SoonTone®

VHF/UHF Wide-band FM
Handheld Transceiver

SoonTone®

ST-818

In-built DCS/CTCSS/DTMF

USER'S MANUAL

THANK YOU!

We are grateful for your purchase of this transceiver.

We believe this easy-to-use transceiver will provide you with dependable and reliable communications.

We adopt advanced technology & workmanship for this transceiver, we trust our aborative design will make it better & quicker service for you. For correct use, please read this manual before use.

MODELS COVERED BY THIS MANUAL

ST-818: VHF FM Transceiver 136-174MHz
ST-818: UHF FM Transceiver 350-390MHz
                            400-470MHz etc.

The transceiver apply for the software of QXPG-78D
NOTE: For avoiding mistakes, should read the data
**   first, then program.**

Quick-operation Guide

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Quick-operation Guide

Function	Operation	Page
Adjust Alarm Clock	[FUNC]+[B]. Press [SCAN] to set alarm clock ON/OFF.Press [LOW] to adjust circularly.Rotate [Circum-rotate Encoder] to adjust time.	26
Choose Rings	[FUNC]+[∗]. Press [SCAN] to choose rings(1~12).Press [LOW] to choose set volume(1~4).	27
Voice Prompting	[FUNC]+[∗] Press DIAL to set prompt voice ON/OFF.	27
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Copy Channel (Frequency+Channel/Time +Channel Mode)	[FUNC]+[A]	29
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Copy Function with Cable	Press [LOW]+[MONI]+Power ON at the same time.	30

NOTE: Under the mode of Time+Channel, press [LOW] to check the current year,month,day and hour,minute,week.

Precaution

For using this transceiver with high safety and efficiency, please read the following information carefully:

- Repairing is only for qualified technicians.Please do not disassemble the transceiver causally.
- Do not modify the transceiver causally.
- Power off when enter into the flammable and explosive places.
- Please do not change or charge the battery when under the flammable and explosive circumstances.
- Please power OFF the transceiver before entering the explosive and detonators areas.
- To avoid the problem caused by electromagnetism interfering or compatibility,please power OFF when you entering into the places where is not allowed to use the transceiver,such as hospitals and airplanes.
- Please put the device out of the range of the extension of the airbag in the car.
- Do not expose the transceiver under sunshine for a long time,nor place it close to heating appliances.
- Please keep the antenna at least 2.5cm far away from you when transmitting.
- Do not put the device into the dusty,humid and wet areas, nor put it into the rough surface.
- If the device smelled abnormally or smoking,please power OFF at once,and take out the battery,then contact with the local distributor.

Contents

Contents

Unpacking and Checking Equipment

Carefully unpack the transceiver. We suggest that you confirm the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

■ SUPPLIED ACCESSORIES

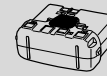| ITEM		QUANTITY
Antenna	136-174MHz	1
	350-390MHz	
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Li-ion Battery Charger		1
Adaptor		1
Li-ion Battery (1250mAh)		1
Belt Clip		1
Screws		1
Hand Strap		1
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Standard Accessories
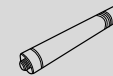
Antenna

Li-ion Battery Charger

Adaptor

Li-ion Battery

Belt Clip

Screws

Gallus

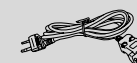Instruction Manual

Warranty

Optional Accessories

Headset

Speaker/Mic
（QME-01）

Speaker/Mic
（QME-02）

Programming Software

Programming Cable (QXPL-01)

Copy Cable

ST-6.5-150V-1   ST-8.5-400V-1

ST-8.5-150V-2   ST-10-400V-2

High Gain Antenna

Battery

NOTES:

Please charge the battery before you use it, because it was uncharged against delivery.The first charging after purchasing or keeping for more than 2 months without using can not achieve normal battery capacity.After repeating charge / discharge for 2 or 3 times,the battery can get to the best performance.Please change or charge the battery if low power.

- Please use the specific charger,other models may cause explosion and lead to hurt the body.
- Do not short circuit the battery or put it into fire, nor remove the housing of the battery.
- The ambient temperature should between 5℃and 40℃ while charging. Otherwise, it may not fully charge.
- Power OFF the transceiver with battery while charging.Using the device while charging would affect normal charging.
- To avoid interfering the charging, please do not cut off the power or take out the battery during charging.
- The battery life will over soon when its operating time decreases even though it is fully and correctly charged.Please replace the battery.
- Please do not take out the battery and recharge it after fully charged,otherwise the battery would be damaged or the life would be shorten.
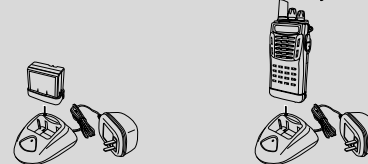- Please do not charge when the battery or the transceiver is damped. Do it before wipe it up to avoid the hazard.

