

TYT

409

SHOP

TH-F2



CTCSS/DCS

ANI code



Channel name setting

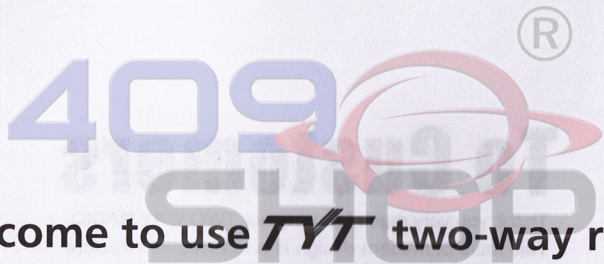


128 memory channels,
25 memory FM
radio stations

AMATEUR TWO-WAY RADIO

MSK/DTMF/STONE/2TONE

USER'S MANUAL



Welcome to use **TYT** two-way radio

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Main Functions

Dual frequency, dual display, dual standby

128 channels, 25 radio receiver memories

Wide/narrow band select (25kHz/12.5kHz)

VOX functions/VOX grade selectable

<http://www.tyt888.com>

CTCSS/DCS

MSK/DTMF/5TONE/2TONE

FM radio receiver

8 groups scrambler (optional)

Tri-backlight colors selective

PC programmable

Channel name setting

ANI code

COMP function

Voice prompt

CTCSS/DCS auto scanning



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User's Manual

Using tips
Product checking

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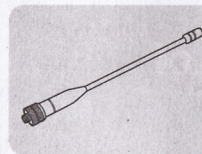
Using tips

- Obey the local government regulation before using this radio, improper use may violate the law and be punished.
- Do not attempt to open the radio; the maintenance work should be done by technical expert only.
- To avoid troubles caused by electromagnetic interference or electromagnetic compatibility, please turn off the radio in places where have the banner "Do not use wireless equipment", such as hospital and other healthcare places.
- In the car with an airbag, do not put the radio within the scope of the airbag deployment.
- Turn off the radio before entering flammable or explosive areas.
- Do not transmit too long, for the radio may heat and hurt the user.
- Do not use radio whose antenna is damaged, touching of damaged antenna will cause heat injury.
- Do not store the radio under the direct sunshine or in hot areas.
- When you transmit with the radio, do keep away from its antenna for 5cm at least.
- If the radio appears smelly or smoke, please shut off its power immediately and contact with your local dealer.

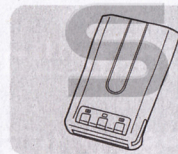
Product checking

Carefully unpack the radio. We recommend you check the items listed in the following table before discarding the package. If any item is missing or has been damaged during shipment, please contact us immediately.

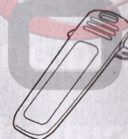
Supplied accessories:



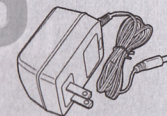
Antenna



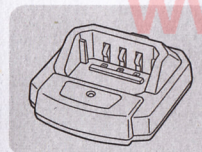
Li-ion battery



Belt Clip



Charger Adapter



Charger



User's Manual

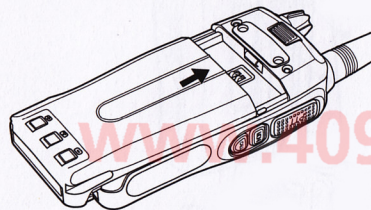
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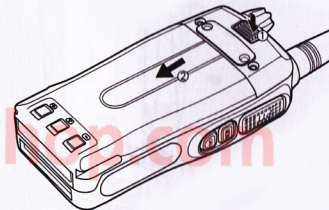
Installing and uninstalling of the accessories

Installing/Removing the battery

- 1) Align the two grooves of battery and the guide rail on the back of aluminum shell, ensuring full contact and in parallel, then push the battery up to the radio base along the rail on the back of aluminum shell, until the battery latch locks up. (picture 1)
- 2) To remove the battery, please make sure the radio is closed, push the battery latch down, and make sure the radio and battery is on the releasing state, and then push the battery out from the radio. (picture 2)



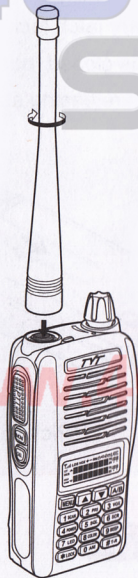
(Picture 1)



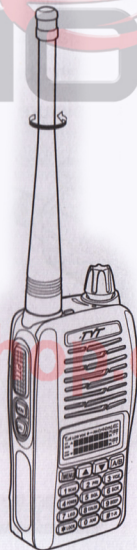
(Picture 2)

Installing and removing the antenna

- 1) Align the threaded end of antenna and the threaded hole at the top of radio, rotate the antenna clockwise until it is tight. (picture 3)
- 2) To remove the antenna, rotate it counter-clockwise until the antenna spirals out. (picture 4)



(Picture 3)



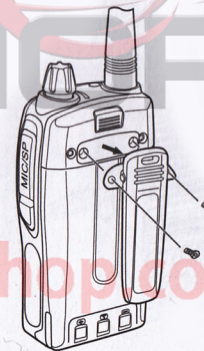
(Picture 4)

Installing/removing the belt clip

- 1) Align the two holes of belt clip and the two holes of the radio, fix them with the supplied M2.5x5 screw. (picture 5)
- 2) Loosen the screw set to remove the belt clip (picture 6)



(Picture 5)

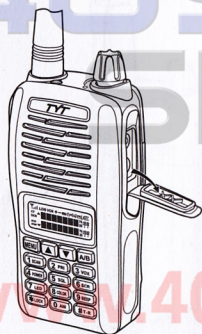


(Picture 6)

Installing external headset

Reveal (do not remove) the mic/speaker jack cover (picture 7), insert the headset into the mic/speaker jack (picture 8).

Note: Using the external headset will affect the water-tightness performance of radio.



