DELTA
Two-Way Radio

DS310

User Manual

K
Delta DS310

MENU ENTA BACK

To Customers

We are grateful for your purchase of this transceiver.

We believe this easy-to-use DMR Radio will provide you with dependable and reliable communications. We employed advanced technology & workmanship for this transceiver and trust that our design will make it user-friendly.

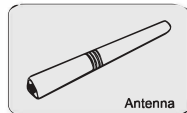For correct use, please read this manual first.

CONTENTS

User and Security Information

- For your safe and efficient use of the radio, please read the information below.
- Please tum off the radio before you into the inflammable, explosive environment.
- Do not replace or charge the battery in the inflammable, explosive environment.
- Before you near the blasting area and detonator area, please tum off the radio.
- Do not using the radio which antenna is damaged, the damaged antenna touch skin may cause minor bums. Refer service to qualified technicians only; don't disassemble the radio by yourself.
- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. For example, the hospital and other health care places. When flying and the Aircraft crew asks to tum off the radio, please tum off the radio.
- For vehicles with an air bag, do not place the radio in the area or in the air bag deployment area.
- Do not expose the radio to long periods of direct sunlight or place it close to heating appliances.
- When your portable radio is transmitting, hold the radio in a vertical position and close to the microphone to speak.
- If you wear a portable radio on your body, please ensure when the radio is transmitting the antenna is at least 2.5 cm from your body.

Welcome to use our radio. Before using, we recommend you that:

- Please check if any damage to the packing box before using.
- Carefully unpack the radio and identify the items listed in the following table; if any items or accessories are missing or have been damaged during shipment, contact with the dealer immediately.

ITEMS	Quantity
Antenna	1
Belt Clip	1
Battery	1
Charger	1
Adaptor	1
User's Manual	1

Antenna

Belt Clip

Battery
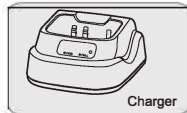
Charger

Adaptor

User's Manual

Antenna

Emergency Alarm Button

Speaker

Menu
Confirm Button/lock key

Channel Select Knob

Power Switch/Volume Control

Status Light

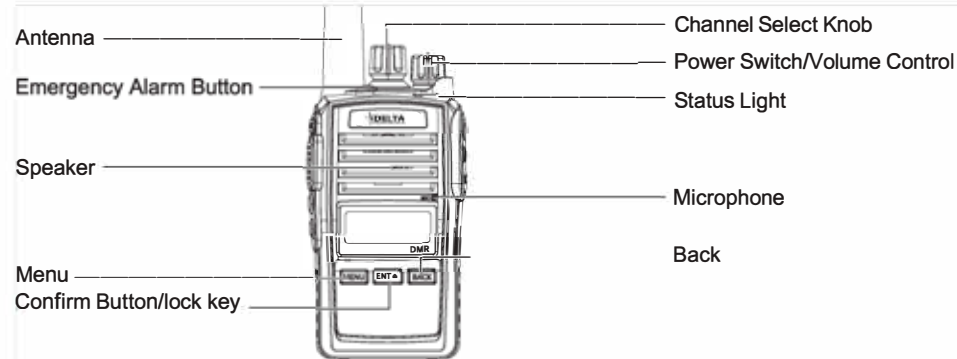Microphone
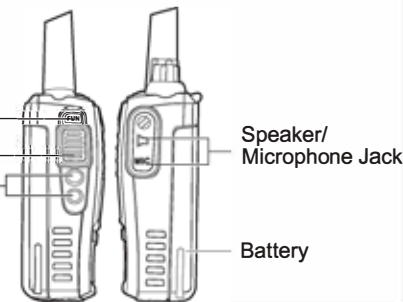
Back

PTT (push to talk) Switch
Press and speak into the microphone to call the other person. Release to receive.

[FUN] Function Key
Press and hold the FUN key to rotate the channel knob to enter the menu selection

Emergency Key/Side Key1/ Side Key2/:
Used to define various function

Speaker/ Microphone Jack

Battery

Note: [FUN) Function key/ EmergencyKey/ Side Key1 / Side Key2 can be programmed through short press and long press byprogramming software to the below functions:

1. N / A
2. All Alert Tones On/Off
3. EmergencyOn
4. EmergencyOff
5. High / Low Power
6. Monitor
7. Useless Channel (temporary) Deleted
8. One Touch Access 1
9. One Touch Access 2
10. One Touch Access 3
11. One Touch Access 4
12. One Touch Access 5
13. One Touch Access 6

14. Scan On / Off
15. Tight / Normal Squelch
16. PrivacyOn / Off
17. VOX On / Off
18. Zone Selection
19. BatteryPower Indicator
20. Lone Work On / Off
21. Repeater / Talk Around
22. Noise Reduction Switch
23. Recording Switch (According to the Firmware)
24. Recording Playback (According to the Firmware)
25. Delete All Recordings (According to the Firmware)

Charging the Battery Pack

The battery pack is not charged at the factory charge it before use. Initially charging the battery packafter purchase or extended storage (greater than 2 months) will not bring the batterypack to its normaoperating capacity. After repeating the charge/discharge cycle two or three times, the operating capacitwill increase to normal.

&CAUTION

◆ DO NOT RECHARGE THE BATTERY PACK IF IT IS ALREADY FULLY CHARGED. DOING SOMAY CAUSE THE LIFE OF THE BATTERY PACK TO SHORTEN OR THE BATTERY PACK MAYBE DAMAGED.
◆ AFTER RECHARGING THE BATTERY PACK, DISCONNECT IT FROM THE CHARGER. CHARGINGTHE BATTERY PACK FOR MORE THAN 5 DAYS MAY REDUCE THE BATTERY PACK LIFE.

Note:

◆ The ambient temperature should be between 5 and 40°C while charging is in progress. Charging beyond this range may not fully charge the battery.
◆ Always switch OFF the radio equipped with a batterypack before charging.
◆ The battery pack life is over when its operating time decreases even though it is fully and correctlycharged. Replace the battery pack.

Plug the AC adaptor cable into the
adaptor jack located on the rear of the
charger .


Plug the AC adaptor into an AC outlet.

Slide the battery pack or radio with a battery pack into the charger.
◆ Make sure the battery pack contacts are in contact with the
charging terminals.
◆ The charger LED lights and charging begins.

