[MULTI BAND RECEIVER MVT-5000]

YUPITERU

25~550/800~1300MHz

OWNER' S MANUAL

MVT-5000 SPECIFICATIONS

Frequency range
Low BAND : 25.0 MHz - 550.0 MHz
High BAND : 800.0 MHz - 1300.0 MHz

Tuning steps (selectable)
5 kHz,10 kHz,12.5 kHz,25 kHz,30 kHz

Mode
Low BAND : FM narrow (F3E) / AM (A3E)
High BAND : FM narrow (F3E)

Circuit type
Low BAND : Triple conversion super-heterodyne
High BAND : Double conversion super-heterodyne

Sensitivity
Low BAND : FM 0.5μV for 12 dB SINAD
(0.23μV TYP at 287.5 MHz)
AM 0.8μV for 10 dB S+N/N
(0.33μV TYP at 287.5 MHz)
High BAND : FM 1.0μV for 12 dB SINAD
(0.26μV TYP at 850.1 MHz)

Intermediate frequencies
Low BAND : 1st IF 705 MHz
2nd IF 45 MHz
3rd IF 455 kHz
High BAND : 1st IF 45 MHz
2nd IF 455 kHz

Image rejection
Low BAND (at 287.5 MHz) : 1st 20dB TYP
2nd 46dB TYP
3rd 73dB TYP
High BAND (at 1050.1 MHz) : 2nd 80dB TYP

IF rejection
Low BAND (at 287.5 MHz) : 1st 27dB TYP
2nd 56dB TYP
3rd > 100dB
High BAND (at 1050.1 MHz) : 1st 46dB TYP
2nd > 100dB

Selectivity
-6dB : 19 kHz TYP
-50dB : 23 kHz TYP

Search rate
Fast : Aprox. 20 steps/sec
Norm. : Aprox. 8 steps/sec

Scanning rate:
Aprox. 5 steps/sec

Priority sampling time:
Aprox. 5 seconds

Delay time
Norm. : Aprox. 2 seconds
Slow : Aprox. 4 seconds

Memories
Frequency : Rewriteable 100 memories
(20 channels x 5 banks)
Search band : Rewriteable 10 memories

Antenna impedance:
50 ohms (nominal)

Audio output power:
100 mW (into 8 ohms)

Audio output impedance:
4 to 16 ohms

Power requirements
Voltage : 4.8 V DC (Ni-Cd batteries)
6 V DC (UM/SUM-3,R6 or "AA" CELL) x4
12 V DC (EXT DC power supply)
Current consumption (at 4.8 V DC)
Maximum audio power : Aprox. 170 mA
Squelched : Aprox. 105 mA
Power save (sleep) : Aprox. 4.5 mA

Usable temperature range:
0 to 50 ℃

Dimensions (WHD):
Aprox. 67 × 175 × 40 mm

Weight:
Aprox. 370 g

Accessories (supplied)
Telescopic antenna
AC 100V adapter
Car battery adapter
Belt clip (with screw)
Carrying pouch
Manual
Warranty card

*** BEFORE OPERATING YOUR MVT-5000 ***

i. This unit operates on four Ni-Cad batteries. Although this unit also operates with ordinary batteries, we strongly suggest you refrain from using ordinary batteries as there is a possibility of damaging the unit.

ii. Turn on the unit and check for "BATT" indication on the LCD. If this indication appears, make sure to recharge the unit before operation.

iii. Before operating the unit for the first time, make sure to press RESET button before initial usage.

iv. When recharging the batteries, make sure the unit is turned "OFF". Also, make sure to recharge the batteries for at least 15 hours.

v. The attached cigarette lighter plug is for use in cars with DC 12V battery only. Do not use in cars with DC 24V battery. Also, the attached direct car power supply lead wires are for use with DC 12V cars only (connect the red lead wire to the plus side and black lead wire to the minus side of the battery).

vi. Adjust the direction/length of the antenna to find out the best reception setting. For receiving distand/weak signals, we suggest you use an external antenna suited for such frequencies from your local dealer. In doing so, do not purchase an antenna with built-in amplifier.

vii. Avoid operating/placing this unit in direct sunlight or near electrical appliances capable of creating heat exceeding 60°C. Also, avoid operating/placing this unit in heavily humid area such as the bathroom.