(Picture 7)



(Picture 8)

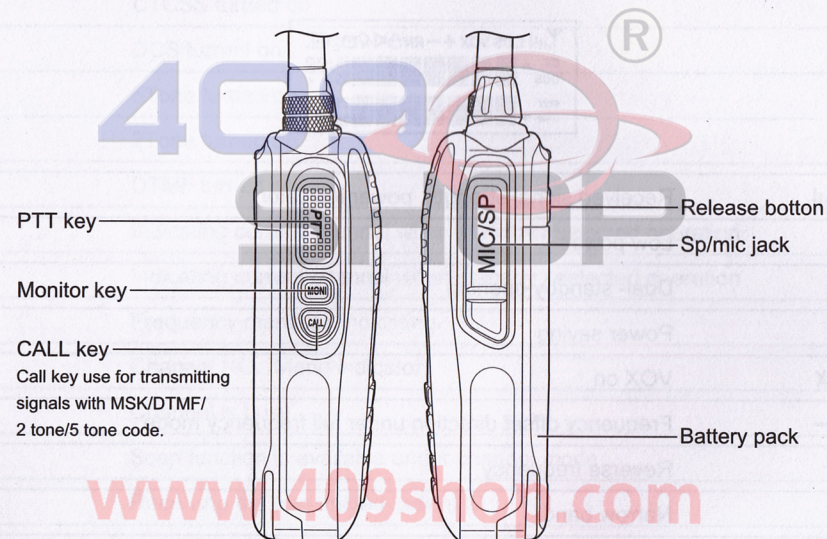
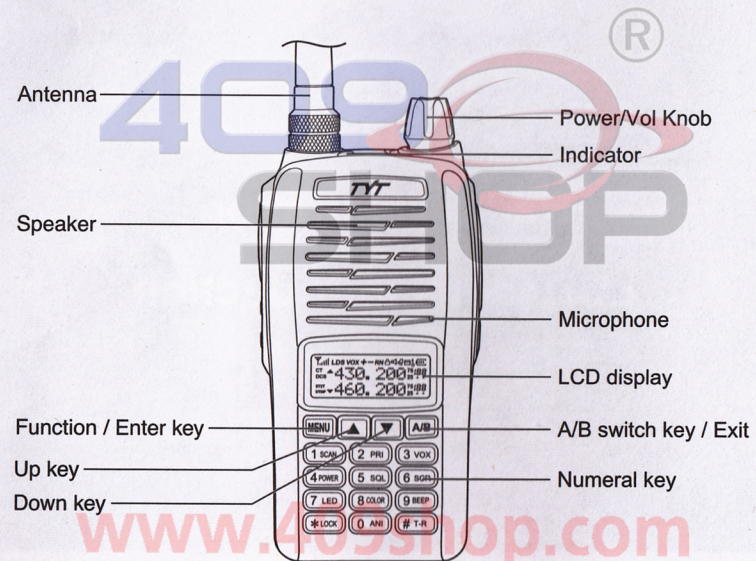
Radio illustration

LCD icons introduction

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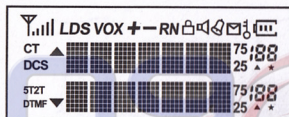
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Radio illustration



LCD icons introduction

You can see various icons are shown on the screen when radio powers on. The following table can help you to identify icons' meaning which display on LCD.



	Received signal strength, power indicator
L	Low power
D	Dual- standby opening
S	Power saving
VOX	VOX on
+ -	Frequency offset direction under full frequency mode
R	Reverse frequency
N	Narrow band
	Keypad locked
	SQL turned on
	Beep on

	Current frequency is with scrambler function
	Battery power display
CT	CTCSS turned on
DCS	DCS turned on
5T	5Tone turned on
2T	2Tone turned on
DTMF	DTMF turned on
▲	Indicating current channel when standby / selected operation
▼	Indicating current channel when standby / selected operation
75 25	Frequency mantissa indicating
188	Channel NO. /Menu indicator
▲	Channel is busy
★	Scan function is available under channel mode
	Receiving the transmitted radio's ID

Menu Illustration

Work modes

Menu Settings

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Menu Illustration

No.	LCD Icons	Optional setting	Menu illustration
01	SCAN	/	scanning
02	TX.SEL	EDIT/BUSY	Dual standby priority TX channel select
03	VOX	1-8	VOX level setting
04	POWER	LOW/HIGH	Current channel transmit power
05	SQL	0-9	SOL Level
06	SCR.NO	1-8	Scrambler groups
07	LED	ON/AUTO / OFF	LED setting
08	LIGHT	BLUE/ORANGE/PURPLE	LED colors
09	BEEP	ON/OFF	Beep on/off
10	ANI	ON/OFF	ANI code
11	D.WAIT	ON/OFF	Dual-standby on/off
12	APRO	OFF/COMP/SCRA	Voice mode
13	TOT	OFF/30/60/.../270	Time out timer
14	BCLO	OFF/WAVE/CALL	Busy channel lock

15	VOX.SW	ON/OFF	VOX switch
16	ROGER	ON/OFF	Transmit end tone voice prompt on/off
17	DW	ON/OFF	Monitoring
18	RX.SAV	ON/OFF	Receive power saving
19	SCAN.S	TIME/CARRY/SEEK	Scan mode
20	AUTOLK	ON/OFF	Auto keypad lock
21	VOICE	ON/OFF	Voice prompt on/off
22	OPNSET	OFF/DC/MSG	Power on display
23	DC	/	Battery voltage indicate
24	MSGSET	-1A, @	Power on message
25A	OFFSET	0.000-99.995MHz	Shift frequency setting
25B	DIS.NM	ON/OFF	Display channel name (under CH mode)
26	CHNAME	-1A, @	Channel name setting
27	C-CDC	OFF/67.0/D023N	RX/TX CTCSS/DCS
28	R-CDC	OFF/67.0/D023N	Receiving CTCSS/DCS

29	T-CDC	OFF/67.0/D023N	Transmitting CTCSS/DCS
30	S-D	+/-/OFF	Shift direction
31	STEP	5K/6.25K/.../100K	Frequency spacing
32	N/W	WIDE/NARROW	Wide/narrow band
33	SEEK 67.0	67.0...254.1	CTCSS audio search
34	SEEK 023N	D023N...754I	DCS audio search

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Work modes

CH mode

Press and hold [▲] key to turn on the radio, enter CH mode, use [▲] / [▼] key to choose channels or input the channel No. directly.

