Owners Manual

To Customers

Thank you very much for using TYT two way radios. This product has a newly developed function menu and humanism operation design, making it easy to use. It will meet your requirement by the compact size and reasonable price.

Thank you for choosing TYT TH-8600 mobile transceiver, TYT always provides high quality products, and this transceiver is no exception. As you learn how to use this transceiver, you will find that TYT is pursuing “user friendliness”. For example, each time you change the menu No. in Menu mode, you will see a text message on the display lets you know what you are configuring.

Though friendly design for user, this transceiver is technically complicated and some features may be new to you. Consider this manual to be a personal tutorial from the designers, allow the manual to guide you through the learning process now, then act as a reference in the coming years.

Please contact the local authorized dealer if you have any questions. We are not responsible for any typographical errors that may by in this manual. Standard accessories may change without notice, getting your understanding for any inconveniences.

When programming the transceiver, read the factory initial data firstly, and then rewrite the frequency and signaling etc. otherwise errors may occur because of different frequency band etc.

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Users Safety Information

- Do not attempt to configure your transceiver while driving.
- This transceiver is designed for a 13.8V DC power supply. Do not use a 24V battery to power on the transceiver.
- Please keep it away from interferential devices (Such as TV s, generators, etc.)
- Do not expose the transceiver to long periods of direct sunlight or place it close to heating appliances.
- If an abnormal odour or smoke is detected coming from the transceiver, turn off the power immediately and contact your dealer.
- Do not transmit with high power for extended periods or the transceiver may overheat.

Package Includes

- Radio unit x 1
- Keypad DTMF microphone x 1
- Mobile mounting bracket x 1
- DC power cable with fuse holder x 1
- Screw packs x 1
- Protection fuses x 1
- User manual x 1

Main Features

TH-8600 mobile radio has nice housing, stoutness & stability, advanced and reliable functions, perfect & valuable. This amateur mobile radio especially designs for drivers and it pursues company philosophy of innovation and practicality. More functions as follows:

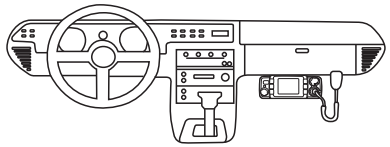
- Distribute buttons reasonably, convenient for operation. Adopt superior quality material, better technology and high quality radiator to ensure stable and durable operation.
- IP 67 waterproof (Optional)
- GPS (Optional)
- 1750/2100/1000/1450 Tone
- Automatic power-off
- 200 programmable memorized channels, identified by editing name.
- Programming different CTCSS, DCS, 2Tone, 5Tone in per channel, rejecting extra calling from other radios.
- Different bandwidth per channel, 25K for wide band.
- Five programmable multi-functional keys, can set various shortcut operation according to different requirement.

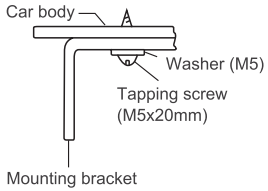
Initial Installation

Mobile Installation

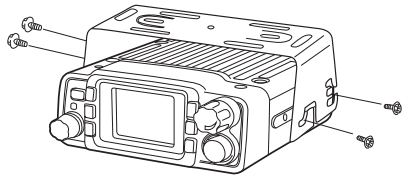
To install the transceiver select a safe and convenient location inside your vehicle that minimizes danger to your passengers and yourself while the vehicle is in motion. Consider installing the unit at an appropriate position so that knees or legs will not strike it during sudden braking of your vehicle. Try to pick a well ventilated location that is shielded from direct sunlight.

1. Install the mounting bracket in the vehicle using the supplied self-tapping screws and flat washers.

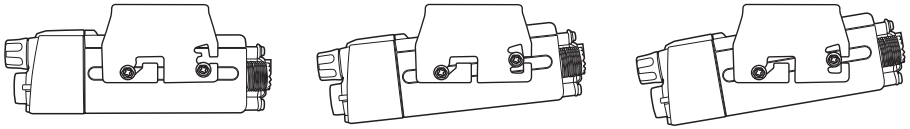




2. Position the transceiver, the insert and tighten the supplied hexagon SEMS screws.
   - Double check that all screws are tightened to prevent vehicle vibration from loosening the bracket or transceiver.



- Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.

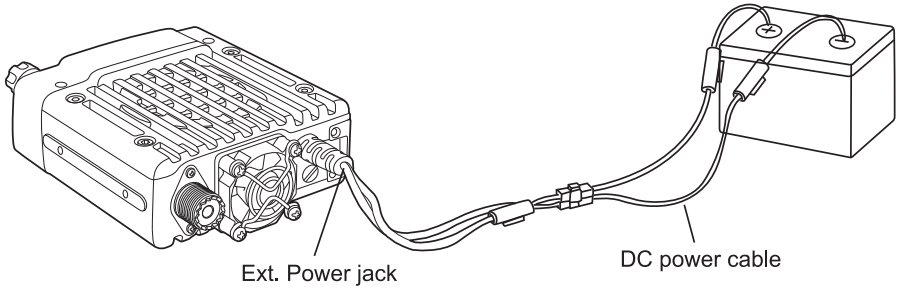


DC Power Cable Connection

Note: Locate the power input connector as close to the transceiver as possible.

The vehicle battery must have a nominal rating of 12V. Never connect the transceiver to a 24V battery. Be sure to use a 12V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient the display may darken during transmission or transmitting output power may drop excessively.