After charging the supplied battery pack for 4 hours, remove it or
the radio equipped with it from the charger.
◆ The charger tum to green automatically after charging is
completed.
Unplug the AC adaptor from the AC outlet.
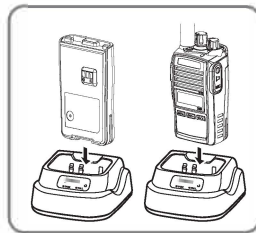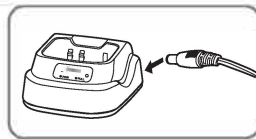
Installing / Removing the Battery Pack

The average life of the supplied battery pack is 10 hours.
Average times are calculated using 5% transmit time, 5% receive time, and 90% standby
time

◆ DO NOT TAMPER WITH THE BATTERY TERMINALS NOR DISPOSE OF THE BATTERY BY
FIRE.
◆ NEVER ATTEMPT TO REMOVE THE CASING FROM THE BATTERY PACK

Match the top of battery with the frame of chassis.	Push the battery pack down toward the radio until you hear a click.	To remove the battery pack pull up the battery locker and slide the pack away from the radio.
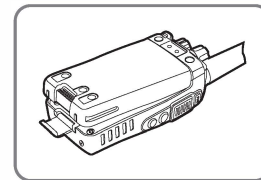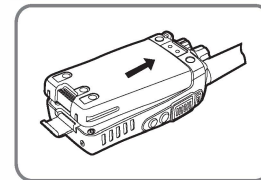
Installing the Antenna

Screw the antenna into the connector on the top of the radio by holding the antenna at its base and turning it clockwise until secure.

Note:

Don't use the antenna as handle, keychain or speaker/microphone hook, it will damage the antenna and affect the performance of the radio.

Antenna

Installing the Belt Clip

If necessary, buckle the belt clip to the back of the battery pack.

Note:

If not install the belt clip, the installation position may become hot during High Temperature.
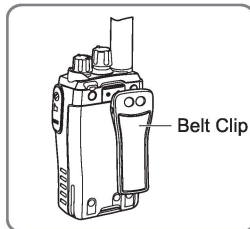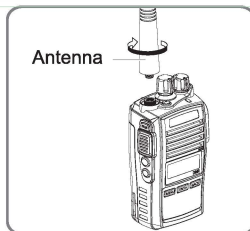
Belt Clip

⚠ CAUTION

◆ DO NOT USE GLUE WHICH IS DESIGNED TO PREVENT SCREW LOOSENING WHEN INSTALLING THE BELT CLIP, AS IT MAY CAUSE DAMAGE TO THE RADIO.
ACRYLIC ESTER, WHICH IS CONTAINED IN THESE GLUES, MAY CRACK THE RADIO'S BACK PANEL

Installing the Earphone/Speaker Microphone

Plug the Earphone/Speaker Microphone into the jack.
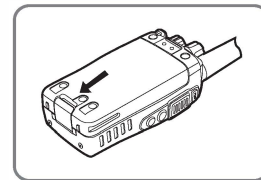
Note:

When use the earphone/speaker microphone, the radio may not waterproof.

Earphone/Speaker Microphone
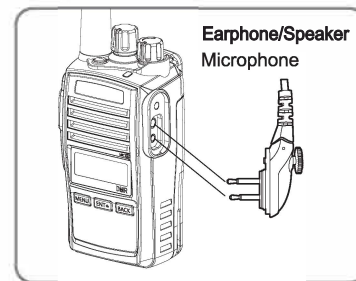
Installing the Jack Cover

If you are not using the jack, cover the jack by jack cover with supplied screw.

Note:

To keep the radio water resistant, you must cover the jacks with the supplied cover and fix the screw.

Earphone/Speaker Microphone Jack Cover

Turn On the Radio

Rotate the on/off/volume control knob clockwise until you hear a click and a brief tone sounds, indicates that the startup detection is successful. To turn off the radio, rotate this knob counterclockwise until you hear a click.

Note: If all prompt sound functions are disabled, there will be no startup sound

Adjusting the Volume

To increase the volume, turn on/off/volume control knob clockwise. To decrease the volume, turn knob counterclockwise.

1. Transmission

➤ **Analog Transmission:** Press and hold PTT key and speak to the speaker.

➤ **Digital Transmission:** Each channel can be set to digital channel.

✦ During the talking, pressing the [PTT] key causes the radio to transmit to other radios on the call. Press the [PTT] key to talk, release the [PTT] key to receive, when the [PTT] key is pressed, the microphone is activated.

✦ When not making a call, press the [PTT] key to initiate a new call (use the channel selection knob to select a channel or a preprogrammed one-touch call). According to programming, if the call permission tone is activated, wait until the short pre-call tone ends.

✦ During a call, if your radio has enabled the "channel free indication" function (programming software setting), when the target radio (the radio receiving your call) releases the [PTT] key, you will hear a short tone, indicating that the channel is free and waiting for your answer.

✦ You will also hear the channel free tone if the call is disconnected (such as when the radio receives an emergency call). You can turn off the channel free indicator by deactivating all notifications on the radio.

✦ During the calling process, if your radio has enabled the "Available Color Code" function (programming software setting), the receiver's radio must also be set with the same color code to receive your call.

2. Receive and Recall Transmission

Select Zone

The Zone is a channel group, the radio can support four zones,each zone with 128 channels max.
➢ Press the side key preprogrammed for zone switching.
➢ You will hear a confirmation beeps, indicating that the radio has switched from zone 1 to zone 2, or you
will hear deny beeps, indicating that the radio has switched from zone 2 to zone 1.

Select Radio Channels / User's ID or Group ID

After the desired channel zone is set (if there are multiple zones in the radio), turn the channel selection
knob to select the number that represents the channel, user's ID or group ID.

Receive and Response Calling

After setting the channels, user's ID or group ID, you can receive or response calling. When radio was
transmitting the LED indicates red or green when receiving.

Analog Receive: Receive the same carrier and matching signaling to open SQ.

Voice Receive: When receive correct calling (number match: single call, group call, all call tone), the
radio start receiving, open the speaker and hear the voice.

SMS Receiving: When two "Beep" tone was heard, the radio received the message, otherwise you will
hear one alert tone means receive failed.