⚠ **Warning**

When jewelry, keys or ornamental chain and other electric metals contact with the battery terminal, the battery may cause damage or hurt bodies. If the battery terminal short circuit it wil generate a lot of heat, Please be careful when you bring or use the battery,especially put it into the pocket, purse or other metal container.

How to Charge

1. Plug the AC adaptor into the AC outlet,then plug the cable of adaptor into the socket at the back of charger. The charger indicator on GREEN.
2. Plug the Li-ion battery pack or transceiver with the Li-ion battery pack into the charger.
  a.Make sure the battery is connected with the charging terminal.
  b.The indicator lights RED while charging.
3. When it is 90% charged (about 4 hours), the indicator turns to LIGHT GREEN (and needed 2 hours more to charge).
4. The indicator turns to GREEN while fully charged.

⚠ **NOTE**

- ◆ After charging the supplied battery for 6 hours, remove it or transceiver equipped with the battery from the charger.Please do not charge for over 10 hours,nor place it in charger for recharging. Over-charging will shorten the life of the battery and affect its performance.
- ◆ Please pay attention to the local net power,in order to supply different adaptors.

How to Store
**1.** If the battery needs to be stored,it should keep in the status of 50% charging.
2. It should be keep in low temperature,dry environment.
3. Keep it far away from heating places, included the place where the sunshine is too strong.

Installing the Accessories

Installing the Li-ion Battery

> ⚠️ **Warning**
>
> ◆ Do not short circuit the battery and put battery into fire.
> ◆ Do not try to remove the housing of battery pack.
> ◆ Do not install battery in the dangerous circumstance,it may cause explosion.
> ◆ Do not place them in high temperature place nor put it into fire,in case of explosion.
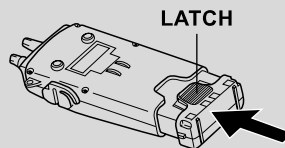
LATCH

1. Slide the battery pack along the back of the transceiver until the release latch on the base of the transceiver locks.
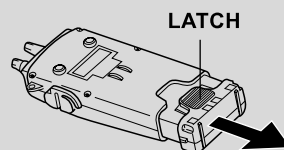
2. Press the release latch and slide the pack away from the transceiver.

LATCH

The transceiver performs best when the Li-ion Battery pack is fully charged, especially for long-time transmitting or continuously use.

Installing the Accessories

Installing the Antenna

Installing the Antenna:

Screw the antenna into the connector on the top of the transceiver and turn clockwise to fasten it.

Removing the Antenna:

Turn the antenna counterclockwise to remove it.

Installing the Belt Clip
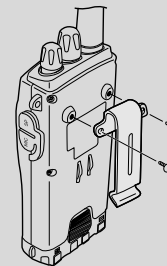
Installing the Belt Clip:

Aim the screw eyes of belt clip and the Al.shell of transceiver at each other,then fasten the belt clip with the screws.

Removing the Belt Clip:

When remove the belt clip,fastening its fixed screws.

Installing the Accessories

Installing the Gallus
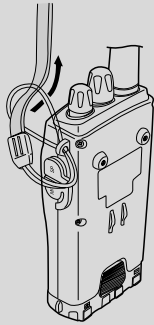
Plug the Gallus into the ring on the right side of the transceiver,and put the other side of the Gallus into the ring, then fasten it.

Installing the Exterior Earphone/Microphone
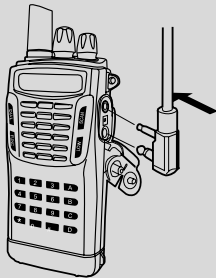
Unveil (not need to take it out) the cover of the MIC-SP jack, then plug the earphone/ microphone into the jack of earphone/ microphone, it will affect the performance of waterproof.

