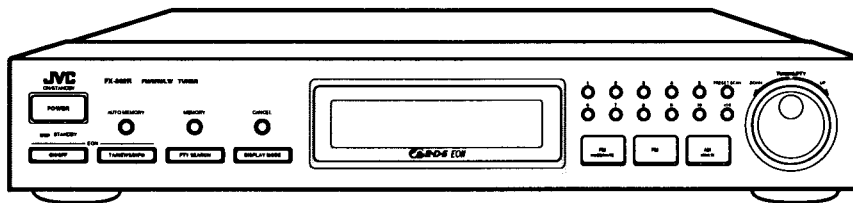


# JVC

## SERVICE MANUAL

### FM/MW/LW TUNER

# FX-382RBK



**COMPU LINK**  
 Remote Control Component

#### Area Suffix

|    |       |                                      |
|----|-------|--------------------------------------|
| BS | ....  | the U.K.                             |
| EF | ....  | Continental Europe<br>Except Germany |
| EN | ....  | Nordic Countris                      |
| G  | ..... | Germany                              |

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### **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 authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by ( $\triangle$ ) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and 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.

### **Warning**

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

# Instruction Book

## Getting Started

Check to be sure you have all of the following items, which are supplied with the Unit. The number in the parenthesis indicates the quantity of the pieces supplied.

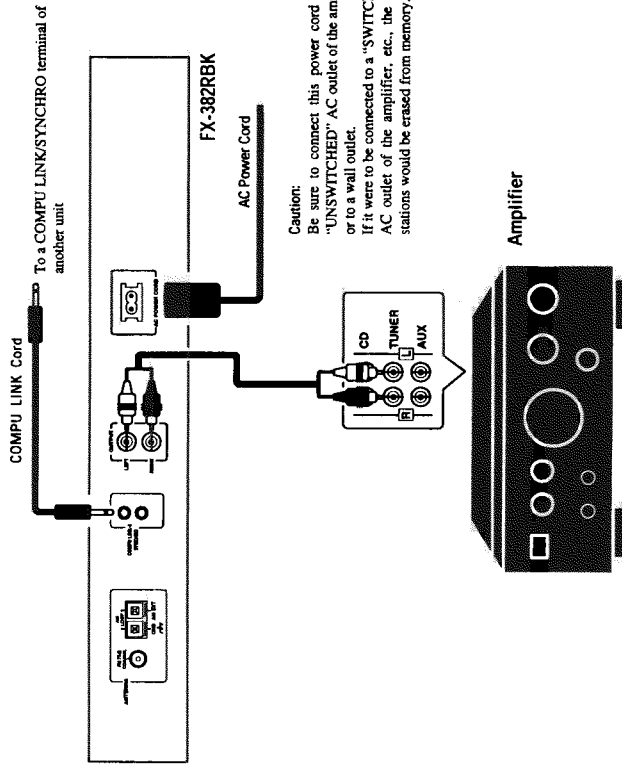
- AM (MW/LW) Loop Antenna (1)
- FM Wire Antenna (1)
- AC Power Cord (1)
- Audio Cord (1)
- COMPU LINK Cord (1)

If anything is missing, contact your dealer immediately.

## Connecting to the Amplifier

### Notes:

- Do not connect the power cord unless all connections are completed.
- Connect to the amplifier with the left and right channels matched correctly. Reversed channels will degrade the stereo effect.



Thank you for purchasing a JVC product. Before you begin operating this Unit, please read the instructions carefully to be sure you get the best possible performance. If you have any questions, consult your JVC dealer.

## Features

- You can preset stations easily using Auto Memory.
  - This Unit is compatible with RDS (Radio Data System) broadcasting.
    - EON data enables you to automatically tune into a station broadcasting the programme you want.
    - PTY Search finds programmes in the category you wish.
- In addition, Station Names, Time Clock and Radio Text can be displayed using data sent by stations.

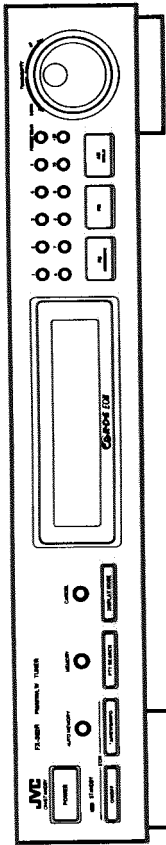
## IMPORTANT

1. Installation
  - Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C).
  - Leave sufficient distance between the Unit and your TV.
  - Do not install the Unit directly on the amplifier, or the amplifier's power transformer may interfere with reception.
  - Keep the power and signal cords away from the antennas to avoid hum.
  - When using the FM antenna provided, extend it.
2. Power cord
  - Do not handle the power cord with wet hands!
  - A small amount of the power (4 watts) is always consumed as long as the power cord is connected to the wall outlet.
  - When unplugging from the wall outlet, always pull the plug, not the power cord.
3. Malfunctions, etc.
  - There are no user serviceable parts inside. If the Unit fails to operate, unplug the power cord and consult your dealer.
  - Do not insert any metallic object inside the Unit.
  - Do not allow water to get inside the Unit.

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# Listening to the Radio



This Unit is compatible with RDS broadcasting. RDS broadcasting provides you with various types of information in addition to normal broadcast programmes. When this Unit receives signals from FM stations which provide RDS broadcasting, the RDS indicator on the display comes on to inform you that the station currently being received is an RDS station. For further information on RDS, refer to "Receiving FM Stations with RDS (Radio Data System)" on page 7.



### Turning On FX-382RBK

- Press the POWER button; the STANDBY indicator goes out.
- This Unit becomes ready to do whatever it was doing when the power was last shut off.
- You can turn on the Unit by pressing either the FM or AM (MW/LW) button.

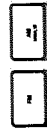


### Turning Off FX-382RBK

- Press the POWER button again; the STANDBY indicator lights up and the display blanks.
- A small amount of the power (4 watts) is always consumed even in standby mode.
- To switch off the Unit completely, unplug the AC power cord from the AC outlet.

## Tuning in Stations

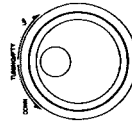
This Unit can receive FM and AM (MW/LW) stations. Stations can be tuned manually, automatically, or from preset memory.



Press the FM or AM (MW/LW) button to turn on the Unit.

### Manual Tuning

Turn the TUNING/PTY knob slowly either to the UP or DOWN direction. You can change the frequency one click at a time in either direction. Turn the knob until you find the frequency of the station you want to listen to.



### Automatic Tuning

Turn the TUNING/PTY knob quickly either to the UP or DOWN direction. Frequency starts changing in the UP or DOWN direction, and as soon as a station is tuned in, the TUNED indicator on the display comes on and the frequency stops changing. Repeat the above procedure until a station you want is tuned in.

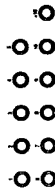
### Tuning in Preset Stations

This method is possible after presetting stations by yourself. (See page 5.)

Select preset stations by pressing the numeric keys (1-10, +10).

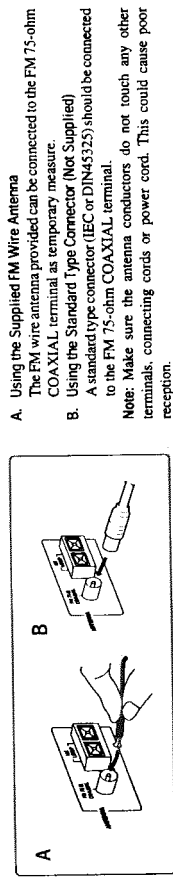
### How to use the numeric keys

- For numbers from 1 to 10, just press the button of the number you want.
- For numbers from 11 to 20, first press the +10 button, then press the one's digit of the number you want — to get 15 press +10 first, then press 5. For 20 press +10 and 10.
- For numbers from 21 to 30, press the +10 button twice; then press the one's digit — to get 25 press +10 +10 and 5. For 30 press +10 +10 and 10.
- For numbers from 31 to 40, press the +10 button three times, then press the one's digit — to get 32 press +10 +10 +10 and 2.



## Connecting the FM and AM (MW/LW) Antennas

### FM Antenna Connections



Extend the supplied FM wire antenna horizontally.

If reception is poor, connect an outdoor antenna.

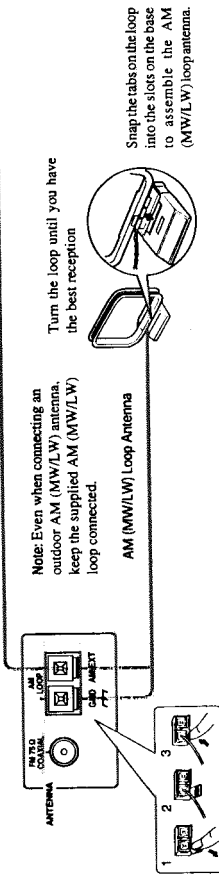
Before attaching a 75-ohm coaxial cable (the kind with a round wire going to an outdoor antenna), disconnect the supplied FM antenna.

### AM (MW/LW) Antenna Connections

AM (MW/LW) Antenna Wire (Not Supplied)

If reception is poor, connect an outdoor antenna.

Note: Even when connecting an outdoor AM (MW/LW) antenna, keep the supplied AM (MW/LW) loop connected.



## Receiving in Stereo or Monaural

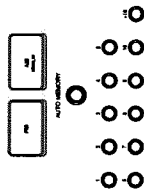


- When an FM stereo broadcast is hard to receive or noisy:
- Press the FM MODE/MUTE button and reception improves, although you lose stereo effect. In this state, you will hear some noise while tuning into a station.
  - To restore stereo effect, press the FM MODE/MUTE button again so that the FM AUTO/MUTE indicator on the display comes on. In this state, when a programme in stereo the STEREO indicator comes on and you will hear the stereo sound; when in monaural, the STEREO indicator goes off and you will hear the monaural sound. Furthermore, in this state you will not hear noise while tuning in stations.

## Presetting Stations in Memory

- Once stations are assigned to channel numbers, any of these stations can quickly be called up using the numeric keys.
- You can preset a total of 40 stations, either FM or AM (MW/LW).
  - In order to use RDS broadcasting effectively, you need to preset stations in memory. Both PTY Search and EON function (which will be explained later) are applicable only to the preset FM stations.
  - In some cases, test frequencies have been already memorized for the tuner since the factory examined the tuner preset function before shipment. This is not a malfunction. You can preset the stations you want into memory by following the presetting method.

### Easy Presetting Auto Memory



1. Press the FM or AM (MW/LW) button to select the band you want to preset using Auto Memory.
  2. Press the AUTO MEMORY button.
  3. MEMORY and "—" come on for 5 seconds on the display. During the 5 seconds you can assign a channel number to the station and enter it into memory. Enter the first channel number using the numeric keys. The Unit starts scanning the stations. When a station is received, the preset channel number and the received frequency blink on the display for 5 seconds. When blinking stops, the frequency is stored in memory of the preset channel number. The Unit continues scanning and automatically assigns the next station received to the next preset channel number. When the highest frequency of the band is reached after repeating this procedure, the last preset channel number is called up on the display. If no frequencies have been stored, the highest frequency will be indicated. Repeat Steps 1 to 3 for the other band.
  4. When presetting the other band, make sure that the preset channel numbers already used for the previous band cannot be used again; otherwise, previously preset stations are erased.
- While storing FM stations using Auto Memory, these stations are received in the FM AUTO/MUTE mode.
  - If you press the AUTO MEMORY button while the channel number and frequency are blinking, the currently received station will be skipped and the Unit will start searching for the next station.
  - If you have not started Auto Memory with the lowest frequency, stations with lower frequencies than the one you began Auto Memory with are not preset.
  - If two different stations are assigned to the same channel number, the newly preset station will be entered into memory. When using Auto Memory, make sure that channel numbers for different bands (FM, AM (MW/LW)) do not overlap one another.

## Normal Preset

1. Tune in the station you want to set.
2. Press the MEMORY button. MEMORY and "—" come on for 5 seconds on the display. During the 5 seconds you can assign a channel number to the station and enter it into memory.
3. Enter a channel number using the numeric keys. The station is assigned to the channel number showing on the display.

## How to Cancel Preset Channels

1. Press the CANCEL button. CANCEL and "—" come on for 5 seconds on the display. During the 5 seconds you can cancel a preset station.
2. Enter the channel number you want to cancel using the numeric keys (1-10, +10).

### How to use the numeric keys

- For numbers from 1 to 10, just press the button of the number you want.
- For numbers from 11 to 20, first press the +10 button, then press the one's digit of the number you want — to get 15 press +10 first, then press 5. For 20 press +10 and 10.
- For numbers from 21 to 30, press the +10 button twice; then press the one's digit — to get 25 press +10 +10 and 5. For 30 press +10 +10 and 10.
- For numbers from 31 to 40, press the +10 button three times, then press the one's digit — to get 32 press +10 +10 +10 and 2.

## Scanning Through Preset Stations

You can scan through your preset radio stations stopping at any station you want to listen to.

1. Press the PRESET SCAN button.
2. The Unit scans your preset stations. Each preset station is received for a few seconds with the channel number blinking.
3. If you want to listen to one of the preset stations, press the PRESET SCAN button again while the channel number is blinking.

If you do not stop at any station, the Unit will scan through the preset stations once, then return to the station received before starting the scanning.

## Receiving FM Stations with RDS (Radio Data System)

RDS is a broadcasting service a growing number of FM stations are now providing. It allows the FM stations to send additional signals along with their regular programme signals. For example, the stations send their station names and information about what type of programme they broadcast, such as sports or music, etc. When tuned to an FM station providing the RDS service, the RDS indicator comes on, the station frequency (and then the station name if sent) is displayed. One convenient RDS service is "Enhanced Other Networks (EON)". This allows the Unit to automatically switch to a programme of your choice when one starts in your broadcast area.



- Not all FM stations provide RDS service, nor do all RDS stations provide the same services. If in doubt, check with local radio stations for details on RDS services in your area.

RDS may not operate correctly if the station tuned is not transmitting data properly or if the signal strength is weak.

### What Information RDS Can Provide

The following RDS services are available. You can see the following RDS information by pressing the DISPLAY MODE button.

- "wait (Service Name)" appears while RDS data is being read.

**PS (Program Service name)**  
Identifies each station by a name.

**CT (Clock Time)**  
Displays the time on the display.

**Note: CT (Clock Time) indication of this Unit utilizes CT data sent by stations. Be aware that some stations may not provide an accurate time.**

**RT (Radio Text)**  
Allows the RDS station to send text messages that appear on the display of the Unit.

**PTY (Programme Type)**  
Identifies the type of RDS programme.

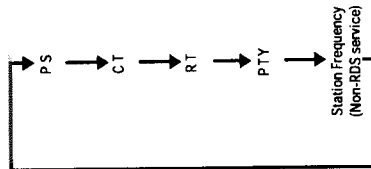
The programme types are as follows:

- TRAFFIC: Traffic announcement (usually called "TA")
- NEWS: News
- INFO: Programmes on medical service, weather forecast, etc.
- POP M: Pop music
- ROCK M: Rock music
- M.O.R. M: Middle-of-the-road music (usually called "easy listening")
- LIGHT M: Light music
- CLASSICS: Classics
- OTHER M: Other music
- AFAIRS: Topical programme expanding on current news or affairs
- SPORT: Sports events
- EDUCATE: Educational programmes
- DRAMA: Radio plays
- CULTURE: Programmes on national or regional culture
- SCIENCE: Programmes on natural sciences and technology
- VARIED: Other programmes like comedies or ceremonies
- NONE: Undefined

**ALARM:** Emergency broadcasts

**Station Frequency (Non-RDS service)**  
Displays station frequencies

**Note:** If you press the DISPLAY MODE button while receiving non-RDS FM stations or AM (MW/LW) stations, "NO RDS DATA" will appear on the display.



## Searching for Programmes by PTY Codes

One of the advantages of the RDS service is that you can locate a particular kind of programme by specifying the PTY (Programme Type) codes.

- PTY Search is applicable to the preset FM RDS stations only.

To search for a programme using the PTY codes, follow this procedure:

- Press the PTY SEARCH button. "select PTY" appears on the display.
- Turn the TUNING/PTY knob while "select PTY" remains on the display.
  - When you turn the TUNING/PTY knob the PTY codes change in the following order: TRAFFIC ↔ NEWS ↔ INFO ↔ POP M ↔ ROCK M ↔ M.O.R. M ↔ LIGHT M ↔ CLASSICS ↔ OTHER M ↔ AFFAIRS ↔ SPORT ↔ EDUCATE ↔ DRAMA ↔ CULTURE ↔ SCIENCE ↔ VARIED ↔ NONE ↔ TRAFFIC
- Press the PTY SEARCH button again while the selected PTY code remains on the display. Searching starts. The selected PTY code blinks during PTY Search, and at the same time preset numbers continue to change.

Once the station broadcasting a programme of the selected PTY code is located, searching stops. Then the station name (if PS code is being sent) appears and the station is tuned in. The preset channel number stays blinking for 15 seconds before searching function ends. If you press the PTY SEARCH button again during this period, search for the same PTY code will restart.

- PTY Search is completed when the indicated preset channel number stops blinking and stays lit.
- If stations broadcasting a programme of the selected PTY code can not be located, "not found" will appear after going through the preset channels. The Unit will then go back to the station which had been tuned in before starting PTY Search.

Press the FM button when you wish to cancel PTY Search.

**Note:** If you operate the Unit while PTY Search is in use, PTY Search will be cancelled.

## EON Function

With the EON (Enhanced Other Networks) code, the Unit can perform a standby reception which enables you to obtain desired PTY code(s) available from other stations.

- The EON indicator will come on only while receiving stations with an EON code.
- EON Standby reception is applicable to the preset FM stations only.
- EON Standby reception cannot work while receiving non-RDS FM stations or AM (MW/LW) stations.

### Setting EON Standby Reception

- Press the EON ON/OFF button so that "EON MODE" appears on the display. Indication of the PTY code(s) previously selected comes on.
- Select PTY code(s) you want by pressing the TA/NEWS/INFO button.

TA: Traffic announcement in your area.

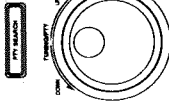
NEWS: News

INFO: Programmes on medical service, weather forecast, etc.

