

To Customers

Thank you very much for using **TYT** Mobile Radio. 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 be 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.

Contents

Users Safety Information	01
Package Includes	01
Main Features	02
Initial Installation	03
Mobile Installation	03
DC Power Cable Connection	04
Fixed Station Operation	05
Replacing Fuses	07
Antenna Connection	08
Accessories Connections	09
External Speaker	09
Microphone:	10
Getting Acquainted	11
Front Panel Operation	11
Display	14
Microphone	15
Basic Operation	17
Switching the Power On/Off	17

Adjusting the Volume	17
Switch between VFO and Channel Mode	17
Adjusting Frequency/Channel through Selector Knob	17
Receiving	18
Transmitting	18
Transmitting Tone-Pulse	19
Transmitting Optional Signaling	19
Channel Edit	19
Channel Delete	19
Shortcut Operations	20
Frequency Scan	20
Offset Direction and Offset Frequency Set up	20
Operation of the composite key	22
Beep (FUN+0)	22
Channel Scan (FUN+1)	22
Frequency Channel Step Setup (Fun+2)	23
CTCSS/DCS Frequency Setting (FUN 3/Tone)	23
TOT (FUN+4)	23
Keypad Lockout (FUN+5)	24
Squelch Level Setting (FUN+6/A/B)	24

LCD Backlight Display Time Setting (FUN+7)	24
High/Mid/Low Power Selection (FUN+8)	24
DTMF Current Channel Edit (FUN+9/Scan)	24
Channel Deleted Quickly (FUN+VFO)	25
Channel Copied Quickly (FUN+Call)	25
Talk Around (FUN+*)	25
Reverse Frequency (FUN+#)	25
Menu	26
1. Signaling	26
2. Scan	26
3. Contacts (Gps Optional)	26
4. Setting	26
Menu Operation	28
Key Setting	35
DTMF operation	37
DTMF decoding	37
DTMF setting	40
DTMF operating:	40
2 Tone Operation	41
2 Tone encode	41

2 Tone decode	41
5 Tone Operation	41
5 Tone encode	41
Simple Trouble Shooting	42
Specifications	43
General	43
Receiver	43
Transmitter	44

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:

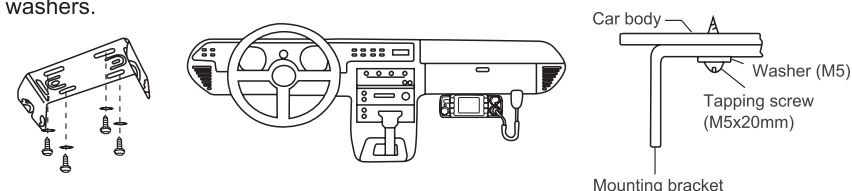
- Distribute buttons reasonably, convenient for operation. Adopt superior quality material, better technology and high quality radiator to ensure stable and durable operation.
- IP 67 waterproof (Optional)
- GPS (Optional)
- 1750/2100/1000/1450 Tone
- Automatic power-off
- 200 programmable memorized 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, 20K for middle band, or 12.5K for narrow band.
- Five programmable multi-functional keys, can set various shortcut operation according to different requirement.

Initial Installation

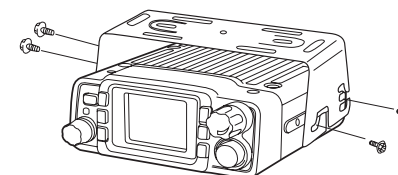
Mobile Installation

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.

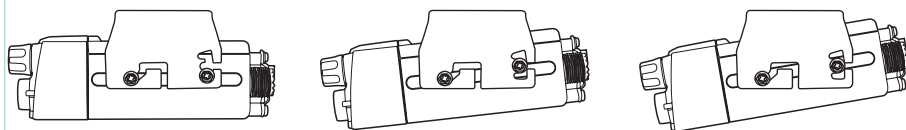
1. Install the mounting bracket in the vehicle using the supplied self-tapping screws and flat washers.



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

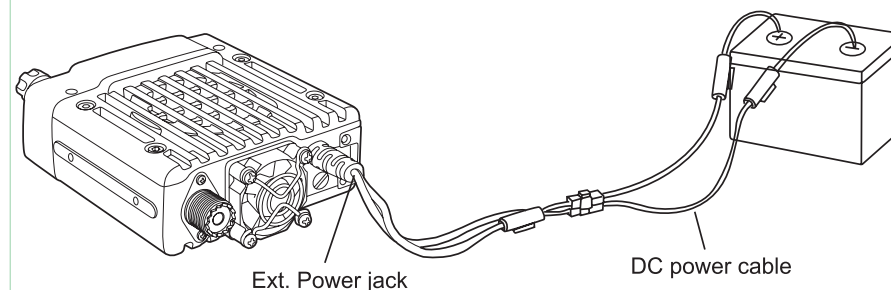
Note: Locate the power input connector as close to the transceiver as possible.

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 wiring 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.

