

**MANUAL FOR INSTALLATION
AND OPERATING INSTRUCTION**

**MINI HAND HELD TYPE
AIR/WEATHER BAND RECEIVER**

USER'S OPERATION MANUAL

MODEL : AR-108



Note :

While every precaution has been taken in the preparation of this manual, no responsibility for errors or omissions is assumed. Neither is any liability assumed for damages resulting from the use of information contained here in.

Although this product has undergone thorough and rigorous reliability tests, the manufacture will not be liable for any damages direct, indirect, incidental, special or consequential resulting from corruption or loss of any messages or alarms stored on recorder under any circumstances.

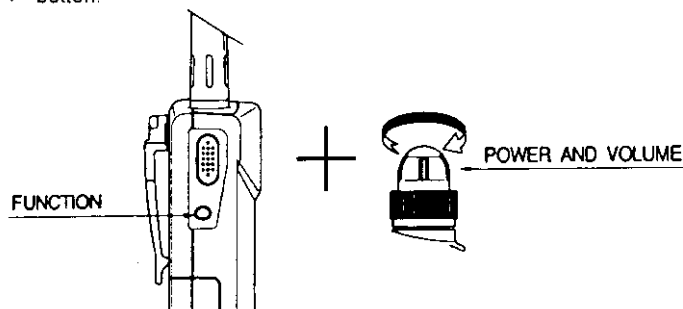
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Caution : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

■ OPTION SETTING MODE

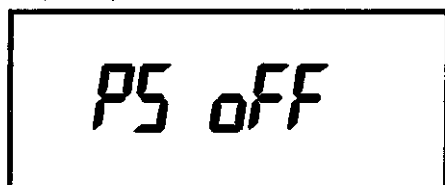
Press and hold "FUNC" button under the condition of Power off, and then turn on the radio. To enter each option setting mode, press "FUNC + ▲" or "▼" button.



1. Setting of Power Save mode

This feature allows to increase the useful life of your battery significantly.

- ▶ Display of Operating Power save On/Off setting Mode.

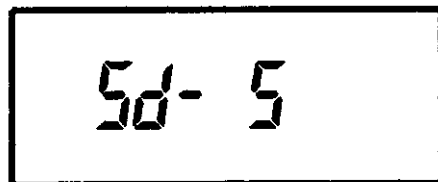


If you press the "▲" or "▼" button in this setting mode, power save On/Off will toggle on the LCD.

2. SCAN Delay Time

To select SCAN Delay time press FUNC and up button in Power Save mode. The Scan Delay feature allows the scanning process to stop for the fixed time when a signal is received at the radio. After this time, the scanning process will continue.

- ▶ Display of Operating SCAN Delay Time Mode



If you press the "▲ or ▼" button in this setting mode, scan delay time will Increase (or decrease) 1 second per press the button and changed contents will appear on the LCD.

NOTE : In the option setting mode,

- A. If you hold "FUNC" button and then press "▲ or ▼" button, the next (or previous) setting mode will appear on the LCD.
- B. If you press the "monitor " button, all changed contents will be stored and the radio will return for normal operation.
- C. Other buttons located on the front of the radio will not operate. If you press these buttons, error beep tone will sound.

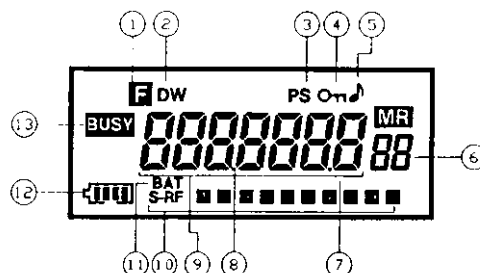
3.Channel Step Option

Press "FUNC" button at the power up the unit will enter into option Setting mode. The first option in the option set mode is Channel step option. This option let the user select from following channel steps 25KHz and 1MHz.

Since selecting one of the above channel step, the unit let the user go up, down or scan the allocated frequency spectrum in the multiple of the selected channel step.

DESCRIPTION OF FEATURES

● Display Panel Features



1. Function Mode

Indicates the "FUNC" button has been selected.

2. DW

Indicates that the "Dual Watch" feature has been activated.

