

BAOFENG[®]



**HD
CALLS**

- Mini size
- Easy to operate
- Slim fashion
- Easy to carry



USER'S MANUAL

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FUNCTIONS AND FEATURES

- Broadcast FM radio receiver(65-108MHz)
- Alarm and built-in LED flashlight
- Max 20 channels
- Time count down (0.5hr/1hr/.../8hrs)
- Voice prompt
- VOX(voice activated transmission)
- 50 CTCSS tone/104 DCS code/nonstandard tone available
- Tail tone elimination
- Battery saving
- Width/Narrow band selection
- SOS call notice
- PC programmable

Getting started




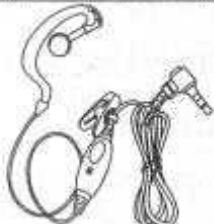


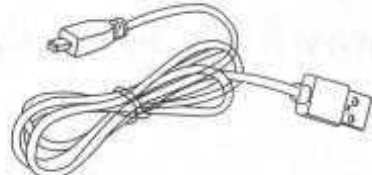

BEFORE PROCEEDING INSURE:

- Qualified technicians shall service this equipment only. Do not modify the radio for any reason.
- Use only BAOFENG supplied or approved accessories.
- Turn off your radio prior to entering any area with explosive and flammable materials. Do NOT USE your transceiver at a gas/fuel station
- Do not expose the radio to direct sunlight over a long time, nor place it close to a heating source.
- To avoid electromagnetic interference or compatibility conflicts, turn off your radio in any area where posted notices instruct you to do so.
- Do not transmit for long periods of time, as it may overheat the transceiver.
- Keep the unit away from dusty, damp and wet environments.

Unpacking and Inspecting

- Please check the packaging of your radio for any signs of damage.
- Carefully open the box, and confirm you received the items listed below.
- If you find the radio or the included accessories are damaged or lost, immediately contact your dealer.