Receive and Response Group Call

When receive the call from one group, the radio must be belonged to the group.
1. LED indicates green
2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth. If "CH free indication" was
enabled, you will hear the short beep tone when your partner release PTT, means the channel is free and
waiting for response.
3. Press PTT to response the call and LED indicates red.
4. You hear the Call permit tone (Activated) and speak clearly.
5. Release PTT to receive.
6. If there is no talking in this channel in preset time the calling was end.

Receive and Response Single Call

Single call mean one radio call to another radio, there are two call types:
One is radio process the inspection before calling, other is Immediate ready to call.
When call to you, your radio indicates green. You can only program one of these two call types into the
radio. Receiving the Single Calling:
1. LED indicates green.
2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth. If "CH free indication" was
enabled, you will hear the short beep tone when your partner release PTT,means the channel is free and
waiting for response.

3. Press PTT to response the call and LED indicator is red.

4. You hear the Call permit tone (if activated) and speak to the speaker.

5. Release PTT to receive.

6. If there is no talking in this channel in preset time,the calling was end.

7. A short tone will be heard.

Receive All Calling

All calling is a call made by an individual radio to all radios on the channel. It is used to post

important notifications that require special attention from the user.

When you receive all calling:

1. Sound an alert tone and LED indicates green.

2. If there is no talking in this channel in preset time,the calling was end. If "CH free indication" was enabled, you will hear the short beep tone when your partner release PTT, it means the channel can be use, but you cannot response all callin

Make a Radio Call

You can use below method to select a channel, user's ID or group ID using:

✦ Channel selection knob.
✦ Preprogrammed one-touch call keys.

Make a Call Using the Channel Selector Knob Making

Group Call

To send the group call, your radio must belong to this group.

1. Rotate the channel knob, use the group ID to select the channel.

2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth.

3. Press PTT to send the calling, LED indicates red.

4. You hear the Call permit tone (if activated) and speak to the speaker.

5. Release PTT to receive, LED indicates green if your partner is answering

6. If "CH free indication" was enabled, you will hear the short beep tone when your partner release PTT, it means the channel is free and wait for your response. Press PTT to response, if there is no talking in this channel in preset time, the calling was end.

Making Single Call

1. Rotate the channel knob, use the user's ID to select the channel.

2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth. 3. Press PTT to send the calling, LED indicates red.

4. You hear the Call permit tone (if activated) and speak to the speaker.

5. Release PTT to receive, LED indicates green if your partner is answering

6. If "CH free indication" was enabled, you will hear the short beep tone when your partner release PTT, it

means the channel is free and wait for your response. Press PTT to response, if there is no talking in this channel in preset time, the calling was end.

7. You will hear a short beep tone.

Making All Call

The function let you send calling to all users on this channel. The radio must be programmed to allow you to use this function.

1. Rotate the channel selection knob, select the channel using the active all call group ID.
2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth.
3. Press PTT to send the calling, LED indicates red.
4. You hear the Call permit tone (if activated) and speak to the speaker, users on the channel cannot reply to all call.

Use One Touch Access Key to Send Group Call or Single Call

One touch access function let you easily send the group call or single call to the preset ID or contacts, the function can be assigned to short programming or long programming key activation. You can program only one ID or Preset one contact person to one Touch Access key, you can program several One Touch Access Keys.

1. Press preset One Touch Access Key, make a group or single call to a predefined ID or current contact.
2. Hold the radio and keep 1-2 inch (2.5-5cm) distance with your mouth.
3. Press PTT to send the calling, LED indicates red.

4. You hear the Call permit tone (if activated) and speak to the speaker.
5. Release PTT to receive, LED indicates green if your partner is answering
6. If "CH free indication" was enabled, you will hear the short beep tone when your partner release PTT, it means the channel is free and wait for your response. Press PTT to response, if there is no talking in this channel in preset time, the calling was end. For single call, you will hear a short tone when the call end.

3.Short Message Setting

Sending the preset message

You may send the preprogrammed short message by preprogram key, there are 50 preset short message available.

1. Press the preprogrammed one touch access key to send preprogrammed message to one contact person.
2. LED indicates red.
3. Two beep will sound when the message is sent successfully, or a low tone prompt indicate that the message can't send.

4. Privacy Function

Privacy Setting (for digital mode only)

It can be set by programming software, the privacy type has none and basic optional, up to 16 sets of privacy groups can be preset, privacy key (4Byte), set no/basic encryption function through preprogrammed key.

5. Digital Emergency Alarm System

Alarm Type (set by programming software)

Activate/deactivate emergency mode by preprogrammed key.

Disabled: Close the Alarm function and the unit cannot emergency alarm, but can receive emergency call alarm from other units.

Regular: The unit sending the Alarm tone and after preset time (programmed by software) send the alarm tone and ID to the receive unit.

Silent: The unit is not alarmed but send the ID to the receive unit and that unit alarm.

Silent W/Noice: After starting the alarm and in the alarm state, press the PTT key to make a call and play the sound.

Lone Work

Enable/disable the function by preprogrammed keys,in order to ensure the security of the user when in the status of lone working. In the process of lone work.the unit will sound the alert tone in the due time, the user must press any key to indicate the security, otherwise the unit will be go for automatically alarm mode.

6. Scan (activate/deactivate this function via pre-programmed keys)

Scan List

Scan lists are created and assigned to individual channels/groups. Your radio can support up to 250 scan lists, with a maximum of 16 members in a list. Each scan list supports a mixture of both analog and digital entries. You can add, delete, or prioritize channels by editing a scan list.

Scan

When you initiate a scan, your radio cycles through a pre-programmed scan list to see if there is voice activity on the current channel.
The LED indicator flashes yellow.
There are two scanning methods:

✦ **Main Channel Scan (Manual)** : Your radio scans all channels/groups in your scan list. When entering the scan, depending on the settings.Your radio can automatically start from the last activated channel/ groups scanned or from the channel on which scanning was enabled.

✦ **Auto Scan (Automatic)** : When you select a channel/group with auto scan activated, the radio starts scanning from the channel with auto scan activated.

Delete the Useless Channels (Temporary)

When scanning is paused, pressing the button pre-programmed for this function will continue to scan the next channel, and the deleted channel will not be scanned again. However, when the scanning function is restarted after exiting, the channel scanning permission will still be restored.

Starting and Stopping a scan

1. Press the preprogrammed Scan key, or use the Channel Selector knob to select a channel for which Auto Scan is active.
2. When scanning is activated, the LED indicator flashes yellow and you hear a beep tone. Or when scanning is deactivated, the LED indicator turns off and you hear a negative tone.