Note: Radio should store two channels at least.

Press and hold [▲] key again to turn on the radio, enter FR mode. Press [A/B] key to select the frequency band, use key to change T/R priority frequency.

CH-FR mode

Under FR mode, hold [A/B] key two second or more, radio changes into CH-FR mode.

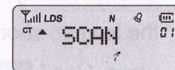
Press and hold [A/B] key two second or more, radio changes into FR mode.

Press [A/B] key to switch current displaying frequency to edit or transmit.

Menu Settings

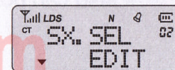
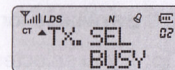
Scan Mode [MENU] + [1 SCAN]

- 1) Under FR mode, press [MENU] key first, then press [▲] key, LCD display "SCAN", press [MENU] key to confirm scan. Under scanning, frequency will increase or decrease bases on current frequency space. User [▲] / [▼] key to change scan direction.
- 2) If operation follows setp1, scanning bases on current CH No./FR frequency under FR/CH mode. Press [A/B] key to exit.



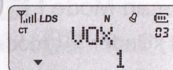
Priority Scan [MENU] + [2 PRI]

- 1) Press [MENU] key, use [▲] / [▼] key to select menu 2, LCD display "TX.SEL BUSY", then press [MENU] key again, move the cursor under the "BUSY" position. Meanwhile press [▲] / [▼] can change "EDIT" "BUSY" display.
- 2) When "EDTT" selected, confirmed by [MENU] key, radio transmits on current edited channel. When "BUSY" has selected, confirmed by [MENU] key, radio transmits on last talked channel. When standby and press PTT key, there is a "▲" displaying on the right bottom of channel. Press [A/B] key twice to exit. Also can use the shortcut ([MENU] + [2 PRI]) to operate.

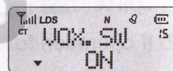


VOX grades setting [MENU] + [3 VOX]

1) Press [MENU] key, use [▲] / [▼] key to select menu 3 VOX grades setting. Press [MENU] key enter grade selecting (1-8), 1 is the lowest, should talk loudly. 8 is the highest, talk with normal voice. Use [▲] / [▼] key to select the grade, confirm by [MENU] key. Press [A/B] key to exit.



2) Press [MENU] key, use [▲] / [▼] to select No.15. with "VOX.SW/OFF", confirm by [MENU] key. Then use [▲] / [▼] key to choose "ON" and confirm by [MENU] key again.



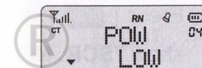
VOX function set successful.

3) It is available for earphone VOX

Tip: If you selected VOX level, but not in NO.15 setting "ON" position, it also can not use VOX transmit, selected "OFF" to closed VOX.

High/LOW power setting [MENU] + [4 POWER]

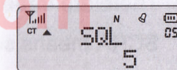
1) Press [MENU] key, use [▲] / [▼] key to select menu 4, the LCD display "POW/HIGH" means radio works with high power. Press [MENU] key again. cursor indicates to "HIGH" position, then press [▲] / [▼] key display "POW/LOW", press [MENU] to confirmed, means Low power set successful, Press [A/B] key twice to exit.



2) Repeat this operation can change LOW power to High power.

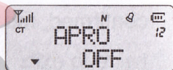
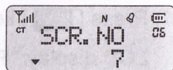
Squelch grade setting [MENU] + [5 SCL]

Press [MENU] key, use [▲] / [▼] key to select menu 5, show current squelch grade. Press [MENU] key again, cursor indicates to grade No., use [▲] / [▼] key to choose desired one, confirm by [MENU] key. Press [A/B] key twice to exit.



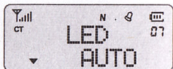
Scrambler group setting/COMP [MENU] + [6 SCR] (Optional)

- 1) Press [MENU] key, use [▲] / [▼] key to select menu 6, will show "SCR. NO/7", press [MENU] key again, cursor indicates to group No. (total 8 groups), use [▲] / [▼] key to choose desired group, press [A/B] to confirmed.
- 2) After confirming, press [MENU] key, use [▲] / [▼] key to select No.12, LCD displays "APRO/OFF", press [MENU] key, use [▲] / [▼] key select to "SCRA", confirm by [MENU] key, Scrambler function is available.
- 3) There are three options: OFF/COMP/SCRA. When choose SCRA means scrambler is on. When choose COMP means voice compander is on. When choose OFF means turn off. More options please refer to software operations.



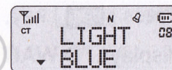
LCD Display [MENU] + [7 LED]

Press [MENU], use [▲] / [▼] key to select menu 7, displays "LED /AUTO", press [MENU] key to change keypad light or LCD setting No., if choose "AUTO", LCD light will be off automatically after seconds. When choose "ON", LCD light lights all the time. If choose*OFF,LCD light is off.



LCD color [MENU] + [8 COLOR]

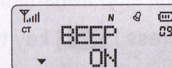
Press [MENU] key, use [▲] / [▼] key to select menu 8, show current LCD color, For example: "LIGHT/BLUE", press [MENU] key to enter current LCD color setting, use [▲] / [▼] key to select color.



There are three colors: "BLUE", "ORANGE", "PURPLE". Confirm by [MENU] key, press [A/B] key twice to exit.

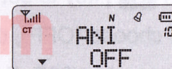
Beep setting [MENU] + [9 BEEP]

Press [MENU] key, use [▲] / [▼] key to select 9, LCD displays "BEEP/ON". Press [MENU] key to enter beep setting. use [▲] / [▼] key to select "ON/OFF". Confirm by [MENU] key, press [A/B] key twice to exit.