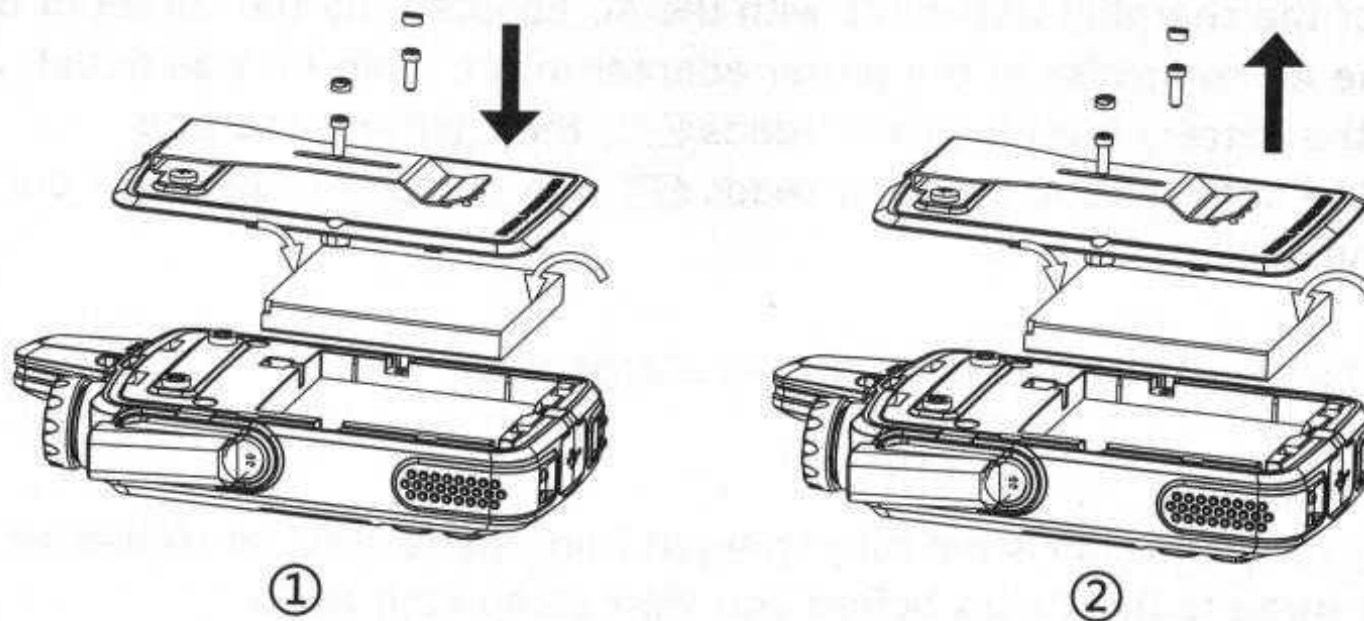
What's in the Box

| | | | | |
|---|--|---|--|---|
|  <p>Mini handheld radio</p> |  <p>Battery</p> |  <p>Adapter</p> |  <p>Earpiece</p> |  <p>Belt clip</p> |
| |  <p>Hand strap</p> |  <p>USB charging cable</p> |  <p>User manual</p> | |

Assembly

Battery


Open the battery cover with the screwdriver, then join the electric lead in to the socket of battery, you will hear the voice 'welcome', and report the channel number. Align the electric lead into the slot and place the battery smoothly and screw the cover. If you want to remove the battery, please do as the above steps.





Charging and battery maintenance

Charging

Battery should be fully charged before initial use. Optimum battery efficiency will be achieved after the three full battery charge and discharge cycles.

When the battery level indicator reads , the battery is depleted. At this point the radio will start beeping periodically, that means you should charge your radio.

1. Connect the charging USB cable with the AC adapter and the socket of the radio.
2. Plug the AC connector of the power adapter into a main AC wall outlet.
3. When the battery level indicator reads , the charge is starting.
4. When the battery level indicator reads , the charge finishes. Pull out the USB charging cable.



Radio should be turned off during charge cycle.

Battery maintenance

The battery for your radio is not fully charged from the factory, so please let it charge for at least three to five hours before you start using your radio.



Use only batteries approved by the original manufacturer.

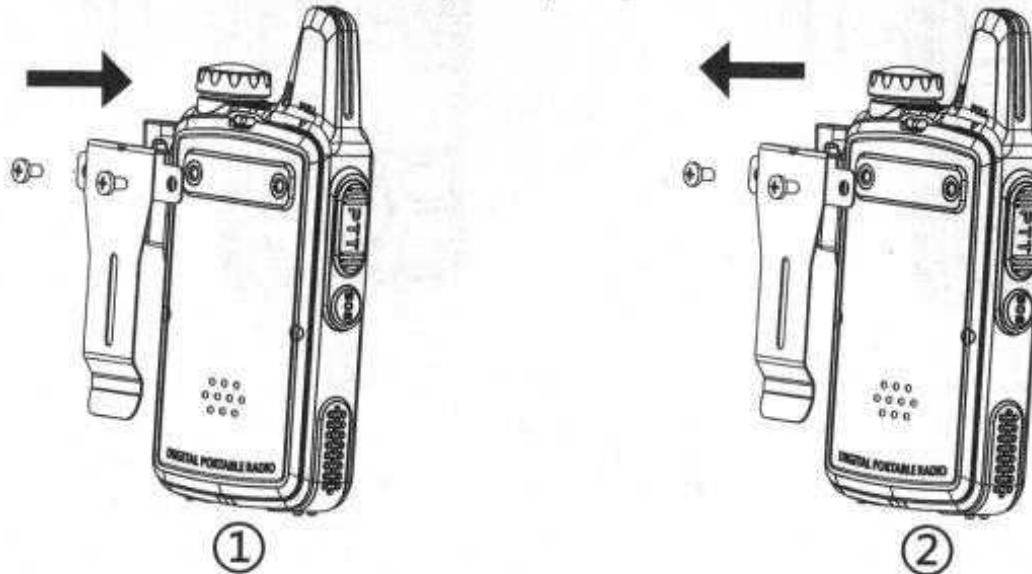
Never attempt to disassemble the battery pack.

Do not expose the battery to fire or intense heat.

Dispose of batteries in accordance with the local recycling regulations.

