

Ultra Compact Dual Band Mobile Radio

Small in Size, Big in Power



Supports 12/24V voltage



USER'S MANUAL

成品尺寸14.3x10.5cm

To customers

Thank you very much for using our two-way radios.
This product has a newly developed function menu
and humanism operation design, making it easy to use.
It will meet your requirement by the compact size and
reasonable price.

Though friendly design for user, this transceiver is technically complicated and some features may be new to you. Considering this manual to be a personal tutorial from the designers, allow the manual to guide you through the learning process now, then act as a reference in the coming years.



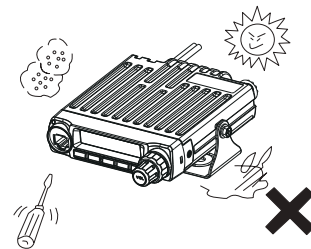
Please contact the local authorized dealer if you have any questions. We are not responsible for any typographical errors that may be in this manual. Standard accessories may change without notice, getting your understanding for any inconveniences.

When programming the transceiver, need the factory initial data firstly, and then rewrite the frequency and signaling etc. Otherwise errors may occur because of different frequency band etc.

Precautions

Please observe the following precautions to prevent fire, personal injury, or transceiver damage:

- Do not attempt to configure your transceiver while driving, it is dangerous.
- This transceiver is designed for a 12V and 24V DC power supply.
- Do not place the transceiver in excessively dusty, humid or wet areas, nor unstable surfaces.
- Please keep it away from interferential devices (such as TV, generator etc.)
- Do not expose the transceiver to long periods of direct sunlight nor place it close to heating appliances.
- If an abnormal odor or smoke is detected coming from the transceiver, turn OFF the power immediately. Contact local service station or your dealer.
- Do not transmit with high output power for extended periods; the transceiver may overheat.



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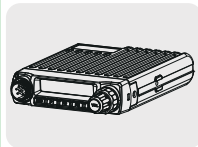
Supplied Accessories

Professional FM Transceiver

Supplied Accessories/Optional Accessories

Supplied Accessories

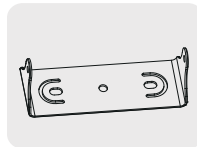
After carefully unpacking the transceiver, identify the items listed in the table below. We suggest you keep the box and packaging.



radio body *1



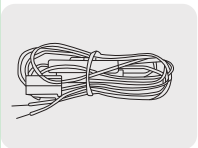
Microphone *1



Panel bracket *1



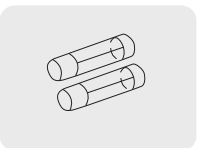
Microphone bracket*1



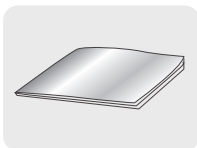
Power Cable*1



Hardware



Fuse*2



User's Manual*1

User's Manual

Installation

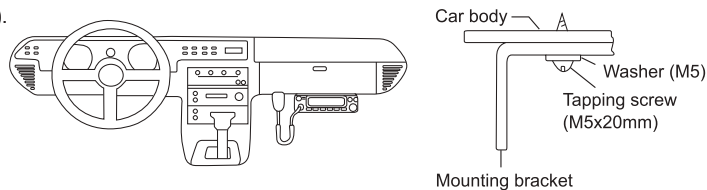
Professional FM Transceiver

Initial Installation

Mobile installation

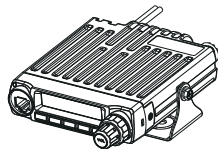
To install the transceiver, select a safe, convenient location inside your vehicle that minimizes danger to your passengers and yourself while the vehicle is in motion. Consider installing the unit at an appropriate position so that knees or legs will not strike it during sudden braking of your vehicle. Try to pick a well ventilated location that is shielded from direct sunlight.

1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (4 pcs) and flat washers (4 pcs).



2. Position the transceiver, then insert and tighten the supplied hexagon SEMS screws.

■ Double check that all screws are tightened to prevent vehicle vibration from loosening the bracket or transceiver.