- Each time you press the TA/NEWS/INFO button, the indications change as follows:  
[ TA NEWS INFO ] → [ TA INFO ] → [ NEWS INFO ] → [ TA NEWS INFO ] → [ TA NEWS INFO ] → (back to the beginning)

As soon as your selection is entered, the Unit goes into the EON Standby reception mode.

Searching for and receiving a programme of the category you want: PTY Search



Obtaining the desired information immediately: EON Standby Reception



# COMPU LINK Remote Control System

JVC has developed the COMPU LINK Remote Control System so that you can operate individual JVC components such as an amplifier, tuner, CD player and cassette deck as an integrated audio system.

In order to enjoy the COMPU LINK Remote Control System, you need to use JVC components compatible with COMPU LINK Remote Control System. These components are equipped with terminals marked either "COMPU LINK-2/SYNCHRO" or "COMPU LINK-3/SYNCHRO". By simply connecting COMPU LINK terminals of these components to the COMPU LINK cords, you can instantly have access to the COMPU LINK Remote Control System.

**Different Versions of the COMPU LINK Remote Control System**  
 There are three different versions of COMPU LINK Remote Control System, "COMPU LINK-1", "COMPU LINK-2" and "COMPU LINK-3". The "COMPU LINK-3" is the latest version with extra functions. It is possible to connect components compatible with "COMPU LINK-3" with those compatible with other versions, but you cannot use the latest functions available only for "COMPU LINK-3".

- Basic Functions of the COMPU LINK Remote Control System**
- Pressing the Play button of the source unit will turn on the source unit and amplifier, select the source on the amplifier and start playing on the source unit.  
 (Applicable only when the amplifier is compatible with COMPU LINK-3.)
  - Selecting the source on the amplifier will turn on the source unit and starts playing.
  - Synchronized Recording enables automatic recording of playback of the selected source.
  - All functions of the COMPU LINK Remote Control System can be operated by the remote control unit of the amplifier.

## Using FX-382RBK as a COMPU LINK Remote Control System Component

FX-382RBK is compatible with COMPU LINK-3.

### Connections

- Connect FX-382RBK's COMPU LINK-3 terminals to those of other equipment using the COMPU LINK cord with monaural mini-plugs.
- Either of the two COMPU LINK terminals can be used for connection.
  - The power plug should be plugged in to either the amplifier's "UNSWITCHED" AC outlet or a wall outlet.
  - If plugged in to the amplifier's "SWITCHED" AC outlet, the Unit will not operate as normally as expected using the COMPU LINK Remote Control System.

### Functions of the COMPU LINK Remote Control System in FX-382RBK

- Pressing the FM or AM(MW/LW) button turns on the amplifier, changes the source to the tuner and receives a broadcast.
- (Applicable only when the amplifier is compatible with COMPU LINK-3.)  
 FX-382RBK can be operated using the remote control unit of the amplifier.
- Point the remote control unit to the amplifier.  
 (Refer to the amplifier's instructions.)
- If the selected PTY code by EON Standby reception is received, the System can automatically select the source to the tuner on the amplifier and tune into the station broadcasting the selected PTY code. If the amplifier is COMPU LINK-3 compatible, the System can turn on the amplifier even if it is off (in STANDBY-mode), then change the source to tuner and receive a broadcast.
- With a special amplifier connected, the source on the amplifiers automatically goes back to the previously selected one when broadcasting of a programme tuned by EON Standby reception ends.  
 (For further details, consult your dealer.)
- Pressing the numeric keys or the PRESET SCAN button will change the source to tuner on the amplifier. If a station is received by PTY Search, it will change the source to tuner on the amplifier and receive a broadcast.

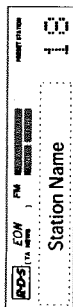
**Note:** While Synchronized Recording, the source selected on the amplifier will not change to tuner even if EON Standby reception starts working to receive a station. However, if recording, other than Synchronized Recording is carried out, the source selected on the amplifier will be changed to the tuner when EON Standby reception starts working to receive a station.



If you want to cancel EON Standby reception, press the EON ON/OFF button again so that indication of the PTY code(s) disappears.

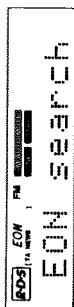
While this Unit is for EON Standby reception, the display changes as follows:

1. While waiting for EON data



**Note:** If no EON data is received, this Unit remains in this mode.

2. When the information of desired PTY data is received, the Unit tunes into the station sending the PTY data (sound is muted).



3. When the station is tuned in, the indication of received PTY code starts blinking.



**Note:** If EON Standby reception fails, "EON failed" will appear. EON Standby reception is cancelled, and the Unit will then go back to the station previously tuned in.

When broadcasting of the desired PTY code(s) ends, "EON end" appears and the Unit automatically goes back to the station previously tuned in. (If you use the COMPU LINK Remote Control System, you can go back to the previously selected source. See page 10.)

- While receiving a programme of the selected PTY code(s) by EON Standby reception, the station will not change to other stations even if a programme of the same type is available from them.
- If you press the EON ON/OFF or T/NEWS/INFO button while receiving the station tuned by EON Standby reception, the Unit will automatically go back to the station previously tuned in.

### Notes:

- If you operate the Unit (except pressing the DISPLAY MODE button) while receiving the station tuned by EON Standby reception, EON Standby reception will be cancelled. (The Unit will not go back to the station previously tuned in.)
- EON broadcasts of some stations may not be compatible with the Unit. In the case of an incompatible EON broadcast, the EON indicator on the display will not come on.

## ALARM Function

When an ALARM (Emergency) broadcast is being received, "ALARM!" blinks on the display and tune in the station broadcasting the ALARM signal.

- ALARM Function cannot work while receiving non-RDS FM stations or AM (MW/LW) stations.



# Specifications

|                                   |                                    |                        |
|-----------------------------------|------------------------------------|------------------------|
| <b>FM SECTION</b>                 | <b>IHF</b>                         | <b>DIN</b>             |
| Tuning Range                      | 87.5 — 108.0 MHz                   |                        |
| Usable Sensitivity                | 10.8 dBf<br>(0.95 $\mu$ V/75 ohms) |                        |
| 26 dB Quieting Sensitivity        |                                    | 1.0 $\mu$ V/75 ohms    |
| Mono                              | 16.3 dBf<br>(1.8 $\mu$ V/75 ohms)  |                        |
| 50 dB Quieting Sensitivity        | 38.3 dBf                           |                        |
| Mono                              |                                    |                        |
| Stereo                            | (22.5 $\mu$ V/75 ohms)             | 22.5 $\mu$ V/75 ohms   |
| S/N 46 dB Stereo Sensitivity      |                                    |                        |
| Signal to Noise Ratio             |                                    | 72 dB                  |
| Mono                              | 80 dB                              | 64 dB                  |
| Stereo                            | 73 dB<br>(IHF-A)                   | (weighted)             |
| Total Harmonic Distortion (1 kHz) |                                    | 0.09%                  |
| Mono                              |                                    | 0.12%                  |
| Stereo                            |                                    |                        |
| Capture Ratio                     | 1.5 dB                             |                        |
| Selectivity                       | 60 dB ( $\pm$ 400 kHz)             | 55 dB ( $\pm$ 300 kHz) |
| Stereo Separation (1 kHz)         | 40 dB                              | 40 dB                  |
| Frequency Response                | 20 Hz — 15 kHz<br>+0.3 dB, -3.0 dB |                        |
| IF Response Ratio                 | 100 dB at 98 MHz                   |                        |
| AM Suppression                    | 60 dB                              |                        |
| Output Level/Impedance            |                                    | 550 mV/1.8 kohms       |
| Sub-carrier Suppression           | 70 dB                              |                        |

|                           |   |
|---------------------------|---|
| <b>MW SECTION</b>         |   |
| Tuning Range              | 522 — 1629 kHz (9 kHz Step)                                   |
| Usable Sensitivity        | 300 $\mu$ V/m (7.5 $\mu$ V)<br>(LOOP AERIAL)<br>0.5%          |
| Total Harmonic Distortion |   |
| Signal to Noise Ratio     | 50 dB   |
| Selectivity               | 35 dB ( $\pm$ 9 kHz at 999 kHz)                               |
| Image Response Ratio      | 40 dB   |
| IF Response Ratio         | 60 dB   |
| <b>LW SECTION</b>         |   |
| Tuning Range              | 144 — 288 kHz (1 kHz Step)                                    |
| Usable Sensitivity        | 600 $\mu$ V/m (15 $\mu$ V)<br>(LOOP AERIAL)                   |
| Signal to Noise Ratio     | 50 dB   |
| Selectivity               | 35 dB ( $\pm$ 9 kHz)  |
| Dimensions                | 435 x 80 x 291 mm (w/h/d)<br>17-3/16 x 3-1/16 x 11-1/2 inches |
| Mass                      | 2.8 kg<br>6.2 lbs   |
| Power Specifications      |   |
| Power Requirements        | AC 230V $\sim$ , 50 Hz  |
| Power Consumption         | 8 watts   |
| Supplied Accessories      |   |
| AM (MW/LW) Loop Antenna   | 1   |
| FM Wire Antenna           | 1   |
| AC Power Cord             | 1   |
| Audio Cord                | 1   |
| COMPU LINK Cord           | 1   |

*Design and specifications are subject to change without notice.*

# Troubleshooting

- If you are having a problem with FX-382RBK, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

| Symptom  | Possible Cause   | ACTION  |
|--|--|---|
| Hard to listen to broadcasts because of noise. | The antenna is disconnected.   | Re-connect the antenna securely.  |
|  | The AM (MW/LW) loop antenna is too close to the Unit.                          | Change the position and direction of the AM (MW/LW) loop antenna.                                       |
|  | The FM wire antenna is not properly extended and positioned.                   | Extend FM wire antenna to the best reception position.  |
| No sound can be heard.                         | Incorrect amplifier operations.  | Read instructions for the amplifier carefully for correct operations.                                   |
|  | The FM AUTO/MUTE mode is used when receiving a FM broadcast with weak signals. | Press the FM MODE/MUTE button to turn off the FM AUTO/MUTE mode. (The FM MODE/MUTE indicator goes off.) |
| EON does not function.                         | No stations are being preset.  | Preset stations.  |
|  | No EON broadcasts.   |   |
| PTY Search does not function.                  | No stations have been preset.  | Preset stations.  |



## Description of Major LSIs

### ■ MN172124K8E (IC501) : SYSTEM CONTROLLER

#### 1. Terminal Layout

|         |    |
|---------|----|
| 63 ~ 43 |    |
| 64      | 42 |
| }       | }  |
| 84      | 22 |
| 1 ~ 21  |    |

#### 2. Key Matrix

|                      | KEY IN 0<br>(PIN64) | KEY IN 1<br>(PIN65) | KEY IN 2<br>(PIN66) | KEY IN 3<br>(PIN67) |
|----------------------|---------------------|---------------------|---------------------|---------------------|
| KEY OUT 0<br>(PIN57) |                     | A U T O<br>MEMORY   | MEMORY              | CANCEL              |
| KEY OUT 1<br>(PIN58) |                     | EON<br>MODE         | PTY<br>SERCH        | DISPLAY             |
| KEY OUT 2<br>(PIN59) |                     | FM MODE             | FM                  | AM                  |
| KEY OUT 3<br>(PIN60) | 1                   | 2                   | 3                   | 4                   |
| KEY OUT 4<br>(PIN61) | 5                   | 6                   | 7                   | 8                   |

#### 3. Description

| Pin No. | Symbol  | I/O | Description                 | Pin No. | Symbol   | I/O | Description                            |
|---------|---------|-----|-----------------------------|---------|----------|-----|--|
| 1       | 3G      | O   | FL grid control             | 43      | RDSRST   | O   | Reset signal for IC201                 |
| 2       | 2G      | O   | FL grid control             | 44      | PLLCE    | O   | Chip enable signal for PLL synthesizer |
| 3       | 1G      | O   | FL grid control             | 45      | PLL CLK  | O   | Clock for PLL synthesizer              |
| 4       | S35     | O   | FL anode control            | 46      | IF DATA  | I   | Data signal from PLL synthesizer       |
| 5       | S34     | O   | FL anode control            | 47      | PLLDA    | O   | Data for PLL synsesizer                |
| 6       | S33     | O   | FL anode control            | 48      | INH      | I   | Inhibit signal input                   |
| 7       | S32     | O   | FL anode control            | 49      | RDS D.ST | I   | D.Start signal from IC201              |
| 8       | S31     | O   | FL anode control            | 50      | /TUNED   | I   | TUNED indication control               |
| 9       | S30     | O   | FL anode control            | 51      | /STEREO  | I   | STEREO indication control              |
| 10      | S29     | O   | FL anode control            | 52      | RDT.E.A  | I   | Rotary encoder A input                 |
| 11      | S28     | O   | FL anode control            | 53      | RDT.E.B  | I   | Rotary encoder B input                 |
| 12      | S27     | O   | FL anode control            | 54      | DCS IN   | O   | Compulink signal input                 |
| 13      | S26     | O   | FL anode control            | 55      | DCS OUT  | O   | Compulink signal output                |
| 14      | S25     | O   | FL anode control            | 56      | MUTE     | I   | Muting tuner sound                     |
| 15      | S24     | O   | FL anode control            | 57      | KO0      | I   | Key matrix output                      |
| 16      | S23     | O   | FL anode control            | 58      | KO1      | O   | Key matrix output                      |
| 17      | S22     | O   | FL anode control            | 59      | KO2      | O   | Key matrix output                      |
| 18      | S21     | O   | FL anode control            | 60      | KO3      | O   | Key matrix output                      |
| 19      | S20     | O   | FL anode control            | 61      | KO4      | O   | Key matrix output                      |
| 20      | S19     | O   | FL anode control            | 62      | KO5      | O   | Key matrix output                      |
| 21      | S18     | O   | FL anode control            | 63      | KO6      | O   | Key matrix output                      |
| 22      | S17     | O   | FL anode control            | 64      | KI0      | I   | Key matrix input                       |
| 23      | VP      | --  | Power supply for FL display | 65      | KI1      | I   | Key matrix input                       |
| 24      | P16     | O   | FL anode control            | 66      | KI2      | I   | Key matrix input                       |
| 25      | P15     | O   | FL anode control            | 67      | KI3      | I   | Key matrix input                       |
| 26      | P14     | O   | FL anode control            | 68      | RST      | I   | Reset signal input                     |
| 27      | P13     | O   | FL anode control            | 69      |          | --  | GND                                    |
| 28      | P12     | O   | FL anode control            | 70      |          | --  | Not used                               |
| 29      | P11     | O   | FL anode control            | 71      |          | --  | GND                                    |
| 30      | P10     | O   | FL anode control            | 72      | OSC2     | O   | Clock oscillation terminal             |
| 31      | P9      | O   | FL anode control            | 73      | OSC1     | I   | Clock oscillation terminal             |
| 32      | P8      | O   | FL anode control            | 74      | VDD      | --  | Power supply                           |
| 33      | P7      | O   | FL anode control            | 75      | 13G      | O   | FL grid control                        |
| 34      | P6      | O   | FL anode control            | 76      | 12G      | O   | FL grid control                        |
| 35      | P5      | O   | FL anode control            | 77      | 11G      | O   | FL grid control                        |
| 36      | P4      | O   | FL anode control            | 78      | 10G      | O   | FL grid control                        |
| 37      | P3      | O   | FL anode control            | 79      | 9G       | O   | FL grid control                        |
| 38      | P2      | O   | FL anode control            | 80      | 8G       | O   | FL grid control                        |
| 39      | P1      | O   | FL anode control            | 81      | 7G       | O   | FL grid control                        |
| 40      | STBY    | O   | STANDBY indication control  | 82      | 6G       | O   | FL grid control                        |
| 41      | RDSCK   | I   | Clock input from IC201      | 83      | 5G       | O   | FL grid control                        |
| 42      | RDSDATA | I   | Data signal from IC201      | 84      | 4G       | O   | FL grid control                        |

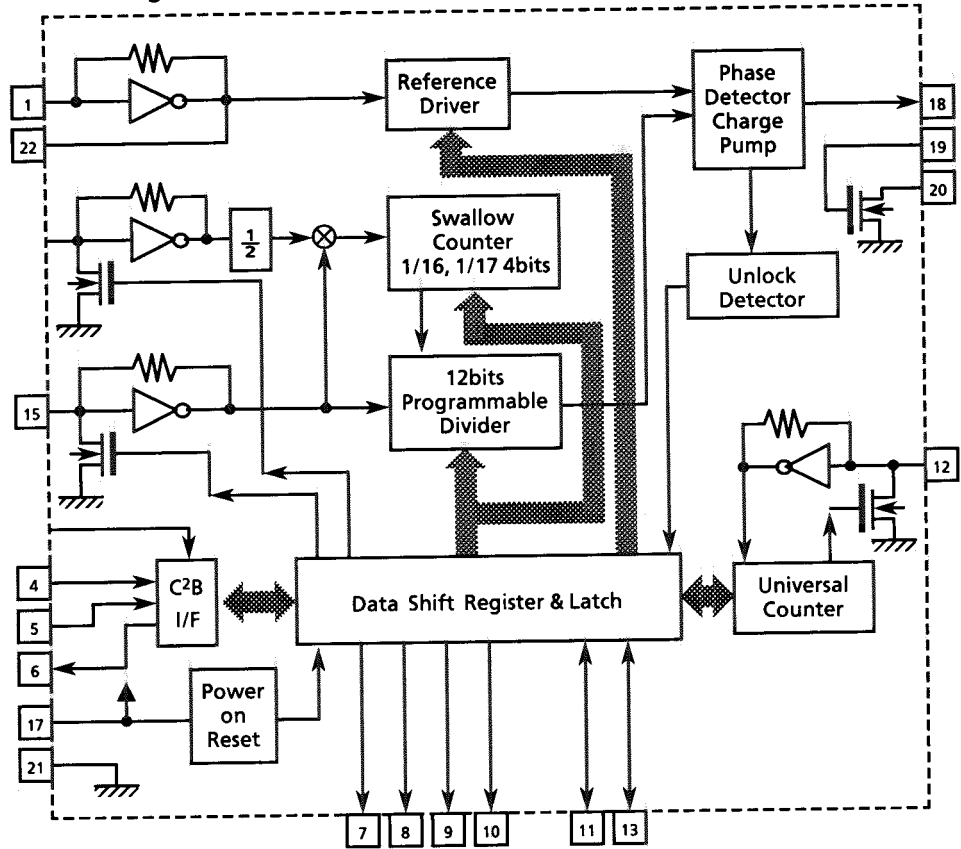
# FX-382RBK

## ■ LC72131 (IC102) : PLL Synthesizer

### 1. Terminal Layout

|           |    |    |          |
|-----------|----|----|----------|
| XIN       | 1  | 22 | XOUT     |
|           | 2  | 21 | VSS      |
| PLLCE     | 3  | 20 | LPF OUT  |
| PLLDA     | 4  | 19 | LPF IN   |
| PLLCK     | 5  | 18 | PD       |
| IFDATA    | 6  | 17 | VDD      |
| <u>FM</u> | 7  | 16 | FM OSC   |
| <u>MW</u> | 8  | 15 | AM OSC   |
| <u>LW</u> | 9  | 14 |          |
| AUTO/MONO | 10 | 13 | IF REQ   |
| POWER     | 11 | 12 | FM/AM IF |

