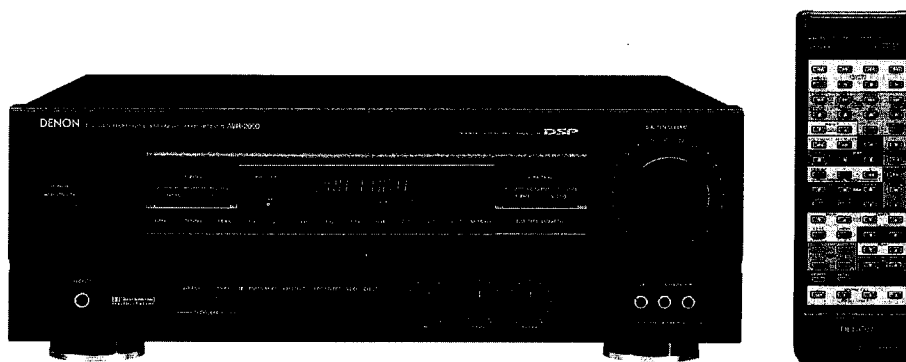


371

DENON

AV Surround Amplifier

SERVICE MANUAL MODEL AVC-3030 AV SURROUND AMPLIFIER



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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

• Audio Section

(Power amplifier)

Rated output:

(All properties shown are only for the power amplifier stage.)

MAIN (main 2ch driven)

110 W + 110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)

CENTER (center 1ch driven)

110 W (8 ohms, 20 Hz – 20 kHz with 0.03% THD)

REAR (rear 2ch driven)

35 W + 35 W (8 ohms, 1 kHz with 0.05% THD)

Frequency response:

5 Hz to 50 kHz (Main in – speaker out)

Rated input level/impedance:

1 V/47 k ohms (Main in – speaker out)

Signal-to-noise ratio:

120 dB (Main in – speaker out)

Output terminals:

Main: A or B 6 to 16 ohms

A + B 12 to 16 ohms

Center: 6 to 16 ohms

Rear: 6 to 16 ohms

(Pre-amplifier)

Line input (Each line input – FRONT PRE OUT)

Input sensitivity/impedance: 150 mV/47 k ohms PHONO (MM): 2.5 mV/47 kohms, CD DIRECT: 150 mV/33 kohms

Frequency response:

5 Hz to 100 kHz: ± 3 dB

5 Hz to 150 kHz: ± 3 dB (CD DIRECT)

Tone control range:

BASS: ± 10 dB at 100 Hz

TREBLE: ± 10 dB at 10 kHz

Signal-to-noise ratio

92 dB

(FRONT PRE OUT):

95 dB (CD DIRECT)

Distortion factor:

0.01% 1 kHz 1 V (BYPASS mode)

0.003% 1 kHz 3 V (CD DIRECT)

Rated output/Maximum output:

1 V/8 V (common for FRONT, CENTER, REAR, MONO, each PRE OUT)

Maximum headphone output:

284 mW (8 ohms)

Phono equalizer (PHONO input – REC OUT)

RIAA deviation:

± 1 dB (20 Hz to 20 kHz)

Signal-to-noise ratio:

76 dB (A weighting, with 5 mV input)

Rated output/Maximum output:

150 mV/8 V

Distortion factor:

0.03% (1 kHz, 3 V)

• Video Section

Standard video jacks

Input and output level/impedance: 1 Vp-p/75 ohms

Frequency response:

1 Hz to 10 MHz $\pm 0, -3$ dB

S-video output jacks

Input and output level/impedance: Y (brightness) signal: 1 Vp-p/75 ohms

C (color) signal: 0.286 Vp-p/75 ohms

Frequency response:

1 Hz to 11 MHz $\pm 0, -3$ dB

• General

Power supply:

120 V AC, 60 Hz

Power consumption:

5.5 A

Maximum external dimensions:

434 (W) \times 184 (H) \times 421 (D) mm (17-3/32" \times 7-1/4" \times 16-37/64")

Weight:

15.0 kg (33 lbs 2 oz)

• Remote control unit (RC-162):

System remote control with learning function

Total buttons: 62

DENON system code

DAT: 8 buttons

CD player: 8 buttons

Cassette deck: 8 buttons

Tuner: 2 buttons

VDP: 8 buttons

AVC-3030 fixed codes: 47 buttons

Learning buttons

System call buttons: 3 (maximum of 10 codes per button)

Program – AMP: 8 buttons

– AV: 58 buttons


Maximum total: 35 codes

Batteries: R6P/AA Type (two batteries)

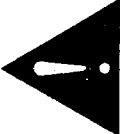
External dimensions: 70 (W) \times 215 (H) \times 18 (D) mm (2-3/4" \times 8-15/32" \times 45/64")

Weight: 170 g (Approx. 6 oz) (including batteries)

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



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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

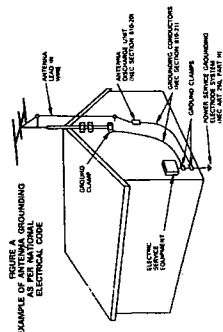
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

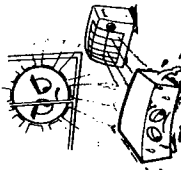


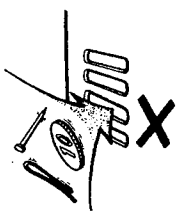

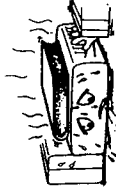
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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. Accessories should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. An appliance and cart should not be used on a combination of uneven surfaces may cause the combination to overturn.
10. Ventilation - Slots and openings in the cabinet are provided for proper ventilation of the video product and to protect it from overheating. These openings should never 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 built-in installation such as a fireplace or heater. Do not place a built-in installation such as a fireplace or heater over the video product. If ventilation is provided or the manufacturer's instructions have been adhered to.
11. 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.
12. Grounding or Polarization - This video product is equipped with a three-pronged grounding-type plug (a plug having one blade wider than the other two). This safety feature will ensure that 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.
13. 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.
14. Outdoor Antenna Grounding - If an outside antenna or cable system is grounded to the video product, be sure the antenna or cable system is grounded in accordance with Part 1 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
15. Lightning - For added protection for this video product, consider installing surge protectors to protect the video product from damage during a lightning storm, or when it is left unattended and unused for long periods of time, unplugging it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and powerline 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 lines, or where it can fall into such power lines or circuits. When installing, maintain a safe distance from power lines. Should contact with power lines or other electric light or power lines occur, they 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, as they may touch dangerous internal components or short-out parts, causing 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 you may expose yourself to dangerous voltage levels 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. Adjustments or repairs should be 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.

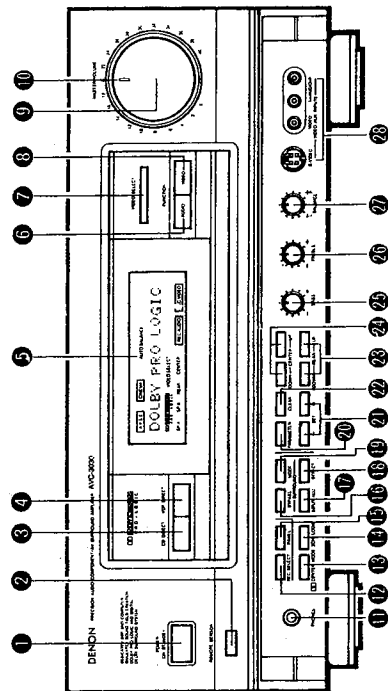


NOTE ON USE

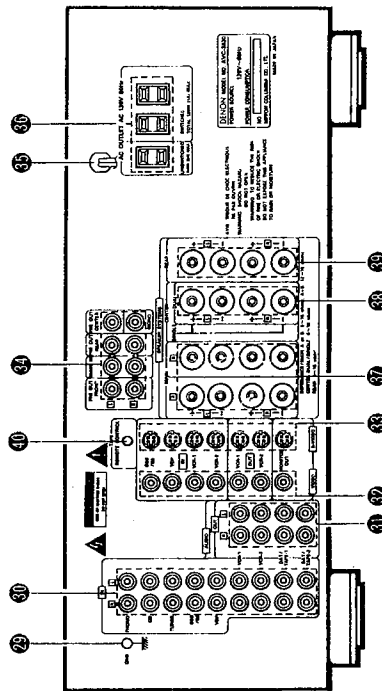
 <p>Be careful of high temperatures</p> <ul style="list-style-type: none"> Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance. <p>Caution on rack/cabinet installation</p> <ul style="list-style-type: none"> Avoid installing the set in a closed-type rack. When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation. 	 <p>Caution on humidity, water, and dust</p> <ul style="list-style-type: none"> Do not place the set in a location where there is high humidity or a lot of dust. Flower vases or other items containing water should not be placed on top of the set. 	 <p>Do not open the case</p> <ul style="list-style-type: none"> Opening the top cover or the bottom plate of the case and inserting your hand is dangerous. Do not open the case. If some trouble arises with the performance of the set, remove the power plug soon and contact the store where the set was purchased or a nearby dealer.
 <p>Do not allow foreign matter into the equipment</p> <ul style="list-style-type: none"> Be especially careful of needles, hair pins, and coins getting into the set. 	 <p>Care with the power cord</p> <ul style="list-style-type: none"> When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it. 	 <p>Do not block the ventilation holes of the set</p> <ul style="list-style-type: none"> Blocking of the ventilation holes will lead to damage of the set. The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

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

Front panel (1 ~ 28)



Rear panel (29 ~ 40)



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

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• Part names and functions of the remote control unit	23~25	• Dolby Pro Logic Surround	38, 39
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Check that the following items are included in the package in addition to the main unit:

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

BEFORE USING

Read the following cautions carefully before using the amplifier:

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

NOTICE

The DENON AVC-3030 is equipped with sophisticated heat detection circuitry to protect the unit from excessive heat. This protection circuit may be activated when the unit is operating at continuous high power conditions and/or inadequate ventilation.

When activated all signal outputs are muted and "PROTECTION!!" is indicated on the display.

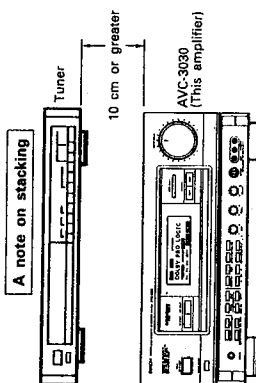
If protection is activated, switch off unit and allow unit to cool, this action will reset protection device. After cool down, turn on unit, it will operate normally.

Note: If unit does not receive adequate air circulation, move to location that will allow proper cooling.

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.



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.

HANDLING PRECAUTIONS

- **Switching the input function when the input jacks are unconnected**
Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.
- **Playback with Dolby Pro Logic**
The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby surround. A different surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode should be used. Other modes will not provide a suitable effect.
- **Muting of the PRE OUT jacks**
An electronic muting circuit has been connected to the PRE OUT jacks. This circuit greatly attenuates the output signal for approximately 6 seconds after the power has been switched on. Raising the volume during this operation will result in an extremely large output once the muting has ended, so volume adjustments should be made only after the completion of muting.
- **Rear output level while in the surround mode**
The rear level will seem small for sources other than Dolby surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back such software with a surround mode, the mode should be set to something other than Dolby Pro Logic surround. The rear output level may seem small for software having a small rear signal, even Dolby surround sources.
- **Opening and closing the door**
This amplifier is equipped with a door on the front panel. Press the "PUSH OPEN" portion printed at the upper right edge of the door to release and open the door. Likewise, to close the door, press in the same manner until a click sound is heard.

NOTE:

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

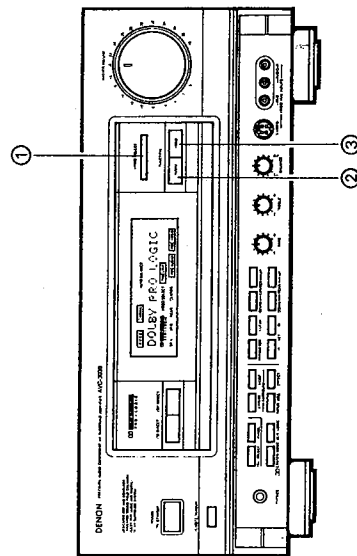
→ Continued

4 INITIALIZATION OF THE MICROPROCESSOR

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

- 1 Switch off the unit and remove the AC power cord from the wall outlet.
- 2 Hold the following 3 buttons of the main unit at the same time (as illustrated in the diagram below, ① VIDEO SELECT button, ② AUDIO FUNCTION button, and ③ VIDEO FUNCTION button) plug the power cord into the outlet.

- 3 Check that the entire MFD display is flashing with an interval of about 1 second, and release your fingers from the 3 buttons.
 - 4 Switch on the unit and the microprocessor will be initialized. The input function is set to tuner with the bypass mode automatically.
- NOTE:**
- When the unit does not show the result of above 3 and 4, repeat the procedure from 1 again.
 - When the microprocessor is initialized, all the previous setting of the unit is released and is set to the shipping condition from the manufacturer.



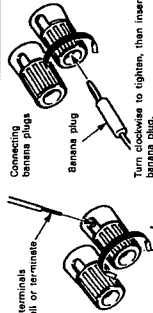
5 CONNECTIONS

Speaker System Connections

- This amplifier can accommodate connections of a total of eight speakers including two sets of front main amplifier speakers (A and B), one set of rear speakers, and one or two center speakers.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (⊕ with ⊕, ⊖ with ⊖). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.

- **Speaker Impedance**
- When speaker systems A and B are used separately, speakers with an impedance of from 6 to 16 ohms can be connected.
- Be careful when using two pairs of front speakers (A + B) at the same time, since use of speakers with an impedance outside the range of 12 to 16 ohms will lead to damage.
- Speakers with an impedance of 6 to 12 ohms can be connected for use as center and rear speakers.
- The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.

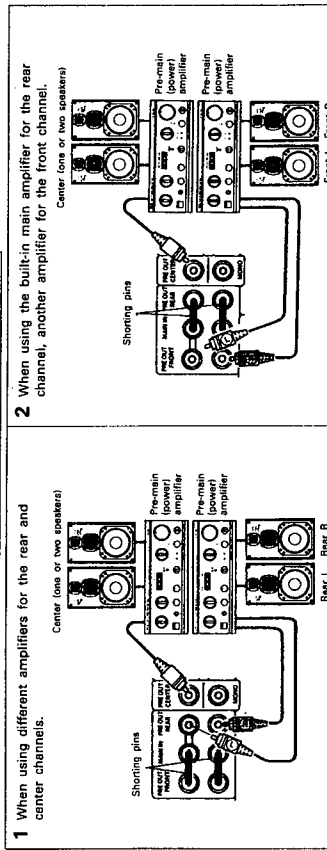
- 1 Peel off the insulation from the tip of the cord.
- 2 Twist the conductors.
- 3 Turn the speaker terminal counterclockwise to loosen it.
- 4 Insert the exposed portion of wire completely and turn the terminal clockwise to tighten it.



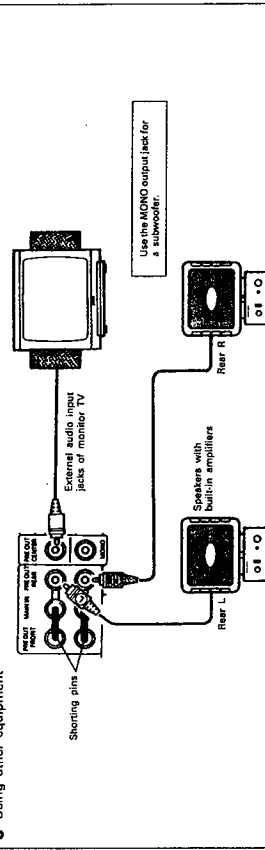
Speaker connections using the PRE OUT and MAIN IN jacks

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

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



3 Using other equipment



Audio Section

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left to left, right to right).
- Insert the plug correctly. 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.

→ Continued

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

Connection jacks for subwoofers with built-in amplifier (super woofer, etc).

PRE OUT and MAIN IN jacks

See page 9.

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

Connecting a CD player

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

Connecting a tuner

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

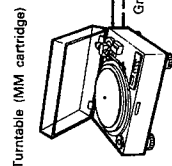
DAT (for recording and playback)

Connecting a DAT (Digital Audio Tape Recorder)

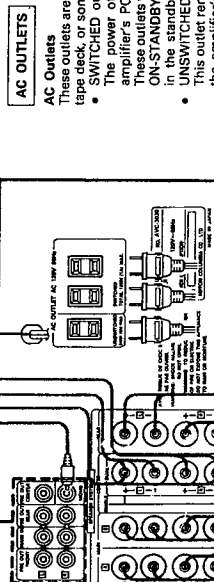
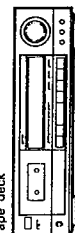
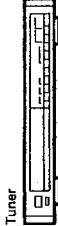
Connections for recording: Connect the DAT's analog recording input jacks (LINE IN or REC) to the amplifier's tape recording (OUTPUT) jacks using pin plug cords.
Connections for playback: Connect the DAT's analog playback output jacks (LINE OUT or PB) to the amplifier's tape playback (INPUT) jacks using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

Connecting tape decks

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



ANALOG OUTPUT

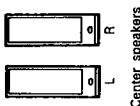


AC OUTLETS

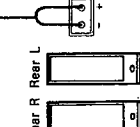
These outlets are convenient for plugging in a TV tuner, turntable, tape deck, or some other component connected to the amplifier.

- SWITCHED outlets (120 W (1 A) total capacity)
The power of these outlets is switched on and off by the amplifier's POWER switch. These outlets will also be switched on when the power is set to ON-STANDBY mode, the remote control. When the amplifier is in the standby mode, the outlets will be switched off.
- UNSWITCHED outlet (240 W (2 A) capacity)
This outlet remains on at all times, regardless of the setting of the amplifier's POWER switch.

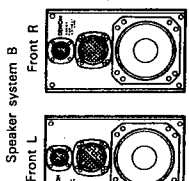
POWER OUTLET
AC 120 V, 60 Hz



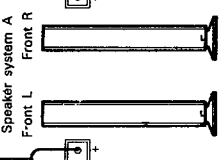
Center speakers



Rear speaker system (surround)



Speaker system B



Speaker system A

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.

Precautions when connecting speakers

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

Video Section

Connecting a BS tuner

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

Connecting a video disc player (VDP)

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

Connecting a video deck (VCR-1)

- There are two sets of VCR jacks, allowing connection of two video decks for simultaneous recording and video copying.
- Connect the VCR S-output jack to the amplifier's [S-VIDEO] in jack using a S-jack connection cord.
- Connect the VCR video output jack to the amplifier's [VIDEO] (yellow) VCR-1 IN jack and the VCR video input jack to the amplifier's [VIDEO] (yellow) VCR-1 OUT jack using 75-ohm video coaxial cable pin plug cords.

BS tuner

Audio output

S-output Video output

Precaution when using S-jacks

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

A note on the S input jacks

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

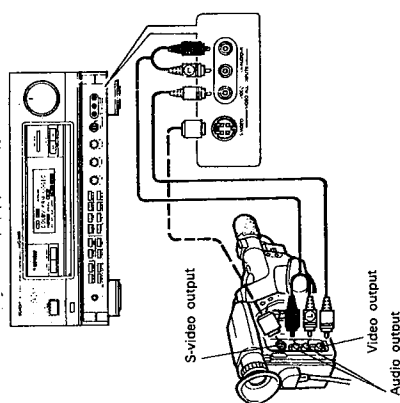
Connecting cam coder (V-AUX)

Connections for video input and output:

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

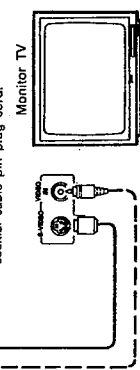
Connecting the audio input and output jacks

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



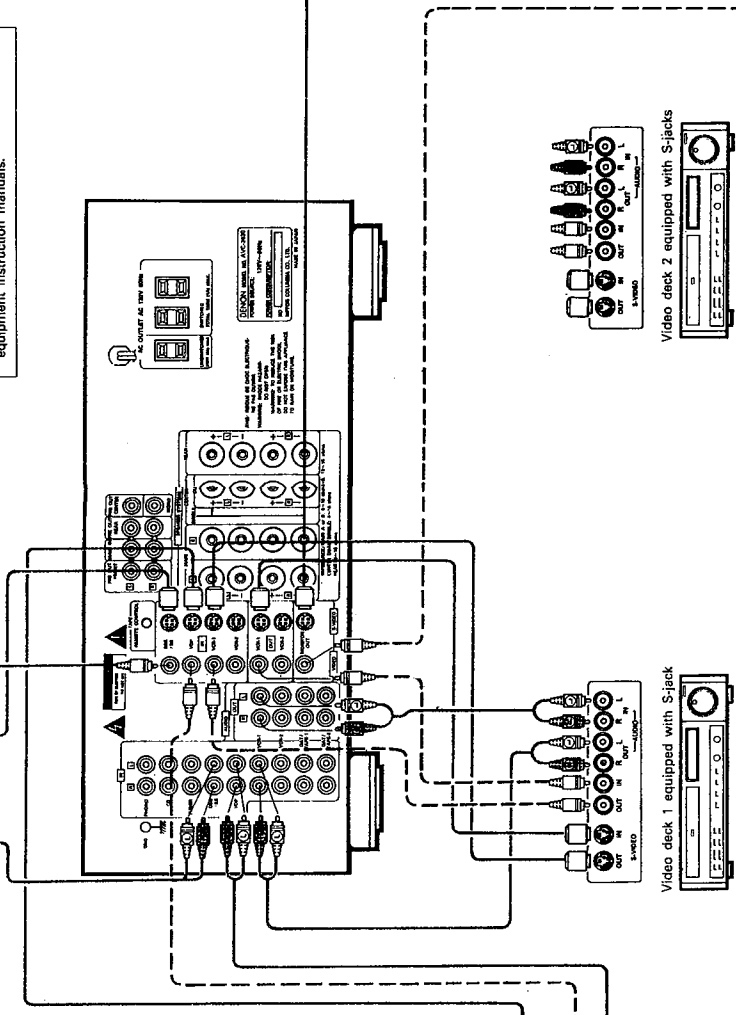
Connecting a monitor TV

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



Connecting the S-jacks

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



Video deck 1 equipped with S-jack

Video deck 2 equipped with S-jacks

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

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

6 PART NAMES AND FUNCTIONS

(Refer to the figures on page 5.)

1 POWER switch

• ON

When this switch is pressed once, the power turns on and the MASTER VOLUME LED 10 flashes. (The muting circuit is activated while "MUTING" is flashing to prevent noise when the POWER switch is operated.) After several seconds, the LED stops flashing, remaining lit and the muting circuit turns off. The set is now in the normal operating mode.

• STANDBY

When the POWER switch is pressed once again, the power turns off and the standby mode is set. The MASTER VOLUME LED 10 remains lit. In addition, when the power turns off, the power supply from the SWITCHED AC outlets on the rear panel also turns off.

2 REMOTE SENSOR

This is where the signals from the wireless remote control unit are received. Point the remote control unit (RC-162) at this sensor when operating it.

3 CD DIRECT button

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

※ Cancelling the CD direct mode

When in the CD direct mode, either press the CD DIRECT button once again, or press the AUDIO FUNCTION selector button 6 or VIDEO FUNCTION selector button 5 or BYPASS button 3 or SURROUND MODE selector button 4 to cancel the CD direct mode.

4 VDP DIRECT button

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

※ Cancelling the VDP direct mode

When in the VDP direct mode, either press the VDP DIRECT button once again, or press the VIDEO FUNCTION selector button 7 or AUDIO FUNCTION selector button 5 or SURROUND MODE selector button 4 or BYPASS button 3 to cancel the VDP direct mode.

NOTE:

When the CD or VDP DIRECT button 3 or 4 is selected, the output of signals to the audio and video output jacks is automatically prohibited, so the REC SELECT (independent audio/video recording) and VIDEO SELECT (independent video signal selector) buttons do not work. Also, if the REC SELECT button 1 is selected, the CD and VDP DIRECT buttons 3 and 4 will not function.

5 MFD (multi-function fluorescent display)

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

Normally the surround mode is displayed. If another button is pressed, a display pertaining to that button is shown for approximately 5 seconds (this time differs according to the display), after which the surround mode is once again displayed. Refer to pages 18 to 21 for details on the MFD displays.

6 AUDIO FUNCTION selector button

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

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

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

7 VIDEO SELECT (independent video signal selector) button

This button is used to select the video signal independently of the audio signal. When pressed once, the video selector function turns on. When the button is held in, the video input signal changes in the order shown below. Release the button when the desired video input signal is displayed on the MFD or on the monitor screen. After this is done, the video signal will not change even if the AUDIO FUNCTION selector button 6 is pressed and the audio input is changed.

To cancel the independent video signal selection mode, either press the VIDEO SELECT button again, or press the VIDEO FUNCTION selector button 8.

DBS/BS → VDP → VCR-1 → VCR-2 → V.AUX.

8 VIDEO FUNCTION selector button

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

DBS/BS → VDP → VCR-1 → VCR-2 → V.AUX.

9 MASTER VOLUME control

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

10 MASTER VOLUME LED

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

11 PHONES jack

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

12 REC SELECT (independent recording output selector) button

This button makes it possible to select the audio or video recording mode independently of the mode selected with the FUNCTION selector buttons. It selects the audio recording signals output to the DAT/TAPE-1, DAT/TAPE-2, VCR-1 and VCR-2 audio output jacks, and the video (and audio) recording signals output to the VCR-1 and VCR-2 output jacks. For the audio recording output, normally the signal input selected with the FUNCTION selector buttons is output to the recording output side, but when this button is used, signals from input jacks other than the ones selected with the FUNCTION selector buttons can be selected.

In addition, for the video (and audio) recording output, normally the video (and audio) signals selected with the VIDEO FUNCTION selector button 8 are output to the recording output side, but when this button is used, input signals other than the ones selected with the VIDEO FUNCTION selector button can be selected.

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

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

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

If the CD DIRECT or the VDP DIRECT button is selected, the audio and video recording output is automatically prohibited, so it is advisable to use the REC SELECT button 12 to prevent accidentally interrupting the recording.

13 CENTER MODE selector button

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

① NORMAL → ② PHANTOM → ③ WIDE

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

① NORMAL → ② WIDE

* In the WIDE SCREEN and LIVE modes, the center mode only changes when the adaptive matrix is on.

* If this button is pressed in a mode other than Dolby Pro Logic, live, wide screen or CD DIRECT, VDP DIRECT, the Dolby Pro Logic mode is set automatically.

For details, refer to pages 38 and 39.

- 13. 3CH. LOGIC**
(three-channel logic) button
Use this button only function when in the Dolby Pro Logic mode. When pressed again, the three-channel logic mode turns off and the normal Pro Logic mode is set.
The 3CH. LOGIC key does not function when in the Dolby Pro Logic Phantom mode.
For details, refer to page 39.
- 14. PANEL button**
Pressing this button provides a display of the current operating condition on the multifunction display. Pressing this button will switch the multifunction display.
For details, see Pages 18 to 21.
- 15. BYPASS (surround bypass) button**
When this button is pressed, the surround mode is bypassed and the normal stereo sound is produced. No signals are output to the rear channel.
If the SURROUND MODE button is pressed when in the bypass mode, the mode returns to the mode which was set before the bypass mode was turned on.
* In the initial setting the center output is turned off.
- 16. INPUT ADJ.**
(input level adjustment selector) button
This function makes it possible to increase the input level by +6dB, and is used when playing a source with a low input level, such as the tuner.
For details, refer to page 33.
- 17. EFFECT selector button**
This button turns the effect of the DSP (digital signal processor) on and off. When turned off, only direct sounds are played on the front left and right speakers. This function can be used to check the effect of the sound processor.
* The effect turns back on if this button is pressed once again when the effect is off, or when a parameter is selected and data is changed with the "←" or "→" keys.
* If the power is turned off when the effect is off, that mode is stored in the memory, so only the direct sound is played when the power is turned back on.
- 18. SURROUND MODE selector button**
Use this button to select the surround mode. Either press it repeatedly or hold it in to change the surround mode in the order shown at the top right of this page.
For details, refer to pages 33 to 34.
- ```

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

```
- 19. PARAMETER**  
(DSP parameter selector) button  
Use this to select the parameter.  
For details, refer to pages 35 to 37.
- 20. "←" and "→" SET**  
(parameter setting) buttons  
Use these to change the parameter selected with the PARAMETER button.  
For details, refer to pages 35 to 36.
- 21. CLEAR (user preset clear) button**  
When this button is pressed, the parameters for the selected mode are reset to the values preset upon shipment from the factory.  
For details, refer to page 47.
- 22. REAR (rear speaker volume adjust) buttons**  
Use these to adjust the volume of the rear (surround) speakers.  
Press the UP button to increase the volume, the DOWN button to decrease the volume.  
The volume changes while the button is held in, and stops changing when the button is released. The volume change is indicated on the MFD or monitor screen. These buttons do not function when in the bypass mode, the CD or VDP direct modes, or the Dolby 3ch. Logic mode.
- 23. CENTER**  
(center speaker volume adjust) buttons  
Use these buttons to adjust the volume of the center (surround) speaker.  
Press the UP button to increase the volume, the DOWN button to decrease the volume.  
The volume changes while the button is held in, and stops changing when the button is released. The volume change is indicated on the MFD or monitor screen. These buttons only function when in the bypass, Dolby Pro (3ch.) Logic normal or wide modes, and in the normal and wide modes with the adaptive matrix on when in the WIDE SCREEN and LIVE modes.
- 24. BASS control**  
Use this to adjust the bass sound of the front speaker output or PRE-OUT FRONT jacks. The bass sound is emphasized when turned clockwise (↻) from the center position, reduced when turned counterclockwise (↻) from the center position.
- 25. TREBLE control**  
Use this to adjust the treble sound of the front speaker output or PRE-OUT FRONT jacks. The treble sound is emphasized when turned clockwise (↻) from the center position, reduced when turned counterclockwise (↻) from the center position.
- 26. BALANCE control**  
Use this to adjust the left/right balance of the front speakers (PRE-OUT FRONT jacks).  
\* This control does not function in the CD direct and VDP direct modes.
- 27. VIDEO AUX INPUTS**  
These are auxiliary inputs for connecting video cameras or other AV equipment.  
S-VIDEO: Connect the S-jack output of the other component here.  
VIDEO: Connect the video output of the other component here. (Use a 75 ohm coaxial cable pin-plug cord.)  
AUDIO L and R: Connect the audio output of the other component here.
- 28. GND (ground) terminal**  
Connect the ground wire of the record player here.
- 29. AUDIO IN (audio input) jacks**
- 30. AUDIO OUT (audio output) jacks**
- 31. VIDEO (video input/output) jacks**
- 32. S-VIDEO (video input/output) jacks**
- 33. PRE OUT**  
(FRONT, CENTER, REAR and MONO) jacks  
Refer to page 3.  
Connect the monaural audio input jack of a separately sold subwoofer or TV here.
- 34. AC cord (power cord)**
- 35. AC OUTLETS**  
Refer to page 11.
- 36. MAIN SPEAKER SYSTEMS terminals**
- 37. CENTER SPEAKER SYSTEMS terminals**
- Note on the center speaker terminals:**  
The center channel output on the AVC-3030 is dual center compatible, so two center speakers can be used. The Pro Logic surround effect can be obtained with a single center channel speaker, but connecting two speakers with similar performance are connected to the L and R terminals creates a more effective dual center channel output.  
For details, refer to pages 10 and 11.
- 38. REAR SPEAKER SYSTEMS terminals**
- 39. TAPE/REMOTE CONTROL**  
This terminal is exclusively used for sending the remote control signals to the tape deck. Connect it with a 3.5mm mini-jack cord.  
**NOTE:**  
Do not hook up a headphones or microphone jack cord. Use this jack to connect a Denon cassette deck with a remote control jack (wired). If the cassette deck does not have this jack, wired remote control is not possible.



