

KSU7

Operation instructions

USER'S MANUAL



Professional wireless intercom
PROFESSIONAL FM TRANSCEIVER

Disclaimer of Warranty

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for any errors or omissions that may occur. Due to the continuous development of technology, our company reserves the right to change product design and specifications without notice. Without prior written authorization from our company, this manual may not be copied, modified, translated, or distributed in any form. The third-party products and content mentioned in this manual belong to the third party, and our company does not guarantee their accuracy, effectiveness, timeliness, legality, or completeness.

Radio frequency radiation information

This product is limited to occupational applications that can meet the requirements of radio frequency energy radiation. Users must have a clear understanding of the hazards of radio frequency radiation and be able to

take corresponding measures to meet the radio frequency radiation limit requirements.

Common knowledge of radio frequency radiation

Radio frequency refers to the electromagnetic frequency that can radiate into space. It is a widely used technology in fields such as communication, healthcare, and food processing, and generates a certain amount of radio frequency radiation during use.

Radio frequency radiation safety

In order to ensure the physical and mental health of users, experts from science, engineering, medicine, health, and industry, together with relevant organizations, have jointly researched and developed RF radiation standards and guidelines, as follows: Federal Communications Commission, Federal Government Regulations Compilation, Volume 47, Part 2, Subpart J.

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) Standard C95.1-1992 edition.

Institute of Electrical and Electronics Engineers Standard C95.1-1999.

The International Commission on Non Ionizing Radiation Protection (ICNIPR) issued the standard in 1998.

Regulatory requirements of the Federal Communications Commission in the United States

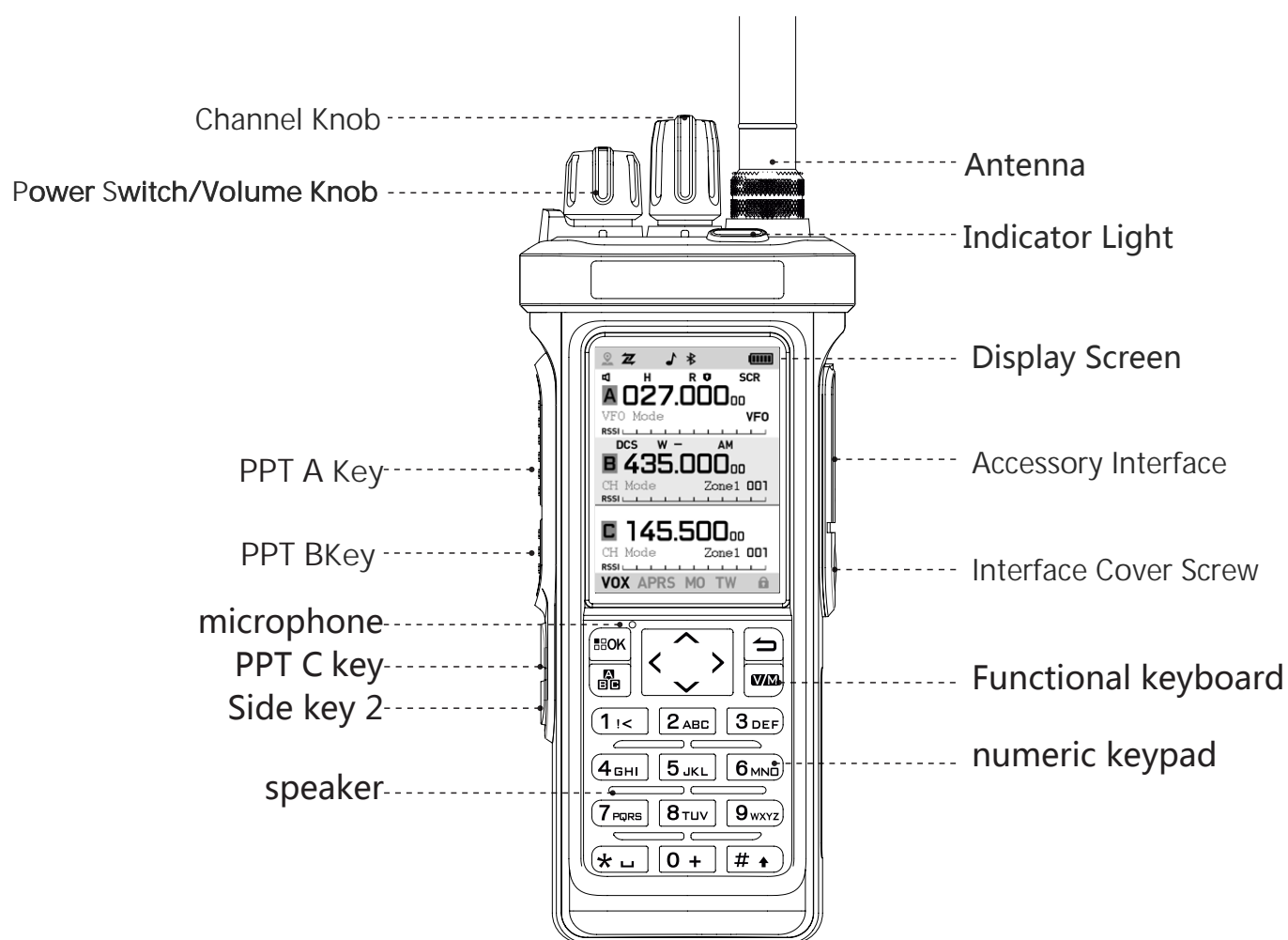
According to the regulatory requirements of the Federal Communications Commission in the United States, this product must comply with the FCC's RF radiation restrictions, otherwise it cannot be sold in the US market. And require manufacturers to inform users of precautions and raise their awareness of radiation protection by posting labels on their products.

