume up to suitable level. • Switch off MUTING.	15 25
	"PROTECTION!!" display appears multi-function fluorescent display.	• Speaker terminals are short-circuited. • Incomplete connection of the shorting pin between PRE OUT and MAIN IN.	• Switch power off, connect speakers properly, then switch power back on. • Connect shorting pin properly.	9 9
	Sound produced only from one channel.	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords. • Left/right balance is off.	• Connect securely. • Connect securely. • Adjust balance knob properly.	9~11 9~13 17
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords.	• Check left and right connections.	9~13
	Sound seems distorted.	• INPUT LEVEL ADJ. button set to +6dB. • Effect level parameter is high.	• Set to 0dB. • Lower effect level parameter.	33 36,45
	Sound seems strange.	• DSP parameter settings are poor.	• Press the CLEAR button then adjust the DSP parameters.	34,47
	Sound field effect cannot be heard.	• EFFECT is turned off. • SOUND SIM. is turned off.	• Turn EFFECT on. • Turn SOUND SIM. on.	16 36
	Recording (audio and/or video) is not possible.	• CD or VDP direct mode set.	• Cancel CD or VDP direct mode.	14,15
	CD or VDP direct mode does not work.	• REC SELECT is on.	• Cancel REC SELECT.	14,15

	Symptom	Cause	Measures	Page
When playing records	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection. • TV or radio transmission antenna nearby.	• Connect securely. • Connect securely. • Contact your store of purchase.	10 10 –
	Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible. • Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).	– –
	Sound is distorted.	• Stylus pressure too weak. • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.	– – –
	Volume is weak.	• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.	10
Remote control unit	Amplifier does not operate properly when remote control unit is used. (When LEARNED/TX LED is lit)	• Batteries dead. • Remote control unit too far from amplifier. • Obstacle between amplifier and remote control unit. • Learning process to the button improper. • Different button is being pressed.	• Replace with new batteries. • Move closer. • Remove obstacle. • Set learning again. • Press the proper button.	22 22 22 28
	Amplifier does not operate properly when remote control unit is used. (When LEARNED/TX LED is not lit)	• Learning process to the button improper. • Learning process has not been applied to the button. • Batteries dead. • ⊕ and ⊖ ends of battery inserted in reverse. • Improper position of PROGRAM switch.	• Set learning again. • Apply learning process. • Replace with new batteries. • Insert batteries properly. • Set to desired position (AMP, AV).	28 28 22 22
	Preset memory codes do not operate.	• Other code already learned at that key.	• Reset.	29

13 SPECIFICATIONS

- **Audio Section**

(Power amplifier)	MAIN (main 2ch driven)
Rated output:	110 W + 110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)
(All properties shown are	CENTER (center 1ch driven)
only for the power	110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)
amplifier stage.)	REAR (rear 2ch driven)
	35 W + 35 W (8 ohms, 1 kHz with 0.05% THD)
Frequency response:	5 Hz to 50 kHz (Main in – speaker out)
Rated input level / impedance:	1 V/47 k ohms (Main in – speaker out)
Signal-to-noise ratio:	120 dB (Main in – speaker out)
Output terminals:	Main: A or B 6 to 16 ohms
	A + B 12 to 16 ohms
	Center: 6 to 16 ohms
	Rear: 6 to 16 ohms
(Pre-amplifier)	
Line input (Each line input – FRONT PRE OUT)	
Input sensitivity / impedance:	150 mV / 47 k ohms PHONO (MM): 2.5 mV / 47 kohms, CD DIRECT: 150 mV / 33 kohms
Frequency response:	5 Hz to 100 kHz: ±3 dB
	5 Hz to 150 kHz: ±3 dB (CD DIRECT)
Tone control range:	BASS: ±10 dB at 100 Hz
	TREBLE: ±10 dB at 10 kHz
Signal-to-noise ratio	92 dB
(FRONT PRE OUT):	95 dB (CD DIRECT)
Distortion factor:	0.01% 1 kHz 1 V (BYPASS mode)
	0.003% 1 kHz 3 V (CD DIRECT)
Rated output / Maximum output:	1 V/8 V (common for FRONT, CENTER, REAR, MONO, each PRE OUT)
Maximum headphone output:	284 mW (8 ohms)
Phono equalizer (PHONO input – REC OUT)	
RIAA deviation:	±1 dB (20 Hz to 20 kHz)
Signal-to-noise ratio:	76 dB (A weighting, with 5 mV input)
Rated output / Maximum output:	150 mV / 8 V
Distortion factor:	0.03% (1 kHz, 3 V)

- **Video Section**

Standard video jacks	
Input and output level / impedance:	1 Vp-p/75 ohms
Frequency response:	1 Hz to 10 MHz +0, –3 dB
S-video output jacks	
Input and output level / impedance:	Y (brightness) signal: 1 Vp-p/75 ohms
	C (color) signal: 0.286 Vp-p/75 ohms
Frequency response:	1 Hz to 11 MHz +0, –3 dB

- **General**

Power supply:	120 V AC, 60 Hz
Power consumption:	5.5 A
Maximum external dimensions:	434 (W) × 184 (H) × 421 (D) mm (17-3/32" × 7-1/4" × 16-37/64")
Weight:	15.0 kg (33 lbs 2 oz)

- **Remote control unit (RC-162):**

System remote control with learning function

Total buttons:	62
DENON system code	
DAT:	8 buttons
CD player:	8 buttons
Cassette deck:	8 buttons
Tuner:	2 buttons
VDP:	8 buttons
AVC-3030 fixed codes:	47 buttons
Learning buttons	
System call buttons:	3 (maximum of 10 codes per button)
Program – AMP:	2 buttons
– AV:	58 buttons
Maximum total:	35 codes
Batteries:	R6P/AA Type (two batteries)
External dimensions:	70 (W) × 215 (H) × 18 (D) mm (2-3/4" × 8-15/32" × 45/64")
Weight:	170 g (Approx. 6 oz) (including batteries)

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

DENON SERVICE NETWORK

- **Please contact one of our overseas service centers, listed below, for follow-up service consultation.**
- **Wenden Sie sich für anfallende Wartungs- bzw. Reparaturarbeiten bitte an eine der folgend aufgeführten Kundendienststellen.**
- **Adressez-vous à nos centres de service d'outre-mer indiqués ci-dessous, pour le service après-vente.**
- **Per il servizio dopo vendita rivolgete Vi al nostro centro di servizio estero appropriato della lista seguente.**
- **Para consultas de servicio porfavor dirigirse a cualquiera de nuestros centros de servicio en el extranjero, enlistados abajo.**
- **Neem kontakt op met één van onze reparatie-inrichtingen in het buitenland, waarvan hier een lijst volgt, voor na-service.**
- **Ta kontakt med nedan angivna servicecentraler för rådfrågning om servicearbeten efter försäljningen.**
- **Favor contactar um de nossos centros de serviços internacionais, abaixo listados, para consulta de serviços de acompanhamento.**

Australia	AWA Limited. 112-118 Talavera Road, North Ryde NSW 2113, Australia, Postal Locked Bag No. 12, North Ryde. Tel: (02) 888-9000, Fax: (02) 888-9310, Telex: AA 22692
Austria	Boyd U, Haas Electronic-Bauelemente Vertriebsges, mbH & Co., KG Rupertusplatz 3 A-1170 Wien Tel: 0222-460288
Belgium	Transtel-Sabima P.V.B.A. Harmoniestraat 13, 2018 Antwerpen 1, België Tel: 03-237-3607
Canada	Denon Canada Inc. 17 Denison Street, Markham Ontario, Canada L3R 1B5 Tel: 416-475-4085
Denmark	Audionord Danmark A/S. Vester Alle 7, 8000 Århus C. Tel: 86-128811
Finland	Suomen Hi-Fi Klubi OY Nylandsgatan 4-6, Helsingfors Tel: 0644401
France	Denon France S.A. 3 Boulevard Ney, 75018 Paris Tel: (1) 40 35 14 14
F.R. Germany	Denon Electronic GmbH Halskestraße 32,4030 Ratingen 1 Tel: 02102-4985-0
Greece	Kinotechniki Ass. 47 Stournara Str., Athens Tel: 3606.998
Hong Kong	Tai Lin Radio Service Ltd. 310 Nathan Road, Kowloon, Hong Kong Tel: K-855005-8
Iceland	Japis Ltd. Brautarholt 2, Box 396, 101 Reykjavik, Iceland Tel: 27133
Indonesia	PT Autoaccindo Jaya. Cideng Barat No. 7 Jakarta, Indonesia Tel: 6016599
Italy	Melchioni S.P.A. Via P. Colletta 37-20135 Milano Tel: 02-57941
Malaysia	Pertama Audio Sdn. Bhd. 44-46 Jalan SS 22/21 Damansara Jaya, 47400 Selangor, Malaysia Tel: 719 3957
Mexico	Labrador, S.A. de C.V. Zamora No. 154 Col. Condesa 06140 Mexico, D.F. Tel: 286 55 09 Fax: 286 34 62
Netherlands	Penhold B.V. Isarweg 6, 1043 AK Amsterdam Tel: 020-611-4957
New Zealand	Avalon Audio Corpn. Limited 119 Wellesley Street, Auckland 1, New Zealand Tel: 09-779-351, 09-775-370
Norway	Hi-Fi Klubben Box 70 Ankertorget, 0133 Oslo 1 Tel: 02-112218
Portugal	Videoacustica Qta. Do Paizinho-Armazém 5-Estrada De Circunvalação-Apart. 3127 1303 Lisboa Codex Tel: 2187004/2187096
Singapore	Pertama Audio Pte. Ltd. Alexandra Distripark Blk 4, No. 03-39 Pasir Panjang Road, Singapore 0511 Tel: 278-4411
Spain	Gaplasa S.A. Conde de Torroja, 24, 28022 Madrid Tel: 747-7777
Sweden	Sveriges Hi-Fi Klubb Box 5116, S-402 23 Göteborg, Tel: 031-200040
Switzerland	Diethelm & Co., AG. Eggbühlstrasse 28, 8052 Zürich Tel: 01-3013030
Taiwan R.O.C.	Taiwan Kolin Co., Ltd. 8th Fl., 83, Sec. 1, Chung-king S. Rd., Taipei, Taiwan R.O.C. Tel: (02) 314-3151 (20 Lines), Fax:(886) 02-3614037 Telex: 11102 TKOLIN
Thailand	Mahajak Development Co., Ltd. 6th FL., Mahajak Building, 46 Sukhuhvit 3 (Nananua), Klongteoy, Prakranong, Bangkok 10110 Tel: 256-0000
United Kingdom & Eire	Hayden Laboratories ltd. Hayden House, Chiltern Hill, Chalfont St. Peter Gerrards Cross, Bucks. SL9 9UG Tel: 0753-888447
U.S.A.	Denon America Inc. 222 New Road Parsippany, NJ07054, U.S.A., Tel: 201-882-7490, Fax: 201-575-1213

- If there is no service center in your local area, consult the outlet where the equipment was purchased.
- Falls sich in Ihrer Nähe keine Kundendienststelle befindet, wenden Sie sich an das Geschäft, wo das Gerät gekauft wurde.
- S'il n'y a aucun centre de service dans votre région, consultez votre revendeur.
- Se nella Vostra zona non c'è il centro di servizio, rivolgete Vi al negozio dove avete acquistato l'apparecchio.
- Si no hay centros de servicio en su área local, consulte en donde haya comprado su equipo.
- Als er in uw streek geen reparatie-inrichting is, neemt u kontakt op met de vestiging waar u de apparatuur gekocht heeft.
- Saknas servicecentral i närheten där du bor, bör kontakt tas medåterförsäljaren för apparaten.
- Se não existir um centro de serviços em sua área local, consulte o estabelecimento onde o equipamento foi adquirido.

H20701

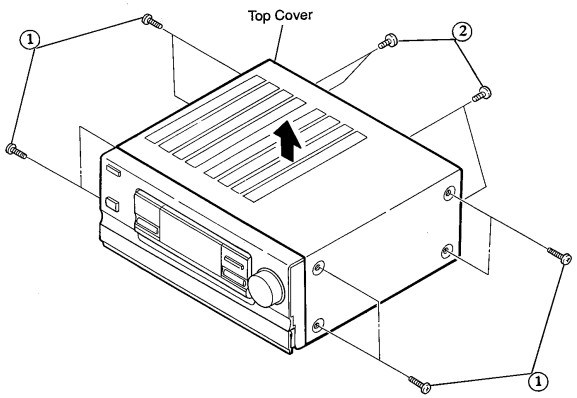
DISASSEMBLY

(To reassemble reverse disassembly)

1. Top Cover

(1) Remove 4 screws ① each on left and right sides which fix the both sides.

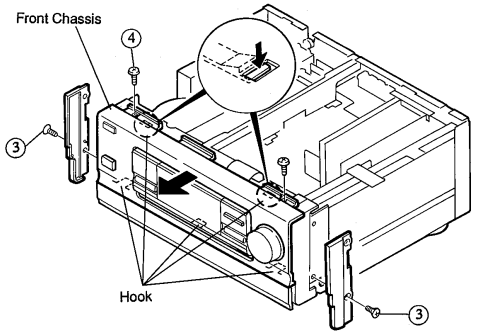
(2) Remove 4 rear screws ② .



2. Front Alminium Panel

(1) Remove each on left and right screws ③ and detach Side Plate.

(2) Remove 2 upper screws ④, unfasten upper hooks at two places, and detach Panel from upper portion in arrow direction.

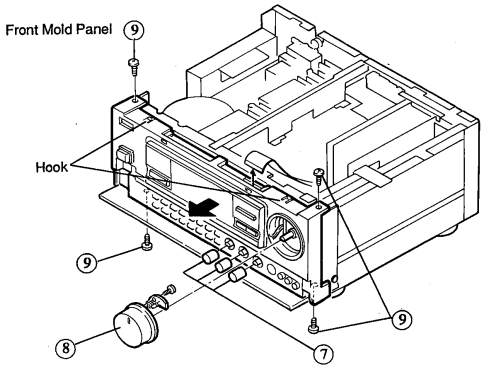


3. Front Mold Panel

(1) Remove connector of wire, for LED of Motor VR ⑧ , and pull out Master VR knob ⑧ and 3 round knobs ⑦.

(2) Remove all connectors of wire, connected to FLD P.C.B..

(3) Remove fixing screws ⑨, from upper and lower positions. (Totally 4 screws).



4. Front Chassis

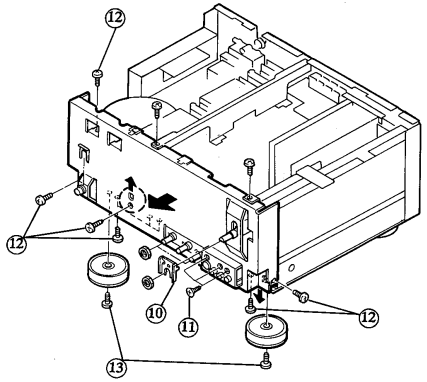
(1) Remove Master VR and 3 VR nuts of one set, and then remove bracket ⑩ .

(2) Remove 3 fixing screws of V-AUX P.C.B. ⑪.

(3) Remove snap plate for fixing headphone jack and fixing screws for fixing wire ⑫.

(4) Remove 2 screws ⑬ for attaching FOOT.

(5) Remove screws for attaching chassis ⑫ . (Upper 2, front 2, and lower 4 screws).

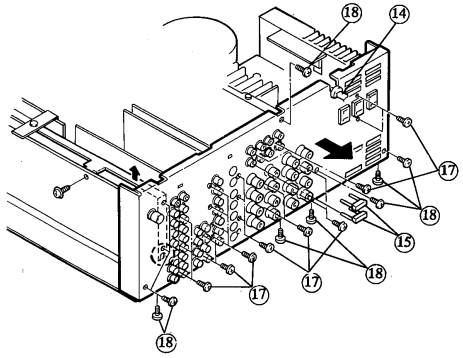


5. Rear Panel

(1) Remove short circuit pin ⑮ , and remove cord bush ⑭ .

(2) Remove 20 terminal connecting screws ⑰ .

(3) Remove panel fixing screws (Lower 4, front 6 screws).



ADJUSTMENT

Idling Current (1U-2433A-1)

Required measurement equipment: DC Voltmeter

Arrangement

(1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F).

(2) Presetting

- POWER (Power source switch) → OFF
- MODE (Mode buttton) → BY PASS
- FUNCTION (Function button) → CD
- VOLUME (Volume control) → 0: fully counterclockwise (↺ min.)
- CENTER VOLUME (Center volume control) → –12dB
- BASS, TREBLE (Tone control) → 0: (Controls to center)
- SPEAKERS (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

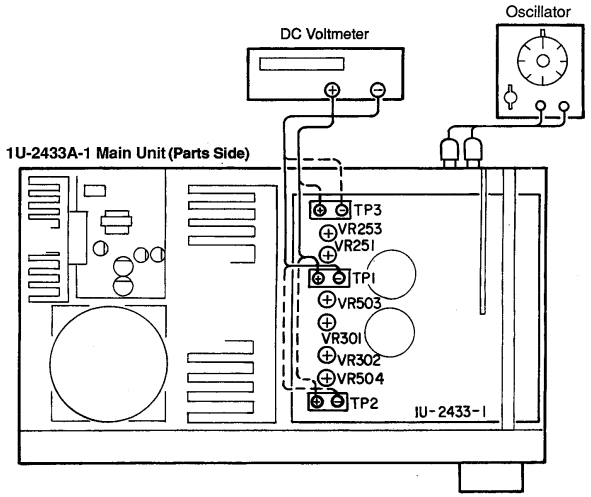
(3) Output 10mVrms, 1kHz sine wave from sine wave oscillator and connect it to input terminal on reverse side.

Adjustment

(1) Remove top cover and set VR251, VR301, VR302, and VR253, VR503, VR504 of 1U-2433A-1 (Main Unit) at counter-clockwise fully.
(2) Connect DC Voltmeter to test points (Lch T.P.1, Rch T.P.2, CENTER ch T.P.3).
(3) Connect power cord to AC Line, and turn power switch "ON".
(4) Allow 15 minutes, and turn VR301, VR302 and VR251 clockwise (↻) and adjust the TEST POINTS voltage to 1.5 mV ± 1.0 mV DC.
(5) After 2 minutes from preset, turn VR301, VR302, and VR251 to set the voltage to 3 mV ± 1.0mV DC.

Idling Adjustment in Operation of OPTICAL CLASS A.

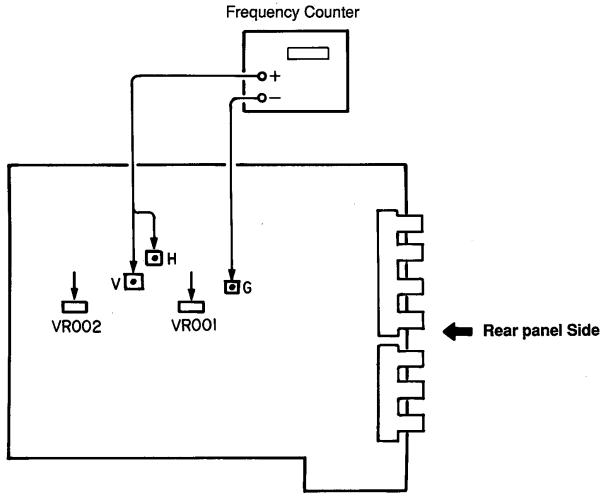
(6) Allow 10 minutes, and turn VOLUME (Main tuning knob) to MAX (↻ maximum) and turn VR503, VR504 and VR253 clockwise within 15 minutes, and adjust the TEST point voltage to 15 mV ± 5mV DC.
(7) Allow 1 minutes, and adjust the VR503, VR504 and VR253 so that the meter reads 20 mV ± 10 mV DC.
(8) Allow 5 minutes further, and confirm that the TEST POINT Voltage is 20 mV ± 10 mV DC.



Video $\overline{\text{H SYNC}}$· $\overline{\text{V SYNC}}$ Oscillation Frequency Adjustment

Required measurement equipment: Frequency Counter

Arrangement



Video & Microcomputer PWB (1U-2435C-2) (Component Side)

- Ground (–) side of frequency counter to G-terminal at the test point (T.P.) of Video and microcomputer P.W.B. (1U-2435C-2).
- Confirm that no insertion of video input or output is made. (With optional function)

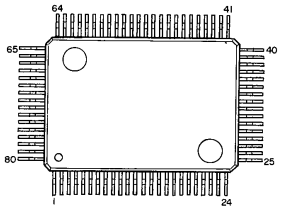
(1) $\overline{\text{H SYNC}}$ (Horizontal synchronous pulse Adjustment)
- Connect probe for frequency counter to H.
- Turn VR002 with non-magnetic screwdriver and adjust the frequency counter so as to read 15.734 kHz ± 200 Hz.

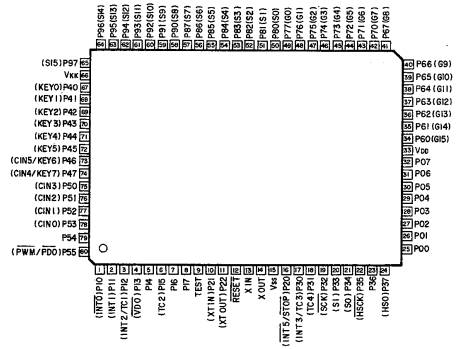
(2) $\overline{\text{V SYNC}}$ (Vertical synchronous pulse Adjustment)
- Connect probe for frequency counter to V.
- Turn VR001 with non-magnetic screwdriver and adjust the frequency counter so as to read 55 Hz ± 1 Hz.