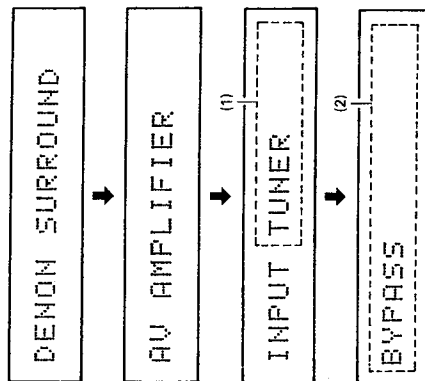
→ Continued

# Multi-function fluorescent Display (MFD)

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

## Display pattern examples

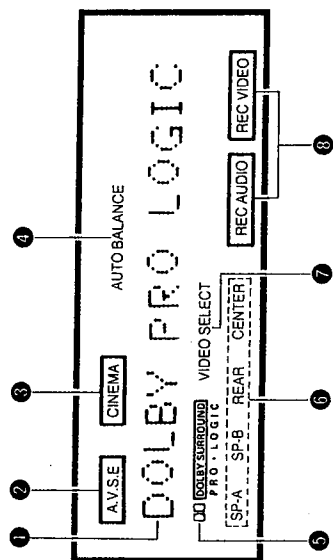
1. When the power is turned on



(1) The function name is displayed.

(2) The surround mode name is displayed.

## Display



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

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

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

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

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

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

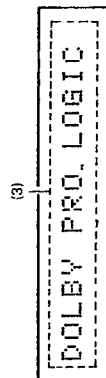
**7 VIDEO SELECT indicator**  
This indicates that video input signals have been selected independently of the audio input signals.

**8 Recording select indicators**  
REC AUDIO lights when one of positions PHONO through DAT/TAPE 2 is selected with the REC SELECT button, and both REC AUDIO and REC VIDEO light when one of positions D8S/BS through VAUX is selected.

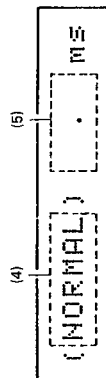


→ Continued

2. Surround mode display



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



- (4) "NORMAL", "PHANTOM" or "WIDE" is displayed.  
\* These are not displayed in modes not using the Dolby center modes or when the adaptive matrix is off in the WIDE SCREEN or LIVE modes.

- (5) The delay time is displayed.

- \* The delay time is not displayed in the Dolby 3ch. Logic mode or any surround modes other than the ones shown above, the CD direct, the VDP direct.



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

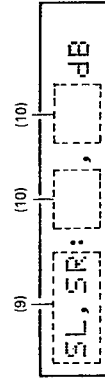
3. Center level display



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

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

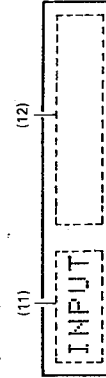
4. Rear level and balance display



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

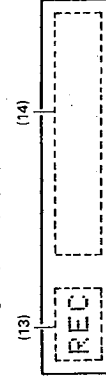
NOTE:  
This is not displayed in modes in which no signals are output to the rear speakers.

5. Input display



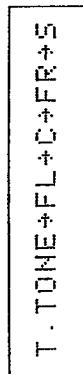
- (11) "INPUT" is displayed when one of the FUNCTION buttons (AUDIO or VIDEO) is pressed, and the name of the function is displayed in section (12). If the video signal has already been selected with the VIDEO SELECT button, the audio input and video input are displayed for 3 seconds when the AUDIO FUNCTION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

6. Recording output display



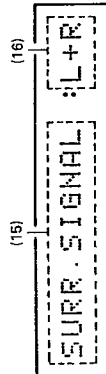
- (13) "REC" is displayed when the REC SELECT button is pressed.  
(14) The name of the function ("PHONO", "CD", "TUNER", "DAT/TAPE-1", "DAT/TAPE-2", "DBS/BS", "VDP", "VCR-1", "VCR-2" or "V-AUX") is displayed. Normally the source is displayed.  
When the recording output selection function is off and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

7. Test tone display



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

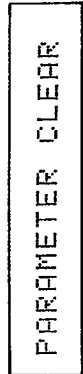
8. DSP parameter display



- (15) The following are displayed in modes for which the PARAMETER key is effective:  
"SURR. SIGNAL"  
"ADAPT. MATRIX"  
"7kHz L.P.F."  
"SOUND SIM."  
"INT. DELAY"  
"ROOM SIZE"  
"EFFECT LEVEL"  
"EFFECT"

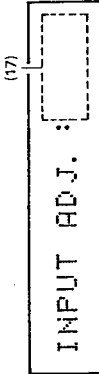
- (16) The parameter settings are displayed here.

9. Clear display



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

10. Input level adjustment display



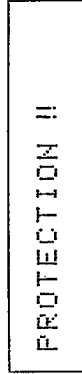
This is displayed when the INPUT ADJ. button is pressed, and the level (0dB or +6dB) is displayed at section (17).  
\* This is not displayed in the CD direct, VDP direct modes.

11. Muting display



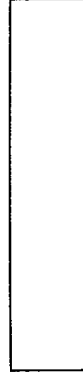
This is displayed when the MUTING button on the included remote control unit is pressed, and remains displayed until the muting function turns off.

12. Protection display



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

13. No display (MFD off)



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



→ Continued

## 7 REMOTE CONTROL UNIT

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

### ■ Cautions for batteries

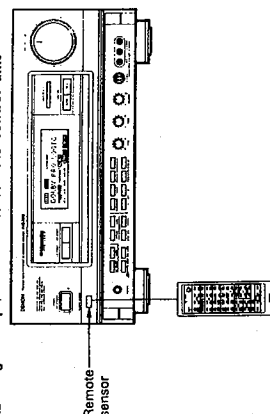
- Use R6P/AA batteries in the remote control unit.
- Replace the batteries with new ones approximately once each year, though this depends on the frequency with which the remote control unit is operated.
- If the remote control unit does not operate from close to the main unit, replace the batteries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

### ■ Using the remote control unit

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

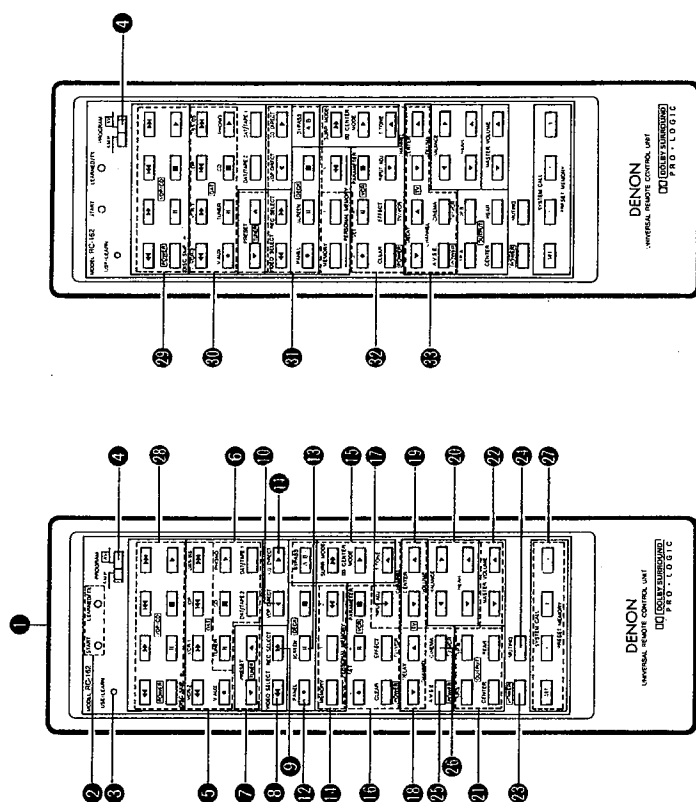
Also note that strong light shining on the remote sensor may result in mistaken operations. In addition, using the amplifier near neon signs which generate pulse type noise may result in mistaken operations, so keep the amplifier as far as possible from such neon signs.

### ■ Range of operation of the remote control unit

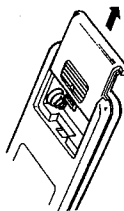


## Part names and functions of the remote control unit

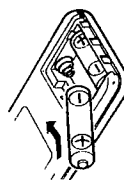
AVC-3030 codes System codes



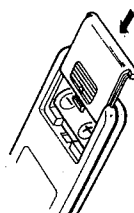
1. Open the bottom cover of the remote control unit and remove the battery cover.



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



3. Close the bottom cover until it clicks shut.



### ■ A note on battery replacement

Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.  
The codes that have been learned may be lost if removed batteries are not replaced within about 5 minutes.

Point the remote control unit at the remote sensor when operating it, as shown on the diagram.  
The remote control unit can be used at a direct distance of approximately 7 meters from the main unit, though this distance will be shorter if there is an obstacle between the remote control unit and main unit or if the remote control unit is operated from an angle.



# AVC-3030 Codes

Use with the PROGRAM switch ③ set to the AMP side.

- ① **Transmitting window**  
The remote control signals (infrared rays) are sent from this window.
- ② **Indicator section (START, LEARNED/TX)**
- ③ **USE/LEARN**  
(normal use/learn mode) selector button  
Press this button with the tip of a pen, etc., to set the learn mode. Both the START and LEARNED/TX indicators in the indicator section ② flash and codes can be learned.

## ④ PROGRAM switch

- ④ **Video input selector buttons**  
These buttons are used to select the video input signals directly. They select the input signals and switch the video signals.  
DBS/BS: Use this to play the BS tuner connected to the DBS/BS jacks.  
VDP: Use this to play the VDP connected to the VDP jacks.  
VCR-1: Use this to play the video deck connected to the VCR-1 jacks.  
VCR-2: Use this to play the video deck connected to the VCR-2 jacks.  
V. AUX: Use this to play the cam corder with playback function, etc., connected to the V-AUX jacks on the front panel.

## ⑤ Audio input selector buttons

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

## ⑥ [TUNER] PRESET ▽ and ▲ buttons

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

- ⑧ **VIDEO SELECT button**  
(Same function as on amplifier.)
- ⑨ **REC SELECT button**  
(Same function as on amplifier.)
- ⑩ **VDP DIRECT button**  
(Same function as on amplifier.)
- ⑪ **CD DIRECT button**  
(Same function as on amplifier.)
- ⑫ **PANEL button**  
When this button is pressed, the current settings are displayed on the MFD. Operate this button to switch the on-screen display.  
For details on the MFD, refer to pages 18 to 21.  
\* This button does not function in the test tone and muting modes.
- ⑬ **SCREEN button**  
This can only be set from the remote control unit. When this button is pressed, the current settings are displayed on the monitor screen.  
Operate this button to switch the on-screen display. For details on the on-screen display, refer to pages 48 and 49.  
\* This button does not function in the TEST TONE, MUTE, CD direct and VDP direct modes.

## ⑭ PERSONAL MEMORY function

- Your favorite surround mode and input function can be stored at "PERSONAL 1" and "PERSONAL 2", then recalled directly from any other playback mode by pressing the PERSONAL "1" or "2" button on the remote control unit.

### • Storing

- ① Use the surround mode button to select the desired surround mode, and the INPUT FUNCTION button to select the desired input function.
- ② Press the PERSONAL MEMORY button to set the memory mode. "PERSONAL" flashes (for six seconds).
- ③ Next press the button at which you want to store the information (PERSONAL "1" or "2"). If any other button is pressed, the memory mode is cancelled.
- ④ "MEMORY 1(2) SET" is displayed, and the selected surround mode and input function are stored in the memory.

### NOTE:

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

## ⑮ SURROUND MODE button

- BYPASS (Surround bypass) button
- SURR. MODE (Surround mode) button
- ID CENTER MODE Selector button  
(Same function as on amplifier.)
- T-TONE (test tone) button  
This can only be set from the remote control unit. To obtain the maximum Dolby Pro Logic surround effect, the volume of all the speakers must be adjusted to the same level. When this button is pressed, test tones are produced from each of the speakers in the following order:  
Front left → Center → Front right → Rear

In addition, there are two modes, auto and manual. The speaker volume balance can be adjusted in either of these modes.  
For details, refer to page 39.

## ⑯ DSP parameter adjustment buttons

- (Same functions as on amplifier.)
- EFFECT selector button
- PARAMETER (DSP parameter selector) button
- CLEAR (User preset clear) button
- "—" and "+" SET button

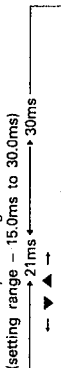
## ⑰ INPUT ADJ. button

- (Input level adjustment selector) button  
(Same function as on amplifier.)

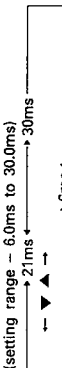
## ⑱ DELAY time buttons

- This can only be set from the remote control unit. When these buttons are pressed, the delay time changes in steps of 1.5ms from 6ms to 60ms, 10.0ms from 60ms to 370ms.  
The delay time increases when the ▲ button is pressed.  
The delay time decreases when the ▼ button is pressed.

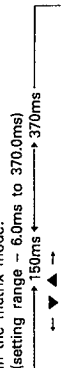
In the Dolby Pro Logic mode:  
(setting range - 15.0ms to 30.0ms)



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



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



## ⑲ CENTER level adjustment buttons

- (Same function as on amplifier.)

## ⑳ REAR Speaker adjustment buttons

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

→ Continued

## ⑳ OUTPUT (speaker output selector) buttons

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

## ㉑ MASTER VOLUME buttons

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

## ㉒ [POWER] button

- (Same function as on amplifier.)

## ㉓ MUTE button

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

## ㉔ A.V.S.E

- (Bass correction button)  
This button is used to emphasize the bass range of the front speakers.  
Setting this switch to ON when using movie video software provides even greater impressiveness. Use this function as desired.  
\* This button cannot be used in the CD direct mode and the VDP direct mode.

## ㉕ CINEMA

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

## ㉖ SYSTEM CALL buttons

- This can only be set from the remote control unit. For details, refer to page 27.



→ Continued

# AVC-3030 Code Buttons

28

When the PROGRAM switch ④ is set to the AMP side:

## VDP system buttons

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

- POWER : Power on/off
- ▶ : Play
- ⏸ : Pause
- : Stop
- ◀ and ▶ : Manual search (reverse and forward)
- ◀◀ and ▶▶ : Auto search (reverse and forward)

29

When the PROGRAM switch ④ is set to the AV side:

## CD system buttons

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

- ▶ : Play
- ⏸ : Pause
- : Stop
- ◀ and ▶ : Manual search (reverse and forward)
- ◀◀ and ▶▶ : Auto search (reverse and forward)
- DISC SKIP + : CD changer, disc skip

# System Call Buttons

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

## Storing the System Call Operations

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

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

### NOTE:

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

## Clearing the System Call Series

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

## Using the System Call Buttons

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



# Remote Control Unit Learning Function

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

## Operation

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

### NOTE:

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

7. To store codes at other buttons, repeat steps 4 to 6.
8. After you finish storing all the codes you want, press the **USE/LEARN** (normal use/learn mode) selector button **1** again. Both LEDs stop flashing and the sending (use) mode is set.  
Check that the stored codes work properly.

### Learnable buttons:

When the **PROGRAM** switch is at the AMP side ..... 8 buttons  
When the **PROGRAM** switch is at the AV side ..... 58 buttons

### NOTE:

Maximum of 35 codes in 66 buttons  
Depending on the types of codes stored, it may not be possible to store 35 codes.

### Resetting (Clearing) Procedure

1. Press the **USE/LEARN** (normal use/learn mode) selector button **1** with the tip of a pen, etc., to set the learn mode.
2. Set the **PROGRAM** switch **3** to the side whose codes you want to clear, AMP or AV.
3. Press the **POWER** button **4** and **REAR** **5** button **6** simultaneously, and hold them in for at least four seconds.
4. When both the **START** and **LEARNED** LEDs **2** light simultaneously, all the learned codes for the selected source are cleared.

### Remote Control Operation

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

## Preset Memory

The VDP **2**, VCR **3** and TV **4** system buttons can be preset to system codes of other manufacturers instead of the Denon component system codes. For some components, operation is possible simply by registering the manufacturer, without using the learning function.

### Registering the Preset System Codes

1. Set the **PROGRAM** switch to the side to be preset.  
AMP ..... VDP **2**  
AV ..... VCR **3** or TV **4**  
be preset.
2. Press and hold in the **POWER** button for the source to be preset.
3. While pressing the **POWER** button, first press the **SYSTEM** CALL button, **1**, **2** or **3**, for the A block. (Select the proper **SYSTEM** CALL button from Table 1.)  
The **LEARNED/TX** LED **6** now flashes.
4. Now press and hold in the **POWER** button and press the button for the B block, as shown on Table 1.
5. The **LEARNED/TX** LED turns off and the preset system codes have been registered.

### NOTE:

Signals are sent from the remote control unit when buttons are pressed while registering the preset system codes, so prevent the components from operating by covering the transmitting window, etc. In addition, the learning function has priority over the preset memory. If codes have been stored with the learning function at any one of the VDP **2**, VCR **3** or TV **4** keys, they will remain stored even if the preset memory codes are registered.

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

Table 1 Combinations of Preset System Codes for Different Manufacturers

| "VCR"         |             |              |          |
|---------------|-------------|--------------|----------|
| B block       | A block     | 1 button     | 2 button |
| CENTER VOL. ▼ | SONY A      | MITSUBISHI A | TOSHIBA  |
| CENTER VOL. ▲ | SONY B      | MITSUBISHI B | —        |
| REAR BAL. ▼   | SONY C      | MITSUBISHI C | VICTOR   |
| REAR BAL. ▲   | —           | —            | —        |
| REAR VOL. ▼   | PANASONIC A | —            | HITACHI  |
| REAR VOL. ▲   | PANASONIC B | —            | —        |
| MASTER VOL. ▼ | SHARP       | SANYO        | RCA      |
| MASTER VOL. ▲ | —           | —            | —        |
| "TV"          |             |              |          |
| B block       | A block     | 1 button     | 2 button |
| CENTER VOL. ▼ | SONY        | MITSUBISHI   | TOSHIBA  |
| CENTER VOL. ▲ | —           | —            | —        |
| REAR BAL. ▼   | —           | —            | VICTOR   |
| REAR BAL. ▲   | —           | —            | —        |
| REAR VOL. ▼   | PANASONIC A | —            | HITACHI  |
| REAR VOL. ▲   | PANASONIC B | —            | —        |
| MASTER VOL. ▼ | SHARP       | SANYO        | —        |
| MASTER VOL. ▲ | —           | —            | —        |
| "VDP"         |             |              |          |
| B block       | A block     | 1 button     | 2 button |
| CENTER VOL. ▼ | SONY A      | DENON A      | —        |
| CENTER VOL. ▲ | SONY B      | DENON B      | —        |
| REAR BAL. ▼   | SONY C      | DENON C      | —        |
| REAR BAL. ▲   | —           | —            | —        |
| REAR VOL. ▼   | PANASONIC   | —            | —        |
| REAR VOL. ▲   | —           | —            | —        |
| MASTER VOL. ▼ | PIONEER     | SANYO        | PHILIPS  |
| MASTER VOL. ▲ | —           | —            | MAGNAVOX |



3 OPERATION

Preparations for playback

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

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

Note on playback

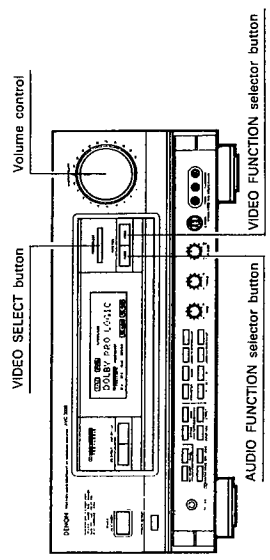
The sound will be interrupted if one of the FUNCTION selector buttons ➋-➍ is pressed during playback. This is due to the operation of the muting circuit which prevents noise from being amplified at the time of switching, and is not a malfunction.

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

Protection Circuit

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

Playback



1. Playing a program source (Normal playback)

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

• AUDIO FUNCTION SELECTOR (Setting the program source)

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

• VIDEO FUNCTION SELECTOR (Setting the video program source)

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

MFD display



2. Simulcast playback (Playing video and audio sources)

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

MFD display



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

MFD display



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

- 4 Adjust the volume and tone.

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

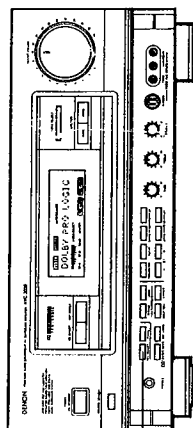
- 2 Begin playback of the program source.  
For operating details, see the manual of the respective component.

- 3 Adjust the volume and tone.



→ Continued

# Recording (Audio and Video)



REC SELECT button

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

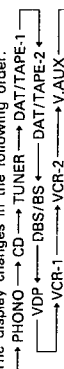
Follow the playback instructions for program sources (page 31).

## Simultaneous Recording (audio or video)

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

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

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



MFD display

REC : [ ]

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

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

## Monitoring the Recording

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

# Operations in the Different Modes

|                                       | SP-A | SP-B | CENTER<br>SYNCH 1 | REAR<br>SYNCH 1 | CENTER<br>LEVEL | REAR<br>LEVEL | REAR<br>BAL | CENTER<br>MODE | TEST<br>TONE | DELAY<br>TIME | SURR.<br>SIGNAL | A<br>MATRIX |
|---------------------------------------|------|------|-------------------|-----------------|-----------------|---------------|-------------|----------------|--------------|---------------|-----------------|-------------|
| CD DIRECT VDP DIRECT                  | O    | O    | X                 | X               | X               | X             | X           | X              | X            | X             | X               | X           |
| BYPASS                                | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| DOLBY PRO LOGIC                       | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| DOLBY 3CH LOGIC                       | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| WIDE                                  | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| SCREEN & A. MATRIX ON                 | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| LIVE A. MATRIX OFF (S, SIG, L-R, L-R) | O    | O    | O                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| MONO MOVIE                            | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| CLASSIC CONCERT                       | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| ROCK CONCERT                          | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| CHURCH                                | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| JAZZ                                  | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| STADIUM                               | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |
| MATRIX                                | O    | O    | X                 | O               | X               | X             | X           | X              | X            | X             | X               | X           |

|                                       | 7MHz<br>L.F.F. | SOUND<br>SIM. | INIT.<br>DELAY | ROOM<br>SIZE | EFFECT<br>LEVEL | EFFECT<br>ON/OFF | A.V.S.E. | CINEMA | INPUT<br>ADJ. | CLR |
|---------------------------------------|----------------|---------------|----------------|--------------|-----------------|------------------|----------|--------|---------------|-----|
| CD DIRECT VDP DIRECT                  | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| BYPASS                                | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| DOLBY PRO LOGIC                       | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| WIDE                                  | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| DOLBY 3CH LOGIC                       | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| WIDE                                  | X              | X             | X              | X            | X               | X                | X        | X      | X             | X   |
| SCREEN & A. MATRIX ON                 | O              | O             | O              | O            | O               | O                | O        | O      | O             | O   |
| LIVE A. MATRIX OFF (S, SIG, L-R, L-R) | O              | O             | O              | O            | O               | O                | O        | O      | O             | O   |
| MONO MOVIE                            | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| CLASSIC CONCERT                       | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| ROCK CONCERT                          | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| CHURCH                                | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| JAZZ                                  | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| STADIUM                               | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |
| MATRIX                                | X              | X             | O              | O            | O               | O                | O        | O      | O             | O   |

O: Operation possible  
X: Operation not possible

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

## Operating the INPUT ADJ. button

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



→ Continued

Parameters

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

1. Independent functions (buttons)

In each DSP mode, there are some functions which can be used, others which cannot.

(1) DELAY (▲ up and ▼ down) buttons

These adjust the delay time of the rear speaker signals.

Remote control unit

(2) T.TONE (on/off) button

When pressed, test tones are emitted for adjusting the level, balance of the different channels.  
(For details, refer to page 39.)

Remote control unit

(3) EFFECT button

This is a parameter which turns the DSP on and off.

When turned off, only the direct sounds are produced, as in the bypass mode.

Use this to check the effect of the DSP.

Main unit and remote control unit

MFD display

EFFECT: [ ]

2. PARAMETER button

Use this button to select the parameter.

The normal procedure for setting parameters is to first select the parameter with the PARAMETER button, then use the [▲] and [▼] buttons to set the selected parameter.

If no button is pressed for approximately 15 seconds, the parameter setting mode is automatically cancelled.

(1) Initial delay

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

MFD display

[ - ] [ + ]

0 ~ 50msec  
(10msec STEP)

INIT. DELAY: [ ]ms

(2) Room size

This parameter sets the time interval between the initial reflected sounds.

The larger the value, the larger the sound field seems to be, and the greater the sense of expansion.

[ - ] [ + ]

0.4 ~ 2.0  
(0.2 STEP)

MFD display

ROOM SIZE: [ ]

9 USING THE DSP (DIGITAL SOUND PROCESSOR)

DSP Modes

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

1. Modes not using the DSP

- Bypass: In this mode, the surround mode (DSP) is bypassed and the normal stereo sound is produced.
- CD direct and VDP direct:

In these modes, the CD input signals are sent directly to the output jacks. (No signals are output to the center and rear channels.)

2. Modes using the DSP

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

The surround modes are as follows:

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

\* These effects may not be very pronounced for some sources.

If this is the case, try other modes, not relying too much on their names, and find the mode you like best. Also, if the sound seems distorted, either lower the effect level or press the CLEAR button and readjust the parameters.

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



### DSP Parameter Table

(3) Effect level

This parameter adjusts the level of the reflected sound.

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

0 ~ 15

**MFD display**

EFFECT LEVEL: 

(4) Surround signal

This parameter is only for the WIDE SCREEN and LIVE modes.

Select the surround input signal.

$$\begin{array}{c} \boxed{+} \\ \boxed{-} \end{array} \quad \begin{array}{c} L+R \\ \longleftrightarrow \\ L-R \end{array}$$

**MFD display**

SURR. SIGNAL: ☐

(5) Adaptive matrix

This parameter is only for the WIDE SCREEN and LIVE modes.

The adaptive matrix is a function for emphasizing a sense of movement and positioning.

The adaptive matrix is a function of movement and positioning. This turns the adaptive matrix, which is necessary for emphasizing the directivity, on and off. Normally leave it on, but for sources with which emphasizing the directivity seems unnatural, turn it off.

☐ + ON  
☐ - OFF

**MFD display**

ADAPT.MATRIX: ☐

(6) 7kHz L.P.F. (low-pass filter)

This parameter is only for the WIDE SCREEN and LIVE modes.

This filter reduces the high frequencies in the reflected sound, cutting all frequencies of 7kHz and above.

☐ ON  
 ↔  
☐ OFF

**MFD display**

2000

(7) Sound simulation

This parameter is only for the WIDE SCREEN and LIVE modes.

This parameter is only for the WIDE GREEN and LIVE modes. This parameter turns various types of sound field simulations on and off. When turned off, only the direct, unprocessed signals are produced.

- \* If the power is turned off when the SOUND SIM. parameter set to "OFF", only the sound will be played when the power is turned back on.

☐ ON  
☐ OFF

**MFD display**

SOUND SIM. : ☐ : MIS QNTOS[illegible]

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

**—NOTE:**

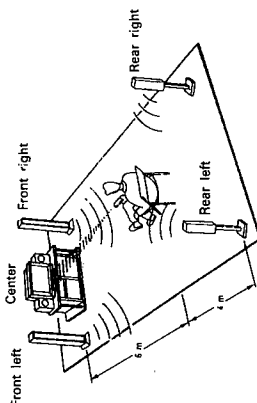
The sound is interrupted momentarily when the delay, initial delay, room size and effect level parameters are changed, but this is normal.

For some playback sources, noise may be generated if the DSP parameters are changed.

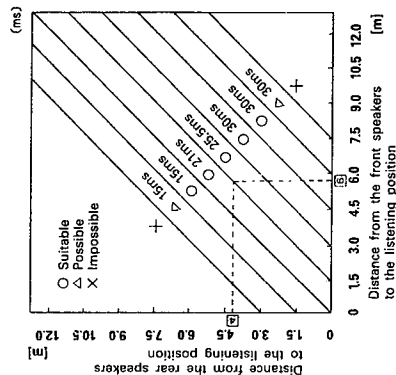


# DOLBY PRO LOGIC SURROUND

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

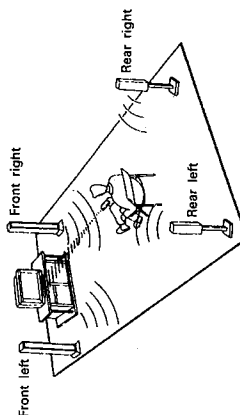
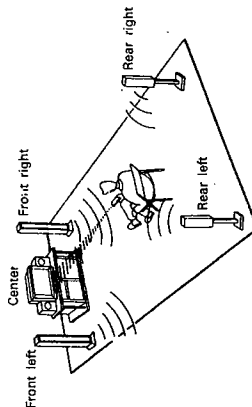


Listening position and optimum delay time for playback with Dolby Pro Logic surround



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

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



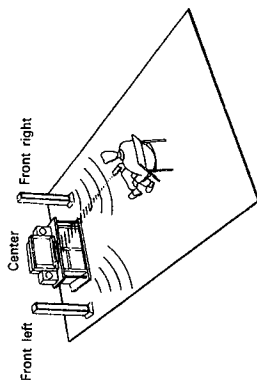
## NORMAL mode

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

## PHANTOM mode

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

→ Continued

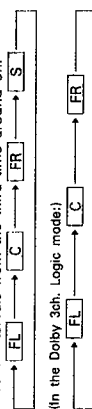


## 3CH LOGIC

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

## Automatic mode

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



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

## Manual mode

In this mode, the channels from which the test tones are emitted are selected manually.  
Use the ☐ and ☐ buttons to select the channels.

The test tones are emitted in the following order each time the ☐ button is pressed:



The test tones are emitted in the following order each time the ☐ button is pressed:



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

## MFD display

T.TONE → FL C FR S

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

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# DSP Operation

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

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

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

MFD display

PRO or 3CH.

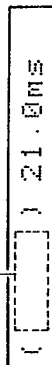


### ① DOLBY CENTER MODE button

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

MFD display

Center mode



### ② T.TONE button

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

PARAMETER button

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

### ③ DELAY buttons (▲ and ▼)

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

### ④ Start playing the source.

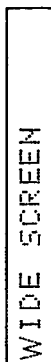
### ⑤ A.V.S.E. button

CINEMA button

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

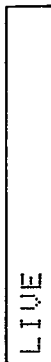
## (2) WIDE SCREEN

MFD display



LIVE

MFD display



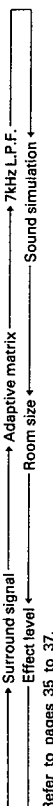
- The usable parameters are the same for the above two modes.

### ① DOLBY CENTER MODE button

Same as for the Dolby Pro Logic mode.

### ② PARAMETER button

Use this to select and set the parameters.



Refer to pages 35 to 37.

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

### ③ DELAY buttons (▲ and ▼)

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

### ④ Start playing the source.

### ⑤ A.V.S.E. button

CINEMA button

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

Main unit and remote control unit

Main unit and remote control unit

Remote control unit

Remote control unit

Remote control unit



→ Continued

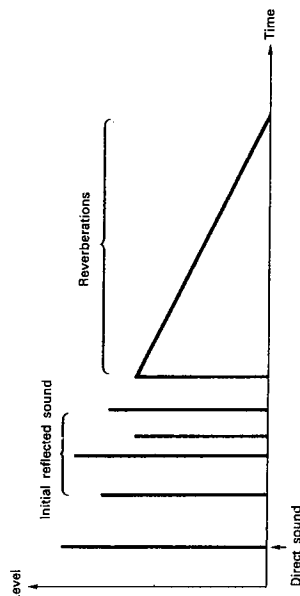
# Technical Advice

## 1. "Sound field"

The sounds we hear normally or in concert halls, etc., does not only consist of sounds heard directly from the sound source (direct sound). Sound disperses in all directions and is reflected repeatedly off the walls and ceilings, and these reflected sounds reach our ears with a certain delay.

Reflected sounds can be classified into two main categories. The first is initial reflected sound, and this is sound which we hear after it has reflected once or a few times off of walls. This creates an echo-like effect, but as the time difference with respect to the direct sound is short, we do not perceive this initial reflected sound as a distinct sound. Rather, it has the effect of increasing the sense of expansion or depth of the direct sound. The second category of reflected sound is called "reverberations". These are sounds which reach our ears after an elaborate series of reflections. These reverberations are responsible for the richness of the overall sound.

