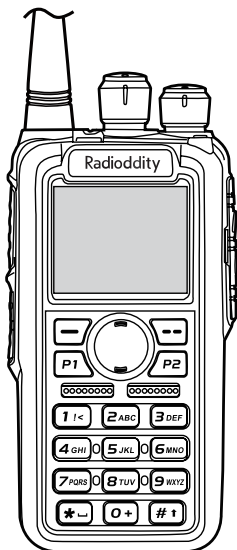# Radioddity

GD-AT10G
Digital DMR and Analog
Two Way Radio

Operating Manual

DMR
DIGITAL MOBILE RADIO ASSOCIATION

THANK YOU!

Thank you very much for choosing our Radioddity Digital DMR and Analog 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 to achieve SMS, high-audio quality and digital encryption. It offers great stability, and reliability, together with long distance communication as well as fashionable design and compact exterior lines. GD-AT10G has Text Messaging, Recording, Voice Message, Digital Encryption, Emergency Alarm, Man Down Alarm, Work Alone GPS, APRS Location Reporting, Roaming, Vibration, 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.**

CONTENTS

1. UNPACKING AND CHECKING THE EQUIPMENT

Unpack the radio carefully. We recommend that you identify the items listed in the following table before discarding the packing materials. If any items are missing or have been damaged during shipment, please contact the carrier or the dealers immediately.

1.1 Supplied Accessories

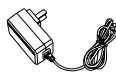| Item	Number	Quantity
Antenna		1
Li-ion Battery Pack		1
Battery Charger		1
AC Adaptor		1
Belt Clip		1
Hand Strap		1
Instruction Manual		1
Programming Cable		1

1.2 Standard Accessories

Antenna*[1]
QA-01

Li-ion Battery Pack
QB-44HL(3100mAh)

Charger
QBC-45L

AC Adaptor
QPS-17

Belt Clip
BC-05

USB Programming
PC-04

Wrist strap

Instruction Manual

*Note: For frequency band of antenna, please refer to label indicated in the bottom of the antenna.

*Note: Car Charger and QBC-45L Charger should be used together.

2. BATTERY INFORMATION

2.1 Charging the Battery Pack

The Li-ion battery pack is not charged at the factory; please charge it before use.

Charging the battery pack for the first time after purchase or extended storage (more than 2 months) may not bring the battery pack to its normal maximum operating capacity. Best operation will require fully charging/discharging the battery two or three times before the operating capacity will reach its best performance. The battery pack life may be depleted when its operating time decreases even though it has been fully and correctly charged. If this is the case, replace the battery pack.

2.2 Charger Supplied

Please use the specified charger provided by Radioddity .Other models may cause explosion and personal injury. After installing the battery pack, and if the radio displays low battery with a red flashing lamp or voice prompt, please charge the battery.

2.3 Use Caution with the Li-ion Battery

a. Do not short the battery terminals or throw the battery into a fire. Never attempt to remove the casing from the battery pack, as Radioddity cannot be held responsible for any accident caused by modifying the battery.

b. The ambient temperature should be between 5℃-40℃ (40°F - 105°F) while charging the battery. Charging outside this range may not fully charge the battery.

c. Please turn off the radio before inserting it into the charger. It may otherwise interfere with correct charging.

d. To avoid interfering with the charging cycle, please do not cut off the power or remove the battery during charging until the green light is on.

e. Do not recharge the battery pack if it is fully charged. This may shorten the life of the battery pack or damage the battery pack.

f. Do not charge the battery or the radio if it is damp. Dry it before charging to avoid damage.

2. BATTERY INFORMATION

WARNING:

» When keys, ornamental chain or other electric metals contact the battery terminal, the battery may become damage or injure a human. If the battery terminals are short circuited it will generate a lot of heat. Take care when carrying and using the battery. Remember to put the battery or radio into an insulated container. Do not put it into a metal container.

