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# **QP-350-DU2 Digital Two-Way Radio USER MANUAL**

**Quantun Electronics, LLC**

## THANK YOU

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*We are grateful for your choice of Quantun production. This Professional Digital two-way radio incorporates the advanced technology and craft. You will be pleased with the quality and features of our product. Please read this manual carefully to ensure you know how to properly operate the radio before use.*

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## User Safety Information



READ THIS IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION BEFORE USING YOUR QUANTUN PORTABLE TWO-WAY RADIO.

### Compliance with RF Energy Exposure Standards

Your **Quantun** two-way radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE (FCC) and ICNIRP exposure limits for occupational/controlled RF exposure environment at duty cycles of up to 50% talk-50% listen and should be used for occupational use only. In terms of measuring RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.

**Note:** The approved batteries supplied with this radio are rated for a 5-5-90 duty cycle (5% talk-5% listen-90% standby), even though this radio complies with the FCC occupational RF exposure limits at duty cycles of up to 50% talk.

**Your Quantun two-way radio complies with the following of RF energy exposure standards and guidelines:**

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3KHz to 300GHz, 1999

- **EU Regulatory Conformance**

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC. Please note that the above information is applicable to EU countries only.

## **Precaution and Notices**

- Government law prohibits the operation of unlicensed radio transmitters. Illegal operation is punishable by fine or imprisonment Of both.
- To avoid problem caused by electromagnetic interference and electromagnetic compatibility, please turn off the transceiver at the sites where you are required, such as hospital, airplane etc.
- In the vehicle equipped with air bag safety, don't put the transceiver within the scope of the air bag inflation.
- Please turn off the transceiver before step into the inflammable and explosive places.
- Don't transmit for a long time, it may damage the transceiver or it may cause scald.
- Don't use the transceiver which antenna is damaged or else when the exposed metal touch the skin, it may cause scald also.
- Don't expose the transceiver to long periods of direct sunlight, nor place it close to heating appliances.
- If belt the transceiver on with belt clip, please notice that the distance Between body and antenna should be more than 5cm when transmitting.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF the power immediately and remove the optional battery pack from the transceiver. Contact our dealer nearby.

\* Industry Canada Compliance:

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme à la norme NMB-003 Canada.

## Product Inspection

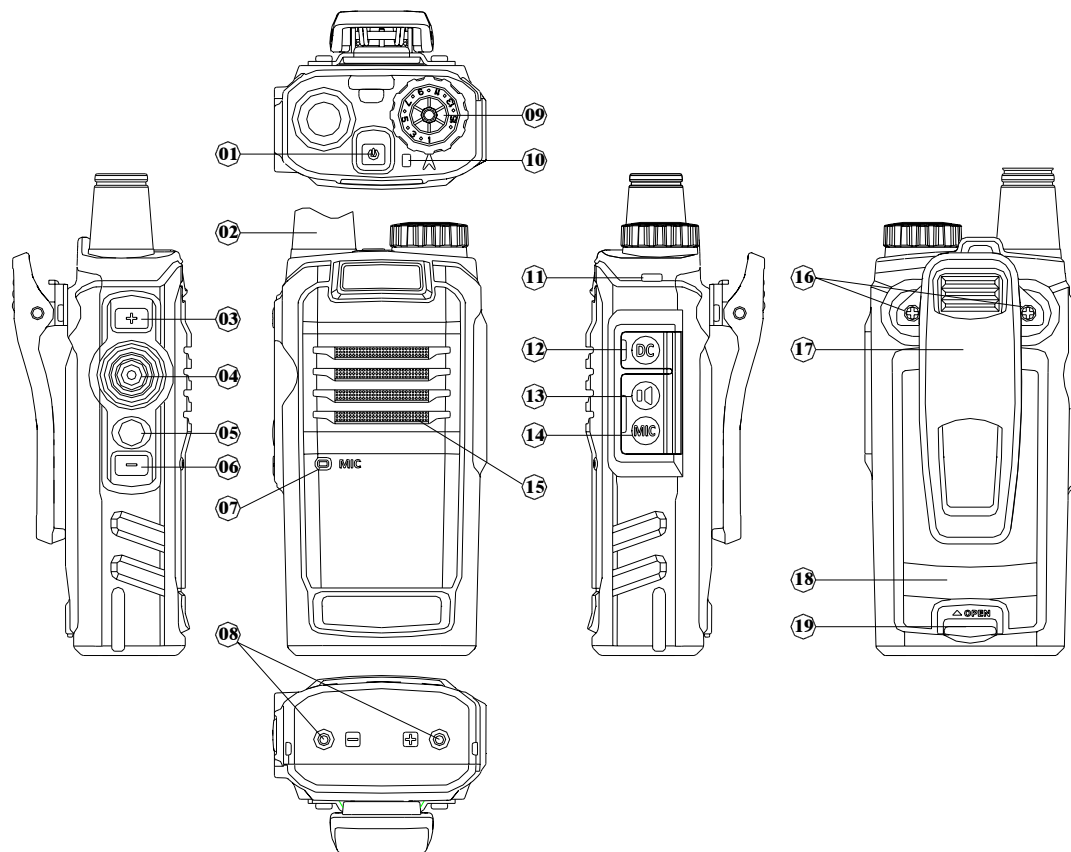
Please carefully take the transceiver out of the box. We recommend that you confirm the items listed in the following table are enclosed before discarding the box. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