RF radiation control and operation instructions

In order to achieve optimal performance of the product and ensure compliance with the radiation restrictions in occupational or controlled environments as specified in the above standards, the transmission time shall not exceed 50% of the rated factor (up to 50% of the time for transmission), and the following instructions shall be followed: RF energy radiation shall only be generated during transmission (speech), and shall not be generated during reception (listening) or standby. The distance between the terminal and the body should be kept at least 2.5 centimeters during transmission.

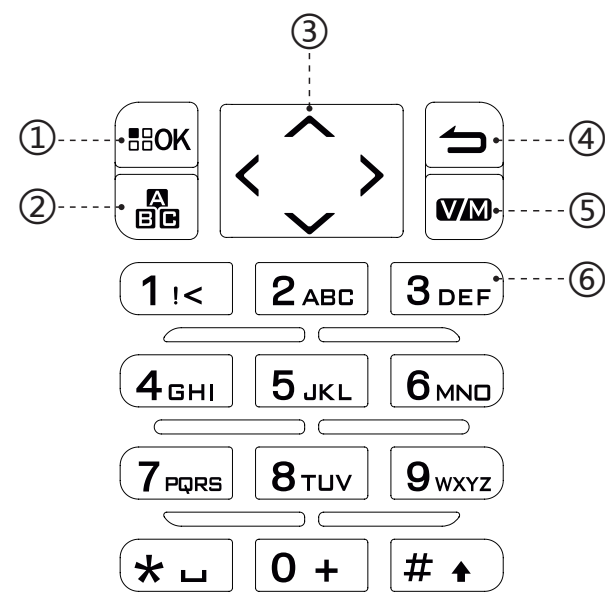
Get Familiar with the Device

Structure Introduction



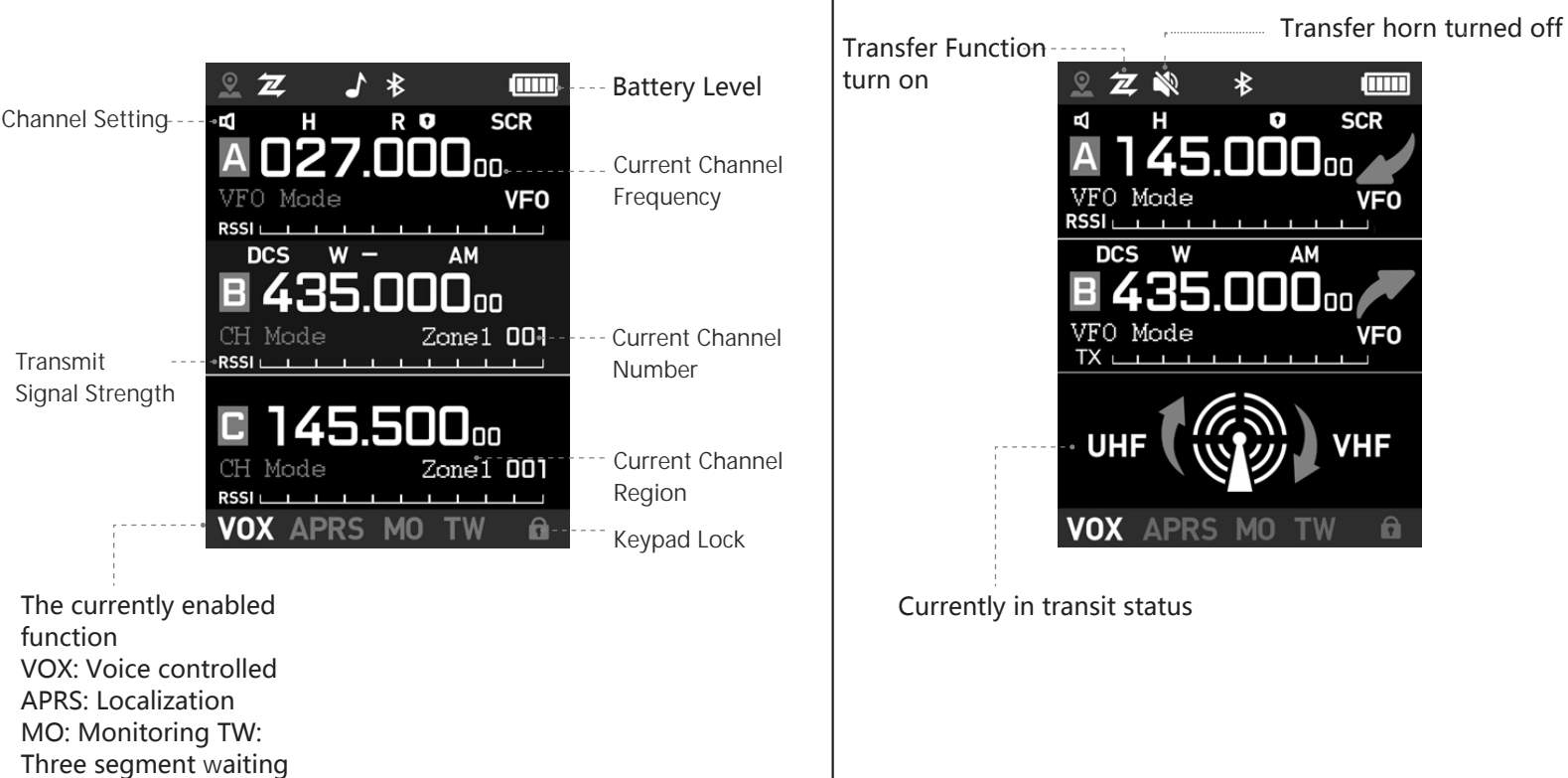
Familiar with this machine

Button Function











Serial number	Button	Function
①		Menu selection / Confirm key; Long press to enter spectrum interface
②		Short press to switch between A/B/C segments; Long press to enter remote CTCSS scan interface
③		Direction keys
④		Short press to exit / clear; Long press to enter frequency sweep interface
⑤		Short press to switch between channel mode and frequency mode; Long press to enter APRS positioning interface
⑥	Number keys	In standby mode: used to set the operating frequency point in frequency mode, and used to switch channel numbers in channel mode. After quick setting, long press the 0-9 keys to quickly enter the setting function.



Transfer interface



Interface icon description

icon	Instructions
VOX	Voice-operated transmission: Starts when microphone sound pressure level reaches set value.
APRS	Automatic Packet Report System (APRS).
MO	Monitor function enabled.
TW	Three-band waiting: Set, activated, in three-segment waiting state.
	Keypad locked: Symbol appears, long-press # to unlock.
ABC	Band A / Band B / Band C.
RSSI	Signal strength: Indicates audio amplitude during transmission, signal strength during reception.
	Positioning switch and indicator.
	Relay function enabled.
	Device muted during relay.
	Side tone enabled: Emits tone when transmitting DTMF.
	Bluetooth enabled.
	Battery level: Outer frame flashes when low, transmission prohibited.
	Power-saving icon: Power-saving function enabled.