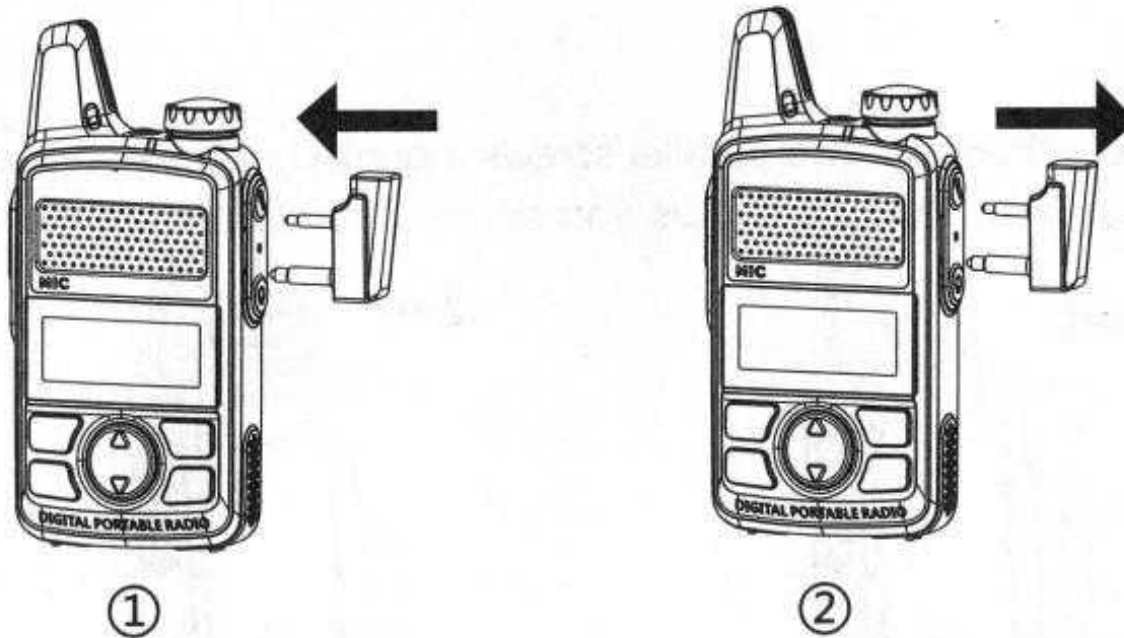
Belt clip

At the back of the radio there are two parallel screws mounted, remove these and thread them through the holes on the belt clip as you screw them back into the radio body.