### Available Accessories

Item	Qty. (Pcs.)
Antenna	1
Belt Clip	1
Screws(Belt Clip)	2
Battery	1
AC Adapter	1
Nylon Strap	1
User's Manual	1

## Radio Overview

### Parts of the Radio



(1) Power Switch	(2) Antenna	(3) Volume Adjust Keys[+]	(4) PTT Key
(5) SK(Programmable Side Key)	(6) Volume Adjust Keys[-]	(7) Microphone	(8) Charging Terminal
(9) Channel Selector Knob	(10) Status Indicator	(11) Charge Indicator	(12) Charge DC Jack
(13) External Earphone Jack	(14) External Earphone Jack	(15) Speaker	(16) Screw(Belt Clip)
(17) Belt Clip	(18) Rear Cover	(19) Battery Latch	

## The functions of the LEDs and beeps Table

Power on	When the radio is turned on, the power on alert tone sounds and status Indicator flashes green once. When the current channel is a blank channel, the radio sounds beep tone continuously.
Power off	When the radio is turned off, the power off alert is heard.
Low battery alert	Status Indicator flashes red, and a Di-Di-Di tone sounds at intervals of 10 seconds.
Transmitting	Status Indicator glows red when transmitting. When TOT timer expires, the radio sounds beep tone continuously. TOT pre-alert:: A beep is heard.
Receiving	Status Indicator glows green when carrier is present.
Call ended (within the presettime period)	LED glows orange
Emergency	LED flashes orange rapidly
Scanning	Status Indicator flashes green once every 1 second, while scanning is in process. Scan Start Alert Tone (programmable by your dealer): A beep is heard. When signal is received on a certain channel, Status Indicator solidly glows green. Scan Exit Alert Tone (programmable by your dealer): Two beep is heard.
Power adjust	A low-pitched tone is heard when transmit power is switched from high power to low power. A high-pitched tone is heard when transmit power is switched from low power to high power.
VOX	One beep sounds when the VOX feature is activated. Two beeps sound when the VOX feature is disabled.



## **Programmable Auxiliary Functions**

The **SK** key is a programmable function button. Your dealer may assign any of the following auxiliary functions to a short or long programmable key-press.