(3) Adjustment completion
- Disconnect the frequency counter.

SEMICONDUCTORS

- **IC's**
  TMP87CM70AF-6040
  (VV:IC801)





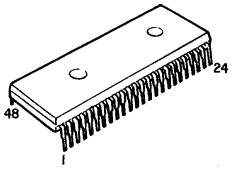
Note)
Indications before IC numbers denote P.W.B. Name.
MA : Main Amp P.W.B. Unit
RE : Rear Input P.W.B. Unit
VV : VFD, Video P.W.B. Unit
SU : Surround P.W.B. Unit

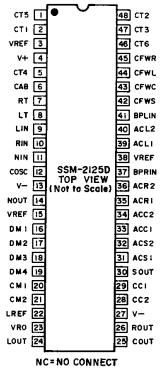
TMP87CK70F Terminal Function

Terminal Voltage Power OFF (V)	Terminal Voltage Power ON (V)	Pin	Terminal Name	I/O	Logic	Initial Setting	Usage
5.3	5.2	1	P10(INT0)	I	L*	—	Power breakdown; Break down detect input (*L at Breakdown)
0.0	0.6	2	P11(INT1)	I	H*	—	PROTECTION: PROTECTION INPUT (*H at detect mode)
0.0	5.0	3	P12(INT2/TC1)	O	L*	L	OSD CS OSD Control (*L at data transfer mode)
0.0	0.0	4	P13(DV0)	I	—	—	MODE Shift 1 (Shift of Previous AVC/AVR MODE)
0.0	0.0	5	P14	O	H	L	DM1
0.0	0.0	6	P15(TC2)	O	H	L	DM2 Dolby-Prologic Control
0.0	0.0	7	P16	O	H	L	DM3 (SSK2125)
0.0	0.0	8	P17	O	H	L	DM4
0.0	0.0	9	TEST	I	–	—	Connect to GND
0.0	0.0	10	P21(XTIN)	O	H	L	CM1 Dolby-Prologic Control
0.0	0.0	11	P22(XTOUT)	O	H	L	CM2 (SSK2125)
5.0	4.9	12	RESET	I	L	—	RESET: Microcomputer reset Input
2.3	2.0	13	XIN	I	–	—	Oscillator connection (8MHz)
2.4	2.0	14	XOUT	I	–	—	
0.0	0.0	15	Vss	PW	–	—	0V (GND)
0.0	0.0	16	P20 (INT5/STOP)	I	—	—	MODE Shift 2 (Shift of Previous OEM MODE)
5.2	5.1	17	P30 (INT3/TC3)	I	L	—	REMOTE: REMOTE Control reception signal input
0.0	5.1	18	P31(TC4)	O	L*	L	FL CS FL Driver Control (MSC2128) (*L at data transfer mode)
0.0	0.0	19	P32(SCK)	O	H	L	CK FL, OSD Control
0.0	5.2	20	P33(SI)	O	L*	L	RESET (MSC7128, M50554) (*L at reset)
0.0	0.0	21	P34(SO)	O	H	L	DATA: FL, OSD Control
0.0	5.1	22	P35(HSCK)	O	H	L	BCK
0.0	0.0	23	P36	O	H	L	WCK DSP Control (YSS-215)
0.0	5.1	24	P37(HSO)	O	H	L	CD
0.0	0.0	25	P00	O	H	L	CK
0.0	0.0	26	P01	O	H*	L	CE Audio I/O, Surround (*H at inhibit Mode)
0.0	0.0	27	P02	O	H	L	DATA (LC7821,7822)
0.0	0.0	28	P03	O	H	L	CK
0.0	5.0	29	P04	O	H	L	DATA Volume control (TC9176P)
0.0	0.0	30	P05	O	H	L	ST1 ➡REAR CH
0.0	0.0	31	P06	O	H	L	ST2 ➡CENTER CH
0.0	0.0	32	P07	O	H	L	INPUT ADJ ➡INPUT LEVEL ADJ
5.2	5.0	33	VDD	PW	–	—	+5V
0.3	–15.0	34	P60(G15)	O	H	L	VOL.UP Motor drive control
0.4	–15.0	35	P61(G14)	O	H	L	VOL.DOWN (BA6109)
4.9	5.0	36	P62(G13)	O	H*	H	LED MOTOR VOLUME LED (*H at lit time)
0.4	–15.0	37	P63(G12)	O	H	L	AVSE AVSE Control
0.4	5.0	38	P64(G11)	O	L	H	CINEMA; CINAMA Equalizer control
0.4	–15.0	39	P65(G10)	O	L*	L	CD or VDP DIECT (*L at VDP DIRECT mode)
0.4	–15.0	40	P66(G9)	O	H*	L	DIRECT MODE ON/OFF (*H at DIRECT mode)
0.4	–15.0	41	P67(G8)	O	L	H	L + R
0.4	4.9	42	P70(G7)	O	L	H	PRO LOGIC CENTER SIGNAL SWITCH
0.4	4.8	43	P71(G6)	O	L	H	Hi-Vision (LC4966)
0.4	4.8	44	P72(G5)	O	H	L	SP-A
0.4	–15.0	45	P73(G4)	O	H	L	SP-B Speaker relay control
0.4	–15.0	46	P74(G3)	O	H	L	SP-REAR
0.4	–15.0	47	P75(G2)	O	H	L	SP-CENTER
0.4	4.7	48	P76(G1)	O	H	L	H/P, PRE MUTE Premute control

Terminal Voltage Power OFF (V)	Terminal Voltage Power ON (V)	Pin	Terminal Name	I/O	Logic	Initial Setting	Usage
0.4	5.0	49	P77(G0)	O	L*	L	AMP MUTE (*L at MUTE mode)
0.3	4.8	50	P80(S0)	O	H	L	POWER Power relay control
0.4	4.8	51	P81(S1)	O	H	L	RUSH Rush Preventive control
0.3	–6.6	52	P82(S2)	O	H	L	KS1
0.3	–6.6	53	P83(S3)	O	H	L	KS2
0.3	–6.6	54	P84(S4)	O	H	L	KS3 Key Scan Strobe
0.3	–6.6	55	P85(S5)	O	H	L	KS4
0.3	–6.6	56	P86(S6)	O	H	L	KS5
0.3	–6.6	57	P87(S7)	O	H	L	KS6
0.3	–7.0	58	P90(S8)	I	H	—	KA1
0.3	–7.0	59	P91(S9)	I	H	—	KA2 Key Scan Receive
0.3	–7.0	60	P92(S10)	I	H	—	KA3
0.3	–7.0	61	P93(S11)	I	H	—	KA4
0.3	–7.0	62	P94(S12)	I	H	—	KA5 Key Scan Receive
0.3	–7.0	63	P95(S13)	I	H	—	KA6
0.4	4.9	64	P96(S14)	O	L*	L	VCR-1 REC INH. (*H at In hibit mode)
0.4	4.9	65	P97(S15)	O	L*	L	VCR-2 REC INH. (*H at In hibit mode)
0.4	–15.0	66	Vrx	PW	–	—	Vrx
0.5	0.0	67	P40(KEY0)	O	H	L	A
0.0	0.0	68	P41(KEY1)	O	H	L	B VIDEO INPUT CONTROL
0.0	0.0	69	P42(KEY2)	O	H	L	C (HD14051BP)
0.0	0.0	70	P43(KEY3)	O	H	L	A
0.0	0.0	71	P44(KEY4)	O	H	L	B VIDEO REC OUT CONTROL
0.0	0.0	72	P45(KEY5)	O	H	L	C (HD14051BP)
0.0	0.0	73	P46(CIN5/KEY6)	O	H	L	ASP-OUT1 (VCR-1)
0.0	0.0	74	P47(CIN4/KEY7)	O	H	L	ASP-OUT2 (MONITOR)
0.3	0.3	75	P50(CIN3)	—	–	—	vacant
0.3	0.6	76	P51(CIN2)	I	H	L	ASP-3 (VCR-1)
0.2	0.6	77	P52(CIN1)	I	H	L	ASP-2 (VDP)
0.3	0.6	78	P53(CIN0)	I	H	L	ASP-1 (DBS/BS)
0.0	0.3	79	P54	O	H*	L	TUNER MUTE (*H at MUTE mode)
0.2	0.5	80	P55(PWM/PDO)	I	H*	L	SYNC DET. OSD Synchronization shift (*H at externally synchronized)

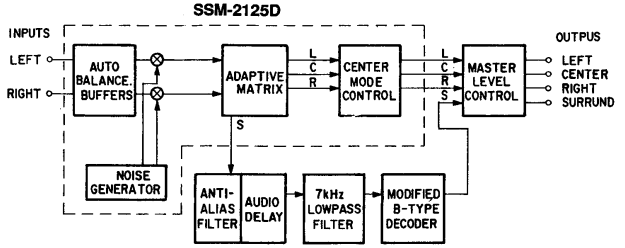
SSM-2125D (SU: IC601)



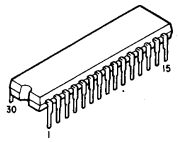


NC=NO CONNECT

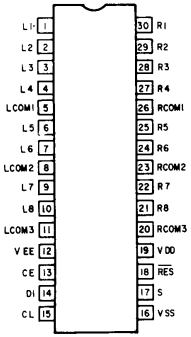
SSM-2125D



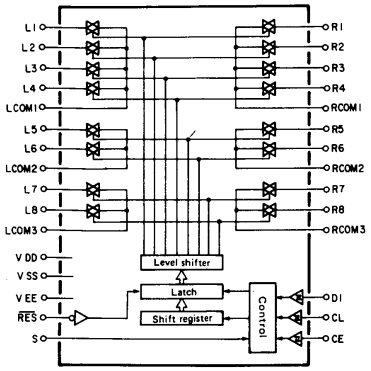
LC7821 (RI: IC153, 155)
LC7822 (RI: IC154)(SU: IC605)



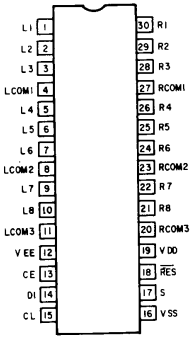
LC7821



LC7821



LC7822



LC7822

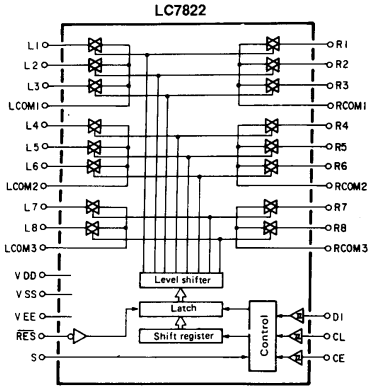
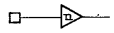
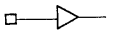
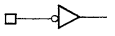
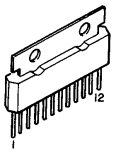


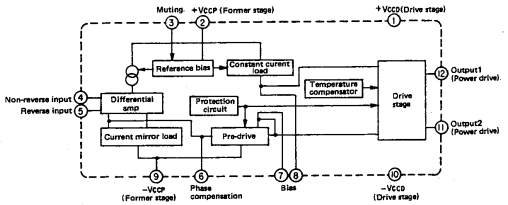
Table of LC7821, LC7822 Terminal Function

Name of Terminal	I/O	Equivalent Internal Circuit	Function of Terminal
VDD, VSS, VEE			Power terminal.
L1 ~ L8, R1 ~ R8 LCOM1 ~ LCOM4, BCOM1 ~ BCOM4		Refer to block diagram	In/Out terminal of analog switch.
CL, DI, CE	I		Serial data input terminal (Schmidt buffer). CL = Clock input terminal. DI = Data input terminal. DE = Chip enable terminal.
S	I		Selection terminal for using of two. Address will be shifted as per below table when switching S terminal to L or H.
$\overline{RES}$	I		Reset terminal. Condition of analog switch is not fixed at the time of turning on the power. Whenshift this termnal to L, all analog switches become OFF.

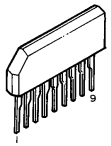
Name of Item	S Terminal	Address			
		A0	A1	A2	A3
LC7821	L	0	1	0	1
	H	1	1	0	1
LC7822	L	0	0	1	1
	H	1	0	1	1

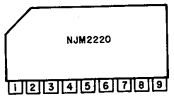
µPC1225H (RI: IC401, 402)





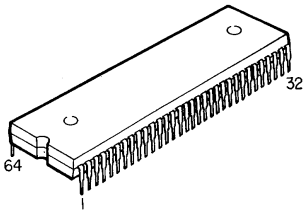
NJM2220S (V.V: IC005)

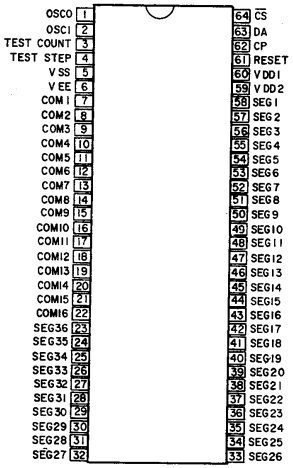


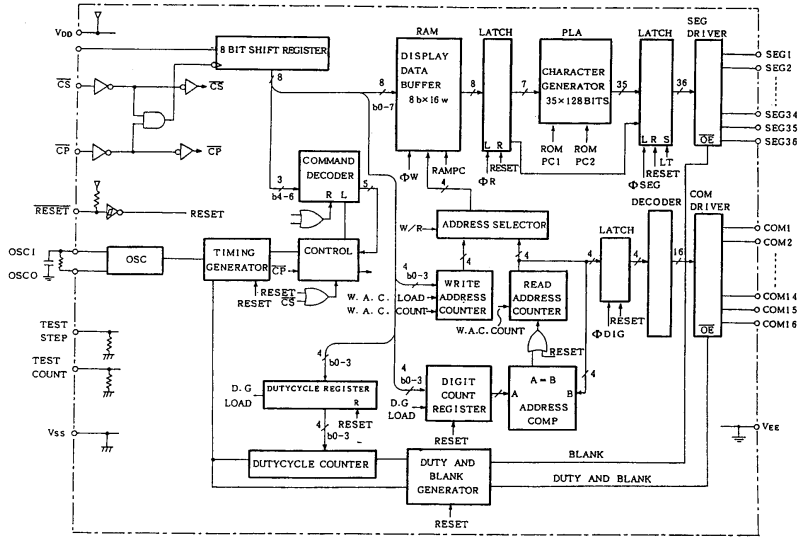


1. M.M time constant setting.
2. SYNC input (Comp, H. V. SYNC).
3. SYNC output.
4. SSG SYNC input.
5. GND
6. SYNC DET. Determine Control.
7. $\overline{\text{SYNC DET}}$
8. M.M Smoother
9. V+ 5 ~ 10V

MSC7128-03SS (VV:IC802)



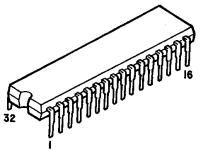


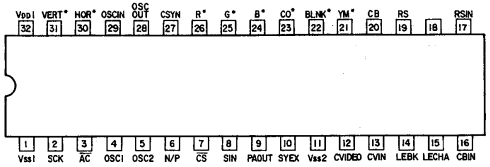


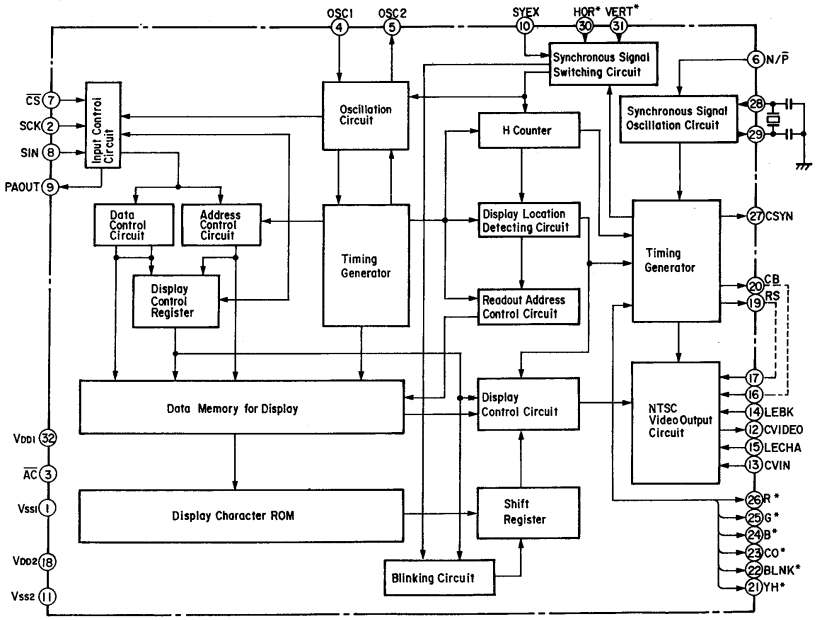
MSC7128-03SS Terminal Function

Terminal Name	Terminal No.	I/O	Connection to:	Function
V_{DD1}	60		Power Supply	V_{DD1} — Vss Internal logic power supply. V_{DD2} — V_{EE} Fluorescent display tube drive circuit power supply.
V_{DD2}	59			
Vss	5			
V_{EE}	6			
DA	63	I	Microcomputer	Serial data input. Input from (Positive logic) LBS.
$\overline{CP}$	62	I	Microcomputer	Shift clock input. Data shift at rise time of CP.
$\overline{CS}$	64	I	Microcomputer	Chip select input. Serial transfer of data is prohibited when set to "Hi".
OSCI	2	I		External terminal of CR for CR oscillation. fosc 250 KHz at C= 100 PF, R= 47 KΩ
OSCO	1	O		
$\overline{RESET}$	61	I		Reset input (Built-in Pull-up resistor). Internal logic is reset when "LOW" is set, and output of SEG1 ~ 36, COM1 ~ 16 all become "LOW".
COM1 ~ COM16	7 ~ 22	O	Fluorescent display tube grid	Drive output of fluorescent display tube grid. Able to connect directly to fluorescent display tube, and no Pull-down resistor is needed. $I_{OH>}$ –30 mA
SEG1 ~ SEG35	58 ~ 24	O	Fluorescent display tube anode	Drive output of anode for fluorescent display tube 5x7 dot. Able to connect directly to fluorescent display tube and no Pull-down resistor is needed. $I_{OH>}$ –2 mA.
SEG36	23	O	Fluorescent display tube anode	Drive output of anode for fluorescent display tube cathode. Able to connect display to fluorescent display tube and no Pull-down resistor is needed. $I_{OH>}$ –10 mA
TEST STEP	4	I		Test mode setting input (Normally opened).
TEST COUNT	3	I		Test clock input (Normally opened).