2.4 How to Charge

a. Plug the AC adaptor into the AC outlet, and then plug the cable of the AC adaptor into the DC jack located on the back of the charger. The indicator light blinks orange and is then ready to charge a battery.

b. Plug the battery or the radio into the charger. Make sure the battery terminals are good in contact with charging terminals. The indicator light turns to red--- charging begins.

c. It takes approximately 2-5 hours to fully charge the battery. When the lamp lights green, the charging is completed. Remove the battery or the radio unit with its battery from socket
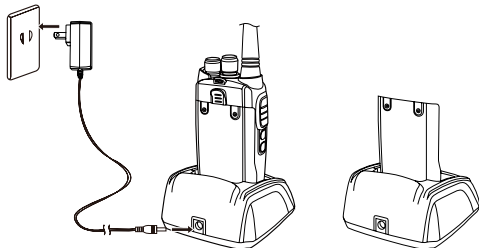
NOTE » when charging a radio (with battery) the indicating lamp will not turn into green to show the fully charged status if the radio is powered on. Only when the radio is switched off will the lamp indicate normal operation. The radio consumes energy when it is power-on, and the charger cannot detect the correct battery voltage when the battery has been fully charged. So the charger will charge the battery in constant voltage mode and fail to indicate correctly when the battery has been fully charged.

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e. LED Indicator:

STATUS	LED
Waiting(No Battery)	None
Precharge	Red light Flashing
Charging	Red Light
Fully Charged	Green Light

NOTE » **Trouble means battery too warm, battery short-circuited or charger short-circuited.**

2.5 Normal Charging Tips

a. **Self-Test:** When powering on the charger, the red light turns on and then turns off and stays off, which means the charger has passed it self- test and it is ready to charge the battery. If the light remains orange or the red light blinks, it means the charger cannot pass it self-test and cannot charge the battery.

b. **Trickle Pre-Charging:** If red light blinks when the battery is inserted into the charger, it means that the battery voltage is low and the charger is trickle-charging the battery (Pre-Charging Mode). The charger will automatically turn into normal charging when the battery reaches a certain electric charge, and if the red light stops blinking, it means the battery voltage has reached a certain level, and the charger will charge the battery in normal mode.

NOTE » **Trickle charging (Pre-Charging Mode) time cannot last beyond 30 minutes. If the indicating lamp still blinks red after 30-minute trickle-charging, it means that the charger cannot charge the battery correctly. Please check whether the battery or charger is damaged.**

2.6 How to Store the Battery

a. If the battery needs to be stored, keep it in status of 80% discharged.

b. It should be kept in low temperature and dry environment.

c. Keep it away from hot places and direct sunlight.

NOTE
» **Do not short circuit the battery terminals.**
» **Never attempt to remove the casing from the battery pack.**
» **Never store the battery in unsafe surroundings, as a short may cause an explosion.**
» **Do not put the battery in a hot environment or throw it into a fire, as it may cause an explosion.**

3.1 Installing / Removing the Battery

a. Match the two bottom grooves of the battery pack with the corresponding guides on the back of the radio and then push it.

b. To remove the battery pack, slide the release latch at the top away from the battery and remove the pack away from the transceiver.
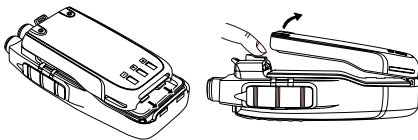
3.2 Installing / Removing the Antenna

a. Installing the Antenna: Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

b. Removing the Antenna: Turn the antenna counter-clockwise to remove it.
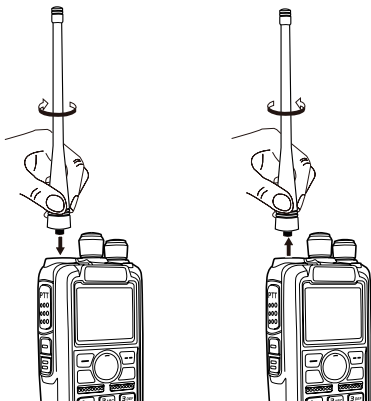
3.3 Installing / Removing the Belt Clip

a. Installing the Belt Clip: Place the belt clip above the corresponding holes on the back of the radio, and screw it into place clockwise with the two supplied screws.

b. Removing the Belt Clip: Unscrew counter-clockwise to remove the belt clip.
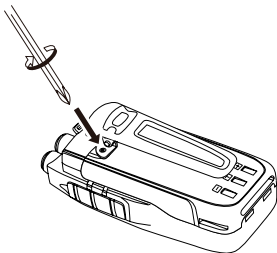
3.4 Installing the Additional Speaker/Microphone (Optional)

Pry open the rubber MIC-Headset jack cover and then insert the Speaker / Microphone plug into the double jack.

