

JVC

1-25-92

SERVICE MANUAL

COMPUTER CONTROLLED STEREO RECEIVER

MODEL NO. **RX-7VBK**



120 watts

TRS

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Safety Precautions

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.

For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.

When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.

5. Leakage current check

(Safety for electrical shock hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

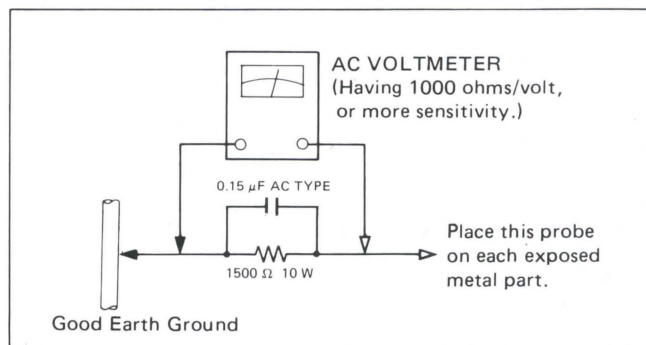
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).

- Alternate check method.

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

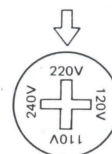
Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



CHECKING YOUR LINE VOLTAGE (Except for U.S.A., Canada, Australia, U.K. and Continental Europe.)

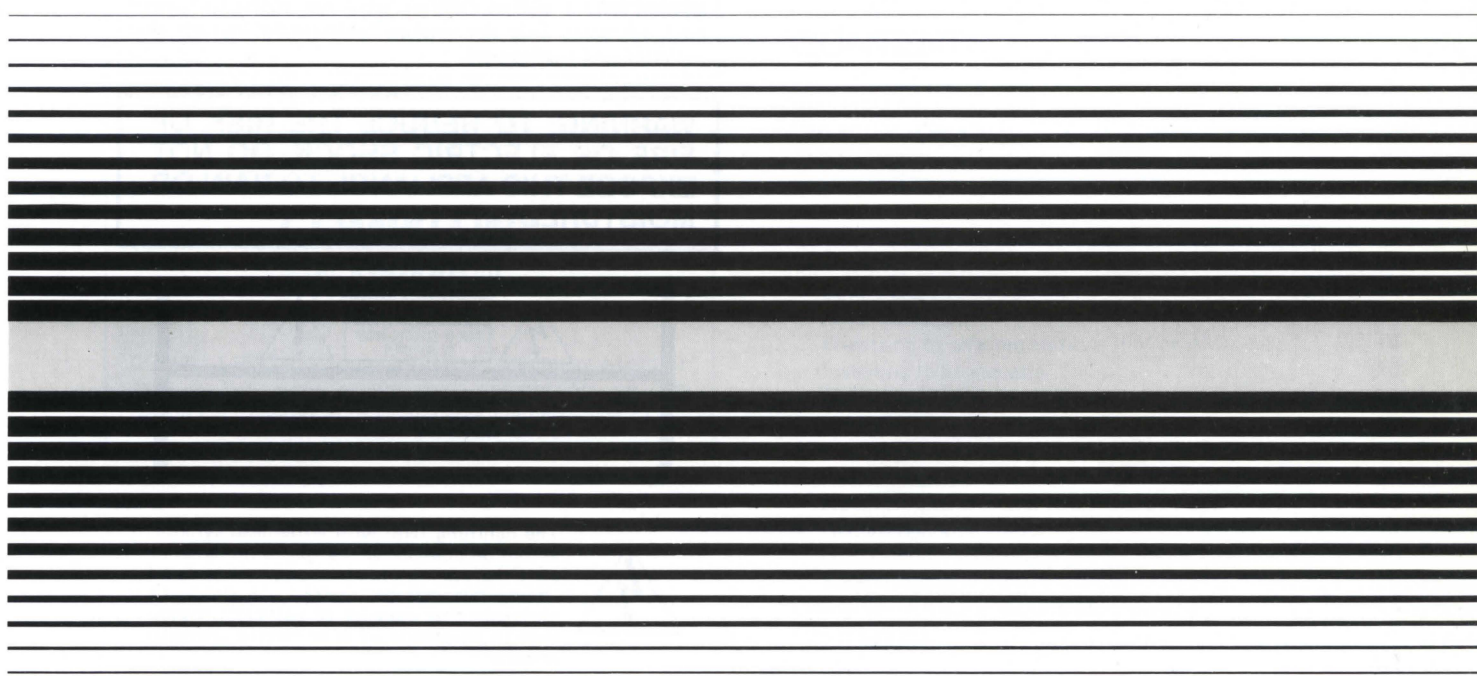
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this equipment. The voltage selector switch is located on the rear panel.

CAUTION Before selecting the "Voltage selector switch" to proper voltage disconnect the power plug.



JVC | Instruction Book

COMPUTER CONTROLLED RECEIVER **RX-7VBK/RX-9VBK**



RX-9VBK



RX-7VBK

COMPU LINK
/// Remote ///
Control Component

For Customer Use:

Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

IMPORTANT (In the United Kingdom)
Mains Supply (AC 240 V~, 50 Hz only)

IMPORTANT

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with the following code:



If these colours do not correspond with the terminal identifications of your plug, connect as follows:

Blue wire to terminal coded N (Neutral) or coloured Black.

Brown wire to terminal coded L (Live) or coloured Red.

If in doubt – consult a competent electrician.

BEMAERK: I stilling OFF er apparatet stadig forbundet med lysnettet hvis det ønskes fuldstændig afbrudt skal netledningen trækkes ud.

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

	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.

IMPORTANT (CANADA ONLY/CANADA SEULEMENT)

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

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

"Note to CATV system installer: (U.S.A. ONLY)

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

COMPU LINK /// Remote /// Control System

COMPU LINK is a computer-linked system by which individual JVC audio and/or video components are controlled via a computer. For further details, see page 12.

CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

Thank you for purchasing this JVC product.

Before you begin operating this unit, please read the instructions carefully to be sure you get the best possible performance.

If you have any questions, consult your JVC dealer.

Note:

This instruction booklet has been prepared for two models — the RX-7VBK and RX-9VBK. The basic operation of both models is virtually identical. The differences are clearly described, followed by respective model numbers. Please check the necessary information relevant to the model you have purchased.

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IMPORTANT

1. Installation

- Select a place which is level, dry; and neither too hot nor too cold (between -5°C and 40°C/23°F and 104°F).
- Pay attention to good ventilation; putting things on the cabinet or using the receiver in a narrow and poorly ventilated place may result in the temperature rising and cause trouble.
- Leave a sufficient distance between the receiver and your TV to prevent interference noise.

2. Power

- Do not handle the power cord with wet hands!
- When unplugging from the wall outlet, always grip the plug, not the power cord itself.

3. Malfunctions, etc.

- Do not insert any metallic object inside the receiver.



- ❶ External ANTENNA terminals
See "ANTENNAS" on page 5.
- ❷ GND terminal
- ❸ CATV IN/OUT terminals
See "ANTENNAS" on page 5.

AUDIO ... For audio signal connection

- ❹ PHONO terminals
- ❺ CD terminals
- ❻ AUX terminals
- ❼ TAPE 1 REC terminals
- ❽ TAPE 1 PLAY terminals
- ❾ TAPE 2 REC terminals
- ❿ TAPE 2 PLAY terminals
- ⓫ VIDEO 1 terminals
- ⓫ VIDEO 2 terminals
- ⓫ VCR REC terminals
- ⓫ VCR PLAY terminals

Notes:

- These VIDEO 1 and VIDEO 2 terminals can also be used to receive audio signals from audio equipment.
- The VCR terminals can also be used as TAPE terminals for an extra tape deck.

VIDEO ... For video signal connection

- ⓫ MONITOR OUT A terminal
Connect the VIDEO MONITOR OUT A terminal to an AV TV with a TV OUTPUT terminal or a television provided with a video input terminal, to reproduce video signals.
- ⓫ MONITOR OUT B terminal
Connect any of several JVC-specified TVs or an AV TV with a LINE OUT terminal. No signal is output from this terminal when the VIDEO 1 source is selected.
- ⓫ VIDEO 1 terminal
Connect any of several JVC-specified TVs, an AV TV with a LINE OUT terminal or an ordinary video unit.
- ⓫ VIDEO 2 terminal
- ⓫ VCR REC terminal
- ⓫ VCR PLAY terminal

GENERAL

- ⓫ AC OUTLETS (SWITCHED)
- ⓫ Fuse holder**
- ⓫ Voltage selector***
When this equipment is used in an area where the supply voltage is different from the preset voltage, reset the voltage selector to the correct position.
- ⓫ SPEAKERS 1 terminals
- ⓫ SPEAKERS 2 terminals
- ⓫ Power cord
- ⓫ AM channel spacing switch***
The AM channel spacing switch on the rear panel allows selection of 9 kHz or 10 kHz steps, depending on your area.

Area \ Band	FM	AM
U.S.A., Canada	100 kHz	10 kHz
Continental Europe, U.K., Australia	50 kHz	9 kHz
Other areas	50 kHz	*9 kHz 10 kHz

Note: *Preset at the factory.

Example

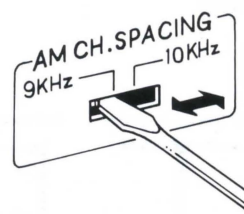


Fig. 3

Switch over using the tip of a screwdriver as shown in Fig. 3.

- ⓫ AM loop antenna terminal
See "ANTENNAS" on page 5.
 - ⓫ SYNCHRO terminals
Connect to units provided with a SYNCHRO terminal to let the COMPU LINK control system function.
- ** Not provided on units for the U.S.A., Canada, the U.K., and Australia.
- *** Not provided on units for the U.S.A., Canada, Continental Europe, the U.K., and Australia.

Notes:

1. When connecting the components, make the correct left and right channel connections. Reversed channels may degrade the stereo effect.
2. Connect speakers with correct polarity: (+) to (+) and (-) to (-). Reversed polarity may degrade the stereo effect.
3. Switch the power off when connecting any component.
4. Connect plugs or wires firmly. Poor contact may result in hum.
5. Use speakers with an impedance of 8 ohms or more (16 ohms when the 1 + 2 position is used). Speakers with an impedance down to 4 ohms (8 ohms when the 1 + 2 position is used) may be used, in which case the temperature rise of the cabinet may not satisfy BS415 or IEC 65. Be sure to provide good ventilation, especially when speakers with an impedance of 4 ohms (8 ohms when the 1 + 2 position is used) are used.
6. The AC outlets provide no power when the power is turned off. Do not connect equipment requiring more than the outlet's specified value.
7. Keep the connection cords as far as possible from the TV.

ANTENNAS

(for the U.S.A and Canada)

Use of CATV cable

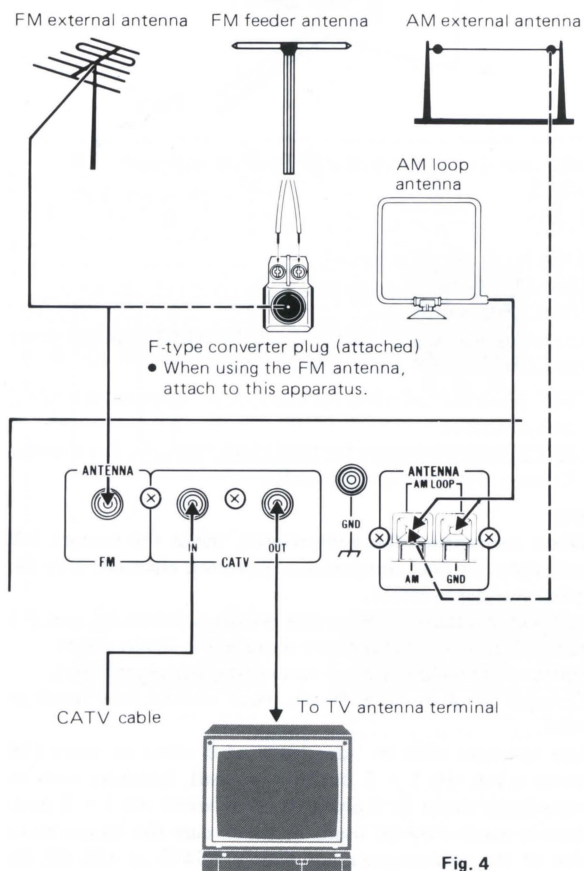


Fig. 4

When using 2 FM antennas

FM ANTENNA and CATV IN terminals can also be used for 2 FM antennas.

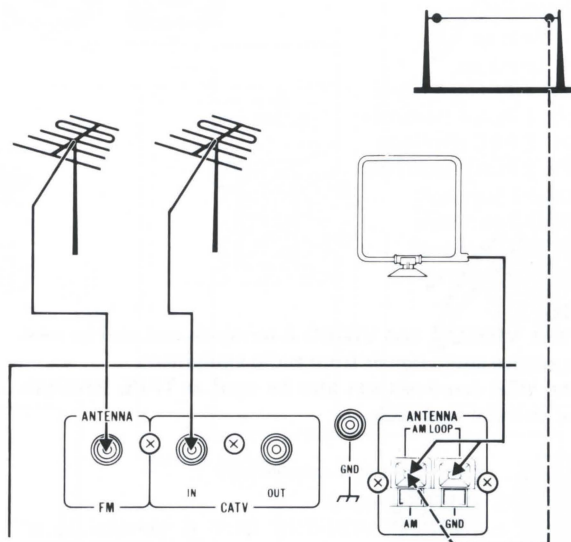


Fig. 5

CAUTION:

- When a television is connected to the CATV OUT terminal of this unit, pulsating sound and a blinking picture may result because the signal entering the CATV IN terminal is too weak. If this happens, connect a CATV booster amplifier to the CATV IN terminal to strengthen the signal.
- If the outdoor antenna installation is impossible and if the TV signal strength is weak, FM signal may interfere with the TV picture and sound.
- Before connecting this unit to the CATV system, consult the cable company.

(for W. Germany)

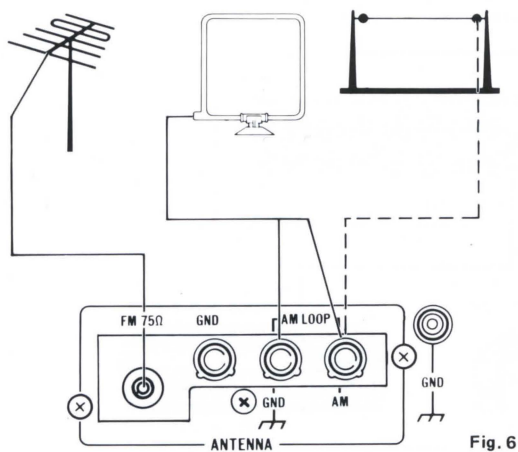


Fig. 6

(for other areas)

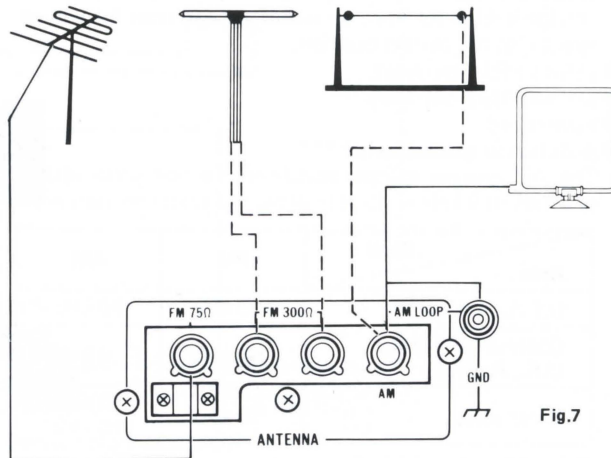


Fig. 7

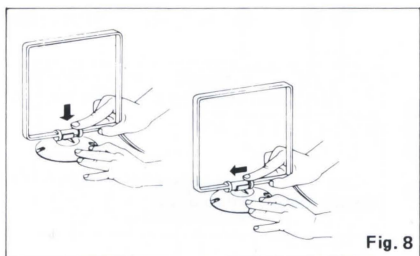


Fig. 8

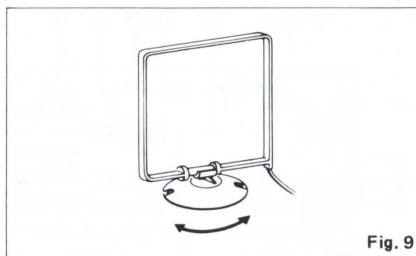


Fig. 9

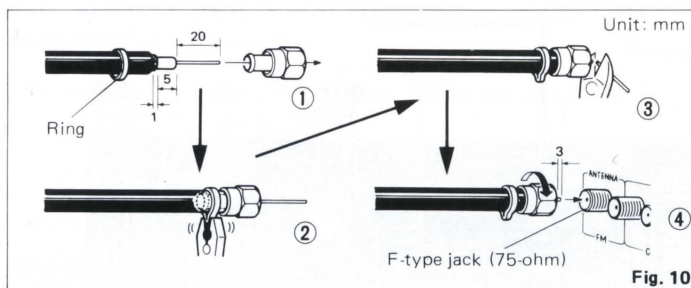


Fig. 10

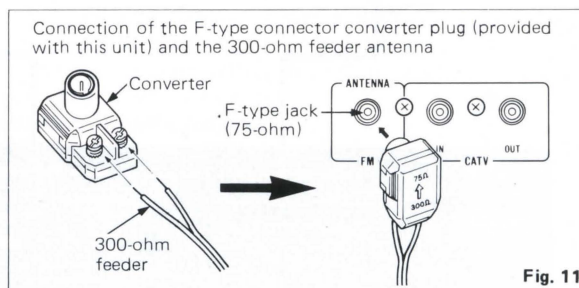


Fig. 11

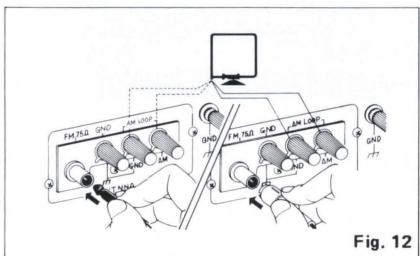


Fig. 12

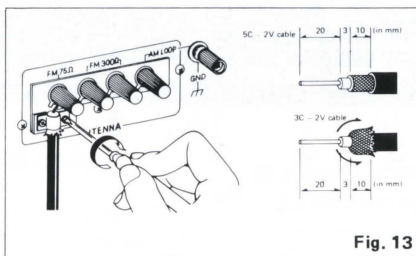


Fig. 13

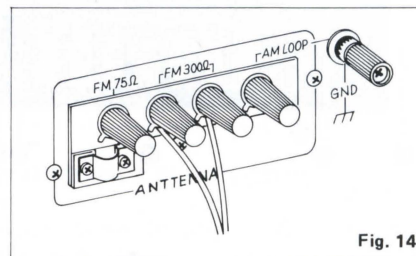


Fig. 14

AM antennas

- How to assemble the AM loop antenna (Fig. 8)
Snap the loop antenna onto the stand, then slide it as shown until firmly held in place.
- When too much noise occurs (Fig. 9)
Change the direction of the loop antenna or reinstall it in a best position.
- AM external antenna (Fig. 4 – 7)
If AM reception is not good, connect an external AM antenna (single-wire antenna) to the AM ANTENNA terminal.

Notes:

- If the provided loop antenna is not set up and its wires attached, or the antenna wires touch the rear panel, it will be impossible to receive AM broadcasts.
- If the AM loop antenna is too close to the speaker terminals, it may cause noise and should be moved away from the rear panel.
- When installing an AM external antenna, leave the AM loop antenna connected.

FM antennas

For USA & CANADA (Fig. 4, 5)

- Connection of the F-type connector and the F-type input jack of the 75-ohm coaxial cable (Fig. 10)
The F-type input jack is not provided with this unit.

- Connect an external antenna to the FM terminal, the CATV line to the CATV IN terminal, and a television to the CATV OUT terminal. (Fig. 4)
- The feeder antenna must be attached to the converter plug first and then connect to the F-type connector on the rear panel. (Fig. 11)
- The CATV IN terminal can also be used for an extra FM antenna. With this arrangement, you can switch between 2 FM antennas for the best reception. (Fig. 5)

For W. Germany (Fig. 6, 12)

- The FM wire antenna provided can be connected to the 75-ohm coaxial jack temporarily.
- 75-ohm antenna with coaxial type connector (DIN 45 332) is to be connected to the 75-ohm terminal.

For other areas (Fig. 7)

- 75-ohm antenna with coaxial lead (Fig. 13)
Loosen the screws on the bracket and insert the cable into the ring from below. Then connect the stripped core to the upper terminal. The bracket ring works as the ground terminal.
- Feeder antenna (Fig. 14)
Connect to the 300-ohm terminal.
Take care that the wires of the feeder antenna do not touch any other terminal.

FRONT PANEL

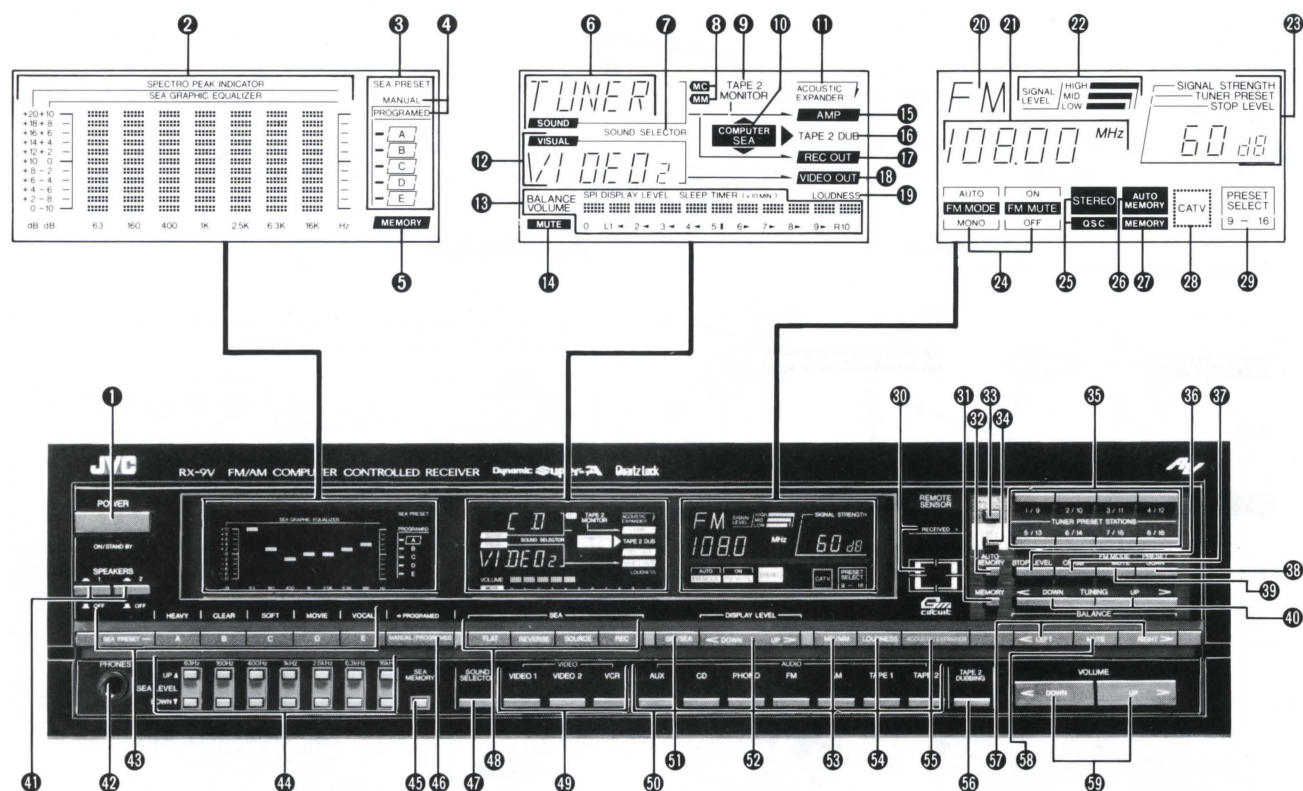


Fig. 15

1 POWER

ON: Press to turn the power on. To turn the power off, press it again.

STAND BY: Even when all of the indicators are turned off, the memory circuit operates and the preset stations and the source selectors are not subject to cancellation or accidental alteration as long as the power cord is plugged into an AC outlet. This situation is called the STAND BY mode. The preset data and the source select data are maintained even in the case of a power failure or when the power cord is disconnected, if the period power is not applied does not exceed a couple of days.

Note:

- Even in the STAND BY mode, this receiver consumes a small amount of electricity (5 watts). To shut the power completely off, disconnect the power cord.

2 SPECTRO PEAK INDICATOR/SEA GRAPHIC EQUALIZER indicator

This display doubles as a SPECTRO PEAK INDICATOR and an SEA GRAPHIC EQUALIZER indicator, and is switched between displays by pressing the SPI/SEA button.

SPECTRO PEAK INDICATOR: The output signal is divided into seven frequency bands, whose center frequencies are identical to those of the seven SEA bands. This SPECTRO PEAK INDICATOR shows the output signal level in each frequency band. For easier viewing, the indicator is designed so that its response time is faster when rising and slower when decaying.

SEA GRAPHIC EQUALIZER: The dot point rises and falls in response to the pressing of the corresponding SEA LEVEL buttons to show the SEA level in each frequency band.

Notes:

- The SEA GRAPHIC EQUALIZER level indicator is shown for about five seconds immediately after the power is applied.
- When the SEA LEVEL, SEA PRESET, SEA FLAT, SEA REVERSE, MANUAL/PROGRAMED or SEA MEMORY button is pressed, the display shows the SPECTRO PEAK INDICATOR after five sec.

3 SEA PRESET indicator

Pressing the MANUAL/PROGRAMED button will cause indicator A, B, C, D, or E to light, according to which preset pattern was being used the last time the unit was in that particular mode (MANUAL or PROGRAMED). If no preset pattern was being used, no preset pattern indicator will light. These indicators also light when an SEA PRESET button has been pressed, to select a preset pattern or to store a newly-created pattern in memory.

4 MANUAL/PROGRAMED indicator

Pressing the MANUAL/PROGRAMED button causes "MANUAL" or "PROGRAMED" to light on the display, indicating which mode has been selected.

5 MEMORY indicator

Pressing the MEMORY button lights "MEMORY" for about five seconds, thus indicating the unit is ready to store in memory the pattern you have created.

6 SOUND indicator

This shows which audio signal has been selected with the source selectors, for listening to or recording.

7 SOUND SELECTOR indicator

This indicator lights when the SOUND SELECTOR button has been pressed to ON.

8 MM/MC indicator (RX-9VBK only)

"MM" or "MC" is shown to indicate the type of cartridge in use. This indicator can be switched by the MM/MC (cartridge select) button.

9 TAPE 2 MONITOR indicator

This indicator lights when the TAPE 2 button is pressed.

10 COMPUTER SEA indicator

When the SEA SOURCE button is pressed, the upper arrow lights to show that the S.E.A. is processing the signals fed to the speakers or headphones.

When the SEA REC button is pressed during TAPE 2 dubbing, the right arrow lights to show that the S.E.A. is processing the signals output from the TAPE 1 REC or VCR REC terminals.

When the SEA REC button is pressed, the lower arrow lights to show that the S.E.A. is processing the signals output from the REC OUT terminals.

11 ACOUSTIC EXPANDER indicator

This indicator lights when the ACOUSTIC EXPANDER button has been pressed to ON.

12 VISUAL indicator

This shows which video signal has been selected with the VIDEO source selectors, for watching or recording.

13 VOLUME/BALANCE/SPI DISPLAY LEVEL/SLEEP TIMER (x 10 MIN) indicator

This indicator is used as the VOLUME, BALANCE, SPI DISPLAY LEVEL, and SLEEP TIMER indicator. Normally, "VOLUME" lights and this indicator shows the level of sound going to the speakers or headphones. When the BALANCE buttons are pressed, "BALANCE", the center bar, "L", and "R" light and the balance between the right and left speakers is shown.

When the DISPLAY LEVEL buttons are pressed, this indicator shows the level of the "SPECTRO PEAK INDICATOR". When the SLEEP button on the remote control unit is pressed, "SLEEP TIMER (x 10 MIN)" lights. Each time the SLEEP button is pressed, the sleep timer's setting is increased in 10-minute increments to up to 60 minutes, with a square on this indicator lighting for each 10-minute increment added. However, the leftmost point does not light in this mode. This indicator is also useful to check the timer's turn-off timer. The display continues in the BALANCE, SPI DISPLAY LEVEL, or SLEEP TIMER indication for about five seconds and then returns to the VOLUME indication mode.

14 MUTE indicator

This indicator lights when the MUTE button has been pressed. Pressing it again returns the volume to its original level. Pressing the VOLUME UP/DOWN buttons also cancels the muting.

15 AMP indicator

The arrow shows which source is output to the amplifier.

16 TAPE 2 DUB indicator

When the TAPE 2 DUBBING button is pressed, this indicator lights.

17 REC OUT indicator

The arrow shows which audio source is being output from the TAPE REC or VCR REC terminals.

18 VIDEO OUT indicator

The arrow shows which video source is output to the VCR REC terminal or the MONITOR OUT terminals.

19 LOUDNESS indicator

When the LOUDNESS button has been pressed, this indicator lights.

20 FM/AM indicator

"FM" is displayed during FM reception and "AM" during AM reception.

21 Frequency indicator

The tuned-in frequency is displayed digitally. Four digits (kHz) are displayed during AM reception, five digits (MHz) (for Continental Europe, U.K., Australia, and other countries) or four digits (MHz) (for U.S.A. and Canada) are displayed during FM reception.

22 SIGNAL LEVEL indicator

This is used in tuning to both FM and AM broadcasts. The signal strength is shown at three levels.

Note:

- The signal strength in dB corresponding to each level in each band is shown below.

	LOW	MID	HIGH
FM	10 – 35 dB	40 – 55 dB	More than 60 dB
AM	40 – 65 dB	70 – 85 dB	More than 90 dB

23 SIGNAL STRENGTH/TUNER PRESET/STOP LEVEL indicator

This indicator is used as the dB signal strength indicator, the tuner preset indicator showing the channel number of the preset station, and the stop level indicator for auto tuning.

This indicator can be switched between the SIGNAL STRENGTH and the TUNER PRESET display modes by pressing the CH/dB button. The STOP LEVEL display is shown by pressing the STOP LEVEL button.

Notes:

- 0 dB corresponds to 1 μ V/75 ohms in FM and 1 μ V/m in AM.
- The indication is shown in 5 dB steps.
- The optimum signal strength is more than 40 dB for FM mono, more than 60 dB for FM stereo, and 70 dB for AM. If the signal is too weak or too strong, this display may not indicate the correct value.
- Even if the dB display mode is set by pressing the CH/dB button, the CH indication is displayed and maintained when the station select buttons are pressed. When the TUNING button is pressed, the 0 dB indication is displayed.
- If a broadcast is received by preset tuning, and then the CH/dB button is pressed so that the dB indication is displayed before switching the power off, the CH indication will be displayed when the power is switched on again.

24 FM MODE/FM MUTE indicators

These indicators show "AUTO"/"ON" or "MONO"/"OFF" according to the setting of the FM MODE/MUTE button.

25 STEREO/QSC indicator

STEREO: When an FM stereo broadcast is being received, this indicator lights. When the MODE indicator shows "MONO", this indicator will not light even if a stereo FM broadcast is being received. In that case, press the FM MODE/MUTE button so that "AUTO" is shown.

QSC: When the signal strength of an FM stereo broadcast is low, this indicator lights and the QSC (Quieting Slope Control) circuit is switched on to reduce noise.

26 AUTO MEMORY indicator

Lights when the AUTO MEMORY button is set to on.

27 MEMORY indicator

Lights for about five seconds when the MEMORY button is pressed to on, or for one second when a frequency is stored in memory during auto memory.

28 CATV indicator (only for the U.S.A. and Canada)

When the CATV button is pressed to on, this indicator lights to show that this unit receives CATV programs.

29 PRESET SELECT indicator

Each time the PRESET SELECT button is pressed, this indicator shows "1 — 8" or "9 — 16" to show the group of preset stations to be selected.

30 REMOTE SENSOR

While infrared signals are being received from the remote control unit, the RECEIVED indicator lights.

31 MEMORY

Press this button, and the MEMORY indicator will light to show that it is ready to receive a memory setting. Pressing the station select button while the MEMORY indicator is lit (for about five seconds) makes it possible to store the station in the specified memory. At this time, the channel number is shown in the display.

32 AUTO MEMORY

After setting the stop level using the STOP LEVEL button, press this button and then one of the TUNER PRESET STATIONS buttons to scan and preset broadcasts automatically. Starting from the frequency being displayed, the tuner tunes in to increasingly higher frequencies, until a broadcast is tuned in. Then its signal strength is shown in dB for one second and the channel number you have pressed earlier flickers for three seconds. If you don't wish to store this station in memory, press this button within four seconds; the dB indication is shown and the scan function starts again. Otherwise, the MEMORY indicator and channel number light together and the frequency is stored in that channel. Then the next channel number is shown and up-scanning restarts, as the tuner automatically searches for a frequency to store in the next channel. This process continues until the highest numbered channel preset station has a frequency stored in its memory.

If the upper limit of the frequency band is reached before this happens, the upper limit frequency is shown with dB displayed instead of the channel number.

Otherwise, when this process ends, the last frequency tuned to and its corresponding channel number are displayed. If, while this operation is taking place within a particular broadcast band, that same broadcast band button is pressed, the operation stops and the broadcast currently being tuned to is heard. If a different broadcast band button is pressed, the operation stops and the broadcast last tuned to when that band was listened to is heard.

Note:

To cancel the auto memory function, press one of the buttons in the tuner section other than the AUTO MEMORY or PRESET SELECT button.

33 PRESET SELECT

Press to set to preset channels 1 — 8 or 9 — 16, 1 — 8 or 9 — 16 PRESET SELECT indicator lights. Up to 16 stations for each band (FM 16, AM 16) can be preset as required. Even when you pushed MEMORY button and then changed 1 — 8 and 9 — 16 by pressing this button, it is possible to accomplish preset memory by pressing the TUNER PRESET STATIONS button.

34 CATV (only for the U.S.A. and Canada)

To listen to an FM broadcast received by the FM antenna attached to the CATV IN terminal, or to a cable TV program received via the connected CATV cable, press this button. The CATV indicator will light.

When the CATV indicator is not lit, FM broadcasts received by the antenna connected to the FM ANTENNA terminal can be heard. In addition, CATV channel frequencies can be stored in preset station memories. To hear the audio portion of a CATV channel so stored, simply press the appropriate PRESET STATION button. Pressing this button is then not necessary.

35 TUNER PRESET STATIONS

These buttons are used to select one of the preset stations or to store a frequency in memory.

When one of these buttons is pressed, the preset number is shown by the TUNER PRESET indicator.

If one of these buttons is pressed when the MEMORY button has been pressed, the frequency which is being received will be stored in memory.

36 STOP LEVEL

This is used to set the strength of broadcast signals at which the scan tuning stops by 5 dB steps for 30 — 60 dB in FM and 60 — 90 dB in AM.

Note:

•0 dB corresponds to 1 μ V/75 ohms in FM and 1 μ V/m in AM.

37 CH/dB

Press to select either the channel indication or dB indication.

If one of the station select buttons is not pressed beforehand, only the dB indication is shown and this button has no effect.

38 PRESET SCAN

This button permits scanning of the preset stations. When this button is pressed, preset station 1 is tuned in, and its number flashes for about five seconds. This continues for each of the other stations, until all 16 (in the AM or FM band) have been scanned. When the desired station is received, pressing the PRESET SCAN button stops the scanning and the RX-7VBK/RX-9VBK remains tuned to the station. If no stations were selected during this function, the frequency tuned to before this function was initiated is tuned to again.

39 FM MODE/MUTE

For normal FM reception and automatic elimination of interstation noise, press this button so that FM MODE's "AUTO" and FM MUTE's "ON" light in the display.

When receiving a weak or noisy FM stereo broadcast, press this button so that "MONO" of FM MODE and "OFF" of FM MUTE light; the broadcast will be heard in mono but the clarity of reception will be improved.

40 TUNING UP/DOWN

DOWN: Press to tune to lower frequencies.

UP: Press to tune to higher frequencies.

Manual tuning

Tapping these buttons changes the frequency in single steps of 9 or 10 kHz in AM, or 50 or 100 kHz in FM.

Auto tuning

Holding either button pressed for more than one second and then releasing it starts auto tuning; when a broadcast is received, tuning will stop. But if either button is kept held in, scanning continues even when a broadcast is received. In auto tuning, pressing either button again stops scanning.

Note:

●When one of these buttons is being tapped, the frequency causes to change at the upper or lower limit of the frequency band. In auto tuning, the frequency scanning reverses direction when the upper or lower limit is reached.

41 SPEAKERS

SPEAKERS-1

Press to switch the speakers connected to the SPEAKERS 1 terminals on or off.

SPEAKERS-2

Press to switch the speakers connected to the SPEAKERS 2 terminals on or off.

42 Headphone jack (PHONES)

Plug stereo headphones into this jack for private listening and recording monitoring. If you want to listen to sound from the headphones only, press the SPEAKERS buttons to OFF.

43 SEA PRESET

Press to store the displayed S.E.A. pattern in memory or to recall the preset S.E.A. pattern corresponding to the button pressed. While in the MANUAL mode, pressing the SEA MEMORY button and then one of these five buttons will store the pattern you have created. Later, while in MANUAL mode, that pattern can be recalled by pressing the appropriate SEA PRESET button. Up to five original patterns can be stored for recall in this way.

A different set of S.E.A. patterns is available when in the PROGRAMED mode. These five patterns (HEAVY, CLEAR, SOFT, MOVIE, and VOCAL) have been permanently stored in memory before the unit was shipped, and may not be replaced. So, up to 10 patterns may be recalled. For more details, refer to page 16.

44 SEA LEVEL

The built-in graphic equalizer divides the audio spectrum into seven frequency bands with center frequencies from 63 Hz to 16 kHz at intervals of 4/3 octave.

When the S.E.A. level is set to '0' (center position), frequency response is flat. The response in each band can be varied by ± 10 dB by pressing the UP or DOWN SEA LEVEL buttons.

The buttons for different frequency bands can be pressed at the same time, and holding them down causes the level to continue rising or falling.

63 Hz: Raise to emphasize the very low bass response of organs, drums, and contrabass. It produces stable and solid sound with emphasis and eliminates the unclear sound response of low frequencies with de-emphasis.

160 Hz: Emphasize to obtain a more expanded low sound. De-emphasize to eliminate unclear sound caused by large or nearly empty listening rooms.

