

YUPITERU



MULTIBAND RECEIVER **MVT-8000**

Owner's Manual

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	3
MAIN FEATURES	4
ACCESSORIES.....	5
IMPORTANT PRECAUTIONS	6
CONTROLS, DISPLAYS AND FUNCTIONS.....	8
POWER SUPPLY	15
CHAPTER 2 BASIC OPERATIONS.....	17
BEFORE KEY OPERATION	18
SELECTING FREQUENCIES THROUGH DIRECT INPUT	20
SELECTING FREQUENCIES WITH THE TUNING DIAL	26
SEARCH FUNCTIONS.....	28
CHAPTER 3 MEMORY AND SCANNING	33
SETTING THE CHANNEL MEMORIES	34
RECALLING CHANNEL MEMORIES.....	38
CHANNEL MEMORY SCAN	44
BANK SCAN	46
PROGRAM SCAN	48
PRIORITY FUNCTION	52
CHAPTER 4 USEFUL FUNCTIONS	55
CHANGING THE SEARCH BAND	56
SKIP FUNCTION	58
DELAY FUNCTION.....	58
NON-MODULATION PASS FUNCTION	59
AGAIN FUNCTION	60
BATTERY SAVE FUNCTION	60
CANCELING THE BEEP TONE	60
CHAPTER 5 THINGS TO KNOW	61
GENERAL SPECIFICATIONS	62

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	3
MAIN FEATURES	4
ACCESSORIES.....	5
IMPORTANT PRECAUTIONS	6
CONTROLS, DISPLAYS AND FUNCTIONS.....	8
POWER SUPPLY	15
CHAPTER 2 BASIC OPERATIONS.....	17
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SELECTING FREQUENCIES THROUGH DIRECT INPUT	20
SELECTING FREQUENCIES WITH THE TUNING DIAL	26
SEARCH FUNCTIONS.....	28
CHAPTER 3 MEMORY AND SCANNING	33
SETTING THE CHANNEL MEMORIES	34
RECALLING CHANNEL MEMORIES.....	38
CHANNEL MEMORY SCAN	44
BANK SCAN	46
PROGRAM SCAN	48
PRIORITY FUNCTION	52
CHAPTER 4 USEFUL FUNCTIONS	55
CHANGING THE SEARCH BAND	56
SKIP FUNCTION	58
DELAY FUNCTION.....	58
NON-MODULATION PASS FUNCTION	59
AGAIN FUNCTION	60
BATTERY SAVE FUNCTION	60
CANCELING THE BEEP TONE	60
CHAPTER 5 THINGS TO KNOW	61
GENERAL SPECIFICATIONS	62

■ Superior Microprocessor Technology

Whether you are an expert or just a beginner, you can enjoy all of the superior functions offered by microprocessor technology.

■ Wide Range of Frequencies (8~1300MHz) in a Variety of Modes(WFM/NFM/AM)

You can select a wide range of frequencies ranging from 8 MHz to 1300 MHz in various receiving modes : Wide FM, Narrow FM and AM.

■ Tuning Dial

You can enter the frequencies by either pressing the NUMBER keys or by rotating the TUNING DIAL.

■ Numerous Frequency Steps

You can select frequencies in steps of 5, 10, 12.5, 25, 50, 100 kHz, depending on your receiving mode.

■ 10-band Search Function

This receiver can search for frequencies over 10 bands including FM and Aeronautical communication (AIR BAND). Moreover, within these bands, you can change the frequencies.

■ 200-channel Memories

You can store up to 200 of your favorite channels in memory. This receiver is also equipped with various Channel Memory Scan functions, Bank

Scan, Program Scan and Priority, which increase the efficiency of receiving frequencies.

■ Varied Power Supply Options

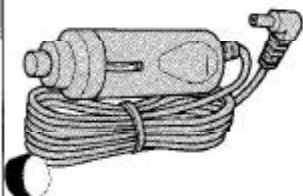
This receiver can be powered by either car or ordinary batteries.

■ Various Receiving and Control Functions

- Pass Memory Function
- Again Function
- Non-modulation Pass Function
- Beep (key touch sound) ON/OFF
- Key Lock Switch
- Convenient Illuminated Display

Telescopic Antenna	(1)	Car Mount Bracket	(1)
Car Cigarette Lighter Plug	(1)	Screws for Car Mount Bracket	(1)
DC Power Supply Cord	(1)	Owner's Manual	(1)

Car Cigarette Lighter Plug



DC Power Supply Cord



OPERATING ENVIRONMENT

- Do not place this receiver near heating equipment or in direct sunlight. Do not place it in a car exposed to direct sunlight or in places where the temperature is very high, such as near the heater on the dashboard.
- Do not place this receiver in humid or poorly ventilated areas.
- Do not place this receiver in dusty or smoky places.
- Do not place this receiver in extremely cold places.

SAFETY

- Never remove the electric plug with wet hands.
- Never bend the power supply cord unnecessarily or place any heavy objects on it.
- Since this receiver is a precision instrument, never disassemble or insert any foreign objects inside of it.

HANDLING

- Do not apply any shock to the receiver such as dropping or hitting it.
- If the receiver becomes dirty, wipe it with a soft cloth. Never use cleaning liquids, such as benzene, thinner or chemical detergents and material which can easily generate static electricity, such as polyester.
- Some internal parts may generate spurious noise which will block out signals. Some of the frequencies may also create noise.

MEMORY BACKUP

- If you are using the receiver for the first time, be sure to charge the batteries for at least one hour to activate the memory backup function. Even if the AC power is accidentally interrupted, the memory will be backed up for about one week.

ANTENNA

Other types of antennas can be used in place of the telescopic antenna. However, they should be suitable for the frequency range received by this unit.

External booster antennas are not recommended because intermodulation may occur if strong signals are picked up.

RESET SWITCH

Press the reset switch with a ball point pen or similar object to initialize the receiver under the following conditions.

You are going to use the receiver for the first time after purchase.

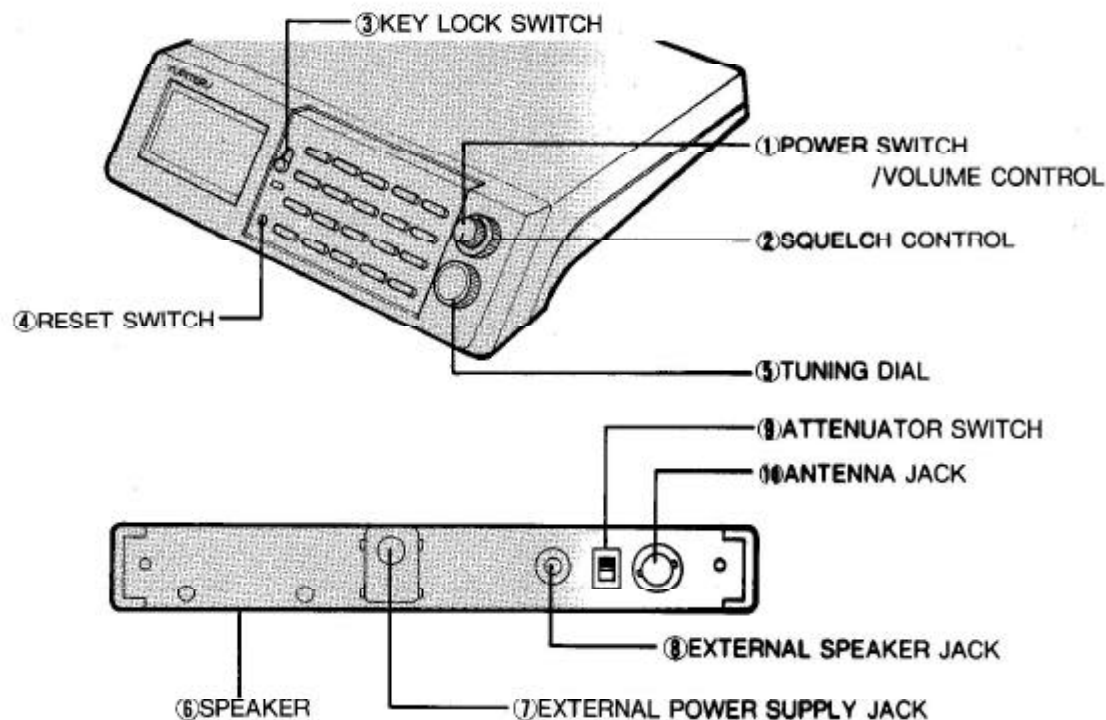
You wish to completely erase all of the data in memory.

