To users:

Thank you for your favor with our products. We are dedicated to providing high performance and high stability radio communication products. This two-way radio is no exception. The radio is a DMR dual-slot digital walkie-talkie developed and produced by my team with 1024 memory channels, 800 memory Contact Person. In order to make you fully understand the various advantages of the radio performance and use and maintenance methods, please

**Main Features**

- **UHF Full-Frequency Radio**  
  Frequency range: UHF 400.000-470.000MHz
- **DMO True2-Slot dual time slot**  
  Direct mode dual-slot communication achieves two groups of calls at a frequency point at the same time, so that the communication efficiency is doubled and frequency resources are saved.
- **Digital and analog compatible**  
  Support DMR digital and analog two communication modes to ensure that the original analog products smooth transition to digital products to meet different communication needs.
- **Digital signaling function**  
  Rich calling modes that support DMR protocol, including single call, group call and all call; supports remote inhibit function and other applications.
- **High sound quality**  
  This digital two-way radio uses advanced AMBE +2TM voice processing technology to achieve higher quality.
- **High/low power switch**  
  2W/0.5W power switch, Meeting the power requirements of different call distances to save more energy.
- **Alarm function**  
  Supporting general alarm and silent alarm in emergency situations.
- **Digital mode supports the use of repeater**
- **Side buttons can be customized without changing the user’s operating habits**
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**Familiar with this Product**

1. **Description of Buttons**

<table>
<thead>
<tr>
<th>[PTT] Transmit button</th>
<th>Switch between transmission and reception; when transmitting, press this button and speak to the microphone; release the button to receive.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side button SK1</td>
<td>Short press to Quickly access to battery power. Long press to transmit power switching. Switching between high power and low power.</td>
</tr>
</tbody>
</table>

2. **Programmable Buttons**

<table>
<thead>
<tr>
<th>No.</th>
<th>Shortcut name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None</td>
<td>No function is assigned to the preset button.</td>
</tr>
<tr>
<td>2</td>
<td>Transmit power</td>
<td>Quickly switch between high power and low power.</td>
</tr>
<tr>
<td>3</td>
<td>Emergency mode on</td>
<td>Quickly establish an emergency call. This is the recommended option for the orange button.</td>
</tr>
<tr>
<td>4</td>
<td>Emergency mode off</td>
<td>Quickly end an emergency call initiated outward.</td>
</tr>
<tr>
<td>5</td>
<td>offline</td>
<td>Quickly switch between repeater mode and offline mode.</td>
</tr>
<tr>
<td>6</td>
<td>Encryption on/off</td>
<td>Quickly turn on/off encryption for channel (only for digital mode).</td>
</tr>
<tr>
<td>7</td>
<td>VOX</td>
<td>Quickly turn on or off the VOX function.</td>
</tr>
<tr>
<td>8</td>
<td>One-touch calling</td>
<td>Quickly call key. After pressing the button to call, send the corresponding call, message or other application functions.</td>
</tr>
<tr>
<td>9</td>
<td>Contacts</td>
<td>Press this key to enter the digital contact list</td>
</tr>
<tr>
<td>10</td>
<td>Contacts</td>
<td>and initiate a call or call related functions</td>
</tr>
<tr>
<td>11</td>
<td>Zone increases</td>
<td>Press this key to switch to the previous zone</td>
</tr>
<tr>
<td>12</td>
<td>Zone decrease</td>
<td>Press this key to switch to the next zone</td>
</tr>
<tr>
<td>13</td>
<td>Zone switching</td>
<td>Quickly select the zone, allowing the user to switch between two zone.</td>
</tr>
<tr>
<td>14</td>
<td>Individual Operation</td>
<td>Press this key to turn on and off Individual Operation.</td>
</tr>
<tr>
<td>15</td>
<td>Monitor</td>
<td>Operation</td>
</tr>
<tr>
<td>16</td>
<td>Battery power indication</td>
<td>Quickly turn on or off the monitor function.</td>
</tr>
<tr>
<td>17</td>
<td>Scan on / off</td>
<td>Quickly access to battery power. The user can check the battery status by voice prompt.</td>
</tr>
<tr>
<td>18</td>
<td>Time to broadcast</td>
<td>Quickly turn the scan function on or off. Press this button to broadcast the current time.</td>
</tr>
<tr>
<td>19</td>
<td>1750Hz Signal</td>
<td>Fast Transmit 1750 pilot signal</td>
</tr>
<tr>
<td>20</td>
<td>Noise channel temporarily deleted</td>
<td>When scanning stops, press this key to temporarily delete the noise channel that is not needed temporarily. The channel will not be detected in the next scanning detection. When the walkie-talkie restarts scanning, the channel will be restored to the scanning list.</td>
</tr>
</tbody>
</table>

Note:
- The same button short press and long press can achieve different functions.
Note:
• For best battery performance, charge for a minimum of 4 hours on first charge.