Getting Acquaited

Antenna

Microphone

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Speaker
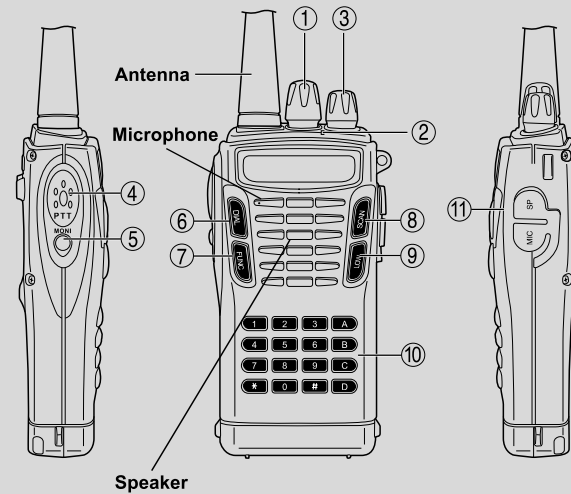
Getting Acquainted

1 Power Switch/Volume Control

Turn clockwise to power ON and adjust volume while turn counterclockwise to power OFF.

2 LED Indicator

Lights RED while transmitting,lights GREEN while receiving, flashes RED while in low battery.

3 Circumrotate Encoder

Rotate to select channels, and also work with other function keys to set functions.

4 PTT (Push-to-talk) Switch

Press,then speak into the microphone for transmitting.

5 MONI (Monitor) Key

According to how to program of this key(Refer to MONI Key Setting). Press to monitor selected channels, and also work with FUNC Key for setting BCL,Wide/Narrow Band,High/Low Power and change QT/DQT code, and work with DIAL Key to input frequency function.

6 DIAL Key

Use to Save/Confirm/Transmit/Delete DTMF numbers(Refer to "DTMF Calling"),and also work with FUNC to set reverse frequency and lock transceiver keypad functions.

Getting Acquainted

7 FUNC (Function) Key

Press to unlcok other functions setting.

8 SCAN (Scanning) Key

Press to begin or stop scanning, and also work with FUNC key to set channel out of scanning and set transceiver LED lightening.

9 LOW Key

Under Time+Channel displaying mode, press LOW can check year,month,day and hour, minute, week. Also work with FUNC to set squelch level and VOX gain.

10 DTMF Keypad

Use to save and transmit DTMF numbers.

11 MIC-SP Jack

Connect earphone/microphone bought by users.

Getting Acquaited

LED SCREEN

```
    DCS  888888. 75 188
  + ACT        50
  - LO F ▪▪▪▪▪▪▪▪  25
                 VOX  ▲
                      R
```

ICON	INSTRUCTION
—	Displays when monitoring channels(Squelch ON)
A	Displays when the selected channels are in the scan list while displays nothing when the channel is out of scan list.
888888	Displays the working frequency or channel number. Select different functions displays different numbers.
188	Displays all kinds of numbers as per the selected functions.
R	Displays when Reverse Frequency function is ON.
VOX	Displays when VOX function is ON.
▪▪▪▪▪▪▪▪	While receiving,it means signal strength (the more, the stronger),while transmitting,it means power(the more,the higher).
F	Displays when pressing FUNC to set functions.
LO	Displays when transmitting in low power.
+	Displays when Key Locked function is ON.
✎	Displays when setting Alarm Clock.
▲	Displays when using narrow band.
DCS	Displays when DQT function is ON.
CT	Displays when QT function is ON.
▭	Displays when setting — Slip Frequency function.
75 50 .25	Mantissa of frequency.

Basic Operation

Power ON/OFF

Turn [Power Switch/Volume Control] clockwise to power ON the transceiver.

Turn [Power Switch/Volume Control] counterclockwise to power OFF the transceiver.

Volume Control

Rotate [Power Switch/Volume Control] to adjust volume.Turn colckwise to turn up the volume while turn counterclockwise to turn down.

◆ When communicating,you need adjust the volume correctly.

⚠ **NOTE**

◆ When adjusting the volume,press MONI to monitor the background noise (Refer to "MONI Key").

Choose Displaying Mode

This transceiver has 4 kinds of displaying modes:Channel Mode, Time+Channel Mode,Frequency+Channel Mode and Full Range Frequency Mode.

◆ Press DIAL (1 second)+ LOW -- Channel Mode.

◆ Press DIAL (1 second)+ FUNC -- Time+Channel Mode.

◆ Press DIAL (1 second)+ DIAL-- Frequency+Channel Mode.

◆ Press DIAL (1 second)+ SCAN -- Full Range Frequency Mode.

⚠ **NOTE**

◆ Under the mode of Time+Channel,press [LOW] to check year,month,day and hour,minute,week.

