

VHF/PTT TH-680



**Dual Mode IP/Analog Radio
VHF / PTT (POC)
Communication**

TH680

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TYPE	PARAMETERS	SPECIFICATIONS	
Mechanical Properties	Model No.	TH-680	
	Dimension	38 (H) x 58 (W) x 135 (L) mm	
	Weight	320g	
	Working Temperature	-30°(to +75°(
Basic Parameter	Working Voltage	6.4V--8.4V (Standard 7.6V)	
	Working Current	31 0mA @ UTMS 2100/900 280mA @ GSM 900	
	Peak Current	1.8A	
RF Parameter	LTE FDD	81 : 2100MHz 83: 1800MHz 87: 2600MHz 88: 900MHz 820 :800MHz	
	WCDMA	Band1 : 2100M OR Band2 : 1900M Band8: 900M Band5: 850M	
	GSM	GSM/GPRS : 900 / 1800 MHz	
	Maximum Output power	WCDMA 900 / 2100M : Power Class3 (+24d8m +2.5d8m/-1.5d8m); GSM / GPRS 850 / 900M : Power Class4 (+33d8m +2.5d8m/ -0.5d8m); GSM / GPRS 1800 I 1900M : Power Class1 (+30d8m +2.5 dBm/ -0.5d8m);	
	Receiving Sensitivity	WCDMA 900: < -108 dBm; WCDMA 2100: <-109d8m; GSM 900/1800 : < -106 dBm	
GPS	GPS	GPS Positioning, 1.57542GHz;	
	Sensitivity	Catch -144dBm, Track -159dBm;	
Technology Standard	Data Speed Rate	GSM CS : UL 9.6kpbs / DL 9.6kpbs GPRS : Multi- slot Class 10 EDGE: Multi-slot Class 12 WCDMA CS : UL 64kpbs / DL 64kpbs WCDMA PS : UL 384kpbs / DL 384kpbs	
	Protocol	HSDPA / WCDMA / EDGE/ GPRS / GSM	
Analog Parameter	GENERAL		
	Frequency Range	UHF : 400-480MHz OR VHF : 136-174MHz or 240-260MHz	
	Channel Number	199	
	Channel Space	25/12.5KHz	
	Frequency Stability	±2.5 ppm	
	TRANSMITTER		
		Wide band	Narrow band
	Power Output	5W	
	Modulation	16K<l>F3E	11K<l>F3E
	Spurious Emission	-36dBm	-36dBm
	Adjacent Channel Power	70dB	60dB
	RECEIVE		
	RF Sensitivity (12db SINAD)	0.20 μV	0.20 μV
	Adiacent Channel Selectivity	60dB	55dB
	Intermodulation Rejection	65dB	60d8
Spurious Response	65dB	65dB	

Items in the Package

TH680 VHF/PTT DEVICE

Checking Equipment

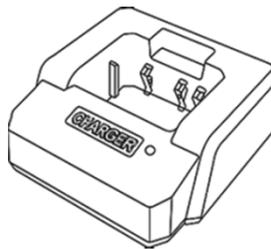
Carefully unpack the radio.

We recommend that you identify the items listed in the following table before discarding the packing material.

If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.



