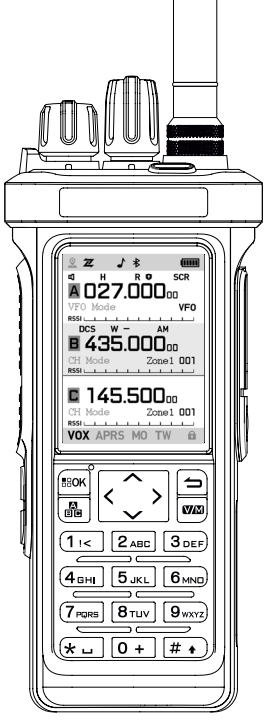
MULTI BAND
HANDHELD RADIO



USER'S MANUAL

Disclaimer

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RF Radiation Information

This product is intended solely for professional use where RF energy radiation requirements can be met. Users must be fully aware of RF radiation hazards and take appropriate measures to comply with RF radiation limits.

RF Radiation Basics

RF (Radio Frequency) refers to electromagnetic frequencies that can radiate into space. It is a technology widely used in fields such as communications, medical, and food processing, and it generates a certain amount of RF radiation during use.

FCC Regulatory Requirements

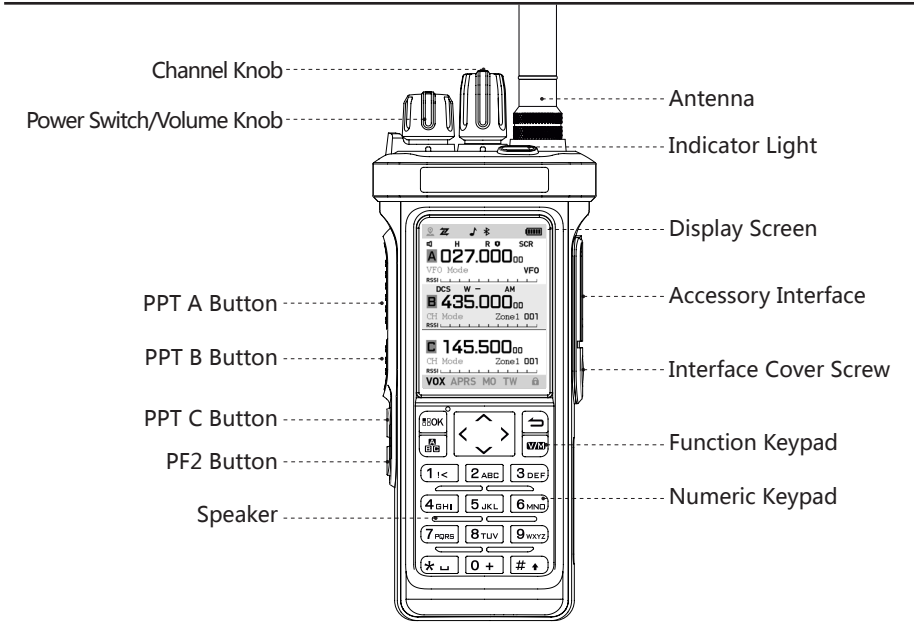
In accordance with the regulations of the Federal Communications Commission (FCC) of the United States, this product must comply with FCC RF radiation limits to be sold in the U.S. market. Manufacturers are required to inform users of important safety precautions by labeling the product, thus enhancing user awareness of radiation protection.

RF Radiation Safety

To ensure the health and well-being of users, experts from the fields of science, engineering, medicine, health, and industry, along with relevant organizations, have jointly developed RF radiation standards and guidelines, as follows:
Title 47, Part 2, Subpart J of the Code of Federal Regulations (CFR) by the Federal Communications Commission (FCC) of the United States.ANSI (American National Standards Institute) / IEEE (Institute of Electrical and Electronics
Engineers) Standard C95.1-1992.IEEE Standard C95.1-1999.Standards issued in 1998 by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