1. Route the DC power cable supplied with the transceiver directly to the vehicle's battery terminals using the shortest path from the transceiver. We suggest you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop. The entire length of the cable must be dressed so it is isolated from heat, moisture and the engine secondary (high voltage) ignition system/cables.
2. After installing the cable, in order to avoid the risk of damp, please use heat-resistant tape to tie together with the fuse box. Do not forget to reinforce the whole cable.
3. Confirm the correct polarity of the connections, then attach the power cable to the battery terminals: Red connects to the positive (+) terminal and black connects to the negative (-) terminal.
4. Reconnect any writing removed from the negative terminal.
5. Connect the DC power cable to the transceiver's power supply connector. Press the connectors firmly together until the locking tab clicks.



Fixed Station Operation

In order to use this transceiver for fixed station operation you will need a separate 13.8V DC power supply (not included).

Please contact your local dealer about it.

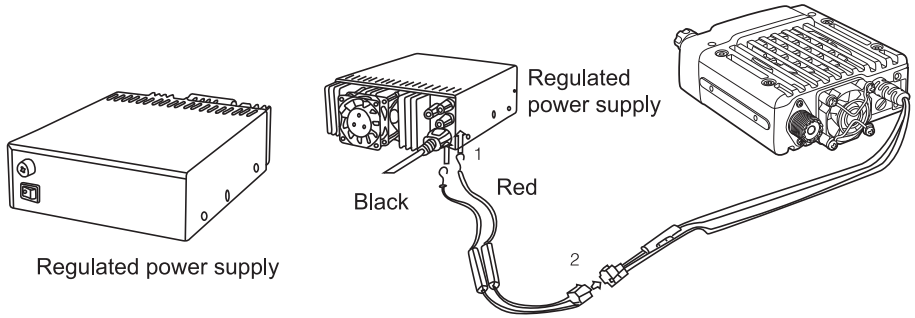
The recommended current capacity of your power supply is 12A.

1. Connect the DC power cable to the regulated DC power supply and ensure that the polarities are correct. (Red: positive; Black: Negative).
   Do not directly the transceiver to an AC outlet.

Use the supplied DC power cable to connect the transceiver to a regulated power supply.
Do not substitute a cable with smaller gauge wires.

2. Connect the transceiver's DC power connector to the connector on the DC power cable.
3. Press the connectors firmly together until the locking tab clicks.

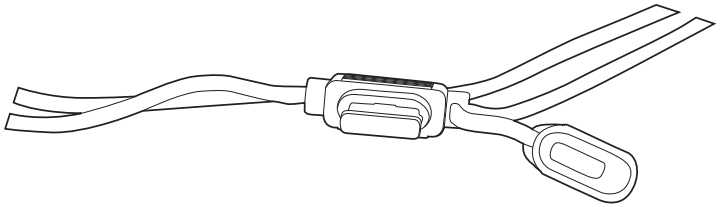
Note: Before connecting the DC power to the transceiver be sure to switch the transceiver and the DC power supply OFF.
Do not plug the DC power supply into an AC outlet until you make all connections.



DC power cable with fuse holder

Replacing Fuses

If the fuse blows, determine the cause then correct the problem. After the problem is resolved replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your local dealer for assistance.



Fuse Location	Fuse Current Rating
Transceiver	15A
Supplied Accessory DC power cable	20A

Only use fuses of the specified type and rating otherwise the transceiver could be damaged.
Note: If you use the transceiver for a long period when the vehicle battery is not fully charged or when the engine is OFF, the battery may become discharged and will not have sufficient reserves to start the vehicle. Avoid using the transceiver in these conditions.

Antenna Connection

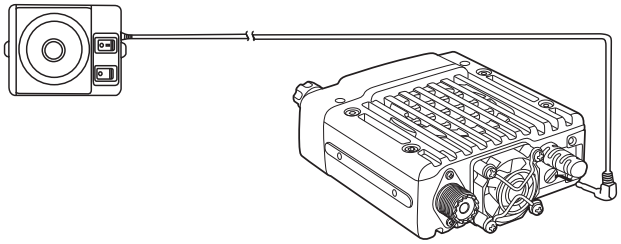
Before operating install an efficient well-tuned antenna. The success of your installation will depend largely on the type of antenna and its correct installation. The transceiver can give excellent results if the antenna system and its installation are given careful attention. Use a 50Ω impedance antenna and low-loss coaxial feed-line that has a characteristic impedance of 50Ω, to match the transceiver input impedance. Coupling the antenna to antenna to the transceiver via feed-lines having a impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby broadcast TV receivers, radio receivers and other electronic equipment.

Note: Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the antenna to the transceiver before transmitting. All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock and transceiver damage.

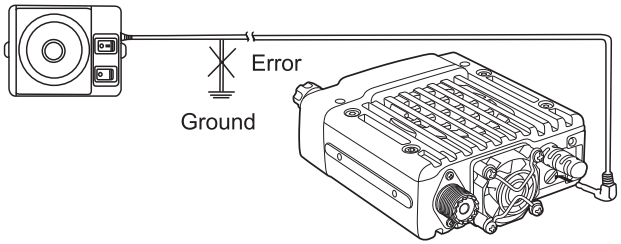
Accessories Connections

External Speaker

If you plan to use an external speaker, choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5mm mono (2-conductor) plug.

