Attachment L. User Manual

Please refer to the following pages

User Manual

AT-100A

Professional FM transceiver

Airtech I & C Co., Ltd.

SAFETY TRAINING INFORMATION

Your FM radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only." In addition, your FM radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

- American National Standards Institute (C95.1 – 1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

- American National Standards Institute (C95.3 – 1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave.

To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

- **DO NOT** operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with

this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio.

• **DO NOT** transmit for more than 50% of total radio use time ("50% duty cycle"). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" lights red. You can cause the radio to transmit by pressing the "PTT" switch.

• **ALWAYS use** Icom authorized accessories (antennas, batteries, belt clips, speaker/mics, etc). Use of unauthorized accessories can cause the FCC RF exposure compliance requirements to be exceeded.

• **ALWAYS keep** the antenna at least 2.5cm (1 inch) away from the body when transmitting and only use the belt-clips which supplied when attaching the radio to your belt, etc., to ensure FCC RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from mouth, and slightly off to one side.

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates within the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, your Icom radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

CONTENTS

General Features

1. Ultra compact size & design
2. Heavy-duty, durable construction
3. 90 PC programmable channels
4. Alphanumeric LCD - display up to 6 characters
5. 38 CTCSS/ 83 DCS/ Invert 83 DCS sub-audio tones
6. Time-Out timer (TOT)
7. Busy Lockout (BLO)
8. Battery saving mode
9. Low battery warning
10. 2/5 tone programmable selcall
11. 12.5KHz/25KHz programmable channel spacing
12. DTMF PTT-ID
13. Key lock
14. 5 watts RF power (Hi)/ 2 watts (Lo) VHF
15. Selectable Hi & Low power
16. Scan & priority scan modes with dual watch
17. 1350mAh Lithium Ion battery pack
18. Extensive range of optional accessories

APPROVAL

Supplied package

Unpack and check that all items have been enclosed.
Packing contents: ①Radio ②antenna③Ni-mh battery pack
(1350mAh) ④Desktop rapid charger(1350mAh/1800mAh)⑤belt clip
⑥ user manual
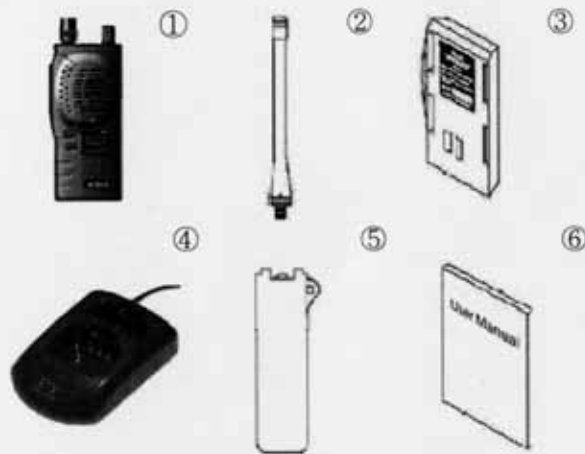
Optional Accessories

1. Accessory range for AT-100A

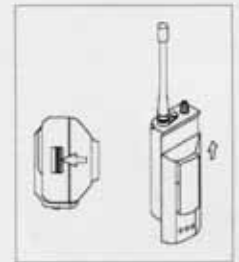|	
MH350	Ni-Mh 1350mAh battery
LI-1800	Lithium 1800mAh battery
SJ-016D	Wall charger
APPC-0012	Programming cable & diskette
AHM-10	External Mic/speaker
APE-10	Earpiece with PTT Mic
AVX-10	External Vox with earphone & Mic
ACC-0012	Cloning cable

Preparation, prior to use

1..Attaching belt clip: using a crosshead screwdriver secure the belt clip to the rear of the battery pack using the supplied pair of screws. NOTE: Use only the supplied screws, failure to comply may cause damage to your battery pack.

2.**Attaching battery pack:** ensure transceiver is switched off. Place the battery pack against the back of the transceiver so that the tabs on the transceiver engage in the four openings in the battery pack. Slide the battery pack towards the top of the transceiver until a click is heard. **Removal of battery pack:** Ensure that the transceiver is switched off. Located at the bottom of the radio is the battery latch lever. Slide this lever across at the same time slide the battery pack down towards the bottom of the transceiver. The battery pack should then separate from the transceiver.

3.Attaching aerial: Carefully align the aerial with the aerial socket, which is located on the top left hand side of the transceiver. Rotate the antenna clockwise until it is seated firmly against the transceivers top escutcheon.
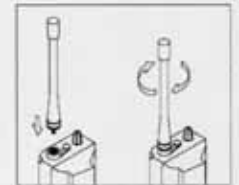
Description

(a) Power on / off and Volume Control Switch
  Turn the transceiver on by rotating this switch in a clockwise direction. A beep confirms the power is on. Select the desired

audio level by further rotating the switch clockwise.

(b) Channel Select Button
  Select the desired channel by pressing the Up/Down buttons. For fast channel selection, hold down for more than 1 second.

(c) PTT(Push To Talk) Button
  Hold down to transmit, release to receive.

(d) Function Button
  Refer to "OPERATION" page 9.

(e) Monitor Button
  The monitor button enters the radio to direct receive mode which bypasses any sub-audio tones (CTCSS/DCS) programmed. Holding the monitor button down for over 2 seconds enters permanent monitoring mode. To exit this mode, press the PTT button. In addition to radio etiquette monitor is used to listen to weak signals.