400 Hz: This frequency range is the base on which music is constructed. Emphasize to really put a punch in your music.

1 kHz: Most effective in emphasizing or de-emphasizing the human voice. Emphasize to cause the vocalist to be brought to the foreground, or de-emphasize to cause it to recede into the background.

2.5 kHz: This frequency stimulates the human ear. If the music sounds hard or metallic, de-emphasize.

6.3 kHz: Boost to add clarity to winds and strings. This frequency band varies the tonal expression, influencing the subtleties of the music.

16 kHz: Boosting this frequency range properly adds to the delicacy of highs, with cymbals and triangles resounding in a more ear-pleasing manner, and provides a feeling of extension. This frequency band can also be used to compensate for cartridge response since most moving-magnet cartridges have their resonance peaks in the frequency range from 10 kHz to 20 kHz.

45 SEA MEMORY

Press this button and the MEMORY indicator will light for about five seconds. While it is lit, press one of the SEA PRESET buttons to store in memory the SEA pattern currently being displayed.

46 MANUAL/PROGRAMED

Press to switch between the MANUAL and PROGRAMED SEA pattern modes.

47 SOUND SELECTOR

When this button is pressed (lighting the SOUND SELECTOR indicator), the SOUND signal can be selected from a different AUDIO source in combination with the VISUAL signal originating from the VIDEO source.

Example: When the VIDEO 1 button and the SOUND SELECTOR button are pressed:

Now, press an AUDIO source selector button (CD, PHONO, AM, FM, TAPE 1, TAPE 2, AUX). The VISUAL signal from the VIDEO 1 terminal is output to the VIDEO MONITOR OUT A terminal and the VIDEO VCR REC terminal. The SOUND signal from the audio source is heard from the speakers or headphones, and is output to the AUDIO VCR REC terminal. In this way, a VCR may record the SOUND and VISUAL signals from separate sources.

48 SEA

FLAT: Press this button for a flat response.

REVERSE: Press this button to reverse the pattern's characteristics.

SOURCE: Press this button to listen to the S.E.A.-compensated sound.

REC: Press this button to record S.E.A.-compensated signals.

Notes:

- The settings of the **SOURCE** and **REC** buttons are shown in the signal flow chart.
- When the **TAPE 1**, **TAPE 2**, or **TAPE 2 DUBBING** button is pressed, either the **SEA SOURCE** or the **SEA REC** mode can be selected.

49 VIDEO

VIDEO 1: Press this button to select the source from the video unit connected to the VIDEO 1 terminals.

VIDEO 2: Press this button to select the source from the video unit connected to the VIDEO 2 terminals.

VCR: Press this button to select the source from the VCR connected to the VCR terminals.

50 AUDIO

AUX: Press this button to listen to the source connected to the AUX terminals.

CD: Press this button to listen to a compact disc player connected to the CD terminals.

PHONO: Press to listen to a turntable connected to the PHONO terminals.

FM: Press this button to listen to an FM broadcast.

AM: Press this button to listen to an AM broadcast.

TAPE 1: Press to listen to a tape deck connected to the TAPE 1 terminals.

TAPE 2: Press to listen to a tape deck connected to the TAPE 2 terminals. Another press of this button will release this function so that the source selected by another source select button may be heard.

51 SPI/SEA

Press to switch the indication between the SPECTRO PEAK INDICATOR and SEA GRAPHIC EQUALIZER level indicator.

52 DISPLAY LEVEL (DOWN/UP)

Adjusts the relative display position on the SPECTRO PEAK INDICATOR so that especially weak or strong level signals can be displayed in an easy-to-see position. This button has no effect on the output sound level.

53 MC/MM (RX-9VBK only)

MM: Press this button so that "MM" is shown on the display when using an MM cartridge or an MC cartridge with an output of more than 0.5 mV.

MC: Press this button so that "MC" is shown on the display when using an MC cartridge with an output of less than 0.5 mV.

54 LOUDNESS

Press this button to compensate for the ear's lower sensitivity at low listening levels.

55 ACOUSTIC EXPANDER

When this button is pressed, the ACOUSTIC EXPANDER indicator lights and the sound image is expanded; a monaural signal will be given a stereo effect and a stereo signal sounds better.

Notes:

- When a TV or VCR is monaural, use the L and R distributor (mono — L and R) for connecting the left and right terminals.
- The ACOUSTIC EXPANDER sound effect cannot be recorded.

56 TAPE 2 DUBBING

Press to dub from TAPE 2 to TAPE 1 and VCR.

Another press of this button will release this function.

57 BALANCE (LEFT/RIGHT)

Use to adjust the balance between the left and right speakers. Press the LEFT button once to adjust the balance to the left by one step and the RIGHT button to adjust to the right. Holding them pressed changes the balance continuously. The BALANCE indicator is shown on the display.

58 MUTE

Press this button, and the MUTE indicator will light and the sound will be instantaneously muted. To return the volume to its original level, press this button again, or press the BALANCE or VOLUME buttons.

59 VOLUME (DOWN/UP)

Adjust the volume of speakers or headphones. Press the UP button once to increase the volume by one step, and the DOWN button once to decrease it by one step; this level is shown by the VOLUME indicator. Holding down one of these buttons will cause the volume to progressively rise or fall.

COMPU LINK REMOTE CONTROL SYSTEM

COMPU LINK /// Remote /// Control System

The COMPU LINK remote control system was developed by JVC. You can not only control each COMPU LINK component from the remote control unit, but also perform the following advanced operations with ease.

Automatic source selection

If the attached remote cable is used to connect this unit to other JVC components with SYNCHRO terminals, sources can be switched with just one touch of this unit's source selector buttons and the corresponding component will start to play automatically. The source select button of the remote control unit or the appropriate component's activation button may also be used.

When switching over from one component to another, such as the cassette deck, turntable or CD player, the previous component will stop playing after about five seconds.

Synchronized recording

Synchronized recording refers to the process whereby the cassette deck automatically commences recording, in synchronization with the CD player or turntable.

Set the cassette deck to REC/PAUSE mode according to the procedures in the instruction manual.

When synchronously recording the CD player, push the PLAY button on the CD player.

The cassette deck enters the record mode the moment the CD player starts and synchronized recording commences.

Synchronized recording stops automatically when the CD player stops playing.

To cancel synchronized recording, push the STOP button of the CD player, turntable or cassette deck.

Notes:

- When the REC/PAUSE mode is set by pushing PAUSE after depressing the REC and PLAY buttons simultaneously, synchronized recording is not possible. For details, refer to your cassette deck's instruction manual.
- Abnormal operation will result if the power supply of one of the components is interrupted during synchronized recording. If this happens, push the activation button again to restart.

CAUTION:

- When a component (such as a cassette deck) is connected to the TAPE 2 terminals of the receiver, do not connect the SYNCHRO terminals of such component to any other component with a remote cable.

REMOTE CONTROL UNIT (RM-S9)

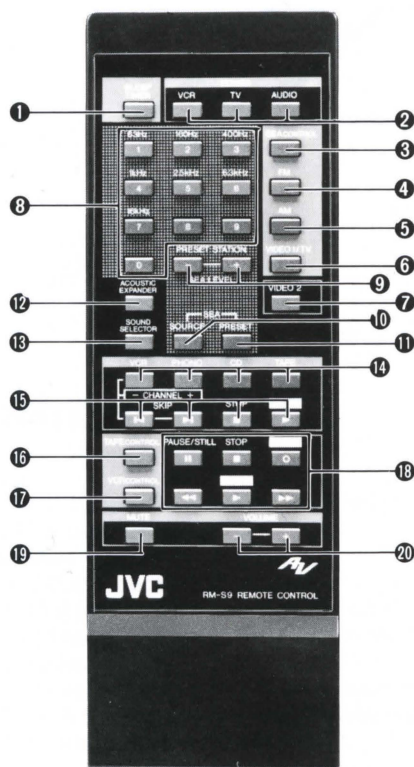


Fig. 16

1 SLEEP TIMER

Each time this button is pressed, the sleep timer's setting is increased in 10-minute steps up to 60 minutes, and its setting is shown on the display.

2 POWER

VCR: Press this button to switch the VCR's power on or off.

TV: Press this button to switch the TV's power on or off.

Note:

As long as one of the JVC-specified VCRs or TVs is used, it can be remote-controlled.

AUDIO: Press this button to switch the RX-7VBK, RX-9VBK's power on or off, and to turn on or off the AC outlets.

3 SEA CONTROL

Press this button, then use the S.E.A. frequency band select buttons to select the frequency band to be adjusted, then press the SEA LEVEL buttons to adjust it.

4 FM

Press this button to listen to an FM broadcast.

5 AM

Press this button to listen to an AM broadcast.

6 VIDEO 1/TV

Press this button to watch the TV or the video equipment connected to the VIDEO 1 terminals.

7 VIDEO 2

Press this button to watch the video equipment connected to the VIDEO 2 terminals.

8 S.E.A. frequency band select buttons/Buttons for direct access to FM/AM presets or TV channels

Once the SEA CONTROL button has been pressed, a particular frequency band can be chosen with these buttons for adjustment with the SEA LEVEL buttons.

When the FM or AM button has been pressed, these buttons can be used to select the preset station by pressing the preset station number as follows.

1) For channels one to nine: push the "0" button, then the desired channel number. e.g., "0" – "1" (channel 1), "0" – "2" (channel 2).

2) For channels ten and above: push the buttons in the order the digits of the channel number appear. e.g. "1" – "0" (channel 10), "1" – "1" (channel 11).

When the VIDEO 1/TV button has been pressed, these buttons can be used to select a TV channel.

Note:

Before operating the television by remote control, be sure to carefully read the television instruction manual.

9 PRESET STATION/SEA LEVEL

When the SEA CONTROL button has been pressed, these buttons can be used to adjust the S.E.A. level of the frequency band selected by the SEA frequency band select buttons.

When the FM, AM, or VIDEO 1/TV button has been pressed, a preset station or TV channel can be selected by using these buttons to sequentially scan the preset stations or channels in either direction.

10 SEA SOURCE

Press this button to listen to the source with S.E.A. compensation.

11 SEA PRESET

Press this button to select an S.E.A. preset pattern. Each time this button is pressed, the preset pattern the equalizer is set to successively changes in this order: MANUAL A – B – C – D – E – PROGRAMED A – B – C – D – E, then returns to MANUAL A again.

12 ACOUSTIC EXPANDER

Press this button to switch the acoustic expander function on or off.

13 SOUND SELECTOR

Use this button to combine the VISUAL signal from a VIDEO source with the SOUND signal from a different AUDIO source.

14 Source selectors

VCR: Press to select the VCR connected to the VCR terminals.

PHONO: Press to listen to a turntable connected to the PHONO terminals.

CD: Press to listen to a compact disc player connected to the CD terminals.

TAPE 1: Press to listen to a tape deck connected to the TAPE 1 terminals.

15 Operation buttons for the compact disc player/turntable/tape deck/VCR, as selected by the source selectors

CHANNEL/SKIP: Press these buttons to skip tracks on compact discs, scan the tunes on tapes, and change channels on the VCR's tuner.

STOP: Press this button to stop playing the compact disc player, tape deck, turntable, or VCR.

PLAY: Press this button to start playing the compact disc player, tape deck, turntable, or VCR.

16 TAPE CONTROL

Press this button to operate the tape deck connected to the TAPE 1 terminals.

17 VCR CONTROL

Press this button to operate the VCR connected to the VCR terminals.

18 Operation buttons for the tape deck/VCR selected by the TAPE CONTROL or VCR CONTROL

 **(PAUSE/STILL):** Press this button to pause during playback or recording. To release this function, press the PLAY button.

 **(STOP):** Press this button to stop operation.

 **(REC):** Press this button with the PLAY (▶) button to record with the tape deck or VCR. When this button is pressed with the PAUSE/STILL (⏸) button, REC-PAUSE mode is activated.

 : Press to fast wind the tape from right to left.

 **(PLAY):** Press this button to play a tape.

 : Press to fast wind the tape from left to right.

19 MUTE

Press this button to instantly mute the sound. To return the volume to its original level, press this button again, or press the BALANCE or VOLUME button.

20 VOLUME

Press the "+" button to increase the volume and the "-" button to decrease it.

Battery

●How to install the batteries (Fig. 17)

1. Slide the cover of the battery case in the direction of the arrow to remove it.
2. Install the provided batteries (AA, SUM-3, R6: 1.5 V), with their polarities properly placed.
3. Re-install the cover of the battery case.

●Battery life

The batteries can be used for about one year.

●Battery replacement time

When the distance at which the remote control unit functions begins to decrease, replace both batteries.

Notes:

- When the remote control is operated too near the receiver during AM reception, it may cause interference.
- The remote control can be used up to about 8 m (26 ft) from the receiver.

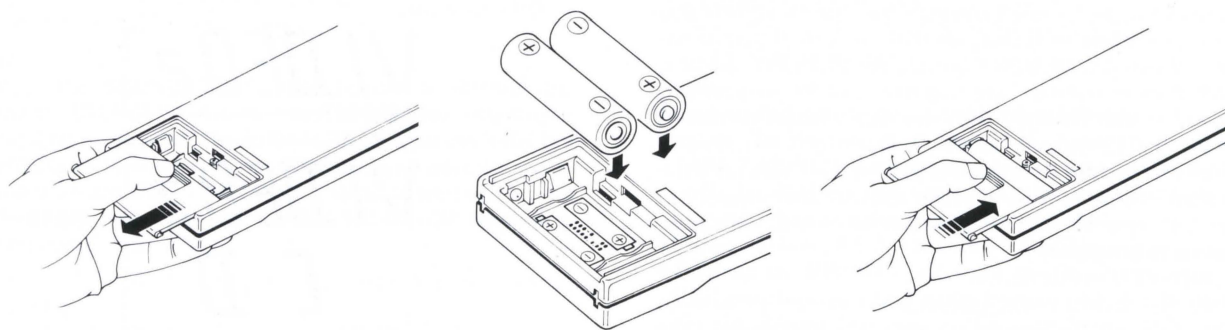


Fig. 17

●How to use the provided connection bar (Fig. 18)

When using the RM-S9 with a compatibly-designed remote control unit of a TV or other component, connect the two units with the connection bar as follows.

Notes:

- For safety, remove the bar when the units are separated.
- To protect yourself from the connection bar's exposed edges, remove the bar from the unit after draping it with a cloth.

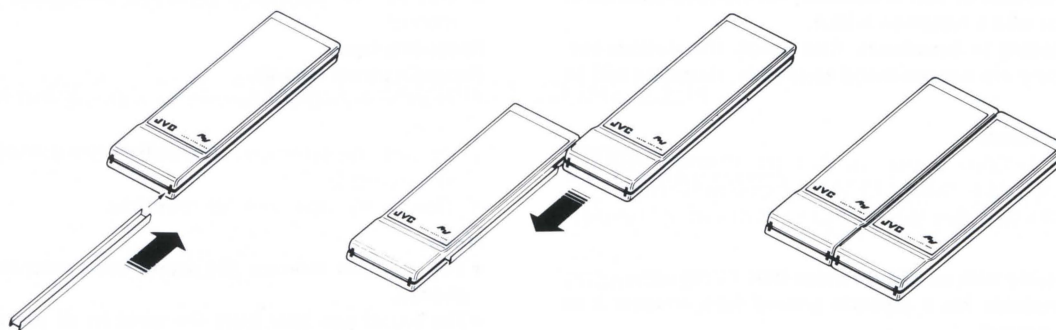


Fig. 18

OPERATION

Before use

Connect each component correctly, and then plug the power cord to an AC wall outlet.

Basic operation

1. Press the POWER button to on.
2. Select the speaker system with the SPEAKERS buttons.
3. Proceed through the steps described below according to your purpose.
4. Adjust the volume and balance to your requirement.
5. Use the SEA buttons to obtain the tone you want to hear.

Presetting to selected stations (FM or AM)

There are two ways to preset stations using the TUNING buttons . . . 1. Auto tuning/manual tuning, 2. Auto memory function.

1 Auto tuning/manual tuning

(Refer to 40 TUNING UP/DOWN buttons.)

1. Press the FM or AM button.
2. Tune to a desired station by pressing the TUNING button for auto tuning or tapping it for manual tuning.
3. Press the PRESET SELECT button as required, so that the PRESET SELECT indicator shows "1 - 8" or "9 - 16".
4. Press the MEMORY button so that the MEMORY indicator lights.
5. Press one of the TUNER PRESET STATIONS buttons.
6. Perform the same pre-tuning procedure (steps 2, 3, 4) for the remaining channels. Pre-tuning is possible for up to 32 stations (16 FM and 16 AM stations).

2 How to operate the auto memory function

(Refer to ② AUTO MEMORY button.)

1. Press the FM or AM button.
2. Tune to the frequency from which you wish the AUTO MEMORY function begins its scanning.
3. Press the PRESET SELECT button as required.
4. Press a TUNER PRESET STATIONS button and then the AUTO MEMORY button. The AUTO MEMORY indicator lights and auto scanning starts from the displayed frequency upward. When a broadcast is tuned in, its signal strength is shown in dB for one second and the channel number you have pressed earlier flickers for three seconds. If you do not press the AUTO MEMORY button, the MEMORY indicator and channel number light together and the frequency is stored in that channel. Then the next channel number is shown and upscanning restarts, in search of a frequency to store in the next channel. This process continues until the highest numbered channel preset station has a frequency in its memory or auto scanning reaches the highest frequency.

Listening to broadcasts

1. Press the FM or AM button.
2. Press the desired preset station select button to listen to any channel. The channel number corresponding to the button pressed is shown in the display.

Notes:

- Adjust the antenna so that the signal strength is as strong as possible using the dB and SIGNAL LEVEL indications.
- When FM broadcast signals are too weak to be received, press the FM MODE/MUTE button to show "MONO"/"OFF".
- For the reception of AM broadcasts, set the loop antenna in the position where reception is best.
- Before listening to broadcasts, first preset the stations correctly; if they are not pre-tuned accurately, reception will be noisy.

Listening to records

1. Press the PHONO button so that the PHONO indicator lights. (RX-9VBK: Set the MC/MM button as required.)
2. Operate the turntable as described in its operation manual.

Notes:

- Use a turntable with an MM cartridge (RX-7VBK only).
- If your turntable has a separate ground lead, connect it to the GND terminal.

Listening to tapes

1. Press the TAPE 1 or 2 button so that the TAPE 1 or 2 indicator lights.
2. Operate the tape deck for playback as described in its operation manual.

Watching and listening to VIDEO 1 (VIDEO 2)

1. Press the VIDEO 1 (VIDEO 2) button so that the SOUND and VISUAL indicators light and "VIDEO 1" ("VIDEO 2") is shown with each one.
2. Operate the video unit as described in its operation manual.

Note:

- Connect the video and audio signal cords of the video unit to the AUDIO and VIDEO terminals of this unit. If a unit other than a video unit is connected, connect it to the AUDIO terminals only.

When the SOUND SELECTOR function is used

Refer to ⑦ SOUND SELECTOR button on page 10.

1. Press the VIDEO 2 (VIDEO 1, VCR) button; the corresponding SOUND and VISUAL indicators in the display will light (Fig. 19).

2. Operate the video unit as described in its operation manual. With this setting, the SOUND and VISUAL signals input via the VIDEO 2 (VIDEO 1, VCR) terminals are output.
3. Press the SOUND SELECTOR button so that the SOUND SELECTOR indicator lights.
4. Press the desired AUDIO source selector button (CD, PHONO, AM, FM, TAPE 1, TAPE 2, AUX) (Fig. 20). The SOUND signal of the source thus selected is output from the speakers, while the VISUAL signal from the VIDEO 2 (VIDEO 1, VCR) terminals is output from the MONITOR OUT terminals.

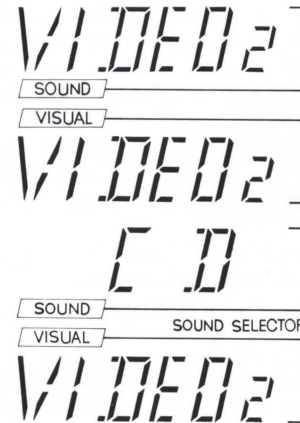


Fig. 19

Fig. 20

Watching and listening to a VCR

1. Press the VCR button.
2. Operate the VCR for playback as described in its operation manual.

Recording tapes

Recording from records

1. Press the PHONO button so that the PHONO indicator lights.
2. Operate the turntable. (RX-9VBK: Set the MC/MM button as required.)
3. Operate the tape deck for recording.

Notes:

- You can also monitor the sound being recorded with headphones.
- The sound you hear from the speakers or headphones is the source sound (record playback sound in this case), not the recording on the tape.
- If you have a three-head tape deck with independent record and playback heads or a tape deck having an independent monitor facility, operate it as follows.

If you are using the JVC three-head tape deck provided with SYNCHRO terminals:

1. Connect the SYNCHRO terminals of each unit using the remote cables.
2. Connect the tape deck to the TAPE 1 terminals.
3. You can monitor the recorded sound while recording by pressing the TAPE 1 button. But, do not monitor while in the SEA REC mode, since pressing this button cancels the SEA REC function.
4. To return to listening to the source sound, press the button of the recorded sound's source.

If you are using a three-head tape deck without the SYNCHRO terminal:

1. Connect the tape deck to the TAPE 2 terminals.
2. You can monitor the recorded sound while recording by pressing the TAPE 2 button.

Recording from other sources (AM, FM, CD, AUX, VCR, VIDEO 1, and VIDEO 2)

Press the button corresponding to the source to be recorded. All other operations are identical to those when recording from records.

*For S.E.A. recording using the SEA REC button, refer to page 17.

Recording from a video unit

1. Press the VIDEO 1 (VIDEO 2) button.
2. Operate the video unit (VIDEO 1, 2).
3. Operate the VCR for recording.

Note:

●When the **SOUND SELECTOR** button is pressed, the **SOUND SELECTOR** function can be used for recording as described on page 10. The **VISUAL** signal from the VIDEO 1 (VIDEO 2) terminal and the **SOUND** signal selected are recorded on the VCR. (The **SOUND** signal cannot come from other video units when the **SOUND SELECTOR** function is being used.)

*For S.E.A. recording using the SEA REC button, refer to page 17.)

Using stereo headphones

Stereo headphones can be plugged into the front panel jack. The signal from this jack is independent of the speakers.

1. Plug stereo headphones into this jack for private listening.
2. To listen through headphones while listening to the speakers, press the appropriate **SPEAKERS** button to ON (▲)

Note:

●Pull out the headphone plug when not in use.

Tape dubbing

To perform tape dubbing, two tape recorders should be connected, one to the TAPE 1 terminals (called "No. 1" tape deck) and another to the TAPE 2 terminals (called "No. 2" tape deck).

Dubbing from No. 2 to No. 1

1. Press the TAPE 2 DUBBING button so that the TAPE 2 DUB indicator lights.
2. Operate No. 2 tape deck for playback.
3. Operate No. 1 tape deck for recording.
4. Press the TAPE 2 button to monitor the sound through speakers or headphones.

Notes:

●Deck-to-deck dubbing is possible while listening to any other source. To do this, press the TAPE 2 button so that the TAPE 2 MONITOR indicator goes out; operate the two tape decks for dubbing and select the other source you want to hear with the corresponding source select button.

●During dubbing, S.E.A. recording is possible.

●Dubbing the **SOUND** signal from the No. 2 tape deck to a VCR and the No. 1 tape deck, from the No. 1 tape deck to the No. 2 tape deck and a VCR, and from a VCR to the No. 1 and No. 2 tape decks are possible; in these cases, S.E.A. recording is possible.

OPERATION OF THE S.E.A. GRAPHIC EQUALIZER

Compensation for room acoustics

The frequency response of a listening room varies depending on the room's shape or furnishings, and the position of the listener in the room. Each listening position in the room provides the listener with a different set of frequency responses, as a result of different degrees of reverberation, reflection, echo, and absorption affecting each frequency.

The S.E.A. system can function to make the sound response of a room flat by emphasizing those frequencies having a high degree of absorption and de-emphasizing those frequencies having a high degree of reflection.

The frequency ranges affected by 'absorption' and 'reflection' are narrow; therefore, it is only necessary to compensate the corresponding frequency band.

Since conventional tone control systems simply adjust the highs and lows centered around the 1 kHz frequency, they are both imprecise and incomplete.

The RX-7VBK/RX-9VBK monitors and equalizes seven separate audio frequency bands, thus allowing you to make the necessary adjustments in the precisely appropriate frequency bands in order to compensate for the acoustic response of a room and any listening position in it.

Custom sound processing

When a studio recording is made, the sound signals are processed to produce sound that is unique to a particular group or orchestra. With the RX-7VBK/RX-9VBK, you can do this at home — producing sound tailored exactly to your tastes by emphasizing or de-emphasizing various parts of the music.

Operation

S.E.A. pattern memory

For your own sound compensation and processing, you can use the 10 PROGRAMED and MANUAL preset S.E.A. patterns.

PROGRAMED

These five S.E.A. patterns were preset at the factory to offer suggested settings for various types of audio programs. Each preset pattern is shown below. After recalling these patterns, you can further change each frequency band to suit yourself. However, since they are representative patterns, the original, stored pattern will be unchanged.

HEAVY (A)

Used for music with a heavy beat, such as rock music. Low frequencies are emphasized to produce a deeper, more powerful sound. Higher frequencies are also emphasized to enhance and bring clarity to the highs, including the percussive notes.

CLEAR (B)

For crisp, clear sound with transparent highs. The low and middle frequencies that tend to be unclear are de-emphasized, and the middle and high frequencies that strengthen the vocal component of the music are emphasized.

SOFT (C)

For background music. The very low frequencies, which need boosting at low volume levels, are emphasized, and the stimulating effect of higher frequencies is diminished by de-emphasizing high frequencies.

MOVIE (D)

For TV, VCR, and videodisc sound. The low and high frequencies, which are usually of insufficient strength in the sound of these sources, are emphasized to produce a balanced, deeper sound. Also, the excessive brightness that is characteristic of these sources' sound is cut back by de-emphasizing the middle frequency band.

VOCAL (E)

For music that is chiefly vocal, or speech. The middle frequencies, which carry the human voice, are emphasized, while surrounding frequencies are reduced. To accent the higher vocal notes, the highest frequencies are also boosted.

MANUAL

These five S.E.A. pattern memories are provided to allow you to create, store, and recall up to five S.E.A. patterns.

To store the S.E.A. pattern in memory, proceed as follows:

1. Set the S.E.A. pattern using the SEA LEVEL UP/DOWN buttons. This will cause the MANUAL indicator to light, if it has not been lit already.
2. Press the MEMORY button. The MEMORY indicator will light for five seconds.

SPECIFICATIONS

RX-7VBK

AMPLIFIER SECTION AUDIO

Output power

70 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007 % total harmonic distortion.

80 watts per channel, min. RMS, both channels driven, into 8 ohms from 40 Hz to 20 kHz, with no more than 0.2 % total harmonic distortion.

75 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003 % total harmonic distortion.

80 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz (DIN).

Total harmonic distortion : 0.003 % at 75 watts
(1 kHz, 8 ohms)

Intermodulation distortion : 0.007 % at 70 watts

Damping factor : 45 at 8 ohms, 1 kHz

Input sensitivity/
impedance

PHONO : 2.5 mV/47 kohms

TAPE 1 PLAY, : 230 mV/47 kohms

TAPE 2 PLAY,
CD, AUX, VCR PLAY,
VIDEO 1, VIDEO 2

Recording output level : 220 mV

Frequency response

PHONO (RIAA : 20 Hz — 20 kHz, +0.5 dB,
equalization) -0.5 dB

TAPE 1 PLAY, : 5 Hz — 50 kHz, +0 dB,

TAPE 2 PLAY, -1 dB

CD, AUX, VCR PLAY,
VIDEO 1, VIDEO 2

3. During this period, press the appropriate SEA PRESET button to store the pattern in memory. The SEA PRESET indicator corresponding to the button just pressed will light, the MANUAL indicator will re-light, and the MEMORY indicator will go off.

S.E.A. recording

The S.E.A. graphic equalizer tailors the sound to your own particular taste or compensates for room acoustics or system characteristics, as described on page 16. The RX-7VBK/RX-9VBK is equipped with an SEA REC button which makes it possible to record with the added effect of the S.E.A.

Operation

1. Set the S.E.A. pattern as required.
2. Press the SEA REC button.
3. Proceed in the same way as in normal recording.

Notes:

●Pressing the VOLUME buttons during S.E.A. recording will not affect the recording level.

●When the TAPE 1, TAPE 2, or TAPE 2 DUBBING button is pressed, while S.E.A. recording, the SEA SOURCE mode cannot be selected.

S.E.A. graphic equalizer

Center frequencies : 63 Hz, 160 Hz, 400 Hz, 1 kHz,
2.5 kHz, 6.3 kHz, 16 kHz

Control range : ± 10 dB

Signal-to-noise ratio

PHONO : 71 dB 66 dB (DIN)
(66 IHF)
78 dB
(78 IHF)
(Rec out)

TAPE 1 PLAY, : 100 dB 67 dB (DIN)

TAPE 2 PLAY, (66 IHF)

CD, AUX, VCR PLAY, 77 dB

VIDEO 1, VIDEO 2 (78 IHF)

RX-9VBK

AMPLIFIER SECTION AUDIO

Output power :

(For the U.S.A. and Canada)

120 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007 % total harmonic distortion

130 watts per channel, min. RMS, both channels driven, into 8 ohms from 40 Hz to 20 kHz, with no more than 0.2 % total harmonic distortion.

125 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003 % total harmonic distortion.

120 watts per channels, min. RMS, both channels driven, into 8 ohms at 1 kHz (DIN).

(For the U.K. and Continental Europe)

115 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007 % total harmonic distortion.

115 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003 % total harmonic distortion.	
120 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz (DIN).	
(For other areas)	
120 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007 % total harmonic distortion.	
120 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003 % total harmonic distortion.	
120 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz (DIN).	
Total harmonic distortion (1 kHz, 8 ohms)	: (For the U.S.A. and Canada) 0.003 % at 125 watts (For the U.K. and Continental Europe) 0.003 % at 115 watts (For other areas) 0.003 % at 120 watts
Intermodulation distortion	: (For the U.S.A. and Canada) 0.007 % at 120 watts (For the U.K. and Continental Europe) 0.007 % at 115 watts (For other areas) 0.007 % at 120 watts
Damping factor	: 45 at 8 ohms, 1 kHz
Input sensitivity/impedance	
PHONO MC	: 250 μ V/100 ohms
MM	: 2.5 mV/47 kohms
TAPE 1 PLAY,	: 230 mV/47 kohms
TAPE 2 PLAY,	
CD, AUX, VCR PLAY,	
VIDEO 1, VIDEO 2	
Recording output level	: 230 mV
Frequency response	
PHONO (RIAA equalization)	: 20 Hz — 20 kHz, +0.5 dB, -0.5 dB
TAPE 1 PLAY,	: 5 Hz — 50 kHz, +0 dB,
TAPE 2 PLAY,	-1 dB
CD, AUX, VCR PLAY,	
VIDEO 1, VIDEO 2	
S.E.A. graphic equalizer	
Center frequencies	: 63 Hz, 160 Hz, 400 Hz, 1 kHz 2.5 kHz, 6.3 kHz, 16 kHz
Control range	: $\pm$ 10 dB
Signal-to-noise ratio	
PHONO	: 80 dB 66 dB (DIN) ('66 IHF) 80 dB ('78 IHF) (Rec out)
TAPE 1 PLAY,	: 100 dB 67 dB (DIN)
TAPE 2 PLAY,	('66 IHF)
CD, AUX, VCR PLAY,	77 dB
VIDEO 1, VIDEO 2	('78 IHF)

RX-7VBK/RX-9VBK

FM TUNER SECTION

	'78 IHF	DIN (For Europe)
Tuning range	: 87.5 MHz — 108.0 MHz	87.5 MHz — 108.0 MHz
Usable sensitivity	: Mono 10.3 dBf 0.9 μ V/75 ohms 1.8 μ V/300 ohms	—
26 dB quieting sensitivity	: —	1 μ V/75 ohms 2 μ V/300 ohms
50 dB quieting sensitivity	: Mono 14.8 dBf (1.5 μ V/75 ohms 3.0 μ V/300 ohms) Stereo 38.3 dBf (22.5 μ V/75 ohms 45 μ V/300 ohms)	—
S/N 46 dB stereo sensitivity	: —	Stereo 23 μ V/75 ohms Stereo 46 μ V/300 ohms
Signal-to-noise ratio	: Mono 84 dB Stereo 78 dB (A-net)	Mono 78 dB Stereo 72 dB (weighted)
Total harmonic distortion 1 kHz	: Mono 0.08 % Stereo 0.08 %	Mono 0.08 % Stereo 0.08 %
Frequency response	: 30 Hz — 15 kHz, +0.5 dB, -0.8 dB	
Capture ratio	: 1.5 dB	1.0 dB
Alternate channel selectivity	: 70 dB $\pm$ 400 kHz	60 dB $\pm$ 300 kHz
Image response ratio	: 90 dB at 98 MHz	
IF response ratio	: 100 dB at 98 MHz	
Stereo separation	: 50 dB at 1 kHz	45 dB at 1 kHz

AM TUNER SECTION

	'78 IHF	DIN (For Europe)
Tuning range	: 522 kHz — 1,629 kHz Channel space 9 kHz 530 kHz — 1,630 kHz Channel space 10 kHz 530 kHz — 1,710 kHz (For U.S.A. and Canada)	
Sensitivity	: 30 μ V* 250 μ V/m*	
Signal-to-noise ratio	: 50 dB* (100 mV/m)	
Selectivity	: 38 dB, $\pm$ 10 kHz	35 dB, $\pm$ 9 kHz*
Image response ratio	: 40 dB*	
IF response ratio	: 65 dB	
Total harmonic distortion	: 0.5 %* (100 mV/m)	

VIDEO SECTION

Output signal level (VCR OUT)	: 1 Vp-p (at 1 Vp-p input)
Impedance	: 75 ohms unbalanced
Synchronization	: Negative
Signal-to-noise ratio	: 45 dB
Crosstalk	: 45 dB (3.58 MHz)

Design and specifications subject to change without notice.

* Measured at 1,000 kHz for '78 IHF and at 999 kHz for DIN.

DIMENSIONS AND WEIGHT

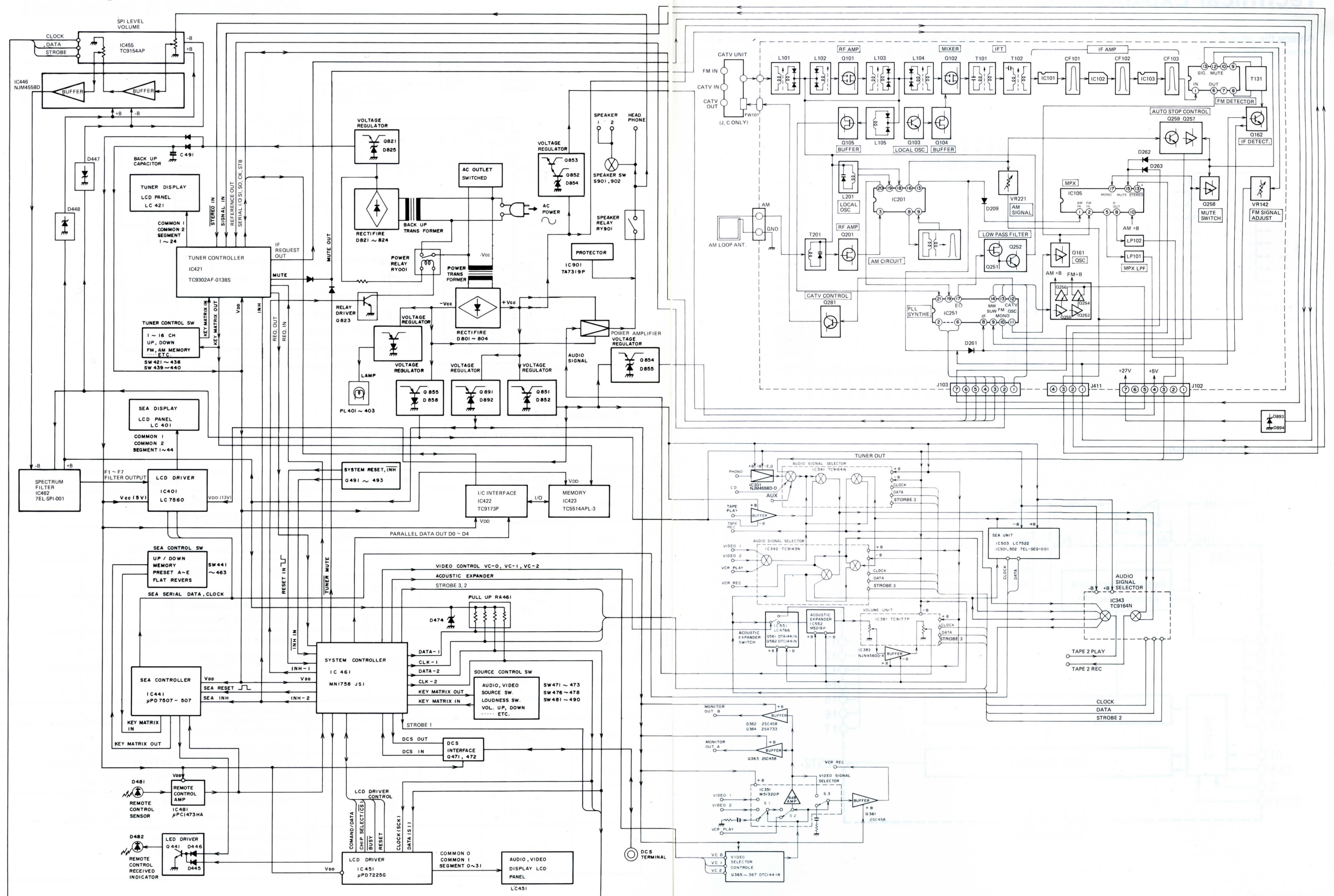
Model	Dimensions			Weight
	Width	Height	Depth	
RX-9VBK	435 mm 17-3/16"	126.5 mm 5"	381 mm 15"	10.4 kg 23.0 lbs.
RX-7VBK	435 mm 17-3/16"	117 mm 4-5/8"	381 mm 15"	9.3 kg 20.5 lbs.