Emergency Alarm Key (PF3)

Channel Switch

Antenna

POWER/VOL

LED Status Indicator

Radioddity

LCD

Menu key

Exit Key

P1 key/ P2 key

Speaker

MIC Input

PTT Button

Speaker/Mic Jacks

[PF1] top Key
[PF2] bottom Key
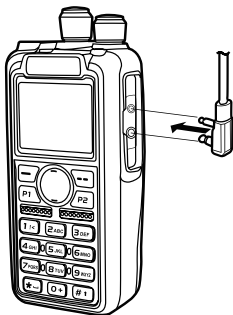
4. RADIO OVERVIEW

4.1 Status Indications

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

LED Indication	Status
Flashes Red	Low battery voltage
Constant Red	Transmitting
Constant Green	Analog Receiving
Constant Cyan	Digital Receiving
Flashes Green	Scan

4.2 Programmed Key

It is possible to set different functions for [PF1], [PF2], [PF3], P1, P2 keys.
Method 1: In radio Menu - Settings - Radio Set - Key - PF1, PF2, PF3, P1,P2.
Method 2: In PC software - Public - Optional Setting - Key function.

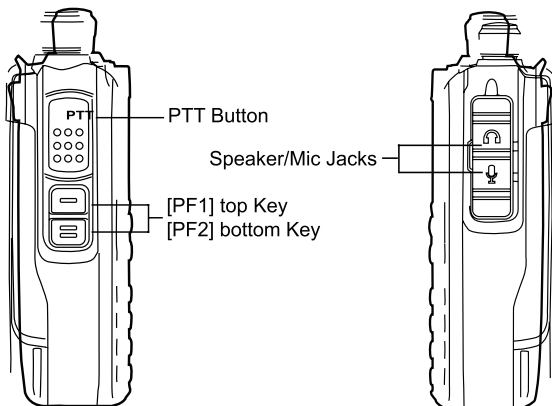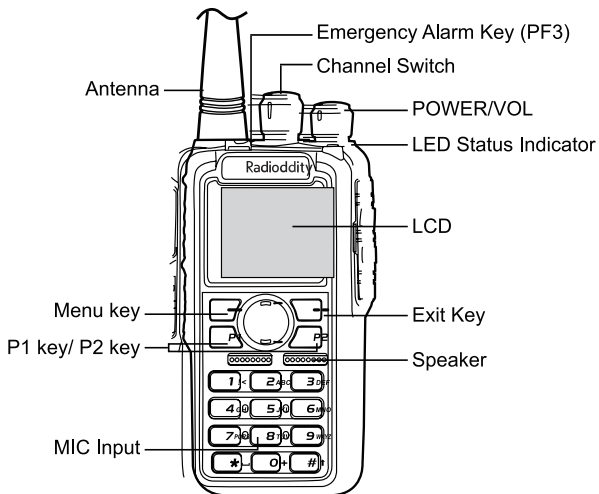| OFF	No Function
Volt	Check the current battery capacity voltage
Tx Power	Switch the power between super high, high, middle and low power.
TalkAround	Switch between Talk Around and Repeater mode
Reverse	Turn on/off the frequency reverse function.
Digi Encrypt	Choose the digital encryption group for digital channel
Call	In Analog mode, send the DTMF/5TONE/2TONE encode. This function is only valid for analog channel.
VOX	Set up the VOX level
VFO / MR	Switch between VFO mode and memory channel mode.
Sub PTT	Sub channel PTT, press to start the call on sub channel (NOTE: On PF1 - PF2 - PF3 Keys Only)
Scan	Press the key to start or stop scanning the channels in scan list.
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