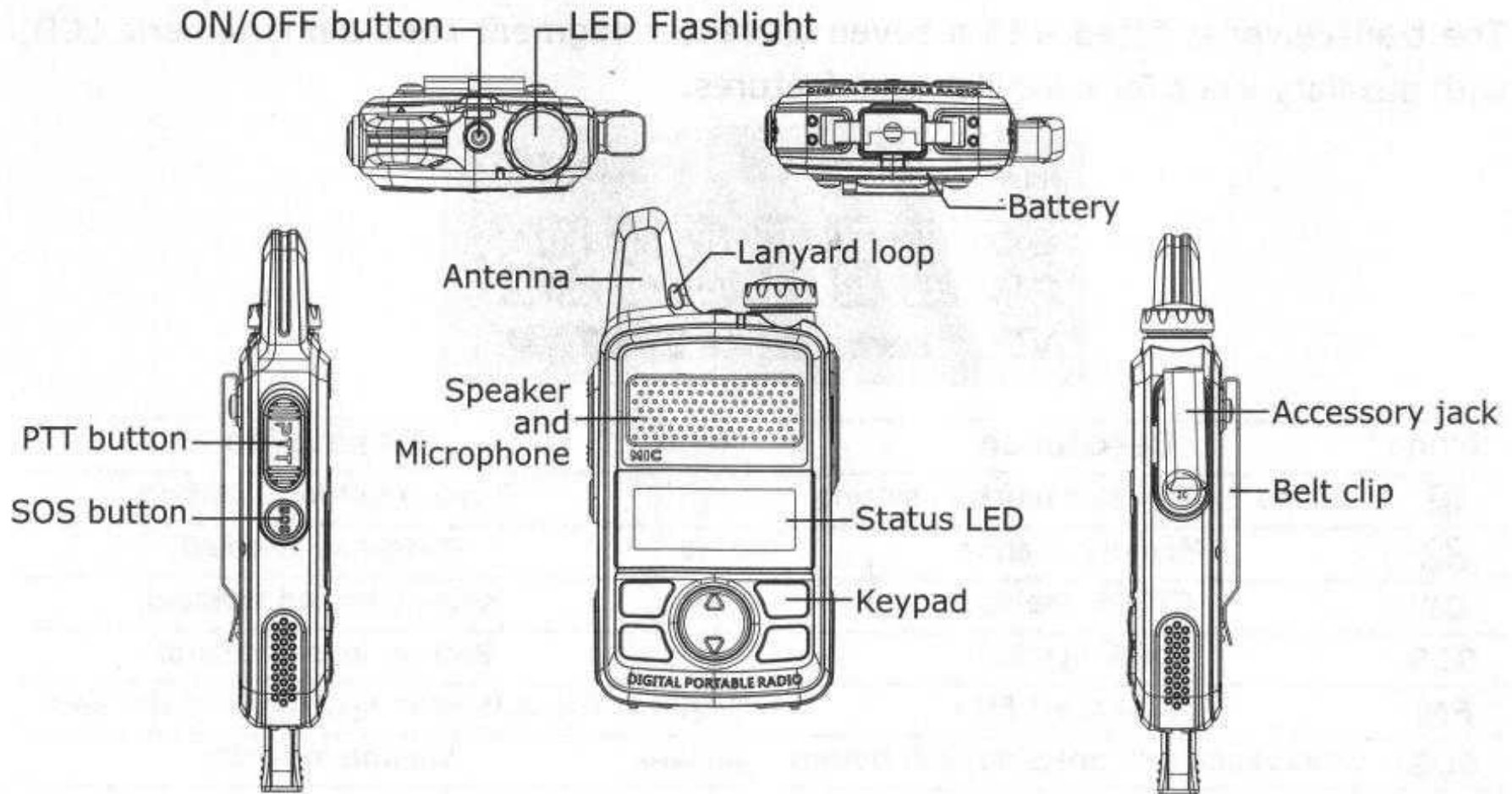


Earpiece

Open the cover of the earpiece jack, align the connector and push fully in.

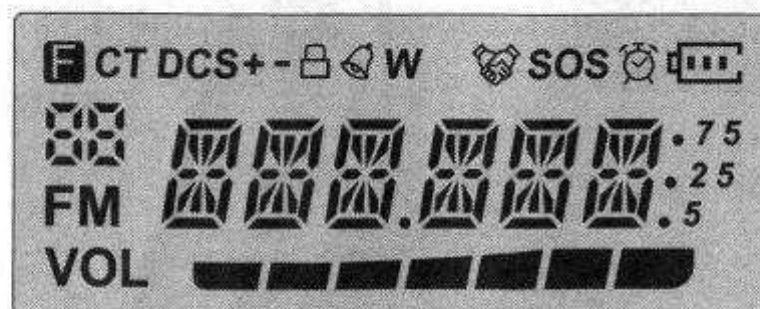


Getting to know your radio



The main display

The transceiver is fitted with a seven character segment code alphanumeric LCD, with auxiliary icons for miscellaneous features.



| Icon | Description | Icon | Description |
|------------|-------------------------------------|----------|-------------------------------------|
| F | Menu 9. Repeater function setting | | Time countdown setting |
| 08 | Memory channel | W | Wideband enabled |
| CT | CTCSS enabled | | Keypad locked enabled |
| DCS | DCS enabled | | Battery level indicator |
| FM | Broadcast FM | | The extension synchronizes the base |
| SOS | Emergency call, pressing SOS button | | Volume indicator |

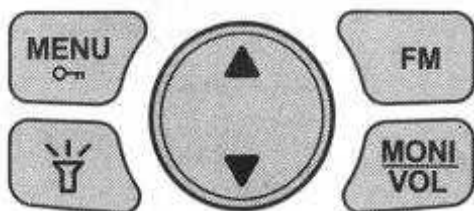
Status LED

The status LED has a very simple and traditional design. When you receive a signal it turns green, when you transmit it turns red, and it's off in standby.