POWER SPECIFICATIONS

Areas	Line voltage & frequency	Power consumption	
		RX-9VBK	RX-7VBK
U.S.A. Canada	AC 120 V~, 60 Hz	410 watts 520 VA	310 watts 400 VA
Continental Europe	AC 220 V~, 50 Hz	300 watts	210 watts
U.K. Australia	AC 240 V~, 50 Hz	300 watts	210 watts
Other areas	AC 110/120/220/240 V~ selectable, 50/60 Hz	300 watts	260 watts

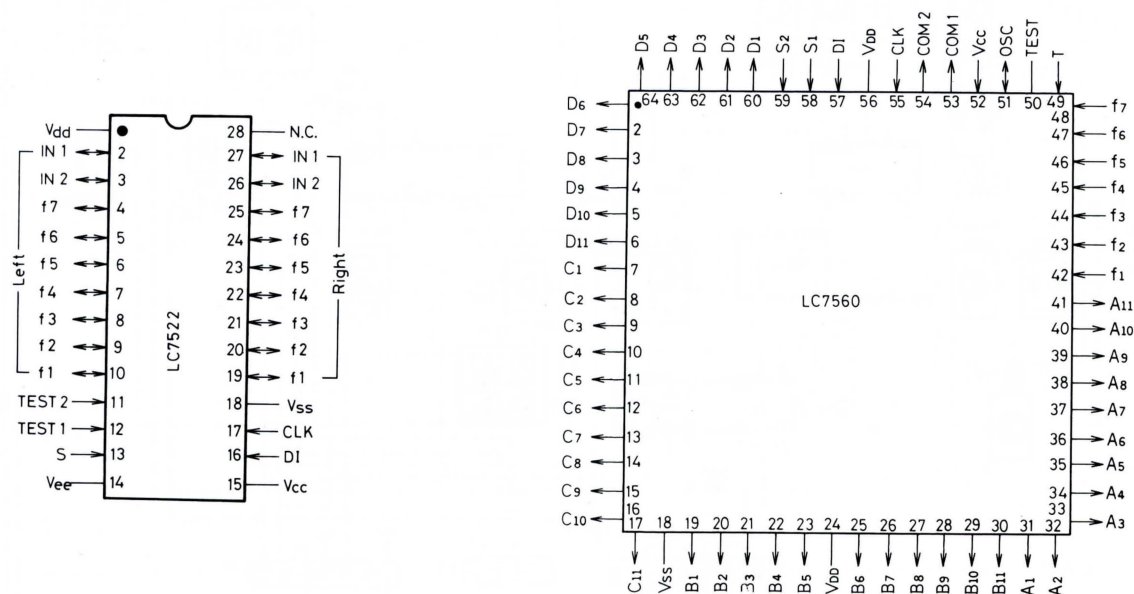


Block Diagram

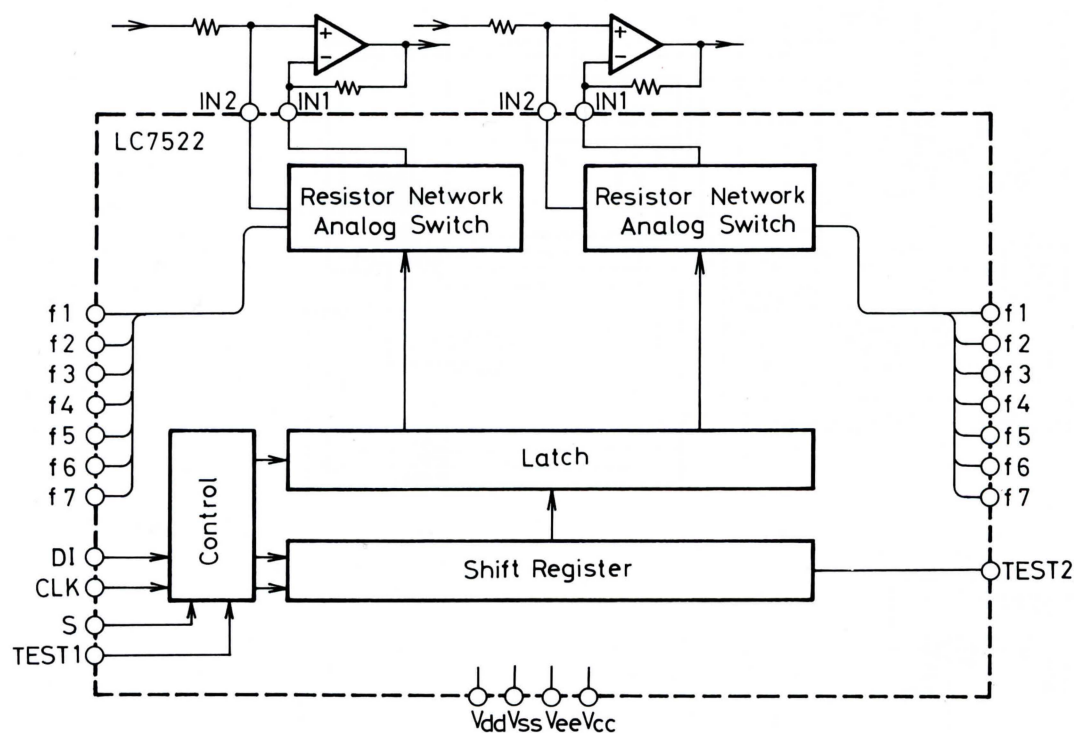


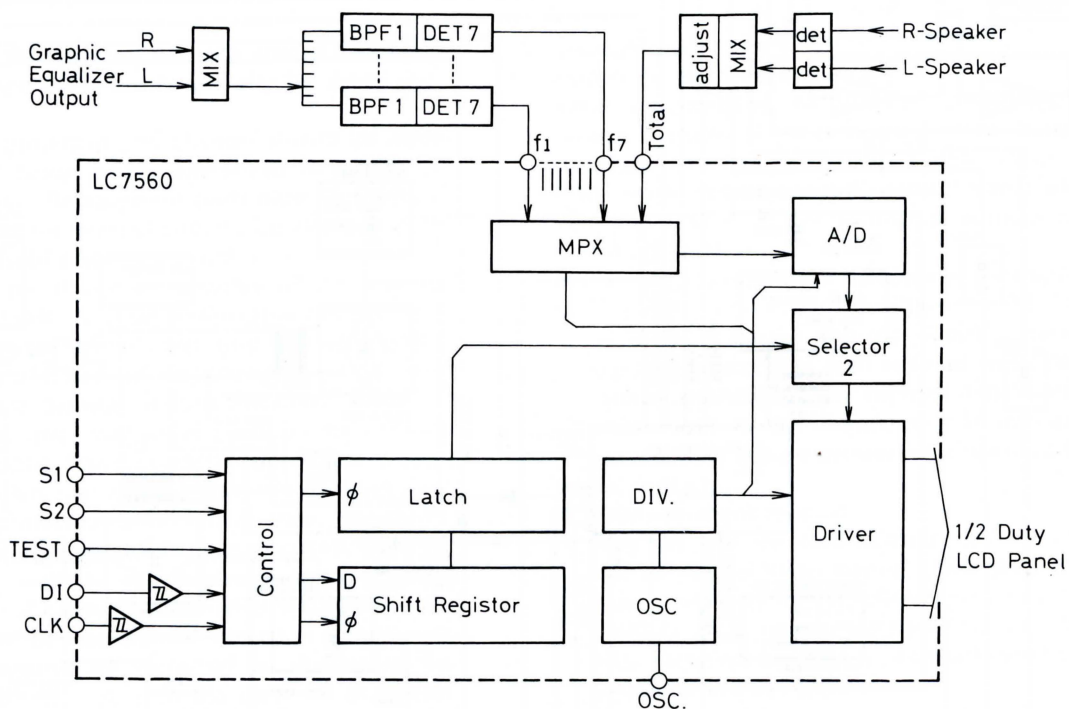
Among the various LSI's adopted on this model, explanations are made in this Section especially on the two types of LSI's assigned to SEA control by the computer. These two LSI's are LC7522 (Symbol No. IC503) and LC7560 (Symbol No. IC401).

■ Terminal Layout Diagram



■ Interior Block Diagram





■ Explanation of Each Terminal

LC7522 (Graphic Equalizer) C-MOS LSI, 7 bands, right-side/left-side independent, ± 2 dB step, ± 10 dB variable

Name	Terminal No.	Terminal type	Explanation
VDD	10		Power supply terminal, +18V Power supply for voice signals
Vref	12		Power supply terminal, +13V Power supply for logic drive
Vss	18		Power supply terminal, 0V
VEE	19		Power supply terminal, -18V Power supply for voice signals
DI	17		Terminal for data input from CPU Schmitt inverter type
CLK	16		Terminal for clock input from CPU Schmitt inverter type
GND	—		Voice-signal system GND
IN1	1, 28		Input terminal for voice signals IN1 to be connected to OP amplifier inversion input
IN2	2, 27		IN2 to be connected to OP amplifier noninversion input Provided both on right side and on left side
f1 ~ f7	9 ~ 3 26 ~ 20		Connection terminal for band filter f1 ~ f7 x right side/left side Total 14 terminals
S	11		Select terminal when 2 chips are used Key code: FD under "1" input Key code: FC under "0" input

LC7560 (LCD Display Driver) C-MOS LSI, 7 bands, ± 2 db step, 11-point display

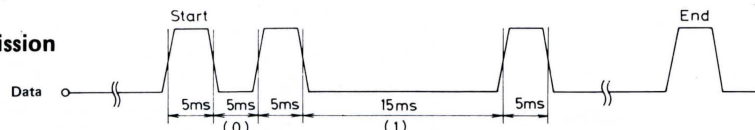
Name	Terminal No.	Terminal type	Explanation
VDD	24 56		Power supply terminal, +13V Power supply for A/D conversion
Vcc	52		Power supply terminal, +5V Power supply for logic drive
Vss	18		Power supply terminal, 0V
DI	57		Terminal for data input from CPU Schmitt inverter type
CLK	55		Terminal for clock input from CPU Schmitt inverter type
COM1 COM2	53 54		Output terminal to LCD common
A ₁ ~ A ₁₁	31 ~ 41		Output terminal to LCD segment For bands f ₁ and f ₂
B ₁ ~ B ₁₁	19 ~ 30		Output terminal to LCD segment For bands f ₃ and f ₄
C ₁ ~ C ₁₁	7 ~ 17		Output terminal to LCD segment For bands f ₅ and f ₆
D ₁ ~ D ₁₁	60 ~ 64 1 ~ 6		Output terminal to LCD segment For band f ₇ and total display
f ₁ ~ f ₇	42 ~ 48		Input terminal for voice signal detection output
T	49		Input terminal for total display Inputs signal detection output
OSC	51		Open-drain-type output buffer Connection terminal of exterior-mounted CR for oscillator
S1	58		Select terminal when a plural number of chips is used (max. 4 chips)
S2	59		

S1	S2	Key Code
1	1	FB
0	1	FA
1	0	F9
0	0	F8

■ Data Transmission through Synchro Terminal

As the synchro terminal has a common bus line to other equipment to be connected externally, data of the both can be mutually exchanged according to the transmission method shown below.

■ Data transmission



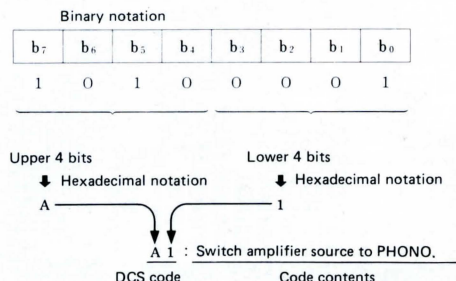
Signals "0" and "1" of data are transmitted being discriminated by different intervals between pulses.

Namely, pulse interval 5 ms....."0"

pulse interval 15 ms "1"

Every transmission datum is composed of 8 bits, therefore, number of pulses for a datum is nine.

■ Configuration of datum



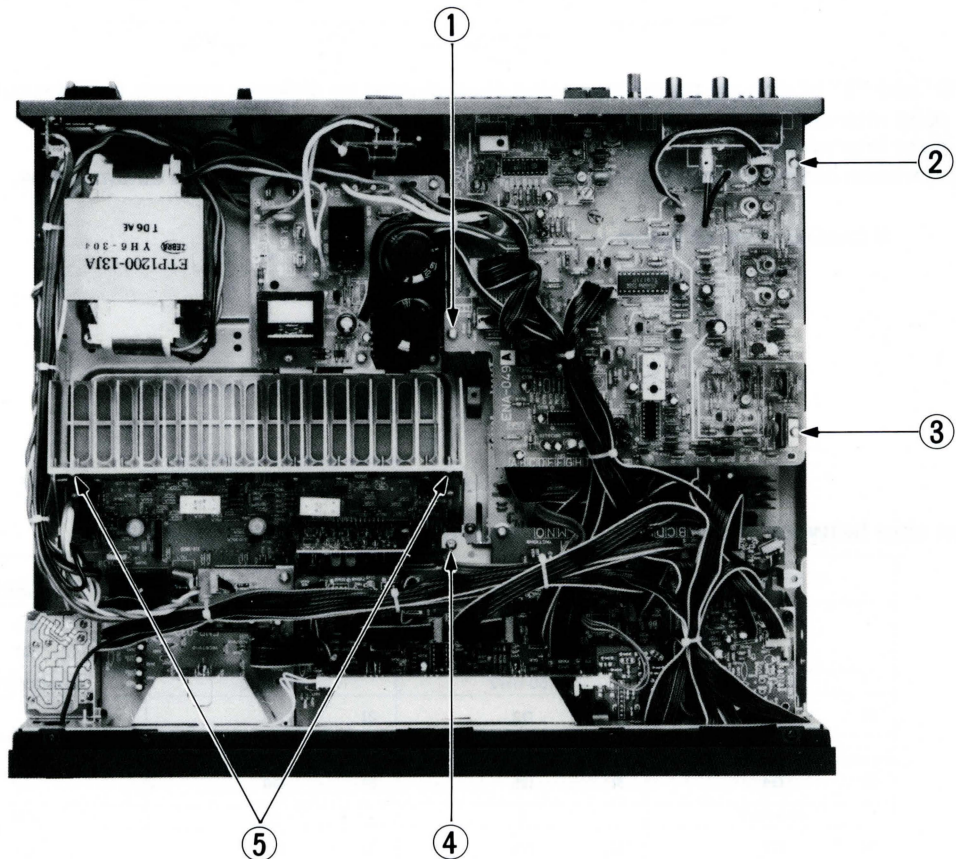
■ Relation ship between Remote Control Transmitter (RM-S9) and DCS Codes

SLEEP TIMER	POWER		
	VCR	TV	AUDIO
—	—	—	1) C0 2) C1
63 Hz/1	160 Hz/2	400 Hz/3	SEA CONTROL
3) D1	3) D2	3) D3	—
1 kHz/4	2.5 kHz/5	6.3 kHz/6	FM
3) D4	3) D5	3) D6	C2
16 kHz/7	8	9	AM
3) D7	3) D8	3) D9	C3
0	PRESET STATION SEA LEVEL		TV
3) D0	3) C7	3) C6	—
ACOUSTIC EXPANDER	VIDEO 1/TV		
—	—		
SOUND SELECTOR	SEA SOURCE	SEA PRESET	TAPE
—	—	—	
VCR	PHONO	CD	A4
—	A1	A3	PLAY
— CHANNEL SKIP	+	STOP	—
7) $\frac{44}{2C}$ 8) —	7) $\frac{43}{2B}$ 8) —	6) $\frac{86}{42}$ 7) $\frac{42}{2E}$ 8) —	6) $\frac{87}{41}$ 7) $\frac{41}{21}$ 8) —
TAPE CONTROL	PAUSE/STILL	STOP	REC
—	9) $\frac{25}{2D}$ 10) —	9) 22	11) $\frac{2D}{29}$ 12) —
VCR CONTROL	◀◀	PLAY	▶▶
—	9) 24	9) $\frac{20}{29}$ 10) —	9) 23
MUTE	VOLUME +		
10) 26	—	—	—

Notes:

- AUDIO (POWER) key is pressed in STANDBY mode.
- AUDIO (POWER) key is depressed at turning on power.
- After depressing FM/AM key, another key is pressed.
- After depressing PHONO key, another key is pressed.
- After depressing CD key, another key is pressed.
- After depressing TAPE key, another key is pressed.
- After depressing TAPE CONTROL key, this key is pressed.
- After depressing TAPE CONTROL key, this key and REC key are pressed at the same time.
- After depressing TAPE CONTROL key, this key and PAUSE/STILL key are pressed at the same time.
- After depressing TAPE CONTROL key, this key and PLAY key are pressed at the same time.

Removal Procedures



(1) Removing the Front Panel

- Step 1: Demount the top cover by removing four screws from the two sides and two screws from the rear.
- Step 2: Remove three screws securing the front panel on its upper side and three screws securing it on the lower side.
- Step 3: Demount the switch P.C. board secured to the front panel with catches.

(2) Removing the Tuner P.C. Board

- Step 1: Demount the top cover (see above item (1), step 1).
- Step 2: Remove three screws (1) through (3) securing the tuner P.C. board on its upper side.
- Step 3: Remove four screws (USA, Canada: five screws) securing the antenna terminal on its rear side

(3) Checking-up the Pre-Amplifier P.C. Board

- Step 1: Demount the tuner P.C. board (see above item (2)).
- Step 2: Demount the bottom cover by removing three screws from the bottom.

(4) Checking-up the Power Amplifier P.C. Board

- Step 1: Demount the top cover (see above item (1), step 1).
- Step 2: Demount the bottom cover by removing two screws from the bottom.

(5) Removing the Front Bracket

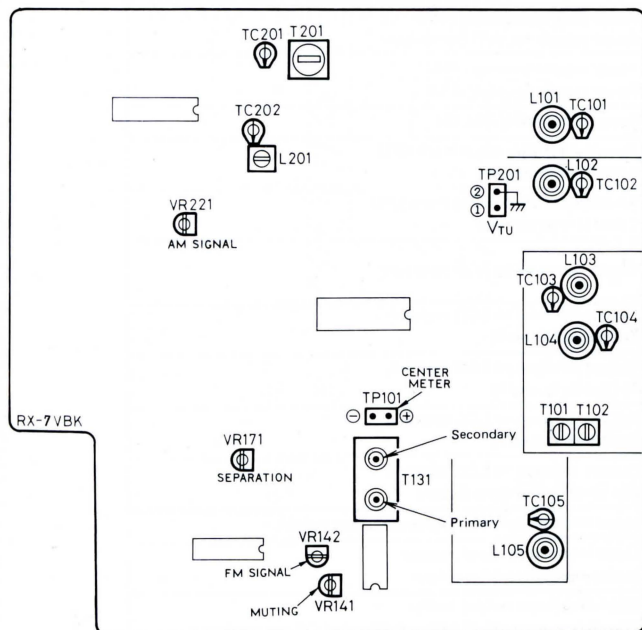
- Step 1: Demount the front panel (see above item (1)).
- Step 2: Remove one screw (4) securing the front bracket on its upper side.
- Step 3: Remove one screw securing the front bracket on its bottom side.
- Step 4: Remove four screws securing the front bracket on its bottom side (toward you).

(6) Removing the Power Transistors

- Step 1: Demount the top cover (see above item (1), step 1).
- Step 2: Demount the bottom cover (see above item (4), step 2).
- Step 3: Remove four screws (5) securing the heat-sink by a bended screwdriver.
- Step 4: Resolder the pins of power transistors.

Note: Part number of the bended screwdriver is "EBSJ-1005".

(1) FM/AM Tuner P.C. Board



FM Section

Band Cover

1. Set the TC105 to center position.
2. Connect a DC VTVM to TP201.
3. Set the frequency display to "87.5 MHz".
4. Adjust L105 so that the VTVM shows $8.0\text{ V} \pm 0.1\text{ V}$.
5. Set the frequency display to "108.0 MHz".
6. Adjust TC105 so that the VTVM shows $23.0\text{ V} \pm 0.1\text{ V}$.
7. Repeat these items (from item 3. to item 6.) alternately until reference voltage is obtained.

Sensitivity

Low Frequency

1. Connect an RF generator to the antenna terminals on the rear panel through a dummy antenna.
2. Set an RF generator to 90 MHz, a modulation of 1 kHz and a deviation of 75 kHz to provide an input of $2\text{ }\mu\text{V}$.
3. Connect a VTVM and an oscilloscope to the "REC. OUT" terminal on the rear panel.
4. Set the frequency display to 90 MHz.
5. Adjust coils L101, L102, L103 and L104 to maximize the output.
6. Adjust IFT (T101) to maximize the output.

High Frequency

7. Set the RF generator to 106 MHz, a modulation of 1 kHz and a deviation of 75 kHz to provide an input of $2\text{ }\mu\text{V}$.
8. Set the Frequency Display to 106 MHz.
9. Adjust the FM trimmers TC101, TC102, TC103 and TC104 to maximize the output.
10. Repeat these high and low frequencies adjustment alternately until maximum sensitivity is obtained.

Discriminator Distortion

1. Press to FM position.
2. Connect an RF generator, 1 kHz modulation and a 75 kHz deviation to the antenna terminals on the rear panel through a dummy antenna.
3. Connect an oscilloscope, Distortion Meter and VTVM to the "REC. OUT" terminal on the rear panel.
4. Set the RF generator to 98 MHz, generator output to $60\text{ dB}/\mu\text{V}$ (1 mV).
5. Set the frequency display to 98 MHz.
6. Connect a DC VTVM between TP101.
7. Adjust the core indicated arrow (Primary) of T131 for DC VTVM reading of (zero) mV.
8. And set the RF generator output to 1 mV.
9. Adjust the core indicated arrow (Secondary) of T131 so that the distortion is minimized.
10. Repeat these items (from item 7. to item 9.) alternately until reference specification is obtained.

Stereo Distortion

Note: This adjustment is after the discriminator distortion adjustment.

1. Set the frequency display to 98 MHz.
2. Switch the selector of stereo-modulator to left channel modulation.
3. Adjust T102 so that the distortion is minimized.

Stereo Separation

1. Switch the selector of stereo modulator to left channel modulation.
2. Adjust VR171 so that the output of right channel is minimized.
3. Switch the selector of the modulator to right channel modulation.
4. Adjust VR171 so that the left channel is minimized.
5. Set VR171 to a average, if the separation of left and right is different.

Muting

1. Connect the RF generator to the antenna terminal on the rear panel.
2. Set the RF generator at 100.1 MHz, $10\text{ }\mu\text{V}$. Rotate VR141 counterclockwise, and stop rotating at the point where muting is eliminated (signals are output).

Signal Strength Display

1. Set the RF generator at 100.1 MHz, $100\text{ }\mu\text{V}$. While rotating VR142 clockwise, adjust the FM-signal strength meter so that this meter displays 40 dB.

AM Section

Band Cover

1. Press to AM position.
2. Set the frequency display to 530 kHz (10 kHz channel step), or 522 kHz (9 kHz channel step).
3. Connect DC VTVM to TP201.
4. Adjust L201 so that the VTVM shows 2.0 V (530 kHz), or 1.8 V (522 kHz).
5. And set the frequency display to 1710 kHz (10 kHz channel step), or 1629 kHz (9 kHz channel step).
6. Adjust TC202 so that the DC VTVM reads 22.0 V for 1710 kHz, or 20.0 V for 1629 kHz.

Tracking and Sensitivity

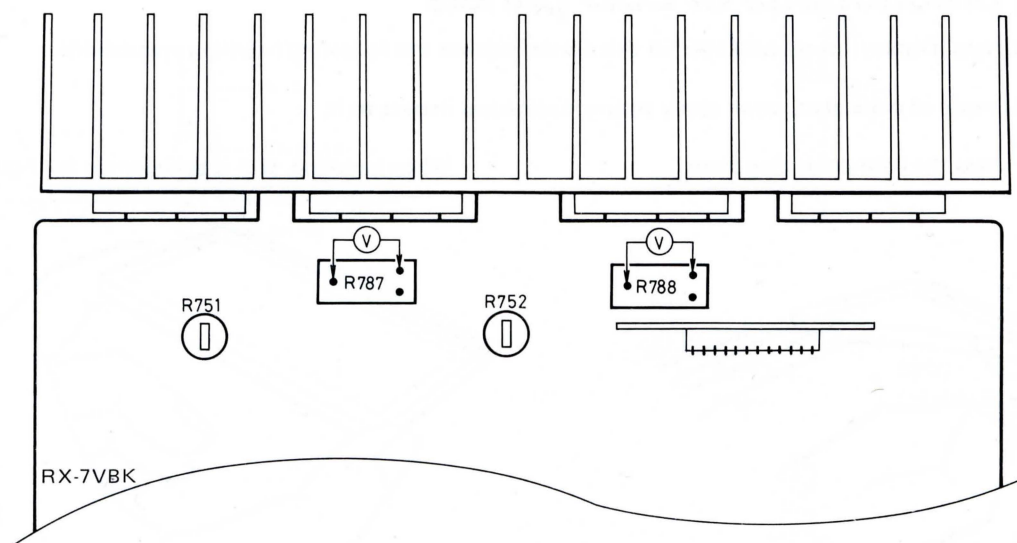
1. Connect the loop antenna. Also connect the RF generator to the antenna terminal on the rear panel.
2. Set the generator to 600 kHz (or 603 kHz) with 30% modulation at 400 Hz.

3. Set the frequency display to 600 kHz, or 603 kHz.
4. Adjust T201 to maximize the output.
5. Set the generator to 1400 kHz, or 1404 kHz.
6. Set the frequency display of the unit to 1400 kHz, or 1404 kHz.
7. Adjust TC201 so that the output signal is maximized.
8. Repeat these adjustments (1 ~ 7) alternately until maximum sensitivity is obtained.

AM-signal Strength Meter

1. Connect the RF generator to the antenna terminal on the rear panel. On this work, use the dummy antenna and achieve connection in series via 5.6 k Ω .
2. Set the RF generator either at 999 kHz (9 kHz step) or 1000 kHz (10 kHz step), 10 mV.
3. While rotating VR221 clockwise, adjust the AM-signal strength meter so that this meter displays 90 dB.

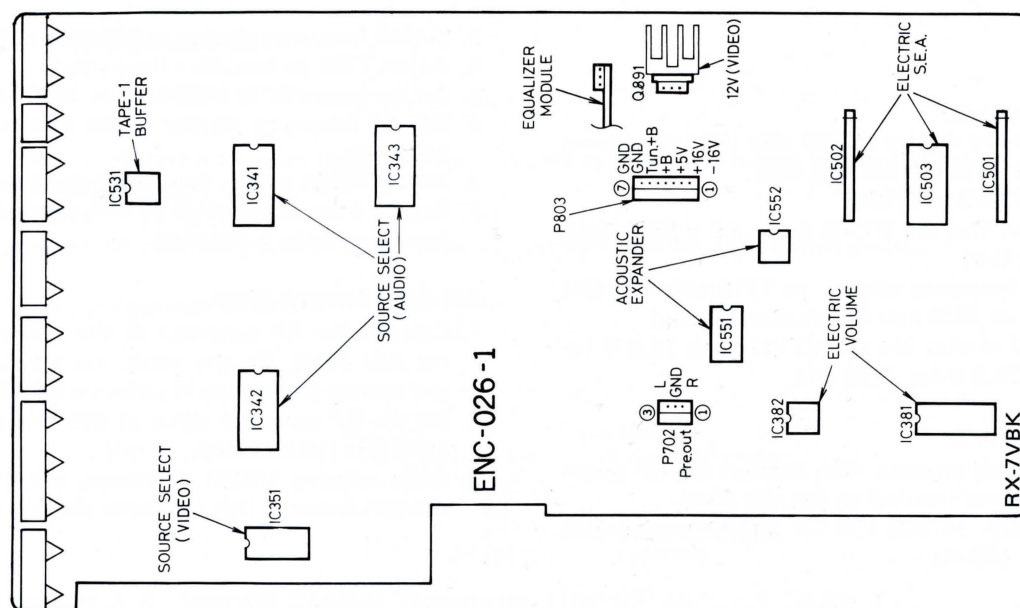
(2) Power Amplifier P.C. Board



Idling Current Adjustment

1. Turn R751 and R752 fully counterclockwise before the power switch on.
2. Allow the set warm up at least 5 minutes before adjustment.
3. Must keep the heatsink to prevent overheating before adjustment.
4. Set the volume control to minimum during this adjustment.
5. Connect a DC VTVM to R787 resistor's leads for left channel, or to R788's leads for right channel.
6. Adjust R751 for left channel, or R752 for right channel, so that the DC VTVM reads 5 mV.

Functions of ICs on the Pre-Amplifier PC Board



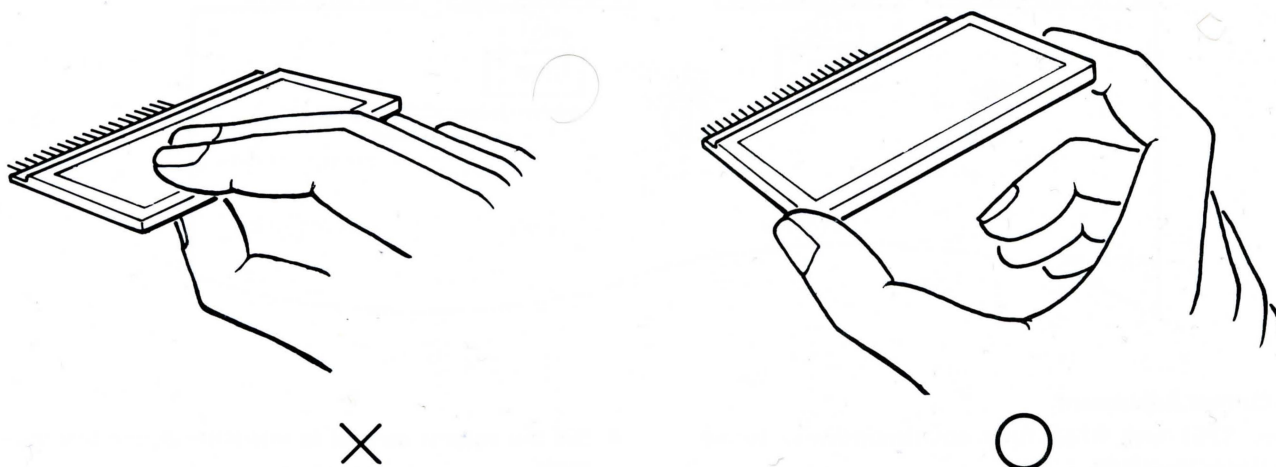
Handling precautions of LCD panels

The LCD (Liquid Crystal Display) panel employed in this device requires the following handling precautions.

1. Since the LCD is made of plate glass, never apply strong mechanical impact to it.

Do not forcibly press the light-polarizing plate.

When handling, grip it as shown in the figure below.



2. When handling the LCD, wear gloves whenever possible.
3. When the light-polarizing plate (surface other than silk-printed areas) becomes contaminated, use an applicator wet with isopropyl alcohol to gently wipe it clean. As for the silk-printed areas, use a soft cloth also to gently wipe it clean.

NOTE: The light-polarizing plate attached to the LCD surface and the silk-printed areas are made of soft material.

4. As much as possible, avoid exposing the LCD to irradiation of harmful light (direct sunlight or ultraviolet rays), especially when the device is not in use.
5. Do not imprint DC voltage on pins of the LCD (characteristics will be degraded).
6. When the LCD is damaged, resulting in leakage of liquid crystal, be very cautious to avoid the liquid from penetrating one's mouth or being swallowed. Should liquid crystal contact the hands or clothing, immediately wash with water, using soap or other appropriate cleanser.

Servicing Method for AWG #20 Wires with Clamping Terminals

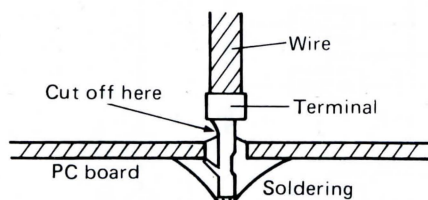
- (1) Application objective → Confirmation of safety
Used to prevent breakage/disconnection troubles of primary and secondary wires within PC boards (or between PC boards). Even when wire breakage/disconnection has actually occurred, a safe air-gap distance between the primary wire and the secondary wire/possibly contacting metal surface can be maintained because the terminal retains the wire sheathing.

(2) Type of wire used

- ① 1015 AWG-#20 (single-coated)
- ② 1672 AWG-#20 (double-coated)

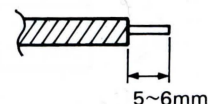
(3) Servicing precautions

- ① The structural design of this terminal causes its catch to hook onto the PC board, preventing the wire from being easily pulled out. As shown in the figure, use cutting pliers or a similar tool to cut off the ends of the terminal and wire; then remove the remaining terminal clip by melting the soldering.

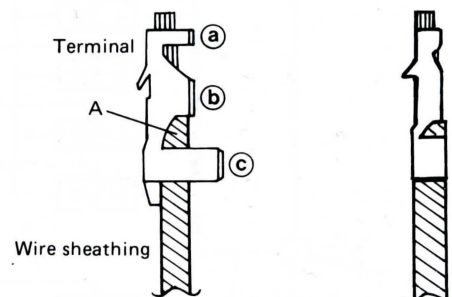


- ② Prior to soldering the wire onto the PC board, confirm safety by pressure-fitting the terminal to the wire by observing the following procedures.

1. Strip off the wire 5 ~ 6 mm from its end.

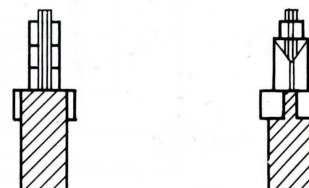


2. Insert the wire until its sheathing contacts section "A" of the terminal and pressure-fit the terminal clamp at three sections of (a), (b), and (c) (section (c) is especially important to assure safety. Exercise particular care to achieve secure clamping).



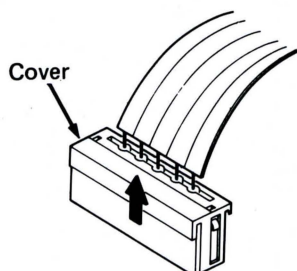
③ Part No., and name

Part No. : 5298T
Name : CRIMP PIN

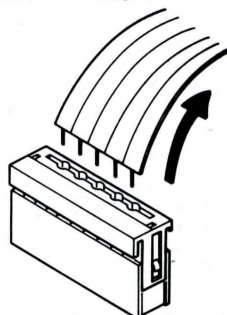


■ Use of new-type connector

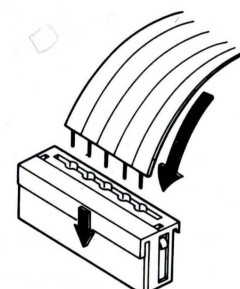
- (1) Slide the cover upward.



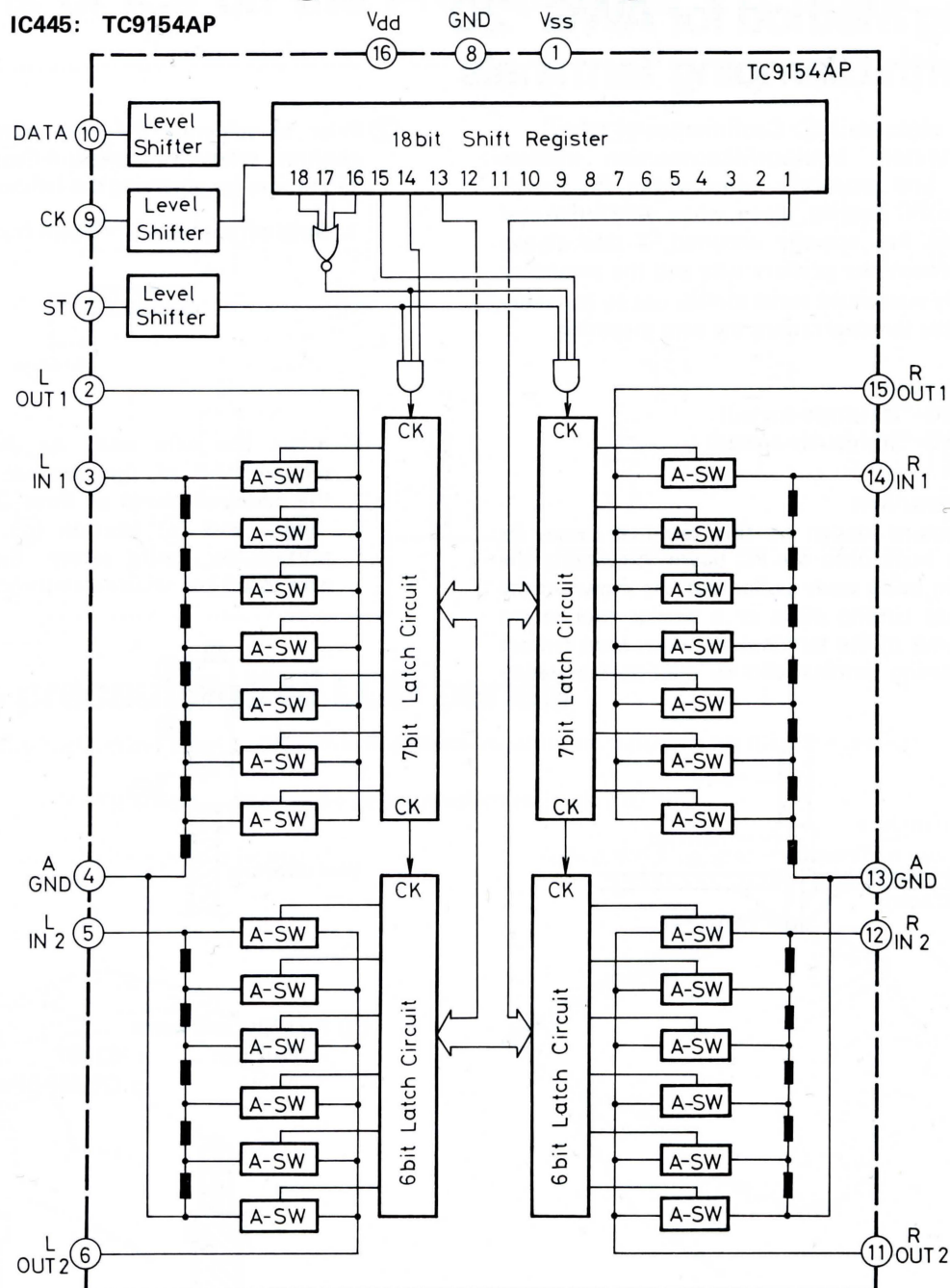
- (2) Extract the wires.



- (3) Insert the wires after pushing in the cover.



