SAFETYTRAINING INFORMATION

Your Quanzhou Chierda Electronic Telecom Co.,Ltd. radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, your Quanzhou Chierda Electronic Telecom Co.,Ltd. radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields– RF and Microwave.

The following accessories are authorized for use with this product. Use of accessories other than those (listed in the instruction) specified may result in RF exposure levels exceed the FCC requirements for wireless RF exposure.

To ensure that your expose to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

DO NOT operate the radio without a proper antenna attached, as this may damaged the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or antenna specifically authorized by the manufacturer for use with this radio.

DO NOT transmits for more than 50% of total radio use time ("50%duty cycle"). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" lights red. You can cause the radio to transmit by pressing the "PTT" switch.

ALWAYS keep the antenna at least 2.5 cm (1 inch) away from the body when transmitting and only use the HYT belt-clip which is listed in instructions when attaching the radio to your belt, etc., to ensure FCC RF exposure compliance requirements are not exceeded. To provide the recipients of your transmission the best sound quality, hold the antenna at least 5 cm (2 inches) from your mouth, and slightly off to one side.

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to as-sure that this radio operates with the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, your Quanzhou Chierda Electronic Telecom Co.,Ltd. radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Thanks for buying the CHIERDA transceiver.

This transceiver offers latest design; enhanced features, solid performance and easy accessibility. We believe you will be pleased with the high quality and reliable features for all your communication needs.

⚠ **WARNING** ▰▰▰

. Please do not use the transceiver when you are in exploring places (such as gas, dust, smoke etc)
. Please turn off the transceiver while your car is being refueled or parked a gas station.

Operation instructions and training guidelines

To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit no more than 50% of the time and always adhere to the following procedures:

Transmit and Receive

To transmit (talk), push the PTT button,; to receiver, release the PTT button.

Hand-held radio operation

Hold the radio in a vertical position with the microphone 5cms away from the lips and let the antenna farther away from you head

Notices to the user

. Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
. Illegal operation is punishable by fine or imprisonment or both.
. Refer service to qualified technicians Only.

⚠ **WARNING** ▰▰▰

. It is important that the operator is aware of and understand hazards common to the operation of any transceiver. Explosive environment (such as gases, dust, fumes), turn off your transceiver while talking on fuel, or while parked in gasoline service stations.

Measures:

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

Precautions

Only qualified technicians are allowed to maintain this product

Do not use the radio or charge a battery in explosive areas such as coal gas, dust , steam, etc.

Switch off the radio while refueling or parking at gas station

Do not modify or adjust this radio without permission.

No not expose the radio to direct sunlight over a long time, nor place it close to heating source.

Do no place the radio in excessively dusty, humid areas, or on unstable surfaces.

Safety: It is important that the operator is aware of and understands hazards common to the operation of any radio.

CONTENTS

Unpacking and checking of your equipment

    Carefully unpack the transceiver. We recommend that you identify the items in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please notify your Chierda dealer.

Supplied accessories

| Transceiver | High gain antenna | Li–ion battery pack | Intelligent charger |
| Belt clip | Hand strap | User's manual | Service card |
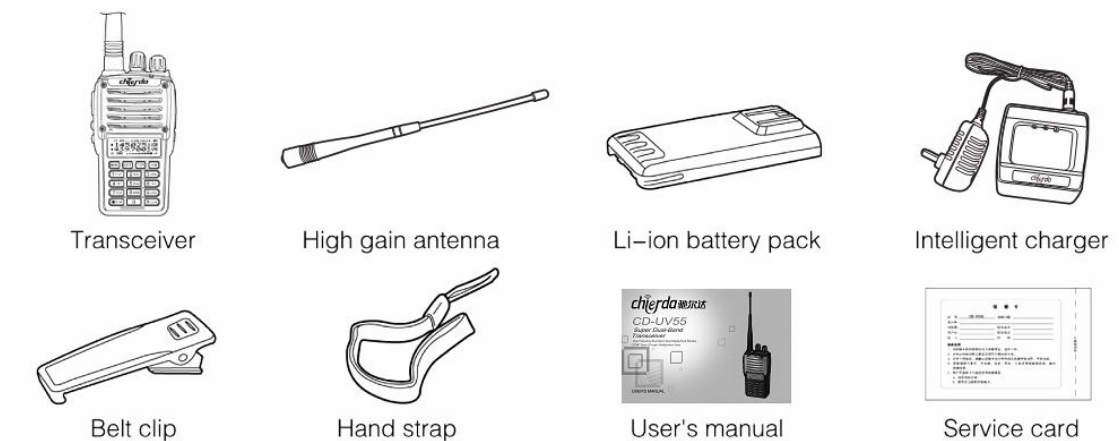
Description of functions

1. Dual frequency, dual band, dual display ,dual standby.
2. Frequency Range
   A. Standard frequency range for the two-way radio
      400-470MHz (RX/TX)

   B. Optional Frequency Range
      400-470MHz((RX/TX)
3. Working mode: U-V,V-V or U-U selectable.
4. Channel setting: UHF TX selectable.
5. DTMF encoding
6. Digital FM Radio (76-108MHz)
7. CTCSS/DCS scan
8. Output power: 4W UHF
9. 128 memory channels
10. VOX
11. Stopwatch timer function
12. 105 groups DCS and 50 groups CTCSS
13. Voice guide
14. SOS function
15. Wide/narrow bandwidth selection (25khz/12.5khz)
16. Multi-display modes (Channel order number/channel frequency/channel name selectable)
17. Reverse frequency
18. Multi-function function
19. Priority scan function
20. Frequency steps selectable (5/6.25/10.12.5/25/50/100khz)
21. High/low power changeable when transmitting
22. High capacity li-ion battery pack
23. Intelligent charger
24. Offset frequency setting (0-69.950MHz)
25. Frequency shift direction setting
26. Busy channel lockout
27. Power-on message (battery-V/full screen/other characters)
28. Low voltage prompt
29. Transmitting beginning/ending prompt
30. Transmitting overtime prompt
31. Keypad locks(auto/manual)
32. Adding scanning channel
33. High/low power switch able when transmitting
34. Programmable by computer
35. Wire-clone function
36. Menu/channel reset

Getting started
LCD display

There are various indicators displaying on the screen when powering on. Please refer the below table to learn what the indicators stand for accordingly.

Reverse frequency
Dual Band
VOX function
Indicator for sub frequency receiving
Bandwidth indicator
Battery capacity indicator

Split (negative)
Split (positive)
DCS
CTCSS

Arrow indicating the master frequency
High/low power transmission
BCL indicator

CT DCS + - R TDR VOX S N

439.700 75 25 128

HL BUSY ------

Menu Order/Channel Order
Keypad Lock
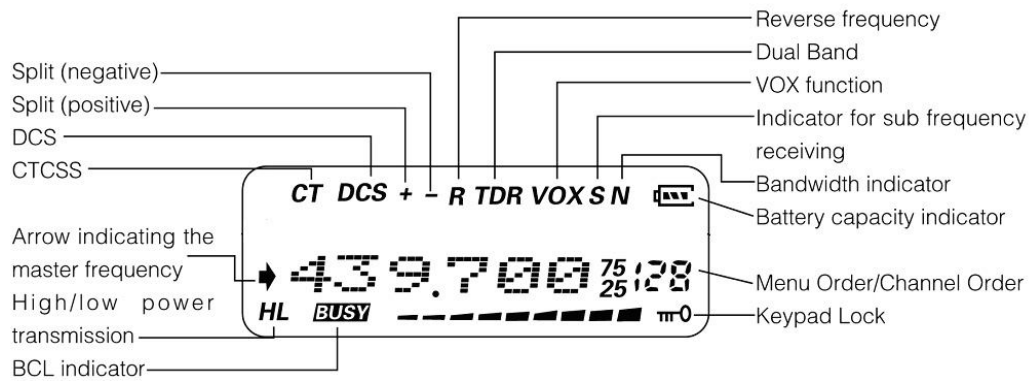
Note:

Full indicator for battery capacity   Exhausted indicator for battery capacity

Low indicator for battery capacity   ------ Receiving signal meter

Getting started
Description Of Transceiver

Rotary Encoder Knob
Power switch/Volume control

Antenna

Receiving/Transmitting linght

chierda

Exit Key
Screen/LCD Display

Function Key

Number Key

FM Radio/Frequency/Channel/
Reverse Frequency Scanning Key

Single/Dual Band switch Key

A/B Switch Key on Master Frequency

Lock Key/Stopwatch timer Key
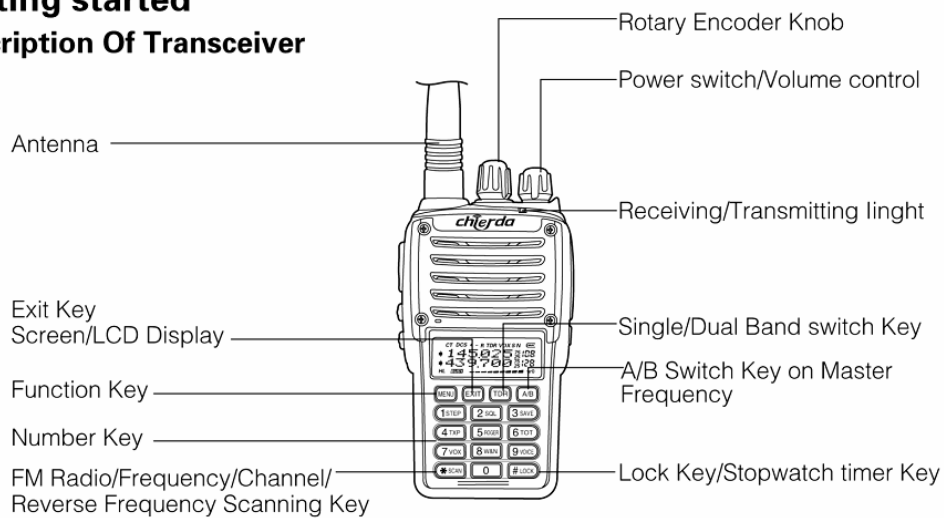
Note: Quickly switch the working mode (MENU+TDR)
Quickly resume the transceiver (MENU+ A/B)

PTT (Push-To-Talk) key

Side key 1: Scan/Lamp
SOS-CH/Radio/
Optional-Signal Call

Side key 2: Monitor Key

Batterypack latch
Speaker/Microphone jacks
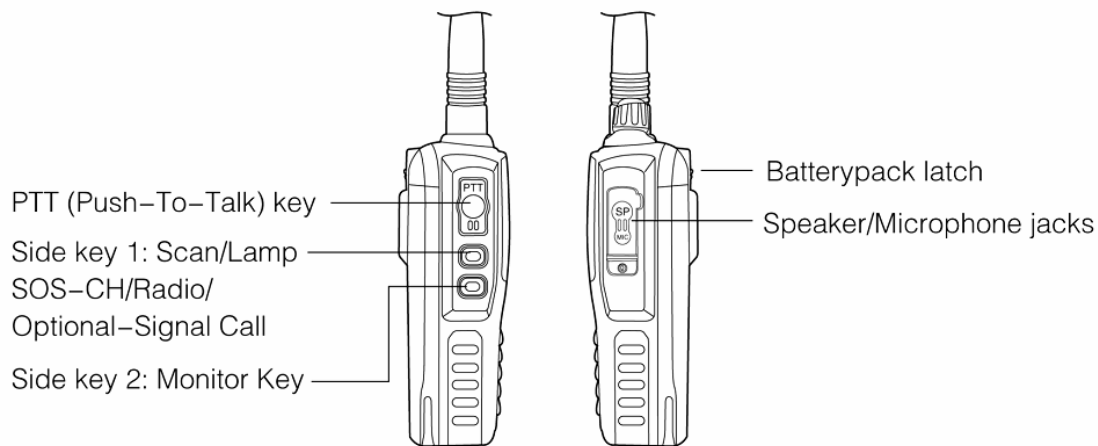
Quick search

Turn encode knob one time to search the desired function or parameter when setting for each function or parameter, while keeping turning encoder knob to quickly search.

Single/dual band switch

Press **TDR**

Single band <--------------------------> Dual band

Quickly resume the transceiver

In standby , press **MENU** + **A/B** , then LCD display **STEP SURE?** . Press **MENU** to confirm, and then the transceiver re-start.

A/B Switch

Press **A/B** to select the master frequency. The frequency with arrowhead mark is the master frequency, while the other frequency without arrowhead mark is the sub frequency. The transceiver can transmit and receive in the master frequency , but only receivers in the sub frequency. When it is receiving in the sub frequency, there shows "S" in the screen.

✳SCAN Key

Short press the **✳SCAN** key to set the reverse frequency, while keeping pressing for 2 seconds to active the   scan function, also have optional-signal-call function.

Side key 2: Monitor function

Shortcut operation sheet

Function Order	Function name	enter function Set	screen display	Turn Encoder Knob to select parameter	confirm	return to standby	see page
1 setting Frequency step		MENU → 1 STEP	STEP 12.50K	MENU	7 kinds of frequency steps 5K/6.25K/10K/12.5K/25K/50K/100K	MENU	EXIT	P 14
2 setting squelch Level		MENU → 2 SQL	SQL-LE 5	MENU	Squelch level from 0 - 9	MENU	EXIT	P 14
3 setting power Saver mode		MENU → 3 SAVE	SAVE ON	MENU	ON: Turn on save function OFF: Turn off save function	MENU	EXIT	P 15
4 selecting transmitting power		MENU → 4 TXP	TXP HIGH	MENU	H: High power (VHF 5W/UHF 4W) L: Low power (1W)	MENU	EXIT	P 16
5 transmitting Beginning/ending Prompt		MENU → 5 ROGER	ROGER OFF	MENU	OFF: turn off this function,without any voice prompting BOT: press PTT, voice prompt when begin transmitting EOT: release PTT, voice prompt when end transmitting BOTH: press and release PTT,voice prompt	MENU	EXIT	P 17
6 time-out timer		MENU → 6 TOT	TOT 60	MENU	TOT has 40 levels in steps of 15 seconds. OFF: Turn off TOT	MENU	EXIT	P 17
7 setting VOX		MENU → 7 VOX	VOX OFF	MENU	VOX has levels from 1 to 10 OFF: Turn off VOX transmission	MENU	EXIT	P 18
8 setting bandwidth		MENU → 8 W&N	WN WIDE	MENU	WIDE: 25KHz NARR: 12.5KHz	MENU	EXIT	P 18
9 voice guide		MENU → 9 VOICE	VOICE CHINES	MENU	Chines: Chinese voice prompt English: English voice prompt Off: Turn off voice prompt	MENU	EXIT	P 19