Dual Priority Channel Scanning

When a priority channel is set, the priority scanning function is allowed to start. The priority scanning mode adopts a circular scanning method, scanning a priority channel once for each normal channel.

During Scanning, Responding to a Scan

During scanning, your radio stops on a channel/group where activity is detected.

The radio stays on that channel for a programmed time period known as "hang time".

1. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth. If the Channel Free indication feature is enabled, the transmitting radio releases the PTT button, you will hear a short alert tone, indicating the channel is free for you to respond.
2. Press the PTT button during hang time. The LED lights up red.
3. A prompt sound is allowed during the call (if activated}, then speak clearly to the microphone.
4. Release PTT button to listen.
5. If you do not respond within the hang time, the radio continues scanning other channels/groups.

7. Settings

Setting the Squelch Level

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or channels that have a higher than normal background noise.

Settings: Normal is the default. Tight filters out (unwanted) calls and/or background noise. However, calls from remote locations may also be filtered out.

1. Press the programmed Squelch button to toggle squelch level between normal and tight.
2. You will hear a confirmation tone, indicating that the radio is in Deep Squelch, or you will hear a negative tone, indicating that the radio is in Normal Squelch.

Setting the power level

You can customize your radio's power setting to high or low for each channel.

Settings: High enables communication with radios located at a considerable distance from you. Low enables communication with radios in closer proximity.

1. Press the pre-programmed "High/Low Power Selection" button.
2. You will hear a confirmation tone, indicating that the radio is transmitting at low power, or you will hear a negative tone, indicating that the radio is transmitting at high power.

Turning the Voice-activated Transmission (VOX) Feature On or Off

This feature allows you to initiate hands-free voice-activated calls on a programmed channel. Whenever the microphone on a vox-enabled accessory detects voice, the radio automatically transmits for a programmed period of time.

Pressing the PTT button during radio operation will disable the VOX function. To re-enable the VOX feature, do one of the following:

＋ Turn OFF the radio and turn ON again, or change the channel via the channel selector knob, or perform the following procedure.

⚠ **Notice**

◆ Enabling or disabling this feature is limited to the radios on which these features are activated.

1. Press the pre-programmed "VOX ON/OFF" key to turn the feature ON or OFF.
2. If the Call Permit Tone feature is activated, use the trigger key to initiate a call. Listen to the Call Permit Tone (if activated), then speak clearly into the microphone.

Turning the Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts (except for the incoming Emergency alert tone) if needed. 1. Press the pre-programmed "All Alert Tones On/Off " button.

2. You will hear a confirmation tone, indicating that all tones and prompts are turned on, or you will hear a negative tone, indicating that all tones and prompts are turned off.

Setting the monitoring function

You can define the side key as the monitoring function through the programming software. This function is effective in analog channels.

Control the volume knob to adjust the background noise level of the channel to a comfortable level for you, so that you can listen to the sound directly without waiting for the carrier to call you.

1. Press the pre-programmed "Monitor" button.
2. When monitoring is in progress, the LED indicator turns green and a speaker icon appears in the upper left corner of the screen.

Check the Battery Strength

You can check the remaining battery power.

Setting: The LED indicator lights up yellow to indicate that the battery is charging, and lights up green to indicate that the battery is fully charged.

Press the pre-programmed "Battery Power Indicator" key to check the battery power strength through the BEEP sound prompt. When the battery is very low, there will be a beep beep sound, when the battery is high, there will be three beeps, when the battery is medium, there will be one beep, and when the battery is low, there will be one beep.

Keyboard Lock

Some functions have been modified to prevent accidental touches. You can enable the keyboard lock function.

1. Long press [ENT] to lock the screen.
2. You will hear a confirmation tone, indicating that the keyboard is locked. When you click the keyboard, the screen will first show "Keyboard is locked" and then "Long press [ENT] to unlock" .

How to Use the Menu

1. Press the [MENU] key to enter the menu mode, and then rotate the channel selector knob to access the menu functions;
2. Press the [ENT] key to select a function or enter a submenu;
3. Press the [BACK] key to return to the previous menu level.

Note: The radio will automatically exit the menu and return to the main screen after a period of inactivity (the hang time is set by the programming software).

Menu Function Description and Settings

Radio Detection

If activated, this function allows you to determine if there are other radios active in the system without disturbing the radio user. No voice or visual notification appears on the target radio.

This function is only available for user aliases or IDs.

Send radio Detection

Use the menu function:

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel knob to Contacts, and press the [ENT] key to select.
3. Rotate the channel knob to the required alias or ID, and press the [ENT] key to select.

4. Rotate the channel knob to radio Detection, and then press the [ENT] key.

5. The screen displays radio Detection:

    <User Alias or ID>, indicating that radio detection is in progress.

    The LED indicator lights up red.

Intercom detection
Contact3

6. If the target radio is active in the system, a tone sounds and the display briefly displays Target radio

    answered. Or if the target radio is not active in the system, a tone sounds and the display briefly displays

    Target radio did not answer.

7. The radio returns to the User Alias or ID screen. If the [BACK] key is pressed while waiting for confirmation,

    the radio terminates all retries and exits radio detection mode.

Remote Monitoring

Use the Remote Monitoring feature to turn on the microphone on the target radio (user alias or ID only). No

voice or visual indication appears on the target radio. You can use this feature to remotely monitor any audio

activity around the target radio.

Your radio must be programmed to allow you to use this feature.

Start Remote Monitoring

Using the menu function:

1. Press the [MENU] key to enter the menu mode.

2. Rotate the channel selector knob to the Contacts, and then press the [ENT] key to select.

3. Rotate the channel selector knob to the desired user alias or ID, and then press the [ENT] key to select.

4. Rotate the channel selector knob to remote monitoring, and then press the [ENT] key.

5. The screen displays Remote Monitoring:

    <User Alias or ID>, indicating that remote monitoring is in progress.

    LED indicator lights up red.

Remote monitoring
Contact3

6. The screen displays Remote Monitoring Success.

    Or the screen displays Remote Monitoring Failure.

7. If successful: The radio starts receiving the audio signal from the monitored radio, and the LED indicator

    turns off after the pre-programmed time is end.

Contacts Setup

The Contacts provides an "address book" for the handheld radio. Each entry corresponds to an alias or ID

used to initiate a call. Entries in the Contacts display the following:

✦ Call Type

✦ Call Alias

✦ Call ID

Contacts 1/9
◀Contact1

NOTE: You can add, delete, or edit contacts from your Digital Contacts list.