3. PS

Indicates that the radio is in the "Battery Save" or "Power Save" mode.

4. Lock

Indicates the "Key Lock" feature has been activated.

5. Beep

Indicates that "Beep" tone confirmation is on.

6. Memory channel Indicator

Display the mode channel number.

7. d2 (Dot No. 2)

Not Used

8. d1 (Dot No. 1)

This dot is used to display the RX Frequency. (Unit : MHz)

9. Channel (Frequency) Indicator

Display Frequency No.

10. Signal strength indicator

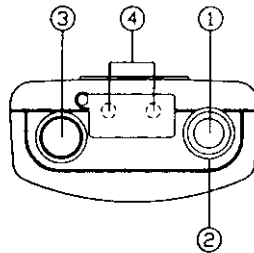
The radio incorporates a ten segment incoming signal in the LCD. When receiving a signal, the meter will indicate how strong the signal is. A weak signal will be indicated by one or two segments, while a very strong signal will have 8 to 10 segments.

11. Battery remainder level meter
Not Used

12. Battery
Indicates batteries are getting low. If the battery level is lower than the standard point, Battery Level Indicator will twinkle.

13. BUSY
Indicates that RF signal received.

● Top Panel Features



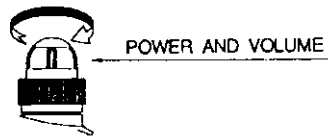
1. Power On/Off, Volume

Turn the Volume switch clockwise to turn power on and set desired volume. Turn the Volume button counter-clockwise to turn power off.

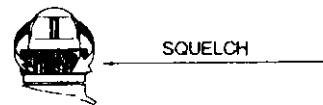
2. Squelch

This control is to cut off or eliminate receiver background noise in the absence of an incoming signal. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background or ambient background noise is eliminated. The incoming signals that are then received will be stronger than the background noise.

<Power and Volume>



<Squelch>



3. Antenna

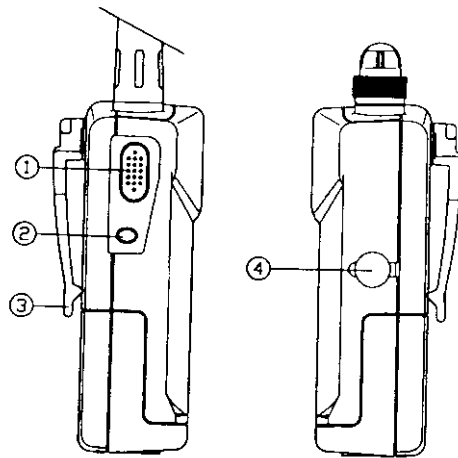
This antenna provides good receiver performance given its overall size.

4. Ear phone Jack

Let the user listen to the conversation in privacy

Dust Cover : When Earphone is not being used, this prevents dirt and moisture from getting inside the radio.

● Side and Back Panel Features



1. MON (Monitor)

Press and hold the "MON (Monitor)" button in the receiving mode to override squelch control. This is useful when weak signal is to be monitored.

2. Function (FUNC) button

This button, when used in conjunction with the buttons in the front panel, allows for access of each function.

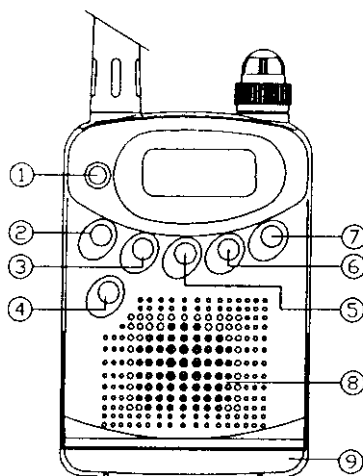
3. Belt Clip

Allows for easy of carrying while attached to users belt.

4. DC Jack

Allows for using external DC Wall Charger.

● Front Panel Features



1. AI/WR

Press the "AI/WR" button to change the Air Band Weather Band alternate.

2. Channel Down(▼)

1) Channel Down(▼) button

Press the "▼" button to arrow to move to a lower Channel than is currently shown on the LCD.