### 2. Block Diagram



### 3. Pin Functions

| Pin No. | Symbol              | I/O | Functions   | Pin No. | Symbol   | I/O | Functions   |
|---------|---------------------|-----|---|---------|----------|-----|---|
| 1       | X in                | I   | Crystal oscillator (7.2MHz).  | 12      | FM/AM IF | I   | Universal counter input   |
| 2       |                     | --  | Not use   | 13      | IF REQ   | O   | Output the "IF-signal request" to IC102   |
| 3       | PLLCE               | I   | Fix the chip enable to "H" when inputting(DI) and outputting (DO) the serial data | 14      |          | I   | Not use   |
| 4       | PLLDA               | I   | Receive the control data from the controller (IC201).                             | 15      | AMOSC    | I   | Input the local oscillator signal of AM.  |
| 5       | PLLCK               | I   | This clock is used to synchronize data when transmitting the data of DI and DO.   | 16      | FM OSC   | I   | Input the local oscillator signal of FM.  |
| 6       | IFDATA              | O   | Transmit the data from LC72131 to the controller which is synchronized with CK.   | 17      | VDD      | O   | This is a terminal of power supply.   |
| 7       | <u>FM</u>           | O   | It is "L" on FM mode.   | 18      | PD       | 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. |
| 8       | <u>MW</u>           | O   | It is "L" on MW mode.   | 19      | LPF IN   | I   | Transistor used for the PLL active low-pass filter  |
| 9       | <u>LW</u>           | O   | It is "L" on LW mode.   | 20      | LPF OUT  | O   | Transistor used for the PLL active low-pass filter  |
| 10      | <u>AUTO</u><br>MONO | O   | It is "L" on monaural, "H" on auto.   | 21      | VSS      | --  | Connected to GND  |
| 11      | POWER               | O   | Regulator control signal<br>PON "H", STANDBY "L"                                  | 22      | X out    | O   | Crystal oscillator (7.2MHz).  |

■ SAA6579 (IC202) : Radio data system demodulator

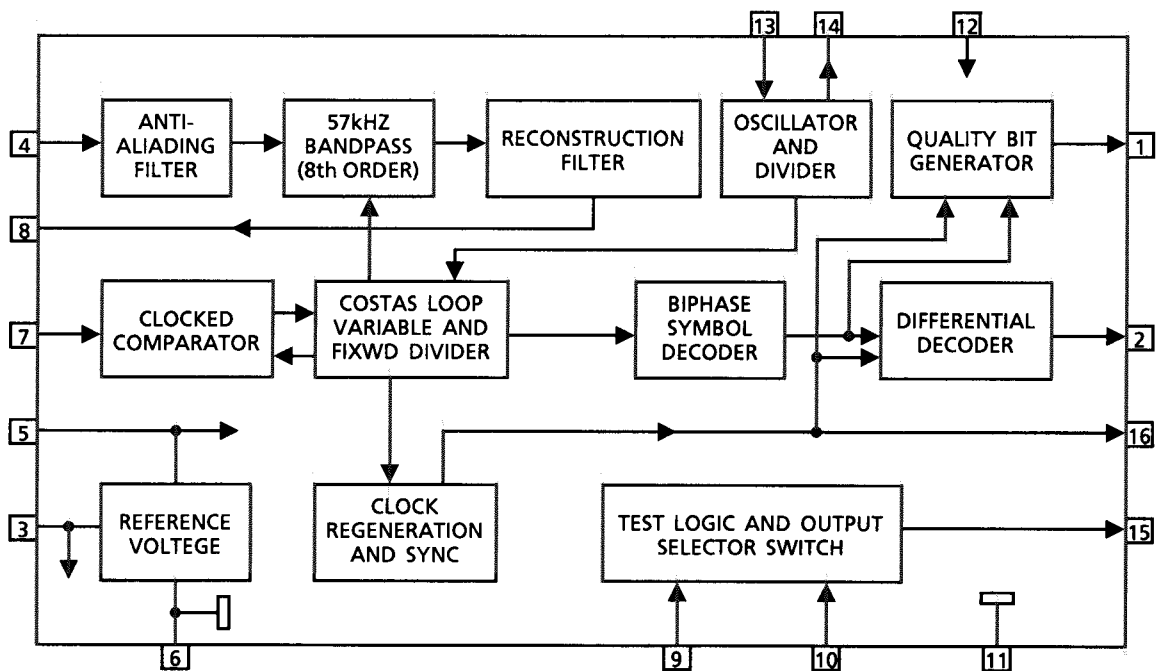
1. Terminal Layout

|       |   |    |      |
|-------|---|----|------|
| QUAL  | 1 | 16 | RDCL |
| RDDA  | 2 | 15 | T57  |
| Vref  | 3 | 14 | OSCO |
| MUX   | 4 | 13 | OSCI |
| VDDA  | 5 | 12 | VDD  |
| GND   | 6 | 11 | GND  |
| CIN   | 7 | 10 | GND  |
| SCOUT | 8 | 9  | GND  |

2. Pin Function

| Pin No. | Symbol | I/O | Function                                   |
|---------|--------|-----|--|
| 1       | QUAL   | —   | Non connection                             |
| 2       | RDDA   | O   | RDS data output                            |
| 3       | Vref   | O   | Reference voltage output                   |
| 4       | MUX    | I   | Multiplex signal input                     |
| 5       | VDDA   | —   | +5V supply voltage for analog part         |
| 6       | GND    | —   | Ground for analog part (0V)                |
| 7       | CIN    | I   | Subcarrier input to comparator             |
| 8       | SCOUT  | O   | Subcarrier output of reconstruction filter |
| 9       | GND    | —   | Ground for digital part (0V)               |
| 10      | GND    | —   | Ground for digital part (0V)               |
| 11      | GND    | —   | Ground for digital part (0V)               |
| 12      | VDD    | —   | +5V supply voltage for digital part        |
| 13      | OSCI   | I   | Oscillator input                           |
| 14      | OSCO   | O   | Oscillator output                          |
| 15      | T57    | —   | Non connection                             |
| 16      | RDCL   | O   | RDS clock output                           |

3. Block Diagram

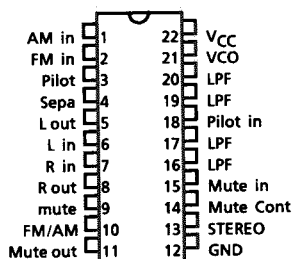


■ LA3401 (IC105) : FM MPX Detector

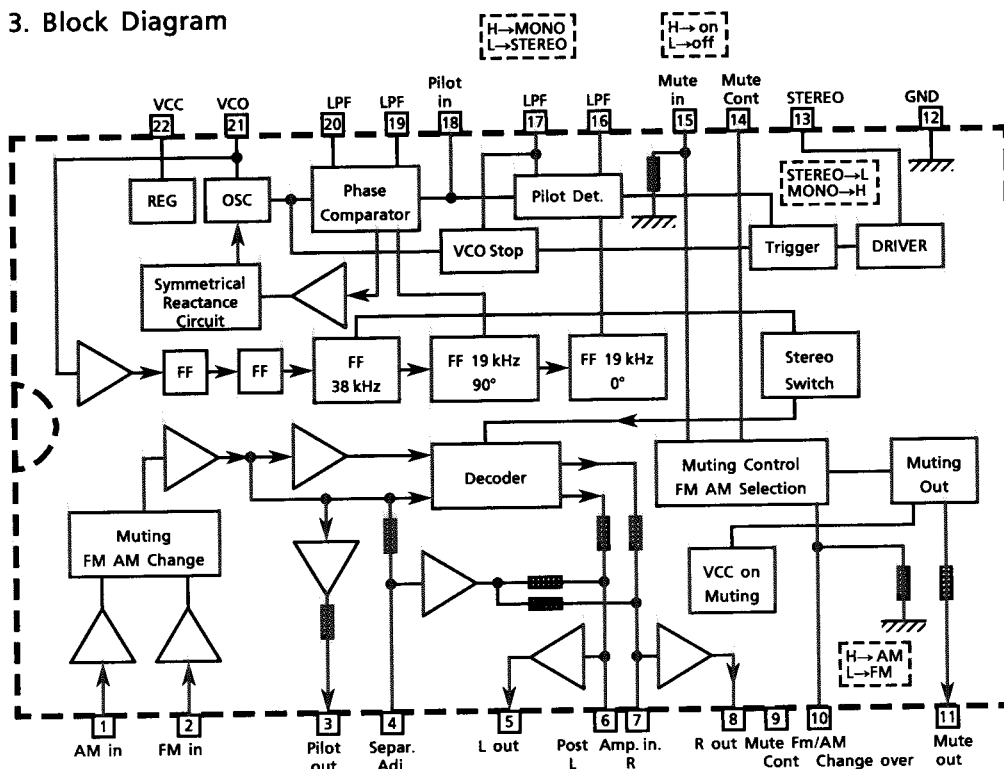
1. The main function descriptions

- (1) Detect the FM Multiplex Signal (Stereo signal).
- (2) When receiving FM Stereo Signal, it outputs the signal for indicator.
- (3) AM / FM Audio Amplifier.

2. Terminal Layout



3. Block Diagram



4. Pin Function Description

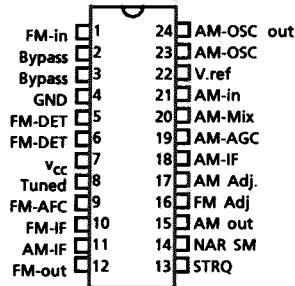
| Pin No. | Symbol     | I/O | Functions and Operations   |
|---------|------------|-----|--|
| 1       | AM in      | I   | This is an input terminal for AM detection signal.                                       |
| 2       | FM in      | I   | This is an input terminal for FM detection signal.                                       |
| 3       | Pilot out  | O   | Output of MPX pilot signal (Connect to Pin18).   |
| 4       | Sepa. Adj. | --  | Separation adjustment.   |
| 5       | L. out     | O   | Left channel signal output.  |
| 6       | L          | O   | Reversal output of Pin5.   |
| 7       | R          | O   | Reversal output of Pin8.   |
| 8       | R out      | O   | Right channel signal output  |
| 9       | Mute Cont  | --  | The mute time is controlled by the connected capacitor when turning the power switch on. |
| 10      | FM / AM    | I   | Change over the FM / AM input. "H" : AM, "L" : FM  |
| 11      | Mute out   | --  | Not use  |
| 12      | GND        | --  | Ground terminal.   |
| 13      | Stereo     | O   | Stereo indicator output. Stereo : "L", Mono : "H"  |
| 14      | Mute Cont  | --  | The mute time is controlled by the connected capacitor when changing over the FM / AM .  |
| 15      | Mute in    | I   | Mute signal input. "H" : Mute on, "L" : Mute off.  |
| 16      | LPF        | --  | Low pass filter of pilot detector.   |
| 17      | LPF        | --  | While this terminal goes to "H", the VCO stop.   |
| 18      | Pilot in   | I   | Pilot input.   |
| 19      | LPF        | --  | Low-pass filter of PLL.  |
| 20      | LPF        | --  | Low-pass filter of PLL.  |
| 21      | VCO        | I   | Voltage controlled oscillator terminal.  |
| 22      | Vcc        | --  | Power supply.  |

■ LA1266A (IC103) : FM AM IF AMP & detector

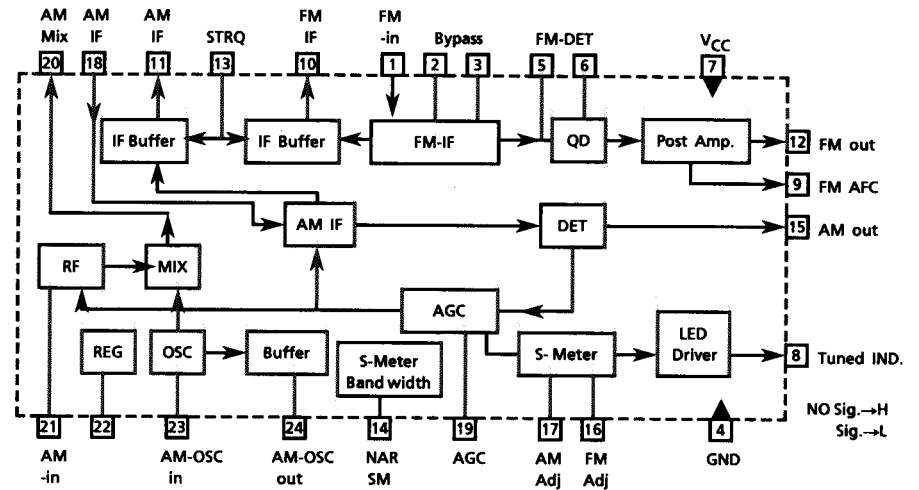
1. The main function descriptions

- (1) Amplify and detect of FM intermodulation frequencies.
- (2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Top View



3. Block Diagram



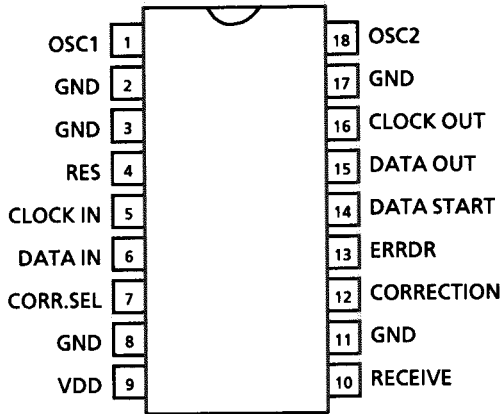
4. Pin Function Description

| Pin No. | Symbol          | I/O | Functions and Operations  |
|---------|-----------------|-----|---|
| 1       | FM in           | I   | This is an input terminal of FM IF Signal.  |
| 2, 3    | Bypass          | --  | Bypass of FM IF Amp.  |
| 4       | GND             | --  | This is the device ground terminal.   |
| 5, 6    | FM DET          | --  | FM detect transformer.  |
| 7       | V <sub>CC</sub> | --  | This is the power supply terminal.  |
| 8       | Tuned           | O   | When the set is tuning, this terminal become "L".   |
| 9       | FM AFC          | O   | This is an output terminal of voltage for FM - AFC.   |
| 10      | FM IF out       | O   | When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of FM IF outputs.          |
| 11      | AM IF out       | O   | When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of AM IF outputs.          |
| 12      | FM out          | O   | FM detection output.  |
| 13      | STRQ            | I   | The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal goes to "High". |
| 14      | NAR SM          | --  | Control the Band-width of AM signal meter.  |
| 15      | AM out          | O   | AM detection output.  |
| 16      | FM Adj          | --  | For adjust the stop level (or mute level) of FM.  |
| 17      | AM Adj          | --  | For adjust the stop level (or mute level) of AM.  |
| 18      | AM-IF           | I   | Input of AM IF Signal.  |
| 19      | AM-AGC          | I   | This is an AGC voltage Input terminal for AM.   |
| 20      | AM-MIX          | O   | This is an output terminal for AM mixer.  |
| 21      | AM-IN           | I   | This is an input terminal for AM RF Signal.   |
| 22      | V.REF           | --  | Control the Band-width of FM signal meter.  |
| 23      | AM-OSC          | --  | This is a terminal of AM Local oscillation circuit.   |
| 24      | AM-OSC out      | O   | AM Local Oscillation Signal output.   |

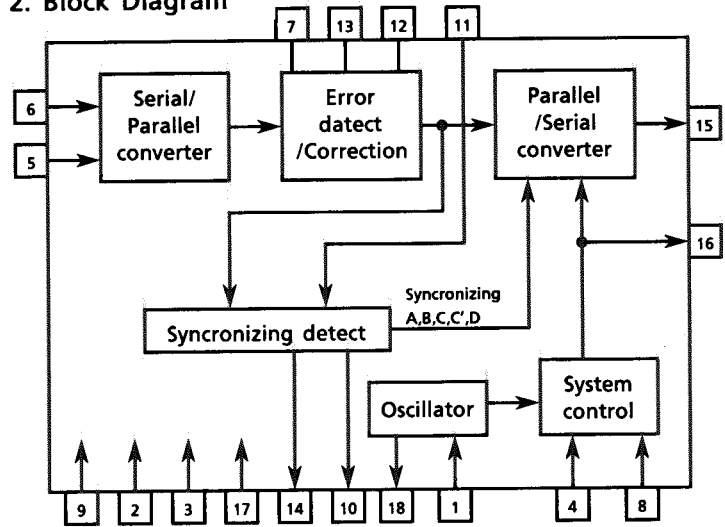
# FX-382RBK

## ■ LC7073 (IC201) : Radio Data System

### 1. Terminal Layout



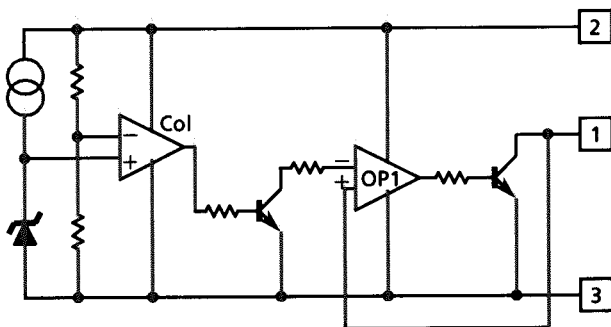
### 2. Block Diagram



### 3. Pin Functions

| Pin No. | Symbol   | I/O | Function             | Pin No. | Symbol     | I/O | Function   |
|---------|----------|-----|----------------------|---------|------------|-----|--|
| 1       | OSC1     | I   | Oscillation terminal | 10      | RECEIVE    | —   | Non connection   |
| 2       | GND      | —   | GND                  | 11      | GND        | —   | GND  |
| 3       | GND      | —   | GND                  | 12      | CORRECTION | —   | Non connection   |
| 4       | RES      | I   | Reset input          | 13      | ERRDR      | —   | Non connection   |
| 5       | CLOCK IN | I   | RDS clock input      | 14      | DATA START | O   | Data start signal for block data to output serial data |
| 6       | DATA IN  | I   | RDS data input       | 15      | DATA OUT   | O   | Serial data output                                     |
| 7       | CORR.SEL | I   | Non connection       | 16      | CLOCK OUT  | O   | Data output of serial data output                      |
| 8       | GND      | —   | GND                  | 17      | GND        | —   | GND  |
| 9       | VDD      | —   | Power supply         | 18      | OSC2       | O   | Oscillation terminal                                   |

