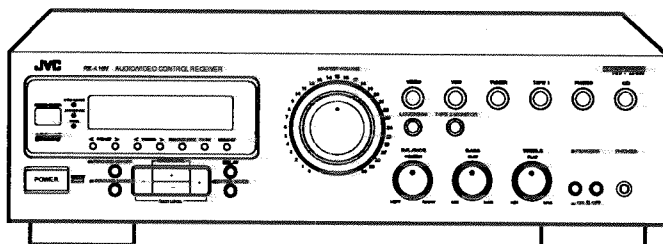


JVC

SERVICE MANUAL

AUDIO/VIDEO CONTROL RECEIVER

RX-416VBK



Area Suffix

A	.....	Australia
BS	.....	the U.K.
EF	.....	Continental Europe
EN	.....	Scandinavia
G	.....	Germany
GI	Italy
UT	Taiwan
U	Other Area

COMPU LINK
 /// Remote ///
 Control Component

Contents

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RX-416VBK

Safety Precautions

1. The design of this product contains special hardware and 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. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products 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 the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of 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 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 it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)
After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (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 parts 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 0.5mA AC (r.m.s.).

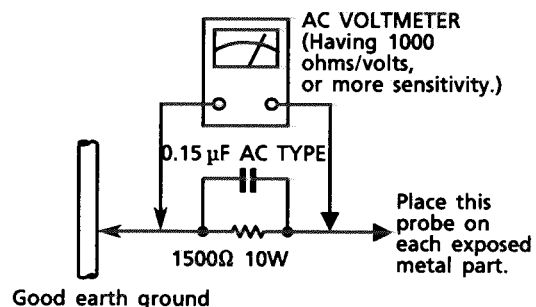
- Alternate check method

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 1,500 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.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

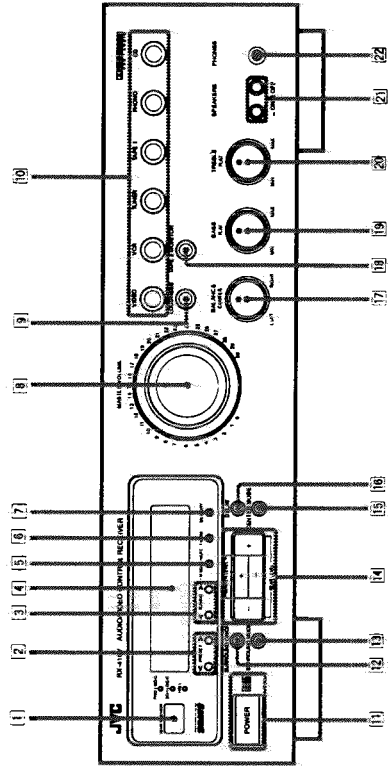
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Introduction

Become familiar with the main switches and controls on your RX-416VBK before use.

Switches, Buttons and Controls



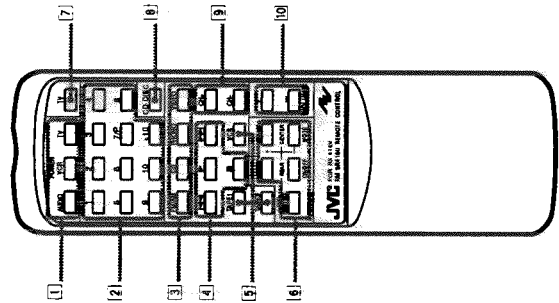
Refer to the pages in parentheses for details.

Front Panel

- 1 Remote sensor
- 2 PRESET buttons (<, >) (13, 14)
- 3 TUNING buttons (<-, >) (13)
- 4 Display (10)
- 5 FM MODE/MUTE button (14)
- 6 FM/AM button (13)
- 7 MEMORY button (13)
- 8 MASTER VOLUME control (11)
- 9 LOUDNESS button (12)
- 10 Source selecting buttons (VIDEO, VCR, TUNER, TAPE1, PHONO, CD) (10)
- 11 POWER button and STANDBY indicator (10)
- 12 SURROUND ON/OFF button (15, 17, 18)
- 13 SURROUND MODE button (15, 17, 18)
- 14 REAR LEVEL/CENTER LEVEL buttons (+/-) (18)
- 15 CENTER MODE button (17)
- 16 DELAY button (17)
- 17 BALANCE control (11)
- 18 TAPE2 MONITOR button (10, 19)
- 19 BASS control (11)
- 20 TREBLE control (11)
- 21 SPEAKERS 1/2 buttons (11)
- 22 PHONES jack (12)

Remote Control

- 1 POWER buttons (10, 20)
- 2 10 keys (13, 14, 20)
- 3 Source selecting buttons (FM/AM, CD, PHONO, VIDEO) (10, 20)
- 4 Operating buttons for JVC audio/video components (20)
- 5 Source selecting buttons (TAPE1, TAPE2, VCR) (10, 20)
- 6 Surround adjustment buttons (17, 18)
- 7 TV button (20)
- 8 CD-DISC button (20)
- 9 CH buttons (+/-) (20)
- 10 VOLUME buttons (+/-) (11)



Getting Started

This section explains how to connect stereo components and speakers to the RX-416VBK, and how to connect the power supply.

Before Installation

General

- Be sure your hands are dry.
- Turn the power off to all components.
- Read the manuals supplied with the components you are going to connect.

Locations

- Install the receiver in a location that is level and protected from moisture.
- The temperature around the receiver must be between 23° and 104° F (-5° and 40° C).
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.

Handling the receiver

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.

Checking the Supplied Accessories

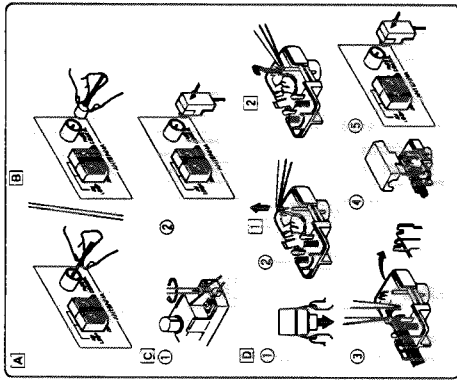
Check to be sure you have all of the following items, which are supplied with the RX-416VBK. The number in the parentheses indicates quantity of the pieces supplied.

- Remote Control (1)
- Batteries (2)
- AM (MW/LW) Loop Antenna (1)
- FM Wire Antenna (only for Germany) (1)
- FM Feeder Antenna (except for Germany) (1)
- Antenna Adaptor (except for Germany) (1)
- Mains Plug (only for the U.K.) (1)

If anything is missing, contact your dealer immediately.

Connecting the FM and AM (MW/LW) Antennas

FM Antenna Connections



For Germany

- Using the supplied wire antenna The FM wire antenna supplied can be connected to the FM 75Ω COAXIAL as a temporary measure.
- Using the supplied wire antenna horizontally. Extend the supplied wire antenna horizontally.
- Using the coaxial type connector (not supplied)
- 75-ohm antenna with coaxial type connector (DIN 45332) should be connected to the FM 75Ω COAXIAL terminal.

For Other European Countries

- Using the supplied feeder antenna
- Attach the feeder antenna to the supplied antenna adaptor as shown in the figure.
- Connect the antenna adaptor to the FM 75Ω COAXIAL terminal.
- Using FM 75-ohm antenna cable (not supplied)
- Open the claws at both sides and remove the cover.
- Move the conductor wire from 1 to 2 using tweezers or similar tool (only when using coaxial cable).
- Fix the coaxial cable and its core.
- Put on the cover.
- Connect the supplied antenna adaptor to the FM 75Ω COAXIAL terminal.

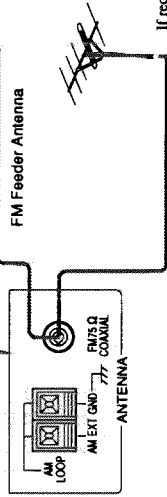
Note:

Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.



For Other European Countries

Unfold the loops of the supplied FM feeder antenna and extend them as shown. Fasten them up in the position which gives you the best FM reception.

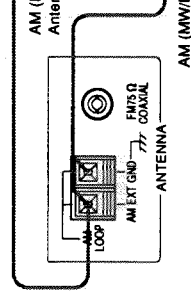


If reception is poor, connect the outside antenna. Before attaching a 75-ohm coaxial cable (the kind with a round wire going to an outside antenna), disconnect the supplied antenna.

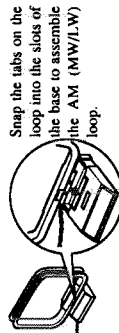
How to strip the 75-ohm coaxial cable

- Strip back the outside covering of the 75-ohm coaxial cable to expose the braided metallic mesh.
- Pull the mesh back over the cable as shown.
- Strip the insulation about 10 mm back from the central wire.
- Attach to the supplied antenna adaptor, as shown in the diagram above.

AM (MW/LW) Antenna Connections



If reception is poor, connect an outdoor single vinyl-covered antenna to the terminal marked AM EXT.



Turn the loop until you have the best reception.

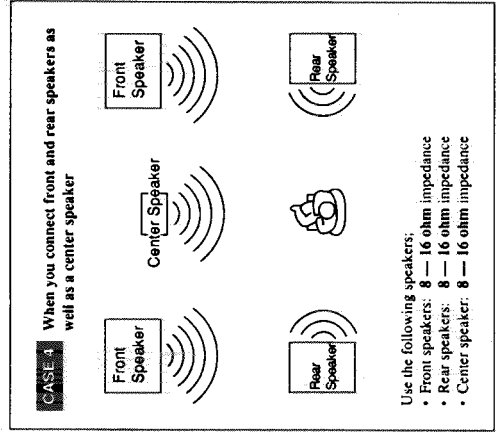
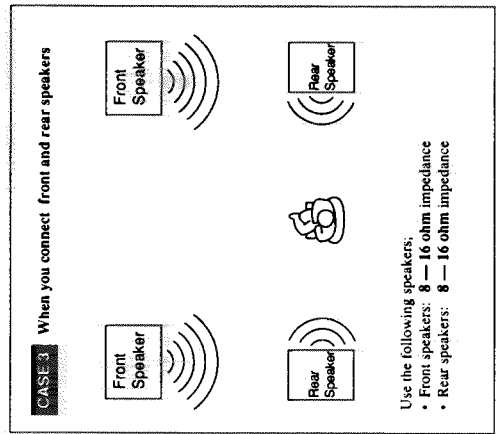
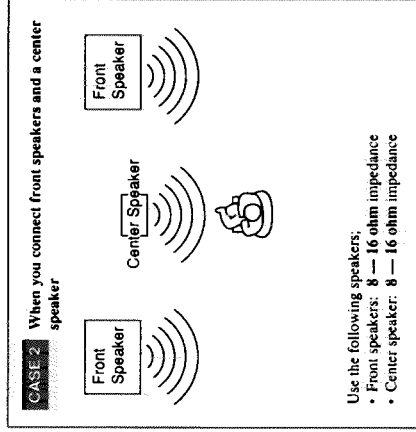
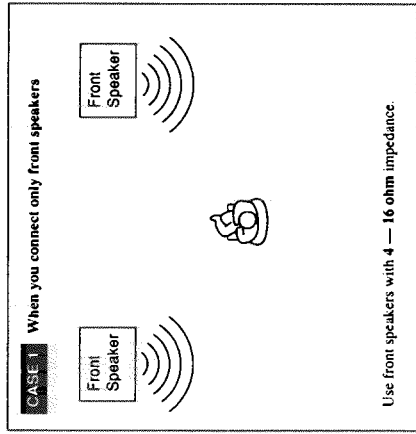
Note:

Even when connecting an outside AM (MW/LW) antenna, keep the indoor AM (MW/LW) loop antenna connected.

About the speaker impedance of the speakers

CAUTION:
When connecting speakers, use speakers with the same **SPEAKER IMPEDANCE** indicated by the speaker terminals.

- Notes:**
- The required speaker impedance of the front speakers differs depending on whether or not a center and/or rear speakers are connected at the same time. Since there are four possible speaker connections with your RX-416VBK, check which one fits your case and use the speaker with the impedance described below.
 - The required speaker impedance of the front speakers does not differ depending on whether both the **FRONT SPEAKERS ①** and **FRONT SPEAKERS ②** terminals are used or only one of them is used.

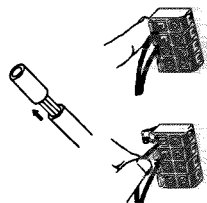


Connecting the Speakers

- You can connect the following speakers:
- Two sets of front speakers to produce normal stereo sound
 - One set of rear speakers to enjoy the surround effect
 - One center speaker to produce more effective surround effect (to make human voices clearer)

For each speaker, connect one end of the speaker signal cable (not supplied) to the speaker terminal on the rear panel and the other end to the speaker.

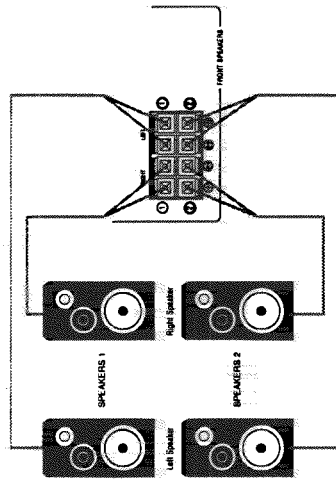
1. Open each terminal.
2. Insert the end of the speaker signal cable as shown (be sure to remove the insulation at the end of each wire first).
3. Close the terminals to clamp the speaker signal cables firmly in place.
4. Connect the black (-) and red (+) terminals on the rear panel to the black (-) and red (+) terminals marked on the speakers.



CAUTION:
Use speakers with the same impedance as marked near the terminals on the rear panel.

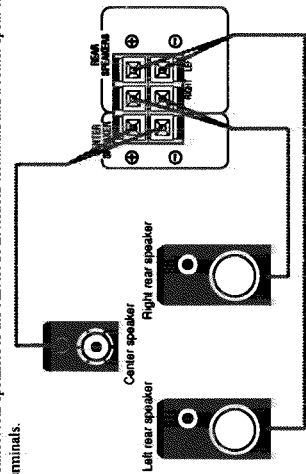
Connecting the front speakers

Connect the front speakers to the **FRONT SPEAKERS** terminals.



Connecting the rear and center speakers

Connect rear speakers to the **REAR SPEAKERS** terminals and a center speaker to the **CENTER SPEAKER** terminals.



Note:
When you connect rear speakers, make sure that both left and right speakers are connected; otherwise, no sound will come out of the rear speakers.

Connecting Audio/Video Components

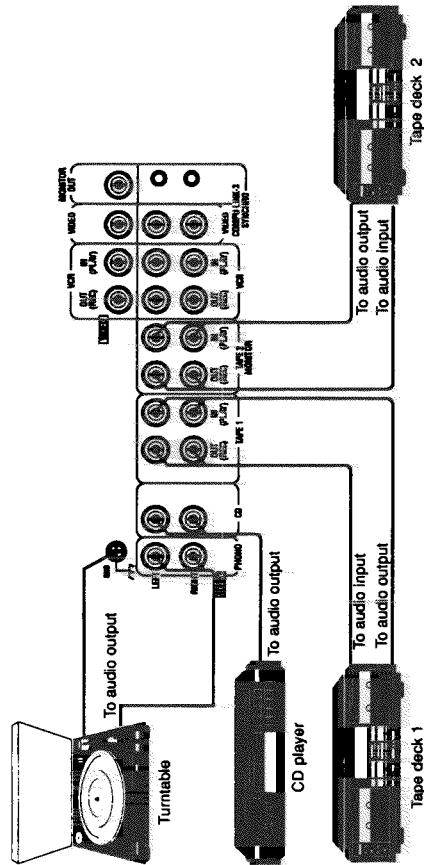
You can connect the following components to the receiver using cables with RCA pin plugs.

Audio Components	Video Components
• Turntable	• VCR
• CD player	• Video disc player
• Tape deck(s)	• TV

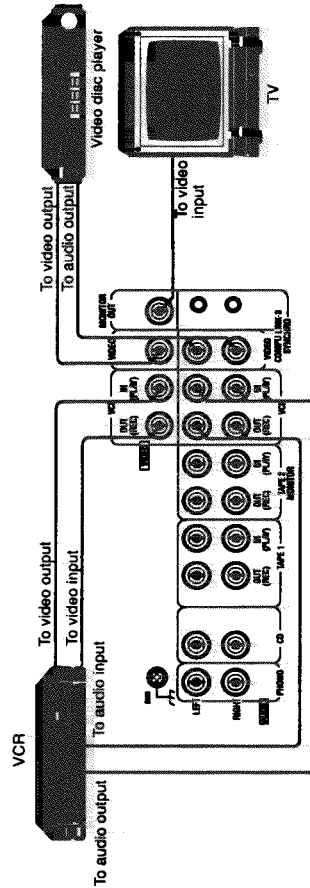
Notes:

- Both plugs and jacks are color-coded: the red ones are for right audio signals, the white ones for left audio signals, and yellow ones for video signals.
- Any turntables incorporating a small-output cartridge such as an MC (moving-coil type) must be connected to this amplifier through a commercial head-amplifier or step-up transformer. Direct connection may result in insufficient volume.
- If a ground cable is provided for your turntable, connect the cable to the screw marked GND on the rear panel.

Audio component connections



Video component connections



CAUTION: If you connect a sound-increasing device such as a graphic equalizer between the source components and this receiver, the sound output through this receiver may be distorted.

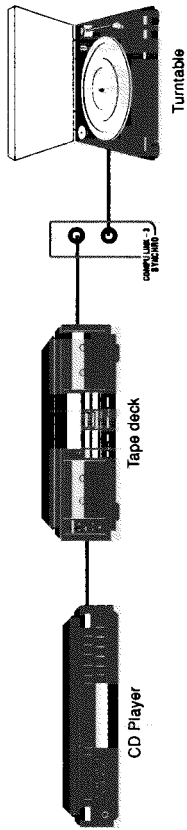
Connecting Audio Components for the COMPU LINK-3 Remote Control System

The COMPU LINK-3 remote control system allows you to control other JVC audio components from the RX-416VBK or vice versa. To use this system, connect your JVC audio components and the RX-416VBK with the cable (monaural mini-plug) supplied with those components.

If your audio component has two COMPU LINK-3 SYNCHRO jacks, you can use either one. If it has only one COMPU LINK-3 SYNCHRO jack, connect it so that it is the last item in the series of components. (For example, the turntable in the diagram below)

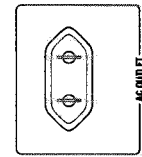
Notes:

- The COMPU LINK-3 remote control system is the upgraded version of the COMPU LINK-1 and COMPU LINK-2. Even if your components has the COMPU LINK-1 or COMPU LINK-2 jacks, you can still connect it in the COMPU LINK-3 remote control system, but some functions may not work correctly.
- For more information about the COMPU LINK-3 (-1 and -2) remote control system, see page 21.

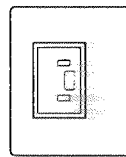


CAUTION: The COMPU LINK-3 remote control system cannot control the tape deck connected to the TAPE2 MONITOR jacks. Use only the tape deck connected to the TAPE1 jacks.

Power Supply through the RX-416VBK to a Connected Component



For Continental Europe



For the U.K.

You can use the AC outlet on the rear of the RX-416VBK to supply power to an audio component. This AC outlet is "switched" outlet. So when the RX-416VBK is off (that is, in standby mode), power is not supplied through this outlet. By turning the RX-416VBK on and off, you can turn the connected component on and off at the same time.

Note:

Do not use the AC outlet on the rear of the RX-416VBK to supply power to the component in the COMPU LINK remote control system; otherwise, the COMPU LINK remote control system may not work correctly.

CAUTION: Do not plug the component to the AC outlet on the rear if the maximum consumption is greater than indicated by the AC outlet.

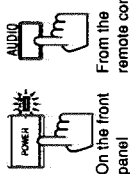
Basic Operations

The following operations are commonly used when you play any sound source.

Turning the Power On and Off

To turn on the power, press the POWER button on the front panel or the AUDIO button on the remote control. The STANDBY indicator goes off.

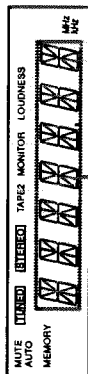
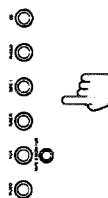
To turn off the power, press the POWER button or AUDIO button on the remote control again. The STANDBY indicator lights up.



Selecting the Source to Play

You need to select the source to listen to before you start playing any source.

Press one of the source selecting buttons so that the source name appears on the display.



Selected source name appears

On the front panel:

- VIDEO View the video component connected to the VIDEO jacks.
- VCR View the video component connected to the VCR jacks.
- TUNER Listen to an FM or AM (MW/LW) broadcast.
- Each time you press the FM/AM button (see page 13), the band alternates between FM and AM (MW/LW).
- TAPE Listen to the tape deck connected to the TAPE1 jacks.
- PHONO Listen to a record.
- CD Listen to the CD player.
- TAPEZ MONITOR Listen to the tape deck connected to the TAPEZ MONITOR jacks.

From the remote control:

- VIDEO View the video component connected to the VIDEO jacks.
- VCR View the video component connected to the VCR jacks.
- FM/AM* Listen to an FM or AM (MW/LW) broadcast.
- Each time you press the button, the band alternates between FM and AM (MW/LW).
- TAPE1* Listen to the tape deck connected to the TAPE1 jacks.
- PHONO* Listen to a record.
- CD* Listen to the CD player.
- TAPEZ Listen to the tape deck connected to the TAPEZ MONITOR jacks.

Notes:

- * The TAPEZ MONITOR button on the front panel and the TAPEZ button on the remote control have a different function from other source selecting buttons, since this button allows you to monitor the recording. For more details, see "Recording Monitor" on page 19.
- * When you press one of the source selecting buttons on the remote control marked above with an asterisk, the RX-416VBK automatically turns on.

Connecting the Power Cord

Before plugging the RX-416VBK into an AC outlet, make sure that all connections have been made. When the power cord is connected, the STANDBY indicator beside the POWER button lights up.

Keep the power cord away from the connecting cables for the TV, VCR, and antenna. The power cord may cause noise or screen interference. We recommend that you use a coaxial cable to connect the antenna, since it is well-shielded against interference.

Notes:

- A small amount of power is always consumed even in standby mode. To switch off the power completely, unplug the power cord from the AC outlet.
- If the power cord is unplugged or a power failure occurs, preset settings will be erased in a few days.

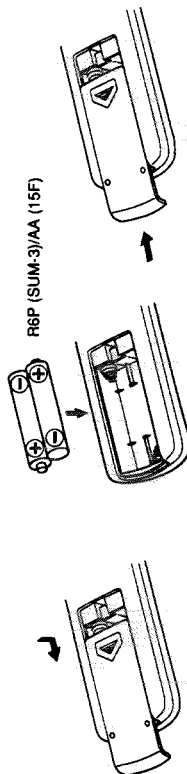
CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. When unplugging the receiver, always grasp the plug itself so as not to damage the cord.

Putting Batteries in the Remote Control

Before using the remote control, put two supplied batteries first.

1. On the back of the remote control, press down on the battery cover and slide it out.
2. Insert batteries. Make sure to observe the proper polarity: (+) to (+) and (-) to (-).
3. Slide the cover in.



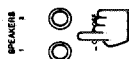
If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6P (SUM-3)/AA (15F) type dry-cell batteries.

CAUTIONS:

- Follow these precautions to avoid leaking or cracking cells:
- Place batteries in the remote control so they match the polarity indicated: (+) to (+) and (-) to (-).
 - Use the correct type of batteries. Batteries that look similar may differ in voltage.
 - Always replace both batteries at the same time.
 - Do not expose batteries to heat or flame.

Selecting the Front Speakers

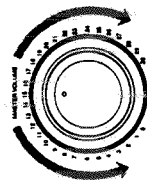
When you have connected two sets of front speakers, you can select which to use. Pressing in the SPEAKERS 1 or SPEAKERS 2 button activates the respective set of speakers.



To use the set of speakers connected to the FRONT SPEAKERS ① terminals, press in the SPEAKERS 1 button (—ON), and press out the SPEAKERS 2 button (■OFF).
 To use the set of speakers connected to the FRONT SPEAKERS ② terminals, press in the SPEAKERS 2 button (—ON), and press out the SPEAKERS 1 button (■OFF).
 To use both sets of speakers, press in both the SPEAKERS 1 and 2 buttons (—ON).
 To use neither set of speakers, press out both the SPEAKERS 1 and 2 buttons (■OFF).

Note: When only one set of the front speakers is connected to either the FRONT SPEAKERS ① or ② terminals, do not press in both SPEAKERS 1 and 2 buttons (—ON). If you do, no sound comes out of the front speakers.

Adjusting the Volume



On the front panel:

To increase the volume, turn the MASTER VOLUME control clockwise.
 To decrease the volume, turn it counterclockwise.

From the remote control:

To increase the volume, press the VOLUME + button.
 To decrease the volume, press the VOLUME - button.

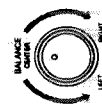
On the front panel



From the remote control

CAUTION: Always set the MASTER VOLUME control to the minimum before starting any source. If the MASTER VOLUME control is left turned up, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

Adjusting the Front Speaker Output Balance



If the sounds you hear from the front right and left speakers are unequal, you can adjust the speaker output balance with the BALANCE control.

To decrease the left channel sound, turn the BALANCE control clockwise.
 To decrease the right channel sound, turn it counterclockwise.

Adjusting the Tone

You can increase or decrease the amount of bass and treble reinforcement.

Adjusting the bass



To increase the bass reinforcement, turn the BASS control clockwise.
 To decrease the bass reinforcement, turn it counterclockwise.
 When set to the FLAT position, no bass reinforcement is applied.

Adjusting the treble



To increase the treble reinforcement, turn the TREBLE control clockwise.
 To decrease the treble reinforcement, turn it counterclockwise.
 When set to the FLAT position, no treble reinforcement is applied.

Listening at Low Volume (Loudness)

Human ears are not sensitive to bass at low volume. To compensate for this, the loudness function automatically boosts the bass level as you lower the volume.



To use the loudness function, press the LOUDNESS button. The LOUDNESS indicator lights up on the display.

To turn the function off, press the LOUDNESS button again. The LOUDNESS indicator goes off.

Recording a Source

You can record any source playing (other than the tape deck connected to the TAPE2 MONITOR jacks) through the RX-416VBK to the tape decks connected to the TAPE1 and TAPE2 MONITOR jacks, and the VCR connected to the VCR jacks at the same time. While recording, you can listen to the selected sound source at whatever sound and tone settings you like, without affecting the sound levels of the recording.

Notes:

- You cannot record from the tape deck connected to the TAPE2 MONITOR jacks to the one connected to the TAPE1 jacks (or the VCR jacks).
- The output volume level, tone adjustments, as well as surround effects cannot affect the recording.
- See also "Recording Monitor" on page 19.

Listening with Headphones

A standard pair of headphones can be connected to the PHONES jack on the front panel. Be sure to turn down the volume before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.

To listen with only headphones
 Press out both the SPEAKERS 1 and 2 buttons (■OFF).

Receiving Radio Broadcasts

You can browse through all the stations or use the preset function to go immediately to a particular station.

Tuning in Stations Manually

1. Press the FM/AM button to select the source (or press the TUNER button on the front panel). The last received station of the last received band is tuned in. Each time you press the FM/AM button, the band alternates between FM and AM (MW/LW).
2. Press the TUNING < or > button repeatedly until you find the frequency you want. Pressing the TUNING > button increases the frequency. Pressing the TUNING < button decreases the frequency.

Notes:

- When you hold down the TUNING < or > button, the frequency keeps changing until you press the TUNING < or > again or a station is tuned in.
- When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.
- When an FM stereo program is received, the STEREO indicator also lights up.

Using the Preset Tuning

Once a station is assigned to a channel number, the station can be quickly tuned. You can preset up to 40 stations at random.

Storing the preset stations

1. Tune in the station you want to preset (see above).
2. Press the MEMORY button.
"--- CH" and the MEMORY indicator appear on the display for 5 seconds.
3. Select a channel number within the 5 seconds.
On the front panel:
Press the PRESET < or > button. Pressing the PRESET > button increases the channel number. Pressing the PRESET < button decreases the channel number.
From the remote control:
Press the 10 keys.
Examples: For channel number 5, press 5. For channel number 15, press +10 then 5. For channel number 20, press +10 then 10.

Note:
When you use the remote control, be sure that the 10 keys are activated for tuner, not for the CD. (See page 20.)

4. Press the MEMORY button again while the selected channel number is blinking on the display. The selected channel number stops blinking and the MEMORY indicator goes off, and the station is assigned to the selected channel number.

To cancel a stored preset station
Storing a new station on a used number erases the previously stored one.

CAUTION:
Preset stations may be erased when power is cut off to the RX-416VBK, as when it is unplugged from the AC outlet or a power failure occurs. If the preset stations are lost, simply set the stations again using the above procedure.

Tuning in a Preset Station



- On the front panel:**
1. Press the FM/AM button. The last received station of the last selected band is tuned in. Each time you press the button, the band alternates between FM and AM (MW/LW).



2. Press the PRESET < or > button to select a preset channel number. Pressing the PRESET > button changes preset channels in increasing order. Pressing the PRESET < button changes preset channels in decreasing order.

On the remote control:

1. Press the FM/AM button. The last received station of the last selected band is tuned in. Each time you press the button, the band alternates between FM and AM (MW/LW).
2. Press the 10 keys to select a preset channel number. Examples: For channel number 5, press 5. For channel number 15, press +10 then 5. For channel number 20, press +10 then 10.

Note:

When you use the remote control, be sure that the 10 keys are activated for tuner, not for the CD. (See page 20.)

Selecting the FM Reception Mode

You can change the FM reception mode so that reception will be improved.



When an FM stereo broadcast is hard to receive or noisy
Press the FM MODE/MUTE button on the front panel. The MUTE AUTO indicator goes off on the display. Reception will be improved although you will lose the stereo effect. In this mode, you will hear noise while tuning into the stations.

To restore stereo effect

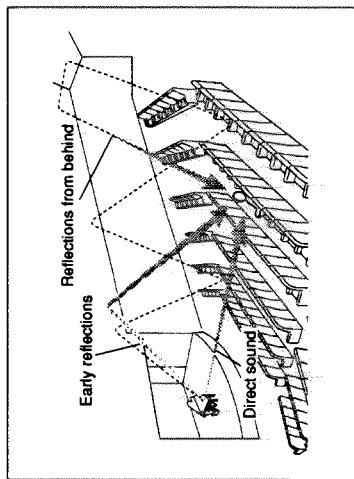
Press the FM MODE/MUTE button again so that the MUTE AUTO indicator lights up on the display. In this mode, when a program is broadcast in stereo, you will hear stereo sound, when in monaural, you will hear monaural sounds. This mode is also useful to suppress static noise between stations.

Using the Surround Processor

The built-in surround processor provides three types of sound programs -- Dolby Pro Logic, Dolby 3-Channel Logic, and JVC's Hall Surround.

What is surround?

The sound heard in a concert hall or a movie theater consists of direct sound and indirect sound: early reflections and reflections from behind. The reflected sounds are always delayed by the distances of the ceiling and walls from the listener. These reflections are some of the most important elements of the acoustic surround.




On JVC's Hall Surround

In order to reproduce a more realistic sound field in your listening room while playing an ordinary stereo source, JVC's Hall Surround has been designed to give you clear vocals and to create the feeling of a concert hall. The sound is reproduced through the front speakers and rear speakers.

On Dolby Surround

The Dolby Surround has been also developed to reproduce the important elements of the acoustic surround at home.

To watch the soundtracks of video software bearing the mark  * which includes the same encoded surround information as found in Dolby Stereo films, the RX-416VBK can provide you with 2 Dolby Surround programs (Dolby Pro Logic and Dolby 3ch Logic).

Dolby Pro Logic: Select this mode when the optional rear speakers are connected.
Dolby 3ch Logic: Select this mode when no rear speakers are connected.

* Manufactured under license from Dolby Laboratories Licensing Corporation.
 DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Using JVC's Hall Surround

You need to connect one set of rear speakers to obtain the full effect.

1. Press the SURROUND ON/OFF button (or the ON/OFF button on the remote control).
 One of the surround program indicators (PRO LOGIC, 3CH LOGIC, or HALL) lights up on the display.
2. Press the SURROUND MODE button (or the MODE button on the remote control) repeatedly until the HALL indicator lights up on the display.