RF radiation information
This product is intended for professional applications that meet FCC RF radiation requirements. Users must be aware of the hazards of RF radiation and take appropriate measures to meet the requirements of RF radiation limit.

Common sense in RF radiation
RF refers to the electromagnetic frequency that can be radiated into space. It is a technology widely used in the fields of communication, medical treatment and food processing. It will produce some RF radiation during use.

Security in RF radiation
To ensure the physical and mental health of users, experts from science, engineering, medicine, health and industry, together with relevant organizations, have developed radio frequency radiation standards and guidelines, as shown below:
• United States Federal Communications Commission, Code of Federal Regulations; Vol 47, Part 2, Subsection J.
• American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 11992 and 11999.
• Standard issued by the International committee on non-ionizing radiation protection (ICNIRP) in 1998.

Federal communications commission regulatory requirements
In accordance with the regulatory requirements of the federal communications commission, terminals must comply with the regulations of the federal communications commission on radio frequency radiation limits, or they cannot be sold in the United States market. The manufacturer is required to inform users of the matters needing attention by putting labels on the products, so as to improve users’ awareness of radiation prevention.

Control and operating instructions of RF radiation
In order to maximize the performance of the product and to ensure compliance with the radiation limits in the relevant occupational or controlled environment of the above criteria, the sending time shall not exceed 50% of the rated factor and shall follow the instructions below:
• RF radiation is generated only during transmission (speech) rather than reception (listening) and standby.
• The distance between the terminal and the body during transmission should be at least 2.5 cm.

Preparation before use
Be sure to ensure that the product is off when charging. Battery into the charger may be charging red flashing constantly flashing, this is the battery power is too low, the charger to protect the battery pre-charge process, is a normal phenomenon, Generally continue for 30 seconds to turn the red light of the normal state of charge.

Please use the charging seat specified by our company to charge the battery, the charging seat indicator shows the charging status.
1. Plug the power adapter into a power outlet;
2. Plug the other end of the power adapter into the socket on the back of the charging cradle;
3. Insert the battery or the battery-equipped product into the charging cradle correctly; the indicator light on the charging cradle shows the charging status. When the indicator light is red, it indicates the start of charging. When the indicator turns green, the charging is completed. The specific table below.

<table>
<thead>
<tr>
<th>Indicator display</th>
<th>Current charge status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red light</td>
<td>In charging</td>
</tr>
<tr>
<td>Green light</td>
<td>The charging is completed</td>
</tr>
</tbody>
</table>

Note:
• For best battery performance, charge for a minimum of 4 hours on first charge.

Battery information
• The first use of the battery
Since the battery is not fully charged at the factory, please charge the new battery before use. Under normal circumstances, the battery when used for the first time, need to charge 4 hours, lithium-ion battery charging using slow charge or fast charge can be performed when
Battery information

- **Charging**: It is recommended that the new battery be operated as above for the first three uses. When you find the battery power is low, you need to charge the battery.
- **Suitable battery type**
  Please use the specified battery for charging; use of other batteries may cause explosion, resulting in human injury.
- **Battery safety attention**
  1. Do not allow metal contacts (including coins, keys, jewelry, or other conductive metal) to be touched by the battery contacts or pole pieces. Otherwise, the battery may short circuit, discharge, heat or leak, which may result in damage to the item or personal injury. Therefore, be careful when handling any battery.
  2. Do not short-circuit the battery terminals or discard the battery in a fire. Do not disassemble the battery pack. When the battery is discarded, please put into a dedicated battery recycling box.
- **Battery normal operation instructions**
  - Please charge the battery indoors, battery charging at room temperature best.
  - Under normal circumstances, the charger indicator from red to green when the battery is fully charged, at this time the battery can be removed.
  - You can charge when Battery installed in the walkie-talkie, but when charging is best to turn off the walkie talkie, to ensure that the battery is fully charged.
  - Please do not charge the battery when the battery power is not used up (after the battery is exhausted, the voice prompt alarm will be given), which will shorten the service life of the battery.
  - Do not put a fully charged battery back on the charger to "power up" again, as this operation significantly reduces the cycle life of the battery.
- **Extend battery life**
  - Battery performance will reduce below -20 °C temperature conditions. Prepare back-up batteries for use in colder weather. Please do not throw away cold batteries that cannot work. These batteries may be used at room temperature.
  - Dusting the battery contacts may affect the battery life. Please wipe the contacts with a clean, dry cloth before inserting the batteries into the  