Function Order	Function name	enter function Set	screen display	Turn Encoder Knob to select parameter	confirm	return to standby	see page
10 transmitting overtime alarm		MENU → 1 STEP → 0	TOA 5	MENU	1 to 10 levels with 1 second each OFF: turn off TOA	MENU	EXIT	P 19
11 setting beep prompt		MENU → 1 STEP → 1 STEP	BEEP ON	MENU	ON: Turn on Beep prompt function OFF: Turn off beep prompt function	MENU	EXIT	P 20
12 power on message		MENU → 1 STEP → 2 SQL	PONMSG OFF	MENU	OFF: Full screen display BATT: Battery voltage display MSG: WELCOME	MENU	EXIT	P 20
13 busy channel lockout		MENU → 1 STEP → 3 SAVE	BCL OFF	MENU	ON: Turn on BCL OFF: Turn off BCL	MENU	EXIT	P 21
14 keypad lock		MENU → 1 STEP → 4 TXP	AUTOLK OFF	MENU	ON: Turn on Autolock OFF: Turn off Autolock	MENU	EXIT	P 21
15 receiving CTCSS		MENU → 1 STEP → 5 ROGER	R-CTC OFF	MENU	50 groups CTCSS (67.0Hz-254.1Hz) OFF: Turn off CTCSS	MENU	EXIT	P 22
16 transmitting CTCSS		MENU → 1 STEP → 6 TOT	T-CTC OFF	MENU	50 groups CTCSS (67.0Hz-254.1Hz) OFF: Turn off CTCSS	MENU	EXIT	P 23
17 receiving DCS		MENU → 1 STEP → 7 VOX	R-DCS OFF	MENU	105 groups DCS (D023N-D754N) OFF: Turn off DCS	MENU	EXIT	P 23
18 transmitting DCS		MENU → 1 STEP → 8 W&N	T-DCS OFF	MENU	105 groups DCS (D023N-D754N) OFF: Turn off DCS	MENU	EXIT	P 24

Function Order	Function name	enter function Set	screen display	Turn Encoder Knob to select parameter	confirm	return to standby	see page
19 voice mode	MENU → 1 STEP → 9 VOICE	ARRO OFF (29)	MENU	OFF:no requirement COMP: companding signal to reduce Noise SCR:secret calling	MENU	EXIT	P 24
20 voice mode	MENU → 2 SQL → 0	SCR-NO (20)	MENU	select 1-8(8 grades)	MENU	EXIT	P 25
21 scan mode	MENU → 2 SQL → 1 STEP	SC-REV TO (21)	MENU	TO/CO/SE	MENU	EXIT	P 25
22 scan/lamp SOS–CH/radio/ Side key 1)	MENU → 2 SQL → 2 SQL	PFI RADIO (22)	MENU	OFF/SCAN/LAMP SOS-CH/RAD10/CALL	MENU	EXIT	P 25
23 working mode	MENU → 2 SQL → 3 SAVE	CH-MDF FREQ (23)	MENU	FREQ/CH/CHFREQ /NAME	MENU	EXIT	P 30
24 Auto backlight	MENU → 2 SQL → 4 TXP	ABR ON (24)	MENU	ON/OFF	MENU	EXIT	P 31
25 colorful backlight	MENU → 2 SQL → 5 ROGER	COLOIR 7 (25)	MENU	from 1-7(7colors backlight)	MENU	EXIT	P 32
26 offset frequency	MENU → 2 SQL → 6 TOT	OFFSET 00.600 (26)	MENU	- - - - - -	MENU	EXIT	P 32
27 frequency shift direction	MENU → 2 SQL → 7 VOX	SFT-D OFF (27)	MENU	OFF/+/-	MENU	EXIT	P 33

Function Order	Function name	enter function Set	screen display	Turn Encoder Knob to select parameter	confirm	return to standby	see page
28 stopwatch	MENU → 2 SQL → 8 W&N	SECOND OFF (28)	MENU	OFF/ON	MENU	EXIT	P 34
29 channel name editing	MENU → 2 SQL → 9 VOICE	CHNAME (29)	MENU	Channel name should be with in 26 letters (A to Z) and 10 numbers (0 to 9), six maximum.	MENU	EXIT	P 34
30 memory channel	3 SAVE → 0 → MENU	MEM-CH CH-001 (30)	MENU	CH-001/002…/128	MENU	EXIT	P 36
31 deleting channel	3 SAVE → 1 STEP → MENU	MEM-CH CH-001 (31)	MENU	CH-001/002…/128	MENU	EXIT	P 37
32 reset	3 SAVE → 2 SQL → MENU	RESET VFO (32)	MENU	VFO/ALL	MENU	EXIT	P 38
33 CTCSS/DCS scan	3 SAVE → 3 SAVE → MENU	SCN CD CTCSS (33)	MENU	CTCSS/DCS	MENU	EXIT	P 39

. Quick search to turn encoder
. High/low power changeable (see page 16)
. DTMF encoding (see page 40)
. Set reverse frequency   (see page 43)
. Setting transmitting overtime prompt (see page 44)
.Wire-clone function (see page 45)

. Programming guide(see page 49-50)
. SOS-CH(SOS function)(see page 26)
. Priority scan function(see page 42)
.Low voltage prompt (see page 44)
.Adding scanning channel function (see page 44)
 Working with repeater (see page 46-48)

How to operate

Menu lock function

Sometimes if the menu is not need to operated frequency, you can lock the menu via the programming software. Please see the detailed steps as follow:

1. set channel mode as the working mode.
2. turn off operating menu function in the channel mode

If you want to operate menu function, can activate menu available of channel of mode by programming software, then change the working mode to frequency mode.

⚠ NOTE ▰▰▰

. in dual standby mode, the screen shows "TDR" , the frequency with arrowhead mark is the master frequency while the other without arrowhead mark is the sub frequency, when the sub frequency is receiving, there shows "S" in the screen. In the dual standby mode, the transceiver only transmits in the master frequency and receives in the sub frequency.

. mater frequency setting

  In dual standby, press A/B to select the master frequency.

. this transceiver is the dual band, with dual frequency and dual display functions. In frequency mode, it can display two different receiving/transmitting frequencies at the same time. In channel mode, it can also display the channel frequency and related parameter in both channels at the same time.

⚠ NOTE ▰▰▰

.in frequency/channel mode, it is switch able between band A and band B by A/B key, when the A/B indicator shows in band A, all the operations are based on band B.

.in frequency mode, it is available to separately set the frequency step, transmitting power, squelch level , bandwidth, CTCSS/DCS, offset frequency, frequency shift direction and channel display modes in band A or band B.

.in channel mode, it is invalid to set frequency step, transmitting power, CTCSS/DCS, bandwidth, offset frequency, and frequency shift direction and channel display modes in band A or band B.

Setting frequency step (STEP)-----MENU 1

In standby ,press [MENU] + [1STEP] ,   the screen displays[STEP 12.50K]

Press: [MENU] to enter, it shows "12.50K", turn encoder to select the desired step, then press to confirm, finally press : [MENU] to return to standby.
The frequency steps selectable for this transceiver are as follow:
5.00khz,6.25khz, 10.00khz,12.5khz,25.00khz,50.00khz,100.00khz

Setting squelch level (SQL-LE)-----MENU 2
Squelch level is about when the signal is strong enough to turn on the squelch function, and when it is weak enough to turn off the squelch function. When the squelch is on, there is voice from the loudspeaker for all the signaling set by the transceiver. When the squelch level is set too high, the weaker signals may be missed, while the squelch level is set too low, the transceiver maybe disturbed by some novice or other needless signals.

⚠ NOTE ▇▇▇

. The squelch level for this transceiver has 0~9 levels selectable, and level 0 is to turn off the squelch function. The higher level the squelch is set, the stronger receiving signal is needed.

In standby , press [MENU] + [2 SQL] ,   ,the screen display[SQL-LE 5]

Press [MENU]   to enter, it shows "5", turn encoder to select the desired squelch level,

then press [MENU] to confirm, finally press [EXIT]   to return to standby.
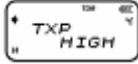
Setting power saver mode (SAVE)-------MENU 3
When the power saver function is on, the receiver circuit will be cut off for the moment, and then re-activate to detect the signals for a while, in order to reduce the battery capacity consumption.

In standby , press [MENU] + [3 SAVE] ,the screen display[SAVE ON]

Press [MENU]   to enter, it shows "5", turn encoder to select turn on/off the power

saving function, then press [MENU] to confirm, finally press   [EXIT]   to return to standby.