To cancel the Hall Surround, press the SURROUND ON/OFF button (or the ON/OFF button on the remote control) again.

Note:
 You can also adjust the delay time (see Step 4 on page 17) and the sound level of the rear speakers (see Step 6 on page 18) for Hall Surround. Once you have adjusted the delay time for the Hall Surround, the RX-416VBK memorizes the setting.



Speaker arrangements for Dolby Surround

The following illustrations show how to obtain the optimum sound environment for various Dolby Surround settings. Try to find the speaker direction and location to create the optimum sound field.

CASE 1 When you have added a center speaker and rear speakers

In this case:
 1. Select PRO LOGIC.
 2. Select NORMAL or WIDE for center mode.
 See page 17 for more details.

CASE 2 When you have added rear speakers

In this case:
 1. Select PRO LOGIC.
 2. Select PHANTOM for center mode.
 See page 17 for more details.

CASE 3 When you have added a center speaker (without rear speakers)

In this case:
 1. Select 3CH LOGIC.
 2. Select NORMAL or WIDE for center mode.
 See page 17 for more details.

Preparing for the Dolby Surround

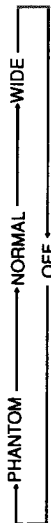
The RX-416VBK memorizes two sets of Dolby Surround adjustments; one for Pro Logic and the other for 3ch Logic. However, the sound levels of center and rear speakers cannot be stored separately.

1. Press the **SURROUND ON/OFF** button (or the **ON/OFF** button on the remote control).
One of the surround program indicators lights up on the display.
2. Press the **SURROUND MODE** button (or the **MODE** button on the remote control).
Each time you press the button, the surround program changes as follows:



PRO LOGIC: Select this mode when you use the rear speakers
3CH LOGIC: Select this mode when you use no rear speakers
HALL: This is JVC's original surround program, and is different from the Dolby Surround. To use this, see page 15.

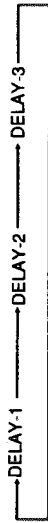
3. Press the **CENTER MODE** button.
Each time you press the **CENTER MODE** button, the mode changes as follows.



PHANTOM: Select this mode when you have not connected a center speaker.
NORMAL: Select this mode when the size of the center speaker is smaller than that of the front speakers.
WIDE: Select this mode when the size of the center speaker is the same as that of the front speakers.
OFF: Select this mode to shut off the output of the center channel signal.

- Note:**
 When you have selected **3CH LOGIC** in Step 2 above, you cannot select **PHANTOM**.

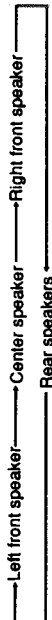
4. Press the **DELAY** button to set the delay time of the delayed sound.
Each time you press the button, the delay time changes among 3 levels.



DELAY-1: When your distance to your rear speakers is greater than that to the front speakers.
DELAY-2: When your distance to your rear speakers is almost equal to that to the front speakers.
DELAY-3: When your distance to your rear speakers is less than that to the front speakers.

- Note:**
 When you have selected **3CH LOGIC** in Step 2 above, you cannot adjust the delay time.

5. Press the **TEST** button on the remote control to check your setting.
When you press the button, "TEST" starts blinking and a test tone comes out of speakers in the following order:



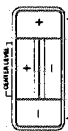
6. Set the levels of center and rear speakers.

On the front panel:

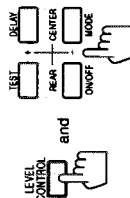
Press the **CENTER LEVEL +/-** button to set the sound level of the center speaker.
 Press the **REAR LEVEL +/-** button to set the sound level of the rear speakers.

From the remote control:

Press the **CENTER +/-** button while pressing the **LEVEL CONTROL** button to set the sound level of the center speaker.
 Press the **REAR +/-** button while pressing the **LEVEL CONTROL** button to set the sound level of the rear speakers.



On the front panel



From the remote control

Notes:

- You can adjust these levels in 1dB steps within the range of ±10 dB. The sound levels of the left and right rear speakers will be the same.
- You cannot set the sound level of the rear speakers when you have selected **3CH LOGIC**.
- You cannot set the sound level of the center speaker when you select **PHANTOM** or **OFF** for center mode.
- Although the sound levels of center and rear speakers can be stored, they are not stored separately for each surround program.

7. Press the **TEST** button on the remote control again to finish the preparation.
The test tone stops.



Using the Dolby Surround

Once you have set the Dolby Surround adjustments you can use the same adjustments every time you want to enjoy Dolby Surround.



1. Press the **SURROUND ON/OFF** button (or the **ON/OFF** button on the remote control) so that one of the surround program indicator lights up on the display.

2. Press the **SURROUND MODE** button (or the **MODE** button on the remote control) repeatedly if the surround program indicator (**PRO LOGIC** or **3CH LOGIC**) you want does not light up.
Each time you press the button, the display changes to show the following:



3. Play a sound source which was processed with Dolby Surround and is labeled with **DD** mark.



To cancel the Dolby Surround, press the **SURROUND ON/OFF** button (or the **ON/OFF** button on the remote control) again.

Other Features

The RX-416VBK has some other features like recording monitor function and others. By using these useful features, your audio life will be much improved.

Recording Monitor

If the tape deck connected to the TAPE2 MONITOR jacks is of the three-head type, you can compare the sound quality of the playing source and of the recording being made on the tape deck.

To use the recording monitor function

Press the TAPE2 MONITOR button on the front panel or the TAPE2 button on the remote control. The TAPE2 MONITOR indicator lights up on the display. You can hear the sound just recorded on the tape.

To cancel recording monitor function

Press the TAPE2 MONITOR button or the TAPE 2 button again. The TAPE2 MONITOR indicator goes off, and you hear the sound from the source playing.

Notes:

- Refer also to the manual supplied with your tape deck.
- Do not press the TAPE2 MONITOR (or TAPE2) button if no component is connected to the TAPE2 MONITOR jacks; otherwise, no sound comes out of the speakers.



On the front panel



From the remote control

RX-416VBK

Using the Remote Control

You can operate JVC's audio and video components with this receiver's remote control, since control signals for JVC components are preset in the remote control. To operate these components with the remote control, first select a source with the source selecting buttons on the remote control. Then, operate that source using the remote control.

Note: If you choose a source on the front panel directly, the remote control will not operate that source. To operate a source with the remote control, the source must be selected using buttons on the remote control.

After pressing the FM/AM button, you can perform the following operations:

- Alternates between FM and AM (MW/LW).
- Selects a preset channel number directly
 - 1 — 10, +10
 - To select channel number 5, press 5. For channel number 15, press +10, then 5. For channel number 20, press +10, then 10.

After pressing the CD button, you can perform the following operations on a CD player:

- ▶ Starts playing
- ▶ Returns to the beginning of the current track
- ▶ Skips to the beginning of the next track
- Stops playing
- ▶ Selects a track number directly
 - 1 — 10, +10
 - To select track number 5, press 5. For track number 15, press +10, then 5. For track number 20, press +10, then 10.

After pressing the TAPE1 button, you can perform the following operations on a tape deck:

- ▶ Starts playback
- ▶ Fast winds a tape from right to left
- ▶ Fast winds a tape from left to right
- Stops operation

After pressing the VCR button, you can perform the following operations on a VCR:

- ▶ Starts playback
- ▶ Rewinds a video tape
- ▶ Fast winds a video tape
- Stops operation
- CH+/- Changes TV channels on a VCR

Note:

While you are playing the source other than VCR—such as the CD player or tape deck, you cannot operate the VCR using the remote control.

After pressing the TV button (located at the upper rightmost portion of the remote control, not the one in the POWER section), you can perform the following operations on TV:

- CH+/- Changes TV channels

Notes:

- When you press the TV button (located at the upper rightmost portion of the remote control, not the one in the POWER section), the TV's input mode changes to TV.
- You can also turn the VCR and TV on and off by pressing the VCR or TV button in the POWER section of the remote control.

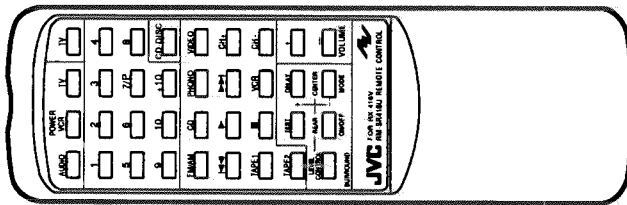
After pressing the CD-DISC button, you can perform the following operations on a CD player-changer:

- 1 — 6, 7/P Select the number of a disc installed in a CD player-changer. Then continue to operate the CD player as described above.

Note:

If you have the CD player-changer XL-MC100C and XL-MC100M, 1 — 6 buttons function as the DISC SKIP button.

- Press 2, 4, or 6 to skip to the next disc.
- Press 1, 3, or 5 to skip back to the previous disc.



Troubleshooting

Use this chart to help you solve daily operational problems. If there is any problem you cannot solve, contact your JVC service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The display does not light up	The power cord not plugged in	Plug the power cord into an AC outlet
No sound from speakers	Speaker wires not connected	Check speaker wiring and reconnect if necessary
	The SPEAKERS buttons are not set correctly	Press the SPEAKERS buttons in or out correctly
	An incorrect source is selected	Select the correct source
	The TAPE2 MONITOR indicator lights up when no component is connected to the TAPE2 MONITOR jacks	Press the TAPE2 MONITOR (or TAPE2) button so that the indicator goes off
Sound from one speaker only	Speaker wires are not connected properly	Check speaker wiring and reconnect if necessary
	The BALANCE control is set to one extreme	Adjust the BALANCE control properly
Continuous hiss or buzzing during FM reception	Incoming signal is too weak	Adjust the antenna
	The station is too far away	Select a new station
	An incorrect antenna is used	Check with your dealer to be sure you have a correct antenna
	Antennas are not connected properly	Check connections
Occasional crackling noise during FM reception	Ignition noise from automobiles	Move the antenna farther from automobile traffic
Howling during record playing	Your turntable is too close to speakers	Move speakers away from the turntable
Remote control does not work	There is an obstruction in front of the remote sensor on the RX-416VBK	Remove the obstruction
	Batteries are weak	Replace batteries

COMPU LINK Remote Control System



The COMPU LINK remote control system allows you to operate JVC audio components through the remote sensor on the RX-416VBK.

To use this remote control system, you need to connect JVC audio components through the COMPU LINK-3 SYNCHRO jacks (see page 8) in addition to the connections using cables with RCA pin plugs (see page 7). This remote control system allows you to use four functions listed below.

■ Remote Control through the Remote Sensor on the RX-416VBK

You can control all audio components through the remote sensor on the RX-416VBK using this remote control. For details, see page 20.

Note:

Aim the remote control directly at the remote sensor on the RX-416VBK.

■ Automatic Source Selection

When you press the play (▶) button on a connected component or on its own remote control, the RX-416VBK automatically turns on and changes the source to the component. On the other hand, if you select a new source on the RX-416VBK or the remote control, the selected component begins playing immediately. In both cases, the previously selected source continues playing without sound for a few seconds.

■ Automatic Power On/Off (only possible with the COMPU LINK-3 connection)

Both the CD player and tape deck turn on and off with the RX-416VBK. When you turn on the RX-416VBK, the CD player or tape deck will turn on automatically, depending which component has been previously selected. When you turn off the RX-416VBK, both the CD player and tape deck will turn off.

■ Synchronized Recording

Synchronized recording means the tape deck starts recording as soon as a CD or record begins playing.

To use synchronized recording, follow these steps:

- 1 Put a tape in the tape deck, and a disc in the CD player (or a record on the turntable).
- 2 Press the record (●) button and the pause (⏸) button on the tape deck at the same time. This puts the tape deck into recording pause.

Note:

If you do not press the record (●) button and pause (⏸) button at the same time, the synchronized recording feature will not operate.

- 3 Press the play (▶) button on the CD player or on the turntable.

The source changes on the RX-416VBK, and as soon as play starts, the tape deck starts recording. When the play ends, the tape deck enters recording pause, and stops 4 seconds later.

Notes:

- During synchronized recording, the selected source cannot be changed.
- If your CD player is playing in program mode, a 4-second blank is recorded between tracks so that the music scan feature of your tape deck can be used on the recorded tape.
- If the power of any component is shut off during synchronized recording, the COMPU LINK remote control system may not operate properly. In this case, you must start again from the beginning.
- Refer also to the manuals supplied with your CD player and tape deck.

CAUTION:

The COMPU LINK-3 remote control system cannot control the tape deck connected to the TAPE2 MONITOR jacks. Use only the tape deck connected to the TAPE1 jacks.

Specifications

Amplifier

Output Power	At Stereo operation	55 watts per channel, min. RMS, both channels driven into 4 ohms at 1 kHz with no more than 0.9% total harmonic distortion (IEC268-3/DIN).
	At Surround operation	50 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz with no more than 0.9% total harmonic distortion (IEC268-3/DIN).
	Front Channels	40 watts per channel, min. RMS, both channels driven into 8 ohms, 20 Hz to 20 kHz with no more than 0.06% total harmonic distortion.
	Center channel	50 watts per channel, min. RMS, driven into 8 ohms at 1 kHz with no more than 0.7% total harmonic distortion.
	Rear channels	50 watts, min. RMS, driven into 8 ohms at 1 kHz, with no more than 0.7% total harmonic distortion.

Total Harmonic Distortion
(8 ohms, 1 kHz)

0.06%* at 40 watts output
(* Measured by JVC Audio Analysis System)

Frequency Response (8 ohms)

20 Hz to 20 kHz (±1 dB)
20 Hz to 20 kHz (±1 dB)

Signal-to-Noise Ratio
(56 IHF/DIN)

70 dB/66 dB
87 dB/67 dB

R/AA Phono Equalization

±0.5 dB (20 Hz to 20 kHz)

Audio Input Sensitivity/Impedance (1 kHz)

2.5 mV/47 k ohms
200 mV/47 k ohms

Audio Output Level

200 mV

Tone Control Range

BASS +8 ±2dB, -8 ±2dB (at 100 Hz)
TREBLE +8 ±2dB, -8 ±2dB (at 10 kHz)

Video Input Sensitivity/Impedance

1 Vp-p/75 ohms

Video Output Level

1 Vp-p (at 1 Vp-p input)

Synchronization

negative

Signal-to-Noise Ratio

45 dB

FM Tuner (IHF)

Tuning Range	87.5 MHz to 108.0 MHz
Usable Sensitivity	12.7 dBf (1.2 µV/75 ohms)
50 dB Quieting Sensitivity	16.3 dBf (1.8 µV/75 ohms) 38.3 dBf (22.5 µV/75 ohms)
Signal-to-Noise Ratio (IHF-A weighted)	80 dB at 85 dBf 73 dB at 85 dBf

Total Harmonic Distortion

0.15% at 1 kHz
0.2% at 1 kHz

Monaural Stereo

Stereo Separation at REC OUT

40 dB at 1 kHz

Capture Ratio

1.5 dB (10 mV)

Alternate Channel Selectivity

60 dB: (4400 kHz)

Frequency Response

30 Hz to 15 kHz: (+0.5 dB, -3 dB)

AM Tuner

Tuning Range
MW: 522 kHz to 1,629 kHz
LW: 144 kHz to 288 kHz

Usable Sensitivity
MW: Loop antenna
External antenna
LW: Loop antenna

Signal-to-Noise Ratio
MW: 300 µV/m
LW: 600 µV/m
50 dB (100 mV/m)

General

Power Requirements

AC 230V^o, 50 Hz

Power Consumption

225 watts
5 watts (in standby mode)

Dimensions (W x H x D)

435 x 126 x 344 mm
(17 1/8 x 5 x 13 7/16 inches)

Mass

8.4 kg (18.6 lbs)

Design & specifications are subject to change without notice

Description of ICs

■ MN171202J5Y1 (IC401) : SYSTEM CONTROLLER

1. Terminal Layout

VDD	1	64	
KIN 0	2	63	
KIN 1	3	62	GND
KIN 2	4	61	
KIN 3	5	60	
D1	6	59	T.MUTE
D2	7	58	LOUDNESS
D3	8	57	AC P./ST.-BY LED
D4	9	56	HALL LED
D5	10	55	3CH LED
D6	11	54	PROLOGIC LED
D7	12	53	SOURCE MUTE
D8	13	52	VOL LED
S0	14	51	VOL +
S1	15	50	VOL -
S2	16	49	COMPLINK OUT
S3	17	48	COMPLINK IN
VPP	18	47	TUNED
S4	19	46	STEREO
S5	20	45	INH IN
S6	21	44	RM IN
S7	22	43	RESET
S8	23	42	DO
S9	24	41	DI
S10	25	40	CK
S11	26	39	CE
S12	27	38	DATA
S13	28	37	STB1
S14	29	36	CLK
S15	30	35	STB2
VIDEO1	31	34	TAPE2 ON/OFF
VIDEO2	32	33	SURR. ON/OFF

2.Key Matrix

	KEY IN 0 (PIN2)	KEY IN 1 (PIN3)	KEY IN 2 (PIN4)	KEY IN 3 (PIN5)
KEY OUT 0 (PIN6)	PHONO (S401)	CD (S402)	TUNER (S403)	TAPE 1 (S404)
KEY OUT 1 (PIN7)	TAPE 2 MONITOR (S405)	VCR (S406)	VIDEO (S407)	LOUDNESS (S408)
KEY OUT 2 (PIN8)	BAND FM/AM (S409)	FM MODE MUTE (S410)	FREC. DOWN (S411)	FREC. UP (S412)
KEY OUT 3 (PIN9)	POWER (S413)	MEMORY (S414)	PRESET DOWN (S415)	PRESET UP (S416)
KEY OUT 4 (PIN10)	SURROUND (S417)	SURROUND MODE (S418)	REAR - (S419)	REAR + (S420)
KEY OUT 5 (PIN11)	DELAY (S421)	CENTER MODE (S422)	CENTER - (S423)	CENTER + (S424)

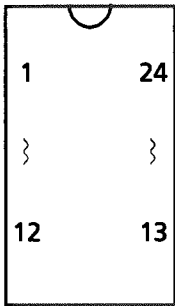
3. Description

Pin No.	Symbol	I/O	Description	Pin NO.	Symbol	I/O	Description
1	VDD	--	Power supply	33	SURR. ON/OFF	O	Surround ON/OFF control
2	KIN 0	I	Key matrix input	34	TAPE2 ON/OFF	O	TAPE2 ON/OFF control
3	KIN 1	I	Key matrix input	35	STB2	O	Strobe signal for IC601 and IC641
4	KIN 2	I	Key matrix input	36	CLK	O	Clock output for IC601,641 and IC321
5	KIN 3	I	Key matrix input	37	STB1	O	Strobe signal for IC321
6	D1/KO0	O	Grid control signal (Key matrix output)	38	DATA	O	Data for IC601,641 and IC321
7	D2/KO1	O	Grid control signal (Key matrix output)	39	CE	O	Chip select signal for IC121
8	D3/KO2	O	Grid control signal (Key matrix output)	40	CK	O	Clock output (To IC121)
9	D4/KO3	O	Grid control signal (Key matrix output)	41	DI	I	Data from PLL synthesizer (From IC121)
10	D5/KO4	O	Grid control signal (Key matrix output)	42	DO	O	PLL synthesizer control data (To IC121)
11	D6/KO5	O	Grid control signal (Key matrix output)	43	RESET	I	Reset signal input
12	D7	O	Grid control signal	44	RM IN	I	Remote control signal input
13	D8	O	Grid control signal	45	INH IN	I	Inhibit signal input
14	S0	O	Segment control signal	46	STEREO	O	STEREO indication control
15	S1	O	Segment control signal	47	TUNED	O	TUNED indication control
16	S2	O	Segment control signal	48	COMPLINK IN	I	Compulink signal input
17	S3	O	Segment control signal	49	COMPLINK OUT	O	Compulink signal output
18	VPP	--	Power supply for FL display	50	VOL -	O	Volume control signal
19	S4	O	Segment control signal	51	VOL +	O	Volume control signal
20	S5	O	Segment control signal	52	VOL LED	O	Volume indication control
21	S6	O	Segment control signal	53	SOURCE MUTE	O	Source muting
22	S7	O	Segment control signal	54	PROLOGIC LED	O	PROLOGIC indication control
23	S8	O	Segment control signal	55	3CH LED	O	3CH indication control
24	S9	O	Segment control signal	56	HALL LED	O	HALL indication control
25	S10	O	Segment control signal	57	AC P./ST.-BY LED	O	STAND-BY indication control
26	S11	O	Segment control signal	58	LOUDNESS	O	Loudness ON/OFF control
27	S12	O	Segment control signal	59	T.MUTE	O	Tuner muting control signal
28	S13	O	Segment control signal	60	--	--	Connected to GND
29	S14	O	Segment control signal	61	--	--	Non connection
30	S15	O	Segment control signal	62	GND	--	GND
31	VIDEO1	O	Video control signal (To IC661)	63	OSC1	--	Oscillation terminal
32	VIDEO2	O	Video control signal (To IC661)	64	OSC2	--	Oscillation terminal

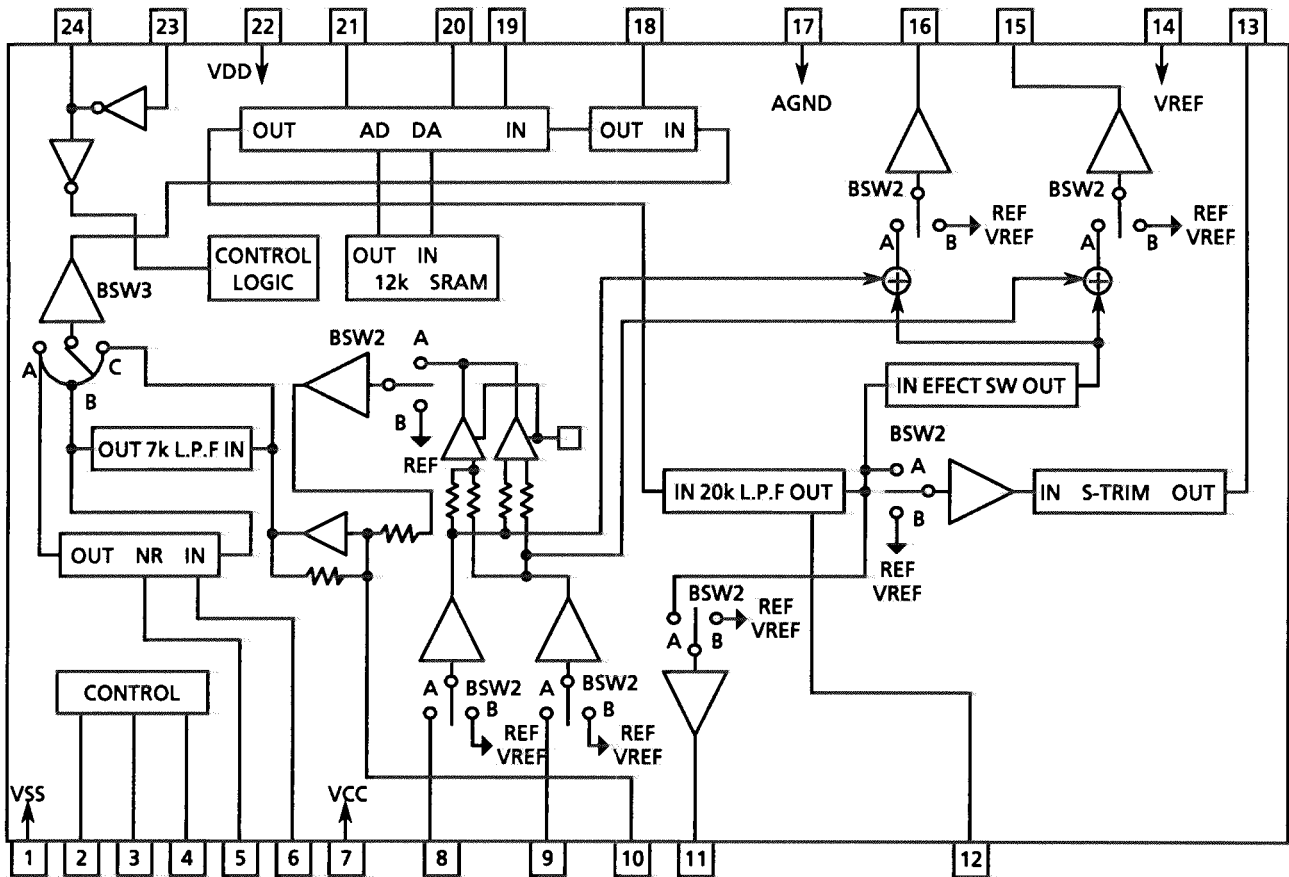
RX-416VBK

■ LV1011 (IC641) : Dolby Surround Passive Decoder

1. Terminal Layout



2. Block Diagram

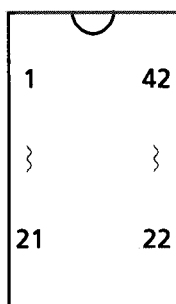


3. Pin Functions

Pin No.	Symbol	I/O	Functions
1	DGND	--	Digital GND
2	CLK	I	Serial interface clock
3	DATA	I	Serial interface data input
4	STB	I	Strobe signal input
5	NR-DET	--	Capacitor for noise reduction detection
6	NR-IREF	--	Resistor for noise reduction reference current
7	VCC	--	Supply
8	L-IN	I	Left channel signal input
9	R-IN	I	Right channel signal input
10	S-IN	I	Surround signal input
11	DELAY-OUT	--	Not used
12	DC-CUT	--	Capacitor for DC-cut
13	S-OUT	O	Surround signal output
14	VREF	--	Analog reference voltage
15	R-MIX-OUT	--	Not used
16	L-MIX-OUT	--	Not used
17	ADND	--	Analog ground
18	DC-CUT	--	Capacitor for DC-cut
19	D/A	--	Capacitor for integrator
20	NOISE SHAPER	--	Capacitor for noise shaper
21	A/D	--	Capacitor for integrator
22	VDD	--	Supply for the digital section
23	OSC	--	Oscillation terminal
24	OSC	--	Oscillation terminal

■ LA2785 (IC601) : Dolby Pro Logic Surround Signal Processor

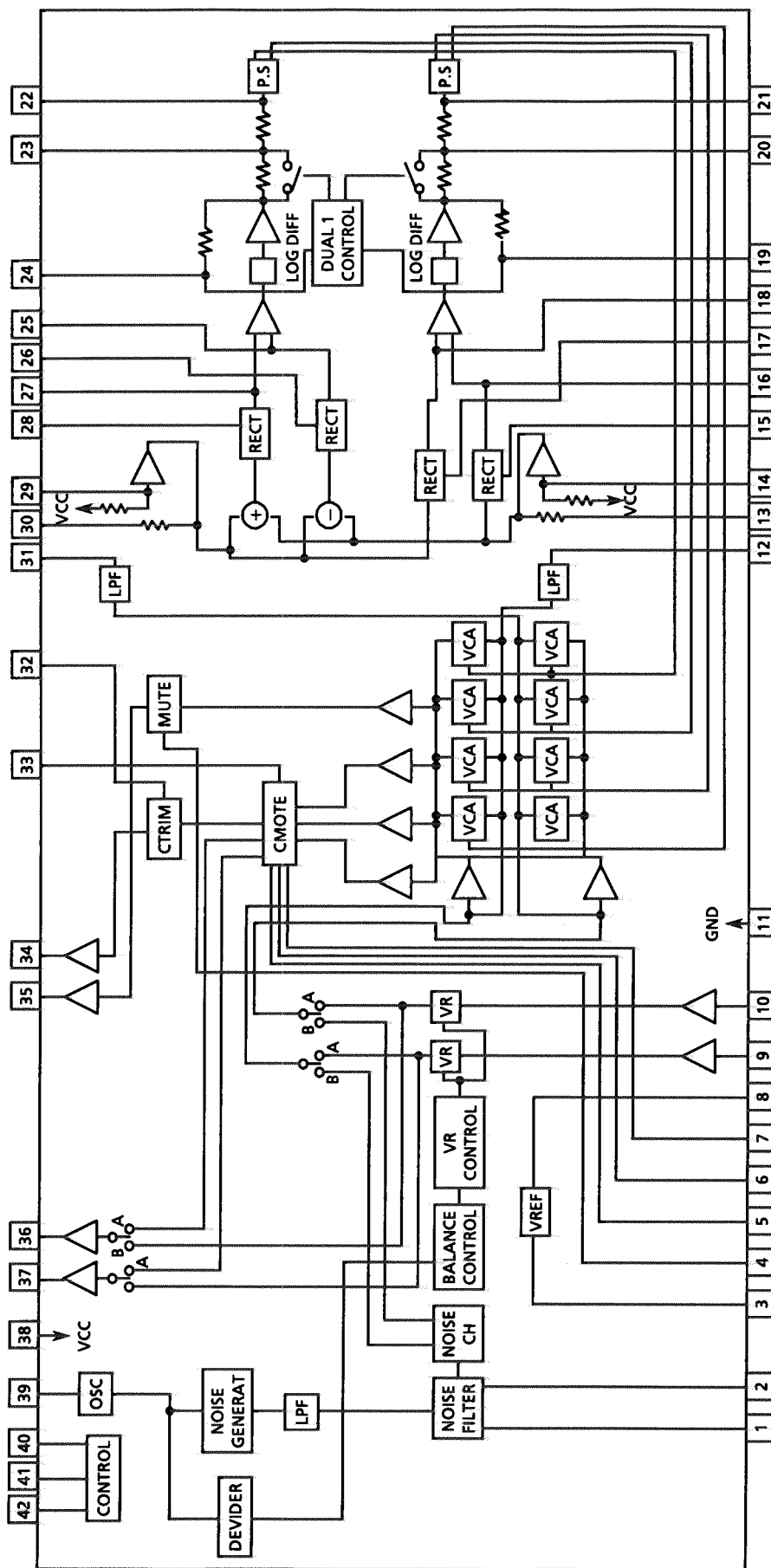
1. Terminal Layout



2. Pin Functions

Pin No	Symbol	I/O	Functions	Pin No	Symbol	I/O	Functions
1	NS-BPF1	--	Capacitor for spectrum filter in noise sequencer	22	VCS-1	--	Capacitor for time constant (in log differential area)
2	NS-BPF2	--	Capacitor for spectrum filter in noise sequencer	23	VCS-2	--	Capacitor for time constant (in log differential area)
3	VREF	--	Analog reference voltage	24	VCS-TH	--	Capacitor for time constant (in log differential area)
4	S-DC-OUT	--	Capacitor for DC-cut Sch	25	L+R RECT	--	Capacitor for Center channel detection
5	C-DC-OUT	--	Capacitor for DC-cut Cch	26	DC-CUT	--	Capacitor for DC-cut at detection circuit
6	L-DC-OUT	--	Capacitor for DC-cut Lch	27	L-R RECT	--	Capacitor for Surround channel detection
7	R-DC-OUT	--	Capacitor for DC-cut Rch	28	DC-CUT	--	Capacitor for DC-cut at detection circuit
8	VREF-BUFFER	--	VREF low impedance	29	R-BPF3	--	LPF,HPF for Right channel control circuit
9	L-IN	I	Left channel signal input	30	R-BPF2	--	LPF,HPF for Right channel control circuit
10	R-IN	I	Right channel signal input	31	R-BPF1	--	LPF,HPF for Right channel control circuit
11	GND	--	Ground	32	C-TRIM DC-CUT	--	Capacitor for DC-cut Center channel
12	L-BPF1	--	LPF,HPF for Lch control circuit	33	C-MODE-CAP	--	Capacitor for Center channel output low-pass filter
13	L-BPF2	--	LPF,HPF Left channel control circuit	34	C-OUT	O	Center signal output
14	L-BPF3	--	LPF,HPF Left channel control circuit	35	S-OUT	O	Surround signal output
15	DC-CUT	--	Capacitor for DC-cut at detection circuit	36	R-OUT	O	Right channel signal output
16	R RECT	--	Capacitor for Right channel detection	37	L-OUT	O	Left channel signal output
17	DC-CUT	--	Capacitor for DC-cut at detection circuit	38	VCC	--	power supply
18	L RECT	--	Capacitor for Left channel detection	39	OSC	--	Oscillation for noise sequencer and auto balance
19	VLR-TH	--	Capacitor for time constant (in log differential area)	40	STB	I	Strobe signal input
20	VLR-2	--	Capacitor for time constant (in log differential area)	41	DATA	I	Serial interface data input
21	VLR-1	--	Capacitor for time constant (in log differential area)	42	CLK	I	Serial interface clock

3. Block Diagram



RX-416VBK

■ LC7218M (IC121) : PLL Synthesizer

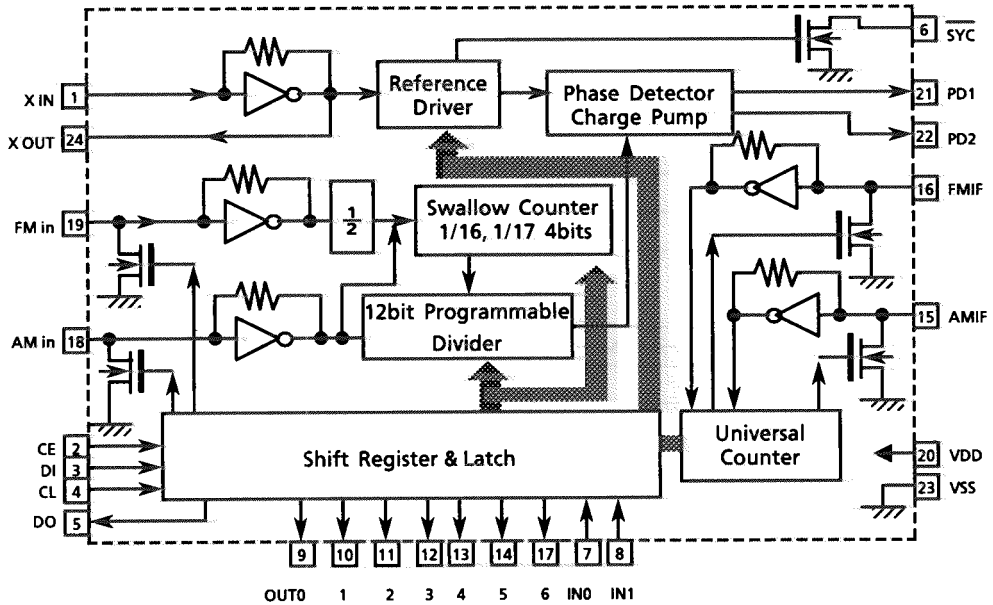
1. The main function descriptions

- (1) It makes the local oscillation frequency by the control data from IC401.
- (2) Decode the control signal and transmit the signal for receiving conditions.
- (3) For the best tuning, count the internal-frequency and transmit the data to IC201.

