# CRT® 4CF

## HANDHELD TRANSCEIVER

# USER MANUAL

**DUAL BAND VHF-UHF**

**VHF 144-146 MHz (TX-RX)**

**UHF 430-440 MHz (TX-RX)**

**FM 64-108 MHz (RX)**

**AM 118-136 MHz (AIR BAND RX)**

**SW 2.3-29.99 MHz (RX)**

**LW 0.52-1.71 MHz (RX)**

FC ( € 0700 ①

RoHS

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English owner's manual Copyright CRT France 2014

## SYMBOLS DESCRIPTION

| | |
|---|---|
| Please carefully read the instructions | |
| Information on recycling, not throwing your material in the trash at the end of life, Bring it to special aera to be recycling | |
| DC using | |
| Keep dry | |
| Shield symbol | |
| CE conformity symbol | |
| Alert symbol indicating an incomplete harmonization of the frequency band which will result in restrictions on the use of the equipment concerned. | |
| Warning | |

## STORAGE , TRANSPORT, USING

*Storage : Classe 1  -30/85% (° Humidity)*

*Transport :- 30/85% (° Humidity )*

*operating temperature  –30 à + 50°*

*Using cycle  TX 10%/RX 90%*

# SAFETY INFORMATION FOR USER

*CRT* transceiver is excellently designed with advanced technology. Please observe the following precautions to perform your obligation, prevent personal injury and ensure the safety of transceiver usage.

1. Keep the transceiver and accessories away from children.
2. Please do not try to open or modify the transceiver without permission, non−professionals process may also cause damage.
3. Please use assorted battery and charger to avoid damage.
4. Please use assorted antenna to ensure the communication distance.
5. Please do not expose the transceiver to long period of direct sunlight, nor place it close to heat appliances.
6. Please do not put the transceiver in excessively dusty or humid areas.
7. Do not use harsh chemicals, cleaning solvents to clean the transceiver.
8. Do not transmit without antenna.
9. When using this transceiver, we recommend transmitting for 1 minute then receiving for 4 minutes. Continuous transmitting for long time or working in high power will heat the back of the transceiver. Do not place the transceiver's hot back close to any surface of plastic.
10. If any abnormal odor or smoke detected coming from the transceiver, turn off the power and take off the battery pack and its case. Then contact local *CRT* dealers.

**NOTICE**
**All tips as above also apply to the standard parts of *CRT* transceiver. If any spare parts fail to work, please contact local *CRT* dealers in time. If users use spare parts from other suppliers instead of *CRT*, the safety and performance of the transceiver can't be guaranteed.**

## THANK YOU FOR YOUR PURCHASE!

Features include 199 memory channels, memory banks, UV-VV-UU modes, dual PTT(programmable), 51 groups CTCSS encode/decode, 1 group user-defined CTCSS encode/decode, 1024 groups DCS encode/decode, plus 2Tone, 5Tone and DTMF encode/decode.

Unique features include the ability to adjust squelch level on-the-ly, display both channel mode and frequency mode at the same time, skip interfering channels while scanning and choose single or dual PTT buttons. The frequency of named channels can be easily displayed and the scanning rate of channels is adjustable via software. Dual standby, dual display, dual receive channel, cross-band repeater functions, frequecny hopping functions(FHSS).

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## STANDARD ACCESSORIES/ADDITIONAL ACCESSORIES

### Standard Accessories

Antenna     Li-ion Battery     Battery Charger     AC Adaptor     Belt Clip

### Additional Accessories

USB Programming Cable     Earphone     Car Charger     Clone cable

Handheld Microphone     Battery Pack for Car Charger

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## ○ OPERATION MODE

*1.* **How to choose a operation Mode:**

   A. **By programming software:**In PC software's "General Setting" menu to choose "Display Mode", channel mode works as Professional transceiver, other two modes as Amateur transceiver.

   B. **By manual setup:**Please refer to "Display Mode" .

*2.* **Amateur Mode:**

Under this mode, press (V/M) key can switch between Channel mode and VFO mode.

   A. **Frequency + Channel mode:**

When set display as "FREQ", the radio enters Frequency +Channel mode, new setting of channel operation and shortcut operation can be temporarily used by user. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings

   B. **Channel+Name Tag Mode:**

When set display as "NAME", it enters Channel+Name Tag Mode. the LCD will display corresponding channel name when the current channel is edited with name. Otherwise, it will display frequency + channel.

   C. **VFO Mode(Frequency mode):**

This mode shows only frequency on the display. Shortcut operation and Channel setting will be changed and stored as the latest value permanently. Once the radio is turned off or changed to new VFO frequency, the value is remained until next change.

*3.* **Professional Mode:**

when set as CH mode, all radio functions shall be set by PC software, besides scan, DTMF encode, keypad lock.     In CH mode, users can't return to amateur mode by menu function.

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## ○ BATTERY INFORMATION

### ))) How to Charge

*1.* Plug the AC adaptor into the AC outlet, then plug the cable of AC adaptor into the DC jack, the indicator lights orange for 1s and turns into GREEN---waits to charge.

*2.* Slide the battery or transceiver with battery into the charger; make sure the battery terminals are in contact with the charging terminals. LED turns into twinkling RED---pre-charging begins.

Ac Input

*3.* Pre-charging for about 5 minutes, LED twinkles stop then charging begins.

*4.* It takes about 5.5 hours to fully charge the battery, when LED turns into GREEN— full charged.