Selecting transmitting power (TXP)-----MENU 4

In frequency mode, press ⸝ MENU + 4 TXP , the screen displays [TXP HIGH]

Press MENU to enter, it shows "high", turn encoder to select high/low power,, then

press MENU to confirm, finally press EXIT to return to standby.

⚠ NOTE ▬▬▬▬

. this transceiver has high and low transmitting power selectable:

UHF: High: 4W, LOW:1W

. The quick switch between the high and low transmitting powers is temporary. In

transmitting mode, press TDR key to quick switch the high/low transmitting power.

Once the transceiver is resumed, the transmitting power reverts to the original output

power.

Setting transmitting beginning/ending prompt (ROGER)-------MENU 5

This function is to select the prompt modes when beginning/ending transmitting as
followings:

OFF: press and release PTT key, there is no prompt for either beginning or ending
transmitting.

BOT: press PTT key, there is prompt for the beginning transmitting.

EOT: Release PTT key, there is   prompt for the ending transmitting.

BOTH: press and release PTT key, there is prompt for both beginning/ending
transmitting.

In standby , press MENU + 5 ROGER ,the screen display [ROGER OFF]

Press MENU   to enter, it shows "OFF", turn encoder to select OFF/BOT/EOT/BOTH,,

then press MENU to confirm, finally press EXIT to return to standby.

Time-Out Timer (TOT)---------MENU 6

This function is to prevent the transceiver from transmitting for too long time. When
the transceiver is exceeding the press time limit , it will stop transmitting with an
overtime alarm.

This transceiver can be set in 40 levels with 15 seconds each, between 15 and 600
seconds.

In standby , press MENU + 6 TOT ,the screen display [TOT 60]

Press [MENU] to enter, it shows "60", turn encoder to select the desired transmitting level, then press [MENU] to confirm, finally press [EXIT] to return to standby.

Setting VOX (VOX)-------MENU 7
This transceiver will switch to the transmitting mode when detecting the voice signal. The transceiver operation will somewhat be delayed, and the voice signal information maybe not transmitted at the first beginning, since there needs some time for the VOX circuit to detect the voice signal.

In standby , press [MENU] + [7 vox] ,the screen display

Press [MENU] to enter, it shows "OFF", turn encoder to turn off VOX function or select VOX level (1~10), then press [MENU] to confirm, finally press [EXIT] to return to standby.

⚠ NOTE ▬▬

. The higher level of VOX is set, the higher volume is needed.
. In scan and radio modes, the vox function is not available, but just showing VOX mark on the upper right of the display screen.

Setting wide or narrow bandwidth (WN)-------MENU 8

In standby , press [MENU] + [8 W&N] ,the screen display

Press [MENU] to enter, it shows "wide", turn encoder to select the desired step, then press [MENU] to confirm, finally press [EXIT] to return to standby.

Setting voice guide(VOICE)---MENU 9
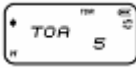
In standby, press [MENU] + [9 VOICE] , the screen displays

Press [MENU] to enter, turn encoder to select Chinese , English or OFF, and then press [MENU] key to confirm, finally press [EXIT] to return to standby

Setting transmitting overtime alarm (TOA)-----MENU 10
This alarm is the pre-alert time when the transmitting time is nearly up to requested transmitting time. When the time is up , the transceiver sounds out the beep prompt and the LCD keeps flashing. This transceiver can be set from 1-10 TOA level with 1 second each. Level 1 means that the prompt 1 second ahead when the transmitting time is up to the TOT preset time.

In standby, press [MENU] + [1STEP] [0] , the screen displays [TOA 5]

Press [MENU] to enter, it shows "5", turn encoder knob to select OFF/1-10 Level, then

press [MENU] key to confirm, finally press [EXIT] to return to the standby mode.

Beep prompt function (BEEP)----MENU 11
Beep prompt function is for the transceiver operating confirmation, error status prompt or faulty reminders. We faithfully advise you to keep this function ON, so that you can detect or check the errors and faults in time.

In standby, press [MENU] + [1STEP] [1STEP] , the screen displays [BEEP ON]

Press [MENU] to enter, it shows "ON, "turn encoder to select turn ON/OFF the beep

prompting function, then press [MENU] key to confirm, finally press [EXIT] to return to standby

Setting power on message (PONMSG)-----MENU 12
This transceiver has 3 display modes selectable for the power on message as follow:
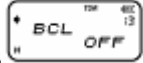OFF: display the full screen
BATT-V: display the current battery voltage
MSG: display "welcome".

In standby, press ▢MENU + ▢1STEP ▢2SQL the screen displays 🔲PONMSG OFF

Press ▢MENU to enter, it shows "OFF, "turn encoder to select OFF/BATT-V/MSG., then press ▢MENU key to confirm, finally press ▢EXIT to return to standby.

Busy channel lockout(BCL)-----MENU 13
This function is to prevent the interference from the other communicating channels. When the selected channel is occupied by others, press PTT and there will be an alarm prompt for BCL, while release PTT, the alarm prompt disappears and the transceiver will be back to the receiving mode.
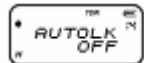
In frequency mode, press ▢MENU + ▢1STEP ▢3SAVE , the screen displays 🔲BCL OFF

Press ▢MENU to enter, it shows "OFF, "turn encoder knob to select ON/OFF this function, then press ▢MENU key to confirm, finally press ▢EXIT to return to standby.

Setting keypad lock (AUTOLK)-----MENU 14
This transceiver has automatically lock (AUTOLK) and manual lock selectable
ON: When the AUTOLK is on, there are no operations within 15 seconds, the transceiver will be locked automatically. Press ▢#LOCK key more than 2 seconds to unlock the keypad.
OFF: The AUTOLK is off, it is only available to lock the keypad manually.

⚠ NOTE ▰▰▰

.According to the manual lock, press ▢#LOCK key for the more than two seconds to lock in standby mode, and press ▢#LOCK key for more than two seconds again to unlock it.

In standby, press ▢MENU + ▢1STEP ▢4TXP the screen displays 🔲AUTOLK OFF
Press to enter, it shows "OFF, "turn encoder knob to select ON/OFF this function, then press key to confirm, finally press to return to standby.

Setting receiving CTCSS (R-CTCSS)----MENU 15
Using the CTCSS/DCS can be used for you to receive the specified individual or group calls and avoid the needless callings from others with the same frequency. Only

receiving the same CTCSS/DCS signals, the transceiver can release the squelch.

In standby, press **MENU** + **1STEP** **5ROGER** the screen displays R-CTC OFF

Press **MENU** to enter, it shows "OFF, "turn encoder to turn off this function or select

67.0hz to 254.1hz CTCSS code, then press **MENU** key to confirm, finally press **EXIT** to return to standby.

⚠ **NOTE**

.This transceiver has 50 groups CTCSS, see appendix (1) CTCSS frequency sheet.

Setting transmitting CTCSS (T-CTCSS)----MENU 16

In standby, press **MENU** + **1STEP** **6TOT** , the screen displays T-CTC OFF
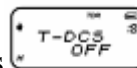
Press **MENU** to enter, it shows "OFF, "turn encoder to turn off this function or select

67.0hz to 254.1hz CTCSS code, then press **MENU** key to confirm, finally press **EXIT** to return to standby.

⚠ **NOTE**

● this transceiver has 50 groups CTCSS, see appendix (1) CTCSS frequency sheet.

Setting receiving DCS (R-DCS)----MENU 17

In standby, press **MENU** + **1STEP** **7VOX** , the screen displays R-DCS OFF

Press **MENU** to enter, it shows "OFF, "turn encoder to turn off this function or select

67.0hz to 254.1hz CTCSS code, then press **MENU** key to confirm, finally press **EXIT** to return to standby.