■ Determine the appropriate angle of the transceiver, using the screw hole positions on the side of the mounting bracket.

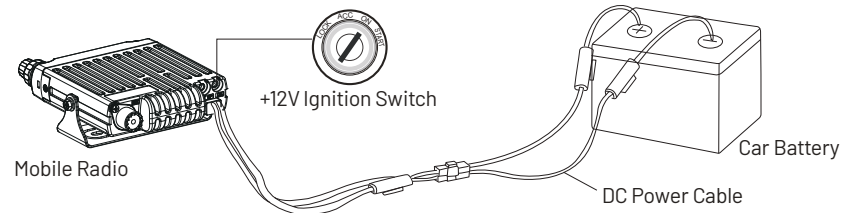


DC Power Cable Connection

NOTE: Locate the power input connector as close to the transceiver as possible.

Mobile Operation

This transceiver is designed for a 12V and 24V DC power supply.



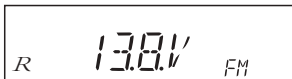
1.Route the DC power cable supplied with the transceiver directly to the vehicle's battery terminals using the shortest path from the transceiver.

- We recommend you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop.

- The entire length of the cable must be dressed so it is isolated from heat,moisture,and the engine secondary (high voltage)ignition system/cables.

2.After installing cable,in order to avoid the risk of damp,please use heat-resistant tap totie together with fuse box.Don't forget to reinforce whole cable.

The transceiver will return to its normal operation when the power is switched ON orrepeat above operation.



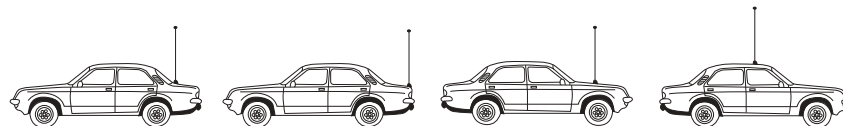
Antenna Connection

Before operating,installan efficient,well-tuned antenna.The success of your installationwill depend largely on the type of antenna andits correct installation.The transceiver cangive excellent results if the antenna system and its installation are given careful attention.Use a 50Ω impedance antenna and lowHoss coaxial feed-line that has a characteristicimpedance of 50Ω,to match the transceiver input impedance.Coupling the antenna tothe transceiver via feed-lines having an impedance other than 50*reduces the efficiencyof the antenna system and can cause interference to nearby broadcast television receivers,radio receivers,and other electronic equipment.

NOTE:Transmitting without first connecting an antenna or other matched load may damagethe transceiver.Always connect the antenna tothe transceiver before transmitting.

All fixed stations should be equipped with a lightning arrester to reduce the risk of fire,electric shock,and transceiver damage.

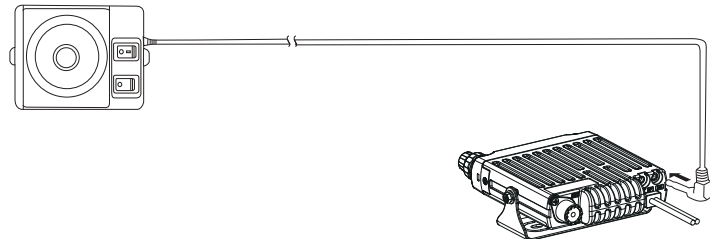
The possible locations of antenna on a car are shown as following:



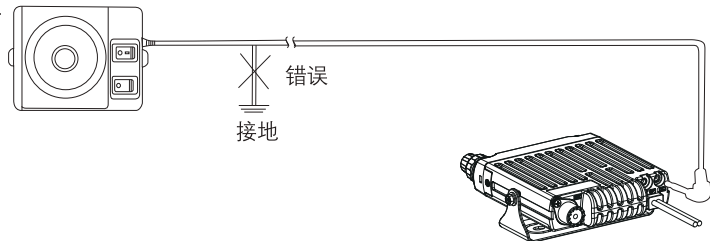
Accessories Connections

External Speaker

■ If you plan to use an external speaker, choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5 mm (1/8") mono (2-conductor) plug.