The display shows erroneous information.

The batteries for memory backup need to be replaced.

If you have any questions regarding this product, please contact the store where it was purchased.

MAIN UNIT



① POWER SWITCH/VOLUME CONTROL (POW/VOL)

Rotate this knob clockwise to turn on the receiver and to increase the volume.

② SQUELCH CONTROL (SQUELCH)

Rotate this knob clockwise to reduce the "white" noise and to improve the condition of the receiving signals.

③ KEY LOCK SWITCH (KEY LOCK)

Set this switch to "ON" in order to lock the keypad and tuning dial.

④ RESET BUTTON (RESET)

Press this button with a ball point pen or similar object to initialize the microprocessor.

⑤ TUNING DIAL

Use this dial to set the frequencies or to change the channels in memory.

⑥ SPEAKER

⑦ EXTERNAL POWER SUPPLY JACK

Connect the AC adaptor or the car cigarette lighter plug to this jack when you wish to operate the receiver from an external power source (AC outlet or car battery). When using the receiver for the first time, be sure to charge the battery for more than one hour for memory backup.

⑧ EXTERNAL SPEAKER JACK (EXT.SP)

Connect an external speaker or earplug to jack. When this jack is used, the internal speaker will be disconnected.

⑨ ATTENUATOR SWITCH (ATT.)

If signals are mixed due to interference caused by strong broadcasting signals or strong noise, turn this switch ON to achieve better reception. However, during normal operation, keep this switch off.

⑩ ANTENNA TERMINAL (ANT.)

Connect an external antenna to this terminal.

DISPLAY



SCAN

"SCAN" will be displayed during Memory Scan mode and will flash when the Non-modulation Pass function is on.

PGM-SCAN

"PGM-SCAN" will be displayed during Program Scan mode and will flash when the Non-modulation Pass function is on.

SEARCH

"SEARCH" will be displayed during Search mode

and will flash when the Non-modulation Pass function is on.

BAND

"BAND" will be simultaneously displayed with the "SEARCH" indicator and designated Band number during Search or after Band number setting.

BANK

During Memory channel mode, "BANK" will be simultaneously displayed with the "SCAN" indicator and the Bank number.

PGM

"PGM" will be displayed during Program Scan mode.

1~9, 0

"1~9,0" will be displayed to indicate the designated Memory channel during Program Scan mode, the Search Band number during Search mode and the Bank number during Memory Scan mode.

FUNC.

"FUNC" will be displayed after pressing the FUNCTION key.

WFM NFM AM

“WFM” “NFM” or “AM” will be displayed when the receive mode is selected.

STEP 5~100

“STEP 5~100” will be displayed when one of the Steps is selected.

999.
Displays the channel memories when they are recalled. When the Pass Memory Channel is recalled, the “CH” indicator will flash.

P.
“P₁” will be displayed when receiving a Priority Channel, when recalling a Priority Channel, and when storing a Priority Channel in memory.

1999.9999
Displays either the stored frequencies in each mode or the numbers entered. Flashes during data entry and displays entered data. Also displays “Error”, “ALL PASS”, and “SLEEP” to indicate such conditions.

S ■■■
This is the signal strength meter. It indicates the strength of the received signal.

BUSY

“BUSY” will be displayed when SQUELCH control is on.

PRI

“PRI” will be displayed when the Priority function is on.

DELAY

“DELAY” will be displayed when the Delay function is on.

SKIP

“SKIP” will be displayed when the Skip function is on.

SAVE

“SAVE” will be displayed when the Battery Save function is on.

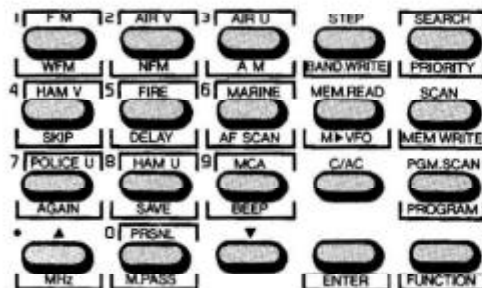
BATT

“BATT” will be displayed when the batteries are weak. When this happens, be sure to check the batteries and replace them if necessary.

BEEP

“BEEP” will be displayed when the Key Beep mode is set. In this mode, a beep tone will be heard when a key is pressed.

KEYBOARD



DIRECT INPUT KEYS

NUMBER KEYS (1~9,0)

Use these keys to set the frequencies and channel memories. During Search, these work as the SEARCH BANK SELECTION keys.

SEARCH BAND SELECTION KEYS (FM, AIR V ~ PRSNL)

Use these keys to select the bands you wish to listen to. Keep pressing the SEARCH key to search for the designated band.

CLEAR/ALL CLEAR KEY (C/AC)

While entering the frequencies or channel memories, press this key to correct the wrong frequencies or channel memories. Press this key once to be able to enter the correct frequencies or channel memories. Press this key twice to clear all of the input data.

ENTER KEY (ENTER)

Use this key to set frequencies in the microprocessor's memory.

UP KEY (▲)

- In the Manual mode, press this key to increase the frequency in one step increments as indicated on the display. Keep pressing this key for more than one second to "walk" through the frequencies in steps.
- In Memory Recall mode, press this key each time to increase the frequency in one channel increments. Keep pressing this key for more than one second to "walk" through the stored channels.
- In Memory Scan or Program Scan mode, press this key to stop the scan and to increase the frequency in one channel increments. After, during this mode, press this key to determine the Scan direction.
- In Search mode, press this key to stop the

search and force the frequency up one step. Also, during this mode, press this key to determine the Search direction, i.e. in the "up" direction.

When setting the frequencies or the channel memories, use this key after pressing the CLEAR/ALL CLEAR key once to specify the correct frequencies or channel memories. You can also jump to the correct frequency unit using the MHz key when you want to correct the MHz frequency unit.

DOWN KEY (▼)

The DOWN key works in the same way as the UP key, but in the opposite direction. (i.e. in descending order)

SEARCH KEY (SEARCH)

Press this key to search automatically for desired frequencies. Press this key once to begin the search and press it again to stop SEARCH mode.

MEMORY SCAN KEY (SCAN)

Press this key once to scan the channels stored in the memory. Press this key again to stop the memory scan.

PROGRAM SCAN KEY (PGM. SCAN)

Press this key once to scan the Program Scan

channels. Press this key again to stop the Program Scan.

STEP KEY (STEP)

In Manual mode or Search mode, press this key to search or select frequencies in steps of 5, 10, 12.5, 25, 50, 100kHz.

FUNCTION KEY (FUNCTION)

Use this key to execute the extended functions of the same colored key.

MEMORY READ KEY (MEM. READ)

Press this key to recall channels stored in the memory.

EXTENDED KEY FUNCTIONS

(Key functions are extended when the following keys are pressed after pressing the FUNCTION key.)

RECEIVE MODE KEYS (WFM/NFM/AM)

Press these keys when you wish to select Wide FM, Narrow FM, or AM receive mode.

SKIP KEY (SKIP)

Press this key during Search, Memory Scan or Program Scan to stop the search or scan for about five seconds at a frequency receiving a signal and then automatically jump to the next signal.

DELAY KEY (DELAY)

Press this key to slow down the up and down movement from one channel to another during the Search, Memory Scan or Program Scan mode. Normally it takes two seconds to search or scan for frequencies. However, with this key, you can slow down the search or scan to four seconds.

AF SCAN KEY (AF SCAN)

Press this key during Search, Memory Scan, or Program Scan modes to search or scan non-modulated frequencies (no-broadcast signals). When a signal is found, the search or scan will stop for three seconds and then continue to the next non-modulated frequency.