2. Terminal Layout



3. Block Diagram

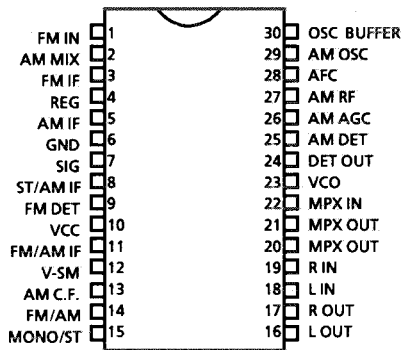


4. Pin Functions

Pin No.	Symbol	I/O	Functions
1,24	X in , X out	I/O	Crystal oscillator (7.2MHz).
2	CE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	I	Receive the control data from the controller (IC401).
4	CL	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	O	Transmit the data from LC7218JM to the controller which is synchronized with CL.
6	SYNC	—	Not used.
7	TUNED	I	Receive the tuned signal from IC102 (LA1836M).
8	STOP IN	—	Connected to GND
9	POWER	—	Not used.
10	QSC	—	Not used.
11	MONO	O	It is "H" on FM-monaural, "L" on FM-Stereo.
12	FM	O	It is "L" on FM mode.
13	MW	O	It is "L" on MW mode.
14	LW	O	It is "L" on LW mode.
15	AM-IF	I	Universal counter input for AM-IF from IC102 (LA1836M).
16	FM-IF	I	Universal counter input for FM-IF from IC102 (LA1836M).
17	IF REQ	O	Output the "IF-signal request" to IC102 when the pin-7 (tuned in) goes to "H".
18	AM OSC	I	Input the local oscillator signal of AM.
19	FM OSC	I	Input the local oscillator signal of FM.
20	V _{DD}	—	This is a terminal of power supply.
21	PD1	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	—	Not used.
23	V _{SS}	—	Connected to GND

■ LA1836M (IC102) : FM AM IF AMP & detector, FM MPX DECODER

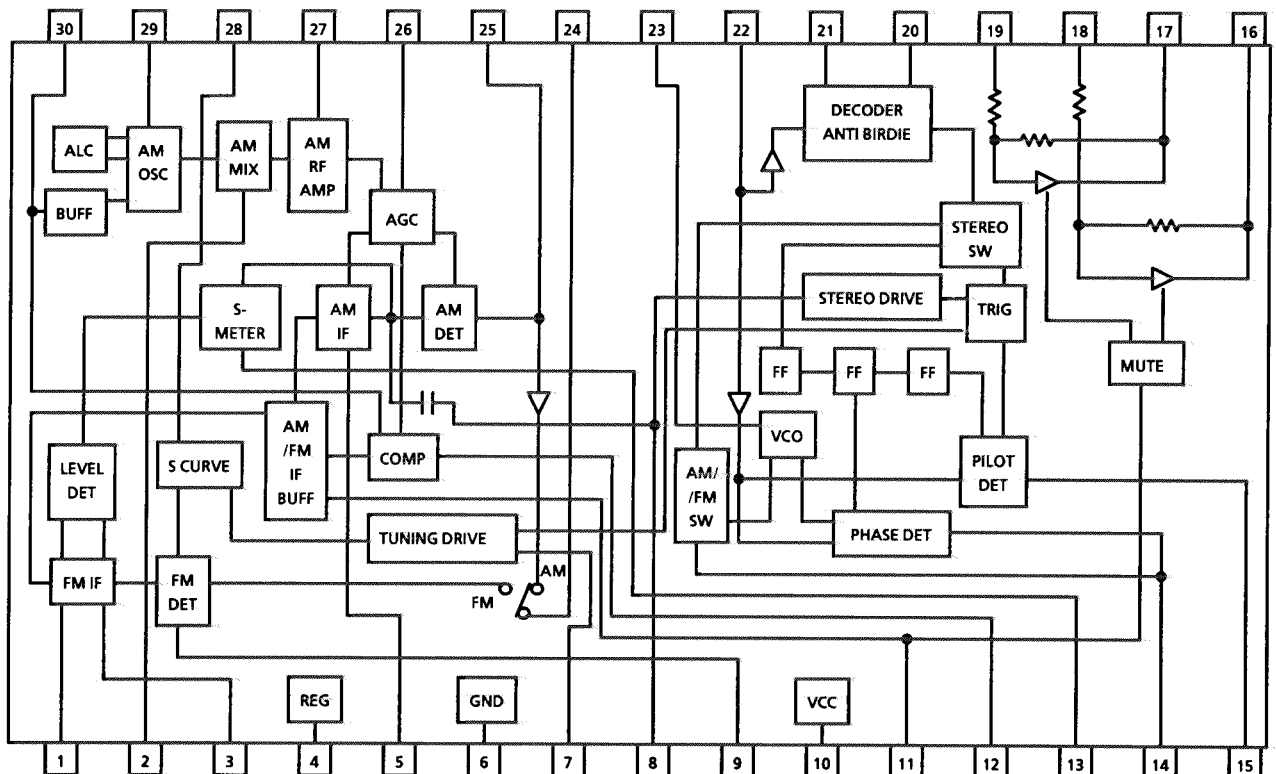
1. Terminal Layout



3. Pin Function

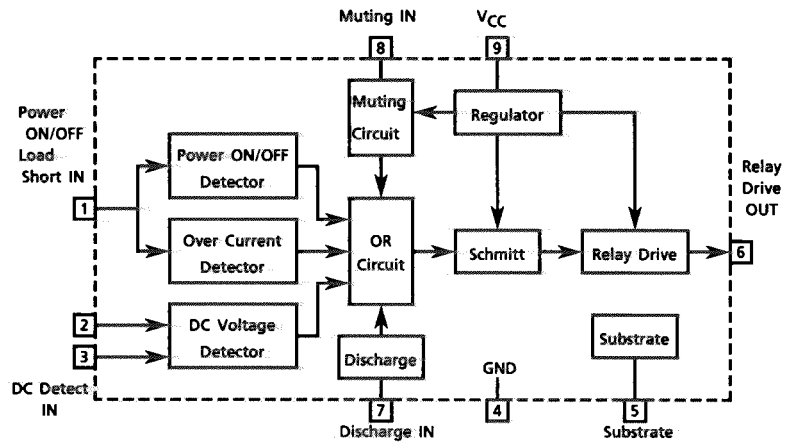
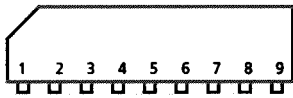
Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF Signal.
2	AM MIX	O	This is an output terminal for AM mixer.
3	FM IF	I	Bypass of FM IF
4	REG	—	Register value between pin4 and pin28 desides the frequency width of the input signal.
5	AM IF	I	Input of AM IF Signal.
6	GND	—	This is the device ground terminal.
7	SIG	O	When the set is tuning , this terminal becomes "L".
8	ST/AM IF	O	Stereo indicator output. Stereo : "L", Mono : "H"
9	FM DET	—	FM detect transformer.
10	VCC	—	This is the power supply terminal.
11	FM/AM IF //MUTE	O/I	When the signal of IF REQ of IC121(LC7218JM) appear, the signal of FM/AM IF output. //Muting control input.
12	VSM	O	S Meter output and adjust AM SD sensitivity.
13	AM C.F.	O	This is a terminal of AM ceramic filter.
14	FM/AM	I	Change over the FM / AM input. "H" : FM, "L" : AM
15	MONO/ST	O	Stereo : "H", Mono : "L"
16	L OUT	O	Left channel signal output.
17	R OUT	O	Right channel signal output
18	LIN	I	Input terminal of the Left channel post AMP.
19	R IN	I	Input terminal of the Right channel post AMP.
20	MPX L OUT	O	Mpx Left channel signal output.
21	MPX R OUT	O	Mpx Right channel signal output.
22	MPX IN	I	Mpx input terminal.
23	VCO	I	Voltage controlled oscillator terminal.
24	DET OUT	O	AM/FM detection output.
25	AM DET	—	AM low cut adjustment.
26	AM AGC	I	This is an AGC voltage input terminal for AM.
27	AM RF	I	This is an input terminal for AM RF signal.
28	AFC	—	This is an output terminal of voltage for FM-AFC.
29	AM OSC	—	This is a terminal of AM Local oscillation circuit.
30	OSC BUFFER	O	AM Local oscillation Signal output.

2. Block Diagram

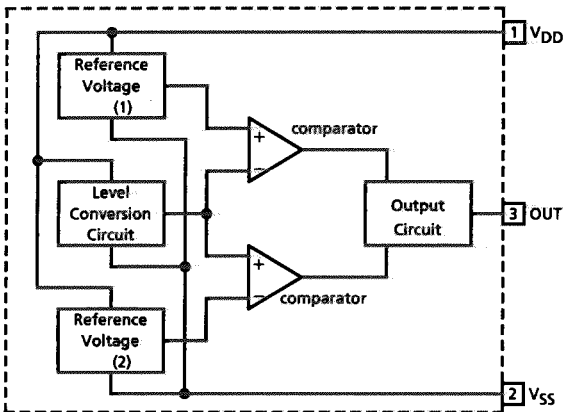


RX-416VBK

■ TA7317P (IC901) : Protector

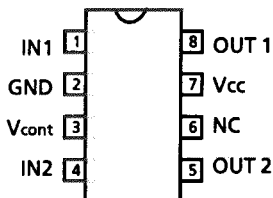


■ MN1281(P.Q) (IC403) : Reset IC



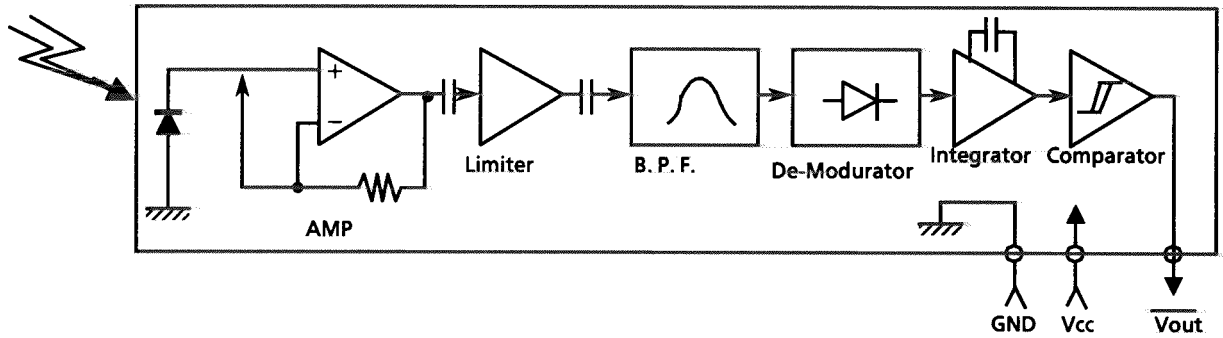
Pin No.	Pin Name	Functions
1	V _{DD}	Power supply
2	V _{SS}	Ground
3	OUT	Reset signal output : Low level is output when resetting : High level is output when cancelling the reset.

■ LB1639-CV (IC511) : Motor Driver

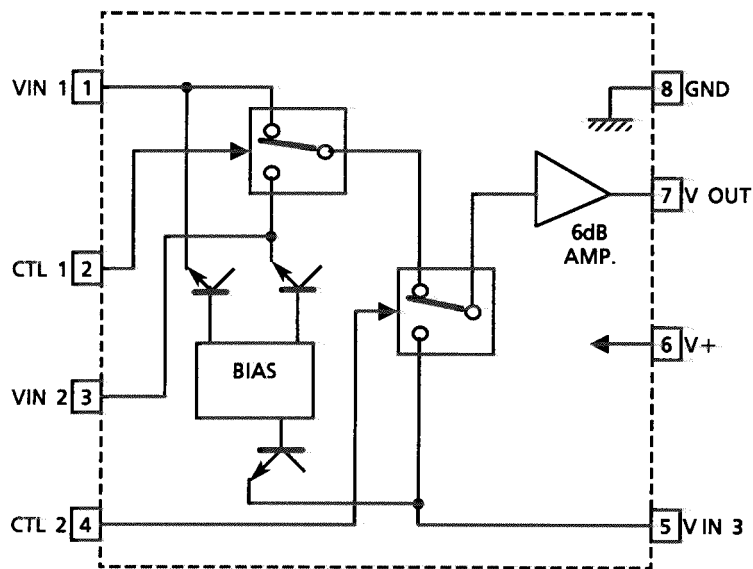


IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	CLOCKWISE
L	H	L	H	COUNTER-CLOCKWISE
H	H	OFF	OFF	WAITING
L	L	OFF	OFF	WAITING

■ SPS-420-1 (IC402) : Remote Control Module IC



■ NJM2246D (IC661) : Video Switch

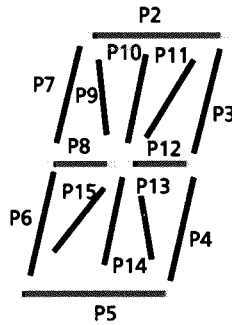
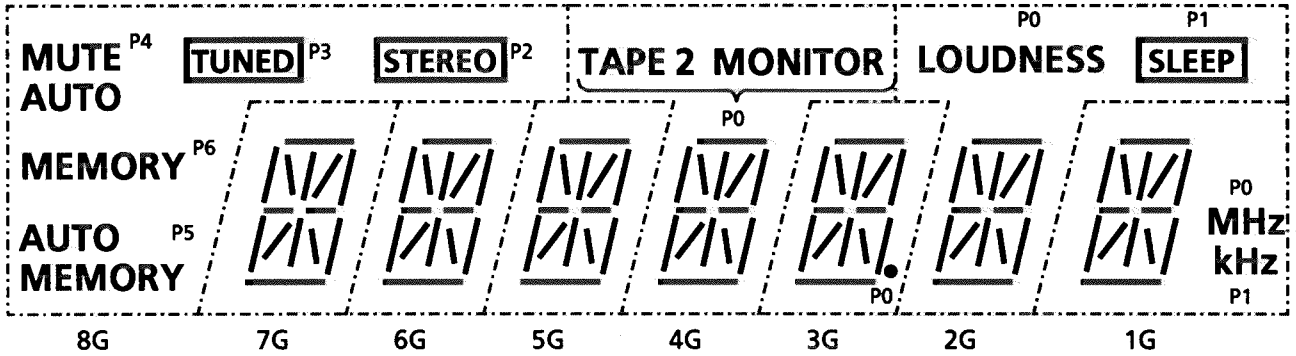


Control Signal—OutputSignal

CTL 1	CTL 2	Output
L	L	VIN 1
H	L	VIN 2
L/H	H	VIN 3

Internal Connections of the FL Display

■ELU0001-144 : FL401



Pin Connection

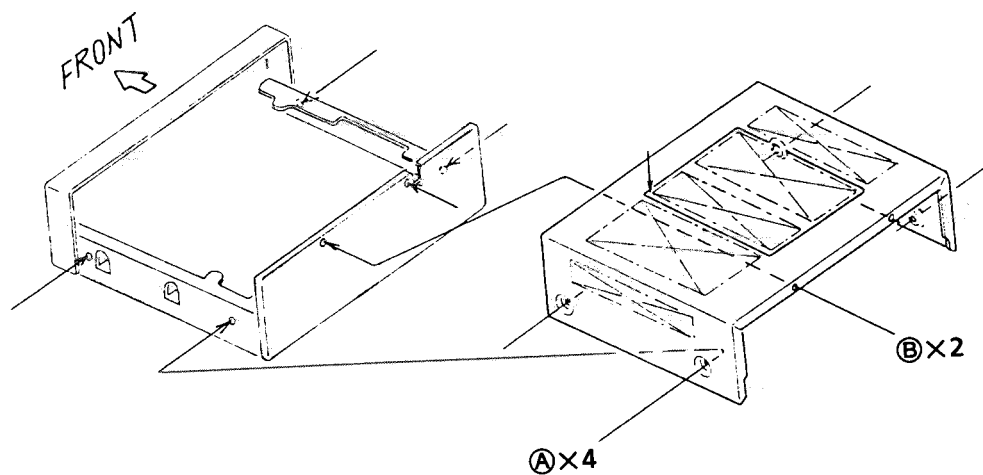
PIN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
ELECTRODE	F1	F1	F1	NP	NP	NP	NP	NP	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6		
PIN NUMBER			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ELECTRODE			P5	P4	P3	P2	P1	P0	8G	7G	6G	5G	4G	3G	2G	1G	NP	F2	F2	F2

Note F : Filament, G : Grid, P : Element, NP : No Pin, NC : No Connection

Disassembly Procedures

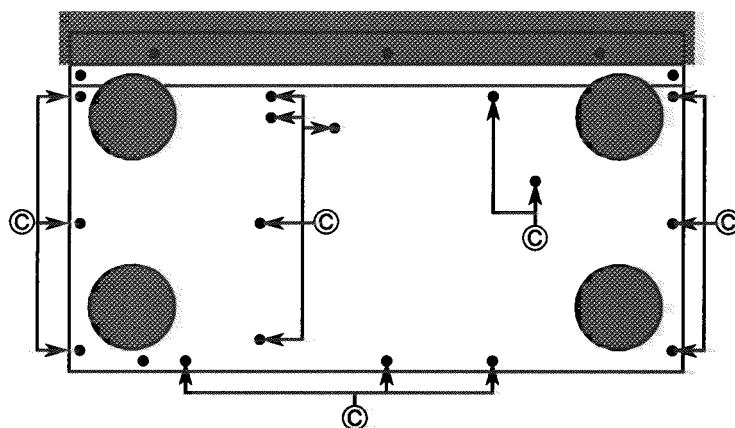
(1) Removing the top cover

1. Remove 4 screws **A** fastening both sides of top cover, and 2 screws **B** fastening the rear side.
2. Remove the top cover.



(2) Removing the Bottom Cover

1. Remove 16 screws **C**.
2. Remove the bottom cover.



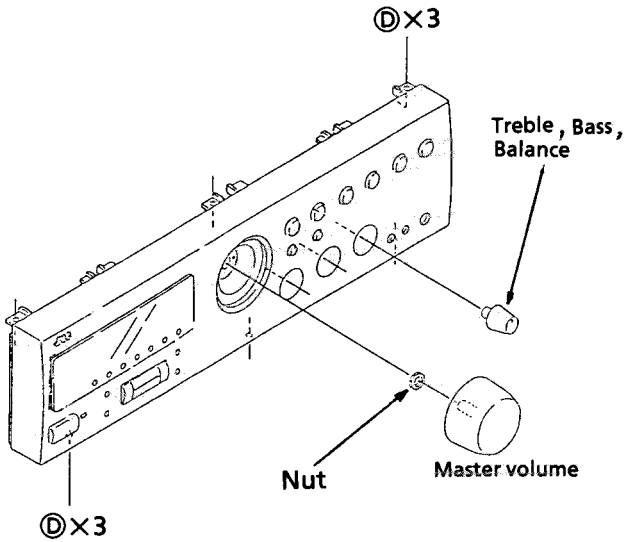
A .. E61660-004

B ... E73273-003

C ... SBSG3008CC

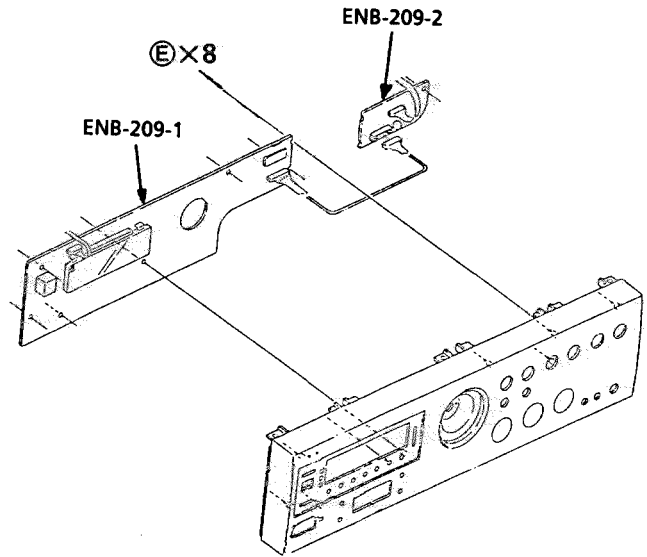
(3) Removing the Front Panel Assembly

1. Remove 3 screws **(D)** fastening top of the front panel, and 3 screws **(D)** fastening bottom of it.
2. Remove the Master volume knob, Treble knob, Bass knob and Balance knob.
3. Remove the nut fastening the Master volume.
4. Remove the front panel disconnecting some wires. (CN881, CN442, J103)



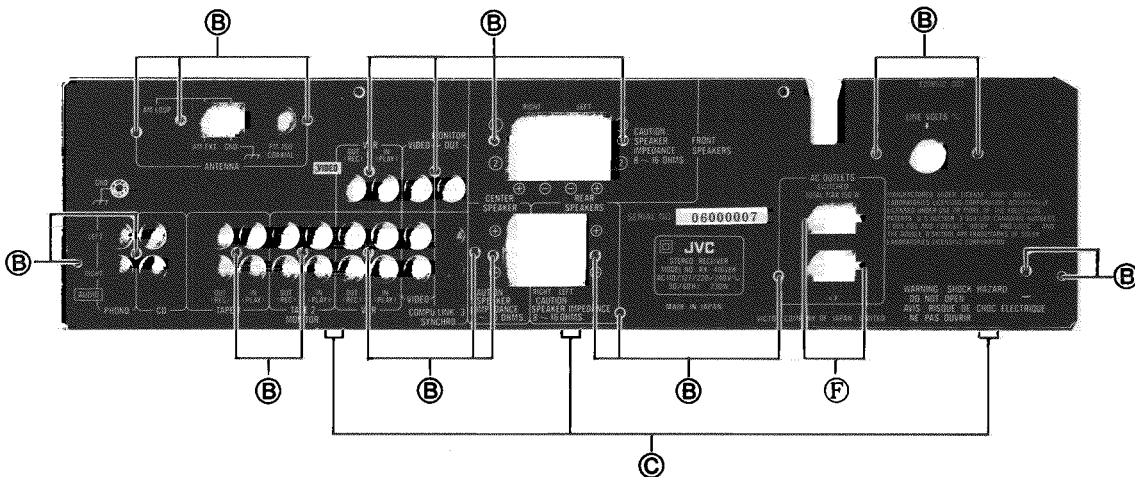
(4) Removing the Front P.C. Board

1. Removing the front panel assembly.
2. Remove 8 screws **(E)**.
3. Remove the front P.C. Board.



(5) Removing the Rear Panel

1. Remove 23 screws **(B)** and **(F)**.
2. Remove 3 screws **(C)** fastening bottom sides of rear panel.
3. Take it out.



(B) E73273-003

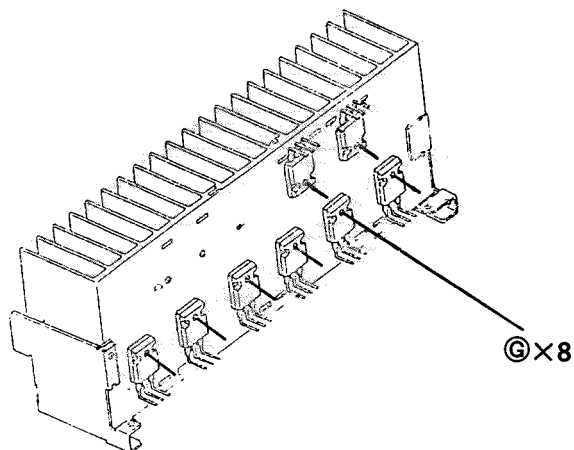
(C) SBSG3008CC

(D) SDSG3008M

(E) SDSF2608Z

(F) SDSG3008CC

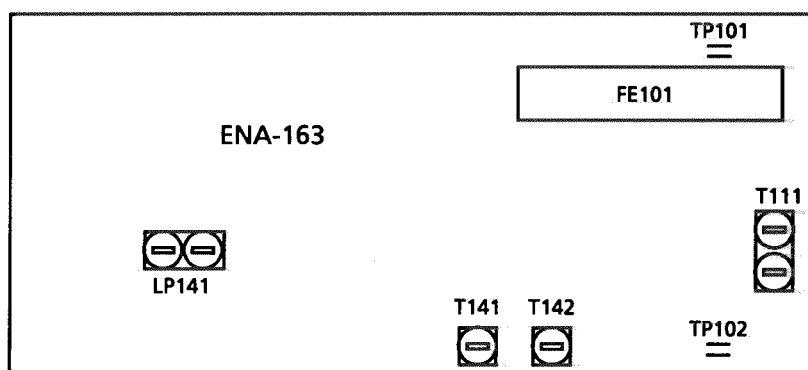
- (6) Removing the Power Transistor
1. Remove the top cover and bottom cover.
 2. Unsolder the broken transistor.
 3. Remove the some screws ③ fastening it.
 4. Remove it.



③ .. E73525-003

ADJUSTMENT PROCEDURES

■ Tuner section



Tuning range

Area	Range		
	LW (kHz)	MW (kHz)	FM (MHz)
Continental Europe, the U.K	144~288	522~1629	87.5MHz~108MHz
Australia	—	522~1629	
Universal type(AM Channel space 9kHz)	—	531~1602	
Universal type(AM Channel space 10kHz)	—	530~1600	

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(1) Tuning Voltage

Confirm the voltages in the table at TP101.

FM Tuning voltage (Unit : V)

Area	Frequency	
	87.5MHz	108MHz
the U.K., Continental Europe, Australia, Universal	1.6±1.0	8.0±2.0

AM Tuning voltage (Unit : V)

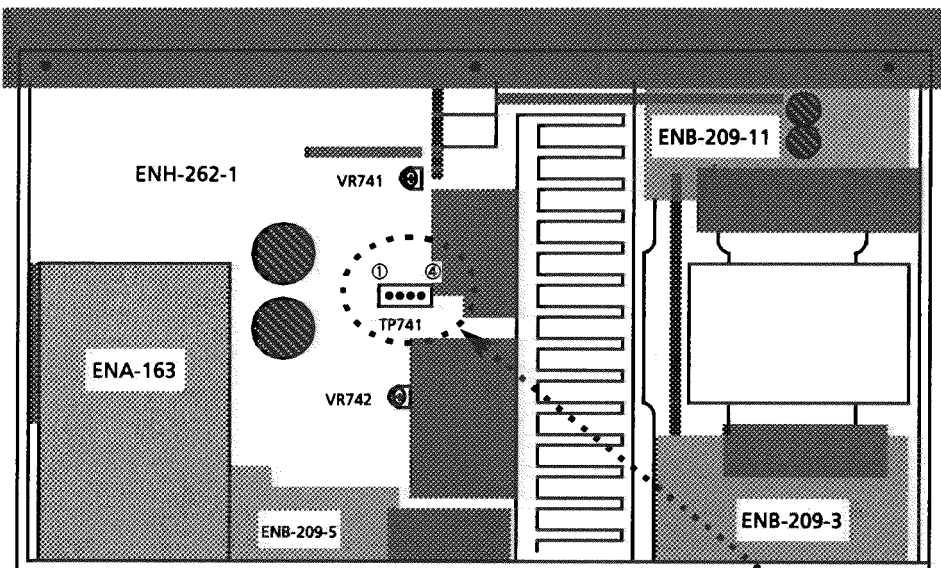
Area	Frequency (MW)						Frequency (LW)	
	522KHz	530KHz	531KHz	1600KHz	1602KHz	1629KHz	144kHz	288kHz
the U.K., Continental Europe	0.5 <1.0	—	—	—	—	7.5 <8.5	0.5 <1.0	5.0 <7.5
Australia	0.5 <1.0	—	—	—	—	7.5 <8.5	—	—
Universal (Chanel space9kHz)	—	—	0.8 <1.0	—	7.2 <7.9	—	—	—
Universal (Chanel space10kHz)	—	0.8 <1.0	—	7.2 <7.9	—	—	—	—

(2) FM Center meter

Receive a broadcast by using the function of 'AUTO STOP'.

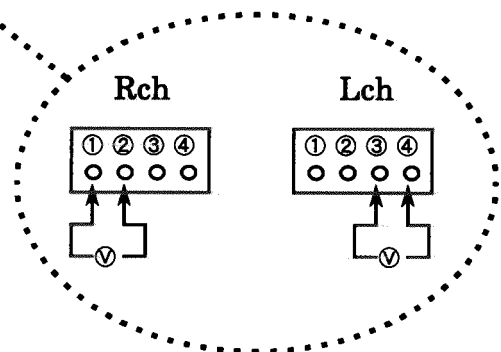
Adjust T141 (Detector coil) so taht the voltage at TP102 becomes $0 \pm 1.5mV$.

