DENON

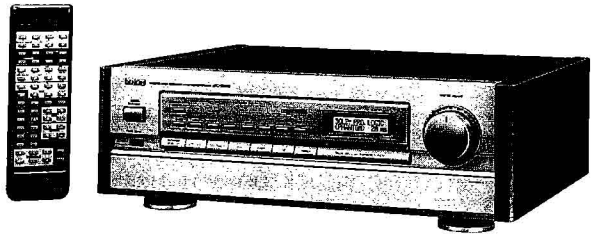
Hi-Fi AV Surround Amplifier

SERVICE MANUAL

MODEL AVC-3000/3000G

AV SURROUND AMPLIFIER

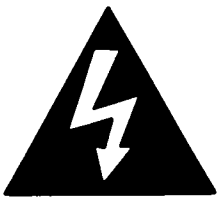
AVC-3000



AVC-3000G

CONTENTS

NIPPON COLUMBIA CO., LTD.



CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

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

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

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

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

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

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

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 adhered 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 ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 – "RADIO AND TELEVISION EQUIPMENT"

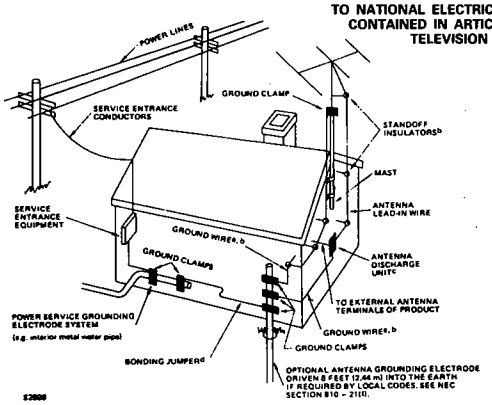


Fig. 4

13. Protective Attachment Plug – The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
14. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to 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.
15. 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.
16. 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.
17. Overloading – Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
18. 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 on the video product.
19. 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.
20. 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.
21. 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.
22. 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.

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

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

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

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

- **Read this manual carefully to ensure that you take full advantage of all the features of this amplifier. Keep the manual in a safe place for future reference.**
- **Be sure to check that the date of purchase and the store's name of purchase have been filled in properly on the warranty issued at your store of purchase.**

– CONTENTS –

Check that the following parts are included in the package aside from the main unit:

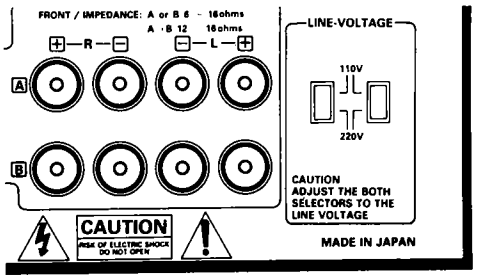
① Operating Instructions 1
② Remote control unit (RC-127) 1
③ Batteries (SUM-3AA/R6) 4
④ Display plate 1

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.

• MULTI-VOLTAGE MODEL ONLY



Setting the line voltage

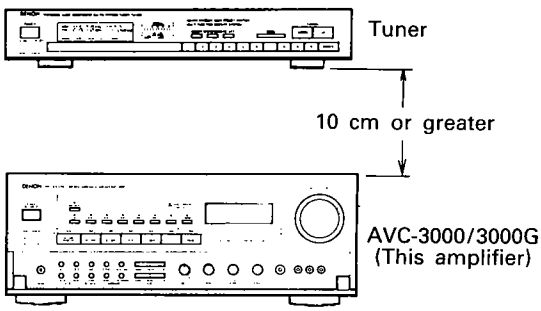
- The customer can set the VOLTAGE SELECTORS on the back panel for appropriate line voltage.
- Do not use excessive force in setting the VOLTAGE SELECTOR KNOB – you may damage it.
- If the VOLTAGE SELECTOR KNOB does not slide smoothly, call qualified service personnel.
- Be sure to set both voltage selectors to same position.

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 8 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 stereo 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 function, 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 stereo 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 CONNECTIONS

Audio Section

Turntable (MM cartridge)

Ground wire

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.

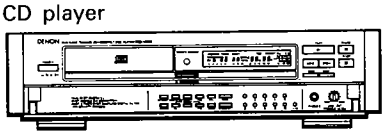
* If hum or other noise is produced when the ground wire is connected, disconnect it.

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.

CD player



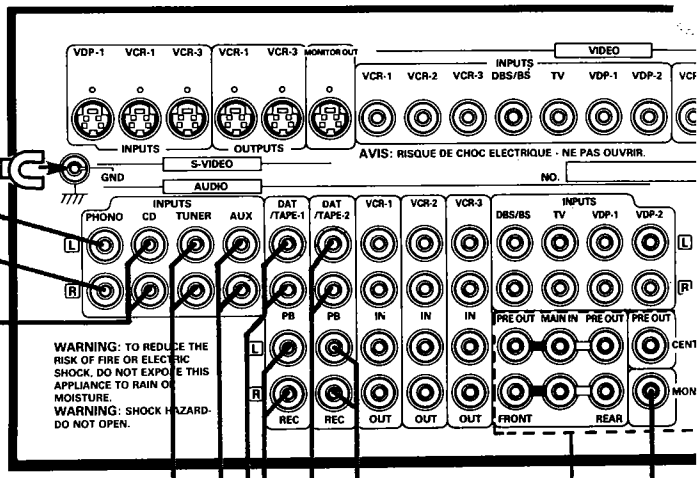
ANALOG OUTPUT R L

Connecting a tuner

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

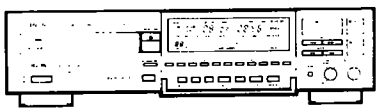
TUNER

OUTPUT R L



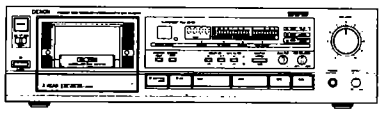
AUX jacks

The auxiliary jacks have the same electrical performance as the CD and TAPE PB jacks, and can be used to connect a second CD player, a tape deck for playback, or some other component. Use pin plug cords to connect the output jacks of the audio component to the AUX jacks of the amplifier.



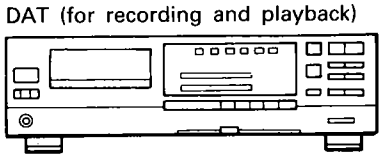
R L OUTPUT

R L OUT PUT R L IN PUT



Tape deck 2

DAT (for recording and playback)



R L OUT PUT R L IN PUT

Connecting tape decks

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

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 (REC) 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 (PB) jacks using pin plug cords.

PRE OUT and MAIN IN jacks

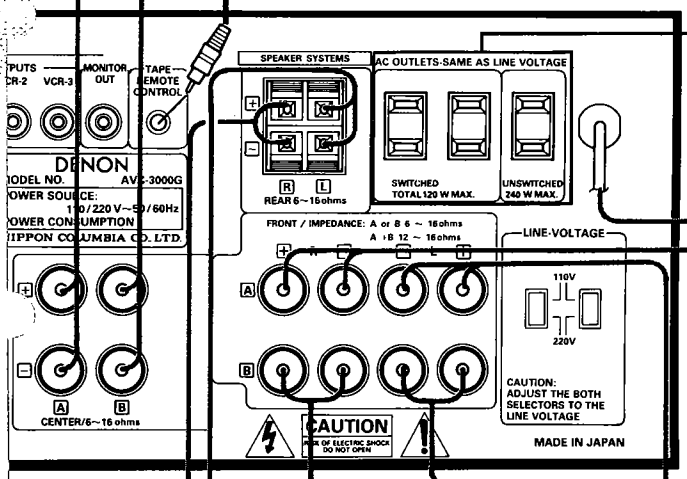
See pages 10, 11.

- 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.
- **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.

A Center speakers B

When two speakers are connected as dual center outputs a better effect will be obtained when speakers having uniform characteristics are used.
Note that surround playback is possible with only one speaker connected to either jack A or B.

Connecting the tape remotes control jack.
Connect the remote control cable included with DENON cassette decks here.



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.

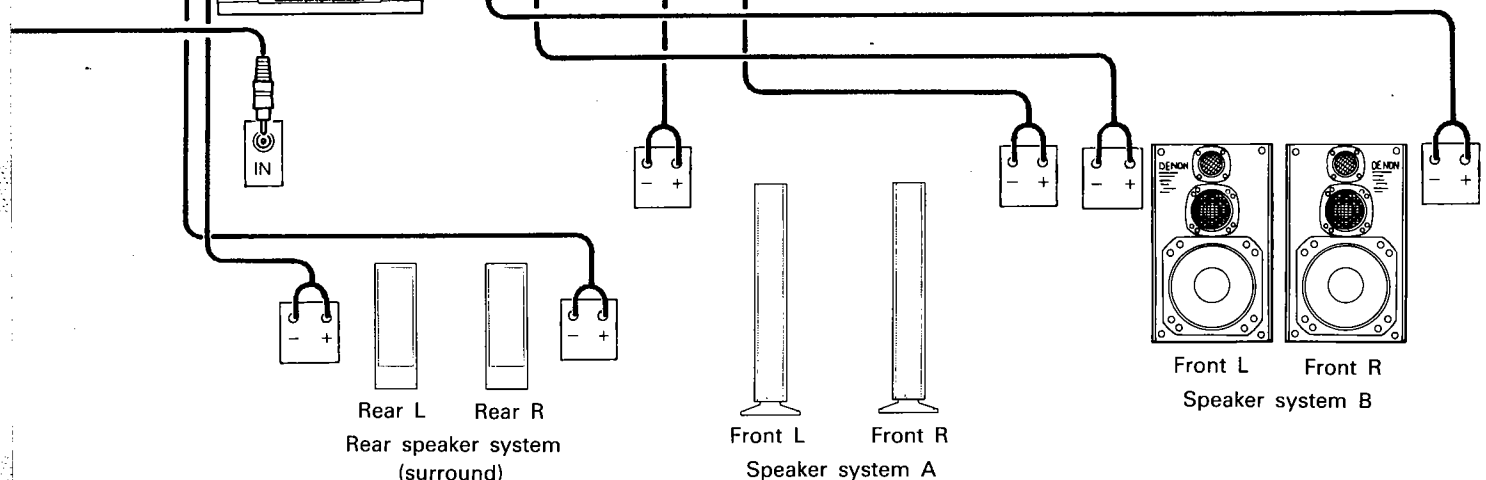
- SWITCHED outlets (120 W total capacity)
  The power of these outlets is switched on and off by the amplifier's POWER switch.
  These outlets will also be switched on when the power is set to ON-STANDBY with the remote control. When the amplifier is in the standby mode, the outlets will be switched off.
- UNSWITCHED outlet (240 W capacity)
  This outlet remains on at all times, regardless of the amplifier's POWER switch.

Power outlet
AC120V, 60Hz
AC110/220V
50/60 Hz (Multiple)

Connection terminals for sub-woofer with built-in amplifier (super woofer), etc.

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.

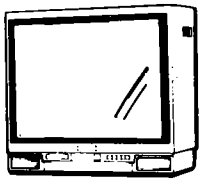


Video Section

Connecting DBS (BS) tuner

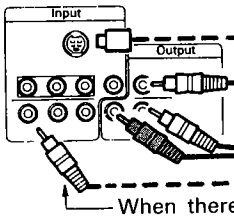
- Connect the DBS (BS) tuner's video output jack to the amplifier's VIDEO DBS (BS)-IN jack (yellow) using a 75-ohm video coaxial cable pin plug cord.
- Connect the DBS (BS) tuner's analog audio output jacks to the amplifier's AUDIO DBS (BS) IN jacks using pin plug cords.

TV (with video input and output jacks)



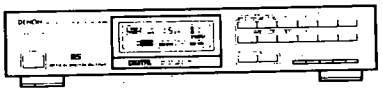
Connecting a TV

- Connect the TV's video output jack to the amplifier's VIDEO TV IN jack (yellow) using a 75-ohm video coaxial cable pin plug cord.
- Connect the TV's audio output jacks to the amplifier's AUDIO TV IN jacks using pin plug cords.

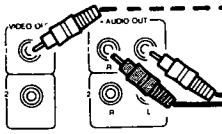


When there is no monitor TV

DBS (BS) tuner



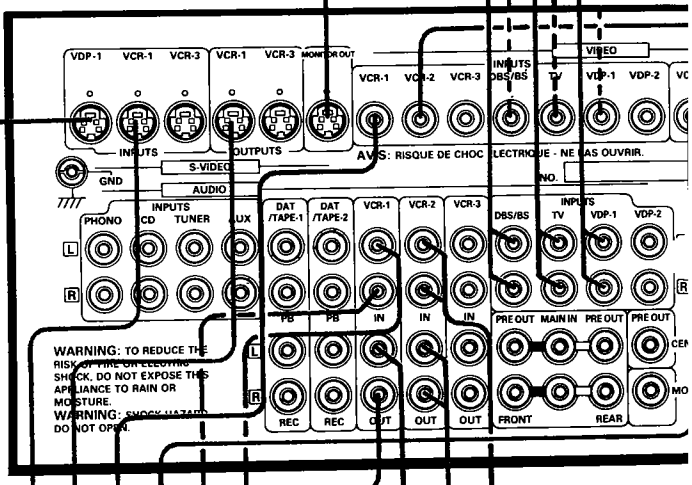
When there is no monitor TV



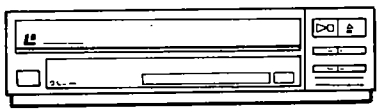
Connecting video disc players (VDP-1 and 2)

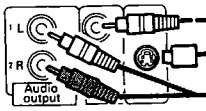
(VDP, CDV, etc.)

- Connect the video disc player's S-output jack to the amplifier's S-VIDEO VDP-1 IN jack using an S-jack connection cord. (VDP-1 only.)
- Connect the video disc player's video output jacks to the amplifier's VIDEO VDP-1 (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-1 jacks using pin plug cords.
- Connections may be made to the VDP-2 jacks in the same way. (Note that there is no S-jack input here.)

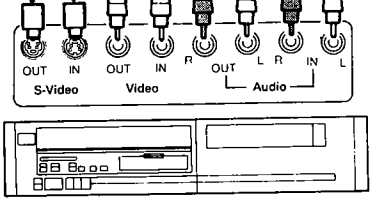


LD player, CDV player, etc.





Audio output	Video output	S-output



Video deck 1 equipped with S-jack

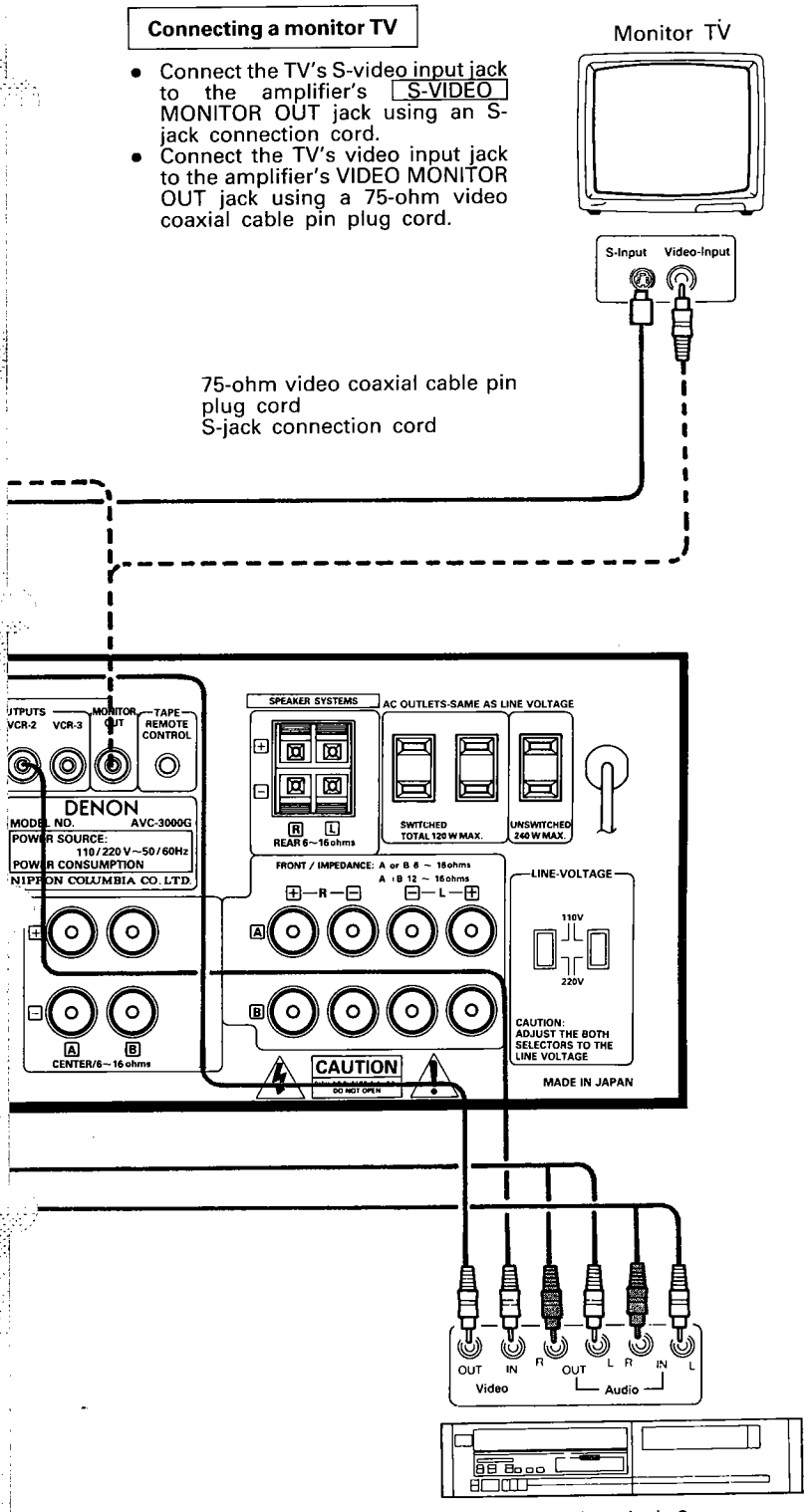
The AVC-3000 is equipped with VIDEO AUX jacks on the front panel for playback of video equipment. This permits video cam-corders with playback functions as well as other equipment to be connected.
The connection method is the same as that for VDP-1.

Connecting a video deck (VCR)

- There are three sets of VCR jacks, allowing connection of three video decks for simultaneous recording and video copying.
  Connections for video input and output:
  Connect the video deck's video output jack to the amplifier's VCR-1 IN jack (yellow) and the video deck's video input jack to the amplifier's VCR-1 OUT jack (yellow) using 75-ohm video coaxial cable pin plug cords.

Connecting a monitor TV

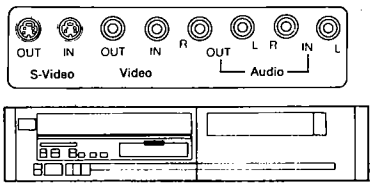
- Connect the TV's S-video input jack to the amplifier's S-VIDEO MONITOR OUT jack using an S-jack connection cord.
- Connect the TV's video input jack to the amplifier's VIDEO MONITOR OUT jack using a 75-ohm video coaxial cable pin plug cord.



Video deck 2

A note on the jacks

- The input selector for the S inputs and that for the pin jack inputs work in conjunction with each other. When a source without an S input is selected, a signal is not output to the S-jack MONITOR OUT.
- The S-jack circuits contain a circuit which provides conversion from the S-jack input to pin jack output for the MONITOR OUT/VCR-3 jack. When this is used, the S-jack video will have priority between the S-jack input and the pin jack input, and will be output to the MONITOR OUT/VCR-3 jack. For example, when both the S-jack and the pin jack of VCR-1 are connected and VCR-1 is selected with the input selector, the video of the S-jack input will be output to the pin jack MONITOR OUT/VCR-3 jack.
- VCR-3 jack
  The VCR-3 jack does not provide independent switching of recording output (i.e., REC OUT SELECT).
  The output of this jack is selected by the input selector, and the same video signal as MONITOR OUT is output.
  Use this jack when you would like to record the video signal input to the S-jack using regular pin jack output.



Video deck 3 equipped with S-jacks

Connect in the same way as for video deck 1.

Connecting the S-jacks (VCR-1 and VCR-3 only)

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.

Connecting the audio input and output jacks

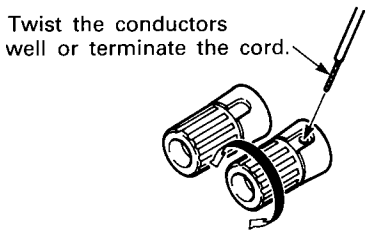
- Connect the video deck's audio output jacks to the amplifier's AUDIO VCR-1 IN jacks and the video deck's audio input jacks to the amplifier's AUDIO VCR-1 OUT jacks using pin plug cords.
- A second or third video deck may be connected to the VCR-2 and VCR-3 jacks in the same way.

Speaker System Connections

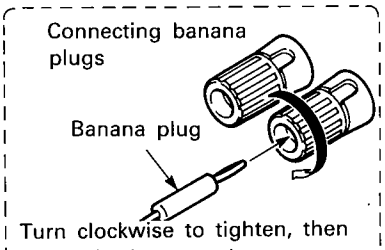
- This amplifier can accommodate connections of a total of eight speakers including two sets of front speakers (A and B), one set of rear speakers, and one or two center speakers.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (⊕ with ⊕, ⊖ with ⊖). Mismatching 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.

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

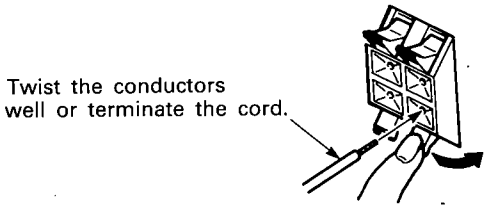
Connecting the front speaker and center speaker terminals



Connecting banana plugs



Connecting the rear speaker terminals



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.

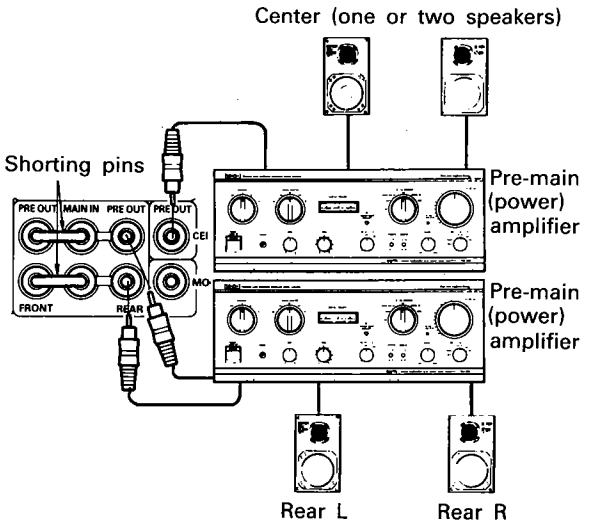
Table of outputs when using the PRE OUT jacks

Diagram number	Jack output / Insertion of shorting pin	FRONT		REAR		CENTER	
		SP-A SP-B	PRE OUT	SPEAKER	PRE OUT	SPEAKER	PRE OUT
1	FRONT PRE OUT-MAIN IN	FRONT	×	REAR	REAR	CENTER	CENTER
2	REAR PRE OUT-MAIN IN	REAR	FRONT	REAR	×	CENTER	CENTER
	None	×	FRONT	REAR	REAR	CENTER	CENTER

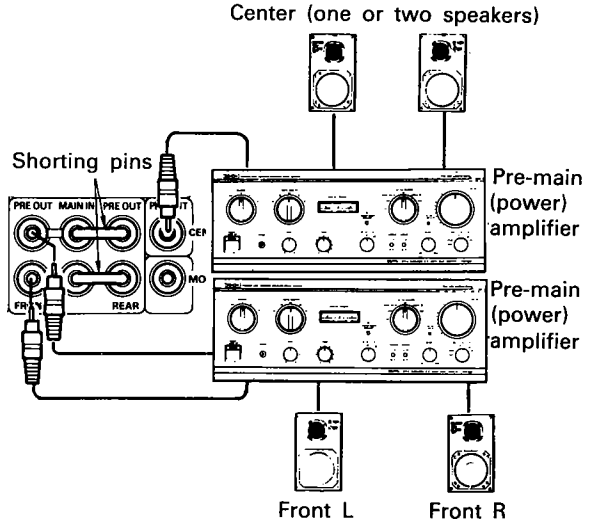
NOTE: Be sure the power has been switched off before withdrawing or inserting the shorting pins.

Using a second pre-main (power) amplifier

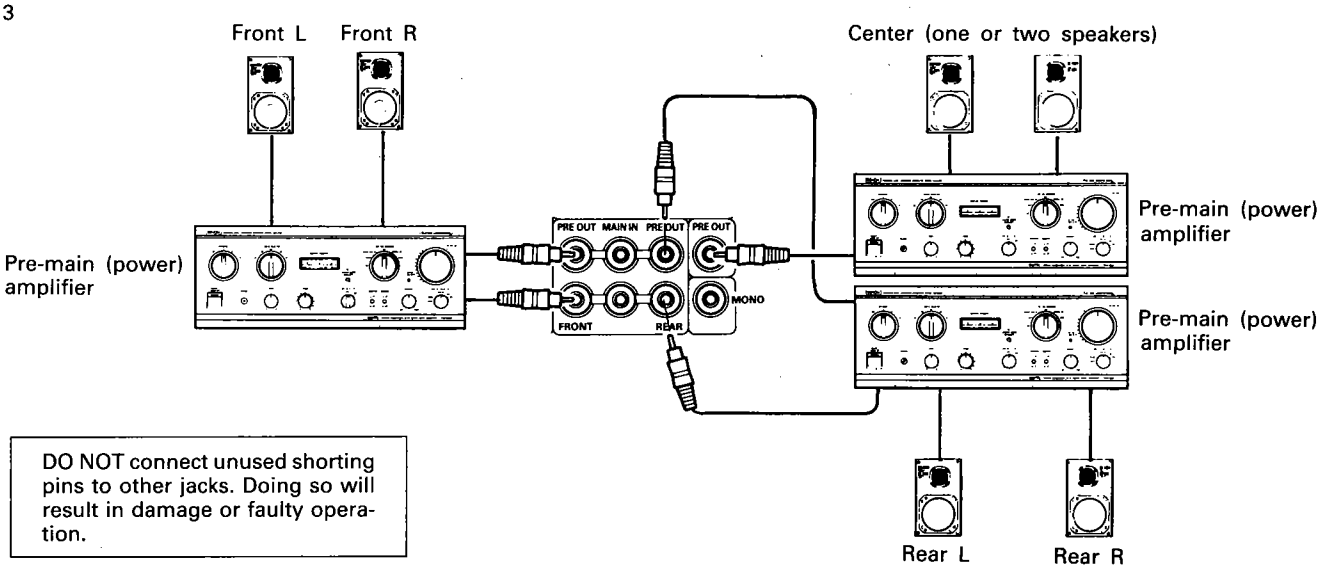
1



2

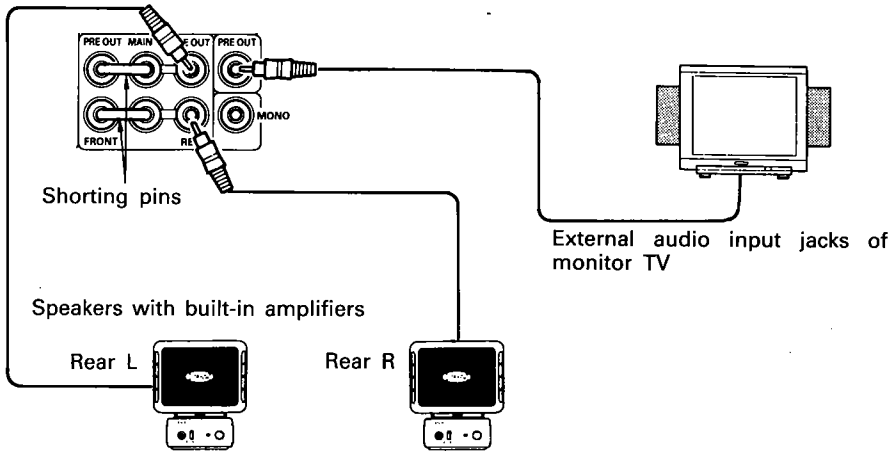


3



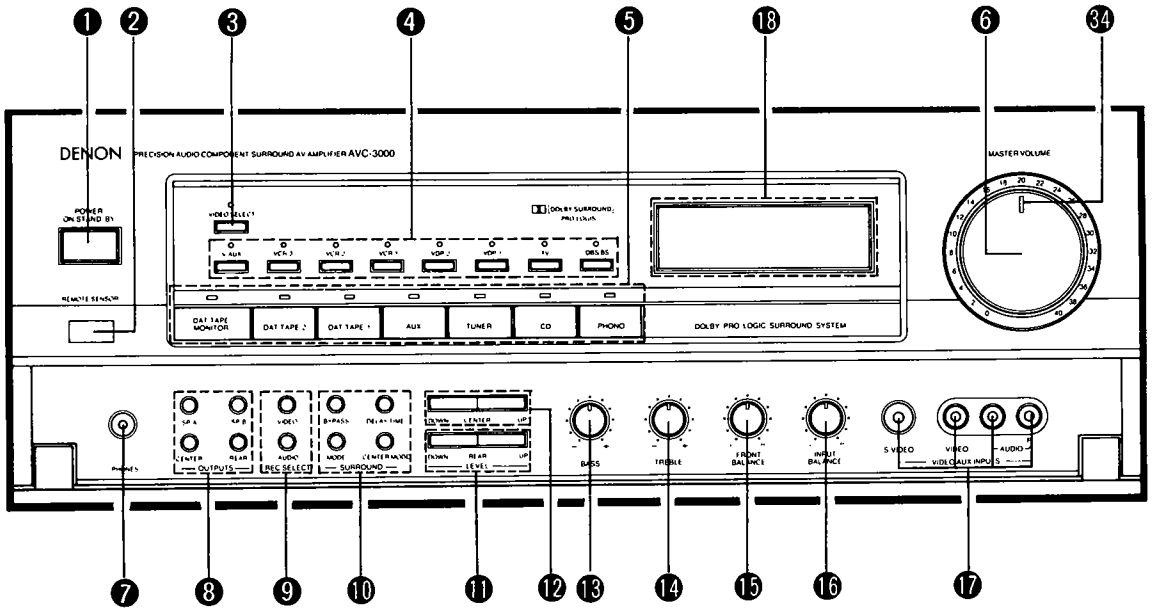
DO NOT connect unused shorting pins to other jacks. Doing so will result in damage or faulty operation.