Basic Operation

Choose Channel

This function is valid under the display mode of Channel,Time + Channel,Frequency+Channel. Rotate[Circumrotate Encoder] to choose needed channel. Turn clockwise to increase the channel number while turn counterclockwise to decrease it.

◆ The selected channel number displays on the screen.

> ⚠ **NOTE**
>
> ◆ If the prompt voice function is ON, the speaker will alert you the current channel when you choosing it.
> ◆ When the programmed frequency of chose channel is out of the range of transceiver, it will alert you out of lock.

Choose Frequency

This function is valid only under the display mode of Full Range Frequency. Rotate [Circumrotate Encoder] to choose frequency, turn clockwise according "stepping" to increase frequency while turn counterclockwise to decrease it.

◆ The selected frequency displays on the screen.

> ⚠ **NOTE**
>
> ◆ Please select the stepping before choosing frequency. (Refer to "Stepping setting".)

Basic Operation

Input Frequency on Keypad

This function is valid only under the display mode of full range Frequency.You can input the communicating frequency on transceiver keypad.

Inputting Frequency:

1. Press DIAL,and then press MONI to set this function ON.

2. Input transceiver frequency on the keypad.

> ⚠ **NOTE**
>
> ◆ The input frequency on keypad is related to stepping, if frequency is out of transceiver range it cannot input.

3. Press any other key to end setting.
   The screen displays the input frequency.

Squelch

When there is no signal,squelch function can mute loudspeaker. When squelch function is ON,you will hear the background noise from the loudspeaker, while the squelch is OFF you will not hear the background noise.
The squelch level you choose will decide when your squelch is ON/OFF. If the level is too high, you cannot get weak signal, if the level is too low,the signal will appears in the background noise.

How to Adjust Squelch:

1. Press FUNC and then press LOW.

◆ The screen displays "_SqL" and current squelch level.

Basic Operation

2. Turn the encoder from 0 (open) to 9 (tightest) to select the squelch level.

◆ Turn clockwise to increase the squelch level while turn counter-clockwise to decrease it.

3. Press any key to end setting.
Return to normal operation.

Transmitting

According to different settings for the monitor function,press MONI to monitor the loudspeaker for a moment, and confirm there is no broadcasting station is transmitting on the selected channel.Press PTT,and then speak into the microphone.

1. Please keep the microphone approximately 3~4 cm from your mouth, and speak in normal voice to ensure best performance.

2. Press PTT, LED indicator lights RED.

3. Release PTT to receive.

Receiving

When the working channel is called, LED lights Kelly,you can receive the call.
If the signal is weak and you have set the higher squelch level, you may miss the call.
If the transceiver QT/DQT function is ON,you could only receive callings from the station that have corresponding code with yours. Other callings cannot be heard.

Advanced Operation

Channel Scanning

This function is valid only under the display mode of Channel,Time +Channel,Frequency+Channel, which is used to monitor every channel signal of the transceiver.When scanning,the transceiver will check every channel and only stop in the channel with signal.

> ⚠ **NOTE**
> ◆ *Scan will quit in the channel out of scanning.*
> ◆ *The transceiver will alert out of lock when the set scanning channel frequency is out of its frequency range, the transceiver will continue scan.*

The transceiver will stay in the channel with signal until the signal disappears.Scan will return after signal disappears for 4 seconds, unless there is new signal appears within these 4 seconds.

> ⚠ **NOTE**
> ◆ *You can only scan when programming at least 2 scanning channels of the transceiver.*

1. Press SCAN to begin scanning.

◆ Scan starts from current channel,and channel number increases gradually.

◆ Screen displays SCAN

◆ When scanning quit in a specific channel,the dot between"CH" and channel number will flash on the screen.

2. Press any key except MONI to end scanning.

Advanced Operation

Add/Delete Scanning

This function is valid only under the display mode of Channel,Time +Channel and Frequency+Channel.You can choose channels out of scan list. To scan please follow these steps:

1. Rotate [Circumrotate Encoder] to choose delete scanning channels

2. Press FUNC,and then press SCAN.

◆ Repeat the operation, channel will alternate between scan and non-scan.

◆ Screen displays "A" when the channel is in the scan list while displays nothing when the channel is out of scan list.

Frequency Scanning

This function is valid only under the display mode of full range Frequency. It is used to monitor the signal in every frequency of the stepping. When scanning, transceiver will check every stepping frequency and only stop in the frequency with signal.