*5.* Charging Process:

| Status | LED |
|---|---|
| Standby (self-examine orange lights 1second when power on) | Green light |
| Pre-charging (pre-charging stage) | Red light twinkles for about 5 minutes |
| Charging (charge in constant currency) | RED light lightens for about 5.5 hours |
| Full charged (charge in constant voltage) | Green light |

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## ○ BATTERY INFORMATION

*6.* LED Indicator:

| STATUS | self-examine when power on | (No battery) | Pre-charging | Charge normally | Full Charged | Trouble |
|--------|---------------------------|--------------|--------------|-----------------|--------------|---------|
| LED | Orange (for 1 second) | Green | Red light twinkles for 5 minutes | Red | Green | Red twinkles for a long time |

**NOTE: Trouble means battery heating, battery short−circuit or charger short−circuit.**

## ((( Charging Prompt
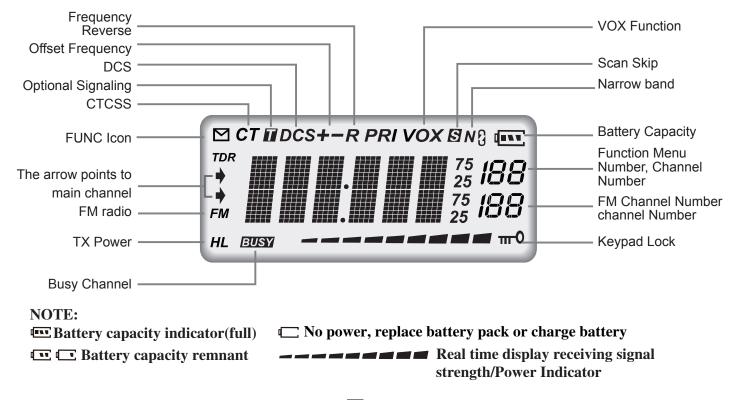
*1.* Self- examination: When charging, ORANGE light twinkles for 1 second and goes out. That means the charger has passed its self-examination and it can charge the battery normally. If the light remains orange or the red light twinkles, it means the charger can not pass its self-examination or charge the battery.

*2.* Trickle pre-charging: When the battery has been inserted into the charger and red light twinkles, which means the remnant voltage is low, the charger trickle charges the battery (pre-charging status), until the battery reaches a certain electric quantity, then the charger automatically turns to normal charging. If the red light stops twinkling, it means the remnant voltage meets a certain electric quantity, and the charger will charge the battery normally.

**NOTE:The time for Trickle pre−charging should not exceed 30 min.  If after 30 min, the red indicator is still twinkling, it means it is unable to charge battery. Please kindly check battery and charger.**
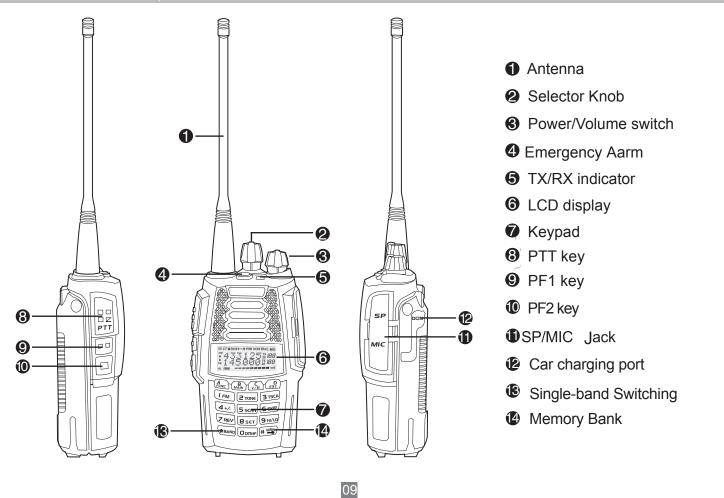
## ◦ GETTING ACQUAINTED

### ))) LCD Display

On LCD display screen, you will see various icons which stand for the selected functions and sometimes you may forget the meaning of them. Here you will find the following table extremely useful.

Frequency Reverse

Offset Frequency

DCS

Optional Signaling

CTCSS

FUNC Icon

The arrow points to main channel

FM radio

TX Power

Busy Channel

VOX Function

Scan Skip

Narrow band

Battery Capacity

Function Menu Number, Channel Number

FM Channel Number channel Number

Keypad Lock

**CT** **T** **DCS** **+** **−** **R** **PRI** **VOX** **S** **N**

TDR

FM

HL  **BUSY**

75 25 **188**
75 25 **188**

**NOTE:**

▭ Battery capacity indicator(full)

▭ ▭ Battery capacity remnant

▭ No power, replace battery pack or charge battery

▬▬▬▬▬▬▬▬▬ Real time display receiving signal strength/Power Indicator

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❶ Antenna

❷ Selector Knob

❸ Power/Volume switch

❹ Emergency Aarm

❺ TX/RX indicator

❻ LCD display

❼ Keypad

❽ PTT key

❾ PF1 key

❿ PF2 key

⓫ SP/MIC   Jack

⓬ Car charging port

⓭ Single-band Switching

⓮ Memory Bank

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## ○ BASIC OPERATIONS

### ))) Switch between Main band and Sub band

Under standby state, press ⟨B/MAIN⟩ key to switch between Main band and Sub band. Arrow indicates the Main band.

```
    461.725   🔋
 →  155.000    2

 H
```

### ))) Switch between Channel mode and VFO mode

Under standby state, press ⟨C/V/M⟩ key to set main band as Channel mode or frequency mode (VFO).

```
 →  156.000   🔋
    155.000

 H
```

### ))) Channel Adjusting

With transceiver in Channel mode or FM radio channel mode, rotate channel switch to adjust channel. Rotate channel switch clockwise to increase channel number, anticlockwise to decrease channel number.

**NOTE: In transceiver mode, arrow directs the main band channel.**
**Rotating channel switch will step through only programmed (saved) channels. Unsaved channels will be skipped.**

### ))) Frequency Adjusting

With transceiver in VFO mode or FM radio frequency mode, rotate channel switch to adjust frequency. Rotate channel switch clockwise to increase frequency, anticlockwise to decrease frequency. Frequency change depends on chosen frequency step.

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## ○ BASIC OPERATIONS

> **NOTE: Channel step:2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K and 50KHz in total 9 for optional. FM radio step frequency is 50K.**

### Frequency Input by Keypad

Under frequency mode or FM radio frequency mode, you can directly enter frequency through keypad.

*1*. When your transceiver is under Channel mode, press the V/M key to switch into VFO.

> **NOTE: When the transceiver is under Channel mode, it shows current channel number on the right of main frequency.**

*2*. Enter the desired frequency by keypad.

> **NOTE: The frequency input of main channel or FM radio is relevant to the stepping and transceiver frequency range. If frequency setup is beyond range or not matching with step size, the input is unavailable. Under the FM radio mode, the frequency step size input by numeric keys is 100k.**

### Channel Input by Keypad

Under channel mode of transceiver or FM radio, you can switch to desired channel by entering three numbers (000-199). If the entered channel is not a saved channel, the transceiver will emit beep to prompt wrong input and return to current channel.

For example, entering 001 is channel 1, 030 is channel 30, 125 is channel 125.