2) Left Cursor function Button

Frequency Selection by Cursor Function (FUNC + ▼ Button)

Preferred frequency can be directly entered using cursor function in normal and memory mode. The preferred frequency however should be within allocated frequency of the receiver. To enter the frequency directly using cursor function; press "FUNC + ▲" button and the second digit of the frequency display will start to flash. Now press "▲ or ▼" button to change the value. Press "FUNC + ▲" button again to make the third digit to flash and change the value and so on until you have entered the desired frequencies.

The same procedure is followed for call and memory channels when selecting the desired frequency.

NOTE : If you have selected a frequency which is above or below the frequency range allowed, the unit will automatically go to either maximum or minimum frequency allowed.

3. Channel Up(▲)

1) Channel Up(▲) button

Press the "▲" button to arrow to move to a higher Channel than is currently shown on the LCD.

2) Right Cursor Button

Frequency Selection by Cursor Function (FUNC + ▲ Button)

The procedure for Cursor function using FUNC + ▲ key is same for FUNC + ▼ key.

The only difference is that last 6th digit start to flash first. Every time FUNC + ▼ key is pressed the next digit on left start to flash.

Band Selection "A"(W)

The AR-108 allows you to listen to Air band and Weather band and VHF band. Press and release the "A" button until you come to the band of your choice. The right hand bottom corner of the LCD, a letter 'A' is shown for Air band and a letter 'V' is shown for VHF Band. For Weather band however channel no is shown on right hand bottom corner of the LCD to indicate it is Weather band.

4. ☼ (Lamp), BP (Beep) Button

1) ☼ (Lamp) Button

Press the "☼" button, the lamp will stay on for four seconds, after which it will turn itself off automatically. If you press another button on the front cabinet when the lamp is on, the lamp will stay on for four second from that time. If you press the "☼" button over than one second, the lamp will stay on until you press the "☼" button once again.

2) BP (Beep) Button

This feature gives the user an audible confirmation through a short beep tone that the radio has been turned on. The AR-108 comes with this feature already turned on. If you would like to deactivate this feature, press "FUNC + LAMP (BP)" button. To reactivate the "Beep" feature, repeat the above process. When "Beep" feature is off, the key beep tone and the error beep tone will not sound.

5. MR, MW Button

This receiver contains 99 memory locations for AIR Band where desired frequencies can be programmed by the user. Programming of the desired frequencies can be carried by following ways.

1) frequency selection by cursor function

Refer back to the cursor function in the previous section for more information.

2) While in the memory set mode use up or down key select the desired frequency.

With this second method the up or down key can only increment or decrement the frequency by channel step value.

To change the memory frequency stored within the memory location press "FUNC + MR (MW)" button whilst in memory mode. In memory mode MR icon and the memory no are displayed. The MR icon starts to blink as soon as the "FUNC + MR (MW)" button is pressed. This mode is called memory set mode. Now press up or down button to select the desire frequency and press MR (MW) to store it memory.

*Scan Skip Function in Memory Mode

Whilst in MR set mode, press "SC" button to select Scan Skip function. It allows the user to scan or skip a particular memory channel.

Whilst in this Scan Skip function, press "▲" or "▼" button to switch scan skip function on or off.

► Display of Scan Skip message



6. SC, DW Button

1) SC (SCAN) Button

To Activate : Press the "SC" button start the scanning process and stopping at any channel that is busy with signals being communicated. It will remain on that channel during scan delay time and reactivate scanning.

- If you want to stop scanning process, simply press the "Monitor" button.
- During the scanning process, the skipped channel will not be scanned.
- d1(dot 1) on the LCD will blink per 0.5 second.
- During the Down(Up) scanning process, press the "▼(▲)" button, then scanning direction will be changed to Down (Up) scanning process.
- If you press the "FUNC" button at stopping channel during the scanning process, this channel will be passed in the next scanning process.

► Display of Pass message



NOTE : The memory channels passed from scanning process is automatically recovered when the radio is switched off and on again.

► Display of EMPTY message



If only one channel will remain because of the passing channel from scanning process, the process will stop and "EMPTY" message will appear on the LCD.

NOTE : Other buttons located on the front of the radio will not operate. If you press these buttons, error beep tone will sound.