■ Power Amplifier section



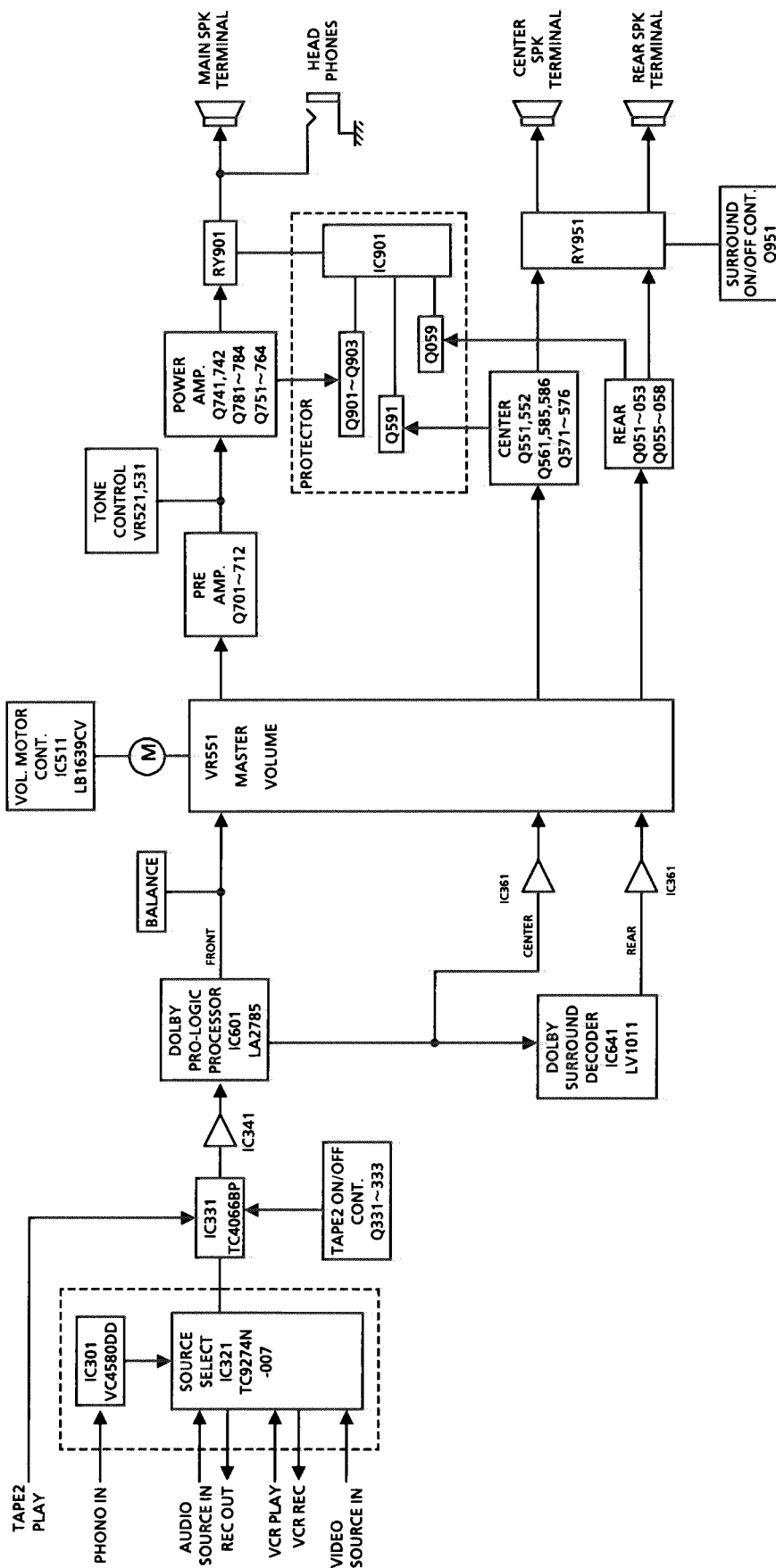
■ Idling current

- (1) Set the volume control to minimum during this adjustment.
- (2) Turn VR741 and VR742 fully counterclockwies to warm up befor adjustment.
If the heatsink is already warm from previous use the correct adjustment can not be made.
- (3) For L-ch, connect a DC voltmeter between TP741's pin1 and pin2.
And, connect it between pin3 and pin4 for R-ch.
- (4) Appox. 30minutes later after power on, djust VR741 for L-ch , or VR742 for R-ch so that the DC voltmeter's value has 1mV~10mV.

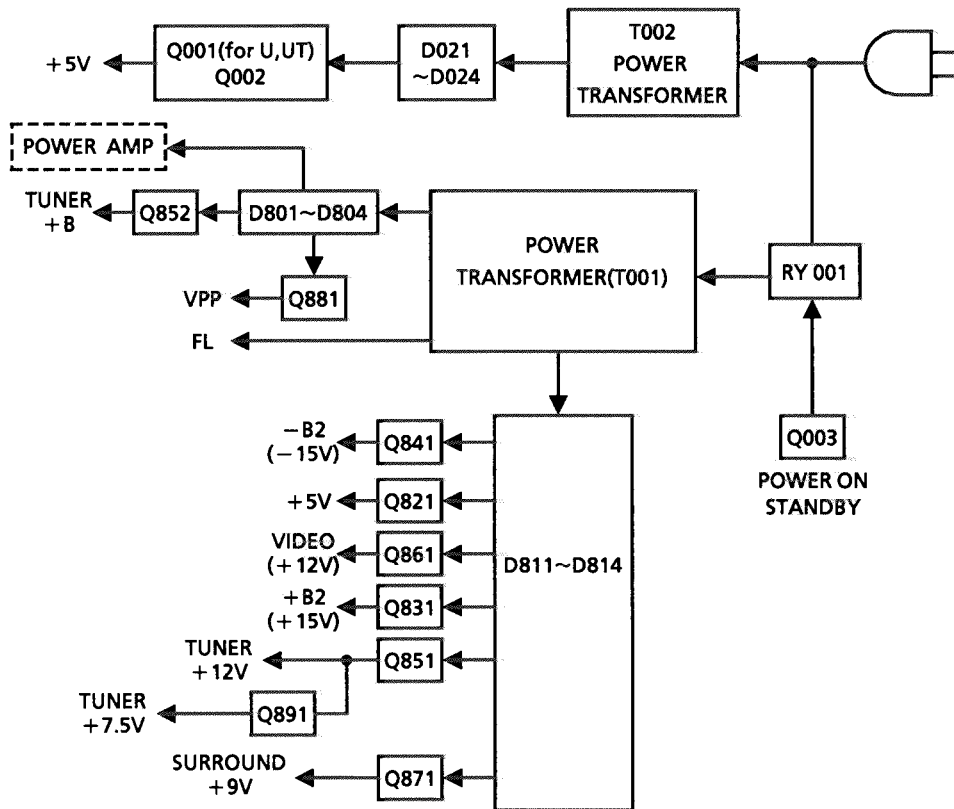


Block Diagrams

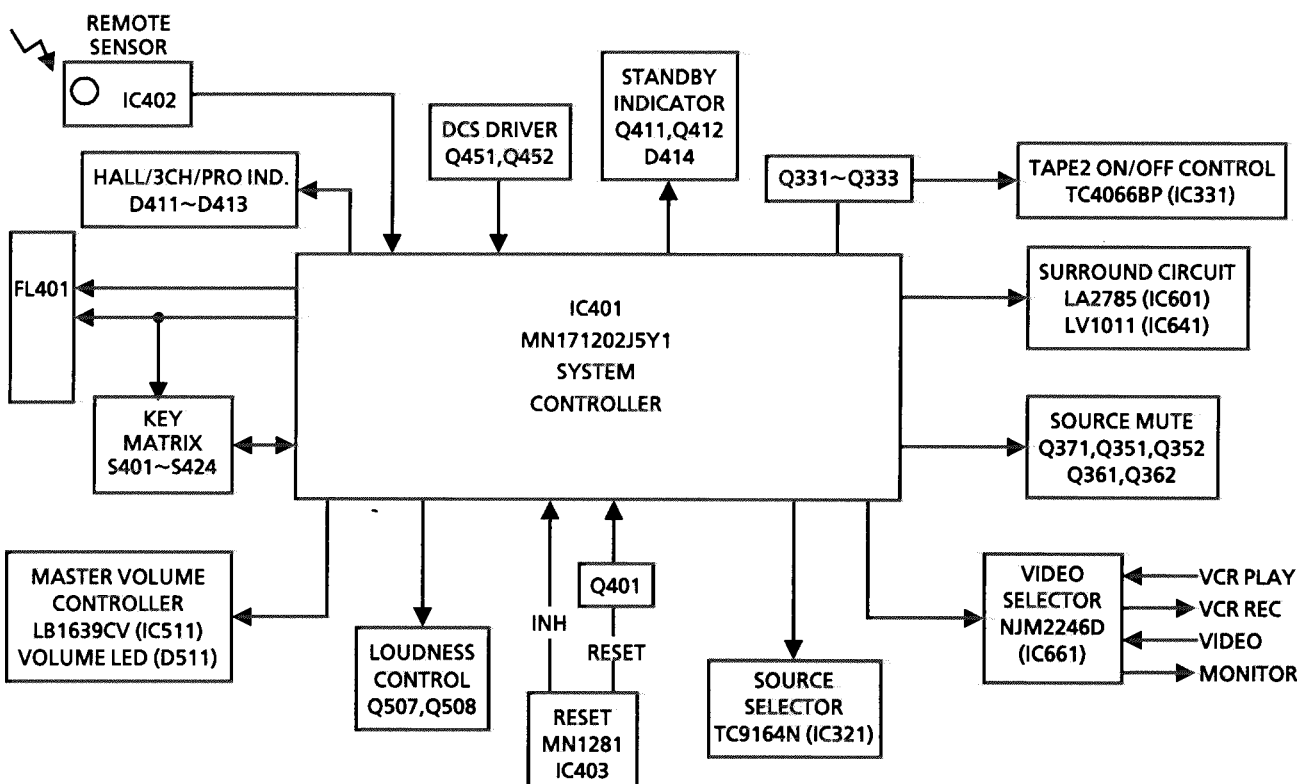
■ Signal Flow Section



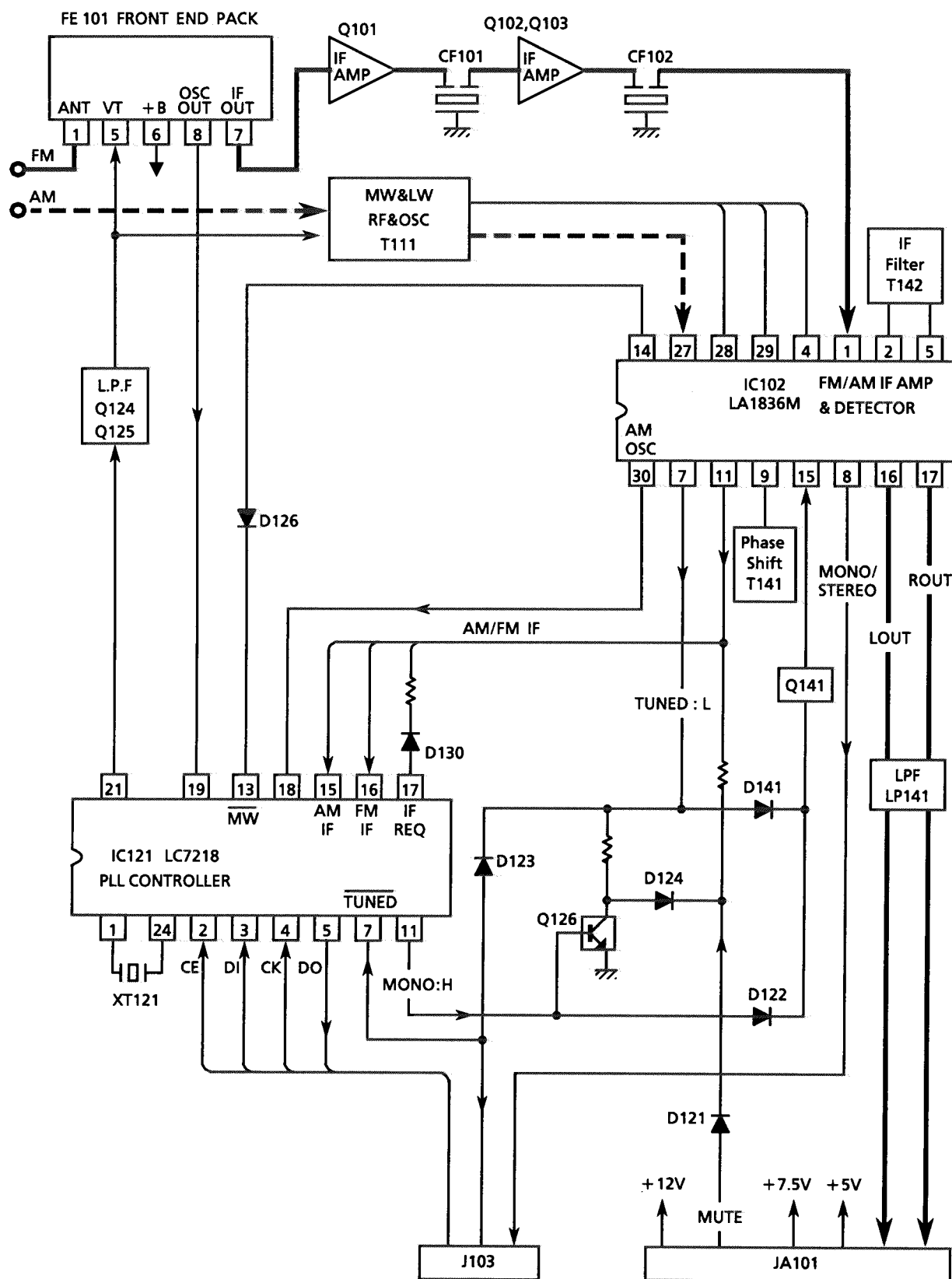
■ Power Supply Section



■ Control Section



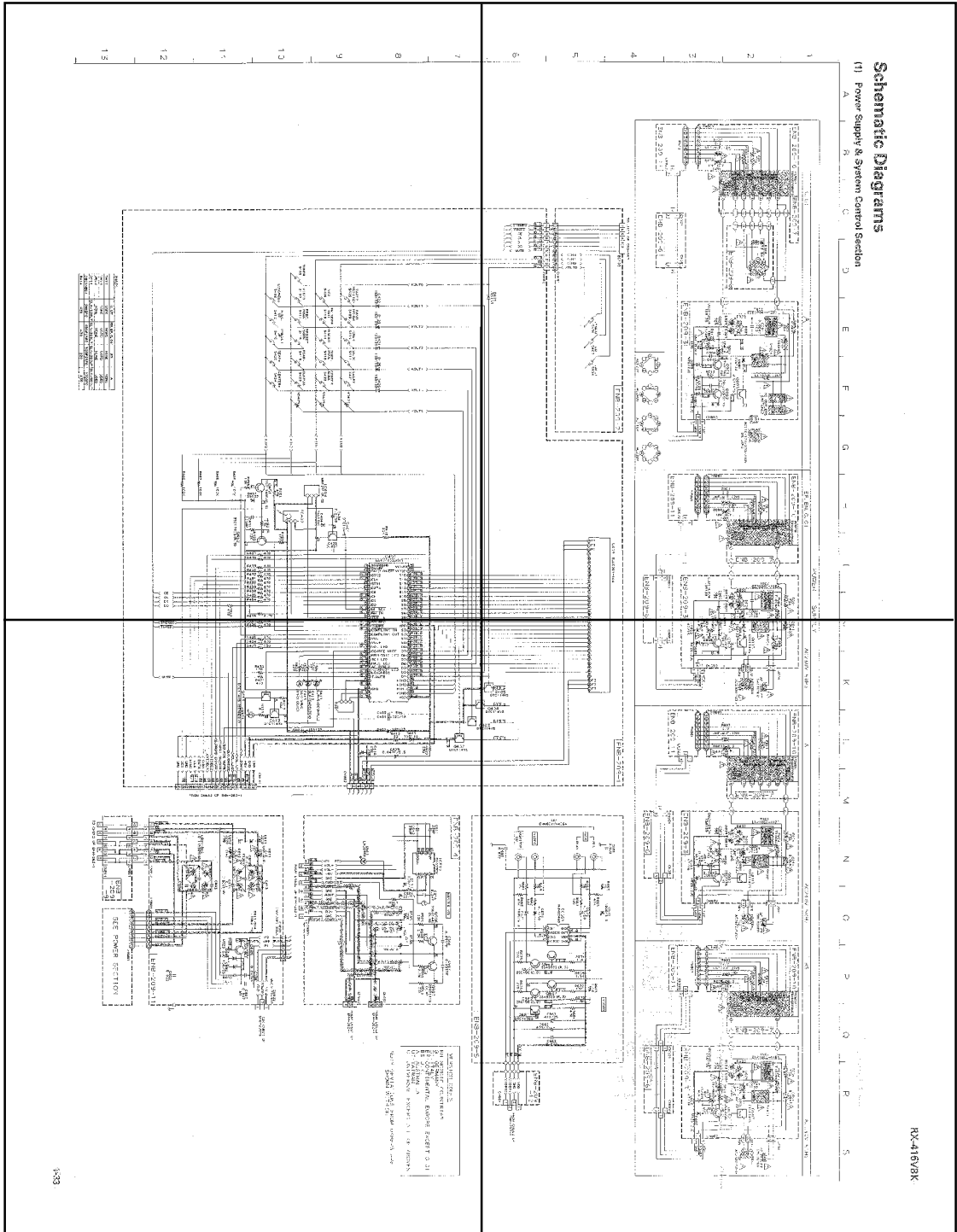
■ Tuner Section



— MEMO —

P1-33-a

P1-33-b

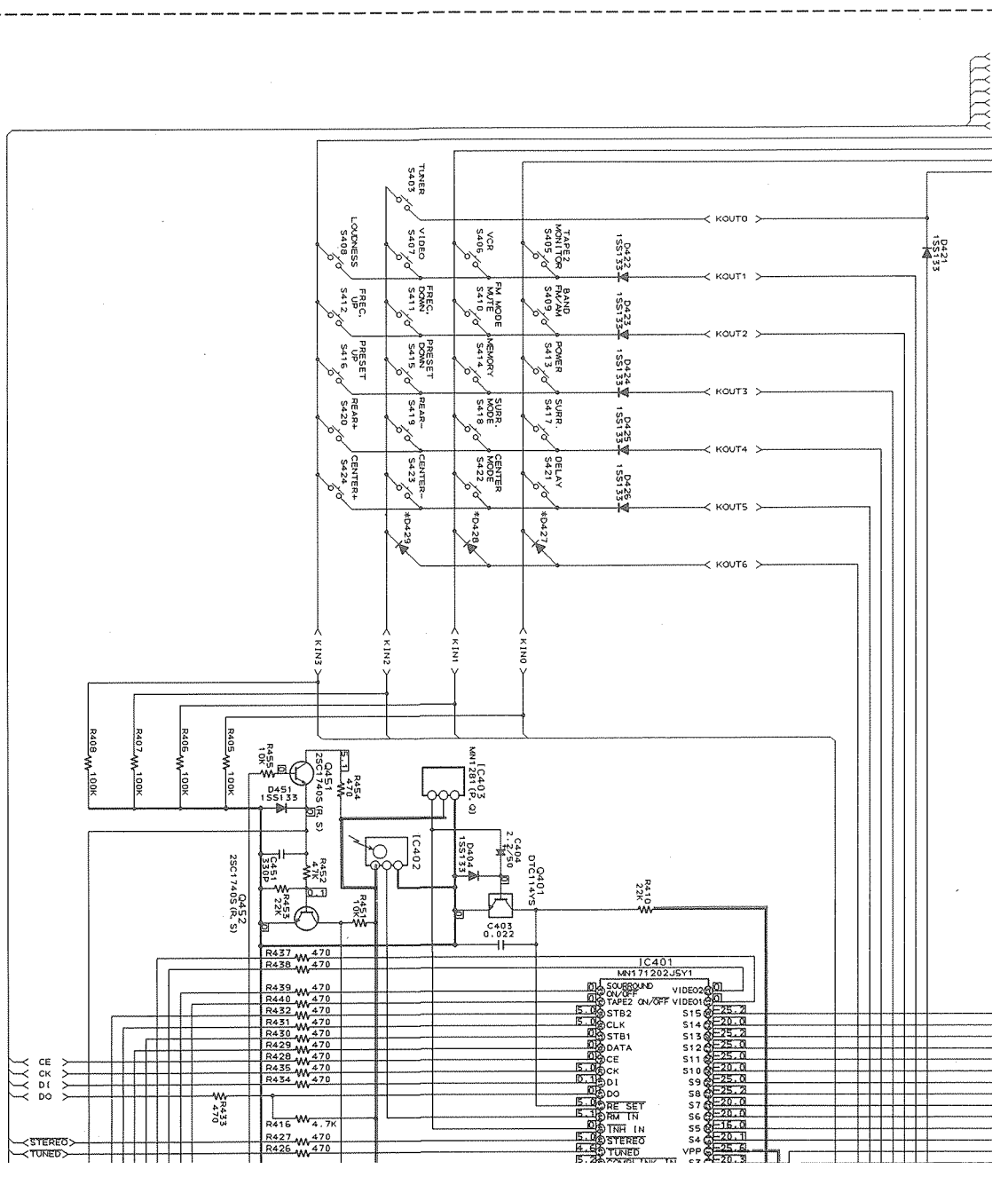


P1-33-c

P1-33-d

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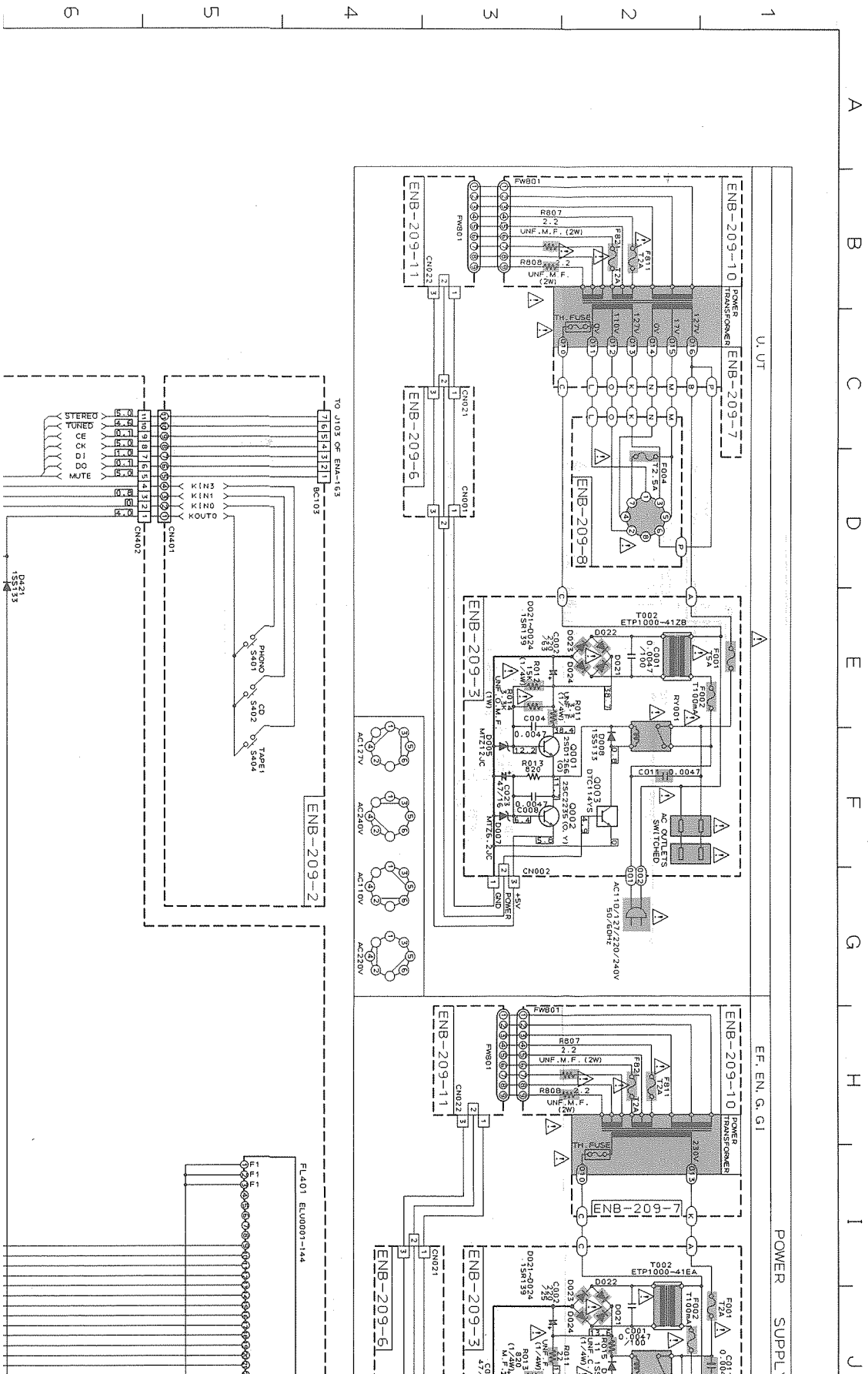


MARK

	U. UT	EN. EF. Q. GI	BS	A
D427	USED	NONE	NONE	NONE
D428	NONE	USED	USED	USED
D429	NONE	NONE	NONE	USED
D414	SLA-380L.T	SLA-380L.T	SLA-380U.T	SLA-380L.T
D801-804	30DZFC	30DZ25FC	30DZ25FC	30DZFC
R414	430	430	220	430

Schematic Diagrams

(1) Power Supply & System Control Section



6

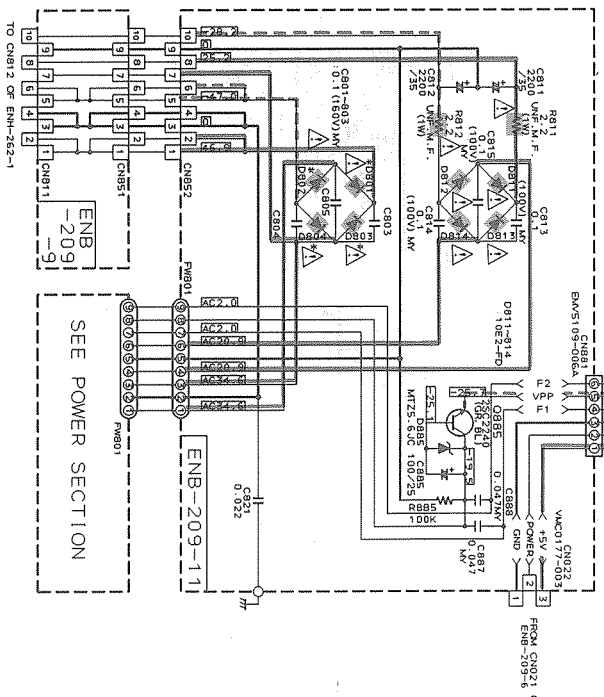
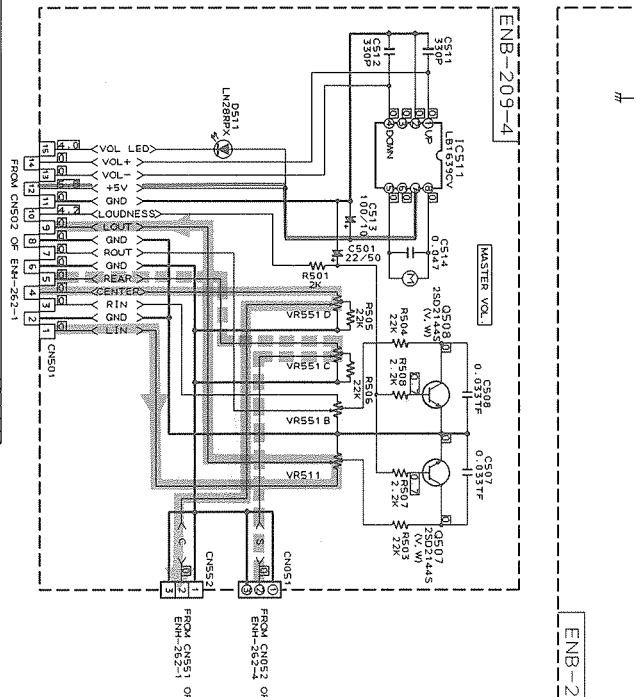
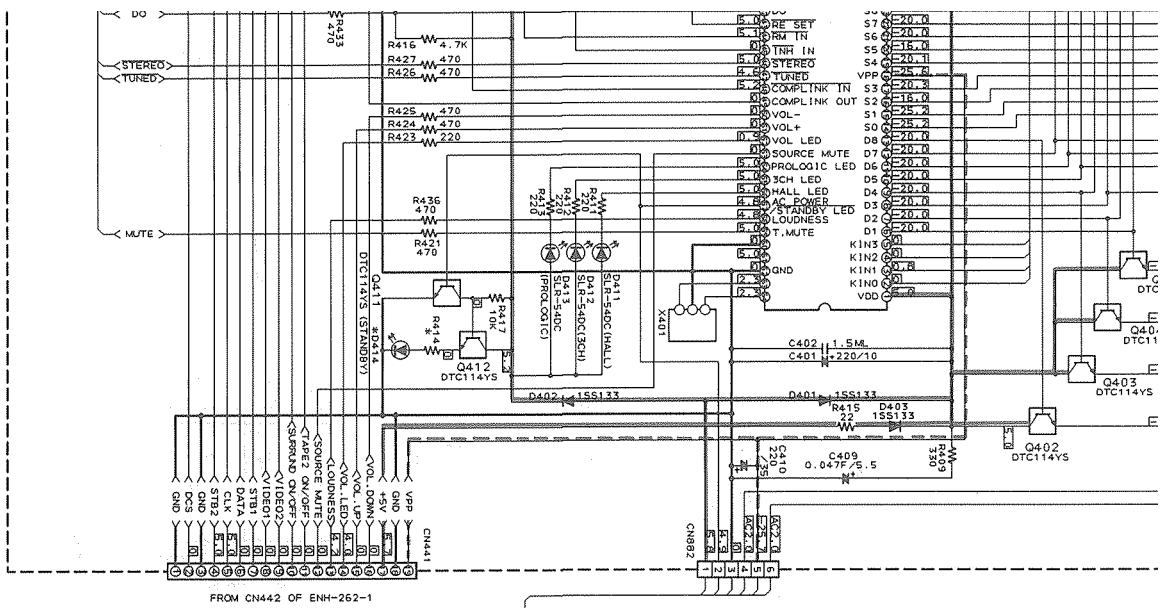
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3

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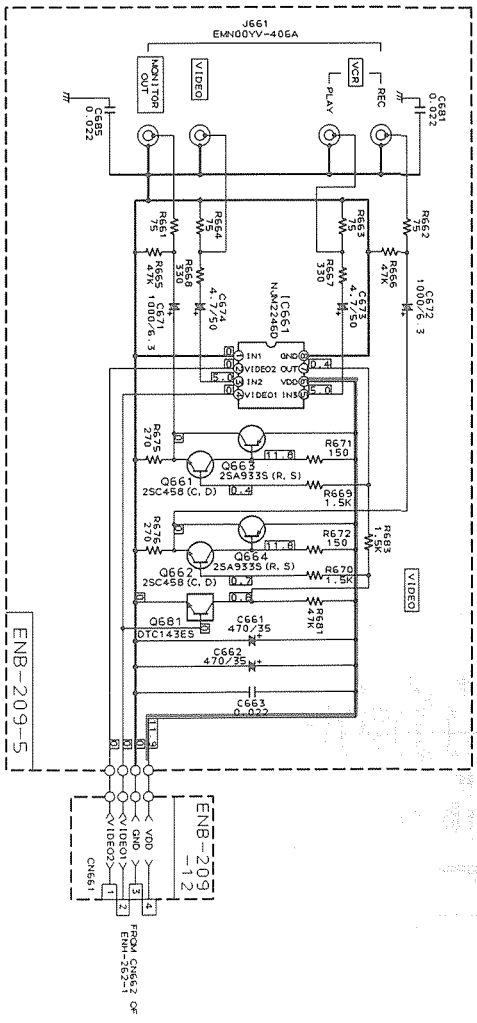
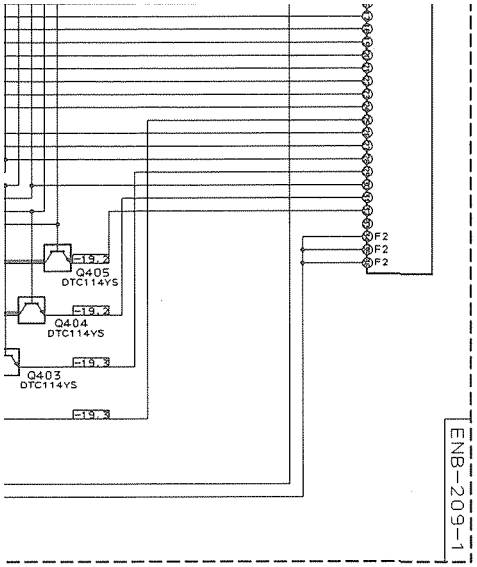
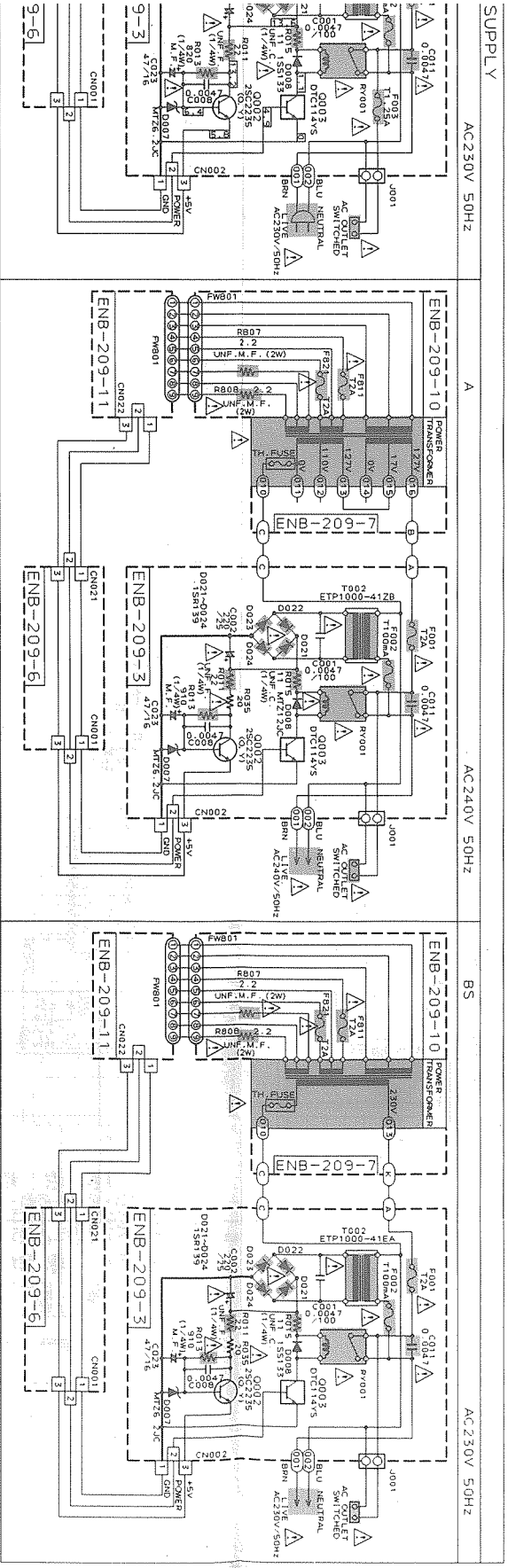