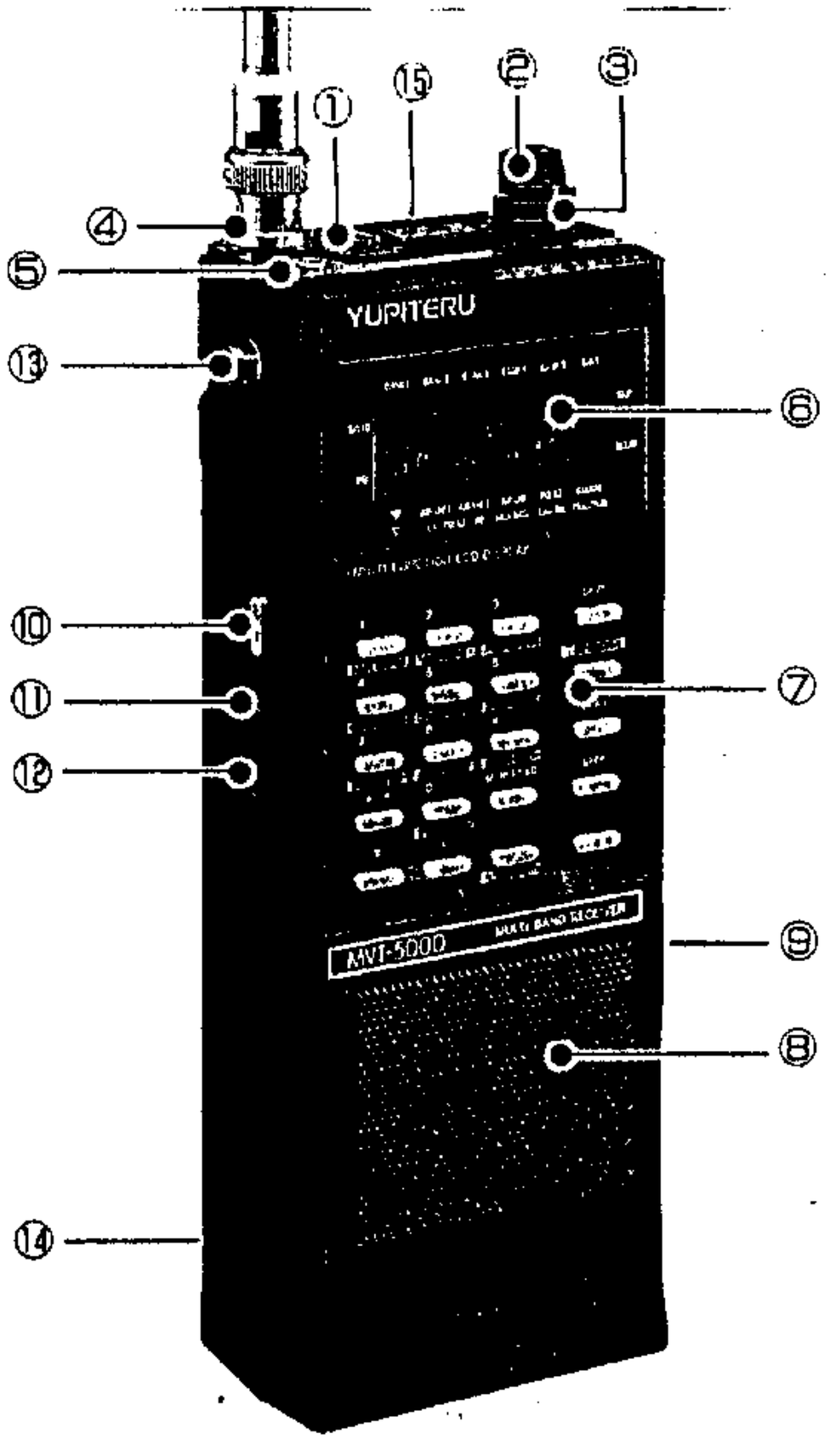
viii. Avoid operating this unit near television, radio, etc. as they may cause noises/interferences.

ix. Avoid cleaning this unit using any material that may cause electro-magnetic discharge such as solvents, polyester rugs, etc. Use only soft dry cloth.