IP & Analog
Antennas



Charger Cradle



Adapter



Battery

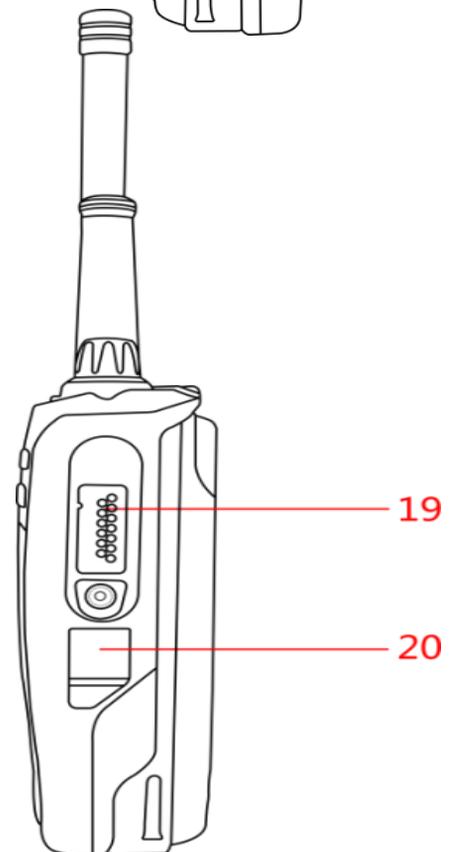
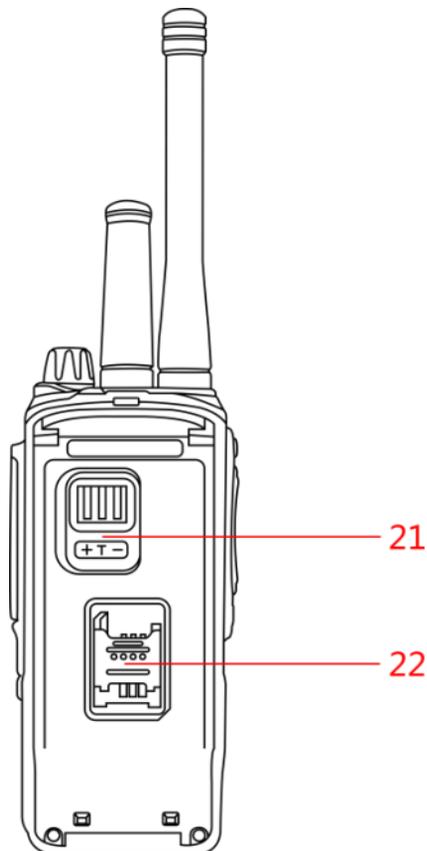
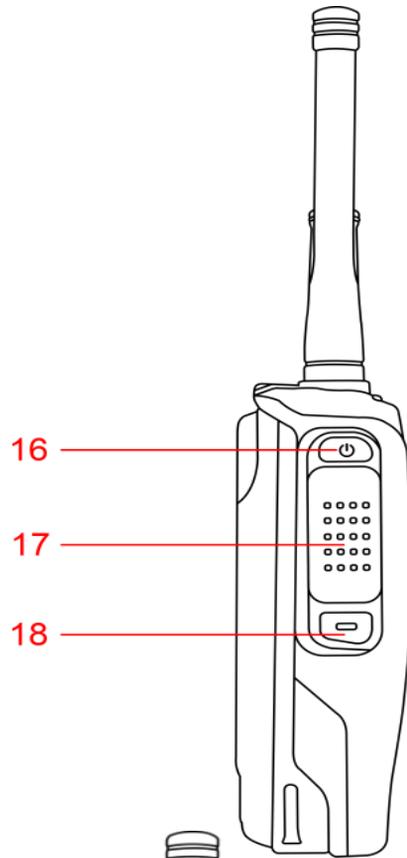
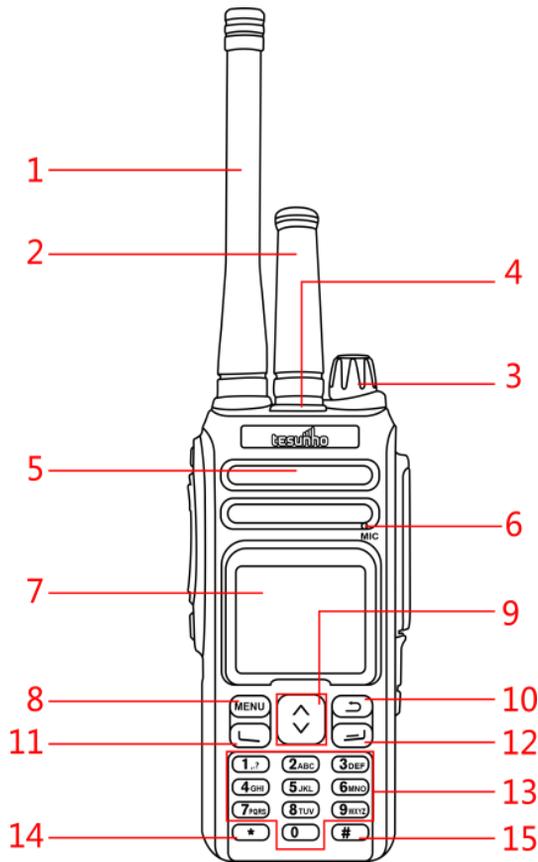