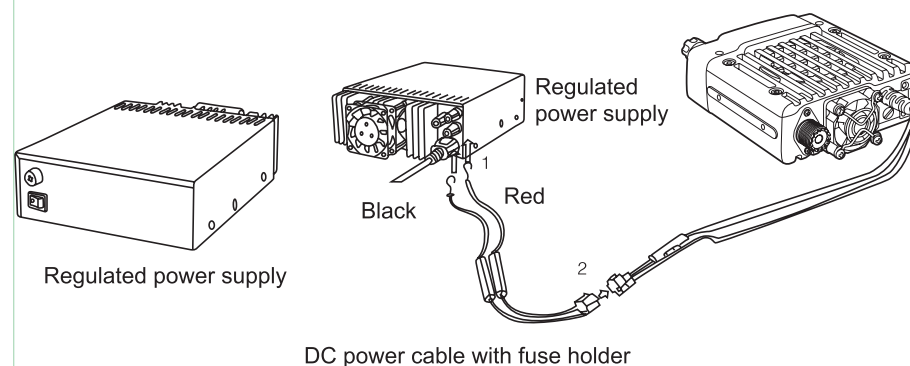
Do not substitute a cable with smaller gauge wires.

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.

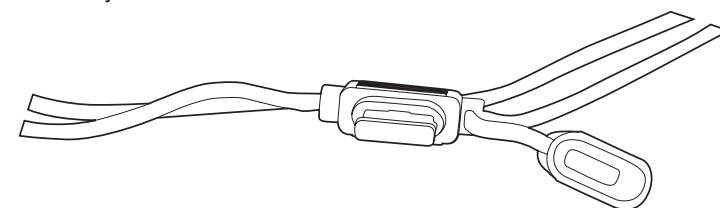
Note: Before connecting the DC power to the transceiver be sure to switch the transceiver and the DC power supply OFF.

Do not plug the DC power supply into an AC outlet until you make all connections.



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
Receiver	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.

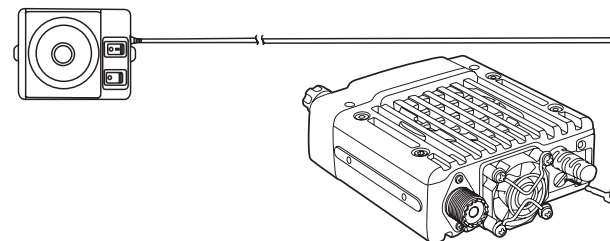
Note: Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the antenna to the transceiver before transmitting. All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock and transceiver damage.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

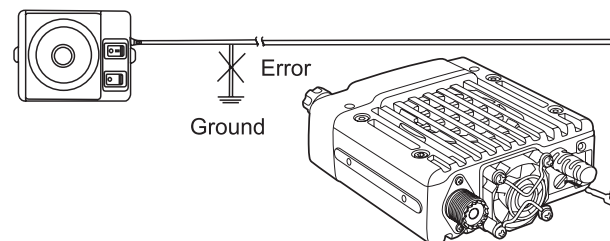
Accessories Connections

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.

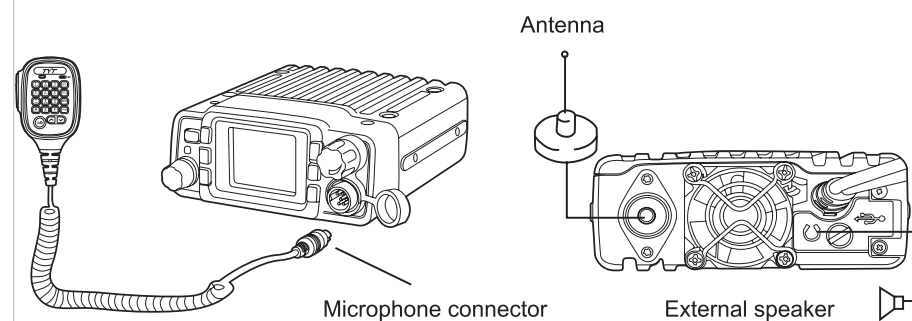


Note: External speaker output adopts double port BTL. Please be aware that the speaker can't connect to the ground otherwise the speaker will fault. The wrong connection way is as below:



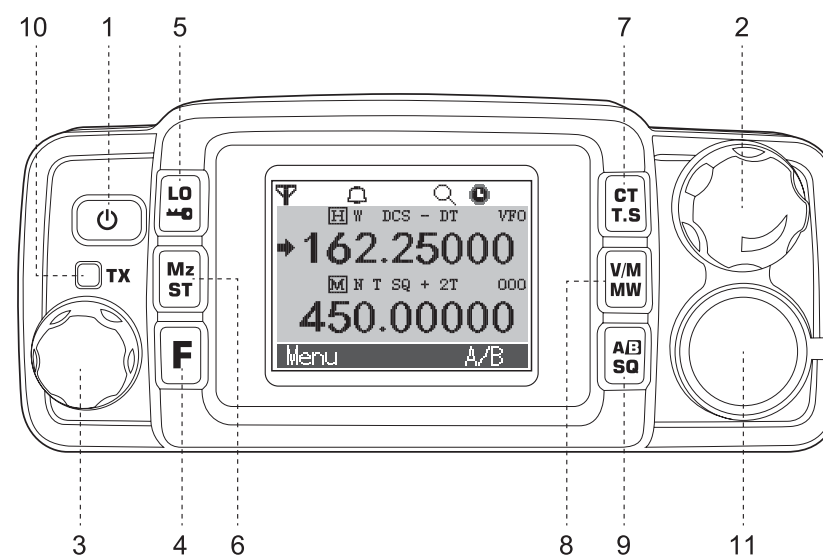
Microphone:

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
		Long press to switch the UHF/VHF in the VFO mode
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
	Long press to switch the UHF/VHF in the VFO mode
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