These different sounds can be graphed as follows:



The above is only one example. Actually the reflected sound takes on a particular form depending on the environment surrounding the sound source, that is such conditions as the size of the room, the distance to the walls, the shape and material of the walls, and our position within the room. This reflected sound combines with the direct sound, and we recognize it as it as the particular sound to the listening environment. This particular sound is called the sound field. Normally we hear it without paying special attention to it.

The AVC-3030 uses an advanced DSP (digital signal processor) to create various sound fields.

## 2. DSP sound fields

We now have access to many types of music and movie sources, including LDs, CD, videos, satellite broadcasts, and so on. In most cases, some sort of sound field has already been added to these sound sources. For live recordings, of course, but also for studio recordings, the reflected sounds are recorded along with the direct sound. But when we listen to them, we sometimes feel we would like a richer sound, or for example that we would like to recreate the exciting sense of presence at a live concert. By adding the DSP sound fields to the sources, we can create a more real sound with greater atmosphere.

The sound fields created by the DSP are created based on the sound source. Because of this, some adjustments are necessary to achieve an effect which fits the source, including the sound field already included in the source. The AVC-3030 offers various parameters so that the user can make these adjustments. Values have already been preset for the different parameters in the various modes upon shipment from the factory, they can be adjusted to create your own original sound fields.

The parameters which the AVC-3030 includes for adjusting the sound field are as follows:

- ① Initial delay
- ② Room size
- ③ Effect level
- ④ Effect
- ⑤ 7kHz L.P.F. (low-pass filter)

MFD display

MONO MOVIE

CLASSIC CONCERT

ROCK CONCERT

CHURCH

JAZZ

STADIUM

MONO MOVIE

CLASSIC CONCERT

ROCK CONCERT

CHURCH

JAZZ

STADIUM

• The usable parameters are the same for the above six DSP surround modes.

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

### ① PARAMETER button

Use this to select and set the parameters.

Main unit and remote control unit

Room size

Effect level

(Refer to pages 35 to 37.)

### ② Start playing the source.

### ③ EFFECT button

Use this to check the effect.

### ④ A.V.S.E. button

CINEMA button

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

Remote control unit

Remote control unit

MFD display

MATRIX

MATRIX

### ① DELAY buttons (▲ and ▼)

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

### ② Start playing the source.

### ④ A.V.S.E. button

CINEMA button

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

Remote control unit

Remote control unit

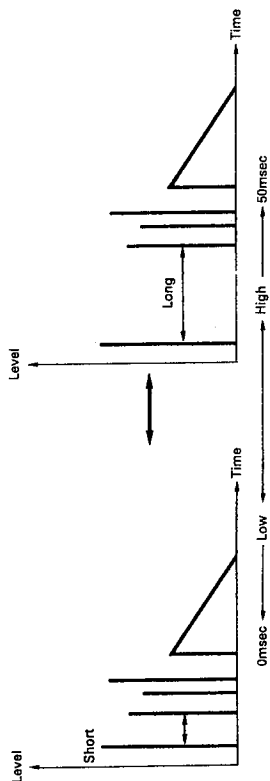


→ Continued

### 3. Description of parameters

#### (1) Initial delay

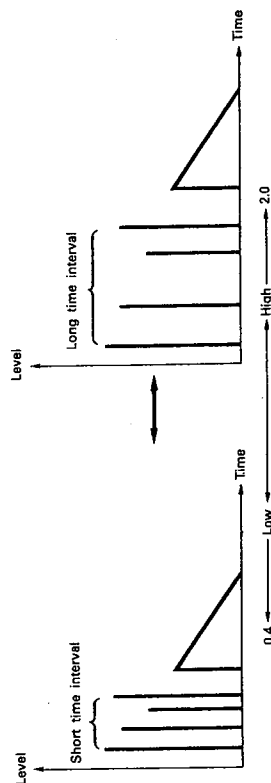
This parameter sets the distance (delay) time from the sound source to the reflecting walls.  
Variable range: 0 to 50msec (in 10msec steps)



This adjusts the time difference between the direct sound and the initial reflected sound. Think of it like changing the distance from the sound source to the wall behind the stage.  
The higher the value, the deeper the stage seems to be.

#### (2) Room size

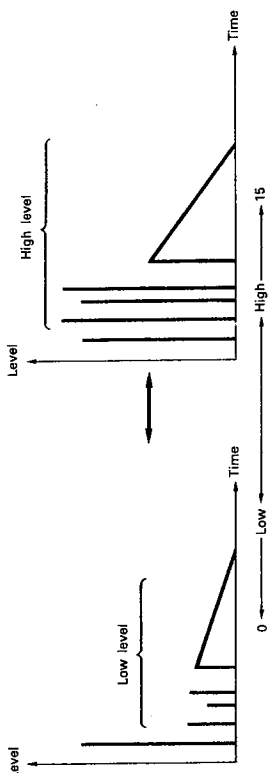
This parameter sets the time interval between initial reflected sounds.  
Variable range: 0.4 to 2.0 (in 0.2 steps)



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

#### (3) Effect level

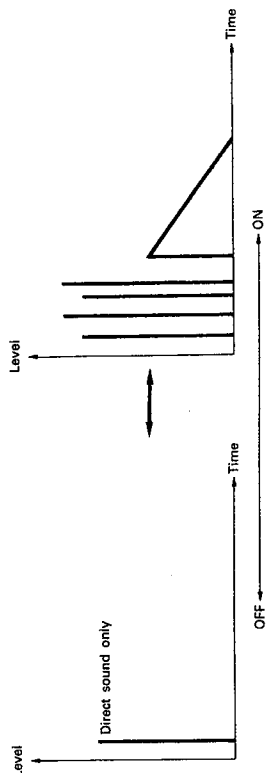
This parameter adjusts the level of the reflected sound.  
The higher the value, the greater the level of the reflected sound.  
Variable range: 0 to 15



Normally the number of reflected sounds runs from several sounds to several tens of sounds, and specific data is set for each of these in the different modes. For some sources, the level of the reflected sound may be too high, making the sound harsh to listen to. In other cases, the effect will be too low and not perceivable. In such cases, use this parameter to change the overall level of the reflected sounds without changing the balance between the level of the different reflected sounds, that is without changing the specific character of the sound field.  
If this parameter is set too high or too low, the resulting sound may be bizarre. At level 0, in particular, there is no reflected sound at all.  
Lower the effect level if the sound seems distorted.

#### (4) Effect

This parameter turns the DSP sound field effect on and off.  
When turned off, the sound is the same as in the bypass mode, and only the direct sound is played.



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



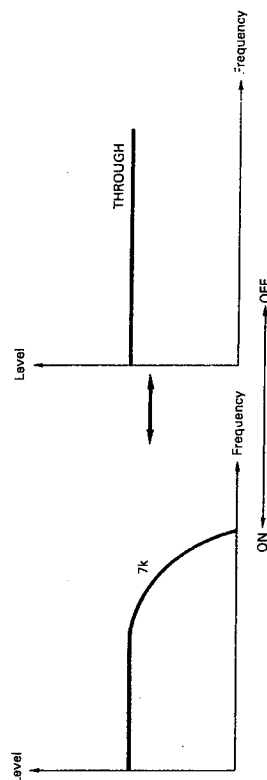
### 5. Initial settings of parameters

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

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

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

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



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

### 4. Creating original sound fields

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

- (1) Select the surround mode to use as the base.
- (2) Adjust the room size and initial delay parameters.  
First adjust the room size parameter. At this stage, roughly determine the size of the sound field. After roughly adjusting the room size parameter, adjust the initial delay parameter. If the room size and initial delay values are too "high", the result may be an unnatural sound for some sources. Find the sound you like.
- (3) Adjust the 7kHz L.P.F. (for the WIDE SCREEN and LIVE modes only)  
Use the 7kHz L.P.F. to determine the quality of the reflected sound.
- (4) Overall adjustment

Use the effect level parameter to adjust the balance between the direct sound and the reflected sound. The atmosphere changes substantially just by changing this balance.

If you cannot achieve the desired effect, try returning to the previous step. In particular, the relationship between steps 2 and 1 is important, so it may be a good idea to try something else. Sometimes you might discover surprising effects through different combinations.

The preset modes have been given names indicating sound fields appropriate for different types of music sources, but when creating your own original sound fields there is no need to worry too much about these names. To create a sound field to your liking, it may be best to try different variations.

\* Press the CLEAR button to start over from scratch.



# 10 ON-SCREEN DISPLAY

If the SCREEN button on the remote control unit is pressed when the power is turned on, the operating modes are displayed on the monitor TV's screen when buttons are operated, etc.

The displays shown below appear on the screen when the power is turned on and the SCREEN button is operated. The mode changes between screen 1, screen 2, screen 3, screen 4 and off each time the SCREEN button is pressed. When the power is turned on, screens 1 to 3 are displayed for approximately 7 seconds, after which the on-screen display automatically turns off.

When other buttons are pressed, messages related to the button that was pressed are displayed for approximately 5 seconds, then automatically turn off.

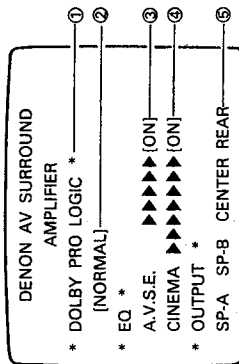
(The normal picture is displayed under the message, but if no picture is being input, the background turns a color which is internally produced.)

## NOTES:

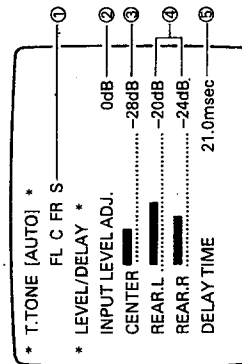
- The on-screen display signals are not output to the S-VIDEO MONITOR OUT jacks or the video output jacks for recording.
- If a video source is selected but no video signals are being input (when a color background is displayed), the color background turns off after the message is displayed.

The following screens are examples of displays.

Screen 1 Surround mode display

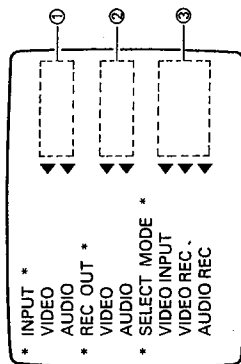


Screen 2 Level display, etc.



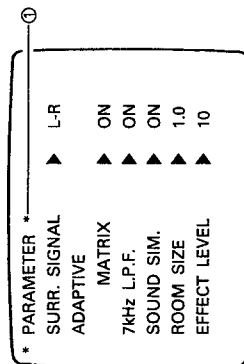
- ① Test tone display  
This is displayed when the test tone mode is set.
- ② Input level adjustment  
0dB/-6dB
- ③ Center level  
The level is displayed by a bar graph and by the decibel (dB) value.  
If the level is increased, the bar becomes longer.
- ④ Rear level and balance  
The levels are displayed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

Screen 3 Input/output display



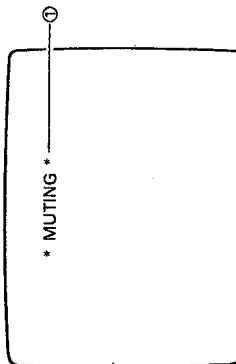
- ① Input selector display  
The set input is displayed here.
- ② Recording output selector  
This indicates the recording output.
- ③ Select mode display  
This is displayed when a select mode such as the recording output select or video select mode is set.

Screen 4 Parameter display, etc.



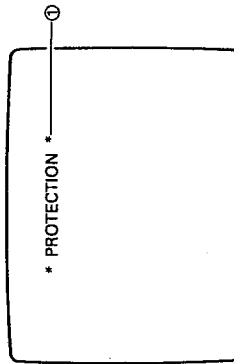
- ① Parameter display  
This indicates the DSP parameters.  
Displayed for approximately 15 seconds.

Other 1



- ① Muting display  
This flashes when in the muting mode.

Other 2



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



## 11 LAST FUNCTION MEMORY

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

## 12 TROUBLESHOOTING

If a problem should arise, first check the following:

1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?

If the amplifier is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

| Symptom                                                           | Cause                                                                                                                       | Measures                                                                                                | Page                 |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------|
| LED not lit and sound not produced when power switch set to on.   | • Power cord not plugged in securely.                                                                                       | • Check the insertion of the power cord plug.                                                           | 11                   |
| LED lit but sound not produced.                                   | • Speaker cords not securely connected.<br>• OUTPUT button is off.                                                          | • Connect securely.<br>• Select SP-A, SP-B, CENTER, or REAR of the remote control's OUTPUT button.      | 9-11<br>25           |
|                                                                   | • Improper position of the audio input selection button.<br>• Volume control set to minimum.<br>• MUTING is on.             | • Set to a suitable position.<br>• Turn volume up to suitable level.<br>• Switch off MUTING.            | 5, 14-17<br>15<br>25 |
| "PROTECTION!" display appears multi-function fluorescent display. | • Speaker terminals are short-circuited.<br>• Incomplete connection of the shorting pin between PRE OUT and MAIN IN.        | • Switch power off, connect speakers and then switch power back on.<br>• Connect shorting pin properly. | 9<br>9               |
| Sound produced only from one channel.                             | • Incomplete connection of speaker cords.<br>• Incomplete connection of input/output cords.<br>• Left/right balance is off. | • Connect securely.<br>• Connect securely.<br>• Adjust balance knob properly.                           | 9-11<br>9-13<br>17   |
| Positions of instruments reversed during stereo playback.         | • Reverse connections of left and right speakers or left and right input/output cords.                                      | • Check left and right connections.                                                                     | 9-13                 |
| Sound seems distorted.                                            | • INPUT LEVEL ADJ. button set to +6dB.<br>• Effect level parameter is high.                                                 | • Set to 0dB.<br>• Lower effect level parameter.                                                        | 33<br>36,46          |
| Sound seems strange.                                              | • DSP parameter settings are poor.                                                                                          | • Press the CLEAR button then adjust the DSP parameters.                                                | 34,47                |
| Sound field effect cannot be heard.                               | • EFFECT is turned off.<br>• SOUND SIM. is turned off.                                                                      | • Turn EFFECT on.<br>• Turn SOUND SIM. on.                                                              | 16<br>36             |
| Recording (audio and/or video) is not possible.                   | • CD or VDP direct mode set.                                                                                                | • Cancel CD or VDP direct mode.                                                                         | 14,15                |
| CD or VDP direct mode does not work.                              | • REC SELECT is on.                                                                                                         | • Cancel REC SELECT.                                                                                    | 14,15                |

Common problems arising when listening to the CD, records, tapes, and FM broadcasts

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

When playing records

Remote control unit



## 13 SPECIFICATIONS

### • Audio Section

#### (Power amplifier)

##### Rated output:

(All properties shown are only for the power amplifier stage.)

##### Frequency response:

5 Hz to 50 kHz (Main in - speaker out)

##### Signal-to-noise ratio:

120 dB (Main in - speaker out)

##### Output terminals:

Main: A or B 6 to 16 ohms

Center: 6 to 16 ohms

Rear: 6 to 16 ohms

#### (Pre-amplifier)

##### Line input (Each line input - FRONT PRE OUT)

Line sensitivity/impedance: 150 mV/47 kohms

Frequency response: 5 Hz to 100 kHz:  $\pm 3$  dB

PHONO (MM): 2.5 mV/47 kohms, CD DIRECT: 150 mV/33 kohms

##### Tone control range:

BASS:  $\pm 10$  dB at 100 Hz

TREBLE:  $\pm 10$  dB at 10 kHz

##### Signal-to-noise ratio (FRONT PRE OUT):

95 dB (CD DIRECT)

##### Distortion factor:

0.003% 1 kHz 1 V (BYPASS mode)

##### Rated output/Maximum output:

1 V/8 V (common for FRONT, CENTER, REAR, MONO, each PRE OUT)

##### Phono equalizer (PHONO Input - REC OUT)

284 mV (8 ohms)

##### RIAA deviation:

$\pm 1$  dB (20 Hz to 20 kHz)

##### Signal-to-noise ratio:

76 dB (A weighting, with 5 mV input)

##### Rated output/Maximum output:

150 mV/8 V

##### Distortion factor:

0.03% (1 kHz, 3 V)

### • Video Section

#### Standard video jacks

Input and output level/impedance: 1 Vp-p/75 ohms

#### Frequency response:

1 Hz to 10 MHz  $\pm 0.3$  dB

#### S-video output jacks

Input and output level/impedance: Y (brightness) signal: 1 Vp-p/75 ohms

C (color) signal: 0.266 Vp-p/75 ohms

#### Frequency response:

1 Hz to 11 MHz  $\pm 0.3$  dB

### • General

#### Power supply:

120 V AC, 60 Hz

#### Power consumption:

5.5 A

#### Maximum external dimensions:

434 (W)  $\times$  184 (H)  $\times$  421 (D) mm (17-3/32"  $\times$  7-1/4"  $\times$  16-37/64")

#### Weight:

15.0 kg (33 lbs 2 oz)

### • Remote control unit (RC-162):

#### System remote control with learning function

Total buttons: 62

DENON system code

DAT: 8 buttons

CD player: 8 buttons

Cassette deck: 8 buttons

Tuner: 2 buttons

VDP: 8 buttons

AVC-3030 fixed codes: 47 buttons

Learning buttons

System call buttons: 3 (maximum of 10 codes per button)

Program - AMP: 3 buttons

- AV: 58 buttons

Maximum total: 35 codes

Batteries: RGP/AA Type (two batteries)

External dimensions: 70 (W)  $\times$  215 (H)  $\times$  18 (D) mm (2-3/4"  $\times$  8-15/32"  $\times$  45/64")

Weight: 170 g (Approx. 6 oz) (including batteries)

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

## DENON SERVICE NETWORK

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

- Australia**  
AWA Limited, 112-118 Talavera Road, North Ryde NSW 2113, Australia, Postal Locked Bag No. 12, North Ryde, Tel: (02) 888-9000, Fax: (02) 888-9310, Telex: AA 22682
- Austria**  
Boyd U. Haas Electronic-Bauelemente Vertriebsges, mbH & Co., KG Rupertusplatz 3, A-1170 Wien, Tel: 0222-460288
- Belgium**  
Transel-Sabims P.V.B.A., Harmoniestraat 13, 2018 Antwerpen 1, België, Tel: 03-237-3607
- Canada**  
Denon Canada Inc., 17 Denison Street, Markham, Ontario, Canada L3R 1B5, Tel: 416-475-4085
- Denmark**  
Audionord Danmark A/S, Vester Alle 7, 8000 Århus C, Tel: 66-128311
- Finland**  
Suomen Hi-Fi Klubi Oy, Nylandsgratan 4-6, Helsingfors, Tel: 0644401
- France**  
Denon France S.A., 3 Boulevard Ney, 75018 Paris, Tel: (1) 40 35 14 14
- Greece**  
Denon Electronic GmbH, Halki Strasse 32, 4030 Ratingen 1, Tel: 02102-4985-0
- Hong Kong**  
Kinotechnik Ass., 47 Stourmer St., Athens, Tel: 3606 598
- Iceland**  
Tali Lin Radio Service Ltd., 310 Nathan Road, Kowloon, Hong Kong, Tel: K-85505-8
- Indonesia**  
Japis Ltd., Brataurort 2, Box 396, 101 Reykjavik, Iceland, Tel: 27133
- Italy**  
PT Autoacendo Jaya, Cideng Barat No. 7 Jakarta, Indonesia, Tel: 6016599
- Malaysia**  
Melchioni S.P.A., Via P. Coletta 37-20135 Milano, Tel: 02-57941
- Mexico**  
Pertama Audio Sdn. Bhd., 44-46 Jalan SS 22/21 Damansara Jaya, 47400 Selangor, Malaysia, Tel: 719 3957
- Netherlands**  
Labrador, S.A. de C.V. Zamora No. 154 Col. Condesa 06140 Mexico, D.F., Tel: 286 55 09
- New Zealand**  
Penhold B.V., Isarweg 6, 1043 AK Amsterdam, Tel: 020-611-4957
- Norway**  
Avalon Audio Corp. Limited, 119 Wellesley Street, Auckland 1, New Zealand
- Portugal**  
Tel: 09-779-351, 09-775-370
- Singapore**  
Hi-Fi Klubben, Box 70 Ankerterget, 0133 Oslo 1, Tel: 02-112218
- Spain**  
Videocustica, Qta. Do Palcinho-Armazém 5-Estrada De Circunvalação-Apart. 3127 1303 Lisboa Codex, Tel: 2187004/2187096
- Sweden**  
Pertama Audio Pte. Ltd., Alexandra Distripark Bldg 4, No. 03-33 Pasir Panjang Road, Singapore 0511, Tel: 278-4411
- Switzerland**  
Gapias S.A., Conde de Torroja, 24, 28022 Madrid, Tel: 747-7777
- Taiwan R.O.C.**  
Sveriges Hi-Fi Klubb, Box 5116, S-402 23 Göteborg, Tel: 031-200040
- Thailand**  
Diethelm & Co., AG, Eggbühlstrasse 28, 8052 Zürich, Tel: 01-3013030
- United Kingdom & Eire**  
Taiwan Kolin Co., Ltd., 8th Fl., 83, Sec. 1, Chung-king S. Rd., Taipei, Taiwan R.O.C., Tel: (02) 314-3151 (20 Lines), Fax: (886) 02-3614037, Telex: 11102 TKOLN
- U.S.A.**  
Mahajak Development Co., Ltd., 6th Fl., Mahajak Building, 46 Sukhumvit 3 (Nananaul), Klongteay, Prakanong, Bangkok 1010, Tel: 256-0000
- U.S.A.**  
Hayden Laboratories Ltd., Hayden House, Chiltem Hill, Chalfont St. Peter, Gerrards Cross, Bucks, SL9 9UG, Tel: 0753-889447
- U.S.A.**  
Denon America Inc., 222 New Road Parsippany, NJ 07054, U.S.A., Tel: 201-882-7490, Fax: 201-575-1213

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

H20701

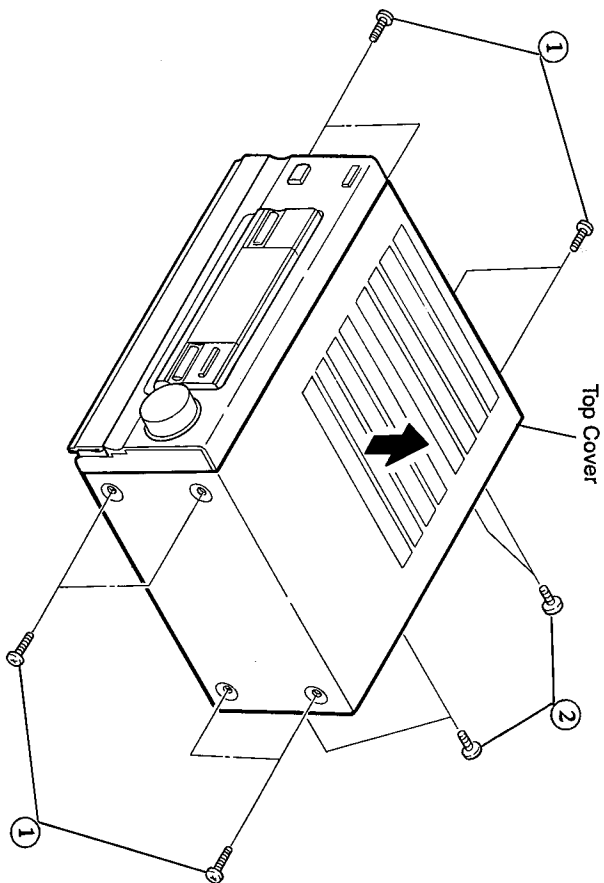


DISASSEMBLY

(To reassemble reverse disassembly)

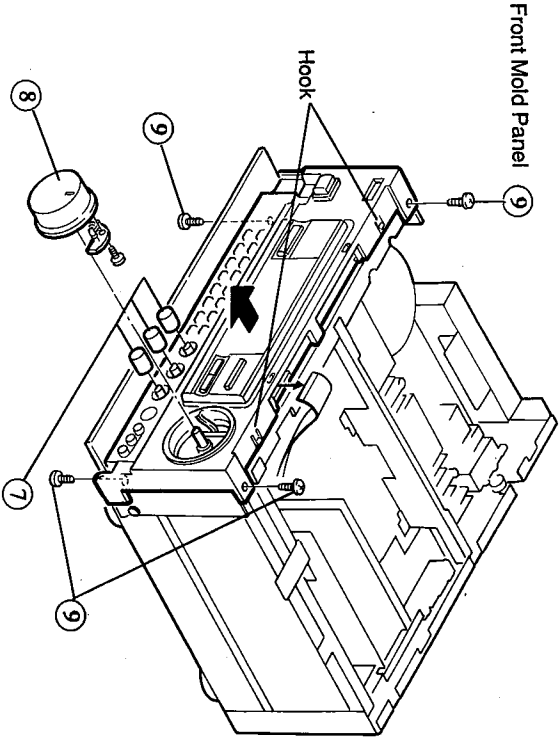
1. Top Cover

- (1) Remove 4 screws ① each on left and right sides which fix the both sides.
- (2) Remove 4 rear screws ②.



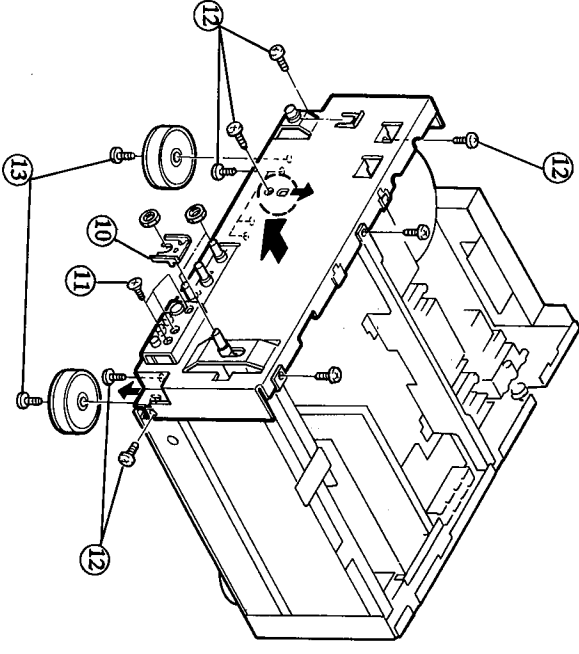
3. Front Mold Panel

- (1) Remove connector of wire, for LED of Motor VR ⑧, and pull out Master VR knob ⑧ and 3 round knobs ⑦.
- (2) Remove all connectors of wire, connected to FLD P.C.B..
- (3) Remove fixing screws ⑨, from upper and lower positions. (Totally 4 screws).



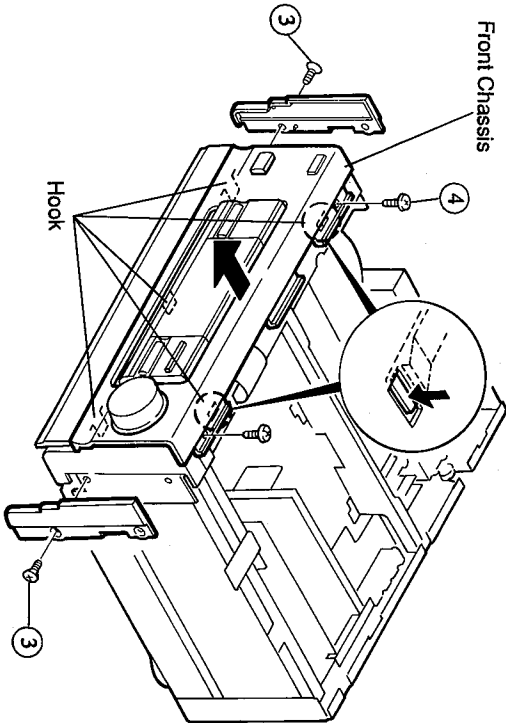
4. Front Chassis

- (1) Remove Master VR and 3 VR nuts of one set, and then remove bracket ⑩.
- (2) Remove 3 fixing screws of V-AUX P.C.B. ⑪.
- (3) Remove snap plate for fixing headphone jack and fixing screws for fixing wire ⑫.
- (4) Remove 2 screws ⑬ for attaching FOOT.
- (5) Remove screws for attaching chassis ⑫. (Upper 2, front 2, and lower 4 screws).



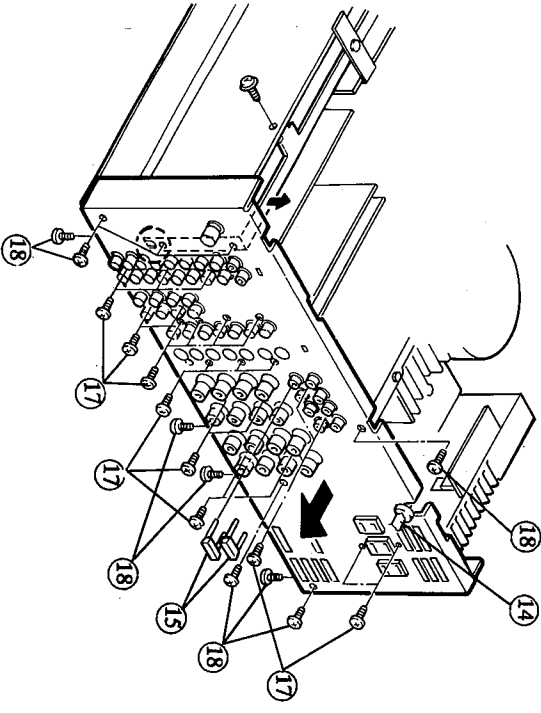
2. Front Aluminium Panel

- (1) Remove each on left and right screws ③ and detach Side Plate.
- (2) Remove 2 upper screws ④, unfasten upper hooks at two places, and detach Panel from upper portion in arrow direction.



5. Rear Panel

- (1) Remove short circuit pin ⑬, and remove cord bush ⑭.
- (2) Remove 20 terminal connecting screws ⑮.
- (3) Remove panel fixing screws (Lower 4, front 6 screws).





ADJUSTMENT

Idling Current (1U-2433A-1)

Required measurement equipment: DC Voltmeter

Arrangement

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

(2) Presetting

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

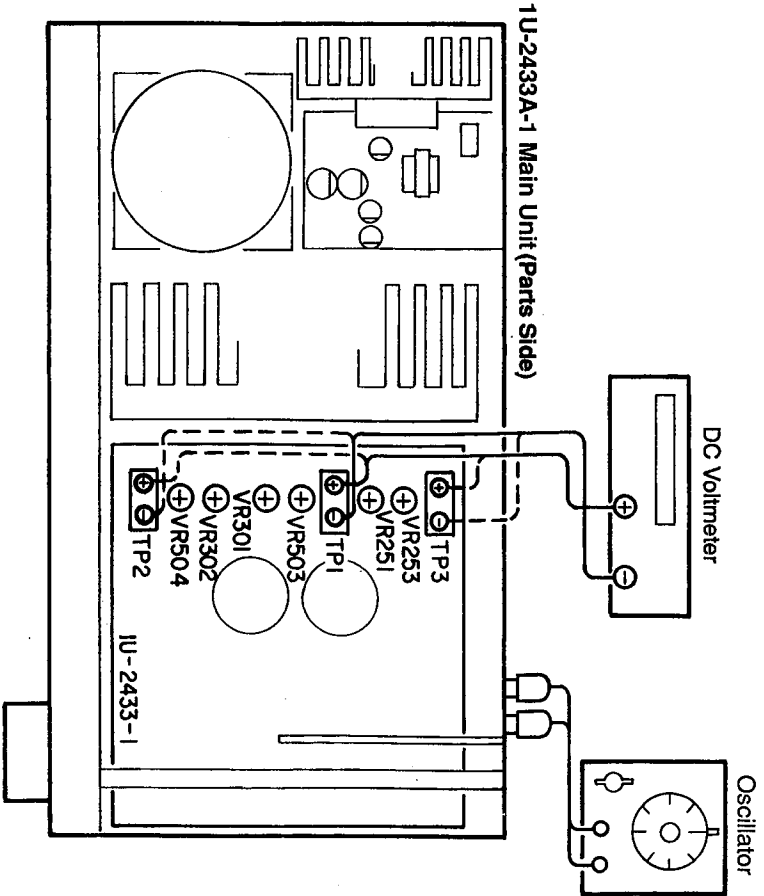
- (3) Output 10mVrms, 1kHz sine wave from sine wave oscillator and connect it to input terminal on reverse side.