Belt Clip



ITEM	QUANTITY
IP Antenna	1
Analog Antenna	1
Charger Cradle	1
Adapter	1
Battery	1
Belt Clip	1
User's Manual	1

TH680 VHF/PTT DEVICE





Communicate between two or more devices at just the push of a button



TH680 VHF/PTT DEVICE

1. Antenna (Analog)
2. Antenna (IP)
3. Power Switch and Volume Control
4. Indicator Lamp
5. Light Red: Transmitting
6. Light Blue: Receiving
7. Speaker
8. MIC
9. LCD Screen
10. Menu Key
11. Enter the submenu or confirm/save the selection
12. UP Key / DOWN Key
13. Back Key / Delete Key
14. Back to the previous menu or delete input
15. Call Key
16. Answering/Making phone call or get user/friend APRS information
17. Exit Key
18. Exit to the home screen or hang up phone call
19. Numeric Keypad
20. "*" Key
21. Standby Mode:
22. Long press - Scanning the ☆marked channels/ frequencies (*main at Analog mode*)
23. "#" Key
24. Standby Mode:
25. Short press - Switch between Analog frequency mode & Analog channel mode
Long press - Reverse frequency (shows R after reversed)
26. PF2 Key
27. Squelch Key (Analog) / SOS Key (IP) Short press - Open/Close squelch Long press - Send/Cancel SOS
28. PTT (Push To Talk)
29. PF1 Key
30. Short press - Switch between IP & Analog modes
31. Long press - Lock/Unlock Keypad 19. Speaker/Microphone Jack 20. Micro USB Jack
32. Radio can be charged via a standard micro USB cable
33. Battery Contactor
34. SIM Card Slot

Icon	Definition
	Battery Power
	Battery Charging
	Signal Strength
SOS	SOS
GPS	Red GPS: GPS enabled, no GPS positioning Green GPS: GPS enabled, GPS positioning acquired
	Repeater
	Phone Call
	Keypad Locked
	Dispatcher MSG
	Current Working Mode
S	Power Save Mode
L	Low-power
H	High-power
CTS	CTCSS Enabled
DCS	Digital Coded Squelch Enabled
N	Narrow Band (12.5KHz)
	Waiting To Receive
R	Frequency Reversed
	Receiving
	Added To Scan List

Please check the following two items before using

- A. Please make sure the SIM card has been activated and has start the data service.
- B. Please make sure the radio has been programmed with the activated platform account and the correct APN information.

If not, please contact local dealer for assistance.

1. Power On

Turn the volume control clockwise to power on.
IP part once logged in, LCD will display user name/group information.

2. Power Off

Turn the volume control anticlockwise to power off.

NOTE: Can not remove battery directly to power off, otherwise it will lead to the data loss and the radio damages.

3. Transmitting

Press PTT to transmit (LED indicator lights red), keep away from microphone 2.5cm-5cm.

Exception & Talking Priority: If there is an advanced user starts to talk when you're transmitting, you will be forced to exit the transmitting mode.

4. Receiving

IP: The LED indicator lights blue, LCD screen displays transmitter's name and "speaker" icon  when receiving.

Analog: The LED indicator lights blue, LCD screen displays "speaker" icon  when receiving.

Three Working Modes

Enter MENU-ADV Settings to set working mode.

IP Only: Only can receive signal from IP radio.

Analog Only: Only can receive signal from Analog radio.

Dual Mode: Can receive signal form both IP radio & Analog radio.

Automatic switching working mode according to the signal it received.