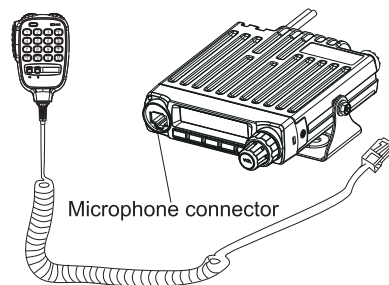


NOTE: External speaker adopt double port BTL, please care about the connecting way. The speaker can not connect with the ground, otherwise the speaker will be fault. The wrong connecting way as the following picture.

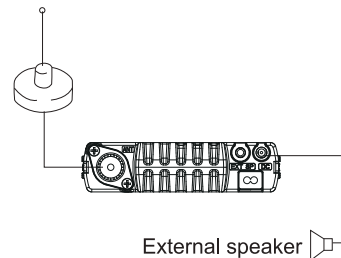


Microphone

■ For voice communications, connect a microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit. Press firmly on the plug until the locking tab clicks. Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.



Antenna [TCA-01]



Functions and features

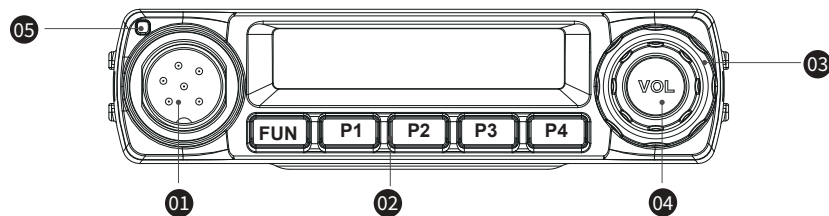
- Supports 12/24V voltage
- Dual band,dual wait,dual standby,dual watch
- Speaker gain
- Mic Gain
- Auto power off
- DOT-MATRIXLCD Display
- 200 channels
- FM radio for 32 channels storage
- Wide/Middle/Narrow bandwidth select
- High/Middle/Low power select
- Talk permit tone
- Roger tone
- Sub band tone
- Remote stun/kill/activate
- TOT
- ANI
- PTT ID
- DTMF encoding and decoding
- 2 Tone/5 Tone encoding and decoding
- Scrambler
- CTCSS/DCS
- Programmable keys
- Backlight brightness setting

User's Manual

Getting Acquainted

Professional FM Transceiver

Front panel buttons' definitions



NO.	Key	Function
01	Mic connector/DATA	Microphone connection port/PC programming data port
02	FUN,P1,P2,P3,P4 key	Long press Fun key to enter menu/Fun+P5:Enter menu Default setting as below: FUN+P1: FM RADIO Fun+*: Main/Sub channel switch Fun+P2: Lock Fun+P3: CTCSS/DCS setting Fun+#:Emergency call
03	Turnning Control	a.Rotate this knob can choose the VFO frequency,Channel number,Tone value,Scan direction. b.When operating band is MR model or channel mode,press [Turnning Control] can switch the channel.

NO.	Key	Function
04	P5	P5-- volume knob Long press P5 to power on the radio
05	Indicator light	Red Light during transmit Green light during receive

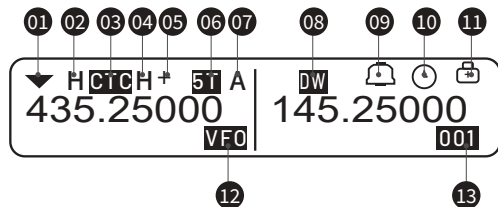
P1-P5 short and long press setting you can do it by software as you requirement.