Initiate a Group Call from the Contacts

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel knob to the Contacts and press the [ENT] key to select.
3. Rotate the channel knob to the required talk group alias or ID.
4. Press the [PTT] key to initiate a call, release the [PTT] key to Receive, and when any user in the group responds, the LED indicator lights up green. You will see the group call icon on the screen.

Initiate a Single Call from the Contacts

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel knob to Contacts and press the [ENT] key.
3. Rotate the channel knob to the required user alias or ID.
4. Press the [PTT] button to initiate a call. The first line displays the user alias or ID, and the second line displays the private call and the private call icon.
5. Release the [PTT] button to receive. When the target radio responds, the LED indicator turns green and the screen displays the caller ID.
6. If there is no voice activity within the pre-programmed private call hang time, the call is terminated.
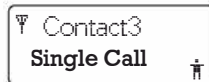
Call Log Function

Your radio can record all recent dialed, received, and missed individual calls. Use the Call Log function to view and manage recent calls.

Check the Latest Called Number

The menu items include Missed Calls, Received Calls, and Dialed Calls.

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel knob to Call Log, and press the [ENT] key.
3. Rotate the channel knob to the required list, and press the [ENT] key.
4. The screen displays the latest entry at the top of the list.
5. Rotate the channel knob to check the members of the list.

Delete a Call from the List

1. Press the [MENU] key to access menu.
2. Rotate the channel knob to Call Log and press [ENT] to select.
3. Rotate the channel knob to the required list and press [ENT] to select.
4. Rotate the channel knob to the required alias or ID and press [ENT] to select.
5. Rotate the channel knob to Delete Entry and press [ENT] to select whether to delete the entry.
6. Select " Yes "and press the [ENT] key to delete the entry, and the screen will show that the entry has been deleted; or select " No " and press the [ENT] key to return to the previous screen.
   When you select a call list but there are no entries in it, the screen will show that the list is empty.
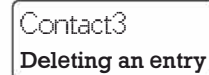
Call Alert Function

Call alert allows you to alert a specific radio user to call you at a possible time. The read function is only available for user aliases or IDs and can be used through the menu, through the address book, or manually dialing.

Receiving and Confirming Call Alerts

When you receive a call alert, the screen displays Call Alert, alternating between the alias or ID of the calling radio.

1. The LED indicator flashes red.
2. Press and release the [PTT] key to confirm the alert, or press the [ENT] key to select "Ignore?" to exit the call alert.

Initiating a Call Alert from the Contacts

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel selector knob to Contact, and press the [ENT] key to select.
3. Rotate the channel selector knob to the desired user alias or ID, and press the [ENT] key to select.
4. Rotate the channel selector knob to Call Alert, and press the [ENT] key.
   The screen displays Call Alert E <User Alias or ID>, indicating that the call alert is being sent.

Call Tips
Contact3

5. When the radio sends a call prompt, the LED indicator lights up red.
6. If the call prompt confirmation is received, a prompt tone is emitted and the call prompt is displayed successfully.
   Or if the call prompt confirmation is not received, a prompt tone is emitted and the screen displays that the call prompt failed.

SMS Function

Your radio can receive data, such as SMS messages from another radio. The maximum length of SMS messages is 164 characters.

Note: Press the [MENU] Key at any time to return to the previous screen.

Sending Pre-programmed SMS

The radio supports up to 50 pre-programmed SMS messages programmed by the dealer:
When SMS messages are pre-defined, you can edit each message before sending it.
Using the Menu Function:

1. Press the [MENU] key to enter the Menu Mode.
2. Rotate the Channel Selector to Message and press the [ENT] key to select.
3. Rotate the Channel Selector to Pre-programmed SMS and press the [ENT] key to select.

Sending SMS:
Contact3

4. Rotate the Channel Selector to the desired pre-programmed SMS message. Then press the [ENT] key to select.

5. After selecting Send, rotate the Channel Selector to the required alias or ID and press the [ENT] key to select.

6. The screen displays the SMS message: <User/Talk Group Alias or ID>, confirming that the SMS message is being sent.

7. If the SMS message is sent successfully, a prompt tone is emitted. The screen displays that the message has been sent. Or if the message cannot be sent. A high-pitched tone sounds and the screen displays that the message failed to be sent. If the message fails to be sent, the radio returns to the resend selection screen.

   You can also press the preprogrammed single-touch call key to send a predefined message to a predefined alias or ID.

Managing Failed SMS Messages

In the resend selection screen, you can select the following options:

✦ Resend

✦ Forward

Resend SMS Message

1. Press the [ENT] key to resend the same SMS message to the same user/group alias or ID.

2. If the message is sent successfully, a tone sounds and the screen displays Message Sent or if the message could not be sent, the screen displays Message Failed.

Forward SMS Message

Select Forward to send the SMS message to another user/group alias or ID.

1. Rotate the Channel Selector to Forward. Then press the [ENT] key to select.

2. Rotate the Channel Selector to the desired alias or ID and press the [ENT] key to resend.

3. The screen displays Message: <User/Group Alias or ID> to confirm that the SMS message is being sent.

4. If the message is sent successfully, a tone sounds and the screen displays Message Sent.

   Or if the message was not sent, a high-pitched tone sounds and the screen displays Message Failed.

Managing Sent SMS

Once a text message is sent to another radio, it is saved in the Outbox. After it is sent, the repeated text messages are always added to the top of the Outbox list. The Outbox folder can store up to 50 recently sent text messages. When the folder is full, the next text message sent will automatically replace the oldest text message in this folder.

Note: Press the [ENT] key at any time to return to the previous screen.

Viewing Sent SMS

Using the Menu Function:

1. Press the [MENU] key to enter the Menu Mode.

2. Rotate the Channel Selector Knob to Message and press the [ENT] key to select.

3. Rotate the Channel Selector Knob to Outbox and press the [ENT] key to select.

4. Rotate the Channel Selector Knob to the required text message and press the [ENT] key.

Sending Sent SMS

When viewing sent text messages, you can select the following options:

✦ Resend

✦ Forward

✦ Delete

1. While viewing a message, press the [ENT] key again.

2. Rotate the Channel Selector to Resend, then press the [ENT] key to repeat.

3. The screen displays Message: <User/Group Alias or ID>, confirming that the same message is being

   sent to the same radio.