AGAIN KEY (AGAIN)

Press this key during Search or Channel Memory Scan mode to return to the previous channel or frequency.

SAVE KEY (SAVE)

Press this key to save battery power during Manual Recalling Memory mode.

BEEP KEY (BEEP)

Press this key to cancel the beep tone function.

MHz KEY (MHz)

Press this key during Manual Receive mode to jump to frequencies in units of MHz.

MEMORY PASS KEY (M. PASS)

Press this key to pass a channel stored in the memory during the Scan mode.

MEMORY VFO KEY (M►VFO)

Press this key to shift a channel memory frequency to Manual mode.

PRIORITY KEY (PRIORITY)

Press this key to use the Priority function.

MEMORY WRITE KEY (MEM. WRITE)

Press this key to use the channel memory. You can also use this key to erase previously stored channels in memory.

PROGRAM REGISTRATION KEY (PROGRAM)

Use this key to register a specific channel as a Program Scan Channel. You can also use this key to erase previously stored Program Scan Channels.

BAND WRITE KEY (BAND WRITE)

Use this key to write over and erase previously stored Search Bands.

- This receiver can be operated by ordinary household current using an AC Adaptor. It can also be operated by a car battery using a DC Power Supply Cord or a Car Cigarette Lighter Plug.

POWER SUPPLY

◆ IMPORTANT

- After connecting the power supply for the first time, make sure to charge the batteries for over one hour to back up the memory.

■ CAR CONNECTOR (Car Cigarette Lighter Plug)

The car connector can only be used in a car with a 12V battery. Do not use this connector in a car with a 24V battery or use another maker's car connector with this unit as this will damage the receiver.



Car with a 12V battery

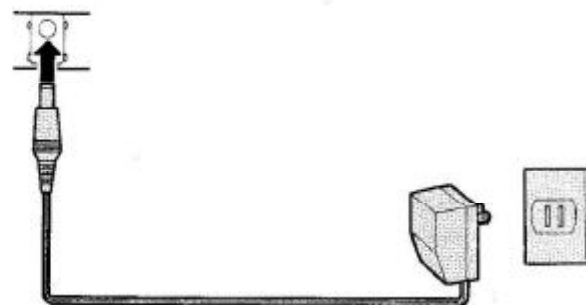
■ DC POWER SUPPLY CORD

This cord is used to connect the main unit to a 12V DC power supply. Connect the red cable to the positive terminal and the black cable to the negative terminal of the DC power supply.

■ AC ADAPTOR

Use an AC adaptor in accordance with the power requirement of this receiver.

1. Connector : Type I
2. Output : 12V 400mA (min.)



If you are not going to use an AC Adaptor for a long time, disconnect it from the outlet.

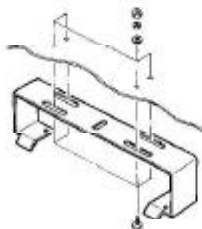


- An AC Adaptor is not included as an accessory.

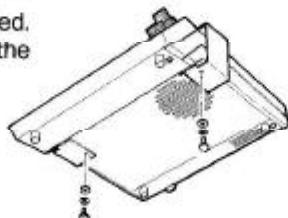
FOR USE IN CARS

■ Installing the unit in a Car

- 1 Install the bracket to hold the receiver under the dash-board.



- 2 Slide the receiver into the bracket. Secure the front end of the receiver to the bracket with the screws provided. Fasten the screws at the bottom of the receiver.

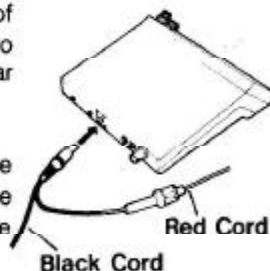


■ Connecting the DC Power Supply Cord

- 1 Connect the DC Power Supply Cord to the external power supply jack.

- 2 Connect the black cable of the DC Power Supply Cord to the metal portion of the car body.

- 3 Connect the red cable of the DC Power Supply Cord to the positive terminal of the power supply.



- 4 After connecting the cable, turn the power switch on and press the RESET switch (see page 7).



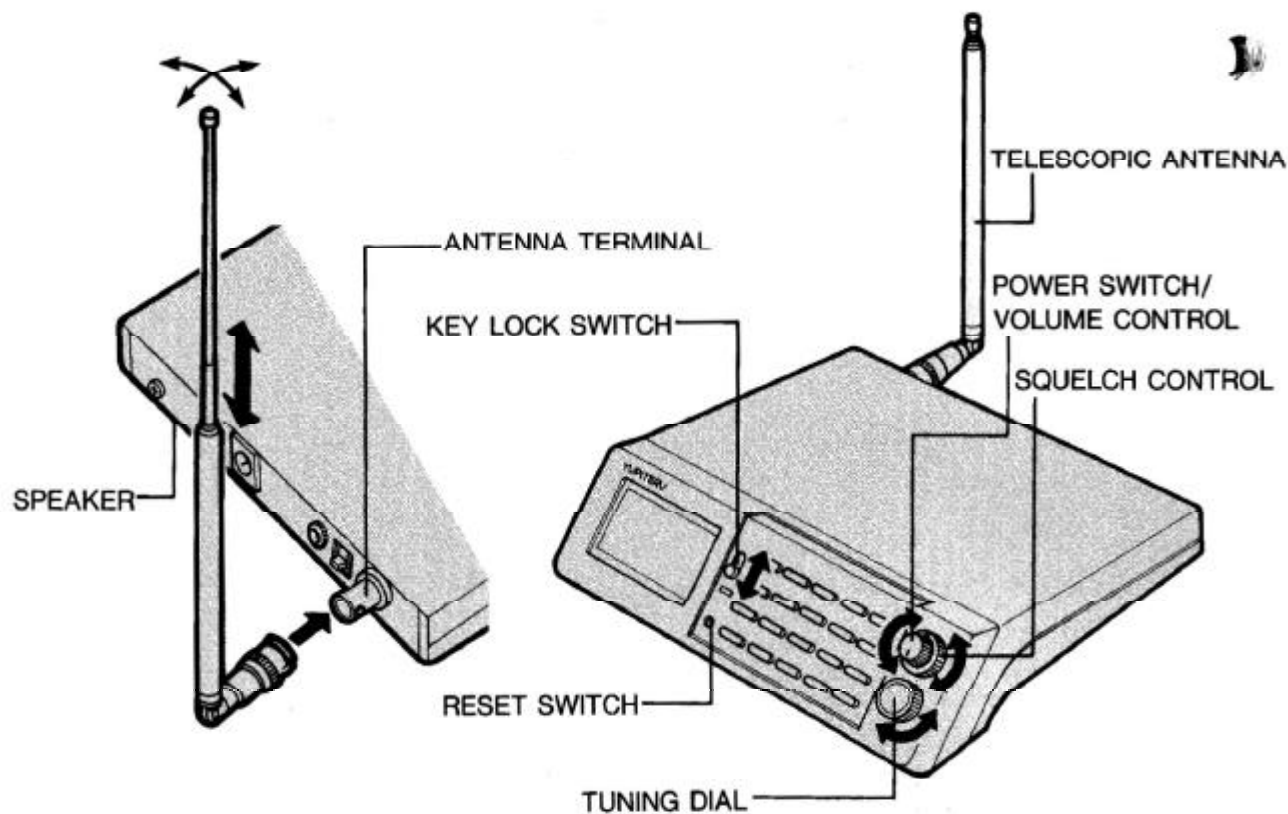
◆ IMPORTANT

- Before connecting the DC Power Supply Cord, make sure that the receiver and your car are turned off.

