Qixiang Electron Science & Technology Co., Ltd.

www.anytone.net

AnyTone®

AT-578UV

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, introduces 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 Text Messaging, Recording, Voice Message, AES256 Digital Encryption, Emergency Alarm, Man Down Alarm, Work Alone, GPS, APRS Location Reporting, Roaming, Cross band repeater, Bluetooth, Analog DTMF, 2TONE, 5TONE, CTCSS/DCS encode/decode functions.

NOTE

» *When programming the radio, start by reading the factory software data, 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-D578UVPRO / AT-D578UVIIIPRO

AT-D578UVPLUS / AT-D578UVIII PLUS

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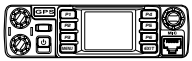
1. ACCESSORIES

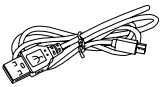
1.1 Standard Accessories



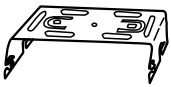
Transceiver

Microphone

DC Power Cable with Fuse Holder



USB Programming Cable



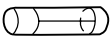
Mobile Mounting Bracket

Hardware Kit for Bracket

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

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

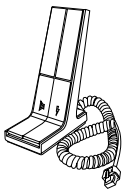
S-Washer (QSS-01D)



Fuse(10A 250V)

User Manual

1.2 Optional Accessories



Desktop Microphone

External Speaker

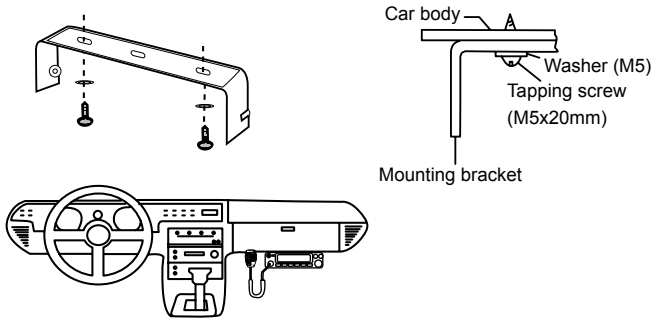
Car Antenna

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 selftapping 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.

3.2 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.

RF Energy Exposure Information

RF Energy Exposure Awareness And Control Information For FCC Occupational Use Requirements

Ibefore using the two-way mobile radio, review the following important RF energy awareness and control information and operational instructions. Comply with this information and instructions in order to ensure compliance with RF exposure guidelines.e the capability to access information in that form.

This radio is intended for use in occupational/controlled conditions, where users have full knowledge of their exposure and can exercise control over their exposure to remain below RF exposure limits. This radio is NOT authorized for general population, consumer, or any other use.

Changes or modifications not expressly approved by Qixiang Electron Science&Technology Co.,Ltd could void the user's authority to operate the equipment.

This two-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. It uses RF energy or radio waves to send and receive calls. RF energy is one form of electromagnetic energy. Other forms include, but are not limited to, electric power, sunlight, and x-rays. RF energy, however, should not be confused with these other forms of electromagnetic energy, which, when used improperly, can cause biological damage. Very high levels of x-rays, for example, can damage tissues and genetic material.

Experts in science, engineering, medicine, health, and industry work with organizations to develop standards for exposure to RF energy. These standards provide recommended levels of RF exposure for both workers and the general public. These recommended RF exposure levels include substantial margins of protection. All two-way radios marketed in North America are designed, manufactured, and tested to ensure they meet government-established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of two-way radios. These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it. Refer to the following websites for more information on what RF energy exposure is and how to control exposure to assure compliance with established RF exposure limits:

http://www.fcc.gov/oet/rfsafety/rf-faqs.html

Federal Communications Commission Regulations

Before it was marketed in the United States, the Digital mobile radio was tested to ensure compliance with FCC RF energy exposure limits for two-way mobile radios. When two-way radios are used as a consequence of employment, the FCC requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a label directing users to specific user awareness information. The radio has an RF exposure product label.

Also, the Product Safety Manual and this Operator’s Manual include information and operating instructions required to control RF exposure and to satisfy compliance requirements.