- None
- Squelch Off
- Squelch Off Momentary
- Monitor
- Monitor Momentary
- Scan
- Power Adjust
- Channel Lock
- Battery Strength Indicator
- VOX
- Encryption

## **Radio embedded features**

- Analog Digital Receive Automatically Identify
- Channel number Voice
- High/low RF power toggle
- Selectable Squelch Level
- Busy Channel Lockout
- Tx time-out-timer
- CTCSS/CDCSS signalling
- Squelch Tail Elimination
- Battery Save function
- Low battery Alert

# Getting Started

## Battery

### Safety Precautions

The battery is not fully charged at the factory. It is recommended to charge the new battery for 5 hours before using it. Also, batteries that may have set longer than 2 months since the last charge should be charged before using it. The battery capacity will be optimum after being charged/discharged two or three times. When the battery's charge is depleted, charge the battery or replace the battery with a new one.

### Caution:

1. Do not short circuit the battery terminals or discard the battery in fire. Never attempt to disassemble the battery.
2. Never charge a battery that is wet. Please dry it with soft cloth prior to charge.
3. Do not return fully charged batteries to the charger for an "extra boost". This action will significantly reduce battery life.
4. Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.

### Battery Tips

1. The battery should be charged at 5°C ~ 40°C, temperature out of this range could result the battery not fully charged.
2. When charging a battery attached to a radio, turn the radio off to ensure a full charge.
3. Do not cut off the power supply or remove the battery when charging a battery.
4. The battery will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal performance, it is time to buy a new battery.

### To Prolong Battery Life

- ✧ Battery performance will be greatly decreased at a temperature -20°C below. Please use back-up battery in cold weather. The cold battery unable to work in this situation may work under room temperature, so keep it for later use.
- ✧ The dust on the battery contact may affect battery life. Please use clean dry cloth to wipe it before the attaching the battery to the radio.

### Battery Storage

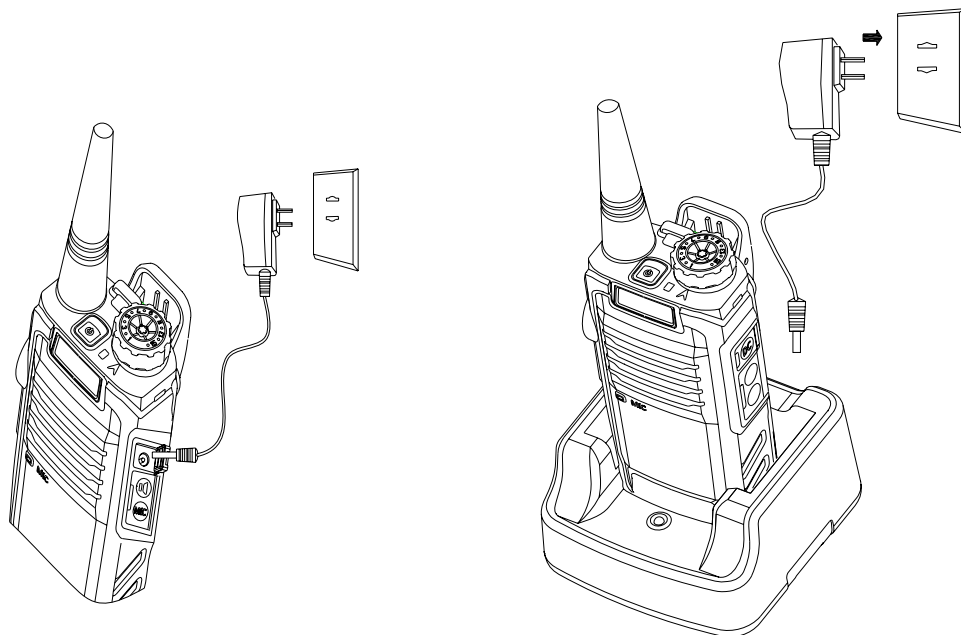
1. Considering the battery's self-discharge characteristics, fully charge the battery prior to long time storage, to avoid battery damage due to over-discharge.
2. Recharge the battery after 6 months' storage, to avoid reducing battery capacity due to over-discharge.
3. Notice the ambient humidity and temperature for the battery storage. Please store it in cool dry area under room temperature, to reduce self-discharge capacity.