Software-Basic---Radioset

Choice as below:

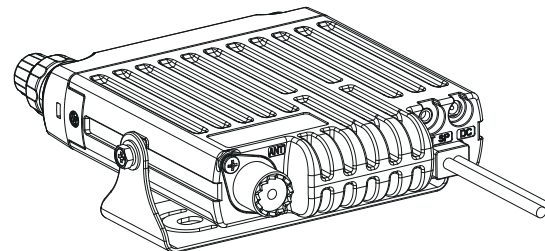
P1 Short
 P1 Long
 P2 Short
 P2 Long
 P3 Short
 P3 Long
 P4 Short
 P4 Long
 P5 Short
 P5 Long
 P6 Short
 P6 Long
 P7 Short
 P7 Long
 P8 Short
 P8 Long
 P9 Short
 P9 Long

Display



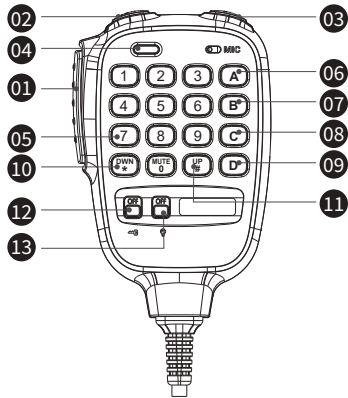
No.	Icon	Function
01	▼	Home screen
02	H,M,L	High power output/Middle power output/Low power output
03	CTC,DCS	CTCSS /DCS encode or decode
04	N,M,W	Narrow bandwidth/Middle bandwidth/Wide bandwidth
05	+, -	Positive direction of offset/Negative direction of offset
06	2T,5T,DT	Signaling
07	A	AM mode
08	DW	Dual wait
09	🔔	Beep
10	⌚	Auto Power-off
11	🔒	Lock the keypad
12	VFO	Frequency mode
13	001	Channel mode

Rear Panel



No.	Description	Function
01	Ant	Connection to 50Ω Antenna
02	EXT SP	Terminal for optional external speaker
03	EXT DC	DC power cable connection

Microphone



No.	Icon	Function
01	PTT	Press the key to transmit
02	Down	Decrease setting value
03	Up	Increase setting value
04	Indicator light	Indicator light will red during transmit and green during receive.
05	Number key	Input channel number or DTMF dial out etc
06	A	VFO mode and MR mode
07	B	Long press B---transmit
08	C	Under VFO mode,long press C to enter one key frequency copy

No.	Icon	Function
09	D	Short press D--Fun menu Long press D---Radio menu
10	*	Lock/Unlock
11	#	Long press # ---FM Radio
12	Key lock	Key lock on or off
13	Keypad light	Keypad light on or off

Basic Operation

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Basic Operations

Power on/off

Long press the P5  button to switch the radio ON.

-The power on message momentarily appears on the display.

-If the transceiver power on password has been activated, you must first enter your password before you can operate the transceiver.

Long press P5 button again to switch the radio OFF.

Adjusting the volume

Rotate P5(volume knob) clockwise to increase the volume and counterclockwise to decrease the volume.

Switch between VFO and channel Mode

In standby, press microphone "A" key, the indicators will display current channel in channel mode. Repeat above operation to switch between Frequency(VFO) mode and channel mode.

Adjusting Frequency/channel

Under Frequency(VFO) mode, you can change the current frequency to the desired one through [Turning Control]; Turn clockwise to increase frequency, turn counterclockwise to decrease. Or you can do it by "Down" or "Up" key at microphone.

In frequency mode, you can rotate the knob and change the standby frequency in steps. This product has 8 step sizes for users selecting: 2.5K, 5K, 6.25K, 10K, 12.5K, 25K, 50K, 100K.

You can also press the number keys to enter the waiting frequency you need to switch in sequence. For example, switch to 455.125MHz and press 【4】 , 【5】 , 【5】 , 【1】 , 【2】 , 【5】 . In the channel mode, you can change the current channel to the desired one through [Turning Control] or microphone “up” and “down”.

You can also press the number keys to enter the channel number you need to switch sequentially. For example, switch to CH001 and press 【0】 , 【0】 , 【1】 ; Switch to CH128 and press 【1】 , 【2】 , 【8】 . When you want to switch to a channel between CH030-CH099, you can also directly enter the last two digits of the channel number; If switching to CH034, connect to 【3】 and 【4】 ; Switch to CH099 and press 【9】 or 【9】 .