M50554-001SP (V.V: IC004)



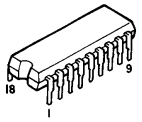


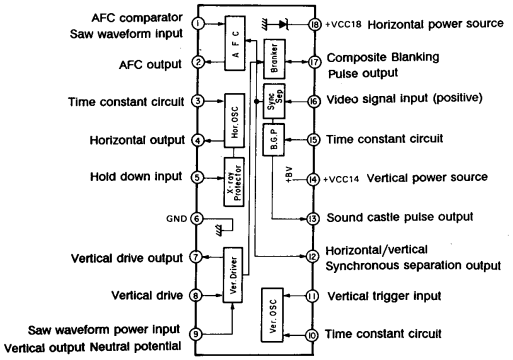


M50554-001SP Terminal Function

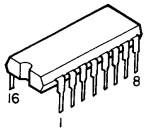
Pin No.	Symbol	Terminal Name	Function
1	$V_{SS}1$	Ground terminal	Digital ground terminal; connect to GND.
2	SCK	Serial clock input	When "L" at CS terminal, takes in SIN serial data at rise time of SCK. Hysteresis input. Built-in Pull-up resistor.
3	$\overline{AC}$	Auto clear input	Reset IC internal circuit at "L" mode. Built-in Pull-up resistor. Hysteresis input.
4 5	OSC1 OSC2	Oscillator circuit external terminal	External terminal for display oscillator circuit. Reference oscillation frequency is approx. 7MHz. Display position is horizontal of TV screen and character width are determined by this oscillation frequency.
6	N/$\overline{P}$	NTSC/$\overline{PAL}$ switch input	Synchronous signal generator switch terminal of NTSC or PAL system. Generates synchronous signal of NTSC type at "H" mode, and synchronous signal of PAL type at "L" mode. Built-in Pull-up resistor.
7	$\overline{CS}$	Chip select input	Chip select terminal; set to "L" mode for serial transfer. Built-in Pull-up resistor.
8	SIN	Serial data input	Serially inputs memory data and address for display control registor and display data. Built-in Pull-up resistor.
9	PAOUT	Parity output	Odd number parity output; detects one-bit error in one word of SIN.
10	SYEX	Synchronous signal switch input	Switch terminal for external or internal synchronous signal. Enter external synchronous signal mode at "H" and internal synchronous signal mode at "L". SYEX comprises logic sum with EX register of address 243 in display control register and internal synchronization. Built-in Pull-up resistor.
11	$V_{SS}2$	Ground terminal	Analog ground terminal; connect to GND.
12	CVIDEO	Composite Video output	Output terminal of composite video signal. Outputs 2Vp-p composite video signal. At superimpose mode, outputs output characters, etc. superimposed on CVIN signal.
13	CVIN	Composite Video input	Input terminal of composite video signal. At superimpose mode, output characters, etc. are superimposed on this composite video signal.
14	LEBK	Blanking level	Input terminal to determine blanking level of video signal.
15	LECHA	Character level input	Input terminal to determine character output level of video signal.
16	CBIN	Color burst signal input	Input CB output after converting to color burst signal level of video signal, via external circuit.
17	RSIN	Character background carrier color signal input	Input RS output after converting to carrier color signal level of video signal, via external circuit.
18	$V_{DD}2$	Power supply terminal	Analog power supply terminal; connect to +5V.
19	RS	Character background carrier color signal output	Carrier color signal output for coloring character background. Outputs signal with phase angle to color burst signal CB. Amplitude 5V.
20	CB	Color burst signal output	Outputs color burst signal of 3.58MHz for NTSC system, 4.43MHz for PAL system. Amplitude 5V.
21	YH	Brightness signal output	Brightness signal output; able to select polarity at character ROM determination.
22	BLNK	Character background output	Outputs character background signal; able to select polarity at character ROM determination.
23	CO	Character output	Outputs character signal; able to select polarity at character ROM determination.
24	B	Blue color output	Blue color output; able to select polarity at character ROM determination.
25	G	Green color output	Green color output; able to select polarity at character ROM determination.
26	R	Red color output	Red color output; able to select polarity at character ROM determination.
27	CSYN	Composite synchronous signal output	Outputs composite synchronous signal of NTSC or PAL system. Negative polarity. Amplitude 5V.
28 29	OSCOUT OSCIN	Synchronous signal generating oscillator circuit	External terminal of synchronous signal generating oscillator circuit. For NTSC system, oscillation frequency of 14.32MHz, and for PAL system, of 17.73MHz are used.
30	HOR	Horizontal synchronous signal's signal	Inputs horizontal synchronous signal. Hysteresis input. Able to select polarity at character ROM determination.
31	VERT	Vertical synchronous signal's signal	Inputs vertical synchronous signal. Hysteresis input. Able to select polarity at character ROM determination.
32	$V_{DD}1$	Power supply terminal	Digital power supply terminal; connect to +5V.

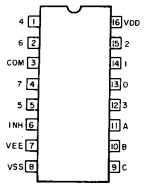
LA7820 (VV: IC006)

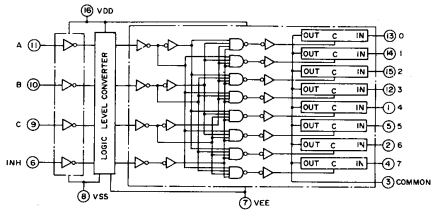




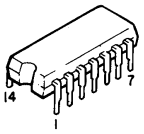
TC4051BP (VV: IC001, 002, 101, 102, 104, 105)

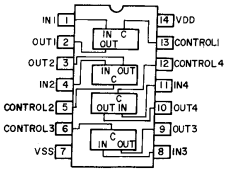




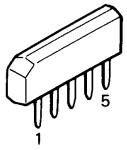


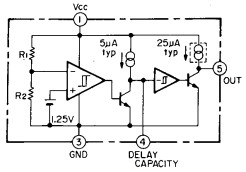
HD14066BP (VV: IC003, 103)



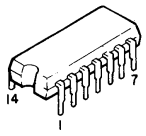


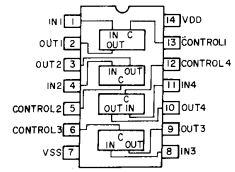
M51953B (VV: IC803)





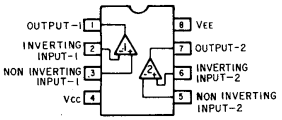
LC4966 (SU: IC604)

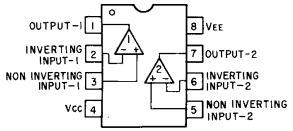




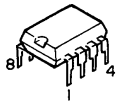
M5128AP
(MA: IC351)
(SU: IC452, 602, 607, 609, 611, 703, 706, 709–712, 716)
(RI: IC051, 152)

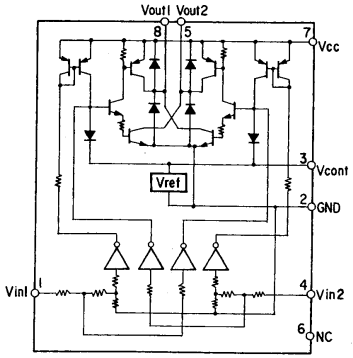
NJM4556D (MA: IC231) (SU: IC231)
NJM4558DD (RI: IC151)
NJM2082D (SU: IC451, 608, 610)
NJM2068DDC (SU: IC713)



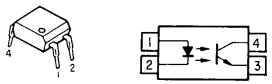


BA1639 (SU: IC714)



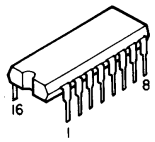


TLP521-1(BL) (MA: IC453-455)
INFRARED LED + PHOTO TRANSISTOR

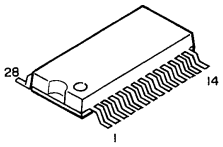


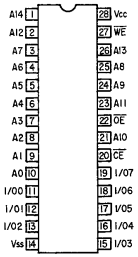
1. Anode
2. Cathode
3. Emitter
4. Collector

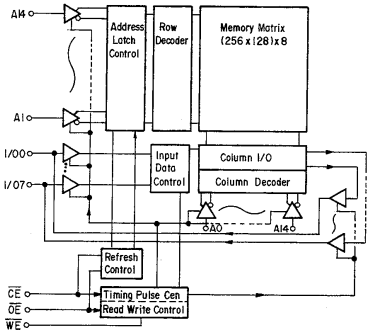
TC9176P (SU: IC707, 708)

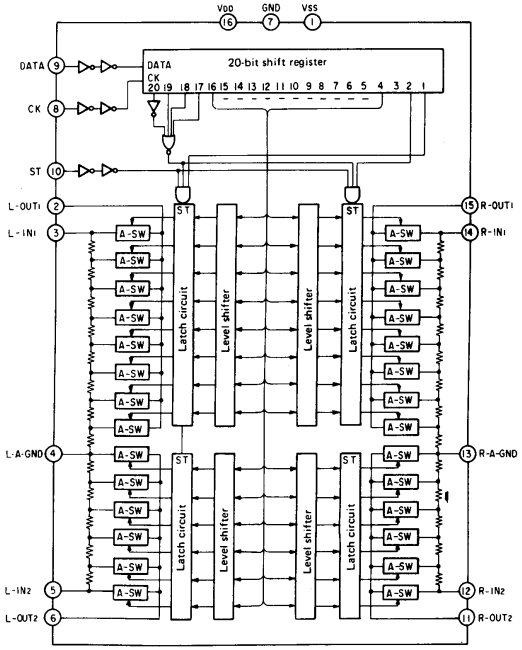


HM65256BLFP-10
(SU: IC705)

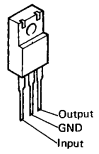




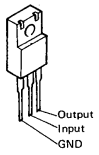




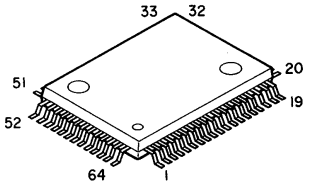
NJM7805FA(S) (SU: IC715)
NJM7806FA(S) (M: IC503, 505)
NJM7815FA(S) (M: IC501)

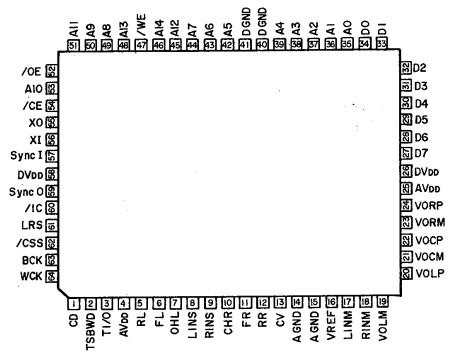


NJM7906FA (M: IC504)
NJM7915FA (M: IC502)

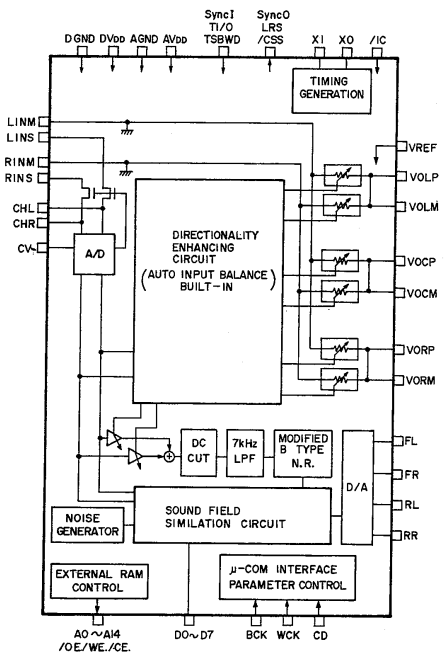


F71002B
(SU: IC704)



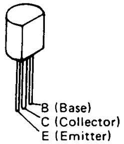


BLOCK DIAGRAM

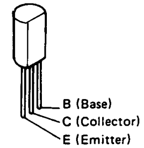


• TRANSISTORS

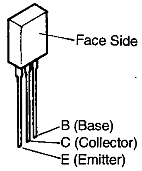
2SA970 (BL)
2SA988 (E/F)
2SC1015 (GR/Y)
2SC1815 (Y),(BL)
2SC1841 (E/F)
2SC2878 (A/B)



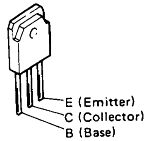
2SB647A (C)
2SD667A (C)



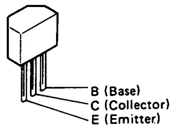
2SB1328 (P)
2SD2004 (P)



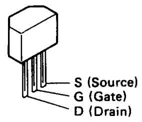
2SA1490 (O/P/Y) (Z)
2SC3854 (O/P/Y) (Z)



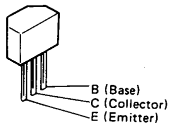
2SA1048 (GR),(Y/GR)
2SC2458 (BL)



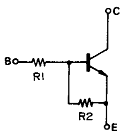
2SK184 (GR)/(BL)



RN1202
RN1204
RN2201
RN2204

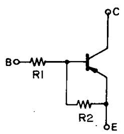


RN1202
RN1204



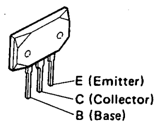
	R1	R2
RN1202	10 kohm	10 kohm
RN1204	47 kohm	47 kohm

RN2201
RN2204



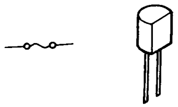
	R1	R2
RN2201	4.7 kohm	4.7 kohm
RN2204	47 kohm	47 kohm

2SA1493(O)/(Y)
2SA3857(O)/(Y)



• IC PROTECTORS

ICP-N15 (RI: IC509~511)
ICP-N20 (RI: IC507, 508)

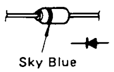


• POSISTOR

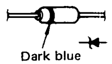
PTH9M04BB222TS2F333
(MA: P301)

• DIODES (included LED)

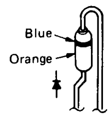
1SS270A
1S2076A



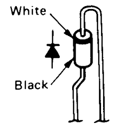
HZS4B-1
HZS6B-1
HZS7C-1
HZS7B-1
HZS9A-1
HZS12B-1
HZS20-1



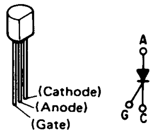
1SR35-200A



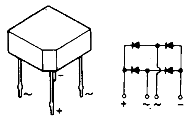
DSM1D2 (Type 3)



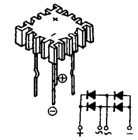
SFOR1A42 (Thyristor)



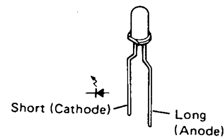
S4VB20F



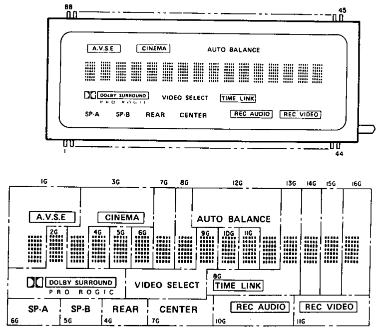
D5FB20 (4001)



SEL1210R (Red)



• FL DISPLAY
(Part No.: 3934115000)



(UPPER) TERMINAL CONNECTION

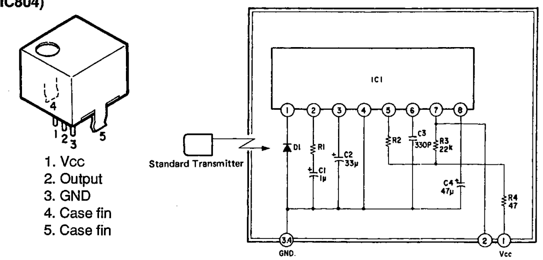
TERMINAL No.	88	87	86	85	84	83	82	81	80	79	78	77								
ELECTRODE	F1	F1	NP	NP	NP	NP	NP	NP	P (11)	P (21)	P (31)	P (41)								
TERMINAL No.	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
ELECTRODE	P (51)	P (12)	P (22)	P (32)	P (42)	P (52)	P (13)	P (23)	P (33)	NP	NP	NP	P (55)	P (45)	P (35)	P (25)	P (15)	P (54)	P (44)	P (34)
TERMINAL No.									56	55	54	53	52	51	50	49	48	47	46	45
ELECTRODE									P (24)	P (14)	P (53)	P (43)	NP	NP	NP	NP	NP	NP	F2	F2

(LOWER)

TERMINAL No.									33	34	35	36	37	38	39	40	41	42	43	44
ELECTRODE									P (27)	P (37)	P (47)	P (57)	NP	NP	NP	NP	NP	NP	F2	F2
TERMINAL No.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
ELECTRODE	3G	7G	8G	12G	13G	14G	15G	16G	11G	10G	2G	9G	NP	P (X)	P (16)	P (26)	P (36)	P (46)	P (56)	P (17)
TERMINAL No.	1	2	3	4	5	6	7	8	9	10	11	12								
ELECTRODE	F1	F1	NP	NP	NP	NP	NP	NP	6G	5G	4G	1G								

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

• OTHERS
SBX1610-52 (Remote Control Receiver)
(VV: IC804)

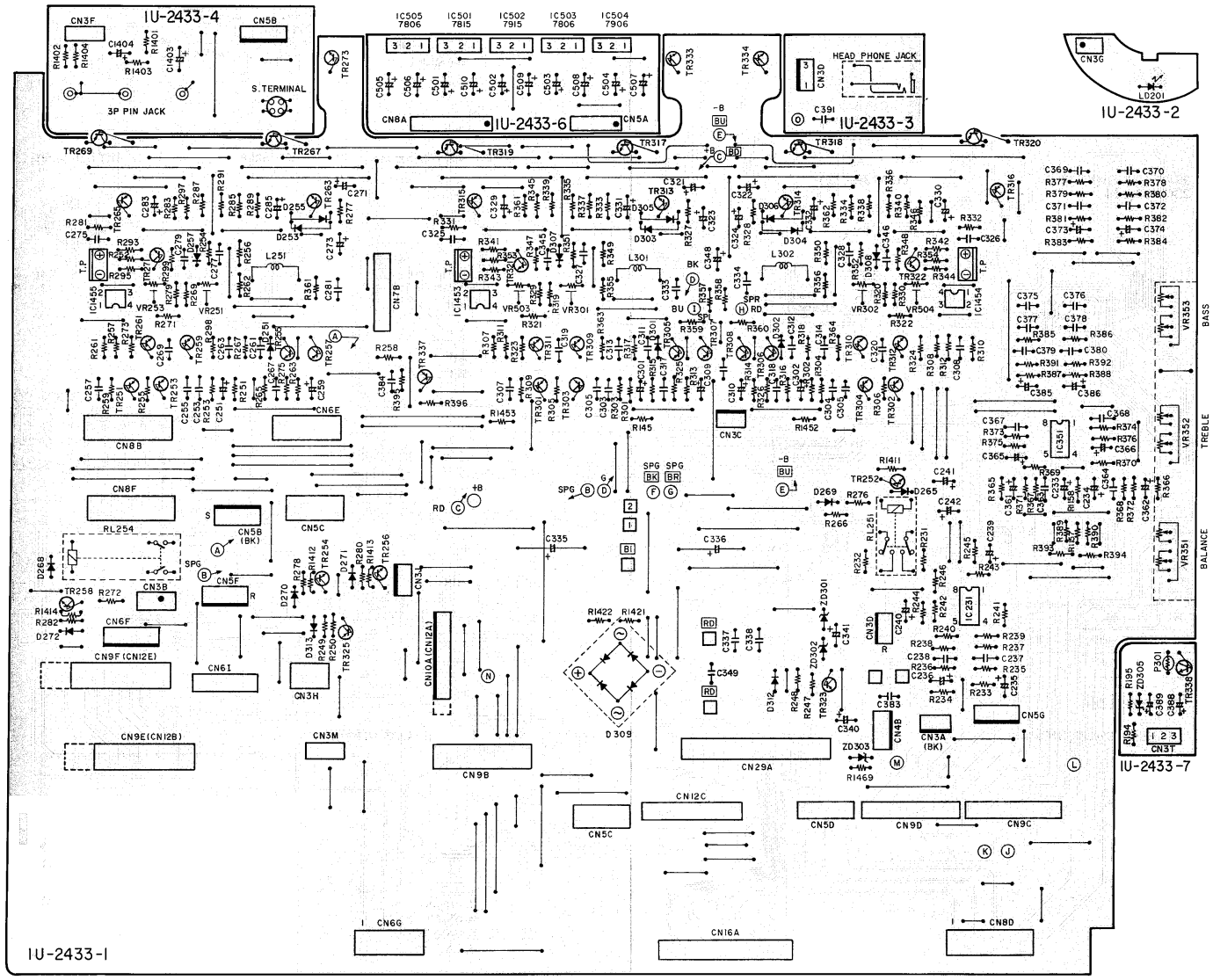


1. Vcc
2. Output
3. GND
4. Case fin
5. Case fin

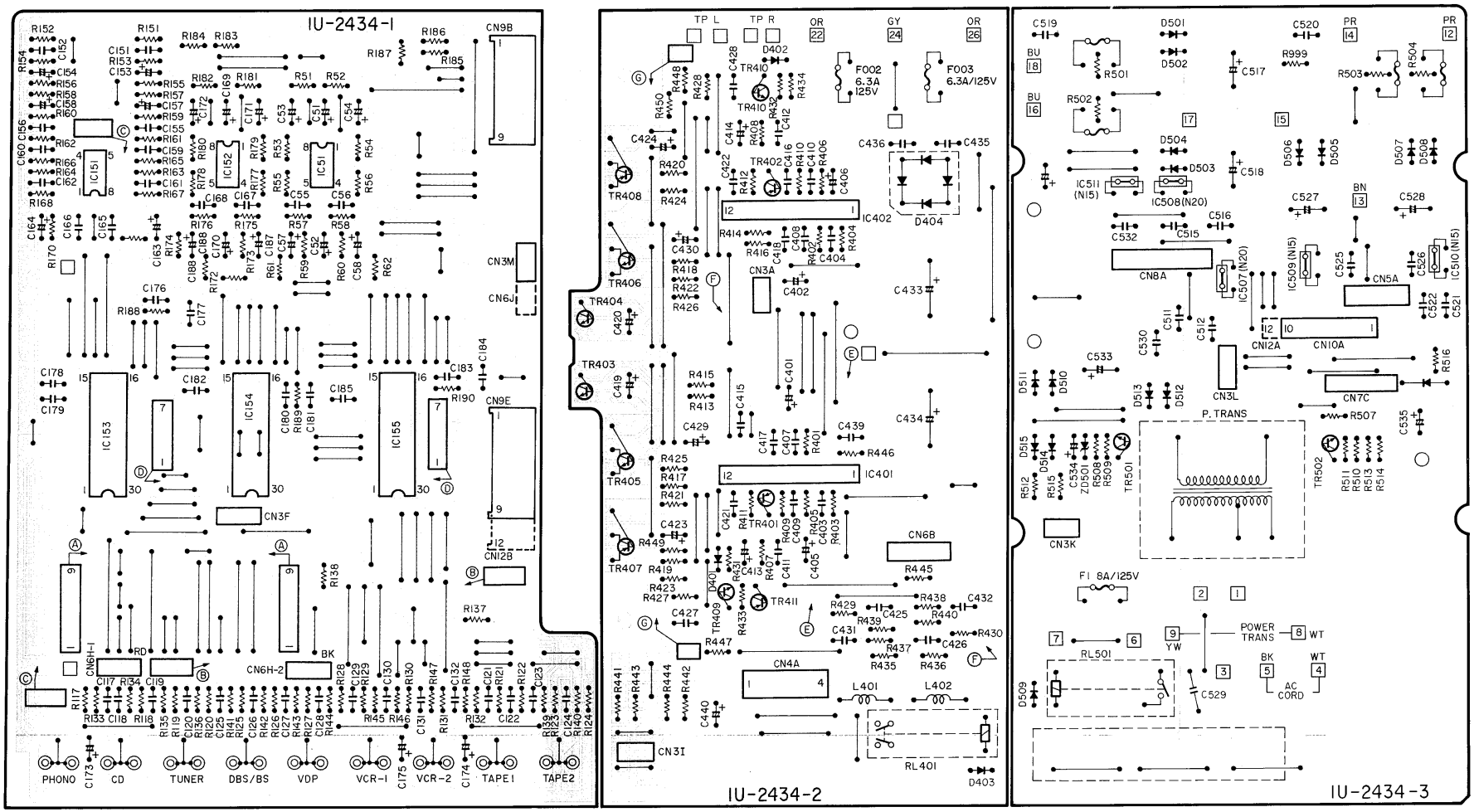
IC1 : CX20106A chip
D1 : Pin photodiode chip
C1, C2, C4 : Aluminum electrolytic capacitor
C3 : SL characteristic ±5%
R1 : Gain control resister
R2 : fo control resistor (using ±1%)
R (Other than above items) : ±5%