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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
VFO Scan	Press the key to start or stop the VFO scan. The VFO scan start and end frequency should be set in CPS -Optional Setting - VFO Scan.
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.)
Channel Ranging	In standby, if the call contact type for a channel is "Private 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 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.
Roaming Set	Sets Roaming Function
APRS Set	Sets APRS Function
Mute Timing	Press the key to mute the radio in set time. The mute timing should be set in CPS -Optional Setting - Other -Mute Timing.
CTC/DCS Set	Set the CTCSS/DCS for analog channel
TBST Send	Send the TBST Tone
Bluetooth	Enable / disable the bluetooth function
GPS	Enable / disable the GPS function
Ch. Name	Switch between channel name display and frequency display for the current channel

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. Only the analog channels with CTCSS/DCS signalling is able to start the CDT scanning.
ARPS Send	Manually transmit the APRS at the current channel.

4.3 Hot Key Setting for PF1, PF2, PF3, P1, P2

Enter radio Menu-Settings-Radio Set-PF1, PF2,PF3,P1,P2,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

⏷/+ number key operation:

Press ⏷ 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 turning the [Power/Volume] switch clockwise till a click is heard, and the LCD displays will show a start-up message, and you will hear a beep after 7 seconds.

5.2 Adjust Volume

Rotate the [Power/Volume] 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 $\boxed{P1}$ 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 $\boxed{P2}$ key to switch between VFO and channel display.

5.5 Set Up VFO Frequency

Turn the radio to VFO mode $\boxed{P2}$, then press the $\boxed{P1}$ key to switch 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 $\boxed{P2}$ 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) Press ⊟(Menu) to enter main Menu.

(2) Select "Settings".

(3) Select "Chan Set".

(4) Select "New Chan".

(5) Input the channel number by keypad, press ⊟ to confirm.

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

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

Fast saving a new channel:

Note: Hold ⊟(Menu) until displays "Next Please Press Dial Key", then press [P1] key to start a new channel from above step 5.

5.8 Delete Channel

(1) In channel (MR) mode, press ⊟(Menu) to enter main Menu.

(2) Select "Settings".

(3) Select "Chan Set".

(4) Select "Delete Chan" to delete current channel.

Fast delete a channel:

Note: Hold ⊟(Menu) until displays "Next Please Press Dial Key", then press [P2] key to delete 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.

5.10 Making a Call

Method 1: from the Channel switch.
Turn the channel switch to choose a programmed channel.
Method 2: from the Talk Group.
*(1)* Turn the channel switch to choose a programmed channel;
(2) Press ⟁(exit) key to enter the TG List, press the ⌒ / ⌄ key to choose a TG.
Method 3: from the keypad.
(1) Turn the channel switch to choose a programmed channel.
(2) Press ☰(Menu) key to Talk Group, press select to enter TG.
(3) Press ⌒ / ⌄ key to Manual Dial, press Select.
(4) Input the ID number by keypad, press #↑ key to switch group ID or Private DMR ID.
Hold the radio vertical 2.5-5cm from your mouth, 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.

5.11 Monitor

In standby, press the [PF2] 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 [PF2] 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 Emergency Alarm key [PF3] to turn alarm function, then press this key again to return.

5.13 Man Down Alarm

a. Press ☰(Menu) to enter main Menu, press ⌒ / ⌄ key to Settings.
b. Select Radio Set, press, press ⌒ / ⌄ key to Man Down.
c. Select Man Down On to turn on the function.

When the function is on, the radio will start an alarm if the radio is falling to the ground. Raise the radio to stop the alarm.

Note: When GPS is on and positioning successfully, it will auto send out the GPS information when the radio starts the alarm.

5.14 Battery Voltage Test

Press the key programed as Voltage function to check the current battery voltage, press this key again to return.