Operation Safety Recommendations

Occupational Safety Guidelines And Safety Training Information

To ensure bodily exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use. Always adhere to the following basic guidelines:

- The push-to-talk button should only be depressed when intending to send a voice message.
- The radio should only be used for necessary work-related communications.
- The radio should only be used by authorized and trained personnel. It should never be operated by children.
- Do not attempt any unauthorized modification to the radio. Changes or modifications to the radio may cause harmful interference and/or cause it to exceed FCC RF exposure limits. Only qualified personnel should service the radio.
- Always use only authorized accessories (antennas, control heads, speakers/mics, etc.). Use of unauthorized accessories can cause the FCC RF exposure compliance requirements to be exceeded.

The information listed above provides the user with information needed to make him or her aware of a RF exposure, and what to do to assure that this radio operates within the FCC exposure limits of this radio.

Transmitter Hazards

The operator of any mobile radio should be aware of certain hazards common to the operation of vehicular radio transmissions. Possible hazards include but are not limited to:

- Explosive Atmospheres — Just as it is dangerous to fuel a vehicle while its engine is running, be sure to turn the radio OFF while fueling the vehicle. If the radio is mounted in the trunk of the vehicle, DO NOT carry containers of fuel in the trunk.
  Areas with potentially explosive atmosphere are often, but not always, clearly marked. Turn the radio OFF when in any area with a potentially explosive atmosphere. It is rare, but not impossible that the radio or its accessories could generate sparks.
- Interference To Vehicular Electronic Systems — Electronic fuel injection systems, electronic antiskid braking systems, electronic cruise control systems, etc., are typical of the types of electronic devices that can malfunction due to the lack of protection from radio frequency (RF) energy present when transmitting. If the vehicle contains such equipment, consult the dealer for the make of vehicle and enlist their aid in determining if such electronic circuits perform normally when the radio is transmitting.
- Electric Blasting Caps – To prevent accidental detonation of electric blasting caps. DO NOT use two-way radios within 1000 feet (305 meters) of blasting operations. Always obey the "Turn Off Two-Way Radios" (or equivalent) signs posted where electric blasting caps are being used. (OSHA Standard: 1926. 900).
- Radio Frequency Energy – To prevent burns or related physical injury from radio frequency energy, do not operate the transmitter when anyone outside of the vehicle is within the minimum safe distance from the antenna as 69.2cm. .
- Vehicles Powered By Liquefied Petroleum (LP) Gas – Radio installation in vehicles powered by liquefied petroleum gas, where the LP gas container is located in the trunk or other sealed-off space within the interior of the vehicle, must conform to the National Fire Protection Association standard NFPA 58. This requires:
  - ➢ The space containing the radio equipment must be isolated by a seal from the space containing the LP gas container and its fittings.
  - ➢ Outside filling connections must be used for the LP gas container.
  - ➢ The LP gas container space shall be vented to the outside of the vehicle.

- Vehicles Equipped with Airbags – For driver and passenger safety,avoid mounting the radio's control head (or any other component) above or near airbag deployment areas. In addition to driverside and passenger-side front-impact airbags, some vehicles may also be equipped with side-impact airbags. For occupant safety, verify the location of all airbags within the vehicle before installing the radio equipment.

Radio Frequency Interference

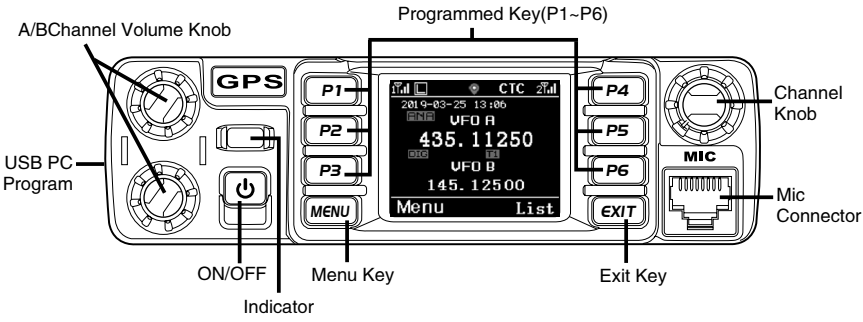
FCC Part 15

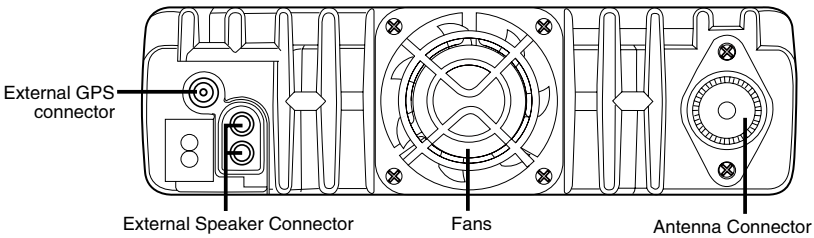
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

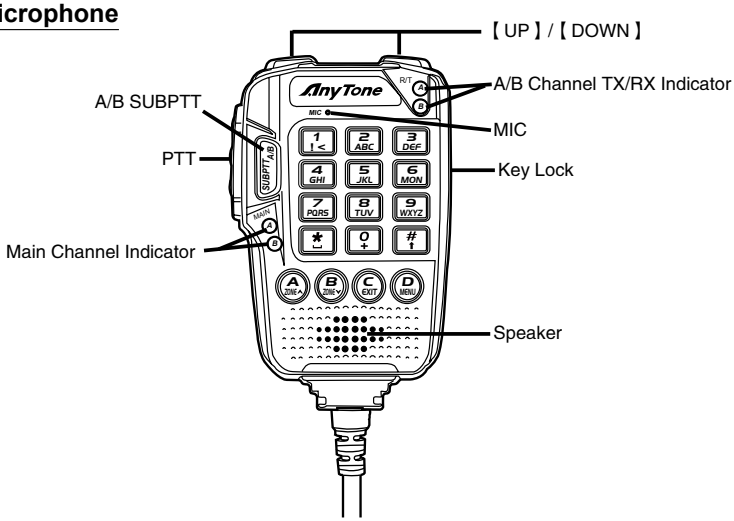
3. GETTING ACQUAINTED

3.1 Radio





3.2 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 - 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
FM Radio	FM radio on/off
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 Hide	Turn on/ off the sub channel
Prior 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."
Enhance 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 swiftly
APRS Set	Enter into APRS menu swiftly
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)

4. RADIO OVERVIEW

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 [SubPTT 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. BASIC OPERATIONS

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 droped 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 theTalk 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.*

(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.

7.6 Roaming

Roaming fucntion enable users to search the roaming channel list by a programmed time interval and lock on the repeater with 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.

Reconnections: when the repeater is out of range, the radio will try reconnect to the repeater. This function allows to set the reconnection times.

(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) **Beep**

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

Beep Off: No beep when you press the keypad.

(2) **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.

(3) **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

(4) **Back Light**

LCD backlight intensity is adjustable in 5 steps

(5) **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.

(6) **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

(7) **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 inoperation.

Off: Turn off the function

(8) **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.

(9) **Max Vol Level**

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

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

(10) **Enhanced Sound**

It will allow you set up the microphone audio pitch.

Normal: Low pitch.

Enhance: High pitch.

(11) **Language**

Choose the Chinese or English.

(12) **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.

(13) **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.

(14) **Background**

Defualt 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.

(15) **ChanFont 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.

(16) **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.

(17) **Sub Ch 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

(18) **SMS Prompt**

Different prompt options when receive a new message.

(19) **Call Ring**

Different prompt options when receive a new call.

(20) **Freq Step**

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

(21) **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.

(22) **TBST Sel**

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

Press PTT and PF1 key together to transmit the TBST tone.

(23) **Scan Mod**

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.

(24) **Mic Level**

Allows to adjust the Microphone gain, level 1 is the lowest, level and 5 is highest gain.

(25) **DTMF Speed**

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

(26) **FM Radio**

Turn on or off the FM radio.

(27) **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.

(28) **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.

(29-30) **AuRepeater 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.

(31-50) **Key P1-P6,PA-PD**

You can program these keys for different functions.(Refer to page 10 & 11)

(51) **Weather Alarm**

(52) **Relay station**

Turn on the cross band repeater function. The radio will work as a repeater,the radio will TX on one channel, RX on the other channel.