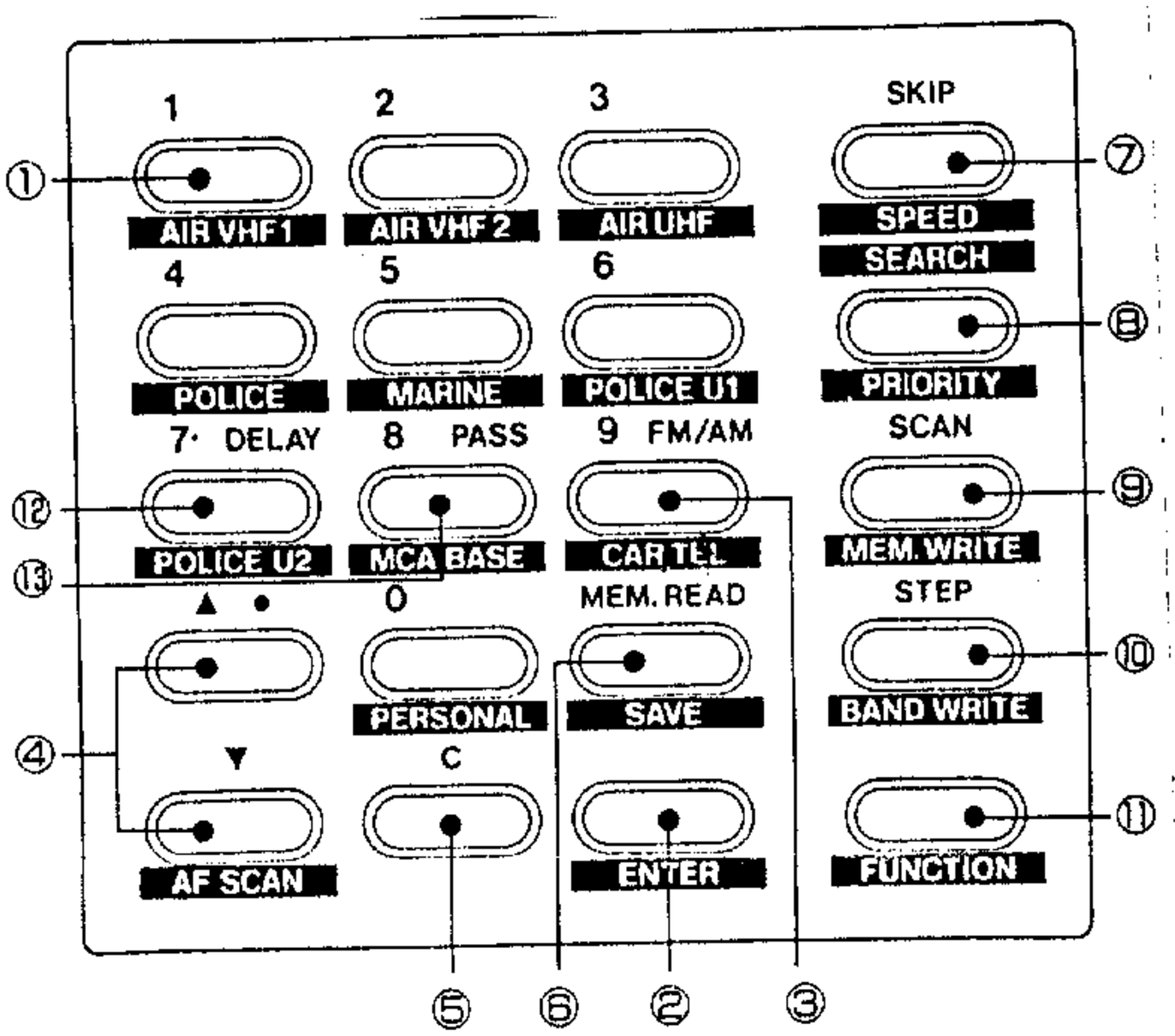
x. Due to the employment of PLL synthesizer tuner, this unit may sometime be unable to receive few signals (due to its internal electro-magnetic interference). Morever, if a strong signal exists nearby or if an external antenna is used, the unit may pick up cross-modulation.

A. NAME OF EACH SECTION

1. POWER SWITCH
2. VOLUME CONTROL KNOB
3. SQUELCH CONTROL KNOB
4. ANTENNA CONNECTOR
5. EXTERNAL SPEAKER JACK
6. LCD
7. FUNCTION KEYBOARD
8. SPEAKER
9. EXTERNAL POWER JACK
10. LAMP SWITCH
11. KEY LOCK SWITCH
12. RESET SWITCH
13. CARRYING BELT STOPPER
14. BATTERY COMPARTMENT
15. CLIP STOPPER



B. NAME OF OPERATING SECTION AND THEIR FUNCTION



1. [1]~[0],[·]

NUMERIC KEYS

Used to designate desired frequency and memory channel.