PRINTED WIRING BOARD (Pattern Side)

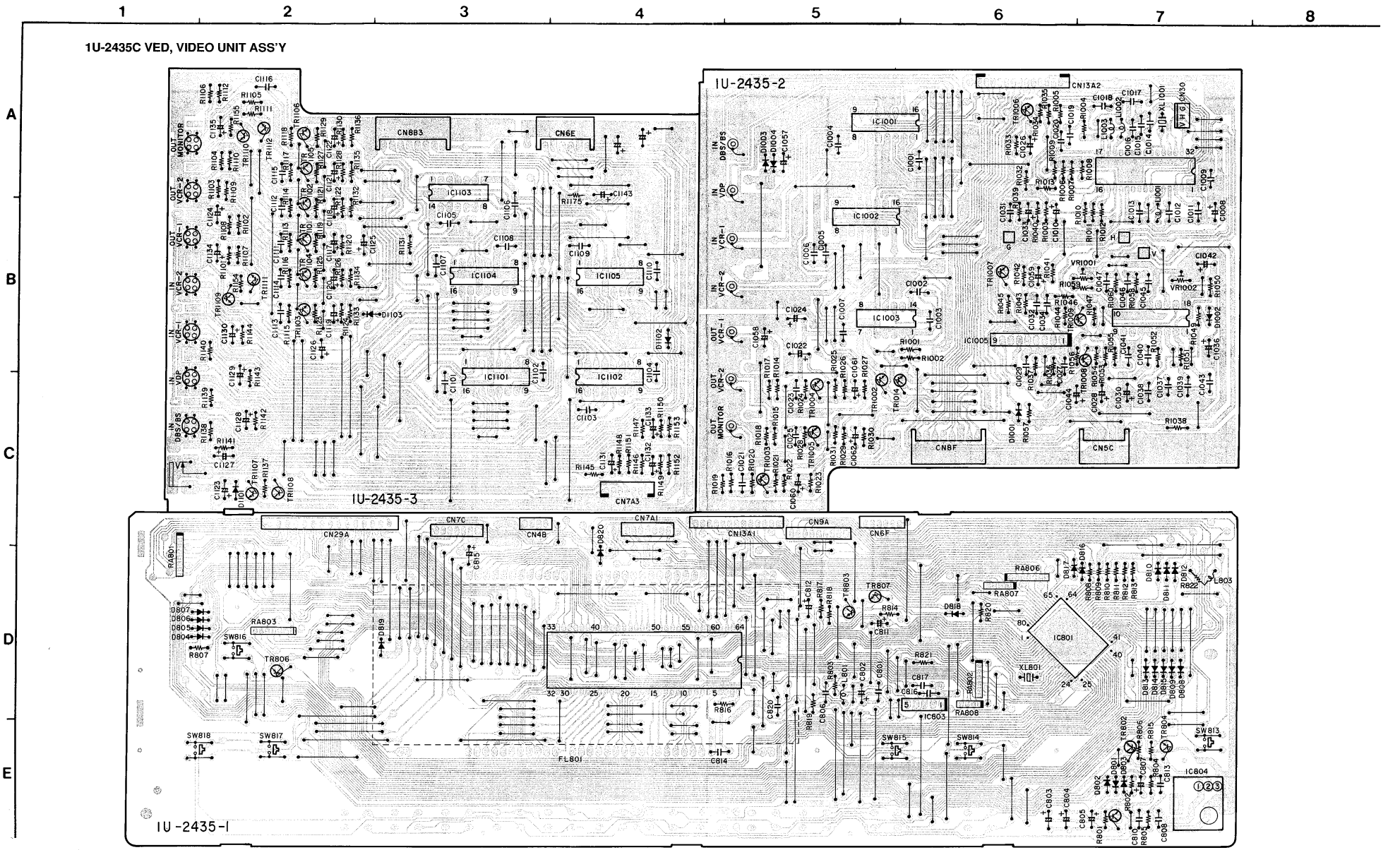
1U-2433A MAIN AMP UNIT ASS'Y



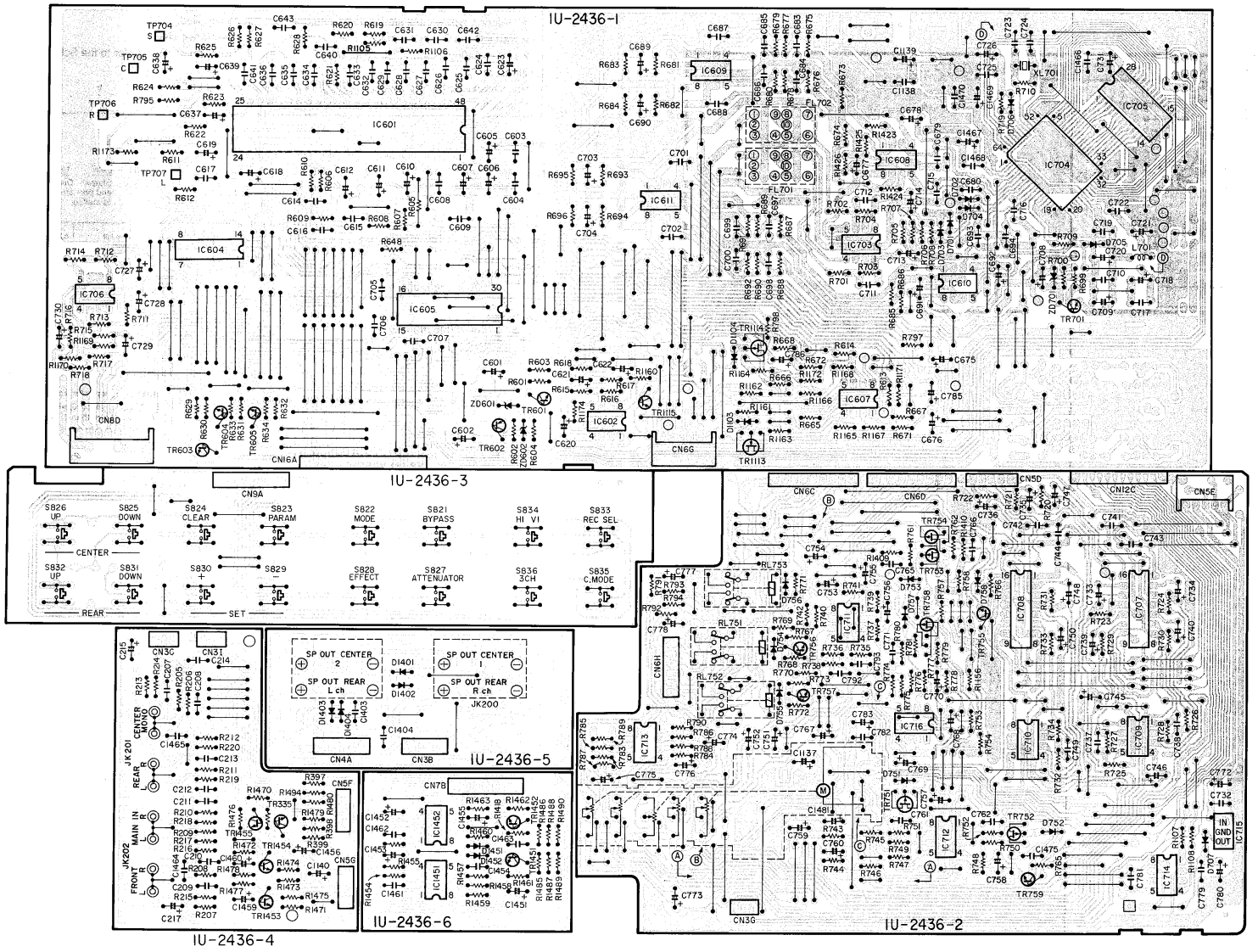
1U-2434D REAR INPUT UNIT ASS'Y



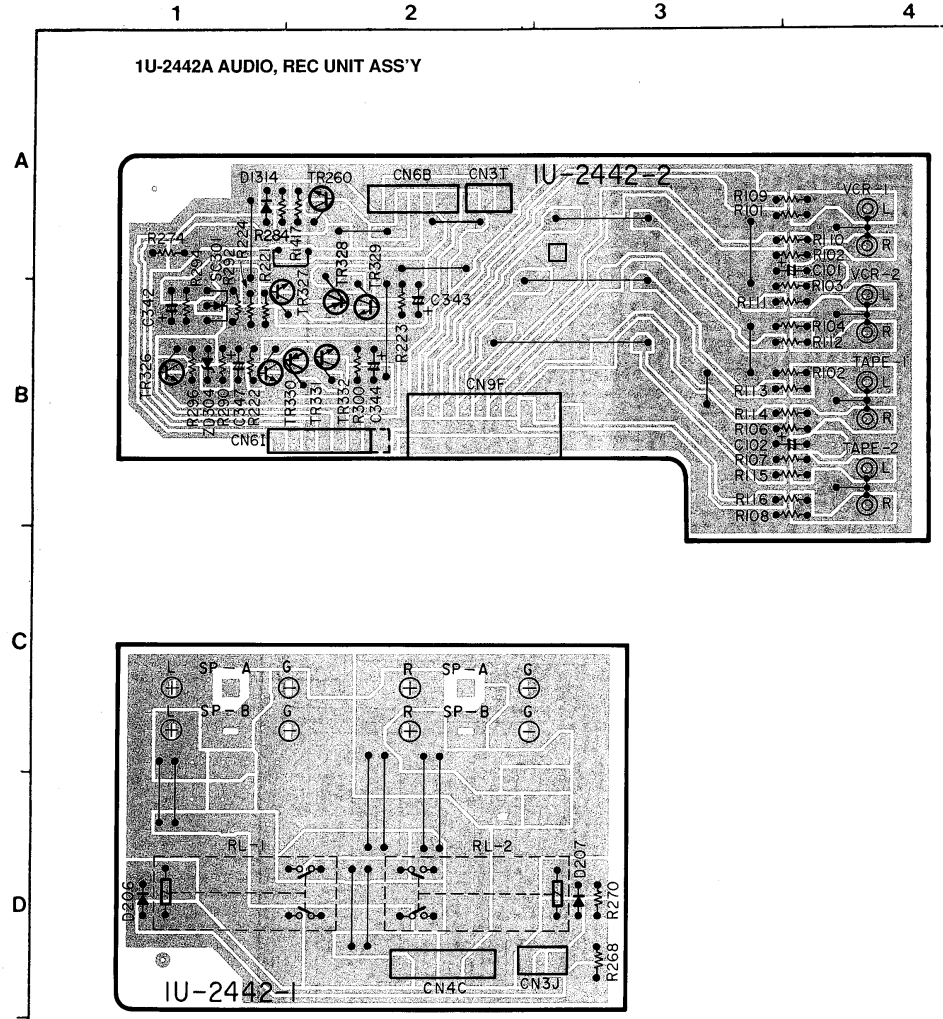
1U-2435C VED, VIDEO UNIT ASS'Y



1U-2436A SURROUND UNIT ASS'Y



1U-2442A AUDIO, REC UNIT ASS'Y



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. (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 (Type) 14K (Shape and performance) 2E (Power) 182 (Resistance) G (Allowable error) FR (Others)

RD : Carbon RC : Composition RS : Metal oxide film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 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 ⇒ 1800 ohm = 1.8 kohm
- 2 — 2-digit effective number.
- 8 — Indicates number of zeros after effective number.
- Units: ohm

1 R 2 ⇒ 1.2 ohm
- 2 — 2-digit effective number, decimal point indicated by R.
- 1 — 1-digit effective number.
- Units: ohm

• Capacity (electrolyte only)

2 2 2 ⇒ 2200μF
- 2 — 2-digit effective number.
- 2 — Indicates number of zeros after effective number.
- Units: μF.

2 R 2 ⇒ 2.2μF
- 2 — 2-digit effective number, decimal point indicated by R.
- 1 — 1-digit effective number.
- Units: μF.

● Capacitors

Ex.: CE (Type) 04W (Shape and performance) 1H (Dielectric strength) 2R2 (Capacity) M (Allowable error) BP (Others)

CE : Aluminum foil electrolytic CA : Aluminum solid electrolytic CS : Tantalum electrolytic 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 (except electrolyte)

2 2 2 ⇒ 2200μμF = 0.0022μF
- 2 — 2-digit effective number.
- 2 — (More than 2) — Indicates number of zeros after effective number.
- Units: μF.

2 2 1 ⇒ 220PF
- 1 — (0 or 1) — Indicates number of zeros after effective number.
- 2 — 2-digit effective number.
- Units: PF.

• When the dielectric strength is indicated in AC, "AC" is included after the dieelectric strength value.

PARTS LIST OF P.W. BOARD
1U-2433A MAIN AMP UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC231	263 0198 005	IC NJM4556D	
IC351	273 0711 000	IC M5218AP	
IC453~455	262 0874 009	IC TLP521-1(BL)	
IC501	263 0812 006	IC NJM7815FA(S)	Regulator
IC502	263 0561 001	IC NJM7915FA	Regulator
IC503	263 0793 002	IC NJM7806FA(S)	Regulator
IC504	263 0683 002	IC NJM7906FA	Regulator
IC505	263 0793 002	IC NJM7806FA(S)	Regulator
TR251	271 0094 919	Transistor 2SA970(BL)	
TR252	273 0317 906	Transistor 2SC2458(BL)	
TR253	271 0094 919	Transistor 2SA970(BL)	
TR254	273 0317 906	Transistor 2SC2458(BL)	
TR255	273 0235 923	Transistor 2SC1841(E/F)	
TR256	273 0317 906	Transistor 2SC2458(BL)	
TR257	271 0131 924	Transistor 2SA988(E/F)	
TR258	273 0317 906	Transistor 2SC2458(BL)	
TR259	273 0235 923	Transistor 2SC1841(E/F)	
TR261	273 0235 923	Transistor 2SC1841(E/F)	
TR263	274 0151 000	Transistor 2SD2004(P)	
TR265	272 0107 906	Transistor 2SB1328(P)	
TR271	273 0235 923	Transistor 2SC1841(E/F)	
TR273	273 0198 905	Transistor 2SC1815(Y)	
TR301~304	271 0094 919	Transistor 2SA970(BL)	
TR305,306	273 0235 923	Transistor 2SC1841(E/F)	
TR307,308	271 0131 924	Transistor 2SA988(E/F)	
TR309~312	273 0235 923	Transistor 2SC1841(E/F)	
TR313,314	274 0151 000	Transistor 2SD2004(P)	
TR315,316	272 0107 906	Transistor 2SB1328(P)	
TR321,322	273 0235 923	Transistor 2SC1841(E/F)	
TR323	272 0053 908	Transistor 2SB647A(C)	
TR325	271 0102 937	Transistor 2SA1015(GR/Y)	
TR333,334	273 0198 905	Transistor 2SC1815(Y)	
TR337	271 0131 924	Transistor 2SA988(E/F)	
TR338	273 0198 918	Transistor 2SC1815(BL)	
D251	276 0432 903	Diode 1SS270A	
D253	276 0049 011	Diode 1S2076A	
D255	276 0049 011	Diode 1S2076A	
D257	276 0432 903	Diode 1SS270A	
D265	276 0432 903	Diode 1SS270A	
D268~272	276 0432 903	Diode 1SS270A	
D301,302	276 0432 903	Diode 1SS270A	
D303~306	276 0049 011	Diode 1S2076A	
D307,308	276 0432 903	Diode 1SS270A	
⚠ D309	276 0356 005	Diode D5FB20(4001)	Bridge
D312	276 0548 910	Diode DSM1D2 (Type 3)	
D313	276 0432 903	Diode 1SS270A	
ZD301,302	276 0479 908	Zener Diode HZS20-1	20V
ZD303	276 0467 907	Zener Diode HZS9A-1	9V
ZD305	276 0474 903	Zener Diode HZS12B-1	12V
LD201	393 9434 906	LED SEL1210S	Red
P301	279 0034 067	Thermistor PTH9M04BB 222 TS2F333	Posistor

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP			
(Not included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)			
⚠ R195	241 2381 904	Carbon Film 3.3kohm, 1/4W (N.B)	RD14B2E332JNBS
⚠ R243,244	244 2051 961	Metal Oxide 100ohm, 1W (N.B)	RS14B3A101JNBS(S)
⚠ R247	241 2376 964	Carbon Film 47ohm, 1/4W (N.B)	RD14B2E470JNBS
⚠ R256	244 2051 987	Metal Oxide 4.7ohm, 1W (N.B)	RS14B3A4R7JNBS(S)
⚠ R257	241 2380 963	Carbon Film 2.2Kohm, 1/4W (N.B)	RD14B2E222JNBS
⚠ R258	244 2043 937	Metal Oxide 10ohm, 1W (N.B)	RS14B3A100JNBS(S)
⚠ R261	241 2380 963	Carbon Film 2.2Kohm, 1/4W (N.B)	RD14B2E222JNBS
⚠ R266	241 2380 950	Carbon Film 2Kohm, 1/4W (N.B)	RD14B2E202JNBS
⚠ R267	241 2377 976	Carbon Film 130ohm, 1/4W (N.B)	RD14B2E131JNBS
⚠ R272	244 2052 973	Metal Oxide 560ohm, 1W (N.B)	RS14B3A561JNBS(S)
⚠ R273	241 2315 967	Fusible 68ohm, 1/4W	RD14B2E680GFRS
⚠ R283	241 2378 920	Carbon Film 220ohm, 1/4W (N.B)	RD14B2E221JNBS
⚠ R285	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R287	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R289	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R291	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R297	241 2380 950	Carbon Film 2Kohm, 1/4W (N.B)	RD14B2E202JNBS
⚠ R298	241 2377 976	Carbon Film 130ohm, 1/4W (N.B)	RD14B2E131JNBS
⚠ R299	241 2380 950	Carbon Film 2Kohm, 1/4W (N.B)	RD14B2E202JNBS
⚠ R307,308	241 2380 963	Carbon Film 2.2Kohm, 1/4W (N.B)	RD14B2E222JNBS
⚠ R311,312	241 2380 963	Carbon Film 2.2Kohm, 1/4W (N.B)	RD14B2E222JNBS
⚠ 317,318	241 2377 976	Carbon Film 130ohm, 1/4W (N.B)	RD14B2E131JNBS
⚠ R323,324	241 2315 967	Fusible 68ohm, 1/4W	RD14B2E680GFRS
⚠ R333~340	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R345~348	241 2380 950	Carbon Film 2kohm, 1/4W (N.B)	RD14B2E202JNBS
⚠ R349,350	244 2051 987	Metal Oxide 4.7ohm, 1W (N.B)	RS14B3A4R7JNBS(S)
⚠ R357,358	244 2043 937	Metal Oxide 10ohm, 1W	RS14B3A100JNBS(S)
⚠ R361,362	241 2378 920	Carbon Film 220ohm, 1/4W (N.B)	RD14B2E221JNBS
⚠ R363,364	241 2377 976	Carbon Film 130ohm, 1/4W (N.B)	RD14B2E131JNBS
VR251	211 6044 048	Semi Fixed Resistor 5Kohm	V06PB502
VR253	211 6044 019	Semi Fixed Resistor 47Kohm	V06PB473
VR301,302	211 6044 048	Semi Fixed Resistor 5Kohm	V06PB502
VR351	211 0760 005	Variable Resistor	V1603V25F---K
VR356	211 0760 005	Variable Resistor	V1603V25F---K
VR503,504	211 6064 019	Semi Fixed Resistor 47Kohm	V06PB473
CAPACITORS GROUP			
C233,234	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C235,236	254 4254 006	Electrolytic 10μF16V	CE04W1C100M
C237,238	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C239,240	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C241,242	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C251	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C253	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C255	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C257	255 1264 908	Plastic Film 0.001μF/50V	CQ93M1H102J(B)