## ■ PST9146T (IC561) : Reset IC

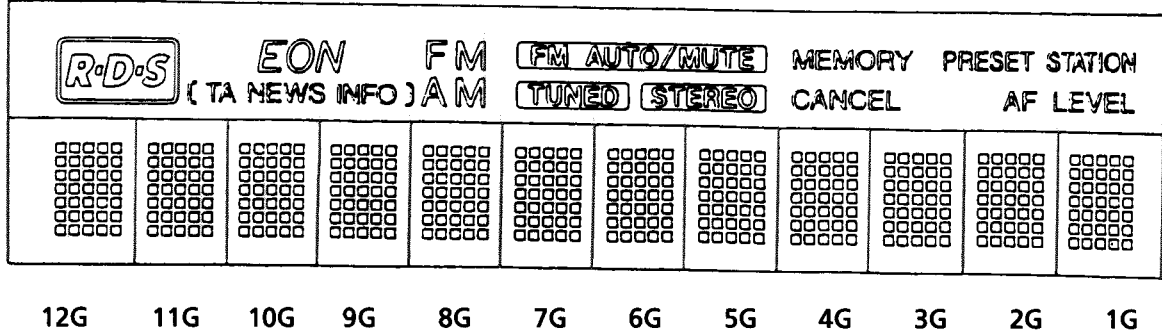


**Internal Connections for the FL Display Tube**

■ ELU0001-181:( DI201)

1. Grid Assignment

13G



2. Pin Connections

(UPPER)

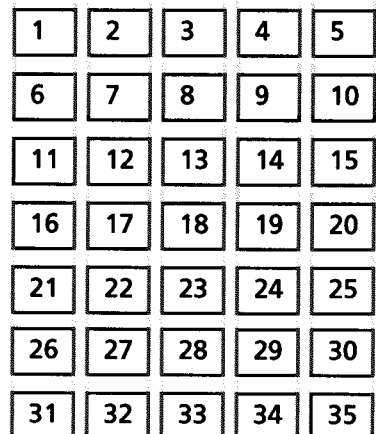
|              |    |    |    |     |      |      |      |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--------------|----|----|----|-----|------|------|------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| TERMINAL NO. | 80 | 79 | 78 | 77  | 76   | 75   | 74   | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 | 63 | 62 | 61 |
| ELECTRODE    | F1 | F1 | F1 | NP  | P s1 | P s2 | P s3 | NP | NP | NP | NP | NP | NP | NP | NP | NP | NP | NP | NP | NP |
| TERMINAL NO. | 60 | 59 | 58 | 57  | 56   | 55   | 54   | 53 | 52 | 51 | 50 | 49 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 |
| ELECTRODE    | NP | NP | NP | 13G | 12G  | 11G  | 10G  | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G | NP | F2 | F2 | F2 |

(LOWER)

|              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TERMINAL NO. | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    | 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    |
| ELECTRODE    | P s20 | P s21 | P s22 | P s23 | P s24 | P s25 | P s26 | P s27 | P s28 | P s29 | P s30 | P s31 | P s32 | P s33 | P s34 | P s35 | NP    | F2    | F2    | F2    |
| TERMINAL NO. | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
| ELECTRODE    | F1    | F1    | F1    | NP    | P s4  | P s5  | P s6  | P s7  | P s8  | P s9  | P s10 | P s11 | P s12 | P s13 | P s14 | P s15 | P s16 | P s17 | P s18 | P s19 |

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

|     | 1G~12G | 13G            |     | 1G~12G |
|-----|--------|----------------|-----|--------|
| S1  | 1      | RDS            | S19 | 19     |
| S2  | 2      | EON            | S20 | 20     |
| S3  | 3      | ( )            | S21 | 21     |
| S4  | 4      | TA             | S22 | 22     |
| S5  | 5      | NEWS           | S23 | 23     |
| S6  | 6      | INFO           | S24 | 24     |
| S7  | 7      | FM             | S25 | 25     |
| S8  | 8      | AM             | S26 | 26     |
| S9  | 9      | FM AUTO/MUTE   | S27 | 27     |
| S10 | 10     | TUNED          | S28 | 28     |
| S11 | 11     | STEREO         | S29 | 29     |
| S12 | 12     | MEMORY         | S30 | 30     |
| S13 | 13     | CANCEL         | S31 | 31     |
| S14 | 14     | PRESET STATION | S32 | 32     |
| S15 | 15     | AF LEVEL       | S33 | 33     |
| S16 | 16     |                | S34 | 34     |
| S17 | 17     |                | S35 | 35     |
| S18 | 18     |                |     |        |



## Disassembly Procedures

**(1) Remove 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.

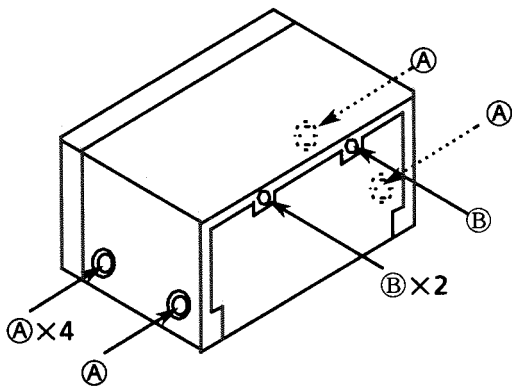
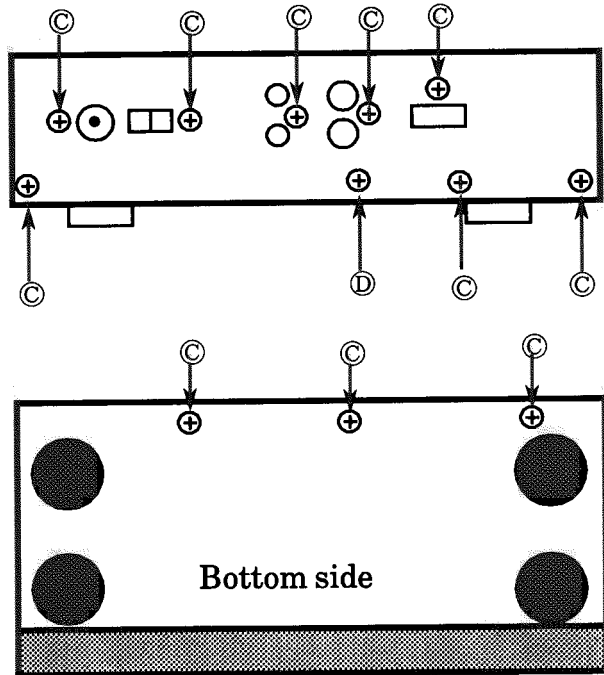


Fig.1

**(2) Remove the rear panel**

1. Remove 8 screws **(C)** and screw **(D)** fastening of the rear panel.
2. Remove the 3 screws **(C)** fastening of the bottom side.
3. Remove the rear panel.

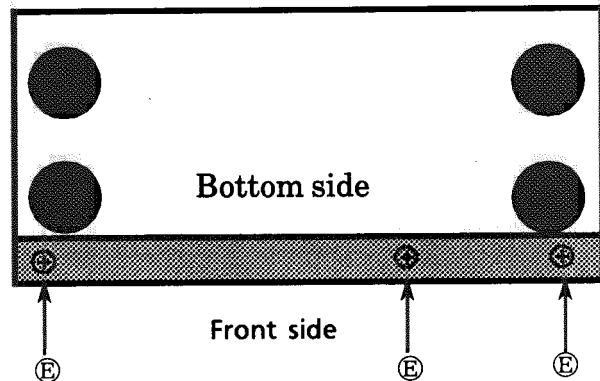


Front side

Fig.2

**(2) Remove the Front Panel Assembly**

1. Remove the top cover.
2. Disconnect the connectors. (CN101, CN102 and CN105)
3. Remove 3 screws **(E)** fastening bottom of the front panel assembly.
4. Remove the front panel assembly.



Bottom side

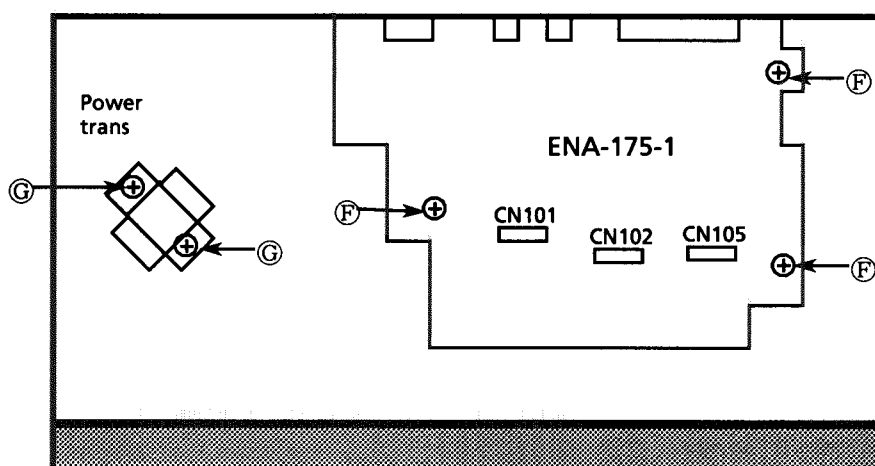
Front side

**(A)** . E61660-004   **(B)** .. GBSG3008M   **(C)** ... E73723-003   **(D)** . E74572-001   **(E)** . SBSG3008M



**(4) Remove the Main PCB (ENA-175-1)**

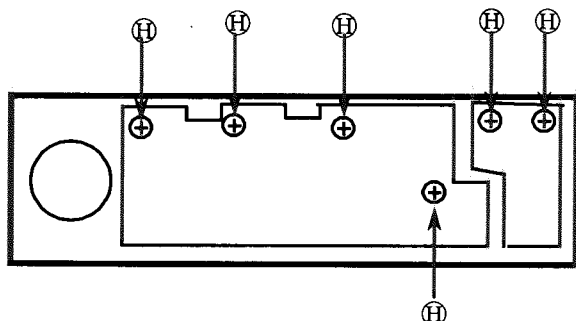
1. Remove the top cover.
2. Disconnect the nonnectors (CN101,CN102,CN105).
3. Remove the rear panel.
4. Remove 3 screws **F** fastening the main PCB.
5. Remove 2 screws **G** fastening the power trans.
6. Remove the main PCB .



Front side

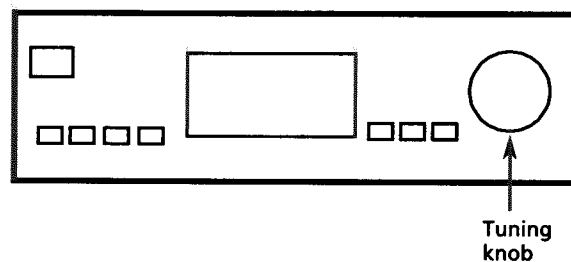
**(5) Remove the Control PCB (ENA-175-2)**

1. Remove the top cover.
2. Remove the front panel assembly.
3. Remove 6 screws **H** fastening the control PCB to remove it.

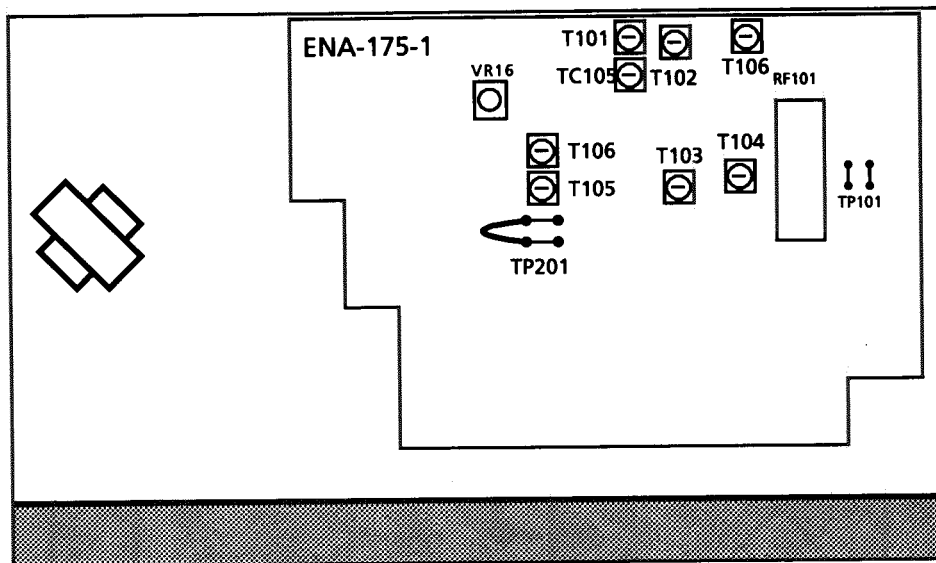


**(6) Remove the Tuning jog PCB (ENA-166-2)**

1. Remove the top cover.
2. Remove the front panel assembly.
3. Pull up the Tuning knob and remove it.
4. Remove the NUT fastening the tuning knob.
5. Remove the Tuning jog PCB .



## Adjustment Procedures



### 1. FM section

#### ■ FM oscillator

- (1) Set the frequency display to "108.0MHz" and the FM MODE switch to "MONO" position.
- (2) Confirm that the FM inter-station noise is received.
- (3) Confirm that the voltage of test point "TP101" is  $8.0V \pm 2.0V$ .
- (4) Set the frequency display to "87.5MHz" and confirm the voltage of test point "TP101" is  $1.6V \pm 1.0V$ .

#### ■ FM detector coil : T105

- (1) Connect a digital voltmeter to test point "TP102", and receive to "100.1MHz" signal with SSG at 70dB.
- (2) Adjust T105 so that the digital voltmeter reads  $0 \pm 1.5mV$ .
- (3) At the same time, adjust T106 so that the distortion of the audio output is minimized.

#### ■ Separation

- (1) Tune to a 98.1MHz stereo signal.
- (2) Adjust VR167 so that the channel separation becomes maximum.

### 2. LW section ( Adjust the L.W section before adjusting the M.W section. )

#### ■ LW oscillator : T104

- (1) Set the frequency display to 144kHz and adjust T104 so that the voltage of TP101 becomes  $0.8V \pm 0.4V$ .
- (2) Set the frequency display to 288kHz [ 290kHz ] and confirm that the voltage of test point TP101 is  $5.7V \pm 0.7V$ .

#### ■ LW antenna coil : T102

- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T102 to obtain the best receiving sensitivity on 164kHz.

#### ■ LW antenna trimmer : TC106

- (1) Adjust TC106 to obtain the best receiving sensitivity on 245kHz.

### 3. MW section

#### ■ MW oscillator : T103

- (1) Set the frequency display to 522kHz and confirm that the voltage of test point TP101 is  $0.9V \pm 0.2V$ .
- (2) Set the frequency display to 1629kHz and confirm that the voltage of test point TP101 is  $7.5V \pm 0.8V$ .
- (3) If its voltage exceeds the allowance, adjust T103 to obtain the voltage.

#### ■ MW antenna coil : T101

- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T101 to obtain the best receiving sensitivity on 603kHz.