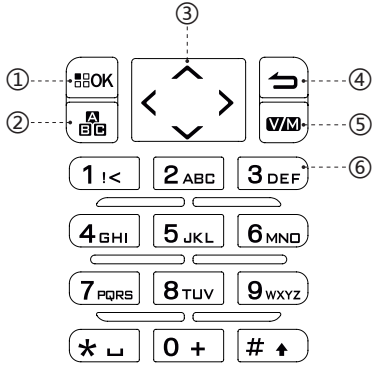
RF Radiation Control and Operating Instructions

To ensure optimal performance and compliance with the radiation limits for occupational or controlled environments as specified in the standards, the transmission time should not exceed a duty cycle of 50% (i.e., a maximum of 50% transmission time). Adhere to the following instructions:RF energy radiation is only generated during transmission (talking), not during receiving (listening) or standby mode.Maintain a minimum distance of 2.5 centimeters between the device and the body during transmission.



Getting to Know the Device

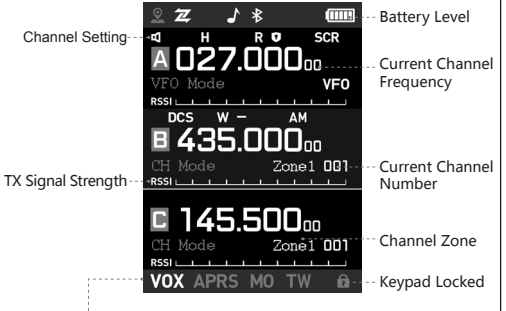
Key Functions



No.	Button	Function
①	OK	Menu Select / Confirm Key. Long press to enter spectrum mode.
②	A/B/C	Short press to switch between A/B/C segments. Long press to enter remote sub-tone scan mode.
③	‹ ›	Direction Keys
④	⮌	Short press: Exit / Clear Key. Long press to enter frequency sweep mode.
⑤	V/M	Short press: Switch between Channel Mode and Frequency Mode. Long press to enter the APRS positioning interface.
⑥	Number keys	In standby state: In Frequency Mode, used to set the working frequency; in Channel Mode, used to switch channel. After quick setup, long pressing keys 0-9 allows fast access to the assigned functions.

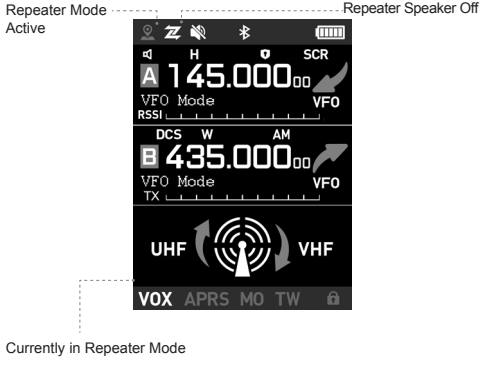
Interface Explanation

Standby Interface



Enabled Features
VOX:Voice-Activated Transmission
APRS:Automatic Packet Reporting System
MO:Monitor Mode
TW:Tri-Watch – Monitoring 3 channels

Repeater Interface



Currently in Repeater Mode

Icon Description

Icon	Description
VOX	Indicates that the VOX function is enabled. Transmission starts when the microphone's sound pressure level reaches the set threshold.
APRS	Automatic Packet Report System.
MO	Indicates that the monitor function is enabled.
TW	Tri-Watch Active,Simultaneously monitors 3 channels.
	Keypad Lock, Appears when the keypad is locked. Long press the # key to unlock.
	Frequency band selection,Band A / Band B / Band C.
RSSI	Signal Strength,Indicates the strength of the received signal.
	GPS Switch & Indicator,Toggles GPS positioning with status icon.
	Repeater Mode ON.
	Repeater Mute Enabled,Speaker muted during repeater operation.
	Side Tone Enabled,Indicates that the side tone function is active, producing a tone sound when transmitting DTMF.
	Bluetooth Enabled.
	Battery Status,Displays the remaining battery power. When the battery is nearly depleted, the outer frame of this symbol flashes, and transmission is prohibited.
	Power Save Icon,Energy-saving mode active.