Ref. No.	Part No.	Part Name	Remarks
C259	254 4256 046	Electrolytic 100μF/25V	CE04W1E101M
C261	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
C263	255 1120 042	Plastic Film 0.0022μF/50V	CQ93M1H222J
C267	253 4536 006	Ceramic 10PF/50V	CC45SL1H100D
C269	253 4482 008	Ceramic 33PF/500V	CC45SL2H330J
C271	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C273	254 4260 087	Electrolytic 10μF/50V	CE04W1H100M
C275	253 1128 006	Ceramic 220PF/500V	CK45B2H221K
C277	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C279	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
C281	256 1042 974	Metalized 0.022μF/250V	CF93A2E223K
C283	254 4262 014	Electrolytic 10μF/63V	CE04W1J100M
C285	254 4262 014	Electrolytic 10μF/63V	CE04W1J100M
C301,302	254 4260 087	Electrolytic 10μF/50V	CE04W1H100M
C303,304	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C305,306	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C307,308	255 1264 966	Plastic Film 0.0033μF/50V	CQ93M1H332J(B)
C309,310	254 4256 046	Electrolytic 100μF/25V	CE04W1E101M
C311,312	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
C313,314	255 1120 042	Plastic Film 0.0022μF/50V	CQ93M1H222J
C317,318	253 4536 006	Ceramic 10PF/50V	CC45SL1H100D
C319,320	253 4269 001	Ceramic 10PF/500V	CC45SL2H100D
C321,322	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C323,324	254 4261 028	Electrolytic 100μF/50V	CE04W1H101M
C325,326	253 1054 057	Ceramic 100PF/500V	CK45B2H101K
C327,328	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C329~332	254 4262 014	Electrolytic 10μF/63V	CE04W1J100M
C333,334	256 1042 974	Metalized 0.022μF/250V	CF93A2E223K
C335,336	254 6170 007	Electrolytic 15000μF/63V	CE04W1J153M(DL)
C337,338	253 1151 905	Ceramic 4700PF/500V	CK45E2H472P
C340,341	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C345,346	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
C348	254 4263 042	Electrolytic 1μF/100V	CE04W2A010M
C349	256 1042 903	Metalized 0.1μF/250V	CF93A2E104K
C361,362	254 4254 022	Electrolytic 33μF/16V	CE04W1C330M
C363,364	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C365,366	254 4258 002	Electrolytic 4.7μF/35V	CE04W1V4R7M
C367,368	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C369,370	255 1264 908	Plastic Film 0.001μF/50V	CQ93M1H102J(B)
C371,372	256 1034 092	Metalized 0.15μF/50V	CF93A1H154J
C373,374	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C375,376	255 1120 039	Plastic Film 0.0018μF/50V	CQ93M1H182J
C377,378	255 1121 038	Plastic Film 0.012μF/50V	CQ93M1H123J
C379,380	256 1034 050	Metalized 0.068μF/50V	CF93A1H683J
C383	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C384	255 1265 936	Plastic Film 0.01μF/50V	CQ93M1H103J(B)
C385,386	254 4260 032	Electrolytic 0.47μF/50V	CE04W1HR47M
C388,389	254 4254 035	Electrolytic 47μF/16V	CE04W1C470M
C391	253 9031 027	BC Ceramic 0.1μF/25V	CK45=1E104K
C403,404	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C501,502	254 4256 033	Electrolytic 47μF/25V	CE04W1E470M
C503~510	254 4260 087	Electrolytic 10μF/50V	CE04W1H100M

OTHER GROUP				Q'ty
	—	(P.W. Board)		(1)
L251	235 0068 004	Inductor 1mH		1
L301,302	235 0068 004	Inductor 1mH		2
RL251	214 0127 003	Relay (RY-12W)		1
RL254	214 0129 001	Relay (DH2TU)		1
	204 8341 017	Head Phone Jack		1
	204 8342 003	3P Pin Jack (C-GND)	(Gold Flash)	1
	205 0605 000	S-Terminal	(Gold Flash)	1
	205 0190 036	3P NH Connector Base	TP	3

Ref. No.	Part No.	Part Name	Remarks	Q'ty
CN3F,T	205 0233 032	3P EH Connector Base		1
CN3A,C, D,D,J	205 0343 032	3P Connector Base (KR-PH)		5
CN4B	205 0343 045	4P Connector Base (KR-PH)		1
CN5B,B,F,G	205 0343 058	5P Conn. Base (KR-PH)		4
CN6F	205 0343 061	6P Conn. Base (KR-PH)		1
CN10A	205 0375 000	10P Conn. Base (KR-PH)		1
CN3M	205 0666 036	3P Conn. Base (9130)		1
CN5D	205 0666 052	5P Conn. Base (9130)		1
CN6I	205 0666 065	6P Conn. Base (9130)		1
CN7B	205 0666 078	7P Conn. Base (9130)		1
CN5C,E	205 0696 051	JL Connector (BT-E)		2
CN6E,G	205 0696 064	JL Connector (BT-E)	6P	2
CN8B,D,F	205 0696 080	JL Connector (BT-E)	8P	3
CN9B,9E, 9F	205 0696 093	JL Connector (BT-E)	9P	3
CN3B	205 0185 025	2P Wire Holder		1
CN9C,D	205 0666 094	9P Connector Base (9130)		2
CN12C	205 0535 028	12P Connector Base (9130)		1
CN16A	205 0772 001	16P Connector Base (9110B)		1
CN29A	205 0736 034	29P FFC Connector (9603)		1
CN3B	203 4868 009	3P VH Conn. Cord		1
CN3G	203 4869 008	3P PH-SAN Conn. Cord		1
CN5A	203 8346 006	5P EH-SCN Conn. Cord		1
CN8A	204 2451 026	8P EH-SCN Conn. Cord		1
	203 4876 004	3C SIN Cord Ass'y		1
B-B	203 0525 029	1P SIN Cord Ass'y		1
A-A	203 0525 032	1P SIN Cord Ass'y		1
	203 0524 004	1P SIN Cord Ass'y		2
	203 0524 017	1P SIN Cord Ass'y		1
CN4C	203 6391 008	4P VH Conn. Cord		1
	203 0426 005	1P Conn. Cord Ass'y		1
	001 0112 043	Vinyl Wire		1
	205 0452 004	Style Pin		1
	125 9002 078	UL Tube (L=30)	for P301	2

1U-2434D REAR, INPUT UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC051	263 0711 000	IC M5218AP	
IC151	265 0030 004	IC NJM4558DD	
IC152	263 0711 000	IC M5218AP	
IC153	262 1227 008	IC LC7821	
IC154	262 1228 007	IC LC7822	
IC155	262 1227 008	IC LC7821	
IC401,402	263 0206 007	IC μPC1225H	
IC507,508	268 0074 904	IC ICP-N20	IC Protector
IC509~511	268 0073 905	IC ICP-N15	IC Protector
TR401,402	271 0102 937	Transistor 2SA1015 (GR/Y)	
TR403,404	273 0198 918	Transistor 2SC1815 (BL)	
TR409,410	273 0235 923	Transistor 2SC1841 (E/F)	
TR411	271 0191 906	Transistor 2SA1048 (GR)	
TR501~503	273 0317 906	Transistor 2SC2458 (BL)	
D401~403	276 0432 903	Diode 1SS270A	
⚠ D404	276 0338 007	Diode S4VB20F	Bridge
D501~508	276 0548 910	Diode DSM1D2 (Type 3)	
D509	276 0432 903	Diode 1SS270A	
D510~515	276 0553 905	Diode 1SR35-200A	
D517	276 0049 011	Diode 1S2076A	
ZD501	276 0456 905	Zener Diode HZS4B-1	4V
RESISTORS GROUP			
(Not included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)			
⚠ R411,412	241 2379 903	Carbon Film 470ohm, 1/4W (N.B)	RD14B2E471JNBS
⚠ R417~424	244 2055 912	Metal Oxide 0.47ohm, 1W (N.B)	RS14B3AR47JNBS(S)
⚠ R425,426	241 2380 950	Carbon Film 2Kohm, 1/4W (N.B)	RD14B2E202JNBS
⚠ R427,428	241 2380 921	Carbon Film 1.5Kohm, 1/4W (N.B)	RD14B2E152JNBS
⚠ R429,430	244 2050 904	Metal Oxide 22ohm, 1W (N.B)	RS14B3A220JNBS(S)
⚠ R437,438	244 2043 937	Metal Oxide 10ohm, 1W (N.B)	RS14B3A100JNBS(S)
⚠ R501,502	244 2043 982	Metal Oxide 0.22ohm, 1W (N.B)	RS14B3AR22JNBS(S)
⚠ R503,504	241 2387 908	Carbon Film 1ohm, 1/4W (N.B)	RD14B2E010JNBS
⚠ R512	241 2375 978	Carbon Film 20ohm, 1/4W (N.B)	RD14B2E200JNBS
⚠ R515	241 2375 978	Carbon Film 200ohm, 1/4W (N.B)	RD14B2E200JNBS
⚠ R516	241 2387 940	Carbon Film 4.7ohm, 1/4W (N.B)	RD14B2E4R7JNBS
CAPACITORS GROUP			
C051,052	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C053,054	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C055,056	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C057,058	254 4260 058	Electroytic 2.2μ/50V	CE04W1H2R2M
C151,152	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C153,154	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C155,156	253 1179 084	Ceramic 470PF/50V	CK45B1H471K
C157,158	254 4250 039	Electroytic 220μF/6.3V	CE04W0J221M
C159,160	255 4199 999	Plastic Film 0.024μF/50V (MRZ)	CQ92M1H243J
C161,162	255 1121 009	Plastic Film 0.0068μF/50V	CQ93M1H682J
C163,164	254 4260 058	Electroytic 2.2μF/50V	CE04W1H2R2M
C165,166	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z

Ref. No.	Part No.	Part Name	Remarks
C167,168	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C169,170	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C173~175	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C176,177	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C178	253 1006 005	Ceramic 2200PF/50V	CK45B1H222K
C179~185	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C187,188	254 4260 058	Electroytic 2.2μF/50V	CE04W1H2R2M
C401,402	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C403,404	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C405,406	254 4256 059	Electroytic 220μF/25V	CE04W1E221M
C407,408	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C413,414	254 4261 028	Electroytic 100μF/50V	CE04W1H101M
C415,416	253 1179 026	Ceramic 150PF/50V	CK45B1H151K
C417,418	253 4537 063	Ceramic 47PF/50V	CC45SL1H470J
C419,420	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C421,422	255 1121 083	Plastic Film 0.033μF/50V	CQ93M1H333J
C423,424	254 4260 087	Electrolytic 10μF/50V	CE04W1H100M
C425,426	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C427,428	255 1121 025	Plastic Film 0.01μF/50V	CQ93M1H103J
C429,430	254 4260 087	Electrolytic 10μF/50V	CE04W1H100M
C431,432	256 1042 974	Metalized 0.022μF/250V	CF93A2E223K
C433,434	254 4355 002	Electrolytic 6800μF/50V	CE04W1H682MDL
C435,436	253 1151 905	Ceramic 4700PF/500V	CK45BE2H472P
C439	255 1121 025	Plastic Film 0.01μF/50V	CQ93M1H103J
C511,512	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C515,516	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C517,518	254 4259 014	Electrolytic 3300μF/35V	CE04W1V332MC
C519,520	253 1151 905	Ceramic 4700PF/500V	CK45E2H472P
C521,522	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C525,526	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C527,528	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
⚠ C529	253 8014 702	Ceramic 0.01μF/400V(AC)	CK45F2GAC103MC
C530	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C532	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C533	254 4256 790	Electrolytic 2200μF/25V	CE04W1E222MC
C534	254 4260 032	Electrolytic 0.47μF/50V	CE04W1HR47M
C535	259 0007 702	Back Up Cap 8200μF/5.5V	SB CAP==822=C

OTHER GROUP				Q'ty
	—	(P.W.Board)		(1)
L401,402	235 0068 004	Inductor 1mH		2
RL401	214 0129 001	Relay (DH2TU)		1
⚠ RL501	214 0120 000	Relay (TV-8)		1
	204 8378 006	6P Pin Jack (S-GND)		3
⚠ F001	206 1046 014	Fuse 8A		1
⚠ F002,003	206 1046 001	Fuse 6.3AUL	20m	2
	202 0022 008	Fuse Holder		6
⚠	203 3946 003	AC Outlet (Polarized)		1
⚠	233 5818 004	Power Trans (Mini)		1
	513 1451 044	Fuse Label		1
CN6H-1	205 0277 030	3P EH Conn. Base (RD)		1
CN6-2	205 0278 039	3P EH Conn. Base (BK)		1
CN3F	205 0233 032	3P EH Conn. Base (BK)		1
CN5A	205 0233 058	5P EH Conn. Base (BK)		1
CN8A	205 0233 087	8P EH Conn. Base (BK)		1
CN3A,I	205 0343 032	3P EH Conn. Base (KR-PH)		2
CN6B	205 0343 061	6P EH Conn. Base (KR-PH)		1
CN7C	205 0343 074	7P EH Conn. Base (KR-PH)		1
CN10A	205 0375 000	10P EH Conn. Base (KR-PH)		1
CN9E	205 0697 092	JL Connector (F-E)	9P	1
CN3M	205 0731 039	3P Connector Base-L (9131)		1
CN9B	205 0748 093	9P JL Connecor (R)		1
CN4A	203 6384 002	4P VH-SDN Conn. Cord		1

1U-2435C VFD, VIDEO UNIT

Ref. No.	Part No.	Part Name	Remarks	Q'ty
D-D	204 2540 005	7P SAN-SAN Conn. Cod		1
A-A	204 2542 003	9P SAN-SAN Conn. Cord		1
C-C	203 4870 000	3P SCN-SCN Conn. Cord		1
E-E	203 0525 003	1P SIN Cod Ass'y		1
F-F	203 0525 016	1P SIN Cord Ass'y		1
	203 2318 001	2P SAN-SAN Cord	l=180	1
	513 1674 009	Fuse label		1
	513 1715 007	Fuse label		1
	513 2011 072	Fuse label		1

Ref. No.	Part No.	Part Name	Remarks
SEMICNDUCTORS GROUP			
IC001,002	262 1108 004	IC TC4051BP	
IC003	262 0276 005	IC D14066BP	
IC004	262 1403 000	IC M50554-001SP	
IC005	263 0603 008	IC NJM2220S	
IC006	263 0619 005	IC LA7820	
IC101,102	262 1108 004	IC TC4051BP	
IC103	262 0276 005	IC HD14066BP	
IC104,105	262 1108 004	IC TC4051BP	
IC801	262 1722 008	IC TMP87CM70AF-6040	µ-Com
IC802	262 1418 105	IC MSC7128-03SS-D	
IC803	263 0423 000	IC M51953B	
IC804	499 0150 008	IC SBX1610-52	Remocon Receiver
TR002	269 0029 907	Transistor RN1204 (47K-47K)	Built in Resistor
TR003~006	273 0198 918	Transistor 2SC1815 (BL)	
TR007	271 0194 903	Transistor 2SA1048 (/GR)	
TR008,009	273 0317 906	Transistor 2SC2458 (BL)	
TR014	269 0029 907	Transistor RN1204 (47K-47K)	Built in Resistor
TR101~106	273 0198 918	Transistor 2SC1815 (BL)	
TR107	269 0029 907	Transistor RN1204 (47K-47K)	Built in Resistor
TR108	269 0030 909	Transistor RN2204 (47K-47K)	Built in Resistor
TR109,110	—	—	
TR111,112	—	—	
TR801,802	273 0317 906	Transistor 2SC2458 (BL)	
TR803	269 0024 902	Transistor RN2201 (4.7K-4.7K)	Built in Resistor
TR804	269 0030 909	Transistor RN2204 (47K-47K)	Built in Resistor
TR806	269 0030 909	Transistor RN2204 (47K-47K)	Built in Resistor
TR807	269 0029 907	Transistor RN1204 (47K-47K)	Built in Resistor
D001~004	276 0432 903	Diode 1SS270A	
D101~103	276 0432 903	Diode 1SS270A	
D801~819	276 0432 903	Diode 1SS270A	
RESISTORS GROUP			
(Not included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)			
⚠ R038	241 2376 964	Carbon Film 47ohm, 1/4W (N.B)	RD14B2E470JNBS
⚠ R057	241 2376 964	Carbon Film 47ohm, 1/4W (N.B)	RD14B2E470JNBS
RA801	246 2044 013	Resistor Array 47Kohm×6	RK99==473JP6
RA802	246 2053 033	Resistor Array 4.7Kohm×5	RK99==472JP5
RA803	246 2044 039	Resistor Array 10Kohm×6	RK99==103JP6
RA806	246 2044 013	Resistor Array 47Kohm×6	RK99==473JP6
RA807	246 2052 005	Resistor Array 10Kohm×4	RK99==103JP4
RA808	246 2076 023	Resistor Array 1.5Kohm×3	RK99==152JP3
VR001	211 6046 024	Semi Fixed Resistor 100Kohm	V06PB104
VR002	211 6046 082	Semi Fixed Resistor 5Kohm	V06QB502

Ref. No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
C001~007	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C008	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C009	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C010	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C011	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C012	253 4537 063	Ceramic 47PF/50V	CC45SL1H470J
C013	253 4537 018	Ceramic 30PF/50V	CC45SL1H300J
C014,015	253 4536 064	Ceramic 18PF/50V	CC45SL1H180J
C016	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C017,018	253 4536 080	Ceramic 22PF/50V	CC45SL1H220J
C019,020	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C021	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C022	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C023	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C024	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C025	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C026	254 4254 035	Electrolytic 47μF/16V	CE04W1C470M
C027	253 9030 905	BC Ceramic 1000PF/25V	CK45=1E102K
C028	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C029	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C030	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C031	253 1179 084	Ceramic 470PF/50V	CK45B1H471K
C033	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C034	253 1180 015	Ceramic 820PF/50V	CK45B1H821K
C035	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C036	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C037	255 1120 055	Plastic Film 0.0027μF/50V	CQ93M1H272J
C038	255 1121 025	Plastic Film 0.01μF/50V	CQ93M1H103J
C039	255 1120 097	Plastic Film 0.0056μF/50V	CQ93M1H562J
C040	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C041	256 1034 034	Metalized 0.047μF/50V	CF93A1H473J
C042	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C043	256 1034 034	Metalized 0.047μF/50V	CF93A1H473J
C044	254 4254 035	Electrolytic 47μF/16V	CE04W1C470M
C045	255 1121 041	Plastic Film 0.015μF/50V	CQ93M1H153J
C046	256 1034 050	Metalized 0.068μF/50V	CF93A1H683J
C047	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C057~059	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C060~062	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C101~110	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C111~116	253 1179 084	Ceramic 470PF/50V	CK45B1H471K
C117~122	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C123	254 3053 004	Electrolytic 10μF/16V (Bipole)	CE04D1C100MBP
C124	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C125,126	254 4252 037	Electrolytic 100μF/10V	CE04W1A101M
C127~130	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C143	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C801	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C802	254 4250 042	Electrolytic 330μF/6.3V	CE04W0J331M
C803	254 4195 916	Electrolytic 4.7μF/35V	CE04W1V4R7M(SRA)
C804	254 4196 944	Electrolytic 1μF/50V	CE04W1H010M(SRA)
C805	254 4196 928	Electrolytic 0.33μF/50V	CE04W1HR33M(SRA)
C806	256 1034 089	Metalized 0.12μF/50V	CF93A1H124J
C807	254 4250 039	Electrolytic 220μF/6.3V	CE04W0J221M
C808	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C810	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C811	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C812	254 4254 006	Electrolytic 10μF/16V	CE04W1C100M
C813	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C814	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C815	254 4261 028	Electrolytic 100μF/50V	CE04W1H101M
C816	253 9030 905	BC Ceramic 1000PF/25V	CK45=1E102K
C817	253 9030 921	BC Ceramic 2200PF/25V	CK45=1E222K
C820	253 1025 002	Ceramic 0.022μF/50V	CK45F1H223Z
C821	253 1027 000	Ceramic 0.1μF/50V	CK45F1H104Z

Ref. No.	Part No.	Part Name	Remarks	Q'ty
OTHER GROUP				
	—	(P.W. Board)		(1)
L001	235 0060 963	Inductor 15μH		1
L002,003	235 0070 924	Inductor 27μH		2
L801	235 0060 989	Inductor 120μH		1
L803	235 0060 989	Inductor 120μH		1
S813~818	212 4388 907	Tact Switch		6
XL001	399 0121 009	Crystal Vibrator (14.32MHz)		1
XL801	399 0160 002	Ceramic Vibrator	CST8.00MTW	1
FL801	393 4115 000	FLD (FIP16X1JA)		1
	204 8394 006	3P Pin Jack (C-GND)	Gold Flash	1
	204 8412 001	4P Pin Jack (C-GND)	Gold Flash	1
	204 8414 008	2P S-Terminal	Gold Flash	2
	204 8415 008	3P S-Terminal	Gold Flash	1
	204 8260 004	Mini Jack	Remote	1
CN4B	205 0355 046	4P KR Conn. Base (L)		1
CN6F	205 0355 062	6P KR Conn. Base (L)		1
CN7A-3	205 0343 074	7P Conn. Base (KR-PH)		1
CN7A-1,7C	205 0355 075	7P KR Conn. Base (L)		2
CN9A	205 0355 091	9P KR Conn. Base (L)		1
CN13A-2	205 0375 039	13P Conn. Base (KR-PH)		1
CN13A-1	205 0480 034	13P KR Conn. Base (L)		1
CN8B,8F	205 0679 089	JL Connector (F-E)	8P	2
CN5C	205 0748 051	5P JL Connector (R)		1
CN6E	205 0748 064	JL Connector (R)	6P	1
CN29A	205 0702 042	29P FFC Conn. Base (L)		1
	125 9002 049	UL Tube (L=25)	for C821	2