Adjustment

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

Idling Adjustment in Operation of OPTICAL CLASS A.

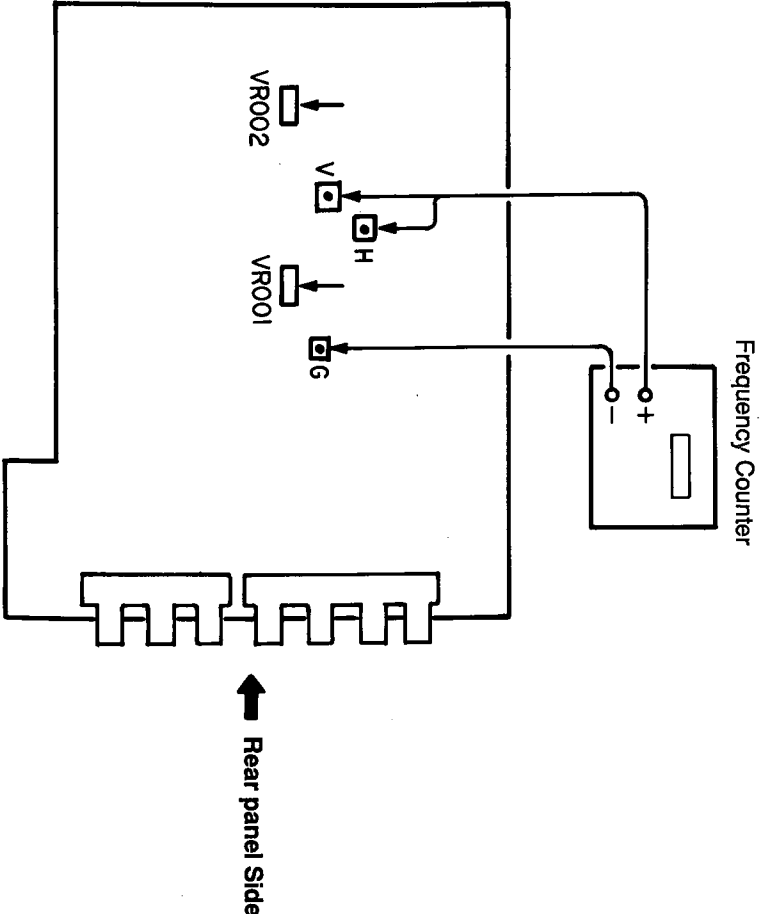
- (6) Allow 10 minutes, and turn VOLUME (Main tuning knob) to MAX ( ⤵ maximum) and turn VR503, VR504 and VR253 clockwise within 15 minutes, and adjust the TEST point voltage to 15 mV ± 5mV DC.
- (7) Allow 1 minutes, and adjust the VR503, VR504 and VR253 so that the meter reads 20 mV ± 10 mV DC.
- (8)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



Video H SYNC·V SYNC Oscillation Frequency Adjustment

Required measurement equipment: Frequency Counter

Arrangement



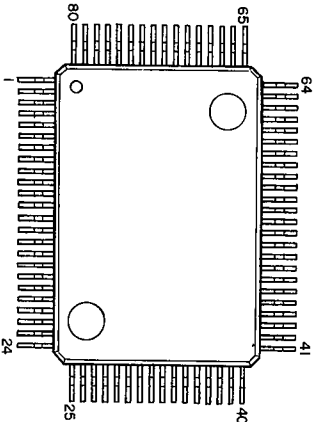
Video & Microcomputer PWB (1U-2435C-2) (Component Side)

- Ground (—) side of frequency counter to G-terminal at the test point (T.P.) of Video and microcomputer P.W.B. (1U-2435C-2).
  - Confirm that no insertion of video input or output is made. (With optional function)
- (1) H SYNC (Horizontal synchronous pulse Adjustment)
- Connect probe for frequency counter to H.
  - Turn VR002 with non-magnetic screwdriver and adjust the frequency counter so as to read 15.734 kHz ± 200 Hz.
- (2) V SYNC (Vertical synchronous pulse Adjustment)
- Connect probe for frequency counter to V.
  - Turn VR001 with non-magnetic screwdriver and adjust the frequency counter so as to read 55 Hz ± 1 Hz.
- (3) Adjustment completion
- Disconnect the frequency counter.



SEMICONDUCTORS

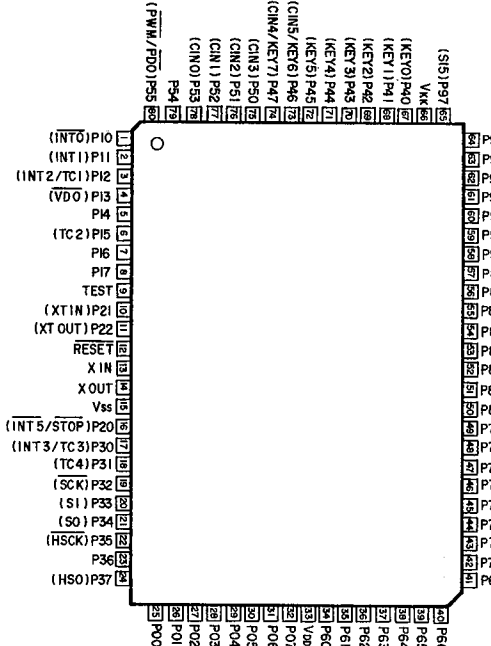
- IC's  
TMP87CM70AF-6040  
(VV:IC801)



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

TMP87CK70F Terminal Function

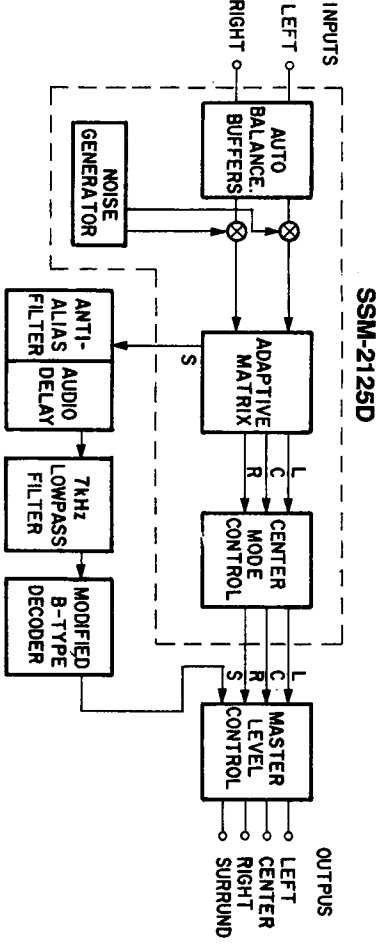
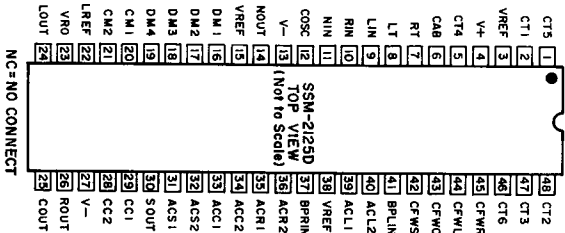
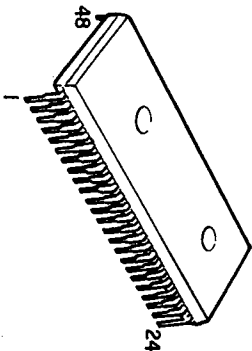
| Terminal Voltage | Terminal Name    | I/O | Logic | Initial Setting | Usage                                                        |
|------------------|------------------|-----|-------|-----------------|--------------------------------------------------------------|
| Power OFF (V)    | $\bar{E}_D$      | I   | L*    | —               | Power breakdown, Break down detect input (*L at Breakdown)   |
| 5.2              | 1 P10(NT0)       | I   | L*    | —               | PROTECTION, PROTECTION INPUT (*H at detect mode)             |
| 0.0              | 2 P11(NT1)       | I   | H*    | —               | OSD CS OSD Control (*L at data transfer mode)                |
| 0.0              | 3 P12(NT2/TC1)   | O   | L*    | L               | MODE Shift 1 (Shift of Previous AN/CAN/R MODE)               |
| 0.0              | 4 P13(QV0)       | I   | —     | —               | DM1                                                          |
| 0.0              | 5 P14            | O   | H     | L               | DM2                                                          |
| 0.0              | 6 P15(TC2)       | O   | H     | L               | Dolby-Protologic Control                                     |
| 0.0              | 7 P16            | O   | H     | L               | DM3                                                          |
| 0.0              | 8 P17            | O   | H     | L               | DM4                                                          |
| 0.0              | 9 TEST           | I   | —     | —               | Connected to GND                                             |
| 0.0              | 10 P21(X1TN)     | O   | H     | L               | CM1                                                          |
| 0.0              | 11 P22(XTCUT)    | O   | H     | L               | CM2                                                          |
| 5.0              | 12 RESET         | I   | L     | —               | RESET, Microcomputer reset input                             |
| 2.3              | 13 XIN           | I   | —     | —               | Oscillator connection (8MHz)                                 |
| 2.4              | 14 XOUT          | I   | —     | —               | 0V (GND)                                                     |
| 0.0              | 15 VSS           | PW  | —     | —               | MODE Shift 2 (Shift of Previous OEM MODE)                    |
| 0.0              | 16 P20(NT5/STOP) | I   | —     | —               | REMOTE, REMOTE Control reception signal input                |
| 5.2              | 17 P30(NT3/TC3)  | I   | L     | —               | FL CS FL Driver Control (MSC2128) (*L at data transfer mode) |
| 0.0              | 18 P31(TC4)      | O   | L*    | L               | FL, OSD Control                                              |
| 0.0              | 19 P32(SCX)      | O   | H     | L               | CK                                                           |
| 0.0              | 20 P33(S)        | O   | L*    | L               | RESET (MSC7128, M50554) (*L at reset)                        |
| 0.0              | 21 P34(SO)       | O   | H     | L               | DATA, FL, OSD Control                                        |
| 0.0              | 22 P35(HSCX)     | O   | H     | L               | BCK                                                          |
| 0.0              | 23 P36           | O   | H     | L               | WCK                                                          |
| 0.0              | 24 P37(HSO)      | O   | H     | L               | CD                                                           |



| Terminal Voltage | Terminal Name | I/O | Logic | Initial Setting | Usage                      |
|------------------|---------------|-----|-------|-----------------|----------------------------|
| Power OFF (V)    | $\bar{E}_D$   | I   | L*    | L               | AMP MUTE (*L at MUTE mode) |
| 5.0              | 49 P77(G0)    | O   | L*    | L               | POWER                      |
| 4.8              | 50 P80(S0)    | O   | H     | L               | POWER                      |
| 4.8              | 51 P81(S1)    | O   | H     | L               | POWER                      |
| 4.8              | 52 P82(S2)    | O   | H     | L               | POWER                      |
| 4.8              | 53 P83(S3)    | O   | H     | L               | POWER                      |
| 4.8              | 54 P84(S4)    | O   | H     | L               | POWER                      |
| 4.8              | 55 P85(S5)    | O   | H     | L               | POWER                      |
| 4.8              | 56 P86(S6)    | O   | H     | L               | POWER                      |
| 4.8              | 57 P87(S7)    | O   | H     | L               | POWER                      |
| 4.8              | 58 P88(S8)    | O   | H     | L               | POWER                      |
| 4.8              | 59 P89(S9)    | O   | H     | L               | POWER                      |
| 4.8              | 60 P92(S10)   | O   | H     | L               | POWER                      |
| 4.8              | 61 P93(S11)   | O   | H     | L               | POWER                      |
| 4.8              | 62 P94(S12)   | O   | H     | L               | POWER                      |
| 4.8              | 63 P95(S13)   | O   | H     | L               | POWER                      |
| 4.8              | 64 P96(S14)   | O   | H     | L               | POWER                      |

| Terminal Voltage | Terminal Name      | I/O | Logic | Initial Setting | Usage                                                              |
|------------------|--------------------|-----|-------|-----------------|--------------------------------------------------------------------|
| Power OFF (V)    | $\bar{E}_D$        | I   | L*    | L               | VCR-2                                                              |
| 4.9              | 65 P97(S15)        | O   | L*    | L               | REC INH. (*H at Inhibit mode)                                      |
| 4.9              | 66 V <sub>CC</sub> | PW  | —     | —               | V <sub>CC</sub>                                                    |
| 4.9              | 67 P40(KEY0)       | O   | H     | L               | A                                                                  |
| 4.9              | 68 P41(KEY1)       | O   | H     | L               | B                                                                  |
| 4.9              | 69 P42(KEY2)       | O   | H     | L               | C                                                                  |
| 4.9              | 70 P43(KEY3)       | O   | H     | L               | A                                                                  |
| 4.9              | 71 P44(KEY4)       | O   | H     | L               | B                                                                  |
| 4.9              | 72 P45(KEY5)       | O   | H     | L               | C                                                                  |
| 4.9              | 73 P46(CIN5/KEY6)  | O   | H     | L               | ASP-OUT1 (VCR-1)                                                   |
| 4.9              | 74 P47(CIN4/KEY7)  | O   | H     | L               | ASP-OUT2 (MONITOR)                                                 |
| 4.9              | 75 P50(CIN3)       | —   | —     | —               | Vacant                                                             |
| 4.9              | 76 P51(CIN2)       | I   | H     | L               | ASP-3 (VCR-1)                                                      |
| 4.9              | 77 P52(CIN1)       | I   | H     | L               | ASP-2 (VDP)                                                        |
| 4.9              | 78 P53(CIN0)       | I   | H     | L               | ASP-1 (DBS/BS)                                                     |
| 4.9              | 79 P54             | O   | H*    | L               | TUNER MUTE (*H at MUTE mode)                                       |
| 4.9              | 80 P55(PWM/PD0)    | I   | H*    | L               | SYNC DET. OSD Synchronization stft (*H at externally synchronized) |

SSM-2125D (SU:IC601)

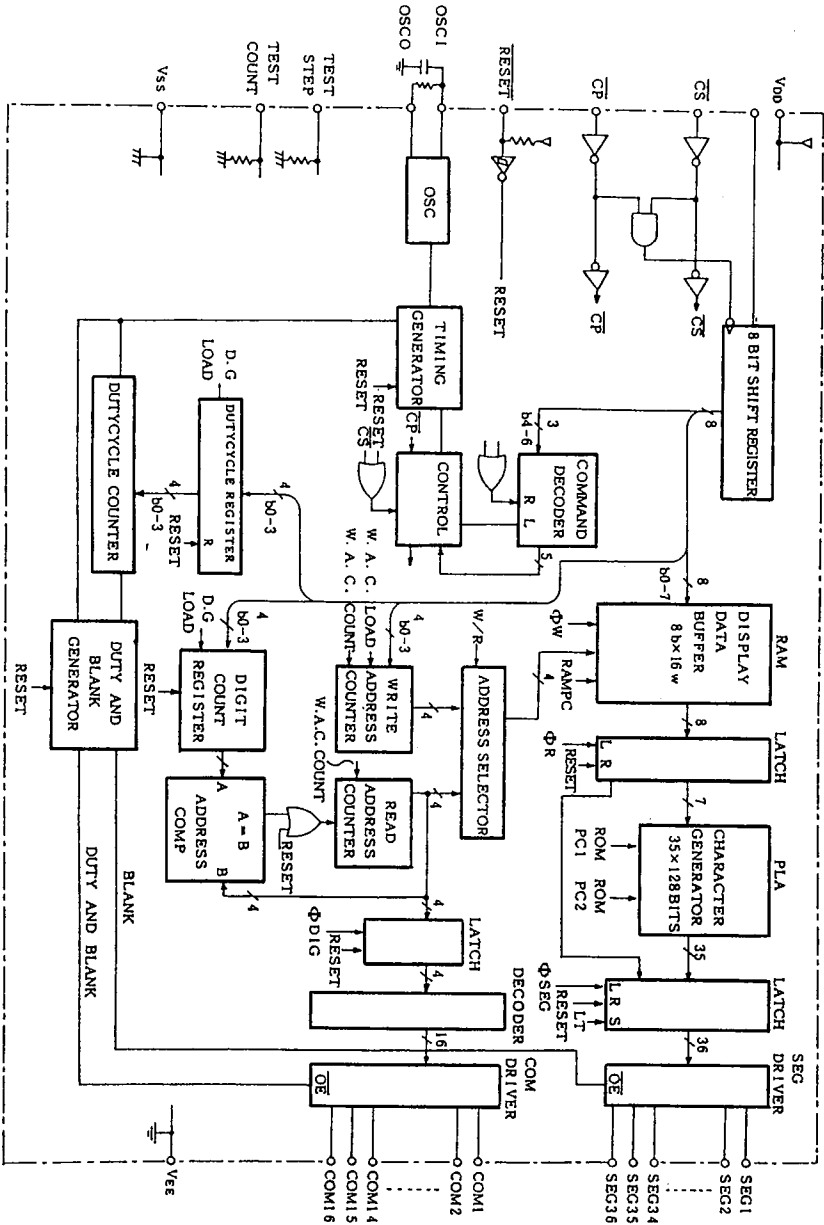
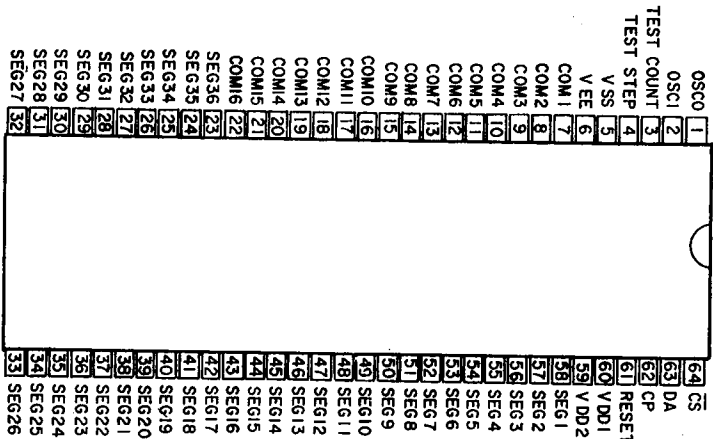
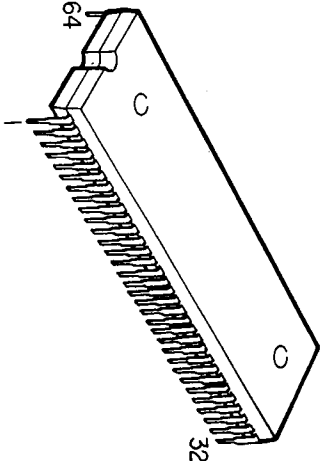








MSC7128-03SS (VV:IC802)

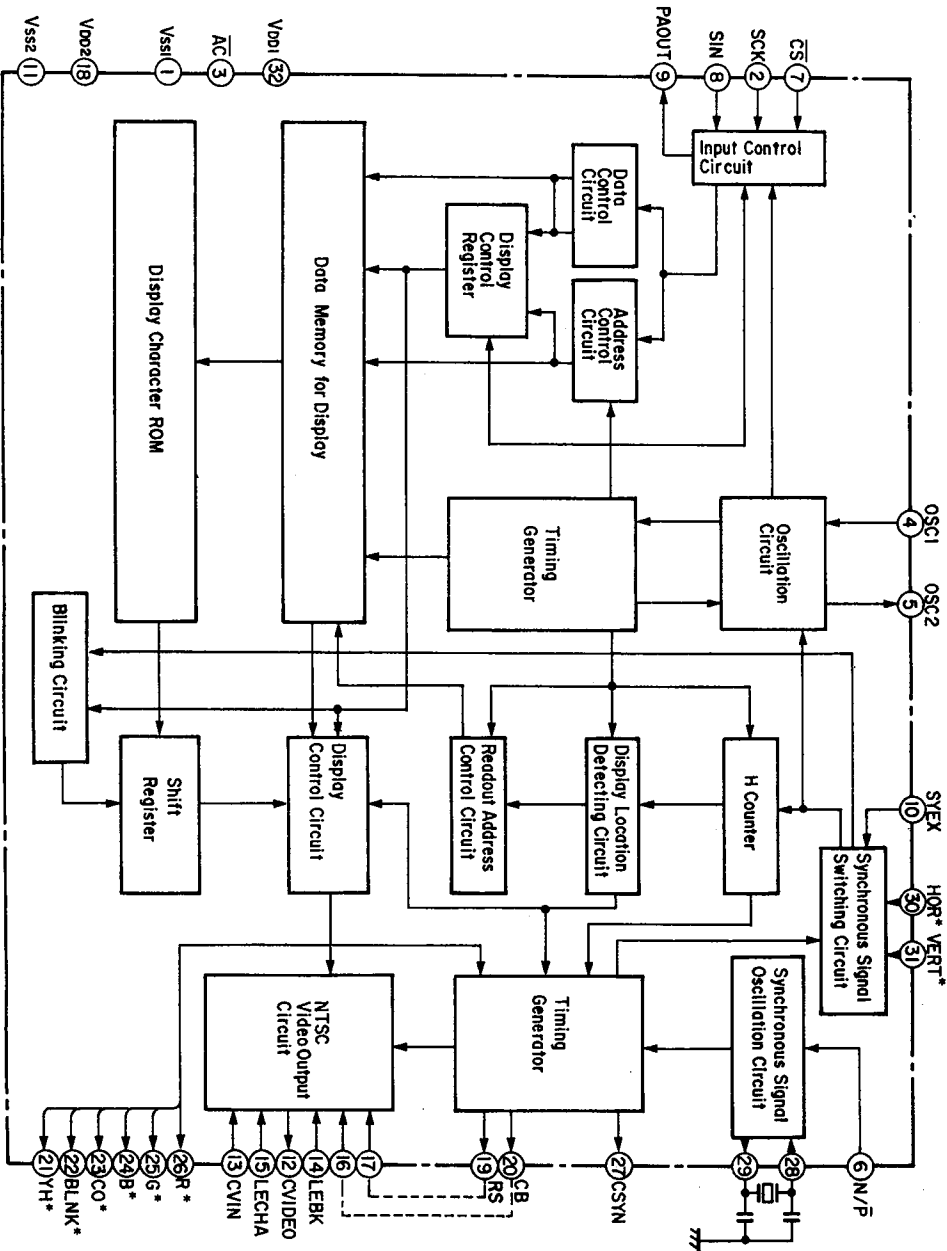
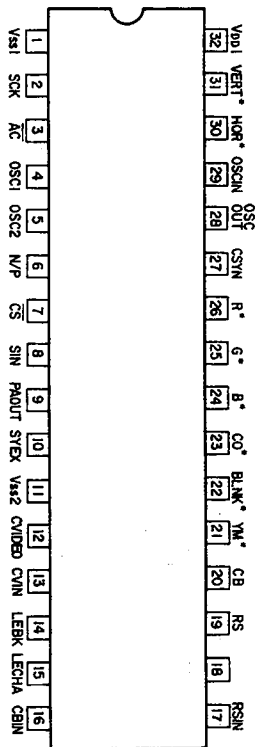
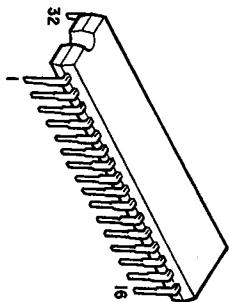


MSC7128-03SS Terminal Function

| Terminal Name    | Terminal No. | I/O | Connection to: | Function                                                                                                                                                                       |
|------------------|--------------|-----|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V <sub>o</sub> 1 | 60           |     | Power Supply   | V <sub>o</sub> 1 — V <sub>ss</sub> Internal logic power supply.                                                                                                                |
| V <sub>o</sub> 2 | 59           |     |                | V <sub>o</sub> 2 — V <sub>ee</sub> Fluorescent display tube drive circuit power supply.                                                                                        |
| V <sub>ss</sub>  | 5            |     |                |                                                                                                                                                                                |
| V <sub>ee</sub>  | 6            |     |                |                                                                                                                                                                                |
| DA               | 63           | I   | Microcomputer  | Serial data input. Input from ( Positive logic ) LBS.                                                                                                                          |
| CP               | 62           | I   | Microcomputer  | Shift clock input. Data shift at rise time of CP.                                                                                                                              |
| CS               | 64           | I   | Microcomputer  | Chip select input. Serial transfer of data is prohibited when set to "H".                                                                                                      |
| OSC1             | 2            | I   |                | External terminal of CR for CR oscillation.                                                                                                                                    |
| OSCO             | 1            | O   |                | fosc 250 KHz at C= 100 PF, R= 47 KΩ                                                                                                                                            |
| RESET            | 61           | I   |                | Reset input ( Built-in Pull-up resistor ). Internal logic is reset when "LOW" is set, and output of SEG1 ~ 36, COM1 ~ 16 all become "LOW".                                     |
| COM1 ~ COM16     | 7 ~ 22       | O   |                | Drive output of fluorescent display tube grid. Able to connect directly to fluorescent display tube, and no Pull-down resistor is needed. I <sub>oh</sub> > -30 mA             |
| SEG1 ~ SEG35     | 58 ~ 24      | O   |                | Drive output of anode for fluorescent display tube 5x7 dot. Able to connect directly to fluorescent display tube and no Pull-down resistor is needed. I <sub>oh</sub> > -2 mA. |
| SEG36            | 23           | O   |                | Drive output of anode for fluorescent display tube cathode. Able to connect display to fluorescent display tube and no Pull-down resistor is needed. I <sub>oh</sub> > -10 mA  |
| TEST STEP        | 4            | I   |                | Test mode setting input ( Normally opened ).                                                                                                                                   |
| TEST COUNT       | 3            | I   |                | Test clock input ( Normally opened ).                                                                                                                                          |



M50554-001SP (V/V: IC004)

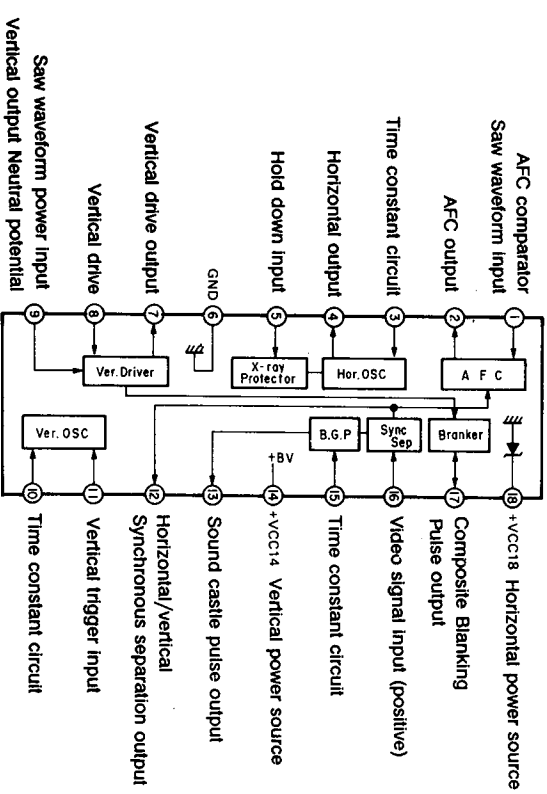
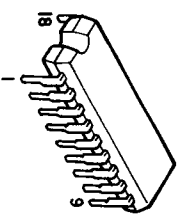


M50554-001SP Terminal Function

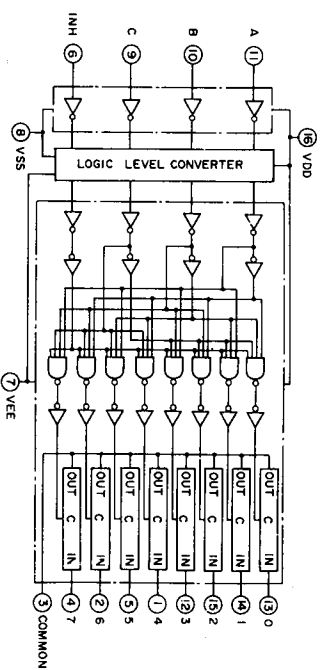
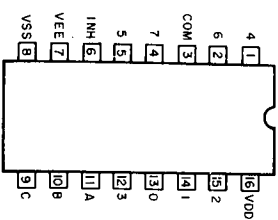
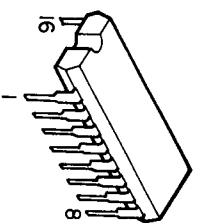
| Pin No. | Symbol  | Terminal Name                                    | Function                                                                                                                                                                                                                                                                                              |
|---------|---------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Vss1    | Ground terminal                                  | Digital ground terminal; connect to GND.                                                                                                                                                                                                                                                              |
| 2       | SCK     | Serial clock input                               | When "L" at CS terminal, takes in SIN serial data at rise time of SCK. Hysteresis input. Built-in Pull-up resistor.                                                                                                                                                                                   |
| 3       | AC      | Auto clear input                                 | Reset IC internal circuit at "L" mode. Built-in Pull-up resistor. Hysteresis input.                                                                                                                                                                                                                   |
| 4       | OSC1    | Oscillator circuit external terminal             | External terminal for display oscillator circuit. Reference oscillation frequency is approx. 7MHz. Display position is horizontal of TV screen and character width are determined by this oscillation frequency.                                                                                      |
| 5       | OSC2    |                                                  |                                                                                                                                                                                                                                                                                                       |
| 6       | N/P     | NTSC/PAL switch input                            | Synchronous signal generator switch terminal of NTSC or PAL system. Generates synchronous signal of NTSC type at "H" mode, and synchronous signal of PAL type at "L" mode. Built-in Pull-up resistor.                                                                                                 |
| 7       | CS      | Chip select input                                | Chip select terminal; set to "L" mode for serial transfer. Built-in Pull-up resistor.                                                                                                                                                                                                                 |
| 8       | SIN     | Serial data input                                | Serially inputs memory data and address for display control register and display data. Built-in Pull-up resistor.                                                                                                                                                                                     |
| 9       | PAOUT   | Parity output                                    | Odd number parity output; detects one-bit error in one word of SIN.                                                                                                                                                                                                                                   |
| 10      | SYEX    | Synchronous signal switch input                  | Switch terminal for external or internal synchronous signal. Enter external synchronous signal mode at "H" and internal synchronous signal mode at "L". SYEX comprises logic sum with EX register of address 243 in display control register and internal synchronization. Built-in Pull-up resistor. |
| 11      | Vss2    | Ground terminal                                  | Analog ground terminal; connect to GND.                                                                                                                                                                                                                                                               |
| 12      | CVVIDEO | Composite Video output                           | Output terminal of composite video signal. Outputs 2Vp-p composite video signal. At superimpose mode, outputs output characters, etc. superimposed on CVIN signal.                                                                                                                                    |
| 13      | CVIN    | Composite Video input                            | Input terminal of composite video signal. At superimpose mode, output characters, etc. are superimposed on this composite video signal.                                                                                                                                                               |
| 14      | LEBK    | Blanking level                                   | Input terminal to determine blanking level of video signal.                                                                                                                                                                                                                                           |
| 15      | LECHA   | Character level input                            | Input terminal to determine character output level of video signal.                                                                                                                                                                                                                                   |
| 16      | CBIN    | Color burst signal input                         | Input CB output after converting to color burst signal level of video signal, via external circuit.                                                                                                                                                                                                   |
| 17      | RSIN    | Character background carrier color signal input  | Input RS output after converting to carrier color signal level of video signal, via external circuit.                                                                                                                                                                                                 |
| 18      | VDD2    | Power supply terminal                            | Analog power supply terminal; connect to +5V.                                                                                                                                                                                                                                                         |
| 19      | RS      | Character background carrier color signal output | Carrier color signal output for coloring character background. Outputs signal with phase angle to color burst signal CB. Amplitude 5V.                                                                                                                                                                |
| 20      | CB      | Color burst signal output                        | Outputs color burst signal of 3.58MHz for NTSC system, 4.43MHz for PAL system. Amplitude 5V.                                                                                                                                                                                                          |
| 21      | YH      | Brightness signal output                         | Brightness signal output; able to select polarity at character ROM determination.                                                                                                                                                                                                                     |
| 22      | BLNK    | Character background output                      | Outputs character background signal; able to select polarity at character ROM determination.                                                                                                                                                                                                          |
| 23      | CO      | Character output                                 | Outputs character signal; able to select polarity at character ROM determination.                                                                                                                                                                                                                     |
| 24      | B       | Blue color output                                | Blue color output; able to select polarity at character ROM determination.                                                                                                                                                                                                                            |
| 25      | G       | Green color output                               | Green color output; able to select polarity at character ROM determination.                                                                                                                                                                                                                           |
| 26      | R       | Red color output                                 | Red color output; able to select polarity at character ROM determination.                                                                                                                                                                                                                             |
| 27      | CSYN    | Composite synchronous signal output              | Outputs composite synchronous signal of NTSC or PAL system. Negative polarity. Amplitude 5V.                                                                                                                                                                                                          |
| 28      | OSCOUT  | Synchronous signal generating oscillator circuit | External terminal of synchronous signal generating oscillator circuit. For NTSC system, oscillation frequency of 14.32MHz, and for PAL system, of 17.73MHz are used.                                                                                                                                  |
| 29      | HOR     | Horizontal synchronous signal's signal           | Inputs horizontal synchronous signal. Hysteresis input. Able to select polarity at character ROM determination.                                                                                                                                                                                       |
| 30      | VERT    | Vertical synchronous signal's signal             | Inputs vertical synchronous signal. Hysteresis input. Able to select polarity at character ROM determination.                                                                                                                                                                                         |
| 31      | VERT    | Vertical synchronous signal's signal             | Inputs vertical synchronous signal. Hysteresis input. Able to select polarity at character ROM determination.                                                                                                                                                                                         |
| 32      | VDD1    | Power supply terminal                            | Digital power supply terminal; connect to +5V.                                                                                                                                                                                                                                                        |