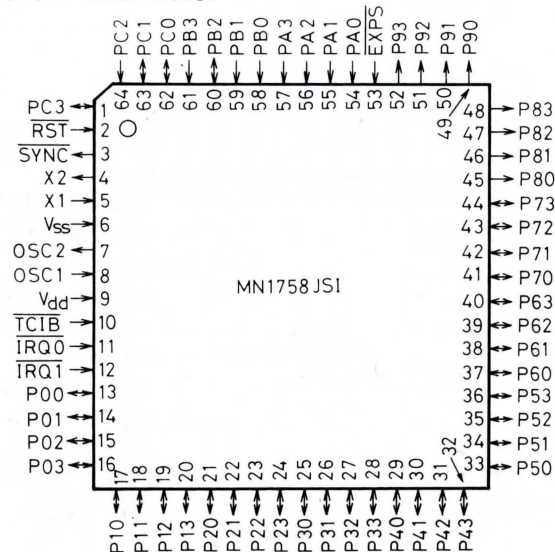
Internal Block Diagrams of Major ICs



IC445: TC9154AP

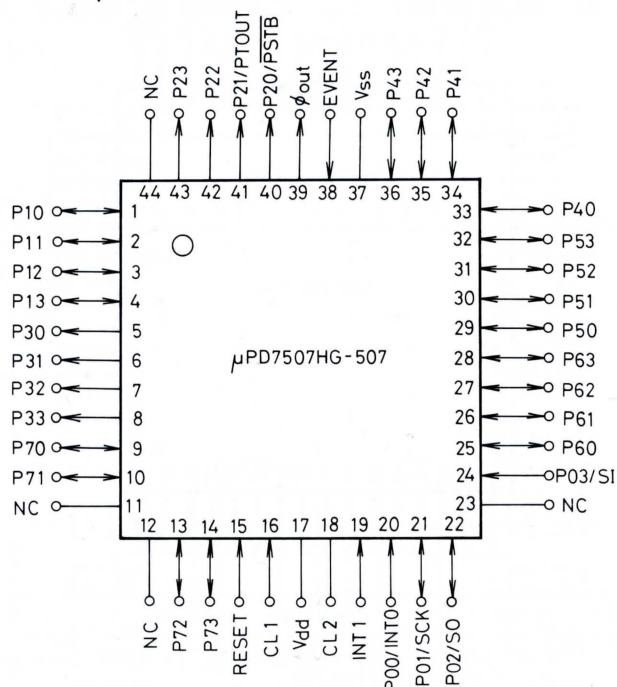
Pin No.	Symbol	Function
1	V ss	(-)Power Supply
2	L-OUT1	10dB Step Attenuator Output
3	L-IN 1	10dB Attenuator Input
4	A-GND	Ground (Power Supply)
5	L-IN 2	2dB Attenuator Input
6	L-OUT2	2dB Step Attenuator Output
7	ST	Strobe Input
8	GND	Ground
9	CK	Clock Input
10	DATA	Data Input
11	R-OUT2	2dB Step Attenuator Output
12	R-IN 2	2dB Attenuator Input
13	A-GND	Ground (Power Supply)
14	R-IN 1	10dB Attenuator Input
15	R-OUT1	10dB Step Attenuator Output
16	V dd	(+)Power Supply

IC461: MN1758JSI

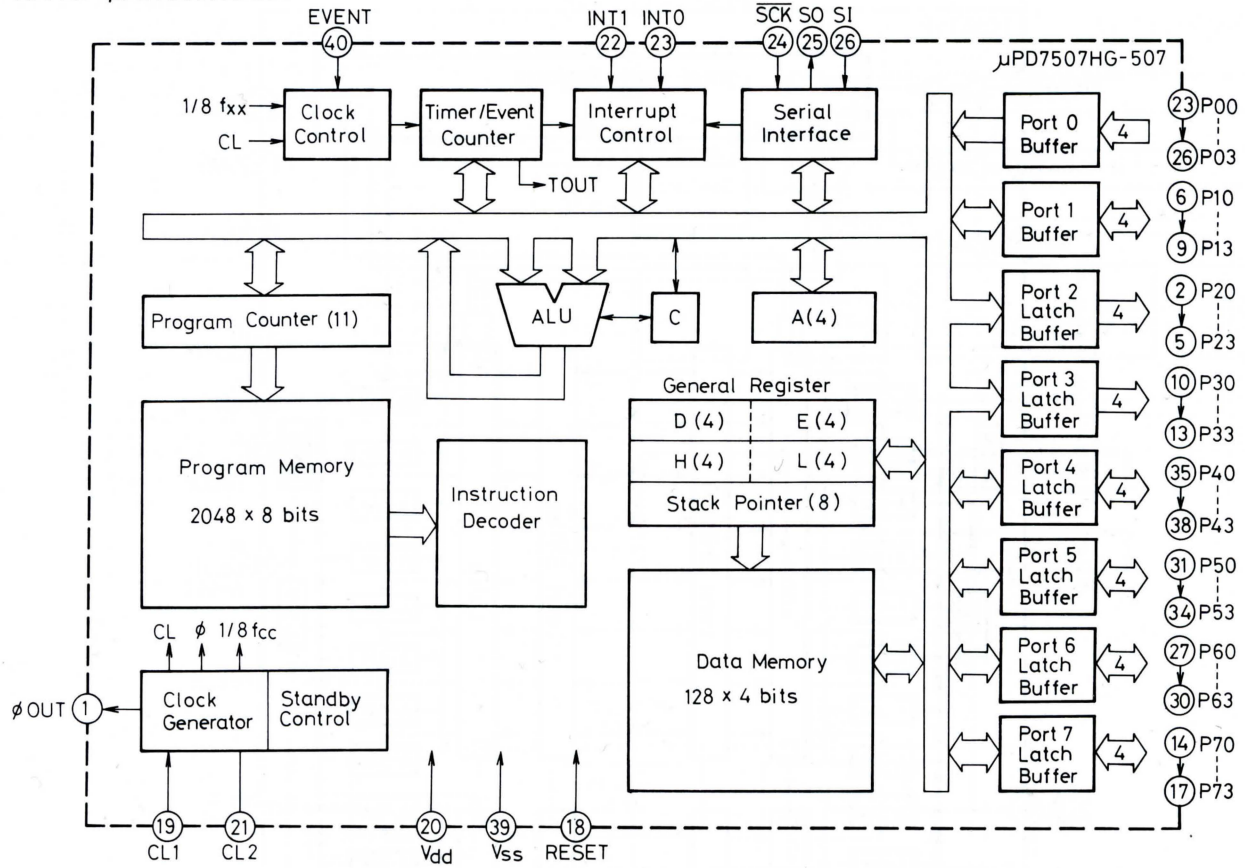


IC461: MN1758JSI

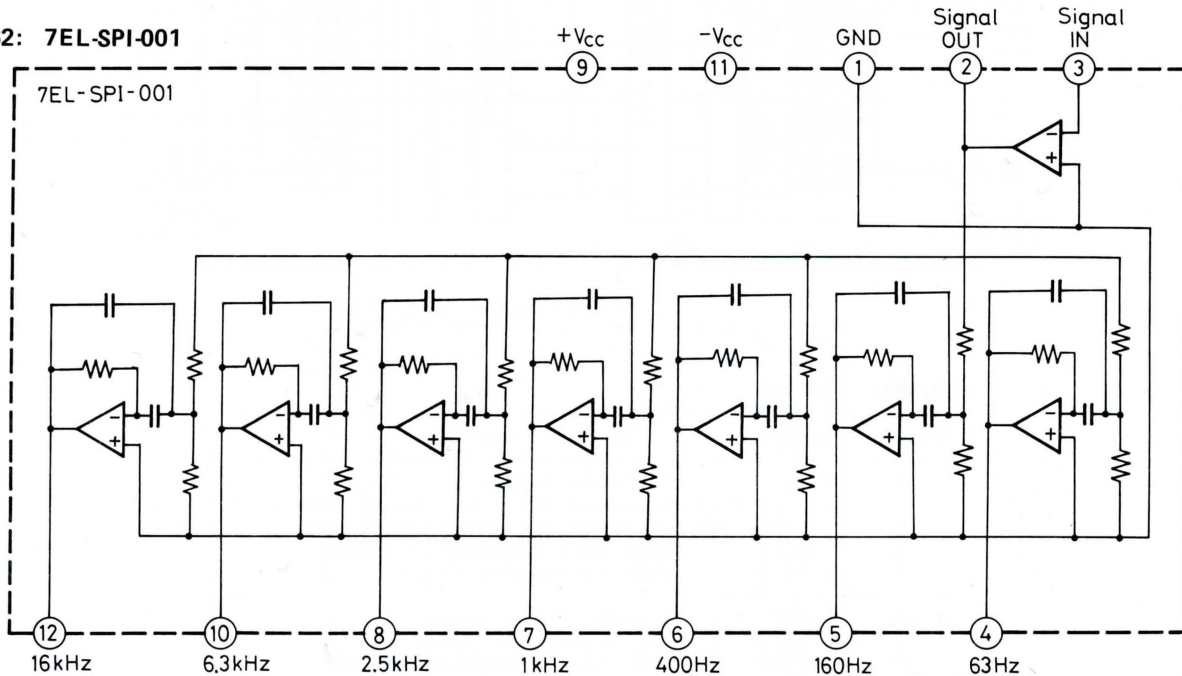
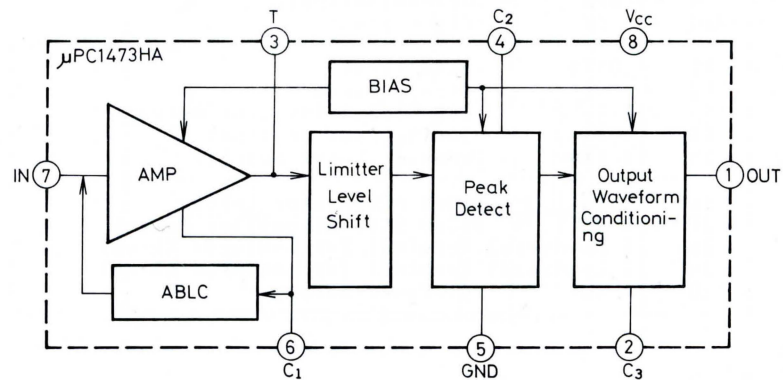
Pin No.	Symbol	Name	I/O	Terminal Function
1	PC3	DATA1	O	Serial data out; Connect to DATA terminal of TC9164N, TC9163N, TC9177P.
2	RST	RESET	I	RESET signal input
3~5	---	---	---	Not use.
6	Vss	Vss	---	GND
7	OSC2	OSC OUT	O	Connect the Ceramic Oscillator.
8	OSC1	OSC IN	I	Connect the Ceramic Oscillator.
9	Vdd	Vdd	---	+5V
10	TCIB	TCIB	---	Not use. (GND)
11	IRQ0	INH in	I	INH signal input
12	IRQ1	IRQ1	---	Not use. (GND)
13	P00	RM in	I	Remote control signal input
14	P01	INH in	I	INH signal input
15	P02	DCS in	I	DCS signal input
16	P03	DCS out	O	DCS signal output
17	P10	RM IND out	O	"H" output when Remote control signal input.
18	P11	LCD C/D	O	Connect the C/D terminal of μ PD7225G.
19	P12	LCD CD	O	Connect the CD terminal of μ PD7225G.
20	---	---	---	Not use. (pull down)
21	P20	REQ-IN	I	Connect the DATA REQUEST OUT terminal of TC9302AF-013BS.
22	P21	MUT	O	"L" output when TUNER Source selected.
23	P22	REQ-OUT	O	Connect the DATA REQUEST IN terminal of TC9302AF-013BS.
24~29	P23~P33	DO~D4	O	Parallel DATA output to control TC9302AF-013BS (DO:LSB, D4:MSB)
29	P40	INH out1	O	"H" output when power "ON".
30	P41	INH out2	O	Connect the INH terminal of μ PD7507HG-507, TC9302AF-013BS.
31	P42	RESET	O	Connect the RESET terminal of μ PD7507HG-507.
32	P43	RESET	O	Connect the RESET terminal of μ PD7225G.
33	P50	VC 0	O	"H" output when VIDEO 1 selected.
34	P51	VC 1	O	"H" output when VIDEO 2 selected.
35	P52	VC 2	O	"H" output when VCR selected.
36	P53	---	---	Not use. (pull down)
37	P60	---	---	Not use. (pull down)
38	P61	---	---	Not use. (pull down)
39	P62	---	---	Not use. (pull down)
40	P63	A-EXP	O	"H" output when Acoustic Expander ON.
41	---	---	---	Not use. (pull down)
42	P71	ST-1	O	Connect the strobe terminal of TC9154AP.
43	P72	ST-2	O	Connect the strobe terminal of TC9164N (IC343).
44	P73	ST-3	O	Connect the strobe terminal of TC9164N (IC341), TC9163N, TC9177P.
45~52	---	---	O	Key output; Composed the key matrix with PA0 $\rightarrow$ PA3.
53	EXPS	EXPS	---	Not use. (open)
54~57	---	---	I	Key input
58	PB0	BUSY	I/O	Connect the BUSY terminal of μ PD7225G.
59	PB1	TEST	O	Volume UP/DOWN test mode
60	PB2	CLK2	O	Serial clock out; Connect the SCK terminal of μ PD7225G and CK terminal of TC9154AP.
61	PB3	PB3	---	Not use. (GND)
62	PC0	DATA2	---	Serial DATA out; Connect the ST terminal of μ PD7225G and DATA terminal of TC9154AP.
63	PC1	CLK1	---	Serial CLOCK out; Connect the CLK terminal of TC9164N, TC9163N, TC9177P.
64	PC2	PC2	---	Not use. (GND)

IC441: μ PD7507HG-507IC441: μ PD7507HG-507

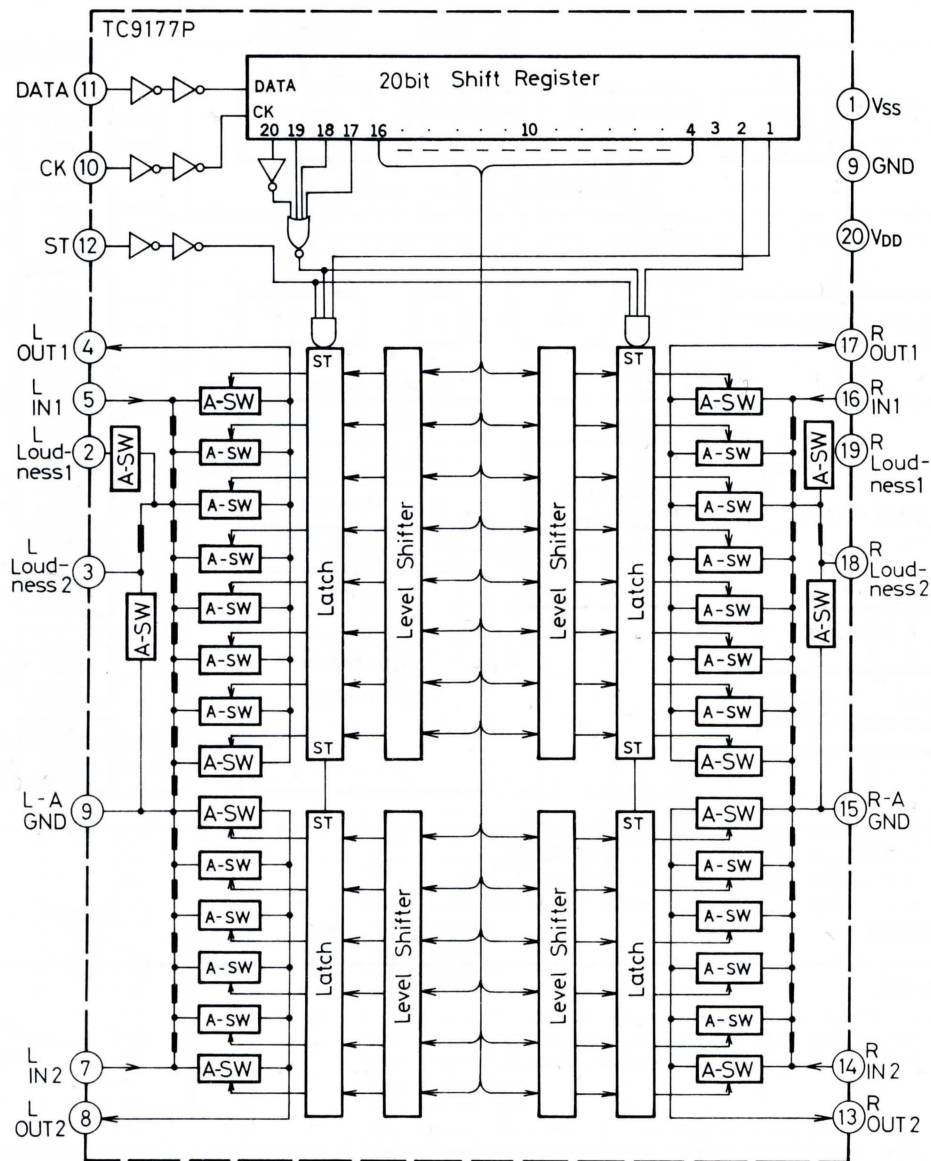
Pin No.	Symbol	Name	I/O	Terminal Function
1	P10	P10	I	Key input; Composed the key matrix with P30 → P33.
2	P11	P11	I	Key input; Composed the key matrix with P30 → P33.
3	P12	P12	I	Key input; Composed the key matrix with P30 → P33.
4	P13	P13	I	Key input; Composed the key matrix with P30 → P33.
5	P30	P30	O	Key output
6	P31	P31	O	Key output
7	P32	P32	O	Key output
8	P33	P33	O	Key output
9	P70	P70	I	Key input; Composed the key matrix with P30 → P33.
10	P71	P71	I	Key input; Composed the key matrix with P30 → P33.
11	NC	NC	---	Non connection
12	NC	NC	---	Non connection
13	P72	P72	I	Key input; Composed the key matrix with P30 → P33.
14	P73	P73	I	Key input; Composed the key matrix with P30 → P33.
15	RESET	RESET	I	Connect the RESET of MN1758JSI.
16	CL1	X'tal in	I	Connect the ceramic oscillator.
17	Vdd	Vdd	---	+5V
18	CL2	X'tal out	O	Connect the ceramic oscillator.
19	INT1	INT1	---	Not use. (GND)
20	P00/INT1	RM IN	I	Remote control signal input
21	P01/SCK	P01/SCK	---	Not use. (Vdd)
22	P02/SO	INH	I	Connect the INH2 of MN1758JSI.
23	NC	NC	---	Non connection.
24	P03/SI	TEST	I	SEA volume UP/DOWN test mode
25	P60	CLK	O	Serial CLOCK OUT
26	P61	DATA	O	Serial DATA OUT
27	P62	RM IND	O	"H" output when remote control signal received.
28	P63	P63	---	Not use. (open)
29	P50	P50	---	Not use. (GND)
30	P51	P51	---	Not use. (GND)
31	P52	P52	---	Not use. (GND)
32	P53	P53	---	Not use. (GND)
33	P40	P40	---	Not use. (GND)
34	P41	P41	---	Not use. (GND)
35	P42	P42	---	Not use. (GND)
36	P43	P43	---	Not use. (GND)
37	Vss	Vss	---	GND
38	EVENT	EVENT	---	Not use. (GND)
39	φ OUT	φ OUT	---	Not use. (open)
40	P20	P20	---	Not use. (open)
41	P21	P21	---	Not use. (open)
42	P22	P22	---	Not use. (open)
43	P23	P23	---	Not use. (open)
44	NC	NC	---	Non connect.

IC441: μ PD7507HG-507

IC462: 7EL-SPI-001

IC481: μ PC1473HA

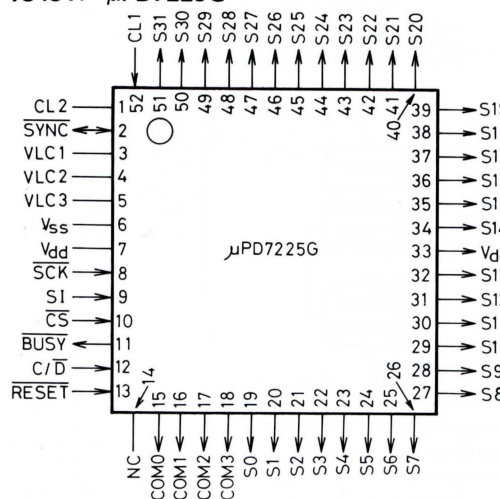
IC381: TC9177P



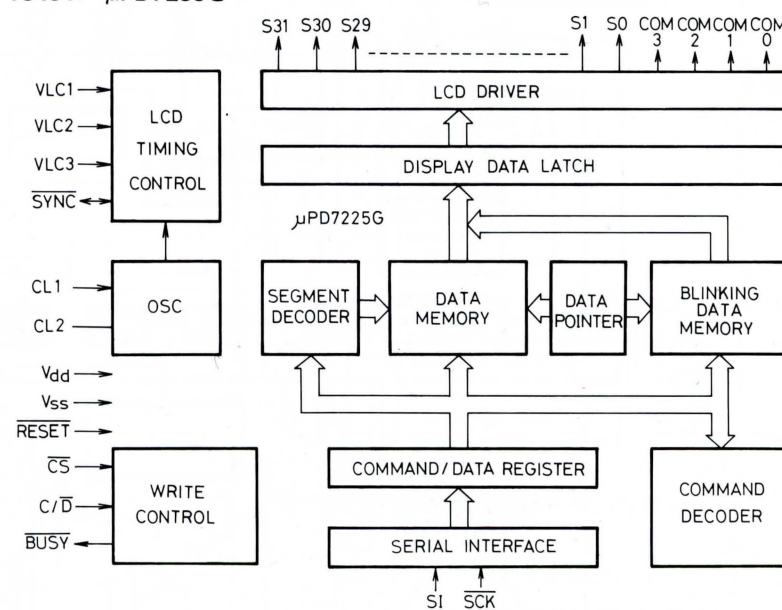
IC381: TC9177P

Pin No.	Symbol	Function
1	V ss	(-)Power Supply
2	L-Loudness1	Terminal for Loudness (L-ch)
3	L-Loudness2	Terminal for Loudness (L-ch)
4	L-OUT1	10dB Step Attenuator Output
5	L-IN 1	10dB Attenuator Input
6	A-GND	Ground (Power Supply)
7	L-IN 2	2dB Attenuator Input
8	L-OUT2	2dB Step Attenuator Output
9	GND	Ground (Signal)
10	CK	Clock Input
11	DATA	Data Input
12	ST	Strobe Input
13	R-OUT2	2dB Step Attenuator Output
14	R-IN 2	2dB Attenuator Input
15	A-GND	Ground (Power Supply)
16	R-IN 1	10dB Attenuator Input
17	R-OUT1	10dB Step Attenuator Output
18	R-Loudness2	Terminal for Loudness (R-ch)
19	R-Loudness1	Terminal for Loudness (R-ch)
20	V dd	(+)Power Supply

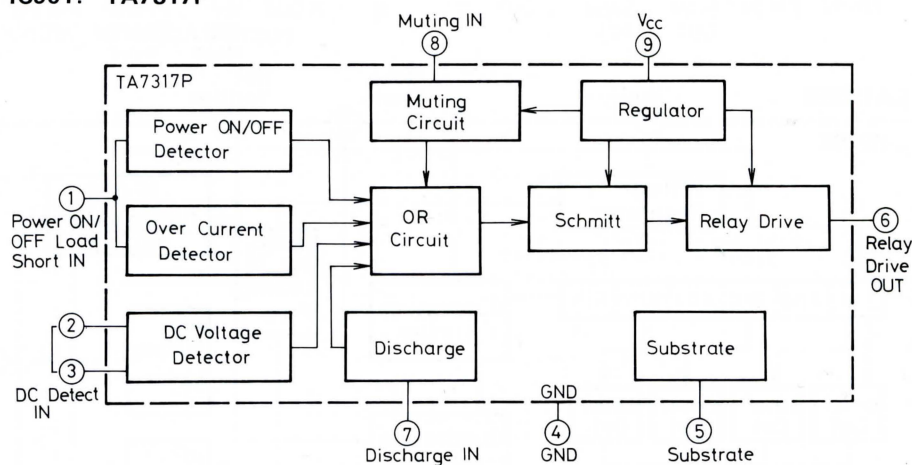
IC451: μ PD7225G



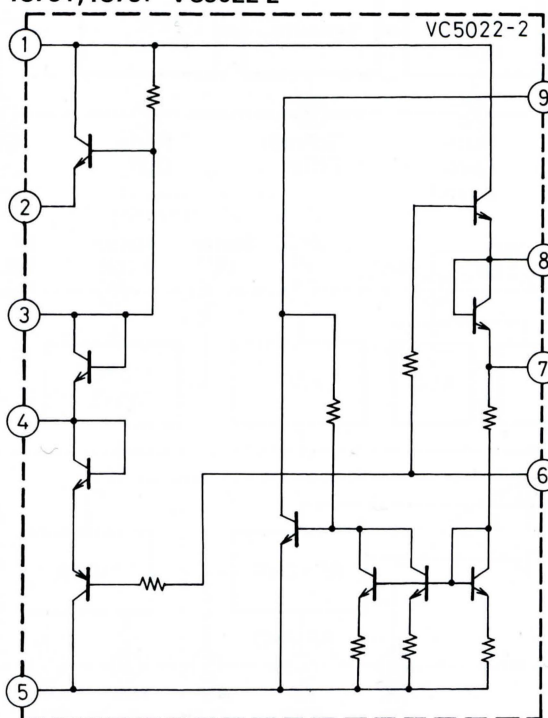
IC451: μ PD7255G



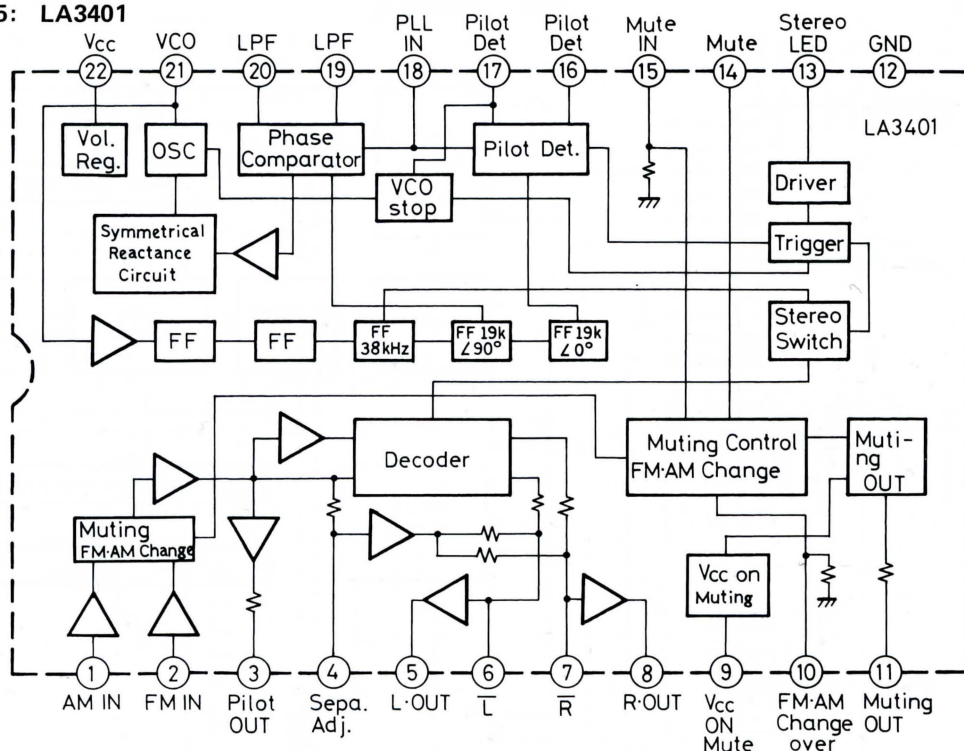
IC901: TA7317P



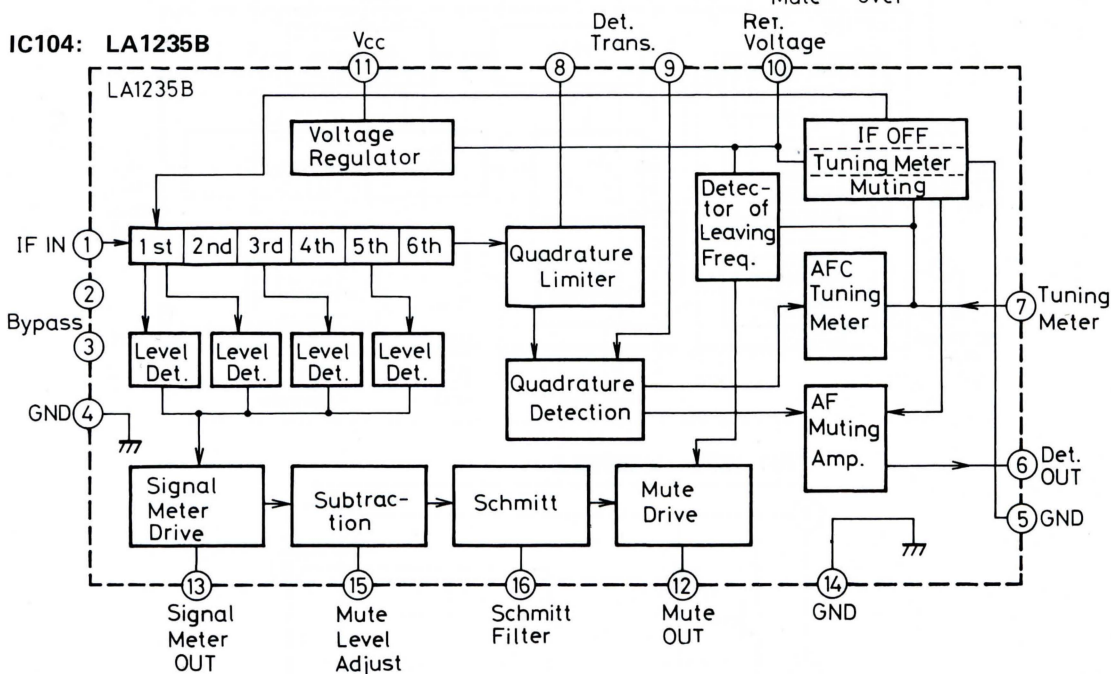
IC751, IC75: VC5022-2



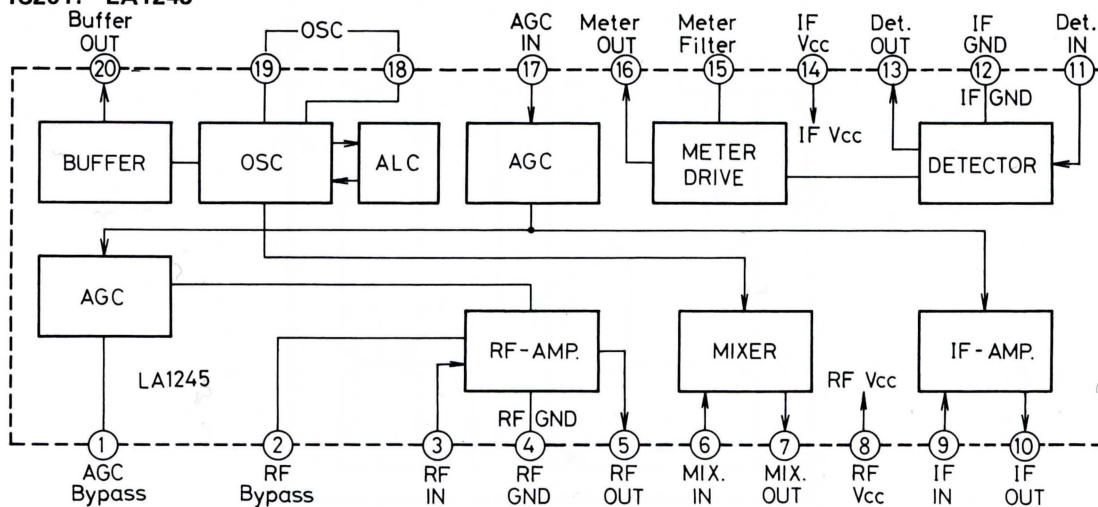
IC105: LA3401



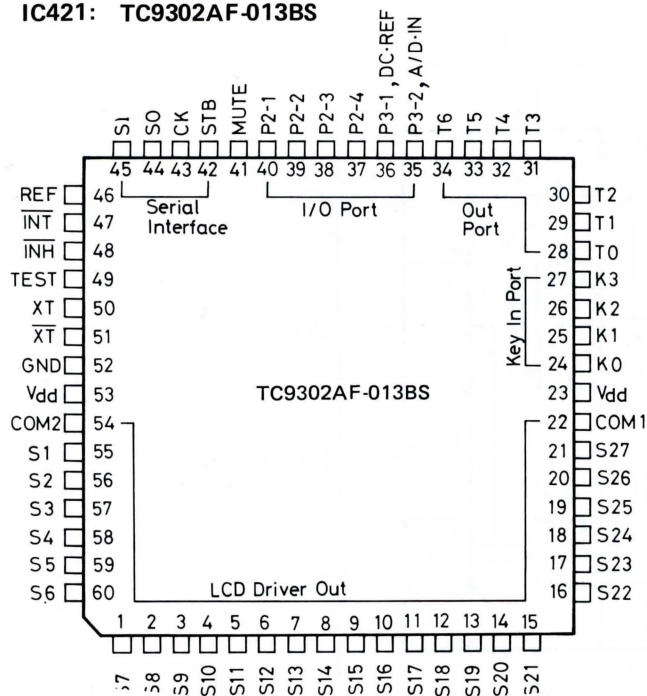
IC104: LA1235B



IC201: LA1245



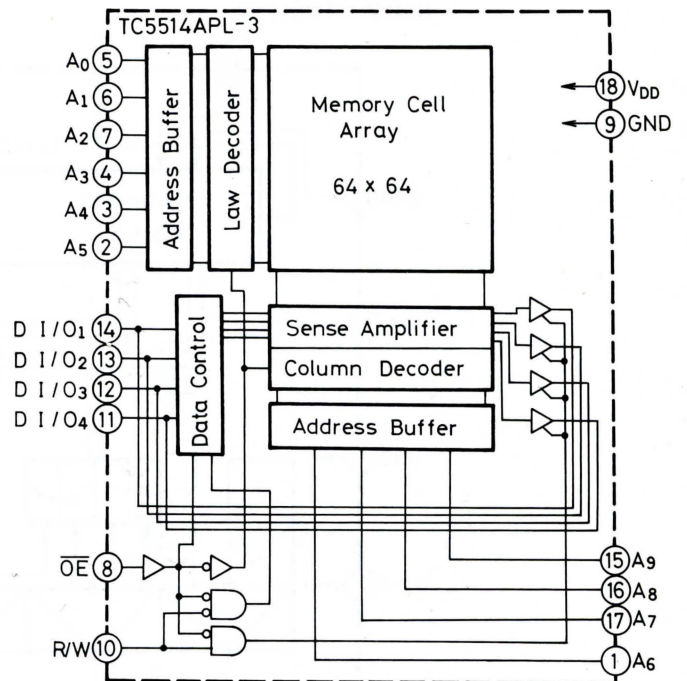
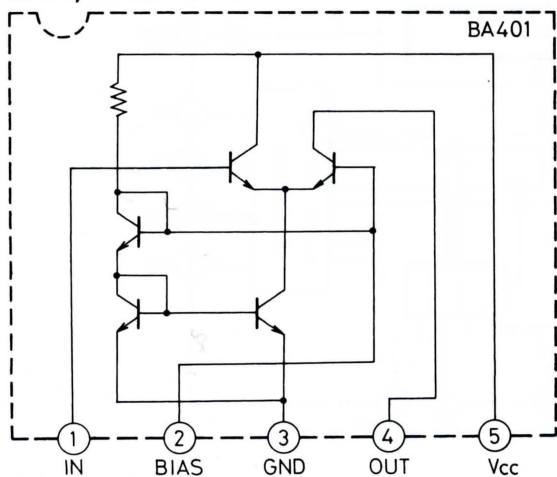
IC421: TC9302AF-013BS



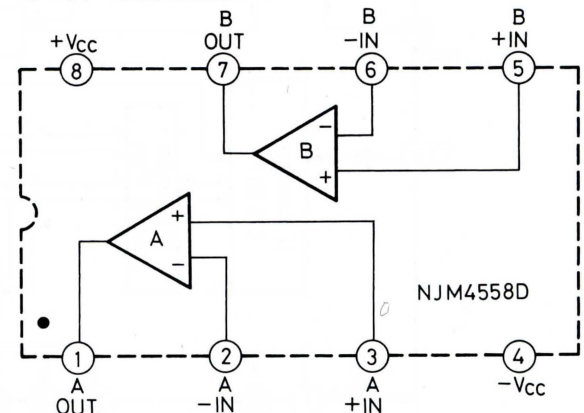
IC421: TC9302AF-013BS

Pin No.	Symbol	Terminal Function
1~21	S7 ~ S27	Segment Out to "LCD"
22	COM 1	Common Out to "LCD"
23	Vdd	Power Supply
24~27	K0 ~ K3	Input Port for Key matrix
28~34	T0 ~ T6	Key Timing Output Port
35	P3-2, A/D-IN	I/O Port3, A/D Input, Signal Meter Input
36	P3-1, DC-REF	I/O Port3, A/D Reference Voltage Input
37	P2-4	Stereo Indicator Input ("L" Level)
38	P2-3	DATA Request Input
39	P2-2	DATA Request Output
40	P2-1	IF Count Request Output ("H" Level)
41	MUTE	Muting Signal Output Port
42	STB	Strobe Pulse Output
43	CK	Serial Clock Output
44	SO	Serial Data Output
45	SI	Serial Data Input
46	REF	PLL Reference Frequency Output
47	INT	Initialize Input
48	INH	Inhibit Input
49	TEST	Test Mode Control Input
50	XT	X'tal Oscillator
51	XT	X'tal Oscillator
52	GND	Ground
53	Vdd	Power Supply
54	COM 2	Common Out to "LCD"
55~60	S1~S6	Segment Out to "LCD"