## Charging the Battery

When the radio top LED flashes red and three beeps sound every 10 seconds indicating the battery power runs low, please recharge the battery.

You are recommended to use Quantun authorized charger. Charger LED will indicate the charging status.

**Please follow these steps to charge your radio using the switching power adapter or desktop charger:**



1. Plug the AC connector of the switching power adapter into the AC outlet socket.
2. Plug the DC connector of the switching power adapter into the DC jack of the radio or charger.
3. Place the radio with the battery attached in the charger when the charger indicator glows green to indicate the power supplies normally. (Please skip this step if you don't

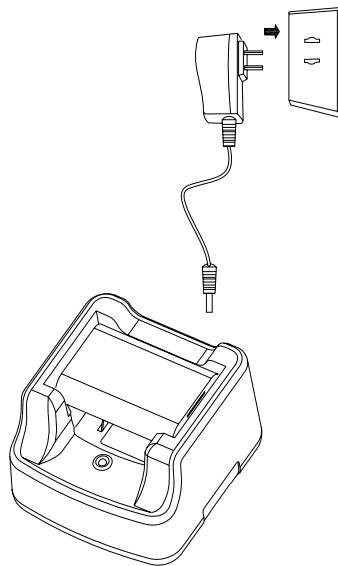
use a charger)

4. Make sure the radio is connected to the switching power adapter or the charger. The charging process initiates when the Charge Indicator of the radio glows orange.
5. The Charge Indicator glows green when the battery is fully charged. Please remove the radio then.

Charger LED	Status
Steady Orange	Battery is charging
Steady Green	Battery is fully charged

**Note:** Make sure the radio is attached with a battery before charging, and is powered off during charging.

**Please follow these steps to charge a battery using the desktop charger:**



1. Plug the AC connector of the switching power adapter into the AC outlet socket.
2. Plug the DC connector of the switching power adapter into the DC jack of the charger.  
Indicator of the charger glows green.
3. Place the battery in the charger.
4. Make sure the battery is connected to the charger. The charging process initiates when the charger indicator glows orange.

5. The charger indicator glows green when the battery is fully charged. Please remove the battery then.

Charger LED	Status
Steady Orange	Battery is charging
Steady Green	Battery is fully charged

## Antenna

Stubby antennas are ideal for communication within limited range. Fine and long antennas optimizes communication coverage, ideal when the radio is worn on the belt because they are flexible and soft.

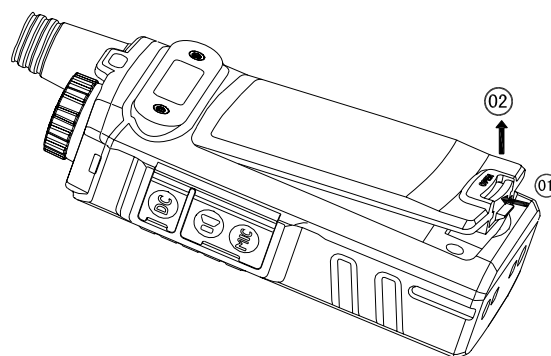
Rainy days or forest locations may narrow your communication range, please repare in advance to avoid potential inconvenience.

## Accessory Installation

### Battery

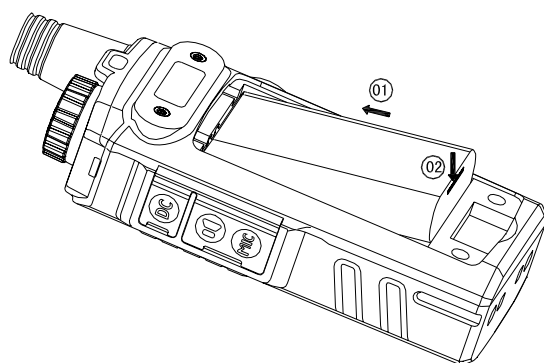
#### Attaching the battery

1. Hold the top part of the radio's body, and slide the battery latch in the direction of arrow ① Then lift the rear cover and remove it from the radio's body, as shown in Figure 1.