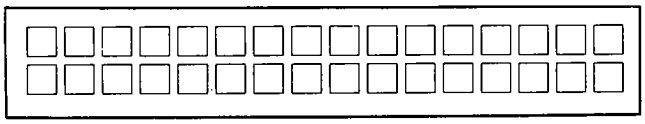
4. Using other equipment



5 PART NAMES AND FUNCTIONS

Front panel



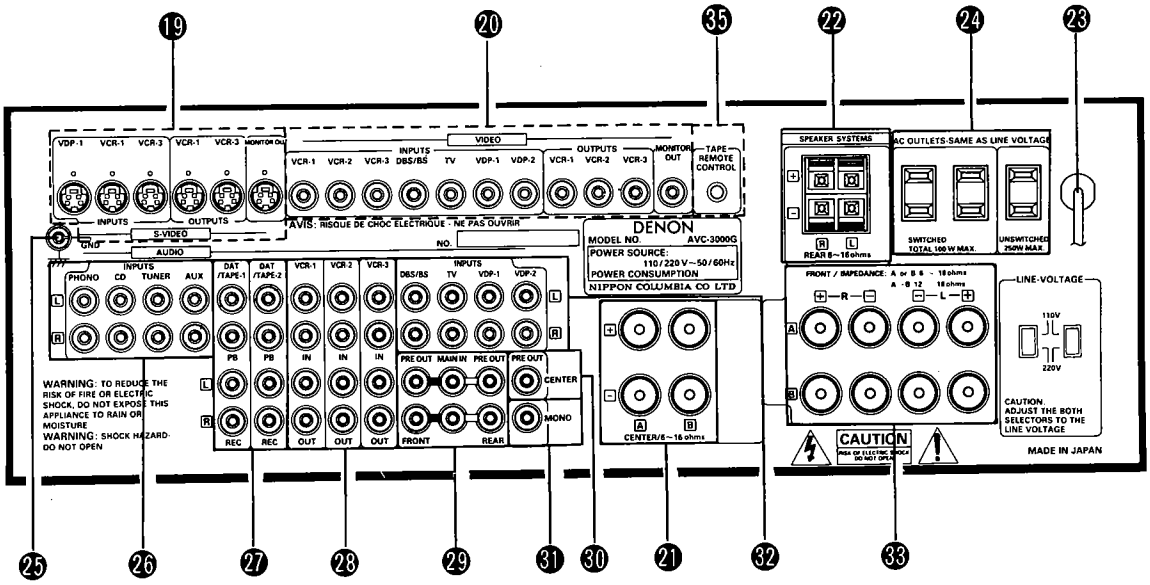


⑱ LCD

Two rows of 16 characters for a display of 32 characters, maximum.

(See pages 17~19)

Rear panel



❶ **POWER switch**

• **ON**

Pressing this button once will switch on the power and the MASTER VOLUME LED ㉞ will flash on and off (during which time the muting circuit operates to prevent the noise which would otherwise occur when the power switch is at "ON-STANDBY"). Several seconds after the power is switched on the LED will change from a flashing to a steadily lit state indicating that the amplifier is in a regular operating state in which the muting circuit has not been cancelled.

• **STANDBY**

Pressing the button once again will switch off the power and introduce the standby mode in which the LED of MASTER VOLUME ㉞ will be lit.

❷ **REMOTE SENSOR**

This is the sensor of the wireless remote control unit.

Point the wireless remote control unit (RC-127) at this sensor when operating it.

❸ **VIDEO SELECT**

(Independent switching button for the video signal)

This button is used to select one video signal from among the DBS/BS, VCR-1, and other video signals.

Pressing this button will cause the VIDEO SELECT LED to flash on and off for about 4 seconds. Pressing one of the video input selection buttons ❹ (V. AUX through DBS/BS) while the LED is flashing will switch the amplifier to that video signal. The LED will change from a flashing to a steadily lit state.

After this, the video input signal will not be switched even if one of the video input selection buttons ❹ is pressed. The operation following this will be as follows:

	VIDEO SELECT button	LED
Maintenance of the VIDEO SELECT video signal	As is	Lit
Switching of the VIDEO SELECT video signal	Repeat the above operation.	Lit
VIDEO SELECT cancellation	Press the button again and do not do anything else until the LED stops flashing. Or, press a button other than one of the video input selection buttons ❹.	Unlit

Note that the selection condition pertaining to the video signal is displayed on the LCD ⑱.

❹ **Video input selection buttons**

These buttons select the input video signals and perform the switching of these signals. The LED located above the selected button will light up.

- DBS/(BS): Press this button to use the DBS (BS) tuner connected to the DBS/BS jack.
- TV: Press this button to use the TV connected to the TV jack.
- VDP-1: Press this button to play back the VDP connected to the VDP-1 jack.
- VDP-2: Press this button to play back a second VDP or a video cam-corder equipped with a playback function connected to the VDP-2 jack.
- VCR-1: Press this button to play back the video deck connected to the VCR-1 jack.
- VCR-2: Press this button to play back the video deck connected to the VCR-2 jack.
- VCR-3: Press this button to play back the video deck connected to the VCR-3 jack.
- V. AUX: Press this button to play back a video cam-corder equipped with a playback function, or some other component that is connected to one of the front panel jacks ⑰.

❺ **Audio input selection buttons**

These buttons perform the switching of the input audio signals. The LED located above the selected button will light up.

- PHONO: Press this button to play back the turntable connected to the PHONO jacks.
- CD: Press this button to play back the CD player connected to the CD jacks.
- TUNER: Press this button to play back the tuner connected to the TUNER jacks.
- AUX: Press this button to play back the component connected to the AUX jacks.
- DAT/TAPE-1: Press this button to play back the DAT or tape deck connected to the DAT/TAPE-1 jacks.
- DAT/TAPE-2: Press this button to play back the DAT or tape deck connected to the DAT/TAPE-2 jacks.

- DAT/TAPE MONITOR:
  Press this button to play back the DAT or tape deck connected to the DAT/TAPE-1 and 2 jacks.
  The DAT or tape deck can be played back only when this button has been set to the on setting (at which time the LED will be lit).

⑥ MASTER VOLUME control

Turn the knob clockwise to raise the volume and turn it counterclockwise to lower it.

⑦ PHONES jack

This jack is used for headphone connections.

NOTE:

When using headphones only, switch off the speakers with OUTPUT button ⑧.

⑧ OUTPUTS on/off buttons

This button switches the speakers and the PRE OUT on and off. The on/off state is displayed on LCD ⑱.

- SP-A: Operates the speaker system connected to the font speaker output terminals "A."
- SP-B: Operates the speaker system connected to the font speaker output terminals "B."
- CENTER: Operates the systems connected to the center speaker A and B output terminals, and the center pre-out terminals.
- REAR: Operates the systems connected to the rear speaker output terminals and the rear pre-out terminals.

⑨ REC SELECT (Independent switching buttons for audio and video recording outputs)

These buttons provide a selection of the audio recording and video recording modes which is independent of the selection of the input selection buttons.

- **AUDIO button**

This button selects a signal output to the recording output jacks of DAT/TAPE 1 and 2, as well as VCR-1 and 2.

With regard to the recording output, the signal input normally connected to the INPUT SELECTOR jacks is output to the recording output side. Use of this button, however, permits selection of a signal from input jacks other than the INPUT SELECTOR jacks.

A press of this button will set the AUDIO REC OUT SELECT standby mode for approximately 5 seconds.

At this time, pressing an input selection button ❹ ❺ for the desired recording output permits selection of the recording signal.

	REC OUT SELECT AUDIO button
Maintenance of the REC OUT SELECTOR audio signal	As is
Switching of the REC OUT SELECTOR audio signal	Repeat the above operation
REC OUT SELECT AUDIO cancellation	Press a button other than one of the input selection buttons ❹ ❺. Or, press the button again and don't do anything for about 5 seconds.

- **VIDEO button**

This button selects a signal output to the recording output jacks of VCR-1 and 2. With regard to the video recording output, normally the video signal selected by the video input selection button is output. Use of this button, however, permits selection of a signal from input jacks other than the VIDEO INPUT SELECTOR jacks.

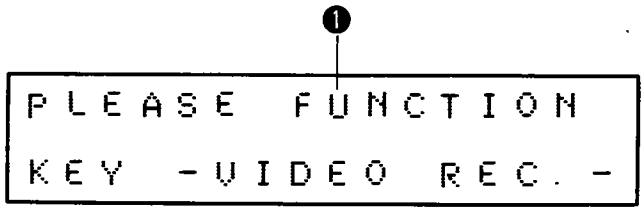
A press of this button will set the VIDEO REC OUT SELECT standby mode for approximately 5 seconds. At this time, pressing an video input selection button (4) for the desired video recording output permits selection of the video recording signal.

	REC OUT SELECT VIDEO button
Maintenance of the REC OUT SELECTOR side signal	As is
Switching of the REC OUT SELECTOR side signal	Repeat the above operation
REC OUT SELECT VIDEO cancellation	Press a button other than one of the input selection buttons ❹. Or, press the button again and don't do anything for about 5 seconds.

NOTE:

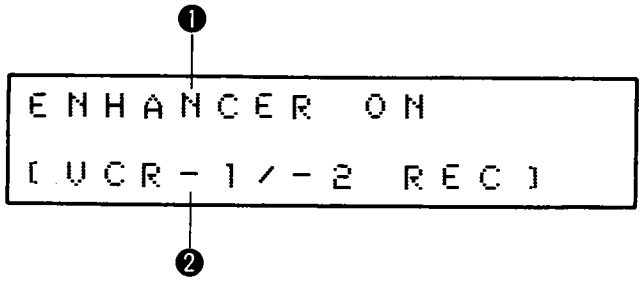
CENTER speaker terminals

This amplifier provides a center channel output corresponding to dual center. Used as a center channel speaker, the Pro-logic surround effect can be obtained with only one speaker connected to jack A. When two speakers having uniform characteristics are connected to jacks A and B, a more effective dual center channel output will be obtained.



9. VIDEO REC OUT SELECT STANDBY display

❶ The display will be shown when the REC SELECT VIDEO key is pressed.

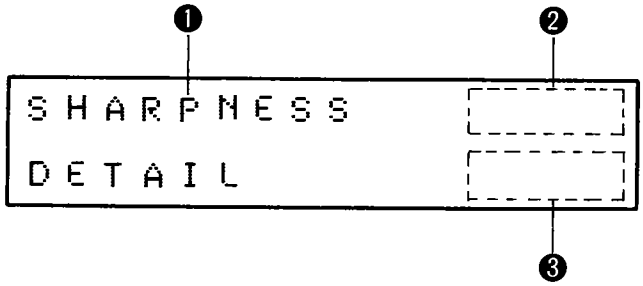


10. ENHANCER display

(1) ENHANCER ON and SELECT display

❶ The display will be shown when the ENHANCER ON/OFF key is pressed.

❷ ENHANCER SELECT display
MON./VCR 3 REC or VCR 1/-2 REC will be displayed.



(2) SHARPNESS and DETAIL display

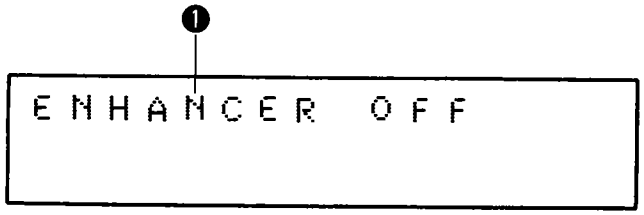
❶ The display will be shown by pressing SHARPNESS or DETAIL during the ENHANCER ON setting.

❷ SHARPNESS effect display

Effect	None	Small	Medium	Large
	___	■__	■■_	■■■

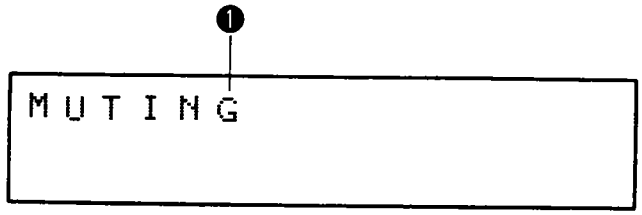
❸ DETAIL effect display

Effect	None	Small	Medium	Large
	___	■__	■■_	■■■



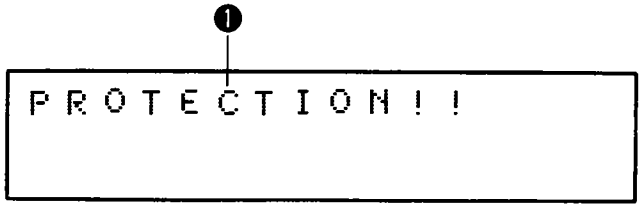
(3) ENHANCER OFF display

❶ This display will be shown when the enhancer is switched off with the ENHANCER ON/OFF key.



11. MUTING display

❶ This display will be shown when the MUTING key of the included remote control unit is switched on.
The display will continue until the muting is cancelled.



12. PROTECTION display

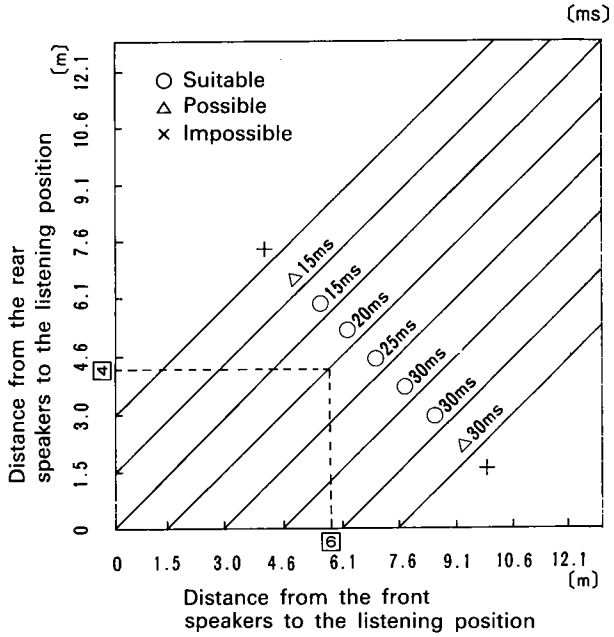
❶ This display is shown when the protection circuit is activated.
If this display should appear, switch off the power switch and check the speaker connections, then switch on the power again.

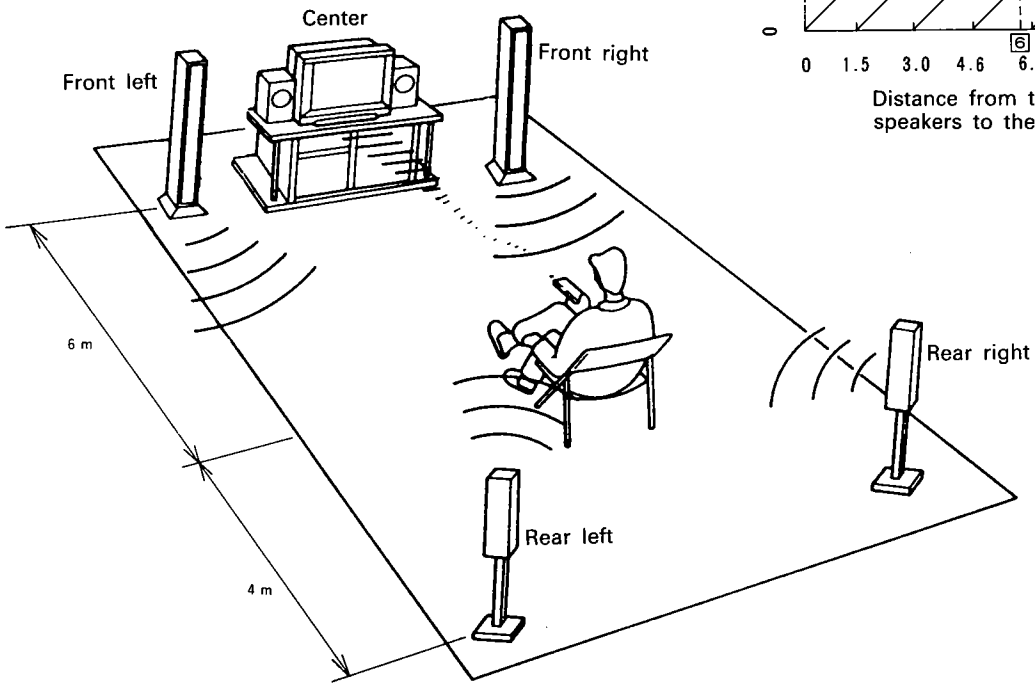
6 DOLBY PRO-LOGIC SURROUND

- **Setting the delay time**

The optimum delay time will differ depending on the listening position. Referring to the chart below, 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 6 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 20 ms.

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





- **Test tone**

The test tone function is used to generate a test signal for adjusting the level of each channel in the Dolby Pro-logic surround mode.
Before using Dolby Pro-logic surround, arrange the speakers as illustrated above and follow the procedure given here. Using the test tone, set the optimum volume balance for each speaker and set the volume and other controls so that each speaker can be heard at the same level.

In the normal and wide modes the test tone is provided as the speakers are switched in the following order:

→Front left → Center → Front right → Rear—┐

Use this signal to adjust the volume balance and set an optimum balance.
In the phantom mode the test tone is provided as the speakers are switched in the following order:

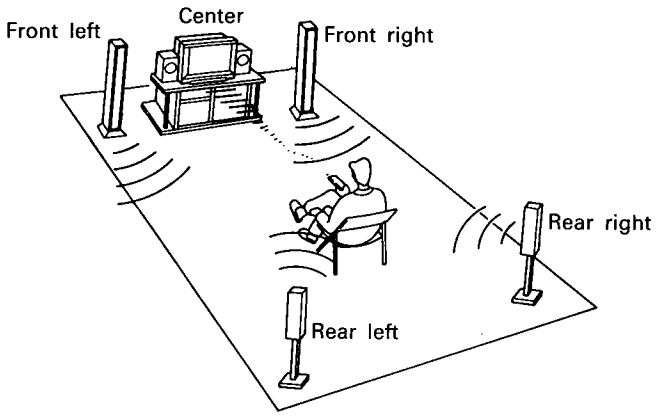
→Front left → Front left and right → Front right ┐
└Rear ──────────────────────────────────┘

In the 3-ch logic mode the test tone is provided as the speakers are switched in the following order:

→Front left → Center → Front right ──┐

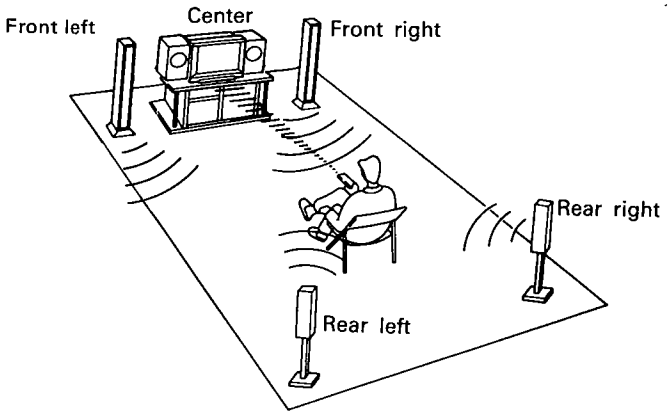
Note that this amplifier provides the test tone at 4-second intervals for the first two cycles and for 2-second intervals thereafter.

- **Speaker arrangement**
  Ideally, center speakers are used for playback of Dolby Pro-logic surround.



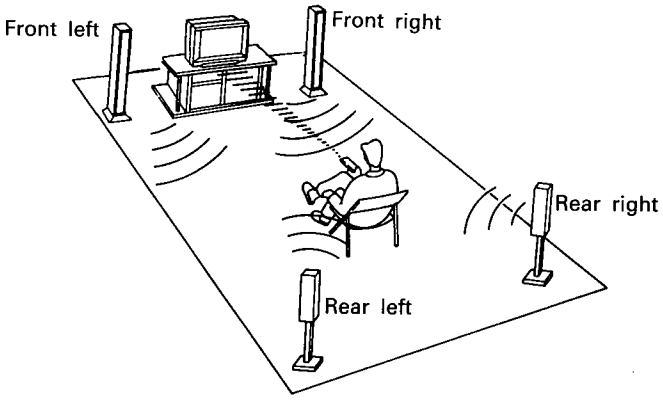
NORMAL mode

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. The bass of the left and right channels increases the apparent deepness of the sound.



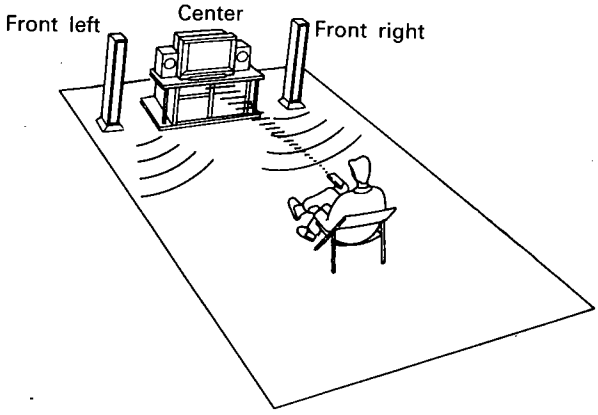
WIDE mode

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.



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 achieves an effect which is extremely close to that of five-channel reproduction although there are four channels.



3-CH LOGIC mode

3-channel logic mode: Use this mode when rear channel speakers are not used. The rear channel information is fed to the front speakers to provide the surround effect.

7 OPERATION

- **Preparations for playback**

1. Checking connections

- Referring to the connection diagrams (Pages 6 to 10) 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 12 to 19 for a reference to the circled numbers.)

- Turn the MASTER VOLUME control fully counterclockwise to the "0" position.
- Set the FRONT BALANCE ⓯, INPUT BALANCE ⓰, BASS ⓭, and TREBLE ⓮ controls to their center positions.

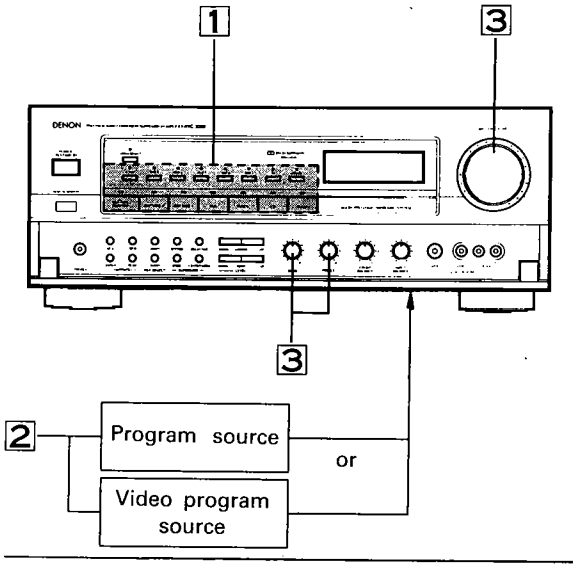
After making the above checks, press POWER switch ❶ to switch on the power.
The amplifier will be operable when the LED of the MASTER VOLUME control stops flashing after several seconds of muting.

Note on Playback
The sound will be interrupted is one of the input selection buttons ❹ ❺ 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.
Note that the activation of the muting circuit mentioned above will not have an effect on the sound being recorded.

- When using the accompanying remote control unit, press the corresponding key.
For details, see section 8, REMOTE CONTROL UNIT, on page 26.

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 superimposed display. If this should happen, switch off the power switch, and check the speaker connections, then switch on the power again. After several seconds of muting, the set will operate normally.

- **Playback of program sources – 1 (Same sound and picture)**



1 Select the desired program source by pressing an audio input selection button or a video input selection button.

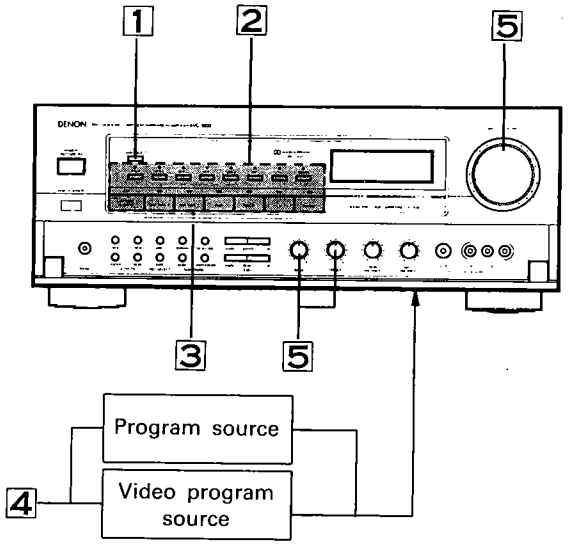
Program source	AUDIO INPUT SELECTOR	DAT/ TAPE MONITOR
To listen to a record	PHONO	OFF
To listen to a CD	CD	OFF
To listen to FM or AM broadcasts	TUNER	OFF
To listen to the component connected to the AUX jacks	AUX	OFF
To listen to the DAT or tape deck connected to the DAT/TAPE-1 jacks	DAT/ TAPE-1	ON
To listen to the DAT or tape deck connected to the DAT/TAPE-2 jacks	DAT/ TAPE-2	ON

Video program source	VIDEO INPUT SELECTOR	DAT/ TAPE MONITOR
To watch a satellite broadcast	DBS/(BS)	OFF
To watch the TV	TV	OFF
To watch the video disc player connected to the VDP-1 jacks	VDP-1	OFF
To watch the video camcorder equipped with playback function or another component connected to the VDP-2 jacks	VDP-2	OFF
To watch the video deck connected to the VCR-1 jacks	VCR-1	OFF
To watch the video deck connected to the VCR-2 jacks	VCR-2	OFF
To watch the video deck connected to the VCR-3 jacks	VCR-3	OFF
To watch the video camcorder equipped with playback function or another component connected to the (front panel) VIDEO-AUX jacks	V-AUX	OFF

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

3 Adjust the volume and tone.

- **Playback of program sources – 2 (Picture and sound from different sources – "Simulcast" playback)**



1 Press the VIDEO SELECT button. The LED will flash on and off.

2 Press the video input selection button for the video program source (DBS/BS through V-AUX) you wish to watch while the VIDEO SELECT LED is flashing.
The LED will stop flashing and remain lit. The LED for the selected source will light for approximately 2 seconds, the normal input select display will appear. The video signals will not change while this mode is set.

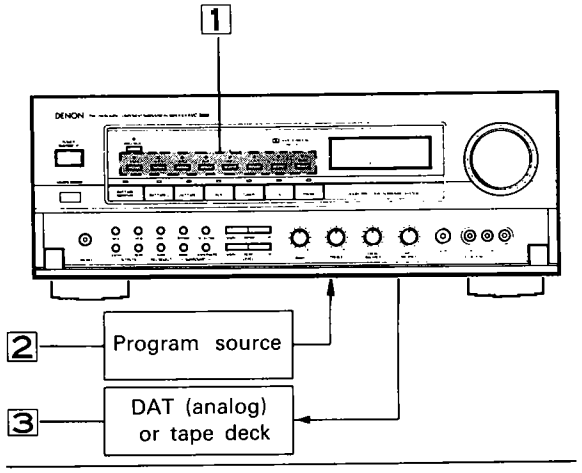
3 Press the audio input selection button or video input selection button for the program source you wish to listen to.

4 Begin playback of the program sources. For operating details, see the manual of the respective component.

5 Adjust the volume and tone.

- The video signal will not change even if the audio signal program source is changed.
- For instructions on cancelling this mode, see the description "❸ VIDEO SELECT button" on Page 13.

- **Recording program sources and copying tapes (Recording the audio source currently being monitored)**
  (Same sound and picture)



1 Press one of the audio input selection buttons to select the program source you wish to record.

Program source	AUDIO INPUT SELECTOR	DAT/ TAPE MONITOR
To record a record	PHONO	OFF
To record a CD	CD	OFF
To record from the tuner	TUNER	OFF
To record from the component connected to the AUX jacks	AUX	OFF

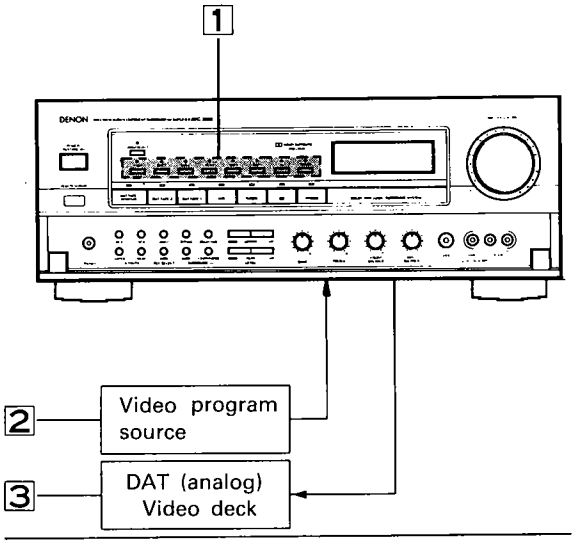
2 Begin playback of the program source you wish to record.

3 Begin recording on the tape deck or DAT (analog).
For operating details, see the manual of the respective component.
For instructions on copying tapes, see Page 25.

- **Monitoring the recording**
  When making a recording using a 3-head tape deck, the sound that has actually been recorded on the tape can be checked. When recording on a deck connected to the DAT/ TAPE-1 jacks, switch the tape monitor switch on and press DAT/TAPE-1. This will permit a check of the recording condition.

- **Simultaneous recording**
  The signals from the sources selected by the input selection buttons are output simultaneously from the REC OUT jacks of the audio and video systems. If two tape decks and three Hi-Fi video decks are connected and all five components are set to the recording mode, the five components will record the same source simultaneously.

- **Recording video program sources and copying videos**
  (Recording the sound and picture of the video source currently being monitored)



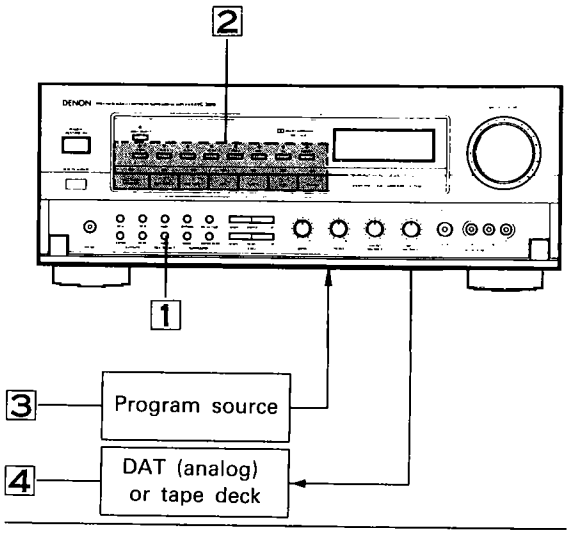
1 Press one of the video input selection buttons to select the program source you wish to record.