Receiving

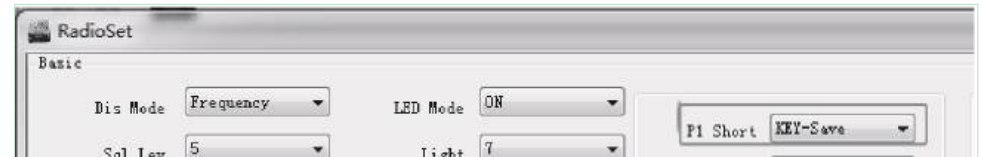
When the channel you are operating is called, the screen will show R and S meter appears on display. The indicator light show green at receiving status.

Transmitting

Press PTT and hold on and speak to the microphone to transmit, the screen will show T __ appears on display. The indicator light show red at transmit status.

Channel store or delete

Preset the key-save function by software. For example set this function at P1 Short.



1. Under frequency mode(VFO), turn [Turning Control] to select the desired frequency or input frequency by Mic's number keys.
2. Select the desired CTCSS/DCS signaling in the menu 23-25th.
3. Short press P1 to enter storage or delete mode, the channel number of screen will flashing.
4. Turn [Turning Control] to select the desired channel number to store or input directly by microphone.
5. Press Fun key or P5 to store current channel. Press P2 to delete the current channel.
6. Press P4 to exist.

VFO offset setting

Under VFO mode, enter Menu 22 to set magnitude of the repeater shift, enter menu 26 to set the shift direction, synthesizer Steps can be changed through menu item 27. For example, if your frequency now is 445.0500MHz, would like to set a frequency 444.4500MHz as transmit frequency, steps as below:

1. Under VFO mode, enter Menu 22 to set the offset at 0.6MHz, press F to confirm.
2. Enter menu 26 to set shift direction at “-“, press [Fun] to confirm.
3. Press PTT button will show transmit frequency at 444.4500MHz.

Operation of the composite key

Press Fun to enter below page:

Menu				
FUN	P1	P2	P3	P4

Then press the key below to achieve default function.

1.Press the “FUN+*” to switch home screen and sub screen.

▼ at where, which screen is home screen

2.FM radio function(FUN+P1)

1) On/off radio receiver

Under standby mode, press [FUN+P1] or directly long press [#] at microphone to open FM radio function , LCD

display “90.4M”, then press [FUN+P1] again, radios receiver is off

Radio 90.4	5
---------------	---

2)Mode selection

Under FM radio mode, press [A] to switch between FM memory mode and FM frequency mode (this function is unavailable when there is not FM memory channel).

3) Frequency selecting

Under FM frequency mode, input the digits directly by keypad or press the [Turning Control] to choose the desire frequency.

Under FM memory,press the [Turning Control] to choose the desire channel.

4)FM radio storage

Under FM frequency mode,press [P1] which you set key-save function, the channel number for storage blinks at the right of the screen.Press [Turning Control] select the desired channel number. Press[FUN] key to confirm and then back to the receiving mode.

5) FM radio channel delete:

Under FM frequency mode, press [P1] which you set key-save function, the channel number for storage blinks at the right of the screen.Press [Turning Control] select the desired channel number. Press[P2] key to delete the channel.

Keypad lock setting(FUN+P2)

Under standby mode, press [*] for 2 S to lock to unlock the keypad.“ ” will be displayed at the top of LCD when keypad is locked.

And you can Enter Menu 32[LOCK MD] to set Keypad lock method:ALL/PTT/KEY/K+S lock.

DCS/CTCSS setting(FUN+P3)

This function is used to receive and transmit CTCSS/DCS frequency.(The current channel should be have CTCSS/DCS)

1. Press the [Fun] key during standby to enter the menu operation interface and select menu 23
2. Press the [Fun] key to confirm and enter the settings mode.

Press the P1 key to switch the signaling type (OFF->DCS).