VERSION CODES

EN	NORDIC COUNTRIES
G	GERMANY
I	ITALY
BS	EUROPEAN CONTINENTAL EUROPE EXCEPT G/G/I
U	UNITED STATES OF AMERICA
T	TAIWAN
U	UNIVERSAL EXCEPT ALL OF ABOVE

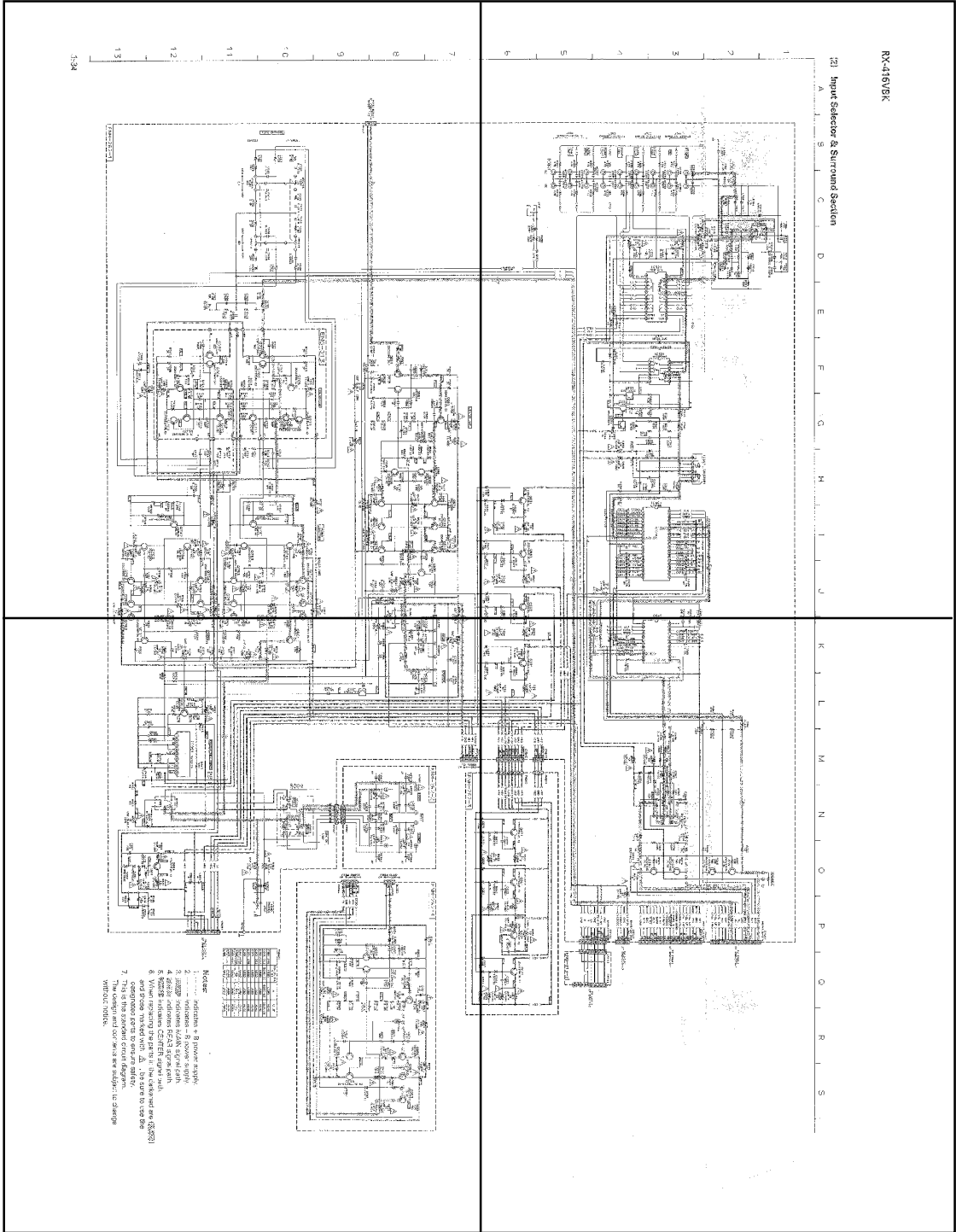
NOTE: DEVIATIONS FROM OTHERS ARE SHOWN WITH (*)

J K L M N O P Q R S



P1-34-a

P1-34-b

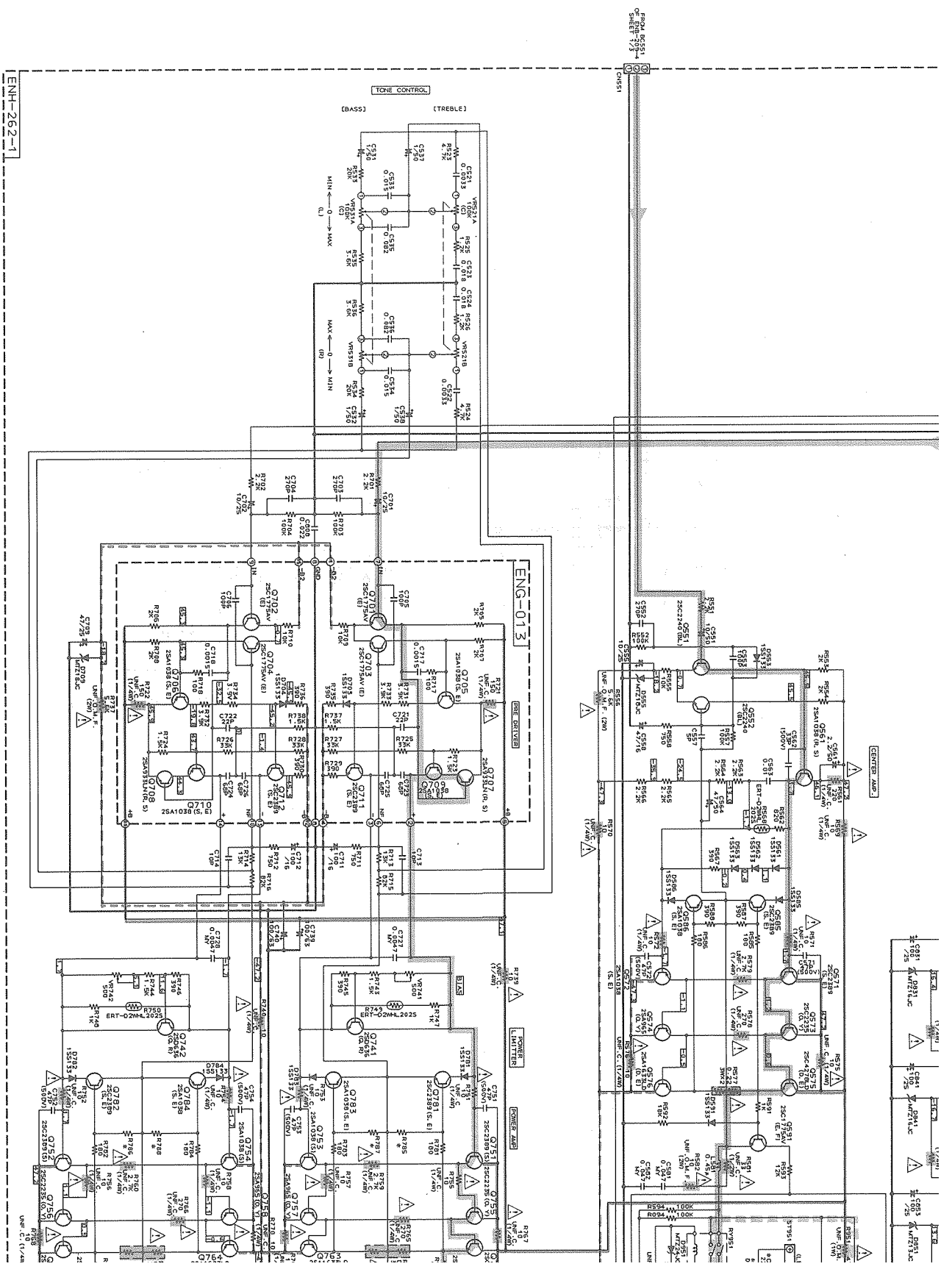


P1-34-c

P1-34-d

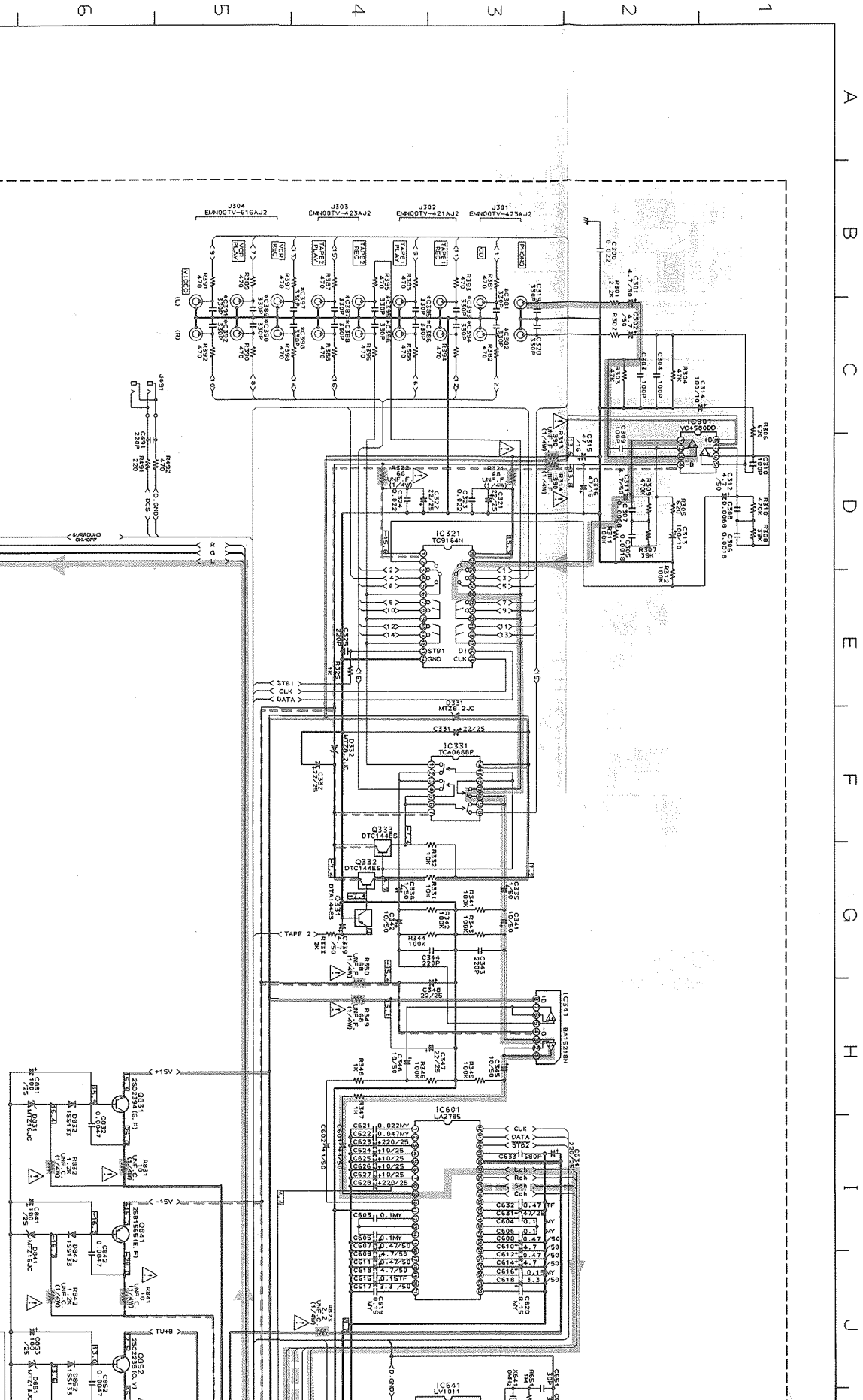
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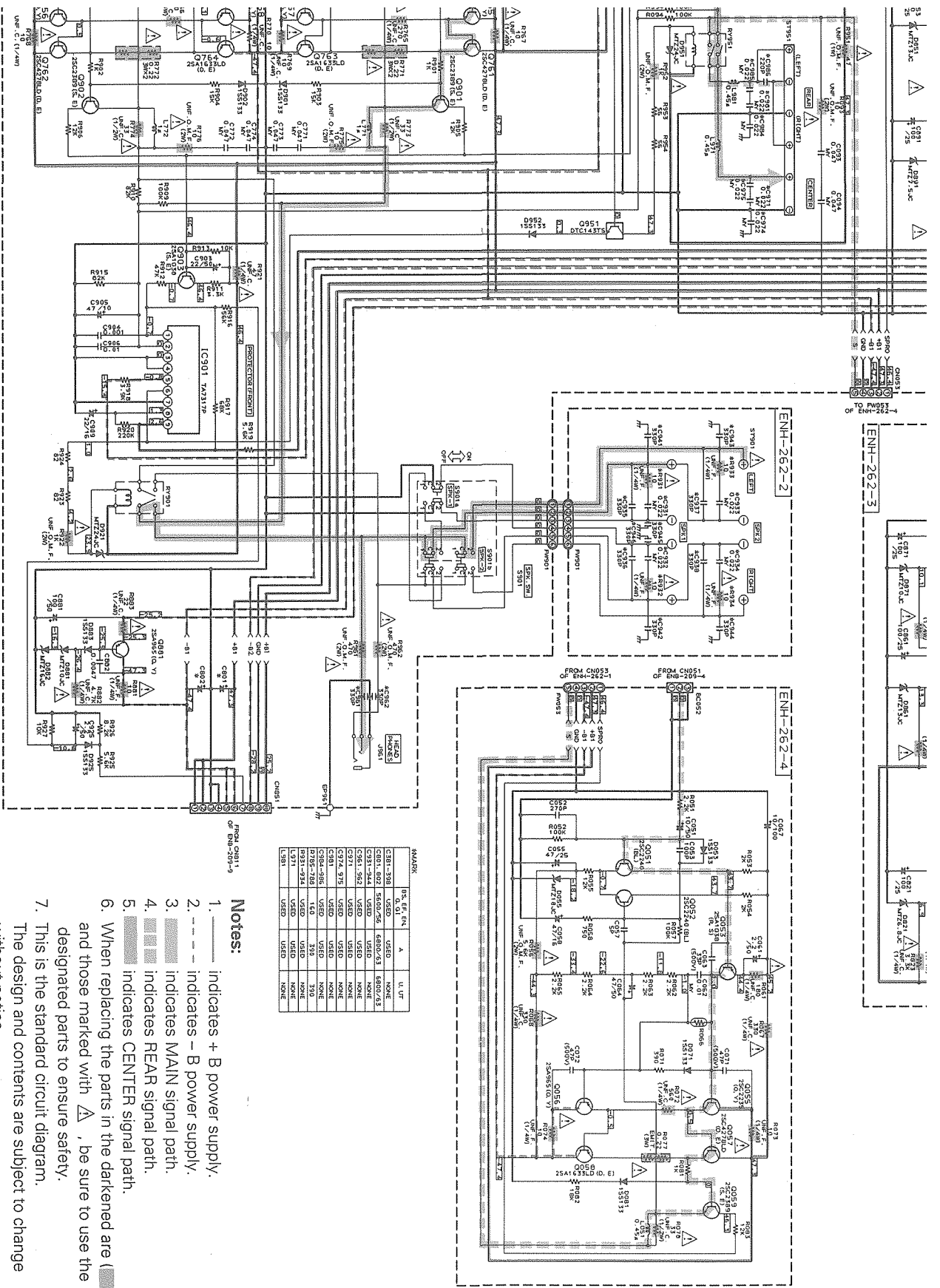
1-34



ENH-262-1

(2) Input Selector & Surround Section

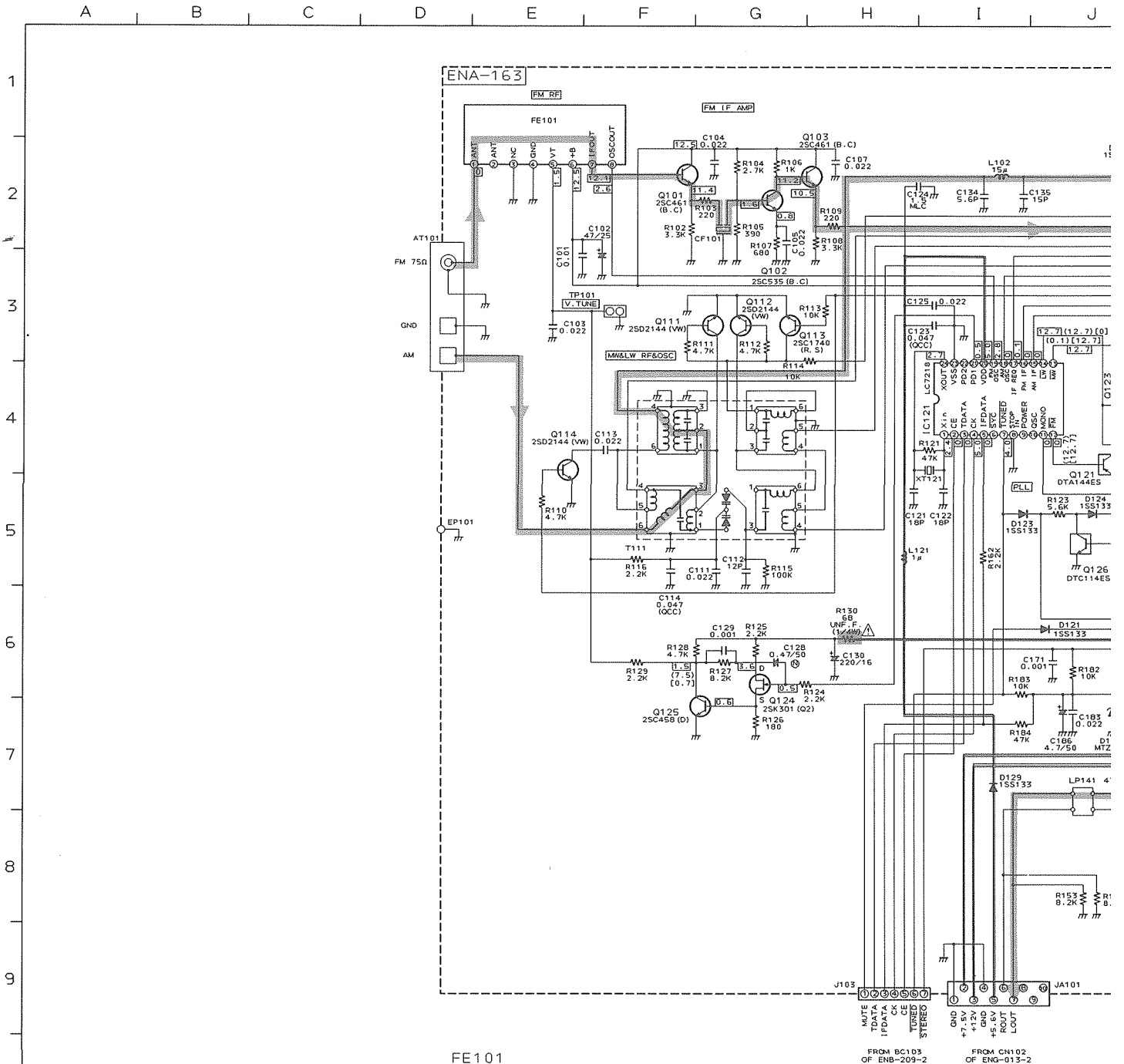




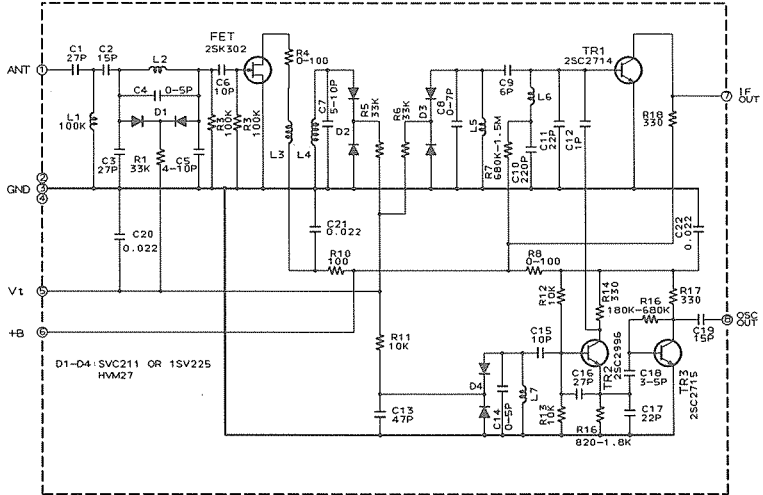
MARK	RESISTOR	A	U, UT
	C901-598	USED	NONE
	C901-802	560Ω/5%	680Ω/5%
	C911-544	USED	NONE
	C911-552	USED	NONE
	C911-555	USED	NONE
	C911-556	USED	NONE
	C911-557	USED	NONE
	C911-558	USED	NONE
	C911-559	USED	NONE
	C911-560	USED	NONE
	C911-561	USED	NONE
	C911-562	USED	NONE
	C911-563	USED	NONE
	C911-564	USED	NONE
	C911-565	USED	NONE
	C911-566	USED	NONE
	C911-567	USED	NONE
	C911-568	USED	NONE
	C911-569	USED	NONE
	C911-570	USED	NONE
	C911-571	USED	NONE
	C911-572	USED	NONE
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	C911-574	USED	NONE
	C911-575	USED	NONE
	C911-576	USED	NONE
	C911-577	USED	NONE
	C911-578	USED	NONE
	C911-579	USED	NONE
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	C911-582	USED	NONE
	C911-583	USED	NONE
	C911-584	USED	NONE
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	C911-586	USED	NONE
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	C911-593	USED	NONE
	C911-594	USED	NONE
	C911-595	USED	NONE
	C911-596	USED	NONE
	C911-597	USED	NONE
	C911-598	USED	NONE
	C911-599	USED	NONE
	C911-600	USED	NONE

- Notes:**
1. — indicates + B power supply.
 2. - - - indicates - B power supply.
 3. ■ indicates MAIN signal path.
 4. ■ indicates REAR signal path.
 5. ■ indicates CENTER signal path.
 6. When replacing the parts in the darkened area (■) and those marked with △, be sure to use the designated parts to ensure safety.
 7. This is the standard circuit diagram. The design and contents are subject to change without notice.

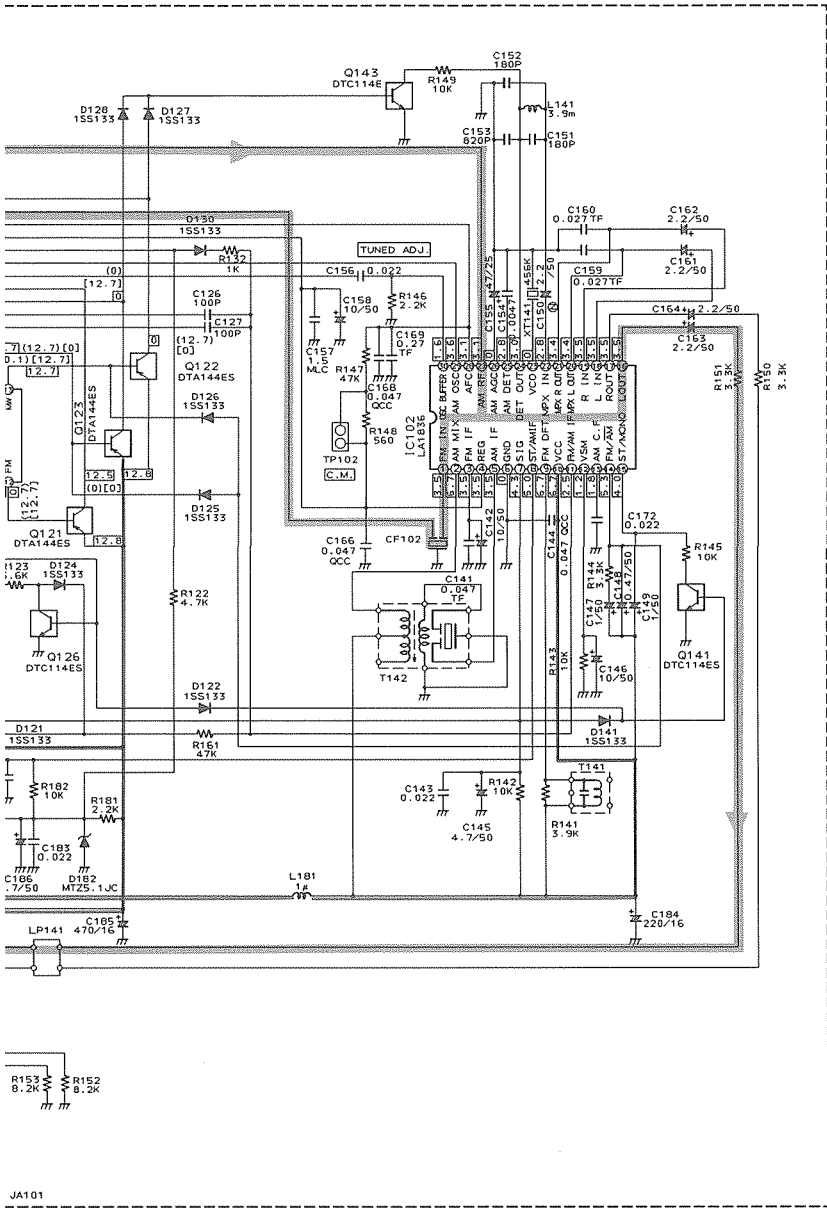
(3) Tuner Section (For BS, E, G)