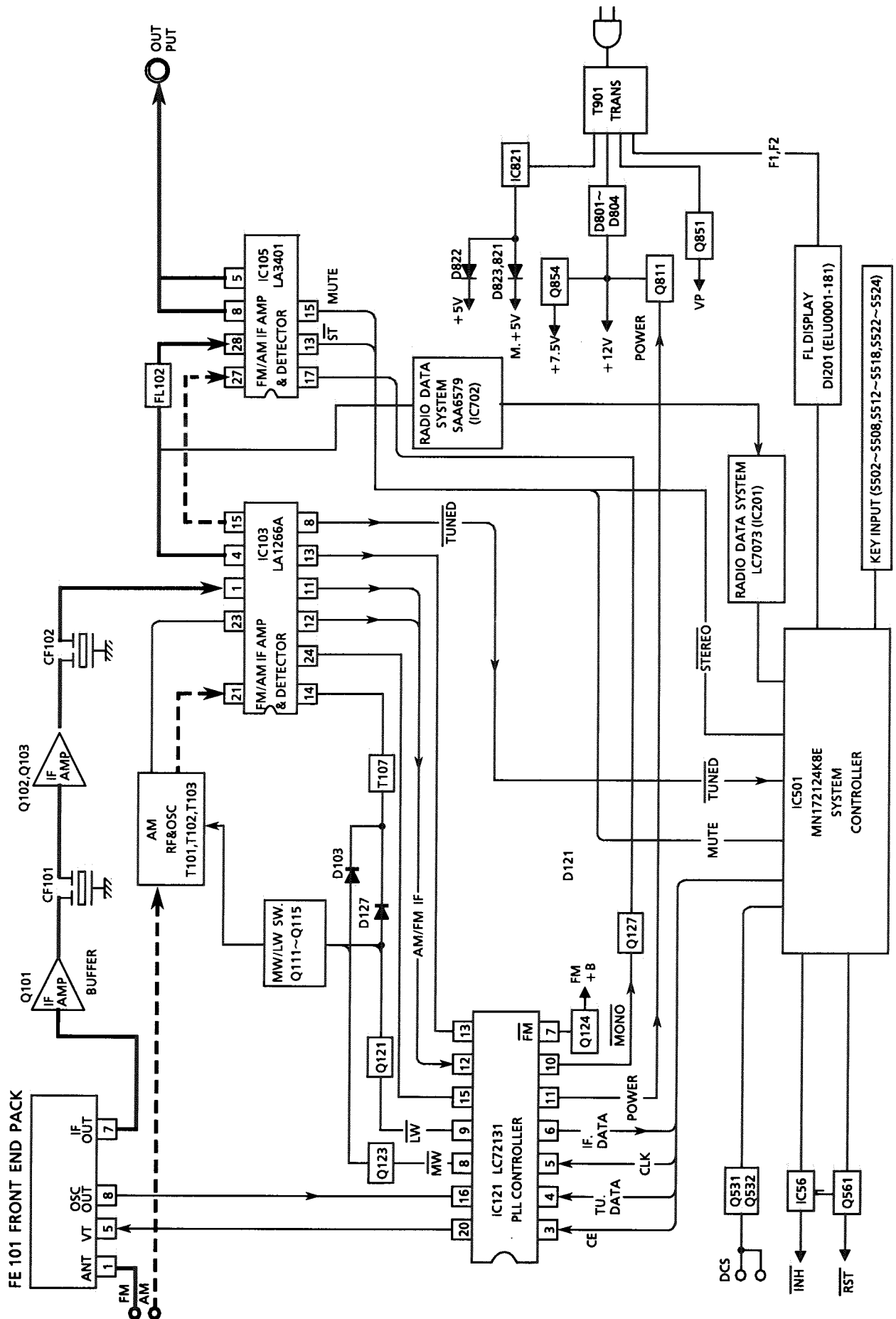
#### ■ MW antenna trimmer : TC105

- (1) Adjust TC105 to obtain the best receiving sensitivity on 1404kHz.

※ Adjust T102 and TC106 so that each sensitivity becomes maximum alternately.

Adjust T101 and TC105 so that each sensitivity becomes maximum alternately.

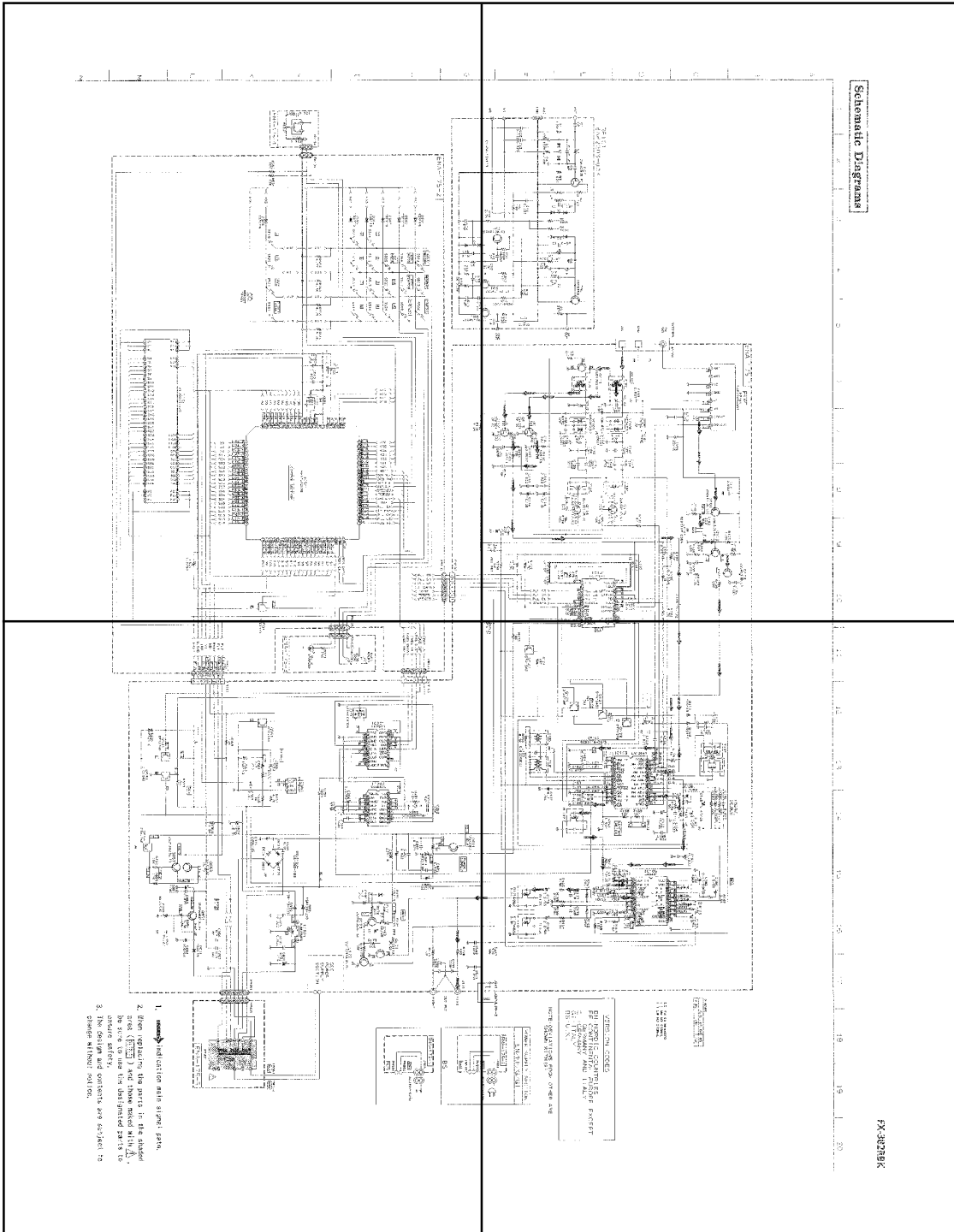
■ Block diagram





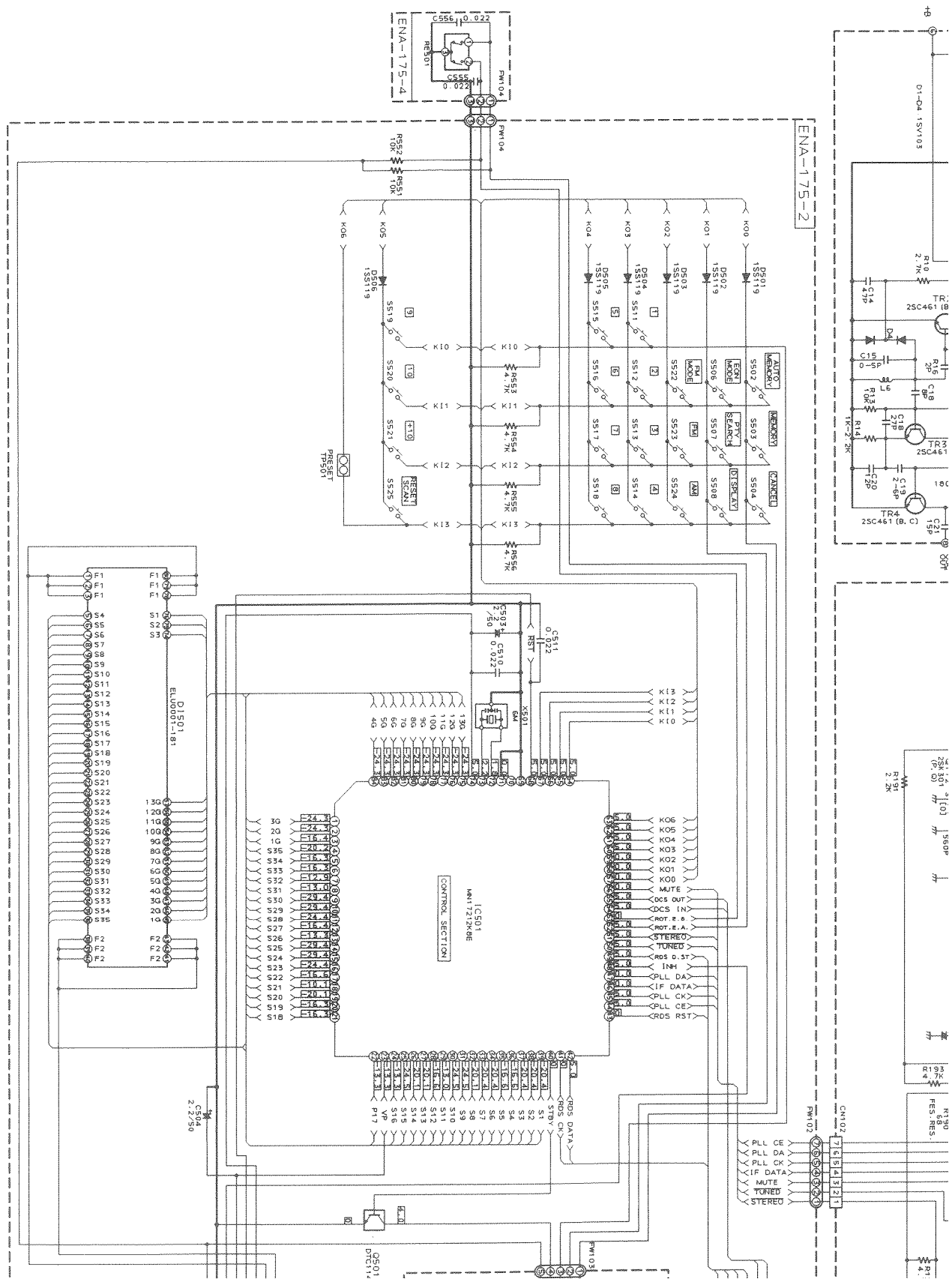
P-S.D-a

P-S.D-b

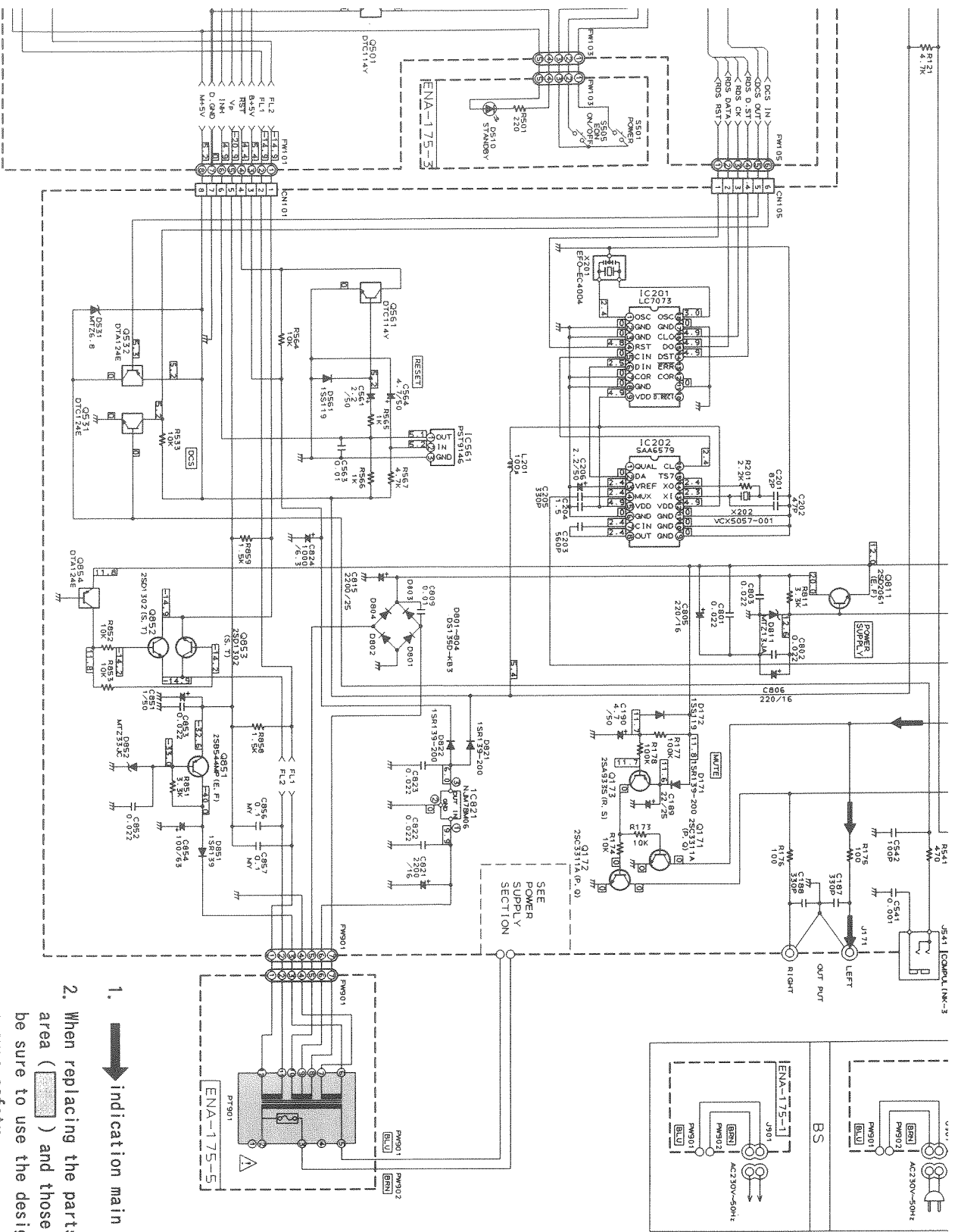


P-S.D-c

P-S.D-d

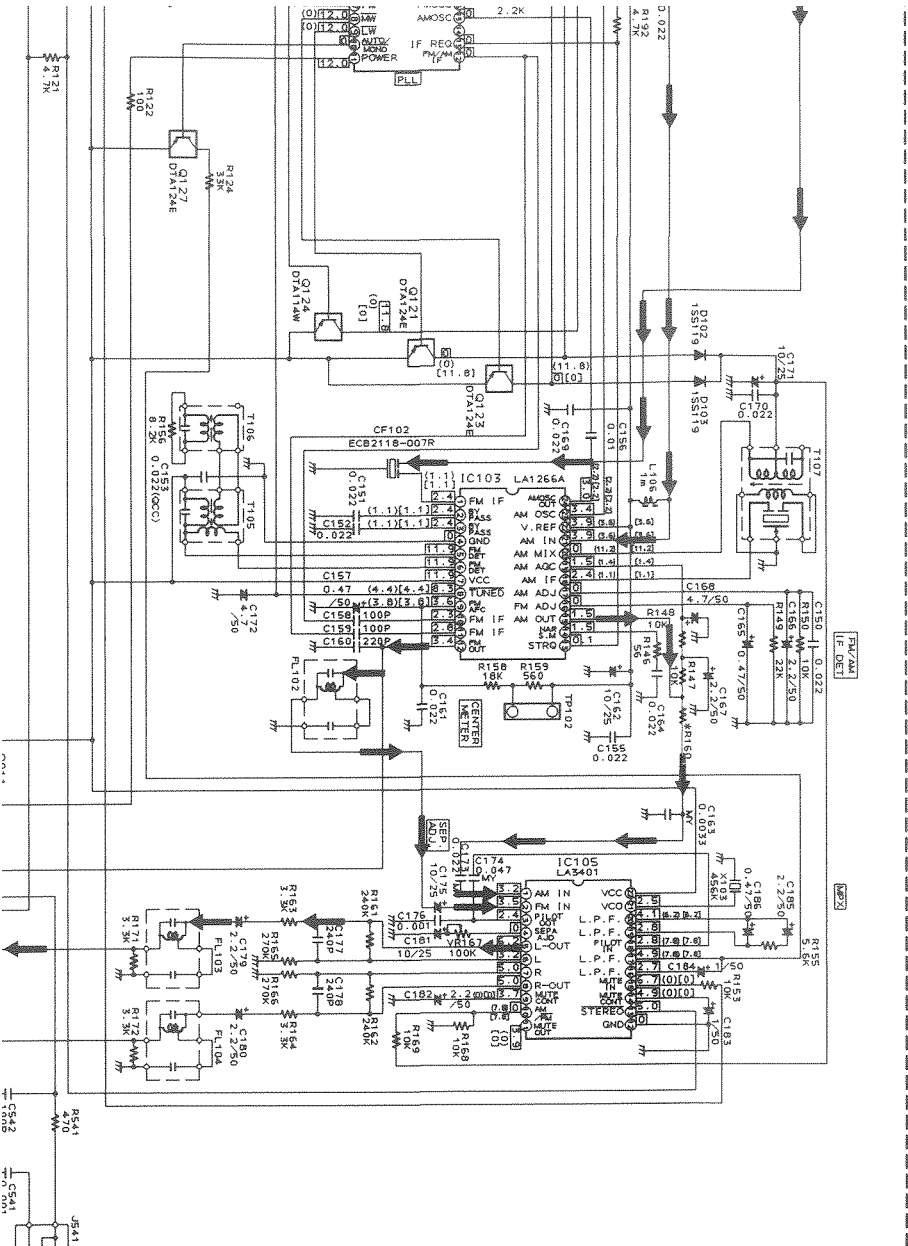






1. indication main signal path.
2. When replacing the parts in the shaded area ( ) and those marked with , be sure to use the designated parts to ensure safety.
3. The design and contents are subject to change without notice.





\* MARK

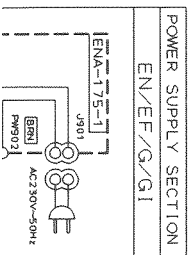
|      |     |     |
|------|-----|-----|
| R150 | 33K | 22K |
|------|-----|-----|

- FM 38 MHz AUTO
- FM NO SIGNAL
- LW NO SIGNAL

VERSION CODES

EN: NORDIC COUNTRIES  
 EF: CONTINENTAL EUROPE EXCEPT GERMANY AND ITALY  
 G: GERMANY  
 GI: ITALY  
 BS: U.K.