Video program source	VIDEO INPUT SELECTOR	DAT/ TAPE MONITOR
To record from the DBS (BS) tuner connected to the DBS (BS) jacks	DBS/BS	OFF
To record from the TV connected to the TV jacks	TV	OFF
To record from the video disc player connected to the VDP-1 jacks	VDP-1	OFF
To record from the video camcorder equipped with playback function or another component connected to the VDP-2 jacks	VDP-2	OFF
To record from the video tape deck connected to the VCR-1 jacks	VCR-1	OFF
To record from the video tape deck connected to the VCR-2 jacks	VCR-2	OFF
To record from the video tape deck connected to the VCR-3 jacks	VCR-3	OFF
To record from the video camcorder equipped with playback function or another component connected to the (front panel) VIDEO-AUX jacks	V-AUX	OFF

2 Begin playback of the video program source you wish to record.

3 Begin recording on the video deck.
For operating details, see the manual of the respective component.

- **Independent recording of program sources and independent tape copying**
  (Recording the sound of a source other than the one currently being monitored)



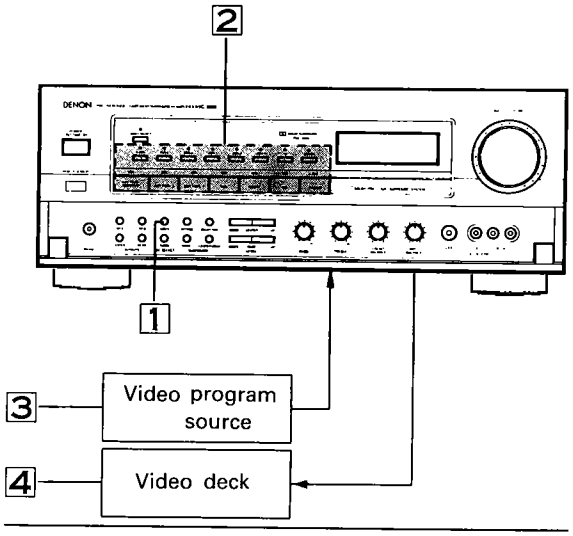
[1] Press the REC SELECT AUDIO button.

[2] Select the audio program source for independent recording.
Select one from among PHONO to DAT/TAPE-2 or DBS/BS to V-AUX.
The input to be recorded will be displayed for approximately 4 seconds, then the normal display will reappear. The audio signals for recording will not change while this mode is set, even if one of the input selection buttons is pressed with the exception of VCR-3 . For instructions on cancelling this mode, see Page 12.

[3] Begin playback of the program source to be recorded.

[3] Begin recording on the tape deck or DAT (analog). For operating details, see the manuals of the respective components.

- **Independent recording of video program sources and independent video tape copying**
  (Recording the picture of a source other than the one currently being monitored)



[1] Press the REC SELECT VIDEO button.

[2] Select the video program source for independent recording.
Select one from among DBS/BS to V-AUX.
The input to be recorded will be displayed for approximately 4 seconds, then the normal display will reappear. The video output signals for recording will not change while this mode is set, even if one of the input selection buttons is pressed with the exception of VCR-3. For instructions on cancelling this mode, see Page 14.

[3] Begin playback of the video program source to be recorded.

[3] Begin recording on the video deck.
For operating details, see the manuals of the respective components.

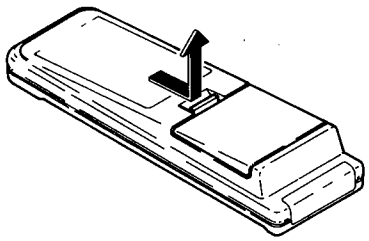
- **VCR-3 jacks:**
  The independent recording output switching operation (record output select) does not function for the VCR-3 jacks.
  Only the output selected by the input selection buttons is output to these jacks.

Use the two modes described above to record a source other than the one whose picture and sound are being monitored. In addition, independent recording can be performed simultaneously for the audio and video recording signals, except for VCR-3.

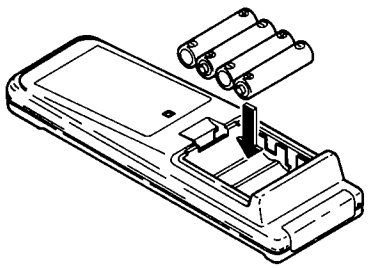
8 REMOTE CONTROL UNIT

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

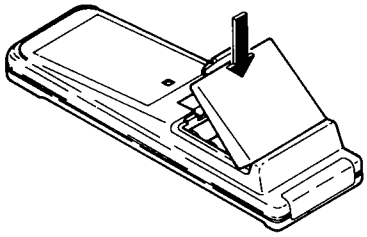
1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the four AA (SUM 3) batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.



3. Close the bottom cover until it clicks shut.



■ Using the remote control unit

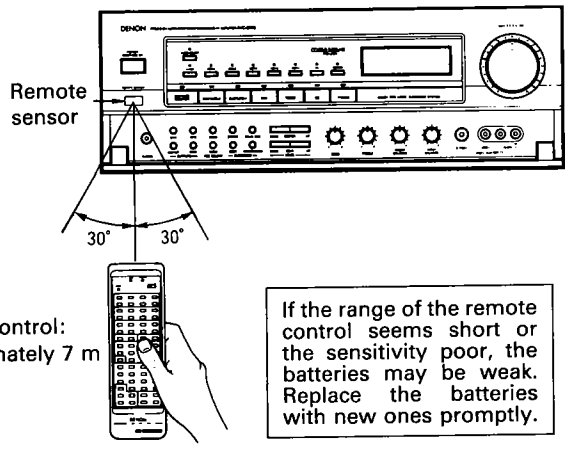
The remote control unit uses highly linear infrared rays. Point it at the amplifier's remote sensor when operating it. The amplifier will not operate if the remote sensor is covered or if there is an obstacle between the remote control unit and the sensor.

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.

■ Cautions for batteries

- 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.

■ Range of operation of the remote control unit

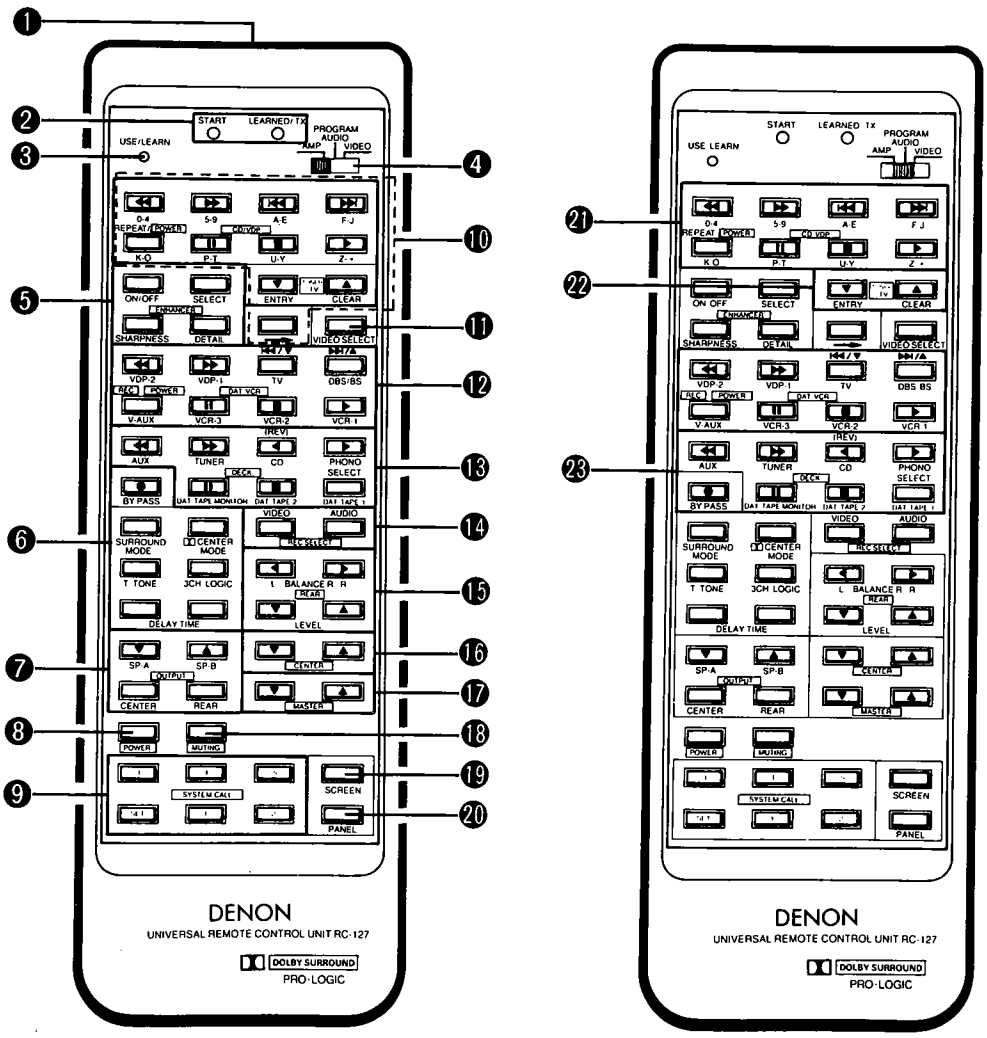


■ A note on battery replacement

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.

Part names and functions of the remote control unit

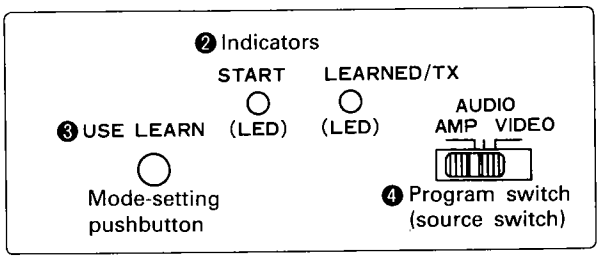


❶ Transmitting window The remote control signals (infrared rays) are sent from this window.

Display plate:

The display plate for the remote control unit is included in the bag containing the Operating Instructions. Use the display plate when using the learning mode and indicate the codes stored at the different keys.
Since the entered characters may rub off, when the display plate is used for a long period of time the characters should be protected with cellophane tape, etc.
A pencil eraser may be used to simply erase the key indications when you wish to change them.

Follow the procedure described below to use the learning function of the remote control unit.



Operation

1. USE/LEARN select button
   Press this button with the tip of a pen, etc. to set the learn mode.
   The START and LEARNED/TX LEDs in the indicator section ❷ will start flashing to indicate that learning is possible.

2. Set the PROGRAM switch to the desired side, PROGRAM AUDIO or VIDEO.

3. Hold the transmitting windows of both your remote control unit and the RC-127 facing each other about 5 cm apart.

4. Press the key of the RC-127 to which you wish to store the code for 1 to 2 seconds, then release it. The LEDs will stop flashing and the START LED will remain lit.

5. Check that the START LED ❷ is lit, then hold down the corresponding key on the other remote control unit.

6. Release the key when the START LED ❷ goes off and the LEARNED LED lights up. The code has now been stored. The two LEDs will once again start flashing.
   Use this procedure to store other codes at other keys.

NOTE:
- If the code cannot be stored, the LEARNED LED will not light after the START LED has gone off. This may occur for a very limited number of models.
- If the memory is overloaded, both LEDs will start flashing rapidly after the START LED lights up. If this happens, no more codes can be stored.
  Use the reset operation to re-learn codes.

7. Repeat steps 4 through 6 above to store codes at other keys.

8. After the learning operations are completed, press the USE/LEARN switch again. The two LEDs will stop flashing and the unit will be in the transmit mode. Check that the stored codes function properly.
   The keys for which learning is possible are, 56 keys with the PROGRAM switch set to AUDIO, and 56 keys with the PROGRAM switch set to VIDEO, which makes a total of 112 keys (maximum).

NOTE:
Depending on the type and length of the codes to be learned, it may not be possible to use all 112 keys for learning.

Clearing operation

For individual sources

1. Press the USE/LEARN switch ❸ with the tip of a pen, etc., to set the learn mode.

2. Set PROGRAM switch ❹ to the side of the source you wish to clear (either AUDIO or VIDEO).

3. Hold down the POWER ❽ and REAR ▼ keys ⓯ at the same time for at least 4 seconds.

4. The START and LEARNED LEDs will light for 2 seconds, then go off when all learned codes for that source are cleared.
   If the source is PROGRAM AUDIO or VIDEO, the remote control unit will be set to the initial codes (DENON system codes).

For all sources

1. Press the USE/LEARN switch ❸ with the tip of a pen, etc., to set the learn mode.

2. The PROGRAM switch ❹ may be set to any one of AMP, AUDIO, or VIDEO.

3. Press the MUTING key ⓲ and the REAR ▲ keys ⓯ at the same time for at least 4 seconds.

4. When the START and LEARNED LEDs alternately light up 6 times, all learning codes will have been cleared.
   Note the initial codes (DENON system codes) will be set.

Remote control operation

1. Check that both LEDs are off.
   If both LEDs are flashing or if the START LED is lit, press the USE/LEARN button to switch them off.
2. When a remote control operation key is pressed, the LEARNED/TX LED will light and the remote control code will be transmitted.

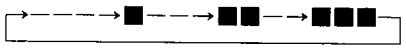
Description of AVC-3000/3000G code keys

❺ ENHANCER keys

These keys include the following functions.

- ON/OFF key
  This switches the enhancer on and off. Press this key once to switch the enhancer on, press again to switch it off.
- SELECT key
  Press this key to select the video output jack for the enhancer effect — MONITOR and VCR-3 recording outputs, or the VCR-1 and VCR-2 recording outputs.
- SHARPNESS key
  This key provides compensation for the contours of pictorial images in three steps. The setting will be changed with each press of the key as shown.

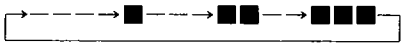
  Effect → None Low Medium High

  Set it at the best position.

- DETAIL key
  This key provided compensation for the details of the pictorial images in three steps. The setting will be changed with each press of the key as shown.

  Effect None Low Medium High

  Use this key in conjunction with the SHARPNESS key and set it at the best position.

VIDEO ENCHANCER

- What it is
  The video enhancer is a compensation circuit which provides a sharp picture quality when dubbing or monitoring deteriorated video sources. It is adjusted by pressing the SHARPNESS and DETAIL keys.

NOTE:

- If the effects of the enhancer are adjusted too strongly the picture quality may deteriorate depending on the monitor TV.
- When there is noise on the recorded/played back video source itself, use of the enhancer may further emphasize the noise.
- The effect of the enhancer will vary depending on the video component or software used for the sharpness and detail adjustments. Since suitable effects may not be obtained, please use the enhancer according to your own discretion.

❻ SURROUND keys

(Same function as on amplifier; see Page 13.)

These keys are used to select the surround mode.

- BYPASS key
  Press this key to clear the surround mode and to set normal stereo operation. Output is not sent to the rear speakers.
- SURROUND MODE key
  Press this key to switch the surround mode as follows:

  DOLBY PRO. LOGIC → HALL → STADIUM → SIMULATED → LIVE → SYNTHETIC → SPACE → (DOLBY PRO. LOGIC)

Dolby Pro-logic is selected first after the BYPASS key has been pressed.

- CENTER MODE key ◘◘
  This key is effective only when the surround mode has been set to Dolby Pro-logic. Press this key to switch the Dolby center mode as follows:

  NORMAL → PHANTOM → WIDE → (NORMAL)

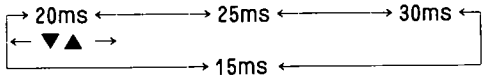
- TEST TONE key
  This key produces a test signal for adjusting the level of each channel in the Dolby Pro-logic surround mode.
  The test tone is switched as follows:

  Front left → Center → Front right → Rear → (Front left)

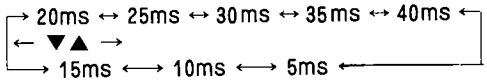
  This signal is used for adjusting the volume balance.
  For details, see Page 20.

NOTE: The test tone is effective only in the Dolby Pro-logic surround setting.

- 3-CH LOGIC key
  This key is used for playing back a video source recorded using Dolby surround without using the rear speakers.
  Switching this key on combines the rear speaker audio with that of the front speakers. Pressing the key once more switches this function off and returns the set to normal operation.
- DELAY TIME key
  This key sets the delay time.
  This key is only effective when the surround mode is on.
  Pressing the ▲ side increases the delay time.
  Pressing the ▼ side decreases the delay time.
  The following sequence is provided in the Dolby Pro-logic mode:



The following sequence is provided in other surround modes (not including LIVE):



❼ **OUTPUT keys** (Same function as on amplifier)
These keys switch the speaker outputs on and off. The settings are displayed on the LCD and superimposed display.

- SP-A: Operates the speaker system connected to the front speaker output terminals "A."
- SP-B: Operates the speaker system connected to the front speaker output terminals "B."
- CENTER: Operates the speaker system connected to the center speaker output terminals, and the center pre-out terminals.
- REAR: Operates the speaker system connected to the rear speaker output terminals, and the rear pre-out terminals.

❽ **POWER key** (Same function as on amplifier)
If the amplifier is plugged into an AC outlet this key can be used to switch it to ON and STANDBY.
When pressed, the amplifier becomes operative. Pressing the key again activates the last function memory, which holds the settings for the various components as they were immediately before the power was last switched off, so that there is no need to perform complicated resettings.
When the power is switched off, the power supply to the switched AC outlets on the rear panel is also turned off.

❾ **SYSTEM CALL key**
See Page 33.

❿ **SYSTEM ENTRY key**
See Page 34.

⓫ **VIDEO SELECT key**
(Same function as on amplifier.)
This key is used to select a video input independently from the DBS/BS, VCR-1, and other input audio signals.
Pressing this key will cause the VIDEO SELECT LED on the amplifier to flash on and off for about 4 seconds. Pressing one of the video input selection keys ⓬ (DBS/BS through V-AUX) while the LED is flashing will switch the amplifier to that video signal.
After this, the video input signal will not be switched even if one of the video input selection keys is pressed. The operation following this will be as follows:

	VIDEO SELECT key
Maintenance of the VIDEO SELECT video signal	As is
Switching of the VIDEO SELECT video signal	Repeat the above operation.
VIDEO SELECT cancellation	Press the button again and do not do anything else until the LED stops flashing. Or, press a key other than one of the video input selection keys.

⓬ **Video input selection keys**
(Same function as on amplifier.)
These keys select the input signals of the video components.
These keys also function when using VIDEO SELECT and VIDEO REC OUT as described in ⓫ and ⓮.
These keys select the input signals as well as switch the video signals.

- DBS/BS: Press this key to use the DBS (BS) tuner connected to the DBS/BS jack.
- TV: Press this key to use the TV connected to the TV jack.
- VDP-1: Press this key to play back the VDP connected to the VDP-1 jack.
- VDP-2: Press this key to play back a second VDP or a video camcorder equipped with a playback function connected to the VDP-2 jack.
- VCR-1: Press this key to play back the video deck connected to the VCR-1 jack.
- VCR-2: Press this key to play back the video deck connected to the VCR-2 jack.
- VCR-3: Press this key to play back the video deck connected to the VCR-3 jack.

Figure 3

```
SYSTEM  ENTRY

CD        : DCD-1630G
```

Figure 4

```
SYSTEM  ENTRY  END
```

5. To input the letter C, press the A-E key ❸ three times and the C will be displayed. Pressing the → ⓫ key will input the C and the cursor will move to the right.
6. To input the letter D, press the A-E key ❸ four times and the D will be displayed. Pressing the → ⓫ key will input the D and the cursor will move to the right.
7. Using the same method, enter the remaining characters by pressing the alphabet, symbol, and numeral keys ❶ through ❽ for the hyphen, 1, 6, 3, 0, and G. (See Figure 3.)
8. Pressing the function key once again will store the contents in the currently registered function.
9. Repeat steps 1 through 7 and store the system entry to another function key.
10. Hereafter, the function display will be displayed as the name entered in the system entry.
11. Press the ENTRY key and complete the operation.

SYSTEM ENTRY CLEAR

Figure 5

```
SYSTEM  ENTRY

CD        :
```

For one function key at a time
1. Press the ENTRY key ❾.
2. Press the function key ⓬ you wish to clear and it will be displayed.
3. Pressing the CLEAR key ⓾ will delete the system entry and the display of Figure 5 will appear.

For all function keys
1. Press the ENTRY key ❾.
2. Pressing the CLEAR key ⓾ will delete all of the system entries.

* After the system entries have been cleared, press the ENTRY ❾ key when completing the ENTRY operation.

Superimposed display

Figure 6

```
**  SYSTEM  ENTRY  1  **
  DBS/BS   ←-
  TU       ←-
  VDP-1    ←-
  VDP-2    ←-
  VCR-1    ←-
  VCR-2    ←-
  VCR-3    ←-
  V. AUX   ←-
```

Figure 7

```
**  SYSTEM  ENTRY  2  **
  MONITOR←-MONITOR
  [DISPLAY]
  PHONO    ←-
  CD       ←-
  TUNER    ←-
  AUX      ←-
  D/T-1    ←-
  D/T-2    ←-
```

- System entries will be shown on the superimposed display the same as on the LCD.
  When selecting DBS/BS through V. AUX of the video input selection buttons with the function key, the contents of Figure 6 will be displayed. Similarly, when selecting PHONO through DAT/TAPE MONITOR of the audio input selection buttons with the function key, the contents of Figure 7 will be displayed.
  Also note that when system entry is completed, Figure 4 will be displayed on the LCD, whereas, when system entry is cleared, Figure 5. will be displayed on the LCD.

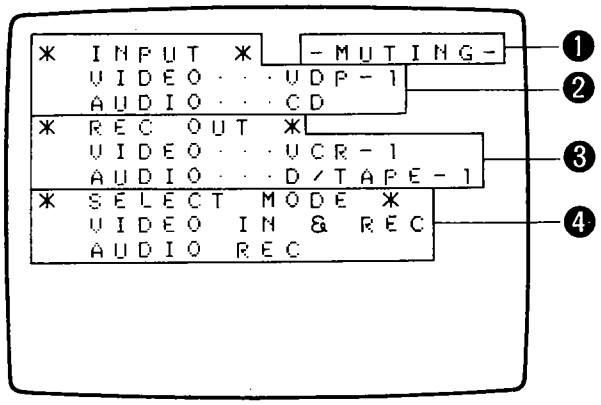
* An ENTRY operation cannot be made on the MONITOR.

9 SUPERIMPOSING

The operating condition of the amplifier is displayed on the monitor TV when the power is switched on, when the SCREEN key of the remote control unit is pressed, when keys are pressed, and at other times.
When the power is switched on and the SCREEN key of the remote control unit is pressed, displays such as the following will appear.
With repeated presses of the SCREEN key the display will change in the following order: screen 1 → screen 2 → screen 3 → system entry display → OFF (and a repetition of this sequence).
For details on the system entry display, see Page 35.
Note that when the power is switched on, screen 1 will be displayed for about 6 seconds and then goes off automatically.
At the time of normal key operation, only the display pertaining to the pressed key is displayed for about 4 seconds and then goes off automatically.
Displays pertaining to keys which have been pressed appear at bottom center of the screen.

NOTE:
- Superimposed displays will not be output to S-jack monitor outputs and video signal outputs used for recording.
- When a video input has not been selected, the screen will remain a blue color following the completion of the superimposed display; however, when a video input has been selected, the screen's blue color will be cancelled following the completion of the superimposed display.

Screen-1 INPUT & REC OUT display



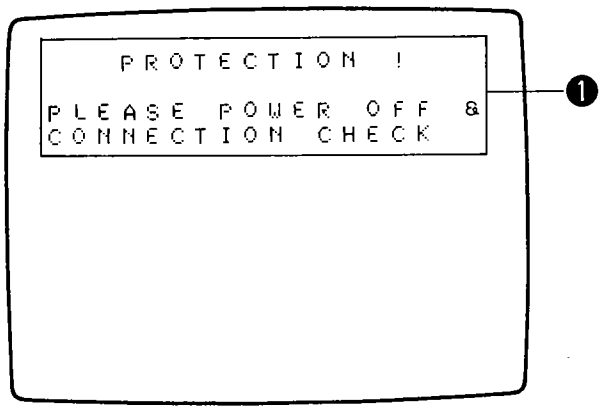
❶ **Muting display**
Flashes when the muting function is on.

❷ **INPUT SELECTOR display**
Displays the amplifier's inputs and VCR-3 recording output using abbreviations, etc.
(When processed for system entry, the registered name is displayed.)

❸ **REC OUT SELECTOR display**
Displays the recording output, except for VCR-3.
(When processed for system entry, the registered name is displayed.)

❹ **SELECT MODE display**
Is displayed when the REC OUT SELECT mode, VIDEO SELECT mode, and other select modes are specified.

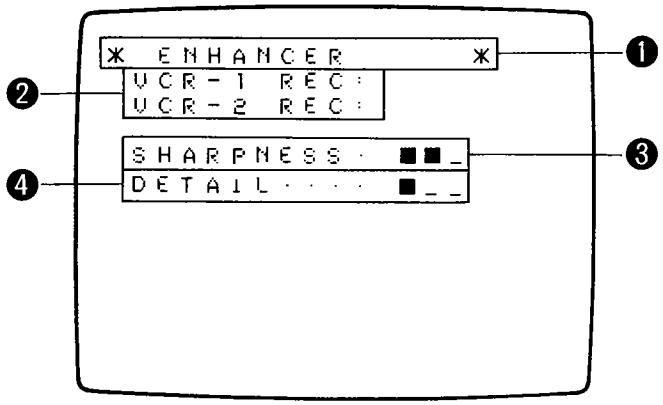
PROTECTION display



❶ **PROTECTION (circuit) display**
This display appears when the protection circuit is activated.
If this display should appear, switch off the power switch, check the speaker connections, then switch on the power again.

NOTE:
If the PROTECTION display still remains after rechecking the connections, be sure to unplug the power cord and contact your store of purchase.

Screen-2 ENHANCER display



❶ **ENHANCER ON/OFF display**
Displays "ENHANCER" when the enhancer is on and "ENHANCER OFF" when the enhancer is off.

❷ **SELECT display**
Indicates that the enhancer effect is being output to the VCR-1 and VCR-2 recording outputs.
(When processed for system entry, the registered name is displayed at the right side.)

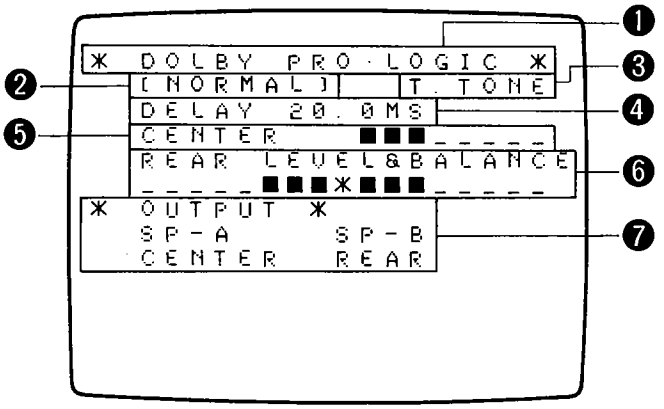
❸ **SHARPNESS effect display**

Effect	None	Low	Medium	High
	___	■__	■■_	■■■

❹ **DETAIL effect display**

Effect	None	Low	Medium	High
	___	■__	■■_	■■■

Screen-3 SURROUND & OUTPUT display



❶ **SURROUND MODE display**
Displays the surround mode.

❷ **CENTER MODE**
The center mode is displayed only when the surround mode is set to Dolby Pro-logic

❸ **T. TONE display**
A blinking display is provided when the test tone is on.

❹ **DELAY TIME display**
Displays the delay time. There is no display in the BYPASS mode.

❺ **CENTER LEVEL display**
Displays the center level when a surround mode other than the Dolby Pro-logic PHANTOM, HALL, or SIMULATED is selected.
The ■ marks increase as the level is raised.

❻ **REAR LEVEL & REAR BALANCE display**
Displays the rear level and the rear balance as ■ marks. There is no display in the bypass mode or at the time of Dolby 3-ch logic.

❼ **OUTPUT display**
Displays the various outputs when they are on.

NOTE:
Character screen wavering of the superimposed display
Depending on the video equipment and software, some of the characters of the superimposed display may be unstable due to noise or poorly adjusted tracking of the video equipment. Should this happen, adjust the tracking of the video equipment.

10 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.	6~9
	LED lit but sound not produced.	• Speaker cords not securely connected. • OUTPUT button is off. • Tape monitor button DAT/TAPE MONITOR is on. • Improper position of the audio input selection button. • Improper position of the video input selection button. • Volume control set to minimum. • MUTING is on.	• Connect securely. • Select SP-A, SP-B, CENTER, or REAR of the OUTPUT button. • Switch off the DAT/TAPE MONITOR when listening to a component connected to jacks other than the DAT/TAPE jacks. • Set to a suitable position. • Set to a suitable position. • Turn volume up to suitable level. • Switch off MUTING.	10 14 22~25 22~25 22~25 14~16 32
	LED continues flashing.	• 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.	10 11
	Sound produced only from one channel.	• Improper connection of speaker cords. • Improper connection of input/output cords. • Left/right balance is off.	• Connect securely. • Connect securely. • Adjust balance knob properly.	10 6~11 16
	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.	6~11
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.	6~11 6~11 –
	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.	6

	Symptom	Cause	Measures	Page
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 key improper. • Different key is being pressed.	• Replace with new batteries. • Move closer. • Remove obstacle. • Set learning again. • Press the proper key.	26 26 26 26 28
	Amplifier does not operate properly when remote control unit is used. (When LEARNED/ TX LED is not lit)	• Learning process to the key improper. • Learning process has not been applied to the key. • 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, AUDIO, or VIDEO).	28 26 26 26 28
	"PROTECTION" display appears on superimposed display and LCD.	• Improper speaker cord connection.	• Connect speaker cord properly.	22, 36

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 day of memory storage with the power cord disconnected.

12 SPECIFICATIONS

- **Power Amplifier**
  Rated Output

For U.S.A. and CANADA models

- FRONT (both channel driven at 2 ch Stereo Mode, Main in, Sp-A out)
  80 W × 2 (8 ohms 20~20 kHz with 0.08% T.H.D.)
- CENTER (at LIVE Mode)
  35 W (8 ohms 20~20 kHz with 0.4% T.H.D. Master Vol: –20 dB)
- REAR (at LIVE Mode)
  35 W × 2
  (8 ohms 1 kHz with 2.0% T.H.D.)