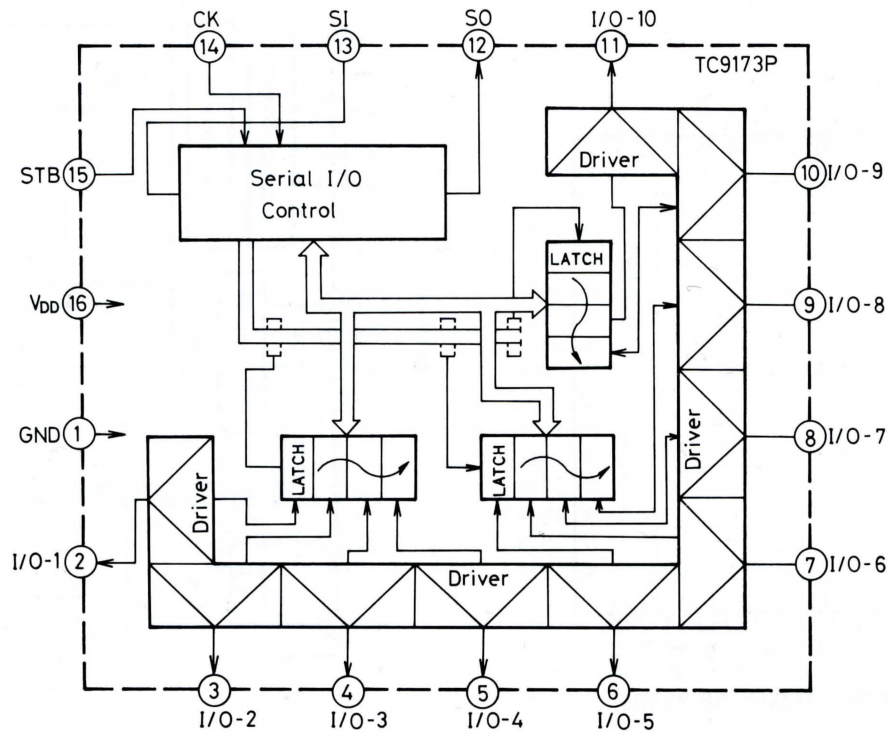
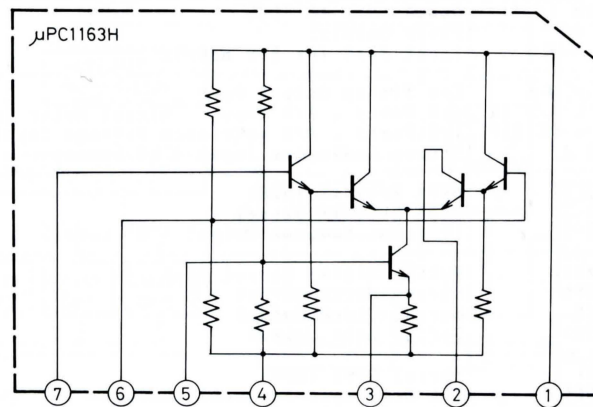
IC101, IC103: BA401



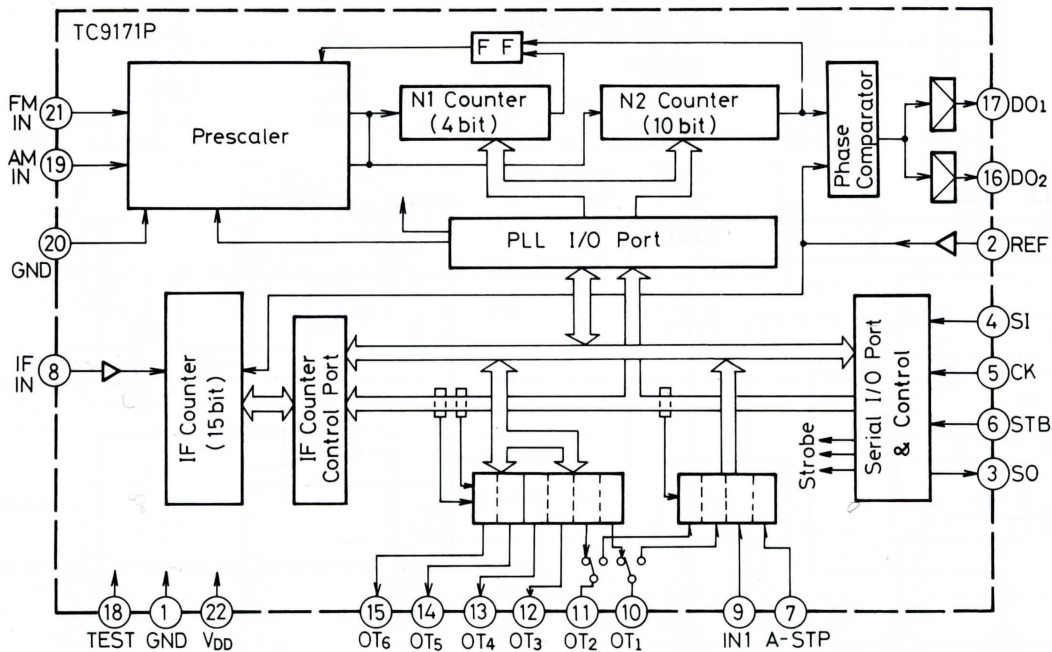
IC446: NJM4558D



IC422: TC9173P

IC102: μ PC1163H

IC251: TC9171P



PARTS LIST

Contents

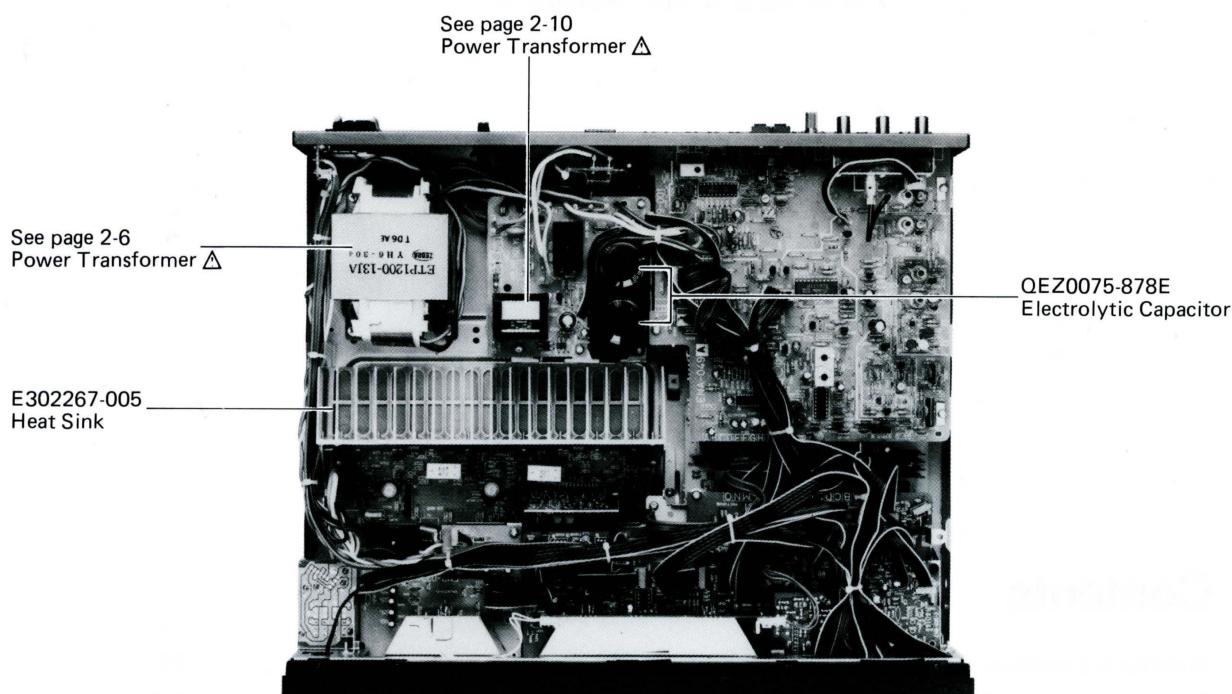
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Exploded View and Parts List	2-3
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■ ENH-075 ☐ Audio P.C. Board Ass'y	2-7
■ ENC-026 ☐ Pre-Amplifier P.C. Board Ass'y	2-11
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■ ENB-033 ☐ LCD Display P.C. Board Ass'y	2-21
■ ENG-004 ☐ Pre-Driver P.C. Board Ass'y	2-22
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Main Parts Locations

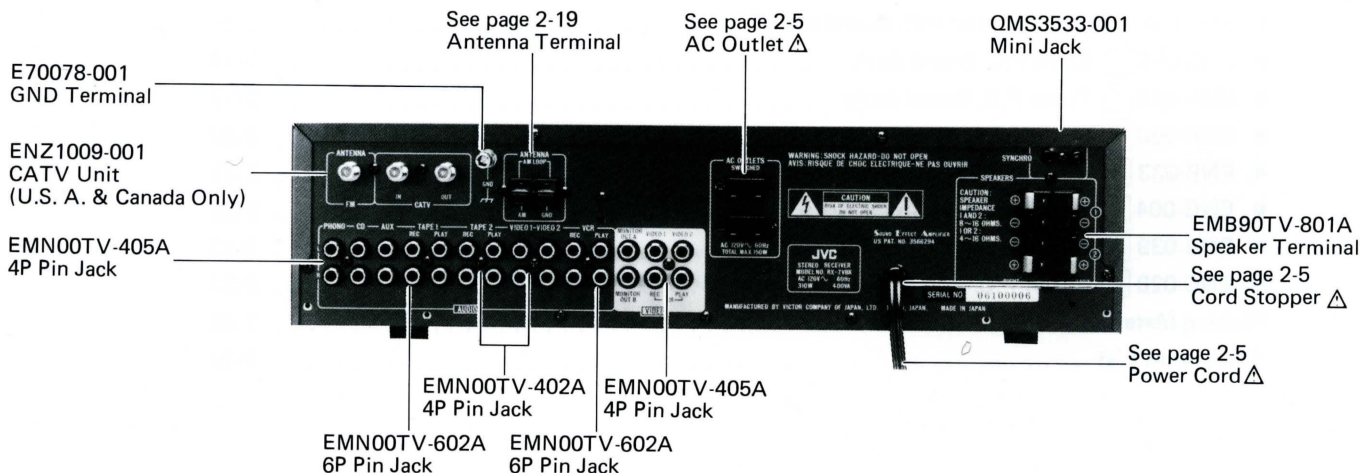
■ Front View



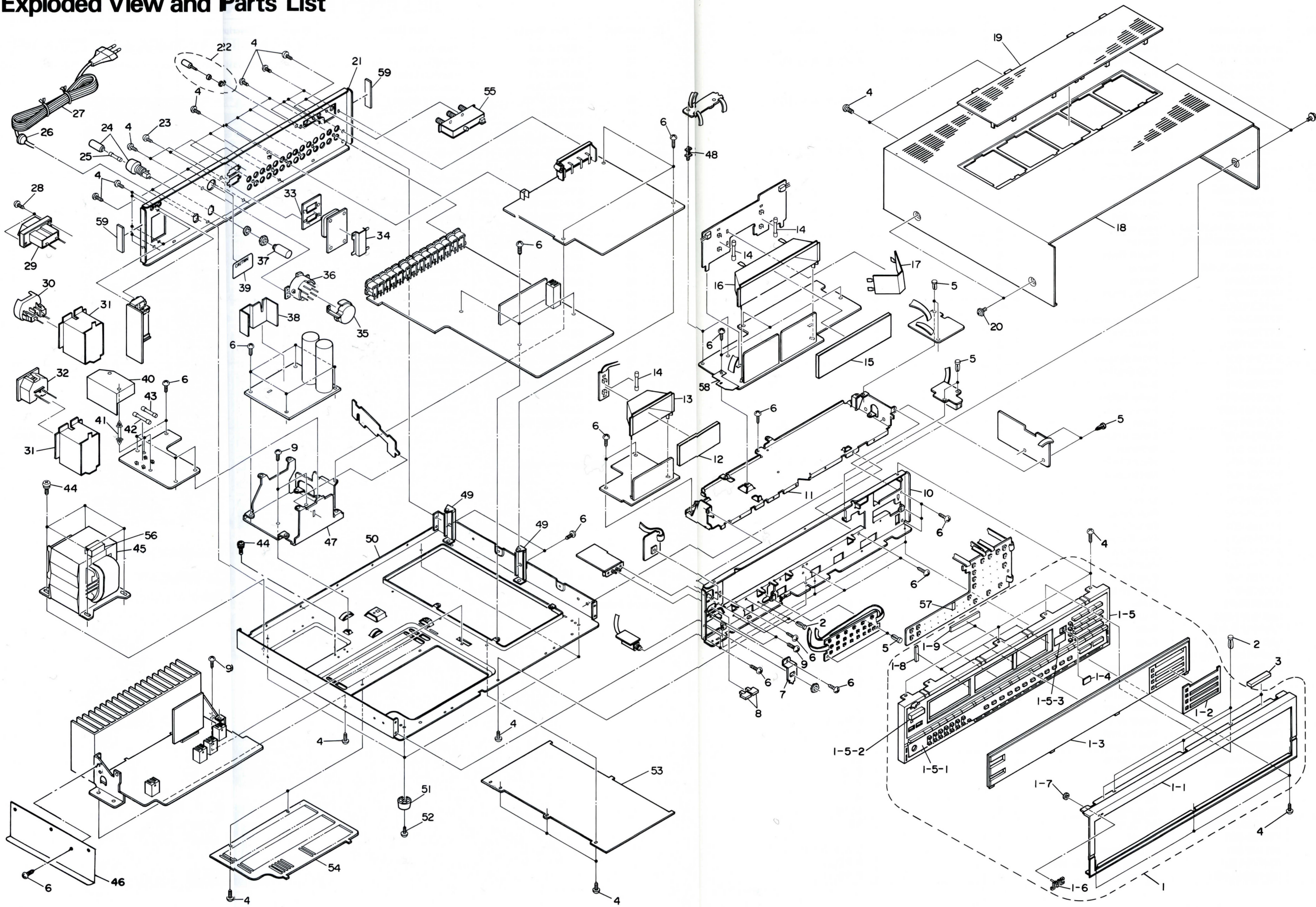
■ Top View



■ Rear View



Exploded View and Parts List



△	Item No.	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-RX7VBKJ	Front Panel Ass'y	1		J, C
		EFP-RX7VBKE	Front Panel Ass'y	1		P, PG, E, A, G, BS, U
	1-1	E25257-006	Front Panel	1		
	1-2	E72805-005	Plate	1		J, C
		E72805-006	Plate	1		P, PG, E, A, G, BSU
	1-3	E25259-003	Window Screen	1		
	1-4	E72437-002	Sheet	1		
	1-5	E25327-017	Front Base Ass'y	1		J, C
		E25327-018	Front Base Ass'y	1		P, PG, E, A, G, BS, U
	1-5-1	E25261-002	Front Plate	1		
	1-5-2	E72808-001	Push Button	1	POWER	
	1-5-3	E72436-002	Screen	1		
	1-6	E72968-001	JVC Mark	1		
	1-7	E60912-003	Speed Nut	1		
	1-8	EXO040004N20S02	Spacer	3		
	1-9	EXO074003N20S02	Spacer	2		
	2	E48729-009	Plastic Rivet	4		
	3	EXO040007N40S	Spacer	3		
	4	SBSE3008M	Screw	38		
	5	E48729-008	Plastic Rivet	8		
	6	SBSE3008CC	Screw	30		
	7	E72858-001	Head Phone Bracket	1		
	8	E72790-001	Push Knob	2		
	9	SBST3006CC	Screw	2		
	10	E11242-002	Front Bracket	1		
△	11	E25263-002	LCD Bracket	1		
	12	E73005-002	Sheet	1		
	13	E303283-001	Lamp Holder	1		
	14	ELP4101-003	Fuse Lamp	3		
	15	E304195-001	Sheet	1		
	16	E304103-001	Lamp Holder	1		
	17	E72813-001	Reflector	1		
	18	E25266-001	Metal Cover	1		J, C, P, PG, A, G, U
		E25267-001	Metal Cover	1		E, BS
	19	E23862-004	Grill	1		E, BS
	20	E61660-004	Screw	4		
	21	E11256-022	Rear Panel	1		J, C
		E11256-024	Rear Panel	1		P, PG, U
		E11256-026	Rear Panel	1		E
		E11256-027	Rear Panel	1		G
		E11256-030	Rear Panel	1		A
		E11256-032	Rear Panel	1		BS
	22	E70078-001	GND Terminal	1		
	23	SDSB3008M	Screw	2		J, C, P, PG, U
	24	QMG0301-003	Fuse Holder	1		P, PG, E, G, U
△	25	QMF51A2-2R5S	Fuse	1		PG, U
△		QMF51A2-5R0S	Fuse	1		P
△		QMF51A2-1R25S	Fuse	1		E
△	26	QHS3876-162	Cord Stopper	1		J, C, P, PG, E, A, G, U
△		QHS3876-162BS	Cord Stopper	1		BS
△	27	QMP1900-200	Power Cord	1		J
△		QMP1480-200H	Power Cord	1		C
△		QMP7600-200	Power Cord	1		P, PG, U
△		QMP3900-200	Power Cord	1		E, G
△		QMP2560-244	Power Cord	1		A
△		QMP9017-008BS	Power Cord	1		BS
△	28	SBSB3016M	Screw	2		E, G
△	29	QMC0240-002	AC Outlet	1		E, G
△	30	EMC0233-001	AC Outlet	1		A
	31	E73209-001	Outlet Cover	1		A, BS
△	32	QMC0232-001BS	AC Outlet	1		BS
	33	E69589-008	Spacer	1		J
	34	E72942-001	Outlet Cover	1		J, C, P, PG, U
	35	E302764-001	Voltage Selector Cover	1		P, PG, U
△	36	QSR0085-008U	Voltage Selector	1		P, PG, U

△	Item No.	Part Number	Part Name	Q'ty	Description	Areas
	37	E69291-001	Fuse Cover	1		P, PG, E, G, U
	38	E73210-001	Sheet	1		
	39	E67119-001	Caution Label	1		J
		E65507-001	Caution Label	1		C
	40	E304174-001	Primary Cover	1		E, A, G, BS
	41	E302321-001	Fastener	2		E, A, G, BS
△	42	QMF51A2-R10S	Fuse	1		E, A, G
△		QMF51E2-R10SBS	Fuse	1		BS
△	43	QMF51U1-5R0S	Fuse	1		J, C
△		QMF51A2-2R5S	Fuse	1		E, A, G
△		QMF51E2-2R5SBS	Fuse	1		BS
	44	E65389-004	Ass'y Screw	4		
△	45	ETP1200-13JA	Power Transformer	1		J, C
△		ETP1200-13FA	Power Transformer	1		P, PG, U
△		ETP1200-13EA	Power Transformer	1		E, A, G
△		ETP1200-13EABS	Power Transformer	1		BS
	46	E304280-001	Sheet	1		
	47	E304102-001	Circuit Board Holder	1		
	48	E300796-001	Fastener	2		
	49	E71278-002	Circuit Board Holder	2		
	50	E11241-001	Chassis Base	1		
	51	E47227-012	Foot	4		
	52	SBSB3010M	Screw	4		
	53	E302294-001	Bottom Cover	1		
	54	E302295-004	Bottom Cover	1		
	55	ENZ1009-001	CATV Unit	1		J, C
	56	EXO040007N50S	Felt Spacer	1		
	57	EXO016008R05S10	Spacer	1		
	58	E73286-002	Sheet	1		
	59	EXO085010R10S	Spacer	2		

△: Safety Parts

The Marks for Designated Areas.

J U.S.A.
 C Canada
 A Australia
 E Europe
 G West Germany
 BS U.K.
 P, PG U.S. Military Market
 U Other Countries

No mark indicates all areas.

Note (1)

P.C. Board Ass'y	Designated Areas
ENH-075 G	U.S.A.
ENH-075 H	Canada
ENH-075 I	U.S. Military Market & Other Countries
ENH-075 J	Europe & Australia
ENH-075 K BS	U.K.
ENH-075 L	West Germany

Transistors

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
Q751	2SD636(Q,R)	SILICON	MATSUSHITA	
Q752	2SD636(Q,R)	SILICON	MATSUSHITA	
Q753	2SC1740LN(R,S)	SILICON	ROHM	
Q754	2SC1740LN(R,S)	SILICON	ROHM	
Q755	2SA933LN(R,S)	SILICON	ROHM	
Q756	2SA933LN(R,S)	SILICON	ROHM	
Q757	2SC1740LN(R,S)	SILICON	ROHM	
Q758	2SC1740LN(R,S)	SILICON	ROHM	
Q759	2SA933LN(R,S)	SILICON	ROHM	
Q760	2SA933LN(R,S)	SILICON	ROHM	
Q761	2SC2389(S,E)	SILICON	ROHM	
Q762	2SC2389(S,E)	SILICON	ROHM	
Q763	2SA1038(S,E)	SILICON	ROHM	
Q764	2SA1038(S,E)	SILICON	ROHM	
Q765	2SC2235(O,Y)	SILICON	TOSHIBA	
Q766	2SC2235(O,Y)	SILICON	TOSHIBA	
Q767	2SA965(O,Y)	SILICON	TOSHIBA	
Q768	2SA965(O,Y)	SILICON	TOSHIBA	
Q769	2SD845LB(O,R)	SILICON	TOSHIBA	
Q770	2SD845LB(O,R)	SILICON	TOSHIBA	
Q771	2SB755LB(O,R)	SILICON	TOSHIBA	
Q772	2SB755LB(O,R)	SILICON	TOSHIBA	
Q821	2SD1265A(O)	SILICON	MATSUSHITA	I
Q822	2SC2235(O,Y)	SILICON	TOSHIBA	
Q823	DTC114YN	SILICON	ROHM	
Q851	2SD1666(R,S)	SILICON	SANYO	
Q852	2SC1740LN(R,S)	SILICON	ROHM	
Q853	2SD1666(R,S)	SILICON	SANYO	
Q854	2SC1740LN(R,S)	SILICON	ROHM	
Q855	2SB1133(R,S)	SILICON	SANYO	
Q857	2SB1133(R,S)	SILICON	SANYO	
Q901	2SC2389(S,E)	SILICON	ROHM	
Q902	2SC2389(S,E)	SILICON	ROHM	
Q903	2SA1038(S,E)	SILICON	ROHM	

I.C.S

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
IC751	VC5022-2	I.C.	SANYO	
IC752	VC5022-2	I.C.	SANYO	
IC901	TA7317P	I.C.	TOSHIBA	

Diodes

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
D751	1S2473	SILICON	ROHM	
D752	1S2473	SILICON	ROHM	
D801	S3V20F	SILICON		
D802	S3V20F	SILICON		
D803	S3V20F	SILICON		
D804	S3V20F	SILICON		
D821	11E2	SILICON	NIHONINTER	
D822	11E2	SILICON	NIHONINTER	
D823	11E2	SILICON	NIHONINTER	
D824	11E2	SILICON	NIHONINTER	
D825	RD12EB3	ZENER	NEC	I
D826	1S2473	SILICON	ROHM	
D827	RD6.2EB3	ZENER	NEC	J
D828	RD12EB3	ZENER	NEC	
D828	1S2473	SILICON	ROHM	G

△: Safety Parts

Diodes

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
D828	1S2473	SILICON	ROHM	H
D828	1S2473	SILICON	ROHM	I
D828	1S2473	SILICON	ROHM	KBS
D828	1S2473	SILICON	ROHM	L
D851	1S2473	SILICON	ROHM	
D852	RD16EB3	ZENER	NEC	
D853	1S2473	SILICON	ROHM	J
D853	1S2473	SILICON	ROHM	KBS
D853	1S2473	SILICON	ROHM	L
D854	RD15EB3	ZENER	NEC	
D855	RD5.6EB3	ZENER	NEC	
D857	1S2473	SILICON	ROHM	
D858	RD16EB3	ZENER	NEC	
D859	RD12EB3	ZENER	NEC	
D860	RD12EB3	ZENER	NEC	
D861	RD8.2EB3	ZENER	NEC	
D862	1S2473	SILICON	ROHM	J
D862	1S2473	SILICON	ROHM	KBS
D862	1S2473	SILICON	ROHM	L
D901	1S2473	SILICON	ROHM	
D902	1S2473	SILICON	ROHM	
D903	1S2473	SILICON	ROHM	
D904	1S2473	SILICON	ROHM	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
△ C001	QCZ9019-472	4700PF	CERAMIC	G
△ C001	QCZ9019-472	4700PF	CERAMIC	H
△ C001	QCZ9019-472	4700PF	CERAMIC	I
△ C001	QCZ9019-472	4700PF	CERAMIC	J
△ C001	QCZ9019-472	4700PF	CERAMIC	L
△ C001	QCZ9019-472BS	4700PF	CERAMIC	KBS
C751	QCS22HJ-470A	47PF 500V	CERAMIC	
C752	QCS22HJ-470A	47PF 500V	CERAMIC	
C753	QCS22HJ-470A	47PF 500V	CERAMIC	
C754	QCS22HJ-470A	47PF 500V	CERAMIC	
C755	QFN81HK-223	0.022MF 50V	MYLAR	G
C755	QFN81HK-223	0.022MF 50V	MYLAR	I
C755	QFN81HK-473	0.047MF 50V	MYLAR	H
C755	QFN81HK-473	0.047MF 50V	MYLAR	J
C755	QFN81HK-473	0.047MF 50V	MYLAR	KBS
C755	QFN81HK-473	0.047MF 50V	MYLAR	L
C756	QFN81HK-223	0.022MF 50V	MYLAR	G
C756	QFN81HK-223	0.022MF 50V	MYLAR	I
C756	QFN81HK-473	0.047MF 50V	MYLAR	H
C756	QFN81HK-473	0.047MF 50V	MYLAR	J
C756	QFN81HK-473	0.047MF 50V	MYLAR	KBS
C756	QFN81HK-473	0.047MF 50V	MYLAR	L
C757	QFN81HK-473	0.047MF 50V	MYLAR	H
C757	QFN81HK-473	0.047MF 50V	MYLAR	J
C757	QFN81HK-473	0.047MF 50V	MYLAR	KBS
C757	QFN81HK-473	0.047MF 50V	MYLAR	L
C758	QFN81HK-473	0.047MF 50V	MYLAR	H
C758	QFN81HK-473	0.047MF 50V	MYLAR	J
C758	QFN81HK-473	0.047MF 50V	MYLAR	KBS
C758	QFN81HK-473	0.047MF 50V	MYLAR	L
C759	QETB1JM-107	100MF 63V	ELECTRO	
C760	QETB1JM-107	100MF 63V	ELECTRO	
C801	QEZ0075-878E	8700MF	NON POLE	
C802	QEZ0075-878E	8700MF	NON POLE	
C805	QFH42EK-104	0.1MF		
C806	QCE22HP-103	0.01MF 500V	CERAMIC	
C807	QCE22HP-103	0.01MF 500V	CERAMIC	
C821	QFN81HK-473	0.047MF 50V	MYLAR	
C822	QETB1CM-477	470MF 16V	ELECTRO	G
C822	QETB1CM-477	470MF 16V	ELECTRO	H
C822	QETB1CM-477	470MF 16V	ELECTRO	J
C822	QETB1CM-477	470MF 16V	ELECTRO	KBS
C822	QETB1CM-477	470MF 16V	ELECTRO	L
C822	QETB1JM-227	220MF 63V	ELECTRO	I
C823	QETB1HM-105	1MF 50V	ELECTRO	
C824	QCF21HP-472	4700PF 50V	CERAMIC	I
C825	QCF21HP-472	4700PF 50V	CERAMIC	
C826	QETB1CM-476	47MF 16V	ELECTRO	
C851	QCF21HP-472	4700PF 50V	CERAMIC	
C852	QETB1EM-227	220MF 25V	ELECTRO	
C853	QCF21HP-472	4700PF 50V	CERAMIC	
C854	QETB1EM-107	100MF 25V	ELECTRO	
C855	QCF21HP-472	4700PF 50V	CERAMIC	
C856	QETB1EM-476	47MF 25V	ELECTRO	
C857	QCF21HP-472	4700PF 50V	CERAMIC	
C858	QETB1EM-227	220MF 25V	ELECTRO	
C859	QCF21HP-472	4700PF 50V	CERAMIC	
C860	QETB1HM-476	47MF 50V	ELECTRO	
C901	QCF21HP-223	0.022MF 50V	CERAMIC	
C902	QCF21HP-223	0.022MF 50V	CERAMIC	

△: Safety Parts

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C903	QETB1EM-226	22MF 25V ELECTRO	
C904	QCF21HP-223	0.022MF 50V CERAMIC	
C905	QCY21HK-102	1000PF 50V CERAMIC	
C906	QETB1AM-476	47MF 10V ELECTRO	
C909	QETB1CM-226	22MF 16V ELECTRO	
C911	QETB1HM-105	1MF 50V ELECTRO	
C941	QCS21HJ-331	330PF 50V CERAMIC	L
C942	QCS21HJ-331	330PF 50V CERAMIC	L
C943	QFN81HK-103	0.01MF 50V MYLAR	L
C944	QFN81HK-103	0.01MF 50V MYLAR	L
C945	QFN81HK-103	0.01MF 50V MYLAR	L
C946	QFN81HK-103	0.01MF 50V MYLAR	L
C947	QCF21HP-103	0.01MF 50V CERAMIC	L
C948	QCF21HP-103	0.01MF 50V CERAMIC	L
C949	QCS21HJ-151	150PF 50V CERAMIC	L
C950	QCS21HJ-151	150PF 50V CERAMIC	L
C951	QCF21HP-103	0.01MF 50V CERAMIC	L
C961	QCF21HP-223	0.022MF 50V CERAMIC	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R001	QRC121K-275EM	2.7M 1/2W COMPOSI	G
R001	QRC121K-275EM	2.7M 1/2W COMPOSI	H
R751	QVP4A0B-471	VARIABLE	
R752	QVP4A0B-471	VARIABLE	
R753	QRD148J-471S	470 1/4W CARBON	
R754	QRD148J-471S	470 1/4W CARBON	
R755	QRD148J-101S	100 1/4W CARBON	
R756	QRD148J-101S	100 1/4W CARBON	
R757	ERT-D2WFL351S	THERMISTER	
R758	ERT-D2WFL351S	THERMISTER	
R759	QRD148J-391S	390 1/4W CARBON	
R760	QRD148J-391S	390 1/4W CARBON	
R761	SDT250	THERMISTER	J
R761	SDT250	THERMISTER	KBS
R761	SDT250	THERMISTER	L
R762	SDT250	THERMISTER	J
R762	SDT250	THERMISTER	KBS
R762	SDT250	THERMISTER	L
R763	QRD148J-102S	1K 1/4W CARBON	
R764	QRD148J-102S	1K 1/4W CARBON	
R765	QRD148J-102S	1K 1/4W CARBON	
R766	QRD148J-102S	1K 1/4W CARBON	
R767	QRD148J-181S	180 1/4W CARBON	
R768	QRD148J-181S	180 1/4W CARBON	
R769	QRD148J-181S	180 1/4W CARBON	
R770	QRD148J-181S	180 1/4W CARBON	
R771	QRD148J-131S	130 1/4W CARBON	
R772	QRD148J-131S	130 1/4W CARBON	
R773	QRD148J-131S	130 1/4W CARBON	
R774	QRD148J-131S	130 1/4W CARBON	
R775	ERT-D2WFL351S	THERMISTER	
R776	ERT-D2WFL351S	THERMISTER	
R777	ERT-D2WFL351S	THERMISTER	
R778	ERT-D2WFL351S	THERMISTER	
R779	QRD148J-121S	120 1/4W CARBON	
R780	QRD148J-121S	120 1/4W CARBON	
R781	QRD148J-121S	120 1/4W CARBON	
R782	QRD148J-121S	120 1/4W CARBON	
R783	QRD145J-272S	2.7K 1/4W UNF. CARBON	
R784	QRD145J-272S	2.7K 1/4W UNF. CARBON	
R785	QRD145J-271S	270 1/4W UNF. CARBON	
R786	QRD145J-271S	270 1/4W UNF. CARBON	
R787	ERF032K-R22	CEMENT	
R788	ERF032K-R22	CEMENT	
R789	QRD145J-100S	10 1/4W UNF. CARBON	
R790	QRD145J-100S	10 1/4W UNF. CARBON	
R791	QRD145J-100S	10 1/4W UNF. CARBON	
R792	QRD145J-100S	10 1/4W UNF. CARBON	
R793	QRD125J-330	33 1/2W UNF. CARBON	G
R793	QRD125J-330	33 1/2W UNF. CARBON	H
R793	QRD125J-330	33 1/2W UNF. CARBON	I
R793	QRD125J-330	33 1/2W UNF. CARBON	J
R793	QRD125J-330	33 1/2W UNF. CARBON	KBS
R793	QRD125J-470	47 1/2W UNF. CARBON	L
R794	QRD125J-330	33 1/2W UNF. CARBON	G
R794	QRD125J-330	33 1/2W UNF. CARBON	H
R794	QRD125J-330	33 1/2W UNF. CARBON	I
R794	QRD125J-330	33 1/2W UNF. CARBON	J
R794	QRD125J-330	33 1/2W UNF. CARBON	KBS
R794	QRD125J-470	47 1/2W UNF. CARBON	L
R795	QRG022J-100A	10 2W O.M. FILM	
R796	QRG022J-100A	10 2W O.M. FILM	
R797	QRD145J-330S	33 1/4W UNF. CARBON	
R798	QRD145J-330S	33 1/4W UNF. CARBON	
R801	QRD148J-333S	33K 1/4W CARBON	

△: Safety Parts

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R802	QRD148J-333S	33K 1/4W CARBON	
R821	QRD145J-100S	10 1/4W UNF. CARBON	G
R821	QRD145J-100S	10 1/4W UNF. CARBON	H
R821	QRD145J-3R3S	3.3 1/4W UNF. CARBON	I
R821	QRZ0062-100	10 1/4W FUSIBLE	J
R821	QRZ0062-100	10 1/4W FUSIBLE	L
R821	QRZ0062-220	22 1/4W FUSIBLE	KBS
R822	QRD148J-472S	4.7K 1/4W CARBON	
R823	QRD148J-821S	820 1/4W CARBON	
R824	QRG012J-222A	2.2K 1W O.M. FILM	I
R851	QRG022J-561A	560 2W O.M. FILM	
R852	QRG022J-681A	680 2W O.M. FILM	
R853	QRG022J-561A	560 2W O.M. FILM	
R854	QRG022J-681A	680 2W O.M. FILM	
R855	QRD125J-562	5.6K 1/2W UNF. CARBON	
R856	QRG022J-101AF	100 2W O.M. FILM	
R857	QRG022J-101AF	100 2W O.M. FILM	
R858	QRG022J-101AF	100 2W O.M. FILM	
R859	QRG022J-101AF	100 2W O.M. FILM	
R860	QRG022J-820AF	82 2W O.M. FILM	
R861	QRG022J-820AF	82 2W O.M. FILM	
R862	QRD145J-101S	100 1/4W UNF. CARBON	G
R862	QRD145J-101S	100 1/4W UNF. CARBON	H
R862	QRD145J-101S	100 1/4W UNF. CARBON	I
R862	QRZ0062-101	100 1/4W FUSIBLE	J
R862	QRZ0062-101	100 1/4W FUSIBLE	KBS
R862	QRZ0062-101	100 1/4W FUSIBLE	L
R863	QRD125J-392	3.9K 1/2W UNF. CARBON	
R864	QRD125J-180	18 1/2W UNF. CARBON	
R865	QRD145J-101S	100 1/4W UNF. CARBON	G
R865	QRD145J-101S	100 1/4W UNF. CARBON	H
R865	QRD145J-101S	100 1/4W UNF. CARBON	I
R865	QRZ0062-101	100 1/4W FUSIBLE	J
R865	QRZ0062-101	100 1/4W FUSIBLE	KBS
R865	QRZ0062-101	100 1/4W FUSIBLE	L
R866	QRD148J-152S	1.5K 1/4W CARBON	
R867	QRG022J-471A	470 2W O.M. FILM	
R868	QRG022J-471A	470 2W O.M. FILM	
R869	QRG022J-471A	470 2W O.M. FILM	
R870	QRD125J-562	5.6K 1/2W UNF. CARBON	
R873	QRD125J-150	15 1/2W UNF. CARBON	
R874	QRD125J-152	1.5K 1/2W UNF. CARBON	
R875	QRD145J-680S	68 1/4W UNF. CARBON	G
R875	QRD145J-680S	68 1/4W UNF. CARBON	H
R875	QRD145J-680S	68 1/4W UNF. CARBON	I
R875	QRZ0062-680	68 1/4W FUSIBLE	J
R875	QRZ0062-680	68 1/4W FUSIBLE	KBS
R875	QRZ0062-680	68 1/4W FUSIBLE	L
R876	QRD145J-680S	68 1/4W UNF. CARBON	G
R876	QRD145J-680S	68 1/4W UNF. CARBON	H
R876	QRD145J-680S	68 1/4W UNF. CARBON	I
R876	QRZ0062-680	68 1/4W FUSIBLE	J
R876	QRZ0062-680	68 1/4W FUSIBLE	KBS
R876	QRZ0062-680	68 1/4W FUSIBLE	L
R877	QRD145J-680S	68 1/4W UNF. CARBON	G
R877	QRD145J-680S	68 1/4W UNF. CARBON	H
R877	QRD145J-680S	68 1/4W UNF. CARBON	I
R877	QRZ0062-680	68 1/4W FUSIBLE	J
R877	QRZ0062-680	68 1/4W FUSIBLE	KBS
R877	QRZ0062-680	68 1/4W FUSIBLE	L
R878	QRD125J-2R2	2.2 1/2W UNF. CARBON	
R879	QRD125J-2R2	2.2 1/2W UNF. CARBON	
R901	QRD148J-681S	680 1/4W CARBON	
R902	QRD148J-681S	680 1/4W CARBON	
R903	QRD148J-562S	5.6K 1/4W CARBON	
R904	QRD148J-562S	5.6K 1/4W CARBON	
R905	QRD148J-123S	12K 1/4W CARBON	
R906	QRD148J-123S	12K 1/4W CARBON	
R907	QRD148J-152S	1.5K 1/4W CARBON	
R908	QRD148J-152S	1.5K 1/4W CARBON	
R909	QRD148J-103S	10K 1/4W CARBON	
R911	QRD148J-332S	3.3K 1/4W CARBON	
R912	QRD148J-473S	47K 1/4W CARBON	
R913	QRD148J-104S	100K 1/4W CARBON	
R914	QRD148J-823S	82K 1/4W CARBON	
R915	QRD148J-683S	68K 1/4W CARBON	
R916	QRD148J-563S	56K 1/4W CARBON	
R917	QRD148J-683S	68K 1/4W CARBON	
R918	QRD148J-392S	3.9K 1/4W CARBON	
R921	QRD148J-224S	220K 1/4W CARBON	
R922	QRD148J-562S	5.6K 1/4W CARBON	
R924	QRD148J-121S	120 1/4W CARBON	
R925	QRD148J-121S	120 1/4W CARBON	
R926	QRD148J-121S	120 1/4W CARBON	
R927	QRD148J-121S	120 1/4W CARBON	
R928	QRD148J-121S	120 1/4W CARBON	
R929	QRD148J-101S	100 1/4W CARBON	
R930	QRD148J-101S	100 1/4W CARBON	
R931	QRD145J-390S	39 1/4W UNF. CARBON	
R935	QRD148J-562S	5.6K 1/4W CARBON	