> ⚠ **NOTE**
>
> ◆ Full range frequency scanning is according to stepping frequency pre-set. When the frequency scanning range is out of transceiver frequency,it will return to the lowest frequency to increase as per "Stepping".

Advanced Operation

The transceiver will stay in the channel with signal until the signal disappears. Scan will return after signal disappears for 4 seconds, unless there is new signal appears within 4 seconds.

Press SCAN to begin scanning.

◆ Scan starts from current frequency,and increases according to the stepping.

◆ Screen displays "SCAN".

◆ Press any key except MONI to end scanning.

DTMF Calling

Manually Dialing

The dealer can set two ways of manually dialing for your free choice:

1. Press PTT,and then enter the needed numbers on keypad.

◆ If programmed by dealer you don't need press PTT to dial. Press PTT,input the first digit,then release PTT,the transceiver will keep transmitting within 2 seconds, you don't need press PTT to dial.

◆ When transmitting DTMF,microphone will be muted,you can monitor the audio frequency through loudspeaker.

Advanced Operation

2. Input the numbers on the keypad(16 max.)

◆ The numbers display on the screen and sounds corresponding DTMF tone and then press DIAL to make calls.

◆ The numbers scrolling on the screen and sounds corresponding DTMF tone,the indicator lights RED to transmit.

◆ If programmed by distributor, transmitting "D" without DTMF tone."D" is used to pause time,and it is set by the distributor.

Save DTMF Numbers

You can save DTMF numbers in 9 memory units(1~9)(16 max.)
Press DIAL to enter the dial-up mode.

1. Screen displays "___d".

◆ Press [#] to enter saving mode.

2. Input the numbers on the keypad.

◆ If you input incorrect number,press MONI to clear it and enter the correct one.

3. Press DIAL, and then enter the memory units (1~9).

◆ Return to the former display.

Advanced Operation

Confirm Saved DTMF Numbers

Confirming the memory units.
Press DIAL to enter the dial-up mode.

1. Screen displays "____d"

◆ Press [*] to enter saving mode.

2. Enter the needed memory units(1~9)

◆ Screen displays the saved number and sounds corresponding DTMF.

3. Return to the former display automatically.

Dial Saved DTMF Numbers

Dial the number saved in the memory units.

1. Press DIAL to enter the dial-up mode.

◆ Screen displays "____d"

2. Input the needed memory units (1~9)

◆ Screen displays saved number and tansmits.

3. Return to the former display automatically.

Delete Saved DTMF Numbers

Delete the number saved in memory units.

1. Press DIAL to enter the dial-up mode.

◆ Screen displays "___d"

2. Press [D] to enter the deleting mode.

◆ Screen displays "CLrd".

◆ Press any key except digit keys from 1 to 9 to cancel the operation.

Advanced Operation

3. Input the needed delete DTMF numbers (1~9)

◆ The selected DTMF numbers were deleted.

4. Return to the former displays automatically.

Redial DTMF Numbers

Redial the last transmitted numbers (16 max.)

1. Press DIAL to enter the dial-up mode.

◆ Screen displays "___d"

2. Press [0] to dial the last transmitted number.

◆ Screen scrolls the calling numbers and sounds DTMF.

> ⚠ **NOTE**
>
> ◆ *Power off,the transceiver will delete the redialing numbers.*

Change QT/DQT

Programed QT/DQT channel in the transceiver,you can only receive the corresponding station callings. This function can help you to ignore(not hear)some unnecessary callings from other transceiver. Using QT/DQT channel is special one, but that not means your callings is privacy.

Advanced Operation

Change QT/DQT Code of the Channel

1. Press FUNC for more than 1 second, and then press MONI.

◆ Screen displays QT/DQT code or "OFF" to set off this function.

2. Press LOW to select QT/DQT/OFF.

◆ When select DQT code,press DIAL to choose Normal or Inverted code.Inverted code displays "-" while Normal code displays nothing.

◆ Displays "q" before the numbers when select QT code,displays "d" before the digits when select DQT code.

3. Rotate [Circumrotate Encoder] to select new QT frequency or DQT code.

4. Power OFF the transceiver or press any other key except MONI and PTT to exit and store the adjusted data.

Note: Programming QT/DQT manually included transmitting and resceiving QT/DQT,if want to set only transmitting or receiving QT/DQT please set by programming software.

Key Locked

This function is to avoid operating transceiver incorrectly.

◆ To lock keypad,press FUNC for more than 1 second and sounds prompt tone,then press DIAL. Screen displays "+".