### Squelch Off Momentary / Squelch Off

Side key [PF2] can be setup for Squelch off Momentary or Squelch off function by programming software.

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## ○ BASIC OPERATIONS

*1.* Squelch off: Press [PF2] key, squelch circuit is not mute, back-ground noise can be heard. Press [PF2] key again, squelch circuit is mute.

*2.* Squelch off Momentary: Press and hold [PF2] key, squelch circuit is not mute, back-ground noise can be heard. Release [PF2] key, squelch circuit is mute.

**NOTE: The above functions are only available after [PF2] key setup in programming software.**

**When in channel mode, opening squelch will show the frequency of the channel.**

## Receiving

When your transceiver is called by other party, green or blue LED light will be on, LCD backlight will be on at the same time, and the arrow icon will flash, you can hear the calling.

**NOTE: You may not receive the calling when your transceiver is set at high squelch level. If current channel is programmed with decode signal, only the same signaling call can be heard.**

## Transmitting

According to [PF2] key setup in programming software, hold [PF2] key to monitor the channel to ensure it is not busy, press PTT key and talk to speaker.

Please keep the distance between mouth and speaker to be 2.5-5CM, speak in normal tone to get the best acoustic fidelity.

**NOTE: When press and hold PTT key, transceiver is transmitting if the red LED light is on, release PTT key to receive calls.**

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## ◦ BASIC OPERATIONS

## Emergency Alarm

Under standby state, press and hold [PF1] key (when programmed for ALARM function) or press the Emer -gency Alarm keyuntil LCD displays "**ALARM**", Emergency alarm function is started. This transceiver has 4 Alarm modes that can be setup in programming software. Power off transceiver to exit Alarm.

## Side Key [PF1] function instruction

[PF1] key can be setup in  for below functions:

*1.* **VOLT:**   Battery capacity inquiry: Under standby, press [PF1] key, LCD displays current battery capacity, press this key again to exit.

*2.* **CALL:** Transmit the prestored DTMF/5TONE Encode signal in channel.

*3.* **FHSS(Version D):**  Frequency hopping function. Press [PF1] key, turn on frequency hopping function, LCD display "**FHSS**", transceiver will communicate in pre-set hopping frequency range.

**Note: Receiver and Sender must have same hopping frequency, and must setup MSK decode signalling.**

*4.* **ALARM:** Long pressing [PF1] key, LCD display "**ALARM**", transceiver will enable the preset alarm function.

*5.* **SUBPTT:** Press [PF1] key, transceiver will transmit on sub-band frequency.

*6.* **Transmit tone pulse frequency:** Press and hold PTT key, then press [PF1] key to transmit selected tone pulse frequency.

**NOTE: The tone pulse frequency can be set to 1750Hz, 1450Hz, 1000Hz or 2100Hz in programming software.**

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## ○ BASIC OPERATIONS

### Side key [PF2] function instruction

*1.* Squelch off: Press [PF2] key, squelch circuit is not mute, back-ground noise can be heard. Press [PF2] key again, squelch circuit is mute.

*2.* Squelch off Momentary: Press and hold [PF2] key, squelch circuit is not mute, back-ground noise can be heard. Release [PF2] key, squelch circuit is mute.

*3.* Transmit DTMF/5TONE/2TONE signaling: Press and hold [PTT] key, then press [PF2] key to transmit selected DTMF/5TONE/2TONE signaling.

*4.* Press and hold [PF2] key to turn on transceiver, until transceiver emits "DU" beep, transceiver enter into general functions setup.

### Edit channel

*1.* Under frequency mode (VFO), enter desired frequency and settings, press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press (C/V/M) key to switch into channel mode, channel number flashes.

*2.* Rotate channel switch to select desired editing channel number.

*3.* Press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press and hold (C/V/M) key until transceiver emits "DUDU" beep, channel is stored successfully.

### Delete channel

*1.* Under standby state, press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press (C/V/M) key to switch into channel mode, channel number flashes.

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*2.* Rotate channel switch to select desired deleting channel number.

*3.* Press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press and hold (B/MAIN) key until transceiver emits "DUDU" beep and clear up frequency information of current channel, deletion is successful.

   **NOTE: This process can be applied for deleting FM radio channels.**

## ((• Programming scan

Setup the frequency of L1 channel, U1 channel, L2 channel and U2 channel will realize VFO frequency scanning border limited. L1 & L2 is starting frequency, U1 & U2 is end frequency. When VFO frequency between L1~ U1 or L2 ~ U2, transceiver will scan frequencies between L1 ~ U1 or L2 ~ U2. When VFO frequency is lower than L1 or L2, transceiver will scan frequencies higher than L1 or L2. When VFO frequency is higher than U1 or U2, transceiver will scan frequencies higher than U1 or U2.

*1.* In VFO mode, enter desired frequency and relative setup, press (A/FUNC) key, the top left corner of LCD displays " ✉ "  icon, then press (C/V/M) key switch into channel mode, channel number flashes

*2.* Rotate channel switch to choose desired channel number.

*3.* Press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, then press (C/V/M) key until transceiver emits "DUDU" beep, channels are saved successfully.

   **NOTE: To make this setup, L1 and U1 must in same frequency band. L2 and U2 must in same  band.**

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## ○ SHORTCUT OPERATIONS

### Turn On/ Off FM Radio

This radio has FM/AM/SW/LW total 4 FM radio bands. Press (A FUNC) key then press [1 FM] key to turn on FM radio, later press (A FUNC) key then press [✱ BAND] key to switch between FM/AM/SW/LW band, press (B MAIN) key will mute /un-mute FM radio.

FM: 64~108MHz(RX) (100 memory channels CH00~CH99

AM: 118~136MHz(RX) (100 memory channels CH00~CH99

SW: 2.3~29.99MHz(RX)

LW: 0.52~1.71MHz(RX)

**Note**：**AM/SW/LW require special antenna. When AM is on, the downside RX channel is occupied.**

### Add/Cancel Optional signal decode function

Under standby state, press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, press [2 TONE] key.

*1.* LCD display "**DTMF**" and "**T**" icon, DTMF signal add in current channel.

*2.* Repeat above operation, LCD display "**5TONE**" and "**T**" icon, 5TONE signal add in current channel.

*3.* Repeat above operation, LCD display "**2TONE**" and "**T**" icon, 2TONE signal add in current channel.