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**Accessories installation**

1. **Install / remove the antenna**
   - Turn off the radio and insert the antenna into the mounting hole and turn clockwise.
   - When removing the antenna, turn it counterclockwise to remove the antenna.
   - Do not shake the top of the antenna by hand, otherwise it will reduce the working performance and service life of the antenna.

2. **Install / remove the battery**
   - Install the battery
**Digital Two Way Radio**

Align the battery with the battery holder on the back of the walkie-talkie. Push the battery firmly into the walkie-talkie and slide the battery up until it locks into place.

- **Remove the battery**
  To remove the battery, turn off the transceiver. Slide the battery latch into the unlocked position and hold, and then slide the battery downward and out of the battery mount.

3. **Install / remove the belt clip**
   - Unscrew the two screws on the battery. Align the two screw holes in the belt clip with the screw holes in the top of the battery, and then tighten the screws.
   - Loosen and remove the screw from the belt clip (it is recommended that you screw the screw to the battery for the next time you are installing and using the belt clip).

4. **Install external headphones / microphone (optional separately)**
   Open the headset cover, the headset plug into the headset hole will be ok. When you do not need to use the headset, unplug the headset plug from the earphone jack and cover the earphone cap. When not using the universal interface, please cover the dust cover.

**LED Indicators**
This product has LED indicators so you can easily grasp the current operating state.

<table>
<thead>
<tr>
<th>Indicator status</th>
<th>Product status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red on</td>
<td>Transmitting</td>
</tr>
<tr>
<td>Green on</td>
<td>Receiving</td>
</tr>
<tr>
<td>Green flash</td>
<td>Scanning</td>
</tr>
</tbody>
</table>

**Basic Operation**

**Power on and off**
To turn on the power, turn the [Power Switch / Volume Control] knob clockwise until you hear a “click” sound and a short beep sounds. To turn off the radio, turn the knob counterclockwise until you hear a click.

1. **If the voice prompt is turned on**
   - When power on or switching channels of voice prompt channel information.
   2. **If the voice prompt is turned off**, there will be no voice prompt.

**Volume Adjustment**
Turn on the power, turn the [Power Switch / Volume Control] knob clockwise to increase the volume of voice reception, and turn counterclockwise to reduce the volume of voice reception.

- **Selecting Zone**
  Zone is a channel group in which you can include channels with the same attributes (such as call type, digital mode and analog mode) in a zone, which makes it easy for you to manage existing channels. The unit supports up to 250 regions, and each region contains up to 64 channels.

- **Select through the programming button:**
  If the dealer has set the [Zone Up] and [Zone Down] shortcut, you can press the shortcut to switch to the desired region.

- **Walkie-talkie should retain at least one area, and each area should retain at least one channel.**

- **Digital and analog channel switch**
  Each channel in this product can be configured by the dealer as either an analog channel or a digital channel. If the current region contains digital channels and analog channels, you can switch channels to analog channels or digital channels.

- **ID Select channel, user ID, group call ID**
  After power on, if you have more than one region in the radio, select the desired region and turn the Channel knob to select the desired channel, user alias or ID, or the group alias or ID.

- **Receive and reply group calls**
  To receive a call from a user group, the transceiver must be configured to belong to the talk group.
  1. When receiving a group call, the LED indicator light is green.
  2. Hold the walkie talkie in its upright position and at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth. If the function of “channel leisure prompt sound” is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that the channel is leisure and waiting for your reply.
  3. Press 【PTT】 key to reply the call, the LED indicator light is red.
4. Release the [PTT] key to receive.
5. If there is no voice activity for the scheduled time period, the call is terminated.