⚠ **NOTE**

. This transceiver has 105 groups DCS, see appendix (2) DCS frequency sheet
. In DCS selections, DXXXN(from D023N to D754N) means POSITIVE code, while
DXXX (from D0231 to D7541) means NEGATIVE code.

Setting transmitting DCS (T-DCS)----MENU 18

In standby, press MENU + 1STEP 8W&N , the screen displays T-DCS OFF

Press MENU to enter, it shows "OFF, "turn encoder to turn off this function or select

67.0hz to 254.1hz CTCSS code, then press MENU key to confirm, finally press EXIT
to return to standby.

⚠ NOTE

. This transceiver has 105 groups DCS, see appendix (2) DCS frequency sheet
. In DCS selections, DXXXN(from D023N to D754N) means POSITIVE code, while
DXXX (from D0231 to D7541) means NEGATIVE code.

Voice mode (APRO)---MENU 19

In standby mode, press MENU + 1STEP 9VOICE , the screen displays ARRO OFF

Then press MENU to confirm, and then turn encoder knob to select OFF, COMP or

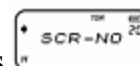SCR. And then press MENU to confirm, finally EXIT

COMP: companying voice signal, reduce noise, improve clear voice, especially
distance between you far away(or one another).

SCR: secret calling, it is unique dealing voice mode, other radio which have same
frequency can receive scrambled and incorrect signal.

OFF: turn off the above-mentioned functions for COMP&SCR.

Secret Calling(SCR-NO)----MENU 20

In standby mode, press MENU + 2SQL 0 , the screen displays SCR-NO 20

Then press MENU to confirm, and then turn encoder knob to select from

(1.2.3.4.5.6.7.8), 8 modes of secret in all, and then press MENU to confirm,

EXIT finally

Setting scan mode (SC-REV)---MENU 21

This transceiver has three scan modes:

TO: the transceiver continues scanning if there are no any operations 5 seconds after receiving signals.

CO: the transceiver pauses scanning when receiving signal, and continues scanning 3 seconds after the signal disappears.

SE: the transceiver stops scanning when receiving signals.

In standby mode, press **MENU** + **2 SQL** **1 STEP** , the screen displays **SC-REV 21 TO**

Then press **MENU** to confirm, it shows "TO, turn encoder knob to select TO/CO/SE scan mode, then press **MENU** to confirm, finally press **EXIT** to return to standby mode.

Setting Scan/Lamp/SOS-CH/FM radio/Optional-Signal Call on side key (PF1)---MENU 22

There are 4 functions selectable on the side key 1 of this transceiver

1.SCAN: scan function   2 LAMP: lamp function   3 SOS-CH: SOS function

4.RADIO: FM radio function 5. Call: (Opt-signal Call: MSK/2-Tone/5-Tone)   6. OFF: Disable this side key

1. SCAN Function

In standby mode, press side key 1 enter to activate scanning (scan mode can be set through MENU 19-scan mode setting), while press any key to stop scanning in scan mode.

In standby mode, press **MENU** + **2 SQL** **2 SQL**, the screen displays **PFI 22 RADIO**

Press **MENU** to enter,   turn encoder knob to select SCAN, then press **MENU** to confirm, finally press **EXIT** to return to standby mode.

2. LAMP function

In standby mode, press side key 1 to turn on the lamp, and press this key again to turn it off.

In standby mode, press **MENU** + **2 SQL** **2 SQL**, the screen displays **PFI 22 RADIO**

Press **MENU** to enter,   turn encoder knob to select LAMP, then press **MENU** to

confirm, finally press [EXIT] to return to standby mode.

3. SOS-CH (SOS function)

In emergency, the transceiver transmits the SOS signals to the outside surrounding on the specified channel or frequency in band A or band B. Meanwhile, the transceiver will sound "wu…wu" with the green light keeping flashing. It will transmit signals every 5 minutes, lasting for 10 seconds each time. When the carrier signal receives in the SOS transmitting mode, the transceiver will automatically switch into the receiving mode. After the carrier signals disappear,   the transceiver switches back to the SOS transmitting mode. Please press any key to exit in the SOS transmitting mode.

⚠ **NOTE** ▬

. In case the SOS-CH frequency you set is not the master frequency , the transceiver will automatically set the SOS-CH frequency to be the master frequency in the SOS-CH mode. Meanwhile , the master frequency will not restore the settings before the SOS transmitting.

. Please press [A/B] key   to reset the master frequency.

In standby mode, press [MENU] + [2 SQL] [2 SQL]   , the screen displays [PFI RADIO]

Then press [MENU] to enter,   turn encoder to choose SOS-CH submenu, the screen displays

Press [MENU] again to confirm, turn encoder to choose Band A or Band B, the

press [MENU]   to confirm,   the transceiver sounds "wu…wu.." meanwhile the RED/GREEN/FLASHLIGHT keeps flashing, while means SOS-CH function is on.
After above settings, switch the transceiver to the standby mode, and press PF1 side key to transmit the

SOS signal.

4. RADIO function

.Turning on the FM radio: in standby mode, press side key 1to turn on. The screen displays 145.025 22 then the indicator keeps flashing, which means transceiver is automatically turning the radio stations. Once the transceiver gets tuned, it stops at this radio station and starts the listening.

.Turning on the FM radio station: in radio mode, press `*SCAN` , the radio keeps turning the stations automatically and the green light keeps flashing at the same time until it succeed in searching the available stations. You can turn encoder to manually turn the radio stations.

.toring radio station: after detecting a radio station, presses `MENU`, the screen display SAVE?88.100, and then select one of the number keys from 1to 9 (1-9), the detected radio station will be stored into the clip for your future use.

 The transceiver has 2 groups of storages selectable for your storing, and the default group is the first storage.

Egif you want to store 88.1MHz into the 1st group channel8, in radio mode, hen turning the desired radio station, press `MENU` +`8W&N` to store it into the 1st storage directly, if you want to store this frequency into the 2nd group channel 8. In radio mode, when turning the desired radio station, press # key then the screen will display . At this time, press `MENU` + `8 W&N` to store this station into the 2nd group channel 8. in radio mode, press 1-9 to select the stored stations accordingly to listen to, while use the

`# LOCK` key to switch between 1st and 2nd storages.

.Exiting from the radio mode: press side key 1 again to exit from the radio mode.

> ⚠ **NOTE**
> - When the FM radio is working, the current frequency or channel is in standby, once detecting the receiving signals; the transceiver will automatically switch to receiving/transmitting mode. Five seconds after the signal disappears, the transceiver will switch back to the radio mode.
> - In FM radio mode, press EXIT to back to the current standby frequency, and press PTT to transmit. Five seconds after transmission, the transceiver will switch back to the radio mode.

5. Call (Optional Signal Call)

3kinds of Opt-Signal Call (MSK、2-Tone、5-tone) are available, each can set 8 groups code , both MSK and 2-Tone can set 10 groups code, but the code of 5-Tone are not be limited. The codes for Optional-signal-call must be set by programming Software of the 2 way radio.

MSK/2-Tone manually set code (but PF1 must be set CALL by Programming Software in advance)

Call list and send out if relative calling list is not still edited, it will have beep tone prompt

When 2-tone is editing in Programming software, code of A Tone form is transmit for 1second, code of B Tone form is transmit 3seconds, But code of A tone is transmit for 5 seconds when there is Only A tone edited in call List (it is regarded as group-call when it is used actually).

Code of 5-tone is manually Edited (but PF1 must be set CALL by programming software via PC in advance). Press PF1 key , LCD display "CALL/----", then input code of 5-tone you want, and

then press PTT key to call, that's ok!