△: Safety Parts

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R936	QRD148J-822S	8.2K 1/4W CARBON	
R937	QRD148J-822S	8.2K 1/4W CARBON	
R941	QRG022J-391A	390 2W O.M.FILM	
R942	QRG022J-391A	390 2W O.M.FILM	
R943	QRZ0062-101	100 1/4W FUSIBLE	L
R944	QRZ0062-101	100 1/4W FUSIBLE	L
R945	QRZ0062-101	100 1/4W FUSIBLE	L
R946	QRZ0062-101	100 1/4W FUSIBLE	L
R949	QRD148J-103S	10K 1/4W CARBON	
R950	QRD148J-103S	10K 1/4W CARBON	

△: Safety Parts

Others

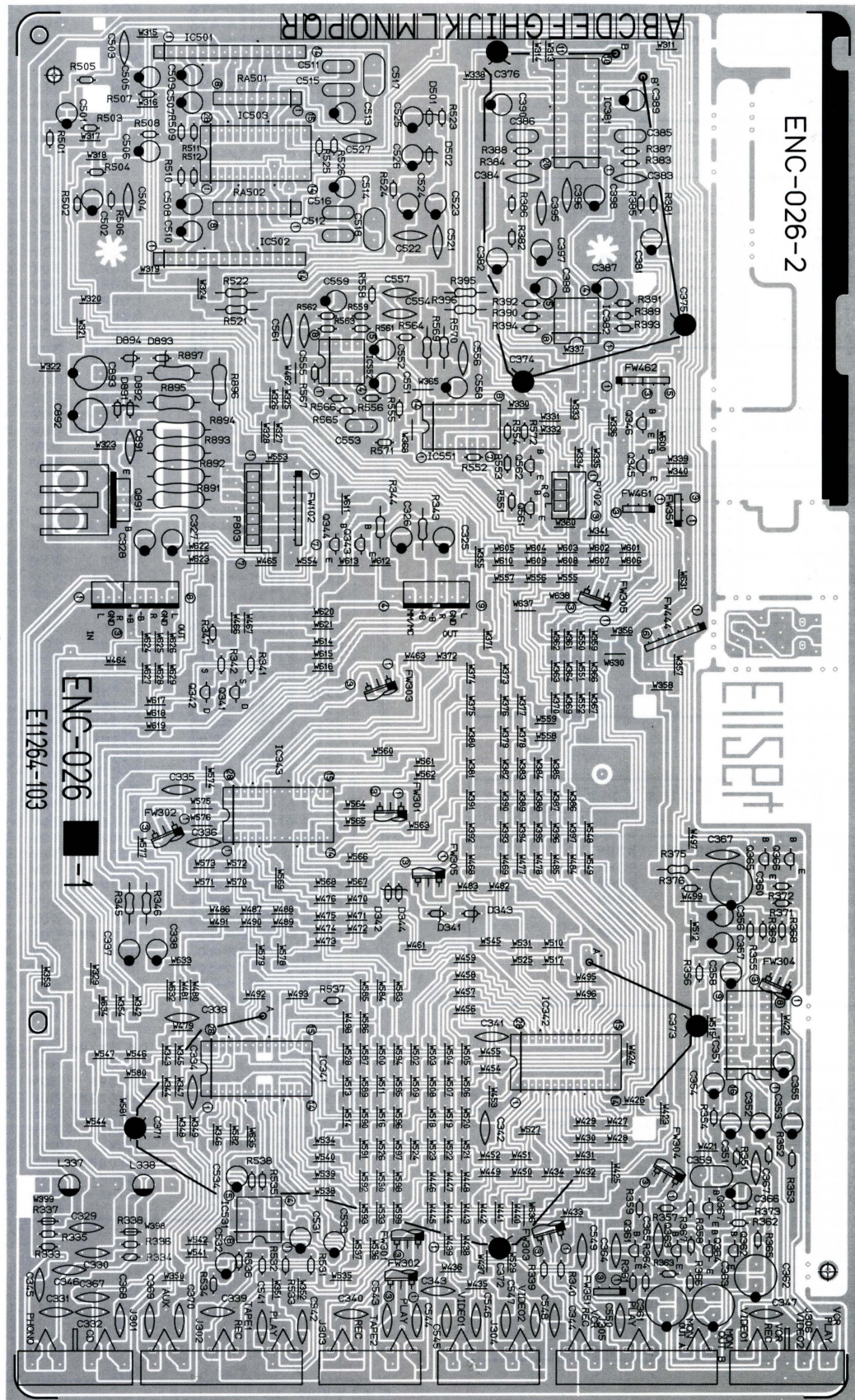
ITEM	PART NUMBER	DESCRIPTION	AREA
	EMB90TV-801A	SPEAKER TERMINAL	
	EMG7331-001	FUSE CLIP	G
	EMG7331-001	FUSE CLIP	H
	EMG7331-001	FUSE CLIP	J
	EMG7331-001	FUSE CLIP	KBS
	EMG7331-001	FUSE CLIP	L
	ENG-004G	CIRCUIT BOARD ASSY	G
	ENG-004G	CIRCUIT BOARD ASSY	H
	ENG-004G	CIRCUIT BOARD ASSY	I
	ENG-004H	CIRCUIT BOARD ASSY	J
	ENG-004H	CIRCUIT BOARD ASSY	KBS
	ENG-004I	CIRCUIT BOARD ASSY	L
△	ETP1000-41EA	POWER TRANSFORMER	J
△	ETP1000-41EA	POWER TRANSFORMER	L
△	ETP1000-41EABS	POWER TRANSFORMER	KBS
△	ETP1000-41JA	POWER TRANSFORMER	G
△	ETP1000-41JA	POWER TRANSFORMER	H
△	ETP1000-41ZA	POWER TRANSFORMER	I
	EW223A-60RR	WIER	
	E11218-003	CIRCUIT BOARD	G
	E11218-003	CIRCUIT BOARD	H
	E11218-003	CIRCUIT BOARD	I
	E11218-003	CIRCUIT BOARD	J
	E11218-003	CIRCUIT BOARD	L
	E11218-003BS	CIRCUIT BOARD	KBS
	E302267-005	HEAT SINK	
	E304105-001	BRACKET	
	E304105-002	BRACKET	
	E33754-001	TIE BAND	
	E65508-002	TAB	
	E67132-T2R5	FUSE LABEL	J
	E67132-T2R5	FUSE LABEL	KBS
	E67132-T2R5	FUSE LABEL	L
	E67764-102	TERMINAL ASSY	
	E67764-103	TERMINAL	
	E67764-202	TERMINAL	
	E67764-203	TERMINAL ASSY	
	E67764-302	TERMINAL	G
	E67764-302	TERMINAL	H
	E67764-302	TERMINAL	I
	E69826-H22B	HEAT SINK	
	E69826-H22B	HEAT SINK	
	E70225-001	EARTH PLATE	
	E70859-001	EARTH PLATE	
△	QMC0437-002	AC SOCKET	G
△	QMC0437-002	AC SOCKET	I
△	QMC0440-001	AC SOCKET	H
	SBSB3008CC	SCREW	
	SBSB3008Z	SCREW	I
	SBSB3012Z	SCREW	
	SBSB3012Z	SCREW	
	SBSE3012CC	SCREW	
J901	QMS6A30-021	JACK ASSY	
J911	QMS3533-001	JACK ASSY	
L751	EQL0001-1R0	INDUCTOR	
L752	EQL0001-1R0	INDUCTOR	
P351	EMV7112-003	SOCKET WIRE	
P801	EMV7112-003	SOCKET WIRE	
P821	EMV7112-003	SOCKET WIRE	
P911	EMV7112-003	SOCKET WIRE	
S901	QST4231-E03	PUSH SWITCH	
△RY001	ESK1D12-113	RELAY	G
△RY001	ESK1D12-113	RELAY	H
△RY001	ESK1D12-113	RELAY	I
△RY001	ESK1D12-113	RELAY	J
△RY001	ESK1D12-113	RELAY	L
△RY001	ESK1D12-113BS	RELAY	KBS
△RY901	ESK5D24-215	RELAY	

△: Safety Parts

■ ENC-026 □ Pre-Amplifier P.C. Board Ass'y

Note:

- ENC-026 □ Varies according to the area employed. See note (1) when placing an order.
- To replace either C513 or C515, demount both capacitors and mount one QFV81HJ-274 (0.27 μ F, T.F. Capacitor). The same procedure is required to replace C514 or C516.



Note (1)

P.C. Board Ass'y	Designated Areas
ENC-026 D	U.S.A., Canada U.S. Military Market & Other Countries
ENC-026 E	Europe, Australia & U.K.
ENC-026 F	West Germany

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
Q361	2SC458(C,D)	SILICON HITACHI	
Q362	2SC458(C,D)	SILICON HITACHI	
Q363	2SC458(C,D)	SILICON HITACHI	
Q364	2SA733A(P,Q)	SILICON NEC	
Q365	DTC144EN	SILICON ROHM	
Q366	DTC144EN	SILICON ROHM	
Q367	DTC144EN	SILICON ROHM	
Q561	DTA114YN	SILICON ROHM	
Q562	DTC144EN	SILICON ROHM	
Q891	2SD1666(R,S)	SILICON SANYO	

I.C.S

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
IC341	TC9164N	I.C. TOSHIBA	
IC342	TC9163N	I.C. TOSHIBA	
IC343	TC9164N	I.C. TOSHIBA	
IC351	M51320P	I.C. MITSUBISHI	
IC381	TC9177P	I.C. TOSHIBA	
IC382	NJM4560D-X	I.C.	
IC501	7EL-GEQ-001	I.C.	
IC502	7EL-GEQ-001	I.C.	
IC503	LC7522	I.C. SANYO	
IC531	M5218P	I.C. MITSUBISHI	
IC551	LC4966	I.C. SANYO	
IC552	M5218P	I.C. MITSUBISHI	

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D501	MTZ6.8C	ZENER ROHM	
D502	MTZ6.8C	ZENER ROHM	
D891	1SS133	SILICON ROHM	
D892	MTZ13C	ZENER ROHM	
D893	MTZ13C	ZENER ROHM	
D894	MTZ13C	ZENER ROHM	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C327	QETB1EM-226	22MF 25V ELECTRO	
C328	QETB1EM-226	22MF 25V ELECTRO	
C331	QCF21HP-223	0.022MF 50V CERAMIC	
C332	QCF21HP-223	0.022MF 50V CERAMIC	
C333	QCF21HP-223	0.022MF 50V CERAMIC	
C334	QCF21HP-223	0.022MF 50V CERAMIC	
C335	QCF21HP-223	0.022MF 50V CERAMIC	
C336	QCF21HP-223	0.022MF 50V CERAMIC	
C337	QETB1EM-476	47MF 25V ELECTRO	
C338	QETB1EM-476	47MF 25V ELECTRO	
C339	QCF21HP-223	0.022MF 50V CERAMIC	
C340	QCF21HP-223	0.022MF 50V CERAMIC	
C341	QCF21HP-223	0.022MF 50V CERAMIC	
C342	QCF21HP-223	0.022MF 50V CERAMIC	
C343	QCF21HP-223	0.022MF 50V CERAMIC	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C344	QCF21HP-223	0.022MF 50V CERAMIC	F
C345	QCS21HJ-221	220PF 50V CERAMIC	F
C346	QCS21HJ-221	220PF 50V CERAMIC	F
C347	QCF21HP-223	0.022MF 50V CERAMIC	
C351	QETB1CM-476	47MF 16V ELECTRO	
C352	QETB1CM-476	47MF 16V ELECTRO	
C353	QETB1CM-476	47MF 16V ELECTRO	
C354	QETB1CM-476	47MF 16V ELECTRO	
C355	QETB1CM-476	47MF 16V ELECTRO	
C356	QETB1CM-476	47MF 16V ELECTRO	
C357	QETB1CM-476	47MF 16V ELECTRO	
C358	QETB1CM-476	47MF 16V ELECTRO	
C359	QFN81HK-104	0.1MF 50V MYLAR	
C360	QETB1CM-108	1000MF 16V ELECTRO	
C361	QETB1AM-108	1000MF 10V ELECTRO	
C362	QETB1AM-108	1000MF 10V ELECTRO	
C363	QETB1AM-108	1000MF 10V ELECTRO	
C364	QCS21HJ-270	27PF 50V CERAMIC	
C365	QCS21HJ-270	27PF 50V CERAMIC	
C366	QETB1EM-106	10MF 25V ELECTRO	
C371	QCS21HJ-101	100PF 50V CERAMIC	
C372	QCS21HJ-101	100PF 50V CERAMIC	
C373	QCS21HJ-101	100PF 50V CERAMIC	
C374	QCS21HJ-101	100PF 50V CERAMIC	
C375	QCS21HJ-101	100PF 50V CERAMIC	
C376	QCS21HJ-101	100PF 50V CERAMIC	
C381	QETB1HM-475	4.7MF 50V ELECTRO	
C382	QETB1HM-475	4.7MF 50V ELECTRO	
C383	QCS21HJ-181	180PF 50V CERAMIC	
C384	QCS21HJ-181	180PF 50V CERAMIC	
C385	QFN81HK-333	0.033MF 50V MYLAR	
C386	QFN81HK-333	0.033MF 50V MYLAR	
C387	QETB1HM-105	1MF 50V ELECTRO	
C388	QETB1HM-105	1MF 50V ELECTRO	
C389	QETB1EM-106	10MF 25V ELECTRO	
C390	QETB1EM-106	10MF 25V ELECTRO	
C395	QCF21HP-223	0.022MF 50V CERAMIC	
C396	QCF21HP-223	0.022MF 50V CERAMIC	
C397	QETB1EM-476	47MF 25V ELECTRO	
C398	QETB1EM-476	47MF 25V ELECTRO	
C501	QETB1HM-475	4.7MF 50V ELECTRO	
C502	QETB1HM-475	4.7MF 50V ELECTRO	
C503	QCS21HJ-470	47PF 50V CERAMIC	
C504	QCS21HJ-470	47PF 50V CERAMIC	
C505	QETB1HM-475	4.7MF 50V ELECTRO	
C506	QETB1HM-475	4.7MF 50V ELECTRO	
C507	QETB1HM-475	4.7MF 50V ELECTRO	
C508	QETB1HM-475	4.7MF 50V ELECTRO	
C509	QETB1HM-475	4.7MF 50V ELECTRO	
C510	QETB1HM-475	4.7MF 50V ELECTRO	
C511	QFN81HK-104	0.1MF 50V MYLAR	
C512	QFN81HK-104	0.1MF 50V MYLAR	
C515	QFV81HJ-274	0.27MF 50V T.FILM	
C516	QFV81HJ-274	0.27MF 50V T.FILM	
C517	QFV81HJ-684	0.68MF 50V T.FILM	
C518	QFV81HJ-684	0.68MF 50V T.FILM	
C521	QCF21HP-223	0.022MF 50V CERAMIC	
C522	QCF21HP-223	0.022MF 50V CERAMIC	
C523	QETB1HM-475	4.7MF 50V ELECTRO	
C524	QETB1HM-475	4.7MF 50V ELECTRO	
C525	QETB1HM-475	4.7MF 50V ELECTRO	
C526	QETB1HM-475	4.7MF 50V ELECTRO	
C527	QCF21HP-223	0.022MF 50V CERAMIC	
C531	QETB1EM-106	10MF 25V ELECTRO	
C532	QETB1EM-106	10MF 25V ELECTRO	
C533	QETB1EM-106	10MF 25V ELECTRO	
C534	QETB1EM-106	10MF 25V ELECTRO	
C551	QETB1HM-475	4.7MF 50V ELECTRO	
C552	QETB1HM-475	4.7MF 50V ELECTRO	
C553	QFN81HK-333	0.033MF 50V MYLAR	
C554	QCY21HK-472	4700PF 50V CERAMIC	
C555	QCS21HJ-271	270PF 50V CERAMIC	
C556	QCF21HP-223	0.022MF 50V CERAMIC	
C557	QCF21HP-223	0.022MF 50V CERAMIC	
C558	QETB1EM-106	10MF 25V ELECTRO	
C559	QETB1EM-106	10MF 25V ELECTRO	
C891	QCF21HP-472	4700PF 50V CERAMIC	
C892	QETB1EM-107	100MF 25V ELECTRO	
C893	QETB1HM-476	47MF 50V ELECTRO	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
△ R339	QRD161J-471	470 1/6W CARBON	
△ R340	QRD161J-471	470 1/6W CARBON	
△ R343	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R343	QRZ0062-680	68 1/4W FUSIBLE	E
△ R343	QRZ0062-680	68 1/4W FUSIBLE	F
△ R344	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R344	QRZ0062-680	68 1/4W FUSIBLE	E
△ R344	QRZ0062-680	68 1/4W FUSIBLE	F
△ R345	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R345	QRZ0062-680	68 1/4W FUSIBLE	E
△ R345	QRZ0062-680	68 1/4W FUSIBLE	F
△ R346	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R346	QRZ0062-680	68 1/4W FUSIBLE	E
△ R346	QRZ0062-680	68 1/4W FUSIBLE	F
△ R351	QRD161J-750	75 1/6W CARBON	
△ R352	QRD161J-750	75 1/6W CARBON	
△ R353	QRD161J-750	75 1/6W CARBON	
△ R354	QRD161J-750	75 1/6W CARBON	
△ R355	QRD161J-750	75 1/6W CARBON	
△ R356	QRD161J-821	820 1/6W CARBON	
△ R357	QRD161J-101	100 1/6W CARBON	
△ R358	QRD161J-102	1K 1/6W CARBON	
△ R359	QRD161J-100	10 1/6W CARBON	
△ R361	QRD161J-151	150 1/6W CARBON	
△ R362	QRD161J-331	330 1/6W CARBON	
△ R363	QRD161J-331	330 1/6W CARBON	
△ R364	QRD161J-680	68 1/6W CARBON	
△ R365	QRD161J-680	68 1/6W CARBON	
△ R366	QRD161J-750	75 1/6W CARBON	
△ R367	QRD161J-182	1.8K 1/6W CARBON	
△ R368	QRD161J-563	56K 1/6W CARBON	
△ R369	QRD161J-563	56K 1/6W CARBON	
△ R371	QRD161J-103	10K 1/6W CARBON	
△ R372	QRD161J-103	10K 1/6W CARBON	
△ R373	QRD161J-102	1K 1/6W CARBON	
△ R375	QRD145J-220S	22 1/4W UNF. CARBON	D
△ R375	QRZ0062-220	22 1/4W FUSIBLE	E
△ R375	QRZ0062-220	22 1/4W FUSIBLE	F
△ R376	QRD161J-104	100K 1/6W CARBON	
△ R381	QRD161J-104	100K 1/6W CARBON	
△ R382	QRD161J-104	100K 1/6W CARBON	
△ R383	QRD161J-105	1M 1/6W CARBON	
△ R384	QRD161J-105	1M 1/6W CARBON	
△ R385	QRD161J-563	56K 1/6W CARBON	
△ R386	QRD161J-563	56K 1/6W CARBON	
△ R387	QRD161J-563	56K 1/6W CARBON	
△ R388	QRD161J-563	56K 1/6W CARBON	
△ R389	QRD161J-103	10K 1/6W CARBON	
△ R390	QRD161J-103	10K 1/6W CARBON	
△ R391	QRD161J-105	1M 1/6W CARBON	
△ R392	QRD161J-105	1M 1/6W CARBON	
△ R393	QRD161J-103	10K 1/6W CARBON	
△ R394	QRD161J-103	10K 1/6W CARBON	
△ R395	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R395	QRZ0062-680	68 1/4W FUSIBLE	E
△ R395	QRZ0062-680	68 1/4W FUSIBLE	F
△ R396	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R396	QRZ0062-680	68 1/4W FUSIBLE	E
△ R396	QRZ0062-680	68 1/4W FUSIBLE	F
△ R501	QRD161J-273	27K 1/6W CARBON	
△ R502	QRD161J-273	27K 1/6W CARBON	
△ R503	QRD161J-393	39K 1/6W CARBON	
△ R504	QRD161J-393	39K 1/6W CARBON	
△ R505	QRD161J-823	82K 1/6W CARBON	
△ R506	QRD161J-823	82K 1/6W CARBON	
△ R507	QRD161J-104	100K 1/6W CARBON	
△ R508	QRD161J-104	100K 1/6W CARBON	
△ R509	QRD161J-224	220K 1/6W CARBON	
△ R510	QRD161J-224	220K 1/6W CARBON	
△ R511	QRD161J-224	220K 1/6W CARBON	
△ R512	QRD161J-224	220K 1/6W CARBON	
△ R521	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R521	QRZ0062-680	68 1/4W FUSIBLE	E
△ R521	QRZ0062-680	68 1/4W FUSIBLE	F
△ R522	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R522	QRZ0062-680	68 1/4W FUSIBLE	E
△ R522	QRZ0062-680	68 1/4W FUSIBLE	F
△ R523	QRD161J-821	820 1/6W CARBON	
△ R524	QRD161J-821	820 1/6W CARBON	
△ R525	QRD161J-681	680 1/6W CARBON	
△ R526	QRD161J-272	2.7K 1/6W CARBON	
△ R531	QRD161J-102	1K 1/6W CARBON	
△ R532	QRD161J-102	1K 1/6W CARBON	
△ R533	QRD161J-823	82K 1/6W CARBON	
△ R534	QRD161J-823	82K 1/6W CARBON	
△ R535	QRD161J-124	120K 1/6W CARBON	
△ R536	QRD161J-124	120K 1/6W CARBON	
△ R537	QRD161J-474	470K 1/6W CARBON	
△ R538	QRD161J-474	470K 1/6W CARBON	
△ R551	QRD161J-563	56K 1/6W CARBON	

△: Safety Parts

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
△ R552	QRD161J-563	56K 1/6W CARBON	
△ R553	QRD161J-563	56K 1/6W CARBON	
△ R554	QRD161J-563	56K 1/6W CARBON	
△ R555	QRD161J-223	22K 1/6W CARBON	
△ R556	QRD161J-273	27K 1/6W CARBON	
△ R558	QRD161J-474	470K 1/6W CARBON	
△ R559	QRD161J-223	22K 1/6W CARBON	
△ R561	QRD161J-104	100K 1/6W CARBON	
△ R562	QRD161J-154	150K 1/6W CARBON	
△ R563	QRD161J-394	390K 1/6W CARBON	
△ R564	QRD161J-474	470K 1/6W CARBON	
△ R565	QRD161J-333	33K 1/6W CARBON	
△ R566	QRD161J-683	68K 1/6W CARBON	
△ R567	QRD161J-273	27K 1/6W CARBON	
△ R569	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R569	QRZ0062-680	68 1/4W FUSIBLE	E
△ R569	QRZ0062-680	68 1/4W FUSIBLE	F
△ R570	QRD145J-680S	68 1/4W UNF. CARBON	D
△ R570	QRZ0062-680	68 1/4W FUSIBLE	E
△ R570	QRZ0062-680	68 1/4W FUSIBLE	F
△ R571	QRD161J-474	470K 1/6W CARBON	
△ R572	QRD161J-474	470K 1/6W CARBON	
△ R891	QRG022J-391A	390 2W O.M. FILM	
△ R892	QRG022J-471A	470 2W O.M. FILM	
△ R893	QRG022J-471A	470 2W O.M. FILM	
△ R894	QRG022J-471A	470 2W O.M. FILM	
△ R895	QRD125J-472	4.7K 1/2W UNF. CARBON	
△ R896	QRD125J-821	820 1/2W UNF. CARBON	
△ R897	QRD125J-122	1.2K 1/2W UNF. CARBON	
△ RA501	QRB075J-474	470K 7W ARRAY	
△ RA502	QRB075J-474	470K 7W ARRAY	

△: Safety Parts

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
△	ENH-060F	CIRCUIT BOARD ASSY	D
△	ENH-060F	CIRCUIT BOARD ASSY	E
△	ENH-060G	CIRCUIT BOARD ASSY	F
△	E11264-103	CIRCUIT BOARD	
△	E70945-H25B	HEAT SINK	
△	SBSB3012Z	SCREW	
△ J301	EMN00TV-405A	PIN JACK ASSY	
△ J302	EMN00TV-602A	PIN JACK ASSY	
△ J303	EMN00TV-402A	PIN JACK ASSY	
△ J304	EMN00TV-402A	PIN JACK ASSY	
△ J305	EMN00TV-602A	PIN JACK ASSY	
△ J306	EMN00TV-405A	PIN JACK ASSY	
△ P702	EMV7112-003	SOCKET WIRE	
△ P803	EMV7112-007	SOCKET WIRE	

Note (1)

P.C. Board Ass'y	Designated Area
ENB-035 A	U.S.A
ENB-035 B	Canada
ENB-035 C	U.S. Military Market & Other Countries
ENB-035 D	Europe, Australia & U.K.
ENB-035 E	West Germany

Transistors

TRANSISTORS					
△	ITEM	PART NUMBER	DESCRIPTION		AREA
				MAKER	
	Q421	DTC144EN	SILICON	ROHM	
	Q441	DTC144EN	SILICON	ROHM	
	Q471	2SC458(C,D)	SILICON	HITACHI	
	Q472	2SC458(C,D)	SILICON	HITACHI	
	Q481	2SC458(C,D)	SILICON	HITACHI	
	Q491	2SC458(C,D)	SILICON	HITACHI	
	Q492	2SC458(C,D)	SILICON	HITACHI	
	Q493	DTC144EN	SILICON	ROHM	

A	ITEM	PART NUMBER	DESCRIPTION		AREA
				MAKER	
	IC421	TC9302AF-013BS	I.C.	TOSHIBA	
	IC422	TC9173P	I.C.	TOSHIBA	
	IC423	TC5514APL-3	I.C.	TOSHIBA	
	IC441	UPD7507HG-507	I.C.	NEC	
	IC445	TC9154AP	I.C.	TOSHIBA	
	IC446	NJM4558D	I.C.		
	IC451	UPD7225G00	I.C.	NEC	
	IC461	MN1758JSI	I.C.	MATSUSHITA	
	IC481	UPC1473HA	I.C.	NEC	

Diodes

ITEM	PART NUMBER	DESCRIPTION		AREA
		MAKER		
D421	1SS133	SILICON	ROHM	C D E C D E
D423	1SS133	SILICON	ROHM	
D424	1SS133	SILICON	ROHM	
D425	1SS133	SILICON	ROHM	
D426	1SS133	SILICON	ROHM	
D427	1SS133	SILICON	ROHM	
D427	1SS133	SILICON	ROHM	
D427	1SS133	SILICON	ROHM	
D429	1SS133	SILICON	ROHM	
D429	1SS133	SILICON	ROHM	
D429	1SS133	SILICON	ROHM	
D431	1SS133	SILICON	ROHM	
D432	1SS133	SILICON	ROHM	
D433	1SS133	SILICON	ROHM	
D434	1SS133	SILICON	ROHM	
D435	1SS133	SILICON	ROHM	
D436	1SS133	SILICON	ROHM	
D437	1SS133	SILICON	ROHM	
D441	1SS133	SILICON	ROHM	
D442	1SS133	SILICON	ROHM	
D443	1SS133	SILICON	ROHM	
D444	1SS133	SILICON	ROHM	
D445	1SS133	SILICON	ROHM	
D446	1SS133	SILICON	ROHM	
D448	MTZ5.6C	ZENER	ROHM	
D449	MTZ5.6C	ZENER	ROHM	
D451	1SS133	SILICON	ROHM	
D456	1SS133	SILICON	ROHM	
D457	1SS133	SILICON	ROHM	
D458	1SS133	SILICON	ROHM	
D459	1SS133	SILICON	ROHM	
D461	1SS133	SILICON	ROHM	
D462	1SS133	SILICON	ROHM	
D463	1SS133	SILICON	ROHM	
D464	1SS133	SILICON	ROHM	

Diodes

ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER	
D465	1SS133	SILICON	ROHM	
D466	1SS133	SILICON	ROHM	
D470	1SS133	SILICON	ROHM	
D472	1SS133	SILICON	ROHM	
D473	1SS133	SILICON	ROHM	
D474	MTZ5.1B	ZENER		
D477	1SS133	SILICON	ROHM	
D478	1SS133	SILICON	ROHM	
D481	PD49PI	SILICON		
D482	SLH-34VC3F	L.E.D.	ROHM	
D485	1SS133	SILICON	ROHM	
D486	1SS133	SILICON	ROHM	
D487	1SS133	SILICON	ROHM	
D488	MTZ5.6C	ZENER	ROHM	
D492	1SS133	SILICON	ROHM	
D497	MTZ12C	ZENER	ROHM	A
D497	MTZ12C	ZENER	ROHM	B
D497	MTZ12C	ZENER	ROHM	C
D497	RD13EB3	ZENER	NEC	D
D497	RD13EB3	ZENER	NEC	E
D498	MTZ12C	ZENER	ROHM	A
D498	MTZ12C	ZENER	ROHM	B
D498	MTZ12C	ZENER	ROHM	C
D498	RD13EB3	ZENER	NEC	D
D498	RD13EB3	ZENER	NEC	E
D499	MTZ12C	ZENER	ROHM	A
D499	MTZ12C	ZENER	ROHM	B
D499	MTZ12C	ZENER	ROHM	C
D499	RD13EB3	ZENER	NEC	D
D499	RD13EB3	ZENER	NEC	E

Capacitors

ITEM	PART NUMBER	DESCRIPTION			AREA
C421	QCS21HJ-120	12PF	50V	CERAMIC	
C422	QCS21HJ-120	12PF	50V	CERAMIC	
C423	QETB1AM-107	100MF	10V	ELECTRO	
C424	QCF21HP-223	0.022MF	50V	CERAMIC	
C425	QCF21HP-223	0.022MF	50V	CERAMIC	
C426	QETB1EM-106	10MF	25V	ELECTRO	
C427	QETB1EM-106	10MF	25V	ELECTRO	
C440	QETBOJM-477	470MF	6.3V	ELECTRO	
C441	QCS21HJ-330	33PF	50V	CERAMIC	
C442	QCS21HJ-330	33PF	50V	CERAMIC	
C443	QETBOJM-227	220MF	6.3V	ELECTRO	
C444	QCF21HP-223	0.022MF	50V	CERAMIC	
C447	QCF21HP-223	0.022MF	50V	CERAMIC	
C448	QCF21HP-223	0.022MF	50V	CERAMIC	
C449	QETB1HM-474	0.47MF	50V	ELECTRO	
C450	QETB1HM-474	0.47MF	50V	ELECTRO	
C451	QETB1HM-474	0.47MF	50V	ELECTRO	
C452	QETB1EM-106	10MF	25V	ELECTRO	
C455	QETB1EM-106	10MF	25V	ELECTRO	
C456	QCF21HP-223	0.022MF	50V	CERAMIC	
C457	QCF21HP-223	0.022MF	50V	CERAMIC	
C461	QCS21HJ-330	33PF	50V	CERAMIC	
C462	QCS21HJ-330	33PF	50V	CERAMIC	
C463	QETBOJM-477	470MF	6.3V	ELECTRO	
C464	QCF21HP-223	0.022MF	50V	CERAMIC	
C481	QETB1EM-106	10MF	25V	ELECTRO	
C482	QETB1EM-476	47MF	25V	ELECTRO	
C483	QETB1HM-475	4.7MF	50V	ELECTRO	
C484	QETB1EM-106	10MF	25V	ELECTRO	
C485	QFN81HK-333	0.033MF	50V	MYLAR	
C486	QCY21HK-332	3300PF	50V	CERAMIC	
C491	EEZ0502-479	47MF		ELECTRO	
C492	QETB1HM-225	2.2MF	50V	ELECTRO	
C493	QCF21HP-223	0.022MF	50V	CERAMIC	
C494	QETB1AM-476	47MF	10V	ELECTRO	
C495	QETB1HM-225	2.2MF	50V	ELECTRO	
C499	QETBOJM-227	220MF	6.3V	ELECTRO	

Resistors

ITEM	PART NUMBER	DESCRIPTION			AREA
R417	QRD161J-104	100K	1/6W	CARBON	
R421	QRD161J-333	33K	1/6W	CARBON	
R422	QRD161J-332	3.3K	1/6W	CARBON	
R424	QRD161J-104	100K	1/6W	CARBON	
R425	QRD161J-473	47K	1/6W	CARBON	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R426	QRD161J-103	10K 1/6W CARBON	
R427	QRD161J-103	10K 1/6W CARBON	
R428	QRD161J-103	10K 1/6W CARBON	
R429	QRD161J-103	10K 1/6W CARBON	
R430	QRD161J-332	3.3K 1/6W CARBON	
R431	QRD161J-222	2.2K 1/6W CARBON	
R432	QRD161J-104	100K 1/6W CARBON	
R433	QRD161J-104	100K 1/6W CARBON	
R435	QRD161J-104	100K 1/6W CARBON	
R436	QRD161J-104	100K 1/6W CARBON	
R437	QRD161J-104	100K 1/6W CARBON	
R438	QRD161J-104	100K 1/6W CARBON	
R441	QRD161J-102	1K 1/6W CARBON	
R444	QRD161J-474	470K 1/6W CARBON	
R445	QRD161J-561	560 1/6W CARBON	
R446	QRD161J-474	470K 1/6W CARBON	
R447	QRD161J-474	470K 1/6W CARBON	
R448	QRD161J-102	1K 1/6W CARBON	
R449	QRD161J-274	270K 1/6W CARBON	
R450	QRD145J-681S	680 1/4W UNF. CARBON	
R451	QRD145J-821S	820 1/4W UNF. CARBON	
R453	QRD161J-104	100K 1/6W CARBON	
R454	QRD161J-474	470K 1/6W CARBON	
R455	QRD161J-184	180K 1/6W CARBON	
R456	QRD161J-102	1K 1/6W CARBON	
R457	QRD161J-102	1K 1/6W CARBON	
R458	QRD161J-474	470K 1/6W CARBON	
R459	QRD161J-474	470K 1/6W CARBON	
R460	QRD161J-474	470K 1/6W CARBON	
R461	QRD161J-104	100K 1/6W CARBON	
R462	QRD161J-473	47K 1/6W CARBON	
R463	QRD161J-473	47K 1/6W CARBON	
R464	QRD161J-473	47K 1/6W CARBON	
R465	QRD161J-473	47K 1/6W CARBON	
R466	QRD161J-473	47K 1/6W CARBON	
R467	QRD161J-102	1K 1/6W CARBON	
R468	QRD145J-681S	680 1/4W UNF. CARBON	
R469	QRD161J-474	470K 1/6W CARBON	
R470	QRD161J-474	470K 1/6W CARBON	
R471	QRD161J-473	47K 1/6W CARBON	
R472	QRD161J-473	47K 1/6W CARBON	
R473	QRD161J-471	470 1/6W CARBON	
R474	QRD161J-473	47K 1/6W CARBON	
R475	QRD161J-473	47K 1/6W CARBON	
R476	QRD161J-103	10K 1/6W CARBON	
R477	QRD161J-474	470K 1/6W CARBON	
R478	QRD161J-474	470K 1/6W CARBON	
R479	QRD161J-474	470K 1/6W CARBON	
R480	QRD161J-474	470K 1/6W CARBON	
R481	QRD161J-102	1K 1/6W CARBON	
R482	QRD161J-220	22 1/6W CARBON	
R483	QRD161J-104	100K 1/6W CARBON	
R484	QRD161J-104	100K 1/6W CARBON	
R485	QRD161J-221	220 1/6W CARBON	
R487	QRD161J-223	22K 1/6W CARBON	
R491	QRD161J-472	4.7K 1/6W CARBON	
R492	QRD161J-102	1K 1/6W CARBON	
R493	QRD161J-472	4.7K 1/6W CARBON	
R494	QRD161J-223	22K 1/6W CARBON	
R495	QRD161J-473	47K 1/6W CARBON	
R496	QRD145J-222S	2.2K 1/4W UNF. CARBON	D
R496	QRD145J-222S	2.2K 1/4W UNF. CARBON	E
R496	QRD161J-222	2.2K 1/6W CARBON	A
R496	QRD161J-222	2.2K 1/6W CARBON	B
R496	QRD161J-222	2.2K 1/6W CARBON	C
R497	QRD161J-331	330 1/6W CARBON	
R498	QRD161J-103	10K 1/6W CARBON	
R499	QRD161J-223	22K 1/6W CARBON	
RA421	QRB055J-473	47K 5W ARRAY	
RA441	QRB045J-104	100K 4W ARRAY	
RA442	QRB045J-104	100K 4W ARRAY	
RA461	QRB045J-103	10K 4W ARRAY	
RA462	QRB045J-473	47K 4W ARRAY	
RA463	QRB065J-473	47K 6W ARRAY	