[AIR VHF1]~[PERSONAL]

SEARCHBAND DESIGNATION KEYS

Used to designate the desired band. Use of [SEARCH] key will enable the unit to search the pre-memorized frequencies within the desired band.

* The below frequencies are pre-memorized into each band:

Band	Lower Edge(MHz)	Upper Edge(MHz)	Step	Modulation
AIR VHF1	108.0	136.01	10	AM
AIR VHF2	225.0	261.5	25	AM
AIR UHF	275.0	327.5	25	AM
POLICE	146.01	154.5	10	FM
MARINE	156.0	162.05	5	FM
POLICE U1	347.7125	348.2125	12.5	FM
POLICE U2	361.5	362.5	12.5	FM
MCA BASE	850.025	859.975	12.5	FM
CAR TEL	870.025	884.975	12.5	FM

2. [ENTER]

ENTER KEY

Press this key after setting deisred frequency/data.

3. [FM/AM]

RECEPTION MODE SELECTION KEY

Press [FUNCTION] - [FM/AM] to select the desisred modulation.

4. [▲] [▼]

UP/DOWN KEY

When in MANUAL mode: Single press shifts frequency by 1 step.
Continuous press shifts frequency in fast mode.

When in MEMORY SCAN mode: Press to shift channel/designate scanning direction.

When in SEARCH/BAND SEARCH mode: Press to shift frequency by 1 step/designate search direction.

When in MEMORY READ mode: Single press shifts channel to next channel.
Continuous press shifts memory channel.

[AF SCAN]

AF SCAN KEY

Pressing [FUNCTION]-[AF SCAN] keys when in scan or search mode will shift the channel to next receptable channel. Further pressing of these keys will enable the unit to return to normal mode.

5. [CLEAR]

CLEAR KEY

Press this key to erase any wrong frequency/data.

6. [MEM. READ]

MEMORY READ KEY

Press desired channel number then press [MEM. READ] key to recall the memorized frequency onto the LCD. Pressing the [MEM. READ] alone will recall the last memorized/used frequency.

[SAVE]

BATTERY SAVE KEY

Pressing [FUNCTION] - [SAVE] keys will extend the battery life of the unit when in manual reception or memory recall mode. Further pressing of these keys will enable the unit to return to normal mode.

7. [SKIP]

SKIP KEY

Single press of [SKIP] key will enable the unit to shift to next channel, with 7 seconds interval, when in scan or search mode. Press again to return to normal mode.

13. [PASS]

PASS MEMORY

Pressing of this key will enable the unit to pass the pass-memorized channel during the scan mode.

C. OPERATION

1. MANUAL MODE

[FREQUENCY] - [ENTER]

* Wish to receive 147.28 MHz

[1] [4] [7] [.] [2] [8] - [ENTER]

- Upon pressing the number keys, frequency starts to blink and when the [ENTER] key is pressed, frequency lights and starts receiving.

"147.28" --→ 147.280.0

blinking lit (receiving)

* If wrong frequency is entered, press [C] clear key and enter correct number. Or, press [ENTER] and start from the beginning.

* 1 step shift/fast upward and downward shift of frequency

- By pressing [▲] or [▼] key once, frequency moves 1 step up or down.

147.290.0 or 147.270.0 if 10 KHz step

147.280

142.50 162.50

If pressed for more than a second, fast upward and downward shift will be repeated within the band as long as pressing continues.

** Notes: This unit will allow manual selection of FM/AM mode by pressing [FUNCTION] - [FM/AM]. (FM mode will not be displayed on the LCD.)

Although FM/AM mode is selectable at high band (800 - 1300 MHz), the unit will not receive in AM mode.

Pressing [STEP] key will enable to shift frequency step to one of the following: 5 KHz, 10 KHz, 12.5 KHz, 25 KHz, 30 KHz. However, when 30 KHz is selected, it will not be displayed on the LCD.

If wrong frequency or out of band frequency is entered, LCD will display "Error".

2. SEARCH MODE

[BAND DESIGNATED] - [SEARCH]

* Wish to receive POLICE

[POLICE] - [SEARCH]

- By pressing [POLICE] and then [SEARCH], the unit will start to search for the frequency from the lower edge through the upper edge within that band.