> ⚠ **NOTE**
>
> ◆ *When key locked function is ON, all the keys are invalid except PTT,MONI, and FUNC.*

◆ To unlock keypad, press FUNC for more than 1 second then press DIAL again.

Advanced Operation

Lightening

You can set the lightening function to be automatism,connection or off.

◆ Setting automatism,light will keep 5 seconds on screen when press any key except PTT and MONI.

◆ Setting connection, light on when the transceiver is power ON.

◆ Setting off, light off

Setting Lightening:

1. Press FUNC for more than 1 second,and then press SCAN.

2. Rotate [Circumrotate Encoder] to select setting.

◆ Displays "A" for automatism.

   Displays "On" for connection.

   Displays "OFF" for cutting off.

3. Press any other key to end setting.

Reverse Frequency

Transmitting and receiving frequency will reverse when using the reverse frequency function. It means to transmit with receiving frequency,to receive with transmitting frequency.Also,QT/DQT encoding and decoding signal will reverse, it means to encode with decoding signal, to decode with encoding signal.

Switching reverse frequency function:

1. Press FUNC,and then press DIAL.

◆ Screen displays "R".

2. When changing channel or scanning,the reverse frequency function is OFF automatically.

Advanced Operation

Stepping

This function is only valid under the display mode of full range Frequency.Rotate Encoder to increase/decrease frequency or frequency scanning as per stepping.

Adjust Stepping

1. Under full range of Frequency,press FUNC and then press [0] to set the function.

2. Press LOW to choose stepping frequency in circle.

   5   means stepping is 5KHz

   6.25   means stepping is 6.25MHz

   12.50   means stepping is 12.50MHz

   25   means stepping is 25MHz

   50   means stepping is 50MHz

   1.000   means stepping is 1.000MHz

   10.000   means stepping is 10.000MHz

3. Press any other key to end setting.

VOX

When VOX function is ON, if microphone's gain is higher than VOX gain,the transceiver will turn to transmitting mode automatically while return to receiving mode after 2 seconds if microphone's gain is lower than VOX gain.
Owing to switching automatically between tansmit and receive, we suggest not transmit when setting VOX gain if the surrounding is too noisy.

Advanced Operation

Adjust VOX gain

1. Press FUNC for more than 1 second, then press LOW.

◆ "VOX" and the current VOX gain displays on the screen.

2. Rotate [Circumrotate Encoder] to select VOX gain from cutting off to 3(high)

◆ Turn clockwise to increase VOX gain while turn counterclock-wise to decrease it. Screen displays "OF" when VOX is OFF. "1" means low gain.

◆ "2" means middle gain, "3" means high gain.

3. Press any key to end setting.

◆ Screen displays "VOX" when select the gain from 1 to 3 and displays nothing when VOX function is OFF.

Time

Displays the current Year/Month/Day and Hour/Minute/Week.

1. Displays Time:

◆ Press DIAL and then press FUNC to enter Time+Channel displaying mode.

◆ Press LOW to check Year/Month/Day and Hour/Minute/Week.

$$\boxed{\text{CT } 060405 \quad ^{12}} \qquad \boxed{\text{CT } 18\text{-}10.1 \quad ^{12}}$$

◆ As per the icon,shows April 5th,2006, eighteen pass ten,Monday, the current channel is 12,and set CTCSS function.

Advanced Operation

Adjust Time

◆ Press FUNC,and then press "#" to adjust time,screen displays Year/Month/Day and Hour/Minute/Week.

◆ Press LOW to adjust in circle. Rotate Encoder to increase /decrease time when the digits flashes.

◆ Press any other key to end setting.

Alarm Clock

Prompt if you set the alarm clock ON.

Alarm Clock (ON)

1. When setting,press FUNC, then press [B],and then press SCAN. "ON" to open while "OF" to close.
Screen displays "🔔" while set on alarm clock.

2. Press any other key except LOW to end setting.

Set Alarm Time

1. Press FUNC and then press [B] to adjust alarm time.

2. Press LOW to adjust hour and minute. Rotate Encoder to increase/decrease time when the digits flashes.

3. Press any other key except SCAN to end setting.

Advanced Operation

Choose Rings

1. Press FUNC then press [*] to enter choosing rings.

2. Press SCAN to choose. There are 12 chord music for free choice.

3. Press LOW to adjust ringing volume. There are 4 levels for free choice.

4. Press any key except LOW to end setting.

Voice Prompting

When you choose channel the speaker will alert you the current channel.