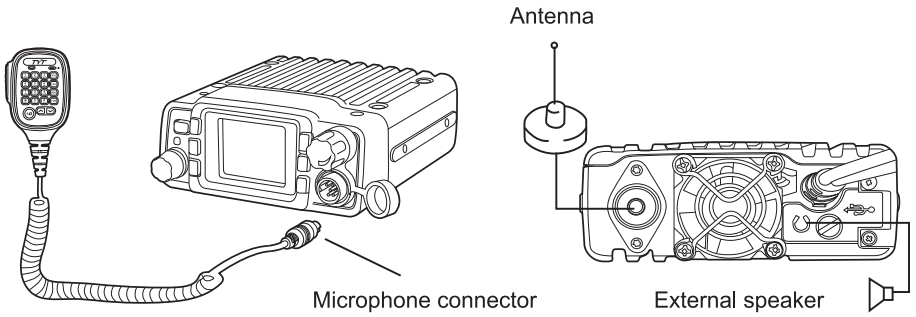


Note: External speaker output adopts double port BTL. Please be aware that the speaker can't connect to the ground otherwise the speaker will fault. The wrong connection way is as below:



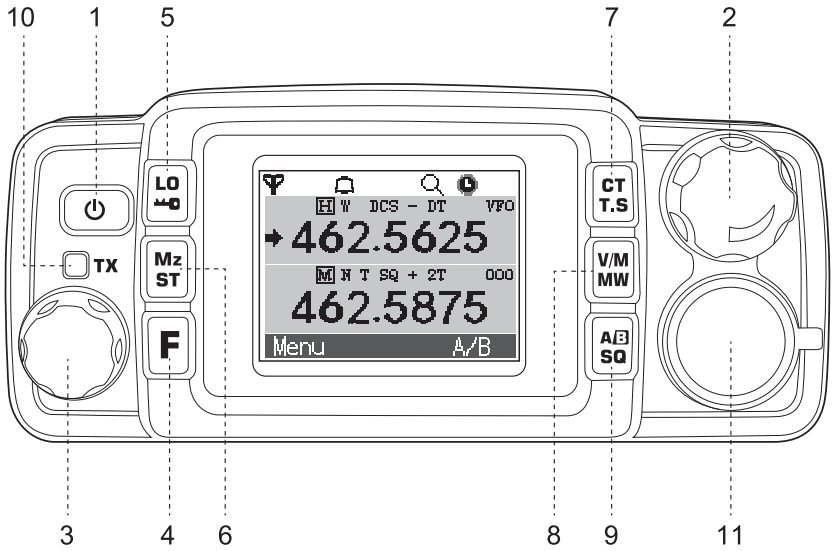
Microphone:

For voice communications, connect a microphone equipped insert into the modular socket on the side of the main unit and tighten the screw. Attach the supplied microphone hanger in an appropriate location using the screws includes included in the screw set.



Getting Acquainted

Front Panel Operation

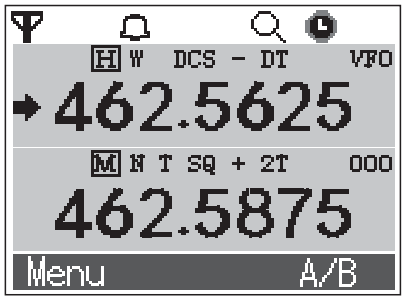


NO.	Key	Function
1	POW (Power)	Power on/off
2	VOL	Adjust volume key
3	Main Dial	Change frequency, memory channel and scan direction etc.
4	F	Function key
5	Lo( )	Short press to switch power output level
		Long press to switch the offset direction
6	Mz(ST)	Short press to adjust the frequency by 1M step in VFO mode, to adjust the channel number by 10 in channel mode
		Long press to adjust the frequency by 10M step
7	CT(T.S)	Short press to switch CTCSS/DCS mode
8	V/M(M/V)	Short press to switch frequency control for the VFO and Memory mode
		Long press to store the channel
9	A/B(SQ)	Short press to switch the home screen/sub screen
10	TX	Lights during transmitting
11	Mic. connector	Microphone connection port

Note: Lo/Mz/CT/V/M/A/B keys is multi-function keys, if users are reassigned these keys, the function would be different, please check the following functions.

Multi-Function Key	Function
A/B	Short press to switch the home screen/sub screen
LOW	Short press to switch the power output level
	Long press to switch the offset direction
MONI	Short press to start monitor
	Long press to turn on/off the channel name
SCAN	Short press to start scan
	Long press to whether the current channel is allowed to scan
TONE	Long press to switch the CTCSS/DCS mode
M/V	Short press to switch the frequency/channel mode
	Long press to store the channel
MHZ	Short press to adjust the frequency by 1M step in VFO mode, to adjust the channel number by 10 in channel mode
	Long press to adjust the frequency by 10M step
MUTE	Short press to reduce the volume by half