SOS button

20 group channels only could be entered via software. And also you could have an extra one for group call or emergency call. While you press this button, all others will receive your call.

Keypad Zone




Menu []

The menu key, used to enter the menu and confirm menu options, also lock the keypad. Press and hold MENU to lock out all the keys except for three buttons (ON/OFF, SOS,PTT).

Up and down key []

The arrow keys are used to navigate through the menu as well as select channels, and volume up and down.

FM (Broadcast FM and Alarm) []

Press FM momentarily to start the broadcast FM receiver. Another momentary press turns the broadcast FM receiver off. If a signal is received on the active channel while you are listening to the broadcast FM, the receiver will open squelch to that frequency (as if scanning) and remain there until the signal goes away. It will then switch back to broadcast FM.

Press and hold FM to activate the alarm function. Press FM (a short press) again to turn it off.



The broadcast FM band could be set via software.

To search the radio station quickly, press the MENU key.

MONI/VOL []

Press it momentarily, the volume indicator will appear, then press arrow keys to volume up or down.

Press and hold MONI/VOL to monitor the signal. This will open up the squelch so you can listen to the unfiltered signal.

Lamp/scan []

Press it momentarily to turn on the LED flashlight. Another momentary press will flash the LED. Another momentary press turns the flashlight off.

Press and hold it to enable the scanner. Another momentary press to exit the scanning.

Combination key functions

High and low output power switching

Press and hold the ON/OFF+LAMP about two seconds to switch on the radio, you can select the high or low output power. If the voice prompt is enabled, the voice will announce "one" or "five".

Resets the radio to factory defaults

Press and hold the ON/OFF+MONI/VOL to switch on the radio, all settings are reset to factory defaults. Factory default setting as: 400.025MHz, no CTCSS/DCS, low output power, battery save, volume level 5, width band, SQL 5, key tone ON, other settings off.

Basic Use

Power and volume

Turning the unit on

To turn the unit on, simply press the On/Off button until you hear a "click". If your radio powers on correctly there should be an audible beep after about second and the display will show a message or flash the LCD depending on settings for about second. Then it will display a channel. If the voice prompt is enabled, the voice will announce "welcome to use".

Turning the unit off

Press and hold the ON/OFF button, turn the unit off.

Adjusting the volume

Press the MONI/VOL momentarily, the volume indicator will appear, then press the UP key to turn the volume up; press the down key to turn the volume down. Press MONI/VOL to confirm the volume level you set.

Making a call

Press and hold the PTT button on the side of the radio body to transmit. While transmitting speak approximately 3-5cm from the microphone. When you release the PTT, your radio will go back to receive mode.

Working the menu system

For a complete reference on available menu items and parameters, see Appendix, Menu definitions.

Basic use

Using the menu with arrow keys

1. Press the MENU key to enter the menu.
2. Using the arrow key to navigate between menu items.
3. Once you find the desired menu items, press menu again to select that menu item.
4. Use the arrow keys to select the desired parameter.
5. When you have selected the parameter you want to set for a given menu item;
 - a. To confirm your selection, press menu and it will save your setting and bring you back to the main menu.*
 - b. To cancel your changes, press SOS or PTT button and it will reset the menu item and bring you out of the menu entirely.*
6. To exit out of the menu at any time, press SOS or PTT button.

Scanning

The radio features a built in scanner for the bands. It will scan your channels. To enable the scanner, press and hold LAMP key for about two seconds. Press LAMP key momentarily to stop the scanning mode.

Scanning modes

The scanner is configurable to one of three ways of operation: Time, carrier or search, each of which is explained in further details in their respective section below.

Setting scanner mode

1. Press menu key to enter the menu.
2. Using arrow keys to navigate between the menu items until you come to the scanner mode.
3. Press Menu key to select.
4. Using arrow keys to select the scanning mode.
5. Press Menu key to save and confirm.
6. Press SOS or PTT button to exit the menu.

Time operation

In time operation (TO) mode, the scanner stops when it detects a signal, and after a factory preset time out, it resumes scanning.

Carrier operation

In carrier operation (CO) mode, the scanner stops when it detects a signal, and after a factory preset time with no signal, it resumes scanning.

Search operation

In search operation (SE) mode, the scanner stops when it detects a signal. To resume scanning, please press and hold LAMP key.