Working mode (CH-MDF)---MENU23

This transceiver has 2options for the working mode:

1. Frequency mode (FREQ)   2.Channel mode

There are 3 channel display selections in channel mode as follow:

① Channel (CH)   ② frequency + channel (CH FREQ)   ③channel name(NAME)

⚠ **NOTE**
- it is available to switch between the frequency mode and the channel mode manually or via the programming software. If you want, you can set the password for the mode switch.
- the password for the mode switch in only available to set via programming software.
- there are 6 charters consist of the password, while "000000" means no password is needed for the mode switch.

Frequency mode (FREQ) and channel mode switchable

(1) Without password input

In standby, press MENU + 2 SQL 3 SAVE,then turn encoder to choose working mode and finally

press MENU to confirm.

(2)With password input

Please set the password for the mode switch via programming software. This password is consisting of 6charters from 0-9. The valid password should be made up by 6 digit except: 00000.

In standby, press MENU + 2 SQL 3 SAVE, then turn encoder to choose one of

FREQ/NAME/CH/CHREQ. Press MENU to confirm, the screen will display the password input
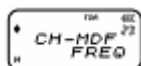
CH-MDF
FREQ . Please input the preset password through the keypad, then the transceiver will switch to the selected mode.

⚠ **NOTE**
- At least one channel is stored ahead into the transceiver, so that the above setting for the mode switch is workable.
- Quickly switch between the frequency mode and the channel mode (CH)
  In standby, press MENU + TDR key to switch the mode. Without password input, you can switch it directly. Otherwise, you need to input the valid password accordingly.

Setting auto backlight (ABR) ---MENU24

In standby, press MENU + 2 SQL 4 TXP, the screen display ABR ON

Press MENU to enter , it shows "ON", turn encoder to turn ON/OFF auto backlight function, then

press MENU to confirm, press EXIT return to standby.

Colorful backlight (COLOR) ---MENE25

In standby mode, press MENU + 2 SQL 5 ROGER then screen displays `COLOIR 25 7`

Then press MENU to confirm, and then turn encoder to select Arabic number from (1-7), and then

press MENU to confirm again, finally EXIT .

Note: every Arabic number means a kind of colorful backlight.
E.G：1 means red backlight, 2 means green backlight, 3 means yellow backlight, and 4 means blue backlight and so on.

Setting offset frequency (OFF SET) ---MENU 26

Offset frequency means the difference between transmitting frequency and receiving frequency. The range of the offset frequency for this transceiver is from 0-69.950 MHz

In standby mode, presses MENU + 2 SQL 6 TOT , the screen displays `OFFSET 26 00.600`

Press MENU to enter, and then turn encoder to select the listed offset frequency, or manually input through in order to transmit and receive in different frequencies, it is necessary to set the offset frequency shift direction in the frequency mode.

Please follow the below setting steps:

1. Set the working mode to the frequency mode.
2. Set the frequency shift direction and offset frequency.

Eg: in frequency mode, the transceiver needs to work on receiving frequency 450.025 MHz and transmitting frequency 460.025 MHz.
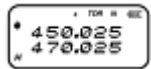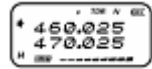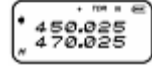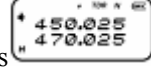
In frequency mode, input

4 TXP 5 ROGER 0 0 2 SQL 5 ROGER then press MENU + 2 SQL 7 VOX + MENU
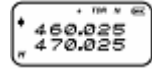
to select positive direction (+), press

MENU + EXIT , then press MENU + 2 SQL 6 TOT + MENU +turn encoder knob to choose

10.000+ MENU + EXIT , so the frequency shift direction and offset frequency are set. The screen

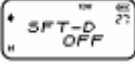displays `450.025 470.025` , press PTT to transmit and the screen displays `460.025 470.025` , release PTT,

the screen displays `450.025 470.025` , and it means receiving frequency is `450.025 470.025` , while the

transmitting frequency is `460.025 470.025`

Setting frequency shift direction (SFT-D) ---MENU 27

There are 3 selections for the frequency shift direction setting:]

1. Plus shift (+), which means the transmitting frequency is higher than the receiving frequency.
2. Minus shift (-), which means the transmitting frequency is lower than the receiving frequency.
3. Turn off this function.

In standby mode, press [MENU] + [2 SQL] [7 VOX], the screen display press [MENU] to enter, turn encoder to select +/-/OFF, then pres [MENU] to confirm, finally [EXIT] return to standby mode.

Selecting stopwatch timer (SECOND) ---MENU28

In standby mode, press [MENU] + [2 SQL] [8 W&N], the screen display press [MENU] to enter, it shows "OFF", then turn encoder knob to turn ON/OFF this stopwatch, press [MENU] to confirm, finally press [EXIT] to return to standby mode.

Using the stopwatch timer:

When this function is in, press [# LOCK] key to start counting, while press any key to pause. Press [# LOCK] key again to re-start counting.

⚠ NOTE ▓▓▓▓
● when it pauses counting, press any key (except [# LOCK] key) to exit from stopwatch timer function.

Channel Name Editing (CHNAME) ---MENU29

In frequency mode an din standby, you press [MENU] + [2 SQL] [9 VOICE], the screen display

This means that the channel name is not edited up to now.

1. the method of editing
    do it via programming software
    or directly operate through the keypad manually.
2. with the following 2 items before editing
    you store/memory at least 1channel before editing channel name, specific operation detail is read in [MENU] 30-setting channel memory

    the transceiver (two way radio) is in the channel mode, must press [MENU] + [TDR] key to switch into the channel mode if it is in the frequency mode.
3. manual operation steps in the channel mode

The 1step: press **MENU** + **2 SQL** **9 VOICE** + **MENU** key to confirm, the screen display

```
* CHNAME
  000000
```

The 2 step: after you press **MENU** to confirm, at this time, you can edit the name of channel

(1) If the channel name which you need is consist of 6 digital numbers （0 123456789）, directly input digital number key from keypad. Turn encoder clockwise to select the digit, turn encoder anti-clockwise for 1time, you will edit second number, and then you will turn clockwise for 1time again, the second digital number will appear. Then operation of editing next number according to the same theory.

(2) If the 9-digit numbers of channel name is consisted of 1 English letter (from A-Z) or more (6 letters at most) you will turn encoder clockwise to select English letter you want, these letters will appear after digital number 9 come out, and then turn encoder anti-clockwise 1time, you will select the second digit, and then turn encoder clockwise for 1time again. You will select digit according to the above mentioned theory as well as the 6th digit.

The 3 step: After you finish selecting the 6digits of channel name, and then press **MENU** , and press **EXIT** .

Setting channel memory: setting Co-Channel and Dis-Channel (MEM-CH) ---MENU30
In frequency mode and in standby mode, it is available to store the desired frequencies and relevant parameter into the specified channel.

Input the desired frequency, and then press **MENU** + **3 SAVE** **0** , the screen display

```
* MEM-CH
  CH-001
```
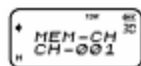
press **MENU** to enter, turn encoder to select channel is co-channel. If you need to store as dis-channel, repeat the above operation on another frequency and transmitting frequency are stored as dis-channel.
e.g: store receiving frequency450.025mhz and transmitting frequency460.025mhz into channel 20 as dis-channel..

1. In frequency mode, input
4 TXP **5 ROGER** **0** **0** **2 SQL** **5 ROGER** + **MENU** + **3 SAVE** **0** + **MENU** then press

2 SQL **0** or turn encoder to select CH-20, press **MENU** to confirm, voice prompt for receiving memory, then press **EXIT** .

2. Input
4 TXP **6 TOT** **0** **0** **2 SQL** **5 ROGER** + **MENU** + **3 SAVE** **0** + **MENU** + **MENU**, ,

voice prompt for transmitting memory, then press [EXIT]

4. the dis-channel is set successfully.