△: Safety Parts

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
P440	QMV5005-003K	PULAG ASSY	
P441	EMV7112-005	SOCKET WIRE	
P442	EMV7112-006	SOCKET WIRE	
P443	EMV7112-007	SOCKET WIRE	
P444	EMV7112-006	SOCKET WIRE	
P461	EMV7112-003	SOCKET WIRE	
P462	EMV7112-003	SOCKET WIRE	
P463	EMV7112-004	SOCKET WIRE	
P464	EMV7112-006	SOCKET WIRE	
P465	EMV7112-003	SOCKET WIRE	
P481	EMV7112-003	SOCKET WIRE	
P804	EMV7112-004	SOCKET WIRE	
P805	QMV5004-003K	PULAG ASSY	
P911	EMV7112-003	SOCKET WIRE	
LC421	ELU0002-011	LCD PANEL	
LC451	ELU0002-013	LCD PANEL	
SW421	ESP0001-007	PUSH SWITCH	
SW422	ESP0001-007	PUSH SWITCH	
SW423	ESP0001-007	PUSH SWITCH	
SW424	ESP0001-007	PUSH SWITCH	
SW425	ESP0001-007	PUSH SWITCH	
SW426	ESP0001-007	PUSH SWITCH	
SW427	ESP0001-007	PUSH SWITCH	
SW428	ESP0001-007	PUSH SWITCH	
SW429	ESP0001-007	PUSH SWITCH	
SW430	ESP0001-007	PUSH SWITCH	
SW431	ESP0001-007	PUSH SWITCH	A
SW431	ESP0001-007	PUSH SWITCH	B
SW432	ESP0001-007	PUSH SWITCH	
SW433	ESP0001-007	PUSH SWITCH	
SW434	ESP0001-007	PUSH SWITCH	
SW435	ESP0001-007	PUSH SWITCH	
SW436	ESP0001-007	PUSH SWITCH	
SW437	ESP0001-007	PUSH SWITCH	
SW438	ESP0001-007	PUSH SWITCH	
SW439	ESP0001-007	PUSH SWITCH	
SW440	ESP0001-007	PUSH SWITCH	
SW441	ESP0001-007	PUSH SWITCH	
SW442	ESP0001-007	PUSH SWITCH	
SW443	ESP0001-007	PUSH SWITCH	
SW444	ESP0001-007	PUSH SWITCH	
SW445	ESP0001-007	PUSH SWITCH	
SW446	ESP0001-007	PUSH SWITCH	
SW447	ESP0001-007	PUSH SWITCH	
SW448	ESP0001-007	PUSH SWITCH	
SW449	ESP0001-007	PUSH SWITCH	
SW450	ESP0001-007	PUSH SWITCH	
SW451	ESP0001-007	PUSH SWITCH	
SW452	ESP0001-007	PUSH SWITCH	
SW453	ESP0001-007	PUSH SWITCH	
SW454	ESP0001-007	PUSH SWITCH	
SW455	ESP0001-007	PUSH SWITCH	
SW456	ESP0001-007	PUSH SWITCH	
SW457	ESP0001-007	PUSH SWITCH	
SW458	ESP0001-007	PUSH SWITCH	
SW459	ESP0001-007	PUSH SWITCH	
SW460	ESP0001-007	PUSH SWITCH	
SW461	ESP0001-007	PUSH SWITCH	
SW462	ESP0001-007	PUSH SWITCH	
SW463	ESP0001-007	PUSH SWITCH	
SW464	ESP0001-007	PUSH SWITCH	
SW471	ESP0001-007	PUSH SWITCH	
SW472	ESP0001-007	PUSH SWITCH	
SW473	ESP0001-007	PUSH SWITCH	
SW474	ESP0001-007	PUSH SWITCH	
SW475	ESP0001-007	PUSH SWITCH	
SW476	ESP0001-007	PUSH SWITCH	
SW477	ESP0001-007	PUSH SWITCH	
SW478	ESP0001-007	PUSH SWITCH	
SW479	ESP0001-007	PUSH SWITCH	
SW481	ESP0001-007	PUSH SWITCH	
SW482	ESP0001-007	PUSH SWITCH	
SW483	ESP0001-007	PUSH SWITCH	
SW484	ESP0001-007	PUSH SWITCH	
SW485	ESP0001-007	PUSH SWITCH	
SW486	ESP0001-007	PUSH SWITCH	
SW487	ESP0001-007	PUSH SWITCH	
SW488	ESP0001-007	PUSH SWITCH	
SW489	ESP0001-007	PUSH SWITCH	
SW490	ESP0001-007	PUSH SWITCH	
SW491	ESP0001-007	PUSH SWITCH	
SW492	ESP0001-007	PUSH SWITCH	
SW499	ESP0001-007	PUSH SWITCH	
XT421	ECX0007-200KC	CRYSTAL	
XT441	ECX0004-190KU	RESONATOR	
XT461	ECX0007-200KM	RESONATOR	

Others

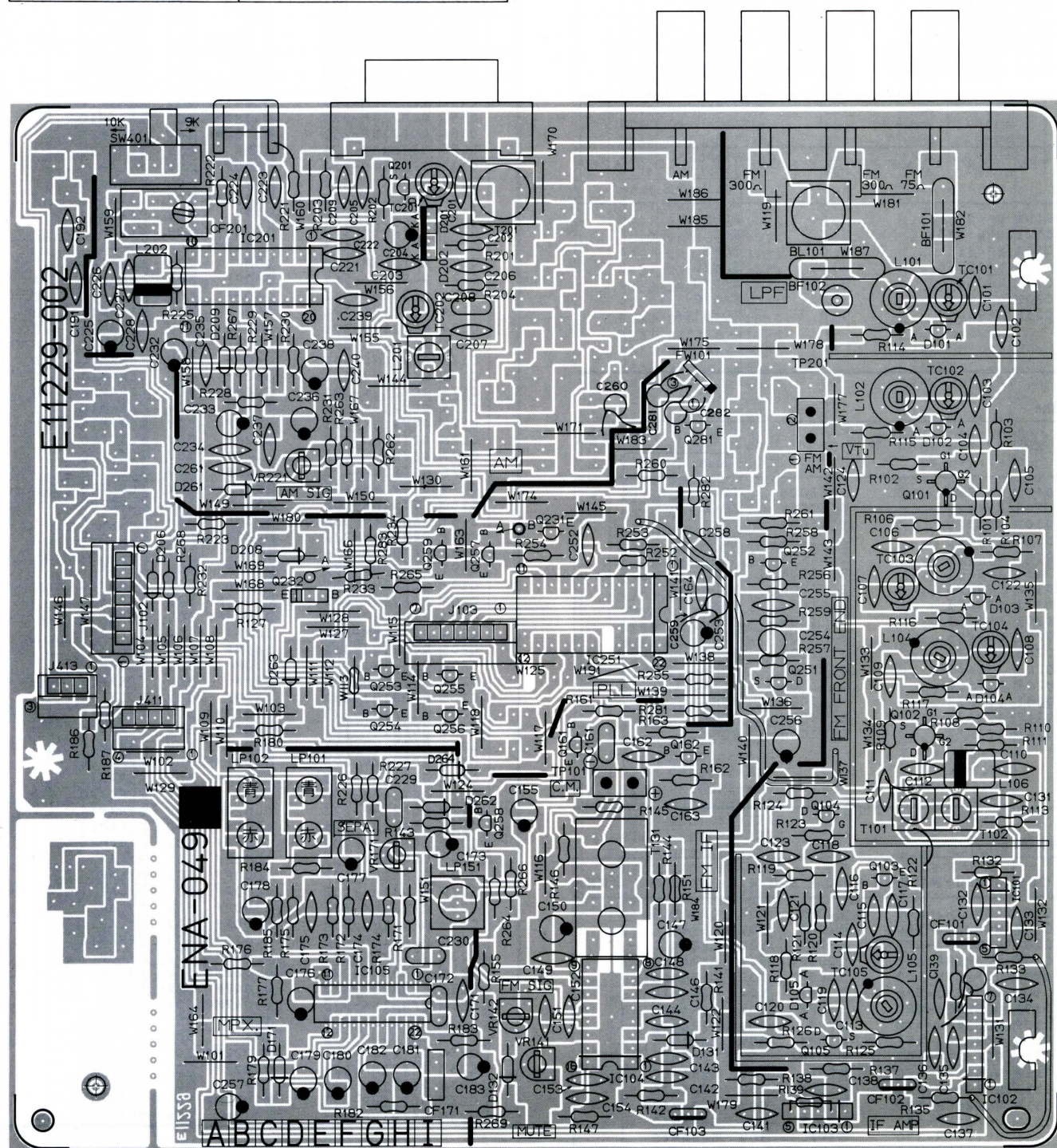
ITEM	PART NUMBER	DESCRIPTION	AREA
E11239-003		CIRCUIT BOARD	
E45524-002		FUSE CLIP	
E48269-001		SPACER	D
E48269-001		SPACER	E
E71504-001		SHIELD COVER	
L481	EQL2103-562	INDUCTOR	
P401	QMV5004-003K	PULAG ASSY	
P420	QMV5005-004K	PULAG ASSY	
P421	EMV7112-005	SOCKET WIRE	
P422	EMV7112-004	SOCKET WIRE	

■ ENA-049 □ Tuner P.C. Board Ass'y

Note: ENA-049 □ Varies according to the area employed. See note (1) when placing an order.

Note (1)

P.C. Board Ass'y	Designated Areas
ENA-049 A	U.S.A. & Canada
ENA-049 C	U.S. Military Market & Other Countries
ENA-049 D	Australia
ENA-049 E	Europe & U.K.
ENA-049 F	West Germany



Transistors

A	ITEM	PART NUMBER	DESCRIPTION		AREA
				MAKER	
	Q101	3SK114(O)	F.E.T.	TOSHIBA	
	Q102	3SK114(O)	F.E.T.	TOSHIBA	
	Q103	2SC461(C)	SILICON	HITACHI	
	Q104	2SK606(Q,R)	F.E.T	MATSUSHITA	
	Q105	2SK168(E,F)	F.E.T	HITACHI	
	Q161	DTC114YN	SILICON	ROHM	
	Q162	2SC535(B,C)	SILICON	HITACHI	
	Q201	2SK301(Q,R)	F.E.T	MATSUSHITA	
	Q231	DTC114YN	SILICON	ROHM	
	Q232	DTC144EFF	SILICON	ROHM	
	Q251	2SK301(Q1)	F.E.T	MATSUSHITA	
	Q252	2SC458(D)	SILICON	HITACHI	
	Q253	DTC114YN	SILICON	ROHM	
	Q254	DTA114YN	SILICON	ROHM	A
	Q254	DTA114YN	SILICON	ROHM	C
	Q254	DTA114YN	SILICON	ROHM	D
	Q254	2SB562(C)	SILICON	HITACHI	E
	Q254	2SB562(C)	SILICON	HITACHI	F
	Q255	DTC114YN	SILICON	ROHM	
	Q256	DTA114YN	SILICON	POHM	
	Q257	DTC114YN	SILICON	ROHM	
	Q258	DTC114YN	SILICON	ROHM	
	Q259	2SC1685(R,S)	SILICON	MATSUSHITA	
	Q281	2SC1685(R,S)	SILICON	MATSUSHITA	A

ICs

△	ITEM	PART NUMBER	DESCRIPTION		AREA
				MAKER	
	IC101	BA401	I.C.	ROHM	
	IC102	UPC1163H	I.C.	NEC	
	IC103	BA401	I.C.	ROHM	
	IC104	LA1235B	I.C.	SANYO	
	IC105	LA3401	I.C.	SANYO	
	IC201	LA1245	I.C.	SANYO	
	IC251	TC9171P	I.C.	TOSHIBA	

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
				MAKER	
	D101	KV1320	SILICON	TOKO	
	D102	KV1320	SILICON	TOKO	
	D103	KV1320	SILICON	TOKO	
	D104	KV1320	SILICON	TOKO	
	D105	KV1320	SILICON	TOKO	
	D131	1S2473	SILICON	ROHM	
	D132	1S2473	SILICON	ROHM	
	D171	1S2473	SILICON	ROHM	
	D201	KV1226	SILICON	TOKO	
	D202	KV1226	SILICON	TOKO	
	D206	1S2473	SILICON	ROHM	
	D208	1S2473	SILICON	ROHM	
	D209	1SS108	SILICON	HITACHI	
	D261	1S2473	SILICON	ROHM	
	D262	1S2473	SILICON	ROHM	
	D263	1S2473	SILICON	ROHM	

Capacitors

ITEM	PART NUMBER	DESCRIPTION			AREA
C101	QCS21HJ-5R0	5.0PF	50V	CERAMIC	
C102	QCS21HJ-1R0	1.0PF	50V	CERAMIC	
C104	QCS21HJ-470	47PF	50V	CERAMIC	
C105	QCF21HP-102	1000PF	50V	CERAMIC	
C106	QCF21HP-102	1000PF	50V	CERAMIC	
C107	QCS21HJ-5R0	5.0PF	50V	CERAMIC	
C108	QCS21HJ-5R0	5.0PF	50V	CERAMIC	
C109	QCS21HJ-470	47PF	50V	CERAMIC	
C110	QCS21HJ-151	150PF	50V	CERAMIC	
C111	QCF21HP-103	0.01MF	50V	CERAMIC	
C112	QCS21HJ-470	47PF	50V	CERAMIC	
C113	QCT26TH-7R0	7.0PF	50V	CERAMIC	
C114	QCT26CH-7R0	7.0PF	50V	CERAMIC	
C115	QCF21HP-103	0.01MF	50V	CERAMIC	
C116	QCT26TH-330	33PF	50V	CERAMIC	

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C117	QCT26TH-2R0	2.0PF	50V	CERAMIC	
	C118	QCS21HJ-100	10PF	50V	CERAMIC	
	C119	QCS21HJ-2R0	2.0PF	50V	CERAMIC	
	C120	QCF21HP-103	0.01MF	50V	CERAMIC	
	C121	QCC21EM-473	0.047MF	25V	CERAMIC	
	C122	QCF21HP-103	0.01MF	50V	CERAMIC	
	C123	QCF21HP-103	0.01MF	50V	CERAMIC	
	C124	QCC21EM-473	0.047MF	25V	CERAMIC	
	C131	QCF21HP-103	0.01MF	50V	CERAMIC	
	C132	QCF21HP-223	0.022MF	50V	CERAMIC	
	C133	QCF21HP-223	0.022MF	50V	CERAMIC	
	C134	QCF21HP-223	0.022MF	50V	CERAMIC	
	C135	QCF21HP-223	0.022MF	50V	CERAMIC	
	C136	QCF21HP-223	0.022MF	50V	CERAMIC	
	C137	QCF21HP-223	0.022MF	50V	CERAMIC	
	C138	QCF21HP-223	0.022MF	50V	CERAMIC	
	C141	QCF21HP-223	0.022MF	50V	CERAMIC	
	C142	QCF21HP-473	0.047MF	50V	CERAMIC	
	C143	QCF21HP-223	0.022MF	50V	CERAMIC	
	C144	QCF21HP-473	0.047MF	50V	CERAMIC	
	C146	QCS21HJ-101	100PF	50V	CERAMIC	
	C147	QETB1HM-105	1MF	50V	ELECTRO	
	C148	QCF21HP-223	0.022MF	50V	CERAMIC	
	C149	QCF21HP-223	0.022MF	50V	CERAMIC	
	C150	QETB1HM-106	10MF	50V	ELECTRO	
	C151	QCF21HP-223	0.022MF	50V	CERAMIC	
	C152	QCC21EM-473	0.047MF	25V	CERAMIC	
	C153	QCF21HP-223	0.022MF	50V	CERAMIC	
	C154	QCF21HP-223	0.022MF	50V	CERAMIC	
	C155	QETB1EM-476	47MF	25V	ELECTRO	
	C161	QFN81HK-152	1500PF	50V	MYLAR	
	C162	QCS21HJ-330	33PF	50V	CERAMIC	
	C163	QCF21HP-223	0.022MF	50V	CERAMIC	
	C164	QCS21HJ-470	47PF	50V	CERAMIC	
	C171	QCF21HP-102	1000PF	50V	CERAMIC	
	C172	QFN81HK-473	0.047MF	50V	MYLAR	
	C173	QETB1EM-106	10MF	25V	ELECTRO	
	C174	QCS21HJ-561	560PF	50V	CERAMIC	A
	C174	QCS21HJ-561	560PF	50V	CERAMIC	C
	C174	QCY21HK-391	390PF	50V	CERAMIC	D
	C174	QCY21HK-391	390PF	50V	CERAMIC	E
	C174	QCY21HK-391	390PF	50V	CERAMIC	F
	C175	QCS21HJ-561	560PF	50V	CERAMIC	A
	C175	QCS21HJ-561	560PF	50V	CERAMIC	C
	C175	QCY21HK-391	390PF	50V	CERAMIC	D
	C175	QCY21HK-391	390PF	50V	CERAMIC	E
	C175	QCY21HK-391	390PF	50V	CERAMIC	F
	C176	QETB1HM-225	2.2MF	50V	ELECTRO	
	C177	QETB1HM-475	4.7MF	50V	ELECTRO	
	C178	QETB1HM-475	4.7MF	50V	ELECTRO	
	C179	QETB1HM-105	1MF	50V	ELECTRO	
	C180	QETB1HM-105	1MF	50V	ELECTRO	
	C181	QEB51EM-335	3.3MF	25V	L.L.C.E.	
	C182	QEB51HM-224	0.22MF	50V	L.L.C.E.	
	C183	QETB1CM-476	47MF	16V	ELECTRO	
	C191	QCS21HJ-331	330PF	50V	CERAMIC	
	C192	QCS21HJ-331	330PF	50V	CERAMIC	
	C202	QCF21HP-473	0.047MF	50V	CERAMIC	
	C203	QCF21HP-223	0.022MF	50V	CERAMIC	
	C204	QETB1EM-106	10MF	25V	ELECTRO	
	C205	QCS21HJ-561	560PF	50V	CERAMIC	
	C206	QCS21HJ-7R0	7.0PF	50V	CERAMIC	
	C207	QCT26CH-330	33PF	50V	CERAMIC	
	C208	QFP81HJ-431	430PF	50V	POLY	
	C209	QCF21HP-223	0.022MF	50V	CERAMIC	
	C221	QCF21HP-102	1000PF	50V	CERAMIC	
	C222	QCF21HP-473	0.047MF	50V	CERAMIC	
	C223	QCF21HP-223	0.022MF	50V	CERAMIC	
	C224	QCF21HP-223	0.022MF	50V	CERAMIC	
	C225	QETB1EM-106	10MF	25V	ELECTRO	
	C226	QCF21HP-223	0.022MF	50V	CERAMIC	
	C227	QCS21HJ-121	120PF	50V	CERAMIC	
	C228	QCF21HP-102	1000PF	50V	CERAMIC	
	C229	QFN81HK-102	1000PF	50V	MYLAR	D
	C229	QFN81HK-102	1000PF	50V	MYLAR	E
	C229	QFN81HK-102	1000PF	50V	MYLAR	F
	C229	QFN81HK-332	3300PF	50V	MYLAR	A
	C229	QFN81HK-332	3300PF	50V	MYLAR	C
	C230	QCF21HP-223	0.022MF	50V	CERAMIC	D
	C230	QFN81HK-223	0.022MF	50V	MYLAR	E
	C230	QFN81HK-223	0.022MF	50V	MYLAR	F
	C230	QFN81HK-473	0.047MF	50V	MYLAR	A
	C230	QFN81HK-473	0.047MF	50V	MYLAR	C
	C232	QETB1EM-106	10MF	25V	ELECTRO	
	C233	QETB1HM-105	1MF	50V	ELECTRO	
	C234	QCF21HP-223	0.022MF	50V	CERAMIC	
	C235	QCF21HP-223	0.022MF	50V	CERAMIC	
	C236	QETB1HM-105	1MF	50V	ELECTRO	
	C237	QCF21HP-223	0.022MF	50V	CERAMIC	
	C238	QETB1HM-475	4.7MF	50V	ELECTRO	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C239	QCF21HP-473	0.047MF 50V CERAMIC	
C240	QCF21HP-102	1000PF 50V CERAMIC	
C252	QCS21HJ-101	100PF 50V CERAMIC	
C253	QETB1EM-107	100MF 25V ELECTRO	
C254	QEN51HM-225	2.2MF 50V NON POLE	
C255	QCF21HP-102	1000PF 50V CERAMIC	
C256	QETB1VM-107	100MF 35V ELECTRO	
C257	QETB1HM-105	1MF 50V ELECTRO	
C258	QCC21EM-473	0.047MF 25V CERAMIC	
C259	QCF21HP-102	1000pF 50V CERAMIC	
C260	QCS21HJ-102	100pF 50V CERAMIC	A
C261	QCF21HP-223	0.022MF 50V CERAMIC	A
C281	QCF21HP-102	1000pF 50V CERAMIC	A
C282	QCF21HP-102	1000pF 50V CERAMIC	A
TC101	ENZ1003-003	TRIMMER	
TC102	ENZ1003-003	TRIMMER	
TC103	ENZ1003-003	TRIMMER	
TC104	ENZ1003-003	TRIMMER	
TC105	ENZ1003-003	TRIMMER	
TC201	ENZ1003-002	TRIMMER	
TC202	ENZ1003-002	TRIMMER	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R101	QRD148J-683S	68K 1/4W CARBON	
R102	QRD148J-103S	10K 1/4W CARBON	
R103	QRD148J-223S	22K 1/4W CARBON	
R104	QRD148J-563S	56K 1/4W CARBON	
R106	QRD148J-100S	10 1/4W CARBON	
R107	QRD148J-101S	100 1/4W CARBON	
R108	QRD148J-224S	220K 1/4W CARBON	
R109	QRD148J-223S	22K 1/4W CARBON	
R110	QRD148J-224S	220K 1/4W CARBON	
R111	QRD148J-223S	22K 1/4W CARBON	
R113	QRD148J-181S	180 1/4W CARBON	
R114	QRD148J-473S	47K 1/4W CARBON	
R115	QRD148J-473S	47K 1/4W CARBON	
R116	QRD148J-473S	47K 1/4W CARBON	
R117	QRD148J-473S	47K 1/4W CARBON	
R118	QRD148J-562S	5.6K 1/4W CARBON	
R119	QRD148J-101S	100 1/4W CARBON	
R120	QRD148J-123S	12K 1/4W CARBON	
R121	QRD148J-223S	22K 1/4W CARBON	
R122	QRD148J-152S	1.5K 1/4W CARBON	
R123	QRD148J-224S	220K 1/4W CARBON	
R124	QRD148J-331S	330 1/4W CARBON	
R125	QRD148J-224S	220K 1/4W CARBON	
R126	QRD148J-331S	330 1/4W CARBON	
R127	QRZ0062-330	33 1/4W FUSIBLE	E
R127	QRZ0062-330	33 1/4W FUSIBLE	F
R132	QRD148J-102S	1K 1/4W CARBON	
R133	QRD148J-331S	330 1/4W CARBON	
R134	QRD148J-331S	330 1/4W CARBON	
R135	QRD148J-331S	330 1/4W CARBON	
R137	QRD148J-331S	330 1/4W CARBON	
R138	QRD148J-331S	330 1/4W CARBON	
R139	QRD148J-102S	1K 1/4W CARBON	
R141	QRD148J-103S	10K 1/4W CARBON	
R142	QRD148J-331S	330 1/4W CARBON	
R143	QRD148J-123S	12K 1/4W CARBON	
R144	QRD148J-103S	10K 1/4W CARBON	A
R144	QRD148J-103S	10K 1/4W CARBON	C
R144	QRD148J-183S	18K 1/4W CARBON	D
R144	QRD148J-183S	18K 1/4W CARBON	E
R144	QRD148J-183S	18K 1/4W CARBON	F
R145	QRD148J-821S	820 1/4W CARBON	
R146	QRD148J-332S	3.3K 1/4W CARBON	
R147	QRD148J-473S	47K 1/4W CARBON	
R155	QRD145J-680S	68 1/4W UNF. CARBON	A
R155	QRD145J-680S	68 1/4W UNF. CARBON	C
R155	QRD145J-680S	68 1/4W UNF. CARBON	D
R155	QRZ0062-680	68 1/4W FUSIBLE	E
R155	QRZ0062-680	68 1/4W FUSIBLE	F
R161	QRD148J-224S	220K 1/4W CARBON	
R162	QRD148J-332S	3.3K 1/4W CARBON	
R163	QRD148J-681S	680 1/4W CARBON	
R171	QRD148J-103S	10K 1/4W CARBON	A
R172	QRD148J-134S	130K 1/4W CARBON	C
R172	QRD148J-134S	130K 1/4W CARBON	D
R172	QRD148J-184S	180K 1/4W CARBON	E
R172	QRD148J-184S	180K 1/4W CARBON	F
R172	QRD148J-184S	180K 1/4W CARBON	A
R172	QRD148J-184S	180K 1/4W CARBON	C
R173	QRD148J-184S	180K 1/4W CARBON	D
R173	QRD148J-184S	180K 1/4W CARBON	E
R173	QRD148J-184S	180K 1/4W CARBON	F
R174	QRD148J-184S	180K 1/4W CARBON	A
R174	QRD148J-184S	180K 1/4W CARBON	C
R174	QRD148J-224S	220K 1/4W CARBON	D

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R174	QRD148J-224S	220K 1/4W CARBON	E
R174	QRD148J-224S	220K 1/4W CARBON	F
R175	QRD148J-184S	180K 1/4W CARBON	A
R175	QRD148J-184S	180K 1/4W CARBON	C
R175	QRD148J-224S	220K 1/4W CARBON	D
R175	QRD148J-224S	220K 1/4W CARBON	E
R175	QRD148J-224S	220K 1/4W CARBON	F
R176	QRD148J-103S	10K 1/4W CARBON	
R177	QRD148J-103S	10K 1/4W CARBON	
R179	QRD148J-103S	10K 1/4W CARBON	
R180	QRD148J-123S	12K 1/4W CARBON	
R182	QRD148J-332S	3.3K 1/4W CARBON	
R183	QRD145J-680S	68 1/4W UNF. CARBON	A
R183	QRD145J-680S	68 1/4W UNF. CARBON	C
R183	QRD145J-680S	68 1/4W UNF. CARBON	D
R183	QRZ0062-680	68 1/4W FUSIBLE	E
R183	QRZ0062-680	68 1/4W FUSIBLE	F
R184	QRD148J-332S	3.3K 1/4W CARBON	
R185	QRD148J-332S	3.3K 1/4W CARBON	
R186	QRD148J-682S	6.8K 1/4W CARBON	
R187	QRD148J-682S	6.8K 1/4W CARBON	
R201	QRD148J-223S	22K 1/4W CARBON	
R202	QRD148J-331S	330 1/4W CARBON	
R204	QRD148J-473S	47K 1/4W CARBON	
R222	QRD148J-102S	1K 1/4W CARBON	
R223	QRD148J-151S	150 1/4W CARBON	
R225	QRD148J-331S	330 1/4W CARBON	A
R225	QRD148J-561S	560 1/4W CARBON	B
R225	QRD148J-561S	560 1/4W CARBON	C
R225	QRD148J-561S	560 1/4W CARBON	D
R225	QRD148J-561S	560 1/4W CARBON	E
R225	QRD148J-561S	560 1/4W CARBON	F
R226	QRD148J-103S	10K 1/4W CARBON	
R227	QRD148J-103S	10K 1/4W CARBON	A
R227	QRD148J-103S	10K 1/4W CARBON	C
R227	QRD148J-393S	39K 1/4W CARBON	D
R227	QRD148J-393S	39K 1/4W CARBON	E
R227	QRD148J-393S	39K 1/4W CARBON	F
R228	QRD148J-103S	10K 1/4W CARBON	
R229	QRD148J-820S	82 1/4W CARBON	
R230	QRD148J-103S	10K 1/4W CARBON	
R231	QRD148J-102S	1K 1/4W CARBON	
R232	QRD145J-680S	68 1/4W UNF. CARBON	A
R232	QRD145J-680S	68 1/4W UNF. CARBON	C
R232	QRD145J-680S	68 1/4W UNF. CARBON	D
R232	QRZ0062-680	68 1/4W FUSIBLE	E
R232	QRZ0062-680	68 1/4W FUSIBLE	F
R233	QRD145J-103S	10K 1/4W UNF. CARBON	A
R234	QRD145J-680S	68 1/4W UNF. CARBON	A
R234	QRD145J-680S	68 1/4W UNF. CARBON	C
R234	QRD145J-680S	68 1/4W UNF. CARBON	D
R234	QRD145J-680S	68 1/4W UNF. CARBON	E
R234	QRD145J-680S	68 1/4W UNF. CARBON	F
R234	QRZ0062-680	68 1/4W FUSIBLE	E
R234	QRZ0062-680	68 1/4W FUSIBLE	F
R235	QRD148J-470S	47 1/4W CARBON	
R251	QRD148J-103S	10K 1/4W CARBON	E
R251	QRD148J-103S	10K 1/4W CARBON	F
R252	QRD148J-473S	47K 1/4W CARBON	
R253	QRD148J-103S	10K 1/4W CARBON	
R254	QRD148J-472S	4.7K 1/4W CARBON	
R255	QRD148J-102S	1K 1/4W CARBON	
R256	QRD148J-271S	270 1/4W CARBON	
R257	QRD148J-222S	2.2K 1/4W CARBON	
R258	QRD148J-682S	6.8K 1/4W CARBON	
R259	QRD148J-392S	3.9K 1/4W CARBON	
R260	QRD145J-680S	68 1/4W UNF. CARBON	A
R260	QRD145J-680S	68 1/4W UNF. CARBON	C
R260	QRD145J-680S	68 1/4W UNF. CARBON	D
R260	QRZ0062-680	68 1/4W FUSIBLE	E
R260	QRZ0062-680	68 1/4W FUSIBLE	F
R261	QRD148J-222S	2.2K 1/4W CARBON	
R262	QRD148J-224S	220K 1/4W CARBON	
R263	QRD148J-223S	22K 1/4W CARBON	
R264	QRD148J-333S	33K 1/4W CARBON	
R265	QRD148J-103S	10K 1/4W CARBON	
R266	QRD148J-103S	10K 1/4W CARBON	
R267	QRD148J-682S	6.8K 1/4W CARBON	
R268	QRD148J-104S	100K 1/4W CARBON	
R269	QRD148J-473S	47K 1/4W CARBON	
R281	QRD148J-103S	10K 1/4W CARBON	A
R282	QRD148J-101S	100 1/4W CARBON	A
R283	QRD145J-680S	68 1/4W UNF. CARBON	A
VR141	QVZ3518-223	VARIABLE	
VR142	QVZ3518-473	VARIABLE	
VR171	QVZ3518-473	VARIABLE	
VR221	QVZ3518-472	VARIABLE	

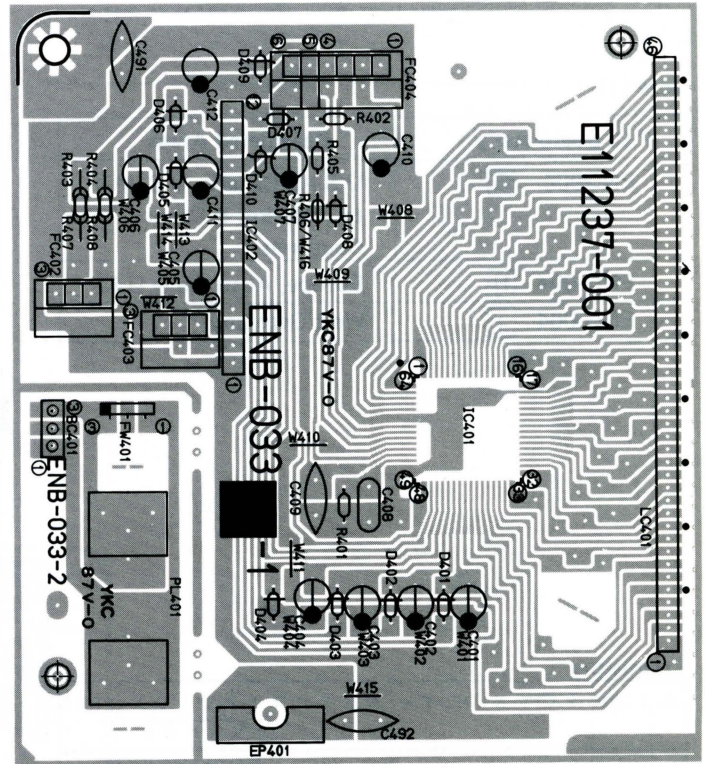
Safety parts

■ ENB-033 □ LCD Display P.C. Board Ass'y

Note: ENB-033 □ Varies according to the area employed. See note (1) when placing an order.

Note (1)

P.C. Board Ass'y	Designated Areas
ENB-033 [E]	U.S.A., Canada, U.S. Military Market & Other Countries
ENB-033 [F]	Europe, Australia, U.K. & West Germany



ICs

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
IC401	LC7560	I.C.	SANYO	E F
IC402	7EL-SPI-001	I.C.		
IC402	7EL-SPI-001	I.C.		

Diodes

ITEM	PART NUMBER	DESCRIPTION	MAKER	AREA
D401	1SS133	SILICON	ROHM	
D402	1SS133	SILICON	ROHM	
D403	1SS133	SILICON	ROHM	
D404	1SS133	SILICON	ROHM	
D405	1SS133	SILICON	ROHM	
D406	1SS133	SILICON	ROHM	
D407	1SS133	SILICON	ROHM	
D408	1SS133	SILICON	ROHM	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C401	QETB1HM-474	0.47MF 50V ELECTRO	
C402	QETB1HM-474	0.47MF 50V ELECTRO	
C403	QETB1HM-474	0.47MF 50V ELECTRO	
C404	QETB1HM-474	0.47MF 50V ELECTRO	
C405	QETB1HM-474	0.47MF 50V ELECTRO	
C406	QETB1HM-474	0.47MF 50V ELECTRO	
C407	QETB1HM-474	0.47MF 50V ELECTRO	
C408	QFN81HJ-103	0.01MF 50V MYLAR	
C409	QCF21HP-223	0.022MF 50V CERAMIC	
C410	QETB1HM-475	4.7MF 50V ELECTRO	

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C411	QETB1EM-106	10MF 25V ELECTRO	
C412	QETB1EM-106	10MF 25V ELECTRO	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R401	QRD161J-273	27K 1/6W CARBON	F
R402	QRD161J-471	470 1/6W CARBON	
R403	QRZ0062-560	56 1/4W FUSIBLE	
R404	QRD145J-560S	56 1/4W UNF. CARBON	
R404	QRZ0062-560	56 1/4W FUSIBLE	
R405	QRD161J-121	120 1/6W CARBON	

△: Safety Parts

Others

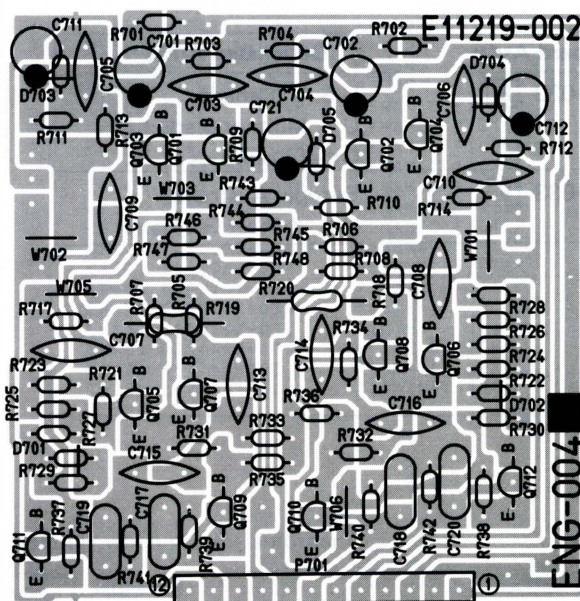
ITEM	PART NUMBER	DESCRIPTION	AREA
	E11237-001	CIRCUIT BOARD	
	E45524-002	FUSE CLIP	
FC402	EMV7112-003	SOCKET WIRE	
FC403	EMV7112-003	SOCKET WIRE	
FC404	EMV7112-006	SOCKET WIRE	
LC401	ELU0002-014	LCD PANEL	

■ ENG-004 □ Pre-Driver P.C. Board Ass'y

Note: ENG-004 □ Varies according to the area employed. See note (1) when placing an order.