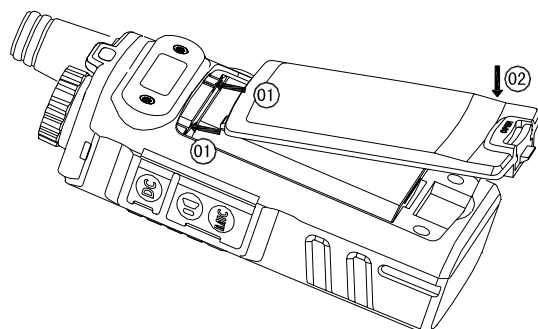
**Figure 1**

2. Align the discharging terminal of the battery with the radio's charging piece, and insert the tab at the top of the battery into the slot at the top of the radio's body. Then press the bottom of the battery towards the radio, until the battery is securely inserted into the battery slot, as shown in Figure 2. Note: If the battery is not well locked, please remove the battery and attach it again.



**Figure 2**

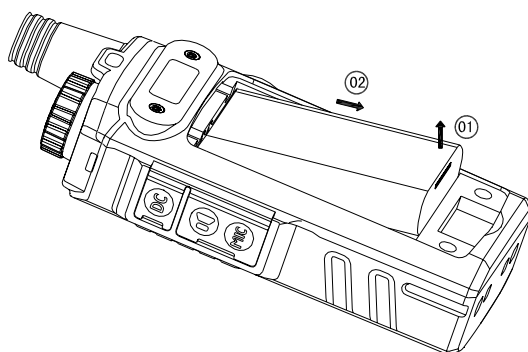
4. Fit the two extensions at the top of the rear cover into the slots at the top of the radio's body, slightly press the bottom of the rear cover towards the radio until a click is heard, and then the rear cover is securely attached to the radio, as shown in Figure 3.



**Figure 3**

### **Removing the Battery**

1. Turn off the radio, if it is turned on. Then follow step 1 in the section "Attaching the Battery" to remove the rear cover.
2. Hold the top part of the radio's body, and lift the battery in the direction of arrow ① by the notch at its bottom, and then remove the battery from the radio's body in the direction of arrow ②, as shown in Figure 4.

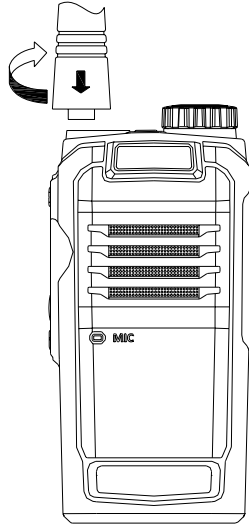


**Figure 4**

## Antenna

### Attaching the Antenna

1. Align the threaded end of the antenna with the radio's antenna connector.
2. Turn the antenna clockwise to fasten it, as shown in Figure 5.



**Figure 5**

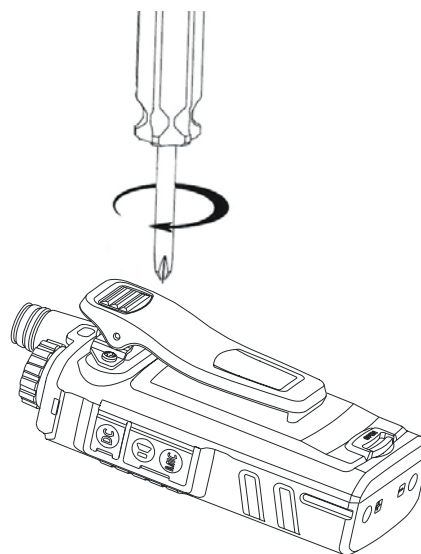
### Removing the Antenna

Rotate the antenna counterclockwise to remove it.

## Belt Clip

### Attaching the Belt Clip

Align the two screw holes on the metal bracket of the belt clip with holes on the elliptical protrusion on the back side of the radio. Then secure the belt clip on the back side of the radio, as shown in Figure 6. Align the belt clip screws with screw holes on the metal bracket of the belt clip, and then secure the screws.



**Figure6**

### Removing the Belt Clip

Loosen the screw to remove the belt clip. Please refer to the operations for attaching the belt clip.

### Attaching/Removing the Battery When the Belt Clip is Attached

When the belt clip is attached to the radio, please first press the belt clip to make its bottom up, and then attach/remove the rear cover and battery by the steps mentioned above, as shown in Figure 7.

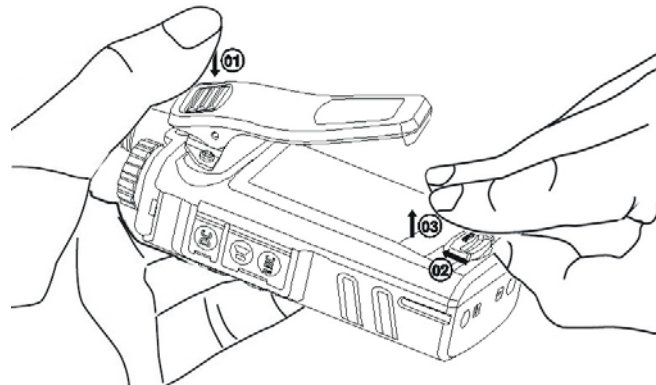


Figure 7

### Attaching the Earpiece/Microphone

Open (not remove) the accessory cover, plug the audio accessory firmly into the accessory jack. as shown in Figure 8

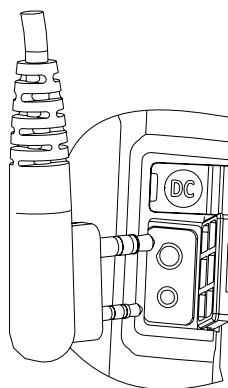


Figure 8

Note: Using the radio with audio accessory may affect the waterproof performance of the radio.



## Basic Operations

### Turn On/Off the Radio

Long press the **Power Switch** until an alert tone is heard to turn the radio on. The LED glows green during power-up. If the current channel is not set, the radio sounds beep tone continuously

To turn the radio off, do the same as you turn it on.

### Adjusting the Volume

You may adjust the volume level through **Volume Adjust Keys** **[+]/[-]**. Press the **[+]** key to increase the volume, or press the **[-]** key to decrease the volume.

### Selecting a Channel

Turn the **Channel Selector** knob to select a channel. Make sure the desired channel number points at the Channel Indicator.

The radio provides 16 conventional channels. Some of the channels may be not programmed and, therefore, not used. Please contact your dealer for more details.

## Call

To ensure optimal volume of the receiving radio, hold the radio approximately 2.5 to 5 centimeters away from your mouth.

### Private Call

#### Transmitting a Private Call

In standby mode, hold down the PTT key to transmit a Private Call to the Private Call contact preset for the current channel.

Note: Your dealer may preset a contact for each digital channel. The preset contact could be a Private Call contact, a Group Call contact or an All Call contact.

#### Receiving and Responding to a Private Call

When a Private Call is received, you can listen to it without any operation, and you may hold down the PTT key within the preset time period to call back.

### Group Call

#### Transmitting a Group Call

In standby mode, hold down the PTT key to transmit a Group Call to the Group Call contact preset for the current channel.

#### Receiving and Responding to a Group Call

When a Group Call is received, you can listen to it without any operation, and you may hold down the PTT key within the preset time period to call back.

### All Call

#### Transmitting an All Call

In standby mode, hold down the PTT key to transmit an All Call to the All Call contact preset for the current channel.

Note: You can transmit an All Call only when it is enabled by your dealer.

### **Receiving an All Call**

When an All Call is received, you can listen to it without any operation.

Note: You cannot respond to an All Call.

## **VOX Operation**

When hands-free operation is desired, your radio can be activated by voice alone using the VOX feature when you speak through an accessory that is connected to your radio.

### ● **Connecting a VOX Headset**

1. Turn off your radio.
2. connect the VOX accessory to your radio and turn the radio on.

### ● **Enabling or Disabling VOX**

To enable or disable VOX operation, press the preprogrammed VOX button (see advanced operations)

**Note:** Pressing the PTT button disables VOX.

## Advanced Operations

### Monitor

- **Squelch Off**

In this mode, the speaker is unmuted in any condition so as to receive any sound on the current channel. When audio signal is received on the channel, audio will be heard. Otherwise, background noise will be heard.

Operation: Press the **Monitor** key to enter this mode, and press it again to exit.

- **Squelch Off Momentary**

Refer to **Squelch Off**. When audio signal is received on the channel, audio will be heard. Otherwise, background noise will be heard.

Operation: Hold down the programmed key continuously to enter this mode, and release the key to exit.

- **Monitor**

In this mode, the receiving party can receive incoming calls from the transmitting party regardless of CTCSS/CDCSS condition. If the carrier condition is not satisfied, the receiving party will fail to receive any incoming calls.

Operation: Press the **Monitor** key to enter this mode, and press it again to exit.

- **Monitor Momentary**

Refer to **Monitor**.

Operation: Hold down the programmed key continuously to enter this mode, and release the key to exit.

### Scan

The Scan feature enables a two-way radio to continuously receive each channel for activity. Press the programmed **Scan** key to initiate scanning channels in the order as they appear in scan list. Status Indicator flashes green during the scan process, and solidly glows when activity is detected and signaling condition is satisfied on a channel. Press the key again to exit scanning. When scanning is active, the radio will continuously scan for activity on scan list members. Once activity is detected on a channel, scanning will pause on the active channel for you to receive activity. The channels available for scanning are programmed by your dealer.

#### **No Priority Channel**

Providing that there is a scan list with 6 channels and all channels are non-prioritized, the normal scan operation would proceed in the following sequence, as shown in Figure 1.

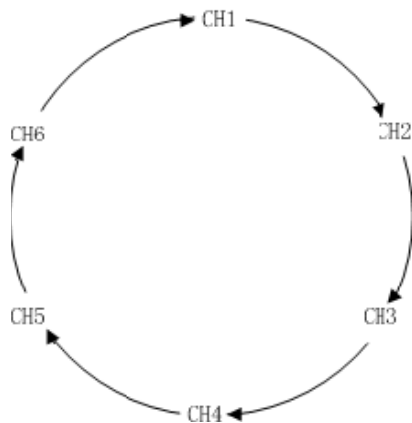


Figure 1 Normal Scan Sequence

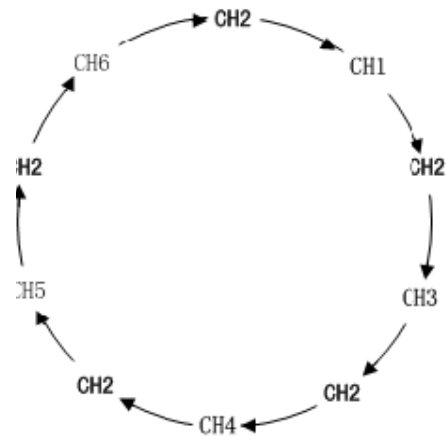


Figure 2 Priority Scan Sequence

### Priority Channel Scan

If you prioritize Channel 2 as Priority 1, the scan operation would proceed in the following sequence, as shown in Figure 2.

- **Scan On/Off**

You can enter scan mode through any of the following two methods:

- (1) Key Operation

Press the programmed **Scan** key to enter scan mode, provided that there're no less than 2 members in the scan list. Press the **Scan** key again or power off to exit.

- (2) Auto

If Auto Scan is enabled for a channel, the radio will automatically enter scan mode when it is switched to this channel. When it is switched to other channels or powers off, the radio will exit from scan mode.