> ⚠ **NOTE** ▰▰▰▰
> - The relevant CTCSS/DCS tone with the receiving frequency should be set ahead the receiving memory, so that these settings can be stored into the desired channel with the frequency.
> - In transmitting memory, only the specified frequency point can be stored.
> - If the desired channel has already been stored, please delete the channel before the transmitting and receiving memory. Only the desired channel is empty, can both the transmitting and receiving memory be done. Otherwise, only the transmitting memory can be manually programmed.
> - besides the manual memory, it is also available to do the memory channel via the matching programming software.

Deleting channel (DEL-CH) ---MENU31

In standby mode, press [MENU] + [3 SAVE] [1 STEP] , the screen display [MEM-CH CH-001]
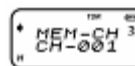
press [MENU] to enter, and turn encoder to select the desired channel, then press [MENU] to confirm,

after the channel is deleted successfully, press [EXIT] to return to standby.

Setting reset---MENU32

This transceiver has 2selections for the reset operation- VFO reset and ALL reset.

VFO reset means all the function parameter set in frequency mode resumes to the factory setting.

ALL reset means all the function parameter set in both frequency mode and channel mode resumes to the factory setting.

1. VFO Reset

In standby mode, press **MENU** + **3 SAVE** **2 SQL** , the screen display

press **MENU** to enter, and turn encoder to select VFO, then press **MENU** , the screen display

press **MENU** again to confirm, and the screen displays

After this operation, the transceiver will be resumed automatically

2. All Reset

3. In order to avoid the faulty operations, we suggest that you set the password for the All Reset via programming software. Only input the valid password, the transceiver can be reset to the factory setting completely. Please see the password setting in the programming software, which is consist of six Arabic number selectable from 0-9.

When the input password is 000000, it means no password is needed to input for this operation.

(1) setting password is 000000
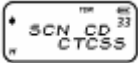
In standby, press [MENU] + [3 SAVE] [2 SQL] , the screen display

press [MENU] to enter, and turn encoder to select ALL, press [MENU] , the screen display

then press [MENU] again to confirm, the screen displays

When the reset operation is done, the transceiver will be resumed automatically

(2) setting password as xxxxxx (e.g 123456)

In standby, press [MENU] + [3 SAVE] [2 SQL] , the screen display

press [MENU] to enter, and turn encoder to select ALL, press [MENU] , the screen display

 , at this time input the valid password (e.g:123456), the screen displays

 then the transceiver will start resetting. After reset is done, the transceiver will be

resumed automatically

CTCSS/DCS scanning ---MENU33

When the transceiver detects the CTCSS/DCS signals, press [MENU] + [3 SAVE] [3 SAVE] , the screen

display

press [MENU] to enter, the arrowhead points to CTCSS, turn encoder select to scan CTCSS/DCS.

And

then press ![MENU] to confirm, it starts scanning CTCSS/DCS frequencies.

> ⚠ **NOTE**
> - This function only works in frequency mode.
> - Only when the transceiver detects the CTCSS/DCS signal from outside, this function works
> - Turn encoder knob to change the scanning direction.
> - When the transceiver scans to the matching CTCSS/DCS frequency, it stops at this frequency. You can press ![MENU] to temporarily replace this frequency as the current standby frequency. If you want to directly set this scanned frequency to be current working frequency, please enter into ![MENU] 15/16 (CTCSS) or ![MENU] 17/18 (DCS) to save separately. Or it will be reset to the original setting before the next scanning.
> - only the band with the arrowhead and detecting the signal can be activated to do next the CTCSS/DCS scanning.

DTMF Encoding

These ![MENU], ![EXIT] ![TDR] ![A/B] keys and knob are respectively corresponding to A, B, C, D at DTMF encoding setting.

Please follow the below steps to activate DTMF manually：
1. Hold on pressing PTT key to transmit.
2. AT the same time, press the keys on the keyboard to sent out the DTMF tone.

> ⚠ **NOTE**
> - This transceiver will monitor the transmission of corresponding DTMF tone.

Editing / Transmitting ANI ID Code, ANI ID Code transmitting delay and DTMF Side tone

> ⚠ **NOTE**
> - The above functions in this transceiver only can be edited by our programming software.

・Editing ANI ID code
   ANI ID Code can be made up by alphanumeric (A-D and 0-9) with 6 digits max

・Transmitting ANI ID Code
   Turn this function on means when press PTT key, the ANI ID Code will be transmitted automatically, while turning it off means manually transmitting.

・**ANI ID Code transmitting delay**
   The delay time for transmitting ANI ID Code means the time which the transceiver is automatically delayed

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transmitting ANI ID Code

this delay can be set 3seconds max, total 30 levels with 100ms each.

・**DTMF Side tone**

   DTMF Side tone means to turn on/off the speaker when transmitting ANI ID Code, and get the corresponding DTMF tone.

• **There are 4options on setting side tone:**

(1) **Keypad side tone:** press keypad to turn on side tone when transmitting

(2) **ANI ID Code side tone:** transmit ANI ID Code to turn on side tone.

(3) **Key side tone + ANI ID side tone:** press number key or transmit ANI ID side can turn on side tone when transmitting

(4) **OFF:** in encoding mode, all side tones are off.

Setting priority scan function

If you want to monitor the other frequency and check the certain preferred frequency at the same time,

You can set priority scan function.

E.G: scan six channels: set CH1, CH2,CH3, CH4 and CH5 as the common scanned channels and CH6 as the priority scanned channel, then the scanning order is as followings:

CH1 → CH6 → CH2 → CH6 → CH3 → CH6 → CH4 → CH6 → CH5 → CH6
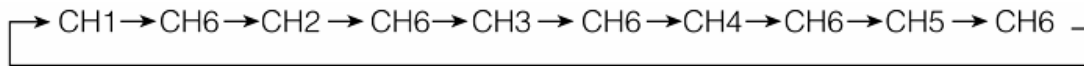
When this transceiver detects signal on the priority channel when scanning, it will call on its frequency. Please program the priority channel via chierda programming software.

Setting reverse frequency function

When using the reverse frequency function, the transmitting and receiving frequencies of this transceiver will be interchanged, together with as well as all setting for CTCSS/DTMF.

·How to set the reverse frequency:

In standby mode, press ✱SCAN to activated this function, while press ✱SCAN again to switch it off.

·In channel mode, if you want to:
  1. turn on the menu setting.
  2. reset the transceiver
  please program above operations via chierda programming software.

Low voltage prompt

When the battery pack is in low voltage, there will be voice prompt for the lower voltage, at this time, the backlight flashes one time every five seconds and the transceiver sounds out "click" to remind of being

charged timely.

Transmitting overtime prompt

When the transmitting time is exceeding the preset time, there will be an alarm to remind of overtime transmitting, and the transmitting will be paused. If you want to continue transmitting, please press PTT to resume transmitting. (Please see MENU 6 about the time-out timer TOT)

Adding scanning channel

⚠ NOTE
● Only the added scanning channel can be listed to scan.
● editing method: strictly via programming software

Wire-clone function

Wire-clone setting	a. Install battery packs on source radio and target radio and connect then via wire-clone b. And then power target radio on c. Power on the source radio an hold on the MONI key at the same time d. Red LED on the source radio Flashes, while the green LED on the target radio flashes, it shows the wire cloning in completely proceeding	Red LED flashing means transmitting data when wire cloning. Red LED will be extinguished after completing wire-clone, and the transceiver returns to standby. Red LED lasting flashing means the wire-clone is failed and the transceiver returns to standby mode
	Target radio	Green LED flashing means receiving data when wire cloning. Green LED will be extinguished after completing wire-clone, and the transceiver returns to standby.