● Receive and reply single call
A single call is an individual walkie-talkie call to another individual walkie-talkie.
1. When receiving a single call, the LED indicator light is green.
2. Hold the walkie-talkie in its upright position and at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth. If the function of "channel leisure prompt sound" is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that the channel is leisure and waiting for your reply.
3. Press [PTT] key to reply the call. The LED indicator light is red.
4. Release the [PTT] key to receive.
5. If there is no voice activity for the scheduled time period, the call is terminated.

● Receive all call
All call is an individual walkie-talkie call to all walkie-talkie on the channel. It is used to publish important notices that require special attention from users.
1. When receiving all call, the LED indicator light is green.
2. After the all call is terminated, the walkie-talkie goes into standby mode. If the function of "channel leisure prompt sound" is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that this channel is now available, but you cannot reply to a all call.
3. When you receive an all call, if you switch to another channel, the transceiver stops receiving the full call. During a full call, you will not be able to use any of the pre-programmed keys until the call is ended.

● Start a single call
You can choose a channel, user ID or talk group in the following ways:
• Rotates the channel knob to select the channel
• Pre-programmed one-touch call button

● Use the channel to place a call
● Initiate group call
To initiate a call to a user group, the transceiver must be configured to belong to the talk group.

1. Rotate the channel knob to select the channel using the active talk group alias or ID.
2. Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
3. Press [PTT] key to initiate a call. The LED indicator light is red.
4. Release the [PTT] key to answer. When the target radio replies, the LED indicator will light green.
5. If the function of "channel leisure prompt sound" is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that the channel is leisure and waiting for your reply. Press [PTT] key to reply. If there is no voice activity for the scheduled time period, the call is terminated.

● Start all call
This feature lets you signal all users on the channel. The walkie-talkie must be programmed to allow you to use this feature.
1. Rotate the channel knob to select the channel using the active full call group alias or ID.
2. Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
3. Press [PTT] key to initiate a call. The LED indicator light is red.
4. Release the [PTT] key to answer. When the target radio replies, the LED indicator will light green.
5. If the function of "channel leisure prompt sound" is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that the channel is leisure and waiting for your reply. Press [PTT] key to reply. If there is no voice activity for the scheduled time period, the call is terminated.
predefined aliases or IDs. This function can be assigned to short programming or long programming keys.

You can assign only one alias or ID to a one-touch call key, and the walkie-talkie can have multiple programmed one-touch call keys.

1. Press the preprogrammed one-touch call button to initiate a group or single call to a predefined alias or ID.
2. Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
3. Press the [PTT] key to initiate a call, LED indicator light is red.
4. Release the [PTT] key to answer. When the target radio replies, the LED indicator will light green.

5. If the function of "channel leisure prompt sound" is enabled, when the release the [PTT] key, you will hear a short prompt sound, indicating that the channel is leisure and waiting for your reply. Press the [PTT] key to reply, if there is no voice activity for the scheduled time period, the call is terminated.

- **Analog channel call**
  On the analog channel, hold down the [PTT] key and speak into the microphone, to transmit. Please release the [PTT] key to receive.

- **Start a call**
  In the analog mode, the upper and lower line codes of DTMF can be configured by programming software, and the upper and lower line codes can be enabled in the analog channel. When the upper line code is enabled, the upper line code will be issued each time the [PTT] key is pressed, and the lower line code will be issued when the [PTT] key is released.

- **Emergency alarm function**
  **Emergency alarm**
  In the event of an emergency, you can use this feature to ask your fellow or control center for help. Emergency alarm has the highest priority, you can alarm whether the walkie-talkie is transmitting or receiving.

  ⚠️ Alarm initiator to exit the alarm mode, there are two cases:
  - **Turn off the radio to exit the whole machine alarm.**

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**Alarm Type**

The radio prompts in different modes for different alarm types, as shown in the following table.

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disable</td>
<td>Turn off alarm function</td>
</tr>
<tr>
<td>Only alarm sound</td>
<td>The walkie-talkie to a sharp alarm sound, and the control center will not receive the alarm signal.</td>
</tr>
<tr>
<td>Normal</td>
<td>When alarms, the walkie-talkie gives an audible and visual prompt.</td>
</tr>
<tr>
<td>Alarm whistle</td>
<td>After sending an emergency alarm signal to the control center, issue a local alarm sound. In the alarm state, there are sound and visual instructions.</td>
</tr>
<tr>
<td>Silent</td>
<td>When alarms, the radio will not give any audible or visual prompt. At the same time, no sound is made on any received audio.</td>
</tr>
<tr>
<td>Silence with voice</td>
<td>When alarms, the radio will not give any audible or visual prompt. However, the radio sounds when you press and hold the PTT button to initiate a call or respond to a call.</td>
</tr>
</tbody>
</table>

**Alarm Mode**

Except the alarm type “Disable・Only alarm sound・Alarm whistle”, other alarm types support the following alarm modes. You can ask the dealer to select one of them (Note: The following methods use “Conventional” alarm type as an example).
Send emergency alert
This feature allows you to send an emergency alert, which belongs to a non-voice signal and will trigger a prompt on another transceiver.
1. Press the pre-programmed [Emergency mode on] button.
2. The LED indicator light is red.
3. When an emergency alert confirmation is received, an emergency call tone sounds and the LED flashes green.
4. The walkie-talkie exits the emergency alert mode. If your walkie-talkie is set to "silent," it will not any voice in emergency call mode.

Receive emergency alert
1. When an emergency alarm is received, a prompt sound is issued, and the LED indicator flashes orange light.
2. If enabled, your walkie-talkie will automatically acknowledge the emergency alert.
3. When the alarm sound, the LED indicator flashes as orange light. Press any key to stop the alarm sound. Disables the current emergency mode by switching channels or turning off the walkie-talkie.

Send an emergency alert with voice follow
This feature allows you to send an emergency alert to another transceiver. After confirmation, your walkie-talkie microphone is activated automatically, allowing you to communicate with other radios without pressing the [PTT] key. This activated microphone status is called "Emergency Microphone". During the duration of emergency

microphone, Except for the pre-programmed [Emergency mode off] key to cancel the alarm, Pressing any other key will remain in emergency mode. Until the emergency microphone duration is over
1. Press the pre-programmed [Emergency mode on] button. The LED indicator light is red.
2. After receiving the alarm confirmation from another walkie-talkie, the LED indicator light is red. The emergency microphone of the walkie-talkie automatically activates and transmits signals, speak clearly toward the microphone and until the end of the emergency microphone time.
3. If the emergency alert request fails, the walkie-talkie will continue to send out emergency calls.
4. After the emergency microphone duration has expired, the walkie-talkie automatically stops emergency call status.

Receive emergency alert
The walkie-talkie receiving the emergency call must select a pre-programmed emergency channel and the emergency channel must be a group call.
1. The walkie-talkie receive the emergency alarm request, send out the alarm sound, The LED indicator light is orange.
2. When the alarm sound stops, the LED indicator will turn green, The walkie-talkie enter the receiving state, and answer the other party's speech until the end of the emergency microphone duration.
3. When the alarm sound is sounded, the LED indicator flashes orange light. Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
4. Press [PTT] key to reply the call, The LED indicator light is red.
5. Release the [PTT] key to receive.

Send emergency alert with call
This feature allows you to send an emergency alert to another transceiver. After confirmation, your walkie-talkie microphone is activated automatically, allowing you to communicate with other radios without pressing the [PTT] key. This activated microphone status is called "Emergency Microphone". During the duration of emergency

microphone, Except for the pre-programmed [Emergency mode off] key to cancel the alarm, Pressing any other key will remain in emergency mode. Until the emergency microphone duration is over
1. Press the pre-programmed [Emergency mode on] button. The LED indicator light is red.
2. After receiving the alarm confirmation from another walkie-talkie, The LED indicator light is red. The emergency microphone of the walkie-talkie automatically activates and transmits signals, speak clearly toward the microphone and until the end of the emergency microphone time.
3. If the emergency alert request fails, The walkie-talkie will continue to send out emergency calls.
4. After the emergency microphone duration has expired, the walkie-talkie automatically stops emergency call status.

Receive emergency alert
The walkie-talkie receiving the emergency call must select a pre-programmed emergency channel and the emergency channel must be a group call.
1. The walkie-talkie receive the emergency alarm request, send out the alarm sound, The LED indicator light is orange.
2. When the alarm sound stops, the LED indicator will turn green, The walkie-talkie enter the receiving state, and answer the other party's speech until the end of the emergency microphone duration.
3. When the alarm sound is sounded, the LED indicator flashes orange light. Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
4. Press [PTT] key to reply the call, The LED indicator light is red.
5. Release the [PTT] key to receive.
DIGITAL TWO WAY RADIO

transceiver. After confirmation, your walkie-talkie microphone is activated automatically, allowing you to communicate with other radios without pressing the [PTT] key. This activated microphone status is called "Emergency Microphone". During the duration of emergency microphone, Except for the pre-programmed [Emergency mode off] key to cancel the alarm, Pressing any other key will remain in emergency mode, Until the emergency microphone duration is over.

1. Press the pre-programmed [Emergency mode on] button. The LED indicator light is red.
2. The emergency microphone of the walkie-talkie automatically activates and transmits signals, speak clearly toward the microphone and until the end of the emergency microphone time.
3. Emergency microphone duration is over and signal transmission is stopped, The LED indicator light is orange, until the end of the receiving duration.
4. During the reception period, you can answer the other party's call. Press the pre-programmed [Emergency mode off] button to exit the emergency mode.

Receive emergency call
1. The walkie-talkie receive the emergency alert, the LED indicator light for green, The walkie-talkie enter the receiving state, and receiving the other party's speech until the end of the emergency microphone duration.
2. The LED indicator light off, Hold the walkie-talkie in its upright position and keep it at a distance of 1 to 2 inches (2.5 to 5.0 cm) from the mouth.
3. Press 【PTT】 key to reply the call, The LED indicator light is red.

Restart emergency mode
It can happened in two situations:
• When the transceiver is in emergency mode and changes channel, it will exit emergency mode. If an emergency alert is activated on the new channel, the transceiver resumes the emergency call.
• Press the preprogrammed alarm on key in the emergency call start / transmit state. This way the walkie-talkie will exit the status and restart

Exit emergency mode
The transceiver exits emergency mode when one of the following happened:
• Receive emergency alert confirmation (emergency alerts only), or
• The number of major attempts to send an alert has been reached, or
• Press Preprogrammed Alarm Off, or
• Press the [PTT] key.

Individual Operation
This feature is ideal for people who work alone. If you encounter unexpected situations during individual operation, you can't operate the radio in preset time. The radio will automatically send alarm to your partner or control center for help.

1. Turn on individual operation
   ● Through writing frequency software, this function is turned on when the radio is started.
   ● Press the preset [Individual Operation] shortcut to enable this function.
2. If you do not operate the radio in the preset response time, the radio will prompt before the response time is up (depending on the dealer settings). At this point, you can end the prompt with a valid physical operation (knob or button operation). When the response time is up, the radio will automatically turn on the alarm system of the current channel.
3. Turn off individual operation
   ● Turn this function off by writing-frequency software.
   ● Press the preset [Individual Operation] shortcut again to turn off this function.

Note: If you do not turn off the individual operation function before shutting down, the function is still active the next time you turn on the radio.
To ensure optimal reception volume, please keep the microphone 2.5 cm to 5 cm away from the mouth.

**Digital channel call**
You can make single call, group call and all call on the digital channel, and each digital channel can be preset by the distributor as a “Transmitting Contacts”.

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Call</td>
<td>Single call contacts and Group call contacts</td>
<td>• The calling participant selects the same digital channel.</td>
</tr>
<tr>
<td>Group Call</td>
<td>Single call contacts and Group call contacts</td>
<td>• In standby mode, press the [PTT] key to initiate the call.</td>
</tr>
<tr>
<td>All Call</td>
<td>Single call contacts and All call contacts</td>
<td>• After receiving the call, Press the [PTT] key in the preset time to initiate a reply.</td>
</tr>
</tbody>
</table>

**Analog channel call**
You can make a call to all users on the current analog channel in the same way as a digital channel call.