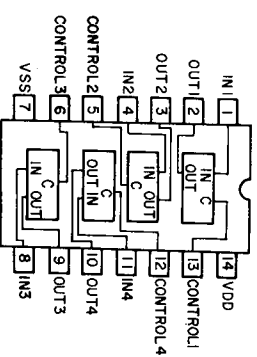
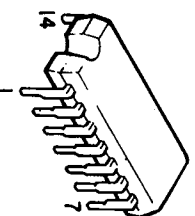
**LA7820 (VV: IC006)**



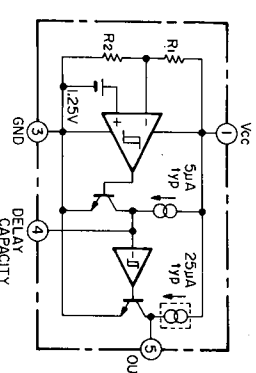
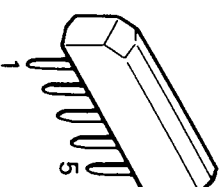
**TC4051BP (VV:IC001, 002, 101, 102, 104, 105)**



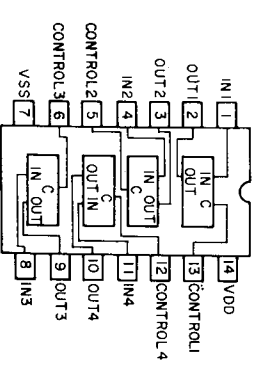
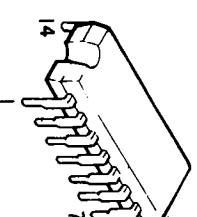
**HD14066BP (VV: IC003, 103)**



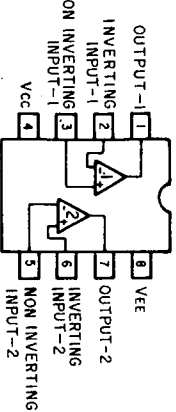
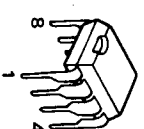
M51953B (VV: IC803)



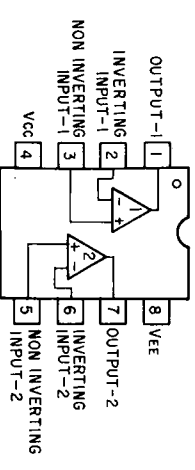
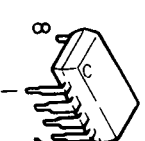
**LC4966 (SU: IC604)**



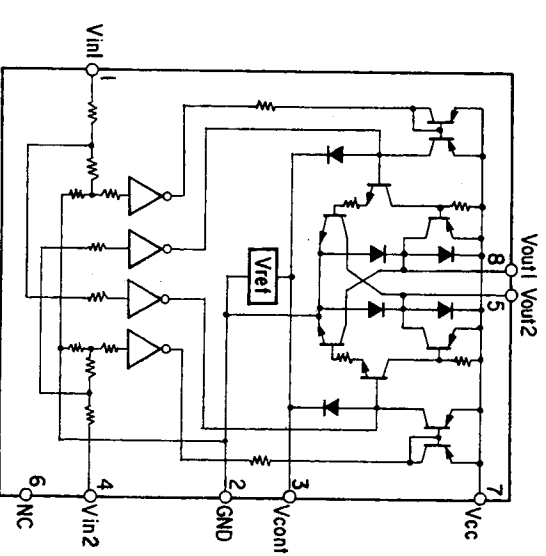
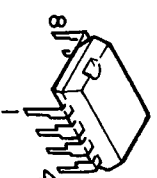
M5128AP  
(MA: IC351)  
(SU: IC452, 602, 607, 609, 611, 703, 706, 709-712, 716)  
(RI: IC051, 152)



NJM44556D (MA: IC231) (SU: IC231)  
 NJM44558DD (RI: IC151)  
 NJM2082D (SU: IC451, 608, 610)  
 NJM2068DDC (SU: IC713)

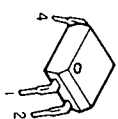


BA1639 (SU: IC714)

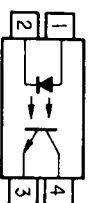




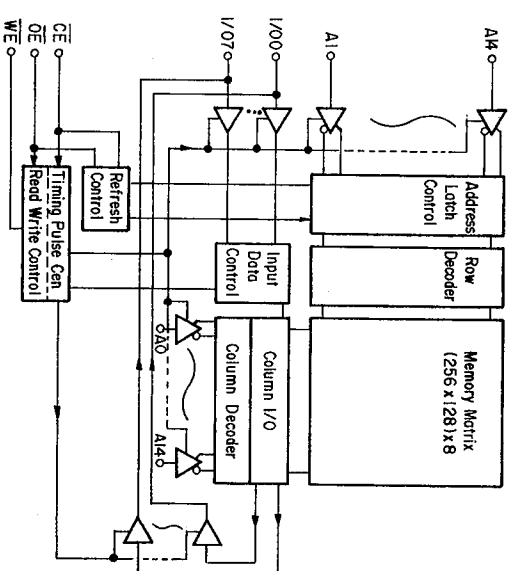
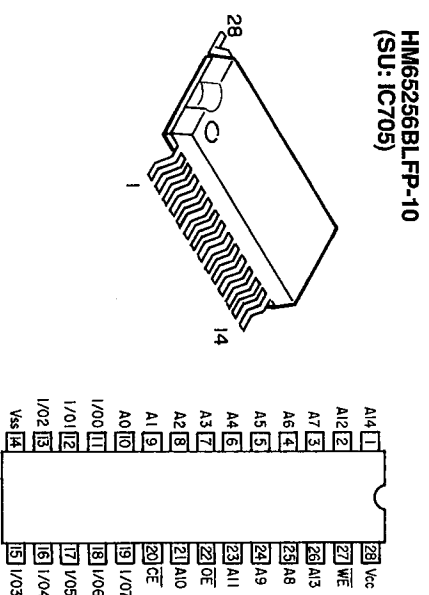
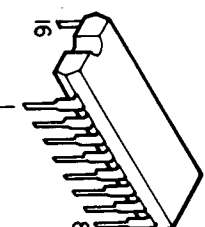
**TLP521-1(BL) (MA:IC453-455)  
INFRARED LED + PHOTO TRANSISTOR**



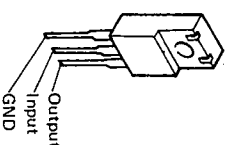
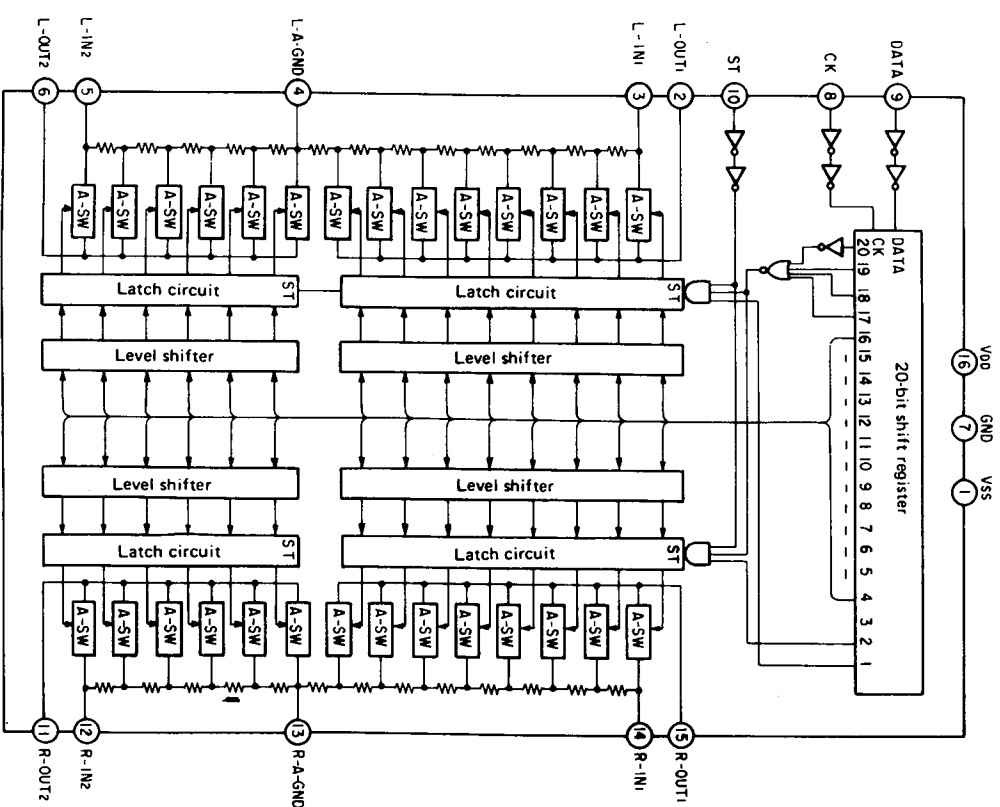
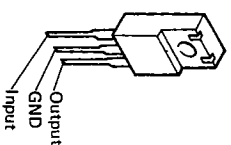
1. Anode
2. Cathode
3. Emitter
4. Collector



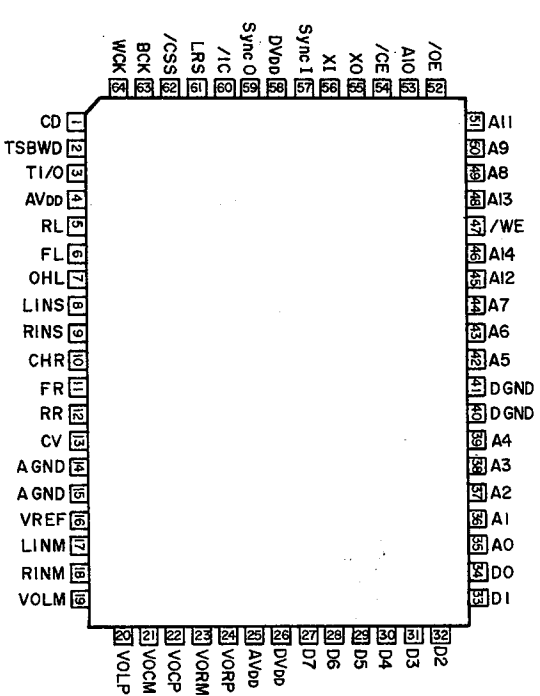
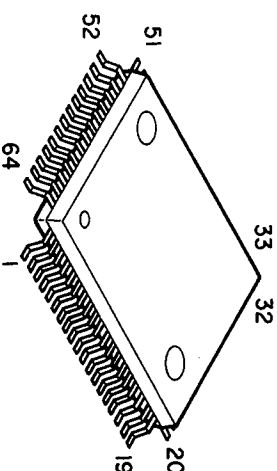
## TC9176P (SU: IC707, 708)



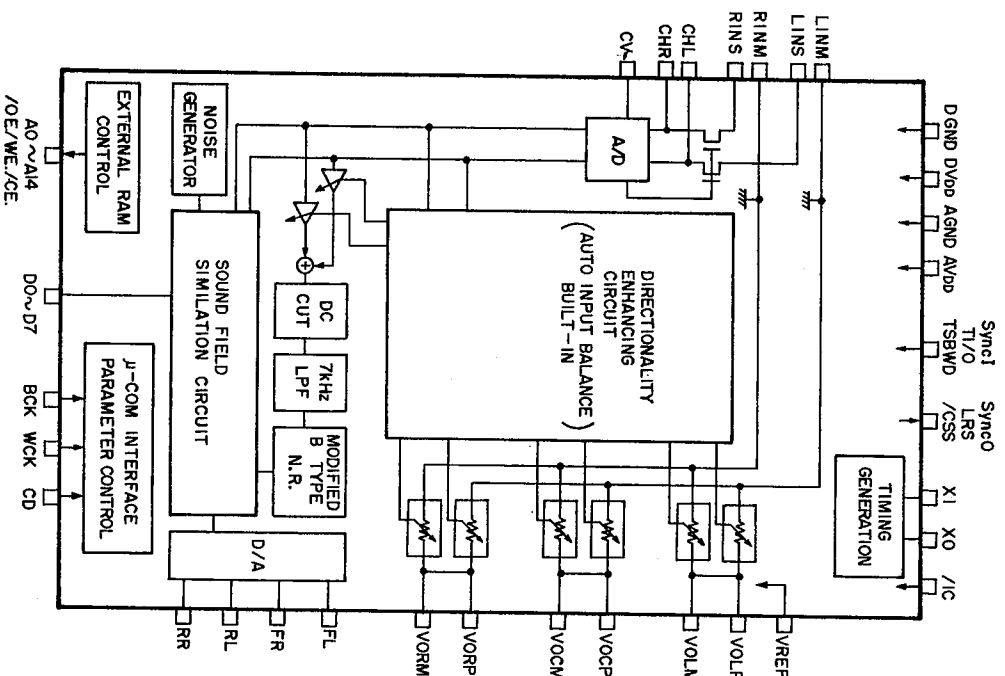
NJM7805FA(S) (SU:IC715)  
NJM7806FA(S) (M:IC503, 505)  
NJM7815FA(S) (M:IC501)



**F71002B**  
**(SU: IC704)**



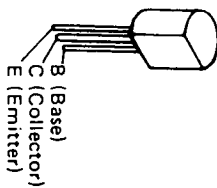
## BLOCK DIAGRAM



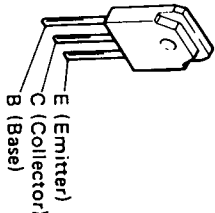


• TRANSISTORS

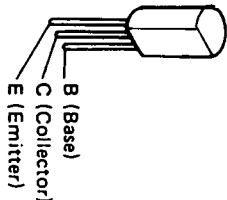
2SA970 (BL)  
2SA988 (E/F)  
2SC1015 (GR/Y)  
2SC1815 (Y),(BL)  
2SC1841 (E/F)  
2SC2878 (A/B)



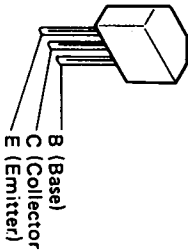
2SA1490 (O/P/Y) (Z)  
2SC3854 (O/P/Y) (Z)



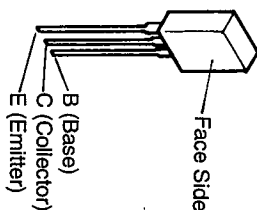
2SB647A (C)  
2SD667A (C)



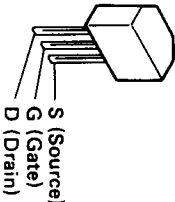
2SA1048 (GR),(Y/GR)  
2SC2458 (BL)



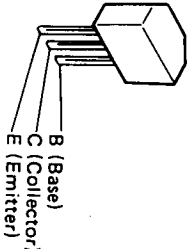
2SB1328 (P)  
2SD2004 (P)



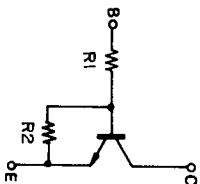
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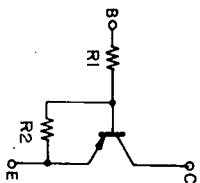
RN1202  
RN1204  
RN2201  
RN2204



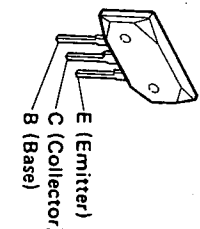
RN1202  
RN1204



RN2201  
RN2204

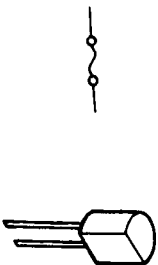


2SA1493(O)/(Y)  
2SA3857(O)/(Y)



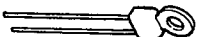
• IC PROTECTORS

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



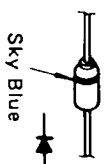
• POSISTOR

PTH9M04BB222TS2F333  
(MA: P301)

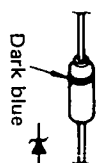


• DIODES (included LED)

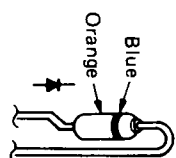
1SS270A  
1S2076A



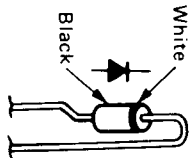
HZS4B-1  
HZS6B-1  
HZS7C-1  
HZS7B-1  
HZS9A-1  
HZS12B-1  
HZS20-1



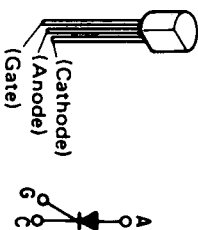
1SR35-200A



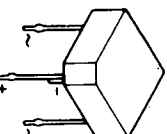
DSM1D2 (Type 3)



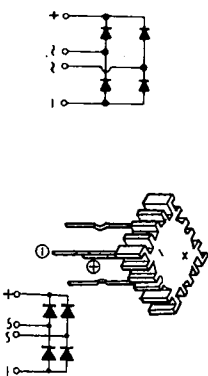
SFOR1A42 (Thyristor)



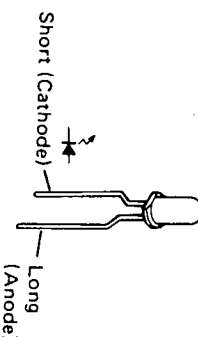
S4VB20F



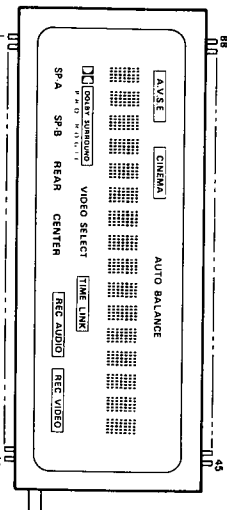
D5FB20 (4001)



SEL1210R (Red)



• FL DISPLAY  
(Part No.: 3934115000)



TERMINAL CONNECTION

| TERMINAL No. | 88   | 87   | 86   | 85   | 84   | 83   | 82   | 81   | 80   | 79   | 78   | 77   |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|
| ELECTRODE    | F1   | F1   | NP   | NP   | NP   | NP   | NP   | NP   | P    | P    | P    | P    |
| TERMINAL No. | 76   | 75   | 74   | 73   | 72   | 71   | 70   | 69   | 68   | 67   | 66   | 65   |
| ELECTRODE    | (51) | (12) | (23) | (32) | (42) | (52) | (13) | (23) | (33) | (43) | (53) | (14) |
| TERMINAL No. | 56   | 55   | 54   | 53   | 52   | 51   | 50   | 49   | 48   | 47   | 46   | 45   |
| ELECTRODE    | P    | P    | P    | P    | P    | P    | NP   | NP   | NP   | NP   | F2   | F2   |

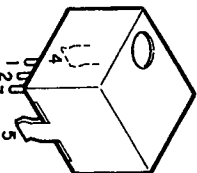
(LOWER)

| TERMINAL No. | 33 | 34 | 35 | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43 | 44 |
|--------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|----|----|
| ELECTRODE    | P  | P  | P  | P   | P   | NP  | NP  | NP  | NP  | NP  | F2 | F2 |
| TERMINAL No. | 13 | 14 | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23 | 24 |
| ELECTRODE    | 38 | 76 | 86 | 126 | 136 | 146 | 156 | 166 | 116 | 106 | 23 | 53 |
| TERMINAL No. | 1  | 2  | 3  | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11 | 12 |
| ELECTRODE    | F1 | F1 | NP | NP  | NP  | NP  | NP  | NP  | 63  | 53  | 43 | 16 |

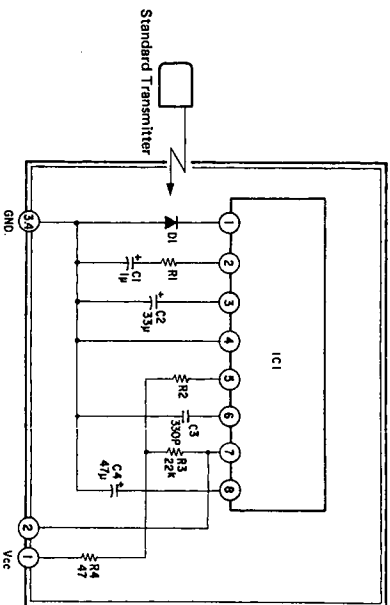
Notes: F: Filament  
G: Grid  
P: Anode  
NP: No-Pin

• OTHERS

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



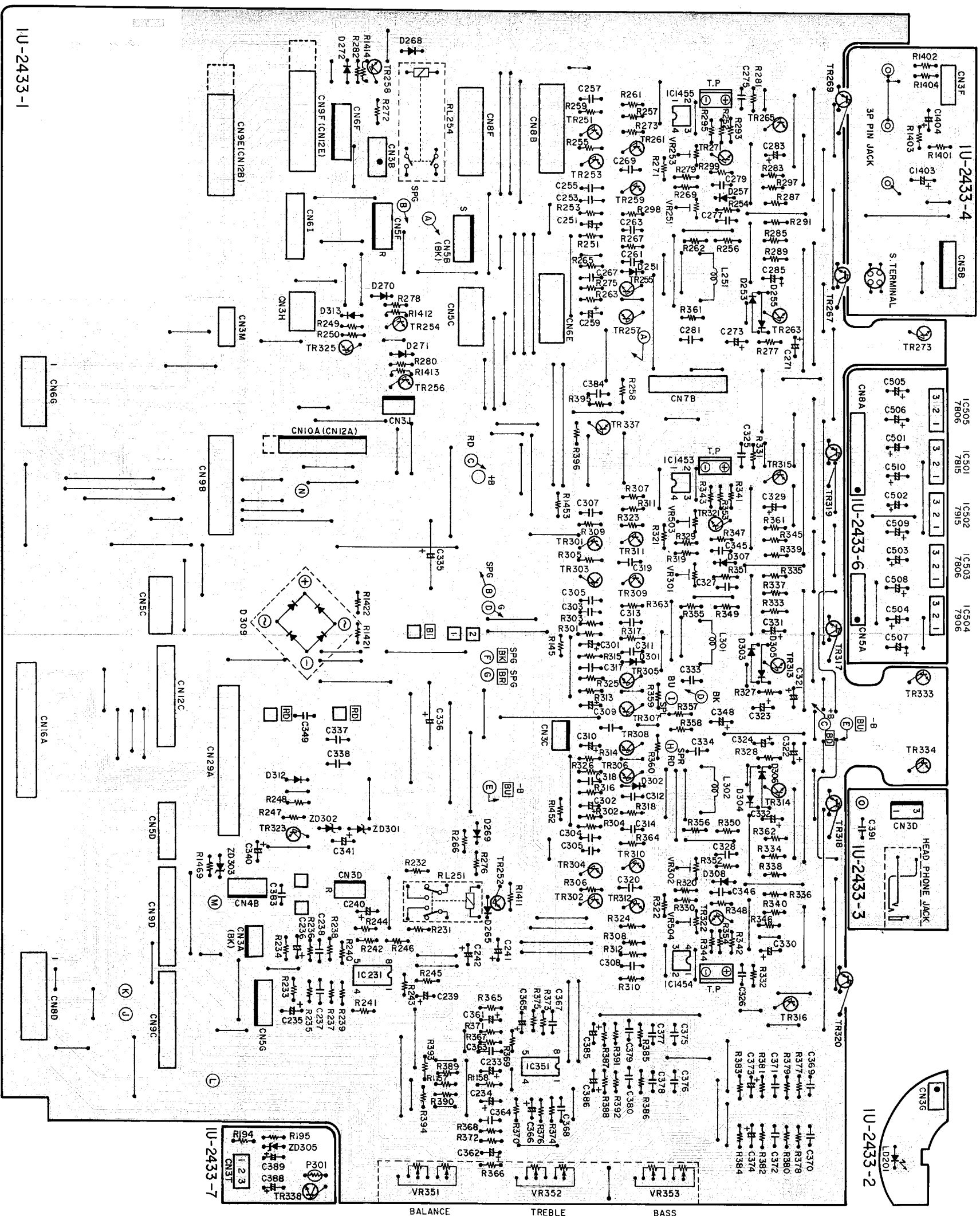
1. VCC
2. Output
3. GND
4. Case fin
5. Case fin



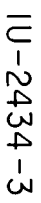
IC1 : CX20106A chip  
D1 : Pin photodiode chip  
C1, C2, C4 : Aluminium electrolytic capacitor  
C3 : SL characteristic  $\pm 5\%$   
R1 : Gain control resistor  
R2 : fo control resistor (using  $\pm 1\%$ )  
R (Other than above items) :  $\pm 5\%$



## 1U-2433A MAIN AMP UNIT ASS'Y













The schematic diagram illustrates the internal circuitry of a radio receiver, organized into several functional sections:

- FRONT:** Includes input stages with resistors R202, R203, R204, R205, R206, R207, R208, R209, R210, R211, R212, R213, R214, R215, R216, R217, R218, R219, R220, R221, R222, R223, R224, R225, R226, R227, R228, R229, R230, R231, R232, R233, R234, R235, R236, R237, R238, R239, R240, R241, R242, R243, R244, R245, R246, R247, R248, R249, R250, R251, R252, R253, R254, R255, R256, R257, R258, R259, R260, R261, R262, R263, R264, R265, R266, R267, R268, R269, R270, R271, R272, R273, R274, R275, R276, R277, R278, R279, R280, R281, R282, R283, R284, R285, R286, R287, R288, R289, R290, R291, R292, R293, R294, R295, R296, R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318, R319, R320, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538, R539, R540, R541, R542, R543, R544, R545, R546, R547, R548, R549, R550, R551, R552, R553, R554, R555, R556, R557, R558, R559, R560, R561, R562, R563, R564, R565, R566, R567, R568, R569, R570, R571, R572, R573, R574, R575, R576, R577, R578, R579, R580, R581, R582, R583, R584, R585, R586, R587, R588, R589, R590, R591, R592, R593, R594, R595, R596, R597, R598, R599, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R632, R633, R634, R635, R636, R637, R638, R639, R640, R641, R642, R643, R644, R645, R646, R647, R648, R649, R650, R651, R652, R653, R654, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R666, R667, R668, R669, R670, R671, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R688, R689, R690, R691, R692, R693, R694, R695, R696, R697, R698, R699, R700, R701, R702, R703, R704, R705, R706, R707, R708, R709, R710, R711, R712, R713, R714, R715, R716, R717, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R750, R751, R752, R753, R754, R755, R756, R757, R758, R759, R760, R761, R762, R763, R764, R765, R766, R767, R768, R769, R770, R771, R772, R773, R774, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R791, R792, R793, R794, R795, R796, R797, R798, R799, R800, R801, R802, R803, R804, R805, R806, R807, R808, R809, R810, R811, R812, R813, R814, R815, R816, R817, R818, R819, R820, R821, R822, R823, R824, R825, R826, R827, R828, R829, R830, R831, R832, R833, R834, R835, R836, R837, R838, R839, R840, R841, R842, R843, R844, R845, R846, R847, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R860, R861, R862, R863, R864, R865, R866, R867, R868, R869, R870, R871, R872, R873, R874, R875, R876, R877, R878, R879, R880, R881, R882, R883, R884, R885, R886, R887, R888, R889, R890, R891, R892, R893, R894, R895, R896, R897, R898, R899, R900, R901, R902, R903, R904, R905, R906, R907, R908, R909, R910, R911, R912, R913, R914, R915, R916, R917, R918, R919, R920, R921, R922, R923, R924, R925, R926, R927, R928, R929, R930, R931, R932, R933, R934, R935, R936, R937, R938, R9



- Part indicated with the mark "●" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "1" (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  $\pm 5\%$ , 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

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

Ex.: 

| RN   | 14K                   | 2E    | 182        | G               | FR     |
|------|-----------------------|-------|------------|-----------------|--------|
| Type | Shape and performance | Power | Resistance | Allowable error | Others |

|                       |           |                |                          |
|-----------------------|-----------|----------------|--------------------------|
| RD : Carbon           | 2B : 1/8W | F : $\pm 1\%$  | P : Pulse-resistant type |
| RC : Composition      | 2E : 1/4W | G : $\pm 2\%$  | NL : Low noise type      |
| RS : Metal oxide film | 2H : 1/2W | J : $\pm 5\%$  | NB : Non-burning type    |
| RW : Winding          | 3A : 1W   | K : $\pm 10\%$ | FR : Fuse-resistor       |
| RM : Metal film       | 3D : 2W   | M : $\pm 50\%$ |                          |
| RK : Metal mixture    | 3F : 3W   |                |                          |
|                       | 3H : 5W   |                |                          |

Ex:  $\frac{CE}{Type}$   $\frac{04W}{Shape}$   $\frac{1H}{Dielectric}$   $\frac{2R2}{Capacity}$   $\frac{M}{Allowable}$   $\frac{BP}{Others}$   
 ↑ ↑ ↑ ↑ ↑

|                                    |           |             |                               |
|------------------------------------|-----------|-------------|-------------------------------|
| CE : Aluminum foil<br>electrolytic | DU : 6.3V | F : ±1%     | HS : High stability type      |
| CA : Aluminum solid                | 1A : 10V  | G : ±2%     | BP : Non-polar type           |
| CS : Tantalum electrolytic         | 1C : 18V  | J : ±5%     | HR : High-resistance type     |
| CQ : Film                          | 1E : 28V  | K : ±10%    | LC : For charge and discharge |
| CK : Ceramic                       | 1F : 35V  | M : ±20%    | HF : High-frequency           |
| CP : Ceramic                       | 1H : 50V  | Z : ±60%    | U : UL part                   |
| CC : Oil                           | 2A : 100V | Z : ±20%    | C : CSA part                  |
| CM : Mica                          | 2B : 125V | P : ±1.00%  | W : UL-CSA type               |
| CF : Metallized                    | 2C : 160V | -40%        | F : Lead wire forming         |
| CH : Metallized                    | 2D : 500V | D : ±0.25PF |                               |
|                                    | 2E : 550V | C : ±0.5PF  |                               |
|                                    | 2H : 500V | = : Others  |                               |
|                                    | 2J : 630V |             |                               |

1 8 2  $\Rightarrow$  1800 ohm = 1,8 kohm  
 Indicates number of zeros after effective number.  
 2-digit effective number.  
 • Units: ohm

$\begin{array}{c} 2 \quad 2 \\ \downarrow \quad \downarrow \\ \text{---} \quad \text{---} \end{array} \Rightarrow 2200\mu\text{F}$   
 Indicates number of zeros after effective number.  
 2-digit effective number.

Units:  $\mu\text{F}$ .

$\frac{2 \ 2 \ 2}{2} \Rightarrow 2200 \mu\text{F} = 0.0022 \mu\text{F}$   
 (More than 2) — Indicates number of zeros after effective number.  
 — 2-digit effective number.