6.1 Access Advanced Features for Private Call

Method 1: To Access a Private Call from Contact list

a. Press the �(Exit) key to enter the Talk Group, press the ⌒ / ⌄ key to a private call ID name.

b. Press Select to View Contact, press Select to see the contact information.

c. Press Option to access the advanced features.

Method 2: Access from Manual Dial

a. Press the ⎯(Menu) key to enter Talk Group, press ⌒ / ⌄ key to Manual Dial.

b. Press Select to enter Manual Dial.

c. 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 Ranging

Select Remote Ranging, 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.

(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.

(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.

(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.

(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.

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

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 GD-AT10G DMR radio has 250 Zones. A Zone can have the maximum of 160 analog and/or digital channels.

Operation 1: Press ⌒ / ⌄ directly to switch the zone, the LCD will display the selected zone number or name.

Operation 2:

(1) Press ▤(Menu) to enter main Menu.

(2) Select "Zone".

(3) Select a zone from the zone list, radio will change to selected zone.

7.4.2 Add Zone

(1) Press ⬛(Menu) to enter main Menu.

(2) Select "Zone".

(3) Select "Add Zone".

   1. Select "Edit name"

Input zone name by keypad, press ⬛ key to delete. After edit right name, press ⬛ to confirm and store.

   2. Select "Edit Chan"

Select "Add Chan" then Select a channel from the list.

   3. Select "Save": press ⬛ key to store new zone.

7.4.3 Delete Zone

(1) Press ⬛(Menu) to enter main Menu.

(2) Select "Zone".

(3) Select a Zone from zone list.

(4) Select Delete Zone to delete current zone.

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 Turn On Scan

Select "**Scan ON/OFF**".

Select "**ON**", the radio will start scan, press any key to stop scan.

7.5.2 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 signalling 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 permenently.

Please note the zone will be changed to match the channel change.

7.5.3 Scan List Operation

Select a scan list and press ▭ to enter scan list sub menu.

1) Select Cur Chan and press ▭ to add current channel to active list.

2) Add Channel into Scan List

Select "Add Chan", then select "channel X" to add it into scan list.

3) Edit Scan List Name

Select "Edit Name". Input or revise the name and press confirm to store.

4) Store List

5) Delete Channel from Scan List

Select "Channel X", then select "Delete CH" to remove it from scan list.

7.5.4 Add Scan List

Select "Scan List".

Select "Add Scan List"

Select "Add Chan", to add wanted channels into new scan list.

Select "Edit Name", input the name and confirm.

Select "Store List" to save new 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.

(1) Roaming On/Off

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 Test 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.

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

Start Roaming:

Fixed Time: Starts timed roaming

Out of Range: The roaming will be started when the radio cannot find a repeater - "The repeater is out of range" icon will appear 3 times, then the radio will perform roaming one time, and return to roaming off automatically.

(4) Repeater Check - Off / On

Turn on this function will allow the radio to check the repeater status, the "Repeater is out of range" icon shows if the repeater is not in range.

7.7 Settings

7.7.1 Radio Set

(1) Voice Func

No.	Function Name	Description
1	Key Tone	Key beep sound on, off.
2	Key Tone Vol	Key beep sound level setting.
3	Digi Idle	Set if you want a tone when the digital channel is free.
4	Ana Idle	Set if you want a tone when the analog channel is free.
5	StartUp Sound	Set if you want a tone when powering on.
6	Talk Permit	Select tone confrming for repeater connection at the start of a call.
7	D-reset Tone	Digital call has a hold time to prevent voice missing after call When D-reset Tone On, it will beep when the hold time terminates.
8	Max Vol Level	Indoor: Very low volume, suitable for the indoor use. Level 1-8: Set up the maximum volume leve l.
9	Ear Max Vol	Maximum earphonne volume level setting
10	Enhance Sound	Normal: Low pitch, for TX audio only. Mic Enhance: High pitch, for TX audio only.
11	SMS Prompt	Set prompt voice when receive a new message.
12	Call Ring	Set prompt option when receive a new call.
13	DigiMic Level	Digital mic level selection.
14	AnaMic Level	Analog mic level selection.
15	Fix Time Mute	Set On to mute the radio in fixed time. Dure time set in CPS->Optional Setting->Other->Mute Timing.