Interface icon description

icon	Instructions
	Displaying this logo indicates being in standby state.
CT	This symbol indicates the current tone is analog CTCSS; it appears during transmission, meaning analog CTCSS signaling is being transmitted.
DCS	Digital DCS symbol: Appears during transmission, transmitting digital DCS signaling.
H	Transmit power: High.
M	Transmit power: Medium.
L	Transmit power: Low.
N	Narrowband symbol: Appears when channel works in narrowband.
W	Narrowband symbol: Appears when channel works in narrowband.
+	Frequency plus symbol: In frequency mode, transmit frequency = receive frequency + offset.
—	Frequency minus symbol: In frequency mode, transmit frequency = receive frequency - offset.
R	Frequency inversion: Transmit and receive frequencies swapped in frequency/channel mode.
T	Off-network mode: Transmit and receive frequencies are the same.
	Encryption symbol: Encryption function enabled.
AM	AM symbol: Current frequency in AM modulation/demodulation mode.
SCR	Scrambler function

Basic Operations

Switch Knob

If you need to turn on the device, rotate the knob clockwise until you hear a "click" sound. To turn it off, rotate it counterclockwise until you hear a "click" sound. After turning on, rotating the knob clockwise can increase the volume, and rotating it counterclockwise can decrease the volume.

Menu Operation

On the main interface, short-press the **【#OK】** key to enter the menu list. Use the up, down, left, and right keys to select. Press the **【#OK】** confirmation key to confirm, and press the **【←】** key to exit.

Main Frequency Switching

Short-press the **【A】** key on the standby interface to select the main frequency. The one with a blue background is the main frequency, and the one without is the sub-frequency.

Channel Mode and Frequency Mode Switching

Short-press the **【V/M】** key on the standby interface to switch between frequency mode and channel mode. If there is no valid channel in the channel list, it cannot switch to channel mode.

Side Key Function

Configure the side key function through the programming software. The functions include: radio/monitoring/scanning/frequency sweeping/alarm/spectrum/beacon transmission.

Voice-Activated Function


Through "Menu → Voice-Activated Function → Voice-Activated Settings", after the voice-activated function is enabled, as long as the voice-activated detection circuit detects that the sound received by the microphone is loud enough, it can automatically enter the transmission state. The voice-activated level can be set through the menu. To ensure the continuity of voice-activated transmission, it is also necessary to set the voice-activated delay time.

Frequency Sweeping Function

Define the side key function as frequency sweeping or long-press the **【←】** key to quickly enter the frequency sweeping mode. Detect the transmitter carrier frequency and sub-audio information and display them on the interface. After detecting the carrier frequency, press the **【#OK】** key to store the swept frequency into the specified channel list. The frequency sweeping function only supports 136-174/400-520MHz.

Basic Operations (Continued)

◦ Repeater Setting

1. Enable Repeater Function: Go to Menu → Intercom Setting → Repeater Mode → Enable. At this time, the repeater icon  will be displayed on the standby interface.
2. Use of Repeater: The device with the repeater function enabled must be of two cross-band frequencies (both frequency mode and channel mode are supported).
3. Repeater Direction: In standby state, both main and sub frequencies are repeater receivers. When the main frequency receives a valid carrier signal first, the sub-frequency band is automatically defined as a cross-band repeater transmitter. When the sub-frequency receives a valid carrier signal first in standby state, the main frequency band is automatically defined as a cross-band repeater transmitter.
4. Repeater Speaker: Choose whether to turn on the speaker of this machine when receiving audio during repeater operation.

◦ SOS Function

Define the side key function as **【Alarm】** key. Set through Menu → Intercom Setting → SOS Mode. The SOS function supports three modes: on-site alarm, transmit alarm tone, and transmit alarm code.

- On-site Alarm: The machine emits an alarm tone without transmitting the signal.
- Transmit Alarm Tone: Transmit the alarm tone through the signal.
 - Transmit Alarm Code: Transmit the alarm code through the signal.

◦ Sub-audio Setting

Operation Method: Go to Menu → Sub-audio Setting and select the required DCS code or CTCSS frequency. DCS and CTCSS are used to remove unwanted noise signals during reception.

◦ Scan Function

Define the side key function as **【Scan】** key. In channel mode, scan the channels in the channel list (need to turn on the machine to scan and add). In frequency mode, scan by stepping frequency. The scan mode is set through Menu → Intercom Setting → Scan Mode.

- Time: After scanning to a carrier signal, continue scanning if no operation is performed within 5 seconds.
- Carrier: Stop scanning after scanning to a carrier signal.
- Search: Stop scanning after scanning to a carrier signal and continue scanning 5 seconds after the carrier disappears.