*4.* Repeat above operation, LCD display "**MSK**" and "**T**" icon, MSK signal add in current channel.

*5.* Repeat above operation, LCD display "**OFF**", the "**T**" icon disappear, no optional signal in current channel.

> **NOTE: When this function is on, user must setup No.7 menu to be TONE option, then DTMF/5TONE/2TONE/ MSK can be used.**

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## ○ SHORTCUT OPERATIONS

### ))) CTCSS/DCS Scan

Press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press ③ T.SCA key to enter into CTCSS/DCS scan. Under this state, rotate channel switch to change scan direction. When scan the matching CTCSS/DCS signaling, it will stay 5seconds and then go on scanning. Press any other keys except (A/FUNC) , ✳BAND , # MSK key to exit.

> **NOTE: This function is invalid when transceiver works in professional mode or the arrow directed channel no setting CTCSS/DCS signaling.**
> **In current channel, if signaling set as CTCSS, it will scan CTCSS, if sets as DCS, it will scan DCS.**

### ))) Offset Frequency Direction Setup

Under standby state, press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, press ④ +/- key to choose offset frequency direction. There are 3 options, Positive offset, Minus offset, shut off offset.

*1*. **(+) Positive offset:** Indicates TX frequency is higher than RX frequency. When enable reverse function, the RX frequency is higher than TX frequency.

*2*. **(-) Minus offset:** Indicates TX frequency is lower than RX frequency. When enable reverse function, the RX frequency is lower than TX frequency.

*3*. **None:** Indicates shut offset off.

Under frequency mode (VFO) or channel mode, press (A/FUNC) key then press ④ +/- key to choose positive offset direction(+), minus offset direction (-) , shut offset off one by one (Please refer to offset frequency setup).

> **NOTE: This function is unavailable in professional transceiver mode.**

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# ○ SHORTCUT OPERATIONS

## ((• Frequency/Channel Scan

Under corresponding mode, press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, then press [5 SCAN] key to start frequency scan or channel scan.

*1.* Frequency Scan

Under VFO mode, frequency scan is available. This function is used for monitoring signal of various communication frequency by transceiver 'step' setup, press numeric key or (D/ESC) key to exit.

*2.* Channel Scan

Under channel mode, this function is used for monitoring signal of each channel

in this mode. Press numeric key or (D/ESC) key to exit.

> **NOTE:**
> ▼ **Frequency scan is of all bands scan, it scans upwards as your STEPPING setting.**
> ▼ **In channel scan, the skipped channel is not in the line of scanning. Scan upwards as per channel no.**
>    **(please refer to channel scan skip).**
> ▼ **Frequency/channel scan can change scan direction by rotating channel switch, when find a matching carrier**
>    **wave and signaling, the transceiver will stay 5 seconds then go on scanning. (Please refer to scan setup)**
>    **If turn off radio in scan mode, when re−power on, radio will resume scanning automatically.**

## ((• Channel Scan Skip

Under channel mode, press (A/FUNC) key, the top left corner of LCD displays " ✉ " icon, then press [6 SKIP] key to set current arrow directed channel as Channel scan skip. Repeat above operation

to cancel channel scan skip.

*1.* LCD displayed "**S**" means the current channel will not be scanned.

*2.* "**S**" icon disappeared means the current channel will be scanned.

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## ○ SHORTCUT OPERATIONS

### Frequency Reverse

Under standby state, press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, then press (7 REV) key to set arrow directed channel as frequency reverse, repeat above operation to turn off frequency reverse.

*1.* When LCD displays "**R**" icon, it means current arrow directed channel open the frequency reverse function, the TX frequency and RX frequency is interchanged, if CTCSS/DCS signaling is set, it will also interchange.

*2.* When "**R**" icon disappears, it means reverse function is close.

### TX Power selection

Under standby state, press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, then press (9 HI/LO) key to choose High/Low power for current arrow directed channel.

*1.* When LCD displays "**L**" icon, it means low power is chosen.

*2.* When LCD displays "**H**" icon, it means high power is chosen.

### Talk Around function

Under standby state, press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, then press (✳ BAND), the arrow directed channel will enable talk around, repeat the above operation to close talk around.

*1.* **TX=RX:** Enable talk around, current channel transmit at RX frequency, if CTCSS/DCS signaling is set, it will interchange decoding CTCSS/DCS as encoding.

*2.* **OFF:** Close talk around.

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## ○ SHORTCUT OPERATIONS

### )))•DTMF code Transmit and Enquiry

*1.* Press (A FUNC) key, the LCD displays " ✉ " icon, then press (0 DTMF) key, the LCD displays DTMF data and group number (total 16groups) of current group.

*2.* Rotate channel switch to choose desired group and DTMF data, press PTT key to transmit selected DTMF signaling. If current group not edit DTMF data, LCD displays "**EMPTY**".

*3.* When current group displays "**EMPTY**", press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, press and hold (0 DTMF) key until transceiver emits "DU" beep, transceiver enters into DTMF edit state, LCD displays "_____", now you can enter desired DTMF data by keypad.

*4.* When finished editing, press side key [PF2] to save DTMF signaling.

### )))•Keypad lock

Keypad lock operation can be done by software programming or radio keypad.

1) Radio keypad operation

Press (A FUNC) key, the top left corner of LCD displays " ✉ " icon, then press and hold (# MSK) key until transceiver emits "DU" beep, LCD displays " ┱o " icon, keypad is locked. Repeat above operation, " ┱o " icon disappears, keypad is unlocked.

2) Software Programming

**ON:** Keypad lock option tick on.　**OFF:** Keypad lock option tick off.

**Note: When keypad lock is turned on by software programming, the keypad lock operation is invalid.**

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## ○ SHORTCUT OPERATIONS

### ((( Single-band Switching

To reduce interference from the sub-band when only the main-band is needed. You can use the single-band switching function to turn off the sub-band quickly.

Continuous pressing of [✱ BAND] will cycle LCD display to show Main + Sub-Band / Sub-Band Only / Main-Band Only.

### ((( CTCSS/DCS encode and decode

*1.* Press [A FUNC] key then press [PF2] to enter into setup.
*2.* Press [PF2] key to choose CTCSS, DCS or OFF, when choose DCS, press [✱ BAND] key to select positive or negative code.
*3.* Rotate Channel selector to choose desired CTCSS/DCS encode and decode.
*4.* Press [D ESC] key or [# MSK] key to confirm and exit.