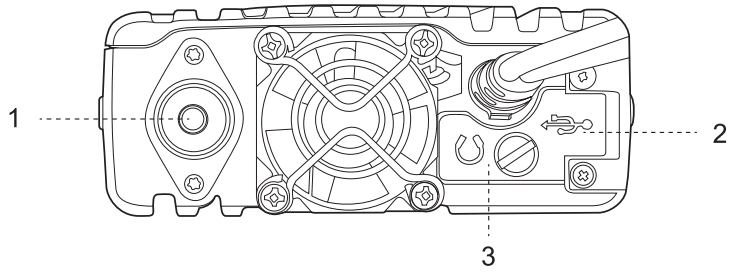
Display



NO.	Icon	Function
1	000	Memory Channel Number
2	H M L	High Power Output / Middle Power Output/ Low Power Output
3	W	Wide Bandwidth
4	DT/2T/5T	Signaling
5	T	CTCSS Encode
6	SQ	CTCSS Decode
7	DCS	DCS Encode and Decode
8		Beep
9		Auto Power-off
10	VFO	Frequency Mode
11	+	Positive Direction of Offset

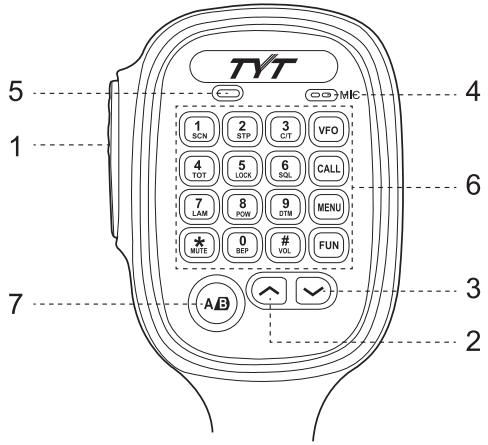
NO.	Icon	Function
12	–	Negative Direction of Offset
13		Home Screen Position
14		Scan
15		Lock the Keypad
16		GPS is allowed to receive (the small circle would be disappear when the GPS has signal)

Rear Panel



Microphone

NO.	Port	Function
1	ANT	Connection for 50Ω antenna
2	DATA	PC programming data port
3	EXT SP	Terminal for optional external speaker



NO.	Icon	Function
1	PTT	Press the key to transmit
2	∧	Decrease volume or setting value
3	∨	Increase volume or setting value
4	MIC	Speak here during transmission
5	Indicate light	Indicate light will red during transmission
6	Number Key	Input channel number or DTMF dial out etc.
7	A/B	Exchange to the home screen and sub screen

Basic Operation

Switching the Power On/Off

According to the option selected during installation, press the key for 1s to power on radio. Press the key for 2s to power off radio.

Adjusting the Volume

Turn the VOL knob clockwise to increase the audio level, counterclockwise to decrease.

Note: during the communication, volume can be adjusted more accurate.

Switch between VFO and Channel Mode

In standby, press the [V/M] key or [VFO] key of microphone, this indicates will display current channel in channel mode. Repeat above operation to switch between Frequency (VFO) mode and channel mode.

Receiving

When the channel you are operating is called, the screen shows RX and field intensity, in this way, you can hear the calling from transmitting party.

Note: If the transceiver has set at higher squelch level, it may fail to hear the calling.

When the channel you are operating is called, the screen shows RX and field intensity, you can't hear the calling from transmitting party, it means current channel receives a matching carrier but unmatching signaling (Refer to CTCSS/DCS encode and decode or Optional Signaling set up).

Transmitting

Press **[MONI]** key to open monitor for a while to confirm the channel desired is not busy, press **[MONI]** key again to cancel the monitor, then press **[PTT]** key to speak into microphone.

Please hold the microphone approximately 2.5-5.0 cm from your lips, and then speak into the microphone in your normal speaking voice to get best timbre.

NOTE: Press and hold **[PTT]** key, LED light red and power intensity showed in screen indicates, that is means it is transmitting, release to receive.

Transmitting Tone-Pulse

Press and hold **[PTT]** key, then press Mic's [∨] key to transmit current selected tone-pulse signal.

Transmitting Optional Signaling

Press and hold **[PTT]** key, then press Mic's [∧] key to transmit pre-stored and selected DTMF/2Tone/5Tone optional signaling.

Channel Edit

1. Select the desired CTCSS/DCS signaling in the menu.
2. Long press **[M/V]** key, the channel number of screen will flashing
3. Turn selector knob to select the desired channel number to store. (if users want to store the frequency only, press Low key at first then operate the 5th instruction.)
4. Press **[F]** key or Mic's **[FUN]** key to stored current channel, press **[PTT]** key or Mic's **[MENU]** key cancel store.

NOTE: When under the memory channel mode, press **[MHZ]** key can store current information into VFO channel.

Channel Delete

1. Long press **[M/V]** key enter to the delete memory channel mode.
2. Turn selector knob to select the channel which you want to delete.
3. Press **[SCAN]** key to delete the current channel.

Shortcut Operations

Offset Direction and Offset Frequency Set up

Repeater receives a signal (UP-LINK) on one frequency and re-transmits on another frequency (DOWN-LINK). The difference between these two frequencies is called the offset frequency. If the UP-LINK frequency higher than DOWN-LINK frequency, the direction is positive, if it is lower, the shift direction is negative.

1. Long press **[LOW]** key, the LCD displays offset direction and offset frequency.
2. Repeatedly long press **[LOW]** key to select positive offset and negative offset.
3. When LCD displays **[+]** icon, it indicates positive offset, which means transmitting frequency higher than receiving frequency.
4. When LCD displays **[-]** icon, it indicates negative offset, which means transmitting frequency lower than receiving frequency.
5. Press **[A/B]** key or **[PTT]** key to exit into standby.