4. Select the DCS/CTCSS you need.
5. When selecting signaling as DCS, press the P2 key to choose the DCS direction.
6. Press [Fun] to confirm after completing the settings.

Set the receive tone coder and transmit tone coder in the same manner as the above operation.

Frequency copy

At VFO mode, Long press “C” at microphone to open one key frequency copy function, the screen will show:Auto Scan.

Using the other radio to transmit,the frequency will copy to your mobile radio.

Support different brand radio copy.

Emergency Alert(F+#)

Under standby mode, press [FUN] to enter menu setting. LCD display “MENU”,then press [#]to turn on emergency alert function,radio will transmit emergency ring,until you press PTT,it will exit.

Menu function instruction

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Menu function instruction

1. There are three ways to enter menu:

-Long press "Fun" key to enter menu

-"Fun" + P5 power on channel

-Long press "D" key at microphone to enter menu

2. Rotating the [Turning Control] to choose the desire menu or using microphone "UP" or "Down" to choose or directly input the desire menu by microphone number key.

3. Press "Fun" key to enter and set the current menu.

4. Press [Turning Control] to select desire value of current menu .

5. Press "Fun" key to save selected value.

6. Repeat the steps of 2-5 can set more value.

No.	Display	Setting values	Description
01	Scan	ON	Scan
02	STE	Frequency/120/180/240/OFF	End Tone Eliminator
03	TX.SEL	Main CH/Last CH	TX Channel
04	POW	HIG/MID/LOW	High/Middle/Low TX Power
05	SQL	0-9 Level	Squelch Level Setting
06	D.WATT	ON/OFF	Dual Wait/Standby
07	LED	ON/5S/10S/15S/20S/25S/30S/OFF	LED Display Mode
08	LIGHT	1-7	Back Light Setting
09	BEEP	ON/OFF	Keypad Beeper Setting
10	DT CH	1-16	Preset Channel Setting
11	TOT	OFF/30/60/90/120/150/180/210/240/270	Time-out-Timer

No.	Display	Setting values	Description
12	BCLO	OFF/SUB/Carrier	Busy Channel Lock-out
13	Signal	OFF/DTMF/2 Tone/5 Tone	Signal Select
14	Roger BP	ON/OFF	Transmit Over Beeper
16	Code	ON/OFF	Power on Password
17	SCAN	TO/CO/SE	Scan Mode
18	AUTO LK	ON/OFF	Auto Keypad Lock
19	Pow off	OFF/30 minute/60 minute/120 minute	Auto Power Off
20	OPNSET	DC/Char/MEG/OFF	Power-on Display
21	DC VOLT	/	DC Voltage
22A	OFF SET	0.000-99.995MHZ	Repeater Shift(Under VFO Mode)
22B	DIS.NM	ON/OFF	Power-on Display
23	C-CDC	OFF/67.0/D023N	TX/RX Tone Coder
24	R-CDC	OFF/67.0/D023N	RX Tone Coder
25	T-CDC	OFF/67.0/D023N	TX Tone Coder
26	S-D	OFF/+/-	Shift Direction
27	STEP	2.5K/5K/6.25K/10K/12.5K/25K/50K/100K	VFO Step
28	N/W	WIDE/MIDD/NARR	Bandwidth Select
29	SEEK	67	CTCSS Scanning
30	SEEK	D023N	DCS Scanning
31	SCR.NO	OFF/1-8	Voice Scramble
32	LOCK MD	ALL/PTT/KEY/K+S	Lock Mode
33	DIS MD	FRE/CH/MR	Work Mode Setting
34	FM Moni	ON/OFF	FM Radio
35	CH.NAME		Display Channel name

No.	Display	Setting values	Description
36	MIC LEV	1-8	Microphone Sensitive Level
37	RX.LIGHT	ALW.ON/CODE.ON/OFF	Receiving Light
38	TalkPrmt	ON/OFF	Talk Permit
39	Ch Alert	ON/OFF	Receive Alert
40	Spk Gain	Normal/1-7	Speaker Gain
41	Reset	ALL/VFO/FULL	Reset Function
42	Ver:	MUC/T	Radio Version

SIGNALINGS

Professional FM Transceiver

SIGNALINGS

Press the [PTT] and [UP] key at microphone to achieve remote kill/stun/active.