(2) Display Func

No.	Function Name	Description
1	Back Light	LCD backlight brightness.
2	Light Time	Back light dure time.
3	CH Name	CH: Work in channel mode only, VFO mode not permitted Frequency: Work in VFO mode , if press the key programmed as VFO/MR function, will swtich to channel mode.
4	Language	Choose display language.
5	Menu Exit Time	The radio will exit menu status after dure time.
6	Start Display	Display picture,character or customer picture when power on.
7	CH Background	Choose the background picture for standby status. Customer's Pic upload by CPS -Tool -Standby BK picture1/2.
8	CHG FontColor	Choose font color for standby status display.
9	CH Color A	Choose font color for band A channel display.
10	CH Color B	Choose font color for band B channel display.
11	Zone Color A	Choose font color for band A zone display.
12	Zone Color B	Choose font color for band B zone display.
13	Main Ch	Choose upper channel (A) or down channel(B) as main channel.
14	Sub Ch Hide	Choose to turn on or off sub channel .

(3) Key Func

No.	Function Name	Description
1	Key Lock	**Manual Lock:** Long press ✱ key to lock keypad. Press ↵ key, then press the ✱ key to unlock the keypad. **Auto Lock:** Radio will auto lock keypad after standby for a while. Press ↵ key, then press the ✱ key to unlock the keypad. **Notice:** Some options should be set for key lock fucntion. ON in CPS -> Optional Setting -> Key function first. Knob Lock: Set On to lock the knobs. Keypad Lock: Set On to lock the keypad. Side Key Lock: Set On to lock the PF1,PF2 and PF3(top blue key). Forced Key Lock: Set On to prevent the key from unlocked. When this function is ON, the keys are not able to unlock manually.
2-11	Key P1, P2, PF1, PF2,PF3	Program these keys for different functions.(Refer to page 10-12)

(4) Other Func

No.	Function Name	Description
1	Auto PowerOFF	Allow automatic power off after standby for a period of time.
2	TX Timer	TX will stop after continute transmit passover choosed time.
3	TOT Predict	When TOT Predict On, 5 seconds before the TOT expires,a beep sound to indicate the TOT will run out of time.
4	TXPow Agc	TX power will drop to a lower level when signal is strong.
5	Freq Step	2.5K,5K,6.25K,10K,12.5K,20K,25K,30K,50K.
6	Ana Sq Level	Choose 5 squelch level for analogue channels.
7	Power Save	Save 1:1, work 30ms, dormant 30ms. Save 2:1, work 60ms, dormant 30ms
8	TBST Sel	Press PTT and PF1 key together to transmit the TBST tone.
9	Vox	Choose VOX level.
10	Vox Delay	Choose VOX delay time.
11	Scan Mode	**SCM TO:** When scanning and stopping for a signal, stays at the channel for 5s before resuming the scan. **SCM CO:** When scanning and stopping for signal, stays at the channel until 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.
12	DTMF Speed	Offers DTMF encode speed to help the receiver decode.
13	FM Radio	Turn on or off the FM radio.
14	FM Radio Moni	Raido Mon Off: the radio not permit TX/RX when FM radio is on.
15	Man Down	The radio will send out alarm if the radio is lie down .
16	Start Up Pwd	Set up the password for start up.
17	AuRepeater A	Turn on the Auto Repeater function for channel A.
18	AuRepeater B	Turn on the Auto Repeater function for channel B.
19	VFO Sc-MinU	Set up the VFO scan upper limit for UHF
20	VFO Sc-MaxU	Set up the VFO scan lower limit for UHF
21	VFO Sc-MinV	Set up the VFO scan upper limit for VHF
22	VFO Sc-MaxV	Set up the VFO scan lower limit for VHF
23	Weather Alarm	Turn On or Off the Weather Alarm function.
24	SMS Format	M-SMS: Motorola format. H-SMS: Hytera format
25	CTC Ste	Squelch Tail Eliminate(STE) setting with CTCSS.
26	No Signal Ste	Normal Squelch Tail Eliminate(STE) setting(no signaling).
27	Time Zone	Set up the time zone of your location.
28	Time Display	Set up if show the date/time on display.
29	Date Time	Time Set: manual time set. GPS check: date & time correct automatically when connect GPS.