ANI code setting [MENU] + [0 ANI]

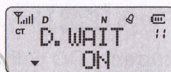
Press [MENU] key, use [▲] / [▼] key to select menu 10, LCD displays "ANI/OFF". Press [MENU] key enter ANI setting, use [▲] / [▼] key to select "ON/OFF". Confirm by [A/B] key twice to exit.



Dual standby ON/OFF

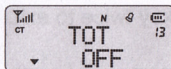
Press [MENU] key, use [▲] / [▼] key to select menu 11, LCD displays **"D.WAIT/ON"**, Press [MENU] key enter setting, use [▲] / [▼] key to select **"ON/OFF"**. Confirm by [MENU] key, press [A/B] key twice to exit.

When select **"ON"**, radio works on both CH display on LCD, there is a **"D"** shows on the left top. When select **"OFF"**, radio works on current CH. **"D"** icon disappears. How long the time you set, radio will stop transmitting after setting time. Confirm by [MENU] key, press [A/B] key twice to exit.



TOT setting

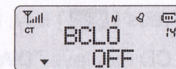
Press [MENU] key, use [▲] / [▼] key to select menu 13, LCD displays **"TOT/OFF"**, press [MENU] key to enter setting, use [▲] / [▼] key to set transmit time, they are: 30S.60S.....270S/OFF. If choose **"OFF"**, there is no time limitation on transmitting, when you select 30S, if the transmitting more than 30 seconds will automatically turned off. Confirm by [MENU] key, press [A/B] key twice to exit.



Busy Channel Lock

Press [MENU] key, use [▲] / [▼] key to select menu 14, LCD displays **"BCLO/OFF"**. Press [MENU] key to enter setting, use [▲] / [▼] key to select **"WAVE/CALL"**.

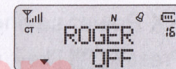
When select **"WAVE"**, radio will stay on the CH which receiving carrier wave signal till signal disappears. When select **"CALL"**, radio stays on the CH which receiving carrier wave and signal both should be the same. Confirm by [MENU] key, press [A/B] key twice to exit.



Transmit end tone on/off

Press [MENU] key, use [▲] / [▼] key to select menu 16, LCD displays **"ROGER/OFF"**, Press [MENU] key to enter setting, use [▲] / [▼] key to select **"ON/OFF"**.

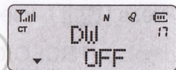
When select **"ON"**, will hear beep "didi" when you press PTT key. Confirm by [MENU] key, press [A/B] key twice to exit.



Monitoring

Press [MENU] key, then use [▲] / [▼] key to select menu 17, LCD displays **"DW/OFF"**. Press [MENU] key to enter the setting, through [▲] / [▼] key to choose "ON/OFF", confirm by [MENU] key, press [A/B] key to exit.

If select "ON", signal will be received when radio is under radio receiver mode. After talking, radio back to radio receiver mode. If select "OFF", radio stays in radio receiver mode, can't receive any signal.

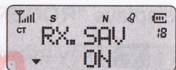


RX Power saving

Press [MENU] key, use [▲] / [▼] key to select menu 17, LCD displays **"RX.SAV"**, Press [MENU] key to enter the setting, through [▲] / [▼] key to choose "ON/OFF", confirm by [MENU] key, press [A/B] key to exit.

If select "ON", there is an "S" displays at the top of LCD.

If select "OFF", RX power saving function isn't available.

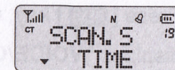


Scan mode setting

Press [MENU] key, use [▲] / [▼] key to select menu 19, LCD displays **"SCAN.S/TIME"**. Press [MENU] key to enter scan mode setting, through [▲] / [▼] key to choose "TIME", "CARRY", "SEEK" three modes, confirmed by [MENU] key, press [A/B] key to exit.

If select "TIME", it is time scan, If select "CARRY", it is carrier wave scan.

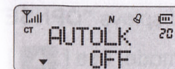
If select "SEEK", it is time exactly scan, including carrier wave, signaling.



Auto keypad lock

Press [MENU] key, use [▲] / [▼] key to select menu 20, LCD displays **"AUTOLK/OFF"**. Press [MENU] key to enter the setting, through [▲] / [▼] key to choose "ON/OFF", confirm by [MENU] key, press [A/B] key to exit.

If select "ON", keypad will be auto locked when there is without any operation.

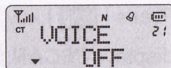


Voice prompt ON/OFF

Press [MENU] key, use [▲] / [▼] key select menu 21, LCD displays **"VOICE/OFF"**, Press [MENU] key to enter the setting, through [▲] / [▼] key to choose "ON/OFF", confirm by [MENU] key, press [A/B] key to exit.

If select "ON", voice prompt function is available.

If select "OFF", voice prompt function is unavailable.



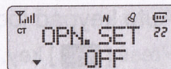
Setting displaying when power on

Press [MENU] key, use [▲] / [▼] key to select menu 22, LCD displays **"OPNSET/OFF"**, Press [MENU] key to enter the setting mode, use [▲] / [▼] key to choose voltage or message, confirm by [MENU] key, press [A/B] key to exit.

If select "DC", battery voltage will be displayed.

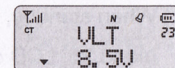
If selected "MSG", message will be displayed on LCD.

There is no message displays when on message has been set or select "OFF". About message setting, please refer to menu 24.



Battery voltage

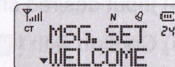
Press [MENU] key, use [▲] / [▼] key to select menu 23, LCD displays current battery voltage.



Setting power on message

- 1) When standby, press [MENU] key, use [▲] / [▼] key to select menu 24, LCD displays **"MSGSET/WELCOME"**
- 2) Press [MENU] key to enter the setting mode, power on message blinks.
- 3) Press [▲] / [▼] key to select the desired letters.
- 4) Press [# T-R] key to switch to the next editable letter, press [* LOOK] to cancel current letter, and return to the last editable letter.
- 5) Confirm [MENU] by key and press [A/B] key twice to exit.