1. Press FUNC and then press [*].

2. Press DIAL to set Voice Prompting ON/OFF.

"OF" is set off voice Prompting while "ON" is set on.

> ⚠ **NOTE**
>
> ◆ *This transceiver prompting voice is in English.*

3. Press any key except SCAN and LOW to end setting.

Busy Channel Locked

If this function is ON,you cannot transmit on this busy channel. When press PTT,transceiver will alert you the channel is busy.

1. Press FUNC then press MONI to set Wide/Narrow Band, High/Low Power and BCL Mode.

Advanced Operation

2. Press DIAL to choose busy channel locked.

"0" is carrier wave,"1" is optional signal,"OF" is setting off.

OFF: Transceiver can transmit at any time.

Carrier Wave: Transceiver cannot transmit when the chose channel is occupied.

Optinal Signal: When the chose channel received signal,BCL function is ON.Transceiver can transmit only received the corresponding signal. The default setting is OFF.

High/Low Power

For transmitting in high power,large waste in battery,thus it doesn't need high power in short distance communication,we can choose low power to save battery, while we use high power when in long distance communication.

1. Press FUNC and then press MONI to set Wide/Narrow band, High/Low power,BCL mode.Low power displays "LO" on the screen while high power displays nothing.

2. Press LOW to choose High/Low power.

3. Press any key except SCAN and DIAL to end setting.

Wide/Narrow Band

1. Press FUNC then press MONI to set Wide/Narrow Band, High/Low Power and BCL Mode.

2. Press SCAN to choose Wide/Narrow band.1 is wide band while 0 is narrow band. Narrow band displays "A" while wide band displays nothing.

3. Press any other key except "DIAL" and "LOW" to end setting.

Advanced Operation

Slip Frequency

This function is valid only under the display mode of full range Frequency,setting the slip frequency of receiving and transmitting it.

1. Press FUNC and then press [D].
2. Press SCAN to select +/- slip frequency," ⊟ " displays before the frequency when it is -slip frequency,while + slip frequency displays nothing.
3. Rotate [Circumrotate Encoder] to increase/decrease slip frequency as per stepping.
4. Press other keys to end setting.

Copy Channel

This function is valid only under the display mode of Channel, Frequency+Channel, Time+Channel. Copy one channel data of the transceiver to other channels.

1. Select the needed copy channel.
2. Press FUNC+ [A] to select the saved copy channel.
◆ Screen displays the saved channel.
3. Rotate [Circumrotate Encoder] to select the channel.
◆ Press any key except PTT to exit but not store.
4. Press PTT to store and exit.
◆ Now the initial channel data is the same with saved channel data.

Save Channel

This function is valid only under the display mode of full range Frequency. Program frenquency and channel when the transceiver

Advanced Operation

without any exterior equipment.

Setting:
1. Enter full range Frequency displaying mode.Select frequency and code.
2. Press FUNC and then press [A] to select save channel.
3. Rotate [Circumrotate Encoder] to select the saved channel.
4. Press PTT to store and exit while press other keys to exit but not store.

Copy Function with Cable

Copy function with cable is that copying the data from one transceiver to another transceiver without any exterior equipment.

⚠ **NOTE**

◆ This function is ON only when the local distributor set it for you.

1. Power OFF the transceiver.
2. Connect two transceivers with specified copying cable.
3. Press LOW and MONI at the same time to power ON,and enter into the copying stand-by status.
4. Press MONI,the data will be copied from the base transceiver to another transceiver (another transceiver also in the copying stand by status)

    Stand by: it displays COPY
    Receive: it displays COPY-R
    Transmit: it displays COPY-T

5. Displays COPY when finish the copying and back to copying stand-by status. Power off the transceiver and restart to exit the copy status.

Auxiliary Operation

Time-out Timer (TOT)

The purpose of the TOT is to prevent any single person from using a channel for an extended period of time.

If you continuously transmitting more than programmed time (the dafault setting is 3 minutes),the transceiver will stop transmitting and an alert tone will sound.To stop the tone,release PTT.

The distributor can program following functions of TOT:

◆ Pre-caution before TOT: The alert tone sounds before the limited TOT time of the transceiver.

◆ Interval after TOT: It is interval after limited TOT time you have set. You cannot transmit during this interval.

◆ TOT resume time: Pre-set TOT resume time, when this function is on,you can not transmit before TOT resume time.Only when resume time arrives,then can transmit again.