Basic Operations

◦ **PTT-ID Function**

Transmit identity code or calling code via DTMF. There are 15 groups of calling codes. Set via "Menu → Signaling Setting → DTMF Code Sending". Each signal or A/B/C segment can independently select the calling code group to be sent. Set the relevant parameters of the identity code via "Menu → Signaling Setting → Identity Code". There are three code sending methods:

- **Press to Send Code:** After pressing PTT, send the calling code/identity code first, then send the voice signal.
- **Release to Send Code:** After releasing PTT, end the transmission state after sending the calling code/identity code.
- **Send Both:** Send the calling code/identity code both when pressing and releasing PTT.

Note: Since the identity code operation is independent of the calling code, if there is a conflict between the identity code and the calling code settings, the identity code will be sent.

◦ **FM Radio**

Customize the side key function as a radio or long-press the customized digital key to enter the radio.

1. Short-press **【#OK】** to enter the radio menu and select the modulation mode. The radio frequency is set directly via the digital keys.
2. In radio mode, press **【V/M】** to switch between the frequency mode and channel mode of the radio.
3. In frequency mode, short-press **【#】** to enable the automatic station search function.

Menu Function List

- **Voice - Activated Function**

1. Voice - Activated Switch: Off / On
2. Voice - Activated Level: Level 1 ~ Level 9
3. Voice - Activated Delay: 0.5sec ~ 2.0sec ◦

Region

- Up to 15 regions can be set, with 64 channels in each region. ◦

Channel Mode (Frequency Mode)

1. Step Frequency: 2.50KHz, 5.00KHz, 6.25KHz, 8.33KHz, 10.0KHz, 12.5KHz, 20.0KHz, 25.0KHz, 50.0KHz, 100.0KHz
2. Frequency Difference Direction: None / Reverse
3. Frequency Difference Frequency: Manual input frequency
4. Receiving Modulation Mode: FM / AM
5. Channel Storage: Region 1 ~ Region 15
6. Channel Deletion: Region 1 ~ Region 15

- **Channel Mode (Channel Mode)**

1. Segment A Display Mode: Channel Name
2. Segment B Display Mode: Channel Frequency
3. Segment C Display Mode: Channel Number
4. Channel Name Editing: -
5. Receiving Modulation Mode: FM / AM
6. Channel Storage: Region 1 ~ Region 15
7. Channel Deletion: Region 1 ~ Region 15

- **Sub - audio Setting**

1. Receive Analog Sub - audio: Off; 67.0Hz ~ 254.1Hz

2. Receive Digital Sub - audio: Off; D023N ~ D754I
3. Transmit Analog Sub - audio: Off; 67.0Hz ~ 254.1Hz
4. Transmit Digital Sub - audio: Off; D023N ~ D754I
5. Learn Frequency: Off
6. Encryption: Off / On
7. Sub - audio Scan: Analog Sub - audio; Digital Sub - audio
8. Scan Sub - audio Storage: All; Decode; Encode
 - **Intercom Setting**
 1. Squelch Level: Off; Level 1 ~ Level 9
 2. Transmit Power: High Power; Medium Power; Low Power
 3. Channel Bandwidth: Wide Band; Narrow Band
 4. Scrambler Function: Off; Scrambler 1 ~ Scrambler 8
 5. Guard Setting: Off / On
 6. Power Saving Mode: Off; Normal Power Saving; Super Power Saving; Deep Power Saving

Radio Mode Menu Structure Analysis

First-level Menu	Second-level Menu	Third-level Menu	Details
Frequency Mode	FM	FM Channel Save	CH-01 • • • CH-15
	AM	AM Channel Save	CH-01 • • • CH-15
		Frequency Range	LW Band, MW Band, SW Band
Channel Mode	FM	FM Channel Save	CH-01 • • • CH-15
	AM	AM Channel Save	CH-01 • • • CH-15

This table details the menu hierarchy for radio functions, covering both frequency mode and channel mode, and specifying the saveable channels and frequency ranges for FM and AM modes. It helps users quickly locate and configure radio-related settings.

Menu Function List

- **Voice - Activated Function**

1. Voice - Activated Switch: Off / On
2. Voice - Activated Level: Level 1 ~ Level 9
3. Voice - Activated Delay: 0.5sec ~ 2.0sec

- **Region**

- Up to 15 regions can be set, with 64 channels in each region.