Icon Description

Icon	Description
	Standby Indicator,Indicates the device is in standby/monitoring mode (continuously listening for signals).
CT	Analog Sub-audio Tone Indicator.This symbol indicates that the current sub-audio tone is an analog tone. When this symbol appears during transmission, it signifies that an analog sub-audio signal is being transmitted.
DCS	Digital Sub-audio Tone Indicator. This symbol indicates that the current sub-audio tone is a digital tone. When this symbol appears during transmission, it signifies that a digital sub-audio signal is being transmitted.
H	High Power Indicator. This symbol indicates that the current transmission power is set to high.
M	Medium Power Indicator. This symbol indicates that the current transmission power is set to medium.
L	Low Power Indicator. This symbol indicates that the current transmission power is set to low.
N	Narrowband Mode Indicator. This symbol appears when the channel is operating in narrowband mode.
W	Wideband Mode Indicator. This symbol appears when the channel is operating in wideband mode.
+	Frequency Mode (+ Frequency Offset) This symbol appears in frequency mode, indicating that the transmission frequency is the reception frequency plus a frequency offset.
−	Frequency Mode (- Frequency Offset) This symbol appears in frequency mode, indicating that the transmission frequency is the reception frequency minus a frequency offset.
R	Frequency Invert,Inverts RX/TX frequencies in Frequency Mode / Channel Mode.
T	Configures transceiver to operate on identical transmit/receive frequencies (simplex communication).
	Encryption On,Indicates encryption function is activated.
AM	AM Modulation,This icon indicates the current frequency is operating in AM (Amplitude Modulation) demodulation mode.
SCR	Scrambler Function: Activates voice encryption to prevent unauthorized monitoring of communications.

Basic Operations

Power/Volume Knob
Power On: Rotate the knob clockwise until a "click" is heard.Power Off: Rotate counterclockwise until a "click" is heard.Rotate clockwise to increase volume.Rotate counterclockwise to decrease volume.

Menu Navigation
From the home screen, briefly press the【MENU OK】key to enter the menu.Use the arrow Direction keys to navigate.Press【MENU OK】again to confirm selections.Press【BACK】to exit the menu.

Primary/Secondary Frequency Toggle
On the standby screen, briefly press the【A B C】key to select the primary frequency highlighted in blue background. Non-highlighted frequencies are secondary.

Channel Mode / Frequency Mode Toggle
On the standby screen, briefly press the【V/M】key to switch between frequency mode and channel mode.Note: If no valid channels are stored, switching to Channel Mode is disabled.

Side Key Configuration
Configure via programming software. Supported functions:RADIO/MONI/SCAN/SEARCH/SOS/SPECTRUM/Beacon TX.

Voice-Activated Transmission (VOX) Function
Operation:Menu → VOX .When enabled, the radio automatically enters transmit mode if the microphone detects sufficient sound input.Adjustable VOX sensitivity level via menu settings. VOX delay time must be configured to maintain transmission continuity.

Basic Operations

Sweep Function
Assign the key function as "Sweep" or long-press【BACK】to quickly enter sweep mode.
It detects the transmitter's carrier frequency and CTCSS/DCS (sub-tone) information, displaying them on the screen.Once the carrier frequency is detected, press the【MENU OK】key to save the scanned frequency to a specified channel list.Supported Ranges:VHF: 136–174 MHz,UHF: 400–520 MHz.

Repeater Setup
1.Activating Repeater Mode
Menu → Radio → AB RPT-Mode → ON.Standby screen displays repeater icon【 】.
2.Repeater Requirements
The devices that enable the relay function must operate on different frequency bands.
3.Repeater Direction Logic
Default Standby State,Both primary and secondary frequencies act as receivers.If the primary frequency first receives a valid carrier signal:
Secondary frequency automatically becomes the cross-band transmitter.
If the secondary frequency first receives a valid carrier signal:Primary frequency automatically becomes the cross-band transmitter.
4.Speaker Audio Control
Configurable option: Enable/disable local speaker audio during repeater operation.