Chapter 2

BASIC OPERATIONS

BEFORE KEY OPERATION.....	18
SELECTING FREQUENCIES THROUGH DIRECT INPUT	20
● ENTERING FREQUENCIES	20
● SELECTING STEP FREQUENCIES	20
● SETTING THE RECEIVE MODE	21
● ONE STEP FREQUENCY AND QUICK STEP FREQUENCY.....	22
● CORRECTING THE INPUT FREQUENCIES	23
● SHIFTING FREQUENCIES IN MHz UNITS	24
SELECTING FREQUENCIES WITH THE TUNING DIAL	26
● SELECTING FREQUENCIES WITH THE TUNING DIAL	26
SEARCH FUNCTIONS.....	28
● BAND SEARCH	28
● PAUSE AND DIRECTION	29
● CONTINUOUS SEARCH.....	30



BEFORE KEY OPERATION

1 Insert the supplied telescopic antenna (or any appropriate antenna available on the market) to the antenna terminal. Hold the antenna firmly at the connector base when installing it.

2 For better reception, you can extend the telescopic antenna for low frequencies, or retract it for high frequencies.

3 Turn off the KEY LOCK switch.

4 Rotate the SQUELCH control counter-clockwise until it stops.

5 Rotate the POWER CONTROL/VOLUME control clockwise to turn on the receiver. The display will light to indicate that the receiver is on.

6 Continue to rotate the POWER CONTROL/VOLUME control clockwise until the desired volume level is reached.

7 If you hear radio interference over the speaker, turn the SQUELCH control clockwise until you can no longer hear the interference. When you hear a signal over the speaker, turn the SQUELCH control back to the center. "BUSY" will be displayed until radio interference is removed.

◆ IMPORTANT

- Set the control according to the strength of the received signal. A weak signal cannot be received if the SQUELCH control is fully rotated clockwise. More radio interference will be received if the control is fully rotated counter-clockwise.

ENTERING FREQUENCIES

1 Enter the desired frequencies using the **NUMBER** keys starting from the highest digit. During input, the displayed frequency will flash.



2 After entering the desired frequency, press the **ENTER** key. During input, the displayed frequency will flash. After pressing the **ENTER** key, the frequency will be displayed and will be entered.



- ☞ If you attempt to enter a frequency which is outside of the receiving range, an "error" indicator will appear for two seconds and the display will return to the previously entered frequency.
- We can ensure a frequency range between 8 and 1300 MHz, but you can enter any frequency within a range of 0.1~1300 MHz.
- If you attempt to enter a frequency which is not

within the step frequency range, the nearest step frequency will be entered instead.

- During frequency input, if you wait more than 10 seconds before pressing the **ENTER** key, the display will return to the previously entered frequency. After entering the frequency, be sure to press the **ENTER** key within 10 seconds.

SELECTING STEP FREQUENCIES

- You can select the frequencies by using either the **UP/DOWN** keys or the **TUNING** dial. If you want to jump to frequencies in steps, select the frequencies using the step method. The frequencies come in units (**STEPS**) of 5, 10, 12.5, 25, 50 or 100 kHz.
- Because the frequencies can be selected by pressing the step key in both the Search and Manual modes, you should select the desired step frequency beforehand when entering frequencies.

1 In Manual or Search mode, press the step key until the desired **STEP** frequency appears on the display.



SELECTING FREQUENCIES THROUGH DIRECT INPUT



- The receiver is not in Manual mode when "SEARCH", "SCAN", "PGM-SCAN" or the Memory Channel number appears on the display. (See page 26.)
- In Wide FM receive mode, only 50 kHz and 100 kHz are available.

SETTING THE RECEIVE MODE

- You can select the receive mode while in Manual or Search modes.

1 Press the FUNCTION key.



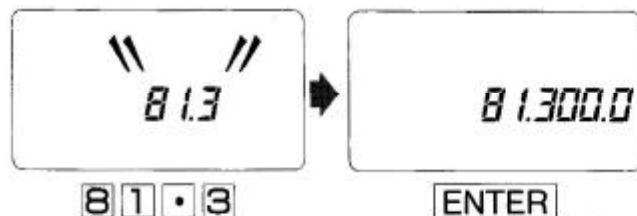
2 Press one of the RECEIVE MODE keys (WFM/NFM/AM) to set the desired receive mode.



Radio Frequencies

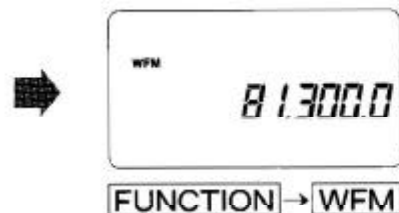
This receiver has a variety of bands available, including amateur traffic, commercial traffic, personal radio traffic, FM radio, TV and aeronautical traffic. In order to receive these various broadcasts, you have to set not only the frequency but also the receive mode for each band. To select the desired receive mode, press one of the Wide FM, Narrow FM or AM keys. The selected mode will be indicated. Be sure to set the frequency before setting the receive mode.

<Example> To receive 81.3MHz FM.



Enter the frequency with the NUMBER keys.

Press the ENTER key.



Set the receive mode.

ONE STEP FREQUENCY AND QUICK STEP FREQUENCY

- In Manual mode, press either the UP or DOWN key to move the frequency up one step or down one step. If you hold down the UP or DOWN key for more than one second, you can "walk" through the frequency steps.



SELECTING FREQUENCIES THROUGH DIRECT INPUT

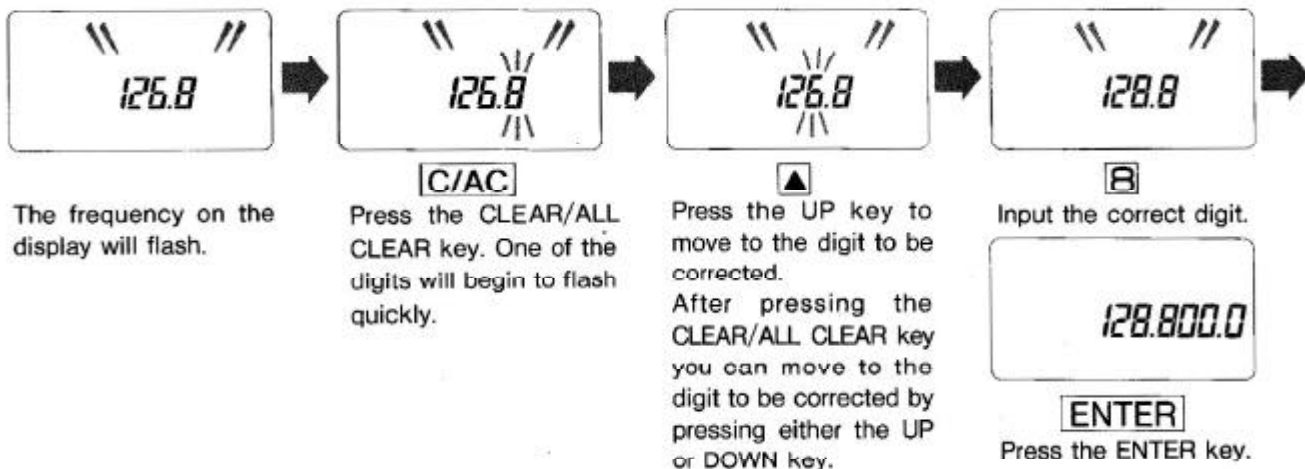
CORRECTING THE INPUT FREQUENCIES

When an incorrect frequency has been entered, press the ENTER key and start again from the beginning or press the CLEAR/ALL CLEAR (C/AC) key and enter the correct frequency with the NUMBER keys or TUNING dial.

IMPORTANT

- After pressing the ENTER key or pressing the CLEAR/ALL CLEAR key twice, the frequency cannot be corrected. You have to enter the correct frequency again from the beginning or use the UP/DOWN keys or the TUNING dial.

<Example> If you entered 126.8 MHz by mistake before pressing the enter key, and wish to enter 128.8 MHz.



SHIFTING FREQUENCIES IN MHz UNITS

- After pressing the FUNCTION key and the MHz key in manual mode, you can enter the frequency in the MHz position using either the NUMBER keys or the TUNING dial.

- 1 Set the receiver to the Manual mode. (See page 26.)

- 2 Press the FUNCTION key.



- 3 Press the MHz key.



- 4 Press the UP key once to shift the flashing digit to the 10 MHz position and twice to shift to the 100 MHz position.



- Press the DOWN key to shift the flashing digit to the 1 MHz position.