- **Channel Mode (Frequency Mode)**

1. Step Frequency: 2.50KHz, 5.00KHz, 6.25KHz, 8.33KHz, 10.0KHz, 12.5KHz, 20.0KHz, 25.0KHz, 50.0KHz, 100.0KHz
2. Frequency Difference Direction: None / Reverse
3. Frequency Difference Frequency: Manual input frequency
4. Receiving Modulation Mode: FM / AM
5. Channel Storage: Region 1 ~ Region 15
6. Channel Deletion: Region 1 ~ Region 15

- **Channel Mode (Channel Mode)**

1. Segment A Display Mode: Channel Name
2. Segment B Display Mode: Channel Frequency
3. Segment C Display Mode: Channel Number
4. Channel Name Editing: -
5. Receiving Modulation Mode: FM / AM
6. Channel Storage: Region 1 ~ Region 15
7. Channel Deletion: Region 1 ~ Region 15

- **Sub - audio Setting**

1. Receive Analog Sub - audio: Off; 67.0Hz ~ 254.1Hz
2. Receive Digital Sub - audio: Off; D023N ~ D754I
3. Transmit Analog Sub - audio: Off; 67.0Hz ~ 254.1Hz
4. Transmit Digital Sub - audio: Off; D023N ~ D754I
5. Learn Frequency: Off
6. Encryption: Off / On
7. Sub - audio Scan: Analog Sub - audio; Digital Sub - audio
8. Scan Sub - audio Storage: All; Decode; Encode
 - **Intercom Setting**
 1. Squelch Level: Off; Level 1 ~ Level 9
 2. Transmit Power: High Power; Medium Power; Low Power
 3. Channel Bandwidth: Wide Band; Narrow Band
 4. Scrambler Function: Off; Scrambler 1 ~ Scrambler 8
 5. Guard Setting: Off / On
 6. Power Saving Mode: Off; Normal Power Saving; Super Power Saving; Deep Power Saving

Menu Function List

- **Intercom Setting**

- 7. Emergency Transmit: Off / On
- 8. Transmit Time Limit: Off; 30sec~240sec
- 9. Tail Tone Elimination: Off / On
- 10. Repeater Guide Frequency: 1000hz,1450hz,1750hz,2100hz
- 11. Scan Mode: Time; Carrier; Search
- 12. Call End Prompt Tone: Off / On
- 13. Repeater Tail Tone Elimination: Off; 100ms~1000ms
- 14. Repeater Tail Tone Detection: Off; 100ms~1000ms
- 15. AB Repeater Mode: Off / On
- 16. Repeater Speaker: Off / On
- 17. SOS Mode: On-site Alarm; Send Alarm Tone; Send Alarm Code

- **APRS Setting**

- 1. APRS Switch: Off / On
- 2. GPS Setting
 - 1. GPS Positioning: Off / On
 - 2. Latitude and Longitude Format: Degree / Degree-Minute / Degree-Minute-Second
 - 3. Time Zone Adjustment: UTC-13~UTC+13
 - 4. Distance Unit: Kilometer / Nautical Mile / Mile
 - 5. Altitude Unit: Meter / Foot
 - 6. Speed Unit: Kilometer / Nautical Mile / Mile
- 3. Beacon Setting
 - 1. Call Sign: -
 - 2. SSID: 0...15

3. Route Selection: Off; WIDE1-1; WIDE1-1,WIDE2-1; PATH1; PATH2
4. Custom Route
 1. Route 1
 2. Route 1 SSID
 3. Route 2
 4. Route 2 SSID
5. My Coordinates: Fixed Coordinates; GPS Coordinates
6. Fixed Coordinates
 1. Set Longitude: 1 Degree / 2 Minutes / 3 Seconds
 2. East-West Hemisphere Selection: W/E
 3. Set Latitude: 1 Degree / 2 Minutes / 3 Seconds
 4. North-South Hemisphere Selection: N/S
 5. Fixed Altitude: -
7. Radio Symbol: [/L] Pedestrian; [/b] Bicycle; [/^] Car; [/R] Recreational Vehicle;
User-defined
8. Custom Icon: -
9. MIC-E Type: Off duty; En Route