For Multi-Voltage model
at Dolby Pro Logic Normal Mode

- FRONT 150 W × 2 (6 ohm EIAJ)
- CENTER 90 W (3 ohms EIAJ)
- REAR 60 W × 2 (6 ohms EIAJ)

- **Preamplifier and Main amplifier**

Input sensitivity / impedance:	PHONO (MM): 2.5mV/47 kΩ CD, TUNER, AUX, DBS/BS, TV, V. AUX, VDP-1 and 2, VCR-1, 2, and 3: 150 mV/47kΩ TAPE-1 and 2: 150 mV/47kΩ, MAIN IN: 1 V/10kΩ
Output level / load impedance:	FRONT (L, R), CENTER, MONAURAL, REAR (L, R): 1 V/10kΩ REC OUT, VCR-1, 2, and 3, TAPE-1 and 2: 150 mV/47kΩ
Frequency response:	20Hz ~ 50kHz ±3dB(CD input–FRONT PRE OUT)
RIAA deviation:	20Hz ~ 20kHz ±1dB
S / N ratio:	76dB (with 5mV input) (PHONO), 118 dB (MAIN IN), (A curve)
Tone control range:	BASS 100Hz ±10dB TREBLE 10kHz ±10dB

- **Video**

Rated input / impedance:	DBS/BS, TV, VDP-1 and 2, V. AUX (FRONT), VCR-1, 2, and 3: 1 Vp-p/75Ω S-terminal/VCR-1 and 3, V. AUX, color signal: 0.286 Vp-p/75Ω; Brightness signal: 1 Vp-p/75Ω
Rated output / impedance:	VCR-1, 2, and 3, MONITOR: 1 Vp-p/75Ω S-terminal/VCR-1 and 3, MONITOR, color signal: 0.286 Vp-p/75Ω; Brightness signal: 1 Vp-p/75Ω
Video frequency response:	VIDEO INPUT 5 Hz ~ 6 MHz +0, –3 dB; S INPUT 5 Hz ~ 10 MHz +0, –3 dB
Video enhancer detail control:	Selection in 3 steps
Video enhancer sharpness control:	Selection in 3 steps
Superimpose function:	180 characters (maximum)

- **Surround**

Delay circuit:	Digital delay 0 ~ 40 ms
Surround modes:	Dolby Pro Logic – Wide – Normal – Phantom – 3-ch logic Stadium Simulated Live Synthetic Space Hall

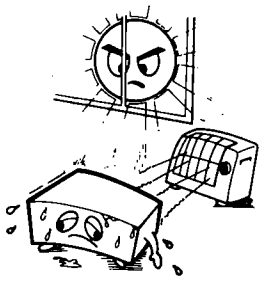
- **General**

Power supply:	120 V AC, 60 Hz (for U.S.A. and Canada models) 110/220 V AC, 60 Hz (for multi-voltage model)
Power consumption:	4.5 A (for U.S.A. and Canada models) 220 W (for multi-voltage model)
Maximum external dimensions:	434 (W) × 160 (H) × 425 (D) mm (17-3/32" × 6-19/64" × 16-47/64") (AVC-3000) 470 (W) × 161 (H) × 425 (D) mm (18-1/2" × 6-11/32" x 16-47/64") (AVC-3000G)
Weight:	15 kg (33 lb, 2 oz) (AVC-3000); 16.2 kg (35 lb, 12 oz) (AVC-3000G)

- **Remote control unit (RC-127)**
  System remote control with learning function
  Total keys: 62
  DENON system code CD player: 8 keys Cassette deck: 8 keys Tuner: 2 keys
  AVC-3000 fixed codes: 56 keys
  Learning keys
  System call keys: 5 (maximum of 15 codes per key)
  Program – Audio: 56 keys
  – Video: 56 keys
  Maximum total: 112 keys
  Batteries: R6/AA type (four batteries)
  External dimensions: 75 (W) × 215 (H) × 35 (D) mm
  (2-61/64" × 8-15/32" × 1-3/8")
  Weight: 240 g (Approx. 8.5 oz) including batteries

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

13 NOTE ON USE

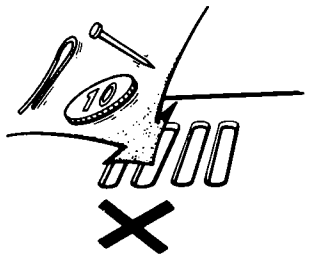


Be careful of high temperatures

- 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 humi

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  where there i
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  Flower vases
  taining water
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Care of the cas

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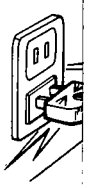

Care with the p

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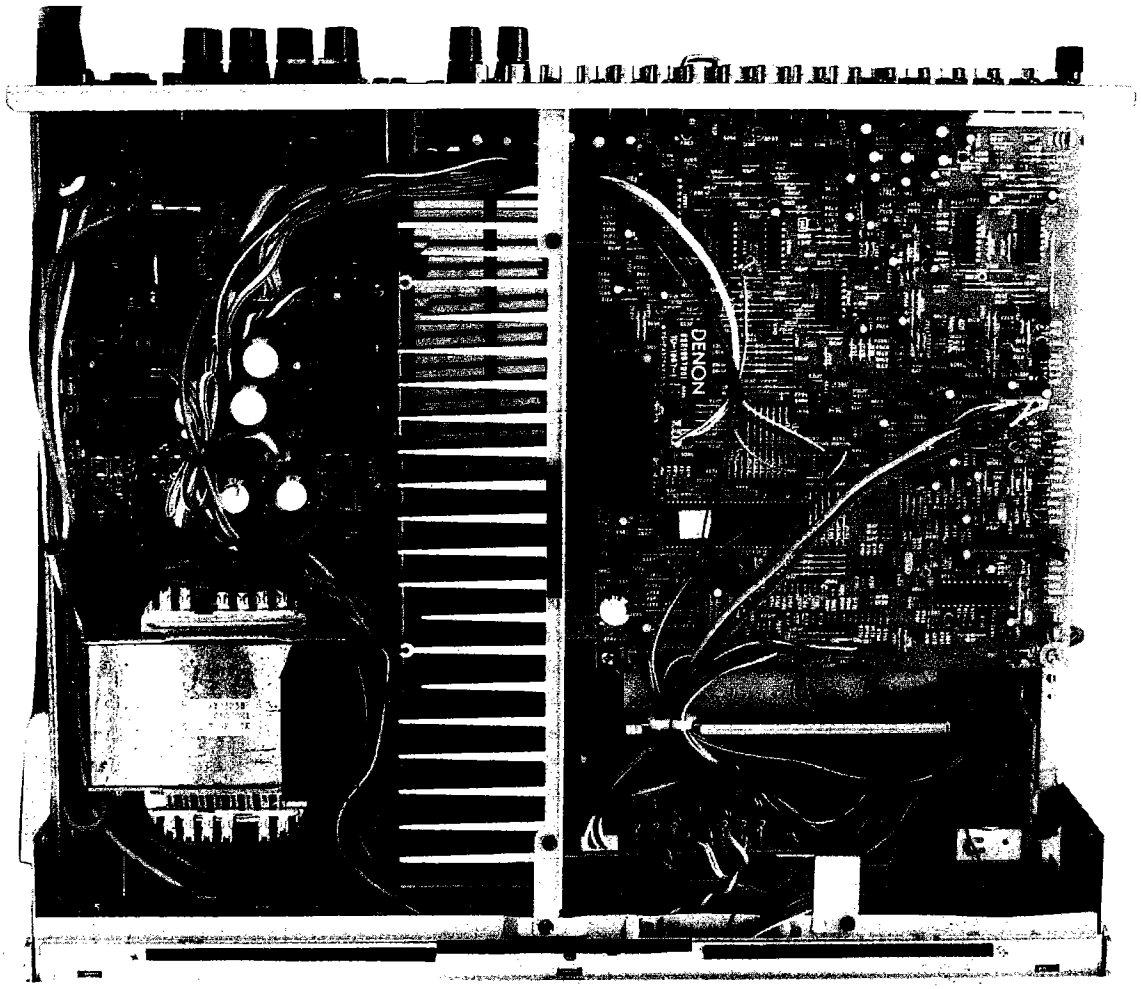
  when remov

For Asia Model

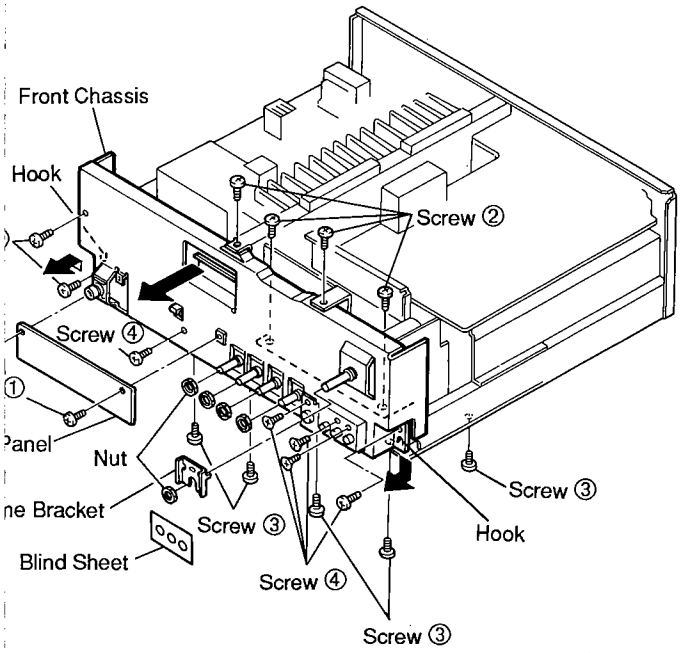


DISASSEMBLY

(To reassemble reverse disassembly)

1. Top Cover

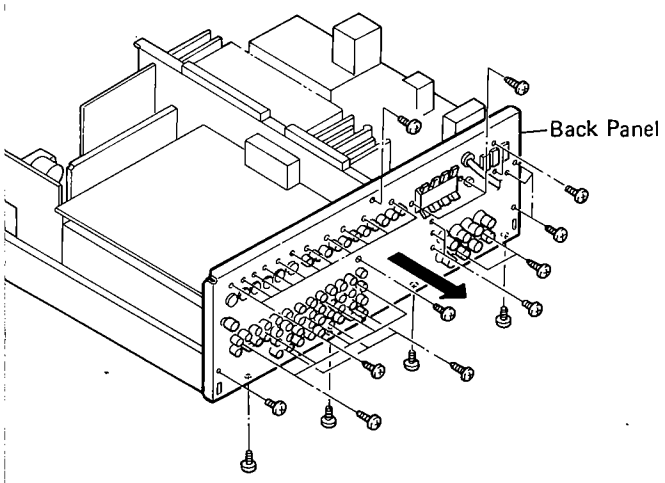
Remove 8 screws, and pull up the top cover to arrow direction.



2. Front Panel

(1) Remove 5 screws from the both sides, and pull the trap door and the side escutcheon.

(2) Remove 3 upper screws on Top Cover and pull the front panel to arrow direction.



3. Front Subpanel

(1) Remove a control knob and a main volume control knob and remove a push-rivet from inside of the main volume control knob and detach LED PCB.

(2) Remove 3 lower screws and 2 front screws and pull the front subpanel to arrow direction.

(2) When generate internal video signal.

When video signal is not supplied, the IC internally generate the video signal output. SW1 is ON and other ones are OFF. The internal video signal is generated by frequency dividing X-tal oscillator XL1200, 7.15909 MHz (color subcarrier x 2).

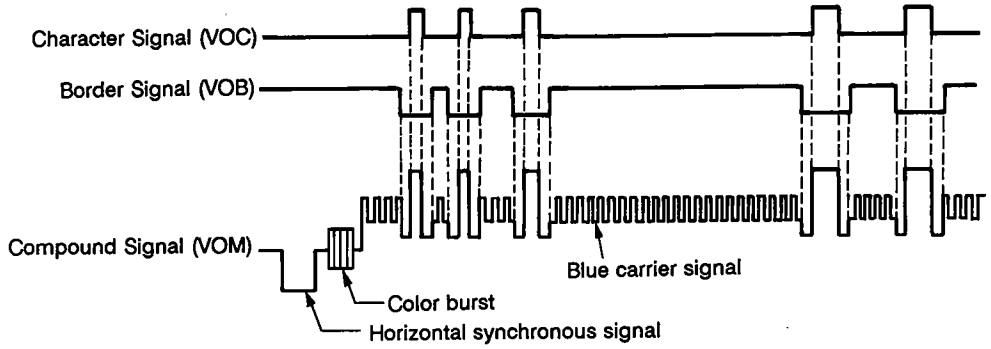


Figure 3 Internal Video Timing

2. SYNCHRONOUS SIGNAL DISCRIMINATION & SEPARATION

IC609 determines whether the synchronous signal is correct or not and separates the synchronous signal. When the synchronous signal input to pin 6 is correct, Pin 13 outputs "High", if not correct (no video signal input or the video signal includes noise, etc.), Pin 13 outputs "Low". When the "Low" output is applied to microcomputer (IC610), IC608 (MB88323A-K1) is set to internal video blue back.

When the video signal is input to pin 6, the vertically and the horizontally synchrtonous separated signals are output to pin 10 and pin 16 respectively.

3. SURROUND CIRCUIT

(1) Table below shows output in each surround mode.

MODE		Output Signal: FRONT Lch	FRONT Rch	FRONT CENTER	REAR Lch	REAR Rch	Delay Time	Output Control: SP-A	SP-B	CENTER	REAR
BYPASS		Lin	Rin	Lin + Rin	–	–	–				X
DOLBY PRO. LOGIC	NORMAL	PRO. F_L	PRO. F_R	PRO. C	PRO. S		15 ~ 30				
	PHANTOM	↓	↓	–	↓		↓			X	
	WIDE	↓	↓	PRO. C	↓		↓				
	3CH.	3CH. F_L	3CH. F_R	3CH. C	–		–			(PHAN. X)	X
HALL		Lin	Rin	–	(Lin + Rin) delay		5 ~ 40			X	
STADIUM		↓	↓	Lin + Rin	(Lin – Rin)d	(Lin – Rin) High Mix	↓				
SIMULATED		↓	↓	–	(Lin + Rin)d	– (Lin + Rin)d	↓			X	
LIVE		↓	↓	Lin + Rin	(Lin – Rin)	(Lin – Rin)	0				
SYNTHETIC		Lin+(Lin–Rin)d	Rin+(Lin–Rin)d	↓	(Lin – Rin)d	(Lin – Rin)d	5 ~ 40				
(SPACE)		↓	↓	↓	(Lin – Rin)d	–(Lin – Rin)d	↓				

In output control: ( )d means delay signal. X means OFF output.

Table 1

Surround made switching motion

MODE \ SW. NO	Surround mode change over switching position: LC7823 S Bit : L — 1 ~ 4	5	6	7	LC7821 S Bit : H — 1	2	3	4	5	6	7	8	Output Control: SP-A	SP-B	CENTER	REAR
BYPASS			○			○						○				$X_{(H)}$
DOLBY PRO. LOGIC NORMAL				○			○			○						
DOLBY PRO. LOGIC PHANTOM				○			○			○					$X_{(H)}$	
DOLBY PRO. LOGIC WIDE				○			○			○						
DOLBY PRO. LOGIC 3CH. LOGIC				○*			○									$X_{(H)}$
HALL		○			○					○					$X_{(H)}$	
STADIUM			○		○				○							
SIMULATED		○			○						○				$X_{(H)}$	
LIVE			○		○					○						
SYNTHETIC			○		○			○		○						
SPACE			○		○			○			○					
	REC OUT Disable	L + R	L – R	PRO. S	Lin Buf.	Lin	PRO L	–d	L – R Buf.	d	d	NOP	Output Control: Mark Nil : ON/OFF Enable; Mark X : ON/OFF Disable			
	By figure ⑧	NOP	L+R	PRO. C	Rin Buf.	Rin	PRO R	–d	–d	d	–d	NOP				
		Delay in / CENTER			Front L / Front R				SURROUND L / R							

Mark ○ is ON position. Mark Nil is OFF position.

Table 2

(2) Dolby Pro-logic surround circuit

AVC-3000/3000G provides **Dolby pro-logic surround circuit** surround decoder which functions same as Dolby surround decoder for professional use. The circuit is also called **active decoder**, and it comprises a different circuit from **passive decoder**, conventionally employed for home use labelled as "Dolby surround." (Figure 4)

Directional enhancer to produce crisp sound image travel.

Main feature is **Directional enhancement circuit.** The conventional Dolby surround circuit is designed to control 3 channels (L.R.S), but this circuit provides a new center channel and 4 channels (L.R.C.S.) control, and employs speaker system same as that of a theater to produce the sound effect.

A merit of directional enhancement circuit is greatly improves the front and rear sound separation to provide a sharp and dynamic front and rear sound image traveling. Conventionally the front and rear separation is around 3 dB, but the pro-logic provides approximately 26 ~ 40 db. (Figure 5, 6). The directional enhancement circuit controls left, right, center and surround signals independently, and the sound image is very crisp and clear. With the conventional Dolby surround, the center sound image is nothing but compound of L and R channels, but the pro-logic has an independent center channel to produce the sound image, and achieved approximately 26 ~ 40 dB L and R channels separation. When the sound image is at center, both L and R channel output are cut down and as the sound image travels to L channel, center and R channel output are cut to enhance the travel of the sound.

Feature of Pro-Logic mode

- NORMAL: Signals which below 100Hz is cut are applied to center channel, and the signals below 100Hz are applied to L and R front speakers. Employ L and R speakers of a certain grade (as a pointer, use ones better than book-shelf), and use a smaller speaker for the center channel.

- WIDE: Normal signal is applied to center channel as it is. Employ speakers of the same grade (better than book-shelf) for center channel as well as L and R speakers.

- PHANTOM: Center channel signals are evenly applied to L and R channels. When a center speaker is not available, this mode is employed. Even without the center channel, the directional enhancement circuit functions as it is.

- 3CH LOGIC: "3CH LOGIC" mode built in remote control, is to enjoy the surround mode without the surround speaker. In normal pro-logic mode, rear (Sch) outputs reversed phase of Lch, Rch input, but in this mode the output is mixed with the front direction Lch and Rch outputs.

- TEST TONE (Remote control): Used to adjust output level of each channel.

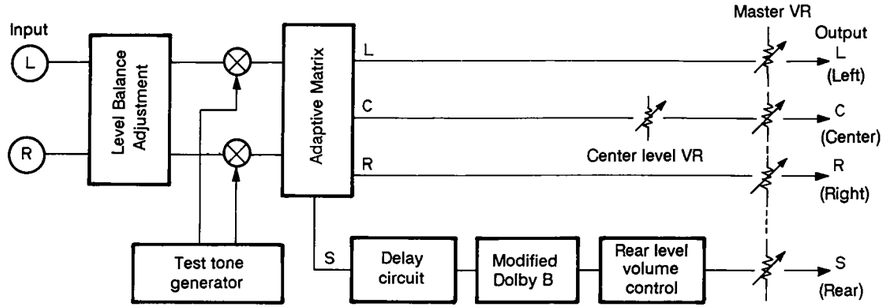


Figure 4

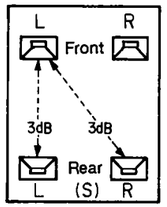


Figure 5

Dolby surround decoder
(Passive decoder)

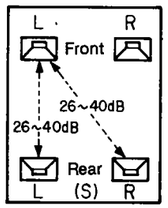


Figure 6

Dolby pro-logic surround decoder
(Active decoder)

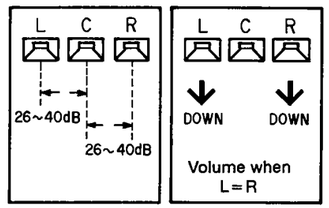


Figure 7

Dolby pro-logic surround decoder
(Active decoder)

Confirm Pro-logic circuit function

Confirm correct pro-logic circuit function with input signal shown table below.

- Measurement : Apply the correct input signal, and adjust level VR of master, center and rear, so that the level falls approximately within * level, respectively.

	Input	Output	Mode		
			Normal	Phantom	Wide
Pro-logic	L ch only	L	*0 dB (1 kHz)	→	→
		C, R, S	(a) Below -20 dB (Normally approximately -26 ~ -42 dB)		
	R ch only	L, C	Same as (a)		
		R	* 0 dB (1 kHz)	→	→
		S	Same as (a)		
	L=R Same phase signal	L	Below -20 dB/approx. -6dB	0 dB	Same as (a)
		C	* 0 dB/approx. -3 dB	Same as (a)	0 dB / 0 dB
		R	Below -20 dB/approx. -6dB	0dB	Same as (a)
		S	Same as (a)		
	L=-R Both CHs Reversed phase signal	L, C, R	Same as (a)		
		S	* +3 dB	→	→
3 ch logic	L=-R Both CHs Rreversed phase signal	L	* -3 dB	→	→
		C	Same as (a)		
		R	* -3 dB	→	→
		S	Same as (a)		

Table 3

ADJUSTMENT

Idling Current (1U-1966-1)

Arrangement

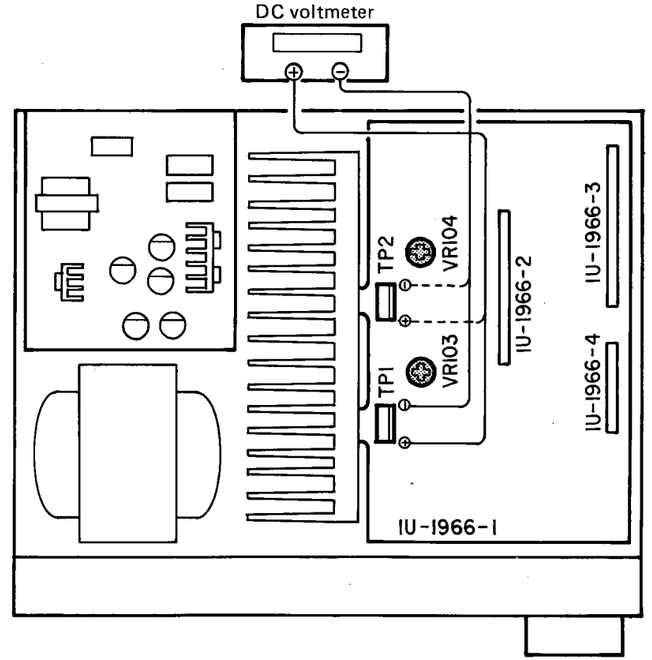
(1) Avoid direct below from a coller or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F).

(2) Presetting

- POWER (Power source switch) → OFF ( )
- VOLUME (Volume control) → 0 fully counterclockwise (min.)
- TONE, BASE, TREBLE, FRONT BALANCE and INPUT BALANCE controls to center.
- SPEAKERS (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

Adjustment

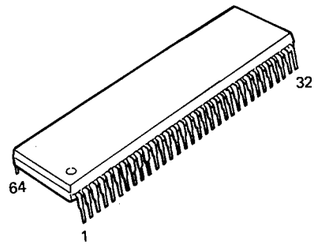
(1) Remove top cover and set VR103 (Lch), VR104 (Rch) of 1U-1966-1, to counterclockwise end position.
(2) Connect DC Voltmeter across Lch L T.P.1 and Rch R T.P.2, which are the test points.
(3) Connect power cord to AC line, and turn power switch "ON" ( )". Allow a minute, and turn VR103 and VR104 clockwise ( ) and adjust the TEST POINT voltage to 3 ± 1 mV DC.
(4) Allow 2 minutes, and adjust the VR103 and VR104 so that the meter reads 5.5 ± 1 mV DC.
(5) Allow 10 minutes, and adjust the VR103 and VR104so that the meter reads 5 ± 1 mV DC.



SEMICONDUCTORS

● IC's

(IC610) HD404019A33S (Master)
(IC102) HD614081SB51 (Slave)



IC Terminal

IC610 HD404019A33S

NO.	Terminal	Circuit Form	I/O	ACT	INT	Current	Signal	Applieation
1	D11	PMOS	O	H		mA		REAR' (SP-MUTE)
2	D12	PMOS	O	L		mA		SP-A
3	D13	PMOS	O	L		mA		SP-B
4	D14	PMOS	O	H		mA		POWER ON (RELAY CONTROL)
5	*D15	PMOS	O	H		mA		VIDEO INPUT Switch INH
6	R00	PMOS	O	H (S input presence)		mA		Composit ↔ Change over switch INPUT
7	R01	PMOS	O	H		mA		VIDEO INPUT Switch (Multiplexer) Ⓐ
8	R02	PMOS	O	H		mA		Ⓑ
9	R03	PMOS	O	H		mA		Ⓒ
10	R10	PMOS	O			mA		VIDEO REC OUT (Multiplexer) Ⓐ
11	R11	PMOS	O			mA		Ⓑ
12	R12	PMOS	O			mA		Ⓒ
13	R13	PMOS	O	H (OFF time L)		mA		VIDEO REC OUT OFF VCR-1
14	R20	PMOS	O	H (OFF time L)		mA		VCR-3
15	R21	PMOS	O	H (OFF time L)		mA		VCR-2
16	*R22	PMOS	O	H		mA		ENHANCER SELECT MON/VCR-3
17	*R23	PMOS	O	H		mA		VCR-1/2
18	RA0	PMOS	I			mA		SYNC DETECT (SYNC presence H)
19	RA1	PMOS	I			mA	Vdisp	(–15V)
20	R30	NMOS	O			mA		TEST TONE
21	R31	NMOS	O			mA		"
22	INT0		I					Power fail detection
23	INT1		I					SLAVE Req.
24	R50	NMOS	O			mA		Sharpness 1 (0 L, 1 H, 2 L, 3 H)
25	R51	NMOS	O			mA		Sharpness 2 (L L, H H)
26	R52	NMOS	O			mA		Detail 1 (0 L, 1 H, 2 L, 3 H)
27	R53	NMOS	O			mA		Detail 2 (L L, H H)
28	R60	NMOS	O			mA		OSD IC RESET
29	R61	NMOS	O			mA		Control SI
30	R62	NMOS	O			mA		CK
31	R63	NMOS	O			mA		CS
32	Vcc						Vcc	Power (+5V)
33	SCK						CLOCK	Master ↔ Slave CK
34	SI							Communication SI
35	S0							SO
36	R43					mA		MASTER Req.

NO.	Terminal	Circuit Form	I/O	ACT	INT	Current	Signal	Spplication
37	R70	NMOS				mA		Reset for slave
38	R71	NMOS				mA		AUDIO DATA
39	R72	NMOS				mA		FUNCTION ST
40	R73	NMOS				mA		IC CK
41	R80	NMOS				mA		DATA
42	R81	NMOS				mA		REAR/CENTER (REAR) ST-1
43	R82	NMOS				mA		LEVEL (CENTER) ST-2
44	R83	NMOS				mA		CK
45	*R90	NMOS	I	H				S. INPUT DET V·AUX
46	*R91	NMOS	I	H				Present S input in H VCR-3
47	*R92	NMOS	I	H				VLR-1
48	*R93	NMOS	I	H				VDP-1
49	RESET						RESET	Connect with Vcc
50	TEST						TEST	Vcc
51	OSC1						OSC1	Ceramic filter (2MHz)
52	OSC2						OSC2	
53	GND						GND	GND
54	D0	NMOS			H	mA		PRO. LOG. IC 3CH LOGIC
55	D1	NMOS			H	mA		WIDE
56	D2	NMOS	O		H	mA		NORMAL
57	D3	NMOS	O		H	mA		T. TONE ON/OFF
58	D4	PMOS	O		H	mA		DELAY FILTER (25, 30, 35, 40)
59	D5	PMOS	I			mA		PROTECTION IN
60	D6	PMOS	O			mA		D. DELAY M50198 REQ
61	D7	PMOS	O			mA		CK
62	D8	PMOS	O			mA		DATA
63	D9	PMOS	O		H	mA		OTHER MUTING
64	D10	PMOS	O		H	mA		CENTER (SP. OUT-MUTE)

IC102 HD614081SB51

NO.	Terminal	Circuit Form	I/O	ACT	INT	Current	Signal	Spplication
1	D11	PMOS	O	H		30mA	KS8	Key scan strobe -8
2	D12	PMOS	O	H		30mA	KS9	Key scan strobe -9
3	D13	PMOS	O			30mA	RS	LCD Driver RS
4	D14	PMOS	O			30mA	R/W	LCD Driver R/W
5	D16	PMOS	O			30mA	E	LCD Driver E
6	R00	PMOS	O	H	L	6mA		SP-A
7	R01	PMOS	O	H	L	6mA		SP-B
8	R02	PMOS	O	H	L	6mA		CENTER
9	R03	PMOS	O	H	L	6mA		REAR
10	R10	PMOS	O			6mA	DB0	LCD Data bus
11	R11	PMOS	O			6mA	DB1	LCD Data bus
12	R12	PMOS	O			6mA	DB2	LCD Data bus
13	R13	PMOS	O			6mA	DB3	LCD Data bus
14	R20	PMOS	O			6mA	DB4	LCD Data bus
15	R21	PMOS	O			6mA	DB5	LCD Data bus
16	R22	PMOS	O			6mA	DB6	LCD Data bus
17	R23	PMOS	O			6mA	DB7	LCD Data bus
18	RA0	PMOS						
19	RA1	PMOS						
20	R30	NMOS						LCD Display SW1 ON/OFF
21	R31	NMOS						
22	INT0		I	L	H		REMOCON	Remote control optical signal input
23	INT1		I	L	H		REQ.	Request signal input
24	R50	NMOS	O	L	H	15mA		LED Display DBS/BS
25	R51	NMOS	O	L	H	15mA		TV
26	R52	NMOS	O	L	H	15mA		VDP1
27	R53	NMOS	O	L	H	15mA		VDP2
28	R60	NMOS	I	L	H	15mA		LED Display VIDEO·AUX
29	R61	NMOS	I	L	H	15mA		VCR1
30	R62	NMOS	I	L	H	15mA		VCR2
31	R63	NMOS	I	L	H	15mA		VCR3
32	Vcc		–	–	–		Vcc	Power (+5%)
33	SCK						CLOCK	M/S Communication
34	SI		I				Data input	M/S Communication
35	S0		O				Data output	M/S Communication
36	R43			L	H		REQ.	Request signal output

NO.	Terminal	Circuit Form	I/O	ACT	INT	Current	Signal	Spplication
37	R70	NMOS	I	L	H	15mA		LED Display V, SELECT
38	R71	NMOS	I	L	H	15mA		PHONO
39	R72	NMOS	I	L	H	15mA		CD
40	R73	NMOS	I	L	H	15mA		TUNER
41	R80	NMOS	I	L	H	15mA		AUX
42	R81	NMOS	I	L	H	15mA		TAPE-1
43	R82	NMOS	I	L	H	15mA		TAPE-2
44	R83	NMOS	I	L	H	15mA		TAPE MONI.
45	R90	NMOS	I				KA1	Key scan receive -1
46	R91	NMOS	I				KA2	Key scan receive -2
47	R92	NMOS	I				KA3	Key scan receive -3
48	R93	NMOS	I				KA4	Key scan receive -4
49	RESET			L	H		RESET	Micro computer reset input
50	TEST			L	H		TEST	Connect with Vcc
51	OSC1			–	–		OSC1	Ceramic filter
52	OSC2			–	–		OSC2	
53	GND						GND	GND
54	D0	NMOS		L	H			LED Display MUTE/STANDBY
55	D1	NMOS		H	L			VOLUME UP
56	D2	NMOS		H	L			VOLUME DOWN
57	D3	NMOS	I					
58	D4	PMOS	O	H		30mA	KS1	Key scan strobe -1
59	D5	PMOS	O	H		30mA	KS2	Key scan strobe -2
60	D6	PMOS	O	H		30mA	KS3	Key scan strobe -3
61	D7	PMOS	O	H		30mA	KS4	Key scan strobe -4
62	D8	PMOS	O	H		30mA	KS5	Key scan strobe -5
63	D9	PMOS	O	H		30mA	KS6	Key scan strobe -6
64	D10	PMOS	O	H		30mA	KS7	Key scan strobe -7

Provided allowable output currency (Σ10) is within 150mA.