4. If the message is successfully sent, a tone sounds, and the screen displays Message Successfully Sent.

   Or if the message is not successfully sent, a high-pitched tone sounds, and the screen displays Message

   Failed. If the message fails to be sent, the radio returns to the Resend Options screen. Press the [ENT]

   key to resend the message to the same user/group alias or ID.

✦ Select Forward to send the selected message to another group/user alias or ID.

✦ Select Delete to delete the selected message.

Delete all sent messages in the "Outbox"

Using the Menu function:

1. Press the [MENU] key to enter Menu mode.

2. Rotate the Channel Selector to Message. Then press the [ENT] key to select.

Sent information
Delete All

3. Rotate the channel selector knob to Outbox, and then press the [ENT] key to

   select.

4. Rotate the channel selector knob to Delete All, and then press the [ENT] key to select.

5. When the Delete SMS message appears, press the [ENT] key, select " Yes " and the screen will show

   that the Outbox has been cleared. Or when the Delete SMS message appears, rotate the channel

   selector knob to No and press the [ENT] key to return to the previous screen. When you select " Outbox "

   but there are no SMS messages in it, the screen will show that the list is empty.

Receiving SMS

When your radio is receiving SMS, the screen displays the sender's alias or ID and the SMS icon on the left.

Press the [ENT] key to view the SMS content.

Managing Received SMS

Use the Inbox to manage SMS messages. The Inbox can store up to 50 SMS messages.

The radio supports the following SMS options:

✦ Reply
✦ Forward
✦ Delete
✦ Delete All

The SMS messages in the Inbox are stored in the order they were most recently received.

Note: Press the [BACK] key at any time to return to the previous screen.

Viewing SMS Messages in the Inbox

1. Press the [MENU] key to enter Menu Mode.
2. Rotate the Channel Selector to Message, then press the [ENT] key to select.
3. Rotate the Channel Selector to Inbox, then press the [ENT] key.
4. Rotate the channel knob to check messages.
5. Press the [ENT] key to select the current message, and press the [ENT] key again to reply, delete or forward the message. Unread messages are indicated by an exclamation mark(!).

Reply to Messages in the Inbox

Using the menu function:

1. Press the [MENU] key to enter the menu mode.
2. Rotate the channel knob to Message, and press the [ENT] to select.
3. Rotate the channel knob to Inbox, and press the [ENT] to select.
4. Rotate the channel knob to the required message, and press the [ENT] to select.
5. Press the [ENT] key again to enter the submenu.
6. Rotate the channel knob to Reply. and then press the [ENT] key to select.
7. Press the [ENT] key again to confirm entering the pre-set message, and rotate the channel knob to select the pre-set message that required to be sent.
8. After selecting the pre-set message, press the [ENT] key twice to select Send.
9. The screen displays Message: <User/Group Alias or ID> to confirm that the message is being sent.
10. If the message is successfully sent, a tone sounds and the screen displays Message Sent.
    Or if the message cannot be sent, the screen displays Message Failed. If the message fails to be sent, the radio returns to the resend selection screen.

Delete Text Messages from your Inbox

Use the menu function:

1. Press the [MENU] to enter the menu mode.

2. Rotate the channel knob to Information, and then press [ENT] to select.

3. Rotate the channel knob to the Inbox, and then press [ENT] to select.

4. Rotate the channel knob to the required SMS, and then press the [ENT] to select.

5. Press again to enter the submenu.

6. Rotate the channel knob to delete, and then press .

7. When display shows "delete messages", rotate the channel knob to "Yes" ,
   and then press the [ENT] , display will show that the message has been deleted.

```
Hello
              Delete
```

Delete all Text Messages in your Inbox

Use the menu functions:

1. Connect to [MENU] to enter the menu mode.

2.Rotate the channel knob to the information, and then press [ENT] to select.

3.Rotate the channel knob to the Inbox, and then press [ENT] to select.

4.Rotate the channel knob to delete all, and then press [ENT] .

5.When the deleted message appears, rotate the channel knob to Yes and press the [ENT] key.

6.The screen shows the inbox is empty. When you select Inbox but has no SMS, the list appears blank.

```
Inbox
           Delete All
```

Privacy

If enabled, this feature helps to prevent eavesdropping by unauthorized users on a channel by the use of a software based scrambling solution. Your radio must have privacy enabled on the channel to send a privacy-enabled transmission.

To unscramble a privacy-enabled call or data transmission, your radio must be programmed to have the same Key Value and Key ID as the transmitting radio.

If your radio receives a scrambled call that is of a different Key Value and Key ID, you will hear chaos sound.

You can preprogram 16 groups privacy, encryption keys by software, press programmed Privacy button to Turn On or Turn off Privacy.

If the radio has a privacy type assigned, the Home screen shows the secure or insecure icon.

The DTMF Signaling Setting

The DTMF receiving / transmitting signaling system has four (programming software setting) , with 32 sets of codes, each with 30 characters.

Called party: called party can set the response type via software, as follows: Kill: after radio receive Kill code, radio disable to receive/transmit.

Active: when radio in Kill status, receiving active code radio return to normal.

Kill/Active function

You can Kill or Active any radio in the system. For example, you may want to stop using the stolen radio, to

prevent thieves using it and enable it when it returns back.

NOTE: Execute radio Kill or Active only suitable the radio has active function and Private Call only.

Radio Kill

Procedure:

1. Press [MENU] access to menu mode.
2. Rotate the Channel knob to Contacts and press [ENT] to select.
3. Rotate the Channel knob to required alias or ID and press [ENT] to select.
4. Rotate the channel knob to Radio Kill and press [ENT] to select.
5. The display shows Radio Kill: <Subscriber alias or ID> and LED indicator lights red.
6. If successful, a tone sounds and display shows Radio Kill successfully. OR if failed, a tone sounds and display shows Radio Kill failed. During operate radio kill, do not press [BACK] key, because you will not get the confirmation information.

Radio Active

Procedure:

1. Press [MENU] access to menu mode.
2. Rotate the Channel knob to Contacts and press [ENT] to select.
3. Rotate the Channel knob to required alias or ID and press [ENT] to select.
4. Rotate the channel knob to Radio Active and press [ENT] to select.