Basic Operations

TH680 VHF/PTT DEVICE

Switch Working Modes

In standby mode, short press PF1 Key (Side Third Key) to switch between IP & Analog modes. In standby mode, short press “#” Key to switch between Analog Frequency Mode and Analog Channel Mode.

Use up/down key to choose needed frequency/channel, or input needed frequency/channel number by numeric keypad, then short press MENU Key to confirm the input frequency/channel

Menu Operation

- Press **MENU** Key to enter menu/submenu
- Press “▲” or “▼” Key to choose menu item
- Press **MENU** Key to confirm/save the selection
- Press ↶ Key to return to the previous menu

Menu	Submenu	Settings	Function Instruction
Choose Group	Group List	-----	Choose a group, then you can transmit and receive message within the group
Friends List	Friends List	-----	Enter to make private call to the friend(s) that added on platform
User List	User List	-----	Enter to make private call to the group member(s)
ADV Settings	Working Mode	IP Only	Only IP Mode is available
		Analog Only	Only Analog Mode is available
		Dual Mode	Both IP & Analog are available
	Repeater Mode	Analog To IP	Transform Analog signal to IP
		IP To Analog	Transform IP signal to Analog
		Auto	Can transform IP and Analog signal automatically
	TX. Selection	OFF	-----
		Auto	Automatically select TX. Mode according to the last received signal
	RX. Priority	Manual	Select TX. mode manually
		Sequence	Different signals will be received in sequence
		IP	IP signal will be received first
		Analog	Analog signal will be received first
		Dual	IP and Analog signals will be received at the same time
	Network Mode	4G Only, 2G/3G, Auto, 2G Only, 3G Only	-----
	SPK Level	Standard / +1/+2/-2/-1	Adjust speaker gain according to the environment
MIC Level	Standard / +1/+2/-2/-1	Adjust MIC gain according to the environment	
Sound Quality	STD Mode	4K Standard Voice Quality	
	HQ Mode	8K High Voice Quality	
Record Control	ON / OFF	Open / Close TX. & RX. Recording function	
PoC Update	-----	Enter to upgrade PoC version	

Menu	Submenu	Settings	Function Instruction	
Analog Settings	Storage Channel		Under Frequency Mode, input desired channel number to store frequency in the corresponding channel number	
	Delete Channel		Enter to delete needless channel	
	TX. Power		High	Hight output power
			Low	Low output power
	RX. CDC	67.0~254.1		Receiving CTCSS setting
	Short press "*" key to switch CTCSS/DCS /OFF setting modes		D023N~D754N, D023I~D754I	Receiving DCS setting
			OFF	Short press "#" key to select normal / reversed DCS
	TX. CDC	67.0~254.1		-----
	Short press "*" key to switch CTCSS/DCS /OFF setting modes			Transmitting CTCSS setting
			D023N~D754N, D023I~D754I	Transmitting DCS setting
	W/N		Narrow	12.5 KHz
			Wide	25 KHz
	BCLO		Carrier	Can't transmit when receiving
			QTDQT	Can't transmit if CTCSS/DCS tone among radios are different
			OFF	-----
	TOT		OFF/30/60.../270	When transmitter time out timer, it will not stop warning until release PTT
	TX Roger		ON/OFF	Beep alarm when press/release PTT
	SQL		0-9	Squelch Level is an analog reference level number that the transceiver's CPU uses to set the internal squelch threshold Range: 0(Open) to 9(Tight) Default: Level 4
	Step		2.5KHz -100KHz	Setting of frequency step
	Power Save Mode		ON/OFF	Save battery consumption when it is on
	Scan. Mode		Time	Radio will stop if sense a signal, and waiting 5 seconds Re-scanning if no PTT is pressed during this period
			Carrier	Radio will stop if sense a signal, staying in this channel till signal is interrupted, and then re-scanning
			Search	Radio will stop if sense a signal
	Scan. Add (Only can use under Channel Mode)		Add	Add the current channel to scan list; the "★" icon displays
			Del	Remove the current channel from scan list
	Channel Display		Frequency	Display transmitting/receiving frequency and channel number
			Channel	Only display channel number "CH-XXX"
Name			Display channel name and number If did not set channel name, then display channel number "CH-XXX" only	
Channel Edit			Edit channel name under channel mode. Press "#" key to switch inputting mode, "Back" key to delete, "*" key for character table	