1. NORMAL MODE

(1) DAT/TAPE MON.: OFF (SELECT VIDEO IN / VIDEO REC / AUDIO REC } OFF)

	AUDIO						VIDEO									
							VIDEO Terminal (Compsit)				S Terminal			C↔S Switch	
	SP-OUT	REC OUT					MONI-TOR	REC OUT			MONI-TOR	REC OUT		R_{75} INPUT	D_{14} REC OUT
		VCR-1	VCR-2	VCR-3	D/T-1	D/T-2		VCR-1	VCR-2	VCR-3		VCR-1	VCR-3		
PHONO		→	→	→	→	→	OFF	→	→	→		→	→	L	L
CD		→	→	→	→	→	OFF	→	→	→		→	→	L	L
TUNER		→	→	→	→	→	OFF	→	→	→		→	→	L	L
AUX		→	→	→	→	→	OFF	→	→	→		→	→	L	L
DBS/BS		→	→	→	→	→	DBS/BS	→	→	→	OFF	→	→	L	L
TV		→	→	→	→	→	TV	→	→	→	OFF	→	→	L	L
VDP-1		→	→	→	→	→	VDP-1 (Ⓢ)	→	→	→	Ⓢ	Ⓢ	Ⓢ	R_{75}: In time of L "H"	
VDP-2		→	→	→	→	→	VDP-2	→	→	→	OFF	→	→	L	L
VCR-1	→	OFF	VCR-1	→	→	→	VCR-1 (Ⓢ)	OFF	VCR-1	→	→	OFF	VCR-1 Ⓢ	R_{75}: In time of L "H"	
VCR-2	→	→	OFF	VCR-2	→	→	VCR-2	→	OFF	VCR-2	OFF	→	→	L	L
VCR-3	→	→	→	OFF	VCR-3	→	VCR-3 (Ⓢ)	→	→	OFF	VCR-3 Ⓢ	→	OFF	R_{75}: In time of L "H"	
V-AUX	→	→	→	→	→	→	V-AUX (Ⓢ)	→	→	→	Ⓢ	Ⓢ	Ⓢ	R_{75}: In time of L "H"	
D/T-1		By SOURCE input													
D/T-2															

1. NORMAL MODE (SELECT VIDEO IN / VIDEO REC / AUDIO REC } OFF)

(2) DAT/TAPE MON.: ON

	AUDIO							VIDEO									
								VIDEO Terminal (Compsit)				S Terminal			C⟷S Switch	
	SP-OUT	REC OUT						MONI-TOR	REC OUT			MONI-TOR	REC OUT		R_{75} INPUT	D_{14} REC OUT
		VCR-1	VCR-2	VCR-3	D/T-1	D/T-2			VCR-1	VCR-2	VCR-3		VCR-1	VCR-3		
PHONO	D/T	PHONO →		D/T	PHONO →		OFF	→	→	→			→		L	L
CD		CD →			CD →		OFF	→	→	→			→		L	L
TUNER		TUNER →			TUNER →		OFF	→	→	→			→		L	L
AUX		AUX →			AUX →		OFF	→	→	→			→		L	L
DBS/BS		DBS/BS →			DBS/BS →		DBS/BS	→	→	→	OFF	→	→		L	L
TV		TV →			TV →		TV	→	→	→	OFF	→	→		L	L
VDP-1		VDP-1 →			VDP-1 →		VDP-1 (S)	→	→	→	Ⓢ	Ⓢ	Ⓢ		R_{75}: In time of L "H"	
VDP-2		VDP-2 →			VDP-2 →		VDP-2	→	→	→	OFF	→	→		L	L
VCR-1		OFF VCR-1 →			VCR-1 →		VCR-1 (S)	OFF	VCR-1	→	→	OFF	VCR-1 Ⓢ		R_{75}: In time of L "H"	
VCR-2		→ OFF		↓	VCR-2 →		VCR-2	→	OFF	VCR-2	OFF	→	→		L	L
VCR-3		→		OFF	VCR-3 →		VCR-3 (S)	→	→	OFF	VCR-3 Ⓢ	→	OFF		R_{75}: In time of L "H"	
V-AUX		→		By D/T	V-AUX →		V-AUX (S)	→	→	→	Ⓢ	Ⓢ	Ⓢ		R_{75}: In time of L "H"	
D/T-1	↓	BY SOURCE		* D/T-1	BY SOURCE						BY SOURCE					
D/T-2	D/T-2			* D/T-2												

* OFF when SOURCE position is in VER-3.

Table 6

2. AUDIO RECOUT SELECT MODE (at STANDBY)

	AUDIO						VIDEO									
							VIDEO Terminal (Compsit)				S Terminal			C ⟷ S Switch	
	SP-OUT	REC OUT					MONI-TOR	REC OUT			MONI-TOR	REC OUT		R_{75} INPUT	D_{14} REC OUT
		VCR-1	VCR-2	VCR-3	D/T-1	D/T-2		VCR-1	VCR-2	VCR-3		VCR-1	VCR-3		
PHONO		PHONO →			PHONO →			*				*			
CD		CD →			CD →										
TUNER		TUNER →			TUNER →										
AUX		AUX →			AUX →										
DBS/BS		DBS/BS →			DBS/BS →										
TV		TV →			TV →										

3. VIDEO RECOUT SELECTOR MODE (at STANDBY)

	AUDIO						VIDEO									
							VIDEO Terminal (Composit)				S Terminal			C ⟷ S Switch	
	SP-OUT	REC OUT					MONI-TOR	REC OUT			MONI-TOR	REC OUT		R_{75} INPUT	D_{14} REC OUT
		VCR-1	VCR-2	VCR-3	D/T-1	D/T-2		VCR-1	VCR-2	VCR-3		VCR-1	VCR-3		
PHONO															
CD															
TUNER															
AUX															
DBS/BS								DBS/BS →				OFF		L	L
TV								TV →				OFF		L	L
VDP-1								VDP-1 →				VDP-1 (S)		R_{75}: In time of L "H"	
VDP-2								VDP-2 →				OFF		L	L
VCR-1								OFF VCR-1				OFF		R_{75}: In time of L "H"	
VCR-2								VCR-2 OFF				OFF		L	L
VCR-3								VCR-3 →				VCR-3 (S)		R_{75}: In time of L "H"	
V-AUX								V-AUX →				V-AUX (S)		R_{75}: In time of L "H"	
D/T-1															
D/T-2															

Table 7

* Key scan strobe
In case with REC SELECT : AUDIO only is S, and composit with VIDEO REC OUT is OFF. And in normal, by SOURCE.

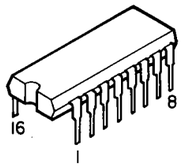
Table 8

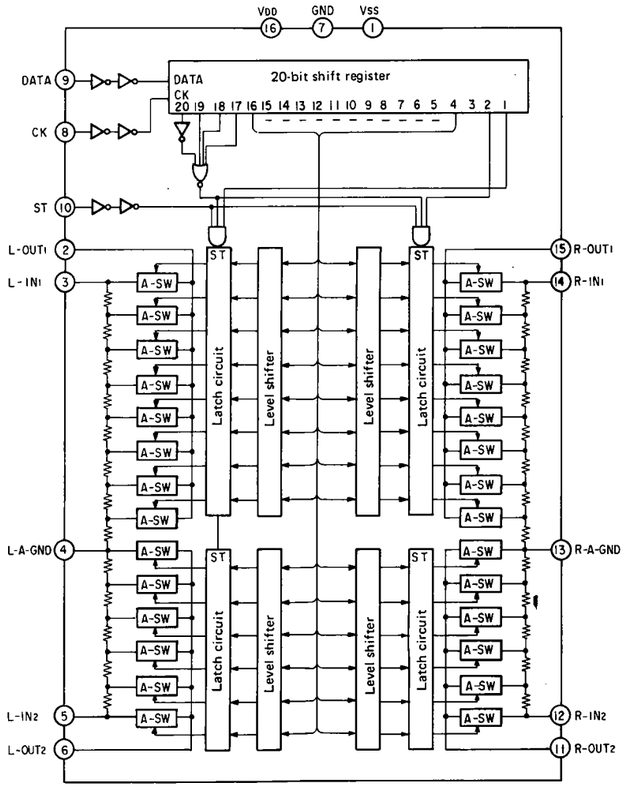
4. VIDEO INPUT SELECTOR MODE (at STANDBY)

	AUDIO						VIDEO									
							VIDEO Terminal (Composit)				S Terminal			C ⟷ S Switch	
	SP-OUT	REC OUT					MONI-TOR	REC OUT			MONI-TOR	REC OUT		R_{75} INPUT	D_{14} REC OUT
		VCR-1	VCR-2	VCR-3	D/T-1	D/T-2		VCR-1	VCR-2	VCR-3		VCR-1	VCR-3		
PHONO															
CD															
TUNER															
AUX															
DBS/BS							DBS/BS →				OFF			L	L
TV							TV →				OFF			L	L
VDP-1							VDP-1 →				VDP-1 (S)			R_{75}: In time of L "H"	
VDP-2							VDP-2 →				OFF			L	L
VCR-1							VCR-1 OFF	VCR-1	→		VCR-1 OFF	VCR-1		R_{75}: In time of L "H"	
VCR-2							VCR-2 →	OFF	VCR-2		OFF	→		L	L
VCR-3							VCR-3 →	→	OFF		VCR-3 →	OFF		R_{75}: In time of L "H"	
V-AUX							V-AUX →	→	→		V-AUX →	→		R_{75}: In time of L "H"	
D/T-1															
D/T-2															

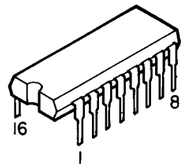
Table 9

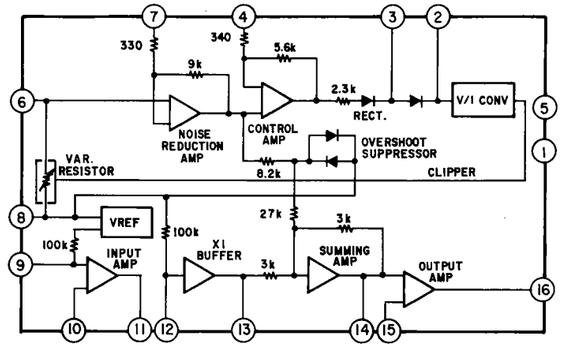
TC9176P
(IC107,111)



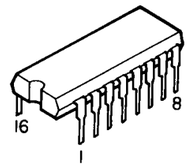


LA2730
(IC118)

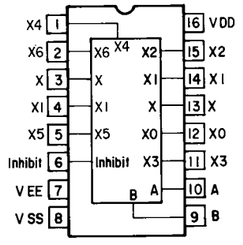


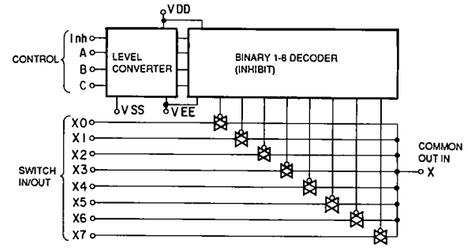


HD14051BP
HD14052BP

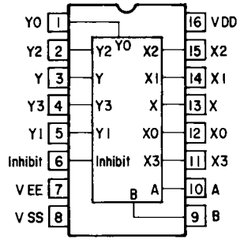


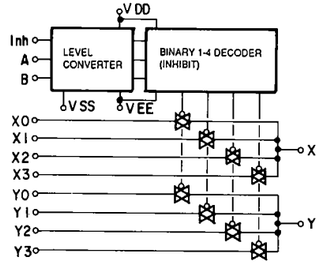
HD14051BP
(IC601,602)



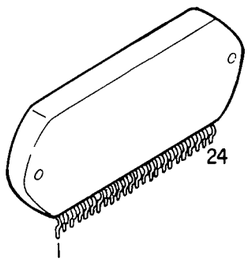


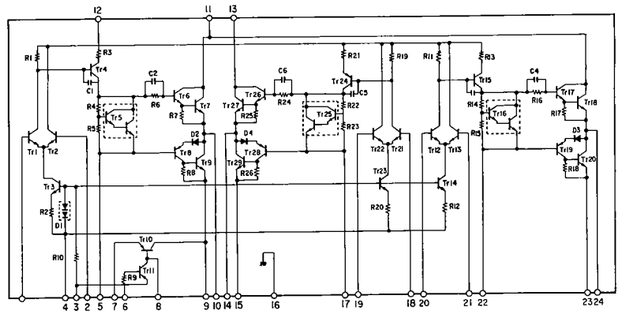
HD14052BP
(IC604,611)



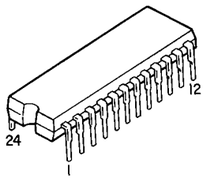


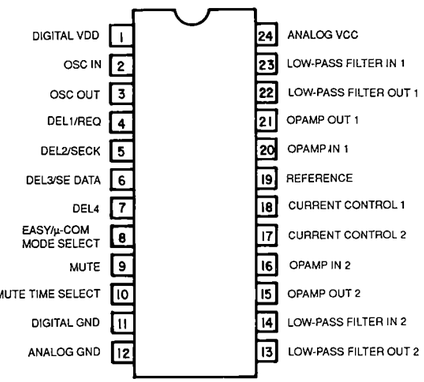
STK4177II
(IC301)

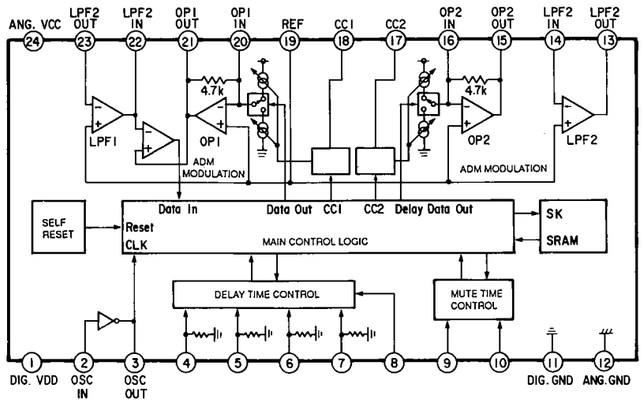




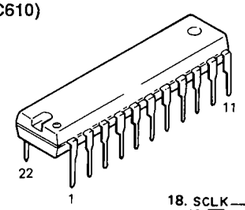
M50198P
(IC125)

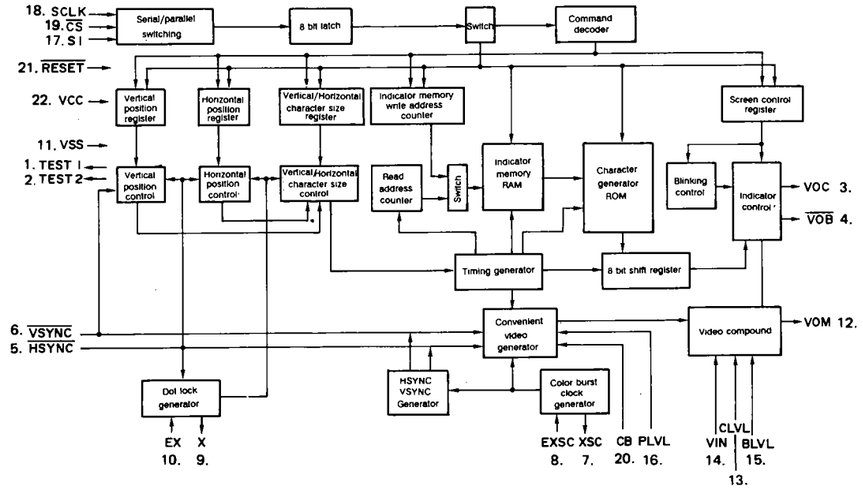




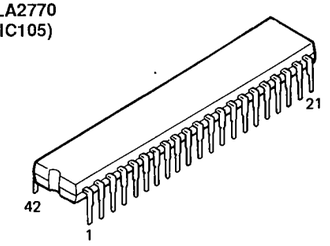


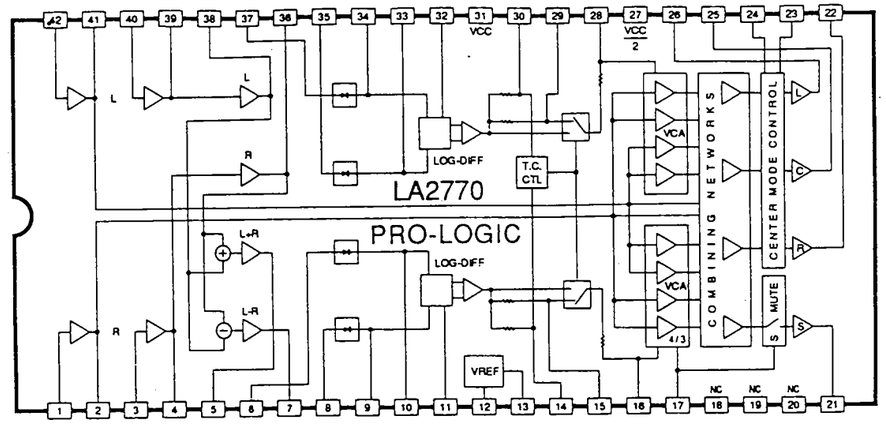
MB88323A-K1
(IC610)



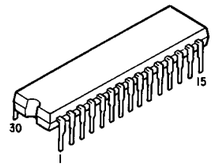


LA2770
(IC105)

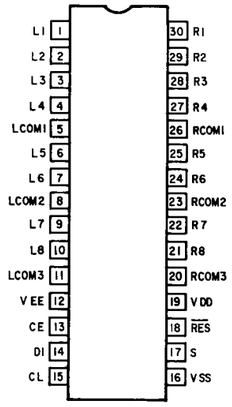




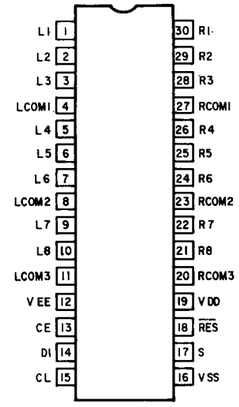
LC7821 (IC109,905)
LC7822 (IC903,906)
LC7823 (IC108,904)



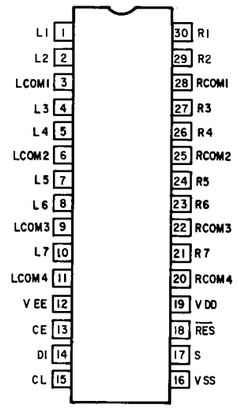
LC7821



LC7822



LC7823



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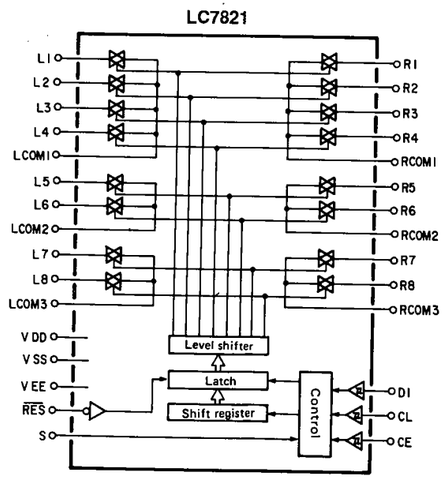
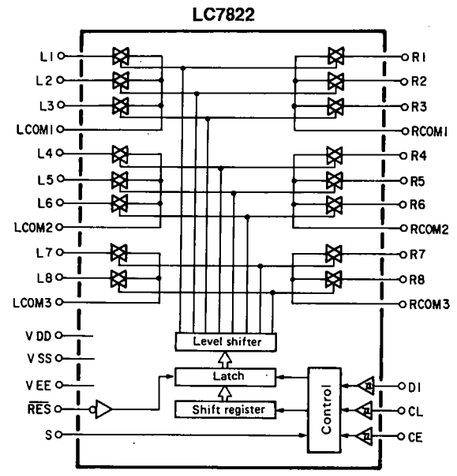


LC7822



LC7823

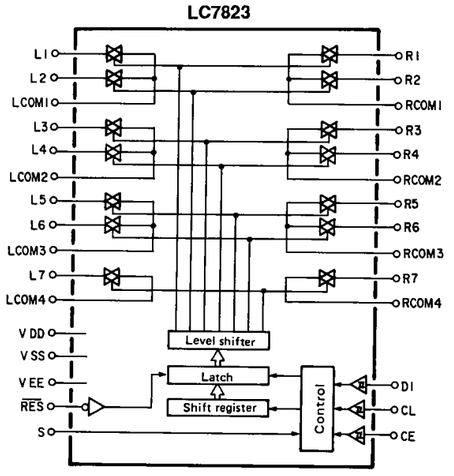
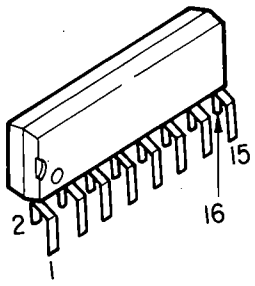
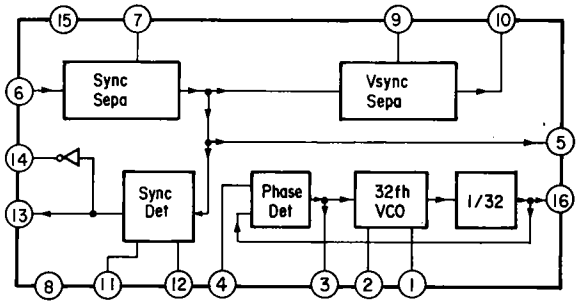


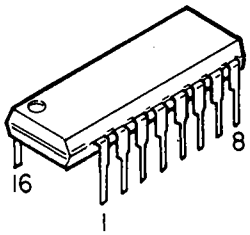
Table 10

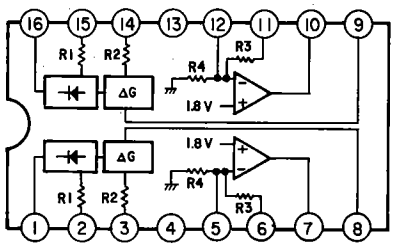
NJM2229S
(IC609)



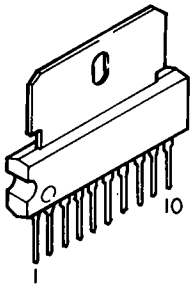


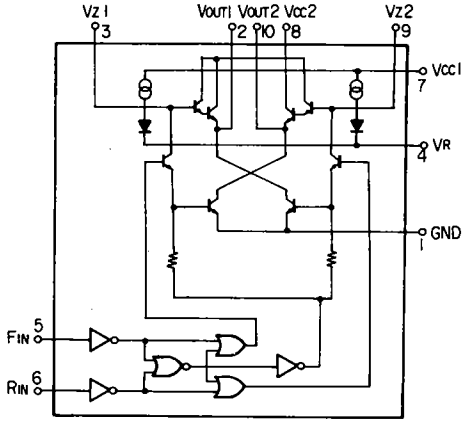
μPC1571C
(IC124)



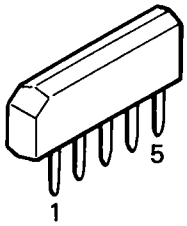


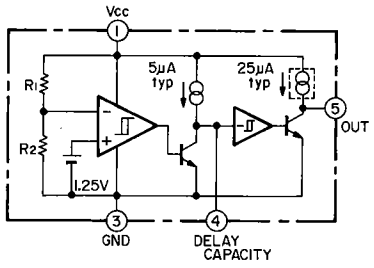
BA6109
(IC051)



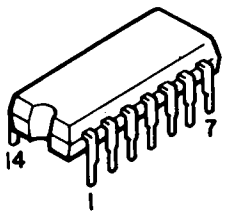


M51954A
(IC612)

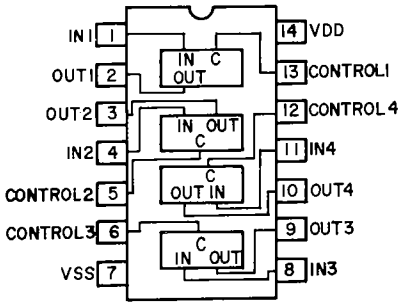




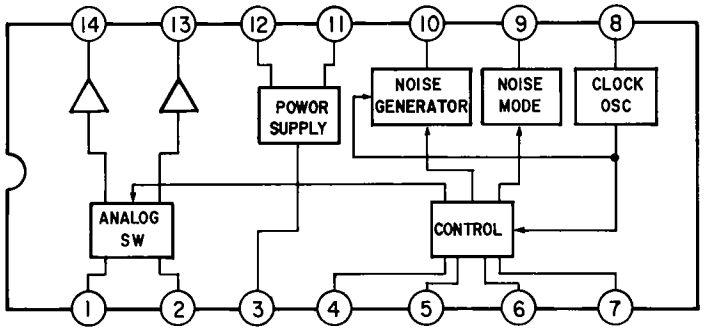
HD14066BP
LA2775



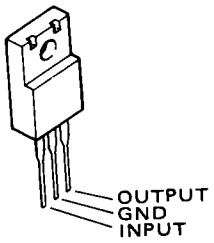
HD14066BP
(IC603,605)



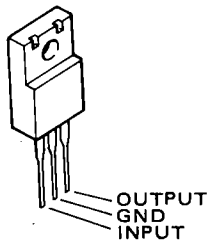
LA2775
(IC101)



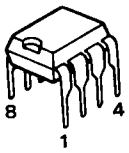
NJM7805FA (IC009)
NJM7806FA (IC003,601)
NJM7815FA (IC052,001)

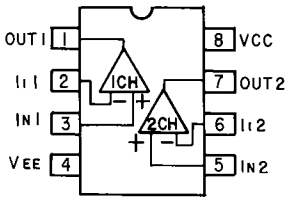


NJM7906FA (IC607)
NJM7915FA (IC002)

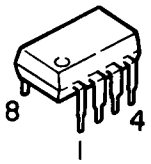


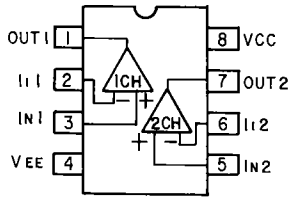
M5218P (IC106,113~116,121,125,902,907,908
BA15218 (IC110,117,122,123)





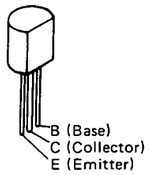
NJM4556D (IC112)
NJM4558D-D (IC401,901)



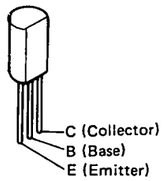


● TRANSISTORS

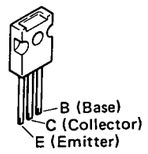
2SA970(BL)
2SA988(E/F)
2SA1015(GR)
2SC1815(BL)
2SC1841(E/F)
2SC2878(A/B)



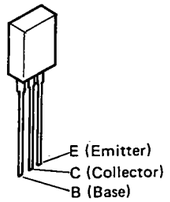
2SD667A(C)



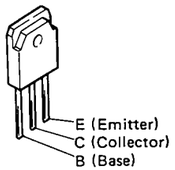
2SC3421(O)/(Y)
(Black)



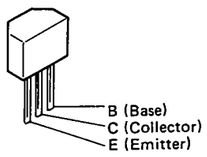
2SB1328(P)
2SD2004(P)



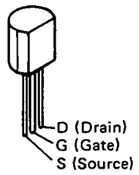
2SA1492(O)/(P)/(Y)
2SC3856(O)/(P)/(Y)



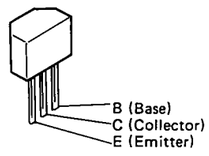
2SA1048(GR)
2SC2458(Y/GR),(BL)



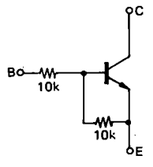
2SK381(B)/(C)



RN1202 (10k-10k)
RN2202 (10k-10k)
RN2204 (47k-47k)
RN2205 (2.2k-47k)

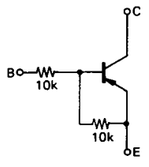


RN1202 (10k-10k)



	R1	R2
RN1202	10kΩ	10kΩ

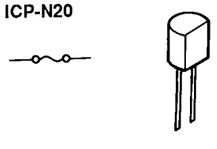
RN2202 (10k-10k)
RN2204 (47k-47k)
RN2205 (2.2k-47k)



	R1	R2
RN2202	10kΩ	10kΩ
RN2204	47kΩ	47kΩ
RN2205	2.2kΩ	47kΩ

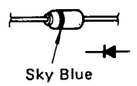
● IC PROTECTOR

ICP-N15
ICP-N20

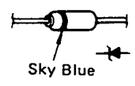


● DIODES (Included LED)

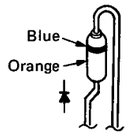
1SS270A



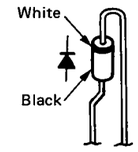
HZS4B-2
HZS5C-2
HZS7B-3
HZS11A-3
HZS12B-2
HZ6C-1



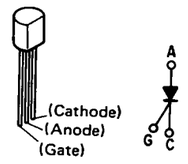
1SR35-200



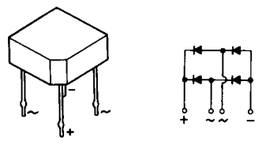
DSM1D2
(Type 3)



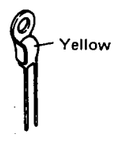
SFOR1A42
(Thyristor)



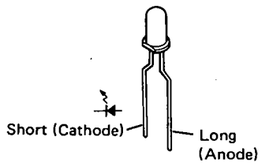
4D4B42



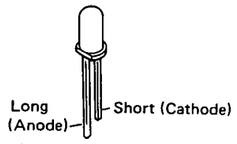
PTH487A1BC222TS
(Posistor)



SEL2210R (Red)
SEL2810D (Anber)

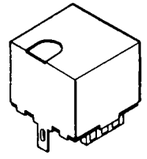


SEL1210S (Red)