FE101
EAF2203-005



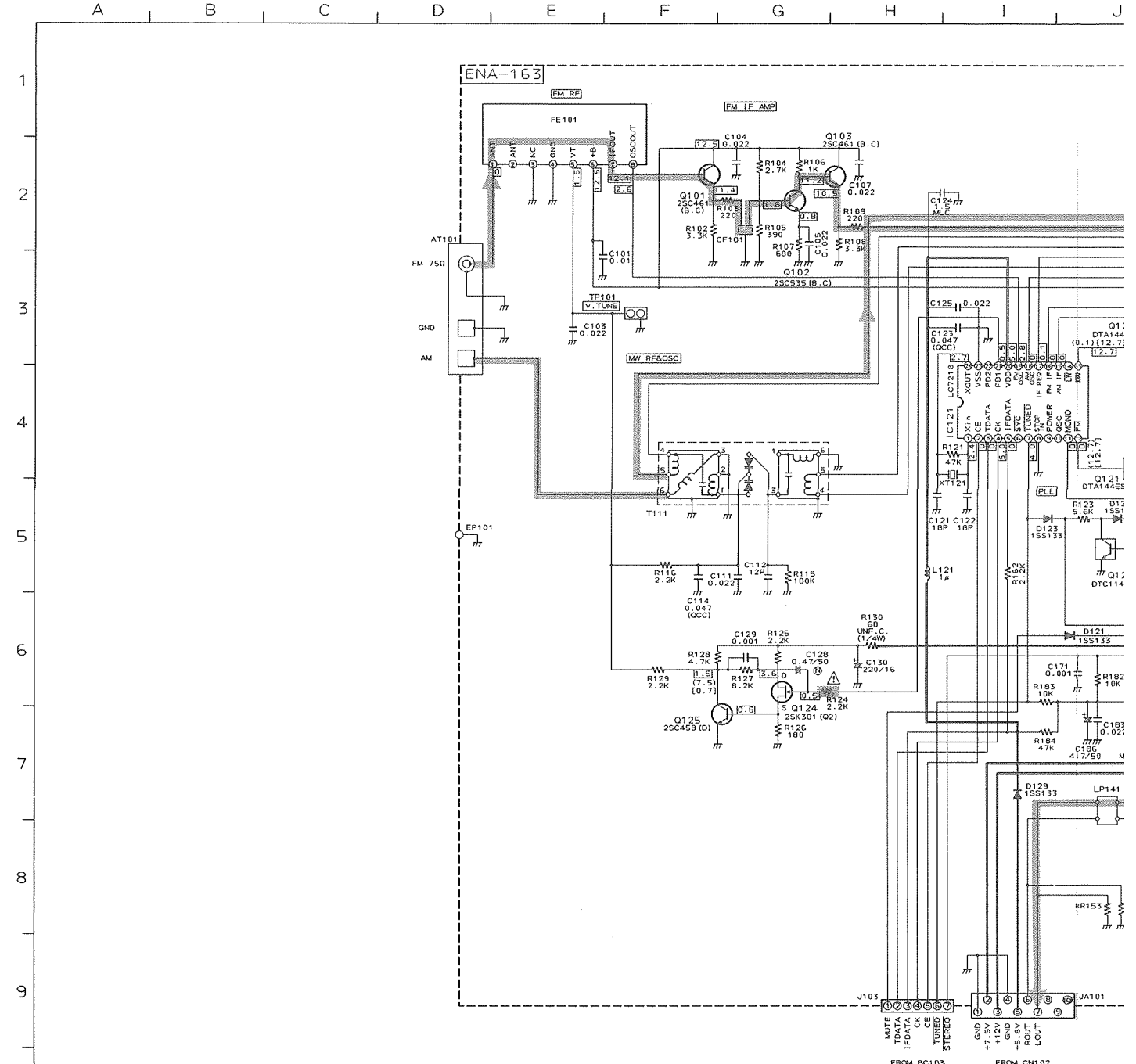
J | K | L | M | N | O | P | Q | R | S



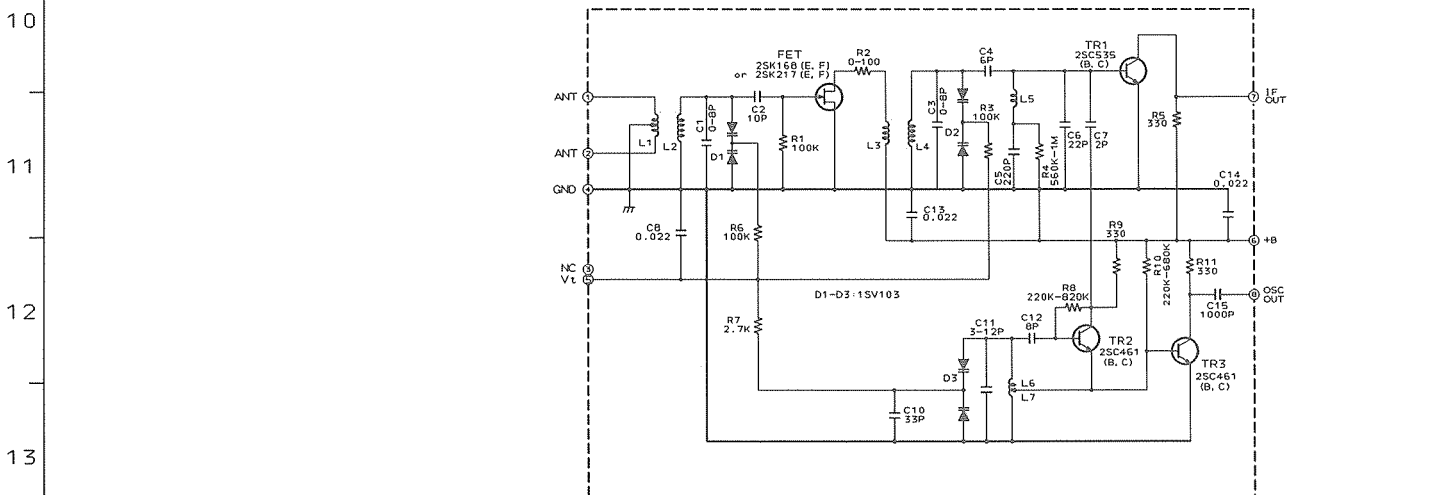
JA101

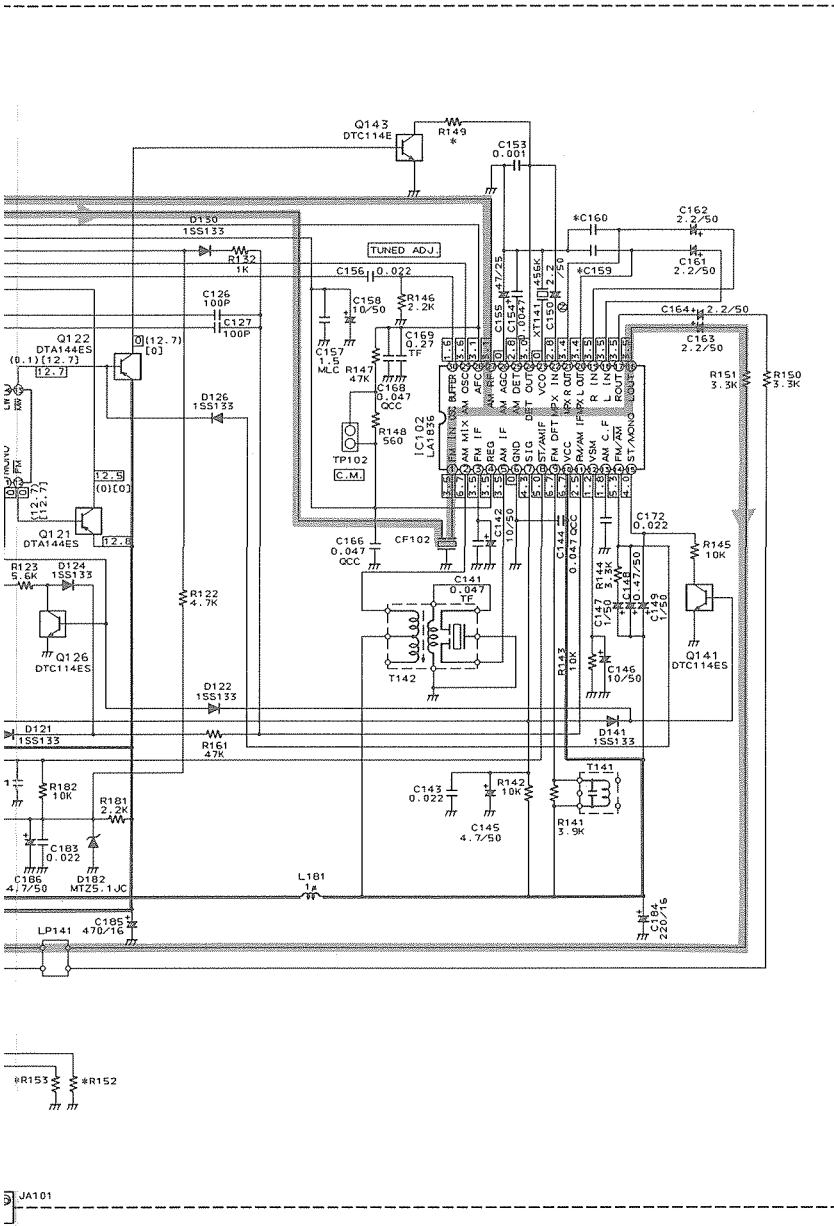
RX-416VBK

(4) Tuner Section (For U, UT, A)



FE101
EAF2203-004





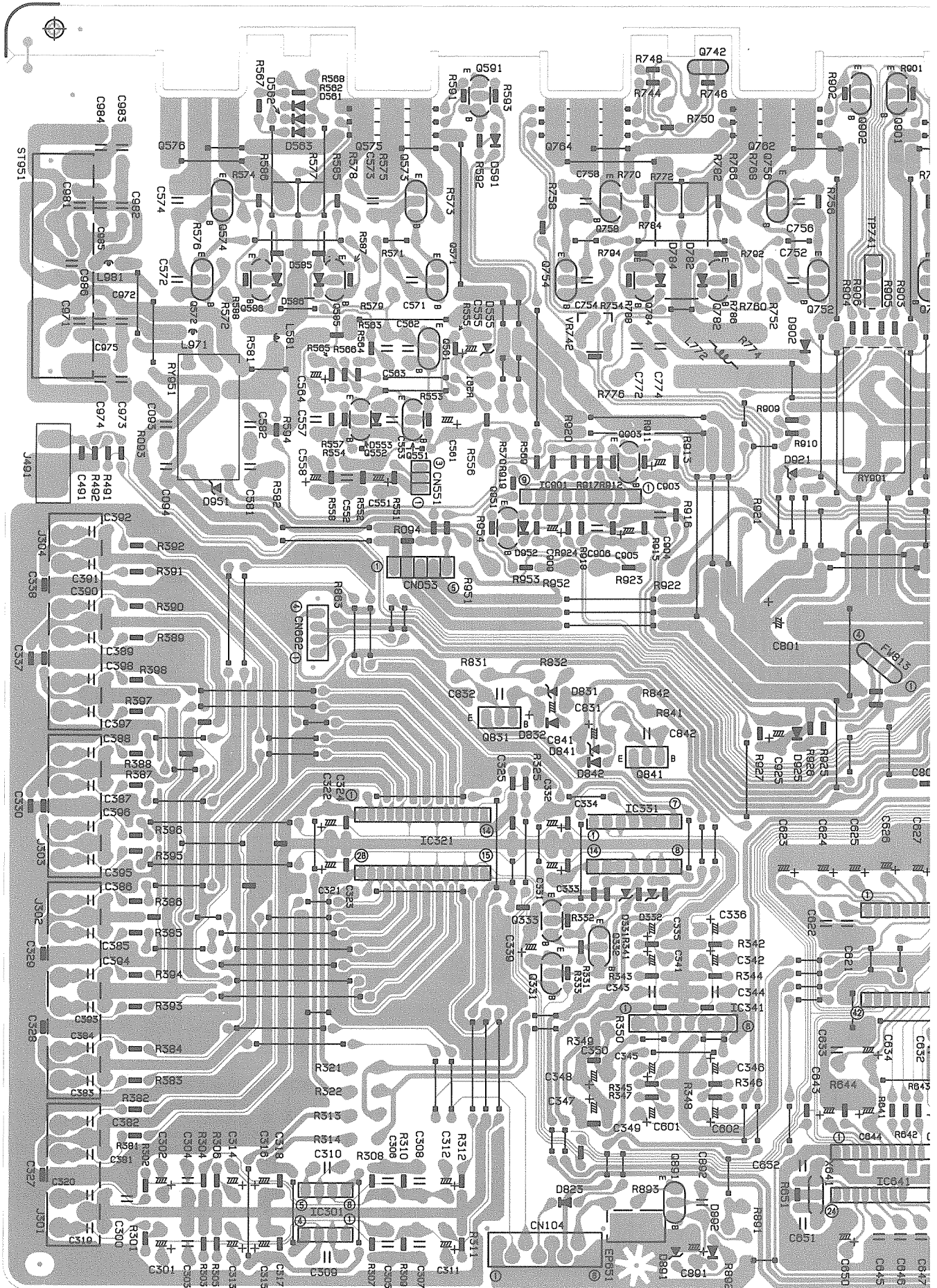
MARK

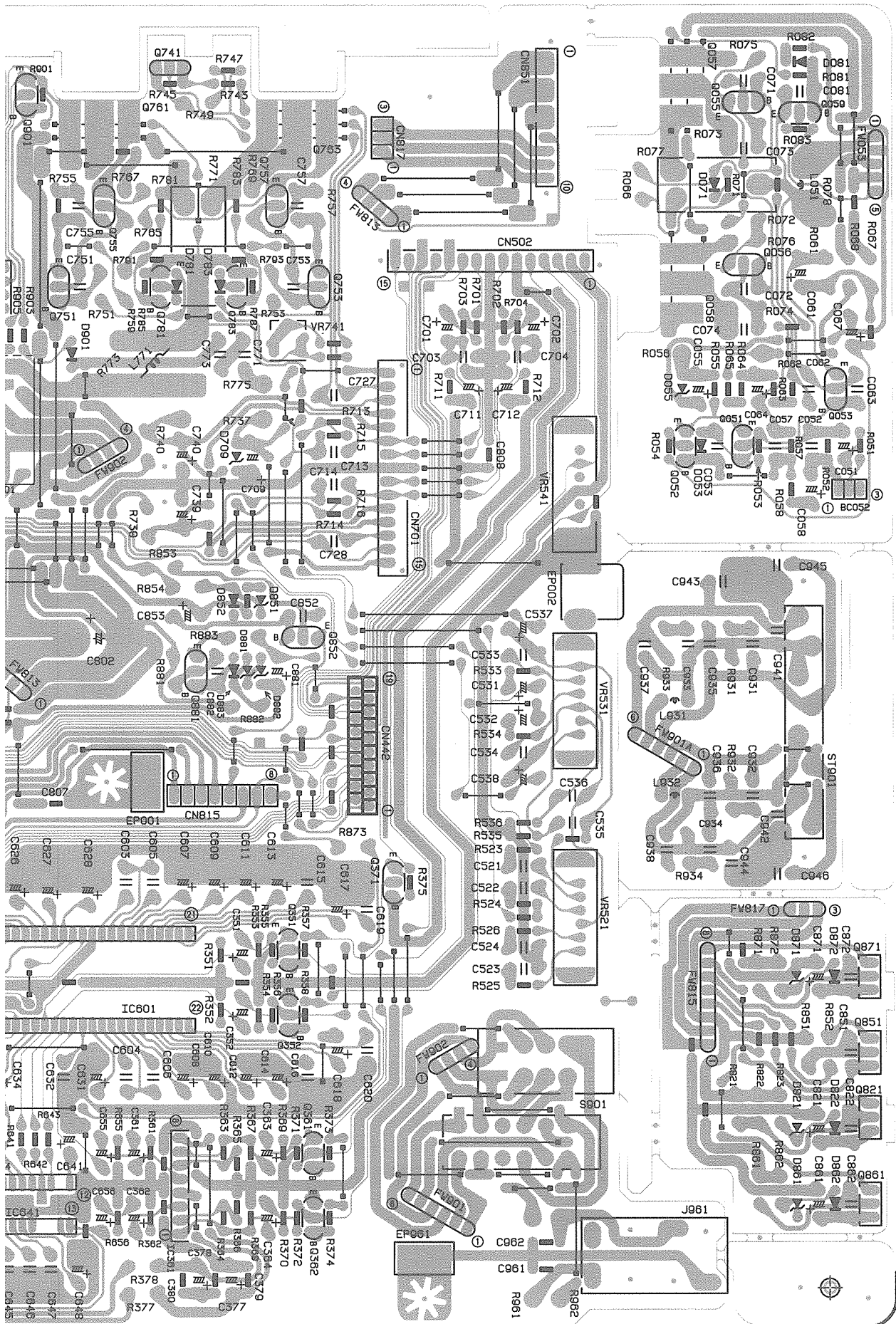
	U, UT	A
C159, 160	0.033TF	0.027TF
R149	22K	10K
R152, 153	3.3K	8.2K

□ FM AUTO NO SIGNAL
 () MW NO SIGNAL
 () LW NO SIGNAL

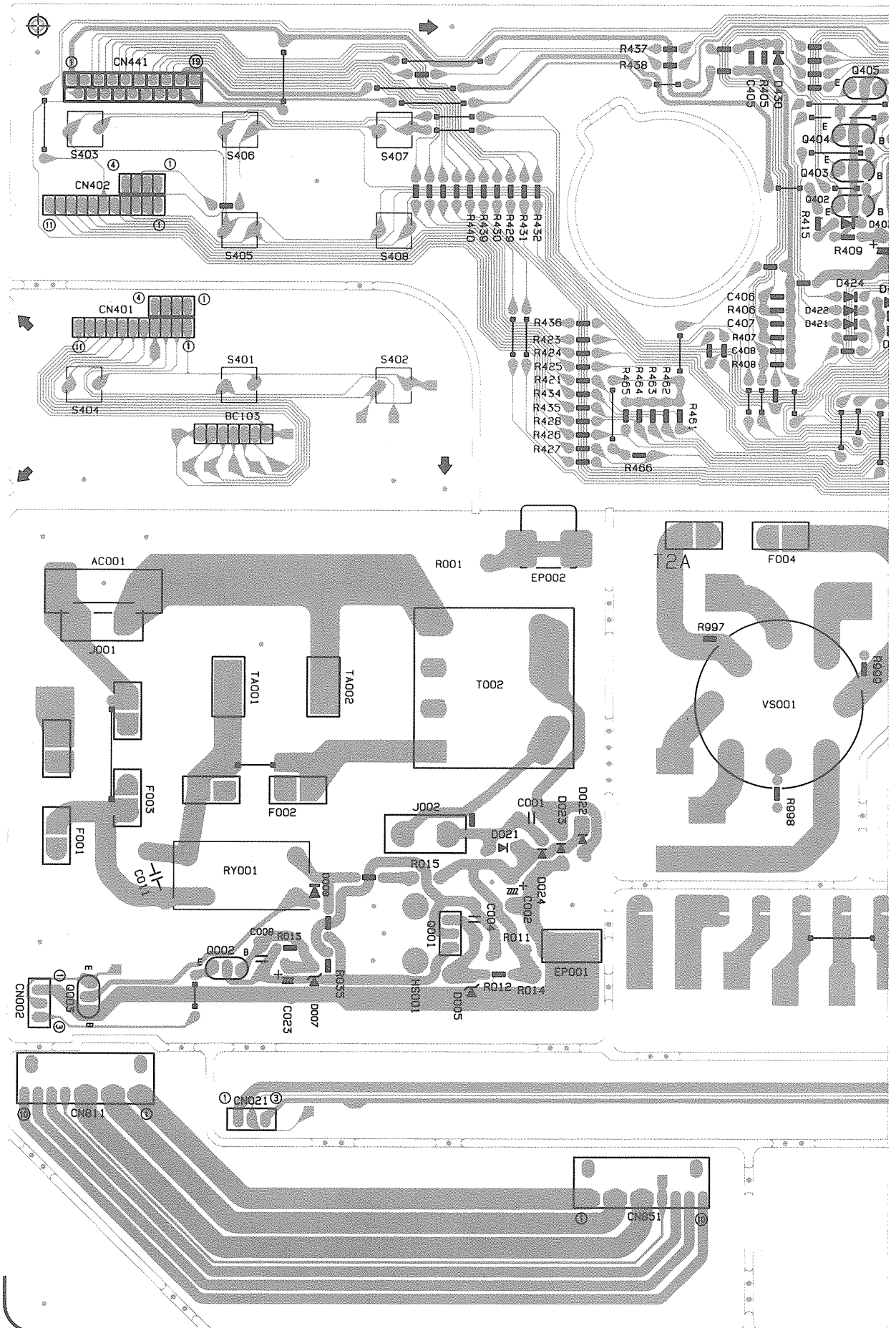
Printed Circuit Boards

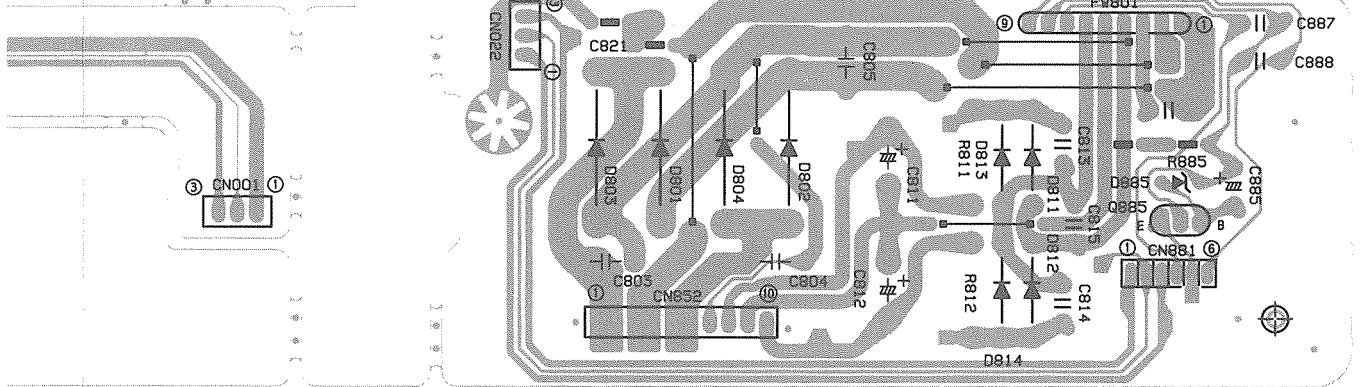
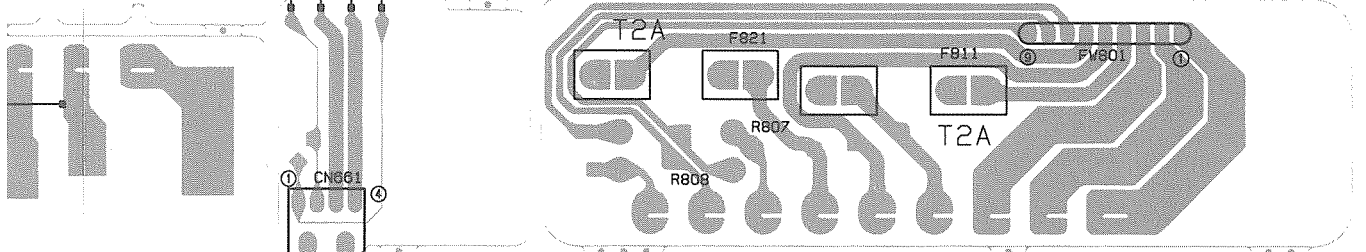
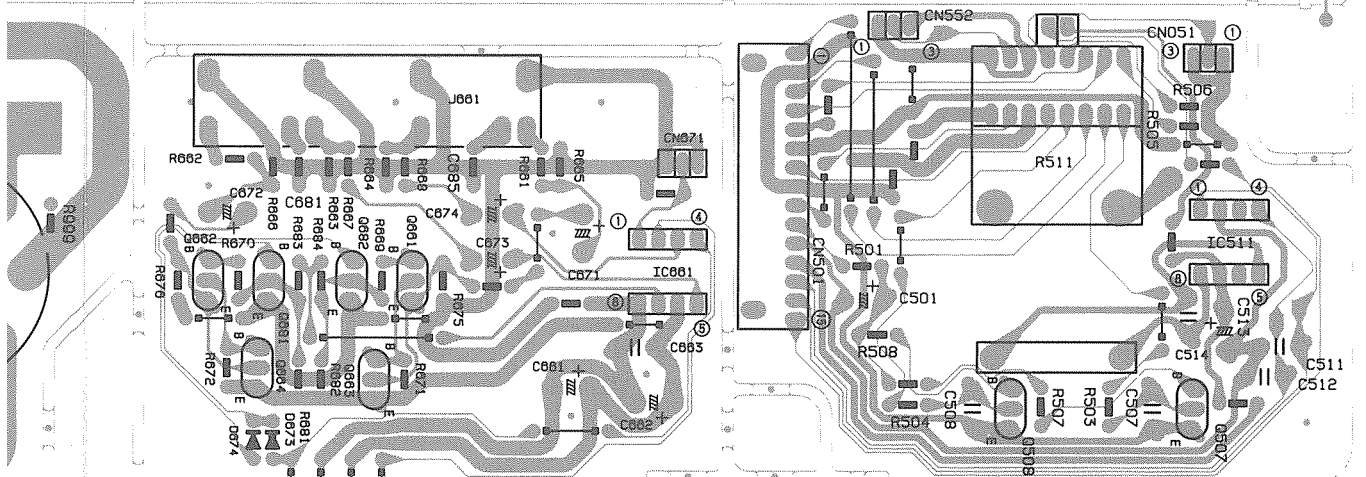
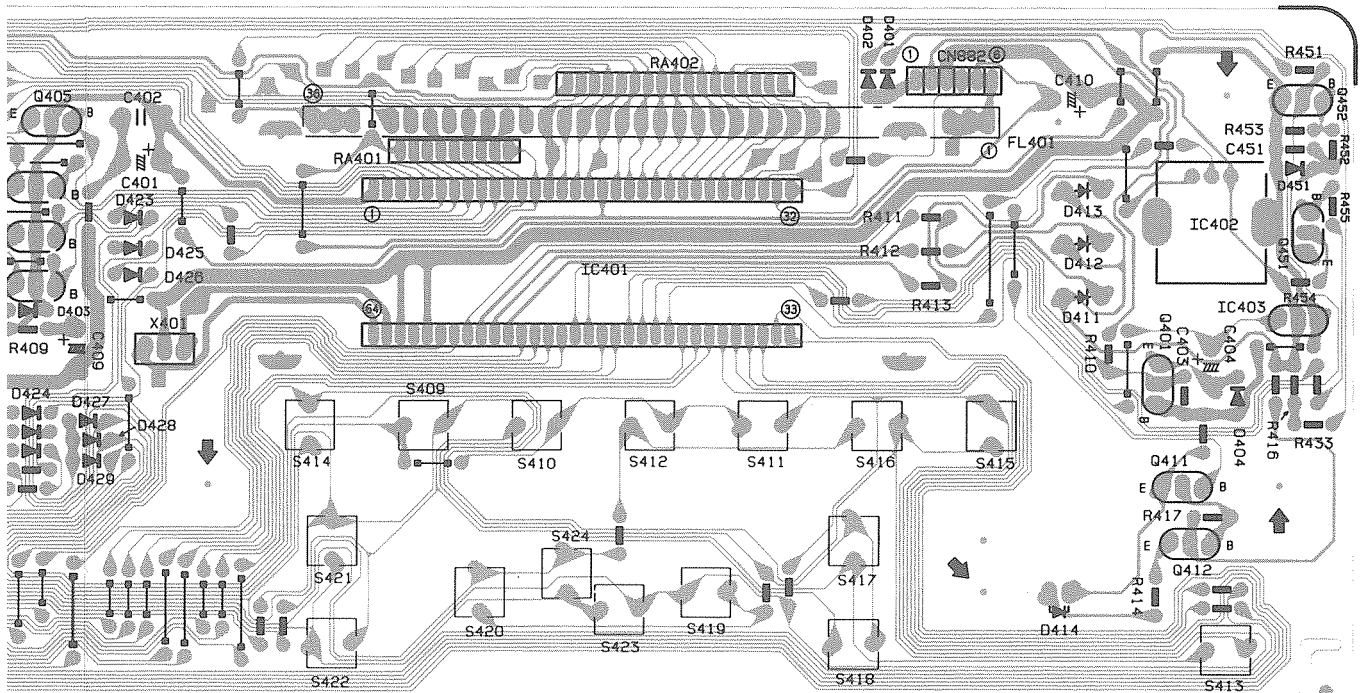
■ Input Selector & Power Amp P.C. Board (ENH-262)



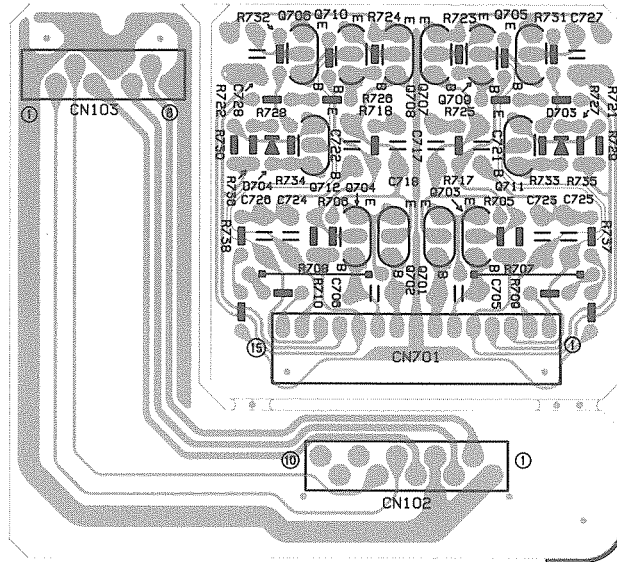


■ Power Supply & System Control P.C. Board (ENB-209)

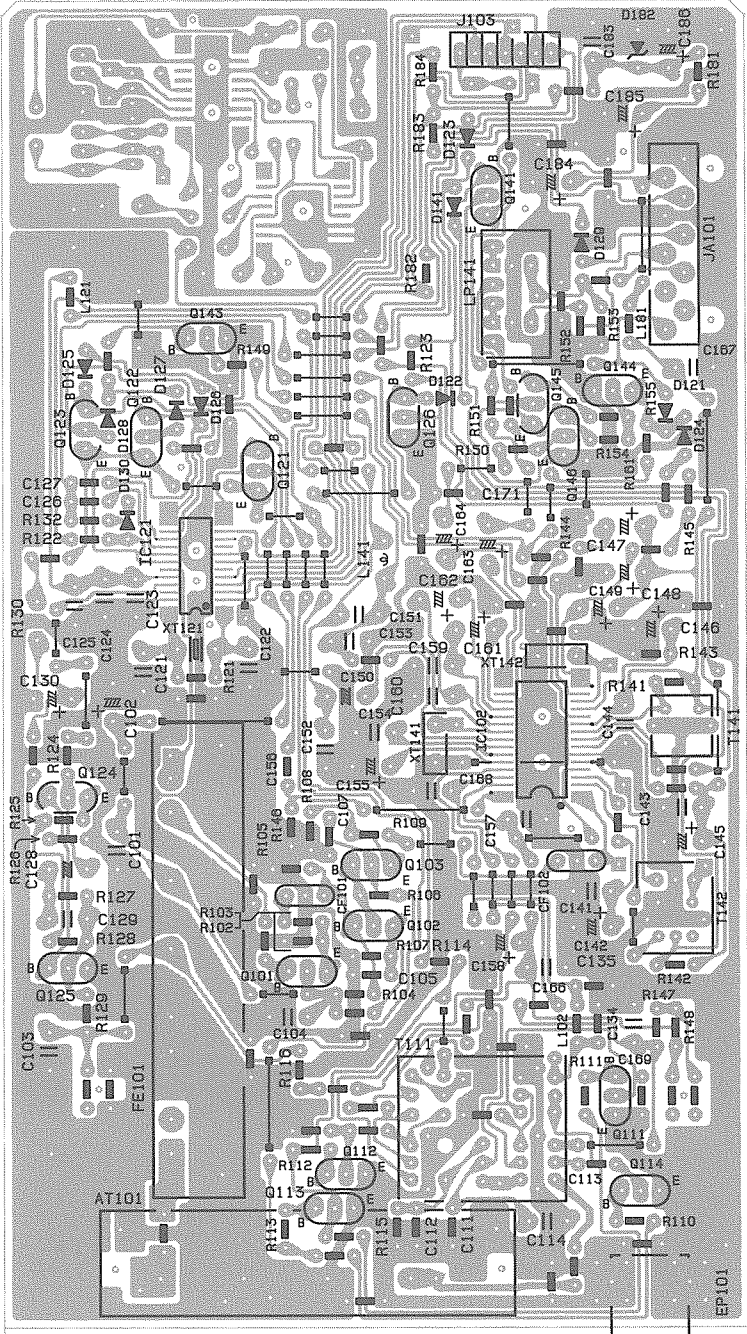




■ Pre-Driver P.C. Board (ENG-013)



■ Tuner P.C. Board (ENA-163)



PARTS LIST

* All printed circuit boards and its assemblies are not available as service parts.

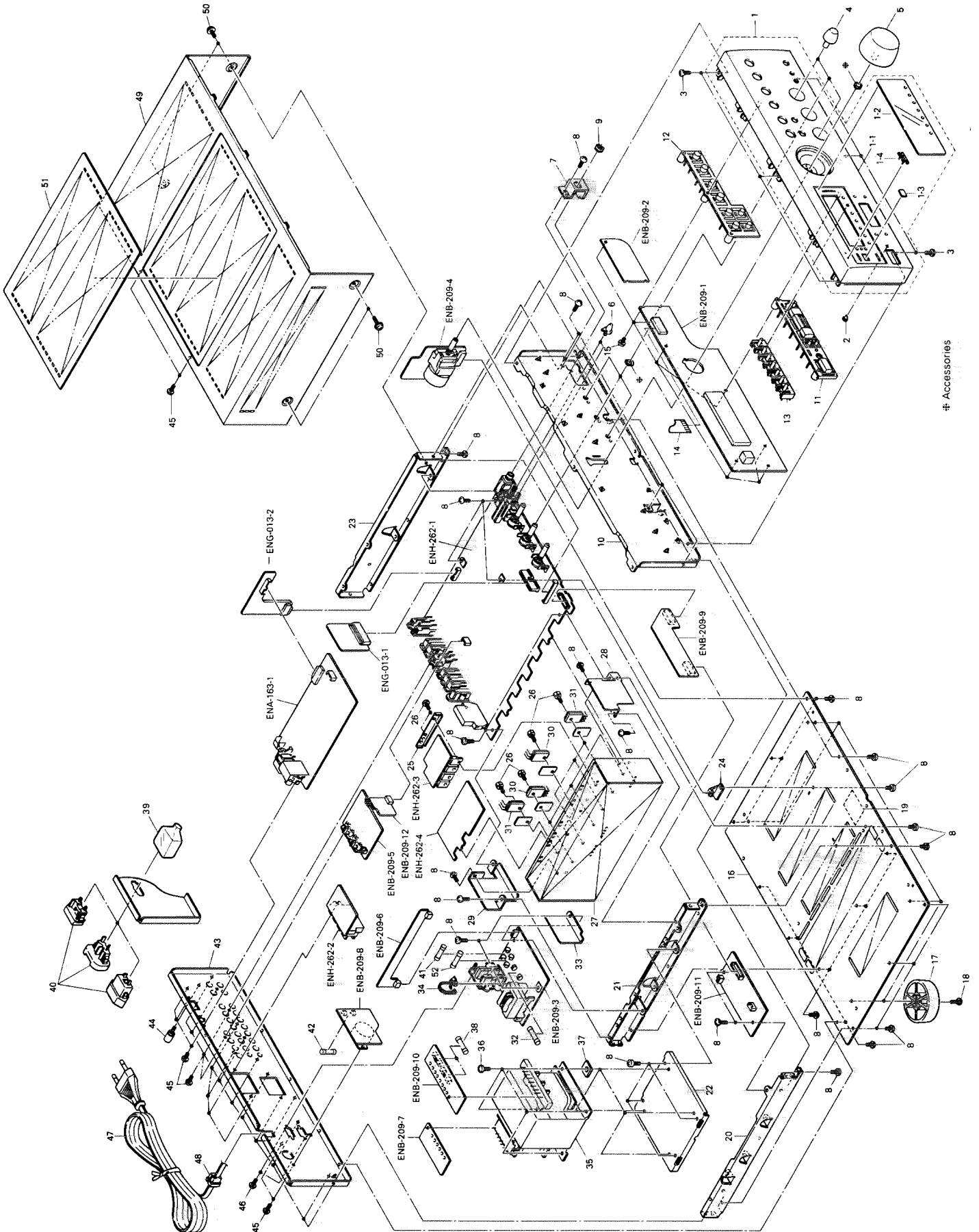
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General Exploded View and Parts List

Symbol No.