Menu	Submenu	Settings	Function Instruction
Dispatcher MSG			Enter to check the dispatcher message
Audio Records			Enter to check the PTT records
Contacts			Add the phone call contacts list by programming. Enter contacts list to choose a phone number to make phone call directly
Records			Enter to check the dialed, received, missed phone call records. Can choose a phone number to make phone call directly
GPS INF			Enter to check the local GPS information (Latitude and longitude)
Settings	SOS Mode	Normal	SOS alarm every 30 seconds and will stop after 3 cycles
		HOT MIC	SOS alarm 30 seconds, auto open MIC 10 seconds, then close 20 seconds, and will stop after 3 cycles
		OFF	Close SOS function
	Time Zone	-12~12	Enter to choose the correct local time zone
	Backlit Mode	Auto	Backlight turns on automatically when operating on keys, transmitting/receiving Backlight off automatically after 30 seconds no operation
		Key	Backlight turns on automatically when operating on keys Backlight off automatically after 30 seconds no operation
		ON	Backlight keeps on
	Auto Lock	ON	Keypad locked automatically after 10 seconds no operation. Only can use PTT and side keys
		OFF	Long press Side Third Key 3 seconds to lock/unlock keypad
	Beep	ON	A beep when operating on keys
		OFF	No voice when operating on keys
	Roger Beep	ON/OFF	Beep alarm when press/release PTT
	Languages	English/CHS	-----
About			Enter to check software version, network system and IMEI

1. Phone Call

- 1) Make phone call through your Contacts list or Records list.
- 2) In standby mode, short press Call Key() to enter dialing mode to make phone call.
- 3) Short press Menu Key or Call Key to answering /making phone call, short press Back Key or Exit Key () to hanging up.

NOTE: Before using, please make sure radio phone function has been enabled, and SIM card is allowed to make phone call. If not, please contact local dealer for assistance. (You need to set the network mode to intelligent or 2G when you dial the number.)

2. Multi-members Selective Call

Enter friend or user list, short press "*"Key to select one or more (5 friends /users at most), press MENU Key to create temporary group, then press PTT for selective call. Short press Exit Key () to exit.

3. Selective Call Alarm

After created temporary group with a friend/user, short press "*"Key to send call alarm if in need.

4. Quick Call

(a) Code Call

- Add three numbers in the front of user/friend name when creating users on platform.
- In standby mode, press the first three numbers of the one you want to call to quick searching the user/friend. Then press PTT to call.

(b) Quick Access Keys' Call

Enter choose group/ friend list/ user list, long press the number keys can store the current chosen group, friend or group members in the corresponding key. In standby mode, long press of key will recall the group, friend or group members stored in the keys.

5. Quick Searching

Enter Choose Group/Friends List/User List, press the character(s) in group/friend/user name on keypad to quick search the group/friend/user, press MENU Key to confirm the selection.

NOTE: Short press "#" Key for the transform of letter and digital.

6. Monitor Group

Enter Choose Group, short press "#" Key to monitor other group(s),the selected group(s) color turn to red. Short press again to cancel.

7. APRS Information

Enter friend or user list, long press Call Key() for 3 seconds to get the online user's APRS information.

8. Repeater

Enter MENU-ADV Settings to choose repeater working mode. The repeater function help to realize the communication between IP and Analog radios.

Auto: Can transform IP and Analog signal automatically

IP To Analog: Transform IP signal to Analog

Analog To IP: Transform Analog signal to IP

9. TX Selection

Enter MENU-ADV Settings to set transmitting mode switch automatically or manually.

Auto: Automatically select TX. mode according to the last received signal

Manual: Select TX. mode manually

10. RX Priority

Enter MENU-ADV Settings to set receiving priority rights.

IP: IP signal will be received first

Analog: Analog signal will be received first

Dual: IP and Analog signals will be received at the same time

Sequence: Different signals will be received in sequence