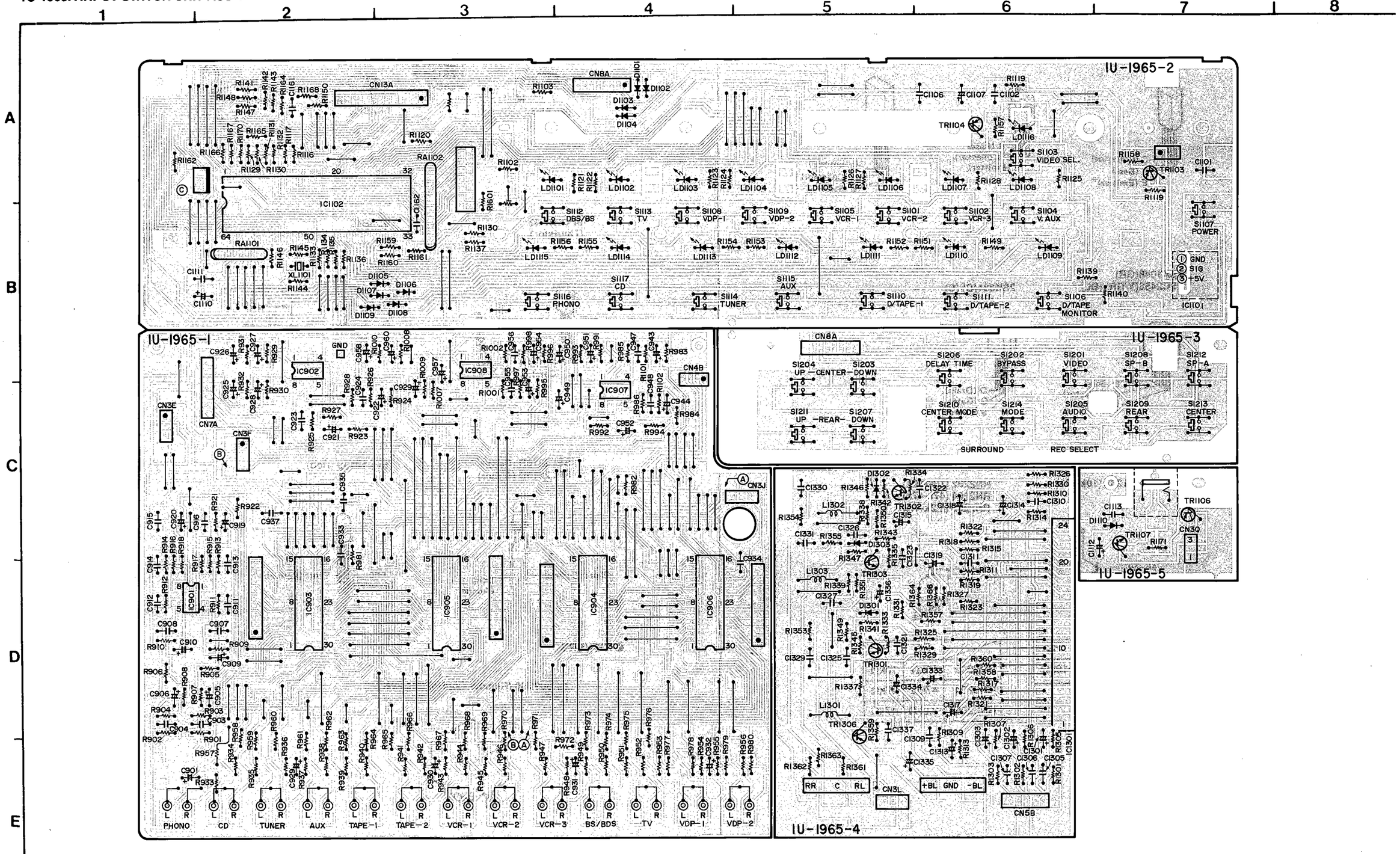


● OTHERS

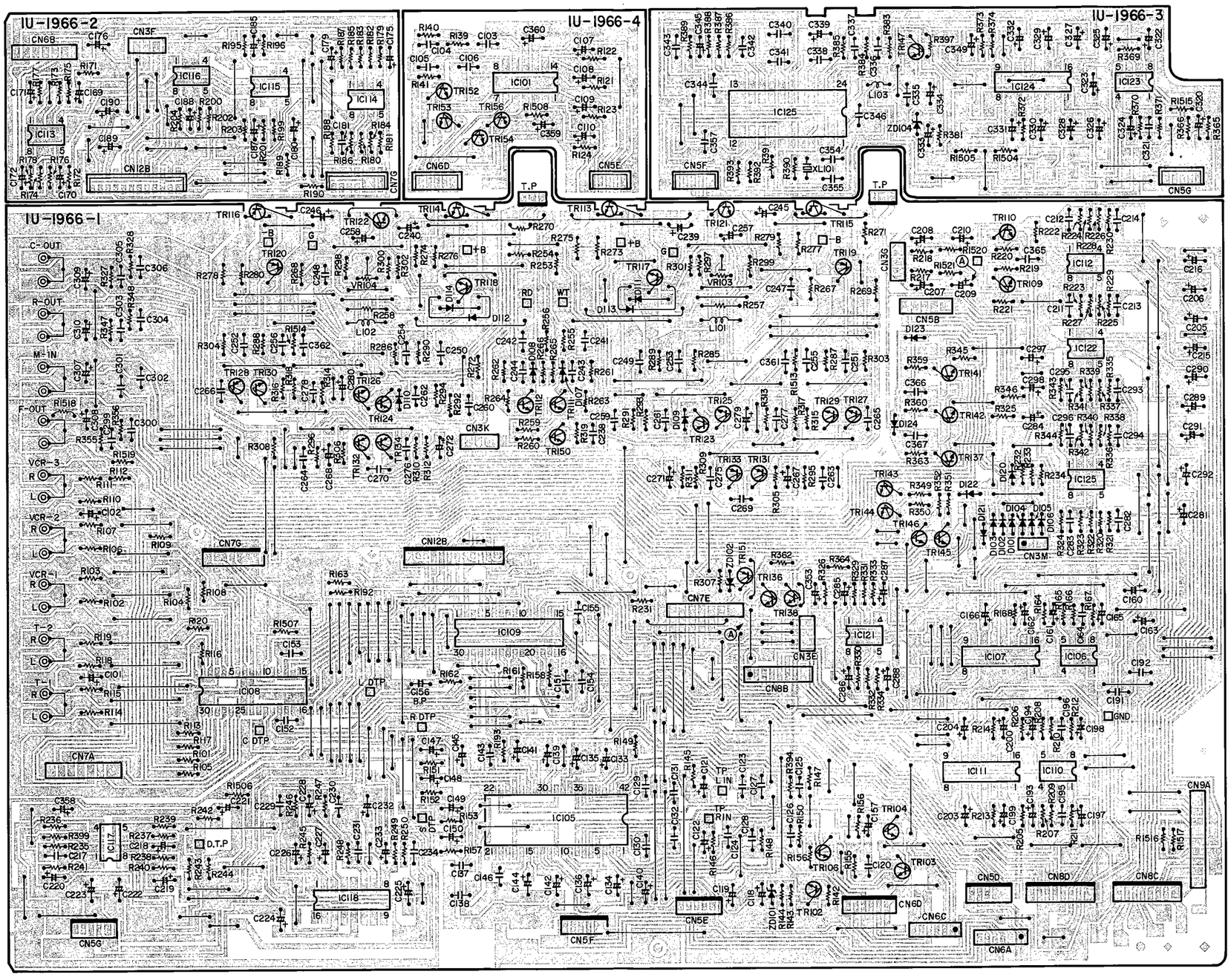
QH3031H0 (Remote Control Receiver)
IC101



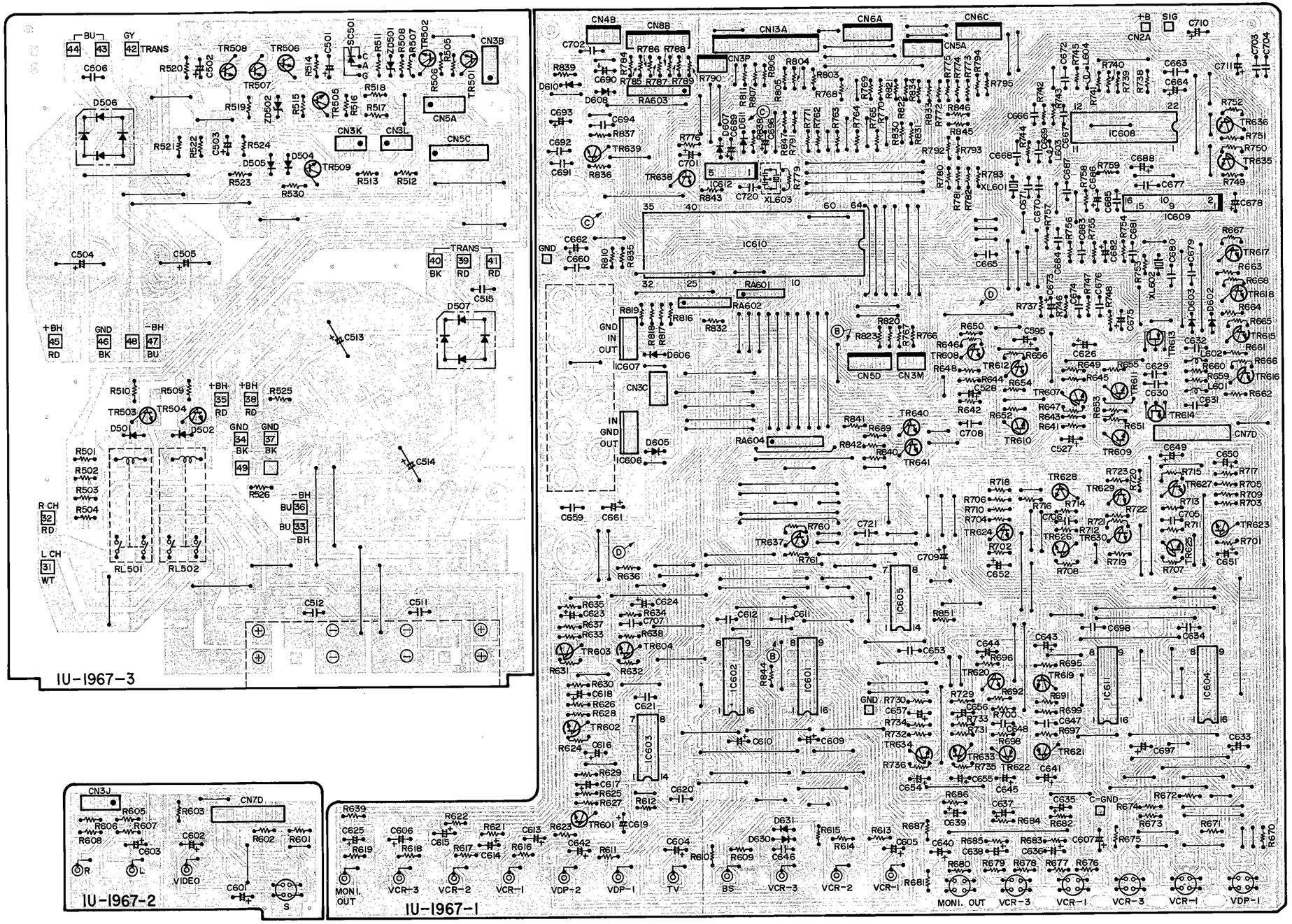
PRINTED WIRING BOARD (Pattern side)
1U-1965A INPUT SWITCH UNIT ASS'Y



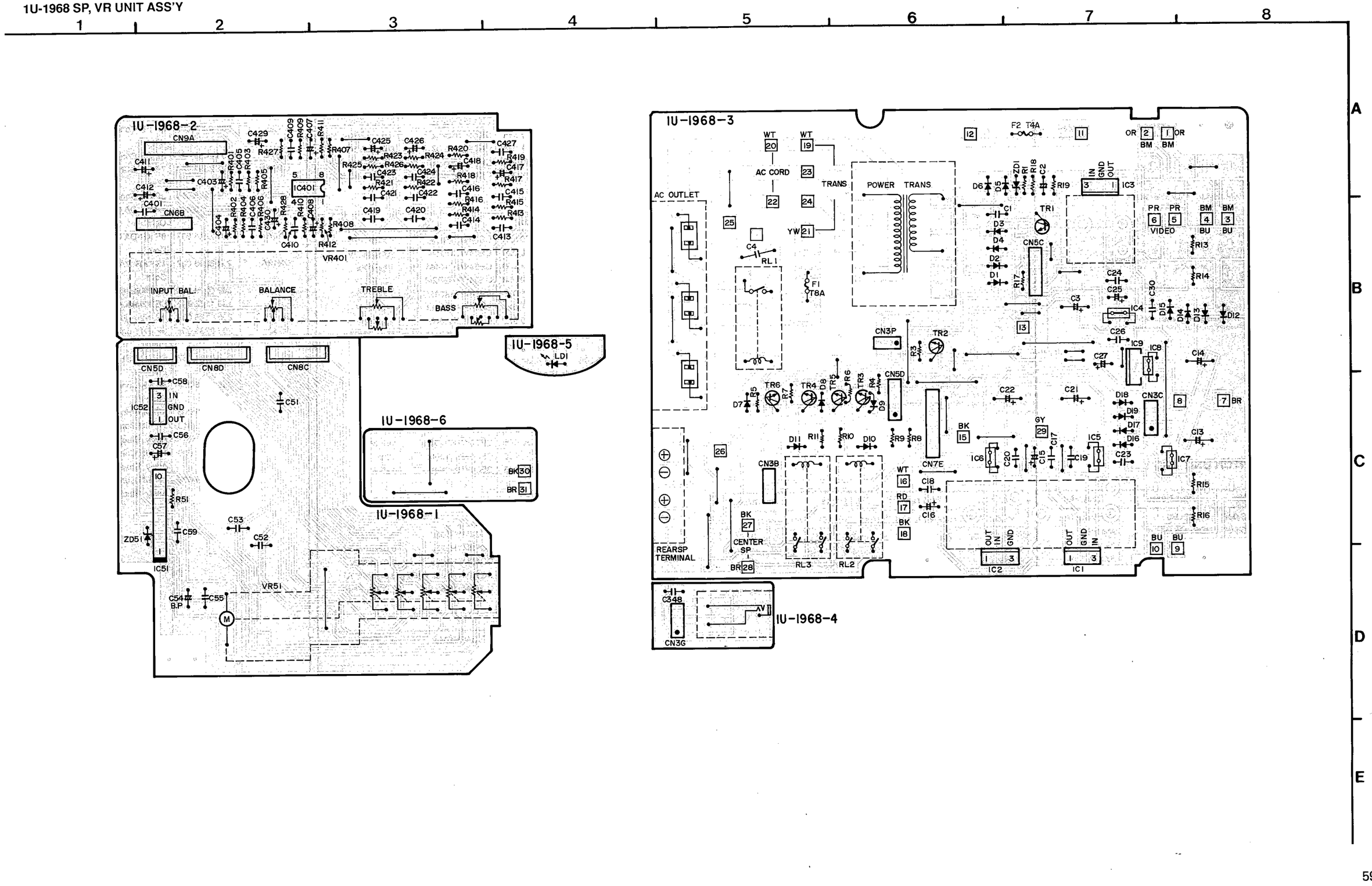
1U-1966 MAIN UNIT ASS'Y



1U-1967 POWER, VIDEO UNIT ASS'Y



1U-1968 SP, VR 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 : Fixed RS : Metallic 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 : 1800Ω = 1.8kΩ
- 2-digit effective number, decimal point indicated by R.
- Indicates number of zeros after effective number
- Units: Ω

- **Capacitors**

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

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

Capacity
2 R 2 : 2.2μF
- 1-digit effective number, decimal point indicated by R.
- 2-digit effective number, decimal point indicated by R.
- Units: μF, (for P, pF (μμF)
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

4U-1965 INPUT, SWITCH UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
IC101	499 0088 002	QH3031H0	Remocon Receiver
IC102	263 0685 107	HD614081SB51	Miconm
IC301	265 0099 003	STK4177II	IC
IC901	265 0030 004	NJM4558D-D	IC
IC902	263 0257 001	M5218P	IC
IC903	262 1228 007	LC7822	IC
IC904	262 1229 006	LC7823	IC
IC905	262 1227 008	LC7821	IC
IC906	262 1228 007	LC7822	IC
IC907,908	263 0257 001	M5218P	IC
TR103	269 0089 905	RN2205	D. Transistor
TR104	269 0026 900	RN2202 (10K-10K)	D. Transistor
TR106	269 0030 909	RN2204 (47K-47K)	D. Transistor
TR107	269 0029 907	RN1204 (47K-47K)	D. Transistor
TR301~303	273 0222 004	2SC2458 (Y/GR)	Transistor
TR306	271 0191 003	2SA1048 (GR)	Transistor
D101~110	276 0432 903	1SS270A	Diode
D301~303	276 0432 903	1SS270A	Diode
LD101~115	393 9416 908	SEL-220IR	LED (Red)
LD116	393 9419 905	SEL-2810D	LED (Amber)

Ref. No.	Part No.	Part Name	Remarks
RESISTORS (not included Carbon Film ±5%, 1/4W Type)			
⚠ R321~323	244 2051 932	RS14B3A332JS (S)	3.3KΩ, 1W N.B
⚠ R329,330	244 2043 982	RS14B3AR22JS (S)	0.22Ω, 1W N.B
⚠ R331	244 2055 912	RS14B3AR47JS (S)	0.47Ω, 1W N.B
⚠ R349~351	244 2051 987	RS14B3A4R7JS (S)	4.7Ω, 1W N.B
⚠ R353~355	244 2043 937	RS14B3A100JS (S)	100Ω, 1W N.B
⚠ R357	241 2387 908	RD14B2E010JNBS	1Ω, 1/4W N.B
⚠ R358	241 2377 947	RD14B2E101JNBS	100Ω, 1/4W N.B
⚠ R364	241 2377 947	RD14B2E101JNBS	100Ω, 1/4W N.B
⚠ R366	244 2055 912	RS14B3AR47JS (S)	0.47Ω, 1W N.B
RA101	246 2054 016	RK99==104JP7	100KΩX7 (Array)
RA102	246 2067 003	RK99==472JP11	4.7KΩX11 (Array)
CAPACITORS			
(Ceramic Capacitor)			
C101	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C106	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C111	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C113	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C161	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C162	253 4537 021	CC45SL1H330J	33PF/50V D=3
C305~307	253 1004 007	CK45B1H102K	1000PF/50V

Ref. No.	Part No.	Part Name	Remarks
C903,904	253 3634 006	CC45SL1H201J	200PF/50V
C907,908	253 1179 084	CK45B1H471K	470PF/50V D=3
C915,916	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C923,924	253 1179 000	CK45F1H101K	100PF/50V D=3
C933,934	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C935	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C937	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C947,948	253 1179 000	CK45B1H101K	100PF/50V D=3
C955,956	253 1179 000	CK45B1H101K	100PF/50V D=3
(Electrolytic Capacitor)			
C107	254 4250 026	CE04W0J101M	100μF/6.3V
C110	254 4250 026	CE04W0J101M	100μF/6.3V
C112	254 4254 006	CE04W1C100M	10μF/16V
C301~303	254 4260 058	CE04W1H2R2M	2.2μF/50V
C313~315	254 4261 028	CE04W1H101M	100μF/50V
C317~319	254 4261 015	CE04W1H470M	47μF/50V
C333~335	254 4260 087	CE04W1H100M	10μF/50V
C336	254 4261 028	CE04W1H101M	100μF/50V
C901	254 4260 045	CE04W1H010M	1μF/50V
C905,906	254 4254 006	CE04W1C100M	10μF/16V
C909,910	254 4250 039	CE04W0J221M	220μF/6.3V
C919,920	254 4260 058	CE04W1H2R2M	2.2μF/50V
C921,922	254 4254 006	CE04W1C100M	10μF/16V
C925~932	254 4260 045	CE04W1H010M	1μF/50V
C943,944	254 4254 006	CE04W1C100M	10μF/16V
C949~952	254 4260 045	CE04W1H010M	1μF/50V
C953,954	254 4254 006	CE04W1C100M	10μF/16V
C957~960	254 4260 045	CE04W1H010M	1μF/50V
(Plastic Film Capacitor)			
C321~323	255 1121 025	CQ93M1H103J	0.01μF/50V
C329~331	255 1121 067	CQ93M1H223J	0.022μF/50V
C337	255 1121 025	CQ93M1H103J	0.01μF/50V
C911,912	255 4199 999	CQ93M1H243J (MRZ)	0.024μF/50V
C913,914	255 1121 009	CQ93M1H682J	0.0068μF/50V
(Metalized Capacitor)			
C325~327	256 1034 076	CF93A1H104J	0.1μF/50V

E.U. PARTS				Q'ty
S101~117	212 4388 004	Tact Switch		17
S201~214	212 4388 004	Tact Switch		14
XL101	399 0034 002	Ceramic Vibrator CST4.00MG		1
L301~303	235 0068 004	Inductor		3
	204 8313 003	4P Pin Jack (S-GND)		2
	204 8346 009	6P Pin Jack (S-GND)		3
	205 0591 004	14P Pin Header (2)		1
	205 0590 005	3P Pin Header (1)		1
	393 4088 001	LCD Unit		1
	204 8266 004	Mini Jack		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
OTHER PARTS				
⊙	—	P.W. Board		1
	205 0075 038	3P Terminal		2
CN3E	203 4644 003	3P EH Connector Cord		1
CN3E	203 4653 007	3P EH Connector Cord (Red)		1
CN3G	203 4652 011	3P EH Connector Cord		1
CN7A	204 2392 004	7P EH-SCN Connector Cord		1
CN3Q	203 4495 074	3P EH Connector Base		1
CN4B	203 6215 090	4P KR-DA Connector Cord		1
CN8A	204 2244 097	8P KR-DA Connector Cord		1
CN13A	204 6269 007	13P KR-DA Connector Cord		1
	002 0009 007	9C Ribbon Cable		2
	146 1102 009	LED Holder		1
3E,3F	205 0185 038	3P Wire Holder		2
3L,3J	205 0233 032	3P EH Connector Base		2
5B	205 0234 057	5P EH-SID Connector Base		1
8A	205 0355 088	8P KR Connector Base (L)		1
	205 0243 093	9P Wire Holder		4
	203 0382 013	1P SIN Connector Ass'y (Blue)	l=150	1
	203 0382 026	1P SIN Connector Ass'y (Brown)	l=180	1
	203 0419 009	1P SIN Connector Ass'y (Black)	l=570	1

4U-1966 MAIN UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS			
IC101	263 0692 006	LA2775	IC
IC105	263 0602 009	LA2770	IC
IC106	263 0257 001	M5218P	IC
IC107	262 0625 009	TC9176P	IC
IC108	262 1229 006	LC7823	IC
IC109	262 1227 008	LC7821	IC
IC110	263 0565 007	BA15218	IC
IC111	262 0625 009	TC9176P	IC
IC112	263 0198 005	NJM4556D	IC
IC113~116	263 0257 001	M5218P	IC
IC117	263 0565 007	BA15218	IC
IC118	263 0600 001	LA2730	IC
IC121	263 0257 001	M5218P	IC
IC122,123	263 0565 007	BA15218	IC
IC124	263 0681 004	μPC1571C	IC
IC125	262 1198 001	M50198P	IC
IC125	263 0257 001	M5218P	IC
TR102	273 0198 015	2SC1815 (BL)	Transistor
TR103,104	273 0317 003	2SC2458 (BL)	Transistor
TR106	273 0317 003	2SC2458 (BL)	Transistor
TR109,110	273 0253 015	2SC2878 (A/B)	Transistor
TR111,112	273 0235 020	2SC1841 (E/F)	Transistor
TR117,118	274 0151 000	2SD2004 (P)	Transistor
TR119,120	272 0107 003	2SB1328 (P)	Transistor
TR123,124	271 0131 021	2SA988 (E/F)	Transistor
TR125~130	273 0235 020	2SC1841 (E/F)	Transistor
TR131~134	271 0094 016	2SA970 (BL)	Transistor
TR136~138	273 0253 015	2SC2878 (A/B)	Transistor
TR141~146	273 0253 015	2SC2878 (A/B)	Transistor
TR147	274 0060 007	2SD667A (C)	Transistor
TR150	271 0131 021	2SA988 (E/F)	Transistor
TR151	269 0030 909	RN2204 (47K-47K)	D. Transistor
TR152~154	269 0025 901	RN1202 (10K-10K)	D. Transistor
TR156	269 0026 900	RN2202 (10K-10K)	D. Transistor
D101~110	276 0432 000	1SS270A	Diode
D111~114	276 0049 011	1S2076A	Diode
D120	276 0432 000	1SS270A	Diode
ZD101	276 0474 916	HZS12B-2	Zener Diode
ZD102	276 0470 923	HZS11A-3	Zener Diode
ZD104	276 0460 917	HZS5C-2	Zener Diode
RESISTORS (not included Carbon Film ±5%, 1/4W Type)			
⚠ R142	241 2376 980	RD14B2E560JNBS	56Ω, 1/4W N.B
⚠ R221,222	244 2051 961	RS14B3A101JS (S)	100Ω, 1W N.B
⚠ R255,256	244 2043 937	RS14B3A100JS (S)	10Ω, 1W N.B
⚠ R261,262	241 2380 950	RD14B2E202JNBS	2KΩ, 1/4W N.B
⚠ R263,264	241 2379 987	RD14B2E102JNBS	1KΩ, 1/4W N.B
⚠ R267,268	244 2050 904	RS14B3A220JS (S)	22Ω, 1W N.B
⚠ R273~280	244 2043 982	RS14B3AR22JS (S)	0.22Ω, 1W N.B
⚠ R285,286	241 2378 920	RD14B2E221JNBS	220Ω, 1/4W N.B
⚠ R287~290	241 2379 958	RD14B2E751JNBS	750Ω, 1/4W N.B
⚠ R291~294	241 2377 976	RD14B2E131JNBS	130Ω, 1/4WN.B
⚠ R303,304	241 2377 905	RD14B2E680JNBS	68Ω, 1/4W N.B
⚠ R315~318	241 2380 963	RD14B2E222JNBS	22KΩ, 1/4W N.B

Ref. No.	Part No.	Part Name	Remarks
⚠ R397	241 2387 940	RD14B2E4R7JNBS	4.7Ω, 1/4W N.B
VR103,104	211 6064 006	V06PB103	10KΩ, semi-fixed resistor
CAPACITORS			
(Ceramic Capacitor)			
C127,128	253 1180 002	CK45B1H681K	680PF/50V D=3
C137,138	253 9030 057	CK45=1E682K	6800PF/25V
C151~155	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C164	253 4538 046	CC45SL1H101J	100PF/50V D=3
C167,168	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C181	253 4538 046	CC45SL1H101J	100PF/50V D=3
C191,192	253 1181 014	CK45F1H223Z	0.022μF/50V D=3
C195,196	253 4538 046	CC45SL1H101J	100PF/50V D=3
C201,202	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C211~214	253 4538 046	CC45SL1H101J	100PF/50V D=3
C217	253 4538 046	CC45SL1H101J	100PF/50V D=3
C231	253 1008 003	CK45B1H472K	4700PF/50V
C234	253 9031 085	CK45=1E562K	5600PF/50V
C249~252	253 4293 006	CC45SL2H101J	100PF/500V
C253~256	253 1180 028	CK45B1H102K	1000PF/50V D=3
C263,264	253 3611 003	CC45SL1H220J	22PF/50V
C265,266	253 4269 001	CC45SL2H100D	10PF/500V
C269,270	253 4538 046	CC45SL1H101J	100PF/50V D=3
C275,276	253 3635 005	CC45SL1H221J	220PF/50V
C277,278	253 1008 003	CK45B1H472K	4700PF/50V
C282,283	253 4538 046	CC45SL1H101J	100PF/50V D=3
C293~296	253 4538 046	CC45SL1H101J	100PF/50V D=3
C299,300	253 3643 000	CC45SL1H471J	470PF/50V
C301~306	253 4538 046	CC45SL1H101J	100PF/50V D=3
C335	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C336	253 9031 085	CK45=1E562K	5600PF/25V
C337	253 1179 097	CK45B1H561K	560PF/50V D=3
C343	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C344	253 3637 003	CC45SL1H271J	270PF/50V
C346	253 9036 006	CK45=1E104Z	0.1μF/25V
C354,355	253 4537 005	CC45SL1H270J	27PF/50V D=3
C361,362	253 1179 026	CK45B1H151K	150PF/50V D=3
(Electrolytic Capacitor)			
C101,102	254 4254 006	CE04W1C100M	10μF/16V
C107,108	254 4254 006	CE04W1C100M	10μF/16V
C109,110	254 4260 074	CE04W1H4R7M	4.7μF/50V
C118	254 4261 015	CE04W1H470M	47μF/50V
C119	254 4256 046	CE04W1E101M	100μF/25V
C121,122	254 4258 002	CE04W1V4R7M	4.7μF/35V
C133~136	254 4321 007	CE04W1V4R7M (LL)	4.7μF/35V (Low Leak)
C139	254 4260 016	CE04W1HR22M	0.22μF/50V
C140	254 4256 033	CE04W1E470M	47μF/25V
C141	254 4321 007	CE04W1V4R7M (LL)	4.7μF/35V (Low Leak)
C142	254 4260 016	CE04W1HR22M	0.22μF/50V
C144	254 4321 007	CE04W1V4R7M (LL)	4.7μF/35V (Low Leak)

Ref. No.	Part No.	Part Name	Remarks
C145	254 4256 033	CE04W1E470M	47μF/25V
C147~150	254 4256 004	CE04W1E100M	10μF/25V
C156	254 3056 014	CE04D1H010MBP	1μF/50V (By Pole)
C157	254 4256 004	CE04W1E100M	10μF/25V
C158,159	254 4254 006	CE04W1C100M	10μF/16V
C160	254 4260 045	CE04W1H010M	1μF/50V
C161,162	254 4254 006	CE04W1C100M	10μF/16V
C163	254 4260 045	CE04W1H010M	1μF/50V
C165,166	254 4260 045	CE04W1H010M	1μF/50V
C169,170	254 4254 006	CE04W1C100M	10μF/16V
C171,172	254 4254 019	CE04W1C220M	22μF/16V
C174	254 4260 045	CE04W1H010M	1μF/50V
C175,176	254 4254 019	CE04W1C220M	22μF/16V
C179,180	254 4254 006	CE04W1C100M	10μF/16V
C185	254 4254 006	CE04W1C100M	10μF/16V
C187~190	254 4260 045	CE04W1H010M	1μF/50V
C193,194	254 4254 006	CE04W1C100M	10μF/16V
C197,198	254 4260 045	CE04W1H010M	1μF/50V
C199,200	254 4254 006	CE04W1C100M	10μF/16V
C203~206	254 4260 045	CE04W1H010M	1μF/50V
C207~210	254 4250 026	CE04W0J101M	100μF/6.3V
C215,216	254 4254 006	CE04W1C100M	10μF/16V
C218,219	254 4260 045	CE04W1H010M	1μF/50V
C220,221	254 4254 006	CE04W1C100M	10μF/16V
C222~224	254 4260 045	CE04W1H010M	1μF/50V
C225	254 4256 046	CE04W1E101M	100μF/25V
C226	254 4260 029	CE04W1HR33M	0.33μF/50V
C227	254 4260 003	CE04W1H0R1M	0.1μF/50V
C228	254 4260 045	CE04W1H010M	1μF/50V
C232	254 4254 019	CE04W1C220M	22μF/16V
C233	254 4252 037	CE04W1A101M	100μF/10V
C239,240	254 4262 001	CE04W1J4R7M	4.7μF/63V
C245,246	254 4262 001	CE04W1J4R7M	4.7μF/63V
C257,258	254 4260 045	CE04W1H010M	1μF/50V
C267,268	254 4254 048	CE04W1C101M	100μF/16V
C271,272	254 4260 045	CE04W1H010M	1μF/50V
C279,280	254 4262 014	CE04W1J100M	10μF/63V
C281	254 4254 006	CE04W1C100M	10μF/16V
C284~286	254 4260 045	CE04W1H010M	1μF/50V
C287,288	254 4254 006	CE04W1C100M	10μF/16V
C289,290	254 4260 045	CE04W1H010M	1μF/50V
C291,292	254 4254 006	CE04W1C100M	10μF/16V
C297,298	254 4260 045	CE04W1H010M	1μF/50V
C307~310	254 4260 045	CE04W1H010M	1μF/50V
C320	254 4260 045	CE04W1H010M	1μF/50V
C322	254 4254 006	CE04W1C100M	10μF/16V
C323	254 4260 074	CE04W1H4R7M	4.7μF/50V
C324	254 4254 006	CE04W1C100M	10μF/16V
C325,326	254 4260 058	CE04W1H2R2M	2.2μF/50V
C327,328	254 4254 006	CE04W1C100M	10μF/16V
C329	254 4258 002	CE04W1V4R7M	4.7μF/35V
C330	254 4260 074	CE04W1H4R7M	4.7μF/50V
C331	254 4258 002	CE04W1V4R7M	4.7μF/35V
C332,333	254 4254 006	CE04W1C100M	10μF/16V
C334	254 4250 026	CE04W0J101M	100μF/6.3V
C339	254 4254 035	CE04W1C470M	47μF/16V
C345	254 4260 045	CE04W1H010M	1μF/50V
C349	254 4254 006	CE04W1C100M	10μF/16V