1U-2436A SURROUND UNIT

Ref No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC451	263 0654 002	IC NJM2082D	
IC452	263 0711 000	IC M5218AP	
IC601	263 0756 104	IC SSM2125D	
IC602	263 0711 000	IC M5218AP	
IC604	263 0359 006	IC LC4966	
IC605	262 1228 007	IC LC7822	
IC607	263 0711 000	IC M5218AP	
IC608	263 0654 002	IC NJM2082D	
IC609	263 0711 000	IC M5218AP	
IC610	263 0654 002	IC NJM2082D	
IC611	263 0711 000	IC M5218AP	
IC703	263 0711 000	IC M5218AP	
IC704	262 1609 105	IC F71002B	
IC705	262 1610 000	IC HM65256BLFP-10T	
IC706	263 0711 000	IC M5218AP	
IC707,708	262 0625 009	IC TC9176P	
IC709~712	263 0711 000	IC M5218AP	
IC713	263 0609 002	IC NJM2068DDC	
IC714	263 0476 002	IC LB1639	
IC715	263 0809 006	IC NJM7805FA(S)	Regulator +5V
IC716	263 0711 000	IC M5218AP	
TR113114	275 0061 902	FET 2SK184(GR)/(BL)	FET
TR115	269 0025 901	Transistor RN1202(10K-10K)	Buit in Resistor
TR335	273 0317 906	Transistor 2SC2458(BL)	
TR451,452	273 0317 906	Transistor 2SC2458(BL)	
TR453~455	273 0253 918	Transistor 2SC2878 (A/B)	
TR601	274 0060 900	Transistor 2SD667A(C)	
TR602	272 0053 908	Transistor 2SB647A(C)	
TR603~605	269 0025 901	Transistor RN1202 (10K-10K)	Buit in Resistor
TR701	274 0060 900	Transistor 2SD667A(C)	
TR751~754	275 0061 902	FET 2SK184(GR)/(BL)	FET
TR755	269 0025 901	Transistor RN1202 (10K-10K)	Buit in Resistor
TR756,757	273 0317 906	Transistor 2SC2458(BL)	
TR758	275 0061 902	FET 2SK184 (GR)/(BL)	FET
TR759	269 0025 901	Transistor RN1202 (10K-10K)	Buit in Resistor
D103,104	276 0432 903	Diode 1SS270A	
D401~404	276 0432 903	Diode 1SS270A	
D451,452	276 0432 903	Diode 1SS270A	
D701~707	276 0432 903	Diode 1SS270A	
D751~758	276 0432 903	Diode 1SS270A	
ZD601,602	276 0466 908	Zener Diode HZS7C-1	7V
ZD701	276 0462 902	Zener Diode HZS6B-1	6V
RESISTORS GROOUP			
(Not included Carbon Film ±5% 1/4W Type. Refer to the Schematic Diagram for thosse Parts.)			
⚠ R603,604	241 2387 940	Carbon Film 4.7ohm 1/4W (N.B.)	RD14B2E4R7JNBS
⚠ R605	242 0203 003	Carbon Composition 10Mohm 1/4W	RC05GF1E106K
⚠ R699	241 2387 940	Carbon Film 4.7ohm 1/4W (N.B.)	RD14B2E4R7JNBS
⚠ R769~[illegible]	241 2379 974	Carbon Fim 910ohm 1/4W	RD14B2E911JNBS
VR701	211 0759 003	Variable Resistor 100Kohm	Main

Ref No.	Part No.	Part Name	Remarks
CAPACITORS GROUP			
C137	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C140	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C207~214	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C215	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C217	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C403,404	253 1024 003	Ceramic 0.01μF/50V	CK45F1H103Z
C451,452	254 4260 045	Electrolytic 1μF/50V	CE04W1H010M
C453	254 4260 087	Electroytic 10μF/50V	CE04W1H100M
C454	253 1024 003	Ceramic 0.01μF/50V	CK45F1H103Z
C455	254 4260 090	Electroytic 22μF/50V	CE04W1H220M
C456	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C459,460	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C461,462	253 4536 006	Ceramic 10PF/50V	CC45SL1H100D
C463	253 1024 003	Ceramic 0.01μF/50V	CK45F1H103Z
C464,465	253 1024 003	Ceramic 0.01μF/50V	CK45F1H103Z
C466	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C467	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C468	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C469	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C470	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C475	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C601,602	254 4261 015	Electroytic 47μF/50V	CE04W1H470M
C603,604	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C605,606	254 4254 048	Electroytic 100μF/16V	CE04W1C101M
C607	254 4258 002	Electroytic 4.7μF/35V	CE04W1V4R7M
C608,609	256 1035 017	Metalized 0.22μF/50V	CF93A1H224J
C610	254 4258 015	Electroytic 10μF/35V	CE04W1V100M
C611,612	254 4260 087	Electroytic 10μF/50V	CE04W1H100M
C614	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C615~617	255 1121 025	Plastic Film 0.01μF/50V	CQ93M1H103J
C618	254 4254 048	Electroytic 100μF/16V	CE04W1C101M
C619	254 4258 002	Electroytic 47μF/35V	CE04W1V4R7M
C620	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C621	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C622	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C623	254 4258 002	Electroytic 4.7μF/35V	CE04W1V4R7M
C624,625	256 1035 017	Metalized 0.22μF/50V	CF93A1H224J
C626~629	256 1035 033	Metalized 0.33μF/50V	CF93A1H334J
C630,631	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C632	253 1180 002	Ceramic 680PF/50V	CK45B1H681K
C633~635	255 1121 067	Plastic Film 0.022μF/50V	CQ93M1H223J
C636	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C637~639	254 4258 002	Electroytic 4.7μF/35V	CE04W1V4R7M
C640	255 1121 067	Plastic Film 0.022μF/50V	CQ93M1H223J
C641	253 1180 002	Ceramic 680PF/50V	CK45B1H681K
C642,643	256 1034 076	Metalized 0.1μF/50V	CF93A1H104J
C675~678	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C679,680	255 6177 919	Plastic Film 56PF/50V (SMT)	CQ09S1H560J
C683,684	253 9030 015	BC Ceramic 1500PF/25V	CK45=1E152K
C685,686	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C687,688	253 9031 072	BC Ceramic 3900PF/25V	CK45=1E392K
C689,690	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C691,692	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C693,694	255 6177 919	Plastic Film 56PF/50V (SMT)	CQ09S1H560J
C697,698	253 9030 015	BC Ceramic 1500PF/25V	CK45=1E152K
C699,700	253 1179 042	Ceramic 220PF/50V	CK45B1H221K
C701,702	253 9031 072	BC Ceramic 3900PF/25V	CK45=1E392K
C703,704	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C705~707	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C708	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C709	254 4254 048	Electroytic 100μF/16V	CE04W1C101M
C710	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C711,712	253 1179 013	Ceramic 120PF/50V	CK45B1H121K
C713,714	254 4054 006	Electroytic 10μF/16V	CE04W1C100M

Ref. No.	Part No.	Part Name	Remarks
C715,716	255 1264 063	Plastic Film 0.0033μF/50V (SMT)	CQ93M1H332J(B)
C717	253 9031 027	BC Ceramic 0.1μF/25V	CK45=1E104K
C718	254 4254 035	Electroytic 47μF/16V	CE04W1C470M
C719	253 9031 027	BC Ceramic 0.1μF/25V	CK45=1E104K
C720	254 4254 035	Electroytic 47μF/16V	CE04W1C470M
C722	253 9031 027	BC Ceramic 0.1μF/25V	CK45=1E104K
C723,724	253 4536 077	Ceramic 20PF/50V	CC45SL1H200J
C725	253 9031 027	BC Ceramic 0.1μF/25V	CK45=1E104K
C726	254 4260 074	Electroytic 4.7μF/50V	CE04W1H4R7M
C727,728	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C729,730	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C731	254 4254 051	Electroytic 220μF/16V	CE04W1C221M
C732	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C733~736	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C737,738	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C739,740	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C741~744	253 1181 014	Ceramic 0.022μF/50V	CK45F1H223Z
C745,746	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C747,748	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C749	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C750~754	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C755~758	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C759,760	254 4254 022	Electroytic 33μF/16V	CE04W1C330M
C761,762	256 1034 089	Metalized 0.12μF/50V	CF93A1H124J
C765,766	255 1121 054	Plastic Film 0.018μF/50V	CQ93M1H183J
C767	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C768,769	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C770	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C771	255 1121 054	Plastic Film 0.018μF/50V	CQ93M1H183J
C772	254 4258 057	Electroytic 100μF/35V	CE04W1V101M
C773,774	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C775,776	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C777,778	254 4261 028	Electroytic 100μF/50V	CE04W1H101M
C779	254 4252 024	Electroytic 47μF/10V	CE04W1A470M
C780~782	253 1181 001	Ceramic 0.01μF/50V	CK45F1H103Z
C783	254 3056 014	Electroytic 1μF/50V (Bi Pole)	CE04D1H010MBP
C785,786	254 4254 006	Electroytic 10μF/16V	CE04W1C100M
C792,793	253 1179 000	Ceramic 100PF/50V	CK45B1H101K
C794	254 4260 045	Electroytic 1μF/50V	CE04W1H010M

OTHER GROUP				Q'ty
	—	(PW Board)		(1)
L701	235 0060 989	Inductor 120mH		1
S821~836	212 4388 907	Tact Switch		16
XL701	399 0162 000	Crystal Vibrator (11.2896MHz)		1
RL751~753	214 0127 000	Relay (RY-12W)		3
	204 8393 007	4P Pin Jack (S-GND)		2
FL701,702	232 0168 002	LC Filter		2
	205 0472 039	8P SP Terminal		1
CN3G,I	205 0343 032	3P Conn. Base (KR-PH)		2
CN3C	205 0323 036	3P Conn. Base (BLK)		1
CN5G	205 0343 058	5P Conn. Base (KR-PH)		1
CN5F	205 0323 052	5P Conn. Base (BLK)		1
CN6H	205 0233 061	6P EH Connector Base		1
CN5E	205 0697 050	JL Connector (F-E)	5P	1
CN6G	205 0697 063	JL Connector (F-E)	6P	1
CN8D	205 0697 089	JL Connector (F-E)	8P	1
CN3B	205 0653 036	3P VH Conn. Base		1
CN4A	205 0653 049	4P VH Conn. Base		1
CN5D	205 0731 055	5P Conn. Base-L (9131)		1
CN7B	205 0667 077	7P Conn. Base-L (9130)		1
CN9C,D	205 0731 097	9P Conn. Base-L (9131)		2
CN12C	205 0536 027	12P Conn. Socket		1

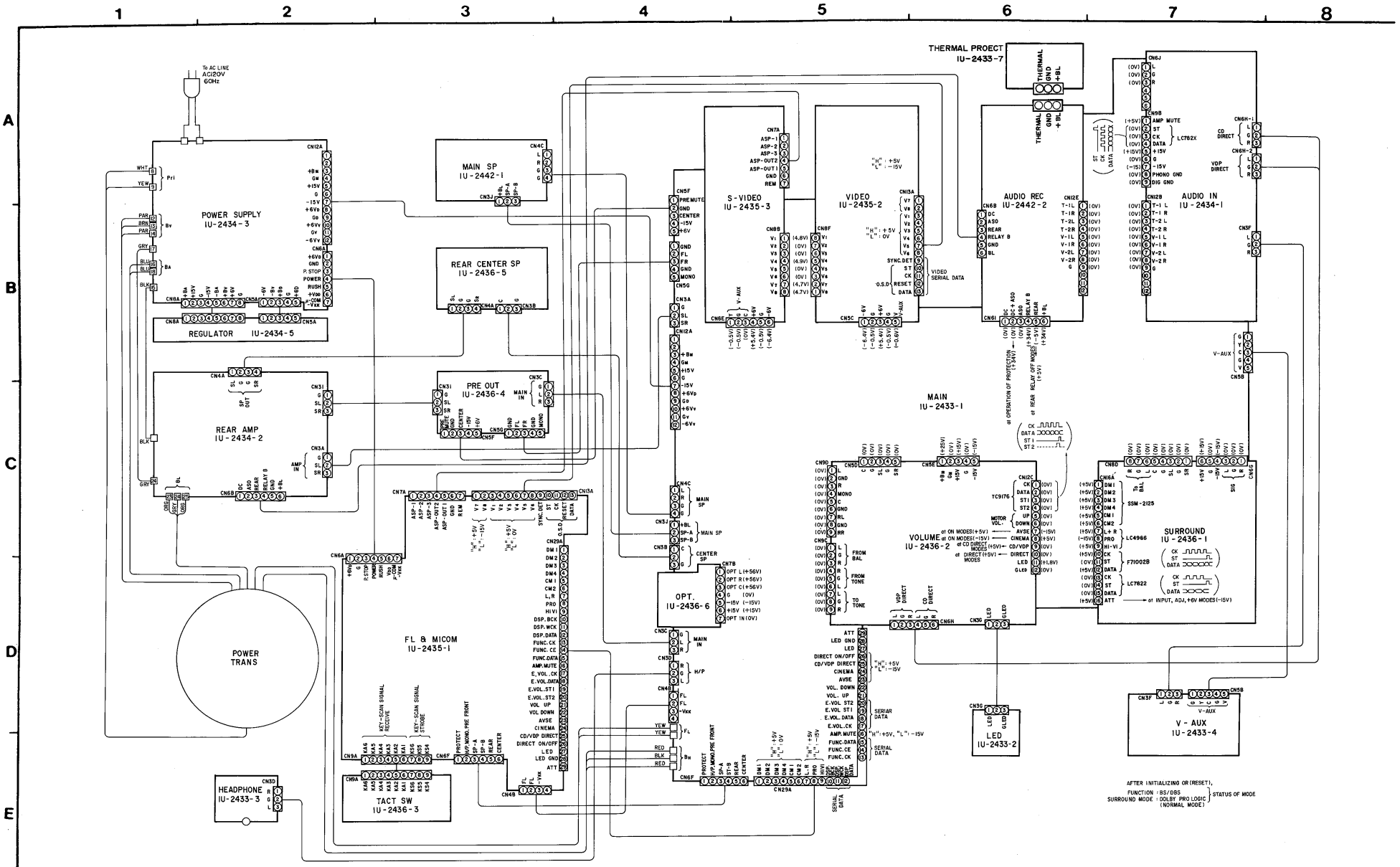
Ref. No.	Part No.	Part Name	Remarks	Q'ty
CN16A	205 0773 000	16P Conn. Base-L (9110)		1
CN9A	204 2541 004	9P KR-DS Conn. Cord		1
	203 0525 003	1P SIN Cord Ass'y	Black l=100	1
	203 0525 032	1P SSIN Cord Ass'y	Brown l=100	1
	001 0112 043	Vinyl Wire	Black l=40	1
	205 0452 004	Style Pin	for Preout	2

1U-2442A AUDIO REC UNIT

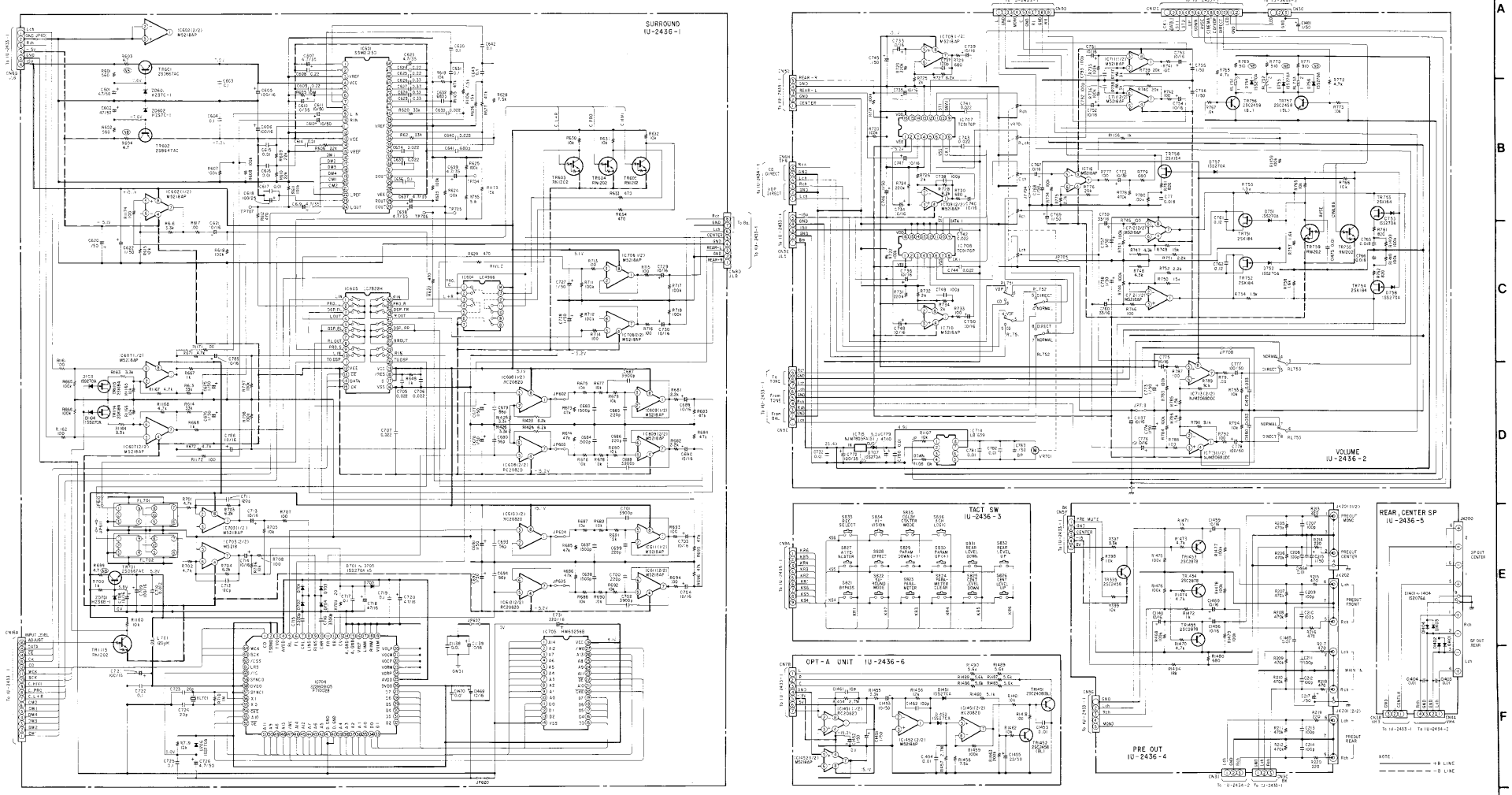
Ref No	Part No	Part Name	Remarks
SEMICONDUCTORS GROUP			
TR260	273 0317 906	Transistor 2SC2458 (BL)	
TR326,327	273 0317 906	Transistor 2SC2458 (BL)	
TR328	271 0191 906	Transistor 2SA1048 (GR)	
TR329,330	273 0317 906	Transistor 2SC2458 (BL)	
TR331	271 0191 906	Transistor 2SA1048 (GR)	
TR332	273 0317 906	Transistor 2SC2458 (BL)	
D206,207	276 0432 903	Diode 1SS270A	
D314	276 0432 903	Diode 1SS270A	
ZD304	276 0465 909	Zener Diode HZS7B-1	7V
SC301	279 0016 904	Thyristor SF0R1A42	
RESISTORS GROUP			
(Not incliuded Carbon Fim ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)			
⚠ R224	244 2052 902	Metal Oxide 2.7Kohm, 1W (N.B)	RS14B3A272JNBS(S)
⚠ R268	244 2052 973	Metal Oxide 560ohm, 1W (N.B)	RS14B3A561JNBS(S)
⚠ R270	244 2052 973	Metal Oxide 560ohm, 1W (N.B)	RS14B3A561JNBS(S)
⚠ R274	244 2052 973	Metal Oxide 560ohm, 1W (N.B)	RS14B3A561JNBS(S)
CAPACITORS GROUP			
C101,102	254 4260 045	Electroytic 1μF/50V	CE04W1H010M
C342	254 4260 090	Electroytic 22μF/50V	CE04W1H220M
C343,344	254 4250 042	Electroytic 330μF/6.3V	CE04W0J331M
C347	254 4261 002	Electroytic 33μF/50V	CE04W1H330M

OTHER GROUP				Q'ty
	—	(PW Board)		(1)
RL001,002	214 0129 001	Relay (DH2TU)		2
	204 8393 007	4P Pin Jack (S-GND)		2
	205 0472 039	8P SP Terminal		1
CN3T	203 4833 021	3P EH-SCN Conn. Cord		1
CN3J	205 0343 032	3P Conn. Base (KR-PH)		1
CN6B	205 0343 061	6P Conn. Base (KR-PH)		1
CN4C	205 0653 049	4P VH Conn. Base		1
CN6I	205 0731 068	6P Conn. Base-L (9131)		1
CN9F	205 0748 093	9P JL Connector (R)		1