2) Dual Watch Operation

To operate Dual Watch :

- (1) Not in the Scan Mode, select the channel in which you want to monitor which we will refer to as your "A Channel".
- (2) Press the "FUNC + SC/DW" button, then "DW" will appear on the LCD.
- (3) Use Up/ Down key to select the "B channel" which you want to monitor. Once "B channel" has been selected, the radio will begin its dual watch monitoring.

► Display of Dual Watch Feature.



To turn off the "Dual Watch" Channel, simply press the "FUNC + SC/DW " button. Note that the radio will return to the "A" channel for normal operation. If you press the "FUNC + SC/DW" button when a signal is receiving on the channel "A" or "B", the Dual Watch feature will be turn off, on the "A" or "B".

If a signal is being received at A channel, Unit will stay on channel A until the signal disappears. But, if a signal is being received at B channel, the unit will switch to A channel to check the signal of A channel every 3 seconds.

Even though a signal is disappear at A (B) channel, which will be remaining there to check another receiving signal during scan delay time. After that A (B) channel will be changed to other channel.

If you press the "▲" or "▼" button in dual watch mode, B channel will move to higher (lower) channel than is currently chosen the channel. In dual watch feature, power save function does not operate.

7. Channel Step Option (ST, LOCK)

To enter channel space setting mode press "Channel Step" (ST) button. This option let the user select from following channel steps using U/ or down key.

25KHz and 1MHz.

To store the channel step value and enter the normal operational mode press Channel step button again.

Press "FUNC + ST(LOCK)" to lock all the keys apart from monitor and function key taking any action.

► Display of Channel Step message.



8. Speaker

If there is any unforeseen fault in the microphone connections the unit will switch off power to the audio amplifier and it will display SHORT to indicate short circuit.

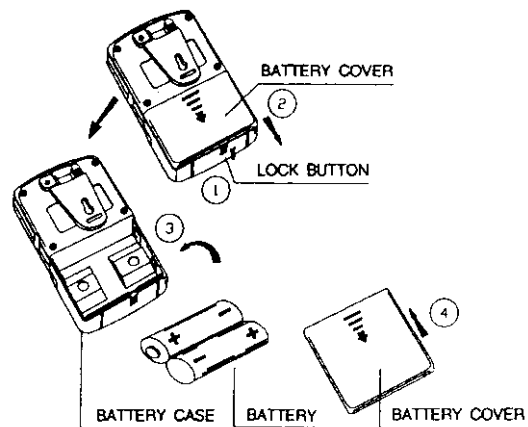
9. Battery Case

See "Batteries" for installation instruction. (Page 18)

BATTERY PACK INSTRUCTION

1. Press down the battery lock button on the bottom side of the radio.(①)
2. Open the battery cover on the back side of the radio.(②)
3. Install the battery as like ③.
4. Put on the battery cover.(④)
5. Press the battery lock button upward to lock the battery case.

To supply the power, use the DC charge adapter or desk top charger.



■ TO RECEIVE

Keep the radio turned on and select the channel you want to listen to.
If the Squelch is activated more than 20ms in the receiving mode, BUSY will appear on the LCD and speaker mute will be removed and the audio on that channel will be heard through speaker.

■ SPECIFICATION

1. GENERAL

FREQUENCY	AIR BAND :108MHz TO 136.975MHz WEATHER BAND :10 CHANNEL
FREQUENCY GENERATION	PLL SYNTHESIZER
FREQUENCY STABILITY	+/- 10ppm
OPERATING TEMPERATURE	-10℃ TO +55℃
POWER SOURCE	INT : 3.0V EXT : 7.0 TO 20V
MODULATION	F3E, A3E
IMPEDANCE	50 ohm
DIMENSIONS	58(W) x 85(H) x 26.5(D)mm
WEIGHT	98.5g, W/O BATTERY

2. RECEIVER SECTION

CIRCUIT TYPE	DUAL CONVERSION SUPERHETERODYNE
IF FREQUENCY	1'st IF:21.4MHz 2'nd IF:455KHz
SENSITIVITY	FM : 0.25uV FOR 12dB SND AM : 1uV for 10dB NQ
SELECTIVITY	50dB Min.
S/N RATIO	40dB Min
AUDIO OUTPUT @10%THD	120mW 16Ω, BTL



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