Note:

1. Offset frequency value can be inputted by Mic's numeric keys, the input method is same as method of input frequency.
2. Under channel mode, this operation can be temporarily used by user. Once the radio is turned off or switched to another channel, the temporary setting will be erased.

Operation of the composite key

1. Press **[F]** key or Mic's **[FUN]** key, the **[Menu]** icon flashing, then press composite key "X".
2. Repeatedly press composite key "X" to switch the corresponding list.
3. Press **[F]** key or **[PTT]** key to exit.

Beep (FUN+0)

1. Press **[F]** key or Mic's **[FUN]** key, the LCD displays **[Menu]** icon is flashing, then press Mic's **[0]** key, LCD display " " icon, that is means the function of keypad tone is opened.
2. Repeatedly the above operation, when the " " icon is disappear, this function is disable.

CTCSS/DCS Frequency Setting (FUN 3/Tone)

This function is used to receive and transmit CTCSS/DCS frequency. (The current channel should be have CTCSS/DCS)

1. When the current channel have CTCSS/DCS, press **[FUN]** key or Mic's **[FUN]** key, the **[Menu]** icon will flashing, then press the **[Tone]** key or Mic's **[3]** key enter to adjust the CTCSS/DCS.
2. Turn selector knob to change the CTCSS/DCS
   If there is CTCSS, press **[F]** key can switch to the CTCSS setting
   If there is DCS, press **[F]** key to set the Positive and negative direction of the DCS.
3. Press **[PTT]** key or Mic's **[FUN]** key to exit.

TOT (FUN+4)

1. Press **[F]** key or Mic's **[FUN]** key, the **[Menu]** icon will flashing, then press the Mic's **[4]** key enter to adjust the TOT.
2. Press the **[4]** key to change the time of the TOT.

Keypad Lockout (FUN+5)

Squelch Level Setting (FUN+6/A/B)

1. Press **[F]** key or Mic's **[FUN]** key, the **[Menu]** icon will flashing, then press the Mic's 6/A/B key enter to the squelch level setting to switch the level: 0~9 of squelch level.

LCD Backlight Display Time Setting (FUN+7)

1. Press **[F]** key or Mic's **[FUN]** key, the [Menu] icon will flashing, then press the Mic's **[7]** key to switch the backlight display time: Normally open/5s/10s

High/Mid/Low Power Selection (FUN+8)

1. Press **[F]** key or Mic's **[FUN]** key, the [Menu] icon will flashing, then press the Mic's **[8]** key to switch the power: High/Mid/Low.

DTMF Current Channel Edit (FUN+9/Scan)

1. Press **[F]** key or Mic's **[FUN]** key, the **[Menu]** icon will flashing, then press the **[Scan]** key or Mic's **[9]** key, enter the DTMF channel edit mode, it can edit the current channel (If user wants to edit other DTMF channel, please change the channel in the menu at first).

2. Press the Mic's **[∧/∨]** key or **[Low]/[Moni]** to adjust the character position by last bit or next bit.
3. Turn the selector knob to change the current character or use microphone to input the corresponding character directly.
4. Press **[A/B]** key to save the current content. Press **[MHZ]/[Menu]** key to delete the current character.
5. Press **[PTT]** key to exit.

Channel Deleted Quickly (FUN+VFO)

1. Press **[F]** key or Mic's **[FUN]** key, the **[Menu]** icon will flashing, then press **[VFO]** key to delete the content of current memory channel.

Note: The "0" channel is prohibited to delete.

Channel Copied Quickly (FUN+Call)

1. Press **[F]** key or Mic's **[FUN]** key, the [Menu] icon will flashing, then press **[Call]** key to copy the content of current channel to the next memory channel.

Talk Around (FUN+*)

The transmitting frequency will same with the receiving frequency if turn on this function.

Note: This function is useless if there is not have offset frequency between transmitting frequency and receiving frequency of the current channel.

Reverse Frequency (FUN+#)

When users turn on this function, the transmitting frequency and receiving frequency would be exchange, the frequency of transmitting would be changed to the receiving frequency, the frequency of receiving would be changed to the transmitting frequency. If the current channel has set the CTCSS/DCS signaling, the CTCSS/DCS encode and CTCSS/DCS decode would be exchanged.

Note: This function is useless if there is not have offset frequency between transmitting frequency and receiving frequency of the current channel.

Menu

1. Signaling
2. Scan
3. Contacts (Gps Optional)
   Select the desired Gps contact
   Select: Choose the GPS contact when calling
   View Number: View the current GPS channel number
   View GPS: Remote view the desired radio's GPS info
4. Setting
   Radio setting
   Radio Info
   GPS Info (Optional)
   Radio setting

Function	vailable Values
Function	Available Values
Signal Select	OFF/DTMF/2Tone/5Tone
Sql Model	SQL/Sig
Power Level	Hig Power/Mid Power/Low Power
Bandwidth	Width
CTC/DCS	Ctc Encode/Ctc Decode/Dcs Encode/Dcs Decode