### ((( Cross-Band Repeater

Set main-band and sub-band to desired VHF & UHF frequencies, then open cross band repeater function.

*1.* In power off radio, press [PF1] and then press [B MAIN] to enter into function menu together and power on radio until LCD shows "**RPT ON**". LCD shows " ✉ " in LCD top left corner.
*2.* Repeat above operation, "**RPT OFF**" is turn off cross band repeater function.

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## ○ FUNCTION MENU SETUP

Menu 1-17 of this transceiver are channel operations. Channel operations temporarily changed the functions of current channel. When power off or channel has been changed, the relevant setup will be erased. Only under VFO mode, the channel operations will be saved until next change.

Menu 18-50 are background operations (menu 20-29 are memory bank setup), it is valid for all channels, the relevant setup will be saved until next change.

The operating methods are as follows:

*1*. Press (A FUNC) key, the top left corner of LCD displays " ☑ " icon, then press (8 SET) key to ente menu.

*2*. Press (B MAIN) / (C V/M) key to choose desired function.

*3*. Rotate channel switch to choose desired setting.

*4*. Press (D ESC) key or (# MSK) key to confirm and exit.

> **Note: When setup CTCSS/DCS encode and decode, press [1 FM] key to choose CTCSS, DCS or off, when choose DCS, press [✱ BAND] key to switch positive and negative code. When edit the name, press [1 FM] key to shift the cursor down, press [4 +/-] key to shift the cursor up.**

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## ○ FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 1 | T-CDC | CTCSS/DCS Encode | OFF | No CTCSS/DCS Encode |
|  |  |  | 62.5HZ-254.1Hz+Self defined | 51 groups fixed CTCSS encode+1 group selfdefined encode |
|  |  |  | 000N-777I | 1024 groups DCS Encode |
| 2 | R-CDC | CTCSS/DCS Decode | OFF | No CTCSS/DCS Decode |
|  |  |  | 62.5HZ-254.1Hz+Self defined | 51 groups fixed CTCSS decode+1 group selfdefined decode |
|  |  |  | 000N-777I | 1024 groups DCS decode |
| 3 | RT-CDC | CTCSS/DCS Encode/Decode Synchronous | OFF | No CTCSS/DCS encode/decode |
|  |  |  | 62.5HZ-254.1Hz+Self defined | 51 groups fixed CTCSS encode/decode + 1 group self-defined CTCSS encode/decode |
|  |  |  | 000N-777I | 1024 group DCS encode/decode |
| 4 | 2T-ENC | 2TONE Encode list | CALL00-31 | 32 groups 2Tone encode list |
| 5 | 5T-ENC | 5TONE Encode list | CALL00-31 | 32 groups 5Tone encode list |
| 6 | 2T-DEC | 2TONE Decode list | DEC 00-31 | 32 groups 2Tone decode list |
| 7 | MSKENC | MSK Encode list | CALL00-31 | 32 groups MSK encode list |
| 8 | TONDEC | Optional signaling setup | DTMF/5TONE/2TONE/MSK | Current optional signal is DTMF/5TONE/2TONE/MSK |

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## FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 9 | SIGNAL | Squelch mode setup | SQ | When current channel received matching RF signals, transceiver can hear the talking from the other party. |
| | | | CTCSS/DCS | When current channel received matching RF signals and matching CTCSS/DCS signaling, transceiver can hear the talking from the other party. |
| | | | TONE | When current channel received matching RF signals and matching optional signaling, transceiver can hear the talking from the other party. |
| | | | CT&TO | When current channel received matching RF signals + matching optional signaling + matching CTCSS/DCS signaling, transceiver can hear the talking from the other party. |
| | | | CT/TO | When current channel received matching RF signals, or matching optional signaling, or matching CTCSS/DCS signaling, transceiver can hear the talking from the other party. |
| 10 | STEP | Frequency step size setup | 2.5K-50K | 9 options in total |
| 11 | W/N | Wide / Narrow Band Setup | 25K/12.5K | Wide band/Narrow band |
| 12 | REV | Frequency Reverse | ON | Turn on Frequency reverse function, TX and RX frequency of current channel will be interchanged. |
| | | | OFF | Close Frequency reverse function. |

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## ○ FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 13 | TALKAR | Talk Around | TX=RX | Turn on Talk Around function, current channel will transmit at RX frequency, if CTCSS/DCS signaling is set, it will interchange decoding CTCSS/DCS as encoding. |
| | | | OFF | Close Talk Around function. |
| 14 | OFFSET | Offset Frequency setup | 0-70MHz | Note: It is available to setup in Programming software. RX:UHF, TX:VHF or RX:VHF, TX:UHF |
| 15 | NAME | Editing Channel name | a-Z, 0-9 | In channel name display mode, will display the edited channel name. |
| 16 | RPLOCK | Busy Channel Lockout | BUSY | Carrier wave lock, transmitting is prohibited when received matching carrier wave. |
| | | | REPEAT | Signaling lock, transmitting is prohibited when received matching carrier but with mismatching CTCSS/DCS. |
| | | | OFF | Close BCLO function. |
| 17 | TX | TX OFF | ON/OFF | TX function is enabled in current channel. |
| 18 | BAK -- | Group Selection | 0-9 | Display current working group |
| 19 | BALK | Group linking | OFF | Turn off group linking, menu 20-29 is hide. |
| | | | ON | Turn on group linking, menu 20-29 display. |
| 20 | BLK 1 | Link Group 1 | OFF/ON | Add or remove the group 1 in group linking |
| 21 | BLK 2 | Link Group 2 | OFF/ON | Add or remove the group 2 in group linking |
| 22 | BLK 3 | Link Group 3 | OFF/ON | Add or remove the group 3 in group linking |
| 23 | BLK 4 | Link Group 4 | OFF/ON | Add or remove the group 4 in group linking |