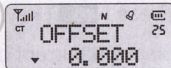
Eg: Input "KENTSAR", LCD display "KENTSAR" when power on.



Setting shift frequency

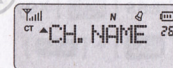
- 1) When standby, press [MENU] key, use [▲] / [▼] key to select menu 25, LCD displays "OFFSET/0.000"
- 2) Press [MENU] key to enter the setting mode.
- 3) Input desired shift frequency. It can be set from 0.000-99.995MHZ.
- 4) Confirm with [MENU] key.
- 5) Under CH mode, press [MENU] key, use [▲] / [▼] key to select menu 25, LCD displays "DIS.NM/OFF"
- 6) Press [MENU] key to enter the setting mode.
- 7) Press [▲] / [▼] key to select "ON/OFF", confirmed by [MENU] key.

Note: Make sure open increase/decrease frequency function before setting shift frequency.



Channel name setting

- 1) Under CH mode, press [MENU] key, use [▲] / [▼] key to select menu 26, LCD displays "CH.NAME"
- 2) Then press [MENU] key to enter the setting mode, message is blinking.
- 3) Press [▲] / [▼] key to select the desired letters. Press [# T-R] key switch to the next editable letter.
- 4) Press [* LOCK] key switch to cancel current letter, and return to the last editable letter.
- 5) Confirm by [MENU] key and press [A/B] key twice to exit.

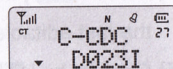
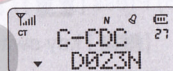
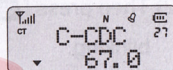
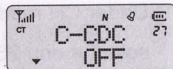


Setting TX/RX CTCSS/DCS [MENU] + [*LOCK]

Press [MENU] key to confirm the setting. The shortcut operation is:

[MENU] + [*LOCK]

- 1) When radio standbys, press [MENU] key, use [▲] / [▼] key to select menu 27, LCD displays "C-CDC/OFF".
- 2) Press [MENU] key to enter the setting mode.
- 3) Press [*LOCK] key radio shows 67.0 (QT), use [▲] / [▼] key to choose QT groups.
- 4) Repress [*LOCK] key radio will show D023N (DCS), use [▲] / [▼] key to choose DCS groups. Continue pressing [*LOCK] key to switch signaling mode (OFF → QT → DCS → OFF)
- 5) When choose DCS, press [#T-R] key to choose DCS direction, like D023I.....
- 6) Confirmed by [MENU] key.

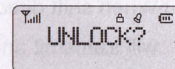
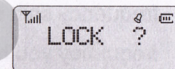


Setting TX/RX CTCSS/DCS

If only set RX with CTCSS/DCS, TX without CTCSS/DCS, or RX without CTCSS/DCS, TX with CTCSS/DCS. You can press [MENU] key into setting mode, use [▲] / [▼] key to select menu 28, 29. Operation is the same as setting TX/RX CTCSS/DCS.

Keypad lock ON/OFF

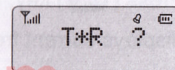
When radio standbys, press and hold [*LOCK] key not less than 2 second to turn on/off the keypad lock. When keypad lock function is on, ☐ will be displayed on the top of LCD, there will have voice prompt like keypad locked.



Reverse frequency ON/OFF

When radio standbys, press [#T-R] key not less than 2 second to turn on/off the reverse frequency.

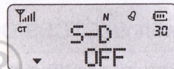
When reverse frequency function is on, "N" will be displayed on the top of LCD, at this time, radio's transmit frequency is its receive frequency; radio's receive frequency is its transmit frequency.



Setting shift direction [MENU] + [# T-R]

1) Press [MENU] key, use [▲] / [▼] key to select menu 30.

LCD displays "S-D/OFF", Press [MENU] key to confirm the setting.



2) Use [▲] / [▼] key to select "+" / "-" (increase/decrease),

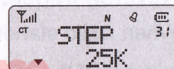
Then confirm by [MENU] key.

3) When select "+" / "-", there is "+" / "-" display on LCD. The frequency shift of transmit/receive operation is the same as the frequency you have set in menu 25.

4) When shift direction function is on but no shift frequency, radio will transmit and receive on the same frequency.

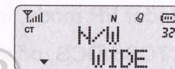
Frequency Space setting

Press [MENU] key, use [▲] / [▼] key to select menu 31, LCD displays current frequency space, like "STP/25". Press [MENU] key to enter the setting, use [▲] / [▼] key to choose frequency spaces, there are (5K/6.25K.....100K) confirm by [MENU] key, press [A/B] key to exit.



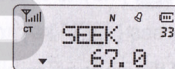
Wide/Narrow band selecting

Press [MENU] key, use [▲] / [▼] key to select menu 32, LCD displays "N/W WIDE". Press [MENU] key, use [▲] / [▼] key to choose "WIDE" / "NARROW", confirm by [MENU] key, press [A/B] key to exit.



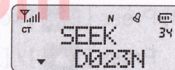
CTCSS auto scanning

Press [MENU] key, use [▲] / [▼] key to select menu 34, LCD displays "SEEK 67.0". Press [MENU] key to enter the CTCSS auto scanning function. Press [▲] / [▼] key to change scanning direction (upward or downward); With this function, the radio will scan signals in the same frequency by CTCSS, and will stop scanning and stay in the frequency when receiving a same CTCSS.



DCS auto scanning

Press [MENU] key, use [▲] / [▼] key to select menu 34, LCD displays "SEEK D023N". Press [MENU] key to enter the DCS auto scanning function. Press [▲] / [▼] key to change scanning direction (upward or downward); press [# T-R] key to change positive and negative direction of DCS code. It can search DCS code of other radios working on the same frequency. and will stop scanning and stay in the frequency when receiving a same DCS.