Menu Function List

- **APRS Setting**

- 3. Beacon Setting

- 9. MIC-E Type: In Service; Returning; Committed; Special; Priority; EMERGENCY

10. Custom Message: -

4. Repeater Setting

1. DIGI Transmit Channel: CH A/CH B/CH A+CH B

2. Transmit Route Selection: WIDE1; WIDE1,WIDE2; PATH1

3. Pre-Transmit Wait: 0S~9S

5. Advanced Setting

1. Data Transmit Delay: 100ms~1000ms

2. APRS Prompt Tone: Off / On

03. Beacon Reception Window: Off / On

4. Receive Signal Clear: -

5. TNC Data Type: OFF/KISS

6. Restore Factory Settings: -

- **Side Key Customization**

1. Short Press Key 2: Radio/Monitor/Scan/Frequency Sweep/Alarm/Spectrum/Beacon Transmit

2. Long Press Key 2: Beacon Transmit

3. Long Press Numeric Key 1-9: No Definition/Radio/Voice-Activated/Frequency Sweep /Spectrum/Weather Forecast/Path Inquiry/Beacon Transmit/Step Frequency/Transmit Power/ Frequency Difference Direction/Transmit Mode/Transmit Delay/Over-Repeater Tail Tone Elimination/Over-Repeater Tail Tone Detection/AB Repeater On/Repeater Speaker On / GPS On/APRS On/Call End

- **Bluetooth**

- Off; On

- **Signaling Setting**

1. Identity Code: CODE1~CODE15
2. DTMF Code
 - Transmit Code: Off; Press to Send Code; Release to Send Code; Send Both
 - Side Tone Switch: Off; Press to Send Tone; Identity Code; Press + Identity Code
3. Prompt Tone: Off / On
4. Voice Control Switch: Off / On
5. Automatic Keypad Lock: Off; 0.5sec~15sec
6. Automatic Dimming: Off; Always On; 0.5sec~3min
7. Menu Exit Time: 0.5sec~60sec
8. Power-On Information: Preview Image/Battery Voltage
9. Language Selection: English/Chinese

- **Restore Factory Settings**

1. Frequency Mode Initialization: -
2. Full Initialization: -

- **Device Information**

- Software Version: -
- Hardware Version: -
- Identity Code: -

Charging Instructions and Maintenance Guidelines

◦ **Charging Instructions**

1. Dock Charging (Optional): Insert the battery pack or the walkie-talkie with battery pack into the dock charger, and ensure the contact with the charging terminals of the dock charger is normal .
2. Type-C Charging: Connect the provided charging cable to the power adapter, and plug the power adapter into an AC power outlet. Insert the charging cable into the Type-C interface of the host battery.
3. When the device is charging, a red indicator light indicates that charging has started or is in progress, and a green indicator light indicates that charging is complete.

◦ **Cleaning and Maintenance**

To ensure the good performance of this product and extend its service life, please familiarize yourself with the following contents for better daily maintenance and cleaning.

• **Daily Maintenance**

1. Do not pierce or scratch this product with hard objects.
2. Do not store this product in an environment containing chemical corrosive substances.
3. Do not carry the earphone cable by hand when carrying or using this product.
4. When the earphone interface is not in use, please cover the interface cover well.

• **Before Cleaning, Please Power Off and Remove the Battery**

1. Please regularly use a dry and clean lint-free cloth or a soft brush to wipe the dust attached to the product surface and charging electrodes.
2. When the keys and case of this product are dirty, you can clean them with a neutral detergent and non-woven fabric. Do not use chemical agents such as (stain remover), alcohol, spray, or petroleum solvent for cleaning to avoid damage to the product's outer shell.
3. After cleaning, make sure this product is completely dry; otherwise, do not use it.

Warranty Terms

The warranty period of this product starts from the sales date (subject to the date on the sales invoice). The main unit is warranted for 12 months, and the battery and charging accessories are warranted for 6 months. During the warranty period, the following situations will be subject to paid repair services:

1. Failure to present this warranty card and the purchase invoice.
2. This card has alteration traces or does not match the product.
3. Defects and damages caused by using this product under unconventional conditions.
4. Defects and damages caused by incorrect use, accident, water ingress, or negligence.
5. Defects and damages caused by incorrect testing, operation, repair, installation, modification, adjustment, etc.
6. Defects and damages caused by unauthorized repair, disassembly, etc.
7. Defects and damages caused by force majeure factors.
8. Wear and tear under normal use.

Product Warranty Card

- **Sales Information**

- Dealer (Valid with Stamp):
- Contact Number:
 - Address:

- **Product Information**

- Product Model:
- Serial Number:
 - Purchase Date:

- **User Information**

- User Name:
- Contact Number:
 - Address:

This warranty card is an important certificate for the end-user to enjoy the warranty service. It is valid only when it is stamped by the authorized dealer and filled out completely. Please keep it properly.