AnyTone®

Qixiang Electron Science & Technology Co., Ltd.

www.anytone.net

A4.210521

AnyTone®

# AT-D578UV

**Digital DMR and Analog**
**UHF/VHF Two Way Radio**

# Operating Manual

# THANK YOU!

Thank you very much for choosing our AnyTone Digital DMR and Analog mobile two way radio.

This radio adopts the latest advances in technology, providing reliable communication in today's demanding communication environment.

This radio offers both DMR digital and analog communication and introduces an innovative DMR digital processing system. It offers great stability, and reliability, together with long distance communication as well as fashionable design and compact exterior lines. AT-D578UV has full duplex on UU,UV,VV,VU. Dual RX simultaneously (Analog+DMR and Analog+Analog). Dual PTT.Text Messaging, Recording, Voice Message, BT Hands Free, TX Interrupt, AES Digital Encryption, Emergency Alarm, Weather Alarm, GPS, APRS Location Reporting, Roaming, Cross band repeater, Digital Single Frequency Repeater, Bluetooth, Analog DTMF, 2TONE, 5TONE, CTCSS/DCS encode/decode, Compander, Scrambler functions.

NOTE

» *When programming the radio, start by reading the factory software data from the radio, and then rewrite this data with your frequency etc., to a new saved code plug, otherwise errors may occur.*

» *You can use the programming cable with a PC to program the frequency, channel type, power etc. your programming must comply with your FCC (or other country) license certification.*

**This user manual is suitable for below models.**

**AT-D578UV / AT-D578UVIII**

**AT-D578UVB / AT-D578UVIIIB**

**AT-D578UVG / AT-D578UVIIIG**

**AT-D578UV PRO / AT-D578UVIII PRO**

**AT-D578UV PLUS / AT-D578UVIII PLUS**

| **Model Name** | D578UV/ D578UVIII | D578UVG/ D578UVIIIG | D578UV PRO/ D578UVIII PRO | D578UV PLUS / D578UVIII PLUS |
|---|---|---|---|---|
| **Included** | No GPS, No BT | GPS | GPS & BT | GPS, BT,Air band |
| **Glass print** | black | black | black | black+silver |
| **Analog APRS TX** | No | Yes | Yes | Yes |
| **Analog APRS RX** | No | No | No | Yes |
| **Digital APRS TX** | No | Yes | Yes | Yes |
| **Digital APRS RX** | No | Yes | Yes | Yes |
| **Air band RX** | No | No | No | Yes |
| **Memory IC capacity** | 2G | 2G | 2G | 2G |
| **Digital Contact** | 500,000 | 500,000 | 500,000 | 500,000 |
| **Firmware/CPS** | D578UV | D578UV | D578UV | D578UVII |

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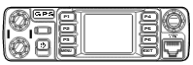
# 1. ACCESSORIES

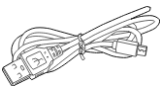
## 1.1 Standard Accessories



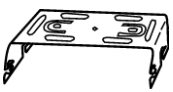
Transceiver

Microphone
SM-0153

DC Power Cable
with Fuse Holder
DYX-0006



USB Programming Cable
QT-0019



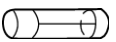
Mobile Mounting Bracket
SJXN-0071

Hardware Kit for Bracket

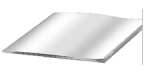
Black screws
(M4X8mm)
4PS(QSS-01A)

Tapping screws
(M5X8mm)
4PS(QSS-01B)

S-Washer
(QSS-01D)

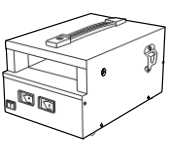


Spare Fuses



User Manual

## 1.2 Optional Accessories

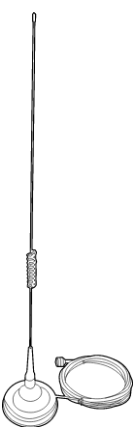


Regulated Power Supply
GJ-0485

Desktop Microphone
SM-0057

External Speaker
S-0018

BT Earphone
QT-0002



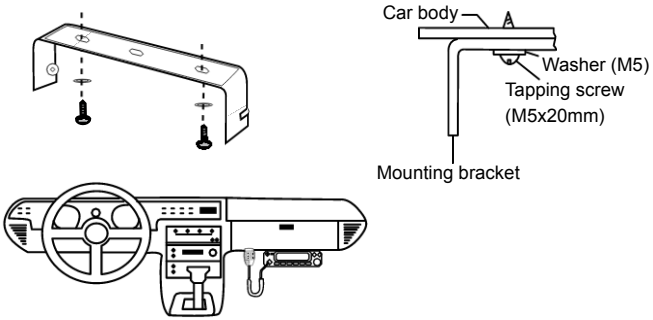
Car Antenna
Tri Band Antenna TX-0048
Dual Band Antenna TX-0010

# 2. INITIAL INSTALLATION

## 2.1 Mobile Installation

To install the transceiver, select a safe, 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 (2pcs) and flat washers (2pcs)




2.Position the transceiver, then 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.

## 2.2 DC Power Cable Connection

NOTE » *Locate the power input connector as close to the transceiver as possible.*

### 3.2.1 Mobile Operation

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.

# 2. INITIAL INSTALLATION

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 recommend 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.

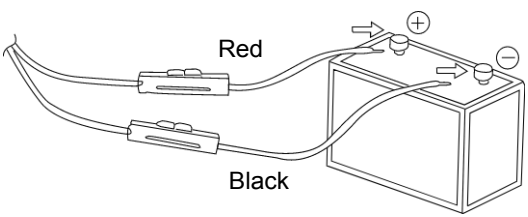
2. After installing cable, in order to avoid the risk of damp, please use heat-resistant tap to tie together with fuse box. Don't forget to reinforce whole cable.

3.In order to avoid the risk of short circuit, please cut down connection with negative (-) of battery, then connect with radio.

4.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.

- ♦ Use the full length of the cable without cutting off excess even if the cable is longer than required. In particular, never remove the fuse holders from the cable.

5. Reconnect any wiring removed from the negative terminal.




6. Connect the DC power cable to the transceiver's power supply connector.

- ♦ Press the connectors firmly together until the locking tab clicks.

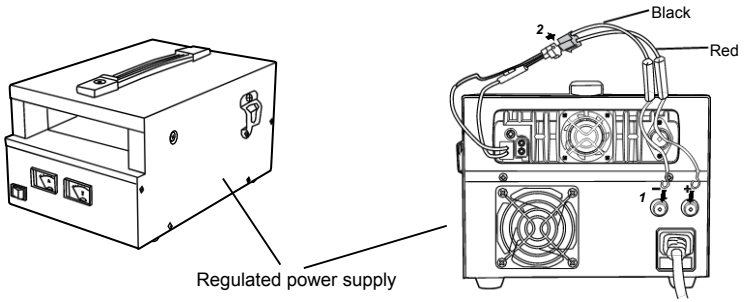
**3.2.2 Fixed Station Operation**

In order to use this transceiver for fixed station operation, you will need a separate 13.8V DC power supply (not included), power supply as optional accessories. Please contact local dealer to require.

The recommended current capacity of your power supply is 15A.

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 connect 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.

♦ Press the connectors firmly together until the locking tab clicks.

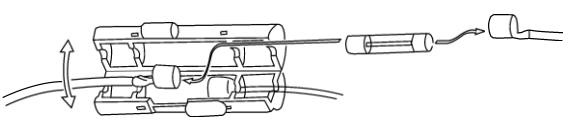
NOTE » *Before connecting the DC power to the transceiver, be sure to switch the transceiver and the DC power supply OFF.*

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

3.The fixed station will work as a base station, or a small repeater when the cross-band repeater function is on.

**3.2.3 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 authorized AnyTone® dealer or an authorized AnyTone®service center 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.*

## 3.3 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.

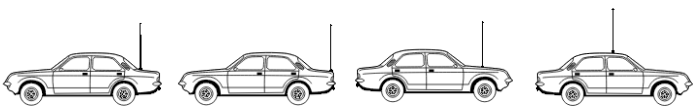
Use a 50Ω impedance antenna and low-loss coaxial feed-line that has a characteristic impedance of 50Ω, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed-lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby broadcast television 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.*

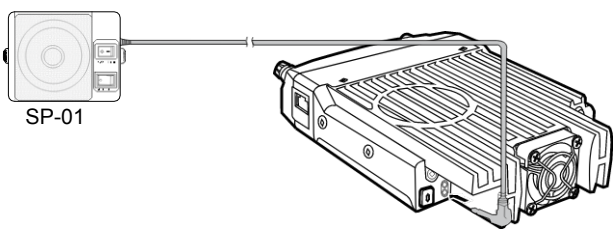
The possible locations of antenna on a car are shown as following:



## 3.4 Accessories Connections

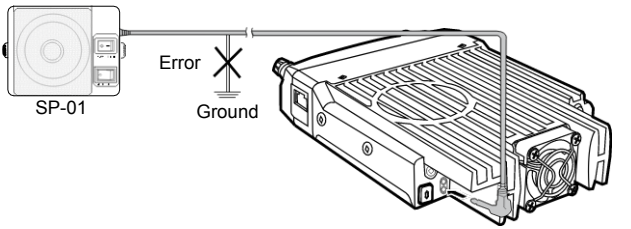
### 3.4.1 External Speaker

If you plan to use an external speaker, choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5mm (1/8") mono (2-conductor) plug.



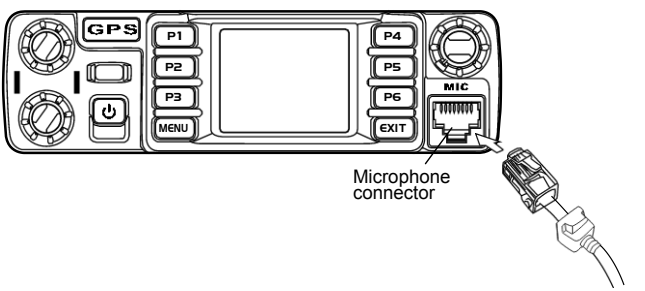

NOTE

» *External speaker adopt double port BTL, please care about the connecting way. The speaker can not connect with the ground, otherwise the speaker will be damaged. The wrong connecting method as shown in the following diagram.*



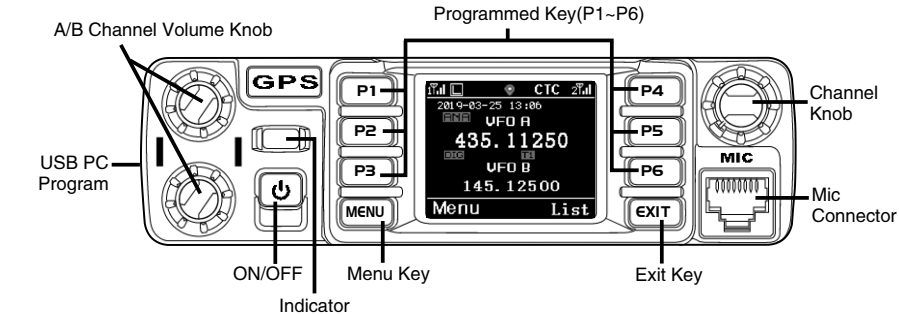

### 3.4.2 Microphone

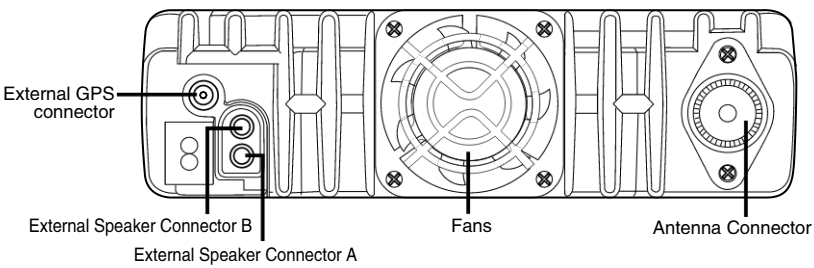
For voice communications, connect a microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit. Press firmly on the plug until the locking tab clicks.



# 3. GETTING ACQUAINTED

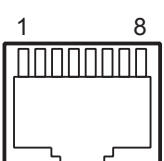
## 3.1 Radio



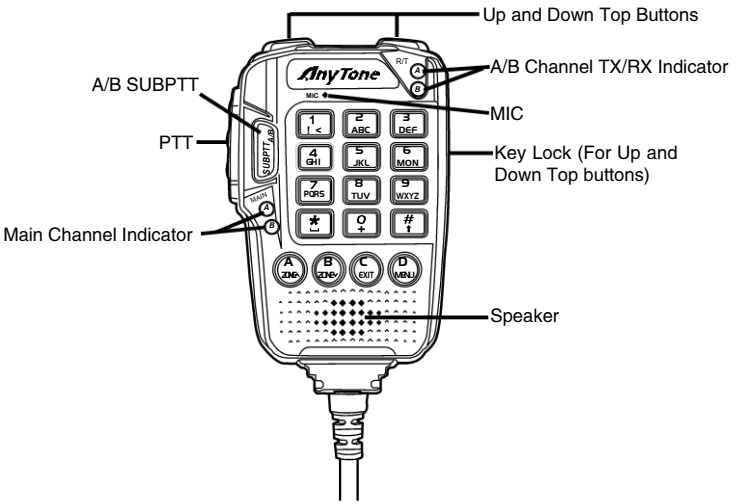

## 3.2 Microphone Connector

MIC connector
(Front view)




1. Red : URX
2. Brown : 5V
3. Yellow : UTX
4. Green : SP+
5. Black: MIC GND
6. White : MIC
7. Blue: SP−
8. Grey : GND

## 3.3 Microphone



# 4. RADIO OVERVIEW

## 4.1 Status Indications

The top LED will help you to identify the current radio status.

| LED Indication | Status |
|---|---|
| Constant Red | Transmitting |
| Constant Green | Analog Receiving |
| Constant Cyan | Digital Receiving |
| Flashes Green | Scan |
| Constant Orange | Repeater function |

## 4.2 Programmed Key

It is possible to set different functions for [P1], [P2], [P3],[P4],[P5],[P6]. A,B,C,D.
Method 1: In radio Menu => Settings => Radio Set => Key Func => P1~P6, PA-PD.
Method 2: In PC software => Public => Optional Setting => Key function.

| | |
|---|---|
| OFF | No Function |
| Volt | Check the current battery capacity voltage |
| Tx Power | Switch the power between super high, high, middle and low power. |
| TalkAround | Switch between Talk Around and Repeater mode |
| Reverse | Turn on/off the frequency reverse function. |
| Digi Encrypt | Choose the digital encryption group for digital channel |
| Call | In Analog mode, send the DTMF/5TONE/2TONE encode. This function is only valid for analog channel. |
| VFO / MR | Switch between VFO mode and memory channel mode. |
| Scan | Scan on/off |
| AM air/FM | Turn on/off AM air band receive or FM radio receive |
| Alarm | Long press the key to start alarm, short press again to exit the alarm. |
| Record Switch | Enable/disable the recording function |
| Record | Start/stop recording. When stop recording, the radio will remind repeat or send the record. |
| SMS | In digital mode, press to enter into SMS messages |
| Dial | Start the manually dial |
| GPS Info | Check the GPS position information |
| Monitor | Monitor the weak signal or the signal with unmatched ID. |
| Main CH Switch | Choose channel A or channel B as the main channel |
| Hot Key 1~6 | Selects Hot Keys 1-6 Note: Hot key setup details on next page |
| Work Alone | Turn on/off the work alone function. |
| Nuisance Delete | During scanning, press the key to skip the unwanted channel |

| | |
|---|---|
| Digi Monitor | In DMR mode, press the key to turn on/off digital monitor |
| Sub CH On/Off | Turn on/ off the sub channel |
| Priority Zone | Switch to Priority Zone |
| Program Scan | "Press the key to start the scan in VFO channel scan start and end frequency must be programmed in CPS." |
| Enhanced Sound | In digital channel, switch the microphone tone to normal or enhanced mode. |
| LastCall Reply | In digital channel, press the key to access the last call and press PTT to call back. |
| Switch ChType | Switch the channel type(Analog, Digital, Ana+Dgi, Dgi+Ana) |
| Ranging | When the radio receives a call and the suspension time is on, press the key programmed as" Ranging" to obtain the caller's position and distance. (Both party need GPS positioned, or will receive only GPS information) |
| Roaming | In standby, press the key programmed as "Roaming" to search and lock on the repeater with strongest signal. (Note: After lock on a repeater, the radio will return to last frequency only after channel or frequency is changed. The repeater frequency list must pre- programmed in CPS.) |
| CH Ranging | In standby, if the call contact type for a channel is "Single call" , press the key programmed as " Channel Ranging" to turn on this function. The radio will automatically start ranging function when turn to this channel. |
| Max VOL Set | In standby, press the key programmed as" Max Volume", will enable users to set the maximum RX volume. |
| Slot Set | Choose Slot for current channel, this function is only valid in repeater mode. |
| Aprs Type | Choose analog or digital Aprs Type for current channel. |
| Zone Select | In standby, press the programmed "Zone Select" key, it will allow you input the zone number and then press confirm key will switch to the zone. |
| A CH Mute | Mute the main channel |
| B CH Mute | Mute the sub channel |
| Roaming Set | Enter into Roaming menu quickly |
| APRS Set | Enter into APRS menu quickly |
| Zone Up | Switch the zone upwardly |
| Zone Dn | Switch the zone downwardly |
| Exit | Exit the menu (only for A-D short press) |
| Menu | Enter into the menu (only for A-D short press) |

| | |
|---|---|
| Repeater | Enable / disable the repeater function |
| Speaker Mode | Set the voice come out from speaker on microphone or radio. |
| Ch.Name | Switch between channel name display and frequency display for the current channel |
| BHT On/Off | Enable / disable the Bluetooth. |
| GPS On/Off | Enable / disable the GPS. |
| CDT Scan | Enable / disable the CTCSS/DCS scanning for the analog channel. When the radio finds matched CTCSS/DCS for current channel, it will open the speaker and start receiving.<br>Only the analog channels with CTCSS/DCS signaling is able to start the CDT scanning. |
| TBST Send | Send the TBST Tone |
| Aprs Send | Manually transmit the APRS at the current channel. |

## 4.3 Hot Key Setting for P1,P2,P3,P4,P5,P6, PA-PD

Enter radio Menu-Settings-Radio Set-P1-P6,PA-PD,sub menu.

Users can choose settings for Hot Keys 1-6.

**Hot Key function** details must be setup in PC software – Public - Hot key.

| | | |
|---|---|---|
| Call | Analog | Should edit the analog quick call first, then choose analog in the hot key set. Press the key to transmit 2Tone/5Tone/DTMF to start the analog quick call. |
| | Digital | It allows to select a contact from the digital contact list, press the key to switch the channel to the contact temporary. It will switch back to the original contact after the group/personal call hold time. |
| Menu | SMS | Quick access to Messages in the menu |
| | New Msg | Quick access to New Msg in the Menu - Messages |
| | Hot Text | Quick access to Quick Text in the Menu - Messages |
| | Received SMS | Quick access to Inbox in the Menu - Messages |
| | Send SMS | Quick access to Out box in the Menu - Messages |
| | Contact list | Quick access to Contact list in the Menu - Contacts |
| | Manual dial | Quick access to Manual Dial in the Menu - Contacts |
| | Call Log | Quick access to Call Log in the Menu |
| | Dialed Calls | Quick access to Dialed Calls in the Menu - Call Log |
| | Received Calls | Quick access to Answered Calls in the Menu - Call Log |
| | Missed Calls | Quick access to Missed Calls in the Menu - Call Log |
| | Zone | Quick access to Zone in the Menu |
| | Radio set | Quick access to Radio Set in the Menu - Settings |

## 4.4 Combination Key Function

[MENU] + number key operation:

Press [MENU] key and hold until the LCD display "Next Please Press Dial Key", press the number key, it will perform the programmed function.

Combination key function shall be setup in PC software-Public-Hot key.

# 5. BASIC OPERATIONS

## 5.1 Power on the Radio

Turn on the radio by pressing the [On/Off] key, and the LCD displays "Booting, please wait", then it will show a start-up message, and you will hear a beep after 7 seconds.

## 5.2 Adjust Volume

The left two knobs are separated for volume change on main channel and sub channel, the upper one is for the upper channel on screen, the bottom one is for the bottom channel on screen.

Rotate the knob to adjust the volume. Turn clockwise to increase the volume and counterclockwise to decrease the volume. The LCD display will show the volume status during an adjustment.

## 5.3 Main Band/Sub Band Switch

Press the [Sub-PTT A/B] key on microphone or programmed [Main Channel Switch] key to switch the main channel to the other channel if there is 2 channels shown on the display. The channel with bold characters is the main channel.

## 5.4 VFO/Channel Switch

Press the programmed [VFO/MR] key to switch between VFO and channel display.

## 5.5 Set Up VFO Frequency

Turn the radio to VFO mode , then switch the channel to the main band, the VFO frequency can only be set up when the channel is in the main "bold text" channel.

**Operation 1:** Input the VFO frequency directly by the keyboard.

**Operation 2:** Turn the channel selector to adjust the VFO frequency steps.

## 5.6 Select a Channel

Press the programmed [VFO/MR] key to switch the radio between VFO and Channel mode, select Channel mode.

**Operation 1:** Turn the channel switch to select a channel.

**Operation 2:** Input the channel numbers by the keyboard. For example, if you want switch to channel 99, input 0+0+9+9 a total of 4 digits, and it will switch to channel 99.

A channel can either be Analog or Digital.

For the analog channels the Push-To-Talk button is always available, and on the Digital Channels the parameters can be set up by the users / system operators by individual channel to allow talk permit.

There are four possible settings that can be selected in the CPS channel:

(1) Always Allow: The user can transmit all the time.

(2) Channel Free: The radio can transmit only if the channel is free

(3) Different Color Code: The radio can transmit if the channel is free, but the color code is mismatch.

(4) Same Color Code: The radio can transmit only if the channel is free and the color code matches.

## 5.7 New channel

(1) Enter radio Menu-Settings-Chan Set-New Chan.

(2) Input the channel number and name.

(3) Select a zone from zone list, then Confirm To Save. The radio will start channel saving, and saving is completed when it displays "Saved".

(4) Now select the new channel in the radio and go to Channel Settings menu to set up all the new channel's parameters.

## 5.8 Delete Channel

Enter radio Menu-Settings-Chan Set-Delete Chan, it allows to delete the current channel.

## 5.9 Receiving and Responding to a Radio Call

When the radio is in the digital mode, it can receive and respond to a call with the same frequency/color code/ slot. When receiving a call:

***a.*** If the radio is programed with callers DMR ID number in the digital contact list, when receiving a call, the radio will ring or vibrate briefly.

***b.*** The blue LED lights up.

***c.*** The left top corner of LCD shows the RSSI icon, and the LCD display will show DMR ID/name/city/state/country/call type and incoming icon based on what is in the contact list.

***d.*** When the call is ended, it will display “Call end”, and you can press [PTT] to respond the call. Make sure to respond the call within the digital hold time, otherwise the radio will drop the connection after the digital hold time is expired.

## 5.10 Make a Digital Call

**A. Talk to the preset TG/DMR ID in channel**

Choose a programmed channel and press PTT to start the call.

**B. Talk to a temporary TG/DMR ID not in the channel**

**Method 1:** Select a temporary TG/DMR ID from the Talk Group list.

(1) Choose a programmed channel.

(2) Press [EXIT] key to enter the TG List, turn the channel switch or press the UP/DN key on microphone to choose a TG/DMR ID.

**Method 2:** Select a temporary TG/DMR ID from the keypad.

(1) Choose a programmed channel.

(2) Press [Menu] key to Talk Group, select Manual Dial.

(3) Input the ID number by keypad on microphone, press [#] key to switch group ID or Private DMR ID.

Press the [PTT] key to start the call, the red LED lights up, the receiver ID/name/city/state/country/call type and call out icon will be display on the LCD. Release [PTT] key to receive the reply.

NOTE » *The temporary call will be dropped when the digital hold time is expired and the radio will return to the preset TG/DMR ID in channel.*

# 5. BASIC OPERATIONS

## 5.11 Monitor

In standby, press the programmed [Monitor] key to enter Monitor. When receiving matched carrier but the signaling / ID is unmatched or the signal is too weak, this function allows monitor the weak signal and signal with unmatched ID. Press the key again to shut off speaker and return to standby.

NOTE » *When in analog mode, if no signal, it will emit noise when press the Monitor Key. ** The Rx icon is seen when monitor is activated.*

## 5.12 Emergency Alarm

Press the programmed [Emergency Alarm] key to turn on alarm function, then press this key again to return.

# 6. ADVANCED FEATURES FOR PRIVATE CALL

## 6.1 Access Advanced Features for Private Call

**Method 1:** To Access a Private Call from Contact list

***a.*** Press the [MENU] key to enter the Talk Group, select a private call ID.

***b.*** Press Option to access the advanced features.

**Method 2:** Access from Manual Dial

***a.*** Press the [MENU] key to enter the Talk Group, select Manual Dial.

***b.*** Input the Private ID, press Option to access the advanced features.

## 6.2 Set Up Advanced Features for Private Call

(1) **Call Alert**

Select Call Alert, it will send out a call alert, the target radio will sound a beep or vibrate when receiving the call alert, and it will return a success call or failed call message to the transmit radio.

(2) **Remote Monitor**

Select Remote Monitor, and it will send out a signal for the target radio will turn on its microphone and transmit when receiving the signaling, it will send back the voice to the transmit radio. With this feature you can monitor the sound activity near the target radio remotely.

***You have to check on the function in CPS-Optional Setting-Digital Func- Remote Monitor first.*

(3) **Get GPS info**

Select Get GPS info, and it will send out a signal to the target radio which will start the GPS positioning and send a message of its GPS position to the transmit radio.

***You have to check on the function in CPS-Optional Setting-GPS/Ranging- Get GPS positioning first.*

# 6. ADVANCED FEATURES FOR PRIVATE CALL

(4) **Check Radio**

Select Check Radio, and it will send out a radio check to the target radio which will send back a message if it is available or not available to the transmit radio. With this feature, you can determine if another radio is active and powered on in the system.

(5) **Kill**

Select Kill, and it will send out a kill signaling to the target radio which will be killed (No display, no operation) when receiving the signaling and it will send back a kill successful message to the transmit radio.

***You have to check on the function in CPS-Optional Setting-Digital Func- Digital Remote Stun&Kill first.*

(6) **Wake**

Select Wake, and it will send out a wake signaling to the killed radio and the target radio will return to standby when it receives this signaling and send back a Wake successful message to the transmit radio.

***You have to check on the function in CPS-Optional Setting-Digital Func- Digital Remote Stun&Kill first.*

(7) **Ranging**

When caller and receiver both GPS positioned, if the caller turn on ranging function and the receiver is within communication range, Tx radio will detect the distance and direction between two radios at fixed interval, and then show the information on the display of Tx radio.

# 7.MAIN MENU FUNCTIONS

## 7.1 Talk Group

**TG List:** Will display the talk group list which had been programmed in the PC software. This list is used as a look-up table to display the contact TG information when receiving a call.

**New Contact:** Allows to create a new TG.

**Manual Dial:** Input the group ID or private ID to access a TG quickly. Press [#] key to switch group ID or Private DMR ID.

**Talker Alias:** Allows Alias Tx Set / Alias Rx Display.

## 7.2 SMS

**New Msg:** Create a new message and send to a contact.

**InBox:** Shows all the received messages, and allows forward or delete the message.

**OutBox:** Shows all the sent messages, and allows resend, forward or delete of the message.

**Quick Text:** Pre-saved messages, and allows to send, edit or delete the message.

**Draft:** Draft messages, and allows send, edit or deleting of the message.

## 7.3 Call Log

**Last Call:** The Last Call List show the last caller ID and time information.

It allows you save the last caller as a new contact if it is not in your contact.

**Sent:** The Sent List shows sent messages until selected and deleted.

**Answered:** Shows all the answered calls, and allows deleting the call record or saving the ID as a new contact.

**Missed:** Shows all the missed calls, and allows deleting the call record or saving the ID as a new contact.

## 7.4 Zone

### 7.4.1 Select a Zone

A Zone is a group of channels grouped together. The radio has 250 Zones. A Zone can have the maximum of 160 analog and/or digital channels.

**Operation 1:** Press A/B key directly to switch the zone, the LCD will display the selected zone number or name.

**Operation 2:**

Go to radio Menu - Zone, select a zone from the zone list, radio will change to selected zone.

### 7.4.2 Add or delete a Zone

It allows you manually add or delete a zone in the zone menu directly.

## 7.5 Scan

In the PC software – Public – Scan list, it allows to save 250 scan lists, and to program the required scan lists and write it into radio.

Switch the radio to channel mode, as the scan list is only valid in the channel mode.

### 7.5.1 **Scan On/Off**

Allows turn on or turn off scan manually.

### 7.5.2 **Scan List**

Allows create a new scan list or edit the existing scan list.

### 7.5.3 **cdt Scan**

Set on to enable the CTCSS/DCS scan in analog channel. When the radio finds matched CTCSS/DCS for current channel, it will open the speaker and start receiving.

Only the analog channels with CTCSS/DCS signaling is able to start the CDT scanning.

**Notice**: When the radio finds a signal during scanning, press Menu key on radio to stay at the channel with signal permanently. Please note the zone will be changed to match the channel change.

## 7.6 Roaming

Roaming enable users to  search the roaming channel list by a programmed time interval and lock on the repeater with the strongest signal. This function is only valid for digital channels.

### (1) **One Time Roam**

Allow you turn on the roaming manually. After the roaming is finished, it will return to the off state. **

*Manually Roaming is a onetime action only.*

(2) **Roaming Zone**

Select **Roam Zone:** select a Roaming Zone from the list to set it as active zone. You can also scroll down the list of Zones and select Add Channel to add a new channel to the current Roaming Zone and set the parameters.

Select **Add Channel:** Add a new roaming channel to the current zone.

**New Roam Ch:** Allows you modify the RX frequency/TX frequency/CC/ TS/CH name for the roaming channel. Also allow you remove the roaming channel from the zone.

**Edit Name:** Edit the zone name.

**Select Zone:** Select the roaming zone for current channel.

**Delete Zone:** Delete the roaming zone from the current channel.

(3) **Auto Roaming settings**

Set the fixed time waiting interval to begin automatic roaming when the repeater cannot be found, roaming will begin at the end of this time.

**On/Off:** Turn on or turn off the auto roaming function.

**Fixed Time Set:** The roaming will be started at preset fixed time or set to off.

**Start Roaming:**

**Fixed Time:** Starts timed roaming

**Repeater check:** The roaming will be started when the radio cannot find a repeater - "The repeater is out of range" icon will appear, then the radio will perform roaming one time, and return to roaming off automatically.

(4) **Repeater Check**

**On/Off:** Turn on this function will allow the radio to check the repeater status.

**Interval Set:** When the repeater is out of range, the radio will try reconnect to the repeater, this function allows to set the interval for reconnections.

(5) **OutRange Note**

When the repeater is out of range after the repeater check, the radio will remind out of range.

**Note kind:** It allows to set beep or sound to remind out of range.

**Note Times:** It allows to set the “out of range” display times on screen.

(6) **Effect wait**

During roaming, when the radio finds a repeater within range, it will stay at the repeater for a short time. This function allows to set the stay time on the repeater.

## 7.7 Settings

### 7.7.1 Radio Set

**(1)Voice Func**

(1.1) ***Key Tone***

Beep On: The radio will beep when you press the keypad.

Beep Off: No beep when you press the keypad.

**(**1.2**) *Digi Idle***

Set on if you want a tone when the digital channel is free.

**(**1.3**) *Ana Idle***

Set on if you want a tone when the analog channel is free.

**(**1.4**) *StartUp Sound***

Set On if you want a tone when powering on.

**(**1.5**) *Talk Permit***

Select if you want a tone confirming Digital and/or Analog repeater connection at the start of a call.

**(**1.6**) *D-Reset Tone***

Select Off or On, digital call has a group call hold time and a private call hold time to prevent voice missing after the call. When set Digi Call Reset Tone is On, it will beep when the hold time terminates.

**(**1.7**) *Speaker Mode***

Mic Spk: Allows the voice come out from the speaker on microphone.

Radio Spk: Allows the voice come out from the speaker on radio.

Both: Allows the voice come out from both speakers on microphone and on radio.

(1.8) ***Mic Spk Set***

When you allows the voice come out from the speaker on microphone, you have to set it is for A channel or B channel.

A channel: Only the voice from A channel will come out.

B channel: Only the voice from B channel will come out.

(1.9) ***Max Vol Level***

Indoor: Very low volume, suitable for the indoor use.

Level 1-8: Set up the maximum volume level.

(1.10) ***Enhanced Sound(For digital mode only)***

It will allow you set up the audio pitch.

Normal: Low pitch, for TX audio only.

Enhance: High pitch, for TX audio only.

Indoor: Improved both the TX and RX audio.

Outdoor: Improved both the TX and RX audio.

(1.11) ***SMS Notify***

Different prompt options when receive a new message.

(1.12) ***Call Ring***

Different prompt options when receive a new call.

(1.13) ***DigiMic Level***

Digital mic level selection.

(1.14) ***AnaMic Level***

Analog mic level selection.

**(2)Display Func**

(2.1) ***Back Light***

LCD backlight intensity is adjustable in 5 steps.

(2.2) ***Ch. Name***

CH name: The radio will work in channel mode and display the channel name, and then the programmed VFO/ MR key is not valid.

Frequency: The radio will work in VFO mode and display the frequency, which allows the programmed VFO/MR key to switch the VFO and Memory channels.

(2.3) ***Language***

Choose the Chinese or English.

(2.4) ***Menu Exit Time***

5S-60S: When enter the menu, the radio will stay at the menu in the set time. When the time is reached, the radio will auto exit the menu.

(2.5) ***Start Display***

Picture: The radio will display an AnyTone picture when powered on.

Character: The radio will display the characters set up in PC software when powered on.

Customer's Pic: The radio will display the picture uploaded by PC software. In CPS -Tool -Boot Image, it will allow you upload a Power-on Picture.

(2.6) ***CHG Background***

Default Picture: In standby, the radio will display default picture.

Customer's Pic: The radio will display the picture uploaded by PC software. In CPS-Tool-Standby BK Picture, it will allow you upload a standby background picture.

(2.7) ***CHG Font Color***

White: In standby, the channel and other information will display color in white.

Black: In standby, the channel and other information will display color in black.

(2.8) ***CH Color A***

Set color for the band A channel display.

(2.9) ***CH Color B***

Set color for the band B channel display.

(2.10) ***Zone Color A***

Set color for the band A zone display.

(2_11) ***Zone Color B***

Set color for the band B zone display.

(2.12) ***Main Ch***

Channel A: The upper displayed channel will be set to become the main channel.

Channel B: The lower displayed channel will be set to become the main channel.

(2.13) ***Sub Ch On/Off***

Sub Channel On: Turns on the sub channel, and the radio will display both channel.

Sub Channel Off: Turns off the sub channel, and the radio will display the main channel only.

**(3)Key Func**

(3.1) ***Key Lock***

Manual Lock: Long press the [*] key to lock the keypad. Press [MENU] key, then press the [*] key to unlock the keypad.

Auto Lock: Radio will auto lock the keypad when standby for a while. Press [MENU] key, then press the [*] key to unlock the keypad

**Note:** *To get the key lock function working, some options should be set ON in CPS -> Optional Setting -> Key function first.*

- *Knob Lock: Set On to lock the knobs on radio, and up/down keys on microphone.*
- *Keypad Lock: Set On to lock the keypad on microphone.*
- *Side Key Lock: Set On to lock the P1-P6 keys on radio.*
- *Forced Key Lock: Set On to prevent the key from unlocked. When this function is ON, the keys are not able to unlock manually.*

(3.2-3.23) ***Key P1-P6,PA-PD***

You can program these keys for different functions.(Refer to page 8-9)

**(4)Other Func**

(4.1) ***Auto Power Off***

Allow to set automatic power off when not used for a period of 10 minutes, 30minutes, 1 hour or 2 hours of in operation.

Off: Turn off the function.

(4.2) ***TX Timer***

30S-240S: The TX will be limited in the set time. When this time is reached, the radio will auto stop transmission.

OFF: Turn off the TX time limit, and there is no limit for the transmission time.

(4.3) ***Fan Open***

PTT: The fan will open when PTT is pressed.

Temperature: The fan will open when the temperature is high.

Both: The fan will open either PTT is pressed or the temperature is high.

(4.4) ***Freq Step***

2.5K,5K,6.25K,10K,12.5K,20K,25K,30K,50K, total of 9 frequency steps.

(4.5) ***Ana SQ Level***

Adjusts the squelch level to receive signal with different signal strength, and a total of 5 levels offered. This function is only valid for analog channel.

(4.6) ***TBST Sel***

TBST frequency is used to activate some dormant repeaters, 1000Hz, 1450Hz,1750Hz, 2100Hz a total of 4 options are offered.

Hold pressing PTT key, at the same time press UP or DN key on microphone to transmit the TBST tone.

(4.7) ***Scan Mode***

SCM TO: When scanning and stopping for a signal, stays at the channel 5s before resuming the scan.

SCM CO: When scanning and stopping for signal, stays at the channel until the signal disappears, and

resumes scan 2s later.

SCM SE: When scanning and stopping for a signal, will terminate the scan. This function is only valid for a VFO scan.

(4.8) ***DTMF Speed***

Offers DTMF encode speed which will help the receiver decode successfully, 50~500ms are the options.

(4.9) ***AM Air/FM***

Off: AM air band or FM Radio function is off.

FM Mode: Turn on FM radio.

AM Mode A: Turn on AM air band receive, the AM channel will default at band A in display.

AM Mode B: Turn on AM air band receive, the AM channel will default at band B in display.

(4.10) ***FM Radio Moni***

Radio Mon On: When FM radio is used, you can still receive or transmit on the channel.

Radio Mon Off: When FM radio is used, the radio will not permit a transmission or reception.

(4.11) ***AM Offset***

Set offset for AM air band.

(4.12) ***AM Sq Level***

Set squelch level for AM air band.

(4.13) ***Start Up Pwd***

On: Set up the password for start up. You need to input the password to power on the radio.

Off: No password is required for the radio power on start up.

The password shall be set up in CPS-Optional Setting-Power on-Power-on Password Char.

(4.14-4.15) ***Auto Rptr A or B (For VFO A or B)***

Turn on the Auto Repeater function, the TX frequency in VFO mode will auto increase or reduce frequency base on the set up offset frequency in CPS.

Off: Turn off the function.

Positive: TX frequency= RX frequency + Offset frequency.

Negative: TX frequency= RX frequency - Offset frequency.

(4.16) ***VFO Sc-MinU***

Set start frequency for a UHF VFO scan.

(4.17) ***VFO SC-MaxU***

Set stop frequency for a UHF VFO scan.

(4.18) ***VFO SC-MinV***

Set start frequency for a VHF VFO scan.

(4.19) ***VFO SC-MaxV***

Set stop frequency for a VHF VFO scan.

(4.20) ***Weather Alarm***

Turn on or off the weather alarm function.

(4.21) ***Weather Channel***

When the Weather Alarm is on, the weather channel will work as sub channel. Once the weather alarm

is received, the radio speaker will open and start the alarm.

(4.22) ***Repeater (Cross-band)***

Turning on the cross-band repeater function will allow the radio to work as a small local repeater. The radio will TX on one channel, RX on the other channel.

**Note:** Cross-band Analog-Analog: Must be UHF-VHF, or VHF-UHF cross bands.

Cross-band Analog- Digital: Must be UHF-VHF, or VHF-UHF cross bands.

Cross-band Digital- Digital: UHF-VHF, or VHF-UHF cross bands, different times lot.

Cross-band Digital- Digital: Same UHF or same VHF bands, different times lot.

Cross-band Same frequency Digital-Digital: TX and RX are at same frequencies, but different times lots on VFO A and VFO B. Radio must also be in Double Slot operation.

*** Please Turn Off Digital Monitor when using the Cross-band repeat function***

Analog (A) to Analog (A) Cross band Repeater Setup

***a.*** To set the channels or frequencies you will want to use with cross band operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).

***b.*** Set the analog channel with simplex or repeater frequency.

***c.*** Turning the Repeater function ON in the Radio Settings menu.

Analog (A) to Digital (D) or Digital (D) to Analog (A) Cross band Repeater Setup

***a.*** To set the channels or frequencies you will want to use with cross band operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).

***b.*** Set the analog channel with simplex or repeater frequency, and set the digital channel with simplex frequency only.

***c.*** Turning the Repeater function ON in the Radio Settings menu.

Digital (D) to Digital (D) Cross band Repeater Setup

***a.*** To set the channels or frequencies you will want to use with (D) to (D) cross band operation, the radio must be set to display both the Main Channel (VFO A) and the Sub-Channel (VFO B).

***b.*** Enter the Simplex channel or Simplex frequency for VFO A and the Simplex channel or frequency for (VFO B).

***c.*** Set the correct Color Code and set the two (VFO) channels to DIFFERENT Time Slots (TS)

***d.*** Set the radio to Double Slot operation.

***e.*** Turning the Repeater function ON in the Radio Settings menu.

**Allows the VFO A and VFO B at same frequency but different time slot, the radio will work as a digital single frequency repeater.

(4.23) ***SMS Format***

M-SMS: Allows SMS text communication with Motorola DMR radio. H-SMS: Allows SMS text communication with Hytera DMR radio.

(4.24) ***CTC STE***

Squelch Tail Eliminate(STE) setting with CTCSS.

(4.25) ***No-Signal Ste***

Normal Squelch Tail Eliminate(STE) setting(no signaling).

(4.26) ***Hand Type***

Set for different microphone use.

Uart-Det: For standard AnyTone D578UV microphone

use. Volt-Det: For simple PTT microphone(no display)

use. (4.27) ***Time Zone***

Set up the time zone of your location.

(4.28) ***Date Time***

Time Set: Allows to set up the date and time manually. Use the channel switch to set the current year. Move to the month by pushing channel switch. Set the month, and push the channel switch to move forward each step. Once done, click the Menu key to save the date and time.

GPS Check: When GPS is positioning successfully, enter this menu, select GPS check to do the date & time correction automatically.

**7.7.2 Chan Set**

Channel set menu Route: Main Menu- Settings - Chan Set. The channel set menu will change accordingly to the channel type. When the channel type is digital, it will automatically hide the analog menus.

**※Chan Set (Digital Channel)**

(1) **New Chan**

Allows create a new channel and save current set up to the new

channel. a. Select "New Chan", then input new channel number and

confirm.

b. Input channel name and confirm.

c. Select a zone and confirm. The new channel will be saved to the selected zone.

(2) **Delete Chan**

Allows to delete current channel.

a. Select "Delete Chan”, the radio will remind " Delete? "

b. press confirm, the current channel will deleted.

Note: After delete one channel, the radio will move to next channel.

(3) **Channel Type**

A-Analog : Set up to analog channel.

D- Digital : Set up to digital channel

A+D TX A: Mixed analog, allow receive analog and digital signal, TX is analog.

D+A TX D: Mixed digital, allow receive analog and digital signal, TX is digital.

(4) **TX Power**

Set up the TX power for current channel.

(5) **Offset**

Press [UP]/[DOWN] to adjust offset frequency.

(6) **Band Width**

Only narrow band 12.5KHz for digital channel.

(7) **RX Freq**

Input the RX frequency by keypad, click the Menu key to save, press P2 key to return.

(8) **TX Freq**

Input the TX frequency by keypad, click the Menu key to save, press [P2] key to return.

(9) **Talk Around**

Allows a Repeater Channel to be used as Simplex. When the TX radio and RX radio both are set up with Talk Around on, they can communicate directly without a repeater. The analog channel will use the RX frequency as TX/RX frequency, the RX CTCSS/DCS decode as TX CTCSS/DCS encode.

(10) **Name**

Allow reset the channel name, this function is only valid in channel mode.

(11) **TX Allow**

Always: Always allow transmit

Channel Free: Allow transmit when the channel is free

Different CC: Allow transmit when receive matched signal but different color code.

Same CC: Allow transmit when receive matched signal and same color code.

(12) **TX Prohibit**

TX ON: Will allow transmit on the current channel.

TX OFF: Will not allow transmit on the current channel.

(13) **Radio ID**

In Digital channel, it will show the DMR ID which must be programmed in the PC software – Digital – DMR ID list- DMR ID. Allows edit and select an ID for the channel, each channel allows one ID.

In Analog channel, it will show the radio self ID which is programmed in PC software – Analog –Analog Address Book – Number.

(14) **Color Code**

The digital channel should have the same color code for communication as defined by the repeater to be used; which can be programmed in the PC software or defined in the Menu.

(15) **Time Slot**

Set up Slot 1 or Slot 2 for the current channel.

(16) **Digi Encrypt**

With the digital encryption, the communication will be confidential. A total of 32 digital encryptions is offered, and it can be programmed in the PC software or defined in the Menu.

(17) **Encrypt Type**

Choose normal encryption or AES encryption type.

(18) **RX Group List**

It will allow edit the RX Group List and assign a new RX Group List to the channel.

Select Cur List: Select the current RX Group List. Add Group: Add a TG to the current RX Group List.

Remove Group: Remove a TG from the current RX Group List.

(19) **Work Alone**

In the PC software – Public – Alarm settings – Work Alone, you have to set up the response time, warn time and response method initially.

Turn on the work alone function for the current channel. When the radios predetermined time has been reached for the alone working time, the radio will beep a sound and show “Work Alone Predict”. The user

has to confirm by pushing the programmed work alone key to confirm continuing work alone, otherwise, the radio will start its alarm and send the alarm on the channel when reaching its preset response time

(20) **CH Ranging**

In standby, if the call contact type for a channel is "Private call", The radio will automatically start ranging function when turned to this channel. The other radio's location will be showed on screen at intervals.

(21) **GPS Receive**

Turn on GPS Coordinates, if both radio GPS is positioned, the radio will display the other radio's distance and position when radio is receiving.

(22) **SMS Forbid**

Set On to prohibit the radio receive SMS.

(23) **DataAck Forbid**

Set On to ignore the repeater data service request. The radio will not reply to repeater when it receives the call confirmation/SMS confirmation request, etc..

(24) **DMR Mode**

Simplex: Enable to communicate by repeater frequencies directly with another radio with opposite TX/RX frequencies.

Repeater: Enable talk with other radio by repeat frequency through repeaters.

Double Slot: When TX/RX frequency is same, turn on this function to communicate by the slot set in simplex mode.

**Note:** *If DMR mode not choose Doube Slot, the radio will work on Slot in repeat mode. if choose Double Slot, it is necessary to Double choose a slot by time slot setting.*

(25) **BT Hands Free**

This function requires to use the BT earpiece provided by AnyTone. When this function is on, the radio will work in digital duplex mode with connecting the BT earpiece, you can directly talk without pressing the [PTT] button, it works similar to a mobile phone.

**Note:** *This function is only valid for two AnyTone radios direct talking without repeater or hotspots.* (26) **Tx Interrupt**

This feature allows the supervisor to start the transmission while another person is talking. It allows supervisor to override the ongoing transmission brings other radios hear what the supervisor is saying, the radio that is transmitting at the time of this override will not hear the supervisor until he release keys his radio and then he will be able to hear the rest of the conversation.

(27) **Slot suit**

Turn on Slot suit, the radio will receive calling from both slot, and will be able to call back in corresponding slot.

**※Chan Set (Available in Analog Channel only)**

When the channel type is analog, it will automatically hide the digital menu, The below listed menus are for analog channel only, unlisted menus are the same as the digital channel, please refer to Chan Set (Digital Channel).

(4) **TCDT**

Set up the CTCSS/DCS code for the TX.

(5) **RCDT**

Set up the CTCSS/DCS code for the RX.

(6) **RTCDT**

Set up the CTCSS/DCS code for both TX and RX CTCSS code: 62.5Hz~254.1Hz, a total of 51 groups DCS code: 000N~7771, a total of 1024 groups.

(7) **Optional Signal**

Allows the setup of DTMF/5TONE/2TONE encode and decode for the Analog channels.

(10) **Squelch mode**

When the analog channel is set up for both CTCSS/DCS decoding and optional signaling, you can set up the RX condition in this menu.

SQ: You can hear the call once the channel receive matched carrier. CDT: You can hear the call when receive matched CTCSS/DCS signal. TONE: You can hear the call when receives a matched signaling.

C&T: You can hear the call when receives a matched CTCSS/DCS and matched signaling.

C|T: You can hear the call when receives a matched CTCSS/DCS or.

(11) **Band Width**

Choose wide band or narrow band for the analog channel.

(12) **Reverse**

When this function is enabled, the RX frequency, TX frequency and CTCSS/DCS encode/decode will be reversed.

(13) **Compander**

Enable this function to reduce background noise and enhance audio

clarity, especially in long range communication.

(14) **Scrambler**

An analog voice inversion scrambler can be equipped. This special audio process can offer a more confidential communication.

Other radios at same frequency will receive only disordered noises.

The radio has 11groups standard Scrambler and 1 group self-defined Scrambler. It works with the CML128 and CML138.

(19) **Busy Lock**

Always: Always allows transmissions

RL: Will not allow transmit when receiving matched carrier but unmatched CTCSS/DCS.

BU: Will not allow transmit when receiving matched carrier.

(21) **OWN ID**

When the analog channel set up with optional signal, you can check the radio ID number in this menu. The ID number should be set up in PC software – Analog – Analog Address Book.

(22) **DTMF Enc**

Set a DTMF ID as the default call ID for the current channel.

Press the PTT key to transmit the selected DTMF ID.

Edit the DTMF ID in Menu or with the PC programing software.

(23-24) **2Tone Enc/Dec**

Set a 2Tone as the default call ID for the current channel. Press the [PTT] key to transmit the selected 2Tone.

Edit the 2Tone in the PC programing software before it can be selected.

(25) **5Tone Enc**

Set a 5Tone as the default call ID for the current channel. Press the [PTT] key to transmit the selected 5Tone.

Edit the 5Tone in the PC programing software before it can be selected.

(26) **5TONE BOT**

Set ON to send the 5Tone encode ID when press the [PTT] key.

(27) **5TONE EOT**

Set ON to send the 5Tone encode ID when release the [PTT] key.

(29) **APRS Receive**

Turn on this function to enable the radio receiving the analog APRS information in current channel. Make sure your channel setting Frequency, CTCSS/DCS match to the transmit radio's setting.

The radio will display the callsign, coordinates, direction, distance, digipeater paths, etc., when receive the analog APRS from the other radios.

Radio Menu-> APRS -> Ana APRS Info, allows to check the receive analog APRS logs.

CPS -> Public->APRS ->Analog APRS -> Receive Allow set to "On", and input the Callsign and SSID you want to receive. The radio will only receive and display the analog APRS information of the filter callsign, instead of display all analog APRS.

### 7.7.3 Device Info

Show the Radio ID, Radio name, model name, frequency range, firmware version and hardware version, radio data version, latest production date, picture version, language version, SCT version and BT module version.

## 7.8 Record

The voice record is designed for security use purpose. Each call will be saved as a separated recording file with DMR ID and time details. The standard voice 10hours record allows in digital channel only. The optional 500 hours voice record allow in both digital and analog channels (It requires to implement an optional recording board).

### 7.8.1 Record Switch

Select on or off to turn on or off the recording.

### 7.8.2 Record List

Select a Record list to enter the Record file. Click on a Record file to see the Detailed Information. It allows different options.

(1) Record Play, it will play one record at a time, you can turn the channel switch to choose another recording without return to previous menu.

(2) Loop Playback, it will play all records in circle.

(3) Record Send, it allows you choose a TG or private ID from TG list or manually, and transmit the record.

### 7.8.3 Record Delete

This function allows you delete all the recordings.

### 7.8.4 Recording Manually

In the PC software, Public – Optional Setting – Key function, program a key as Record.

***a.*** Press the programmed Record key, and the radio will start the recording, and speak into the microphone.

***b.*** Select Record Play, and the radio will play the record

***c.*** Select Record Send, and the radio will display Contact list or Manual Dial.

***d.*** Select Contact list to choose a contact, and press select to send the Record.

***e.*** Select Manual Dial, input the DMR ID, press [#] key to switch group ID or private ID, press select to send the Record.

## 7.9 GPS Positioning Function(optional with installed GPS)

### 7.9.1 GPS On/Off

Turn the GPS on or off manually.

### 7.9.2 GPS Info

Method 1: Check GPS info from Menu

Press [MENU] key to enter Main Menu, select "GPS", then select "GPS Info".

Method 2: Check GPS info from programmed key

In the PC software, Public – Optional Setting – Key function, program a key as "GPS Info", then press the programmed key to check the GPS info.

**NOTE: If the GPS is not positioning, it will display “No Fixed Position”, and the GPS icon shows a grey color. Move the radio to an open window or outdoors, and it will take a few minutes to connect to the GPS Satellites.**

### 7.9.3 Send GPS Information

a. When the GPS is positioning successfully, the GPS icon shows a red color. Follow the above step to check the GPS info, press edit key to Text edit.

b. Press Confirm, and it will display Send or Save. If you select Save, the

GPS info will be saved as a draft message.

c. Choose Send and it will display Contact list or Manual Dial.

d. Select Contact list to choose a contact, press select to send the GPS info. or

e. Select Manual Dial, input the DMR ID, press [#] key to switch group ID or private ID, press [MENU] to send the GPS info.

## 7.10 APRS Location Reporting(Supported by GPS)

APRS menu is not in menu list when GPS is off, you have to turn on GPS first if you want to use APRS menu.

(1) **Upload Type**

None: No APRS.

Sel A Aprs: Select analog APRS. Sel D Aprs: Select DMR APRS.

(2) **Ana APRS**

**PTT Upload:** Set the PTT transmit method.

● Off: Not transmit APRS.

● Tx Start: Transmit analog APRS when press the PTT.

● TX End: Transmit analog APRS when release the PTT.

**Upload Power:** Set the transmit power.

**Upload frequency:** Set the transmit frequency.

**Signal Path:** Set the signal path to transmit the APRS.

**Upload text:** Set the text to be shown on aprs.fi.

(3) **Ana APRS Info**

The received analog APRS information will be saved in radio for look back use. Click on "Ana APRS Info" will show the received APRS information.

Click on "Delete All" will clear the information.

(4) **Digi APRS**

**PTT Upload:** Set the PTT transmit method.

● Off: Not transmit APRS.

● On: Transmit DMR APRS when release the PTT.

**Report Channel:** Allow user to select a channel to transmit the DMR

APRS, please set the 8 report channels in CPS-APRS-Digi page first.

**Upload Slot:** Allow user to select a slot to transmit the DMR APRS.

● Channel Slot: It uses the slot of current channel

● Slot 1: Use slot 1

● Slot 2: Use slot 2

**Upload ID:** Allow user to set an APRS TG as the destination.

(5) **Digi APRS Info**

The received APRS information will be saved in radio for look back use. Click on "Digi APRS Info" will show the received APRS information.

Click on "Delete All" will clear the information.

(6) **Intervals Set**

This function allows you to set the analog APRS or DMR APRS auto

transmit at fixed times.

(7) **Upload Beacon**

**GPS Beacon:** The APRS will transmit the GPS data, only if the GPS is set

to on first, then GPS must also successfully lock on the satellites.

**Fixed Beacon:** The APRS will transmit the fixed beacon data. Someone can transmit the fixed beacon without setting the GPS on. The fixed beacon location information should be set in CPS firstly.

**Note:** *More setup are available by PC software only. CPS-Tools-Options-APRS, you have to check on the APRS box first to get APRS menu add to the left Digital menu.*

**(APRS is a registered trademark of Bob Bruninga, WB4APR)**

## 7.11 Digital Monitor

(1) **DigiMoni Switch**

off: Turn off Digital Monitor

Single Slot: Monitor the current TS

Double Slot: Monitor TS1 and TS2

(2) **DigiMoni Cc**

Any Cc: Monitor any color code

Same Cc: Monitor the same color code

(3) **DigiMoni Id**

Any Id: Monitor any TG

Same Id: Monitor the same TG

(4) **Slot Hold**

Off: Turn off the slot hold

On: Turn on the slot hold

Recommend to turn on slot hold when monitor double slot TS1 and TS2, when the signal is disappear in one slot, instead of switching to the other slot at once, the radio will hold on some seconds and wait for the audio drop.

### 7.11.1 How to Respond and Save a call in Digital Monitor Mode

During Digital Monitor, when receive a call with unmatched ID, press **[*]** key, the screen will display "*Monitor Response Setup Successfully* ", press **[PTT]** key will response to the call.

Press [#] key, the radio will remind you choose a Zone, you can choose a zone and save the new channel to the Zone.

# 8. RESET

**A.** Power off the radio.

**B.** Then power it on while holding the [P2] and the channel switch at the same time.

**C.** The radio will start up with a note on the display – "Are you sure you want to initialize radio?"

Press Exit to exit the reset and power on the radio.

Press Confirm to proceed the reset, it will come with a screen display

note – Initialize Radio.

**D.** After a re-start the radio will display the setting of time zone and the date and the time. Use the channel switch to set the current year. Move to the month by pushing the channel switch. Set the month, and use the channel switch key to move forward each step. Once done, click the Confirm key to save the date and time.

Please remember set up the time zone to avoid the date/time error.

Make sure the codeplug is saved to PC before your do the update and reset.

# 9. TROUBLE SHOOTING GUIDE

| Problem | Solutions |
|---|---|
| The radio cannot be switched on or no display after being switched on. | Check the power cord connection, make sure the red cord connect to +, and the black cord connect to -. |
| Cannot talk to or hear other members in your group. | 1. Make sure the frequency and CTCSS are the same as other members.<br>2. Make sure you are within range, and not too far away from your member.<br>3. Make sure you are set in correct digital mode, and frequency.<br>4. In digital mode, make sure set correct code and encrypt group is used in current channel.<br>5. In digital mode, make sure set correct receiving contacts and receiving group is used. |
| Other voices from non-group members are heard on the channel | Analog: Change the CTCSS/DCS<br>Tone, and make sure to change the tone on all radios in your group. |
| The D878UV codeplug can not load into the D578UV radio, the CPS reminds "Band Error". | Reason: The codeplug and radio have mismatched bands.<br>Solution:<br>1)Export the D878UV codeplug to .CSV files.<br>2)Use D578UV CPS to read the data from D578UV radio.(This step helps the CPS to stay at same band of radio)<br>3)Import the .CSV file to D578UV CPS.<br>4)Save the new codeplug and write into radio. |

In case you have some difficult issues can not be resolved, please report to your dealers. Make sure below information is included when you report the issues.

(1) FW,SCT,BT versions in the Radio menu - Device information.

(2) Detailed description on the issue

(3) A short video showing the issue

(4) A copy of the current code plug for the radio

(5) If using an MMDVM Hotspot, provide a copy of your configuration backup file

# 10. PROGRAMMING GUIDE

AnyTone AT-D578UV radios ship from the manufacturer “Keypad” locked per FCC rules.

You can press the **[MENU]** key and the **[*]** key to unlock the keypad for the first time of use. You will need the programming cable to connect your radio to your computer for programming.

The programming software and codeplug programming guide are available for download from AnyTone website: http://www.anytone.net/download.html

When programming this radio for the first time, it is recommended you first READ the radio with the software and then save this file for future reference as it contains the default programming and settings. In addition, after you READ this radio with software, first make your programming and frequency changes, then send this edited file back to your radio.

## Multiple Radio ID’s

The AT-D578UV radio will allow multiple DMR Radio ID numbers to be used with the radio. This feature will allow one radio to be used for example as a Commercial Radio with its own DMR ID, and at the same time also be used as an Amateur radio with another DMR ID.

In PC software, Digital/Radio ID List, you can enter your Department Unit Number or Amateur Radio callsign.

## Amateur DMR-MARC

For the best Amateur DMR experience obtain a subscriber ID from one of many available Amateur Radio sources. A U.S. Amateur can obtain a DMR ID From:

https://www.radioid.net/cgi-bin/trbo-database/register.cgi

For DMR repeaters in your area please see: www.repeaterbook.com

World DMR repeater network map:

https://www.repeaterbook.com/index.php/repeater-database

World DMR repeater network with verified Talkgroups by activity:

https://brandmeister.network/?page=lh

## Worldwide Amateur Contact Database

The AT-D578UV DMR radios contain a separate database memory for importing and displaying Amateur DMR individual IDs, call sign and user name in comma-delimited format (.csv)

Please reference in the programming guide for import and export database operations detailed.

User List Contact Database: https://ham-digital.org/status/

# 11. ON-LINE SERVICE AND SUPPORT

The AnyTone website provides additional information about obtaining service or support for the AnyTone line of two-way radios and accessories. Visit: www.anytone.net

Warning Notes

Every effort has been made to ensure that the information in this document is complete, accurate, and up to-date. AnyTone Radio assumes no responsibility for the results of errors beyond its control. The manufacturer of this equipment also cannot guarantee that changes in the equipment made by non-authorized users will not affect the information in it.

FCC Licensing Information

This AnyTone radio operates on Commercial / Land Mobile frequencies which require a license from the Federal Communications Commission (FCC) for business, personal, education and recreational use. To obtain forms, call the FCC forms hotline at: 1-800-418-3676 or go to http://www. fcc.gov

For questions concerning commercial licensing, contact the FCC at 1-888-CALL-FCC (1-888-225-5322).

# SAFETY

The AnyTone AT-D578UV DMR mobile transceiver has been carefully designed to provide you with years of safe, reliable operation. As with all electrical equipment, however, there are a few basic precautions you should take to avoid hurting yourself or damaging the radio:

• Read the instructions in this handbook carefully. Be sure to save it for future reference.

• Read and follow all warning and instruction labels on the radio and owner's manual.

• Be sure the "PTT" key is not pressed when you do not need to transmit.

• Do not operate the radio near unshielded electrical blasting caps or in an explosive atmosphere.

• Respect the environment conditions. The radio is designed to be used in heavy environments, however avoid exposing it to extremely hot or cold temperature (out of the range between –20°C to +60°C). Do not expose the transceiver to excessive vibrations as well as dusty or rainy locations.

• Never try to disassemble or service the radio by yourself (aside from the routine maintenance described in this handbook). It may cause damage to the radio transceiver and void your warranty requiring extensive repair work. Always contact your local dealer for assistance.

• Use only authorized accessories. Using non AnyTone radio brand accessories may seriously damage your handheld transceiver and void your warranty.

• Do not spill liquid of any kind into your radio. If the transceiver gets wet, immediately dry it by a soft and clean cloth.

• Switch the radio off before you clean it.

• Be certain that your power source matches the rating listed for the supplied power cord. If you are not sure, check with your authorized AnyTone dealer.

• Avoid damaging the power cord. Do not step on or place anything on it as this could result in a damaged charger power cord. This product complies with the requirements of the Council Directives 89/336/EEC and 73/23/EEC on the approximation of the laws of the member states relating to electromagnetic compatibility and low voltage.

# EU DECLARATION OF CONFORMITY

In accordance with EU Directives and Regulations, the undersigned hereby declare that the following equipment is in conformity with the essential requirements of the RE Directive 2014/53/EU.

## 1. INFORMATION ON THE EQUIPMENT

| | |
|---|---|
| Product: | DMR Digital and Analog VHF/UHF Mobile Radio |
| Model Name: | AT-D578UV |

## 2. INFORMATION ON THE MANUFACTURER

| | |
|---|---|
| Manufacturer: | DMR Digital and Analog VHF/UHF Mobile Radio |
| Address: | Qixiang Building,Tangxi Industrial Zone,Luojiang District,Quanzhou,Fujian, China |
| Name: | Ken XU (General Manager) |
| Tel: | +86 595 22656926 |
| Mail: | ken6833@qxdz.cn |

## 3. INFOMRATION ON THE STANDARDS

| | |
|---|---|
| RF: | EN 301 783 V2.1.1<br>EN 303 413 V1.1.1<br>EN 303 345 V1.1.7<br>EN 300 328 V2.1.1 |
| EMC: | EN 301 489-1/-5/-15/-17/-19<br>EN 550 32, EN 550 35 |
| Health | EN 62311:2008 |
| Safety | EN 62368-1:2014+A11:2017 |

The notified body TIMCO Engineering, Inc. (EU Identification Number: 1177) performed a conformity assessment according to Annex III, Module B. Signed on behalf of Qixiang Electron Science & Technology Co., Ltd.

Ken Xu (General Manager)
Signature:
Date: 2019-Sep-25

# 12. TECHNICAL SPECIFICATIONS

| GENERAL | | |
|---|---|---|
| Frequency Range | Dual band(US Part90):136-174MHz(V),400-480MHz(U)<br>Europe: 144-146MHz(V),430-440MHz(U)<br>Australia: 144-148MHz(V), 420-450MHz(U)<br>Tri band(US):144-148MHz(V), 222-225MHz, 420-450MHz(U) | |
| Channel Capacity | 4000 channels | |
| Channel Spacing | 25KHz (Wide Band) ,12.5KHz (Narrow Band) | |
| Phase-locked Step | 5KHz, 6.25KHz | |
| Operating Voltage | 13.8V DC ±15% | |
| Frequency Stability | ±2.5ppm | |
| Power Supply<br>Current Requirement (min) | 15 Amps | |
| Operating Temperature | -20℃~+60℃ | |
| Size | 188x141x40mm (radio only) | |
| Weight | 1.04kg (without accessories) | |
| **Receiving Part** | | |
| | Wide band | Narrow band |
| Sensitivity (12dB Sinad) | ≤0.25μV | ≤0.35μV |
| Digital Sensitivity | 0.3uV/-117.4dBm (BER 5%)<br>0.7uV/-110dBm (BER 1%) | |
| Adjacent Channel Selectivity | ≥70dB | ≥60dB |
| Spurious Emission | ≤-57dB | ≤-57dB |
| Spurious Rejection | ≥70dB | ≥70dB |
| Blocking | 84db | |
| Audio power output | ≥45dB | ≥40dB |
| Audio Distortion | ≤5% | |
| Audio Power Output | 2W/8Ω | |
| **Transmitting Part** | | |
| | Wide band | Narrow band |
| Power Output | Turbo | 55W at 144-148MHz<br>40W at 430-440MHz |
| | High | UHF/VHF 25W |
| | Middle | UHF/VHF 10W<br>222-225MHz 5W |
| | Low | UHF/VHF/225MHz 1W |
| Modulation | ±5.0KHz@25KHz | ±2.5KHz@12.5KHz |
| Adjacent Channel Power | ≥70dB | ≥60dB |
| Hum & Noise | ≥40dB | ≥36dB |
| Spurious Emission | ≤-36dBm | ≤-36dBm |
| 4FSK Digital Modulation | 12.5KHz(data)7K60FXD 12.5KHz(data+voice)7K60FXE | |
| Audio Distortion | ≤5% | |
| Error rate | ≤3% | |

***European Users should note that operation of this unit in Transmit mode requires the operator to have a valid Amateur Radio License from their respective Countries Amateur Radio Licensing Authority for the Frequencies and Transmitter Power levels that this Radio transmits on. Failure to comply may be unlawful and liable for prosecution.*** *At this subject, refer to the "EU" specification guide 2014/53/EU.*

## Disposal of your Electronic and Electric Equipment

***Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste. Electronic and Electric Equipment should be recycled at a facility capable of handling these items and their waste by products.***

***In EU countries, please contact your local equipment supplier representative or service center for information about the waste collection system in your country.***

ATTENTION: conditions of use!
The band of frequencies on which this device operates is administrated by limitations and/or permissions for their usage. Consequently, in the EU countries mentioned in the sheet, operators must consult the entrusted authorities. In particular, they must possess a license or a frequency assigned to them by their respective competent authority.

ACHTUNG: informativ zur Benutzung!
Das Frequenzband, auf dem dieses Gerät arbeitet, wird durch Einschränkungen und/oder Berechtigungen für deren Verwendung verwaltet. Folglich müssen die Betreiber in den in der Tabelle aufgeführten EU-Ländern die zuständigen Behörden konsultieren. Insbesondere müssen sie über eine Lizenz verfügen, oder eine Frequenz besitzen, die ihnen von ihrer jeweiligen zuständigen Behörde zugewiesen wurde.

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| | | | | | |
|---|---|---|---|---|---|
| AT | BE | BG | CY | CZ | DE |
| DK | ES | EE | FI | FR | UK |
| EL | HR | HU | IE | IT | LT |
| LU | LV | MT | NL | PL | PT |
| RO | SK | SI | SE | CH | IS |
| LI | NO | – | – | – | – |

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