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## FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 24 | BLK 5 | Link Group 5 | OFF/ON | Add or remove the group 5 in group linking |
| 25 | BLK 6 | Link Group 6 | OFF/ON | Add or remove the group 6 in group linking |
| 26 | BLK 7 | Link Group 7 | OFF/ON | Add or remove the group 7 in group linking |
| 27 | BLK 8 | Link Group 8 | OFF/ON | Add or remove the group 8 in group linking |
| 28 | BLK 9 | Link Group 9 | OFF/ON | Add or remove the group 9 in group linking |
| 29 | BLK 0 | Link Group 0 | OFF/ON | Add or remove the group 0 in group linking |
| 30 | PF1 | Self define PF1 key function | VOLT | Displays current battery capacity. |
| | | | CALL | Call function |
| | | | FHSS | Frequency hopping |
| | | | ALARM | Emergency alarm function |
| | | | SUBPTT | Sub band PTT |
| | | | OFF | No function |
| 31 | BAND | VFO band limit | ON/OFF | Turn on/off band limit function |
| 32 | DSPSUB | Sub band display setup | FREQ | Display sub band frequency or channel |
| | | | VOLT | Display current battery voltage |
| | | | OFF | Sub band display is disabled |
| 33 | BEEP | Keypad Voice prompt setup | ON/OFF | Turn on/off keypad voice prompt function |
| 34 | TOT | Time-Out-Timer | OFF | Turn off time-out timer |
| | | | 10-270S | Total 27 levels for optional, each level step 10seconds. |

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## FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 35 | VOX | Voice Operated Transmission (VOX) Setup | OFF | Turn off VOX function |
| | | | 1--10 | Total 10 VOX levels for optional |
| 36 | VDELAY | VOX Delay Setup | 0.5S-3S | Total 27 levels for optional, each interval is 0.1S |
| 37 | APO | Automatic Power Off Setup | OFF | Disable the Automatic power off function |
| | | | 30MIN-2HOUR | 30minutes ~ 2hours: Total 3 levels for optional. |
| 38 | DTMF | DTMF Transmitting Time | 50MS-500MS | Total 5 kinds of DTMF transmitting time for optional. |
| 39 | SQL | Squelch level Setup | 00-09 | 10 levels of squelch in total for optional, "00" is minimum setup value (normally open) |
| 40 | SCAN | Scan Dwell Time Setup | 5ST-15ST | When scanning matched signal, transceiver will stop scanning for 5-15seconds then resume. |
| | | | 2SP | When scanning matched signal, transceiver will stop scanning, 2seconds after signal disappeared, then resume. |
| 41 | SPEED | Scan Speed Setup | QUICK | Fast scan speed |
| | | | NORMAL | Normal scan speed |
| 42 | FTIME | Function Icon Stay Time | FUNCT | When finished function setting or enter into function menu, icon disappeared. |
| | | | 1SEC-3SEC | When finished function setting or enter into function menu, icon stay 1-3seconds then disappeared. |
| | | | ALWAYS | Function icon is always display, only when pressing function key again, the icon will disappear. |

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## ○ FUNCTION MENU SETUP

| Menu No. | LCD Display | Function | Options | Description |
|---|---|---|---|---|
| 43 | LIGHT | LCD Backlight | ON/OFF | Always on/off |
| | | | AUTO | Backlight will automatic closed after a period |
| 44 | COLOR | LCD Backlight Color | BLUE/ORG/PUR | Blue/Orange/Purple |
| 45 | ID | Self ID inquiry | 001/12345 | LCD displays radio self ID, DTMF ID is 3 digits, 5TONE ID is 5 digits. |
| 46 | TBST | Tone Pulse Frequency Selection | 1750Hz/2100Hz /1450Hz/ 1000Hz | Tone plus frequency is 1750Hz/2100Hz/ 1450Hz/1000Hz |
| 47 | SAVE | Battery Save Setup | OFF | Turn off battery save function |
| | | | 1:2-1:8 | Battery save time is 1:2-1:8 |
| | | | AUTO | Battery save ratio is adjusting automatically. |
| 48 | RADIO | FM radio | ON/OFF | Allow/Prohibit using FM radio. |
| 49 | SUBVOL | Sub-Radio Volume Setting | 1--8 | Adjust main band receive, at the same time Sub band output volume |
| 50 | MUTE | RPT mute setup | ON | In UV or VU mode, mute the RX sub band when main band is TX. |
| | | | OFF | Sub band is not mute when main band is TX. |

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## ((•Display Mode Setup

There are three kinds of display modes for optional.

*1.* Press [PF2] key to turn on radio, hold [PF2] key until transceiver emits beep.

*2.* Press (B̲ᴀɪɴ) / (C̲ᵥ/ₘ) key to choose No.01 function item, it shows "**DSP**" on LCD.

*3.* Rotate channel switch to choose desired setup.

    **FREQ:** Frequency+Channel mode, transceiver displays current channel name +
           frequency, press (C̲ᵥ/ₘ) key to switch into VFO mode.

    **CH:** Channel mode, 1~24 items of function menu will hide automatically, user can
         only operate some functions. It is unable to switch into VFO by pressing (C̲ᵥ/ₘ)
         key. This model can be used for Amateur mode.

    **NAME:** Channel+Name Tag mode, transceiver displays current channel number
            +channel name, press (C̲ᵥ/ₘ) key to switch into VFO mode.

*4.* Press (D̲ₑꜱᴄ) key or (# MSK) key to confirm and exit.

## ((•Resume Factory Default

You can make all the settings of transceiver return to the factory default settings when transceiver can not work normally because of wrong operation or error setup.

*1.* Press [PF2] key to turn on radio, hold [PF2] key until transceiver emits beep.

*2.* Press (B̲ᴀɪɴ) / (C̲ᵥ/ₘ) key to choose No.02 function item, it shows "**RESTOR**" on LCD.

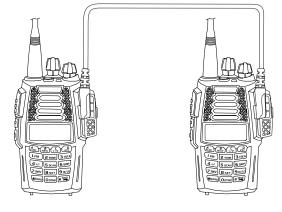*3.* Rotate channel switch to choose desired setup.

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**OFF:** No operations.

**FACT:** Resume all items to factory default, including channel and background settings.

**INIT:** Resume background settings to factory default, channel operations are keeping.

*4.* Press [D ESC] key to exit current selection.

*5.* Press [# MSK] key to confirm current selection.

```
CT       ▨
   RESTOR   02
      OFF
H
```

```
CT       ▨
   RESTOR   02
   FACT?
H
```

```
CT       ▨
   RESTOR   02
   INIT?
H
```

## ))) Cloning Cable

This feature will copy the programmed data and parameters from the master unit to slave units. It copies the parameters and memory program settings.