[SPEED]

SPEED KEY

Press [FUNCTION] - [SPEED] keys to change the speed of scan or search to fast rate. Further pressing of these keys will enable the unit to return to normal rate of scan or search.

8. [SEARCH]

SEARCH KEY

Press this key to start/stop search or band search operation. Pressing the [SEARCH] key alone will enable upward search from the last frequency displayed on the LCD. Pressing the [SEARCH] key after designating the desired band key will enable upward search within that band.

[PRIORITY]

PRIORITY KEY

Press [FUNCTION] - [PRIORITY] keys to monitor the priority channel every 5 seconds.

9. [SCAN]

SCAN KEY

Press to start automatic scanning and press again to stop scanning.

[MEM. WRITE]

MEMORY WRITE KEY

Press to memorize desired channel.

10. [STEP]

STEP KEY

Press to select frequency steps.

[BAND WRITE]

BAND WRITE KEY

Press to memorize the desired band. (This key is used to rewrite the pre-memorized bands.

11. [FUNCTION]

FUNCTION KEY

Press this key to shift the function of another key with the same color of lettering.

12. [DELAY]

DELAY KEY

Press [FUNCTION] - [DELAY] keys to delay the search or memory scan at the time of inconstant signal reception. Further pressing of these keys will enable the unit to return to normal search/memory scan mode.

- If a certain frequency is received, the unit will be in reception mode and if the reception is lost, the unit will start to search again. Press [SEARCH] again to stop searching.

* Designating search direction and frequency steps

- During search mode, if you wish to skip the received frequency and go to next frequency, press [▲] or [▼] keys to designate the direction of search.

* Continuous search

- This unit can receive 25 - 550 MHz (low band) and 800 - 1300 MHz (high band). If the present receiving frequency is in the low band, pressing the [SEARCH] key alone will enable to search through the whole low band. Same operation while receiving high band will enable to search through the whole high band. If a frequency is received, the unit will be in the reception mode and if the frequency is lost, the unit will start to search again.

** Notes: Use squelch control before starting search function to eliminate noise.

The pre-memorized band data in [AIR VHF1] ~ [PERSONAL] can be changed manually by following the instructions on the latter part of this manual.

Although this unit is pre-programmed with frequency steps relative for each band, you can change the frequency step by pressing [STEP] key to select desired frequency step and then press [SEARCH].

3. CHANNEL MEMORY

* Memorizing frequency by designating the desired channel

- [FREQUENCY] - [ENTER] - [ch NO] - [FUNCTION] - [MEM. WRITE]

* Wish to program 108.6 MHz into channel 3

[1] [0] [8] [.] [6] - [ENTER] - [3] - [FUNCTION] - [MEM. WRITE]

* Continous memory

- By using the search or search band function in the previous part of this manual, search for the receptable frequency. If a frequency is received, press [FUNCTION] - [MEM. WRITE] to memorize that frequency. Repeat this operation for desired receptable frequency from up to 100 memory channels (00ch to 99ch). Remember to press [SEARCH] key again to stop the search function and then carry out the memorizing procedures.

** Notes: This unit can memorize receptable frequencies consecutively from 00ch to 99ch. Or, it can memorize desired receptable frequencies into the desired channels.

Once the desired frequencies are memorized by either of the above method, you can easily scan through those channels by following the scanning method described on the latter parts of this manual.

4. MEMORY SCAN

* How to scan

- Press [SCAN] key to scan through memorized channels. If a receptable memorized channel exists, the unit will stop scanning and receive that

channel. If the channel reception is lost, the unit will resume scanning until the next receptable channel is found.

* Designating scanning direction

- By pressing the [▲] or [▼] keys, you can move to the next channel. The [▲] or [▼] key will decide the direction of scanning thereafter.

** Notes: Use squelch control before starting scanning function to eliminate noise.

The unit will only scan through the memorized channels. If none of the channels are memorized, the unit will not scan.

Pressing of the [MEM. WRITE] key during the scan mode will stop the scanning and will display the last channel/frequency.

This unit will categorize the memorized channels into 5 banks as follows: 00ch - 19ch (bank 1), 20ch - 39ch (bank 2), 40ch - 59ch (bank 3), 60ch - 79ch (bank 4), and 80ch - 99ch (bank5).

Pressing the desired bank keys (numeric keys of [1] through [5]) **before** scanning mode will designate the desired bank of scanning and start scanning from the first memeorized channel in that bank.