Note (1)

P.C. Board Ass'y	Designated Areas
ENG004 ☐ G	U.S.A., Canada, U.S. Military Market & Other Countries
ENG-004 ☐ H	Europe, Australia & U.K.
ENG-004 ☐ I	West Germany



Transistors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
	Q701	2SC2240(A,B)	SILICON	TOSHIBA	
	Q702	2SC2240(A,B)	SILICON	TOSHIBA	
	Q703	2SC2240(A,B)	SILICON	TOSHIBA	
	Q704	2SC2240(A,B)	SILICON	TOSHIBA	
	Q705	2SA1038(S,E)	SILICON	ROHM	
	Q706	2SA1038(S,E)	SILICON	ROHM	
	Q707	2SA933LN(R,S)	SILICON	ROHM	
	Q708	2SA933LN(R,S)	SILICON	ROHM	
	Q709	2SA1038(S,E)	SILICON	ROHM	
	Q710	2SA1038(S,E)	SILICON	ROHM	
	Q711	2SC2389(S,E)	SILICON	ROHM	
	Q712	2SC2389(S,E)	SILICON	ROHM	

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	C711	QETB1CM-476	47MF	16V	ELECTRO
	C712	QETB1CM-476	47MF	16V	ELECTRO
	C713	QCS21HJ-220	22PF	50V	CERAMIC
	C714	QCS21HJ-220	22PF	50V	CERAMIC
	C715	QCS21HJ-121	120PF	50V	CERAMIC
	C716	QCS21HJ-121	120PF	50V	CERAMIC
	C717	QFN81HJ-822	8200PF	50V	MYLAR
	C718	QFN81HJ-822	8200PF	50V	MYLAR
	C719	QFN81HJ-822	8200PF	50V	MYLAR
	C720	QFN81HJ-822	8200PF	50V	MYLAR
	C721	QETB1EM-106	10MF	25V	ELECTRO

Diodes

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
	D701	1SS133	SILICON	ROHM	
	D702	1SS133	SILICON	ROHM	
	D703	1SS133	SILICON	ROHM	
	D703	1SS133	SILICON	ROHM	
	D704	1SS133	SILICON	ROHM	
	D704	1SS133	SILICON	ROHM	
	D705	MTZ22C	ZENER		

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	C701	QETB1HM-475	4.7MF	50V	ELECTRO
	C702	QETB1HM-475	4.7MF	50V	ELECTRO
	C703	QCS21HJ-271	270PF	50V	CERAMIC
	C704	QCS21HJ-271	270PF	50V	CERAMIC
	C705	QCS21HJ-101	100PF	50V	CERAMIC
	C706	QCS21HJ-101	100PF	50V	CERAMIC
	C707	QCY21HK-332	3300PF	50V	CERAMIC
	C708	QCY21HK-332	3300PF	50V	CERAMIC
	C709	QCS21HJ-100	10PF	50V	CERAMIC
	C710	QCS21HJ-100	10PF	50V	CERAMIC

Resistors

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	R701	QRD161J-222	2.2K	1/6W	CARBON
	R702	QRD161J-222	2.2K	1/6W	CARBON
	R703	QRD161J-104	100K	1/6W	CARBON
	R704	QRD161J-104	100K	1/6W	CARBON
	R705	QRD161J-202	2K	1/6W	CARBON
	R706	QRD161J-202	2K	1/6W	CARBON
	R707	QRD161J-202	2K	1/6W	CARBON
	R708	QRD161J-202	2K	1/6W	CARBON
	R709	QRD161J-103	10K	1/6W	CARBON
	R710	QRD161J-103	10K	1/6W	CARBON
	R711	QRD161J-202	2K	1/6W	CARBON
	R712	QRD161J-202	2K	1/6W	CARBON
	R713	QRD161J-104	100K	1/6W	CARBON
	R714	QRD161J-104	100K	1/6W	CARBON
	R717	QRD161J-101	100	1/6W	CARBON
	R718	QRD161J-101	100	1/6W	CARBON
	R719	QRD145J-121S	120	1/4W	UNF. CARBON
	R720	QRD145J-121S	120	1/4W	UNF. CARBON
	R723	QRD144J-472S	4.7K	1/4W	
	R724	QRD144J-472S	4.7K	1/4W	
	R727	QRD144J-472S	4.7K	1/4W	
	R728	QRD144J-472S	4.7K	1/4W	
	R729	QRD161J-391	390	1/6W	CARBON
	R730	QRD161J-391	390	1/6W	CARBON
	R731	QRD161J-152	1.5K	1/6W	CARBON
	R732	QRD161J-152	1.5K	1/6W	CARBON
	R733	QRD161J-152	1.5K	1/6W	CARBON
	R734	QRD161J-152	1.5K	1/6W	CARBON
	R735	QRD161J-333	33K	1/6W	CARBON
	R736	QRD161J-333	33K	1/6W	CARBON

△: Safety Parts

Resistors

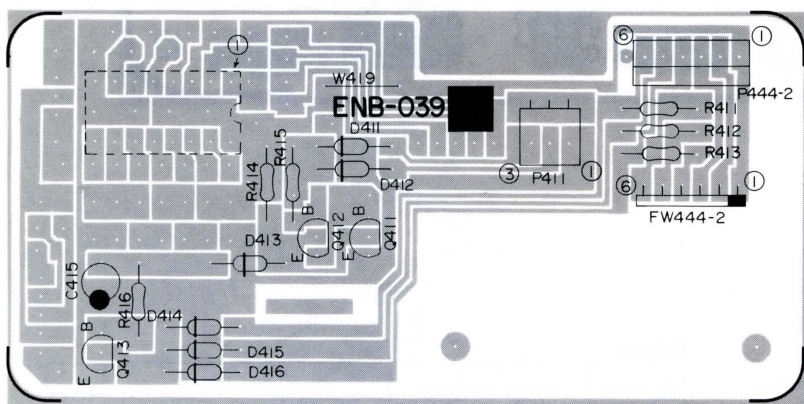
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△	ITEM	PART NUMBER	DESCRIPTION		AREA
	R737	QRD161J-391	390	1/6W	CARBON
	R738	QRD161J-391	390	1/6W	CARBON
	R739	QRD161J-682	6.8K	1/6W	CARBON
	R740	QRD161J-682	6.8K	1/6W	CARBON
	R741	QRD161J-682	6.8K	1/6W	CARBON
	R742	QRD161J-682	6.8K	1/6W	CARBON
	R743	QRD161J-511	510	1/6W	CARBON
	R744	QRD161J-511	510	1/6W	CARBON
	R745	QRD125J-182	1.8K	1/2W	UNF. CARBON
	R747	QRD161J-511	510	1/6W	CARBON
△	R748	QRD161J-511	510	1/6W	CARBON
	R748	QRD161J-511	510	1/6W	CARBON
	R748	QRD161J-511	510	1/6W	CARBON

△: Safety Parts

Others

Others			
ITEM	PART NUMBER	DESCRIPTION	AREA
P701	E11219-002 EMV5101-012B	CIRCUIT BOARD PLUG ASSY	

■ ENB-039 **A** Sub Control P.C. Board Ass'y



Transistors

ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER	
Q411	2SC1740LN(R,S)	SILICON	ROHM	
Q412	2SC1740LN(R,S)	SILICON	ROHM	
Q413	2SC1740LN(R,S)	SILICON	ROHM	

Diodes

ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER	
D411	1S2473HX	SILICON	ROHM	
D412	1S2473HX	SILICON	ROHM	
D413	1S2473HX	SILICON	ROHM	
D414	1S2473HX	SILICON	ROHM	
D415	1S2473HX	SILICON	ROHM	
D416	1S2473HX	SILICON	ROHM	

Capacitors

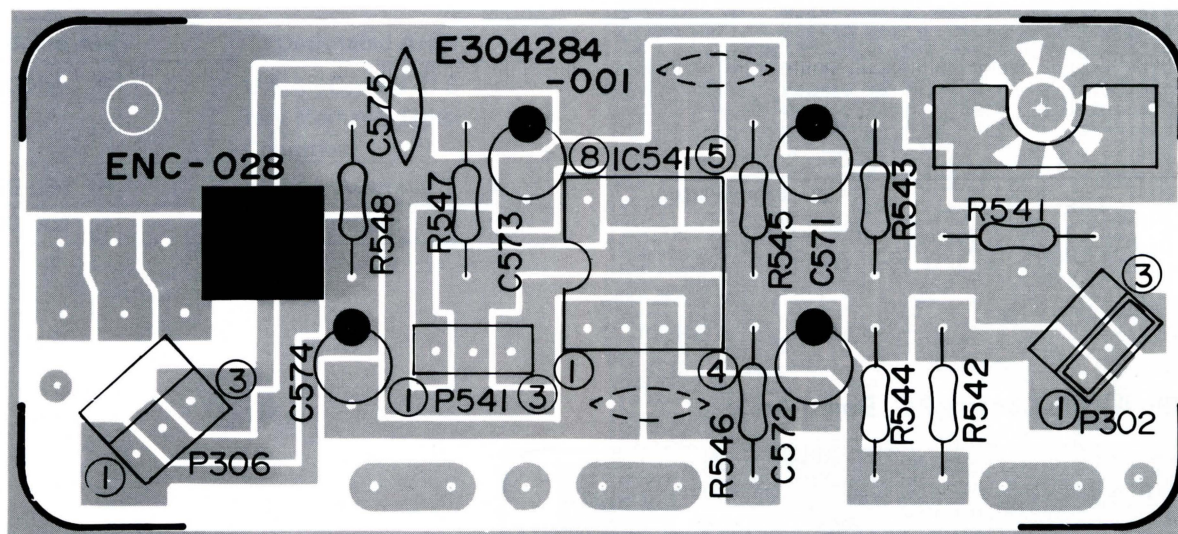
Capacitors					
ITEM	PART NUMBER	DESCRIPTION			AREA
C415	QETB1HM-474	0.47MF	50V	ELECTRO	

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R411	QRD148J-471S	470	1/4W CARBON
R412	QRD148J-471S	470	1/4W CARBON
R413	QRD148J-471S	470	1/4W CARBON
R414	QRD148J-223S	22K	1/4W CARBON
R415	QRD148J-474S	470K	1/4W CARBON
R416	QRD148J-473S	47K	1/4W CARBON

Others

GENERAL				
 ITEM PART NUMBER DESCRIPTION AREA				
		E304243-001	CIRCUIT BOARD	
	P411	QMV5004-003K	PULAG ASSY	
	P444	EMV7112-006	SOCKET WIRE	

■ ENC-028 **A** Buffer P.C. Board Ass'y

I.C.S.

PARTS				
ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER	
IC541	NJM4558D-D			

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
	E304284-001	CIRCUIT BOARD	
P302	EMV7112-003	SOCKET	
P306	EMV7112-003	SOCKET	
P541	QMV5005-003K	3P PLUG ASS'Y	
	E70859-001	EARTH PLATE	

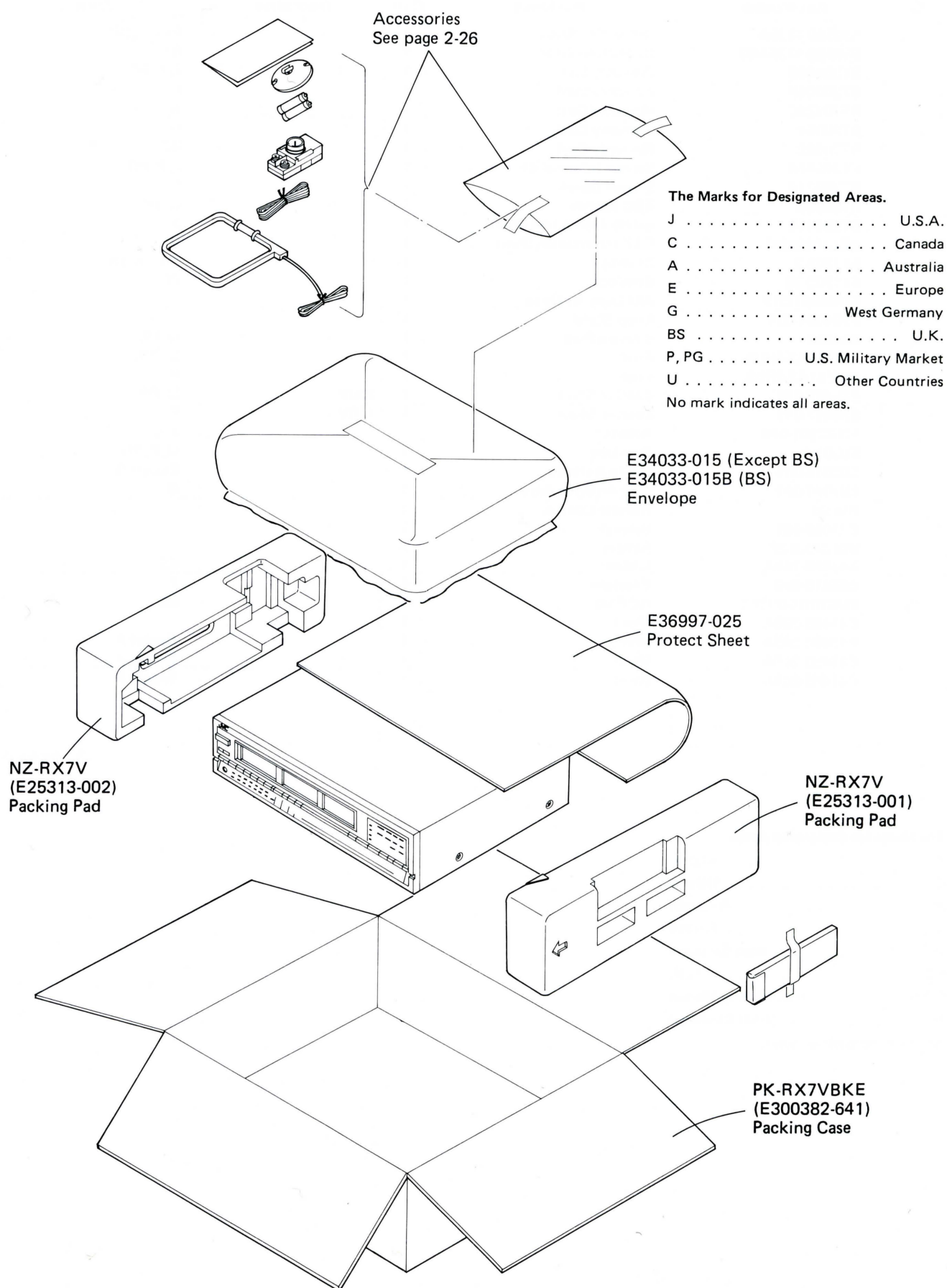
Capacitors

ITEM	PART NUMBER	DESCRIPTION			AREA
C571	QETB1EM-106	10MF	25V	ELECTRO	
C572	QETB1EM-106	10MF	25V	ELECTRO	
C573	QETB1EM-106	10MF	25V	ELECTRO	
C574	QETB1EM-106	10MF	25V	ELECTRO	
C575	QCF21HP-223	0.022MF	50V	CERAMIC	

Resistors

ITEM	PART NUMBER	DESCRIPTION			AREA
R541	QRD148J-102S	1K	1/4W	CARBON	
R542	QRD148J-102S	1K	1/4W	CARBON	
R543	QRD148J-823S	82K	1/4W	CARBON	
R544	QRD148J-823S	82K	1/4W	CARBON	
R545	QRD148J-124S	120K	1/4W	CARBON	
R546	QRD148J-124S	120K	1/4W	CARBON	
R547	QRD148J-474S	470K	1/4W	CARBON	
R548	QRD148J-474S	470K	1/4W	CARBON	

Packing Materials and Part Numbers



Accessories List

△	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1335A	Instruction Book	1		Except BS
	E30580-1335ABS	Instruction Book	1		BS
	BT20048B	Warranty Card	1		J, P, PG
	BT20025H	Warranty Card	1		C
	BT20029C	Warranty Card	1		A
	BT20064	Warranty Card	1		G
	BT20060	Warranty Card	1		BS
	BT20046B	Service Information	1		J, P, PG
	BT20071A	Service Center	1		C
	BT20066	EEC Agency	1		G, BS
	BT20044E	Safety Instruction Sheet	1		J
	QZL1008-001	FTZ Information Sheet	1		G
	E41202-2	Envelope	1		Except BS
	E41202-2B	Envelope	1		BS
	EQB4001-012	AM Loop Antenna	1		
△	E304084-001	Loop Stand	1		
△	E04056	Siemens Plug	1		U, PG
△	QMF51A2-5R0S	Fuse	1		U, PG
△	QMF51A2-2R5S	Fuse	1		P
	E35497-015	Caution Sheet	1	220V	U, PG
	E35497-013	Caution Sheet	1	110V	P
	EMZ2001-006	Adaptor	1		J, C
	E6581-4	Envelope	1		U, P, PG
	E03614-004	Bilt-in Antenna	1		Except G
	E67007-001	Wire Antenna Ass'y	1		G
	RM-S9	Remote Control	1		
	E73088-001	Bracket	1		
	UM-3(DJ)-2P	Battery	2		
	E43486-165A	I. Sheet	1		BS
△	E66416-003	Envelope	1		J
	EMC0201-001BS	AC Plug	1		BS
	E43486-238A	Sheet	1		
	E43486-245A	Sheet	1		Except J
	E43486-246A	Sheet	1		Except J
	E43486-247A	Sheet	1		Except J

△: Safety Parts

The Marks for Designated Areas.

J U.S.A.

C Canada

A Australia

E Europe

G West Germany

BS U.K.

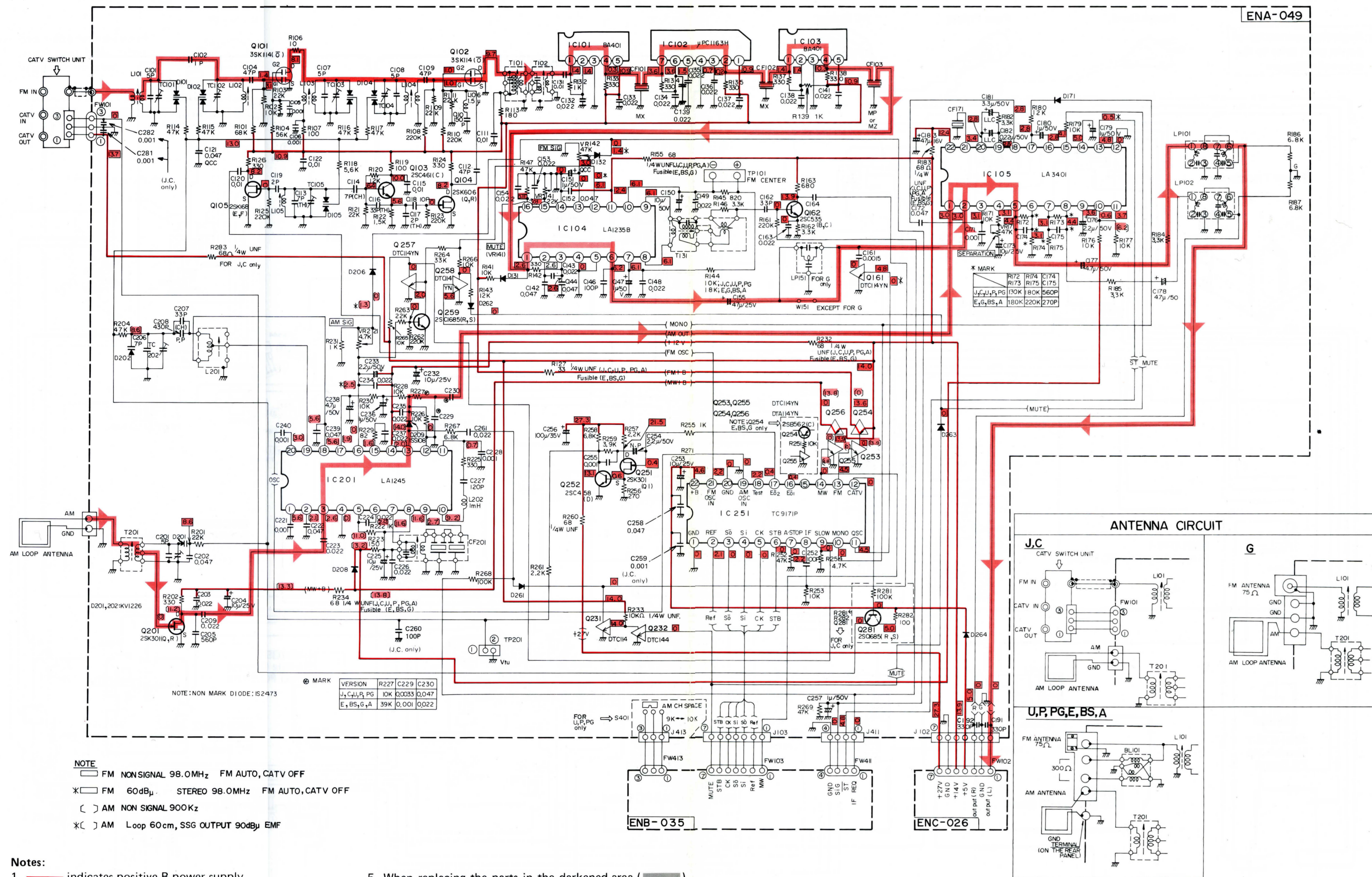
P, PG U.S. Military Market

U Other Countries

No mark indicates all areas.

Schematic Diagram

(1) Tuner Section



Notes:

- indicates positive B power supply.
 - - - indicates negative B power supply.
 - indicates signal path.
 - / [■] shows DC voltage to the chassis with no signal input.
- ... FM [■] ... AM

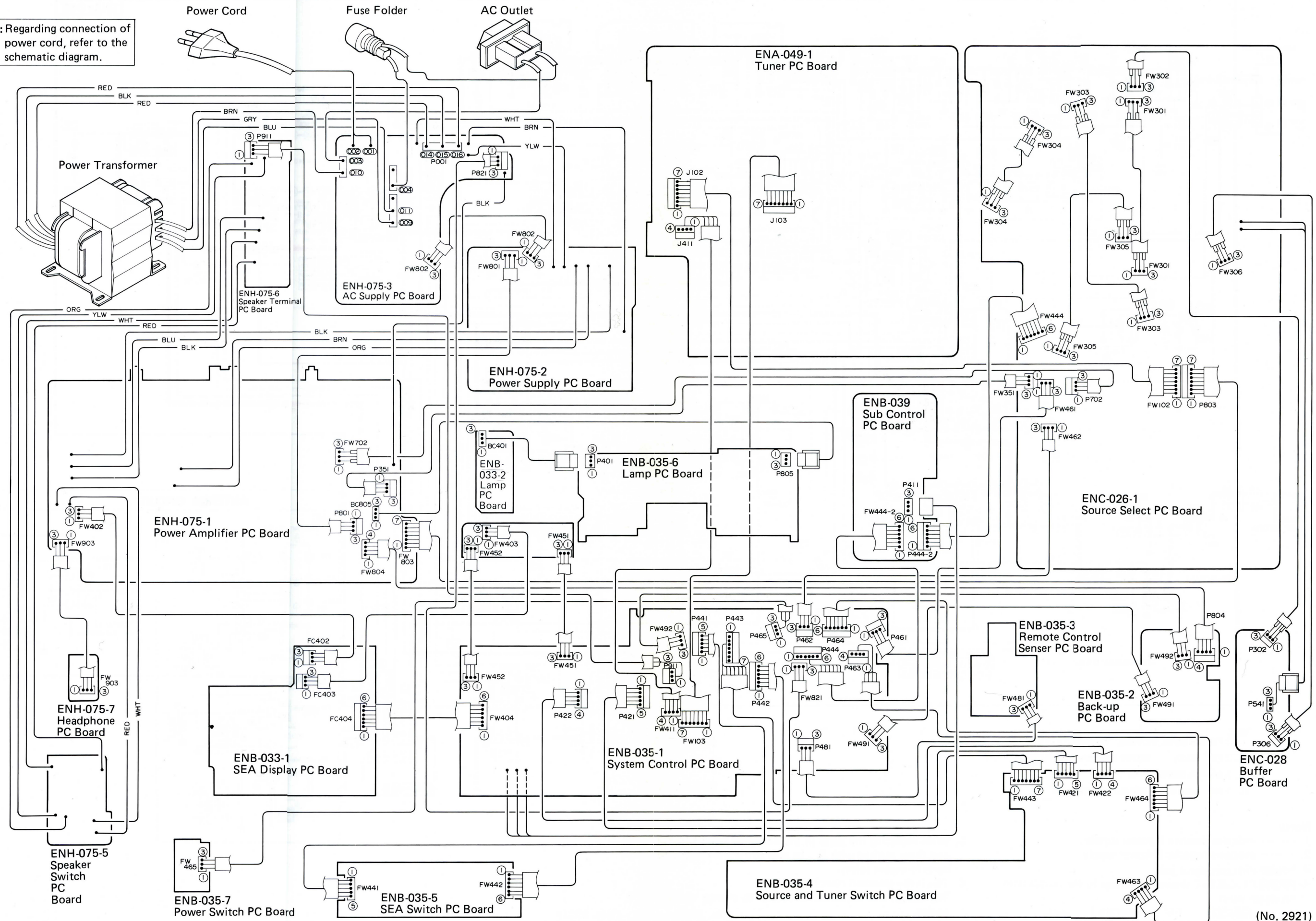
- When replacing the parts in the darkened area (■) and those marked with △, be sure to use the designated parts to ensure safety.
- This is the standard circuit diagram. The design and contents are subject to change without notice.

(No. 2921)

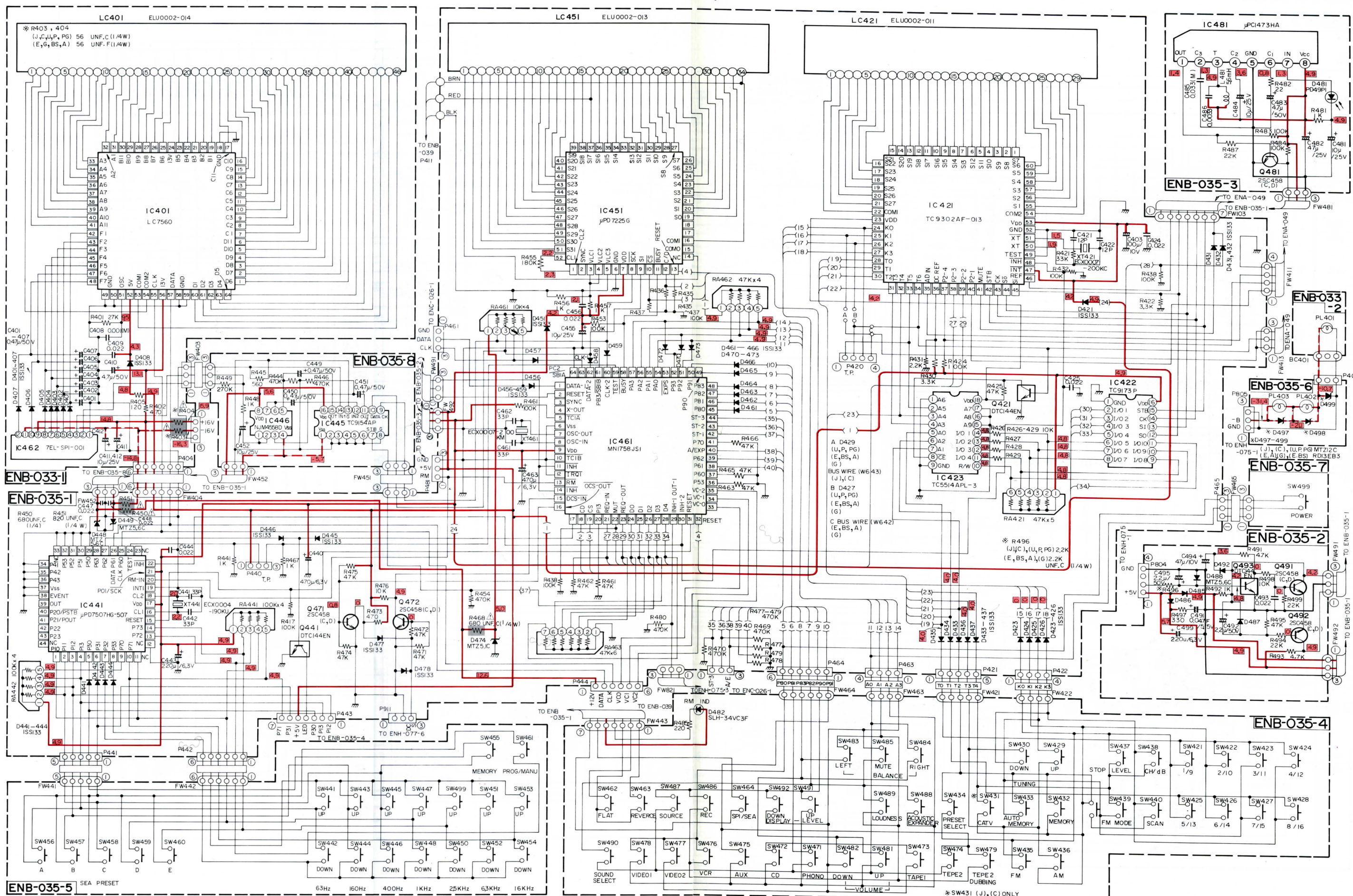
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Connection Diagram

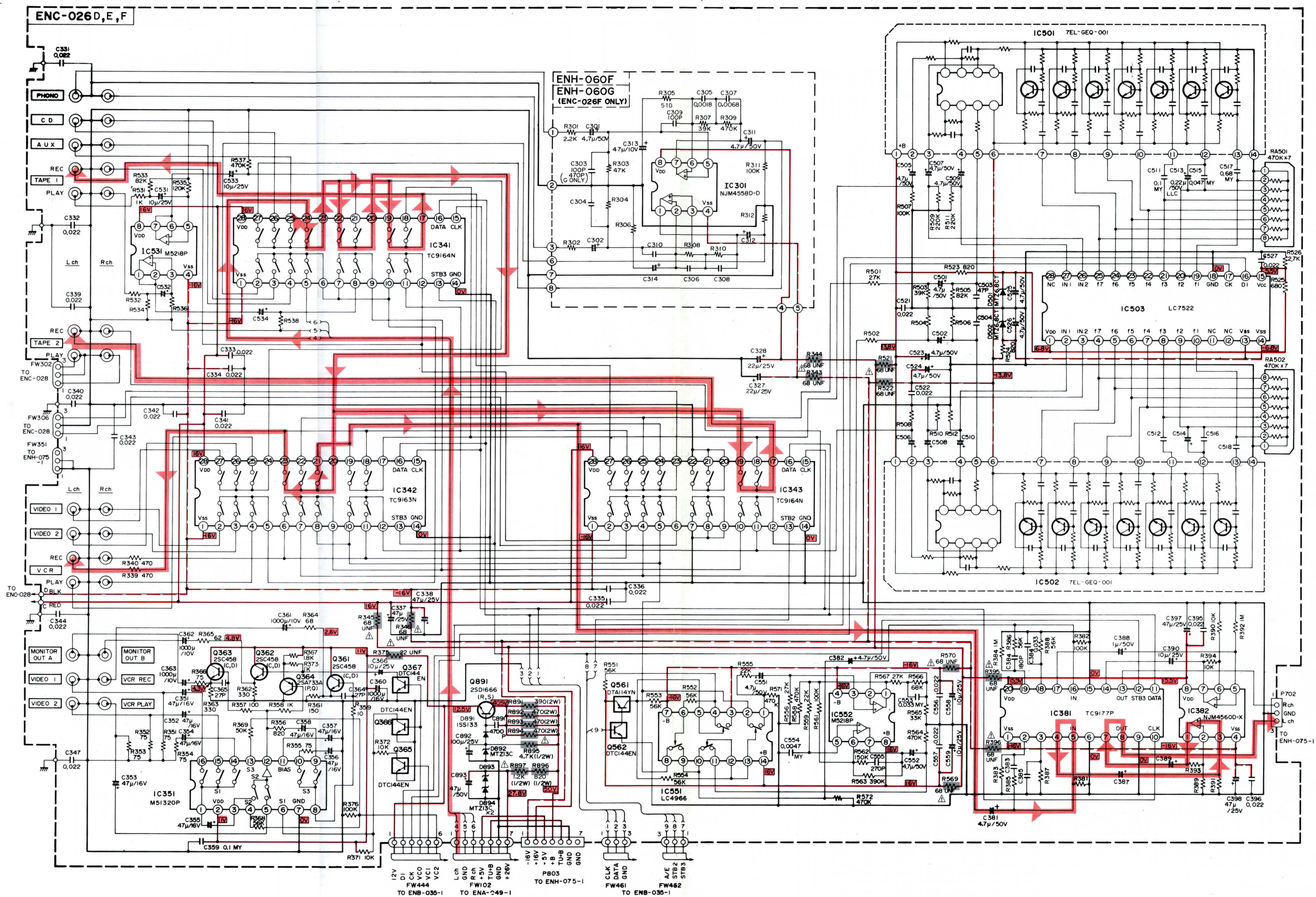
Note: Regarding connection of power cord, refer to the schematic diagram.



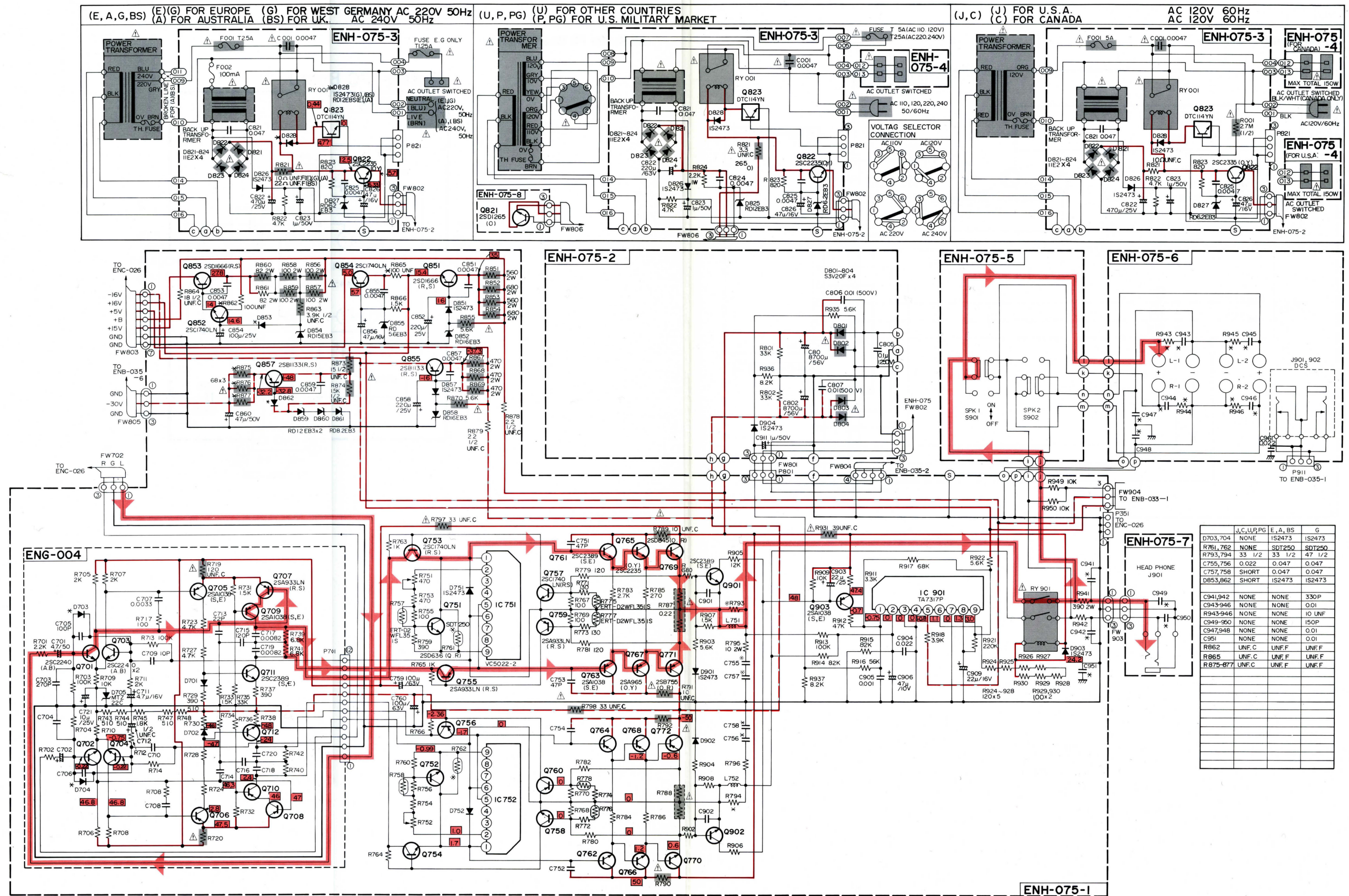
(2) Logic Section



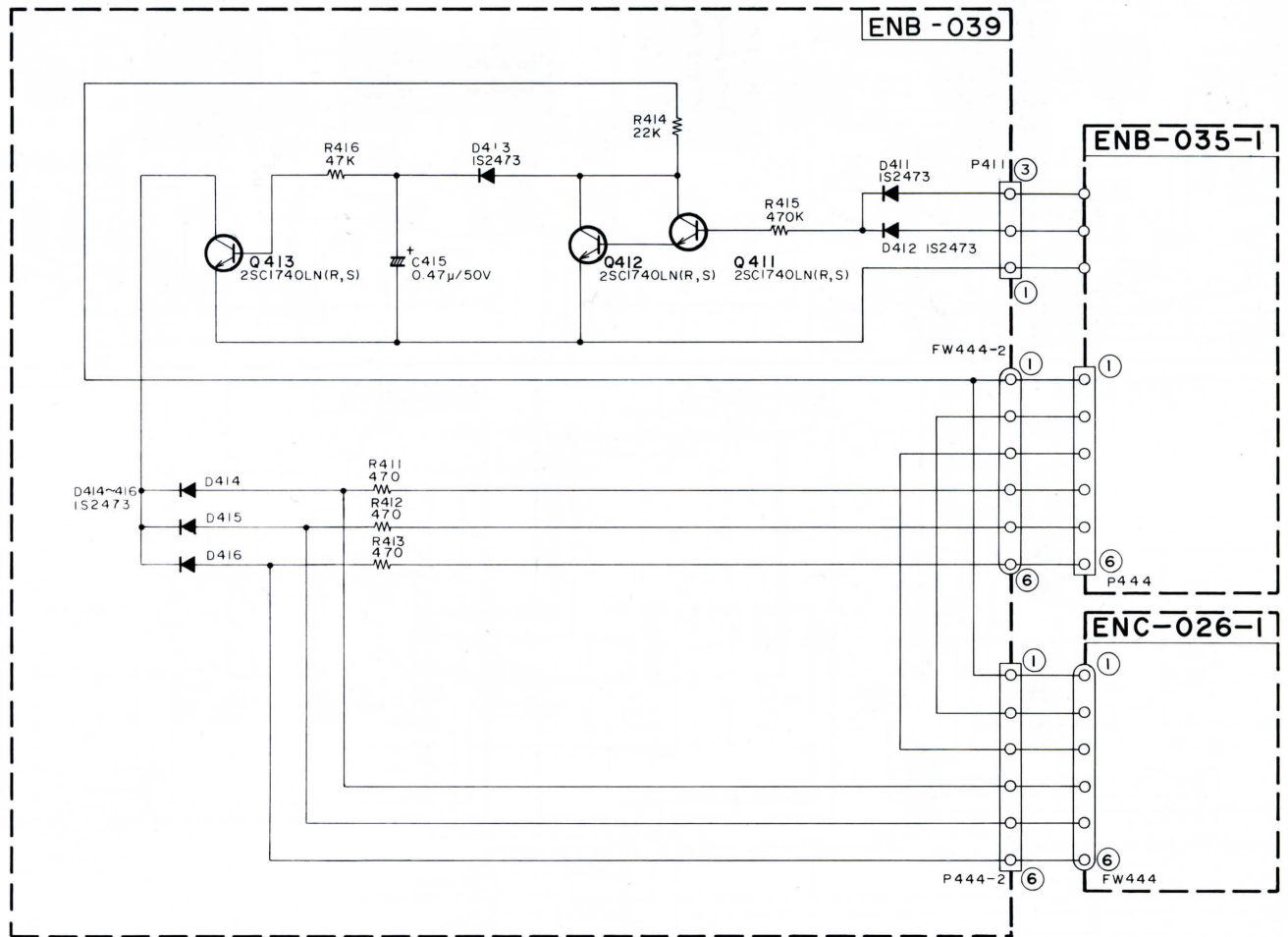
(3) Pre-Amplifier Section



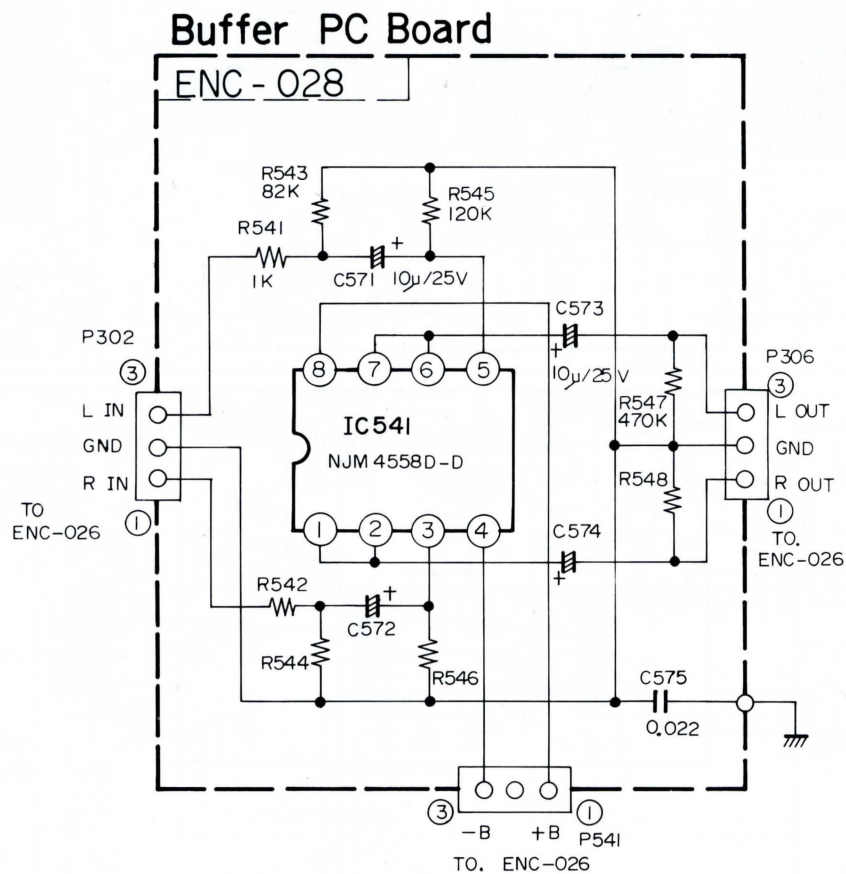
(4) Power Amplifier Section



(5) Sub Control Section



(6) Buffer PC Board Section



- M E M O -

JVC

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AUDIO DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN