

UV-2520 User Manual

For User

Do not charge the radio or battery in an explosive environment, such as gas, dust, smoke area etc. Please turn off the radio when nearby gas station. Do not disassemble or modify the radio. do not leave the radio under dusty or wet environment. It's very important for users to understand all instruction knowledge before using the radio, please obey the local legal rules.

Warnins:

The Radio is pre-configured with 8 GMRS repeater channels: 467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, and 467.7250 MHz.

device that is used to increase the range of two way radios. Repeaters will receive a transmission on one frequency and simultaneously rebroadcast that transmission on a different frequency. Repeaters are often set up in a fixed location and connected to an antenna that is mounted at a higher elevation to provide better range than is normally available with radio-to-radio (simplex) communications.

Using GMRS repeaters can significantly increase the range of your radio, but just tuning to one of the repeater channels isn't necessarily going to work. You first have to be sure there is a repeater listening on that channel's frequency, and you have to be within range of that repeater.

In basic terms, a repeater is a It is important to keep in mind that a GMRS repeater is not necessarily intended for public use.

They are owned by individuals and are sometimes intended for private use or require permission to use.

Before connecting to a GMRS repeater, be sure that you have permission or that the owner is fine with public use. The description on the myGMRS website usually indicates if permission is required and provides a way to get in touch with the owner.

-----§ 95.1743 Minor GMRS operators.

Operators under the age of 18 will not be held personally responsible, pursuant to § 95.343, for improper operation of a GMRS repeater or base station. The holder of the individual license under which the minor operates is solely responsible for any improper operation that occurs while an individual under the age of 18 is operating the station.

For Antenna:



Accord to that antenna length in different regions, only below type antenna was authorized use in the product.

Antenna Model: TQC-BG-5.0-465V

Antenna Type: Whip steel antenna

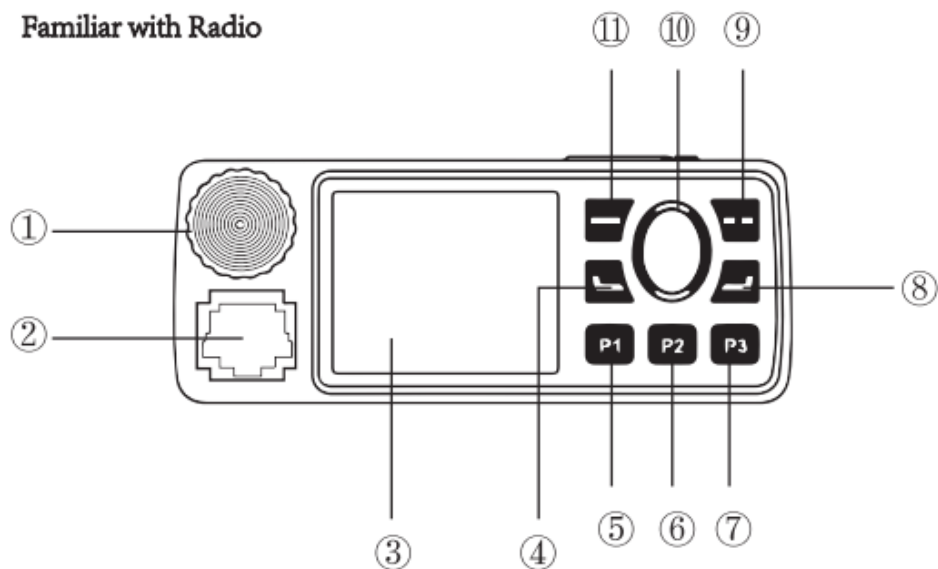
Antenna Gain: 0dBi

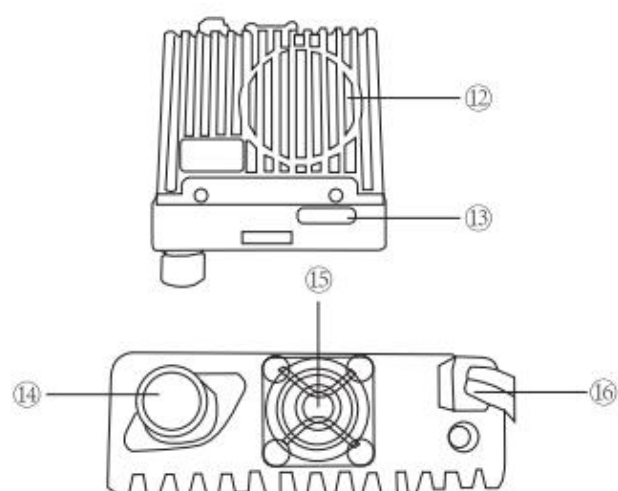
Product Checking

Thanks for choosing our radio. please unbox and check whether the following accessories are included and well-packed. If there's anything missing or damaging after unboxed, please contact your local distributor.

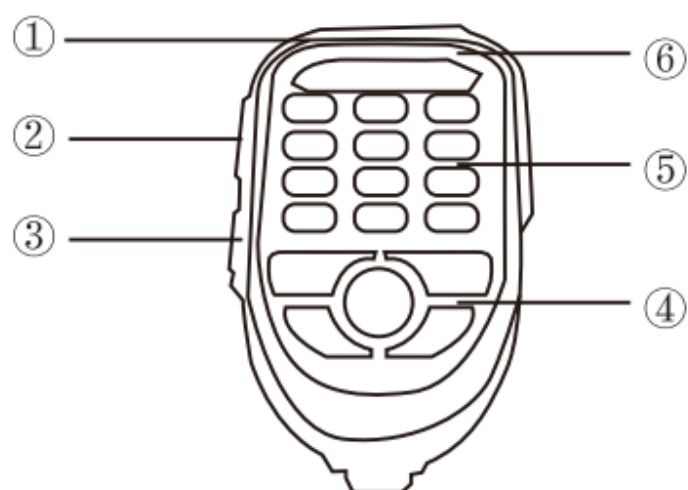
| NO | Item | QTY |
|----|----------------|-----|
| 1 | Device | 1 |
| 2 | Microphone | 1 |
| 3 | Holder | 1 |
| 4 | Screw | 1 |
| 6 | User Manual | 1 |
| 7 | Guarantee Card | 1 |

Familiar with Radio

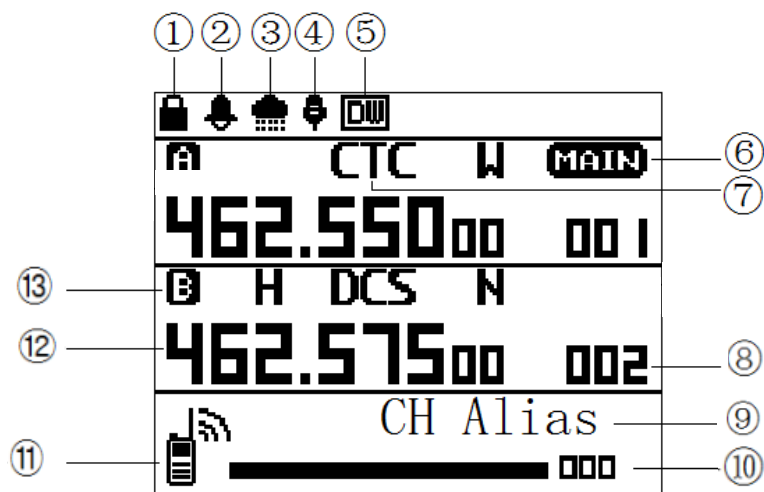




- | | | | |
|--------------------------------|-------------------|---------------------|---------------------|
| ① ;Turn ON/OFF & Volume Button | ⑥ Definable Key 2 | ⑪ Confirm Key | ⑫ Speaker |
| ② Hand-MIC & Earpiece Jack | ⑦ Definable Key 3 | ⑫ Speaker | ⑬ TF Card Slot |
| ③ Screen Area | ⑧ Right Key | ⑬ TF Card Slot | ⑭ Antenna Connector |
| ④ Left Key | ⑨ Exit | ⑭ Antenna Connector | ⑮ Radiator Fan |
| ⑤ Definable Key 1 | ⑩ UP/DOWN Key | ⑮ Radiator Fan | ⑯ Power Cable |



- ① Indicator Light ② PTT-1 ③ PTT-2 ④ Function Key Area ⑤ Numeric Key Area ⑥ MIC



- ①Lock & Remote Stun ②Roger Beep ③NOAA ④VOX ⑤Dual Standby
 ⑥Main Area ⑦CTCSS/DCS ⑧Channel Number ⑨Channel Alias
 ⑩ RSSI or MIC Strength Indicator
 ⑪TX/RX Indicator or Fan Indicator ⑫Working Frequency
 ⑬ A/B Area Indicator

| Radio Keys | Hand-MIC Keys | Function |
|---------------|---------------|--|
| ON/OFF/Volume | | Short-press:lock/unlock the keypad |
| | | Long-press:Turn on/off the radio |
| | | Clockwise:turn up the volume |
| | | Anti-clockwise:turn down the volume |
| 【—】 | 【MENU】 | Short-press:confirm setting or enter into menu |
| | | Long-press: enter into/exit DTMF input mode |
| | | DTMF Code : A |
| 【--】 | 【EXIT】 | AB Short-press:cancel setting or exit menu,switch working frequency AB band |
| | | Long-press:switch single/dual display |
| | | DTMF Code : D |
| 【~】 | 【▲】 | Short-press:switch frequency/channels/menu list upward |
| | | Long-press:fast switching of frequency/channels/menu list,FM scanning upward |
| | | DTMF Code : B |

| | | |
|----------------|-----|--|
| 【↵】 | 【▼】 | Short-press:switch frequency/channels/menu list downward |
| | | Long-press:fast switching of frequency/channels/menu list,FM scanning downward |
| | | DTMF Code : C |
| 【↵】 | | Short-press:switch from channel report methods to channel name report or channel number report |
| 【↵】 | | Short-press:switch channel mode or frequency mode |
| 【P1】 【P2】 【P3】 | | Definable keys |
| | 【1】 | Short-press:input digit 1 |
| | | Long-press:enter/exit frequency input mode, which is used via repeater |
| | | DTMF Code: 1 |
| | | Character Input:ASCII code (symbol,digit,letter) |
| | 【2】 | Short-press:input digit 2 |
| | | Long-press:switch from priority TX to edit or busy |
| | | DTMF Code: 2 |
| | | Character Input: A B C a b c |
| | 【3】 | Short-press:input digit 3 |
| | | Long-press:turn on/off VOX |
| | | DTMF Code: 3 |
| | | Character Input: D E F d e f |
| | 【4】 | Short-press:input digit 4 |
| | | Long-press:Switch high/low power |
| | | DTMF Code: 4 |
| | | Character Input: G H I g h i |
| | 【5】 | Short-press:input digit 5 |
| | | Long-press:switch to squelch level |
| | | DTMF Code: 5 |
| | | Character Input: J K L j k l |
| | 【6】 | Short-press:input digit 6 |
| | | Long-press:turn on/off dual-band standby |

| | | |
|--|----------------|---|
| | | DTMF Code: 6 |
| | | Character Input: M N O m n o |
| | 【7】 | Short-press:input digit 7 |
| | | Long-press:turn on/off backlight |
| | | DTMF Code: 7 |
| | | Character Input: P Q R S p q r s |
| | 【8】 | Short-press: input digit 8 |
| | | Long-press:shift to frequency space menu |
| | | DTMF Code: 8 |
| | | Character Input: T U V t u v |
| | 【9】 | Short-press:input digit 9 |
| | | Long-press:turn on/off keypad tone |
| | | DTMF Code: 9 |
| | | Character Input: W X Y Z w x y z |
| | 【0】 | Short-press:input digit 0 |
| | | DTMF Code: 0 |
| | | Character Input: space key |
| | 【*】 | Short-press:switch from channel report method to channel name report or channel number report |
| | | Long-press:enter/exit FM radio |
| | | DTMF Code: * |
| | | Character Input>Delete Characters |
| | 【#】 | Short-press:switch channel mode to frequency mode |
| | | Long-press:turn on Scan |
| | | DTMF 码: # |
| | | Character Input:turn on/off character inputting |
| | 【PTT-1】 | Main PTT, press this button to transmit signals of the main working frequency |
| | 【PTT-2】 | Sub-PTT,press this button to transmit signals by B band frequency |

4. Function and Operation

4.1 Transmitting Signal

Press [PTT-1] or [PTT-2] to transmit signals, icon ⑫ turns red, and hand-mic light turns green.

Press [PTT-1] to transmit main working frequency signals, press [PTT-2] to transmit B band frequency signals.

4.2 Receiving Signal

When the device receives same frequency signal with current working channel and the CTCSS matches with each other's, the radio will receive and send out the voice, and the icon ⑫ turns blue. If A band receives signals, hand-mic light turns green, while B band receives signals, hand-mic light turns blue.

4.3 Display Mode Switching

Short press 【EXIT】 key to turn on/off dual-band display. When turn off dual-band display, the sub-frequency area will show as system time.

4.4 Channel Switching

Under channel mode status, input channel number via keypads to switch to appointed channel directly. Short press 【▲】 / 【▼】 to switch to working channels one by one. Long press 【▲】 / 【▼】 is fast switching function.

4.7 Air Band Receiving

When the working frequency is set within the range of 108-136MHz, the device enters aviation frequency receiving mode.

The device is not allowed to transmit signals under aviation frequency band status.

4.8 FM function

Long press 【*/FM】 to enter into FM radio mode. Long press 【▲】 / 【▼】 to search for signals, or input frequencies manually via keypads. And short press 【▲】 / 【▼】 to stop scanning.

If you want to receive signals while under FM radio mode, please check with MENU list **FM Standby**, and turn it on.

4.9 NOAA

【P1】 / 【P2】 / 【P3】 key to set to NOAA channels and press the side-key to NOAA weather report channels under standby status. Press 【▲】 / 【▼】 to switch NOAA channels. If not to operate for 2 seconds, the device will scan NOAA channels automatically.

NOAA function is available in countries and areas that are supported only. The followings are 11 NOAA working frequencies.

| | | | |
|---|------------|----|------------|
| 1 | 162.55000M | 7 | 162.52500M |
| 2 | 162.40000M | 8 | 161.65000M |
| 3 | 162.47500M | 9 | 161.77500M |
| 4 | 162.42500M | 10 | 161.75000M |
| 5 | 162.45000M | 11 | 162.00000M |
| 6 | 162.50000M | | |

4.10 Inputting Method

You can change relative characters via inputting method both in Menu list **Personal ID** and Menue list **CH Name**.

4.10.1 Delete Character

when in **Person ID**, the display content will be added blank characters automatically to 16 bytes(2 bytes per Chinese character, 1 byte per Digit/English letter/symbol). while in **Channel Name**, the display content will be added blank characters automatically to 10 bytes. You can move the cursor via 【▲】 or 【▼】 to certain place, then press 【*】 to delete the characters before it.

4.10.2 Inputting of Digit/Symbol/English Letter

When in **Personal ID** or **CH Name** status, input numeric keys directly to finish the numeric inputting. Press 【#】 button to input English letter, press relative keys to complete the inputting.

Steps to input characters

- 1.press 【#】 key to start inputting

2. Press **【1】** key, open ASCII code table (the table consists of digits/symbols/English letters, and the initial character is blank character)

3. press **【▲】** or **【▼】** key to find the needed characters.

4. press the digit key which holds the characters to complete the inputting.

The match-up relationship of digit keys and letters

【1 Characters】 【2 ABC】 【3 DEF】

【4 GHI】 【5 JKL】 【6 MNO】

【7 PQRS】 【8 TUV】 【9 WXYZ】

5. Functions of Definable Keys

To define **【P1】** / **【P2】** / **【P3】** functions in Menu, the following are side-key functions:

1. Off: press defined key, and nothing happen
2. Monit: to monitor the signal of working frequency, and ignore the TX/RX sub-tone setting, force to turn on squelch.
3. Preset CH: to fast switching from current channel to preset shortcut channels. Shortcut channels are set by software.
4. Local Alarm: to give out emergency alarm and report to surroundings at the same time.
5. Remote Alarm: to give out emergency alarm and transmit the alarm via main working frequency.
6. NOAA CH: to enter/exit NOAA weather report channels.
7. Send Tone: to transmit a fixed frequency Tone via main working mode. The tone is set by software.
8. Roger Beep: to change end tones.

6. Instruction of Menu

【startup logo】 to turn on/off the image of startup

【ringtone】 to turn on/off startup tone

【prompt text】 to turn on/off startup greeting

【key beep】 to turn on/off keypad tone

【roger beep】 to turn on/off TX end tone

【dual display】 to turn on/off dual display

【TX priority】 to switch priority transmitting to edition mode or busy mode. If set to edition mode the radio transmits the signal under main channels. If set to busy mode, the main channel is set to the receiving channel to transmit signals under receiving.

【SQ level】 to set SQ level

【LED timer】 to set backlight time

【TOT】 to set the max TX time.

【VOX level】 to set VOX level

【VOX delay】 to set VOX delay time

【NOAA Monitor】 to turn on/of NOAA monitor.

【FM Standby】 to turn on/off main frequency receiving function while in FM status.

【Tail Tone】 to turn off/on tail tone.

【scan DIR】 to set scan direction.

【scan mode】 T0:to continue to scan after receiving.

C0:start to scan once the signal gone.

SE: stop scanning after receiving signal.

【scan timer】 to set standing time.

【scan end】 to exit scan.

【Personal ID】 to set local ID.

【CTCSS/DCS】 to set the sub-tones of TX/RX frequency, switching sub-tone mode via **【*】** key, press

【▲】 or **【▼】** to switch sub-tones.

【RX CTCSS/DCS】 to set RX CTCSS/DCS of main frequency.

【TX CTCSS/DCS】 to set TX CTCSS/DCS of main frequency.

【Busy Lock】 to set busy lock. If carriers match, and the channel is not allowed to transmit no matter their CTCSS/DCS matches or not. If CTCSS/DCS matches successfully, the radio is not allowed to transmit.

【Scrambler】 to set voice scrambler number on main frequencies, if the number is 0, the scrambler is turned off.

【DCS Encrypt】 When there is digital sub-tones on main frequencies, turn on encryption function will re-encrypt to digital sub-tones. Only supported to digital sub-tones.

【Mute Code】 This is non-standard DCS, can be defined to 23 or 24 digits. Press the **【▲】** or **【▼】** to choose CTCSS mode, input digits to become non-standard DCS code. The saved non-standard DCS code can be checked in this list.

【CH Name】 to set channel name of main frequency.

【Save CH】 Copy and save information of current channel to appointed channels. The CH-XXX N/Y shows up when enter the list. N means empty channel. Y means not empty channel. To input the digits manually to shift to appointed channel.

【Delete CH】 to delete information of appointed channels. To input the digits manually to shift to appointed channel.

【RX record】 to turn on/off RX record.

【TX record】 to turn on/off TX record.

【Record log】 to check recorded voice, and the recording shows up as “sequence number+ channel number+recording duration + recording time” . Red characters means to transmit recording, blue characters means to receive recording. Press **【*】** to delete current recording. Press **【#】** to play current recording.

Note: do not remove the TF card arbitrarily, or the recording will not match.

【GPS】 to turn on/off GPS.

【GPS Monit】if the radio has GPS, please turn on the GPS and GPS monit, the radio will send the GPS module to the connected computer. The data can be parsed via GPS monitor software or port instrument. The Bard rate of programming cable is Normal mode 115200, slow mode 19200. please turn off this rate while write or read data, or it will fail to write or read.

【UTC area】to set UTC area to match local time.

【APO】to set shutoff time to reduce power consumption.

【Initialize】to initialize the radio to the last writing status.

【Version】to check firmware version and version date.

【Instruction】to scan QR code to check with user manual.

7. Specifications

| General Part | |
|---------------------|--|
| Frequency Range | RX : FM band 64-108MHz Aviation frequency band: 108-136MHz NOAA WEATHER 161.650-162.550MHz Scanning: 108-520MHz TX/RX : 462MHz/467MHz |
| Channel Capacity | 23CH (& 11CH NOAA WEATHER) |
| Voltage | 13.8V DC |
| Working Mode | Same frequency simplex,different frequency simplex |
| Antenna | Removable Antenna |
| Frequency Stability | ≤ 5ppm |
| Working Temperature | − 20 ~ + 60℃ |
| Dimension | 126 X 100 X 40 without holderabout455g without holder |

| Transmitting Part | |
|-----------------------|--------|
| TX Current | ≤4A |
| Modulation Mode | F3E |
| Modulation distortion | <7% |
| Spurious emission | ≤-13DB |

| Receiving Part | |
|----------------|--|
|----------------|--|

| | |
|--------------------|-----------|
| Audio Distortion | ≤5% |
| Audio Output Power | ≤3W (16Ω) |
| RX Current | ≤500mA |
| Standby Current | ≤150mA |

Note: The above parameters are subject to change without prior notice!

| GMRS CHANNELS | | | | | |
|---------------|-------|-----------|-------|-----------|-------|
| A | POWER | B | POWER | C | POWER |
| 462.5500M | H | 462.5625M | H | 467.5500M | H |
| 462.5750M | H | 462.5875M | H | 467.5750M | H |
| 462.6000M | H | 462.6125M | H | 467.6000M | H |
| 462.6250M | H | 462.6375M | H | 467.6250M | H |
| 462.6500M | H | 462.6625M | H | 467.6500M | H |
| 462.6750M | H | 462.6875M | H | 467.6750M | H |
| 462.7000M | H | 462.7125M | H | 467.7000M | H |
| 462.7250M | H | | | 467.7250M | H |

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .

This equipment should be installed and operated with minimum distance 40 cm between the radiator& your body.