- 5 Enter the shift value you wish by using either the TUNING dial or the NUMBER keys.

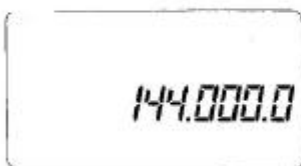


- 6 Press the ENTER key to complete this operation.



SELECTING FREQUENCIES THROUGH DIRECT INPUT

<Example> The frequency 144.0MHz is shown on the display and you wish to shift to the 10MHz position to enter a new digit, 194.0MHz.



Current frequency is shown on the display.



FUNCTION → **MHz**

Press the FUNCTION key and press the MHz key.

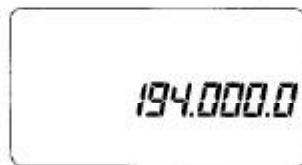


Press the UP key to move to the 10MHz position.



9

Enter the correct digit, 9.



ENTER

Press the ENTER key.

- When you turn the TUNING dial in Manual mode, the frequencies will jump to the next frequency according to the step frequency on the display.

Make sure that the receiver is in Manual mode (cancel "SEARCH", "SCAN", "PGM-SCAN" or "CH" if one of those modes is displayed.)

To cancel the Search mode :

Press the SEARCH key.

To cancel the channel Memory Scan mode :

Press the SCAN key and then the MEMORY READ key.

To cancel the Program Scan mode :

Press the PROGRAM SCAN key.



- 1 To cancel the Memory Recall mode :**
Press the MEMORY READ key or the MEMORY VFO key. The Memory Channel will shift to Manual mode.



- 2 Select the step frequency.**



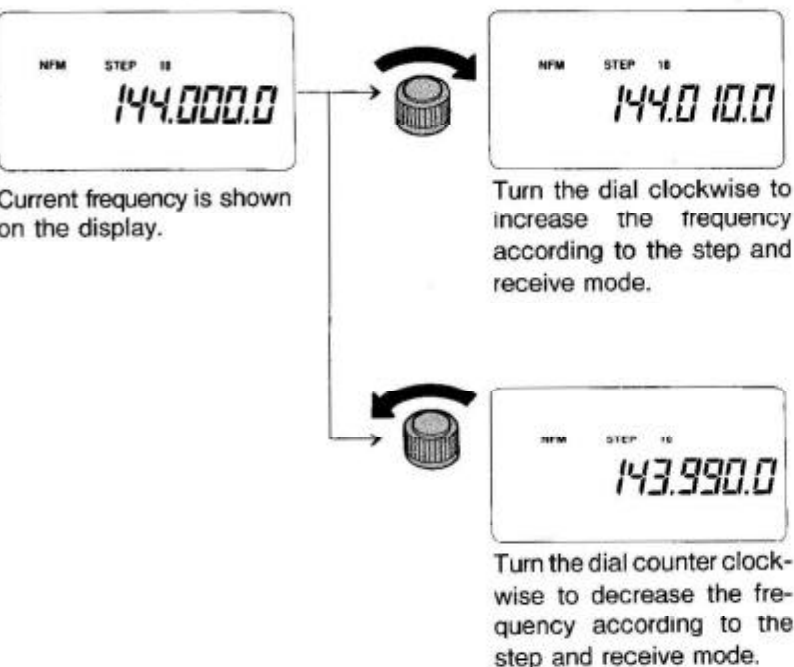
- 3 Set the receive mode.**

- 4 Turn the TUNING dial clockwise to increase the frequency according to the step displayed.**



SELECTING FREQUENCIES WITH THE TUNING DIAL

Example To select frequencies using the TUNING dial.



- All transmitted signals have somewhat of a band width, which is called "occupied frequency band width". Signals may be received if they are within the band width, but may not always be received at the strongest point.
- If the step frequency interval is too large, you may not catch the desired frequency. Therefore, set the step frequency at smaller intervals. While looking at the SIGNAL METER, turn the TUNING dial until the station frequency shows the strongest signal.

Strong Signal

S ■1■ ■2■ ■3■ ■4■ ■5■

Weak Signal

S ■1■

BAND SEARCH

- 1 If you don't know exactly which frequency you are searching for in the various bands, such as FM and air bands, you can directly jump to one of the 10 bands where data is already stored and search for a signal automatically.

- 2 Turn the SQUELCH control clockwise until no noise is heard from the speaker.



- 3 Press the BAND key you wish to receive.



- 4 Press the SEARCH key. The automatic search for the stations will begin. "SEARCH" and band indicators as well as one of the BAND Numbers "1~9, 0" will be displayed during this operation.



- See page 63 for the pre-set value of the BAND SEARCH keys (FM, AIR V~PRSNL). After pressing the desired BAND SELECTION key, press the SEARCH key. The Band Search will begin searching for the frequencies in that Band. If there is a station, the Search will stop and begin to receive that signal. If the signal is cut, the receiver will jump to another frequency and begin searching for another station.
- You can register the frequencies you desire in the 10 bands (FM~PRSNL) using the band memory method. (See page 56.)
- During Band search, you may change the receive mode or the step frequency. However, bear in mind that the receive modes and step frequencies for each band have already been set beforehand. (See page 63.)
- If you press the SEARCH key during search, the Search mode will be canceled.

<Example> To receive the air band (AIR VHF)



AIR V

Press the AIR V key.



SEARCH

"SEARCH" will be indicated as the receiver searches for stations on the air band. If there is a signal, the receiver will stop to receive it.

PAUSE AND DIRECTION

■ PAUSE

If you press the UP key or the DOWN key during Search, the Search will pause at the frequency indicated on the display. If no signal is detected within one second, the receiver will continue the Search.

■ DIRECTION

If you press the UP key or the DOWN key while the Search is stopped, you can move up or down one step frequency. Afterwards, the Search will continue in the same direction.

CONTINUOUS SEARCH

- When you do not know which frequency you wish or when you do not know exactly how to locate a particular frequency, this feature will enable you to automatically search for stations within the frequency range of this receiver using the indicated Receive mode and step frequency.

- 1 Turn the SQUELCH control clockwise until no noise is heard from the speaker.



- 2 Select the receive mode and the step frequency.

- 3 Press the SEARCH key. The receiver will begin to automatically Search for stations.



- If you press the SEARCH key during search, the Search mode will be canceled.
- If you have a rough idea of which frequency you wish, input the frequencies. You can change the direction of the Search with UP key or DOWN key and the receiver will begin automatic search for stations in the same direction.

〈Example〉 To start a Search from the frequency displayed.



SEARCH

Current frequency is shown on the display.

Press the SEARCH key. The receiver will automatically jump to the next frequency based on the step frequency displayed and begin to search for a signal until some signal is received.



CHAPTER 3

MEMORY AND SCANNING

SETTING THE CHANNEL MEMORIES.....	34
• SETTING THE CHANNEL MEMORIES.....	34
• CONTINUOUS MEMORY	36
RECALLING CHANNEL MEMORIES.....	38
• RECALLING CHANNEL MEMORIES.....	38
• QUICK MEMORY CHANNEL.....	39
• RETURNING TO MANUAL MODE.....	40
• PASS MEMORY	41
• ERASING THE CHANNEL MEMORY	42
CHANNEL MEMORY SCAN	44
• CHANNEL MEMORY SCAN.....	44
• PAUSE AND DIRECTION.....	45
BANK SCAN.....	46
• BANK SCAN.....	46
PROGRAM SCAN.....	48
• REGISTERING THE PROGRAM SCAN	48
• PROGRAM SCAN.....	50
• PAUSE AND DIRECTION.....	51
PRIORITY FUNCTION	52
• REGISTERING THE PRIORITY CHANNEL	52
• RECEIVING THE PRIORITY CHANNEL	54

SETTING THE CHANNEL MEMORIES

■ There are 200-channel memories (1ch~200ch) available in this receiver. In Manual mode or when a SEARCH is stopped, you can use Channel Memories.

■ In this receiver, 20 channels can be grouped as one bank in the memory. Therefore, 10 banks are equal to 200 channels. If the channel memories are grouped according to the bank stored in the memory, you can use the Bank Scan function when using channel memories. (See page 46.)