Countdown timer

A countdown is a sequence of backward counting to indicate the time remaining before an event is scheduled to occur. There are a lot of different selections. Please do as below:

1. Press menu key to enter the menu.
2. Using arrow keys to navigate between the menu items until you come to NO.6 ALARM.
3. Press Menu key to select.

4. Using arrow keys to select different setting.
5. Press Menu key to save and confirm.
6. Press SOS or PTT button to exit the menu.

Selective calling

Sometimes when you are working with large groups of people using the same channel, things can get very crowded. To minimize this problem, several methods blocking out unwanted transmission on your frequency have developed. In general, there are two forms of selective calling in two-way radio systems: Group calling and individual calling.

Group calling, as the name suggest, is one - to-many form of communication. Every radio in your working group is configured the same way and any radio will make contact with every other radio in the group.

Individual calling, sometimes also known as paging, is one-to-one many form of communication. Every radio is programmed with a unique ID code. And only by sending out a matching code can you get that radio open up to your transmissions.

The Baofeng BF-T1 features three different ways of group calling.

CTCSS / DCS

Tone-burst (1750Hz)



1. *Using these features does not mean that others won't be able to listen in on your transmissions.*
2. *CTCSS/DCS only could be changed via program software.*

1750Hz Tone-burst

To send out a 1750Hz Tone-burst; press the MONI/VOL key while holding down the PTT. No further configuration required using this feature.



If you have the keypad lock enabled on your radio, you can still send a 1750Hz tone the regular way without having to unlock your radio.

Repeaters

A radio repeater is an automated transceiver in a fixed location. Usually mounted high up on hilltops or on tall buildings, but sometimes they operate within buildings for internal use. A repeater takes one signal and relays it, usually after amplifying it

by orders of magnitude. This could be very handy, as this enables you to use a small low powered hand-held two-way transceiver to reach great distances.

How to activate the relay function.

1. Press menu key to enter the menu.
2. Using arrow keys to navigate between the menu items until you come to NO.9 RELAYM.
3. Press Menu key to select.
4. Using arrow keys to select different setting.
5. Press Menu key to save and confirm.
6. Press SOS or PTT button to exit the menu.



1. *The RX and TX frequency only could be programmed by software.*
2. *Better encoded with CTCSS or DCS, the squelch level should be 5.*

Programming

Memory channels are an easy to store commonly used frequencies so that they can easily be retrieved at a later date.

The BF-T1 features 20 memory channels that each can hold: Receive and transmit frequencies, transmit power, group signaling information, bandwidth.

Computer programming

The radio kit doesn't include a programming cable. To attain a data cable, please contact your dealer for it and the software.

Appendix.A

Troubleshooting

| Symptom | Possible Cause | Solution |
|--|---|---|
| <ul style="list-style-type: none"> •The radio doesn' t start. | <ul style="list-style-type: none"> •The battery is too low. •The battery isn' t correctly installed. | <ul style="list-style-type: none"> •Change or recharge the battery. •Remove the battery and reinstall it |
| <ul style="list-style-type: none"> •The battery dies quickly. | <ul style="list-style-type: none"> •The battery is dead. •The battery isn' t fully charged. | <ul style="list-style-type: none"> •Purchase a new battery. •Recharge the battery. |
| <ul style="list-style-type: none"> •The LED indicates reception, •But the speaker is silent. | <ul style="list-style-type: none"> •Volume is too low. •CTCSS or DCS enabled. | <ul style="list-style-type: none"> • Turn up the volume. • Change the CTCSS or DCS to match those you are trying to communicate. • Turn off your CTCSS or DCS. |
| <ul style="list-style-type: none"> •Others can' t hear your transmission. | <ul style="list-style-type: none"> •Their CTCSS or DCS settings don' t match yours. •You are too far apart. | <ul style="list-style-type: none"> •Change your CTCSS or DCS settings to match your peers. •Move in closer. |

Appendix.B

Menu definitions

See working the menu system for more info about using the menu-system.