Emergency SOS Function
Assign a key as the [Emergency Alarm] button.
Operation:Menu → Radio → SOS Mode.
Local Alarm:The device sounds an alarm tone locally without transmitting any signal.
Transmit Alarm Tone:Broadcasts the alarm tone via signal transmission.
Transmit Alarm Code:Sends the alarm code through signal transmission.

Basic Operations

CTCSS/DCS Settings
Operation: Menu → CTCSS/DCS,Select desired DCS code or CTCSS frequency.
Function: Enables selective call reception by filtering out unwanted noise signals.

Scan Function
Keys Shortcut:Assign a key as the Scan Key.
Configure via:Menu → Radio → Scan Mode.
Channel Mode: Scans the channels listed in the channel memory (requires power-on scan to add).Frequency Mode: Scans frequencies based on the selected step Setting.
- Time Mode: Resumes scanning if no operation is performed within 5 seconds after detecting a carrier signal.
- Carrier Mode: Stops scanning upon detecting a carrier signal and resumes scanning 5 seconds after the carrier disappears.
- Search Mode: Stops scanning immediately upon detecting a carrier signal.

PTT-ID Function
DTMF transmit identity S-CODE or PTT-ID.
Call Codes (15 preset groups):Menu → Signaling → S-CODE.Assign unique call codes to each segment (A/B/C) or signal type.
ID Code Setup:Menu → Signaling → PTT-ID .
Transmission Modes
- Send on Press: After pressing the PTT, the call code/identity code is sent first, followed by the voice signal.
- Send on Release: After releasing the PTT, the call code/identity code is sent, then the transmission ends.
- Send Both: The call code/identity code is sent both when the PTT is pressed and released.

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

Basic Operations

APRS Operation Manual

1.Enable APRS
Configure via: Menu → APRS Set → APRS ON/OFF

2. Enable GPS Positioning
Configure via: Menu → GPS → GPS → ON/OFF

3. Select APRS Source Position
Configure via: Menu → Beacon Setup → Source Position → Fixed Position / GPS Position

4. Assign the PF2 button as the Beacon TX Key
Configure via: Menu → User Key → PF2 (Long Press PF2) → Beacon TX

5. For Fixed Position Mode: Set Fixed Coordinates First
Configure via: Menu → Beacon Setup → My Position Set
After completing the setup, press the customized beacon transmit key that you have defined (PF2) to initiate Beacon TX.

6. For GPS Position Mode:
Long press the V/M key and wait for the GPS position to update. Then, press the customized beacon transmit key to initiate Beacon TX.

FM Radio Function

Customize the key as a radio shortcut or long pressing number key to enter radio mode.
1.Short press【OK】to access the radio menu and select modulation mode. Set the radio frequency directly using the numeric keys.
2.In radio mode, press【V/M】to toggle between Frequency Mode (VFO) and Channel Mode (MR).
3.In Frequency Mode, short press the【#】key to activate auto-scan for stations.
4.Radio Spectrum Scan Function ，In radio mode，Long press the【V/M】key to enter scanning mode，Use the Up/Down keys to browse through detected signals，Press the 【OK】key to save the selected frequency.

Menu	Second Menu	Third level menu	
Modulation	FM	FM MEMCH	1...15
	AM	AM MEMCH	1...15
		Work Band	LW Band
			MW Band
			SW Band
		Frequency Step	1K,10K,100K
		LNA	AGC
			0bd,...,-35bd
	LSB/USB/CW	SSB MEMCH	1...15
		Frequency Step	1K,5K,10K,100K,500K,1000K
		Bandwidth	0.5K,1.0K,1.2K,2.2K,3.0K,4.0K
		LNA	AGC
			0bd,...,-35bd
		BFO	