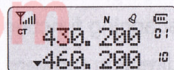
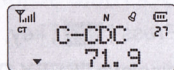
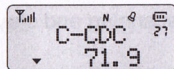
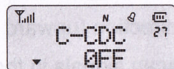
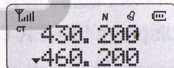


Memory channel storage

Under FR mode, input frequency and other parameters (such as CTCSS/DCS, offset frequency, offset direction, etc). Press [MENU] first, then press [A/B] key, the channel No. for storage will be displayed at the right of the screen. Press [▲] / [▼] key to select the desired channel for storage, and then press [▲] / [▼] key to select the desired channel for storage, and then press [A/B] key to finish the storage.

If the channel is blinking, means radio has stored frequency, if isn't blinking, the current channel is null, without any frequency message.
Examples: input frequency: 465.025 T/R CDCSS :71.9 store in CH 10.
Operation:

- 1) Input the NO. like: [4 POWER] [6 SCR] [5 SOL] [0 ANI] [2 PRI] [5 SOL]
- 2) Press [MENU] and [*LOCK] keys again
- 3) Press [MENU] key to confirm, use [*LOCK] key to choose 67.0,
Press [▲] / [▼] key to select 71.9, confirm by [MENU] key.
"CT" is displaying at the right of LCD
- 4) Re-press [A/B] key to exit. Use [MENU] and [A/B] key, then input 010 directly and confirm by [A/B] key to complete channel store. Also can press [▲] / [▼] key to select No.10 and confirm by [A/B] key to complete channel storage.

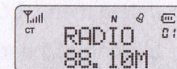
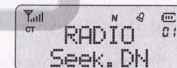
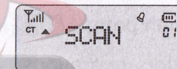


Radio receiver setting

In standby, press [A/B] key for more than 2 seconds, switch to CH-FR mode. Repeat it to enter Full-frequency mode.

In FM radio mode, press [▲] key to enter CH model. Repeat it to resume.

- 1) Open: When radio standbys, press [MENU] with MONI keys, radio receiver is working.
- 2) Input directly four broadcasting no. or press [▲] / [▼] key to select the broadcast channel (step is 100K)
- 3) Under radio receiver mode, press [MENU] + [1 SCAN] keys, then repress [MENU] key, radio scans all the radio receiver memories. Radio stops scanning when there has radio receiver frequency. Press [▲] / [▼] key to select the scan direction.
- 4) OFF: Under radio receiver mode, press [MENU] and MONI keys, radio receiver is off.



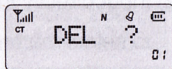
Store radio receiver channels

Under radio mode, inout the memories you want to save, press [**MENU**] + [**A/B**] keys, select channel to store (you can directly enter channel No., you can press [**▲**] / [**▼**] key to select channels), then press [**A/B**] key to confirm. MAX storage is 25 channels.

Store operations is the same as radio channel.

Delete CH or radio receiver channel

- 1) Under CH mode, press [**A/B**] key to turn on the radio, enter delete menu. LCD displays **"DEL"**, current channel NO. is blinking at the top right of LCD.
- 2) Use [**▲**] / [**▼**] key to choose the desired delete channel.
- 3) Confirm by [**MENU**] key to delete the channel.



User's Manual

Optional signalings

Wireclone

<http://www.tyt888.com>

Optional signalings (Programmed by TH-F2 software)

This transceiver supports four optional signalings (MSK, DTMF, 2-Tone, 5-Tone), DTMF signaling only supports encoding.

DTMF part:

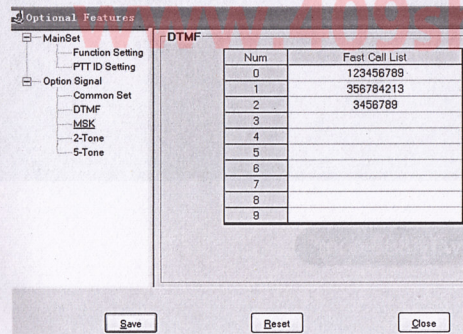
Edit DTMF message

- 1) Edit the fast calling signal, radio can store up to 10 groups of fast calling list.

The position of DTMF signal table in the program software:

Click[Edit]→[Optional Features]→[Optional Signal]→[DTMF]

- 2) Input the desired code (16 characters in maximum) in the corresponding list, click (save) after finishing it, then exit.



- 3) Set the optional signal of the desired channel to be DTMF

The position of channel optional signal in the programming software: Click (more), then select "DTMF" in the "Option signal" to set the edited DTMF signal into the radio.

Make DTMF call with the transceiver

- 1) Power on, then select the channel with DTMF signal.
- 2) Press [CALL] key, LCD displays "**CALL / DTMF?**", Press 0-9 keys to make call with the desited call list message. If the corresponding call list has not been edited (blank), it will sound "Du".

MSK part:

Edit the MSK message of the transceiver (ID code for receiving, calling list message for transmitting)

- 1) Edit the fast calling signal via programming software, radio can store up to 10 groups of fast calling list.

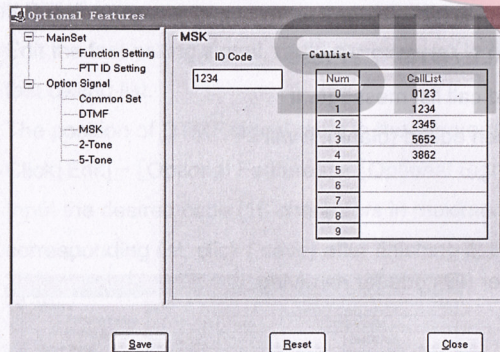
The position of MSK signal in the programming software:

click [Edit]→[Optional Features]→[Option Signal]→[MSK]

- 2) Input the desired codes (4 characters in maximum) in the corresponding list, click (Save) after finishing it, then exit.

- 3) Input the corresponding decoding ID in (ID Code) setting.
- 4) Set the optional signal of the desired channel to be MSK.

The position of channel optional signal in the programming software: Click (More), then select "MSK" in the (Option signal) to set the edited MSK signal into the radio.