| Menu | Name (full name) | Settings | Description |
|------|----------------------------------|--|--|
| 1 | SQL-Squelch Level | [0-9] Setting the squelch to 0 will open up the squelch entirely. | Squelch silences the receiver When there is no signal. |
| 2 | LIGHT-Display Illumination | OFF/ON/Key | Selection for the LCD backlight |
| 3 | BEEP-Keypad Beep Of a key press. | OFF/ON | Allows audible conformation |
| 4 | VOX-Voice Operated TX | OFF/1-9 | It is not necessary to push the PTT button on the transceiver,When enable it. Adjust the gain level to an appropriate sensitivity to allow smooth transmission |
| 5 | VOICE-Voice Prompt | OFF/CHI/EN | Allows audible voice conformation Of a key press. |

| | | | |
|---|---------------------------------|------------------------|---|
| 6 | ALARM- Countdown timer | OFF/0.5H/1.0H/.../8.0H | to indicate the time remaining before an event is scheduled to occur. |
| 7 | TOT-Transmission Time Out Timer | OFF/30S/60S/.../180S | This feature provides a safety switch that limits transmission time to a programmed value. This will promote battery Conservation by not allowing you to Make excessively long transmissions, And in the event of a stuck PTT switch It can prevent interference to other users As well as battery depletion. |
| 8 | SCANM-Scanner Resumed Method | TO/CO/SE | See chapter... |
| 9 | RELAYM-Relay Mode | TX/RX/OFF | TX: Synchronize the frequency of TX Base fstation. RX: Synchronize the frequency of RX Base station |

| | | | |
|----|------------------------------|-------------------------------|--|
| 10 | BCLO-Busy Channel Lock-out | ON/OFF | Disables the [PTT] button on a channel that is in use. The transceiver will sound A beep tone and will not Transmit if the [PTT] button Is pressed when a channel Is already in use. |
| 11 | STE-Squelch Tail Elimination | ON/OFF | This function is used Eliminate the squelch tail Noise between radios That are communicating Directly. |
| 12 | RXODE-Reception CTCSS/DCS | OFF/CTCSS,DCS see Appendix... | Mutes the speaker of the transceiver in the absence of a specific low-level Signal. If the station you are listening to Does not transmit this specific and Continuous signal, you will not Hear anything. |
| 13 | TXODE-Transmit CTCSS/DCS | OFF/CTCSS,DCS see Appendix... | Transmits a specific low-level digital signal to unlock the squelch of a Distant receiver. |
| 14 | W/N-Wideband/Narrowband | WIDE/NARROW | Wideband (25KHz bandwidth) Narrowband (12.5KHZ bandwidth) |

Appendix.C

General

| | |
|---------------------|----------------------------------|
| Frequency Range | 400.00-440.00 MHz |
| | 440.00- 470.00MHz |
| Storage Channel | 20 |
| Step Frequency | 12.5/25KHz |
| Rated voltage | DC 3.7V |
| Frequency Stability | ± 2.5 ppm |
| Work Temperature | -20 °C to +60°C |
| Battery Capacity | H-1500m Ah (Li-ion Battery) |
| Battery Life | About 12 Hours |
| Antenna Impedance | 50 Ω |
| Dimension | 108x55x21 mm (Including Antenna) |
| Weight | 120g(Including battery) |

Transmitter

| | |
|---|--|
| Output Power | 0.5W/1W |
| Modulation Mode(W/N Band) | 16K Φ F3E/11K Φ F3E |
| Maximum Frequency Deviation (W/N Band) | $\leq 5\text{KHz}$ / $\leq 2.5\text{KHz}$ |
| Spurious Power | $\leq 7.5 \mu\text{W}$ |
| Adjacent channel power | $\leq -65\text{dB}$ / $\leq -60\text{dB}$ |
| Audio Distortion | $< 5\%$ |
| SNR | $\geq -45\text{dB}$ / $\geq -40\text{dB}$ |
| CTSCC/DCS Frequency Deviation(W/N Band) | $0.7 \pm 0.1\text{KHz}$ (W), $0.4 \pm 0.1\text{KHz}$ (N) |
| Modulation Sensitivity | 8-12mV |
| Transmitting Current | $\leq 1000\text{mA}$ |