DTMF

When the signal of the channel selects the DTMF, press PTT and at the same time press

【UP】key at microphone, the current channel will automatically check if the DTMF signaling is received and decoding it. And achieve a corresponding function according to the received code.

The function including: ANI display, remote stun/waken/kill.

ANI Display:

1.DTMF Encode type choose ANI:

DTMF MENU		
Dtmf Encode		
No.	Type	Code
1	ANI	003*001

2.Input the called ID, eg, your radio ID is 001, the called radio ID is 003

No.	Type	Code
1	ANI	003*001
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Special Cal

No.

Call Type

Call ID

3.Select channel NO.

Own ID	001	Dtmf Speed(MS)	100
Delimiter	*	First Digit(MS)	200
Group Code	A	Auto Reset Time(S)	10
		☒ DTMF ANI	Select Ch 1
		☒ Side Tone	

4.Choose DTMF signal

No.	Rx Fre	Tx Fre	Decode	Encode	Scramble	Power	B_Lock	Step	Wide	Signal
1	445.02500	445.02500	OFF	OFF	OFF	Hig	OFF	12.5K	Wide	DTMF

5.Press PTT and side key 【UP】 key at the microphone at the same time to achieve the ANI display function.

Remote stun, remote kill function

Stun code: when the radio receives the corresponding DTMF code, the radio will be remote stunned and disabled transmit.

Kill code: when the radio receives the corresponding DTMF code, the radio will be remote killed and disabled receive and transmit.

Waken code: release the state of stun/kill.

Select Ch: the default channel when the DTMF is calling.

1.DTMF Encode type choose OFF, user can input the desired DTMF code directly.

DTMF MENU		
Dtmf Encode		
No.	Type	Code
1	ANI	003*001
2	OFF	323457989012345
3	OFF	323457989012345#
4	OFF	423465789012345
5	OFF	423465789012345#
6		

2.In transmitting ,input the remote kill/stun code for the radio which you want to remote kill/stun.

Stun Code 323457989012345

Kill Code 423465789012345

3.DTMF Encode:

Remote receive code : "remote stun code + #" to waken radio which at stun state

Remote receive code: "remote kill code + #" to waken radio which at kill state

4.Select channel

Own ID	001	Dtmf Speed(MS)	100
Delimiter	*	First Digit(MS)	200
Group Code	A	Auto Reset Time(S)	10
		☒ DTMF ANI	
		☒ Side Tone	Select Ch 1

Like above setting,
 Channel 1: ANI display,
 Channel 2: remote stun code
 Channel 3: remote waken from stun state
 Channel 4: remote kill code
 Channel 5: remote waken from kill state
 5. Signal choose DTMF

No.	Rx Fre	Tx Fre	Decode	Encode	Scramble	Power	B_Lock	Step	Wide	Signal
1	445.02500	445.02500	OFF	OFF	OFF	Hig	OFF	12.5K	Wide	DTMF

6. Remote kill/waken/stun operation.

After setting like above, if you would like to achieve Radio A kill Radio B, there are two way to achieve:

One: At programming software DTMF setting choose Ch 4.

Then press the PTT and 【UP】 key at microphone to achieve remote radio B.

Two: At radio, choose Menu 10th—DT CH—Channel number choose 4.

Then press the PTT and 【UP】 key at microphone to achieve remote radio B.

Similar operation for remote stun/waken.