1 Enter the desired frequencies and select the receive mode.

2 Set the desired Memory Channel (1ch~200ch) with the NUMBER keys. The Memory Channel you selected will flash on the display.



3

Press the FUNCTION key.



4

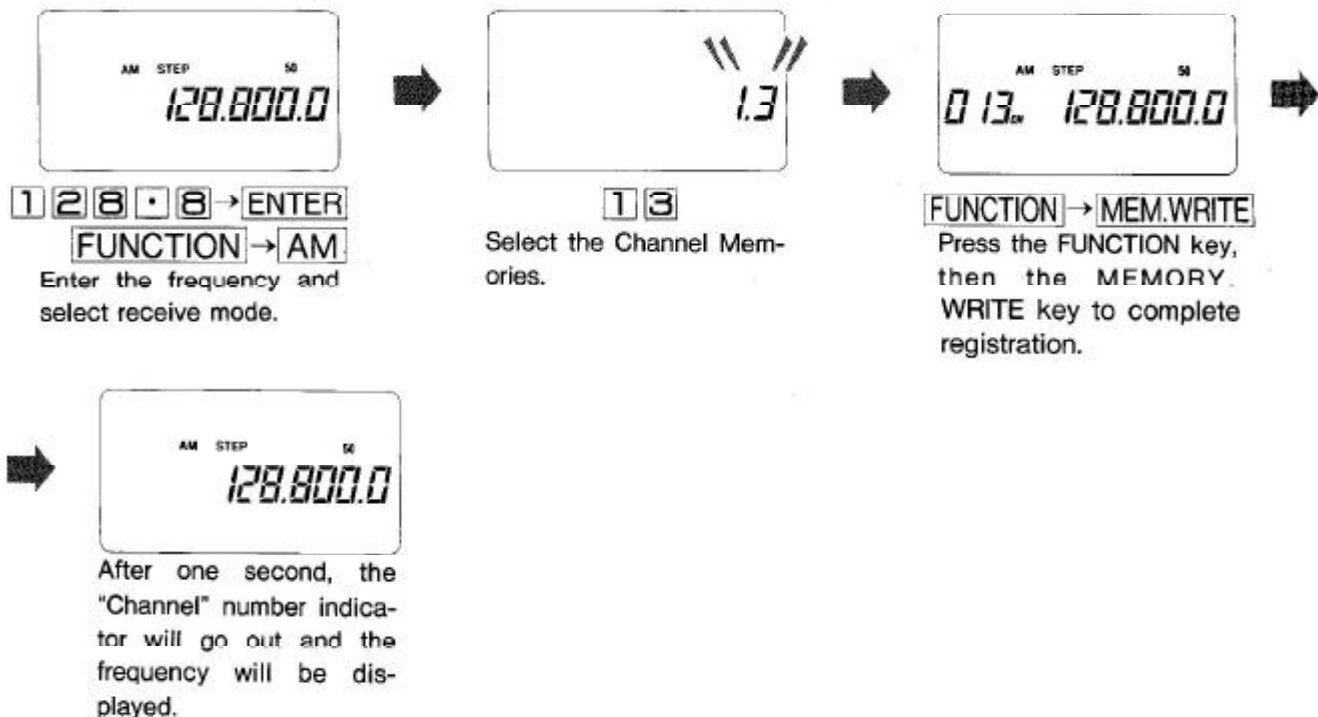
Press the MEMORY WRITE key. Two beeps will be heard to indicate the end of Memory Channel registration.



- The receive mode and step frequency indicated on the display will be stored in the memory.
- If you try to register more than 200 channels in the memory, "Error" will be indicated on the display for two seconds and the receiver will return to the previous operation. If you select a channel that is already stored in the memory, the data will be erased and replaced with new data.
- When you register the 0 channel, it will become the Priority Channel. (See page 52.)

SETTING THE CHANNEL MEMORIES

<Example> To register the air traffic frequency 128.8 MHz as the 13 channel.



CONTINUOUS MEMORY

■ When Search is stopped or in Manual mode, you can use Continuous Memory to skip some steps when setting the Channel Memories.

1 Enter the desired frequency and select the receive mode.

2 Press the FUNCTION key.



3 Press the MEMORY WRITE key. Two beeps will be heard to indicate the completion of Continuous Memory.



- Starting with the last recalled Channel, it will be stored in the memory.
- When recalling memory Channel during Memory Channel mode, the last recalled channel plus one will be recalled.
- During the Search mode or when you are receiving a signal, you do not have to input frequencies or set the receive mode. The indicated frequency and receive mode shown on the display will be stored.

SETTING THE CHANNEL MEMORIES

<Example> To register stations continuously in the memory when searching for air traffic on AIR V band.



AIR V → **SEARCH**

Press AIR V band key to find station.

FUNCTION → **MEM.WRITE**

Press the FUNCTION key, then the MEMORY WRITE key to complete registration of the signal as a Memory Channel.

After one second, the Channel number will go out and the receiver will return to the Search mode.

RECALLING CHANNEL MEMORIES

- 1** Set the channel you wish to recall with the **NUMBER** keys. The displayed digits will flash.



- 2** Press the **MEMORY READ** key.



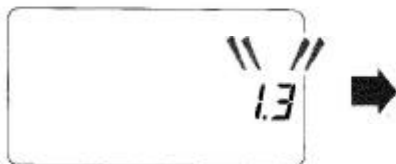
- The previous channel will be recalled if the **MEMORY READ** key is pressed without specifying any channel number.
- When you press the **MEMORY READ** key during Memory Channel mode, the channel following the last channel stored in memory will be recalled.
- You can recall channels from memory without any frequencies. However, the frequency will be displayed as "000.000.0".

- Priority Channel is recalled if 0 channel is recalled.
- If you try to register more than 201 channels in the memory, "Error" will be displayed for two seconds and the receiver will return to the previous operation.
- If you press the **MEMORY READ** key again while recalling the channels from the memory, the receiver will return to the previous station in the manual mode.
- When you recall the channel in the Pass Memory mode, the "CH" on the display will flash.

RECALLING CHANNEL MEMORIES

MOVING FREQUENCY IN THE MEMORY CHANNEL

<Example> How to recall channel 13(frequency 128.8 MHz)from the memory.



1 3

Specify the channel to recall using the NUMBER keys.



MEM.READ

Press the MEMORY READ key.

- After recalling a channel from memory, you can "walk" through the channels one step at a time in ascending or descending order by pressing the UP/DOWN keys or turning the TUNING dial. If you hold down the UP key or the DOWN key, you can "walk" continuously between the channels 1~200 in ascending or descending order.

RETURNING TO MANUAL MODE

- You can return the frequency in Memory Channel mode to Manual mode (VFO).

1 Recall the desired Memory Channel.

2 Press the FUNCTION key.

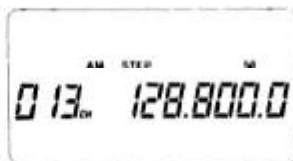


3 Press the MEMORY VFO key to enter MANUAL mode.



- When returning to Manual mode, the step frequency and the Receive mode stored in the Memory Channel will also be returned.

◀ **Example** ▶ To recall channel 13 (frequency 128.8 MHz) from memory and shift to the Manual mode.



1 3 → MEM.READ

Recall channel 13 from the memory.



FUNCTION → MEM VFO

Press the FUNCTION key and then press the MEMORY VFO key to return the Manual mode.

PASS MEMORY

- If you set the Pass Memory mode after recalling the channels from memory or during the Scan mode (see page 44), the channels in the memory will be skipped afterwards during scanning.

1 Recall the channel from memory that you wish to skip.

2 Press the FUNCTION key.



3 Press the MEMORY PASS key.

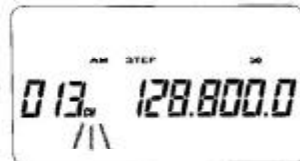


- Any station received during Scan mode (Scan halt mode) will be treated as a channel recalled from memory.
- To cancel the Pass Memory mode after recalling the channel from memory, press the FUNCTION and PASS key again.