Receiver

| | |
|--|--|
| Sensitivity | $<0.25 \mu V$ (12dB SINAD) |
| Audio Power | 1W |
| Inter modulation Interference Resistance | $\geq 65\text{dB}$ (W), $\geq 60\text{dB}$ (N) |
| Adjacent channel?Selectivity (W/N Band) | $\geq 65\text{dB}$ (W), $\geq 55\text{dB}$ (N) |
| Audio Distortion | 5 % |
| Receiving Current | $\leq 380\text{m A}$ |

TCSS Table (50)

| No | Tone (Hz) | No | Tone (Hz) | No | Tone (Hz) | No | Tone (Hz) | No | Tone (Hz) |
|----|-----------|----|-----------|----|-----------|----|-----------|----|-----------|
| 1 | 67.0 | 11 | 94.8 | 21 | 131.8 | 31 | 171.3 | 41 | 203.5 |
| 2 | 69.3 | 12 | 97.4 | 22 | 136.5 | 32 | 173.8 | 42 | 206.5 |
| 3 | 71.9 | 13 | 100.0 | 23 | 141.3 | 33 | 177.3 | 43 | 210.7 |
| 4 | 74.4 | 14 | 103.5 | 24 | 146.2 | 34 | 179.9 | 44 | 218.1 |
| 5 | 77.0 | 15 | 107.2 | 25 | 151.4 | 35 | 183.5 | 45 | 225.7 |
| 6 | 79.7 | 16 | 110.9 | 26 | 156.7 | 36 | 186.2 | 46 | 229.1 |
| 7 | 82.5 | 17 | 114.8 | 27 | 159.8 | 37 | 189.9 | 47 | 233.6 |
| 8 | 85.4 | 18 | 118.8 | 28 | 162.2 | 38 | 192.8 | 48 | 241.8 |
| 9 | 88.5 | 19 | 123.0 | 29 | 165.5 | 39 | 196.6 | 49 | 250.3 |
| 10 | 91.5 | 20 | 127.3 | 30 | 167.9 | 40 | 199.5 | 50 | 254.1 |

DCS Table (210)

| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D023N | D025N | D026N | D031N | D032N | D036N | D043N | D047N | D051N | D053N | D054N | D065N |
| D071N | D072N | D073N | D074N | D114N | D115N | D116N | D122N | D125N | D131N | D132N | D134N |
| D143N | D145N | D152N | D155N | D156N | D162N | D165N | D172N | D174N | D205N | D212N | D223N |
| D225N | D226N | D243N | D244N | D245N | D246N | D251N | D252N | D255N | D261N | D263N | D265N |
| D266N | D271N | D274N | D306N | D311N | D315N | D325N | D331N | D332N | D343N | D346N | D351N |
| D356N | D364N | D365N | D371N | D411N | D412N | D413N | D423N | D431N | D432N | D445N | D446N |
| D452N | D454N | D455N | D462N | D464N | D465N | D466N | D503N | D506N | D516N | D523N | D526N |
| D532N | D546N | D565N | D606N | D612N | D624N | D627N | D631N | D632N | D645N | D654N | D662N |
| D664N | D703N | D712N | D723N | D731N | D732N | D734N | D743N | D754N | | | |

| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D023I | D025I | D026I | D031I | D032I | D036I | D043I | D047I | D051I | D053I | D054I | D065I |
| D071I | D072I | D073I | D074I | D114I | D115I | D116I | D122I | D125I | D131I | D132I | D134I |
| D143I | D145I | D152I | D155I | D156I | D162I | D165I | D172I | D174I | D205I | D212I | D223I |
| D225I | D226I | D243I | D244I | D245I | D246I | D251I | D252I | D255I | D261I | D263I | D265I |
| D266I | D271I | D274I | D306I | D311I | D315I | D325I | D331I | D322I | D343I | D346I | D351I |
| D356I | D364I | D365I | D371I | D411I | D412I | D413I | D423I | D431I | D432I | D445I | D446I |
| D452I | D454I | D455I | D462I | D464I | D465I | D466I | D503I | D506I | D516I | D523I | D526I |
| D532I | D546I | D565I | D606I | D612I | D624I | D627I | D631I | D632I | D645I | D654I | D662I |
| D664I | D703I | D712I | D723I | D731I | D732I | D734I | D743I | D754I | | | |