Function	vailable Values
Busy Lock	OFF/CTC/DCS/Carrier
DTMF ID	001
5Tone ID	12345
TOT	Infinite/1/2…/30Minutes
Auto Power Off	OFF/30/60/120Minutes
DTMF Sending Time	50/100/200/300/500MS
Sql Level	OFF/LEV 1/…LEV 9
Scan Mode	TO/CO/SE
Display Mode	Vfo Mode/CH Display Mode/MR Display Mode
TBST Fre	1750HZ/2100HZ/1000HZ/1450HZ
Password Lock	OFF/ON
Back Light	On/5S/10S
Sub Screen	OFF/frequency/Voltage
KeyFun Lo	A/B/ LOW/ MONI/ SCAN/ TONE/ M/V/ MHZ/MUTE
KeyFun Mz	A/B/ LOW/ MONI/ SCAN/ TONE/ M/V/ MHZ/MUTE
KeyFun CT	AB/ LOW/ MONI/ SCAN/ TONE/ M/V/ MHZ/MUTE
KeyFun V/M	AB/ LOW/ MONI/ SCAN/ TONE/ M/V/ MHZ/MUTE
KeyFun AB	AB/ LOW/ MONI/ SCAN/ TONE/ M/V/ MHZ/MUTE
Instr Screen	OFF/Char String/Picture
Ch Display	Frequency/Name

Function	vailable Values
TX Chanel	Last Receive/Select
TX Inh	Tx Enable/Tx Inhibit
Gps Rx (Optional)	Enable/Disable
Gps Tx (Optional)	Enable/Disable
Reset	Factory/Set up
Sub Screen Prompt	Enable/Disable

Menu Operation

Procedure:

1. Short press [Menu] key or long press [F] key enter into the menu mode.
2. Turn selector knob or [+/-] key to select the desired menu number.
3. Press [F] key ,then turn selector knob or press [+/-]key to select the desired parameters
4. After the set, press the [F] key or [Menu] key to saved and returned to the higher level menu, press the [A/B] key or [Vfo] key to cancel and returned the higher level menu.
5. Press [PTT] key to exit.

Menu: Signal Select

Function: Select the Signaling Type

Available Values: OFF/DTMF/2Tone/5Tone

Default: OFF

Menu: Squelch Mode

Function: Squelch Mode Setting

Available Values: SQL/Sig

Default: SQL

Menu: Power Level

Function: Power Setting

Available Values: Hig Power/Mid Power/Low Power

Default: High Power

Menu: CTCSS/DCS Selection

Function: CTCSS/DCS Frequency Setting

Available Values: Ctc Encode/Ctc Decode/Dcs Encode/Dcs Decode

Menu: Busy Lock

Function: Busy Channel Lockout Setting

Available Values: Off/CTCSS/Carrier

Default: OFF/CTC/DCS/Carrier

Menu: DTMF ID

Function: Display Radio DTMF ID

Menu: 5 Tone ID

Function: Display Radio 5 Tone ID

Menu: TOT

Function: Set the Time-out Timer

Available Values: Infinite/1～30Minutes

Default: 6 Mins

Menu: Auto Power Off

Function: The radio will power-off when there is no operation for a specified period of time

Available Values: OFF/30/60/120 Minutes

Default: OFF

Menu: DTMF Sending Time

Function: Set the DTMF sending Time

Available Values: 50/100/200/300/500MS

Default: 50MS

Menu: Sql Level

Function: Adjust the Squelch Level

Available Values: OFF/LEV1~LEV9

Default: 5

Menu: TBST Fre

Function: Select the TBST Frequency

Available Values: 1750/2100/1000/1450

Default: 1750

Press [PTT]+Mic's[∨] key to transmit

Menu: Password Lock

Function: Turn On/Off the Password

Available Values: OFF/ON

Default: OFF

Note: the default password "000000" can input by programming software, input the exactly password can enter the standby interface. Press Mic's [MENU] key to empty the inputted password.

Menu: Back light

Function: Set the Backlight

Available Values: ON/ 5S/10S

Default: ON

Menu: Step

Function: Select the Step

Available Values: 2.5/5/6.25/7.5/8.33/10/12.5/15/20/25/30/50K

Default: 12.5k

Menu: Skip

Function: Whether the Current Channel is allowed to Scan

Available Values: Enable/Disable

Default: Enable

Menu: Sub Screen

Function: Display Type of Sub Screen

Available Values: OFF/Frequency/Voltage

Default: Voltage

Menu: KeyFun Setting

Function: Program the Key Assignment

Available Values: AB/LOW/MONI/SCAN/TONE/M/V/MHZ/MUTE

Default: LOW

Menu: KeyFun Setting

Function: Program the Key Assignment

Available Values: AB/LOW/MONI/SCAN/TONE/M/V/MHZ/MUTE

Default: LOW

Menu: KeyFun Setting

Function: Program the Key Assignment

Available Values: AB/LOW/MONI/SCAN/TONE/M/V/MHZ/MUTE

Default: MHZ

Menu: KeyFun Setting

Function: Program the Key Assignment

Available Values: AB/LOW/MONI/SCAN/TONE/M/V/MHZ/MUTE

Default: Tone

Menu: KeyFun Setting

Function: Program the Key Assignment

Available Values: AB/LOW/MONI/Scan/Tone/M/V/MHZ/Mute

Default: V_M

Menu: Instr Screen

Function: Select the Instr Screen

Available Values: OFF/Picture/Character

Default: OFF

Menu: TX Channel

Function: this function is priority transmission

Last receive: it will use the frequency or channel in the last communication to transmit.

Select: it will use the selected frequency and channel to transmit.

Menu: Transmit Disabled

Function: Turn on/off the Transmit Disabled

Available Values: Enable/Disable

Default: Enable

Menu: Reset

Factory reset is to reset all the settings, including memory channels and menu settings

Setup reset is to reset menu settings, but keep memory channels you stored.