- Units:  $\mu\text{F}$ .

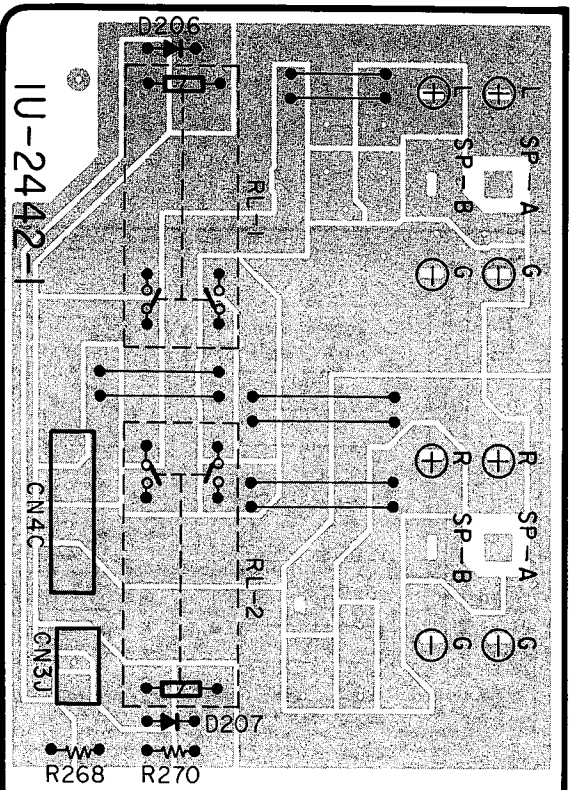
$\begin{array}{cc} 2 & 2 \\ 2 & 1 \end{array}$   
 $\approx 220\text{PF}$

$(0 \text{ or } 1)$

Indicates number of zeros after effective number.

2-digit effective number.

- Units: Pf.
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.





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

| Ref. No.                    | Part No.     | Part Name                       | Remarks                                                       | Ref. No.                                                                                          | Part No.     | Part Name                          | Remarks           |
|-----------------------------|--------------|---------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------|------------------------------------|-------------------|
| <b>SEMICONDUCTORS GROUP</b> |              |                                 |                                                               | <b>RESISTORS GROUP</b>                                                                            |              |                                    |                   |
|                             |              |                                 |                                                               | (Not included Carbon Film $\pm 5\%$ , 1/4W Type. Refer to the Schematic Diagram for those Parts.) |              |                                    |                   |
| IC231                       | 263 0198 005 | IC NJM4556D                     | Regulator<br>Regulator<br>Regulator<br>Regulator<br>Regulator | $\Delta$ R195                                                                                     | 241 2381 904 | Carbon Film<br>3.3kohm, 1/4W (N.B) | RD14B2E332JNBS    |
| IC351                       | 273 0711 000 | IC M5218AP                      |                                                               | $\Delta$ R243,244                                                                                 | 244 2051 961 | Metal Oxide 100ohm, 1W (N.B)       | RS14B3A101JNBS(S) |
| IC453-455                   | 262 0874 009 | IC TLP521-1(BL)                 |                                                               | $\Delta$ R247                                                                                     | 241 2376 964 | Carbon Film 47ohm, 1/4W (N.B)      | RD14B2E470JNBS    |
| IC501                       | 263 0812 006 | IC NJM7815FA(S)                 |                                                               | $\Delta$ R256                                                                                     | 244 2051 987 | Metal Oxide 4.7ohm, 1W (N.B)       | RS14B3A4R7JNBS(S) |
| IC502                       | 263 0561 001 | IC NJM7915FA                    |                                                               | $\Delta$ R257                                                                                     | 241 2380 963 | Carbon Film<br>2.2Kohm, 1/4W (N.B) | RD14B2E222JNBS    |
| IC503                       | 263 0793 002 | IC NJM7806FA(S)                 | Regulator<br>Regulator<br>Regulator<br>Regulator              | $\Delta$ R258                                                                                     | 244 2043 937 | Metal Oxide 10ohm, 1W (N.B)        | RS14B3A100JNBS(S) |
| IC504                       | 263 0683 002 | IC NJM7906FA                    |                                                               | $\Delta$ R261                                                                                     | 241 2380 963 | Carbon Film<br>2.2Kohm, 1/4W (N.B) | RD14B2E222JNBS    |
| IC505                       | 263 0793 002 | IC NJM7806FA(S)                 |                                                               | $\Delta$ R266                                                                                     | 241 2380 950 | Carbon Film<br>2Kohm, 1/4W (N.B)   | RD14B2E202JNBS    |
| TR251                       | 271 0094 919 | Transistor 2SA970(BL)           |                                                               | $\Delta$ R267                                                                                     | 241 2377 976 | Carbon Film<br>130ohm, 1/4W (N.B)  | RD14B2E131JNBS    |
| TR252                       | 273 0317 906 | Transistor 2SC2458(BL)          |                                                               | $\Delta$ R272                                                                                     | 244 2052 973 | Metal Oxide 560ohm, 1W (N.B)       | RS14B3A561JNBS(S) |
| TR253                       | 271 0094 919 | Transistor 2SA970(BL)           | Regulator<br>Regulator<br>Regulator<br>Regulator              | $\Delta$ R273                                                                                     | 241 2315 967 | Fusible 68ohm, 1/4W                | RD14B2E680GFRS    |
| TR254                       | 273 0317 906 | Transistor 2SC2458(BL)          |                                                               | $\Delta$ R283                                                                                     | 241 2378 920 | Carbon Film<br>220ohm, 1/4W (N.B)  | RD14B2E221JNBS    |
| TR255                       | 273 0235 923 | Transistor 2SC1841(E/F)         |                                                               | $\Delta$ R285                                                                                     | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)      | RS14B3AR22JNBS(S) |
| TR256                       | 273 0317 906 | Transistor 2SC2458(BL)          |                                                               | $\Delta$ R287                                                                                     | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)      | RS14B3AR22JNBS(S) |
| TR257                       | 271 0131 924 | Transistor 2SA988(E/F)          |                                                               | $\Delta$ R289                                                                                     | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)      | RS14B3AR22JNBS(S) |
| TR258                       | 273 0317 906 | Transistor 2SC2458(BL)          | Regulator<br>Regulator<br>Regulator<br>Regulator              | $\Delta$ R291                                                                                     | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)      | RS14B3AR22JNBS(S) |
| TR259                       | 273 0235 923 | Transistor 2SC1841(E/F)         |                                                               | $\Delta$ R297                                                                                     | 241 2380 950 | Carbon Film<br>2Kohm, 1/4W (N.B)   | RD14B2E202JNBS    |
| TR261                       | 273 0235 923 | Transistor 2SC1841(E/F)         |                                                               | $\Delta$ R298                                                                                     | 241 2377 976 | Carbon Film<br>130ohm, 1/4W (N.B)  | RD14B2E131JNBS    |
| TR263                       | 274 0151 000 | Transistor 2SD2004(P)           |                                                               | $\Delta$ R299                                                                                     | 241 2380 950 | Carbon Film<br>2Kohm, 1/4W (N.B)   | RD14B2E202JNBS    |
| TR265                       | 272 0107 906 | Transistor 2SB1328(P)           |                                                               | $\Delta$ R307,308                                                                                 | 241 2380 963 | Carbon Film<br>2.2Kohm, 1/4W (N.B) | RD14B2E222JNBS    |
| TR271                       | 273 0235 923 | Transistor 2SC1841(E/F)         | Regulator<br>Regulator<br>Regulator<br>Regulator              | $\Delta$ R311,312                                                                                 | 241 2380 963 | Carbon Film<br>2.2Kohm, 1/4W (N.B) | RD14B2E222JNBS    |
| TR273                       | 273 0198 905 | Transistor 2SC1815(Y)           |                                                               | $\Delta$ 317,318                                                                                  | 241 2377 976 | Carbon Film<br>130ohm, 1/4W (N.B)  | RD14B2E131JNBS    |
| TR301-304                   | 271 0094 919 | Transistor 2SA970(BL)           |                                                               | $\Delta$ R323,324                                                                                 | 241 2315 967 | Fusible 68ohm, 1/4W                | RD14B2E680GFRS    |
| TR305,306                   | 273 0235 923 | Transistor 2SC1841(E/F)         |                                                               | $\Delta$ R333-340                                                                                 | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)      | RS14B3AR22JNBS(S) |
| TR307,308                   | 271 0131 924 | Transistor 2SA988(E/F)          |                                                               | $\Delta$ R345-348                                                                                 | 241 2380 950 | Carbon Film 2kohm, 1/4W (N.B)      | RD14B2E202JNBS    |
| TR309-312                   | 273 0235 923 | Transistor 2SC1841(E/F)         | Regulator<br>Regulator<br>Regulator<br>Regulator              | $\Delta$ R349,350                                                                                 | 244 2051 987 | Metal Oxide 4.7ohm, 1W (N.B)       | RS14B3A4R7JNBS(S) |
| TR313,314                   | 274 0151 000 | Transistor 2SD2004(P)           |                                                               | $\Delta$ R357,358                                                                                 | 244 2043 937 | Metal Oxide 10ohm, 1W              | RS14B3A100JNBS(S) |
| TR315,316                   | 272 0107 906 | Transistor 2SB1328(P)           |                                                               | $\Delta$ R361,362                                                                                 | 241 2378 920 | Carbon Film<br>220ohm, 1/4W (N.B)  | RD14B2E221JNBS    |
| TR321,322                   | 273 0235 923 | Transistor 2SC1841(E/F)         |                                                               | $\Delta$ R363,364                                                                                 | 241 2377 976 | Carbon Film<br>130ohm, 1/4W (N.B)  | RD14B2E131JNBS    |
| TR323                       | 272 0053 908 | Transistor 2SB647A(C)           |                                                               | VR251                                                                                             | 211 6044 048 | Semi Fixed Resistor 5Kohm          | V06PB502          |
| TR325                       | 271 0102 937 | Transistor 2SA1015(GR/Y)        | Regulator<br>Regulator<br>Regulator<br>Regulator              | VR253                                                                                             | 211 6044 019 | Semi Fixed Resistor 47Kohm         | V06PB473          |
| TR333,334                   | 273 0198 905 | Transistor 2SC1815(Y)           |                                                               | VR301,302                                                                                         | 211 6044 048 | Semi Fixed Resistor 5Kohm          | V06PB502          |
| TR337                       | 271 0131 924 | Transistor 2SA988(E/F)          |                                                               | VR351                                                                                             | 211 0760 005 | Variable Resistor                  | V1603V25F---K     |
| TR338                       | 273 0198 918 | Transistor 2SC1815(BL)          |                                                               | VR356                                                                                             | 211 0760 005 | Variable Resistor                  | V1603V25F---K     |
| D251                        | 276 0432 903 | Diode 1SS270A                   | Bridge                                                        | VR503,504                                                                                         | 211 6064 019 | Semi Fixed Resistor 47Kohm         | V06PB473          |
| D253                        | 276 0049 011 | Diode 1S2076A                   |                                                               | <b>CAPACITORS GROUP</b>                                                                           |              |                                    |                   |
| D255                        | 276 0049 011 | Diode 1S2076A                   |                                                               | C233,234                                                                                          | 254 4260 045 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M       |
| D257                        | 276 0432 903 | Diode 1SS270A                   |                                                               | C235,236                                                                                          | 254 4254 006 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M       |
| D265                        | 276 0432 903 | Diode 1SS270A                   |                                                               | C237,238                                                                                          | 253 1179 000 | Ceramic 100PF/50V                  | CK45B1H101K       |
| D268-272                    | 276 0432 903 | Diode 1SS270A                   | 20V                                                           | C239,240                                                                                          | 254 4254 006 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M       |
| D301,302                    | 276 0432 903 | Diode 1SS270A                   |                                                               | C241,242                                                                                          | 254 4260 045 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M       |
| D303-306                    | 276 0049 011 | Diode 1S2076A                   |                                                               | C251                                                                                              | 254 4254 006 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M       |
| D307,308                    | 276 0432 903 | Diode 1SS270A                   |                                                               | C253                                                                                              | 253 1179 000 | Ceramic 100PF/50V                  | CK45B1H101K       |
| $\Delta$ D309               | 276 0356 005 | Diode D5FB20(4001)              |                                                               | C255                                                                                              | 253 1179 042 | Ceramic 220PF/50V                  | CK45B1H221K       |
| D312                        | 276 0548 910 | Diode DSM1D2 (Type 3)           | 9V                                                            | C257                                                                                              | 255 1264 908 | Plastic Film 0.001 $\mu$ F/50V     | CQ93M1H102J(B)    |
| D313                        | 276 0432 903 | Diode 1SS270A                   |                                                               |                                                                                                   |              |                                    |                   |
| ZD301,302                   | 276 0479 908 | Zener Diode HZS20-1             |                                                               |                                                                                                   |              |                                    |                   |
| ZD303                       | 276 0467 907 | Zener Diode HZS9A-1             |                                                               |                                                                                                   |              |                                    |                   |
| ZD305                       | 276 0474 903 | Zener Diode HZS12B-1            |                                                               |                                                                                                   |              |                                    |                   |
| LD201                       | 393 9434 906 | LED SEL1210S                    | Red                                                           |                                                                                                   |              |                                    |                   |
| P301                        | 279 0034 067 | Thermistor PTH9M04BB 22 TS2F333 | Posistor                                                      |                                                                                                   |              |                                    |                   |



| Ref. No.    | Part No.     | Part Name                 | Remarks         | Ref. No.         | Part No.     | Part Name                  | Remarks  | Q'ty |
|-------------|--------------|---------------------------|-----------------|------------------|--------------|----------------------------|----------|------|
| C259        | 254 4256 046 | Electrolytic 100μF/25V    | CE04W1E101M     | CN3F,T           | 205 0233 032 | 3P EH Connector Base       |          | 1    |
| C261        | 255 1265 936 | Plastic Film 0.01μF/50V   | CQ93M1H103J(B)  | CN3A,C,<br>D,D,J | 205 0343 032 | 3P Connector Base (KR-PH)  |          | 5    |
| C263        | 255 1120 042 | Plastic Film 0.0022μF/50V | CQ93M1H222J     | CN4B             | 205 0343 045 | 4P Connector Base (KR-PH)  |          | 1    |
| C267        | 253 4536 006 | Ceramic 10PF/50V          | CC45SL1H100D    | CN5B,B,F,G       | 205 0343 058 | 5P Conn. Base (KR-PH)      |          | 4    |
| C269        | 253 4482 008 | Ceramic 33PF/500V         | CC45SL2H330J    | CN6F             | 205 0343 061 | 6P Conn. Base (KR-PH)      |          | 1    |
| C271        | 254 4260 045 | Electrolytic 1μF/50V      | CE04W1H010M     | CN10A            | 205 0375 000 | 10P Conn. Base (KR-PH)     |          | 1    |
| C273        | 254 4260 087 | Electrolytic 10μF/50V     | CE04W1H100M     | CN3M             | 205 0666 036 | 3P Conn. Base (9130)       |          | 1    |
| C275        | 253 1128 006 | Ceramic 220PF/500V        | CK45B2H221K     | CN5D             | 205 0666 052 | 5P Conn. Base (9130)       |          | 1    |
| C277        | 256 1034 076 | Metalized 0.1μF/50V       | CF93A1H104J     | CN6I             | 205 0666 065 | 6P Conn. Base (9130)       |          | 1    |
| C279        | 255 1265 936 | Plastic Film 0.01μF/50V   | CQ93M1H103J(B)  | CN7B             | 205 0666 078 | 7P Conn. Base (9130)       |          | 1    |
| C281        | 256 1042 974 | Metalized 0.022μF/250V    | CF93A2E223K     | CN5C,E           | 205 0696 051 | JL Connector (BT-E)        | 6P       | 2    |
| C283        | 254 4262 014 | Electrolytic 10μF/63V     | CE04W1J100M     | CN6E,G           | 205 0696 064 | JL Connector (BT-E)        | 8P       | 3    |
| C285        | 254 4262 014 | Electrolytic 10μF/63V     | CE04W1J100M     | CN8B,D,F         | 205 0696 080 | JL Connector (BT-E)        | 9P       | 3    |
| C301,302    | 254 4260 087 | Electrolytic 10μF/50V     | CE04W1H100M     | CN9B,9E,<br>9F   | 205 0696 093 | JL Connector (BT-E)        |          |      |
| C303,304    | 253 1179 000 | Ceramic 100PF/50V         | CK45B1H101K     | CN3B             | 205 0185 025 | 2P Wire Holder             |          | 1    |
| C305,306    | 253 1179 042 | Ceramic 220PF/50V         | CK45B1H221K     | CN9C,D           | 205 0666 094 | 9P Connector Base (9130)   |          | 2    |
| C307,308    | 255 1264 966 | Plastic Film 0.0033μF/50V | CQ93M1H332J(B)  | CN12C            | 205 0535 028 | 12P Connector Base (9130)  |          | 1    |
| C309,310    | 254 4256 046 | Electrolytic 100μF/25V    | CE04W1E101M     | CN16A            | 205 0772 001 | 16P Connector Base (9110B) |          | 1    |
| C311,312    | 255 1265 936 | Plastic Film 0.01μF/50V   | CQ93M1H103J(B)  | CN29A            | 205 0736 034 | 29P FFC Connector (9603)   |          | 1    |
| C313,314    | 255 1120 042 | Plastic Film 0.0022μF/50V | CQ93M1H222J     | CN3B             | 203 4868 009 | 3P VH Conn. Cord           |          | 1    |
| C317,318    | 253 4536 006 | Ceramic 10PF/50V          | CC45SL1H100D    | CN3G             | 203 4869 008 | 3P PH-SAN Conn. Cord       |          | 1    |
| C319,320    | 253 4269 001 | Ceramic 10PF/500V         | CC45SL2H100D    | CN5A             | 203 8346 006 | 5P EH-SCN Conn. Cord       |          | 1    |
| C321,322    | 254 4260 045 | Electrolytic 1μF/50V      | CE04W1H010M     | CN8A             | 204 2451 026 | 8P EH-SCN Conn. Cord       |          | 1    |
| C323,324    | 254 4261 028 | Electrolytic 100μF/50V    | CE04W1H101M     |                  | 203 4876 004 | 3C SIN Cord Ass'y          |          | 1    |
| C325,326    | 253 1054 057 | Ceramic 100PF/500V        | CK45B2H101K     | B-B              | 203 0525 029 | 1P SIN Cord Ass'y          |          | 1    |
| C327,328    | 256 1034 076 | Metalized 0.1μF/50V       | CF93A1H104J     | A-A              | 203 0525 032 | 1P SIN Cord Ass'y          |          | 1    |
| C329-332    | 254 4262 014 | Electrolytic 10μF/63V     | CE04W1J100M     |                  | 203 0524 004 | 1P SIN Cord Ass'y          |          | 2    |
| C333,334    | 256 1042 974 | Metalized 0.022μF/250V    | CF93A2E223K     | CN4C             | 203 0524 017 | 1P SIN Cord Ass'y          |          | 1    |
| C335,336    | 254 6170 007 | Electrolytic 15000μF/63V  | CE04W1J153M(DL) |                  | 203 6391 008 | 4P VH Conn. Cord           |          | 1    |
| C337,338    | 253 1151 905 | Ceramic 4700PF/500V       | CK45E2H472P     |                  | 203 0426 005 | 1P Conn. Cord Ass'y        |          | 1    |
| C340,341    | 254 4260 045 | Electrolytic 1μF/50V      | CE04W1H010M     |                  | 001 0112 043 | Vinyl Wire                 |          | 1    |
| C345,346    | 255 1265 936 | Plastic Film 0.01μF/50V   | CQ93M1H103J(B)  |                  | 205 0452 004 | Style Pin                  |          | 1    |
| C348        | 254 4263 042 | Electrolytic 1μF/100V     | CE04W2A010M     |                  | 125 9002 078 | UL Tube (L=30)             | for P301 | 2    |
| C349        | 256 1042 903 | Metalized 0.1μF/250V      | CF93A2E104K     |                  |              |                            |          |      |
| C361,362    | 254 4254 022 | Electrolytic 33μF/16V     | CE04W1C330M     |                  |              |                            |          |      |
| C363,364    | 253 1179 000 | Ceramic 100PF/50V         | CK45B1H101K     |                  |              |                            |          |      |
| C365,366    | 254 4258 002 | Electrolytic 4.7μF/35V    | CE04W1V4R7M     |                  |              |                            |          |      |
| C367,368    | 253 1179 000 | Ceramic 100PF/50V         | CK45B1H101K     |                  |              |                            |          |      |
| C369,370    | 255 1264 908 | Plastic Film 0.001μF/50V  | CQ93M1H102J(B)  |                  |              |                            |          |      |
| C371,372    | 256 1034 092 | Metalized 0.15μF/50V      | CF93A1H154J     |                  |              |                            |          |      |
| C373,374    | 254 4260 045 | Electrolytic 1μF/50V      | CE04W1H010M     |                  |              |                            |          |      |
| C375,376    | 255 1120 039 | Plastic Film 0.0018μF/50V | CQ93M1H182J     |                  |              |                            |          |      |
| C377,378    | 255 1121 038 | Plastic Film 0.012μF/50V  | CQ93M1H123J     |                  |              |                            |          |      |
| C379,380    | 256 1034 050 | Metalized 0.068μF/50V     | CF93A1H683J     |                  |              |                            |          |      |
| C383        | 256 1034 076 | Metalized 0.1μF/50V       | CF93A1H104J     |                  |              |                            |          |      |
| C384        | 255 1265 936 | Plastic Film 0.01μF/50V   | CQ93M1H103J(B)  |                  |              |                            |          |      |
| C385,386    | 254 4260 032 | Electrolytic 0.47μF/50V   | CE04W1HR47M     |                  |              |                            |          |      |
| C388,389    | 254 4254 035 | Electrolytic 47μF/16V     | CE04W1C470M     |                  |              |                            |          |      |
| C391        | 253 9031 027 | BC Ceramic 0.1μF/25V      | CK45=1E104K     |                  |              |                            |          |      |
| C403,404    | 254 4260 045 | Electrolytic 1μF/50V      | CE04W1H010M     |                  |              |                            |          |      |
| C501,502    | 254 4256 033 | Electrolytic 47μF/25V     | CE04W1E470M     |                  |              |                            |          |      |
| C503-510    | 254 4260 087 | Electrolytic 10μF/50V     | CE04W1H100M     |                  |              |                            |          |      |
| OTHER GROUP |              |                           |                 |                  |              |                            |          |      |
|             |              |                           |                 |                  |              |                            |          | Q'ty |
| L251        | 235 0068 004 | (P.W. Board)              |                 |                  |              |                            |          | (1)  |
| L301,302    | 235 0068 004 | Inductor 1mH              |                 |                  |              |                            |          | 1    |
| RL251       | 214 0127 003 | Inductor 1mH              |                 |                  |              |                            |          | 2    |
| RL254       | 214 0129 001 | Relay (RY-12W)            |                 |                  |              |                            |          | 1    |
|             | 204 8341 017 | Relay (DH2TU)             |                 |                  |              |                            |          | 1    |
|             | 204 8342 003 | Head Phone Jack           |                 |                  |              |                            |          | 1    |
|             | 205 0605 000 | 3P Pin Jack (C-GND)       | (Gold Flash)    |                  |              |                            |          | 1    |
|             | 205 0190 036 | S-Terminal                | (Gold Flash)    |                  |              |                            |          | 1    |
|             |              | 3P NH Connector Base      | TP              |                  |              |                            |          | 3    |



## 1U-2434D REAR, INPUT UNIT

| Ref. No.                                                                                             | Part No.     | Part Name                               | Remarks                      |
|------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------|------------------------------|
| SEMICONDUCTORS GROUP                                                                                 |              |                                         |                              |
| IC051                                                                                                | 263 0711 000 | IC M5218AP                              | IC Protector<br>IC Protector |
| IC151                                                                                                | 265 0030 004 | IC NJM4558DD                            |                              |
| IC152                                                                                                | 263 0711 000 | IC M5218AP                              |                              |
| IC153                                                                                                | 262 1227 008 | IC LC7821                               |                              |
| IC154                                                                                                | 262 1228 007 | IC LC7822                               |                              |
| IC155                                                                                                | 262 1227 008 | IC LC7821                               |                              |
| IC401,402                                                                                            | 263 0206 007 | IC $\mu$ PC1225H                        |                              |
| IC507,508                                                                                            | 268 0074 904 | IC ICP-N20                              |                              |
| IC509-511                                                                                            | 268 0073 905 | IC ICP-N15                              |                              |
| TR401,402                                                                                            | 271 0102 937 | Transistor 2SA1015 (GR/Y)               |                              |
| TR403,404                                                                                            | 273 0198 918 | Transistor 2SC1815 (BL)                 |                              |
| TR409,410                                                                                            | 273 0235 923 | Transistor 2SC1841 (E/F)                |                              |
| TR411                                                                                                | 271 0191 906 | Transistor 2SA1048 (GR)                 |                              |
| TR501-503                                                                                            | 273 0317 906 | Transistor 2SC2458 (BL)                 |                              |
| D401-403                                                                                             | 276 0432 903 | Diode 1SS270A                           |                              |
| D404                                                                                                 | 276 0338 007 | Diode S4VB20F                           | Bridge                       |
| D501-508                                                                                             | 276 0548 910 | Diode DSM1D2 (Type 3)                   |                              |
| D509                                                                                                 | 276 0432 903 | Diode 1SS270A                           |                              |
| D510-515                                                                                             | 276 0553 905 | Diode 1SR35-200A                        |                              |
| D517                                                                                                 | 276 0049 011 | Diode 1S2076A                           |                              |
| ZD501                                                                                                | 276 0456 905 | Zener Diode HZS4B-1                     |                              |
| RESISTORS GROUP                                                                                      |              |                                         |                              |
| (Not included Carbon Film $\pm 5\%$ , 1/4W Type.<br>Refer to the Schematic Diagram for those Parts.) |              |                                         |                              |
| R411,412                                                                                             | 241 2379 903 | Carbon Film<br>470ohm, 1/4W (N.B)       | RD14B2E471JNBS               |
| R417-424                                                                                             | 244 2055 912 | Metal Oxide 0.47ohm, 1W (N.B)           | RS14B3AR47JNBS(S)            |
| R425,426                                                                                             | 241 2380 950 | Carbon Film<br>2Kohm, 1/4W (N.B)        | RD14B2E202JNBS               |
| R427,428                                                                                             | 241 2380 921 | Carbon Film<br>1.5Kohm, 1/4W (N.B)      | RD14B2E152JNBS               |
| R429,430                                                                                             | 244 2050 904 | Metal Oxide 22ohm, 1W (N.B)             | RS14B3A220JNBS(S)            |
| R437,438                                                                                             | 244 2043 937 | Metal Oxide 10ohm, 1W (N.B)             | RS14B3A100JNBS(S)            |
| R501,502                                                                                             | 244 2043 982 | Metal Oxide 0.22ohm, 1W (N.B)           | RS14B3AR22JNBS(S)            |
| R503,504                                                                                             | 241 2387 908 | Carbon Film<br>1ohm, 1/4W (N.B)         | RD14B2E010JNBS               |
| R512                                                                                                 | 241 2375 978 | Carbon Film<br>20ohm, 1/4W (N.B)        | RD14B2E200JNBS               |
| R515                                                                                                 | 241 2375 978 | Carbon Film<br>200ohm, 1/4W (N.B)       | RD14B2E200JNBS               |
| R516                                                                                                 | 241 2387 940 | Carbon Film<br>4.7ohm, 1/4W (N.B)       | RD14B2E47JNBS                |
| CAPACITORS GROUP                                                                                     |              |                                         |                              |
| C051,052                                                                                             | 254 4260 045 | Electrolytic 1 $\mu$ F/50V              | CE04W1H010M                  |
| C053,054                                                                                             | 254 4254 006 | Electrolytic 10 $\mu$ F/16V             | CE04W1C100M                  |
| C055,056                                                                                             | 253 1179 042 | Ceramic 220PF/50V                       | CK45B1H221K                  |
| C057,058                                                                                             | 254 4260 058 | Electrolytic 2.2 $\mu$ F/50V            | CE04W1H2R2M                  |
| C151,152                                                                                             | 253 1179 042 | Ceramic 220PF/50V                       | CK45B1H221K                  |
| C153,154                                                                                             | 254 4254 006 | Electrolytic 10 $\mu$ F/16V             | CE04W1C100M                  |
| C155,156                                                                                             | 253 1179 084 | Ceramic 470PF/50V                       | CK45B1H471K                  |
| C157,158                                                                                             | 254 4250 039 | Electrolytic 220 $\mu$ F/6.3V           | CE04W0J221M                  |
| C159,160                                                                                             | 255 4199 999 | Plastic Film<br>0.024 $\mu$ F/50V (MRZ) | CQ92M1H243J                  |
| C161,162                                                                                             | 255 1121 009 | Plastic Film 0.0068 $\mu$ F/50V         | CQ93M1H682J                  |
| C163,164                                                                                             | 254 4260 058 | Electrolytic 2.2 $\mu$ F/50V            | CE04W1H2R2M                  |
| C165,166                                                                                             | 253 1181 014 | Ceramic 0.022 $\mu$ F/50V               | CK45F1H223Z                  |

| Ref. No.    | Part No.     | Part Name                      | Remarks        |
|-------------|--------------|--------------------------------|----------------|
| C167,168    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K    |
| C169,170    | 254 4260 045 | Electrolytic 1 $\mu$ F/50V     | CE04W1H010M    |
| C173-175    | 254 4260 045 | Electrolytic 1 $\mu$ F/50V     | CE04W1H010M    |
| C176,177    | 253 1181 014 | Ceramic 0.022 $\mu$ F/50V      | CK45F1H223Z    |
| C178        | 253 1006 005 | Ceramic 2200PF/50V             | CK45B1H222K    |
| C179-185    | 253 1181 014 | Ceramic 0.022 $\mu$ F/50V      | CK45F1H223Z    |
| C187,188    | 254 4260 058 | Electrolytic 2.2 $\mu$ F/50V   | CE04W1H2R2M    |
| C401,402    | 254 4260 045 | Electrolytic 1 $\mu$ F/50V     | CE04W1H010M    |
| C403,404    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K    |
| C405,406    | 254 4256 059 | Electrolytic 220 $\mu$ F/25V   | CE04W1E221M    |
| C407,408    | 253 1179 000 | Ceramic 100PF/50V              | CK45B1H101K    |
| C413,414    | 254 4261 028 | Electrolytic 100 $\mu$ F/50V   | CE04W1H101M    |
| C415,416    | 253 1179 026 | Ceramic 150PF/50V              | CK45B1H151K    |
| C417,418    | 253 4537 063 | Ceramic 47PF/50V               | CC45SL1H470J   |
| C419,420    | 254 4260 045 | Electrolytic 1 $\mu$ F/50V     | CE04W1H010M    |
| C421,422    | 255 1121 083 | Plastic Film 0.033 $\mu$ F/50V | CQ93M1H333J    |
| C423,424    | 254 4260 087 | Electrolytic 10 $\mu$ F/50V    | CE04W1H100M    |
| C425,426    | 256 1034 076 | Metalized 0.1 $\mu$ F/50V      | CF93A1H104J    |
| C427,428    | 255 1121 025 | Plastic Film 0.01 $\mu$ F/50V  | CQ93M1H103J    |
| C429,430    | 254 4260 087 | Electrolytic 10 $\mu$ F/50V    | CE04W1H100M    |
| C431,432    | 256 1042 974 | Metalized 0.022 $\mu$ F/250V   | CF93A2E223K    |
| C433,434    | 254 4355 002 | Electrolytic 6800 $\mu$ F/50V  | CE04W1H682MDL  |
| C435,436    | 253 1151 905 | Ceramic 4700PF/500V            | CK45BE2H472P   |
| C439        | 255 1121 025 | Plastic Film 0.01 $\mu$ F/50V  | CQ93M1H103J    |
| C511,512    | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C515,516    | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C517,518    | 254 4259 014 | Electrolytic 3300 $\mu$ F/35V  | CE04W1V332MC   |
| C519,520    | 253 1151 905 | Ceramic 4700PF/500V            | CK45E2H472P    |
| C521,522    | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C525,526    | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C527,528    | 254 4256 790 | Electrolytic 2200 $\mu$ F/25V  | CE04W1E222MC   |
| C529        | 253 8014 702 | Ceramic 0.01 $\mu$ F/400V(AC)  | CK45F2GAC103MC |
| C530        | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C532        | 253 1181 001 | Ceramic 0.01 $\mu$ F/50V       | CK45F1H103Z    |
| C533        | 254 4256 790 | Electrolytic 2200 $\mu$ F/25V  | CE04W1E222MC   |
| C534        | 254 4260 032 | Electrolytic 0.47 $\mu$ F/50V  | CE04W1HR47M    |
| C535        | 259 0007 702 | Back Up Cap 8200 $\mu$ F/5.5V  | SB CAP==822=C  |
| OTHER GROUP |              |                                |                |
| L401,402    | 235 0068 004 | (P.W.Board)<br>Inductor 1mH    | (1)            |
| RL401       | 214 0129 001 | Relay (DH2TU)                  | 1              |
| RL501       | 214 0120 000 | Relay (TV-8)                   | 1              |
|             | 204 8378 006 | 6P Pin Jack (S-GND)            | 3              |
| F001        | 206 1046 014 | Fuse 8A                        | 1              |
| F002,003    | 206 1046 001 | Fuse 6.3AUL                    | 2              |
|             | 202 0022 008 | Fuse Holder                    | 6              |
|             | 203 3946 003 | AC Outlet (Polarized)          | 1              |
|             | 233 5818 004 | Power Trans (Mini)             | 1              |
|             | 513 1451 044 | Fuse Label                     | 1              |
| CN6H-1      | 205 0277 030 | 3P EH Conn. Base (RD)          | 1              |
| CN6-2       | 205 0278 039 | 3P EH Conn. Base (BK)          | 1              |
| CN3F        | 205 0233 032 | 3P EH Conn. Base (BK)          | 1              |
| CN5A        | 205 0233 058 | 5P EH Conn. Base (BK)          | 1              |
| CN8A        | 205 0233 087 | 8P EH Conn. Base (BK)          | 1              |
| CN3A,I      | 205 0343 032 | 3P EH Conn. Base (KR-PH)       | 2              |
| CN6B        | 205 0343 061 | 6P EH Conn. Base (KR-PH)       | 1              |
| CN7C        | 205 0343 074 | 7P EH Conn. Base (KR-PH)       | 1              |
| CN10A       | 205 0375 000 | 10P EH Conn. Base (KR-PH)      | 1              |
| CN9E        | 205 0697 092 | JL Connector (F-E)             | 1              |
| CN3M        | 205 0731 039 | 3P Connector Base-L (9131)     | 1              |
| CN9B        | 205 0748 093 | 9P JL Connecor (R)             | 1              |
| CN4A        | 203 6384 002 | 4P VH-SDN Conn. Cord           | 1              |