Make MSK call with the transceiver

- 1) Power on, then select the channel with MSK signal.
- 2) Press [CALL] key, LCD displays "**CALL / MSK?**", press 0-9, keys to make call with the desired call list message. If the corresponding call list has not been edited (Blank), it will sound "Du".

2-Tone park (Optional)

Edit 2-tone message

- 1) Edit the fast calling signal via programming software, the radio can store up to 10 groups of fast calling list.
The position of 2-tone in the programming software.
Click [Edit] → [Optional Features] → [Optional Signal] → [2-Tone]

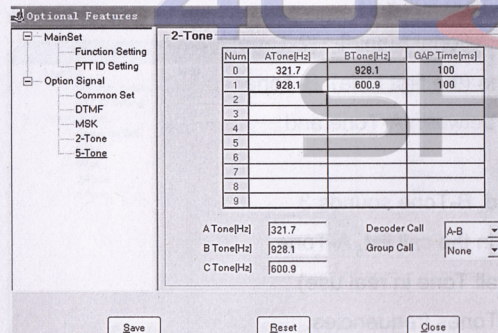
- 2) Input the encoding-requested A-Tone (the first tone), B-Tone (the second tone) and the Gap Time between A-Tone and B-Tone in your required call list.

In encoding, A-Tone sounds 1 second, B-Tone sounds 3 second; but when it only has A-Tone in the call list, A-Tone will sound 5 second. (As the Group call Tone in real use)

- 3) Edit the decoding-requested A, B, C Tones frequencies.
- 4) Edit decoder call mode, 6 modes optional: A-B, C-B, C-A, B-C, B-A, A-C.
E.g.: if select C-B, when decoding, it requires the first tone to be C-Tone, the second tone to be B-Tone.
- 5) Select (Group Call) to be "None" or A-Tone, B-Tone, C-Tone, to turn on the group call function, click "save" after finishing it, then exit.

6) Set the optional signal of the desired channel to be 2-Tone.

The position of channel optional signal in the programming software: Click (More), then select "2-Tone" in the (Option signal), to set the deited 2-Tone signal into to radio.



Make 2-Tone call with the transceiver

1) Power on, and then select the channel with 2-Tone signal.

2) Press [CALL] key, LCD displays "CALL /2T?", press 0-9

keys to make call with the desired call its message, If the corresponding call list has not been edited (blank), it will sound "Du".

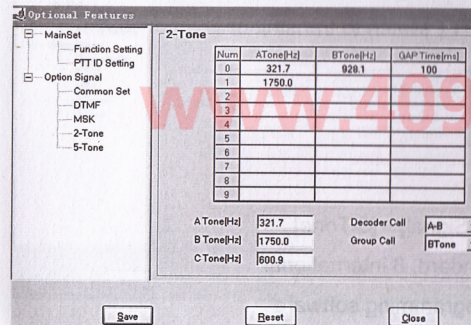
If make the one-tone call, only A-tone should be input in the encoding code (e.g.: A tone is 1750Hz), no need to input other tones.

In decoding, one of the A-tone or B-tone frequency should be the same as A tone frequency in encoding. The decoding format is no need to select. And the group call tone should be the same as decoding tone(whose frequency is the same as encoding tone frequency.)

E.g.: Encoding A-tone is 1750.0Hz,

decoding tone is: B-tone=1750Hz.

See the following chart:



That is, in decoding, B-tone is selected, then in group call, B-tone must be selected, too. If selecting A-tone as decoding tone, then group call tone should be A-tone, if selecting C-tone as decoding tone, then group call tone should be C-tone. But the frequency should be the same as encoding A-tone frequency.

Use 1750Hz burst tone to connect with repeater

- 1) Select the desired frequency or channel for connecting with repeater
- 2) Long press [CALL] for more than 2S to transmit 1750Hz, release [CALL] key to stop it.
- 3) When the radio has connected with repeater, you can transmit by the normal operation, that is, press PTT switch to transmit or receive.





5-Tone part (Optional)

Edit 5-Tone message

click [Edit] → [Optional Features] → [Option Signal] → [5-Tone]

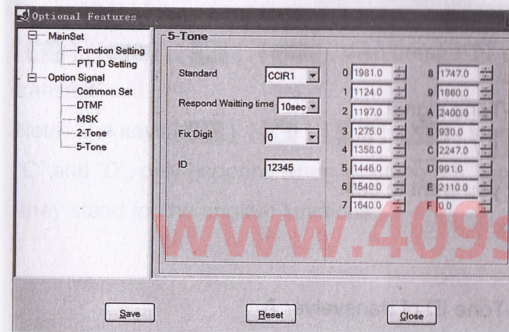
- 1) Select the desired standard item in standard, 8 international common standard is selectable; the programming software

displays the corresponding codes that match the specific international standard.

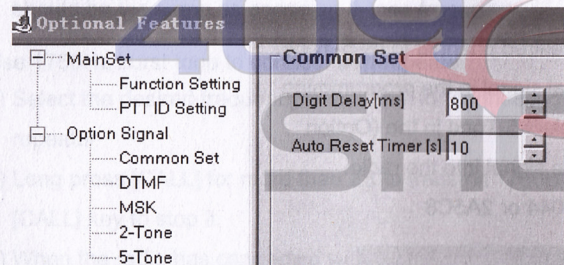
- 2) Input the 5-Tone ID of this radio in ID setting, 5 digits in maximum. (Including letters A, B, C, D, A [], B [], C [], D [],)
- 3) Set the optional signal of the desired channel to be 5-Tone.

The position of channel optional signal in the programming software: Click (More), then select 5-Tone in the (Option Signal) to set the edited 5-Tone signal into the radio.

E.g: The 5 Tone ID can be: 44044 or 2A5C8



As it needs a certain time for the radio to receive (in battery save mode and standby mode), we recommend the "Digit delay [ms]" in the menu "Common set" of "Optional signal" to be 800ms or more.