Connection: Use optional CP04 cloning cable, connect Read/write frequency port on both master and slave, setting and programing as the requirement below.

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## ○ SENIOR FUNCTION OPERATIONS

[Settings: Master side]

*1.* Press the [PF1] side key to Power on, the display shows "CLONE", the master unit enters into copy mode .

```
CLONE
```

*2.* Press [PF1] key, the display appears "CLONE XX" XX stands for the data amount being cloned.

```
CLONE
A 5
```

*3.* When the data transfer is completed, slave unit restarts, the master unit display appears "CLONE 04".

*4.* Master unit remain copy mode state to prepare for the next copy, if reboot the master means exit copy mode to return to normal mode.

```
CLONE
0 4
```

[Settings: Slave side]

*1.* In the standby mode, when the slave receives the data, the display shows "**CLONE XX**" XX stands for the data being cloned.

*2.* When data reception is complete, the slave unit returns to normal mode and restart automatically.

```
CLONE
A 5
```

*3.* Turn off the slave's power, remove the cable, insert another slave which you want to copy.

If the data is not successfully transmitted, turn off the master and slave, check if the cable connections are correct, and then repeat the whole process again.

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## ○ MEMORY BANK

10 memory banks 0-9 are available, bank 0 includes all edited channels. Bank 1-9 can be assigned maximum 32 channels, a channel can be assigned to more groups by software or keypad.

**Assign channel to memory bank:**

*1.* In Memory channel mode, choose a memory channel, press [# SMK] key, bank number show in the channel number position as "**-X**" twinkling.

*2.* Turn Channel selector to choose desired memory bank, press [# SMK] key, the memory channel will be assigned to the bank.

*3.* If the bank already has 32 channels, the new assigned channel will replace the last channel in bank.

```
 CT              ▭
   Jack        -9
 �→ 455.875     1
 H
```

## ))) Memory Bank Switch

In Channel mode, press [# SMK] key twice to enter memory bank mode, press (A FUNC) key then press [8 SET] key to enter into function menu.

*1.* Press (B MAIN) / (C V/M) key to choose menu 18, LCD displays **"BAK – –"**

*2.* Turn Channel switch to choose bank 0--9, press [# SMK] key confirm

*3.* Rotate the channel switch clockwise to enter into desired memory bank.

```
              ▭
   BAK--      3S
      1
```

**Note: When the bank linking is on, if no channel in the selected bank, radio will enter into the next linking bank. When the bank linking is off, if no channel in the selected bank, current channel will be assigned to this bank.**

## ))) Memory Bank Exit

When transceiver in memory bank mode, press [# SMK] key twice to exit and return to channel mode.

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## ○ MEMORY BANK

### Bank linking

1. In channel mode, press [# SMK] key twice to enter into memory bank mode, press [A FUNC] key then press [8 SET] key to enter into function menu.
2. Press [B MAIN] / [C V/M] key to choose menu 19, LCD show " **BALK**".
   **ON:** Turn on Bank linking.
   The following menus allow adding or deleting banks.

| Menu No. | LCD display | Funtion | Option |
|----------|-------------|---------|--------|
| Menu20 | BLK1 | Link Group 1 | OFF/ON |
| Menu21 | BLK2 | Link Group 2 | OFF/ON |
| Menu22 | BLK3 | Link Group 3 | OFF/ON |
| Menu23 | BLK4 | Link Group 4 | OFF/ON |
| Menu24 | BLK5 | Link Group 5 | OFF/ON |
| Menu25 | BLK6 | Link Group 6 | OFF/ON |
| Menu26 | BLK7 | Link Group 7 | OFF/ON |
| Menu27 | BLK8 | Link Group 8 | OFF/ON |
| Menu28 | BLK9 | Link Group 9 | OFF/ON |
| Menu29 | BLK0 | Link Group 10 | OFF/ON |

```
BALK      36
   ON
```

```
BLK 1     37
   ON
```

   **OFF:** Turn off Bank linking, hide menu 20-29.

When bank linking is on, one or more banks can be added into scan list. In memory bank mode, enable the scanning function, transceiver will scan the channels in current bank. During scanning, long pressing key 0-9 will add or delete the corresponding memory bank.

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## Programming software starting (Takes Windows XP system for example)

1. Double Click "CRT 4CF setup.exe", then go on installing as computer command.
2. Click "START" menu of computer, choose " USB To COM " in CRT 4CF item and click it. Please install USB To Comport drive program as computer command.
3. Please plug PC03 programming cable into USB port of PC device, then connect to transceiver.
4. Double click "CRT 4CF" shortcut icon, or click CRT 4CF item in "START" menu to open programming software interface.
5. Choose "COM Port" as computer command, then click "OK" to start programming software.

**NOTE: In same computer, if programming cable plugs into different USB port, the COM Port number is different.**

Before programming, transceiver should be turned on firstly.

Not turn on or turn off transceiver when it is connecting with computer, otherwise it may cause transceiver not read or write data. If this situation is happened, please shut down programming software, remove programming cable from computer, then re-plug cable into computer and re-start programming software, re-choose COM Port, the programming will work normally.

(picture 1)

(picture 2)

**NOTE:**
**The programming software is attached with product identifying system. In first time run, the transceiver should be connected to computer, otherwise the software can not run.**

## ◌ TECHNICAL SPECIFICATION

| General | |
|---|---|
| Frequency Range | VHF:144~146MHz<br>UHF:430~440MHz<br>FM:64~108MHz(RX)<br>AM: 118~136M Hz(RX)<br>SW: 2.3~29.99MHz(RX)<br>LW: 0.52~1.71MHz(RX) |
| Channel Capacity | 199 channels |
| Channel Spacing | 25KHz (wide band)<br>12.5KHz (narrow band) |
| Phase-locked Step | 0.1KHz |
| Operation Voltage | 7.4V DC ±20% |
| Battery Life | More than 12 Hours(2200mAh), by 5-5-90 working cycle |
| Frequency Stability | ±2.5ppm |
| Operation Temperature | -20℃~ +55℃ |
| Size | 112x61x35mm ( with battery ) |
| Weight | 285g (with battery) |