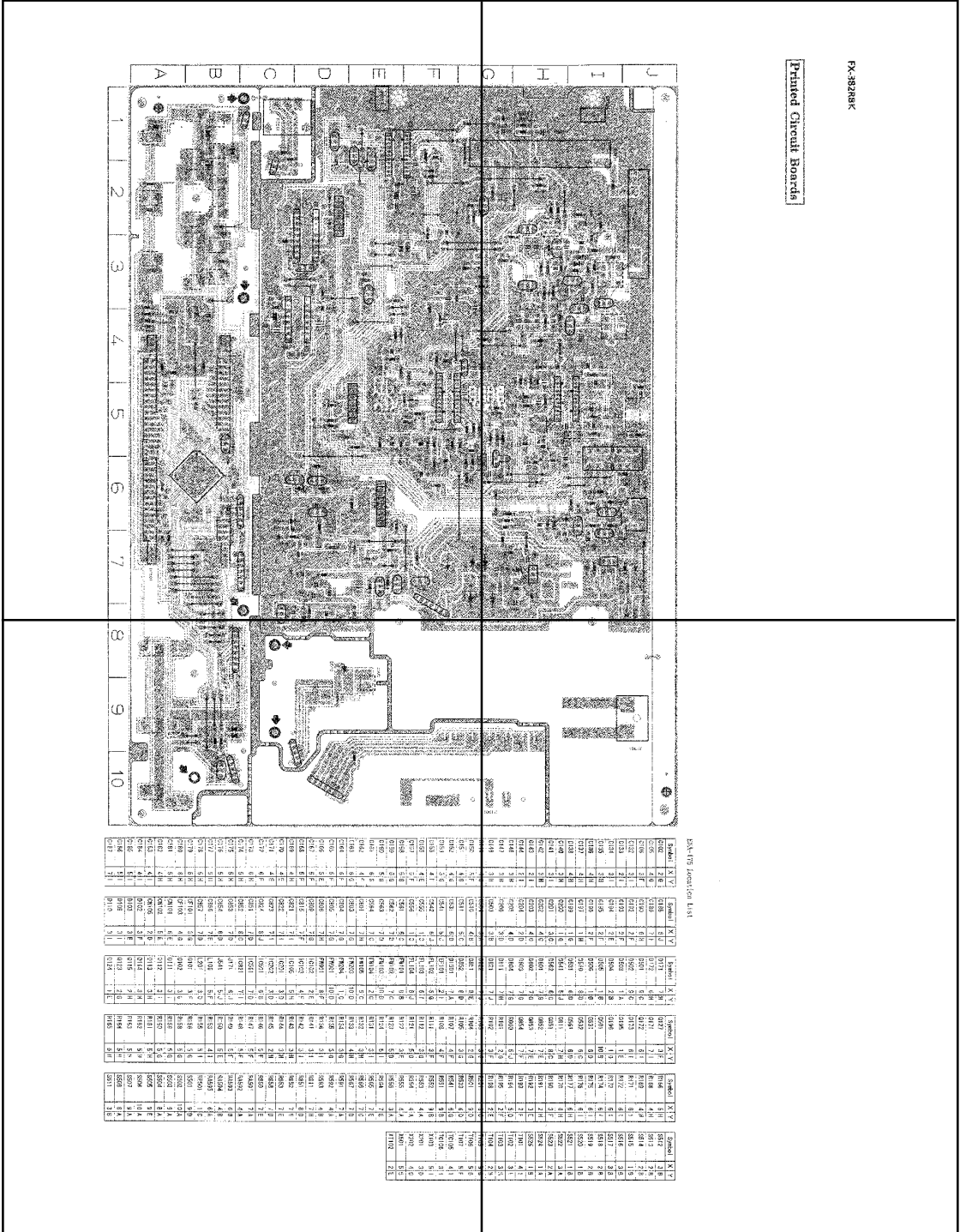
NOTE: DEVIATIONS FROM OTHER ARE SHOWN WITH (\*)





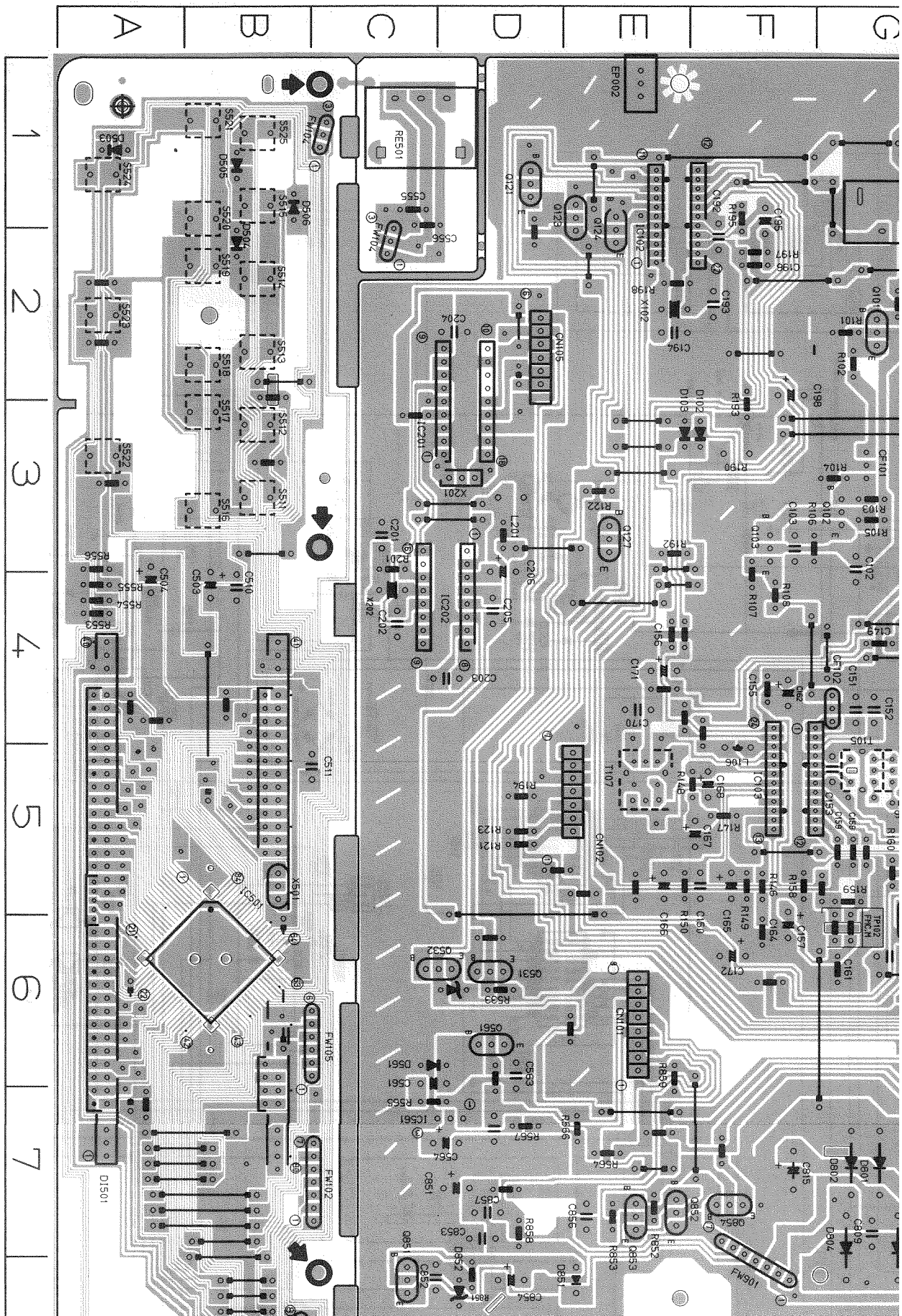
P-P.C.B-a

P-P.C.B-b

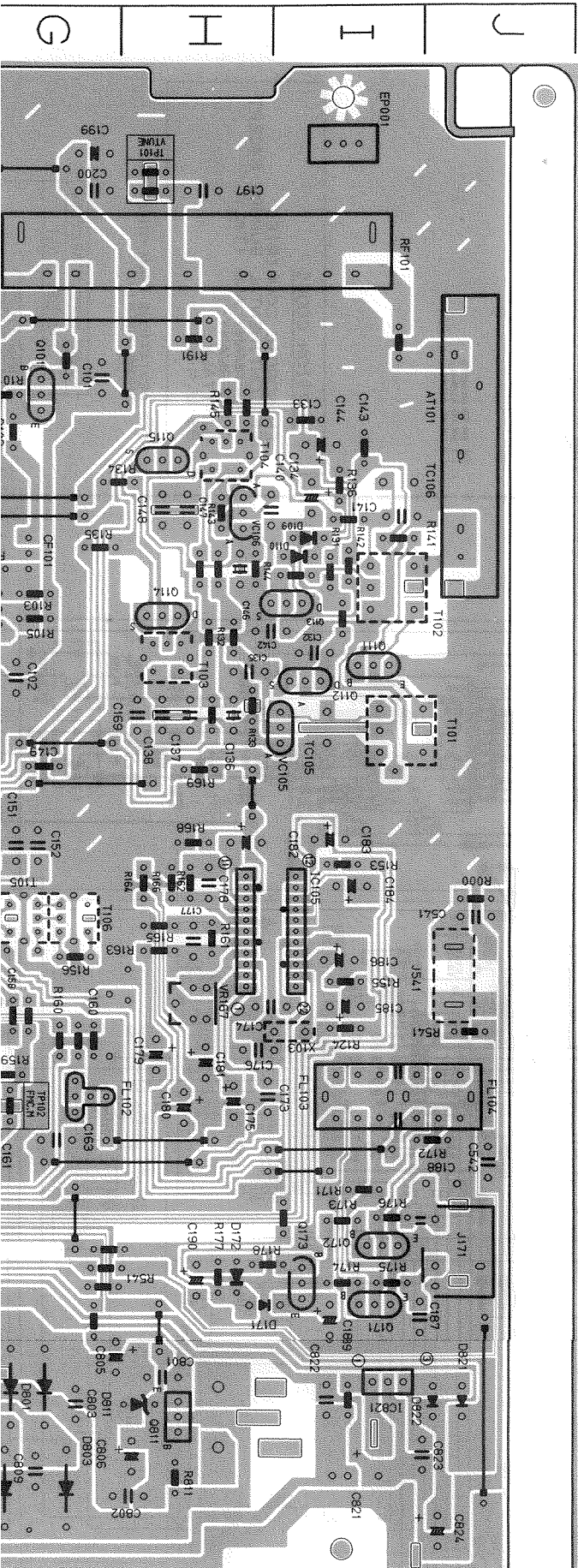


P-P.C.B-c

P-P.C.B-d



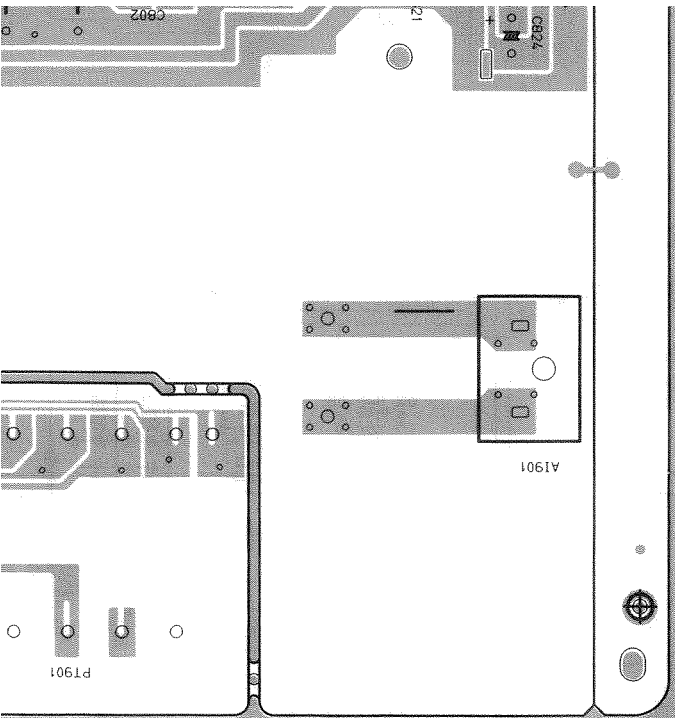
Printed Circuit Boards







ENA-175 Location List



| Symbol | X   | Y   |
|--------|-----|-----|
| C102   | 2 G | 2 G |
| C105   | 4 G | 4 G |
| C106   | 3 F | 3 F |
| C132   | 3 I | 3 I |
| C133   | 2 I | 2 I |
| C134   | 3 I | 3 I |
| C135   | 3 H | 3 H |
| C136   | 4 H | 4 H |
| C137   | 4 H | 4 H |
| C138   | 4 H | 4 H |
| C140   | 3 H | 3 H |
| C141   | 3 I | 3 I |
| C142   | 3 H | 3 H |
| C143   | 2 I | 2 I |
| C144   | 2 I | 2 I |
| C146   | 3 H | 3 H |
| C147   | 3 H | 3 H |
| C148   | 3 H | 3 H |
| C149   | 4 G | 4 G |
| C150   | 5 F | 5 F |

| Symbol | X   | Y   |
|--------|-----|-----|
| C188   | 6 J | 6 J |
| C189   | 7 I | 7 I |
| C190   | 6 H | 6 H |
| C192   | 2 F | 2 F |
| C193   | 2 F | 2 F |
| C194   | 2 E | 2 E |
| C195   | 2 F | 2 F |
| C196   | 2 F | 2 F |
| C197   | 1 H | 1 H |
| C199   | 1 G | 1 G |
| C200   | 1 G | 1 G |
| C201   | 3 C | 3 C |
| C202   | 4 C | 4 C |
| C203   | 4 C | 4 C |
| C204   | 2 D | 2 D |
| C205   | 4 D | 4 D |
| C206   | 3 D | 3 D |
| C503   | 3 B | 3 B |
| C504   | 3 A | 3 A |
| C510   | 4 B | 4 B |

| Symbol | X   | Y   |
|--------|-----|-----|
| D171   | 7 H | 7 H |
| D172   | 6 H | 6 H |
| D501   | 9 C | 9 C |
| D502   | 9 C | 9 C |
| D503   | 1 A | 1 A |
| D504   | 2 B | 2 B |
| D505   | 1 B | 1 B |
| D506   | 1 B | 1 B |
| D510   | 8 D | 8 D |
| D531   | 6 D | 6 D |
| D541   | 5 J | 5 J |
| D562   | 6 C | 6 C |
| D801   | 7 G | 7 G |
| D802   | 7 G | 7 G |
| D803   | 7 G | 7 G |
| D804   | 7 G | 7 G |
| D811   | 7 H | 7 H |
| D821   | 7 J | 7 J |
| D822   | 7 J | 7 J |
| D851   | 8 E | 8 E |

| Symbol | X    | Y    |
|--------|------|------|
| Q127   | 3 E  | 3 E  |
| Q171   | 7 I  | 7 I  |
| Q172   | 6 I  | 6 I  |
| Q173   | 6 I  | 6 I  |
| Q195   | 1 E  | 1 E  |
| Q196   | 1 D  | 1 D  |
| Q501   | 10 B | 10 B |
| Q531   | 6 D  | 6 D  |
| Q532   | 6 C  | 6 C  |
| Q561   | 6 D  | 6 D  |
| Q811   | 7 H  | 7 H  |
| Q851   | 8 C  | 8 C  |
| Q852   | 7 E  | 7 E  |
| Q853   | 7 E  | 7 E  |
| Q854   | 7 F  | 7 F  |
| R000   | 5 J  | 5 J  |
| R101   | 2 G  | 2 G  |
| R102   | 3 F  | 3 F  |
| R103   | 3 G  | 3 G  |
| R104   | 2 G  | 2 G  |

| Symbol | X   | Y   |
|--------|-----|-----|
| R166   | 5 H | 5 H |
| R168   | 4 H | 4 H |
| R169   | 4 H | 4 H |
| R171   | 6 I | 6 I |
| R172   | 6 I | 6 I |
| R173   | 6 I | 6 I |
| R174   | 6 I | 6 I |
| R175   | 6 I | 6 I |
| R176   | 6 I | 6 I |
| R177   | 6 H | 6 H |
| R178   | 6 H | 6 H |
| R190   | 3 F | 3 F |
| R191   | 2 H | 2 H |
| R192   | 3 E | 3 E |
| R193   | 2 F | 2 F |
| R194   | 5 D | 5 D |
| R195   | 2 F | 2 F |
| R198   | 2 E | 2 E |
| R201   | 3 C | 3 C |
| R501   | 9 I | 9 I |

| Symbol | X   | Y   |
|--------|-----|-----|
| S512   | 3 B | 3 B |
| S513   | 2 B | 2 B |
| S514   | 2 B | 2 B |
| S515   | 1 B | 1 B |
| S516   | 3 B | 3 B |
| S517   | 3 B | 3 B |
| S518   | 2 B | 2 B |
| S519   | 2 B | 2 B |
| S520   | 1 B | 1 B |
| S521   | 1 B | 1 B |
| S522   | 3 A | 3 A |
| S523   | 2 A | 2 A |
| S524   | 1 A | 1 A |
| S525   | 1 B | 1 B |
| T101   | 4 I | 4 I |
| T102   | 3 I | 3 I |
| T103   | 3 H | 3 H |
| T104   | 2 H | 2 H |
| T105   | 5 G | 5 G |
| T106   | 5 G | 5 G |