Menu: GPS RX

Function: The radio is enabled or disabled to receive the GPS info from other radio

Available Values: Enable/Disable

Menu： GPS TX

Function: the radio is enabled or disabled to send the GPS info

Available Values: Enable/Disable

Menu: Sub Screen Ring

Function: If there have voice prompt when the sub screen receiving the signal.

Available Values: OFF/ON

Key Setting

AB/LOW/MONI/SCAN/TONE/M/V/MHZ/MUTE

1. A/B key
   Short press: Switch the home screen/sub screen
   Long press: Switch the frequency band of the current VFO
2. LOW key
   Short press: Switch output power level
   Long press: Switch the frequency offset direction
3. MONI key
   Short press: Start the monitor
   Long press: Turn on/off the channel name display
4. SCAN key
   Short press: Start scan
   Long press: Turn on/off scan
5. TONE key
   Short press: switch the CTCSS/DCS mode
6. M/V key
   Short press: Switch frequency/channel mode
   Long press: Store the channel
7. MHZ key
   Short press: 1M step
   Long press: 10M step
8. MUTE key
   Short press: Volume halving

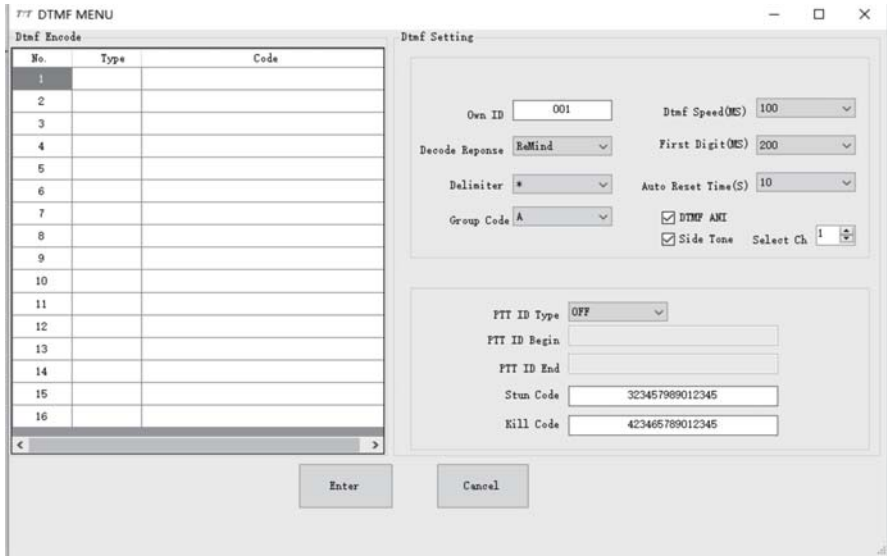
Other keys

1. Mic's CALL key
   Short press: Signaling call
2. Mic's MENU key
   Short press: Set Menu
3. Mic's Fun key
   Short press: Switch on composite key
4. Mic's * key
   Short press: Volume halving
5. Mic's # key
   Switch the function of the Mic's +/- key: Volume/frequency halving
6. Mic's A/B key
   Short press: Switch the home screen/sub screen

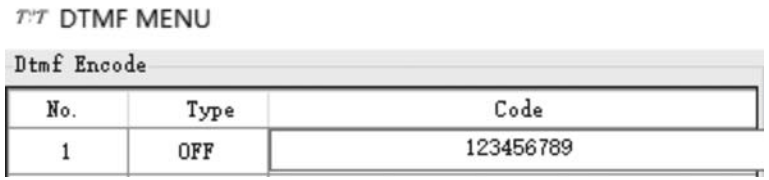
DTMF operation

DTMF decoding (In programming software)

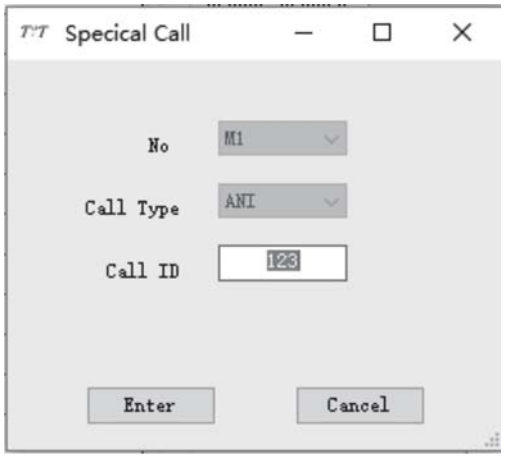
1. Select the DTMF encode type



1）“OFF”, users can input the desired DTMF code directly

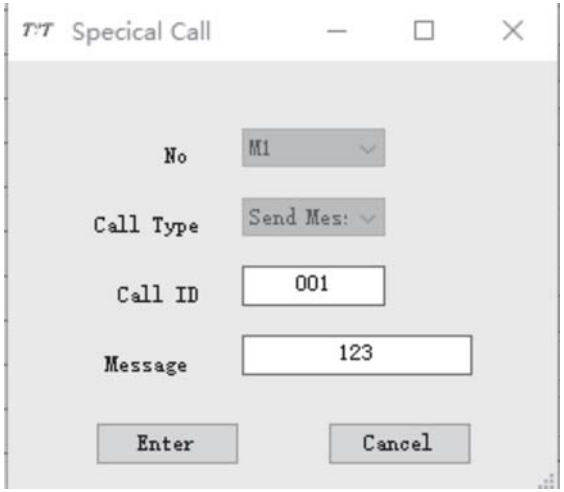


2）“ANI”, users only should input the call ID, which is called radio ID



3）“Message”, users should input the call ID firstly which is called radio ID, and then input the Message.