WIRING DIAGRAM

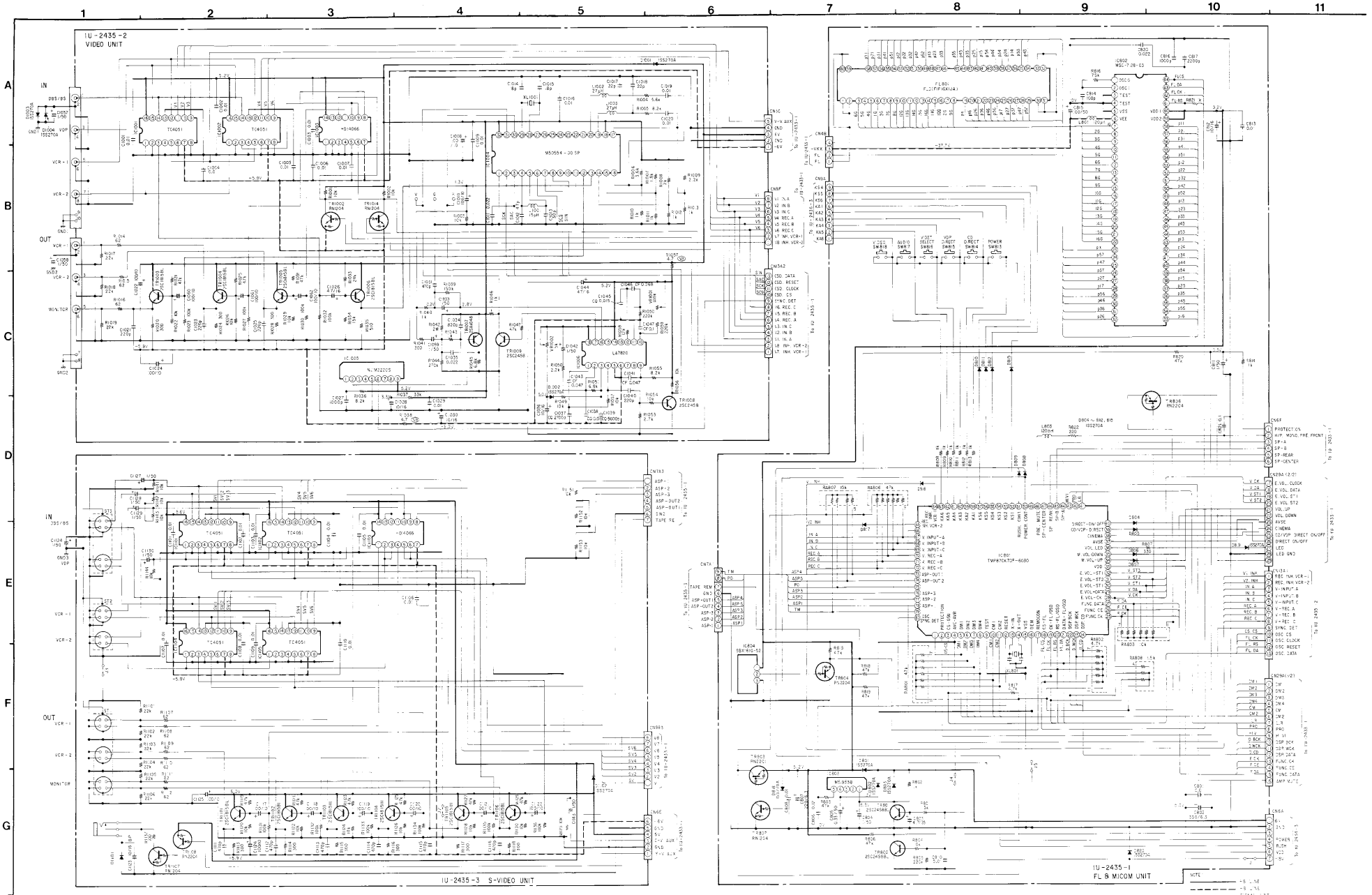


SCHEMATIC DIAGRAM - 1/4



NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

SCHEMATIC DIAGRAM - 2/4



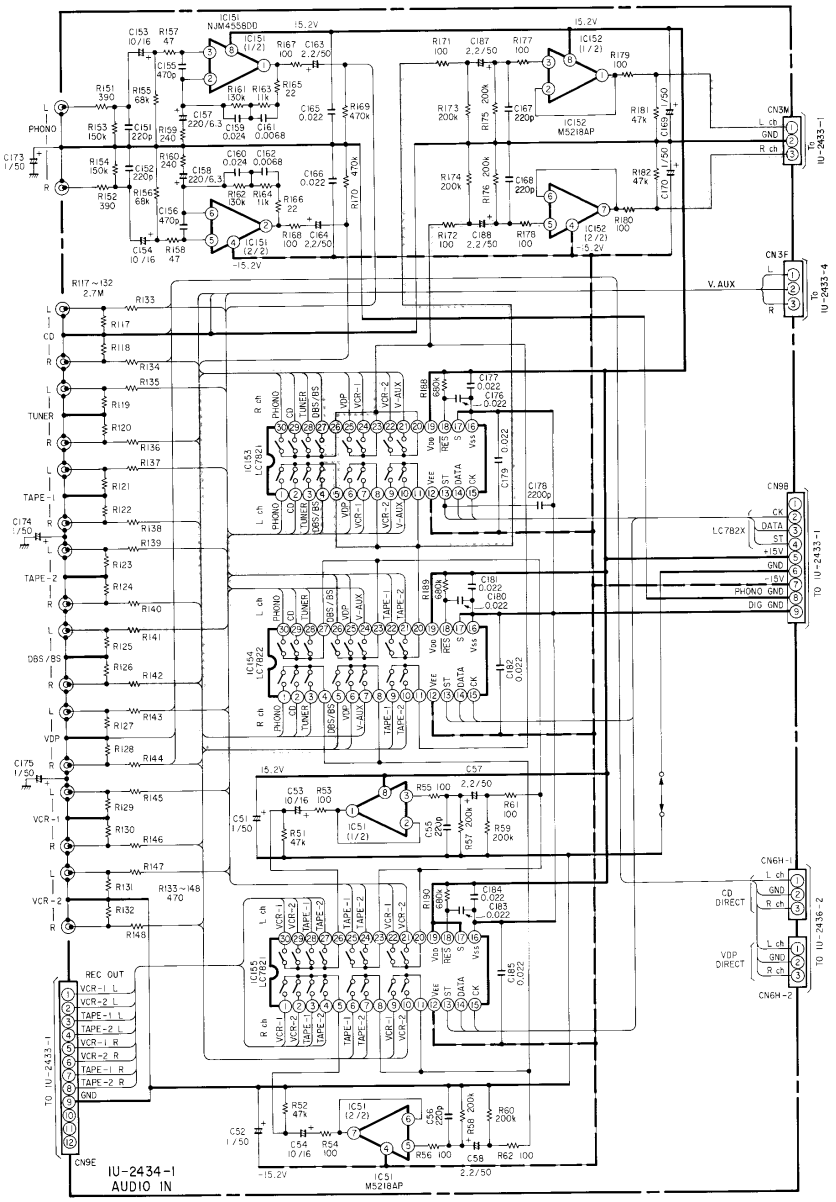
WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

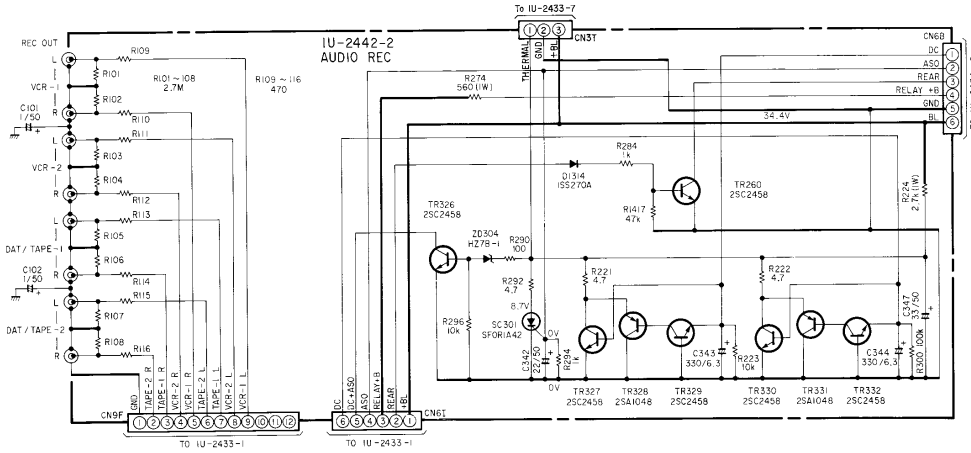
CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

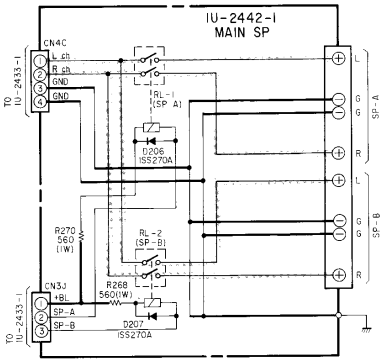
WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

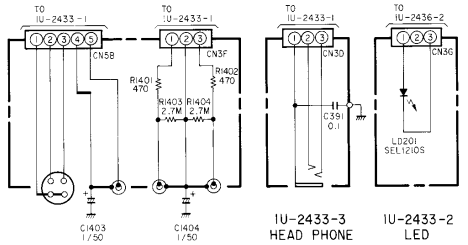
NOTES
ALL RESISTANCE VALUES IN OHM, k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

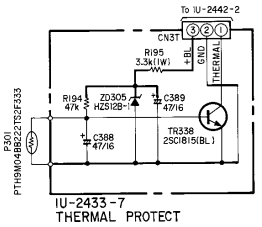
SCHEMATIC DIAGRAM - 3/4


IU-2434-1
AUDIO IN
IC151 NJM4558DD
IC152 M52182AP
IC53 LC7821
IC54 LC7822
IC55 LC7821
IC51 M52182AP
15.2V
-15.2V
PHONO
TUNER
TAPE-1
TAPE-2
DBS/BS
VDP
VCR-1
VCR-2
V. AUX
REC OUT
CN9E
CN3M
CN3F
CN9B
CN6H-1
CN6H-2
TO IU-2433-1
TO IU-2433-4
TO IU-2436-2
CD DIRECT
VDP DIRECT
LC7821
LC7822


IU-2442-2
AUDIO REC
REC OUT
DAT / TAPE-1
DAT / TAPE-2
CN9F
CN6I
CN3T
CN6B
TO IU-2433-1
TO IU-2433-7
TO IU-2434-2
THERMAL
34.4V
TR326 2SC2458
TR260 2SC2458
TR327 2SC2458
TR328 2SA1048
TR329 2SC2458
TR330 2SC2458
TR331 2SA1048
TR332 2SC2458
SC301 SFORIA42
ZD304 HZ7B-1
D314 1SS270A







NOTE :
+B LINE
-B LINE
SIGNAL LINE

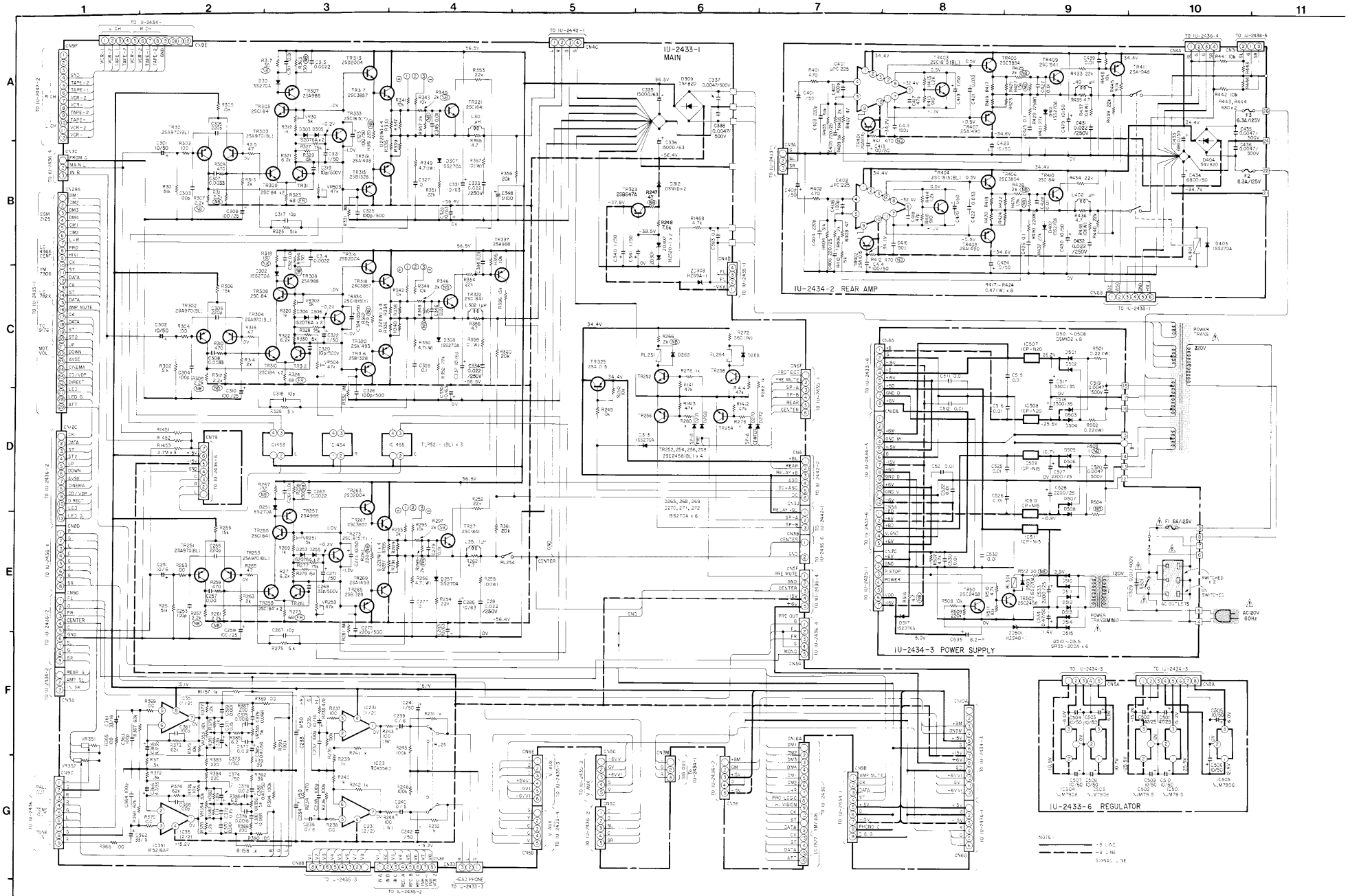
NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

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

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

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

SCHEMATIC DIAGRAM - 4/4



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

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

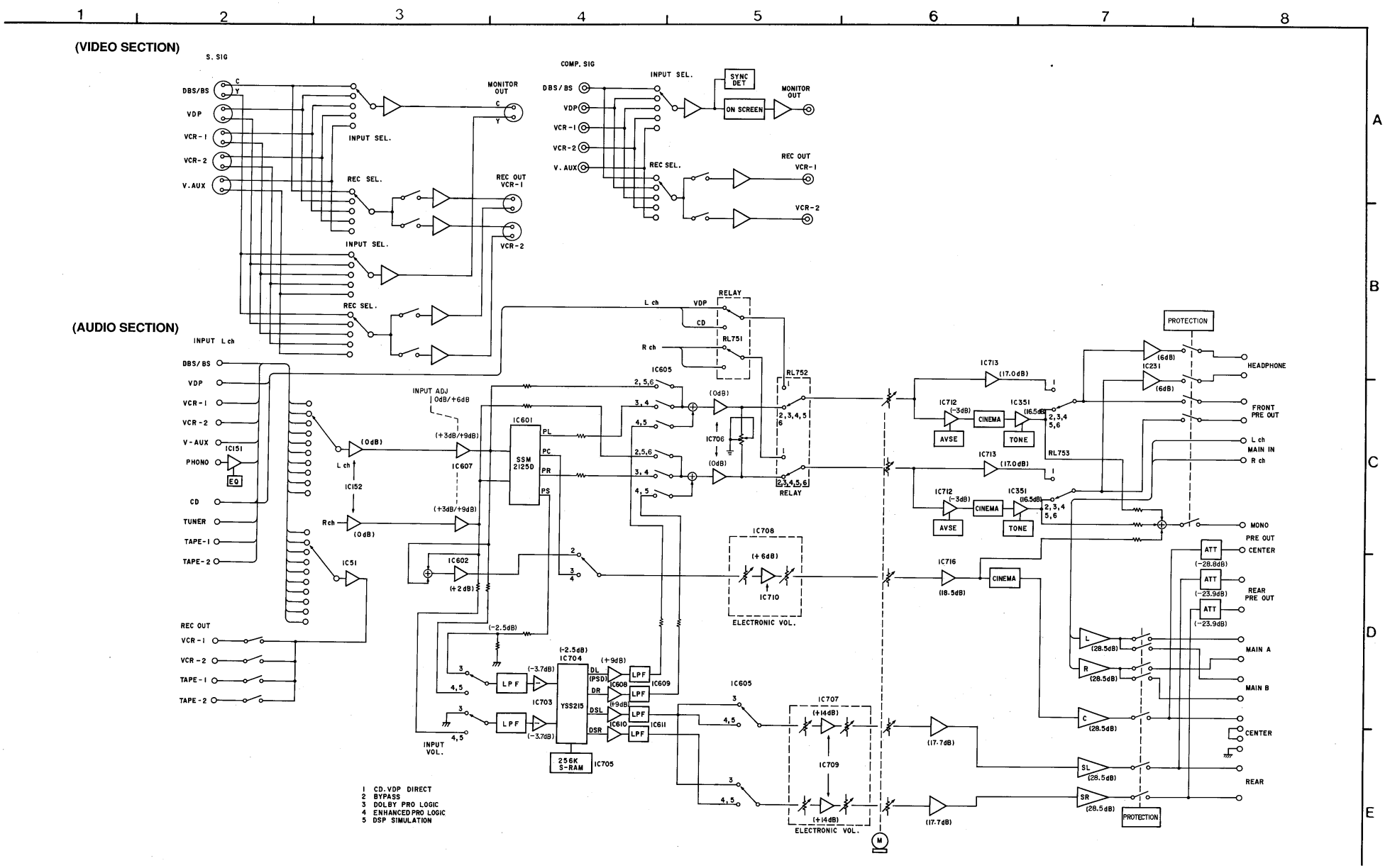
WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

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.