Menu Function List

Menu	Second Menu	Third level menu
VOX	1.VOX Switch	OFF/ON
	2.VOX Level	Level 1···Level 9
	3.VOX Delay	0.5sec···2.0sec
Zone	Up to 15 zones can be set, with 64 channels per zone.	
VFO&CH (Frequency mode)	1.Step	2.50KHz, 5.00KHz, 6.25KHz, 8.33KHz, 10.0KHz, 12.5KHz, 20.0KHz, 25.0KHz, 50.0KHz, 100.0KHz
	2.Direction	None/Plus/Minus
	3.Offset	Manual frequency input
	4.RX Modulation	FM/AM
	5.CH-Memory	Zone1···Zone15
	6.CH-Delete	Zone1···Zone15
VFO&CH (Channel mode)	1.MDF-A	NAME FREQUENCY CHANNEL NUM.
	2.MDF-B	
	3.MDF-C	
	4.CH-Edit Name	Press # to switch Input Method
	5.RX Modulation	FM/AM
	6.CH-Memory	Zone1···Zone15
	7.CH-Delete	Zone1···Zone15
CTCSS DCS	1.RX CTCSS	OFF
		67.0Hz···254.1Hz
	2.RX DCS	OFF
		D023N···D754I

Menu	Second Menu	Third level menu
CTCSS DCS	3.TX CTCSS	OFF
		67.0Hz···254.1Hz
	4.TX DCS	OFF
		D023N···D754I
	5.FHSS CODE	OFF
	6.Encryption	OFF/ON
	7.Scan SubCode	CTCSS
		DCS
	8.Scan Memory	ALL
		DECODER
		ENCODER
Radio	1.Work Band	18-64MHz
		64-520MHz
	2.SQL	OFF
		Level 1-Level 9
	3.Trans Power	High
		Middle
		Low
	4.Bandwidth	Wide
		Narrow
	5.Scramble	OFF
		Scram1···Scram8
	6.Standby Set	OFF/ON
	7.Battery Save	OFF
		Normal
		Super
		DEEP

Menu Function List

Menu	Second Menu	Third level menu	
Radio	8.Busy Lockout	OFF/ON	
	9.TOT	OFF	
		30sec···240sec	
	10.TALL	OFF/ON	
	11.R-TONE	1000hz,1450hz,1750hz,2100hz	
	12.Scan Mode	Time	
		Carrier	
		Search	
	13.ROGRE	OFF/ON	
	14.RP-STE	OFF	
		100ms···1000ms	
	15.RPT-RL	OFF	
		100ms···1000ms	
	16.AB RPT-Mode	OFF/ON	
	17.RPT-Speaker	OFF/ON	
	18.SOS Mode	On Site	
		Send Sound	
		Send Code	
APRS Set	1.APRS ON/OFF	OFF/ON	
	2.GPS	1.GPS	OFF/ON
		2.Position	Degrees/Degrees and Minute/Degrees and Minute and Second
		3.Time Zone	UTC-13···UTC+13
		4.Distance Unit	KM/Sae Mile/Mile
		5.Altitude Unit	Meter/Foot
		6.Speed Unit	Km/h / Kn / MPH

Menu	Second Menu	Third level menu		
APRS Set	3.Beacon Setup	1.Callsign		
		2.SSID	0...15	
		3.Path Choose	OFF	
			WIDE1-1	
			WIDE1-1,WIDE2-1	
			PATH1	
			PATH2	
		4.User Path	1.Digi1 Path	
			2.Digi1 SSID	
			3.Digi2 Path	
			4.Digi2 SSID	
		5.Source Position	Fixed Position	
			GPS Position	
		6.My Position Set	1.Set Longitude	Degrees/Minute/Second
			2.Longitude WE Set	W/E
			3.Set Latitude	Degrees/Minute/Second
			4.Latitude NS Set	N/S
			5.Fixed altitude	
		7.Stations Symbol	⌈/L⌋ People	
			⌈/b⌋ Bicycle	
			⌈/>⌋ Car	
			⌈/R⌋ Vehicle	
			USER User-defined	
		8.Custom Icons		
		9.MIC-E Type	Off duty	
			En Route	