Note: Because DTMF does a long time for message, this function only supports simple message function.



DTMF setting

Stun code: when the radio receives the corresponding DTMF code, the radio will be remote stunned and disabled transmit.

Kill code: when the radio receives the corresponding DTMF code, the radio will be remote killed and disabled receive and transmit.

Select Ch: The default channel when the DTMF is calling

DTMF operating:

When the signaling of channel selects the DTMF, the current channel will automatically check if the DTMF signaling is received and decoding it. And achieve a corresponding function according to the received code. The function including: Turn on the squelch, ANI display, message, remote stun, and remote kill.

Note: when the radio is remote stunned or killed, it can be released by programming.

2 Tone Operation

2 Tone encode

Input: the frequency of first tone and second tone

Note: the frequency between of the first tone and second tone should not too similar to avoid the decoding is wrong.

2 Tone decode

Decode Format: the combination of decode, for example: A-B, you should make sure the frequency of first tone is A, and second tone is B. other combination is similar.

5 Tone Operation

5 Tone encode

The write way is same with the DTMF.

5 Tone decode

Function: The function will be achieved when the radio receives the corresponding code.

Select: Turn on squelch

Stun/kill: same with DTMF

Wake: release the state of stun/kill

Simple Trouble Shooting

Problem	Possible Causes and Potential Solutions
(a) Power is on, nothing appears on Display.	+ and - polarities of power connection are reversed. Connect red lead to plus terminal and black lead to minus terminal of DC power supply.
(b) Fuse is blown.	Check and solve problem resulting in blown fuse and replace fuse with new fuse.
(c) Display is too dim.	Dimmer setting is “LAMP-L”. Please make the dimmer setting “LAMP-H”.
(d) No sound comes from speaker.	Squelch is muted. Decrease squelch level. Tone or CTCSS/DCS squelch is active. Turn CTCSS or DCS squelch off.
(e) Key and Dial do not function.	Key-lock function is activated. Cancel Key-lock function.
(f) Rotating Dial will not change memory channel.	Transceiver is in CALL mode. Press the VFO or memory mode.
(g) PTT key is pressed but transmission does not occur.	Microphone connection is poor. Connect microphone properly. Antenna connection is poor. Coonect antenna properly.

Specifications

General

Frequency	Tx/Rx: 462.5625~462.7125 Tx/Rx: 462.5500~462.7250 Tx: 467.5500~467.7250 Rx: 462.5500~462.7250
Channel	200
Frequency stability	±1ppm
Operating temperature	-30˚C~+60˚C
Operating voltage	13.8V DC
Dimension	107x125x45mm

Receiver

Sensibility	0.2μV
Adjacent channel selectivity	60dB@12.5KHz 70dB@25KHz
Inter modulation	≥60dB/≥65dB
Spurious rejection	≥70dB
Audio response	+1~-3dB
Audio distortion	<5%
FM hum and noise	≥45dB@25KHz ≥40dB@12.5KHz
Rated audio	3W

Transmitter

Output power	Tx/Rx:462.5625~462.7125 5W
	Tx/Rx:462.5500~462.7250 25W /5W
	Tx:467.5500~467.7250 25W/5W
Transmitting current	4A@13.8V
Standby current	0.2A@13.8V
FM modulation	Wide band: 16K0F3E
Modulation distortion	<5%
FM hum and noise	≥45dB@25KHz
Adjacent channel power	≥70dB@25KHz
Audio response	+1~-3dB

RF exposure warning :
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment shall be installed and operated
with minimum distance 44.7cm between the radiator & body

For a transmitter that can only be operated with an FCC license, warnings concerning compliance with applicable licensing requirements and information concerning license application procedures.

FCC Warnings and Statements

IMPORTANT!

Changes or modifications to this unit not expressly approved by MIDLAND RADIO CORPORATION could void your right to operate this unit. Your radio is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the COMMUNICATOR to exceed those limitations. Any adjustment to your radio must be made by qualified technicians.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions; (1) this device does not cause any harmful interference, and (2) this radio must accept any interference thay may cause undesired operations

IMPORTANT NOTICE, FCC LICENSE REQUIRED FOR GMRS OPERATION
(Only Applicable for GMRS Radio Use in the United States)

The radios operate on GMRS (General Mobile Radio Service) frequencies which require an FCC (Federal Communications Commission) license. You must be licensed prior to operating on channels 1 - 23, which comprise the GMRS channels of the radio.
Serious penalties could result from unlicensed use of GMRS channels, in viola-tion of FCC rules, as stipulated in the Communications Acts Sections 501 and 502 (amended).
You will be issued a call sign by the FCC which should be used for station identification when operating the radio on GMRS channels. You should also cooperate by engaging in permissible transmissions only, avoiding channel interference with other GMRS users, and being prudent with the length of your transmission time.
To obtain a license or ask questions about the license application, contact the FCC at 1-888-CALL FCC or go to the FCC's website:
http://www.fcc.gov and request form **605**.