Low Battery Warning

If low power the indicator flashes RED,and it can transmit continuously for a while, but the over-transmitting will use up the battery soon. If the voltage is too low,an alert tone will sound and stop trasmitting(cannot transmit).Please change or charge the battery.

MONI Key Setting

MONI key can be set as the following auxiliary functions.

◆ **Squelch OFF (Default setting)**
   Press to hear the background noise, release to return the normal operation.It is used to get the weak signal which you can't get even operated correctly.

Auxiliary Operation

◆ **None (No function)**
   No operation if press.
◆ **Activate Monitor**
   Press to set CTCSS/DCS OFF, press again to return normal operation.
◆ **Monitor Momentary**
   Press to set CTCSS/DCS OFF, release to return normal operation.

Battery Save

The battery save function is ON when a signal is not received and no operations are performed (no keys are being pressed and no switches are being turned).And it can decrease the amount of power used. While the channel is not busy and no operation is performed for 5 seconds,this function will be ON,and while a signal is received or an operation is performed this function is OFF.

Prompting Voice

You can set prompting voice ON/OFF.

Auxiliary Operation

PTT ID

PTT ID is used to continue or stop some repeaters and telephone system.
Press PTT to transmit ID signal if has been set transmitting starts.
Release PTT to transmit ID signal if has been set transmiting stops.
Press PTT then release it to transmit ID signal if hans been set the above two situations

Input Information

You can write your own information (64 characters max.) storing in the transceiver.

Main Technology Parameter

Frequency Range	136-174MHz
	350-390MHz
	400-470MHz etc.
Working Temperature	-20℃ ~ +55℃
Frequency Synthesization	PLL
Working Voltage	DC7.4V(2 Rechargeable Li-ion battery)
Number of Channels	128 Channels
Antenna Configuration	Coil Loaded Antenna
Antenna Impedance	50 Ω
Working Way	Simplex in same channel Simplex in different channel
Grounding	Cathode
Size	116mm×61mm×31mm
Weight	230g

Transmitting

Output Power	High power 4W, Low power 1 W
Modulation	FM
Max.Fre.Deviation	Wide≤±5KHz Narrow≤±2.5KHz
Residual Wave Radiation	≤-65dB
Pre-emphasis	6dB
Transmitting Current	≤1.5A

Main Technology Parameter

Receiving

Sensitivity	Wide band <0.18μV Narrow band<0.25μV (12dB SINAD)
Squelch Sensitivity	≤0.12uV
Intermodulation Interference	60 dB
Audio Power	≥500mW
Receiving Power	≤200mA
Squelch Standby	20mA

⚠ NOTE

◆ *No further advise for changing the specification.*

Trouble Shooting

Trouble phenomenon	Shooting method
No power	Maby out of battery,please charge or replace it. Maybe the battery is not correctly installed. Try again!
Unable to talk with others in the group	Check whether the frequency and CTCSS is same as that of other members, whether other members are in valid communication distance of transceiver.
There is disturbance from other members	Please modify CTCSS,also signal order of other members or to work in other frequency
The battery life is short even after correctly charged	The battery life is over,replace with a new one.
The transceiver cannot scan	Haven't programmed the channel into the scan list(set by professional)
Noisy after being progr-ammed	Squelch is open when programming, nonprofessional users please do not modify parameters causally
Some regulated"Da da da" sounds after being programmed	Some errors happen when program it. Maybe it is out of working frequency range or the type is not the same with transceiver.
There is no sound after using the earphone for a period.	Something wrong with ear bud (send it to distributor for reparation)

Trouble Shooting

Trouble phenomenon	Shooting method
Communication distance closer and sensitivity weaker.	Whether the antenna and its connector is complete, whether set to be in low power. (Send it to distributor for reparation)
It can receive but not transmit	Check PTT Key. (Send it to distributor for reparation)
Cannot power ON and power OFF often	Check whether the connector of battery is complete
The voice is too low, and often cut off.	Check whether the MIC jack is block with something (Send it to distributor for reparation)
Receiving signal unconsciously,and with big noise	Out of communication distance,or block with high buildings,or using it in the underground building.(Send it to distributor for reparation)
Speaker with"Ka ka" sound or weaker and weaker after using for a period of time.	Check whether there is something on the cover of speaker.(Send it to distributor for reparation)
No sound from speaker	Check whether it is in Min. volume. (Send it to distributor for reparation)