## 1U-2435C VFD, VIDEO UNIT

| Ref. No. | Part No.     | Part Name             | Remarks | Q'ty | Ref. No.                                                                                              | Part No.     | Part Name                        | Remarks           |
|----------|--------------|-----------------------|---------|------|-------------------------------------------------------------------------------------------------------|--------------|----------------------------------|-------------------|
| D-D      | 204 2540 005 | 7P SAN-SAN Conn. Cord |         | 1    | <b>SEMICONDUCTORS GROUP</b>                                                                           |              |                                  |                   |
| A-A      | 204 2542 003 | 9P SAN-SAN Conn. Cord |         | 1    | IC001,002                                                                                             | 262 1108 004 | IC TC4051BP                      |                   |
| C-C      | 203 4870 000 | 3P SCN-SCN Conn. Cord |         | 1    | IC003                                                                                                 | 262 0276 005 | IC D14066BP                      |                   |
| E-E      | 203 0525 003 | 1P SIN Cord Ass'y     |         | 1    | IC004                                                                                                 | 262 1403 000 | IC M50554-001SP                  |                   |
| F-F      | 203 0525 016 | 1P SIN Cord Ass'y     |         | 1    | IC005                                                                                                 | 263 0603 008 | IC NJM2220S                      |                   |
|          | 203 2318 001 | 2P SAN-SAN Cord       | I=180   | 1    | IC006                                                                                                 | 263 0619 005 | IC LA7820                        |                   |
|          | 513 1674 009 | Fuse label            |         | 1    | IC101,102                                                                                             | 262 1108 004 | IC TC4051BP                      |                   |
|          | 513 1715 007 | Fuse label            |         | 1    | IC103                                                                                                 | 262 0276 005 | IC HD14066BP                     |                   |
|          | 513 2011 072 | Fuse label            |         | 1    | IC104,105                                                                                             | 262 1108 004 | IC TC4051BP                      |                   |
|          |              |                       |         |      | IC801                                                                                                 | 262 1722 008 | IC TMP87CM70AF-6040              | μ-Com             |
|          |              |                       |         |      | IC802                                                                                                 | 262 1418 105 | IC MSC7128-03SS-D                |                   |
|          |              |                       |         |      | IC803                                                                                                 | 263 0423 000 | IC M51953B                       |                   |
|          |              |                       |         |      | IC804                                                                                                 | 499 0150 008 | IC SBX1610-52                    | Remocon Receiver  |
|          |              |                       |         |      | TR002                                                                                                 | 269 0029 907 | Transistor RN1204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR003-006                                                                                             | 273 0198 918 | Transistor 2SC1815 (BL)          |                   |
|          |              |                       |         |      | TR007                                                                                                 | 271 0194 903 | Transistor 2SA1048 (JGR)         |                   |
|          |              |                       |         |      | TR008,009                                                                                             | 273 0317 906 | Transistor 2SC2458 (BL)          |                   |
|          |              |                       |         |      | TR014                                                                                                 | 269 0029 907 | Transistor RN1204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR101-106                                                                                             | 273 0198 918 | Transistor 2SC1815 (BL)          |                   |
|          |              |                       |         |      | TR107                                                                                                 | 269 0029 907 | Transistor RN1204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR108                                                                                                 | 269 0030 909 | Transistor RN2204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR109,110                                                                                             | —            | —                                |                   |
|          |              |                       |         |      | TR111,112                                                                                             | —            | —                                |                   |
|          |              |                       |         |      | TR801,802                                                                                             | 273 0317 906 | Transistor 2SC2458 (BL)          |                   |
|          |              |                       |         |      | TR803                                                                                                 | 269 0024 902 | Transistor RN2201 (4.7K-4.7K)    | Built in Resistor |
|          |              |                       |         |      | TR804                                                                                                 | 269 0030 909 | Transistor RN2204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR806                                                                                                 | 269 0030 909 | Transistor RN2204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | TR807                                                                                                 | 269 0029 907 | Transistor RN1204 (47K-47K)      | Built in Resistor |
|          |              |                       |         |      | D001-004                                                                                              | 276 0432 903 | Diode 1SS270A                    |                   |
|          |              |                       |         |      | D101-103                                                                                              | 276 0432 903 | Diode 1SS270A                    |                   |
|          |              |                       |         |      | D801-819                                                                                              | 276 0432 903 | Diode 1SS270A                    |                   |
|          |              |                       |         |      | <b>RESISTORS GROUP</b>                                                                                |              |                                  |                   |
|          |              |                       |         |      | <b>(Not included Carbon Film ±5%, 1/4W Type.<br/>Refer to the Schematic Diagram for those Parts.)</b> |              |                                  |                   |
|          |              |                       |         |      | ⚠ R038                                                                                                | 241 2376 964 | Carbon Film<br>47ohm, 1/4W (N.B) | RD14B2E470JNBS    |
|          |              |                       |         |      | ⚠ R057                                                                                                | 241 2376 964 | Carbon Film<br>47ohm, 1/4W (N.B) | RD14B2E470JNBS    |
|          |              |                       |         |      | RA801                                                                                                 | 246 2044 013 | Resistor Array 47Kohm×6          | RK99==473JP6      |
|          |              |                       |         |      | RA802                                                                                                 | 246 2053 033 | Resistor Array 4.7Kohm×5         | RK99==472JP5      |
|          |              |                       |         |      | RA803                                                                                                 | 246 2044 039 | Resistor Array 10Kohm×6          | RK99==103JP6      |
|          |              |                       |         |      | RA806                                                                                                 | 246 2044 013 | Resistor Array 47Kohm×6          | RK99==473JP6      |
|          |              |                       |         |      | RA807                                                                                                 | 246 2052 005 | Resistor Array 10Kohm×4          | RK99==103JP4      |
|          |              |                       |         |      | RA808                                                                                                 | 246 2076 023 | Resistor Array 1.5Kohm×3         | RK99==152JP3      |
|          |              |                       |         |      | VR001                                                                                                 | 211 6046 024 | Semi Fixed Resistor 100Kohm      | V06PB104          |
|          |              |                       |         |      | VR002                                                                                                 | 211 6046 082 | Semi Fixed Resistor 5Kohm        | V06QB502          |



| Ref. No.                | Part No.     | Part Name                      | Remarks          | Ref. No.           | Part No.     | Part Name                   | Remarks     |
|-------------------------|--------------|--------------------------------|------------------|--------------------|--------------|-----------------------------|-------------|
| <b>CAPACITORS GROUP</b> |              |                                |                  | C821               | 253 1027 000 | Ceramic 0.1μF/50V           | CK45F1H104Z |
| C001~007                | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      | <b>OTHER GROUP</b> |              |                             |             |
| C008                    | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    |              |                             | Q'ty        |
| C009                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              | (P.W. Board)                | (1)         |
| C010                    | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      | L001               | 235 0060 963 | Inductor 15μH               | 1           |
| C011                    | 253 1181 014 | Ceramic 0.022μF/50V            | CK45F1H223Z      | L002,003           | 235 0070 924 | Inductor 27μH               | 2           |
| C012                    | 253 4537 063 | Ceramic 47PF/50V               | CC45SL1H470J     | L801               | 235 0060 989 | Inductor 120μH              | 1           |
| C013                    | 253 4537 018 | Ceramic 30PF/50V               | CC45SL1H300J     | L803               | 235 0060 989 | Inductor 120μH              | 1           |
| C014,015                | 253 4536 064 | Ceramic 18PF/50V               | CC45SL1H180J     | S813~818           | 212 4388 907 | Tact Switch                 | 6           |
| C016                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      | XL001              | 399 0121 009 | Crystal Vibrator (14.32MHz) | 1           |
| C017,018                | 253 4536 080 | Ceramic 22PF/50V               | CC45SL1H220J     | XL801              | 399 0160 002 | Ceramic Vibrator            | CST8.00MTW  |
| C019,020                | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      | FL801              | 393 4115 000 | FLD (FIP16X1JA)             | 1           |
| C021                    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K      |                    | 204 8394 006 | 3P Pin Jack (C-GND)         | Gold Flash  |
| C022                    | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    | 204 8412 001 | 4P Pin Jack (C-GND)         | Gold Flash  |
| C023                    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K      |                    | 204 8414 008 | 2P S-Terminal               | Gold Flash  |
| C024                    | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    | 204 8415 008 | 3P S-Terminal               | Gold Flash  |
| C025                    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K      |                    | 204 8260 004 | Mini Jack                   | Remote      |
| C026                    | 254 4254 035 | Electrolytic 47μF/16V          | CE04W1C470M      | CN4B               | 205 0355 046 | 4P KR Conn. Base (L)        | 1           |
| C027                    | 253 9030 905 | BC Ceramic 1000PF/25V          | CK45=1E102K      | CN6F               | 205 0355 062 | 6P KR Conn. Base (L)        | 1           |
| C028                    | 254 4254 006 | Electrolytic 10μF/16V          | CE04W1C100M      | CN7A-3             | 205 0343 074 | 7P Conn. Base (KR-PH)       | 1           |
| C029                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      | CN7A-1,7C          | 205 0355 075 | 7P KR Conn. Base (L)        | 2           |
| C030                    | 254 4254 006 | Electrolytic 10μF/16V          | CE04W1C100M      | CN9A               | 205 0355 091 | 9P KR Conn. Base (L)        | 1           |
| C031                    | 253 1179 084 | Ceramic 470PF/50V              | CK45B1H471K      | CN13A-2            | 205 0375 039 | 13P Conn. Base (KR-PH)      | 1           |
| C033                    | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      | CN13A-1            | 205 0480 034 | 13P KR Conn. Base (L)       | 1           |
| C034                    | 253 1180 015 | Ceramic 820PF/50V              | CK45B1H821K      | CN8B,8F            | 205 0679 089 | JL Connector (F-E)          | 8P          |
| C035                    | 253 1181 014 | Ceramic 0.022μF/50V            | CK45F1H223Z      | CN5C               | 205 0748 051 | 5P JL Connector (R)         | 2           |
| C036                    | 254 4254 006 | Electrolytic 10μF/16V          | CE04W1C100M      | CN6E               | 205 0748 064 | JL Connector (R)            | 6P          |
| C037                    | 255 1120 055 | Plastic Film 0.0027μF/50V      | CQ93M1H272J      | CN29A              | 205 0702 042 | 29P FFC Conn. Base (L)      | 1           |
| C038                    | 255 1121 025 | Plastic Film 0.01μF/50V        | CQ93M1H103J      |                    | 125 9002 049 | UL Tube (L=25)              | for C821    |
| C039                    | 255 1120 097 | Plastic Film 0.0056μF/50V      | CQ93M1H562J      |                    |              |                             | 2           |
| C040                    | 253 1179 042 | Ceramic 220PF/50V              | CK45B1H221K      |                    |              |                             |             |
| C041                    | 256 1034 034 | Metalized 0.047μF/50V          | CF93A1H473J      |                    |              |                             |             |
| C042                    | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C043                    | 256 1034 034 | Metalized 0.047μF/50V          | CF93A1H473J      |                    |              |                             |             |
| C044                    | 254 4254 035 | Electrolytic 47μF/16V          | CE04W1C470M      |                    |              |                             |             |
| C045                    | 255 1121 041 | Plastic Film 0.015μF/50V       | CQ93M1H153J      |                    |              |                             |             |
| C046                    | 256 1034 050 | Metalized 0.068μF/50V          | CF93A1H683J      |                    |              |                             |             |
| C047                    | 256 1034 076 | Metalized 0.1μF/50V            | CF93A1H104J      |                    |              |                             |             |
| C057~059                | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C060~062                | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    |              |                             |             |
| C101~110                | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              |                             |             |
| C111~116                | 253 1179 084 | Ceramic 470PF/50V              | CK45B1H471K      |                    |              |                             |             |
| C117~122                | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    |              |                             |             |
| C123                    | 254 3053 004 | Electrolytic 10μF/16V (Bipole) | CE04D1C100MBP    |                    |              |                             |             |
| C124                    | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C125,126                | 254 4252 037 | Electrolytic 100μF/10V         | CE04W1A101M      |                    |              |                             |             |
| C127~130                | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C143                    | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C801                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              |                             |             |
| C802                    | 254 4250 042 | Electrolytic 330μF/6.3V        | CE04W0J331M      |                    |              |                             |             |
| C803                    | 254 4195 916 | Electrolytic 4.7μF/35V         | CE04W1V4R7M(SRA) |                    |              |                             |             |
| C804                    | 254 4196 944 | Electrolytic 1μF/50V           | CE04W1H010M(SRA) |                    |              |                             |             |
| C805                    | 254 4196 928 | Electrolytic 0.33μF/50V        | CE04W1HR33M(SRA) |                    |              |                             |             |
| C806                    | 256 1034 089 | Metalized 0.12μF/50V           | CF93A1H124J      |                    |              |                             |             |
| C807                    | 254 4250 039 | Electrolytic 220μF/6.3V        | CE04W0J221M      |                    |              |                             |             |
| C808                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              |                             |             |
| C810                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              |                             |             |
| C811                    | 254 4260 045 | Electrolytic 1μF/50V           | CE04W1H010M      |                    |              |                             |             |
| C812                    | 254 4254 006 | Electrolytic 10μF/16V          | CE04W1C100M      |                    |              |                             |             |
| C813                    | 253 1181 001 | Ceramic 0.01μF/50V             | CK45F1H103Z      |                    |              |                             |             |
| C814                    | 253 1179 000 | Ceramic 100PF/50V              | CK45B1H010K      |                    |              |                             |             |
| C815                    | 254 4261 028 | Electrolytic 100μF/50V         | CE04W1H101M      |                    |              |                             |             |
| C816                    | 253 9030 905 | BC Ceramic 1000PF/25V          | CK45=1E102K      |                    |              |                             |             |
| C817                    | 253 9030 921 | BC Ceramic 2200PF/25V          | CK45=1E222K      |                    |              |                             |             |
| C820                    | 253 1025 002 | Ceramic 0.022μF/50V            | CK45F1H223Z      |                    |              |                             |             |



## 1U-2436A SURROUND UNIT

| Ref No.              | Part No.     | Part Name                   | Remarks           |
|----------------------|--------------|-----------------------------|-------------------|
| SEMICONDUCTORS GROUP |              |                             |                   |
| IC451                | 263 0654 002 | IC NJM2082D                 | Regulator +5V     |
| IC452                | 263 0711 000 | IC M5218AP                  |                   |
| IC601                | 263 0756 104 | IC SSM2125D                 |                   |
| IC602                | 263 0711 000 | IC M5218AP                  |                   |
| IC604                | 263 0359 006 | IC LC4966                   |                   |
| IC605                | 262 1228 007 | IC LC7822                   |                   |
| IC607                | 263 0711 000 | IC M5218AP                  |                   |
| IC608                | 263 0654 002 | IC NJM2082D                 |                   |
| IC609                | 263 0711 000 | IC M5218AP                  |                   |
| IC610                | 263 0654 002 | IC NJM2082D                 |                   |
| IC611                | 263 0711 000 | IC M5218AP                  |                   |
| IC703                | 263 0711 000 | IC M5218AP                  |                   |
| IC704                | 262 1609 105 | IC F71002B                  |                   |
| IC705                | 262 1610 000 | IC HM65256BLFP-10T          |                   |
| IC706                | 263 0711 000 | IC M5218AP                  |                   |
| IC707,708            | 262 0625 009 | IC TC9176P                  |                   |
| IC709-712            | 263 0711 000 | IC M5218AP                  |                   |
| IC713                | 263 0609 002 | IC NJM2068DDC               |                   |
| IC714                | 263 0476 002 | IC LB1639                   |                   |
| IC715                | 263 0809 006 | IC NJM7805FA(S)             |                   |
| IC716                | 263 0711 000 | IC M5218AP                  |                   |
| TR113114             | 275 0061 902 | FET 2SK184(GR)/(BL)         | FET               |
| TR115                | 269 0025 901 | Transistor RN1202(10K-10K)  | Built in Resistor |
| TR335                | 273 0317 906 | Transistor 2SC2458(BL)      | Built in Resistor |
| TR451,452            | 273 0317 906 | Transistor 2SC2458(BL)      |                   |
| TR453-455            | 273 0253 918 | Transistor 2SC2878 (A/B)    |                   |
| TR601                | 274 0060 900 | Transistor 2SD667A(C)       |                   |
| TR602                | 272 0053 908 | Transistor 2SB647A(C)       |                   |
| TR603-605            | 269 0025 901 | Transistor RN1202 (10K-10K) |                   |
| TR701                | 274 0060 900 | Transistor 2SD667A(C)       |                   |
| TR751-754            | 275 0061 902 | FET 2SK184(GR)/(BL)         | FET               |
| TR755                | 269 0025 901 | Transistor RN1202 (10K-10K) | Built in Resistor |
| TR756,757            | 273 0317 906 | Transistor 2SC2458(BL)      | FET               |
| TR758                | 275 0061 902 | FET 2SK184 (GR)/(BL)        |                   |
| TR759                | 269 0025 901 | Transistor RN1202 (10K-10K) |                   |
| D103,104             | 276 0432 903 | Diode 1SS270A               | 7V<br>6V          |
| D401-404             | 276 0432 903 | Diode 1SS270A               |                   |
| D451,452             | 276 0432 903 | Diode 1SS270A               |                   |
| D701-707             | 276 0432 903 | Diode 1SS270A               |                   |
| D751-758             | 276 0432 903 | Diode 1SS270A               |                   |
| ZD601,602            | 276 0466 908 | Zener Diode HZS7C-1         |                   |
| ZD701                | 276 0462 902 | Zener Diode HZS6B-1         |                   |

**RESISTORS GROOUP**

(Not included Carbon Film  $\pm 5\%$  1/4W Type. Refer to the Schematic Diagram for those Parts.)

|           |               |                                |              |
|-----------|---------------|--------------------------------|--------------|
| VR603,604 | 241 2387 940  | Carbon Film 470ohm 1/4W (NB)   | RD11629-100K |
| VR605     | 242 0203 003  | Carbon Composition 10Mohm 1/4W | RD00341-100K |
| VR699     | 241 2387 940  | Carbon Film 470ohm 1/4W (NB)   | RD11629-100K |
| VR769-771 | 241 2379 9745 | Carbon Film 910ohm 1/4W        | RD11629-100K |
| VR701     | 211 0759 003  | Variable Resistor 100Kohm      | Main         |

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



1U-2442A AUDIO REC UNIT

| Ref. No.    | Part No.     | Part Name                          | Remarks        | Q'ty |
|-------------|--------------|------------------------------------|----------------|------|
| C715,716    | 255 1264 063 | Plastic Film<br>0.0033μF/50V (SMT) | CO93M1H332J(B) |      |
| C717        | 253 9031 027 | BC Ceramic 0.1μF/25V               | CK45-1E104K    | 1    |
| C718        | 254 4254 035 | Electrolytic 47μF/16V              | CE04W1C470M    | 1    |
| C719        | 253 9031 027 | BC Ceramic 0.1μF/25V               | CK45-1E104K    | 1    |
| C720        | 254 4254 035 | Electrolytic 47μF/16V              | CE04W1C470M    | 1    |
| C722        | 253 9031 027 | BC Ceramic 0.1μF/25V               | CK45-1E104K    | 1    |
| C723,724    | 253 4536 077 | Ceramic 20PF/50V                   | CC45SL1H200J   | 2    |
| C725        | 253 9031 027 | BC Ceramic 0.1μF/25V               | CK45-1E104K    |      |
| C726        | 254 4260 074 | Electrolytic 4.7μF/50V             | CE04W1H4R7M    |      |
| C727,728    | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| C729,730    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C731        | 254 4254 051 | Electrolytic 220μF/16V             | CE04W1C221M    |      |
| C732        | 253 1181 001 | Ceramic 0.01μF/50V                 | CK45F1H103Z    |      |
| C733-736    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C737,738    | 253 1179 000 | Ceramic 100PF/50V                  | CK45B1H101K    |      |
| C739,740    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C741-744    | 253 1181 014 | Ceramic 0.022μF/50V                | CK45F1H223Z    |      |
| C745,746    | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| C747,748    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C749        | 253 1179 000 | Ceramic 100PF/50V                  | CK45B1H101K    |      |
| C750-754    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C755-758    | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| C759,760    | 254 4254 022 | Electrolytic 33μF/16V              | CE04W1C330M    |      |
| C761,762    | 256 1034 089 | Metalized 0.12μF/50V               | CF93A1H124J    |      |
| C765,766    | 255 1121 054 | Plastic Film 0.018μF/50V           | CO93M1H183J    |      |
| C767        | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C768,769    | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| C770        | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C771        | 255 1121 054 | Plastic Film 0.018μF/50V           | CO93M1H183J    |      |
| C772        | 254 4258 057 | Electrolytic 100μF/35V             | CE04W1V101M    |      |
| C773,774    | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| C775,776    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C777,778    | 254 4261 028 | Electrolytic 100μF/50V             | CE04W1H101M    |      |
| C779        | 254 4252 024 | Electrolytic 47μF/10V              | CE04W1A470M    |      |
| C780-782    | 253 1181 001 | Ceramic 0.01μF/50V                 | CK45F1H103Z    |      |
| C783        | 254 3056 014 | Electrolytic 1μF/50V (B Pole)      | CE04D1H010MBP  |      |
| C785,786    | 254 4254 006 | Electrolytic 10μF/16V              | CE04W1C100M    |      |
| C792,793    | 253 1179 000 | Ceramic 100PF/50V                  | CK45B1H101K    |      |
| C794        | 254 4260 045 | Electrolytic 1μF/50V               | CE04W1H010M    |      |
| OTHER GROUP |              |                                    |                | Q'ty |
| L701        | —            | (PW Board)<br>Inductor 120mH       |                | (1)  |
| S821-836    | 212 4388 907 | Tact. Switch                       |                | 16   |
| XL701       | 399 0162 000 | Crystal Vibrator (11.2896MHz)      |                | 1    |
| RL751-753   | 214 0127 000 | Relay (RY-12W)                     |                | 3    |
| FL701,702   | 204 8393 007 | 4P Pin Jack (S-GND)                |                | 2    |
|             | 232 0168 002 | LC Filter                          |                | 2    |
| CN3G,I      | 205 0472 039 | 8P SP Terminal                     |                | 1    |
| CN3C        | 205 0343 032 | 3P Conn. Base (KR-PH)              |                | 1    |
| CN3G        | 205 0323 036 | 3P Conn. Base (BLK)                |                | 2    |
| CN5G        | 205 0343 058 | 5P Conn. Base (KR-PH)              |                | 1    |
| CN5F        | 205 0323 052 | 5P Conn. Base (BLK)                |                | 1    |
| CN6H        | 205 0233 061 | 6P EH Connector Base               | 5P             | 1    |
| CN5E        | 205 0697 050 | JL Connector (F-E)                 |                | 1    |
| CN6G        | 205 0697 063 | JL Connector (F-E)                 | 6P             | 1    |
| CN8D        | 205 0697 089 | JL Connector (F-E)                 | 8P             | 1    |
| CN3B        | 205 0653 036 | 3P VH Conn. Base                   |                | 1    |
| CN4A        | 205 0653 049 | 4P VH Conn. Base                   |                | 1    |
| CN5D        | 205 0731 055 | 5P Conn. Base-L (9131)             |                | 1    |
| CN7B        | 205 0667 077 | 7P Conn. Base-L (9130)             |                | 1    |
| CN9C,D      | 205 0731 097 | 9P Conn. Base-L (9131)             |                | 1    |
| CN12C       | 205 0536 027 | 12P Conn. Socket                   |                | 2    |
|             |              |                                    |                | 1    |

| Ref No                                                                                     | Part No      | Part Name                                                            | Remarks            |
|--------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------|--------------------|
| SEMICONDUCTORS GROUP                                                                       |              |                                                                      |                    |
| TR260                                                                                      | 273 0317 906 | Transistor 2SC2458 (BL)                                              |                    |
| TR326,327                                                                                  | 273 0317 906 | Transistor 2SC2458 (BL)                                              |                    |
| TR328                                                                                      | 271 0191 906 | Transistor 2SA1048 (GR)                                              |                    |
| TR329,330                                                                                  | 273 0317 906 | Transistor 2SC2458 (BL)                                              |                    |
| TR331                                                                                      | 271 0191 906 | Transistor 2SA1048 (GR)                                              |                    |
| TR332                                                                                      | 273 0317 906 | Transistor 2SC2458 (BL)                                              |                    |
| D206,207                                                                                   | 276 0432 903 | Diode 1SS270A                                                        |                    |
| D314                                                                                       | 276 0432 903 | Diode 1SS270A                                                        |                    |
| ZD304                                                                                      | 276 0465 909 | Zener Diode HZS7B-1                                                  | 7V                 |
| SC301                                                                                      | 279 0016 904 | Thyristor SF0R1A42                                                   |                    |
| RESISTORS GROUP                                                                            |              |                                                                      |                    |
| (Not Included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.) |              |                                                                      |                    |
| R224                                                                                       | 244 2052 902 | Metal Oxide 2.7Kohm, 1W (N.B)                                        | RS14B3A2ZJNBS(S)   |
| R266                                                                                       | 244 2052 973 | Metal Oxide 560ohm, 1W (N.B)                                         | RS14B3A56J1NBS(S)  |
| R270                                                                                       | 244 2052 973 | Metal Oxide 560ohm, 1W (N.B)                                         | RS14B3A56J1NBS(S)  |
| R274                                                                                       | 244 2052 973 | Metal Oxide 560ohm, 1W (N.B)                                         | RS14B3A56J1NBS(S)  |
| CAPACITORS GROUP                                                                           |              |                                                                      |                    |
| C101,102                                                                                   | 254 4260 045 | Electrolytic 1μF/50V                                                 | CE04W1H010M        |
| C342                                                                                       | 254 4260 090 | Electrolytic 22μF/50V                                                | CE04W1H220M        |
| C343,344                                                                                   | 254 4250 042 | Electrolytic 330μF/6.3V                                              | CE04W0331M         |
| C347                                                                                       | 254 4261 002 | Electrolytic 33μF/50V                                                | CE04W1H330M        |
| OTHER GROUP                                                                                |              |                                                                      |                    |
| RL001,002                                                                                  | —            | (PW Board)<br>Relay (DH2TU)<br>4P Pin Jack (S-GND)<br>8P SP Terminal | (1)<br>2<br>2<br>1 |
| CN3T                                                                                       | 203 4833 021 | 3P EH-SCN Conn. Cord                                                 | 1                  |
| CN3J                                                                                       | 205 0343 032 | 3P Conn. Base (KR-PH)                                                | 1                  |
| CN6B                                                                                       | 205 0343 061 | 6P Conn. Base (KR-PH)                                                | 1                  |
| CN4C                                                                                       | 205 0653 049 | 4P VH Conn. Base                                                     | 1                  |
| CN6I                                                                                       | 205 0731 068 | 6P Conn. Base-L (9131)                                               | 1                  |
| CN9F                                                                                       | 205 0748 093 | 9P JL Connector (H)                                                  | 1                  |