2 TONE Operation

The screenshot shows the '2 Tone Menu' software interface. On the left is a '2 Tone Encode' table with columns for No., First Tone, Second Tone, and Rate. The first row is populated with 1, 666.0, 2222.0, and 2T-01. Below this is a '2 Tone Decode' section with a 'Decode Format' dropdown set to 'A-B', a 'Decode Express' dropdown set to 'Normal', and four input fields for A Tone(F), B Tone(F), C Tone(F), and D Tone(F) with values 666.0, 2222.0, 666.0, and 2043.0 respectively. To the right of these are 'Setting' options for First Tone Time, Second Tone Time, Long Tone Time, Interval Time, First Tone Time, and Auto Repeat Time, with a 'Slide Tone' checkbox checked. At the bottom are 'Enter' and 'Cancel' buttons.

2 Tone encode

Input: the frequency of first tone and second tone

Note: the frequency between of the first tone and second tone should not too similar to avoid the decoding is wrong.

2 Tone decode

Decode Format: the combination of decode, for example: A-B, you should make sure the frequency of first tone is A, and second tone is B. Other combination is similar.

5 Tone Operation

5Tone Menu

5Tone Encode 5Tone Decode

5Tone Encode

No.	Type	Call ID	Ch. Name
1	AKI	12345	ST-01
2	OFF	12345678	ST-02
3	OFF	12345678	ST-03
4	OFF	87654321	ST-04
5	OFF	88876411	ST-05
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Enter Cancel

5 Tone encode

The write way is same with the DTMF.

5 Tone decode

Function: The function will be achieved when the radio receives the corresponding code.

Select: Turn on squelch

Stun/kill: same with DTMF

Wake: release the state of stun/kill

SPECIFICATION/GUARANTEES

Professional FM Transceiver

SPECIFICATION

General	Frequency range	EU 144-146 & 430-440MHz /US 144-148&420-450Mhz
	Channels	200
	Frequency stability	±1ppm
	Working temperature	-10°C ~ + 60°C
	Operating voltage	13.8V DC
	Size (HxWxD)	145x108x21.5mm
	Weight	422g
Receiver	Receiver sensibility	0.2μV @ 12dB SINAD
	Adjacent channel selectivity	≤-60dB@12.5KHz
	Intermodulation	≥60dB /≥65dB
	Spurious rejection	≥70dB
	Audio response	+1 ~ -3dB
	Audio distortion	<5%
	Audio power	3W
Transmitter	FM Hum and Noise	≥45dB@25KHz /≥40dB @12.5KHz
	RF output power	UHF 25W / VHF 25W max
	Transmit current	≤4.5A
	Standby current	0.2A
	FM modulation	11kΦF3E / 16kΦF3E
	Modulation distortion	<5%
	FM Hum and Noise	≥45dB@25KHz /≥40dB@12.5KHz
	Adjacent channel power	≤-60dB@12.5KHz
	Audio response	+1 ~ -3dB

GUARANTEE

Model Number: _____

Serial Number: _____

Purchasing Date: _____

Dealer: _____ Telephone: _____

User's Name: _____ Telephone: _____

Address: _____ Post Code: _____

Remarks:

- 1 This guarantee card to be kept by the user, no replenishment if lost.
- 2 This guarantee card to be filled & chopped by the dealer, or it is invalid.
- 3 Don't alter the guarantee card, please confirm the serial number on the guarantee card is same as that on the machine.
- 4 One-year guarantee, charger, battery, ear-phone, antenna and cable are not under guarantee.
- 5 The user can get repairing service from the followingways:
 - Go to the shop where you buy the machine.
 - Our local repairing agents.
 - Send back to our company.

Please cut along with this line



SPECIFICATION

CE statement

We declare that the radio is compliance with Radio equipment Directive (RED) 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: xxxxxx

The device in the environment with the temperature between -10-60°C. and operating under 2000m, otherwise, it may damage your device.

This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated with minimum distance 110 cm between the radiator & body.

Prohibit the use of non-original antenna, if the antenna is damaged, please contact the dealer for replacement, support the frequency range of 144-146/430-440Mhz external antenna gain 3dBi max /50 ohms.

CAUTION:

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the use's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority granted by the local government radio management departments to operate this radio and should not be made. To comply with the corresponding requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the local government radio management departments equipment authorization for this radio could violate the rules.