(f) LCD Display Panel
  Refer to next page.

(g) Tx / Rx Indicate LED (3 colors)

Red	On	Transmitting
	Blinking	Low battery
Green	On	Receiving, monitoring
	Blinking	Different sub-tone when receiving
Orange	On	Initializing, programming and cloning

(h) Microphone
  Hold transceiver 5~7Cm away from your mouth whilst transmitting.

(i) Speaker

(j) External Earphone/MIC and Programming Jack Socket

(k) 1350mAh Ni-Mh battery Pack

(l) Antenna

LCD Panel

888888
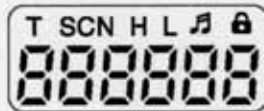
DISPLAY	FUNCTION
T	Sub-tone
SCN	Scanning
H L	Transmit output power
♫	Beep sound
🔒	Button lock
CH-001	Channel
On	On
OFF	Off

dt	PTT-ID
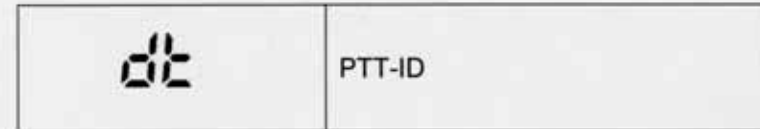
Operation

1. **Power on / off and Volume Control**

   Rotate the Power on/off and Volume Control Switch ⓐ clockwise to turn power on, the LED ⓖ lights orange and power–up tone is generated after about one second, this indicates the transceiver has passed its self–diagnostic test. After power on, the transceiver will always default to the last channel selected. Rotate this switch ⓐ clockwise to increase the volume or counter clockwise to reduce the volume. Rotate it ⓐ fully counter clockwise to power transceiver off.

3. **Transmit**

   Select the desired channel by pressing channel select button ⓑ Hold down the PTT Button ⓒ for duration of speech and talk in to the MIC ⓗ holding the transceiver 5~7Cm away from your mouth. The LED ⓖ lights red on transmit. Release the PTT button ⓒ to stop transmitting.

4. **Receive**

   Choose the desired channel by pressing channel select button ⓑ The LED ⓖ lights green when receiving. In the event that the signal doesn't match the sub–tone programmed in your transceiver, the speaker will be muted and the LED will flash green.

5. **Monitor**

   Press the Monitor Button ⓔ to monitor the selected channel. Holding down Monitor Button ⓔ for within 2 seconds temporarily stop sub-tone, selcall function. Pressing Monitor Button ⓔ once again to retrieve sub-tone, selcall function. Holding down over 2 seconds to enter permanent monitoring mode., pressing Monitor

Button(e) again once or press the PTT Button(c) to exit this mode.

6. Scan
Press the UP button (b) whilst holding down Function Button(d) to start scanning.

Without priority channels pre selected
1) mem 1ch > mem 2ch > mem 3ch > .....
With one priority channel selected
2) mem 1ch > pri ch > mem 2ch > pri ch > .....
With two priority channels selected
3) mem 1ch > pri 1ch > pri 2ch > mem 2ch > .....

The transceiver will stop scanning after detecting a valid signal. The default time setting for the radio to resume scan mode is 10 seconds after the received signal has stopped. The scan resume time can be adjusted by your dealer.

Alternatively when the radio is locked on to a scanned channel you can press the UP button immediately to resume scan mode. If the DOWN button is pressed the radio will also resume scan mode but it will skip the original scanned channel.

If you transmit during scan mode the radio will transmit on the last busy channel.

When priority scan channel is programmed, If the received channel is not priority channel, it watches channel presently being received and priority channel.

To exit scan mode, press the FUNCTION and UP button simultaneously.

7. Selecting priority channel
Turn radio on whilst pressing the DOWN button. The LCD displays "SL-001" Using the UP/DOWN buttons you can select which channels you wish to scan. Pressing FUNCTION button toggles the SCAN on or off for each channel. To exit this mode and confirm settings press the PTT button. At this stage you can then either switch the radio off and on to resume normal operation or continue to set the **PRIORITY CHANNELS.** The LCD is now displaying "P1-000" select your first desired priority channel using UP or DOWN buttons. Press the PTT button to confirm. The LCD will now display "P2-000" which allows for a 2nd priority channel. Leave at "P2-000" if no 2nd priority channel is required.

7. Beep Sound on / off
When you press Function Button(d) once   sign on LCD blinks. Press Channel Select Button(b) to select the beep sound on or off. Press PTT Button(c) to finish selection.

8. Key lock on / off
When you press Function Button(d) twice, sign on LCD blinks. Press Channel Select Button(b) to select the key lock on or off. Press PTT Button(c) to finish selection. This function prevents users from changing the channel inadvertently.

9. DTMF PTT-ID on / off
When you press Function Button(d) three times, the "dt" sign on LCD blinks. Press Channel Select Button(b) to select DTMF PTT-ID on or off. Press PTT Button(c) to finish. (This feature only operates correctly if programmed by your dealer)

10. Selecting Hi/Low power
While holding down PTT Button(c), press Channel Select Button (b) to set high power (shows 'H' on LCD) or press Channel Select Button(b) to set low power (shows 'L' on LCD)

11. 2/5 Tone Selcall (Programmable by dealer only)
Various 2/5 selcall tone features are available. Please contact your dealer for further information.