WIRING DIAGRAM

1

2

3

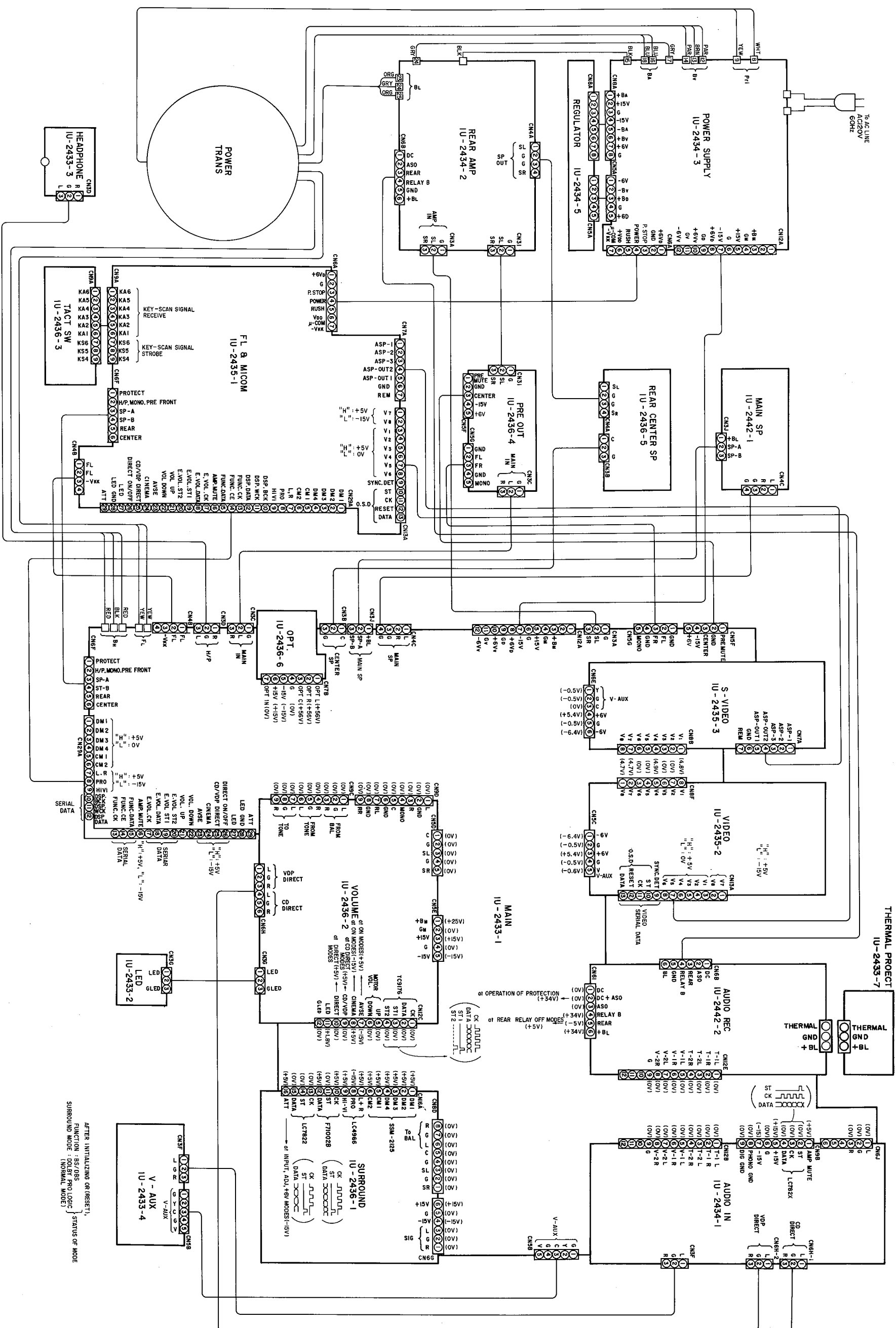
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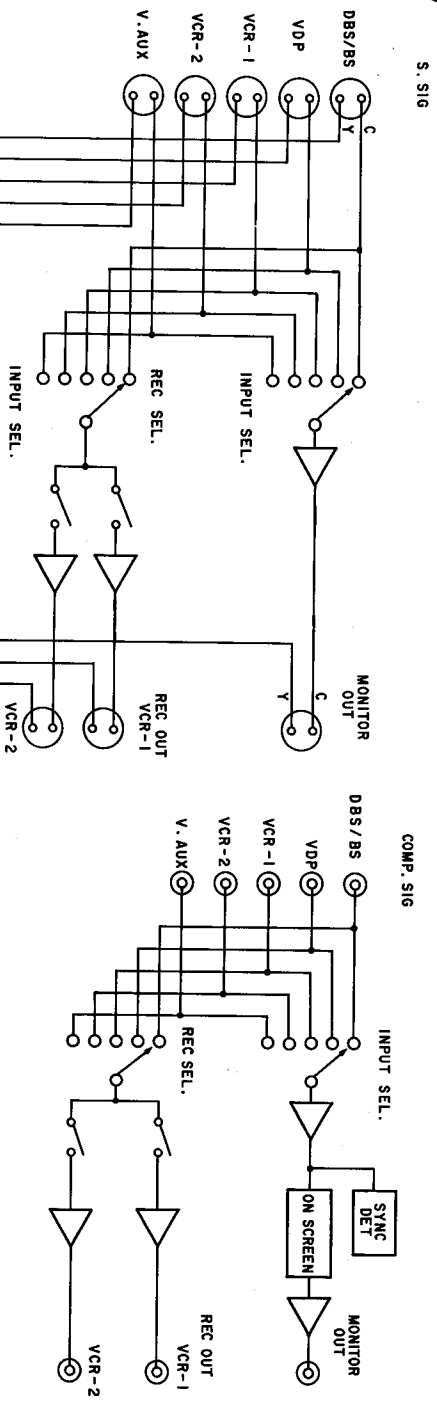
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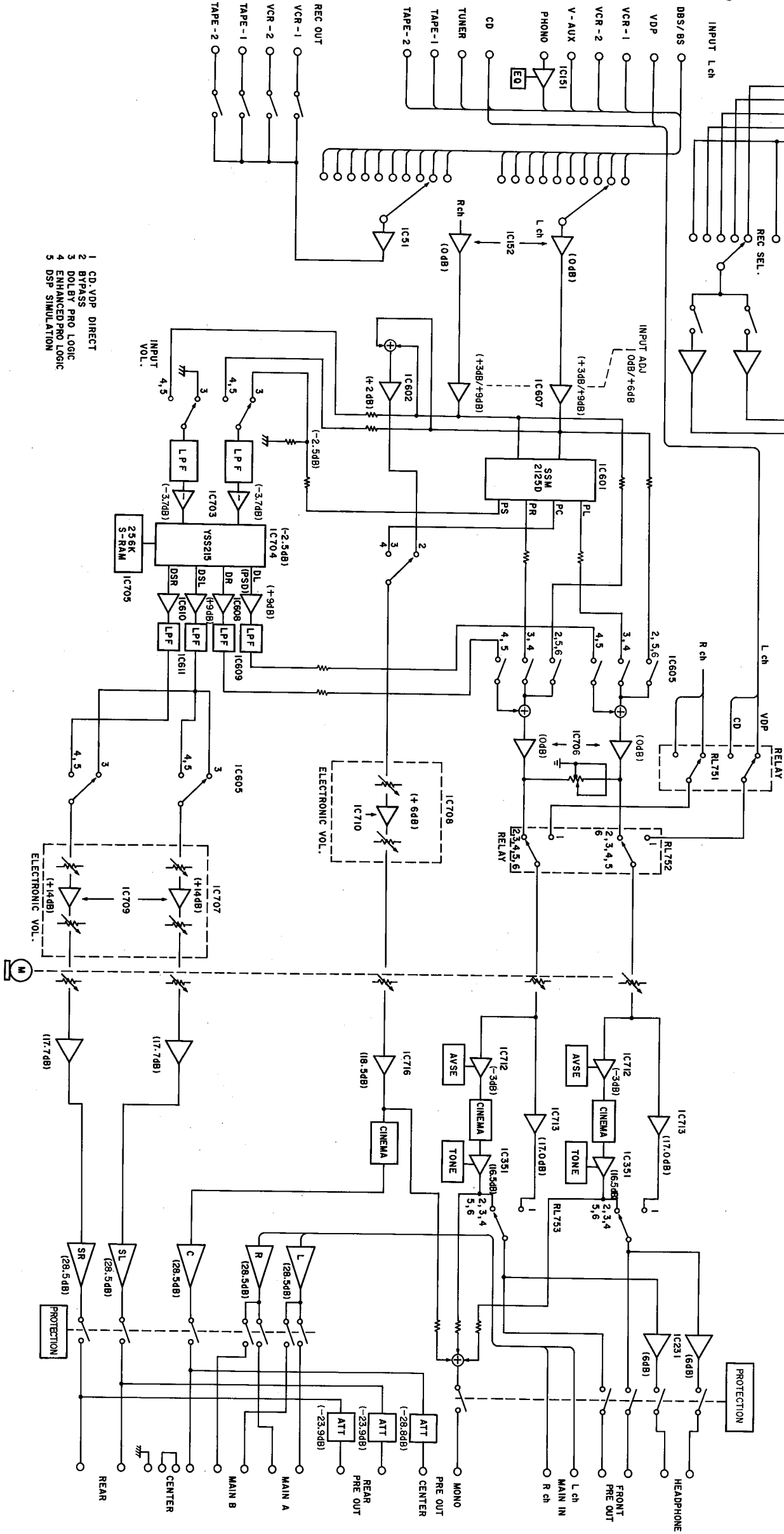




(VIDEO SECTION)



(AUDIO SECTION)



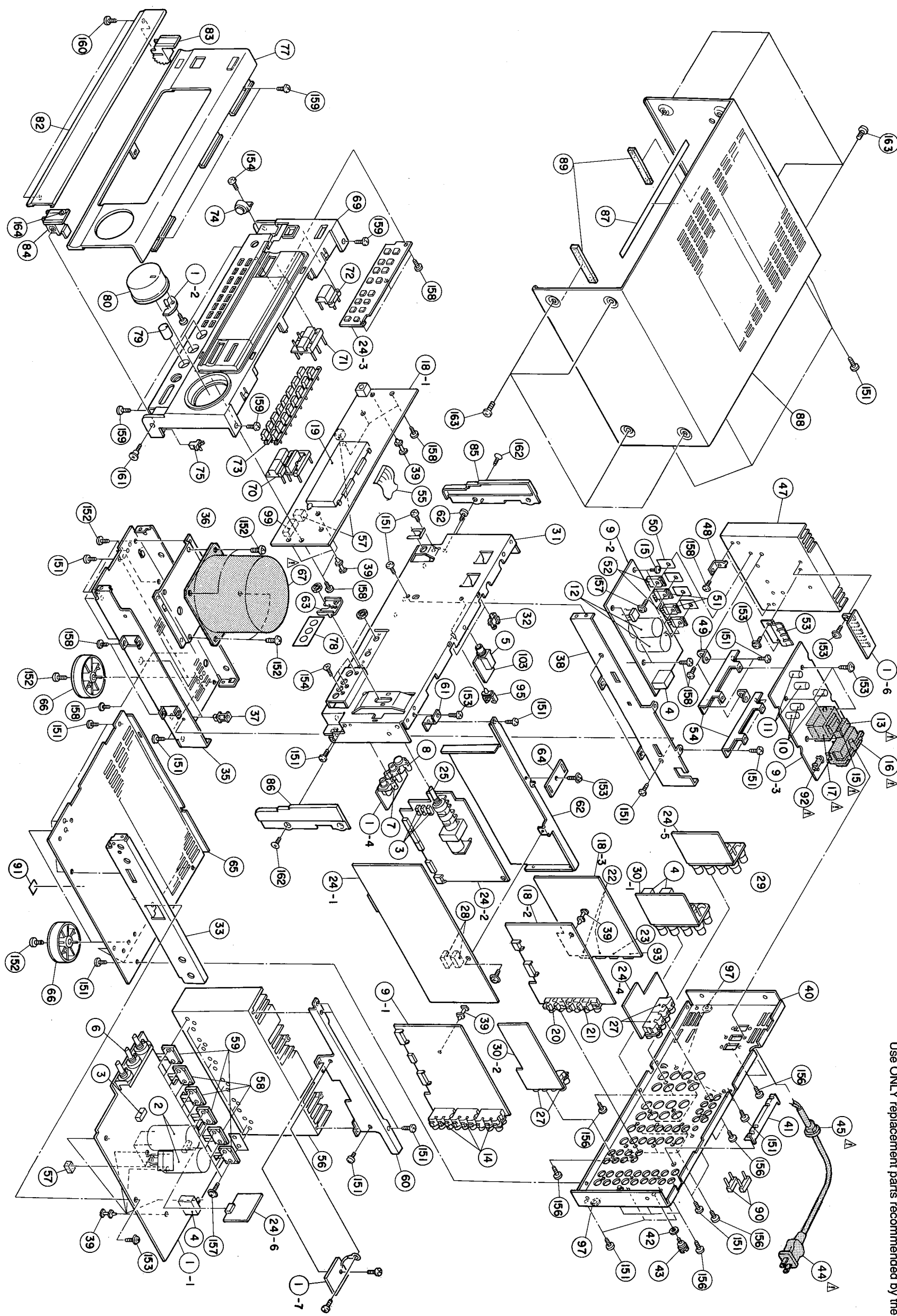
- 1 CD, VDP DIRECT
- 2 BYPASS
- 3 DOLBY PRO LOGIC
- 4 ENHANCED PRO LOGIC
- 5 DSP SIMULATION



EXPLODED VIEW OF CHASSIS AND CABINET

1 2 3 4 5 6 7 8

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





PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No.     | Part Name                  | Remarks      | Qty            |
|----------|--------------|----------------------------|--------------|----------------|
| 1        | 1U-2433A     | Main Amp Unit Assy         |              | 1 <sup>s</sup> |
| 1-1      | —            | Main Unit                  |              | (1)            |
| 1-2      | —            | LED Unit                   |              | (1)            |
| 1-3      | —            | Head Phone Unit            |              | (1)            |
| 1-4      | —            | Video Aux. Unit            |              | (1)            |
| 1-5      | —            | —                          |              | (1)            |
| 1-6      | —            | —                          |              | (1)            |
| 1-7      | —            | Regulator Unit             |              | (1)            |
| 2        | 254 6170 007 | Thermal Protect Unit       |              | (1)            |
| 3        | 214 0127 003 | Chemicon 15000uF/63V       | C335,336     | 2              |
| 4        | 214 0129 001 | Relay (RY-12W)             |              | 4              |
| 5        | 204 8341 017 | Relay (DH2TU)              |              | 2              |
| 6        | 211 0760 005 | Headphone Jack             |              | 1              |
| 7        | 204 8342 003 | Variable Resistor          | Gold Flash   | 1              |
| 8        | 205 0605 000 | 3P Pin Jack (C-GND)        | VR351,356    | 1              |
| 9        | 1U- 2434D    | S-Terminal                 |              | 1              |
| 9-1      | —            | Rear Input Unit Assy       |              | 1s             |
| 9-2      | —            | Audio Input Unit           |              | (1)            |
| 9-3      | —            | Rear Amp Unit              |              | (1)            |
| 10       | 254 4256 790 | Power Supply Unit          |              | (1)            |
| 11       | 254 4259 014 | Chemicon 2200uF/25V        | C527,528,333 | 3              |
| 12       | 254 4355 002 | Chemicon 3300uF/35V        | C517,518     | 2              |
| 14       | 204 8378 006 | Chemicon 6800uF/50V        | C433,434     | 2              |
| 18       | 1U-2435C     | 6P Pin Jack (S-GND)        |              | 3              |
| 18-1     | —            | VFD, VIDEO Unit Assy       |              | 1s             |
| 18-2     | —            | VFD, µ-Comm. Unit          |              | (1)            |
| 18-3     | —            | Video Unit                 |              | (1)            |
| 19       | 393 4115 000 | S-Video Unit               |              | (1)            |
| 20       | 204 8394 006 | FLD (FIP-6X1UA)            |              | (1)            |
| 21       | 204 8412 001 | 3P Pin Jack (C-GND)        | Gold Flash   | 1              |
| 22       | 204 8414 009 | 4P Pin Jack (C-GND)        | Gold Flash   | 1              |
| 23       | 204 8415 008 | 2P S-Terminal              | Gold Flash   | 2              |
| 24       | 1U-2436A     | 3P S-Terminal              | Gold Flash   | 1              |
| 24-1     | —            | Surround Unit Assy         |              | 1s             |
| 24-2     | —            | Surround Unit              |              | (1)            |
| 24-3     | —            | Volume Unit                |              | (1)            |
| 24-4     | —            | Tact Switch Unit           |              | (1)            |
| 24-5     | —            | Pre Out Unit               |              | (1)            |
| 24-6     | —            | Center, Rear SP Unit       |              | (1)            |
| 25       | 211 0759 003 | OPT-A Unit                 |              | (1)*           |
| 26       | —            | Variable Resistor 100 Kohm | Main VR      | 1              |
| 27       | 204 8393 007 | 4P Pin Jack (S-GND)        |              | 4              |
| 28       | 232 0168 002 | LC Filter                  |              | 2              |
| 29       | 205 0472 039 | 8P SP Terminal             |              | 2              |
| 30       | 1U-2442A     | Audio Rec Unit Assy        |              | 1s             |
| 30-1     | —            | Main SP Unit               |              | (1)            |
| 30-2     | —            | Audio Rec Unit             |              | (1)            |
| 30-3     | —            | Main SP Unit               |              | (1)            |
| 30-4     | —            | Instust Unit               |              | (1)            |
| 30-5     | —            | Pre Out Unit               |              | (1)            |
| 30-6     | —            | Regulator Unit             |              | (1)            |
| 31       | 411 1175 309 | Front Chassis Assy         |              | 1              |
| 32       | 445 0073 007 | Wire Clip                  |              | 3              |
| 33       | 411 9057 610 | Side Chassis               |              | 1              |
| 34       | —            | —                          |              | *              |
| 35       | 411 1021 314 | Trans Chassis              |              | 1              |
| 36       | 412 9160 209 | Trans Bracket              |              | 1              |
| 37       | 415 9032 006 | P.C.B Holder (T)           |              | 2              |
| 38       | 411 0928 104 | Center Chassis             |              | 1              |
| 39       | 412 2814 028 | Card Spacer (L=10)         |              | 11             |
| 40       | 105 1037 393 | Rear Panel                 |              | 1              |

| Ref. No. | Part No.     | Part Name                      | Remarks       | Qty |
|----------|--------------|--------------------------------|---------------|-----|
| 41       | 412 3519 005 | PWB Support (A)                |               | 1   |
| 42       | 477 0018 001 | Washer (P-87)                  |               | 1   |
| 43       | 205 0071 016 | Terminal Assy                  |               | 1   |
| 44       | 206 2060 002 | AC Cord (Polarized)            | GND           | 1   |
| 45       | 24510056 008 | Cord Bush                      |               | 1   |
| 46       | —            | —                              |               | 1   |
| 47       | 417 0459 215 | Power Radiator (B)             |               | 1   |
| 48       | 412 3225 108 | P.W.B Bracket (A)              |               | 2   |
| 49       | 412 3427 003 | L Bracket                      |               | 2   |
| 50       | 415 0234 007 | Insulating Sheet               |               | 4   |
| 51       | 273 0386 005 | Transistor 2SC3854 (O/P/V) (Z) | TR405,406     | 2   |
| 52       | 271 0237 006 | Transistor 2SA1490 (O/P/V) (Z) | TR407,408     | 2   |
| 53       | 412 3314 103 | Spring Plate (A)               |               | 1   |
| 54       | 412 3521 006 | P.W.B Bracket                  |               | 1   |
| 55       | 002 0045 003 | 29C FF Cable                   |               | 2   |
| 56       | 417 0458 313 | Power Radiator (A)             |               | 1   |
| 57       | 461 0539 048 | Rubber Sheet                   | 15×10×T10     | 6   |
| 58       | 273 0354 008 | Transistor 2SC3857 (O)/(V)     | TR267,317,318 | 3   |
| 59       | 271 0220 000 | Transistor 2SA1493 (O)/(V)     | TR269,319,320 | 3   |
| 60       | 412 2939 204 | Radiator Bracket               |               | 1   |
| 61       | 412 3529 008 | Support Bracket                |               | 1   |
| 62       | 411 1177 103 | Shield Chassis                 |               | 1   |
| 63       | 412 2897 100 | VR Bracket                     |               | 1   |
| 64       | 412 3520 007 | P.W.B Support (B)              |               | 1   |
| 65       | 105 1051 007 | Bottom Cover                   |               | 1   |
| 66       | 104 0194 108 | Foot Assy                      |               | 4   |
| 67       | 233 5394 009 | Power Trans.                   |               | 1   |
| 68       | 146 1375 344 | Inner Panel Assy               |               | 1   |
| 69       | 113 1534 017 | Function Knob (A)              |               | 1   |
| 70       | 113 1535 016 | Function Knob (B)              |               | 1   |
| 71       | 113 1292 236 | Push Knob (P)                  |               | 1   |
| 72       | 113 1464 019 | Push Knob                      |               | 1   |
| 73       | 421 9007 007 | Mini Damper                    |               | 2   |
| 74       | 435 0113 009 | Latch (Y3Y18)                  |               | 1   |
| 75       | 445 8004 007 | Wire Clamper                   |               | 1   |
| 76       | 144 2201 314 | Front Panel Assy               |               | 11  |
| 77       | 146 9045 207 | Blind Sheet                    |               | 1   |
| 78       | 112 0555 007 | Vol. Knob (B)                  |               | 1   |
| 79       | 112 0712 015 | VR Knob Assy                   |               | 3   |
| 80       | 144 1941 109 | Trap Door                      |               | 1   |
| 82       | 401 0165 203 | Hinge (L)                      |               | 1   |
| 83       | 401 0166 309 | Hinge (R)                      |               | 1   |
| 84       | 146 1377 012 | Side Plate (L)                 |               | 1   |
| 85       | 146 1378 011 | Side Plate (R)                 |               | 1   |
| 86       | 122 0183 049 | Spacer                         |               | 1   |
| 87       | 102 0515 118 | Top Cover                      | t=1           | 1   |
| 88       | 461 9001 043 | Rubber Sheet                   | T5×10×70      | 1   |
| 89       | 205 0752 005 | Short Pin                      |               | 2   |
| 90       | 513 8266 009 | Dangerous Mark                 | AC Cord       | 2   |
| 91       | 206 1046 001 | Fuse 6.3AUL (20mm)             |               | 1   |
| 92       | 204 8260 004 | Mini Jack                      | Remote        | 2   |
| 93       | 513 1796 097 | Fuse Caution Label             |               | 1   |
| 94       | 449 0068 014 | Wire Saddle                    |               | 1   |
| 95       | 513 1673 000 | Fuse Caution Label             |               | 2   |
| 96       | 477 0224 031 | SP Washer                      |               | 1   |
| 97       | 513 2046 018 | IC Caution Label               |               | 2   |
| 98       | 461 0334 052 | Rubber Sheet                   | 30×10×T10     | 1   |
| 99       | 513 2046 021 | IC Caution Label               |               | 1   |
| 100      | —            | —                              |               | 1   |

PACKING & ACCESSORIES  
(Not included EXPLODED VIEW)

| Ref. No. | Part No.     | Part Name                   | Remarks                 | Qty |
|----------|--------------|-----------------------------|-------------------------|-----|
| SCREWS   |              |                             |                         |     |
| 151      | 473 7015 018 | Tapping Screw (S) 3×8       | Black                   | 35  |
| 152      | 473 7007 000 | Tapping Screw (S) 4×8       | Black                   | 12  |
| 153      | 473 8007 025 | Cup Screw 3×8               |                         | 13  |
| 154      | 473 7511 004 | F.H. Tapping Screw (P) 3×10 |                         | 4   |
| 155      | —            | —                           |                         | 4   |
| 156      | 477 0064 107 | Fixing Screw                |                         | 21  |
| 157      | 473 8007 009 | Cup Screw 3×12              |                         | 16  |
| 158      | 473 7501 001 | Tapping Screw (P) 3×10      |                         | 19  |
| 159      | 473 7002 021 | Tapping Screw (S) 3×8       | Black                   | 7   |
| 160      | 473 7500 044 | Tapping Screw (P) 3×8       | Black                   | 2   |
| 161      | 473 7514 001 | Special Screw               |                         | 1   |
| 162      | 473 7009 011 | F.H. Tapping Screw (S) 3×10 |                         | 4   |
| 163      | 477 0283 005 | 3P Swelling Screw           |                         | 8   |
| 164      | 477 0231 024 | Washer φ4 (S)               |                         | 1   |
| 165      | —            | —                           |                         | 1   |
| 166      | —            | —                           |                         | 1   |
| 201      | 504 0092 060 | Styrene Paper               | for AC Cord for Set     | 1   |
| 202      | 504 9102 029 | Styrene Paper               |                         | 1   |
| 203      | 505 9102 019 | Poly Cover                  |                         | 1   |
| 204      | 503 1017 203 | Cushion                     |                         | 2   |
| 205      | 511 2450 006 | Inst. Manual                |                         | 1   |
| 206      | 499 0257 008 | Remocon Receiver (RC-162)   | Incl. R6P Batteries (2) | 1   |
| 207      | 501 1610 170 | Carton Case                 |                         | 1   |
| 208      | 505 8006 019 | Envelope                    |                         | 1   |
| 209      | 502 0741 069 | Pad                         | 170×110×45              | 1   |
| 210      | 502 0741 043 | Pad                         | 185×45×45               | 1   |
| 211      | 515 0623 002 | DAI Warranty Home           |                         | 1   |

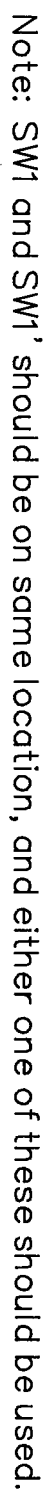
NOTE FOR PARTS LIST

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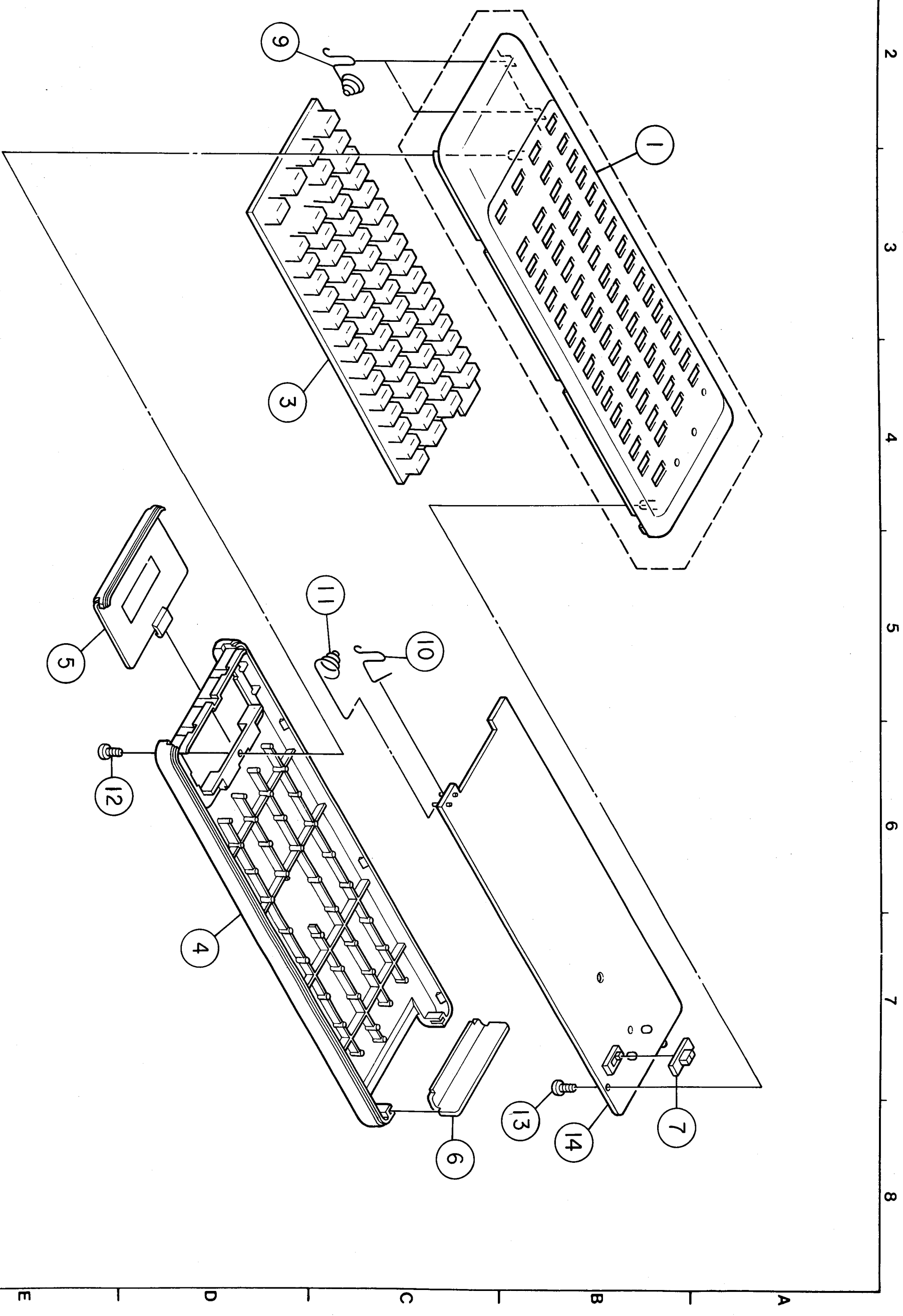
WARNING:

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REMOTE CONTROL UNIT ASS'Y

PARTS LIST OF EXPLODED VIEW

KEY LAYOUT

| Ref. No.             | Part No.     | Part Name                     | Remarks       |
|----------------------|--------------|-------------------------------|---------------|
| SEMICONDUCTORS GROUP |              |                               |               |
| IC1                  | 9H3 1000 157 | IC $\mu$ PD17203AGC-701       | $\mu$ -Com    |
| IC2                  | 9H3 1000 158 | IC RH5VA20AA                  | VOL. Detector |
| TR1<br>or            | 9H3 1000 070 | Transistor 2SC3443BF/BG       | Chip          |
|                      | 9H3 1000 070 | Transistor 2SC2982B/C         | Chip          |
| D1,2                 | 9H3 1000 028 | LED TLR124                    | Visible-Red   |
| D3                   | 9H3 1000 131 | LED SE1003-C                  | Inflated      |
| D5                   | 9H3 1000 087 | Diode 1SS281 (1)              |               |
| D6                   | 9H3 1000 029 | Diode PH310                   | Photo-PIN     |
| D7<br>or             | 9H3 1000 071 | Diode DA119/DA118             | Chip          |
|                      |              | Diode 1SS196                  |               |
| RESISTORS GROUP      |              |                               |               |
| R1,2                 | 247 0006 988 | Chip Resistor 560ohm, 1/10W   | RM73B--561J   |
| R4                   | 247 0001 909 | Chip Resistor 2.2ohm, 1/10W   | RM73B--2R2J   |
| R6                   | 247 0005 989 | Chip Resistor 220ohm, 1/10W   | RM73B--221J   |
| R7                   | 247 0012 927 | Chip Resistor 100kohm, 1/10W  | RM73B--104J   |
| R8                   | 247 0012 914 | Chip Resistor 91kohm, 1/10W   | RM73B--913J   |
| R9                   | 247 0009 901 | Chip Resistor 4.7kohm, 1/10W  | RM73B--472J   |
| R10                  | 247 0012 901 | Chip Resistor 82kohm, 1/10W   | RM73B--823J   |
| R11                  | 247 0009 969 | Chip Resistor 8.2kohm, 1/10W  | RM73B--822J   |
| R12                  | 247 0011 902 | Chip Resistor 33kohm, 1/10W   | RM73B--333J   |
| R13                  | 247 0009 901 | Chip Resistor 4.7kohm, 1/10W  | RM73B--472J   |
| J7,8                 | 247 0018 905 | Chip Resistor 0ohm, 1/10W     | RM73B--0R0K   |
| CAPACITORS GROUP     |              |                               |               |
| C1                   | 254 4213 034 | Electrolytic 100 $\mu$ F/6.3V | CE04W0L101M   |
| C2                   | —            | Chip Ceramic 0.33 $\mu$ F/25V | CK73F1E334Z   |
| C3                   | 254 4213 021 | Electrolytic 47 $\mu$ F/6.3V  | CE04W0L470M   |
| C4                   | 257 0014 935 | Chip Ceramic 0.1 $\mu$ F/25V  | CK73F1E104Z   |
| C5,6                 | 257 0003 946 | Chip Ceramic 33PF/50V         | CK73SL1H330J  |
| C7                   | 257 0014 935 | Chip Ceramic 0.1 $\mu$ F/25V  | CK73F1E104Z   |
| C8                   | 257 0004 961 | Chip Ceramic 100PF/50V        | CC73SL1H101J  |
| OTHER GROUP          |              |                               | Q'ty          |
| X1                   | —            | (P.W. Board)                  | (1)           |
| SW1                  | 9H3 1000 088 | Ceramic Resonator             | 1             |
|                      | 9H3 1000 089 | Slide Switch                  | 1             |
|                      | —            | Port Wrapping                 | 2             |
|                      |              | KBR4.0M5C3                    |               |

| Ref. No. | Part No.     | Part Name         | Remarks | Q'ty           |
|----------|--------------|-------------------|---------|----------------|
| 1        | 9H3 1000 145 | Case Top Ass'y    |         | 1              |
| 2        | —            | —                 |         |                |
| 3        | 9H3 1000 149 | Switch Rubber     |         | 1              |
| 4        | 9H3 1000 146 | Case Bottom Ass'y |         | 1              |
| 5        | 9H3 1000 147 | Cover Battery     |         | 1              |
| 6        | 9H3 1000 148 | IR Filter         |         | 1              |
| 7        | 9H3 1000 150 | Switch Button     |         | 1              |
| 8        | —            | —                 |         |                |
| 9        | 9H3 1000 153 | Spring Coil       |         | 1              |
| 10       | 9H3 1000 151 | Spring Coil       |         | 1              |
| 11       | 9H3 1000 152 | Spring Coil       |         | 1              |
| 12       | 9H3 1000 154 | Tapping Screw 2x6 |         | 1              |
| 13       | 9H3 1000 155 | Tapping Screw 2x5 |         | 1              |
| 14       | 9H3 1000 156 | P.W.Unit Ass'y    |         | 1 <sup>9</sup> |
| 15       | —            | Label             |         | 1              |
| 16       | —            | Sheet             |         | 1              |

↑ Transmitting direction (upper side)

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

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