Make 5-Tone with the transceiver

- 1) Power on, select the channel with 5-Tone signal.
- 2) Press [CALL] key, LCD display "CALL / ____"
- 3) Input the 5-Tone ID of the radio that you want to call.
E.g.: 12345
- 4) Press [PTT] to transmit.
E.g.: Here are 2 transceivers, the 5-Tone ID of transceiver A is:12345, transceiver B is: 67890, the steps are followed for transceiver A to call transceiver B: Press [CALL], press

number keys [6 SCR] [7 LED] [8 COLOR] [9 BEEP] [0 ANI] in sequence, and then press PTT to transmit.

Inputting method of ABCD: When you press "CALL" key to input the 5 Tone ID, these four number keys [MENU] [▲] [▼] [A/B] stand for "A" "B" "C" and "D" respectively. With these four number keys, you can input the 5 Tone ID with letters.

E.g: Call other radios whose 5 Tone ID are: 44044 and 2A5C8 respectively

- 1) Press "CALL" key, input the number [4 POWER], [4 POWER], [0 ANI], [4 POWER], [4 POWER] in sequence, then press PTT switch to transmit.
- 2) Press "CALL" key, input these keys in sequence: [2 PRI], [MENU], [5 SQL], [▼], [8 COLOR], then press PTT switch to transmit.

Note: The keys [MENU] [▲] [▼] [A/B] stand for "A" "B" "C" and "D", only happens when inputting a 5 Tone ID, otherwise, they stand for the original functions.

Wireclone

Preparing 2pcs TH-F2 and 1pcs specific cloning wire.

Master radio (Sending data in wire-cloning)

Deputy radio (Receiving and storing data in wire-cloning)

Steps of wire-clone operation

- 1) The deputy radio normally power on, the master radio turns off.
- 2) Press [PTT] and [▲] to turn on the master radio, enter the wire-clone state, LCD displays "**LONE**" connect master radio and deputy radio with the wire-clone cable.
- 3) Press [MONI] key of the master radio to start wire-clone.
During cloning, the master radio shows "**ending**" and red light flickers, the deputy radio light flickers in green but no upgrade information of cloning. When cloning succeeded, the master radio shows "**END**" LCD of lights. When cloning failed, the master radio shows "**ERROR**". To wire-clone next radio, you only need to connect master radio with wire-clone cable to next deputy radio, then press [MONI] key of the master radio to start cloning.

Optional accessories

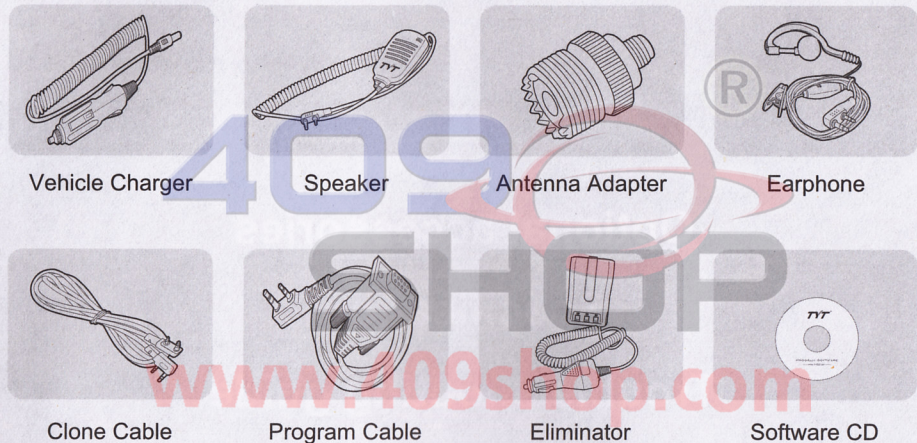
Specification

Trouble shooting guide

Guarantee

<http://www.tyt888.com>

Optional accessories



Specification

General	
Frequency range	VHF: 136-174MHz 245-246MHz UHF: 400-470MHz 350-390MHz 465-520MHz
Frequency stability	± 2.5PPm
Operationg voltage	DC7.2V (Rechargeable Li-ion battery)
Channel No.	128
Antenna	High gain antenna
Antenna impedance	50 Ω
Mode of operation	Simplex or semi-duplex
Dimensions(WxHxD)	120mm x 54mm x 32mm

Transmitter	
Output power	High $\geq 4W$ Low $\geq 0.5W$
Modulation mode (Wideband/Narrow band)	16KF ∇ 3E/11K ∇ F3E
Maximum deviation (Wideband/Narrow band)	$<5KHZ$ / $<2.5KHZ$
Adjacent channel power (Wideband/Narrow band)	$\geq 65dB$ / $\geq 60dB$
Spurious radiation	$<7\mu W$
Pre-emphasis characteristics	6dB
Current	$\leq 1.6A(5W)$
CTCSS/DCS deviation (Wideband/Narrow band)	$0.5KHZ \pm 0.1KHZ$, $0.3KHZ \pm 0.1KHZ$
Intermediation sensitivity	8-12mV
Intermediation distortion	$<10\%$
Receiver	
RF sensitivity	-22dBm (12dB SINAD)
Audio power	$>0.5W$
Audio distortion	$<10\%$
Blocking	≥ 85
Intermediation (Wideband/Narrow band)	$\geq 60dB$ $\geq 55dB$
Selectivity (Wideband/Narrow band)	$\geq 65dB$ $\geq 60dB$
Spurious rejection	$\geq 65dB$

Note: Specification will be revised without inform due to technical improvement. Thanks.

Trouble shooting guide

Troubles	Solution
No Electrical Source	<ul style="list-style-type: none"> • The battery has been exhausted. Replace or recharge the battery. • The battery is installed incorrectly. Remove it and install again.
The operating time becomes short, even the battery is fully charged.	<ul style="list-style-type: none"> • Replace the battery.
Not able to communicate with the transceivers of the same group.	<ul style="list-style-type: none"> • Confirm the QT/DQT is the same. • The distance is outside of range.
The voice of another group can be heard.	<ul style="list-style-type: none"> • Change all QT/DQT of the group.