# PARTS LIST

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

## The Marks for Designated Areas

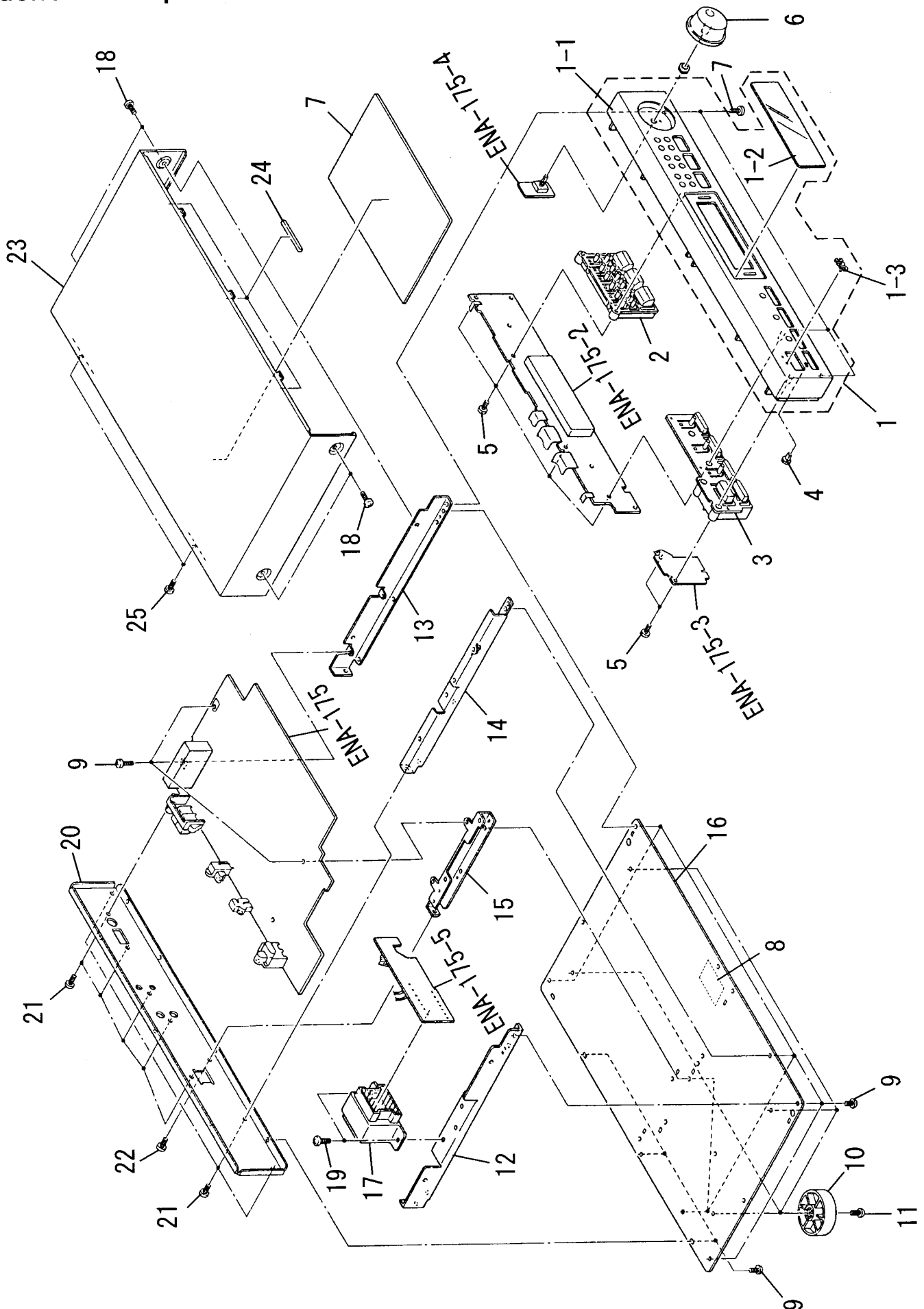
|                   |                             |                              |
|-------------------|-----------------------------|------------------------------|
| BS . . . the U.K. | EF . . . Continental Europe | EN . . . Scandinavia         |
| GI . . . Italy    | G . . . Germany             | No mark indicates all areas. |

## Contents

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| Accessories List . . . . .                     | 2-6 |
| Packing Materials and Part Numbers . . . . .   | 2-7 |

# General Exploded View and Parts List

Block No. M1MM



■ Parts List

Block No. **M1MM**

| △ | Item | Parts Number     | Parts Name            | Q'ty | Description | Area |
|---|------|------------------|-----------------------|------|-------------|------|
|   | 1    | EFP-FX382RBKE(S) | FRONT PANEL ASSY      |      |             | 1    |
|   | 1-1  | E103125-001ST    | FRONT PANEL           | 1    |             |      |
|   | 1-2  | E309746-001      | WINDOW SCREEN         | 1    |             |      |
|   | 1-3  | VJD5429-001      | JVC MARK              | 1    |             |      |
|   | 2    | E208270-001      | PUSH BUTTON           | 1    |             |      |
|   | 3    | E208272-002      | PUSH BUTTON           | 1    |             |      |
|   | 4    | FSJD4001-002     | INDICATOR LENS        | 1    |             |      |
|   | 5    | SDSF2608Z        | SCREW                 | 6    |             |      |
|   | 6    | E309756-001      | TUNING KNOB           | 1    |             |      |
|   | 7    | E409365-001      | SHEET                 | 1    |             | G    |
|   | 8    | E70115-002       | CAUTION LABEL         | 1    |             |      |
|   | 9    | SBSG3008CC       | TAPPING SCREW         | 14   |             |      |
|   | 10   | E406282-005SF    | FOOT ASSY             | 4    |             |      |
|   | 11   | SBST3010Z        | TAPPING SCREW         | 4    |             |      |
|   | 12   | E306787-001SS    | SIDE BRACKET          | 1    |             |      |
|   | 13   | E306788-001SS    | SIDE BRACKET          | 1    |             |      |
|   | 14   | E306789-001SS    | CENTER BRACKET        | 1    |             |      |
|   | 15   | E306791-001SS    | PRINTED BOARD BRACKET | 1    |             |      |
|   | 16   | E26725-001SS     | BOTTOM PLATE          | 1    |             |      |
| △ | 17   | ETP1000-89EAJ    | POWER TRANSFORMER     | 1    | PT901       |      |
|   | 18   | E61660-004       | SPECIAL SCREW         | 4    |             |      |
|   | 19   | E61661-003       | SPECIAL SCREW         | 2    |             |      |
|   | 20   | E208775-002SSF   | REAR PANEL            | 1    |             |      |
|   | 21   | E73273-003       | SPECIAL SCREW         | 8    |             |      |
|   | 22   | E74572-001       | TAPPING SCREW         | 1    |             |      |
|   | 23   | E206986-003      | METAL COVER           | 1    |             |      |
|   | 24   | E306805-180      | SPACER                | 1    |             |      |
|   | 25   | SBSG3008M        | TAPPING SCREW         | 5    |             |      |
|   | -    | E61029-005       | NUMBER LABEL          | 1    |             |      |
|   |      | E408919-001      | RATING LABEL          | 1    |             | BS   |
|   |      | E407619-056      | FTZ LABEL             | 1    |             | G    |
|   |      | E408843-001      | APROVAL LABEL         | 1    |             | EN   |
|   |      | QZL1031-101      | LABEL                 | 1    |             | EF   |

△ : Safety Parts

# FX-382RBK

## ■ Electrical Parts List (ENA-175)

| △ | Item  | Parts Number    | Description           | Area |
|---|-------|-----------------|-----------------------|------|
|   |       | I. C. S         |                       |      |
|   | IC102 | LC72131         | I. C (M)              |      |
|   | IC103 | LA1266A         | I. C (MONO-ANALOG)    |      |
|   | IC105 | LA3401          | I. C (MONO-ANALOG)    |      |
|   | IC201 | LC7073          | I. C (DIGI-MOS)       |      |
|   | IC202 | SAA6579         | I. C (M)              |      |
|   | IC501 | MN172412KBE     | I. C (MICRO-COMPUTER) |      |
|   | IC561 | PST9146T        | I. C (MONO-ANALOG)    |      |
| △ | IC821 | NJM78M06FA      | I. C (MONO-ANALOG)    |      |
|   |       | DIODES          |                       |      |
|   | D102  | 1SS119          | SI. DIODE             |      |
|   | D103  | 1SS119          | SI. DIODE             |      |
|   | D109  | 1SS119          | SI. DIODE             |      |
|   | D110  | 1SS119          | SI. DIODE             |      |
|   | D171  | 1SR139-200      | SI. DIODE             |      |
|   | D172  | 1SS119          | SI. DIODE             |      |
|   | D501  | 1SS119          | SI. DIODE             |      |
|   | D502  | 1SS119          | SI. DIODE             |      |
|   | D503  | 1SS119          | SI. DIODE             |      |
|   | D504  | 1SS119          | SI. DIODE             |      |
|   | D505  | 1SS119          | SI. DIODE             |      |
|   | D506  | 1SS119          | SI. DIODE             |      |
|   | D510  | SLH-34VC3F      | L. E. D.              |      |
|   | D531  | MTZ6.8JC        | ZENER DIODE           |      |
|   | D561  | 1SS119          | SI. DIODE             |      |
| △ | D801  | DS135D-KB3      | DIODE                 |      |
| △ | D802  | DS135D-KB3      | DIODE                 |      |
| △ | D803  | DS135D-KB3      | DIODE                 |      |
| △ | D804  | DS135D-KB3      | DIODE                 |      |
|   | D811  | MTZ13JA         | ZENER DIODE           |      |
|   | D821  | 1SR139-200      | SI. DIODE             |      |
|   | D822  | 1SR139-200      | SI. DIODE             |      |
|   | D851  | 1SR139-200      | SI. DIODE             |      |
|   | D852  | MTZ33JC         | ZENER DIODE           |      |
|   | VC105 | SVC342 (L)      | VARI-CAPA DIODE       |      |
|   | VC106 | SVC342 (L)      | VARI-CAPA DIODE       |      |
|   |       | TRANSISTORS     |                       |      |
|   | Q101  | 2SC461          | SI. TRANSISTOR        |      |
|   | Q102  | 2SC535          | SI. TRANSISTOR        |      |
|   | Q103  | 2SC461          | SI. TRANSISTOR        |      |
|   | Q111  | 2SD1302         | SI. TRANSISTOR        |      |
|   | Q112  | 2SK301 (P, Q)   | F. E. T.              |      |
|   | Q113  | 2SK301 (P, Q)   | F. E. T.              |      |
|   | Q114  | 2SK301 (P, Q)   | F. E. T.              |      |
|   | Q115  | 2SK301 (P, Q)   | F. E. T.              |      |
|   | Q121  | DTA124ES        | DIGITAL TRANSISTOR    |      |
|   | Q123  | DTA124ES        | DIGITAL TRANSISTOR    |      |
|   | Q124  | DTA114WS        | DIGITAL TRANSISTOR    |      |
|   | Q127  | DTA124ES        | DIGITAL TRANSISTOR    |      |
|   | Q171  | 2SC3311A (Q, R) | SI. TRANSISTOR        |      |
|   | Q172  | 2SC3311A (Q, R) | SI. TRANSISTOR        |      |
|   | Q173  | 2SA933S (RS)    | SI. TRANSISTOR        |      |
|   | Q501  | DTC114YS        | DIGITAL TRANSISTOR    |      |
|   | Q531  | DTC124ES        | DIGITAL TRANSISTOR    |      |
|   | Q532  | DTA124ES        | DIGITAL TRANSISTOR    |      |
|   | Q561  | DTC114YS        | DIGITAL TRANSISTOR    |      |
|   | Q811  | 2SD2061 (F, G)  | SI. TRANSISTOR        |      |
|   | Q851  | 2SB544MP (E, F) | SI. TRANSISTOR        |      |
|   | Q852  | 2SD1302         | SI. TRANSISTOR        |      |
|   | Q853  | 2SD1302         | SI. TRANSISTOR        |      |
|   | Q854  | DTA124ES        | DIGITAL TRANSISTOR    |      |
|   |       | CAPACITORS      |                       |      |
|   | C101  | QCF21HP-223A    | 0.022MF 50V CER. CAP. |      |
|   | C102  | QCF21HP-223A    | 0.022MF 50V CER. CAP. |      |
|   | C103  | QCF21HP-223A    | 0.022MF 50V CER. CAP. |      |
|   | C132  | QCS31HJ-561Z    | 560PF 50V CER. CAP.   |      |
|   | C133  | QCHB1EZ-223     | 0.022MF 25V CER. CAP. |      |
|   | C134  | QETB1EM-106     | 10MF 25V AL. E. CAP.  |      |
|   | C135  | QCC21EM-223     | 0.022MF 25V CER. CAP. |      |
|   | C136  | QCT25CH-180Z    | 18PF 50V CER. CAP.    |      |
|   | C137  | QCT26CH-221     | 220PF 50V CER. CAP.   |      |
|   | C138  | QCT26CH-241     | 240PF 50V CER. CAP.   |      |

| △ | Item | Parts Number  | Description            | Area |
|---|------|---------------|------------------------|------|
|   | C140 | QCC21EM-223   | 0.022MF 25V CER. CAP.  |      |
|   | C141 | QCS21HJ-390   | 39PF 50V CER. CAP.     |      |
|   | C142 | QCY31HK-272Z  | 2700PF 50V CER. CAP.   |      |
|   | C143 | QCHB1EZ-223   | 0.022MF 25V CER. CAP.  |      |
|   | C144 | QETB1EM-106   | 10MF 25V AL. E. CAP.   |      |
|   | C146 | QCT26CH-680   | 68PF 50V CER. CAP.     |      |
|   | C147 | QCT25CH-220Z  | 22PF 50V CER. CAP.     |      |
|   | C148 | QCT25CH-121   | 120PF 50V CER. CAP.    |      |
|   | C149 | QCHB1EZ-223   | 0.022MF 25V CER. CAP.  |      |
|   | C150 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C151 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C152 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C153 | QCC21EM-223   | 0.022MF 25V CER. CAP.  |      |
|   | C155 | QCHB1EZ-223   | 0.022MF 25V CER. CAP.  |      |
|   | C156 | QCVB1CM-103Y  | 0.01MF 16V CER. CAP.   |      |
|   | C157 | QETB1HM-474   | 0.47MF 50V E. CAP.     |      |
|   | C158 | QCCB1HK-101Y  | 100PF 50V CER. CAP.    |      |
|   | C159 | QCCB1HK-101Y  | 100PF 50V CER. CAP.    |      |
|   | C160 | QCCB1HK-221Y  | 220PF 50V CER. CAP.    |      |
|   | C161 | QCHB1EZ-223   | 0.022MF 25V CER. CAP.  |      |
|   | C162 | QETB1EM-106   | 10MF 25V AL. E. CAP.   |      |
|   | C163 | QFN31HJ-332Z  | 3300PF 50V MYLAR CA    |      |
|   | C164 | QCHB1EZ-223   | 0.022MF 25V CER. CAP.  |      |
|   | C165 | QETB1HM-474   | 0.47MF 50V E. CAP.     |      |
|   | C166 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C167 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C168 | QETB1HM-475E  | 4.7MF 50V E. CAP.      |      |
|   | C169 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C170 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C171 | QETB1EM-106   | 10MF 25V AL. E. CAP.   |      |
|   | C172 | QETB1HM-475E  | 4.7MF 50V E. CAP.      |      |
|   | C173 | QFN81HJ-223   | 0.022MF 50V METAL. MYL |      |
|   | C174 | QFN81HJ-473   | 0.047MF 50V METAL. MYL |      |
|   | C175 | EEZ5009-106   | 10MF AL. E. CAP.       |      |
|   | C176 | QCY31HK-102Z  | 1000PF 50V CER. CAP.   |      |
|   | C177 | QFP31HJ-241Z  | 240PF 50V POLYPROP     |      |
|   | C178 | QFP31HJ-241Z  | 240PF 50V POLYPROP     |      |
|   | C179 | EET2508-475ZE | 4.7MF E. CAP.          |      |
|   | C180 | EET2508-475ZE | 4.7MF E. CAP.          |      |
|   | C181 | QETB1EM-106   | 10MF 25V AL. E. CAP.   |      |
|   | C182 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C183 | QETB1HM-105   | 1MF 50V AL. E. CAP.    |      |
|   | C184 | QETB1HM-105   | 1MF 50V AL. E. CAP.    |      |
|   | C185 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C186 | QETB1HM-474   | 0.47MF 50V E. CAP.     |      |
|   | C187 | QCS31HJ-331Z  | 330PF 50V CER. CAP.    |      |
|   | C188 | QCS31HJ-331Z  | 330PF 50V CER. CAP.    |      |
|   | C189 | QETB1EM-226N  | 22MF 25V E. CAP.       |      |
|   | C190 | QETB1HM-475E  | 4.7MF 50V E. CAP.      |      |
|   | C192 | QCC21EM-473   | 0.047MF 25V CER. CAP.  |      |
|   | C193 | QCS21HJ-180A  | 18PF 50V CER. CAP.     |      |
|   | C194 | QCS21HJ-180A  | 18PF 50V CER. CAP.     |      |
|   | C195 | QENB1HM-474   | 0.47MF 50V NP. E. CAP. |      |
|   | C196 | QCCB1HK-102Y  | 1000PF 50V CER. CAP.   |      |
|   | C197 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C198 | QETB1CM-227   | 220MF 16V AL. E. CAP.  |      |
|   | C199 | QETB1EM-226N  | 22MF 25V E. CAP.       |      |
|   | C200 | QCF21HP-103A  | 0.01MF 50V CER. CAP.   |      |
|   | C201 | QCS21HJ-820   | 82PF 50V CER. CAP.     |      |
|   | C202 | QCS21HJ-470   | 47PF 50V CER. CAP.     |      |
|   | C203 | QCS31HJ-561Z  | 560PF 50V CER. CAP.    |      |
|   | C204 | QCZ0205-155   | 1.5MF 25V C. CAP.      |      |
|   | C205 | QCS31HJ-331Z  | 330PF 50V CER. CAP.    |      |
|   | C206 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C503 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C504 | QETB1HM-225   | 2.2MF 50V AL. E. CAP.  |      |
|   | C510 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C511 | QCF21HP-223A  | 0.022MF 50V CER. CAP.  |      |
|   | C541 | QCF31HP-102Z  | 1000PF 50V CER. CAP.   |      |
|   | C542 | QCY21HK-101   | 100PF 50V CER. CAP.    |      |
|   | C555 | QCXB1CM-222Y  | 2200PF 16V CER. CAP.   |      |
|   | C556 | QCXB1CM-222Y  | 2200PF 16V CER. CAP.   |      |