BLOCK DIAGRAM

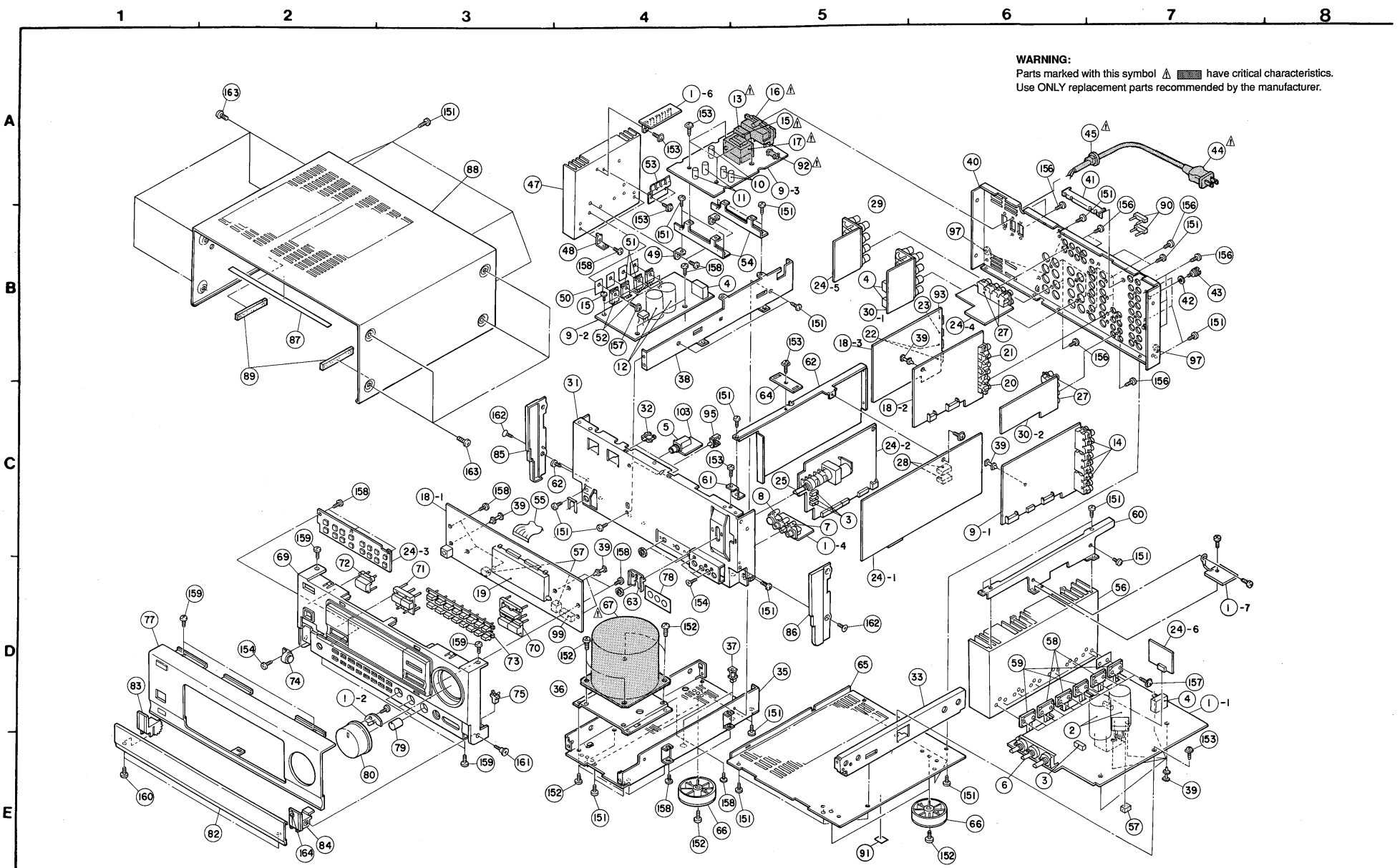
(VIDEO SECTION)

(AUDIO SECTION)



EXPLODED VIEW OF CHASSIS AND CABINET

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



PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	1U-2433A	Main Amp Unit Ass'y		1s
1-1	—	Main Amp Unit		(1)
1-2	—	LED Unit		(1)
1-3	—	Head Phone Unit		(1)
1-4	—	Video Aux. Unit		(1)
1-5	—	—		
1-6	—	Regulator Unit		(1)
1-7	—	Thermal Protect Unit		(1)
2	254 6170 007	Chemicon 15000µF/63V	C335,336	2
3	214 0127 003	Relay (RY-12W)		4
4	214 0129 001	Relay (DH2TU)		2
5	204 8341 017	Headphone Jack	Gold Flash	1
6	211 0760 005	Variable Resistor	VR351,356	1
7	204 8342 003	3P Pin Jack (C-GND)		1
8	205 0605 000	S-Terminal		1
◉ 9	1U- 2434D	Rear Input Unit Ass'y		1s
9-1	—	Audio Input Unit		(1)
9-2	—	Rear Amp Unit		(1)
9-3	—	Power Supply Unit		(1)
10	254 4256 790	Chemicon 2200µF/25V	C527,528,333	3
11	254 4259 014	Chemicon 3300µF/35V	C517,518	2
12	254 4355 002	Chemicon 6800µF/50V	C433,434	2
⚠ 13	214 0120 000	Relay (TV-8)	RL501	1
14	204 8378 006	6P Pin Jack (S-GND)		3
⚠ 15	206 1046 014	Fuse 8A	F001	1
⚠ 16	203 3946 003	AC Outlet (Polarized)		1
⚠ 17	233 5818 004	Power Trans (Mini)		1
◉ 18	1U- 2435C	VFD. VIDEO Unit Ass'y		1s
18-1	—	VFD, µ-Comm. Unit		(1)
18-2	—	Video Unit		(1)
18-3	—	S-Video Unit		(1)
19	393 4115 000	FLD (FIP16X1JA)		1
20	204 8394 006	3P Pin Jack (C-GND)	Gold Flash	1
21	204 8412 001	4P Pin Jack (C-GND)	Gold Flash	1
22	204 8414 009	2P S-Terminal	Gold Flash	2
23	204 8415 008	3P S-Terminal	Gold Flash	1
◉ 24	1U- 2436A	Surround Unit Ass'y		1s
24-1	—	Surround Unit		(1)
24-2	—	Volume Unit		(1)
24-3	—	Tact Switch Unit		(1)
24-4	—	Pre Out Unit		(1)
24-5	—	Center, Rear SP Unit		(1)
24-6	—	OPT-A Unit		(1)
25	211 0759 003	Variable Resistor 100 Kohm	Main VR	1
26	—	—		
27	204 8393 007	4P Pin Jack (S-GND)		4
28	232 0168 002	LC Filter		2
29	205 0472 039	8P SP Terminal		2
◉ 30	1U-2442A	Audio Rec Unit Ass'y		1s
30-1	—	Main SP Unit		(1)
30-2	—	Audio Rec Unit		(1)
30-3	—	Main SP Unit		(1)
30-4	—	Inrush Unit		(1)
30-5	—	Pre Out Unit		(1)
30-6	—	Regulator Unit		(1)
◉ 31	411 1175 309	Front Chassis Ass'y		1
32	445 0073 007	Wire Clip		3
◉ 33	411 9057 610	Side Chassis		1
34	—	—		
◉ 35	411 1021 314	Trans Chassis		1
◉ 36	412 9160 209	Trans Bracket		1
37	415 9032 006	P.C.B Holder (T)		2
◉ 38	411 0928 104	Center Chassis		1
◉ 39	412 2814 028	Card Spacer (L=10)		11
◉ 40	105 1037 393	Rear Panel		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 41	412 3519 005	P.W.B Support (A)		1
42	477 0018 001	Washer (P-87)		1
43	205 0071 016	Terminal Ass'y	GND	1
⚠ 44	206 2060 002	AC Cord (Polarized)		1
⚠ 45	445 0056 008	Cord Bush		1
46	—	—		
47	417 0459 215	Power Radiator (B)		1
◉ 48	412 3225 108	P.W.B Bracket (A)		2
◉ 49	412 3427 003	L Bracket		2
50	415 0234 007	Insulating Sheet		4
51	273 0386 005	Transistor 2SC3854 (O/P/Y) (Z)	TR405,406	2
52	271 0237 006	Transistor 2SA1490 (O/P/Y) (Z)	TR407,408	2
◉ 53	412 3314 103	Spring Plate (A)		1
◉ 54	412 3521 006	P.W.B Bracket		2
55	002 0045 003	29C FF Cable		1
56	417 0458 313	Power Radiator (A)		1
57	461 0539 048	Rubber Sheet	15×10×T10	6
58	273 0354 008	Transistor 2SC3857 (O)/(Y)	TR267,317,318	3
59	271 0220 000	Transistor 2SA1493 (O)/(Y)	TR269,319,320	3
◉ 60	412 2939 204	Radiator Bracket		1
◉ 61	412 3529 008	Support Bracket		1
◉ 62	411 1177 103	Shield Chassis		1
◉ 63	412 2897 100	VR Bracket		1
◉ 64	412 3520 007	P.W.B Support (B)		1
65	105 1051 007	Bottom Cover		1
66	104 0194 108	Foot Ass'y		4
⚠ 67	233 5994 009	Power Trans		1
◉ 69	146 1375 344	Inner Panel Ass'y		1
70	113 1534 017	Function Knob (A)		1
71	113 1535 016	Function Knob (B)		1
72	113 1292 236	Push Knob (P)		1
73	113 1464 019	Push Knob		2
74	421 9007 007	Mini Damper		1
75	435 0113 009	Latch (Y3Y18)		1
★ 76	445 8004 007	Wire Clamper		11
◉ 77	144 2201 314	Front Panel Ass'y		1
78	146 9045 207	Blind Sheet		1
79	112 0555 007	Vol. Knob (B)		3
80	112 0712 015	VR Knob Ass'y		1
82	144 1941 109	Trap Door		1
83	401 0165 203	Hinge (L)		1
84	401 0166 309	Hinge (R)		1
85	146 1377 012	Side Plate (L)		1
86	146 1378 011	Side Plate (R)		1
87	122 0183 049	Spacer	t=1	1
◉ 88	102 0515 118	Top Cover		1
89	461 9001 043	Rubber Sheet	T5×10×70	2
90	205 0752 005	Short Pin		2
★ 91	513 8266 009	Dangerous Mark	AC Cord	1
⚠ 92	206 1046 001	Fuse 6.3AUL (20mm)	F002,003	2
93	204 8260 004	Mini Jack	Remote	1
★ 94	513 1796 097	Fuse Caution Label		1
95	449 0068 014	Wire Saddle		2
★ 96	513 1673 000	Fuse Caution Label		1
97	477 0224 031	SP Washer		2
★ 98	513 2046 018	IC Caution Label		1
99	461 0334 052	Rubber Sheet	30×10×T10	1
★ 100	513 2046 021	IC Caution Label		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
SCREWS				
151	473 7015 018	Tapping Screw (S) 3×8	Black	35
152	473 7007 000	Tapping Screw (S) 4×8	Black	12
153	473 8007 025	Cup Screw 3×8		13
154	473 7511 004	F.H. Tapping Screw (P) 3×10		4
155	—	—		
156	477 0064 107	Fixing Screw		21
157	473 8007 009	Cup Screw 3×12		16
158	473 7501 001	Tapping Screw (P) 3×10		19
159	473 7002 021	Tapping Screw (S) 3×8	Black	7
160	473 7500 044	Tapping Screw (P) 3×8	Black	2
161	473 7514 001	Special Screw		1
162	473 7009 011	F.H. Tapping Screw (S) 3×10		4
163	477 0263 005	3P Swelling Screw		8
164	477 0231 024	Washer ϕ4 (S)		1
165				
166				

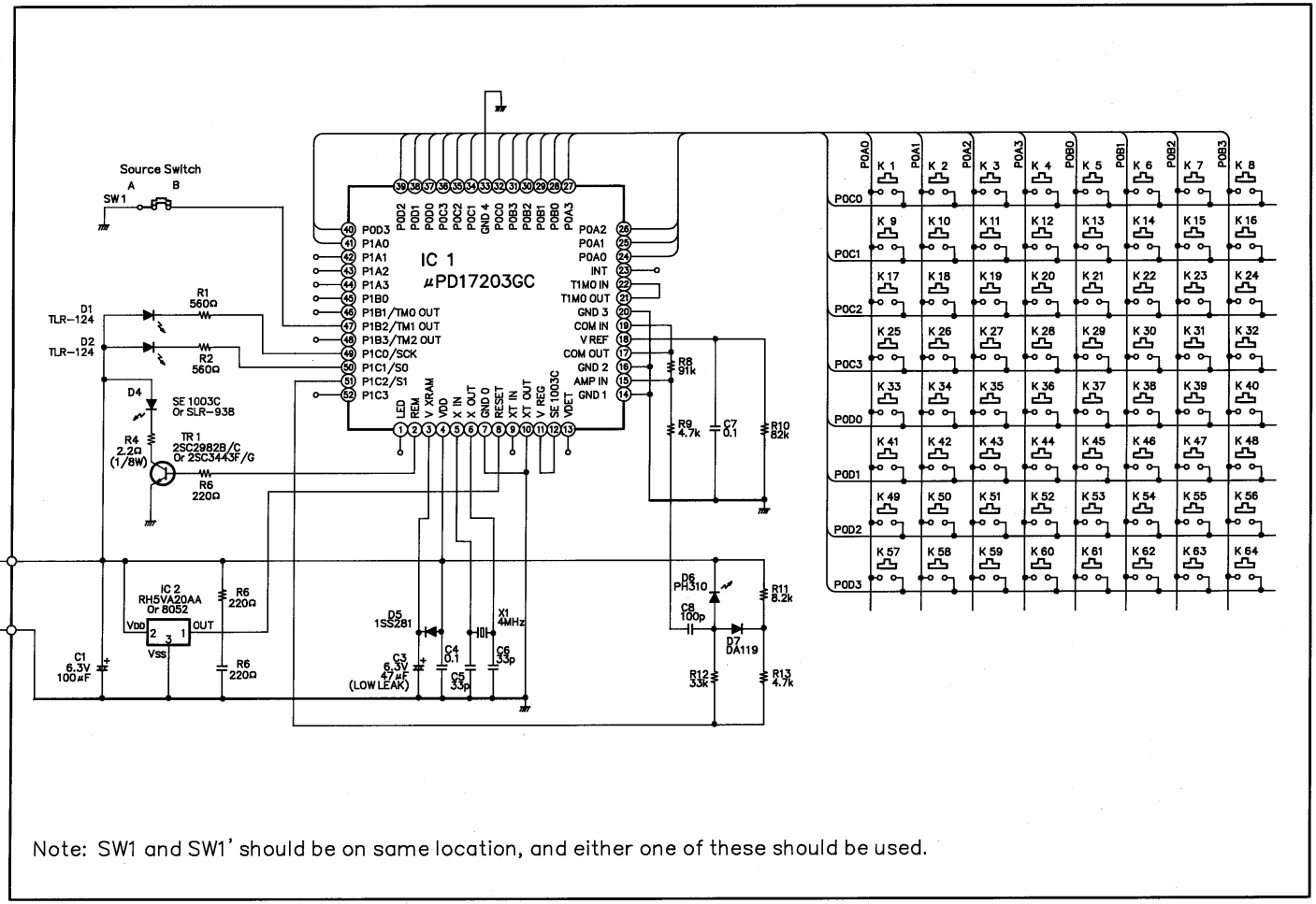
PACKING & ACCESSORIES
(Not included EXPLODED VIEW)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
201	504 0092 060	Styrene Paper	for AC Cord	1
202	504 9102 029	Styrene Paper	for Set	1
203	505 9102 019	Poly Cover		1
◉ 204	503 1017 203	Cushion		2
◉ 205	511 2450 006	Inst. Manual		1
◉ 206	499 0257 008	Remocon Receiver (RC-162)	Incl. R6P Batteries (2)	1
◉ 207	501 1610 170	Carton Case		1
208	505 8006 019	Enverope		1
◉ 209	502 0741 069	Pad	170×110×45	1
◉ 210	502 0741 043	Pad	185×45×45	1
211	515 0623 002	DAI Warranty Home		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 "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.

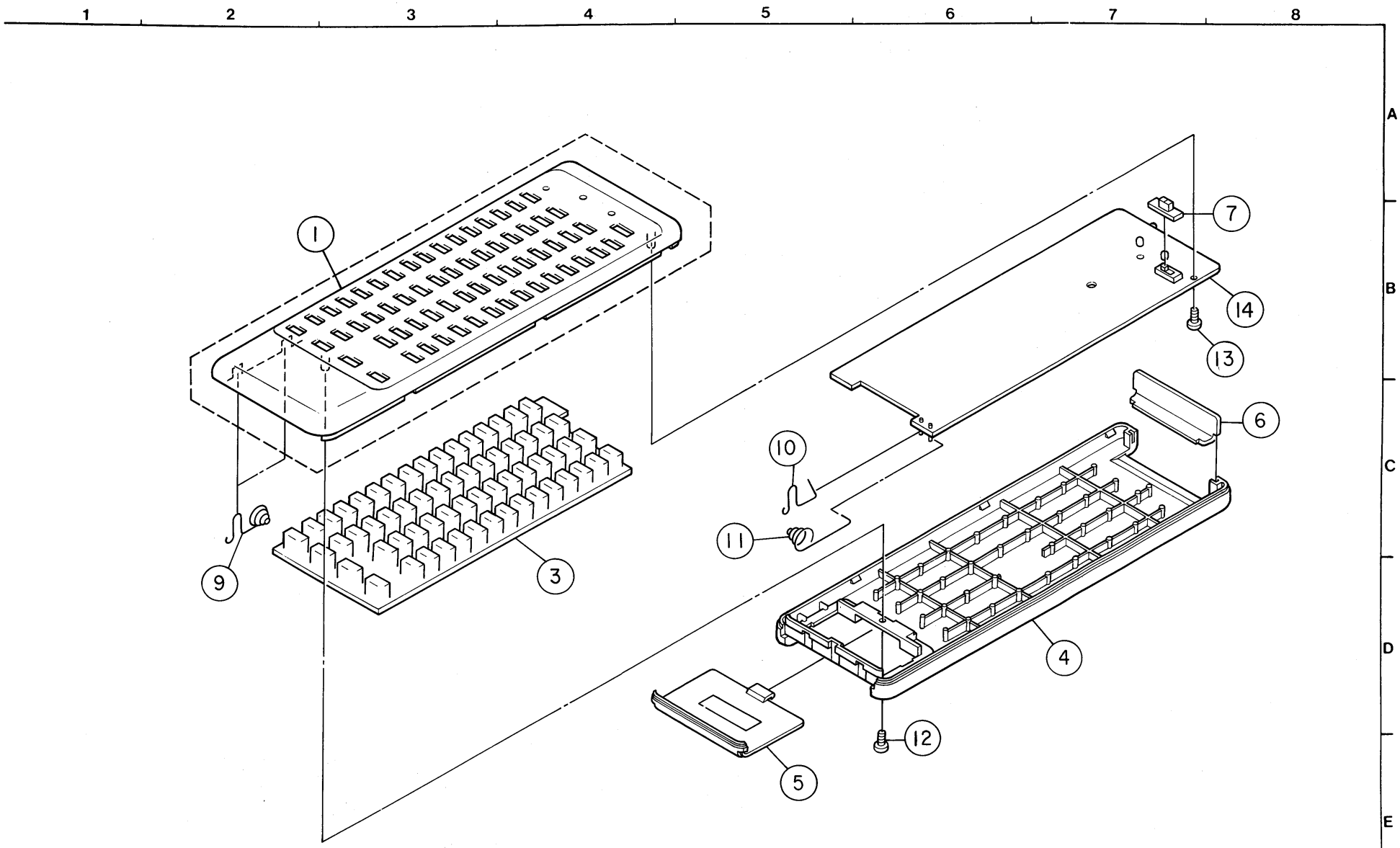
WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM



Note: SW1 and SW1' should be on same location, and either one of these should be used.

EXPLODED VIEW



REMOTE CONTROL UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC1	9H3 1000 157	IC μPD17203AGC-701	μ-Com
IC2	9H3 1000 158	IC RH5VA20AA	VOL. Detector
TR1	9H3 1000 070	Transistor 2SC3443BF/BG	Chip
or	9H3 1000 070	Transistor 2SC2982B/C	Chip
D1,2	9H3 1000 028	LED TLR124	Visible-Red
D3	9H3 1000 131	LED SE1003-C	Inflared
D5	9H3 1000 087	Diode 1SS281 (1)	
D6	9H3 1000 029	Diode PH310	Photo-PIN
D7	9H3 1000 071	Diode DA119/DA118	Chip
or		Diode 1SS196	
RESISTORS GROUP			
R1,2	247 0006 988	Chip Resistor 560ohm, 1/10W	RM73B--561J
R4	247 0001 909	Chip Resistor 2.2ohm, 1/10W	RM73B--2R2J
R6	247 0005 989	Chip Resistor 220ohm, 1/10W	RM73B--221J
R7	247 0012 927	Chip Resistor 100kohm, 1/10W	RM73B--104J
R8	247 0012 914	Chip Resistor 91kohm, 1/10W	RM73B--913J
R9	247 0009 901	Chip Resistor 4.7kohm, 1/10W	RM73B--472J
R10	247 0012 901	Chip Resistor 82kohm, 1/10W	RM73B--823J
R11	247 0009 969	Chip Resistor 8.2kohm, 1/10W	RM73B--822J
R12	247 0011 902	Chip Resistor 33kohm, 1/10W	RM73B--333J
R13	247 0009 901	Chip Resistor 4.7kohm, 1/10W	RM73B--472J
J7,8	247 0018 905	Chip Resistor 0ohm, 1/10W	RM73B--0R0K
CAPACITORS GROUP			
C1	254 4213 034	Electrolytic 100μF/6.3V	CE04W0J101M
C2	—	Chip Ceramic 0.33μF/25V	CK73F1E334Z
C3	254 4213 021	Electrolytic 47μF/6.3V	CE04W0J470M
C4	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C5,6	257 0003 946	Chip Ceramic 33PF/50V	CK73SL1H330J
C7	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z
C8	257 0004 961	Chip Ceramic 100PF/50V	CC73SL1H101J

OTHER GROUP				Q'ty
	—	(P.W. Board)		(1)
X1	9H3 1000 088	Ceramic Resonator	KBR4.0M503	1
SW1	9H3 1000 089	Slide Switch		1
	—	Port Wrapping		2

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty
1	9H3 1000 145	Case Top Ass'y		1
2	—	—		
3	9H3 1000 149	Switch Rubber		1
4	9H3 1000 146	Case Bottom Ass'y		1
5	9H3 1000 147	Cover Battery		1
6	9H3 1000 148	IR Filter		1
7	9H3 1000 150	Switch Button		1
8	—	—		
9	9H3 1000 153	Spring Coil		1
10	9H3 1000 151	Spring Coil		1
11	9H3 1000 152	Spring Coil		1
12	9H3 1000 154	Tapping Screw 2×6		1
13	9H3 1000 155	Tapping Screw 2×5		1
14	9H3 1000 156	P.W.Unit Ass'y		1
15	—	Label		1
16	—	Sheet		1

KEY LAYOUT

↑ Transmitting direction (upper side)

K5	K6	K7	K8
K13	K14	K15	K16
K21	K22	K23	K24
K29	K30	K31	K32
K37	K38	K39	K40
K45	K46	K47	K48
K53	K54	K55	K56
K61	K62	K63	K64
K57	K58	K59	K60
K49	K50	K51	K52
K41	K42	K43	K44
K33	K34	K35	K36
K25	K26	K27	K28
K17	K18	K19	K20
K9	K10	K11	K12
K1	K2	K3	K4

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.

WARNING:

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