Working with repeater

This series of transceiver is available to work with the repeater both in frequency mode and channel mode, which is programmable through the key board and via the programming software.

Please refer to the following steps about manually programming the channels to work the repeater.

a.   set the transceiver work in the frequency/VFO mode, (if the radio work on channel mode,

   please press + key to switch frequency mode)

b.   Input the receive frequency through the keyboard. (the receive frequency of this transceiver is the transmit frequency of repeater)

c.   Set the related parameter you need for this frequency, like MENU15-18 CTCDD/DCS, MENU 26 Offset frequency, MENU 27 shift frequency direction and others.

d.   Memorize this frequency and the parameter into the specified channel by MENU 30.

e.   After setting the Offset frequency and the shift frequency direction of receiving memory, you do not need to memorize the transmit frequency.

After above, the settings to work with repeater are successful. Switch the working mode to channel mode, call out this specified channel you have memorized, the transceiver can join in the repeater.

For example, the receive frequency range of repeater is 442.850MHz, the offset frequency is 5.00MHz, the shift frequency direction is "-", the T-CTCSS is 103.5hz, the specified channel CH-20. Please see the steps as following:

a. Power on the transceiver, and set it to work in frequency mode.

b. Press **MENU** + **1STEP** + **MENU** to set the frequency step, turn encode knob to select the desired frequency step, and then press **MENU** to confirm, finally press **EXIT** to return to standby.

c. Input the frequency447.850 through the keypad, and operate as follows:

Press **MENU** + **0** + **4 TXP** + **MENU** to set the transmitting power. Turn encode key to select the desired power, and then press **MENU** to confirm, finally press **EXIT** to return to standby. (Please refer to MENU 4 on page 16)

Press **MENU** + **2 SQL** + **6 TOT** + **MENU** to set the T-CTCSS, turn encode key to select the desired CTCSS code 103.5HZ, and then press **MENU** to confirm, finally press **EXIT** to return to standby. (Please refer to MENU 16 on page 23)

Press **MENU** + **2 SQL** + **6 TOT** + **MENU** to set the offset frequency, turn encode knob to select the desired offset frequency 5.00 MHz, and then press **MENU** to confirm, finally press **EXIT** to return to standby. (Please refer to MENU 26)

Press **MENU** + **2 SQL** + **7 VOX** + **MENU** to set the shift frequency direction. Turn encode key to select the desired direction – and then press **MENU** to return to standby. (Please refer to MENU 27)

Press **MENU** + **3 SAVE** **0** + **MENU** to memory channel, turn encoder knob clockwise or anti-clockwise, or directly input **2 SQL** + **0** through the keypad to select the specified channel CH-20, and then press **MENU** to confirm,, there is voice prompt "receiving memory" (it prompts when the voice guide is ON). Finally press **EXIT** to return to standby. (Please refer to MENU 30)

After above, the settings for memory channel to the repeater is done.

If necessary for the channel name editing, please press **MENU** + **TDR** to switch the working mode to channel mode. Select the specified channel CH-20, and then press **MENU** + **2 SQL** + **3 SAVE** + **MENU** to change channel mode. Turn encode key to select name and then press **MENU** to confirm, finally press **EXIT** to return to standby.

How to use the intelligent charger

1. Insert the AC plug into the power grid socket (AC: 110-220V). The indicator on the charger flashes, and then the charger is in the charger is in the charging standby mode.
2. Insert the battery into the charger, the RED LED is on, which means charging is on the progress. When the RED LED turns to GREEN, the charging completes.

Programming guide for software (via USB Programming cable)

1. Download, unzip and install the USB driver according to different operating system.
2. Restart your computer, and it shows the driver is installed successfully.
3. download and unzip the matching programming software
4. Connect the transceiver and open the software
5. Power on the transceiver and open the software
6. Read from the radio to check the connection
7. Set the parameter and functions accordingly
8. Wire to the radio

⚠ NOTE ▮▮▮▮▮

•if you get the message "failed connection" when you try to read from the radio, please check the first five steps and the communication ports accordingly.

• Please confirm that the first 3 steps are done well, the com port will be selected automatically when you open the software. However, according to the different computer settings, the com port may be needed to re-set.

• Please determine the port assignment form the device manager of the computer and select the correct commutation port, which is available for the connection.

• If the connection is still not ok, please try another cable or another transceiver on another computer to double check. Please refer to the detailed manual.

Troubleshooting Guide

Before the transceiver is regarded as being faulty, please double checks according to the main problems as following chart, it the problems are still happening, please reset it to avoid some mis-function operation, search assistance from the experienced technician or contact your buyer accordingly.

problem	solution
The transceiver can not be powered on	• The battery may be exhausted, please change the new battery or re-charge it • The battery was not installed correctly, please re-stall
The battery life is too short to use	• The battery life is over, please change a new battery • The battery is not full charge
The receiving light keeps flashing, But there is no sound coming out	• make sure the volume is highest •make sure the CTCSS/DCS settings are the same as the transmitting transceiver
It seems the keypad does not work	• make sure if the keypad is locked or not • make sure if the keys are not stuck
In standby, the transceiver will transmit automatically even the PTT key is not pressed	• make sure if VOX function is ON or not, and its level is set too low or not
Some functions can not be stored normally	• please confirm if the transceiver is working in channel mode, since some functions are only set in frequency mode via programming software
There are other disturbed signals or noise (from other groups) in the channel	•please change the CTCSS/DCS frequencies set in your group.

Technical Specification

Appendix 1

CTCSS										
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	156.4	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

Appendix 1

DCS													
1	D023N	16	D074N	31	D165N	46	D261N	61	D356N	76	D462N	91	D627N
2	D025N	17	D114N	32	D172N	47	D263N	62	D364N	77	D464N	92	D631N
3	D026N	18	D115N	33	D174N	48	D265N	63	D365N	78	D465N	93	D632N
4	D031N	19	D116N	34	D205N	49	D266N	64	D371N	79	D466N	94	D645N
5	D032N	20	D122N	35	D212N	50	D271N	65	D411N	80	D503N	95	D654N
6	D036N	21	D125N	36	D223N	51	D274N	66	D412N	81	D506N	96	D662N
7	D043N	22	D131N	37	D225N	52	D306N	67	D413N	82	D516N	97	D664N
8	D047N	23	D132N	38	D226N	53	D311N	68	D423N	83	D523N	98	D703N
9	D051N	24	D134N	39	D243N	54	D315N	69	D431N	84	D526N	99	D712N
10	D053N	25	D143N	40	D244N	55	D325N	70	D432N	85	D532N	100	D723N
11	D054N	26	D145N	41	D245N	56	D331N	71	D445N	86	D546N	101	D731N
12	D065N	27	D152N	42	D246N	57	D332N	72	D446N	87	D565N	102	D732N
13	D071N	28	D155N	43	D251N	58	D343N	73	D452N	88	D606N	103	D734N
14	D072N	29	D156N	44	D252N	59	D346N	74	D454N	89	D612N	104	D743N
15	D073N	30	D162N	45	D255N	60	D351N	75	D455N	90	D624N	105	D745N

Technical Specification

Frequency range (can be suitable for different countries or Areas)	1.Standard frequency for the transceiver 400-470 MHz (Rx/Tx) 2. Optional frequency 400-470 MHz (Rx/Tx)
Memory channel	128 channels
Operating voltage	7.4v
Operating temperature	-30 to +60℃
Working mode	Co-channel or Dis-channel simplex
Output power	UHF:4W
Modulation	F3E(FM)
Max frequency deviation	< +5khz
Spurious radiation	< -60db
Frequency stability	+2.5ppm
Receive sensitivity	< 0.2uv
Audio output power	> 500mw
Dimension	120(L)*62(W)*41(T)mm
Weight	250g

NOTE: Specifications is subject to be updated without prior notice.