■ Electrical Parts List (ENA-175)

| Δ | Item  | Parts Number | Description           | Area      |
|---|-------|--------------|-----------------------|-----------|
|   | C561  | QETB1HM-225  | 2.2MF 50V AL E. CAP.  |           |
|   | C563  | QCF21HP-103A | 0.01MF 50V CER. CAP.  |           |
|   | C564  | QETB1HM-475E | 4.7MF 50V E. CAP.     |           |
|   | C801  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C802  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C803  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C805  | QETB1CM-227  | 220MF 16V AL E. CAP.  |           |
|   | C806  | QETB1CM-227  | 220MF 16V AL E. CAP.  |           |
|   | C809  | QCF21HP-103A | 0.01MF 50V CER. CAP.  |           |
|   | C815  | QETB1EM-228  | 2200MF 25V E. CAP.    |           |
|   | C821  | QETB1CM-228  | 2200MF 16V AL E. CAP. |           |
|   | C822  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C823  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C824  | QETB0JM-108N | 1000MF 6.3V E. CAP.   |           |
|   | C851  | QETB1HM-105  | 1MF 50V AL E. CAP.    |           |
|   | C852  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C853  | QCF21HP-223A | 0.022MF 50V CER. CAP. |           |
|   | C854  | QETB1JM-107  | 100MF 63V AL E. CAP.  |           |
|   | C856  | QFV81HJ-104  | 0.1MF 50V THIN FILM   |           |
|   | C857  | QFV81HJ-104  | 0.1MF 50V THIN FILM   |           |
|   | TC105 | ENZ1003-006  | 00MF TRIMMER C        |           |
|   | TC106 | ENZ1003-006  | 00MF TRIMMER C        |           |
|   |       | RESISTORS    |                       |           |
|   | R101  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R102  | QRD161J-221  | 220 1/6W CARBON RE    |           |
|   | R103  | QRD161J-222  | 2.2K 1/6W CARBON RE   |           |
|   | R104  | QRD161J-391  | 390 1/6W CARBON RE    |           |
|   | R105  | QRD167J-152  | 1.5K 1/6W CARBON RE   |           |
|   | R106  | QRD161J-681  | 680 1/6W CARBON RE    |           |
|   | R107  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R108  | QRD161J-331  | 330 1/6W CARBON RE    |           |
|   | R121  | QRD161J-472  | 4.7K 1/6W CARBON RE   |           |
|   | R122  | QRD161J-101  | 100 1/6W CARBON RE    |           |
|   | R123  | QRD161J-472  | 4.7K 1/6W CARBON RE   |           |
|   | R124  | QRD161J-333  | 33K 1/6W CARBON RE    |           |
|   | R131  | QRD161J-331  | 330 1/6W CARBON RE    |           |
|   | R132  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R133  | QRD161J-473  | 47K 1/6W CARBON RE    |           |
|   | R134  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R135  | QRD161J-470  | 47 1/6W CARBON RE     |           |
|   | R136  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R141  | QRD161J-472  | 4.7K 1/6W CARBON RE   |           |
|   | R142  | QRD161J-331  | 330 1/6W CARBON RE    |           |
|   | R143  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R144  | QRD161J-473  | 47K 1/6W CARBON RE    |           |
|   | R145  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R146  | QRD167J-560  | 56 1/6W CARBON RE     |           |
|   | R147  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R148  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R149  | QRD167J-223  | 22K 1/6W CARBON RE    |           |
|   | R150  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R153  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R155  | QRD167J-562  | 5.6K 1/6W CARBON RE   |           |
|   | R156  | QRD167J-822  | 8.2K 1/6W CARBON RE   |           |
|   | R158  | QRD161J-183  | 18K 1/6W CARBON RE    |           |
|   | R159  | QRD161J-561  | 560 1/6W CARBON RE    |           |
|   | R160  | QRD161J-333  | 33K 1/6W CARBON RE    | EF EN G G |
|   | R160  | QRD167J-223  | 22K 1/6W CARBON RE    | BS        |
|   | R161  | QRD161J-244  | 240K 1/6W CARBON RE   |           |
|   | R162  | QRD161J-244  | 240K 1/6W CARBON RE   |           |
|   | R163  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R164  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R165  | QRD161J-274  | 270K 1/6W CARBON RE   |           |
|   | R166  | QRD161J-274  | 270K 1/6W CARBON RE   |           |
|   | R168  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R169  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R171  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R172  | QRD167J-332  | 3.3K 1/6W CARBON RE   |           |
|   | R173  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R174  | QRD161J-103  | 10K 1/6W CARBON RE    |           |
|   | R175  | QRD161J-101  | 100 1/6W CARBON RE    |           |

| Δ | Item  | Parts Number    | Description         | Area |
|---|-------|-----------------|---------------------|------|
|   | R176  | QRD161J-101     | 100 1/6W CARBON RE  |      |
|   | R177  | QRD161J-104     | 100K 1/6W CARBON RE |      |
|   | R178  | QRD161J-104     | 100K 1/6W CARBON RE |      |
| Δ | R190  | QRZ0077-680     | 68 1/4W FUSIBLE R   |      |
|   | R191  | QRD161J-222     | 2.2K 1/6W CARBON RE |      |
|   | R192  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R193  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R194  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R195  | QRD161J-222     | 2.2K 1/6W CARBON RE |      |
|   | R197  | QRD167J-822     | 8.2K 1/6W CARBON RE |      |
|   | R198  | QRD161J-473     | 47K 1/6W CARBON RE  |      |
|   | R201  | QRD161J-222     | 2.2K 1/6W CARBON RE |      |
|   | R501  | QRD161J-221     | 220 1/6W CARBON RE  |      |
|   | R533  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R541  | QRD161J-471     | 470 1/6W CARBON RE  |      |
|   | R551  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R552  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R553  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R554  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R555  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R556  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R564  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R565  | QRD161J-102     | 1K 1/6W CARBON RE   |      |
|   | R566  | QRD161J-102     | 1K 1/6W CARBON RE   |      |
|   | R567  | QRD161J-472     | 4.7K 1/6W CARBON RE |      |
|   | R811  | QRD167J-332     | 3.3K 1/6W CARBON RE |      |
|   | R851  | QRD167J-332     | 3.3K 1/6W CARBON RE |      |
|   | R852  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R853  | QRD161J-103     | 10K 1/6W CARBON RE  |      |
|   | R858  | QRD167J-152     | 1.5K 1/6W CARBON RE |      |
|   | R859  | QRD167J-152     | 1.5K 1/6W CARBON RE |      |
|   | VR167 | QVPA601-104A    | 100K TRIMMER R      |      |
|   |       | OTHERS          |                     |      |
|   |       | EMW10622-002    | PRINTED BOARD       |      |
|   |       | SBS83008Z       | WOOD SCREW          |      |
|   | H811  | E70945-H25      | HEAT SINK           |      |
|   | J171  | EMN00TV-223A    | PIN JACK            |      |
|   | J541  | QMS3501-021     | PIN JACK            |      |
| Δ | J901  | QMCB001-E02H    | AC SOCKET           |      |
|   | L106  | EQL3001-102K    | INDUCTOR            |      |
|   | L201  | EQL4007-101     | INDUCTOR            |      |
|   | S501  | ESPO001-023M    | TACT SWITCH         |      |
|   | S502  | ESPO001-023M    | TACT SWITCH         |      |
|   | S503  | ESPO001-023M    | TACT SWITCH         |      |
|   | S504  | ESPO001-023M    | TACT SWITCH         |      |
|   | S505  | ESPO001-023M    | TACT SWITCH         |      |
|   | S506  | ESPO001-023M    | TACT SWITCH         |      |
|   | S507  | ESPO001-023M    | TACT SWITCH         |      |
|   | S508  | ESPO001-023M    | TACT SWITCH         |      |
|   | S511  | ESPO001-023M    | TACT SWITCH         |      |
|   | S512  | ESPO001-023M    | TACT SWITCH         |      |
|   | S513  | ESPO001-023M    | TACT SWITCH         |      |
|   | S514  | ESPO001-023M    | TACT SWITCH         |      |
|   | S515  | ESPO001-023M    | TACT SWITCH         |      |
|   | S516  | ESPO001-023M    | TACT SWITCH         |      |
|   | S517  | ESPO001-023M    | TACT SWITCH         |      |
|   | S518  | ESPO001-023M    | TACT SWITCH         |      |
|   | S519  | ESPO001-023M    | TACT SWITCH         |      |
|   | S520  | ESPO001-023M    | TACT SWITCH         |      |
|   | S521  | ESPO001-023M    | TACT SWITCH         |      |
|   | S522  | ESPO001-023M    | TACT SWITCH         |      |
|   | S523  | ESPO001-023M    | TACT SWITCH         |      |
|   | S524  | ESPO001-023M    | TACT SWITCH         |      |
|   | S525  | ESPO001-023M    | TACT SWITCH         |      |
|   | T101  | EQR1111-014     | RF COIL             |      |
|   | T102  | EQR1310-005     | RF COIL             |      |
|   | T103  | EQR1207-015     | OSC COIL            |      |
|   | T104  | EQR1307-009     | OSC COIL            |      |
|   | T105  | EQT2140-012     | DET. COIL           |      |
|   | T106  | EQT2140-013     | DET. COIL           |      |
|   | T107  | ECB1560-012     | CERAMIC FILTER      |      |
|   | X102  | ECX0007-200KWJ1 | CRYSTAL             |      |

■ Electrical Parts List (ENA-175)

| △ | Item  | Parts Number   | Description       | Area |
|---|-------|----------------|-------------------|------|
|   | X103  | ECX0000-456KR  | CERAMIC RESONATOR |      |
|   | X201  | EFO-EC4004T4   | CERAMIC RESONATOR |      |
|   | X202  | VCX5057-001    | CRYSTAL           |      |
|   | X501  | ECX0060-000EM  | CERAMIC RESONATOR |      |
|   | AT101 | EMB41YV-303KJ4 | ANTENNA TERMINAL  |      |
|   | CF101 | ECB2123-005R   | CERAMIC FILTER    |      |
|   | CF102 | ECB2118-007R   | CERAMIC FILTER    |      |
|   | EP001 | EMZ4002-001Z   | EARTH PLATE       |      |
|   | EP002 | EMZ4002-001Z   | EARTH PLATE       |      |
|   | FL102 | EQF0102-001    | LOWPASS FILTER    |      |
|   | FL103 | EQF0101-011    | LOWPASS FILTER    |      |
|   | FL104 | EQF0101-011    | LOWPASS FILTER    |      |
|   | FW101 | EW380-25LS     | FLAT WIRE ASSY    |      |
|   | FW102 | EW370-25LS     | FLAT WIRE ASSY    |      |
|   | FW103 | EW350-13LS     | FLAT WIRE ASSY    |      |
|   | FW104 | EW330-13SS     | FLAT WIRE ASSY    |      |
|   | FW105 | EW360-30LS     | FLAT WIRE ASSY    |      |
|   | FW901 | EW370-16LS     | FLAT WIRE ASSY    |      |
|   | JT101 | EMV7145-004Z   | SOCKET ASSY       |      |
|   | JT102 | EMV7145-004Z   | SOCKET ASSY       |      |
|   | JT103 | EMV7145-003Z   | SOCKET ASSY       |      |
|   | JT104 | EMV7145-004Z   | SOCKET ASSY       |      |
|   | JT105 | EMV7145-003Z   | SOCKET ASSY       |      |
|   | JT106 | EMV7145-003Z   | SOCKET ASSY       |      |
|   | PW901 | QWE881-16RR    | PIN WIRE          |      |
|   | PW902 | QWE886-16RR    | PIN WIRE          |      |
|   | RE501 | QSJ1004-E01    | ENCODER SWITCH    |      |
|   | RF101 | EAF2203-003    | VHF TUNER         |      |

■ Accessories List

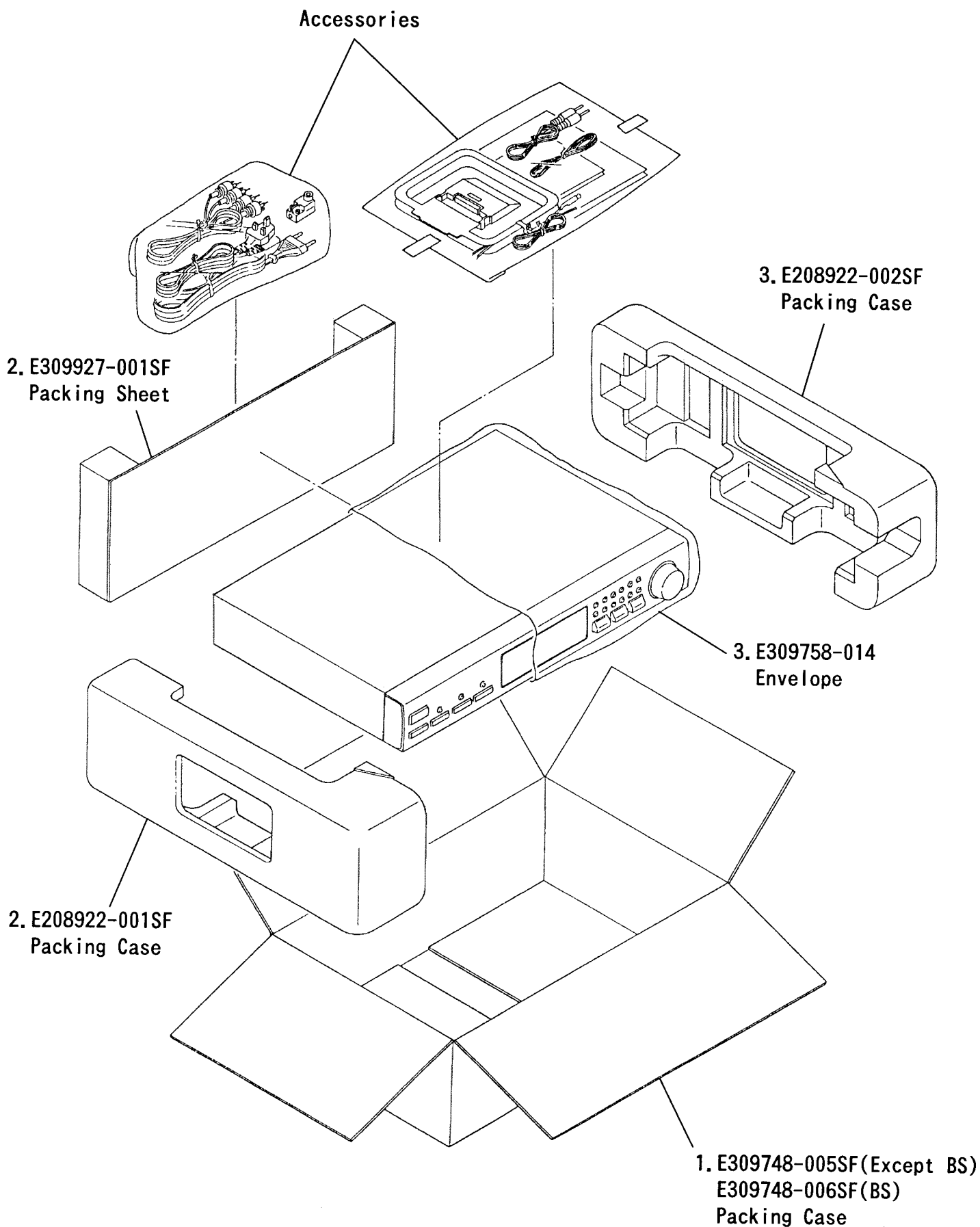
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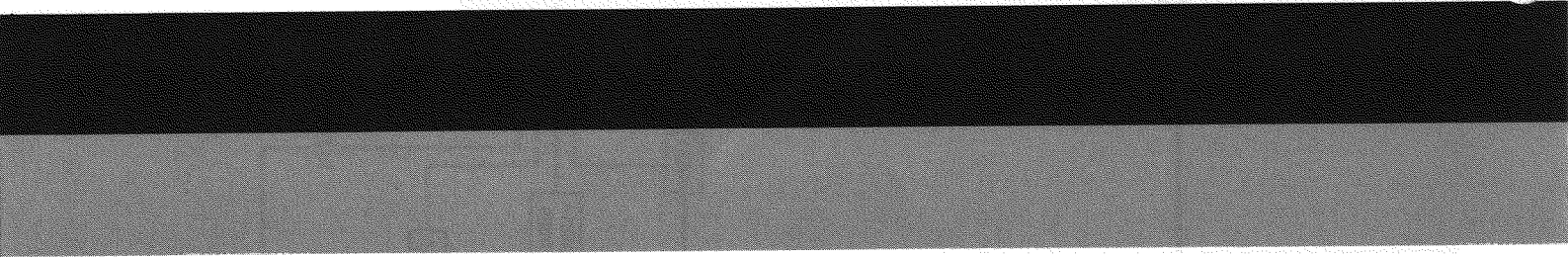
| △ | Item | Parts Number   | Parts Name       | Q'ty | Description | Area  |
|---|------|----------------|------------------|------|-------------|-------|
|   | 1    | E30580-2419A   | INSTRUCTION BOOK | 1    |             | EF BS |
|   |      | E30580-2419A   | INSTRUCTION BOOK | 1    |             | G GI  |
|   |      | E30580-2420A   | INSTRUCTION BOOK | 1    |             | EN    |
| △ | 2    | QMP39F0-183E   | POWER CORD       | 1    |             | EF    |
| △ |      | QMP39F0-183E   | POWER CORD       | 1    |             | EN G  |
| △ |      | QMP39F0-183E   | POWER CORD       | 1    |             | GI    |
| △ |      | QMP5520-1835BS | POWER CORD       | 1    |             | BS    |
|   | 3    | EWP302-011     | SIGNAL CORD      | 1    |             |       |
|   | 4    | EWP805-012     | PLUG WIRE ASSY   | 1    |             |       |
|   | 5    | EQB4001-015    | LOOP ANTENNA     | 1    |             |       |
|   | 6    | EWP503-001     | ANTENNA WIRE     | 1    |             |       |
|   | 7    | E43486-340A    | SAFETY SHEET     | 1    |             | BS    |
|   | 8    | BT-20134       | WARRANTY CARD    | 1    |             | G     |
|   |      | BT-54003-1     | WARRANTY CARD    | 1    |             | BS    |
|   | 9    | BT-20066A      | DISTRIBUTOR LIST | 1    |             | BS    |
|   | 10   | E309758-002    | ENVELOPE         | 2    |             |       |

△ : Safety Parts

# Packing Materials and Part Numbers

Block No. **M3MM**





# JVC

VICTOR COMPANY OF JAPAN, LIMITED  
AUDIO PRODUCT DIVISION, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