- You cannot use the Pass Memory functions for channels which are not stored in memory.
- The "CH" indicator for channels that have been selected to be passed will flash when such channels are recalled.
- A Priority Channel cannot be selected as a Pass Channel.

<Example> To pass channel 13 during the SCAN mode.



1 3 → MEM.READ

To recall channel 13 from memory, press the NUMBER keys first, and then the MEMORY READ key.

FUNCTION → M.PASS

To specify channel 13 as the Pass Memory Channel, press the FUNCTION key first and then the MEMORY PASS key.

ERASING THE CHANNEL MEMORY

- Follow the steps below to erase data from the Memory Channel.

1 Recall the Memory Channel that you wish to erase.

2 Press the FUNCTION key.



3 Press the MEMORY WRITE key.



- If you erase a channel from memory, the "000.000.0" display will appear.
- If you erase a channel from memory while receiving a signal, the signal will be received even after erasing the channel from memory.
- You cannot erase the Priority Channel from the memory.

◀Example▶ To erase the data from channel 13.



1 3 → **MEM.READ**

First, recall channel 13 from memory by pressing NUMBER keys 13 and then pressing the MEMORY READ key.

FUNCTION → **MEM.WRITE**

Press the FUNCTION key and MEMORY WRITE key. Channel 13 will be erased from memory.

CHANNEL MEMORY SCAN

- Pressing the SCAN key enables the receiver to scan the channels (1ch~200ch) until it receives a signal. If the signal is cut, the receiver will start scanning again until it receives a new signal.

1

Turn the SQUELCH control clockwise until no noise is heard from the speaker.



2

Press the SCAN key. The receiver will begin to scan for a signal. The channel bank numbers in memory and SCAN will appear on the display during scanning. When a signal is received, the Bank Number will start flashing.



- Press the SCAN key again to cancel the Scan mode.
- You can only scan channels in memory.
- If all the channels stored in memory are in Pass Memory mode, "ALL PASS" will appear on the display and the Scan mode will not be available.

<Example> when you wish to Scan the channel memories



SCAN

Press the SCAN key. "SCAN" will appear on the display. The receiver will automatically begin to Scan the channel memories until it receives a signal.

PAUSE AND DIRECTION

■ PAUSE

If you press the UP or DOWN key during the SCAN mode, scanning will stop at the CHANNEL indicated on the display for one second.

■ DIRECTION

If you press the UP or DOWN key while the scanning is stopped, you can move up or down one channel and the receiver will begin scanning in the same direction.



- During the scan, you cannot use the TUNING dial. If you turn the TUNING dial while receiving a signal (scanning is stopped), the receiver will shift one channel and the scanning will continue.

BANK SCAN

- In this receiver, 20 channels can be grouped as one bank in the memory. Therefore, 10 banks are equal to 200 channels. To scan a specific bank, specify the Bank Number you wish to scan with the number keys and press the SCAN key.

- 1 Turn the SQUELCH control until no noise is heard from the speaker.



- 2 Specify the bank you wish to scan with the number keys. You can specify up to four banks by pressing the Number keys in order. The Bank Numbers you specify will flash on the display.



3

Press the SCAN key. The receiver will begin to scan the specified banks.



- See the chart below for the relationship between the Bank Numbers and the Channel memories.

BANK NUMBERS	1	2	...	9	0
CHANNEL NUMBERS	1~20	21~40	...	161~180	181~200

- The Bank Scan specified by the NUMBER keys will be canceled when you enter another mode.
- If all of the channels stored in banks are in the Pass Memory mode, the "ALL PASS" indicator will appear on the display for two seconds and the receiver will return to the previous receive mode.
- Only banks which are in the memory can be specified.

BANK SCAN

Example> To scan Bank 1 (1~20ch), Bank 3 (41~60ch) and Bank 0 (181~200ch) from the 10 banks in which channels have already been stored.



Specify the bank to scan by entering the Bank Numbers with the NUMBER keys.



Press the SCAN key to scan the specified banks. During Bank Scan, the Bank Numbers 1, 3 and 0 will appear on the display. When a signal is received, the Bank Scan Number will begin to flash.

REGISTERING THE PROGRAM SCAN

■ This receiver can scan selected ten channels selected from the previously stored memory channels.

1 Recall the channel you wish to store in the Program Scan.

2 Press the FUNCTION key.



3 Press the PROGRAM key. You will hear two beeps indicating that the channels have been stored.



- To confirm the channels stored in the Program Scan, turn the SQUELCH control counter clockwise and press the UP or DOWN key to confirm the channels.
- You can only register up to 10 channels (channels 1~9.0) in one program. If you try to register more than 10 channels, the 11th channel will be stored as the first channel.
- To erase the Program Scan, select the channels with the NUMBER keys, press the FUNCTION key, and then press the PROGRAM key.
- When you register a new Program Scan, it will start from the previously erased Program Scan number.

◀**Example**▶ When you wish to register channel 5 (78 MHz in the Wide FM receive mode) in the Program Scan



5 → **MEM.READ**

Recall channel 5 from memory by pressing the NUMBER key and the MEMORY READ key.

FUNCTION → **PROGRAM**

Press the FUNCTION key and the PROGRAM key to complete the Program Scan.

PROGRAM SCAN

1 Turn the SQUELCH control clockwise until no noise can be heard from the speaker.



2 Press the PROGRAM SCAN key. The "PGM-SCAN" will be displayed and the receiver will begin the Program Scan.



- The receiver will scan only those channels stored in the program. During the PROGRAM SCAN, which starts with the last channel stored, the specified "PGM-SCAN" (1-9,0) will be displayed.
- Press the Program Scan key again to cancel the Program Scan and the receiver will return to the previous mode.
- The TUNING dial will not function during the Program Scan. However, turning the tuning dial during the receive mode (Program Scan is stopped) will move the Program Channel up one channel and Program Scan will continue.

<Example> To scan the channels stored beforehand in the Program Scan



PGM.SCAN

Press the PROGRAM SCAN key. Program Scan will begin to search for signals. The program number will flash when a signal is received.

PAUSE AND DIRECTION

■ PAUSE

Press the UP or DOWN key during Program Scan to stop the Program Scan. The channel will appear on the display for one second to receive a signal. If no signal can be received within one second, the Program Scan will start again.

■ DIRECTION

When the Program Scan is stopped, press the UP key or DOWN key to move up or down one channel and to continue the Program Scan in a new direction.

REGISTERING THE PRIORITY CHANNEL

■ This receiver can store certain frequencies as Priority Channels, which are monitored in every six seconds during any of the Scan, Search, Memory Recalling, and Manual modes. The "PCH" will appear on the display when a Priority Channel is received.

1 Enter the desired frequency as a Priority Channel in the Manual mode.

2 Specify the Receive mode.

3 Press the "0" NUMBER key.



4 Press the FUNCTION key.

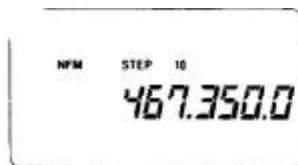


5 Press the MEMORY WRITE key. You will hear two beeps when the Priority Channel has been stored.



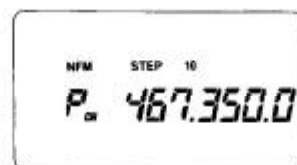
- The Priority Channel is stored in the memory as the 0 channel.
- The Priority Channel is pre-set at 144.0 MHz in the Narrow FM Mode at the factory.
- To check the stored Priority Channel, recall channel 0.
- When you register the Priority Channel, the receive mode and the step are also stored automatically.

<Example> To register 467.35MHz (Narrow FM Mode) as the Priority Channel



4 6 7 . 3 5 →
 ENTER → FUNCTION
 → NFM

Enter the desired frequency with the NUMBER keys and press the ENTER key. Then, press the FUNCTION key and select the receive mode using the RECEIVE MODE keys.



0 → FUNCTION →
 MEM.WRITE

Press the 0 NUMBER key and the FUNCTION key. Then press the MEMORY WRITE key to register 0 as the Priority Channel.