M	1	M	M
---	---	---	---



Symbol No.

M	1	M	M
---	---	---	---

■ Parts List

△	Item	Part Number	Part Name	Q'ty	Description	Area
	1	EFP-RX416VBKE(S)	FRONT PANEL	1		
	1-1	E103037-001SM	FRONT PANEL	1		
	1-2	E309419-001SM	WINDOW SCREEN	1		
	1-3	E72436-006	REMORT SCREEN	1		
	1-4	VJD5429-001	JVC MARK	1		
	2	FSJD4001-002	INDICATOR LENS	1		
	3	SDSG3008M	TAPPING SCREW	6		
	4	E309111-003SM	BALANCE KNOB	3		
	5	E309465-001SM	VOLUME KNOB	1		
	6	E407321-002SM	PUSH BUTTON	2		
	7	E407323-002SM	HEADPHONE BRACKET	1		
	8	SBSG3008CC	TAPPING SCREW	39		
	9	VKZ4150-001	NUT	1		
	10	E103039-001SM	FRONT BRACKET	1		
	11	E208534-001SM	PUSH BUTTON	1		
	12	E208535-001SM	PUSH BUTTON	1		
	13	E309418-001SM	PUSH BUTTON	1		
	14	VWF1219-16TTB	FFC CABLE	1	FW441	
	15	SDSF2608Z	SCREW	8		
	16	E102371-006SM	BOTTOM PLATE	1		
	17	E406379-008SS	FOOT	4		BS,EF,EN,G,GI
		VJF4039-00F	FOOT	4		A,U,UT
	18	SBST3010Z	TAPPING SCREW	4		
	19	E70115-002	CAUTION LABEL	1		
	20	E206956-001SM	SIDE BRACKET	1	Left	
	21	E206958-004SM	CENTER BRACKET	1		
	22	E309423-001SM	TRANSFORMER BRACKET	1		
	23	E206957-001SM	SIDE BRACKET	1	Right	
	24	E68587-222SM	BRACKET PLATE	1		
	25	E406969-002SM	LEAF SPRING	1		
	26	E73525-003	SCREW	10		
	27	E308835-007SM	HEAT SINK	1		
	28	E309425-001SM	HEAT SINK BRACKET	1		
	29	E309426-001SM	HEAT SINK BRACKET	1		
	30	2SA1633LD(D,E)	SI.TRANSISTOR	4	Q763,764,576,058	
	31	2SC4278LD(D,E)	SI.TRANSISTOR	4	Q761,762,575,057	
△	32	QMF51A2-R10S	FUSE	1	F002	Except BS
△	32	QMF51E2-R10SBS	FUSE	1	F002	BS
	33	E408902-001SM	PROTECT COVER	1		
	34	E307572-001	FASTNER	1		
△	35	ETP1200-66EAJ	POWER TRANSFORMER	1		EF,EN,G,GI
△		ETP1200-66EAJBS	POWER TRANSFORMER	1		BS
△		ETP1200-66FAJ	POWER TRANSFORMER	1		U,UT,A
	36	E65389-004	SPECIAL SCREW	4		
	37	E406309-003SM	SPACER	4		
△	38	QMF51E2-2R0	FUSE	2	F811,821	
	39	E406079-001	COVER	1		BS
△	40	EMC0236-001	AC OUTLET	1		EF,EN,G,GI
△		EMC0237-001BS	AC OUTLET	1		BS
△		EMC0238-001	AC SOCKET	1		A
△	41	QMF51E2-2R0	FUSE	1	F001	A,EF,EN,GI,G,BS
△		QMF51E2-4R0	FUSE	1	F001	U,UT
△	42	QMF51E2-2R0	FUSE	1	F004	U,UT
	43	E208532-008	REAR PANEL	1		BS,EF,EN,G,GI
		E208532-002SM	REAR PANEL	1		A

RX-416VBK

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
		E208532-003SM	REAR PANEL	1		U,UT
	44	E408091-001	EARTH PLUG	1		
	45	E73273-003	SPECIAL SCREW	20		Except U,UT
		E73273-003	SPECIAL SCREW	23		U,UT
	46	SDSG3008CC	TAPPING SCREW	2		U,UT
⚠	47	QMP25F0-244	POWER CORD	1		A
⚠		QMP3900-200	POWER CORD	1		EF,EN,G,GI
⚠		QMP5530-0085BS	POWER CORD	1		BS
⚠		QMP7520-200	POWER CORD	1		U,UT
⚠	48	QHS3771-108	CORD STOPPER	1		Except BS
⚠		QHS3771-108BS	CORD STOPPER	1		BS
	49	E207049-007(S)	METAL COVER	1		
	50	E61660-004	SPECIAL SCREW	4		
	51	E208294-001	PROTECTOR COVER	1		
⚠	52	QMF51E2-1R25	FUSE	1	F003	EF,EN,G,GI
	-	QZL1031-101	SEV LABEL	1		EF
	-	E309384-012	RATING LABEL	1		UT
	-	E407619-042	FTZ LABEL	1		G
	-	E408450-001	CE LABEL	1		BS,EF,EN,G,GI
	-	E70028-001	APPROVAL LABEL	1		EN
	-	E75040-056	GI LABEL	1		GI
	-	E75139-003	Z LABEL	1		U,UT
	-	QZL1007-001	BEAB LABEL	1		BS

⚠ : Safety Parts

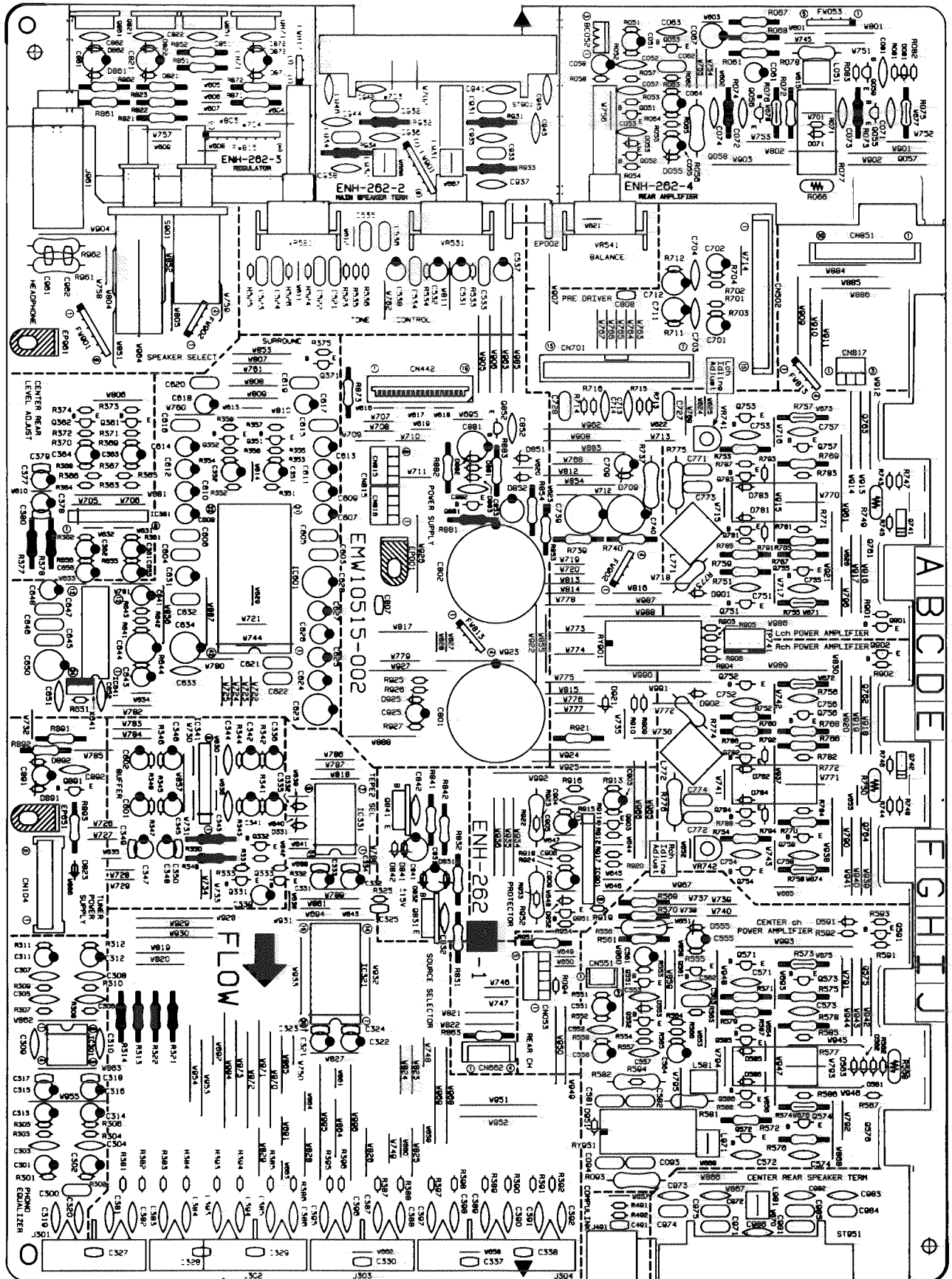
The Marks for Designated Areas

A	.....	Australia	BS	....	the U.K.	EF	.....	Continental Europe
EN	....	Scandinavia	GI	....	Italy	G	.....	Germany
U	.....	Universal Type	UT	....	Taiwan	No mark indicates all area.		

Printed Circuit Board Ass'y and Parts List

■ ENH-262 □ Input Selector & Power Amp PC Board Ass'y

Note : ENH-262 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Designated Areas
ENH-262 E	EF	Continental Europe
	EN	Scandinavia
	GI	Italy
	G	Germany
ENH-262 F	BS	the U.K.
ENH-262 G	A	Australia
ENH-262 H	U UT	Universal Type Taiwan

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
Q051	2SC2240(BL)	SI. TRANSIST	
Q052	2SC2240(BL)	SI. TRANSIST	
Q053	2SA1038(R,S)	SI. TRANSIST ROHM	
Q055	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q056	2SA965(Y)	SI. TRANSIST TOSHIBA	
Q059	2SC2389(S,E)	SI. TRANSIST ROHM	
Q331	D7A144ES	DIGITAL TRA ROHM	
Q332	D7C144ES	DIGITAL TRA ROHM	
Q333	D7C144ES	DIGITAL TRA ROHM	
Q351	2SD2144S(VW)	SI. TRANSIST ROHM	
Q352	2SD2144S(VW)	SI. TRANSIST ROHM	
Q361	2SD2144S(VW)	SI. TRANSIST ROHM	
Q362	2SD2144S(VW)	SI. TRANSIST ROHM	
Q371	D7A144ES	DIGITAL TRA ROHM	
Q551	2SC2240(BL)	SI. TRANSIST	
Q552	2SC2240(BL)	SI. TRANSIST	
Q561	2SA1038(R,S)	SI. TRANSIST ROHM	
Q571	2SC2389(S,E)	SI. TRANSIST ROHM	
Q572	2SA1038(R,S)	SI. TRANSIST ROHM	
Q573	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q574	2SA965(Y)	SI. TRANSIST TOSHIBA	
Q585	2SC2389(S,E)	SI. TRANSIST ROHM	
Q586	2SA1038(R,S)	SI. TRANSIST ROHM	
Q591	2SC2389(S,E)	SI. TRANSIST ROHM	
Q741	2SD636	SI. TRANSIST MATSUSHITA	
Q742	2SD636	SI. TRANSIST MATSUSHITA	
Q751	2SC2389(S,E)	SI. TRANSIST ROHM	
Q752	2SC2389(S,E)	SI. TRANSIST ROHM	
Q753	2SA1038(R,S)	SI. TRANSIST ROHM	
Q754	2SA1038(R,S)	SI. TRANSIST ROHM	
Q755	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q756	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q757	2SA965(Y)	SI. TRANSIST TOSHIBA	
Q758	2SA965(Y)	SI. TRANSIST TOSHIBA	
Q781	2SC2389(S,E)	SI. TRANSIST ROHM	
Q782	2SC2389(S,E)	SI. TRANSIST ROHM	
Q783	2SA1038(R,S)	SI. TRANSIST ROHM	
Q784	2SA1038(R,S)	SI. TRANSIST ROHM	
Q821	2SD2394(E,F)	SI. TRANSIST ROHM	
Q831	2SD2394(E,F)	SI. TRANSIST ROHM	
Q841	2SB1565(E,F)	SI. TRANSIST ROHM	
Q851	2SD2394(E,F)	SI. TRANSIST ROHM	
Q852	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q361	2SD2394(E,F)	SI. TRANSIST ROHM	
Q871	2SD2394(E,F)	SI. TRANSIST ROHM	
Q881	2SA965(Y)	SI. TRANSIST TOSHIBA	
Q891	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q901	2SC2389(S,E)	SI. TRANSIST ROHM	
Q902	2SC2389(S,E)	SI. TRANSIST ROHM	
Q903	2SA1038(R,S)	SI. TRANSIST ROHM	
Q951	D7C143TS	DIGITAL TRA ROHM	

△ : SAFETY PARTS

I.C.s

ITEM	PART NUMBER	DESCRIPTION	AREA
IC301	VC4580DD	I.C(MONO-AN DAINICHI	
IC321	TC9164N	I.C(DIGI-MO TOSHIBA	
IC331	UPD4066BC	I.C(DIGI-MO NEC	
IC341	BA15218N	I.C(MONO-AN ROHM	
IC361	BA15218N	I.C(MONO-AN ROHM	
IC601	LA2785	I.C(M) SANYO	
IC641	LV1011	I.C(M) SANYO	
IC901	TA7317P	I.C(MONO-AN TOSHIBA	

△ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
D053	1SS133	SI. DIODE ROHM	
D055	MTZ18JC	ZENER DIODE ROHM	
D071	1SS133	SI. DIODE ROHM	
D081	1SS133	SI. DIODE ROHM	
D331	MTZ8.2JC	ZENER DIODE ROHM	
D332	MTZ8.2JC	ZENER DIODE ROHM	
D553	1SS133	SI. DIODE ROHM	
D555	MTZ18JC	ZENER DIODE ROHM	
D561	1SS133	SI. DIODE ROHM	
D562	1SS133	SI. DIODE ROHM	
D563	1SS133	SI. DIODE ROHM	
D585	1SS133	SI. DIODE ROHM	
D586	1SS133	SI. DIODE ROHM	
D591	1SS133	SI. DIODE ROHM	
D709	MTZ18JC	ZENER DIODE ROHM	
D781	1SS133	SI. DIODE ROHM	
D782	1SS133	SI. DIODE ROHM	
D783	1SS133	SI. DIODE ROHM	
D784	1SS133	SI. DIODE ROHM	
D821	MTZ6.8JC	ZENER DIODE ROHM	
D822	1SS133	SI. DIODE ROHM	
D831	MTZ16JC	ZENER DIODE ROHM	
D832	1SS133	SI. DIODE ROHM	
D841	MTZ16JC	ZENER DIODE ROHM	
D842	1SS133	SI. DIODE ROHM	
D851	MTZ13JC	ZENER DIODE ROHM	
D852	1SS133	SI. DIODE ROHM	
D861	MTZ13JC	ZENER DIODE ROHM	
D862	1SS133	SI. DIODE ROHM	
D871	MTZ10JC	ZENER DIODE ROHM	
D872	1SS133	SI. DIODE ROHM	
D881	MTZ10JC	ZENER DIODE ROHM	
D882	MTZ16JC	ZENER DIODE ROHM	
D883	1SS133	SI. DIODE ROHM	
D891	MTZ8.2JC	ZENER DIODE ROHM	
D892	1SS133	SI. DIODE ROHM	
D901	1SS133	SI. DIODE ROHM	
D902	1SS133	SI. DIODE ROHM	
D921	MTZ24JC	ZENER DIODE ROHM	
D925	1SS133	SI. DIODE ROHM	
D951	MTZ24JC	ZENER DIODE ROHM	
D952	1SS133	SI. DIODE ROHM	

△ : SAFETY PARTS

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C051	QETB1HM-106	10MF 50V E.CAPACITO	
C052	QCS21HJ-271A	270PF 50V CER.CAPACI	
C053	QCS21HJ-101A	100PF 50V CER.CAPACI	
C055	QETB1EM-476	47MF 25V AL E.CAPAC	
C057	QCS21HJ-5R0	5PF 50V CER.CAPACI	
C058	QETB1CM-476	47MF 16V AL E.CAPAC	
C061	QETB1HM-225	2.2MF 50V AL E.CAPAC	
C062	QFLB1HJ-103	0.01MF 50V MYLAR CAPA	
C063	QCS22HJ-330	33PF 500V CER.CAPACI	
C064	QETB1HM-476	47MF 50V E.CAPACITO	
C067	QETB2AM-106	10MF 100V AL E.CAPAC	
C071	QCS22HJ-470A	47PF 500V CER.CAPACI	
C072	QCS22HJ-470A	47PF 500V CER.CAPACI	
C093	QFLB1HJ-473	0.047MF 50V MYLAR CAPA	
C094	QFLB1HJ-473	0.047MF 50V MYLAR CAPA	
C300	QFLB1HJ-223	0.022MF 50V MYLAR CAPA	
C301	QETB1HM-475E	4.7MF 50V E.CAPACITO	
C302	QETB1HM-475E	4.7MF 50V E.CAPACITO	
C303	QCS21HJ-101A	100PF 50V CER.CAPACI	
C304	QCS21HJ-101A	100PF 50V CER.CAPACI	
C305	QCY31HK-182Z	1800PF 50V CER.CAPACI	
C306	QCY31HK-182Z	1800PF 50V CER.CAPACI	
C307	QCY31HK-682Z	6800PF 50V CER.CAPACI	
C308	QCY31HK-682Z	6800PF 50V CER.CAPACI	
C309	QCS21HJ-101A	100PF 50V CER.CAPACI	
C310	QCS21HJ-101A	100PF 50V CER.CAPACI	
C311	QETB1HM-475E	4.7MF 50V E.CAPACITO	
C312	QETB1HM-475E	4.7MF 50V E.CAPACITO	
C313	QETB1AM-107	100MF 10V AL E.CAPAC	
C314	QETB1AM-107	100MF 10V AL E.CAPAC	
C315	QETB1CM-476	47MF 16V AL E.CAPAC	
C316	QETB1CM-476	47MF 16V AL E.CAPAC	
C319	QCS31HJ-331Z	330PF 50V CER.CAPACI	
C320	QCS31HJ-331Z	330PF 50V CER.CAPACI	
C321	QETB1EM-226N	22MF 25V E.CAPACITO	
C322	QETB1EM-226N	22MF 25V E.CAPACITO	
C325	QCB1HK-221Y	220PF 50V CER.CAPACI	
C331	QETB1EM-226N	22MF 25V E.CAPACITO	
C332	QETB1EM-226N	22MF 25V E.CAPACITO	
C335	QETB1HM-105	1MF 50V AL E.CAPAC	
C336	QETB1HM-105	1MF 50V AL E.CAPAC	
C339	QETB1HM-475E	4.7MF 50V E.CAPACITO	
C341	QETB1HM-106	10MF 50V E.CAPACITO	
C342	QETB1HM-106	10MF 50V E.CAPACITO	
C343	QCS21HJ-221	220PF 50V CER.CAPACI	

△ : SAFETY PARTS

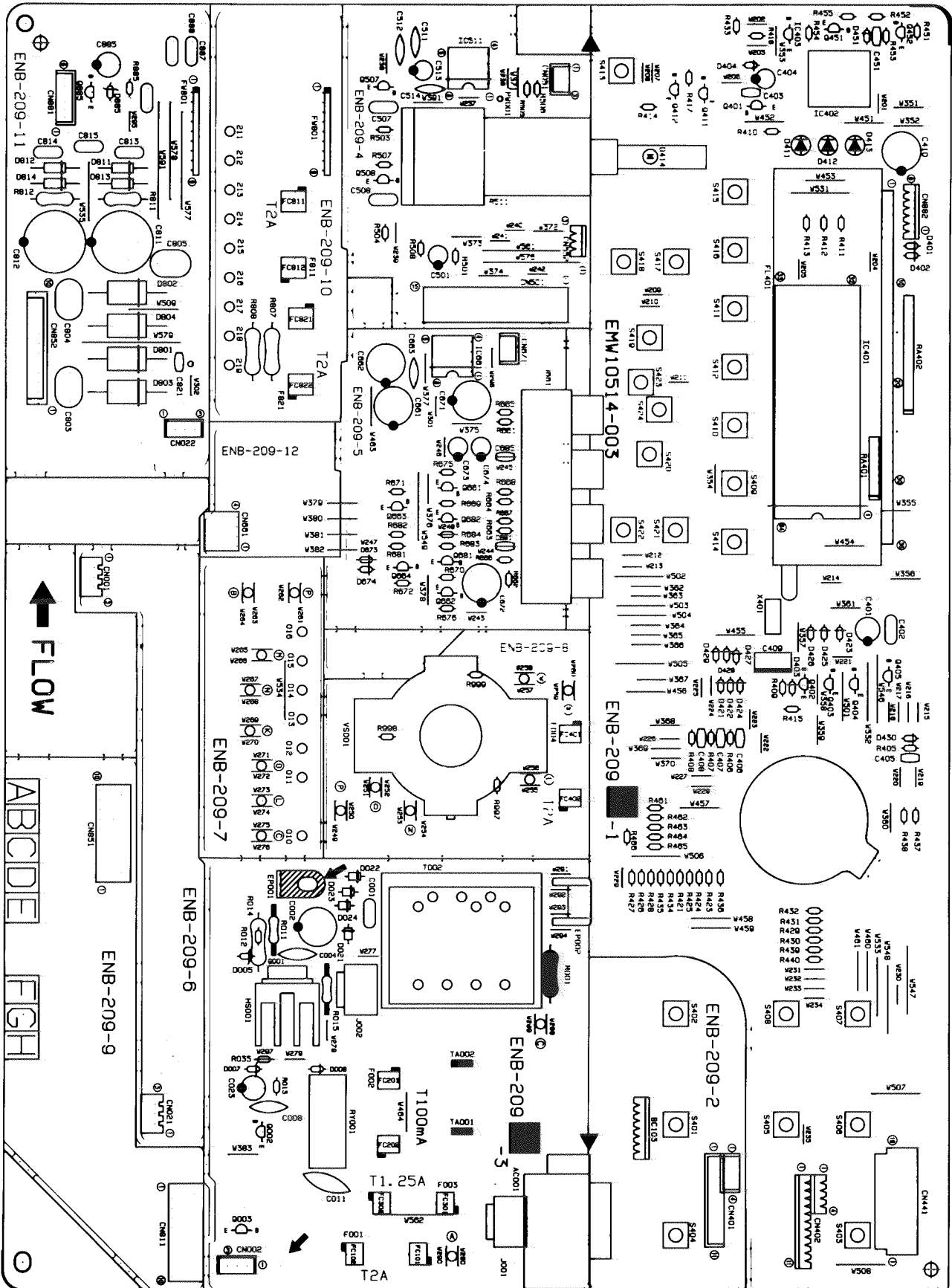
Others

ITEM	PART NUMBER	DESCRIPTION	AREA
	J301	EMW10515-003 CIR. BOARD	
	J302	EMN00TV-423AJ2 PIN JACK	
	J303	EMN00TV-423AJ2 PIN JACK	
	J304	EMN00TV-616AJ2 PIN JACK	
	J491	QMS3501-021 PIN JACK	
	J961	QMS6022-V01 MICROPHONE	
	L051	EQL0011-R45J1 INDUCTOR	
	L581	EQL0011-R45J1 INDUCTOR	
	L771	EQL0001-1R0 INDUCTOR	
	L772	EQL0001-1R0 INDUCTOR	
	L971	EQL0011-R45J1 INDUCTOR	A
	L971	EQL0011-R45J1 INDUCTOR	BS
	L971	EQL0011-R45J1 INDUCTOR	EF
	L971	EQL0011-R45J1 INDUCTOR	EN
	L971	EQL0011-R45J1 INDUCTOR	G
	L971	EQL0011-R45J1 INDUCTOR	GI
	L981	EQL0011-R45J1 INDUCTOR	A
	L981	EQL0011-R45J1 INDUCTOR	BS
	L981	EQL0011-R45J1 INDUCTOR	EF
	L981	EQL0011-R45J1 INDUCTOR	EN
	L981	EQL0011-R45J1 INDUCTOR	G
	L981	EQL0011-R45J1 INDUCTOR	GI
	S901	QST4241-E05J2 PUSH SWITCH	
	X641	ECXP8R0-001Z CRYSTAL	
	BC052	EMV293-0117 SOCKET WIRE	
	CN053	EMV7145-005Z SOCKET ASSY	
	CN104	EMV5140-008 CONNECT TER	
	CN442	EMV7123-019 P.W. BOARD C	
	CN502	EMV5125-015 MALE CONNec	
	CN552	EMV5109-003A MALE CONNec	
	CN662	EMV5125-004 CONNECT TER	
	CN701	EMV7163-015 CONNECT TER	
	CN815	EMV7145-004Z SOCKET ASSY	
	CN816	EMV7145-004Z SOCKET ASSY	
	CN817	EMV7145-003Z SOCKET ASSY	
	CN851	EMV5125-010 MALE CONNec	
	EP001	EMZ4002-001Z EARTH PLATE	
	EP651	EMZ4002-001Z EARTH PLATE	
	EP961	EMZ4002-001Z EARTH PLATE	
	FW053	EWR35B-10LST FLAT WIRE	
	FW813	EWR34B-20SST FLAT WIRE	
	FW815	EWR38D-16LS FLAT WIRE A	
	FW817	EWR33D-08LS CORD	
	FW901	EWR36D-40SS CORD	
	FW902	EWR34B-20SST FLAT WIRE	
	RY901	ESK7D24-2120 RELAY	
	RY951	ESK7D24-2120 RELAY	
	ST901	EMB90TV-805G SPEAKER TER	A
	ST901	EMB90TV-805G SPEAKER TER	BS
	ST901	EMB90TV-805G SPEAKER TER	EF
	ST901	EMB90TV-805G SPEAKER TER	EN
	ST901	EMB90TV-805G SPEAKER TER	G
	ST901	EMB90TV-805G SPEAKER TER	GI
	ST901	EMB90TV-805G SPEAKER TER	U
	ST901	EMB90TV-805G SPEAKER TER	UT
	ST951	EMB90TV-602G SPEAKER TER	U
	ST951	EMB90TV-602G SPEAKER TER	UT
	ST951	EMB90TV-602G SPEAKER TER	A
	ST951	EMB90TV-602G SPEAKER TER	BS
	ST951	EMB90TV-602G SPEAKER TER	EF
	ST951	EMB90TV-602G SPEAKER TER	EN
	ST951	EMB90TV-602G SPEAKER TER	G
	ST951	EMB90TV-602G SPEAKER TER	GI
	TP741	QMV5005-004X PLUG ASSY	

△ SAFETY PARTS

■ ENB-209 □ Power Supply & System Control PC Board Ass'y

Note : ENB-209 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Designated Areas
ENB-209 E	EF	Continental Europe
	EN	Scandinavia
	GI	Italy
	G	Germany
ENB-209 F BS	BS	the U.K.
ENB-209 G	A	Australia
ENB-209 H	U UT	Universal Type Taiwan

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
Q001	2SD1266	SI. TRANSIST MATSUSHITA	U
Q001	2SD1266	SI. TRANSIST MATSUSHITA	UT
Q002	2SC2235(O,Y)	SI. TRANSIST TOSHIBA	
Q003	DTC114YS	DIGITAL TRA ROHM	
Q401	DTC114YS	DIGITAL TRA ROHM	
Q402	DTC114YS	DIGITAL TRA ROHM	
Q403	DTC114YS	DIGITAL TRA ROHM	
Q404	DTC114YS	DIGITAL TRA ROHM	
Q405	DTC114YS	DIGITAL TRA ROHM	
Q411	DTC114YS	DIGITAL TRA ROHM	
Q412	DTC114YS	DIGITAL TRA ROHM	
Q451	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q452	2SC1740S(R,S)	SI. TRANSIST ROHM	
Q507	2SD2144S(VW)	SI. TRANSIST ROHM	
Q508	2SD2144S(VW)	SI. TRANSIST ROHM	
Q661	2SC458(C,D)	SI. TRANSIST HITACHI	
Q662	2SC458(C,D)	SI. TRANSIST HITACHI	
Q663	2SA933S(RS)	SI. TRANSIST	
Q664	2SA933S(RS)	SI. TRANSIST	
Q681	DTC143ESTP	SILICON	
Q885	2SC2240(GR,BL)	SI. TRANSIST TOSHIBA	

Δ : SAFETY PARTS

I.C.s

ITEM	PART NUMBER	DESCRIPTION	AREA
IC401	MN171202J5Y1	I.C.(MICRO-C MATSUSHITA	
IC402	SPS-420-1	INFRARED DE SANYO	
IC403	MN1281(P,Q)	I.C.(DIGI-MO MATSUSHITA	
IC511	LB1639-CV	I.C.(DIGI-OT SANYO	
IC661	NUM2246D	I.C.(MONO-AN DAINICHI	

Δ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
D005	MTZ12JC	ZENER DIODE ROHM	U
D005	MTZ12JC	ZENER DIODE ROHM	UT
D007	MTZ6.2JC	ZENER DIODE ROHM	
D008	MTZ12JC	ZENER DIODE ROHM	A
D008	1SS133	SI. DIODE ROHM	BS
D008	1SS133	SI. DIODE ROHM	EF
D008	1SS133	SI. DIODE ROHM	EN
D008	1SS133	SI. DIODE ROHM	G
D008	1SS133	SI. DIODE ROHM	GI
D008	1SS133	SI. DIODE ROHM	U
D008	1SS133	SI. DIODE ROHM	UT
D021	1SR139-200	SI. DIODE ROHM	
D022	1SR139-200	SI. DIODE ROHM	
D023	1SR139-200	SI. DIODE ROHM	
D024	1SR139-200	SI. DIODE ROHM	
D401	1SS133	SI. DIODE ROHM	
D402	1SS133	SI. DIODE ROHM	
D403	1SS133	SI. DIODE ROHM	
D404	1SS133	SI. DIODE ROHM	
D411	SLR-34DC50F124	L.E.D.	
D412	SLR-34DC50F124	L.E.D.	
D413	SLR-34DC50F124	L.E.D.	
D414	SLA-380LT3F	L.E.D.	BS
D414	SLA-380LT3F	L.E.D.	A
D414	SLA-380LT3F	L.E.D.	EF
D414	SLA-380LT3F	L.E.D.	EN
D414	SLA-380LT3F	L.E.D.	G
D414	SLA-380LT3F	L.E.D.	GI
D414	SLA-380LT3F	L.E.D.	U
D414	SLA-380LT3F	L.E.D.	UT