Menu Function List

Menu	Second Menu	Third level menu	
APRS Set	3.Beacon Setup	9.MIC-E Type	In Service
			Returning
			Committed
			Special
			Priority
			EMERGENCY
		10.Message	
	4.Digi Setup	1.DIGI CH	CH A/CH B/ CH A+CH B
		2.Routing	OFF
			WIDE1
			WIDE1,WIDE2
			PATH1
		3.DIGI Tx Wait	0S···9S
	5.Advanced	1.APRS Tx Delay	100ms···1000ms
		2.APRS Ringer	OFF/ON
		3.RX Popup	OFF/ON
		4.RX Beacon Clear	
		5.TNC Type	OFF/KISS
		6.Factory Setting	
User Key	1.PF2	RADIO/MONI/SCAN/SEARCH/SOS/ SPECTRUM/Beacon TX	
	2.Long Press PF2		
	3.Long Press keys 0-9	NONE/RADIO/VOX/SEARCH/SPECTRUM/ NOAA/SCAN QT/SQUELCH/FREQ STEP/ TX POWER/CH-MEMORY/ZONE SELECT/ STANDBY SET/CTCSS DCS/FREQ OFFSET/ FREQ DIR/RX MODULATION/TONE TX/ TRANSFER/GPS SWITCH/APRS SWITCH/ ROGER	

Menu	Second Menu	Third level menu
Bluetooth	OFF	
	ON	
Signaling	1.S-CODE	CODE1···CODE15
	2.PTT-ID	OFF
		BOT
		EOT
		BOTH
	3.DTMFST	OFF
		DT-ST
		ANI-ST
		DT+ANI
Setting	1.Beep Prompt	OFF/ON
	2.Voice	OFF/ON
	3.Keypad Lock	OFF
		0.5sec···15sec
	4.Back Light	Bright
		0.5sec···3min
	5.Menu OutTime	0.5sec···60sec
	6.Power On Display	Picture/Voltage
	7.Language	English/Chinese
Reset	1.VFO Mode	
	2.Reset All	
About Machine	Software	
	Hardware	
	ANI CODE	

Charging Instructions

1.Dock Charging (Optional): Insert the battery pack or the radio with the battery pack into the charging dock. Ensure proper contact with the charging terminals of the dock.
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 main unit's battery.
3.When the device is charging, the red indicator light indicates charging in progress. The green indicator light indicates charging is complete.

Cleaning and Maintenance

To ensure optimal performance and extend the lifespan of this product, please follow the guidelines below for daily maintenance and cleaning.

Daily Maintenance:

1.Do not pierce or scratch the product with hard objects.
2.Do not store the product in environments containing chemical corrosive substances.
3.Do not carry or use the product by pulling the earphone cable.
4.When not using the earphone jack, cover the interface with the protective cap.

Cleaning Procedure:

Before cleaning, please power off the device and remove the battery:

1.Regularly use a dry, clean, lint-free cloth or a soft brush to remove dust from the product surface and charging terminals.
2.If the buttons or casing become dirty, use a neutral detergent and a non-woven cloth for cleaning. Do not use detergents, alcohol, sprays, or petroleum-based chemicals as they may damage the surface casing.
3.After cleaning, ensure the product is completely dry before use.

Warranty Terms

The warranty period for this product starts from the date of sale (based on the date on the sales invoice). The main unit is covered for 12 months, and the battery and charging accessories are covered for 6 months. The following cases will require paid repair services during the warranty period:

1.Failure to present this warranty card and the purchase invoice.
2.This card shows signs of alteration or does not match the product.
3.Defects and damages caused by using this product under non-standard conditions.
4.Defects and damages caused by misuse, accidents, water ingress, or negligence.
5.Defects and damages resulting from improper testing, operation, repair, installation, modification, or adjustment.
6.Defects and damages caused by unauthorized repairs or disassembly.
7.Defects and damages caused by force majeure.
8.Normal wear and tear from regular 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 serves as an important proof for the end user to enjoy warranty services. It must be stamped and filled out completely by an authorized dealer to be valid. Please keep it safe.