## ○ TECHNICAL SPECIFICATION

| Receiving Part | | |
|---|---|---|
| | Wide band | Narrow band |
| Sensitivity (12dB SINAD) | ≤0.25μV | ≤0.35μV |
| Adjacent Channel Selecitvity | ≥65dB | ≥60dB |
| Intermodulation | ≥60dB | ≥60dB |
| Spurious Rejection | ≥70dB | ≥70dB |
| Hum & Noise | ≥45dB | ≥40dB |
| Audio Distortion | ≤5% | |
| Audio Power Output | 1000mW/10% | |

| Transimitting Part | | |
|---|---|---|
| | Wide band | Narrow band |
| Power Output | VHF:6W/1W    UHF:5W/1W | |
| Modulation | 16KΦF3E | 11KΦF3E |
| Adjacent Channel Power | ≥65dB | ≥60dB |
| Hum & Noise | ≥40dB | ≥40dB |
| Spurious Emission | ≤-36dB | ≤-36dB |
| Audio Distortion | ≤5% | |

## ))) **CTCSS Frequency Chart**

| 1 | 62.5 | 12 | 94.8 | 23 | 136.5 | 34 | 177.3 | 45 | 218.1 |
|----|------|----|-------|----|-------|----|-------|----|--------------|
| 2 | 67.0 | 13 | 97.4 | 24 | 141.3 | 35 | 179.9 | 46 | 225.7 |
| 3 | 69.3 | 14 | 100.0 | 25 | 146.2 | 36 | 183.5 | 47 | 229.1 |
| 4 | 71.9 | 15 | 103.5 | 26 | 151.4 | 37 | 186.2 | 48 | 233.6 |
| 5 | 74.4 | 16 | 107.2 | 27 | 156.7 | 38 | 189.9 | 49 | 241.8 |
| 6 | 77.0 | 17 | 110.9 | 28 | 159.8 | 39 | 192.8 | 50 | 250.3 |
| 7 | 79.7 | 18 | 114.8 | 29 | 162.2 | 40 | 196.6 | 51 | 254.1 |
| 8 | 82.5 | 19 | 118.8 | 30 | 165.5 | 41 | 199.5 | 52 | user-defined |
| 9 | 85.4 | 20 | 123.0 | 31 | 167.9 | 42 | 203.5 | | |
| 10 | 88.5 | 21 | 127.3 | 32 | 171.3 | 43 | 206.5 | | |
| 11 | 91.5 | 22 | 131.8 | 33 | 173.8 | 44 | 210.7 | | |

# ATTACHED CHART

## 1024 groups DCS frequency chart

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 000 | 001 | 002 | 003 | 004 | 005 | 006 | 007 |
| 010 | 011 | 012 | 013 | 014 | 015 | 016 | 017 |
| 020 | 021 | 022 | 023 | 024 | 025 | 026 | 027 |
| 030 | 031 | 032 | 033 | 034 | 035 | 036 | 037 |
| 040 | 041 | 042 | 043 | 044 | 045 | 046 | 047 |
| 050 | 051 | 052 | 053 | 054 | 055 | 056 | 057 |
| 060 | 061 | 062 | 063 | 064 | 065 | 066 | 067 |
| 070 | 071 | 072 | 073 | 074 | 075 | 076 | 077 |
| 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 |
| 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 |
| 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |
| 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 |
| 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 |
| 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 |
| 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 |
| 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 |
| 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
| 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 |
| 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 |
| 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 |
| 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 |

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# ◦ATTACHED CHART

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 |
| 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 |
| 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 |
| 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 |
| 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 |
| 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 |
| 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 |
| 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 |
| 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 |
| 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 |
| 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 |
| 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 |
| 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 |
| 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 |
| 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 |
| 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 |
| 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 |
| 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 |
| 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 |
| 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 |
| 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 |
| 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 |
| 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 |

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## ○ ATTACHED CHART

| 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 |
| 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 |
| 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 |
| 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 |
| 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 |
| 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 |
| 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 |
| 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 |
| 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 |
| 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 |
| 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 |
| 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 |
| 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 |
| 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 |
| 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 |
| 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 |
| 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 |
| 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 |
| 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 |

**NOTE: N stands for positive code. I stands for inverted code. 1024 groups of DCS in total.**

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**CRT**

**DECLARATION OF CONFORMITY**

$C \in 0700 \oplus$

**We hereby declare under our responsability that the product :**

**Marque : CRT_Model :4CF**
**144-146 MHz/430-440 Mhz HAM Radio**

**Satisfies all the technical regulations applicable to the product within the scope of directive R .TTE 1999/5/CE and european standarts**

**EN 60950-1 :2006+A11 :2009+A1 :2010+A12 :2011**

**EN 301 489-1 V1.9.2**

**EN 301 489-15 V1.2.1**

**EN 301 783-1 V1.2.1**

**EN 301 783-2 V1.2.1**

**Notified Body : PHOENIX TESTLAB Gmbh  Germany**

**The was approved in the CEPT countries and those non CEPT countries that implement the CEPT regulation TR 61/01**

**C.R.T. FRANCE INTERNATIONAL S.A.R.L.**
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Capital de 762 500 euros
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**E-mail : superstar@crtfrance.com**
**Web site : www.crtfrance.com**

Mr CELESTRANO PHILIPPE
GERANT

LE 15/12/2014

**FC**

CᴛC
ISO9001
ISO14001

**RoHS**
compliant

RECYCLABLE

# CONDITIONS OF GUARANTEE

This transceiver **CRT SUPERSTAR** is guaranteed on 2 years.

Any abnormality of functioning must be indicated to your retailer, who will intervene or will send it to our technical service for control

The spare parts of our devices are the object of no sending under guarantee

**Are excluded of the guarantee :**

- the damages caused by accidents, shocks, natural elements
(lightning, thunderstorm, static electricity etc.)

- The transistors of power, the microphones, the fuses, the bad uses: badly adjusted antenna (tos excessive), inversion of polarité, surge, bad connection etc. recognized by our technical service

- The interventions having modified the standards of approval of the device

# PROCEDURE ON RETURNING TO THE AFTER-SALES SERVICE CRT

- If you send back a radio under guarantee for repair : you pay the freight costs to go. CRT will pay the freight costs return. If the radio is not under guarantee postal charges are at your expense.

- each device must be sent accompanied with a photocopy of the invoice as well as with a descriptive note of the noticed defect

If our AFTER-SALES SERVICE estimates the repair more expensive than the value of the device, this one will send you an estimate which must have returned to him accepted or refused. If the estimate is refused, the device will have carriage forward returned.