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 ⌃ / ⌄ 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) APRS Receive

Turn APRS Receive, 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 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 Doulbe 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) **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.

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.

(17) 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.

(19) 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.

(20) 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.

(21-22) 2Tone Enc

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.

(23) 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.

(24) 5Tone BOT

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

(25) 5Tone EOT

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

(26) Work Alone

Turn on or off work alone function.

(27) APRS Receive(optional with installed BT+APRS board)

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, serial number, model name, frequency range, firmware version, radio data version, latest program date, picture version, language version etc.

7.8 Record

The voice record is designed for security use purpose. Each call will be saved as a separated recording ile with DMR ID and time details. The standard voice 10hours record allows in DMR mode only. The optional 500 hours voice record allow in both DMR or analog mode.

7.8.1 Turn On/ Off the Recording

a. Press ▭/(Menu) enter main Menu, press ⌒ / ⌄ key to Record.

b. Select **Talk Record**, then

  •Select **Record Switch**, select on or off to turn on or off the recording.

7.8.2 Play the Record

a. Press ▭/(Menu) to enter main Menu, press ⌒ / ⌄ key to Record.

b. Select **Record List** to enter Record list, select a Record list to enter the Record file.

c. Select a Record to see the Detailed Information.

d. Press Select to choose the record option.

1) **Record Play**, it will play one record at a time, you can press ⌒ / ⌄ key to switch the recording without return to previous menu.

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

7.8.3 Send the Record

a. Press ▭/(Menu) to enter main Menu, press ⌒ / ⌄ key to Record.

b. Select Record List to enter Record list, select a Record list to enter the Record file.

c. Select a Record to see the detail information.

d. Select Record Send, and it will display the Contact list or Manual Dial.

e. Select Contact list to choose a contact, press select to send the Record.

f. Select Manual Dial, input the DMR ID, press #↑ key to switch group ID or private ID, press select to send the Record.

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.

NOTE » **The Recording function is only valid in digital channel.**

7.9 GPS Positioning Function(optional with installed GPS)

7.9.1 Turn on GPS

a. Press ▭(Menu) to enter the main Menu.

b. Select "GPS".

c. Select "GPS On".

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 ⬚ to send the GPS info.

7.10 APRS Location Reporting(Supported by GPS)

(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.
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

(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 Bruinga, WB4APR)

7.11 Digital Monitor

a. Press ▢(Menu) key to enter main menu, press ⌃ / ⌄ key to choose **Digi Moni** function.

b. Press Select to enter **Digi Moni** menu, press ⌃ / ⌄ key to choose a sub menu.

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.

***c.*** Press Select to enter the sub menu and set up.

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, press ⌢ / ⌣ key to choose a Zone, press select key to save the new channel to the Zone.

7.12 Bluetooth function (Optional with installed Bluetooth)

1) BHT Switch
It will allow select "Bluetooth ON" or "Bluetooth OFF", select "Bluetooth ON" to turn on the bluetooth function.

2) BHT Match
It will allow select Enter Match or Exit Match   select Enter Match to start the bluetooth pairing.

3) Device Name
It will show the bluetooth information and version.

4) MIC while BHT
When bluetooth function is on, the radio microphone is default off. This function will allow you turnton the radio microphone

5) Speaker while BHT
When bluetooth function is on the radio speaker is default off. This function will allow you turn on the radio speaker.

6) BHT MIC Gain C
This function will allow you select different MIC gain level for bluetooth headset.

7) BHT SPK Gain
This function will allow you select different speaker gain level for bluetooth headset.

a. Power off the radio firstly.

b. Then power it on while holding the [PTT] and the [PF1] button below the PTT 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 up-down key to set the current year. Move to the month by pushing the **P1** key. Set the month, and use the **P1** 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.