One second later, the "PCH" will go out and the desired frequency will be displayed.

RECEIVING THE PRIORITY CHANNEL

1

Press the FUNCTION key in the receive mode.



2

Press the PRIORITY key to receive the Priority Channel. The "PRI" will appear on the display.



- To cancel the Priority function, press the FUNCTION key and the PRIORITY key.

CHAPTER 4

USEFUL FUNCTIONS

CHANGING THE SEARCH BAND.....	56
SKIP FUNCTION	58
DELAY FUNCTION	58
NON-MODULATION PASS FUNCTION	59
AGAIN FUNCTION	59
BATTERY SAVE FUNCTION	60
CANCELING THE BEEP TONE.....	60

CHANGING THE SEARCH BAND

■ You can change the searching range of the SEARCH BAND keys (FM, AIR V ~ PRSNL). (See page 63)

1 While in the Manual mode, select the step frequency and receive mode.

2 Press the FUNCTION key.



3 Press the BAND WRITE key.



4 Enter the lower limit of the band frequency.

5 Enter the upper limit of the band frequency.



6 Press the SEARCH BAND key to change the searching range.



7 Press the ENTER key. You will hear two beeps when the searching range has been changed.



- Although in the above steps you enter the lower and then the upper limit of the band frequencies, you can reverse the order if you like.

<Example> To change the range of the SEARCH BAND to 1260 MHz through 1300 MHz with a 10 kHz step frequency in Narrow FM receive mode.



Select the step frequency of 10 kHz and the Narrow FM receive mode in Manual mode.



FUNCTION → **BAND WRITE**

Press the **FUNCTION** key and then the **BAND WRITE** key.



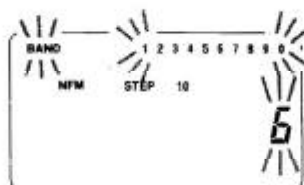
1 2 6 0 → **ENTER**

Enter the lower limit of the Band Search and press the **ENTER** key. The displayed frequency will go out.



1 3 0 0 → **ENTER**

Enter the upper limit of the Band Search and press the **ENTER** key. The displayed frequency will go out.



MARINE

Press the **SEARCH BAND SELECTION** key (**MARINE** in this case).



ENTER

Press the **ENTER** key to complete the registration. The receiver will return to the frequency initially displayed.

SKIP FUNCTION

- You can use this function to "INDEX MONITOR" signals during Search, Channel Memory Scan or Program Scan. The receiver will stop (for five seconds) at each signal before moving on to the next signal.

1 Press the FUNCTION key.



2 Press the Skip key to start the Skip function.



❖ IMPORTANT

- The Skip function is not available during direct entry with the NUMBER keys (numbers flash on the display).



- To cancel the Skip function, press the FUNCTION key and the SKIP key again.
- The "SKIP" will light when the Skip function is on.

DELAY FUNCTION

- It takes two seconds to move up or down from one channel to another during scanning or searching signals. With the DELAY function, this timing can be delayed to four seconds.

1 Press the FUNCTION key.



2 Press the DELAY key to activate the Delay function.



- To cancel the Delay function, press the FUNCTION key and the DELAY key again.
- While the Delay function is on, the "DELAY" will be displayed.

❖ IMPORTANT

- During direct entry with the NUMBER keys (when numbers are flashing on the display), the Delay function is not available.

NON-MODULATION PASS FUNCTION

■ During Search, Channel Memory Scan and Program Scan modes, the receiver will begin to scan or search for the next signal after three seconds if a non-modulated signal is received.

1 Press the FUNCTION key.



2 Press AF SCAN key to activate the Non-modulation PASS function.



- To cancel the Non-Modulation Pass function, press the FUNCTION key and the AF SCAN key again.
- When the Non-Modulation PASS function is enabled, the "SEARCH", "SCAN" or "PGM-SCAN" will flash on the display.



IMPORTANT

During direct entry with the NUMBER keys (numbers flash on the display), the Non-Modulated function is not available.

AGAIN FUNCTION

■ If you press the AGAIN key during the Search mode, the channel will return to the previous frequency in the same band. During the Channel Memory Scan mode, the receiver will return to the previous channel.

1 Press the FUNCTION key.



2 Press the AGAIN key. The Again function is activated.



- The Again function only works during the Search mode and the Channel Memory Scan mode.

BATTERY SAVE FUNCTION

- This function checks whether or not the receiver is receiving a signal. If no signal is being received, power to the receiver will shut off in order to conserve battery power.

1 Press the FUNCTION key.



2 Press the SAVE key to activate the Battery Save function.



- To cancel the Battery Save function, press the FUNCTION key and the SAVE key again.
- If the Battery Save function is on and no signal is being received, the "Sleep" will be displayed and the power will automatically shut off.
- When the Battery Save function is on, "SAVE" will be displayed.
- The Battery Save function only works during Manual Receive mode and Recalling Channel Memories mode and does not work during Search, Memory Scan and Program Scan mode.

CANCELING THE BEEP TONE

1 Press the FUNCTION key.



2 Press the BEEP key to cancel the beep tone.



- To activate the beep tone function, press the FUNCTION key again and then, the BEEP key again.
- When the beep function is on, the "BEEP" will be displayed.
- The beep tone indicates if you are doing the correct key operation or not.
- The following beeps indicate three different operations:
 - One beep indicates input from a NUMBER key or an individual key.
 - Two beeps indicate the completion of memory operations (storing and erasing operations).
 - Three beeps indicate an error.

❖ IMPORTANT

- The beep tone cannot be canceled during direct entry (when numbers are flashing on the display) using the NUMBER keys.

CHAPTER 5

THINGS TO KNOW

RECEIVING FREQUENCY RANGE

Guaranteed Range: 8~1300 MHz
(Displayed Range: 0.1~1300 MHz)

STEP FREQUENCY

5/10/12.5/25/50/100 kHz
(Wide FM mode: 50/100 kHz)

RECEIVE MODES

WFM/NFM/AM

RECEIVE MODE SENSITIVITIES

NFM: Less than $0.5\mu\text{V}$ (SINAD 12dB)
(1000~1300 MHz is less than $1\mu\text{V}$)

WFM: $0.75\mu\text{V}$ standard (SINAD 12dB)

AM: $0.5\mu\text{V}$ standard (S/N 10dB)

NUMBER OF CHANNEL MEMORIES AND BANDS

Channel Memories: 200

Band Memories: 10

Priority Channel: 1

SCAN/SEARCH SPEED

Approx. one second per 15 channels/20 steps

ANTENNA IMPEDANCE

50Ω

POWER SUPPLY

12V DC

AC ADAPTOR

Output: 12V 400mA(min.)

Connector: Type I

SPEAKER MAXIMUM POWER

700mW (8Ω)

CURRENT CONSUMPTION

Maximum Output: 420 mA

Sleep mode: 210 mA

OPERATING TEMPERATURE RANGE

50°C

EXTERNAL DIMENSIONS

160mm(W) $\times$ 45mm(H) $\times$ 155mm(D) (Excluding protruding parts)

WEIGHT

650 g

ACCESSORIES

- Telescopic Antenna
- Car Cigarette Lighter Plug
- DC Power Supply Cord
- Car Mount Bracket
- Screws for Car Mount Bracket
- Owner's Manual

GENERAL SPECIFICATIONS

	BAND	FREQUENCY LIMITS (MHz)		STEP FREQUENCY (kHz)	RECEIVE MODES
		Lower Limit	Upper Limit		
1	FM	76	90	50	WFM
2	AIR V	108.0	142.0	50	AM
3	AIR U	250.0	327.5	100	AM
4	HAM V	144.0	146.0	10	NFM
5	FIRE	146.01	154.5	10	NFM
6	MARINE	156.0	162.05	12.5	NFM
7	POLICE U	347.1875	363.05	12.5	NFM
8	HAM U	430.0	440.0	10	NFM
9	MCA	850.025	859.975	12.5	NFM
10	PRSNL	903.0375	904.9875	12.5	NFM

The above specifications indicate the pre-set values.

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