Ref. No.	Part No.	Part Name	Remarks
C353	254 4260 045	CE04W1H010M	1μF/50V
C358	254 4254 006	CE04W1C100M	10μF/16V
C359	254 4260 045	CE04W1H010M	1μF/50V
C360	254 4254 048	CE04W1C101M	100μF/16V
(Plastic Film Capacitor)			
C103~105	255 1121 025	CQ93M1H103J	0.01μF/50V
C106	255 1120 068	CQ93M1H332J	0.0033μF/50V
C238	255 1121 025	CQ93M1H103J	0.01μF/50V
C241,242	255 1121 067	CQ93M1H223J	0.022μF/50V
C243,244	255 1121 025	CQ93M1H103J	0.01μF/50V
C247,248	255 1121 025	CQ93M1H103J	0.01μF/50V
C259~262	255 1120 042	CQ93M1H222J	0.0022μF/50V
C277,278	255 1073 005	CQ93M1H123K	0.012μF/50V
C321	255 1121 025	CQ93M1H103J	0.01μF/50V
(Metalized Capacitor)			
C120	256 1035 059	CF93A1H474J	0.47μF/50V
C123~126	256 1034 076	CF93A1H104J	0.1μF/50V
C129	256 1035 033	CF93A1H334J	0.33μF/50V
C130	256 1034 092	CF93A1H154J	0.15μF/50V
C131	256 1035 033	CF93A1H334J	0.33μF/50V
C132	256 1034 092	CF93A1H154J	0.15μF/50V
C143	256 1035 017	CF93A1H224J	0.22μF/50V
C146	256 1035 017	CF93A1H224J	0.22μF/50V
C229	256 1034 018	CF93A1H333J	0.033μF/50V
C230	256 1034 005	CF93A1H273J	0.027μF/50V
C338	256 1034 076	CF93A1H104J	0.1μF/50V
C340~342	256 1034 076	CF93A1H104J	0.1μF/50V
C365	256 1034 076	CF93A1H104J	0.1μF/50V

E.U. PARTS				Q'ty
L101,102	235 0068 004	Inductor		2
L103	235 0060 989	Inductor (121)		1
XL101	399 0085 006	Ceramic Vibrator	OSA3.27MG	1
	204 8278 009	Pin Jack (S-GND)		3
OTHER PARTS				
⊙	—	P.W. Board		1
CN5B	203 8268 003	5P EH-SCN Connector Cord		1
CN3M	203 4632 015	3P KR-DA Connector Cord		1
CN6A	204 0265 081	6P KR-DA Connector Cord		1
CN6C	204 0279 019	6P KR-DA Connector Cord (RD)		1
CN8B	204 2244 071	8P KR-DA Connector Cord		1
TP	205 0190 036	3P NH Connector Base		2

4U-1967 POWER, VIDEO UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Q'ty
CN3F,3G, 3K	205 0233 032	3P EH Connector Base		3
CN6B	205 0233 061	6P EH Connector Base		1
CN7A,7E	205 0233 074	7P EH Connector Base		2
CN9A	205 0233 090	9P EH Connector Base		1
CN5G,5F 5E	205 0483 057	5P MQ-ST Connector Base		3
CN6D	205 0483 060	6P MQ-ST Connector Base		1
CN12B	205 0483 028	12P MQ-ST Connector Base		1
CN5E,5D 5F,5G	205 0330 032	5P MQ Connector Base		4
CN6D	205 0330 003	6P MQ Connector Base		1
CN8C,8D	205 0330 029	8P MQ Connector Base		2
	205 0330 016	12P MQ Connector Base		1
CN7G	205 0330 061	7P MQ Connector Base		1
CN7G	205 0483 073	7P MQ-ST Connector Base		1
CN3E	205 0277 030	3P EH Connector Base (PO)		1

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS			
IC601,602	262 0621 003	HD14051BP	IC
IC603	262 0276 005	HD14066BP	IC
IC604	262 0628 006	HD14052BP	IC
IC605	262 0276 005	HD14066BP	IC
IC606	262 1071 005	NJM7806FA	IC
IC607	263 0683 002	NJM7906FA	IC
IC608	262 1109 003	MB88323A-K1	IC
IC609	263 0682 003	NJM2229S	IC
IC610	263 0684 108	HD404019A33S	Microm
IC611	262 0628 006	HD14052BP	IC
IC612	263 0535 008	M51954A	IC
TR501	271 0191 003	2SA1048 (GR)	Transistor
TR502~506	273 0317 003	2SC2458 (BL)	Transistor
TR507	271 0191 003	2SA1048 (GR)	Transistor
TR508,509	273 0317 003	2SC2458 (BL)	Transistor
TR601~604	273 0198 015	2SC1815 (BL)	Transistor
TR607~612	273 0198 015	2SC1815 (BL)	Transistor
TR613,614	275 0048 912	2SK381 (B)/(C)	FET
TR615~618	273 0317 003	2SC2458 (BL)	Transistor
TR619,620	273 0198 015	2SC1815 (BL)	Transistor
TR621,622	271 0102 021	2SA1015 (GR)	Transistor
TR623~630	273 0198 015	2SC1815 (BL)	Transistor
TR633,634	273 0198 015	2SC1815 (BL)	Transistor
TR635,636	273 0317 003	2SC2458 (BL)	Transistor
TR637	269 0025 901	RN1202 (10K-10K)	D. Transistor
TR638,639	273 0253 015	2SC2878 (A/B)	Transistor
TR640,641	273 0317 003	2SC2458 (BL)	Transistor
D501,502	276 0481 925	HZS24-3	Zener Diode
D504,505	276 0432 000	1SS270A	Diode
D506,507	276 0424 005	4D4B42 (LC1)	Bridge Diode
D602,603	276 0432 000	1SS270A	Diode
D605~608	276 0432 000	1SS270A	Diode
D610,611	276 0432 000	1SS270A	Diode
D630,631	276 0432 000	1SS270A	Diode
ZD501,502	276 0465 925	HZS7B-3	Zener Diode
SC501	279 0016 904	SF0R1A42	Thyristor
RESISTORS (not included Carbon Film ±5%, 1/4W Type)			
R501~504	244 2380 905	RD14B2E122JNBS	1.2KΩ, 1/4W N.B
R521,522	244 2052 915	RS14B3A182JS (S)	1.8KΩ, 1W N.B
R839	241 2387 940	RD14B2E4R7JNBS	4.7Ω, 1/4W N.B
RA601	246 2053 017	RK99==473JP5	47KΩX5 (Array)
RA602	246 2044 013	RK99==473JP6	47KΩX6 (Array)
RA603	246 2054 029	RK99==473JP7	47KΩX7 (Array)
RA604	246 2044 013	RK99==473JP6	47KΩX6 (Array)
CAPACITOR			
(Ceramic Capacitor)			
C506	253 1151 002	CK45E2H472P	4700PF/500V
C515	253 1151 002	CK45E2H472P	4700PF/500V
C611,612	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C620,621	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C629,630	253 4537 076	CC45SL1H510J	51PF/50V D=3

Ref. No.	Part No.	Part Name	Remarks
C631	253 4536 093	CC45SL1H240J	24PF/50V D=3
C632	253 1179 042	CK45B1H221K	220PF/50V D=3
C634	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C646	253 9031 001	CK45=1E473K	0.047μF/25V
C647,648	253 4535 052	CC45SL1H050C	5PF/50V D=3
C653,654	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C659,660	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C663	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C665~667	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C668	253 4537 021	CC45SL1H330J	33PF/50V D=3
C669	253 4537 076	CC45SL1H510J	51PF/50V D=3
C670,671	253 4536 048	CC45SL1H150J	15PF/50V D=3
C672	253 1179 013	CK45B1H121K	120PF/50V D=3
C676	253 4539 046	CC45SL1H101J	100PF/50V D=3
C677	253 3638 002	CC45SL1H301J	300PF/50V
C680	253 3643 000	CC45SL1H471J	470PF/50V
C683	253 3631 009	CC45SL1H151J	150PF/50V
C685	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C691,692	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C694	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C698	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C702~704	253 9036 006	CK45=1E104Z	0.1μF/25V
C705,706	253 4537 021	CC45SL1H330J	33PF/50V D=3
C707,708	253 9036 006	CK45=1E104Z	0.1μF/25V
(Electrolytic Capacitor)			
C501	254 4260 090	CE04W1H220M	22μF/50V
C502	254 4250 026	CE04W0J101M	100μF/6.3V
C503	254 4260 087	CE04W1H100M	10μF/50V
C504,505	254 4355 002	CE04W1H682MDL	6800μF/50V
C513,514	254 6155 006	CE68W1J123M (DL)	12000μF/6.3V
C527,528	254 4254 035	CE04W1C470M	47μF/16V
C601~607	254 4252 037	CE04W1A101M	100μF/10V
C609,610	254 4254 035	CE04W1C470M	47μF/16V
C613~615	254 4250 042	CE04W0J331M	330μF/6.3V
C616~619	254 4254 035	CE04W1C470M	47μF/16V
C623,624	254 4254 035	CE04W1C470M	47μF/16V
C625	254 4250 042	CE04W0J331M	330μF/6.3V
C626	254 4254 035	CE04W1C470M	47μF/16V
C633	254 4254 035	CE04W1C470M	47μF/16V
C635~640	254 4250 042	CE04W0J331M	330μF/6.3V
C641	254 4254 035	CE04W1C470M	47μF/16V
C642~644	254 4252 037	CE04W1A101M	100μF/10V
C645	254 4254 035	CE04W1C470M	47μF/16V
C646	254 4254 037	CE04W1A101M	100μF/10V
C649,650	254 4254 035	CE04W1C470M	47μF/16V
C651,652	254 4252 037	CE04W1A101M	100μF/10V
C654~657	254 4254 035	CE04W1C470M	47μF/16V
C661,662	254 4254 035	CE04W1C470M	47μF/16V
C664	254 4252 037	CE04W1A101M	100μF/10V
C673	254 4260 045	CE04W1H010M	1μF/50V
C675	254 4260 074	CE04W1H4R7M	4.7μF/50V
C678	254 4260 045	CE04W1H010M	1μF/50V
C682	254 4260 045	CE04W1H010M	1μF/50V
C686	254 4252 037	CE04W1A101M	100μF/10V
C688	254 4254 064	CE04W1C331M	330μF/16V

Ref. No.	Part No.	Part Name	Remarks
C689	254 4260 029	CE04W1HR33M	0.33μF/50V
C690	254 4252 037	CE04W1A101M	100μF/10V
C695	254 4254 035	CE04W1C470M	47μF/16V
C696	254 4254 006	CE04W1C100M	10μF/16V
C697	254 4254 035	CE04W1C470M	47μF/16V
C701	254 4254 019	CE04W1C220M	22μF/16V
C710,711	254 4260 045	CE04W1H010M	1μF/50V
(Plastic Film Capacitor)			
C511,512	255 1121 025	CQ93M1H103J	0.01μF/50V
C674	255 1121 067	CQ93M1H223J	0.022μF/50V
C679	255 1120 068	CQ93M1H332J	0.0033μF/50V
C684	255 1120 013	CQ93M1H122J	0.0012μF/50V
C687	255 1120 000	CQ93M1H102J	0.001μF/50V
(Metalized Capacitor)			
C681	256 1034 050	CF93A1H683J	0.068μF/50V
C720	256 1034 089	CF93A1H124J	0.12μF/50V
(Other Capacitor)			
C693	259 0007 702	SB CAP==822=C	8200μF/5.5V

E.U. PARTS				Q'ty
RL501,502	214 0129 001	Relay (DH2TV)		2
XL601	399 0086 005	X'tal (7.16MHz)		1
XL602	399 0105 009	Ceramic Vibrator (CSB503FZ)		1
XL603	399 9023 001	Ceramic Vibrator (CST2.00MG)		1
	204 8308 005	3P Pin Jack (C-GND)		1
	204 8342 003	3P Pin Jack (C-GND)	Gold Plating	1
	204 8309 004	4P Pin Jack (C-GND)		2
	205 0577 002	S-Terminal (SW)		3
	205 0577 015	S-Terminal (SW)	Gold Plating	1
	205 0578 001	S-Terminal		3
	205 0472 013	8P Speaker Terminal (EAEK)		1
L601	235 0060 934	Inductor (470)		1
L602	235 0060 989	Inductor (121)		1
L603	235 0060 963	Inductor (150)		1
L604	235 0069 906	Inductor (R22)		1
OTHER PARTS				
◉	—	P.W. Board		1
CN3J	203 4644 016	3P EH Connector Cord		1
CN3K	203 4473 054	5P EH Connector Cord		1
CN3L	203 4457 054	5P EH Connector Cord (BK)	Black	1
CN3B	203 4305 067	3P EH Connector Cord		1

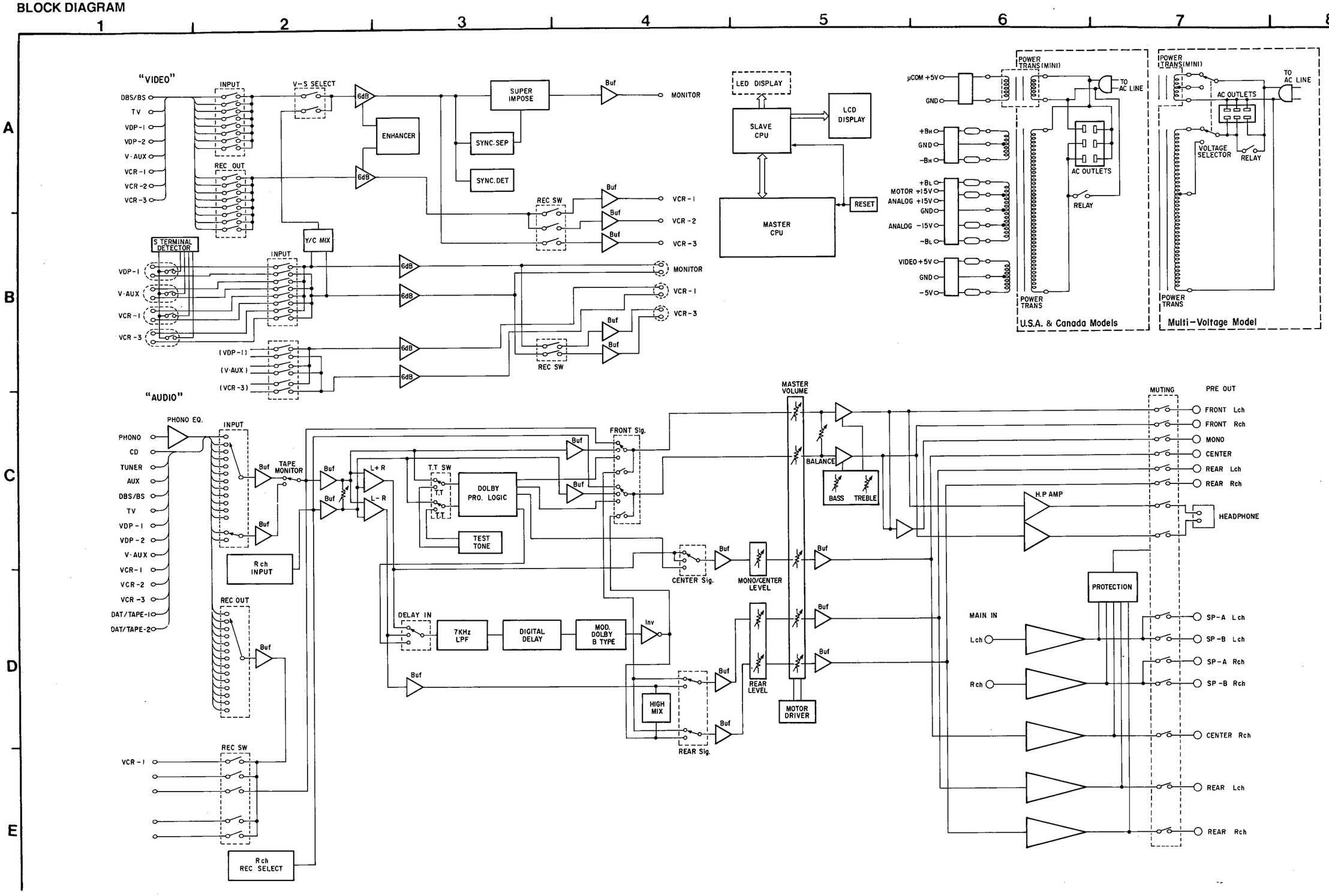
4U-1968 SP. VR UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Q'ty
CN5C	203 8218 079	5P EH Connector Cord		1
CN7D	204 2393 003	7P EH SCN Connector Cord		1
CN5A	203 8259 025	5P KR-DA Connector Cord		1
	417 0388 001	Radiator		1
	473 7005 002	Tapping Screw (S) 3x10	Black	2
3K,3L	205 0185 025	2P Wire Holder		2
3B,3J	205 0185 038	3P Wire Holder		2
5C	205 0185 054	5P Wire Holder		1
3C	205 0233 032	3P EH Connector Base		1
7D	205 0233 074	7P EH Connector Base		1
3M	205 0343 032	3P Connector Base (KR-PH)		1
4B	205 0343 045	4P Connector Base (KR-PH)		1
5A,5D	205 0343 058	5P Connector Base (KR-PH)		1
6A	205 0343 061	6P Connector Base (KR-PH)		1
6C	205 0321 067	6P Connector Base (LED)		1
8B	205 0343 087	8P Connector Base (KR-PH)		1
13A	205 0375 039	13P Connector Base (KR-PH)		1
CN3P	205 0321 038	3P Connector Base (RED)		1
	203 0382 042	1P SIN Connector Ass'y (Gray)	l=100	1
	203 0382 055	1P SIN Connector Ass'y (Black)	l=160	1

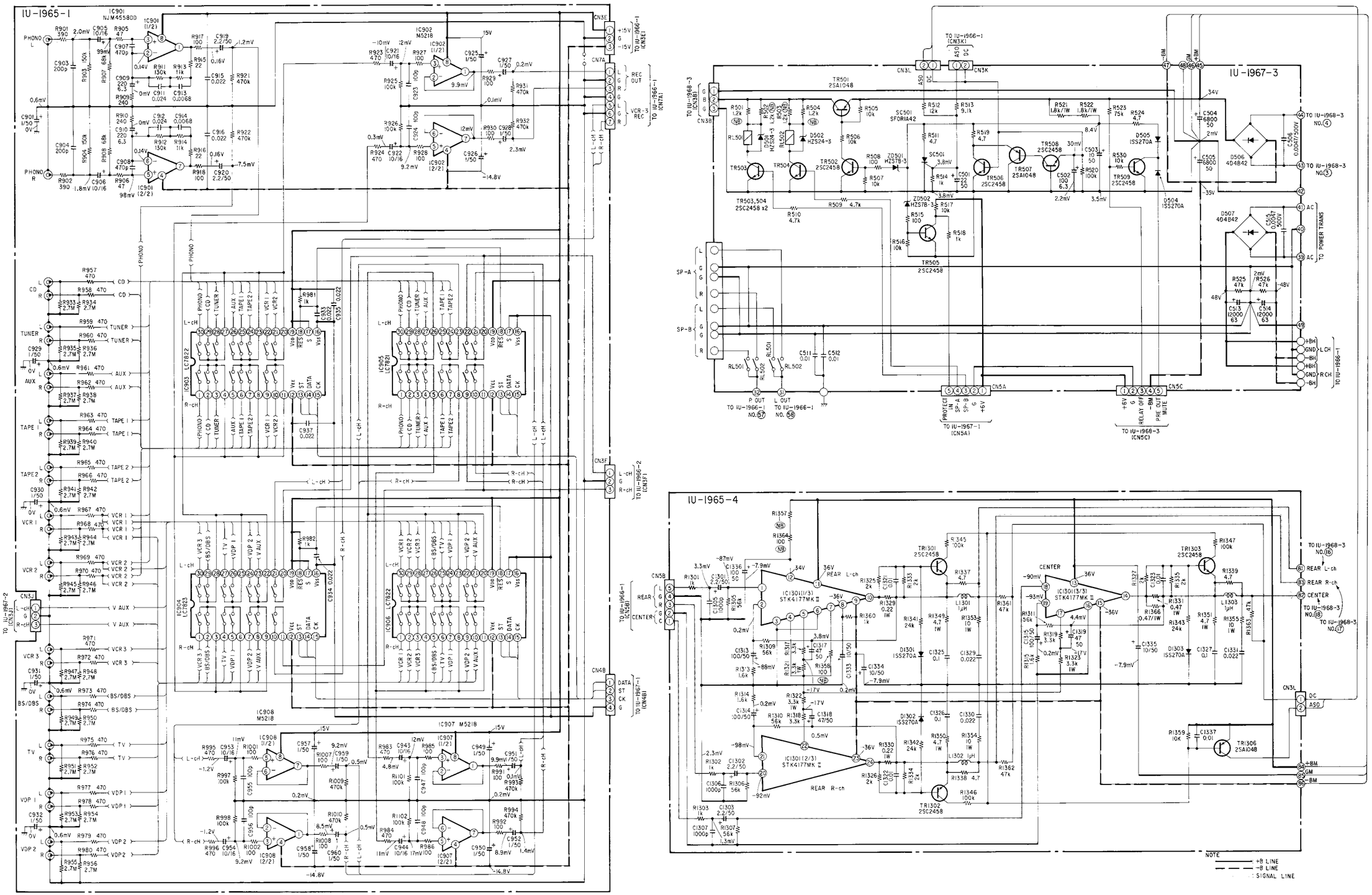
Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS			
IC001	263 0560 002	NJM7815FA	IC
IC002	263 0561 001	NJM7915FA	IC
IC003	262 1071 005	NJM7806FA	IC
IC004	268 0073 905	ICP-N15	IC Protector
IC005	268 0074 904	ICP-N20	IC Protector
IC006~008	268 0073 905	ICP-N15	IC Protector
IC009	263 0553 006	NJM7805FA	IC
IC051	262 0326 007	BA6109	IC
IC052	263 0560 002	NJM7815FA	IC
IC401	265 0030 004	NJM4558D-D	Ope. Amp
TR001	273 0253 015	2SC2878 (A/B)	Transistor
TR002	273 0222 004	2SC2458 (Y/GR)	Transistor
TR003,004	269 0025 901	RN1202 (10K-10K)	D. Transistor
TR005,006	273 0222 004	2SC2458 (Y/GR)	Transistor
D001~006	276 0553 905	1SR35-200A	Diode
D007~009	276 0432 000	1SS270A	Diode
D010,011	276 0481 925	HZS24-3	Zener Diode
D012~015	276 0553 905	1SR35-200A	Diode
D016~019	276 0548 910	DSM1D2	Diode (Type 3)
ZD051	276 0463 901	HZS6C-1	Zener Diode
ZD	276 0456 015	HZS4B-2	Zener Diode
LD001	393 9434 906	SEL1210S	LED
RESISTORS (not included Carbon Film ±5%, 1/4W Type)			
⚠ R005	241 2375 978	RD14B2E200JNBS	20Ω, 1/4W N.B
⚠ R008~011	241 2380 905	RD14B2E122JNBS	1.2kΩ, 1/4W N.B
⚠ R013~016	244 2043 982	RS14B3AR22JS (S)	0.22Ω, 1W N.B
VR051	211 0637 002	V1650V30FA104R	
VR401	211 0633 006	V1604P30F...K	
CAPACITOR			
(Ceramic Capacitor)			
C001	253 1151 002	CK45E2H472P	4700PF/50V
⚠ C004	253 8014 702	CK45F2GAC103MC	0.01μF/400V (AC)
C017~020	253 1181 001	CK45F1H103Z	0 .01μF/50V D=3
C023	253 1151 002	CK45E2H472P	4700PF/500V
C024	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C026	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C030	257 1151 002	CK45E2H472P	4700PF/500V
C051~053	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C055,056	253 1181 001	CK45F1H03Z	0.01μF/50V D=3
C058,059	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C348	253 9031 001	CK45=1E473K	0.047μF/25V
C401	253 1181 001	CK45F1H103Z	0.01μF/50V D=3
C405,406	253 1179 000	CK45B1H101K	100PF/50V D=3
C409,410	253 1179 000	CK45B1H101K	100PF/50V D=3
C427	253 9036 006	CK45=1E104Z	0.1μF/25V
(Electrolytic Capacitor)			
C002	254 3056 001	CE04D1HR47MBP	0.47μF/50V (By Poler)
C003	254 4256 091	CE04W1E222MC	2200μF/25V
C013,014	254 4256 091	CE04W1E222MC	2200μF/25V
C015,016	254 4260 045	CE04W1H010M	1μF/50V

Ref. No.	Part No.	Part Name	Remarks
C021,022	254 4529 014	CE04W1V332M	3300μF/35V
C025	254 4260 045	CE04W1H010M	1μF/50V
C027	254 4254 006	CE04W1C100M	10μF/16V
C054	254 3056 001	CE04D1H010MBP	1μF/50V (By poler)
C057	254 4260 087	CE04W1H100M	10μF/50V
C403,404	254 4254 006	CE04W1C100M	10μF/16V
C407,408	254 4260 074	CE04W1H4R7M	4.7μF/50V
C411,412	254 4260 045	CE04W1H010M	1μF/50V
C417,418	254 4260 045	CE04W1H010M	1μF/50V
C425,426	254 4260 032	CE04W1HR47M	0.47μF/50V
C	254 4254 006	CE04W1C100M	10μF/16V
(Plastic Film Capacitor)			
C413,414	255 1120 000	CQ93M1H102J	0.001μF/50V
C419,420	255 1120 039	CQ93M1H182J	0.0018μF/50V
C421,422	255 1121 038	CQ93M1H123J	0.012μF/50V
(Metalized Capacitor)			
C415,416	256 1034 092	CF93A1H154J	0.15μF/50V
C423,424	256 1034 050	CF93A1H683J	0.068μF/50V
E.U. PARTS			**Q'ty**
RL001	214 0120 000	Relay (TV-8)	1
RL002,003	214 0129 001	Relay (DH2TU)	2
⚠ F001	206 1052 008	Fuse (8A)	1
⚠	203 3946 003	AC Outlet (Polarized)	1
	205 0550 003	4P Terminal	1
	205 0592 003	4P Push Terminal	1
⚠	233 5818 004	Power Trans	mini size 1
	204 8341 004	Head Phone Jack	1
	202 0022 008	Fuse Holder	4
OTHER PARTS			
⊙	—	P.W. Board	1
CN3C	203 4652 008	3P EH Connector Cord	1
CN5D	203 8259 012	5P KR-DA Connector Cord	1
3G,3C	205 0185 038	3P Wire Holder	2
7E	205 0233 074	7P EH Connector Base	1
3B	205 0233 032	3P EH Connector Base	1
5C	205 0233 058	5P EH Connector Base	1
	205 0483 057	5P MQ-ST Connector Base	1
	205 0483 086	8P MQ-ST Connector Base	2
	417 0388 001	Radiator	1
	473 7005 002	Tapping Screw (S) 3x10	3
	417 9010 008	Radiator	1
CN3P	203 4633 027	3P KR-DA Cord (Red)	1
CN6B	204 0228 015	6P EH-SCN Connector Cord	1
CN9A	204 2394 002	9P EH-SCN Connector Cord	1
	203 0340 026	1P Contact Ass'y	1

BLOCK DIAGRAM



SCHEMATIC DIAGRAM (2/4)



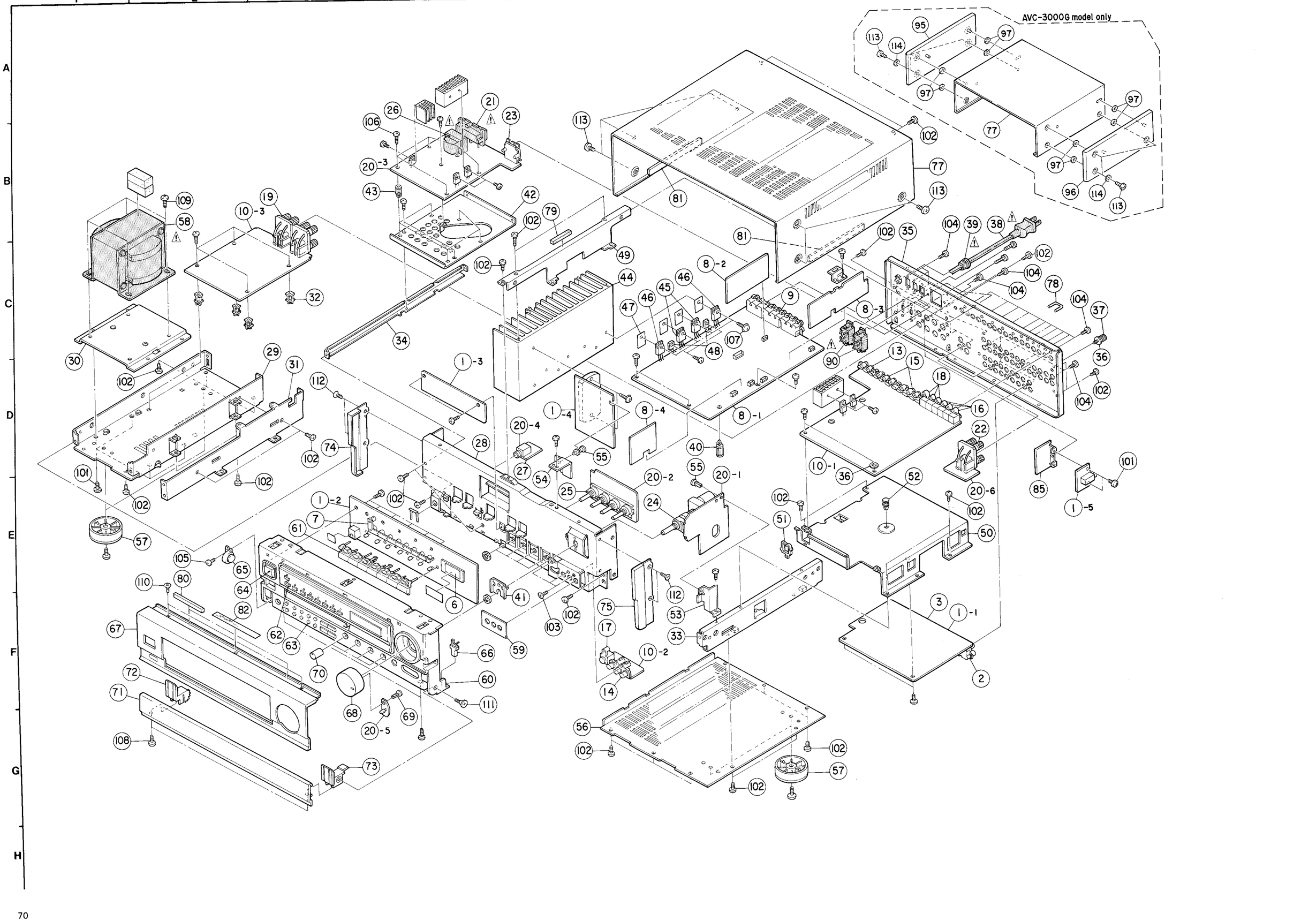
NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