5. The display shows Radio Active: <Subscriber alias or ID>.
6. If successful, a tone sounds and display shows Radio Active successfully. OR if failed, a tone sounds and display shows Radio Active failed. During operate radio Active, do not press [BACK] key, because you will not get the confirmation information.

Scan

Scan lists are created and assigned to individual channels/groups. Your radio can support up to 250 scan lists, with a maximum of 16 members in a list. Each scan list supports a mixture of both analog and digital entries. You can add, delete, or prioritize channels by editing a scan list.

Viewing an Entry in the Scan List

Procedure:

1. Use the Channel Selector Knob to select a channel programmed with a scan list.
2. Press [MENU] to access menu mode.
3. Rotate Channel knob to Scan and press [ENT] to select.
4. Rotate Channel knob to View List and press [ENT] to select.
5. Rotate the Channel knob to view each member on the list.
   If set priority, the Priority icon appears left of the member's alias, indicate whether the member is on a Priority 1 or Priority 2 channel list. You cannot have multiple Priority 1 or Priority 2 channels in a scan list. There is no Priority icon if priority is set to None.

Scan Instructions and Methods

When starting a scan, your radio cycles through a pre-programmed scan list to see if there is any voice activity on the current channel. The LED indicator flashes red, and the scan icon appears on the screen.

Two scanning methods:

✦ Manual scan: Start scanning according to the pre-programmed scan ON/OFF key or menu function. When scanning is started, the radio will detect all Channels/Groups in the preset scan list.

✦ Automatic scan: When you select a Channel/Groups that has Auto Scan activated, the radio starts scanning from the channel that the Auto Scan is activated.

Starting and Stopping Scan

Press the pre-programmed Scan button to start or stop Scan OR follow the procedure below:

1. Use the Channel Selector Knob to select a channel pre-programmed with a scan list.
2. Press [MENU] access to menu.
3. Rotate the Channel knob to Scan and press [ENT] to select.
4. The display shows Turn Off if scan is disabled. OR the display shows Turn on if scan is enabled.
5. Press [ENT] to select.
6. The LED blinks red and the Scan icon is displayed when Scan is enabled. OR the LED turns off and the Scan icon is not displayed when Scan is disabled.

Responding to a Scan

During scanning, your radio stops on a channel/group where activity is detected. The radio stays on that channel for a programmed time period known as "hang time".

Procedure:

1. Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth. If the Channel Free indication feature is enabled, the transmitting radio releases the PTT button, you will hear a short alert tone, indicating the channel is free for you to respond.
2. Press the PTT button during hang time. The LED lights up red.
3. Release PTT button to listen.
4. If you do not respond within the hang time, the radio continues scanning other channels/groups.

Zone

A zone is a channel group. This radio supports multiple channel groups, each channel group contains up to 16 channels.

1. Press [MENU] access to menu mode.
2. Rotate Channel knob to Zone, and press [ENT] to select.
3. Rotate Channel knob to required Zone, and press [ENT] to confirm, screen displays the group name and "selected".

Note: The Channel group you are currently in has a "√" mark in front of its group name. The group name of the zone is unique.

Utilities

Keypad locked and Keypad unlocked

You can lock your radio's keypad to avoid inadvertent key entry. Procedure:

1. Press [MENU] to access the menu.

2. Rotate Channel knob to Utilities and press [ENT] to select.

3. Rotate Channel knob to Radio Settings and press [ENT] to select.

4. Rotate Channel knob to Keypad Lock and press [ENT] to select.

5. The display shows Keypad Locked and returns to the Home screen.

6.To unlock the keypad, long press [ENT] key.

7. The display shows Keypad Unlocked and returns to the Home screen.

Tones / Alerts

Three options for Tones/Alerts:

✦ All tones

✦ Call permission

✦ Keypad tone

If needed. You can choose to activate and stop, The following example takes the activation and deactivation

of keypad tones as an example.

1. Press [MENU] to access the menu.

2. Rotate Channel knob to Utilities and press [ENT] to select.

3. Rotate Channel knob to Radio Settings and press [ENT] to enter the submenu.

4. Rotate Channel knob to Tones/Alerts and press [ENT] to select.

5. Rotate Channel knob to Keypad Tones and press [ENT] to select.

6. The display shows Turn On, Press [ENT] to enable keypad tones. The display shows keypad Tone On.
   OR the display shows Turn Off. Press [ENT] to disable keypad tones. The display shows Keypad Tone Off.

Setting the Squelch Level

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or channels
that have a higher than normal background noise.

Settings: Normal is the default. Tight filters out (unwanted) calls and/or background noise. However, calls
from remote locations may also be filtered out.

Press the programmed Squelch button to toggle squelch level between normal and tight.

Procedure:

1.Press [MENU] to access the menu.

2.Rotate Channel knob to Utilities and press [ENT] to select.

3.Rotate Channel knob to Radio Settings and press [ENT] to select.

4.Rotate Channel knob to Squelch and press [ENT] to enter sub-menu.

5.Choose either Tight or Normal and press [ENT] button, screen returns to the previous menu.

Setting the Power Level

You can customize your radio's power setting to high or low for each channel.

Settings: High enables communication with radios located at a considerable distance from you. Low enables communica- tion with radios in closer proximity.

Press the programmed Power Level button to toggle transmits power level between high and low.

Procedure:

1. Press [MENU] to access the menu.
2. Rotate Channel knob to Utilities and press [ENT] to select.
3. Rotate Channel knob to Radio Settings and press [ENT] to select.
4. Rotate Channel knob to TX Power and press [ENT] button.
5. Change your current setting as prompted on the display.
6. Press [ENT] button to select a new power level.

   Press [BACK] button to return to the Home screen. The display shows the Power Level icon.

Turning the Voice Operating Transmission (VOX) Feature On or Off

This feature allows you to initiate a hands-free voice activated call on a programmed channel.

✦ Follow the procedure below:

NOTE: Turning this feature on or off is limited to radios with this function enabled.

Press the programmed VOX button to toggle the feature on or off.

Follow the procedure below:

1. Press [MENU] to access the menu.
2. Rotate Channel knob to Utilities and press [ENT] to select.
3. Rotate Channel knob to Radio Settings and press [ENT] to select.
4. Rotate Channel knob to VOX and press [ENT] to select.
5. The display shows VOX On. Press [ENT] to enable VOX and display shows VOX On. OR the display shows VOX Off.

   Press [ENT] to disable VOX and display shows VOX Off.