Δ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
D421	1SS133	SI. DIODE ROHM	
D422	1SS133	SI. DIODE ROHM	
D423	1SS133	SI. DIODE ROHM	
D424	1SS133	SI. DIODE ROHM	
D425	1SS133	SI. DIODE ROHM	
D426	1SS133	SI. DIODE ROHM	
D427	1SS133	SI. DIODE ROHM	U
D427	1SS133	SI. DIODE ROHM	UT
D428	1SS133	SI. DIODE ROHM	A
D428	1SS133	SI. DIODE ROHM	BS
D428	1SS133	SI. DIODE ROHM	EF
D428	1SS133	SI. DIODE ROHM	EN
D428	1SS133	SI. DIODE ROHM	G
D428	1SS133	SI. DIODE ROHM	GI
D429	1SS133	SI. DIODE ROHM	A
D451	1SS133	SI. DIODE ROHM	
D801	30DF2SFC	SI. DIODE NIHOINTER	BS
D801	30DF2SFC	SI. DIODE NIHOINTER	EF
D801	30DF2SFC	SI. DIODE NIHOINTER	EN
D801	30DF2SFC	SI. DIODE NIHOINTER	G
D801	30DF2SFC	SI. DIODE NIHOINTER	GI
D801	30D2FC	GE. DIODE NIHOINTER	A
D801	30D2FC	GE. DIODE NIHOINTER	U
D801	30D2FC	GE. DIODE NIHOINTER	UT
D802	30DF2SFC	SI. DIODE NIHOINTER	BS
D802	30DF2SFC	SI. DIODE NIHOINTER	EF
D802	30DF2SFC	SI. DIODE NIHOINTER	EN
D802	30DF2SFC	SI. DIODE NIHOINTER	G
D802	30DF2SFC	SI. DIODE NIHOINTER	GI
D802	30D2FC	GE. DIODE NIHOINTER	A
D802	30D2FC	GE. DIODE NIHOINTER	U
D802	30D2FC	GE. DIODE NIHOINTER	UT
D803	30DF2SFC	SI. DIODE NIHOINTER	BS
D803	30DF2SFC	SI. DIODE NIHOINTER	EF
D803	30DF2SFC	SI. DIODE NIHOINTER	EN
D803	30DF2SFC	SI. DIODE NIHOINTER	G
D803	30DF2SFC	SI. DIODE NIHOINTER	GI
D803	30D2FC	GE. DIODE NIHOINTER	A
D803	30D2FC	GE. DIODE NIHOINTER	U
D803	30D2FC	GE. DIODE NIHOINTER	UT
D804	30DF2SFC	SI. DIODE NIHOINTER	BS
D804	30DF2SFC	SI. DIODE NIHOINTER	EF
D804	30DF2SFC	SI. DIODE NIHOINTER	EN
D804	30DF2SFC	SI. DIODE NIHOINTER	G
D804	30DF2SFC	SI. DIODE NIHOINTER	GI
D804	30D2FC	GE. DIODE NIHOINTER	A
D804	30D2FC	GE. DIODE NIHOINTER	U
D804	30D2FC	GE. DIODE NIHOINTER	UT
D811	10E2-FD	DIODE NIHOINTER	
D812	10E2-FD	DIODE NIHOINTER	
D813	10E2-FD	DIODE NIHOINTER	
D814	10E2-FD	DIODE NIHOINTER	
D885	MTZ5.6JC	ZENER DIODE ROHM	

Δ : SAFETY PARTS

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C001	QFN82AK-472	4700PF 100V METAL.MYLA	
C002	QETB1EM-227	220MF 25V AL E.CAPAC	A
C002	QETB1EM-227	220MF 25V AL E.CAPAC	BS
C002	QETB1EM-227	220MF 25V AL E.CAPAC	EF
C002	QETB1EM-227	220MF 25V AL E.CAPAC	EN
C002	QETB1EM-227	220MF 25V AL E.CAPAC	G
C002	QETB1EM-227	220MF 25V AL E.CAPAC	GI
C002	QETB1JM-227	220MF 63V AL E.CAPAC	U
C002	QETB1JM-227	220MF 63V AL E.CAPAC	UT
C004	QCF21HP-472	4700PF 50V CER.CAPACI	U
C004	QCF21HP-472	4700PF 50V CER.CAPACI	UT
C008	QCF21HP-472	4700PF 50V CER.CAPACI	
C011	QCZ9019-472	4700PF C.CAPACITO	A
C011	QCZ9019-472	4700PF C.CAPACITO	EF
C011	QCZ9019-472	4700PF C.CAPACITO	EN
C011	QCZ9019-472	4700PF C.CAPACITO	G
C011	QCZ9019-472	4700PF C.CAPACITO	GI
C011	QCZ9019-472	4700PF C.CAPACITO	U
C011	QCZ9019-472	4700PF C.CAPACITO	UT
C011	QCZ9019-472	4700PF CERAMIC	BS
C023	QETB1CM-476	47MF 16V AL E.CAPAC	
C401	QETB1AM-227	220MF 10V E.CAPACITO	
C402	QC20202-155	1.5MF 25V CER.RESIST	
C403	QCHB1EZ-223	0.022MF 25V CER.CAPACI	
C404	QER51HM-225G	2.2MF 50V AL E.CAPAC	
C409	QEAD0HZ-4792B	47000MF E.CAPACITO	
C410	QETB1VM-227	220MF 35V AL E.CAPAC	
C451	QCBB1HK-331Y	330PF 50V CER.CAPACI	
C501	QETB1HM-226E	22MF 50V E.CAPACITO	
C507	QFLB1HJ-333	0.033MF 50V MYLAR CAPA	
C508	QFLB1HJ-333	0.033MF 50V MYLAR CAPA	
C511	QCY21HK-331	330PF 50V CER.CAPACI	
C512	QCY21HK-331	330PF 50V CER.CAPACI	
C513	QETB1AM-107	100MF 10V AL E.CAPAC	
C514	QCF21HP-473A	0.047MF 50V CER.CAPACI	

Δ : SAFETY PARTS

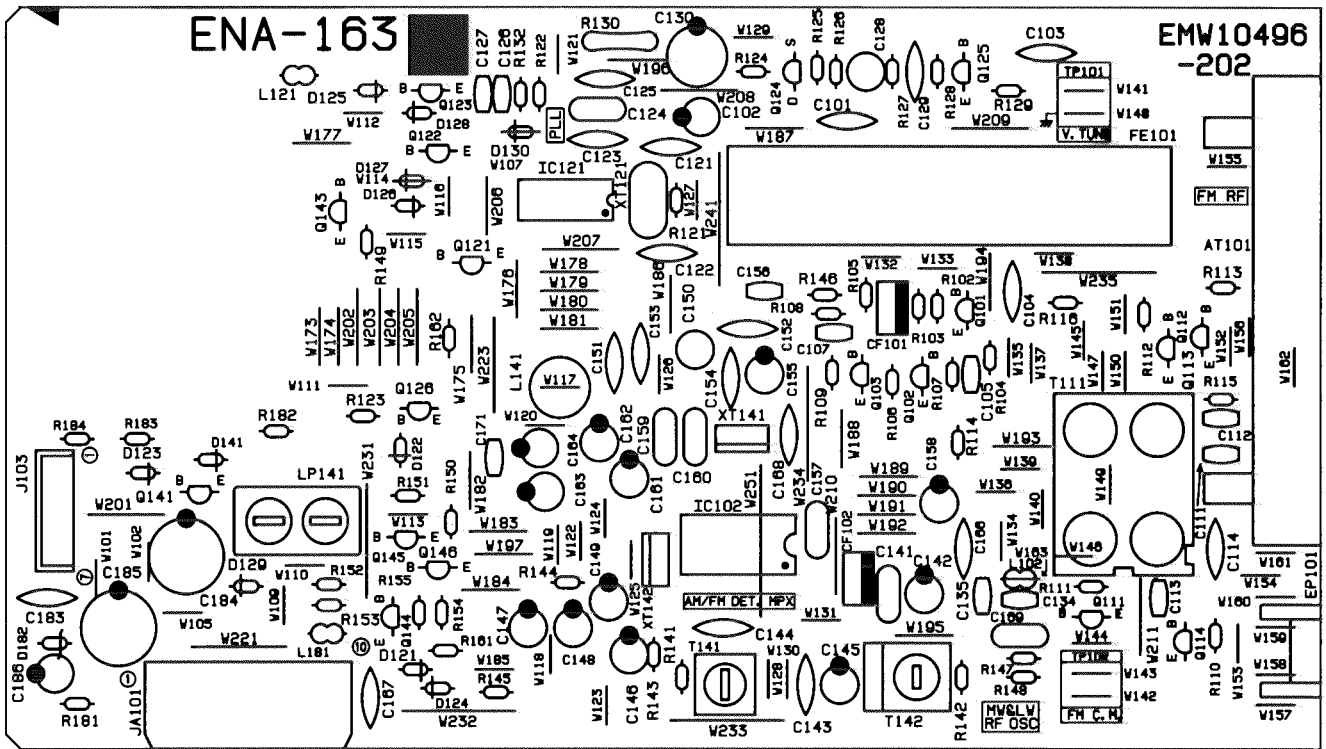
Others

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	S406	ESP0001-023M	TACT SWITCH	
	S407	ESP0001-023M	TACT SWITCH	
	S408	ESP0001-023M	TACT SWITCH	
	S409	ESP0001-023M	TACT SWITCH	
	S410	ESP0001-023M	TACT SWITCH	
	S411	ESP0001-023M	TACT SWITCH	
	S412	ESP0001-023M	TACT SWITCH	
	S413	ESP0001-023M	TACT SWITCH	
	S414	ESP0001-023M	TACT SWITCH	
	S415	ESP0001-023M	TACT SWITCH	
	S416	ESP0001-023M	TACT SWITCH	
	S417	ESP0001-023M	TACT SWITCH	
	S418	ESP0001-023M	TACT SWITCH	
	S419	ESP0001-023M	TACT SWITCH	
	S420	ESP0001-023M	TACT SWITCH	
	S421	ESP0001-023M	TACT SWITCH	
	S422	ESP0001-023M	TACT SWITCH	
	S423	ESP0001-023M	TACT SWITCH	
	S424	ESP0001-023M	TACT SWITCH	
Δ	T002	ETP1000-41EA	POWER TRASN	A
Δ	T002	ETP1000-41EA	POWER TRASN	EF
Δ	T002	ETP1000-41EA	POWER TRASN	EN
Δ	T002	ETP1000-41EA	POWER TRASN	G
Δ	T002	ETP1000-41EA	POWER TRASN	GI
Δ	T002	ETP1000-41EABS	POWER TRASN	BS
Δ	T002	ETP1000-41ZB	POWER TRASN	U
Δ	T002	ETP1000-41ZB	POWER TRASN	UT
	X401	ECXP6R0-001ZA	CRYSTAL	
Δ	AC001	QMCA002-E02S	IAC OUTLET	U
Δ	AC001	QMCA002-E02S	IAC OUTLET	UT
	BC103	EWS267-A420	SOCKET WIRE	
	CN001	VMC0178-003	CONNECT TER	
	CN002	VMC0177-003	CONNECT TER	
	CN021	VMC0178-003	CONNECT TER	
	CN022	VMC0177-003	CONNECT TER	
	CN051	EMV5109-003A	MALE CONNEC	
	CN401	EMV5109-011A	MALE CONNEC	
	CN402	EWS26B-A408J	SOCKET WIRE	
	CN441	EMV7123-019R	CONNECTOR	
	CN501	EMV7125-015R	P.W.BOARD C	
	CN552	EWS293-0130	SOCKET WIRE	
	CN661	EMV7125-004R	CONNECT TER	
	CN811	EMV7125-010R	MALE CONNEC	
	CN851	EMV7125-010R	MALE CONNEC	
	CN852	EMV5125-010	MALE CONNEC	
	CN881	EMV5109-006A	CONNECT TER	
	CN882	EWS266-A413	SOCKET WIRE	
	EP001	EMZ4002-001Z	EARTH PLATE	
	EP002	E70225-001	EARTH PLATE	
	FC101	VMZ0087-001Z	FUSE HOLDER	
	FC102	VMZ0087-001Z	FUSE HOLDER	
	FC201	VMZ0087-001Z	FUSE HOLDER	
	FC202	VMZ0087-001Z	FUSE HOLDER	
	FC301	VMZ0087-001Z	FUSE HCLDER	EF
	FC301	VMZ0087-001Z	FUSE HOLDER	EN
	FC301	VMZ0087-001Z	FUSE HOLDER	G
	FC301	VMZ0087-001Z	FUSE HOLDER	GI
	FC302	VMZ0087-001Z	FUSE HCLDER	EF
	FC302	VMZ0087-001Z	FUSE HOLDER	EN
	FC302	VMZ0087-001Z	FUSE HOLDER	G
	FC302	VMZ0087-001Z	FUSE HOLDER	GI
	FC401	VMZ0087-001Z	FUSE HOLDER	U
	FC401	VMZ0087-001Z	FUSE HOLDER	UT
	FC402	VMZ0087-001Z	FUSE HOLDER	U
	FC402	VMZ0087-001Z	FUSE HOLDER	UT
	FC811	VMZ0087-001Z	FUSE HOLDER	
	FC812	VMZ0087-001Z	FUSE HOLDER	
	FC821	VMZ0087-001Z	FUSE HOLDER	
	FC822	VMZ0087-001Z	FUSE HOLDER	
	FH001	E308270-002SM	FL HOLDER	
	FH002	E308270-002SM	FL HOLDER	
	FL401	ELU0001-144	FLUORESCENT	
	FW801	EW39D-08SS	FLAT WIRE A	
	HS001	E70945-H40B	HEAT SINK	U
	HS001	E70945-H40B	HEAT SINK	UT
	RY001	ESK1D12-118J1	RELAY	A
	RY001	ESK1D12-118J1	RELAY	EF
	RY001	ESK1D12-118J1	RELAY	EN
	RY001	ESK1D12-118J1	RELAY	G
	RY001	ESK1D12-118J1	RELAY	GI
	RY001	ESK1D12-118J1	RELAY	U
	RY001	ESK1D12-118J1	RELAY	UT
	RY001	ESK1D12-118J1BS	RELAY	BS
	SP001	E3400-444	FELT SPACER	
	SP002	E3400-444	FELT SPACER	
	TA001	EMZ4001-001	TAB	
	TA002	EMZ4001-001	TAB	
Δ	VS001	QSR0085-018	SELECT SWIT	U
Δ	VS001	QSR0085-018	SELECT SWIT	UT

Δ SAFETY PARTS

■ ENA-163 □ Tuner PC Board Ass'y

Note : ENA-163 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Designated Areas
ENA-163 B	U UT	Universal Type Taiwan
ENA-163 C	A	Australia
ENA-163 D	BS EF EN G GI	the U.K. Continental Europe Scandinavia Germany Italy

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
Q123	DTA144ES	DIGITAL TRA ROHM	BS
Q123	DTA144ES	DIGITAL TRA ROHM	EF
Q123	DTA144ES	DIGITAL TRA ROHM	EN
Q123	DTA144ES	DIGITAL TRA ROHM	G
Q123	DTA144ES	DIGITAL TRA ROHM	GI
Q124	2SK301(P,Q)	F.E.T.	
Q125	2SC458(C,D)	SI. TRANSIST HITACHI	
Q126	D7C114ES	DIGITAL TRA ROHM	
Q141	D7C114ES	DIGITAL TRA ROHM	
Q143	D7C114ES	DIGITAL TRA ROHM	

△ : SAFETY PARTS

I.C.s

ITEM	PART NUMBER	DESCRIPTION	AREA
IC102	LA1836M	I.C.(MONO-AN SANYO	
IC121	LC7218JMX	I.C.(DIGI-MO SANYO	

△ : SAFETY PARTS

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
Q101	2SC461	SI. TRANSIST	
Q102	2SC535	SI. TRANSIST HITACHI	
Q103	2SC461	SI. TRANSIST	
Q111	2SD2144S(VW)	SI. TRANSIST ROHM	BS
Q111	2SD2144S(VW)	SI. TRANSIST ROHM	EF
Q111	2SD2144S(VW)	SI. TRANSIST ROHM	EN
Q111	2SD2144S(VW)	SI. TRANSIST ROHM	G
Q111	2SD2144S(VW)	SI. TRANSIST ROHM	GI
Q112	2SD2144S(VW)	SI. TRANSIST ROHM	BS
Q112	2SD2144S(VW)	SI. TRANSIST ROHM	EF
Q112	2SD2144S(VW)	SI. TRANSIST ROHM	EN
Q112	2SD2144S(VW)	SI. TRANSIST ROHM	G
Q112	2SD2144S(VW)	SI. TRANSIST ROHM	GI
Q113	2SC1740S(R,S)	SI. TRANSIST ROHM	BS
Q113	2SC1740S(R,S)	SI. TRANSIST ROHM	EF
Q113	2SC1740S(R,S)	SI. TRANSIST ROHM	EN
Q113	2SC1740S(R,S)	SI. TRANSIST ROHM	G
Q113	2SC1740S(R,S)	SI. TRANSIST ROHM	GI
Q114	2SD2144S(VW)	SI. TRANSIST ROHM	BS
Q114	2SD2144S(VW)	SI. TRANSIST ROHM	EF
Q114	2SD2144S(VW)	SI. TRANSIST ROHM	EN
Q114	2SD2144S(VW)	SI. TRANSIST ROHM	G
Q114	2SD2144S(VW)	SI. TRANSIST ROHM	GI
Q121	DTA144ES	DIGITAL TRA ROHM	
Q122	DTA144ES	DIGITAL TRA ROHM	

△ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
D121	1SS133	SI. DIODE ROHM	
D122	1SS133	SI. DIODE ROHM	
D123	1SS133	SI. DIODE ROHM	
D124	1SS133	SI. DIODE ROHM	
D125	1SS133	SI. DIODE ROHM	
D125	1SS133	SI. DIODE ROHM	BS
D125	1SS133	SI. DIODE ROHM	EF
D125	1SS133	SI. DIODE ROHM	EN
D125	1SS133	SI. DIODE ROHM	G
D125	1SS133	SI. DIODE ROHM	GI
D126	1SS133	SI. DIODE ROHM	
D127	1SS133	SI. DIODE ROHM	BS
D127	1SS133	SI. DIODE ROHM	EF
D127	1SS133	SI. DIODE ROHM	EN
D127	1SS133	SI. DIODE ROHM	G
D127	1SS133	SI. DIODE ROHM	GI
D128	1SS133	SI. DIODE ROHM	BS
D128	1SS133	SI. DIODE ROHM	EF
D128	1SS133	SI. DIODE ROHM	EN
D128	1SS133	SI. DIODE ROHM	G
D128	1SS133	SI. DIODE ROHM	GI
D129	1SS133	SI. DIODE ROHM	
D130	1SS133	SI. DIODE ROHM	
D141	1SS133	SI. DIODE ROHM	
D182	MTZ5.1JC	ZENER DIODE ROHM	

△ : SAFETY PARTS

RX-416VBK

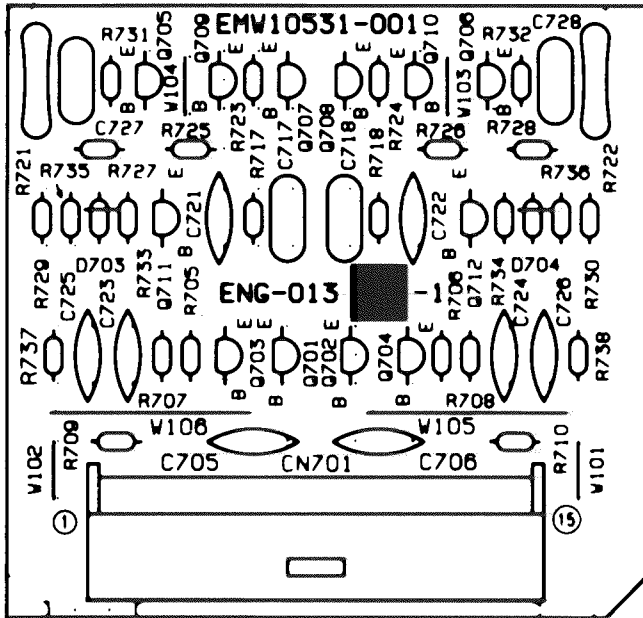
Others

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMW10496-203	CIR. BOARD	
		E308963-001	SHIELD BRAC	
	J103	EMV5109-007A	MALE CONNec	
	L102	EQL4007-150T	INDUCTOR	BS
	L102	EQL4007-150T	INDUCTOR	EF
	L102	EQL4007-150T	INDUCTOR	EN
	L102	EQL4007-150T	INDUCTOR	G
	L102	EQL4007-150T	INDUCTOR	GI
	L121	EQL4007-1R0	INDUCTOR	
	L141	EQL2108-392	INDUCTOR	BS
	L141	EQL2108-392	INDUCTOR	EF
	L141	EQL2108-392	INDUCTOR	EN
	L141	EQL2108-392	INDUCTOR	G
	L141	EQL2108-392	INDUCTOR	GI
	L181	EQL4007-1R0	INDUCTOR	
	T111	EQR7121-004	RF COIL	A
	T111	EQR7121-004	RF COIL	U
	T111	EQR7121-004	RF COIL	UT
	T111	EQR7121-006	RF COIL	BS
	T111	EQR7121-006	RF COIL	EF
	T111	EQR7121-006	RF COIL	EN
	T111	EQR7121-006	RF COIL	G
	T111	EQR7121-006	RF COIL	GI
	T141	EQT2140-021	I.F.TRANSFO	
	T142	EC91560-010	CERAMIC FIL	
	AT101	EMB41YV-302K	ANTENNA TER	
	CF101	ECB2118-007R	CERAMIC FIL	BS
	CF101	ECB2118-007R	CERAMIC FIL	EF
	CF101	ECB2118-007R	CERAMIC FIL	EN
	CF101	ECB2118-007R	CERAMIC FIL	G
	CF101	ECB2118-007R	CERAMIC FIL	GI
	CF101	ECB2123-006R	CERAMIC FIL	A
	CF101	ECB2123-006R	CERAMIC FIL	U
	CF101	ECB2123-006R	CERAMIC FIL	UT
	CF102	ECB2118-007R	CERAMIC FIL	BS
	CF102	ECB2118-007R	CERAMIC FIL	EF
	CF102	ECB2118-007R	CERAMIC FIL	EN
	CF102	ECB2118-007R	CERAMIC FIL	G
	CF102	ECB2118-007R	CERAMIC FIL	GI
	CF102	ECB2123-006R	CERAMIC FIL	A
	CF102	ECB2123-006R	CERAMIC FIL	U
	CF102	ECB2123-006R	CERAMIC FIL	UT
	EP101	E70225-001	EARTH PLATE	
	FE101	EAF2203-004	FRONT END	A
	FE101	EAF2203-004	FRONT END	U
	FE101	EAF2203-004	FRONT END	UT
	FE101	EAF2203-005	FRONT END	BS
	FE101	EAF2203-005	FRONT END	EF
	FE101	EAF2203-005	FRONT END	EN
	FE101	EAF2203-005	FRONT END	G
	FE101	EAF2203-005	FRONT END	GI
	JA101	EMV7140-L10R	PIN CONNECT	
	LP141	EGF0101-002	LOWPASS FIL	
	SP102	VYH7653-002	I.C.SOCKET	
	SP121	VYH7653-004	I.C.PROTECT	
	XT121	ECX0007-200KWJ1	CRYSTAL	
	XT141	ECXPR46-001A	CRYSTAL	
	XT142	ECB1001-002	CERAMIC FIL	

△ : SAFETY PARTS

■ ENG-013 □ Pre-Driver PC Board Ass'y

Note : ENG-013 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Designated Areas
ENG-013 □	BS	the U.K.
	EF	Continental Europe
	EN	Scandinavia
	G	Germany
	GI	Italy
ENG-013 □	A	Australia
	U	Universal Type
	UT	Taiwan

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
Q701	2SC1775AV(F1)	SI. TRANSIST HITACHI	
Q702	2SC1775AV(F1)	SI. TRANSIST HITACHI	
Q703	2SC1775AV(F1)	SI. TRANSIST HITACHI	
Q704	2SC1775AV(F1)	SI. TRANSIST HITACHI	
Q705	2SA1038(R,S)	SI. TRANSIST ROHM	
Q706	2SA1038(R,S)	SI. TRANSIST ROHM	
Q707	2SA933LN(R,S)	SI. TRANSIST ROHM	
Q708	2SA933LN(R,S)	SI. TRANSIST ROHM	
Q709	2SA1038(R,S)	SI. TRANSIST ROHM	
Q710	2SA1038(R,S)	SI. TRANSIST ROHM	
Q711	2SC2589(S,E)	SI. TRANSIST ROHM	
Q712	2SC2589(S,E)	SI. TRANSIST ROHM	

△ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
D703	1SS133	SI. DIODE ROHM	
D704	1SS133	SI. DIODE ROHM	

△ : SAFETY PARTS

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C705	QCS21HJ-101A	100PF 50V CER. CAPACI	
C706	QCS21HJ-101A	100PF 50V CER. CAPACI	
C717	QFN81HJ-152	1500PF 50V METAL. MYLA	
C718	QFN81HJ-152	1500PF 50V METAL. MYLA	
C721	QCS21HJ-220A	22PF 50V CER. CAPACI	
C722	QCS21HJ-220A	22PF 50V CER. CAPACI	
C723	QCS21HJ-680A	68PF 50V CER. CAPACI	
C724	QCS21HJ-680A	68PF 50V CER. CAPACI	
C725	QCS21HJ-680A	68PF 50V CER. CAPACI	
C726	QCS21HJ-680A	68PF 50V CER. CAPACI	

△ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R705	QRD161J-202	2K 1/6W CARBON RES	
R706	QRD161J-202	2K 1/6W CARBON RES	
R707	QRD161J-202	2K 1/6W CARBON RES	
R708	QRD161J-202	2K 1/6W CARBON RES	
R709	QRD161J-103	10K 1/6W CARBON RES	
R710	QRD161J-103	10K 1/6W CARBON RES	
R717	QRD161J-101	100 1/6W CARBON RES	
R718	QRD161J-101	100 1/6W CARBON RES	
R721	QRD14CJ-151SX	150 1/4W UNF. CARBON	
R722	QRD14CJ-151SX	150 1/4W UNF. CARBON	
R723	QRD167J-152	1.5K 1/6W CARBON RES	
R724	QRD167J-152	1.5K 1/6W CARBON RES	
R725	QRD161J-333	33K 1/6W CARBON RES	
R726	QRD161J-333	33K 1/6W CARBON RES	
R727	QRD161J-333	33K 1/6W CARBON RES	
R728	QRD161J-333	33K 1/6W CARBON RES	
R729	QRD161J-391	390 1/6W CARBON RES	
R730	QRD161J-391	390 1/6W CARBON RES	
R731	QRD161J-392	3.9K 1/6W CARBON RES	
R732	QRD161J-392	3.9K 1/6W CARBON RES	
R733	QRD161J-392	3.9K 1/6W CARBON RES	
R734	QRD161J-392	3.9K 1/6W CARBON RES	
R735	QRD161J-391	390 1/6W CARBON RES	
R736	QRD161J-391	390 1/6W CARBON RES	
R737	QRD167J-152	1.5K 1/6W CARBON RES	
R738	QRD167J-152	1.5K 1/6W CARBON RES	

△ : SAFETY PARTS

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
CN102	EMV5140-010	CIR. BOARD VOLUME SOCK	
CN103	EMV7140-L08R	CONNECT TER	
CN701	EMV5163-015R	CONNECT TER	

△ : SAFETY PARTS

Accessories List

Symbol No.

M	2	M	M
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⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	E30580-2245A	INSTRUCTION BOOK	1		EF,G,GI
		E30580-2245ABS	INSTRUCTION BOOK	1		BS
		E30580-2246A	INSTRUCTION BOOK	1		EN
		E30580-2247A	INSTRUCTION BOOK	1		A,U,UT
		E43486-371A	INSTRUCTION SHEET	1		BS
	2	QPGA025-03505B	ENVELOPE	2		
	3	RM-SR416U	WIRE-LESS REMOTE CONTROL	1		
	4	R6PRPA-2PSA	BATTERY	1		
	5	EQB4001-015	LOOP ANTENNA	1		
	6	E03614-004	FM FEEDER ANTENNA	1		Except G
	7	EMZ2001-014	ADAPTOR PLUG	1		Except G
	8	BT-20066A	WARRANTY CARD	1		BS
		BT-20134	WARRANTY CARD	1		G
		BT-56001-1	WARRANTY CARD	1		A
		BT20060	WARRANTY CARD	1		BS
⚠	9	EMC0202-001BS	AC PLUG	1		BS
	10	E43486-340A	SAFETY SHEET	1		BS
	11	E67007-001	ANTENNA WIRE	1		G
	12	ENZ2203-001	ADAPTOR PLUG	1		U,UT

⚠ : Safety Parts

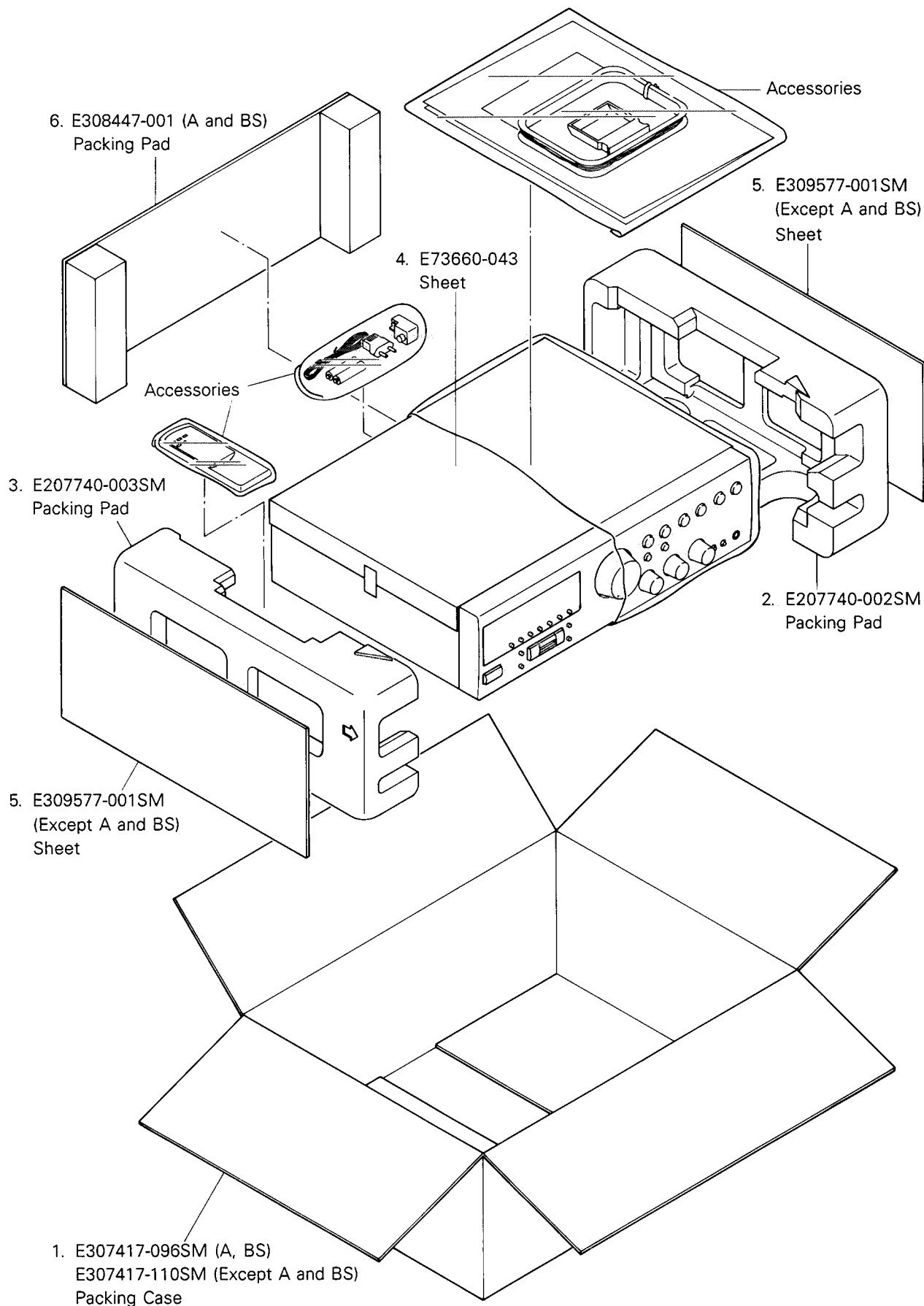
The Marks for Designated Areas

- | | | |
|------------------------|------------------|-----------------------------|
| A Australia | BS the U.K. | EF Continental Europe |
| EN Scandinavia | GI Italy | G Germany |
| U Universal Type | UT Taiwan | No mark indicates all area. |

Packing Materials and Part Numbers

Symbol No.

M	3	M	M
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RX-416VBK

JVC

VICTOR COMPANY OF JAPAN, LIMITED

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

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