Problems	Solutions
The radio cannot be switched on or no display after being switched on.	A. Battery pack may not be installed properly. Remove the battery pack and install it again. B. Battery power may be insufficient. Recharge or replace the battery pack.
The battery doesn't last very long after charging.	The battery is defective; please replace it with a new battery pack.
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.

Radioddity GD-AT10G radios ship from the manufacturer "Keypad" locked per FCC rules.

You can press the ▭/(Menu) key and the ✱⏗(star) 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 Radioddity website:
www.radioddity.com

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 GD-AT10G 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 GD-AT10G 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 Radioddity website provides additional information about obtaining service or support for the Radioddity line of two-way radios and accessories. Visit: www.radioddity.com

Warning Notes

Every effort has been made to ensure that the information in this document is complete, accurate, and up to-date. Radioddity 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 Radioddity 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).

The Radioddity GD-AT10G DMR handheld 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.

• Do not carry the transceiver by the antenna. This may damage the antenna or antenna terminal. Grasp the handheld by its base (not the antenna) when you need to place or remove it.

• Do not keep the radio with the antenna very close to, or touching exposed parts of the body, while transmitting. Radioddity radios will perform best, if you speak 2-4 inches away from the microphone and the radio is vertical.

• 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.

• Do not transmit without the antenna fitted on the radio. Though it is provided with a protection, it may damage the TX output final stage.

• 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 +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 Radioddity 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. Follow the directions described in the paragraph "Care and maintenance".

• Handle the battery properly. Never place the LI-ion battery in your pocket or purse with loose coins. This could result in short circuiting the battery.

• Be certain that your power source matches the rating listed for the supplied battery charger (AC adapter). If you are not sure, check with your authorized Radioddity dealer.

• Avoid damaging the power cable of the battery charger. 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.

WARNING

Your wireless hand-held portable transceiver contains a low power transmitter. When the Push-to-Talk (PTT) button is pressed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50% TX and 50% RX.

In August 1996, the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices. To maintain compliance with the FCC's RF exposure guidelines, this transmitter and its antenna must maintain a separation distance of least 2 inches from your face. Speak in a normal voice, with the antenna pointed up and away from the face at the required separation distance. The belt clip is for storage purposes only.

AVOID TRANSMITING ON HIGH POWER WHILE RADIO IS ATTACHED TO YOUR BELT. To transmit, hold the device away from your body and ensure the antenna is at least 2 inches from your body when transmitting.

12. TECHNICAL SPECIFICATIONS

General	
Frequency Range	UHF radio: 400-480MHz
FCC ID	2AN62-AT10G
Channel Capacity	4000 channels
Channel Spacing	25KHz (Wide Band) ,12.5KHz (Narrow Band)
Phase-locked Step	5KHz, 6.25KHz
Operating Voltage	7.4V DC ±20% / (2100mAh)
Frequency Stability	±2.5ppm
Operating Temperature	-20℃~ +55℃
Size	129×61×39mm (with battery pack)
Weight	282g (with battery pack, antenna)

Receiving Part		
	Wide band	Narrow band
Sensitivity(12dB SINAD)	≤0.25μV	≤0.35μV
Digital Sensitivity	0.3uV/-117.4dBm (BER 5%) 0.7uV/-110dBm (BER 1%)	
Adjacent Channel Selectivity	≥70dB	≥60dB
Spurious Emission	≤-57dB	≤-57dB
Spurious Rejection	≥70dB	≥70dB
Blocking	84db	
Hum & Noise	≥45dB	≥40dB
Audio Distortion	≤5%	
Audio Power Output	1000mW/16Ω	

Transmitting Part		
	Wide band	Narrow band
Power Output	UHF radio: 10/5/2.5/1W	
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 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

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	–	–	–	–

Radioddity

SAIN3 LLC

www.radioddity.com

Address: 36 Berkley Drive Newark Delaware United States 19702