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 time slot

Same band Digital - Digital : Same UHF or same VHF bands, different time slot

Same frequency Digital-Digital: TX and RX are at same frequencies, but different time slot.

(53) **SMS Format**

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

(54) **Time Zone**

Set up the time zone of your location.

(55) **Date Time**

Time Set: Allows to set up the date and time manually. Use the channel swtich 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 automatical hide the analog menus..

※**Chan Set (Digital Channel)**

(1) **New Chan**

Allows creat 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**

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 enhanced 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 Coordinates**

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) **DMR Mode**

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

Repeater: Enable talk with other radio by repeat frequency throught 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 choosed 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.

(23) **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 mobilephone.

(24) **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.

(25) **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 (Avaiable 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 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.

7.MAIN MENU FUNCTIONS

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) **Encryption**

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.

(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.

7.7.3 Device Info

Show the Radio ID, Radio name, model name, frequency range, firmware version and hardware version, radio data version, latest program 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) **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.

(4) **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.

(5) **Intervals Set**

This function allows you to set the analog APRS or DMR APRS auto transmit at fixed times.

(6) **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 Bruinga, 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 Response 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 reponse 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. 2. Make sure you are within range, and not too far away from your member. 3. Make sure you are set in correct digital mode, and frequency. 4. In digital mode, make sure set correct code and encrypt group is used in current channel. 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 Tone, and make sure to change the tone on all radios in your group.

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 –10°C to +55°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

Place the DOC file page

12. TECHNICAL SPECIFICATIONS

GENERAL	
Frequency Range	Europe: 144-146MHz(V),430-440MHz(U) United State: 136-174MHz(V),400-480MHz(U) Australia: 144-148MHz(V), 420-450MHz(U) Tri band:144-148MHz(V), 222-225MHz, 420-450MHz(U)
Channel Capacity	4000 channels
Channel Spacing	12.5KHz (Narrow Band)
Phase-locked Step	5KHz, 6.25KHz
Operating Voltage	13.8V DC ±15%
Frequency Stability	±2.5ppm
Operating Temperature	-10℃~+55℃
Size	188x141x40mm (radio only)
Weight	1.04kg (without accessories)
Receiving Part	
	Narrow band
Sensitivity (12dB Sinad)	≤0.35μV
Digital Sensitivity	0.3uV/-117.4dBm (BER 5%) 0.7uV/-110dBm (BER 1%)
Adjacent Channel Selectivity	≥60dB
Spurious Emission	≤-57dB
Spurious Rejection	≥70dB
Blocking	84db
Audio power output	≥40dB
Audio Distortion	≤5%
Audio Power Output	2W/8Ω
Transmitting Part	
	Narrow band
Power Output	VHF: 60/25/10/1W, UHF: 45/25/10/1W
Modulation	±2.5KHz@12.5KHz
Adjacent Channel Power	≥60dB
Hum & Noise	≥36dB
Spurious Emission	≤-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 Licence from their respective Countries Amateur Radio Licencing 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.

ATTENTION : conditions d'utilisation!
Certaines bandes de fréquence sur lesquelles cet appareil fonctionne sont régies par des limitations et/ou il faut des autorisations pour les utiliser. Par conséquent, dans les pays de l'UE indiqués dans le tableau, les opérateurs doivent d'abord consulter les autorités appropriées. Les opérateurs utilisant cet appareil doivent donc posséder une licence ou une fréquence qui leur est attribuée par les autorités compétentes.

ATENCIÓN: información sobre el uso!
La banda de frecuencias en la que opera este aparato está gestionada por limitaciones y/o permisos para su uso. Por lo tanto, en los países de la UE que se muestran en la tabla, los operadores deben consultar a las autoridades correspondientes. En particular, deben poseer una licencia o una frecuencia asignada por su respectiva autoridad competente.

ATTENZIONE: informativa all'uso!
La banda delle frequenze sulle quali opera questo apparato è amministrata da limitazioni e/o permessi al loro uso. Quindi, nei paesi UE riportati nella tabella, gli operatori devono consultare le autorità preposte. Segnatamente, devono possedere una licenza oppure una frequenza assegnata a loro dalla rispettiva autorità competente.

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

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