- **Talk Back**

This option defines whether users can talk back on the channel where scanning pauses. When the option is checked, users can do so. If the scanning does not pause on any channel, users may talk back on the predefined channel.

- **Priority Channel Scan**

This function enables users to scan the most frequently used channel so that messages will not be missed. The priority channel is programmed by the dealer via programming software. Contact your dealer for details. Note: Even though the radio remains on a non-priority channel, activities on the priority channel are still under monitoring. The radio will switch to the priority channel once any activity is detected.

- **Available Keys in Scan Mode**

**PTT** key, Volume Adjust keys **[+]** / **[-]**, and 4 programmable keys of Squelch Off, Squelch Off Momentary, Monitor and Monitor Momentary.

### TX Power Adjust

Users can switch the Tx power level between high and low power by pressing the programmed **Power Adjust** key.

## Battery Strength Indicator

QP-350 allows you to simply press the programmed **Battery Strength Indicator** key to illuminate the Status Indicator, which gives different indications representing battery strength levels. To exit the indications, release the key. The Status Indicator gives the following indications to represent corresponding battery strength levels:

Battery Strength	Status Indication
70%-100%	Status Indicator solidly glows green.
50%-70%	Status Indicator solidly glows orange.
30%-50%	Status Indicator solidly glows red.
10%-30%	Status Indicator flashes red. Even no press this key, Status Indicator still flashes red while the radio is operating.
Less than 10%	Status Indicator flashes red. Even no press this function key, While the radio is in standby mode, Status Indicator still flashes red and a low-pitched tone sounds at intervals of ten seconds. If <b>PTT</b> key is pressed at the moment, the radio will give an alert indicating that transmissin is prohibited.

## Channel Lock

Press the programmed function key to activate the Channel Lock mode, When the Channel Lock feature is activated, rotate the channel selector is invalid.

# Troubleshooting

Trouble	Solution
Cannot power on the radio.	<ul style="list-style-type: none"> <li>● The battery has run out. Please recharge the battery or replace it with a new one.</li> <li>● The battery may not be properly installed. Remove the battery and attach it again.</li> </ul>
The operating time is noticeably shorter than normal performance, even though the battery is properly charged.	<ul style="list-style-type: none"> <li>● The battery has worn out, and it is time to buy a new battery.</li> <li>● The battery is not fully charged. Make sure the charge indicators glow green.</li> </ul>
Cannot talk to or hear group members.	<ul style="list-style-type: none"> <li>● Make sure all members are on the same digital/analog Channel setting.</li> <li>● Make sure you are within their communication range.</li> </ul>
Non-group members voice are present on the channel	<ul style="list-style-type: none"> <li>● Send the radio to your dealer to change your CTCSS/CDCSS settings, and so as your group members.</li> </ul>
No voice or low voice while transmitting	<ul style="list-style-type: none"> <li>● Make sure the volume is turned up to its maximum value.</li> <li>● Send the radio to your dealer for microphone examination.</li> </ul>
Noise always on	<ul style="list-style-type: none"> <li>● Group members are too far away to receive their call. Please go within the communication range and re-power on the radio to try.</li> <li>● Reset the Squelch Level by your dealer.</li> </ul>

## Care and Cleaning

- Do not place the radio in a dusty or dirty environment.
- Clean the radio with a lint-free cloth to remove dirt or grease, to avoid poor contact due to excessive dust.
- Clean the radio using a lint-free cloth moistened with clean water and a mild dishwashing liquid.
- Avoid subjecting the radio to corrosives, solvents or spirits.

## **Service**

If you need service, contact your Quantun dealer. If you find it inconvenient to have service performed by your local dealer, you may contact Quantun below:

**Quantun Electronics,LLC**

**1379 Shotgun Road Sunrise, Florida 33326 USA**

**Main line: 954-598-3500**

**Toll Free USA: 888-361-0521**