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

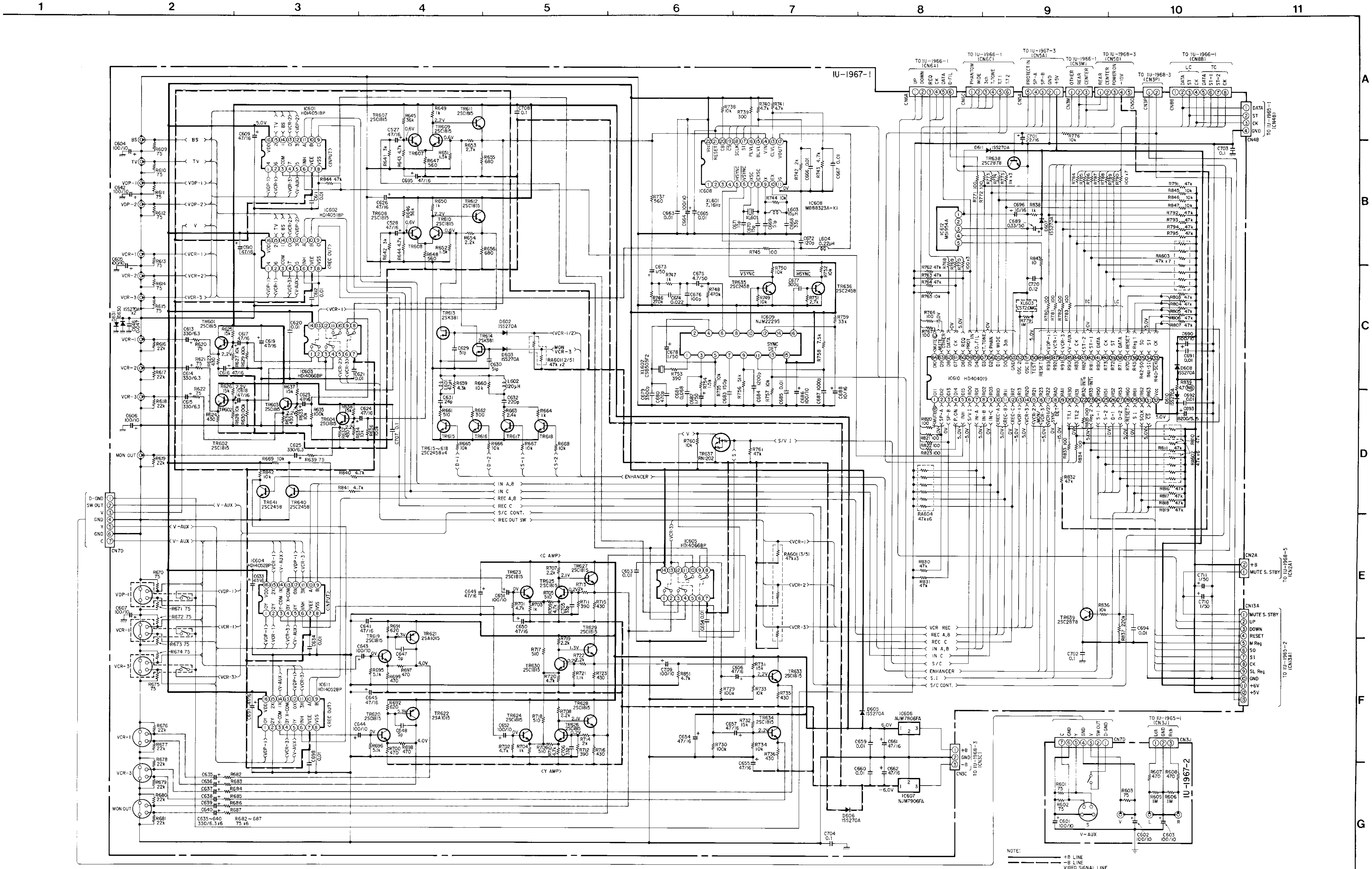
CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

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

EXPLODED VIEW OF CHASSIS AND CABINET



SCHEMATIC DIAGRAM (4/4)



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

CAUTION:
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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.
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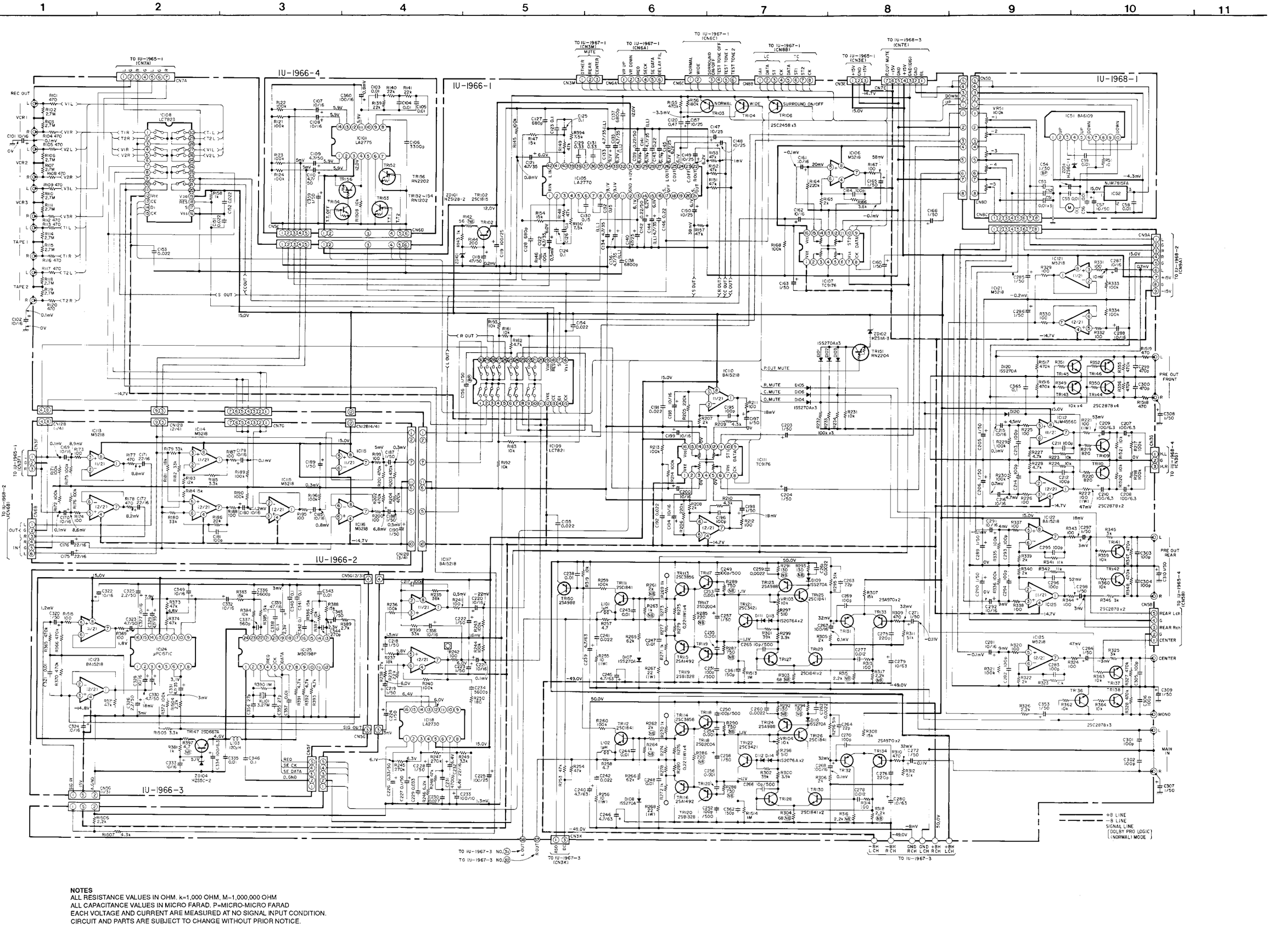
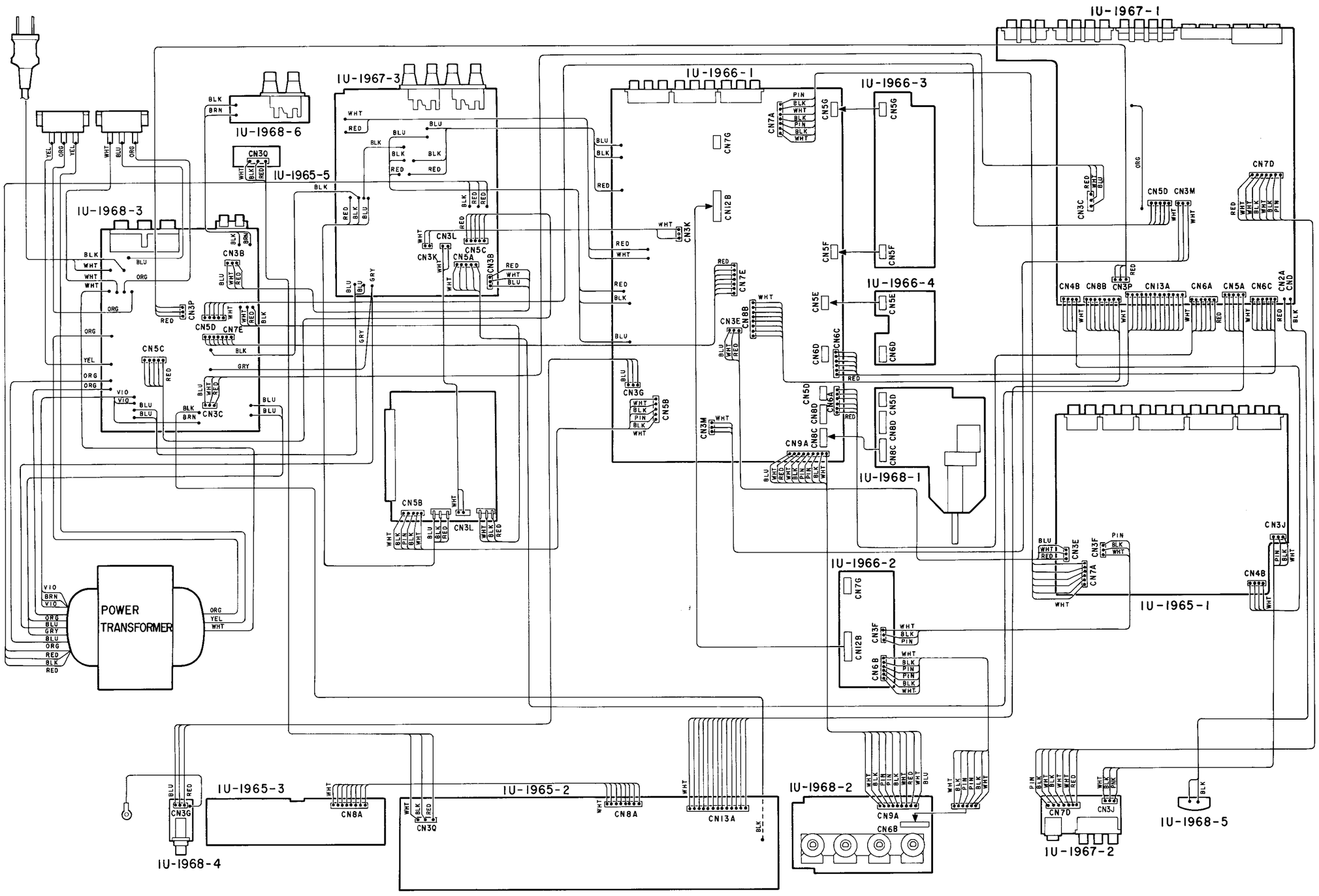
SCHEMATIC DIAGRAM (1/4)



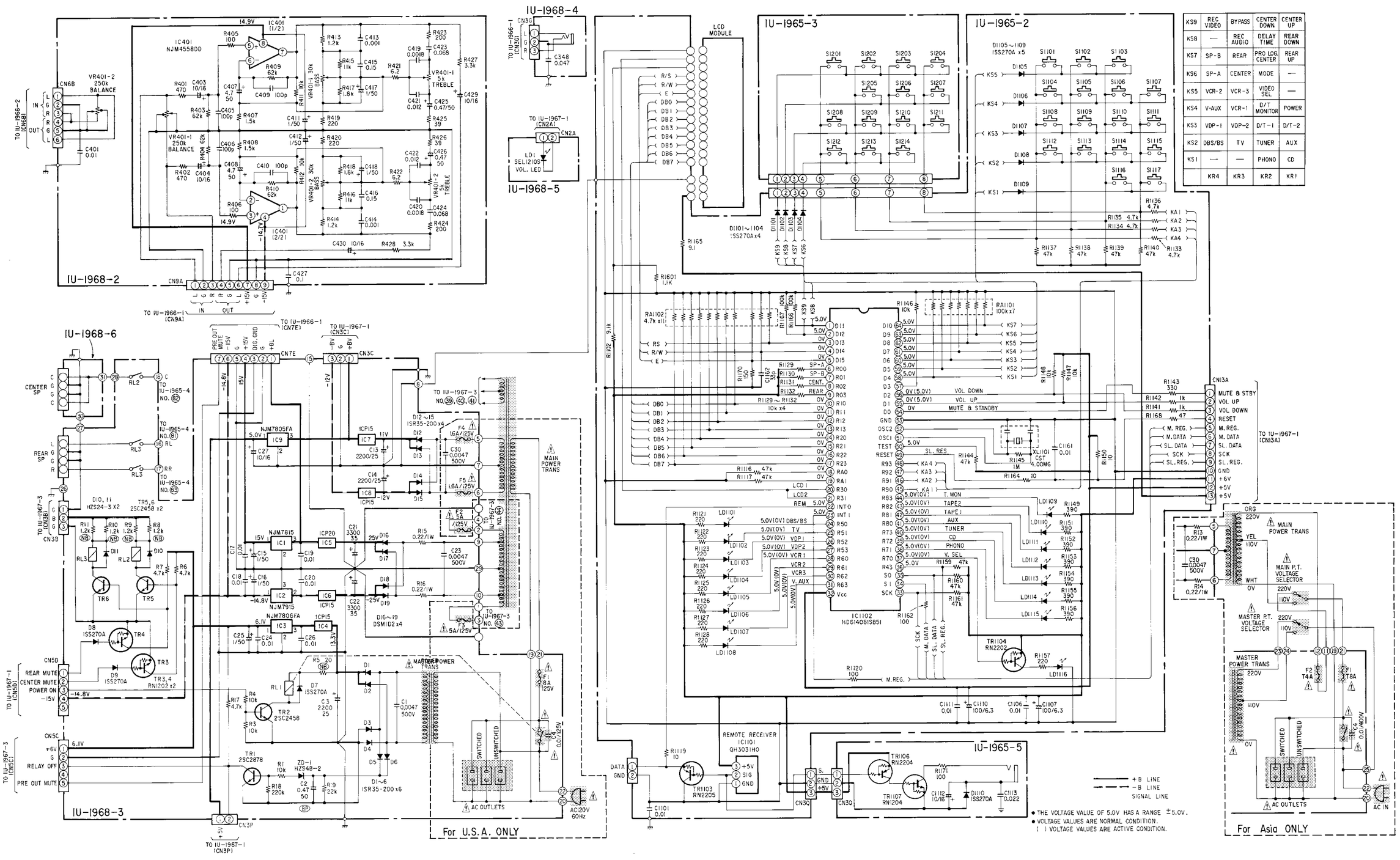
NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WIRING DIAGRAM



Area	Unit No.			
	Input SW Unit	Main Unit	Power, Video Unit	SP, VR Unit
U.S.A. & Canada	1U-1965B	1U-1966	1U-1967	1U-1968B
Multi-Voltage	1U-1965A	1U-1966	1U-1967	1U-1968A

SCHEMATIC DIAGRAM (3/4)



KS9	REC VIDEO	BYPASS	CENTER DOWN	CENTER UP
KS8	—	REC AUDIO	DELAY TIME	REAR DOWN
KS7	SP-B	REAR	PRO LOG. CENTER	REAR UP
KS6	SP-A	CENTER	MODE	—
KS5	VCR-2	VCR-3	VIDEO SEL	—
KS4	V-AUX	VCR-1	D/T MONITOR	POWER
KS3	VDP-1	VDP-2	D/T-1	D/T-2
KS2	DBS/BS	TV	TUNER	AUX
KS1	—	—	PHONO	CD
	KR4	KR3	KR2	KR1

- THE VOLTAGE VALUE OF 5.0V HAS A RANGE ±5.0V.
- VOLTAGE VALUES ARE NORMAL CONDITION.
( ) VOLTAGE VALUES ARE ACTIVE CONDITION.

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.

PARTS LIST OF EXPLODED VIEW (for U.S.A. Black Version)

Ref. No.	Part No.	Part Name	Remarks	Q'ty
⊙ 1	1U-1965A	Input, Switch Unit		1S
1-1	—	Input Unit		
1-2	—	Sub Micom Unit		
1-3	—	Tact Switch Unit		
1-4	—	Rear, Center Amp Unit		
1-5	—	Tape Remote Unit		
2	204 8313 003	4P Pin Jack (S-GND)		2
3	204 8346 009	6P Pin Jack (S-GND)		3
★ 4	205 0590 005	3P Pin Header (1)		1
★ 5	205 0591 004	14P Pin Header (2)		1
6	393 4088 001	LCD Unit		1
7	146 1102 009	LED Holder		1
⊙ 8	1U-1966	Main Unit		1S
8-1	—	Main Unit		
8-2	—	Surround Unit		
8-3	—	Delay Unit		
8-4	—	Test Tone Unit		
9	204 8278 009	6P Pin Jack (S-GND)		3
⊙ 10	1U-1967	Power, Video Unit		1S
10-1	—	Video Unit		
10-2	—	V-AUX Unit		
10-3	—	Power Supply Unit		
★ 11	254 4355 002	CE04W1H682MDL (Chemicon)	6800μF/50V	2
★ 12	254 6155 006	CE68W1J123M (DL) (Chemicon)	1200μF/63V	2
13	204 8308 005	3P Pin Jack (C-GND)		1
14	204 8342 003	3P Pin Jack (C-GND)	Gold Plating	1
15	204 8309 004	4P Pin Jack (C-GND)		2
16	205 0577 002	S-Terminal (SW)	Gold Plating	3
17	205 0577 015	S-Terminal (SW)	Gold Plating	1
18	205 0578 001	S-Terminal		3
19	205 0472 013	8P Speaker Terminal		1
⊙ * 20	Note	SP, VR Unit		1S
20-1	—	Rear, Center Unit		
20-2	—	Master Vol. LED Unit		
20-3	—	Head Phone Unit		
20-4	—	Volume Unit		
20-5	—	Master Volume Unit		
20-6	—	Center Speaker Unit		
⚠ 21	203 3946 003	AC Outlet	Polarized	1
22	205 0550 003	4P Terminal		1
23	205 0592 003	4P Push Terminal		1
24	211 0637 002	V1650V30FA104R	VR051	1
25	211 0633 006	V1604P30F...K	VR401	1
⚠ * 26	Note	Power Trans	Mini Size	
27	204 8341 004	Head Phone Jack		1
⊙ 28	411 0926 203	Front Chassis Ass'y		1
⊙ 29	411 9056 200	Trans Chassis		1
⊙ 30	412 2941 001	Trans Bracket		1
⊙ 31	411 0928 104	Center Chassis		1
32	415 9032 006	P.C.B. Holder (T)		4
⊙ 33	411 9057 403	Side Chassis		1
⊙ 34	412 2942 107	P.W.B. Bracket		1
⊙ * 35	Note	Rear Panel		1
36	477 0018 001	Washer (P-87)		2
37	205 0071 016	Terminal Ass'y	GND	1
⚠ * 38	Note	AC Cord		1
⚠ 39	445 0056 008	Cord Bushing		1
40	412 2814 028	Card Spacer (I=10)		2
⊙ 41	412 2897 003	Volume Bracket		1
⊙ 42	412 2890 107	P.W.B Support		1
43	412 2762 002	P.W.B Holder		5
44	417 0386 003	Power Radiator		1
45	273 0358 004	Transistor 2SC3856(O)/(P)/(Y)	TR113,114	2
46	271 0222 008	Transistor 2SA1492(O)/(P)/(Y)	TR115,116	2
47	415 0234 007	Insulating Sheet		4
48	273 0323 000	Transistor 2SC3421 (O/Y)	TR121,122	2
49	412 2936 107	Radiator Bracket		1
50	411 0929 103	Shield Chassis		1
★ 51	445 0076 004	Wire Clip		1
52	443 9015 002	P.W. Spacer		1
⊙ 53	412 2962 006	Bracket (Main Volume)		1
⊙ 54	412 2963 005	Bracket		1
55	477 0288 006	Push Rivet		2
56	105 9108 305	Bottom Cover		1
57	104 0194 001	Foot Ass'y		4
⚠ * 58	Note	Power Trans		1
* 59	Note	Blind Sheet		1
* 60	Note	Inner Panel Ass'y		1
* 61	Note	Function Knob	Audio	1
* 62	Note	Function Knob	Video	1
* 63	Note	Function Selector Knob		1
* 64	Note	Push Knob (P)		1
65	421 9007 007	Mini Dumper		1
66	435 0113 009	Latch (Y3Y18)		1
* 67	Note	Front Panel Ass'y		1
* 68	Note	Volume Knob Ass'y		1
69	477 0096 007	Push Rivet		1
* 70	Note	Volume Knob (B)		4
* 71	Note	Trap Door		1
* 72	Note	Hinge (L)		1
* 73	Note	Hinge (R)		1
* 74	Note	Side Plate (L)		1
* 75	Note	Side Plate (R)		1
★ 76	445 8004 007	Wire Clamper		15
* 77	Note	Top Cover		1
78	209 0103 009	Short Pin		2
79	461 0539 035	Rubber Sheet		1
80	461 0413 083	Rubber Sheet		2
81	461 0334 007	Rubber Sheet		2
82	122 0183 007	Spacer		1
★ 83	461 0397 015	Spacer Rubber		1
★ 84	143 0568 001	Filter		1
85	412 2463 000	Bracket-B		1
⊙ ★ 86	412 2972 009	Support Bracket		1
★ 87	461 0539 048	Rubber Sheet		3
88	143 0677 002	Filter (LCD)		1
SCREWS				
101	473 7002 018	Tapping Screw (S) 3×8		14
* 102	473 7015 018	Tapping Screw (S) 3×8		38
103	473 7511 004	F. Tapping Screw (P) 3×10		3
104	477 0064 107	Fixing Screw		25
105	473 7501 001	Tapping Screw (P) 3×10		9
106	473 7501 030	Tapping Screw (P) 3×20		5
107	473 8007 038	Cup Screw 3×14		6
108	473 7500 044	Tapping Screw (P) 3×8		2
109	473 7004 003	Tapping Screw (S) 4×8		12
110	473 7009 011	F. Tapping Screw (S) 3×10		2
111	473 7514 001	Special Screw		1
112	473 7003 004	F. Tapping Screw (S) 3×8		4
* 113	Note	Swelling Screw		6
114	477 0224 028	SP Washer		1
115				
116				
PACKING & ACCESSORIES (not included EXPLODED VIEW)				
⊙ 201	GEN 0830 -M	Envelope Sub Ass'y		1S
201-1	505 8006 019	Envelope		1
201-2	511 1947 109	Inst. Manual		1
201-3	129 0129 004	Plate		1
201-4	499 0149 006	Remote Controller	RC-217	1
201-5	—	Battery		2
201-6	Note			
⊙ 202	504 9102 029	Stylen Paper		1
⊙ 203	505 9102 019	Poly Cover		1
⊙ 204	504 0092 060	Stylen Paper	for AC Cord	1
⊙ 205	503 0847 102	Cushion Ass'y		1
⊙ * 206	Note	Carton Case		1
207	513 1389 006	Control Card Base		1
208	513 1349 004	Thermal Carbon Film		1

ADDENDUM LIST

Ref. No.	Part Name & Descriptions	Part No.			
		Black U.S.A. model	Gold U.S.A model	Black Multi-Voltage	Gold Multi-Voltage
⊙ 20	SP. VR Unit	1U-1968B	1U-1968B	1U-1968A	1U-1968A
20-1	Master Volume Unit	—	—	—	—
20-2	Volume Unit	—	—	—	—
20-3	Rear Speaker Unit	—	—	—	—
20-4	Headphone Unit	—	—	—	—
20-5	Master Volume LED Unit	—	—	—	—
20-6	Center Speaker Unit	—	—	—	—
⚠ 26	Power Trans (Mini)	233 5818 004	233 5818 004	233 5793 006	233 5793 006
⚠ 35	Rear Panel	105 0874 243	105	105 0874 227	105 0874 230
⚠ 38	AC Cord	206 2060 002	206 2060 002	206 2083 005	208 2083 005
58	Power Trans.	233 5817 005	233 5817 005	233 5792 007	233 5792 007
59	Blind Sheet	146 9045 100	146 1117 007	146 9045 100	146 1117 007
60	Inner Panel Ass'y	146 1098 304	146 1098 317	146 1098 304	146 1098 317
61	Function Knob (Audio)	113 1289 100	113 1289 113	113 1289 100	113 1289 113
62	Function Knob (Video)	113 1290 102	113 1290 115	113 1290 102	113 1290 115
63	Function Selector Knob	113 1291 101	113 1291 114	113 1129 101	113 1291 114
64	Push Knob (P)	113 1292 100	113 1291 113	113 1292 100	113 1292 113
67	Front Panel Ass'y	144 1939 108	144 1939 124	144 1940 100	144 1939 124
68	Volume Knob Ass'y	112 0569 103	112 0569 132	112 0569 103	112 0569 132
70	Volume Knob (B)	112 0555 007 (4)	112 0555 023 (4)	112 0555 007 (4)	112 0555 023 (4)
71	Trap Door	144 1941 109	144 1941 125	144 1941 109	144 1941 125
72	Hinge (L)	401 0165 106	401 0165 119	401 0165 106	401 0165 119
73	Hinge (R)	401 0166 202	401 0165 215	401 0166 202	401 0165 215
74	Side Plate (L)	146 1100 302	146 1100 315	146 1100 302	146 1100 315
75	Side Plate (R)	146 1101 301	146 1101 314	146 1101 301	146 1101 314
77	Top Cover	102 0406 201	102 0406 227	102 0406 201	102 0406 227
⚠ 90	Voltage Sel. SW	—	—	212 1020 006 (2)	212 1020 006 (2)
★ 91	Preset Label	—	—	515 8030 008	515 8030 008
92					
93					
94					
95	Wood Board (L)	—	101 2149 013	—	101 2149 013
96	Wood Board (R)	—	101 2143 019	—	101 2143 019
97	Felt Sheet	—	124 0032 015 (8)	—	124 0032 015 (8)
SCREWS					
102	Tapping Screw (S) 3×8 Black	473 7015 018 (42)	473 7015 018 (38)	473 7015 018 (42)	473 7015 018 (42)
113	Tapping Screw (S) 4×20 Black	—	473 7007 039 (6)	—	473 7007 039 (6)
114	Washer ϕ5	—	475 1006 016 (6)	—	475 1066 016 (6)
PACKING & ACCESSORIES (not included EXPLODED VIEW)					
201-6	DAI Warranty Home	515 0418 208	515 0418 208	—	—
206	Carton Case	501 1399 022	501 1399	501 1399 022	501 1399 035
209	Color Label (Gold)	—	513 9111 001 (2)	—	513 9111 001 (2)

NOTE FOR PARTS LIST

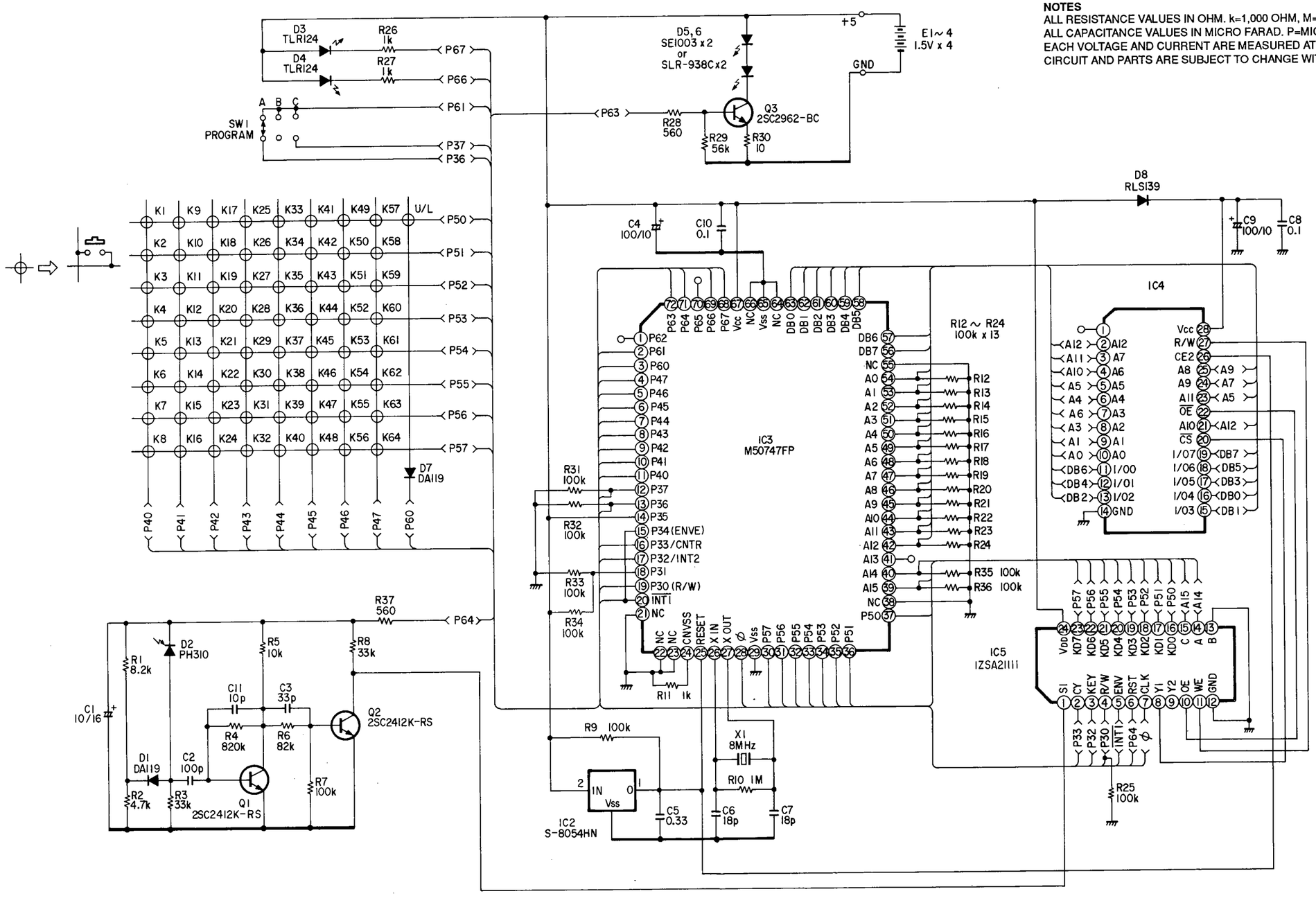
- Part indicated with the mark " ⊙ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can 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 CONTROLLER SCHEMATIC DIAGRAM

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.



DENON

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