Controlling the Display Backlight

You can enable or disable the radio's display backlight as needed. The setting also affects the Menu Navigation Buttons and keypad backlighting accordingly.

Procedure:

1. Press [MENU] to access the menu.
2. Rotate Channel knob to Utilities and press [ENT] to select.
3. Rotate Channel knob to Radio Settings and press [ENT] to select.
4. Rotate Channel knob to Backlight and press [ENT] button.
5. The display shows Auto On. Press [ENT] to enable the display backlight. The display shows Backlight Auto On. OR the display shows Turn Off. Press [ENT] to disable the display backlight. The display shows

Backlight Turn Off. The display backlight and keypad backlight are automatically turned off if the LED indicator is disabled.

Talkaround

You can continue to communicate when your repeater is not operating, or when your radio is out of the repeater's range but within talking range of other radios. This is called "talkaround", the radio must be configured to allow talk around function on the channel.

Press the programmed Repeater/Talkaround button to toggle between talkaround and repeater modes.

Procedure:

1. Press [MENU] to access the menu.
2. Rotate the Channel knob to Utilities and press [ENT] to select.
3. Rotate the Channel knob to Radio Settings and press [ENT] to select.
4. Rotate the Channel knob to Talkaround and press [ENT] to select.
5. You see Turn On if the radio is currently in Repeater mode. OR you see Turn Off if the radio is currently in Talkaround mode.
6. Press [ENT] to select.
7. The display shows Talkaround On. Or the display shows Talkaround Off.
8. The screen automatically returns to the previous menu.

Turning the Radio Tones/Alert On or Off

You can enable and disable all radio tones and alerts (except for the incoming Emergency alert tone) if needed.

Procedure:

1. Press [MENU] to access the menu.
2. Rotate the Channel knob to Utilities and press [ENT] to select.
3. Rotate the Channel knob to Radio Settings and press [ENT] to select.
4. Rotate the Channel knob to Tones/Alerts and press [ENT] to enter sub-menu.
5. Rotate the Channel knob to All Tones and press [ENT] button.
6. The display shows Turn On. Press to enable all tones and alerts. The display shows All Tones On. OR the display shows Turn Off. Press [ENT] to disable all tones and alerts. The display shows All Tones Off.

Chinese-English Shift

You can switch Chinese-English if needed.

Procedure:

1. Press [MENU] to access the menu.
2. Rotate the Channel knob to Utilities and press [ENT] to select.
3. Rotate the Channel knob to Radio Settings and press [ENT] to select.
4. Rotate the Channel knob to Language select and press [ENT] to sub-menu.
5. Rotate the Channel knob to select Chinese-English display and press [ENT] button.

Turning the LED Indicator On or Off

You can enable and disable the LED Indicator if needed.

1. Press [MENU] to access the menu

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3. Rotate the Channel knob to Radio Settings and press [ENT] to select.

4. Rotate the Channel knob to LED Indicator and press [ENT] button.

5. The display shows Turn. Press [ENT] to enable the LED Indicator. The display shows All LEDs On. OR the display shows Turn Off. Press [ENT] to disable the LED Indicator. The display shows All LEDs Off. The display backlight, buttons and keypad backlight are automatically turned off if the LED indicator is disabled.

Turning the Introduction Screen On or Off

You can enable and disable the Introduction Screen if needed.

Procedure:

1. Press [MENU] to access the menu.

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3. Rotate the Channel knob to Radio Settings and press [ENT] to select.

4. Rotate the Channel knob to Intro Screen and press [ENT] to select.

5. The display shows Turn On. Press [ENT] to enable the Introduction Screen. The display shows Intro Screen On. OR the display shows Turn Off. Press [ENT] to disable the Introduction Screen. The display shows Intro Screen Off.

Accessing General Radio Information

Your radio contains information on the following:

✦ Radio ID
✦ Software version
✦ Codeplug Version

NOTE: Press [BACK] at any time to return to the previous screen.

Checking the Radio ID

Procedure:

1. Press [MENU] to access the menu

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3. Rotate the Channel knob to Radio Info and press [ENT] to select.

4. Rotate the Channel knob to My Number and press [ENT] button.

5. The display shows radio ID and alias

Checking the Firmware Version

Display the firmware version on your radio.

Procedure:

1. Press [MENU] to access the menu.

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3.Rotate the Channel knob to Radio Info and press [ENT] to select.

4.Rotate the Channel knob to Firmware Ver. and press [ENT] button.

5.The display shows the current firmware version.

Checking the Codeplug Version

Display the codeplug version on your radio. Procedure:

1. Press [MENU] to access the menu.

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3.Rotate the Channel knob to Radio Info and press [ENT] to select.

4.Rotate the Channel knob to CP Ver. and press [ENT] button.

5.The display shows the current codeplug version.

Checking the hardware version

Display the hardware version on your radio.

Procedure:

1. Press [MENU] to access the menu.

2. Rotate the Channel knob to Utilities and press [ENT] to select.

3. Rotate the Channel knob to Radio Info and press [ENT] to select.

4. Rotate the Channel knob to Hardware Ver. and press [ENT] button.

5. The display shows the current hardware version.

General			
Model	PD590	Size (about)	115 * 57 * 38 mm (Exclude Antenna)
Operating Temperature	- 20℃ ~+ 60℃	Weight (about)	221g (Include Battery)
Operating Voltage	DC 7.4 V	Antenna Impedance	50 Ω
Operating Mode	Same /different frequency Simplex		
Transmitter			
Carrier frequency capacity	± 250Hz	Modulating Characteristic	+ 3 dB ~ - 3 dB
Carrier Output Power	H≤5W L≤1W	Adjacent Channel Power	≥65dB
Modulation Limit	≤5KHz@25KHz;	Spurious RF	≤7.5μV
	≤2.5KHz@12.5KHz	Occupied bandwidth	≤16KHz
Audio Distortion	≤5%		
Receiver			
Reference Sensitivity	≤0.224μV	Adjacent Channel Selectivity	≥55dB
Audio Distortion	≤ 5%	Intermodulation Anti - interference Ability	≥55dB
Audio Response	+ 3dB ~ - dB	Blocking	≥85dB
Co - channel Rejection	≥-8dB		

The preparation of this manual has been striving for the correctness and completeness of the content, but Delta Radio Group reserves the right to interpret the possible omissions. Delta Radio Group. reserves the right to change product design and specifications without prior notice.