If you press the desired bank keys **during** the scanning mode, the unit will skip the designated bank(s) and will resume scan from the next bank upward. Pressing the bank-pass key originally pressed will enable the unit to return to normal mode of scan.

5. MEMORY CHANNEL RECALL

* How to recall desired memory channel

- Press [chNO] - [MEM. READ] keys to recall desired memory channel.

* Wish to recall ch17

- Press [1] [7] - [MEM. READ]. The frequency memorized into ch17 will be displayed (along with its channel number) on the LCD. Pressing the [MEM. READ] key again will erase the display and the unit will return to manual mode.
- After the desired channel is recalled onto the LCD, pressing of [▲] or [▼] key will enable the channels to shift (one channel at a time) toward the desired direction. If the [▲] or [▼] key is pressed continuously, the channels will shift upward or downward at a faster rate.

** Notes: If a channel that has not been memorized is recalled, the LCD will display "000.000.0" with the recalled channel number momentarily, and will display the last frequency used.

Pressing of the [MEM. READ] key alone will display the last memory channel recalled onto the LCD.

6. REWRITING THE CONTENT OF BAND MEMORY

* How to rewrite/change the content of pre-programmed band memory

- Press [FUNCTION] - [BAND WRITE] - [FREQUENCY] - [ENTER] - [FREQUENCY] - [ENTER] - [BAND NO.] - [ENTER].

* Wish to rewrite the frequencies pre-programmed into band-key 3 (AIR UHF) to 50.1 MHz - 59.9 MHz

- Press [FUNCTION] - [BAND WRITE] - [5] [0] [.] [1] - [ENTER] - [5] [9] [.] [9] - [ENTER] - [3] - [ENTER].

7. SKIP

Pressing of the [SKIP] key during scan or search modes will enable the unit to monitor receptable channel/frequency for 7 seconds each and will move on to the next receptable channel/frequency. Press [SKIP] key again to return to normal mode. This function is useful while index monitoring.

8. DELAY

During scan or search modes, if a certain channel/frequency reception is lost, the unit will scan/search for the next receptable channel/frequency automatically with 3 seconds interval between them. By pressing the [FUNCTION] - [DELAY] keys, this interval will be extended to 5 seconds. Press [FUNCTION] - [DELAY] keys again to return to normal mode.

9. SPEED

Pressing of [FUNCTION] - [SPEED] keys during the scan or search modes will enable the unit to scan/search at a faster speed (rate). Press the [FUNCTION] - [SPEED] keys again to return to normal speed (rate) of scan/search.

10. AF SCAN

During scan or search modes, press [FUNCTION] - [AF SCAN] keys to skip no-modulated signals. The "SCAN" or "SEARCH" letters displayed on the LCD will blink to show the function is activated. Press [FUNCTION] - [AF SCAN] keys again to return to normal mode.

11. BATTERY SAVE

During manual reception or memory recall modes, press [FUNCTION] - [SAVE] keys to extend the battery life (this function cannot be used under scan or search modes). When this function is activated, the unit will utilize its reserve battery, trying to receive the designated channel/frequency. If the designated channel/frequency is received, the unit will stay on and if not receptable or lost, the unit will turn off automatically and will repeat the cycle every several seconds until the designated channel/frequency is received. Press [FUNCTION] - [SAVE] keys again to return to normal mode.

12. PRIORITY

Pressing of [FREQUENCY] - [ENTER] - [FUNCTION] - [PRIORITY] - [ENTER] keys will enable the unit to memorize single priority channel. Press [FUNCTION] - [PRIORITY] keys to activate the function. When the function is activated, the unit will monitor the memorized priority channel every 5 seconds, even while receiving other channel(s) by scanning or search mode. During activation, the channel number display section of the LCD will displan "Pch". (Note that the pre-programmed frequency of the priority channel is 144.0 MHz.)

13. PASS MEMORY

Pressing of the [chNO] - [MEM. READ] - [FUNCTION] - [PASS] keys before scanning will enable the unit to pass the designated channel(s) during the actual scanning of channels. Or, pressing of the [FUNCTION] - [PASS] keys when channel is received during the scan mode will enable the unit to pass that channel(s) in the scanning thereafter.

Press [chNO] - [MEM. READ] keys to check if the channel(s) is actually pass-memorized. If it is, "CH" on the LCD will blink. (Note that this function will automatically cancel the bank-pass function.)