**Function list**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Function Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>VOX</td>
<td>When the microphone detects that the voice reaches the level to trigger the voice-activated transmission, the walkie-talkie automatically transmits the voice.</td>
</tr>
<tr>
<td></td>
<td>Busy Channel Lockout</td>
<td>The Busy Channel Lockout is prevent interference with other users that are transmitting on the same channel.</td>
</tr>
<tr>
<td></td>
<td>Transmit time-out timer(TOT)</td>
<td>The TOT is over the time of a single transmits (the default is 60 seconds), the walkie-talkie will automatically terminate the transmits and issue a warning sound. If you need to transmits again, please transmits after the preset time.</td>
</tr>
<tr>
<td></td>
<td>Power Save</td>
<td>The walkie-talkie enters the power save mode after preset time in standby mode.</td>
</tr>
<tr>
<td>Digital</td>
<td>Single Call</td>
<td>One-to-one call</td>
</tr>
<tr>
<td></td>
<td>Group Call</td>
<td>One-to-many call within a group</td>
</tr>
<tr>
<td></td>
<td>All Call</td>
<td>A call to all contacts on the current digital channel</td>
</tr>
<tr>
<td></td>
<td>One-touch calling</td>
<td>One to one or one to many calls within a group through a shortcut key</td>
</tr>
<tr>
<td></td>
<td>DMO True2-Slot</td>
<td>Direct mode dual-slot communication achieves two groups of calls at a frequency point at the same time.</td>
</tr>
<tr>
<td>Analog</td>
<td>Analog channel call</td>
<td>One-to-many calls on the current analog channel</td>
</tr>
<tr>
<td></td>
<td>Squelch</td>
<td>The squelch turn on, the walkie-talkie always turn on the speaker</td>
</tr>
<tr>
<td></td>
<td>Squelch level</td>
<td>The squelch level is normal open, normal and strengthened. If set to normally open, the walkie-talkie always turn on the speaker.</td>
</tr>
<tr>
<td></td>
<td>Monitor</td>
<td>Monitor is to identify and listen for weak sounds in a speaker</td>
</tr>
<tr>
<td></td>
<td>CTCSS/CDCSS</td>
<td>When receiving CTCSS/CDCSS and transmitting CTCSS/CDCSS match, you can listen to the voice through the speaker.</td>
</tr>
</tbody>
</table>
**DIGITAL TWO WAY RADIO**

**Main technological specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>UHF:400-470MHz</td>
</tr>
<tr>
<td>Memory Channel</td>
<td>Up to 1024</td>
</tr>
<tr>
<td>Frequency Stability</td>
<td>±1.0ppm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30°C ~ +60°C</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>DC 3.7V</td>
</tr>
<tr>
<td>Dimension</td>
<td>128×60×34mm (not including the antenna)</td>
</tr>
<tr>
<td>Weight</td>
<td>191g</td>
</tr>
<tr>
<td><strong>Frequency range</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Memory Channel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Frequency Stability</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Operating Voltage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Transmission**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output power</td>
<td>High: 2W, Low: 0.5W</td>
</tr>
<tr>
<td>Output Consumption</td>
<td>Analogs: 1.2A, Digitals: 0.8A ≤ 0.16A</td>
</tr>
<tr>
<td>Consumption</td>
<td>16K9F3E@25KHz, 141K9F3E@20KHz</td>
</tr>
<tr>
<td>FM modulation</td>
<td><a href="mailto:11K9F3E@12.5KHz">11K9F3E@12.5KHz</a></td>
</tr>
<tr>
<td>4FSK digital modulation</td>
<td>12.5KHz for data, 7K60FXD, 12.5KHz for data and voice: 7K60FXE</td>
</tr>
<tr>
<td>Modulation Distortion</td>
<td>≤ 5%</td>
</tr>
<tr>
<td>Signal-to-noise(wide/narrow)</td>
<td>≥ 45dB@25KHz, ≥ <a href="mailto:40dB@12.5KHz">40dB@12.5KHz</a></td>
</tr>
<tr>
<td>Adjacent Channel power</td>
<td>≤ 85dB ≤ 60dB</td>
</tr>
<tr>
<td>Audio Response</td>
<td>+1~3dB</td>
</tr>
<tr>
<td>Antenna Port Spurious</td>
<td>9KHz-1GHz: ≤ 36dBm, 1GHz-12.75GHz: ≤ 30dBm</td>
</tr>
<tr>
<td>Digital Protocol</td>
<td>ETSI-TS102 361-1, -2, -3</td>
</tr>
<tr>
<td>Vocoder type</td>
<td>AMBE+2 TM</td>
</tr>
</tbody>
</table>

**Reception**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog receive sensitivity</td>
<td>-122dBm (12dB SINAD)</td>
</tr>
<tr>
<td>Digital receive sensitivity</td>
<td>-120dBm (BER≤5%)</td>
</tr>
<tr>
<td>Audio power</td>
<td>1W</td>
</tr>
<tr>
<td>Audio distortion</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Audio response</td>
<td>+1~3dB</td>
</tr>
<tr>
<td>Signal imitation</td>
<td>≥ 70dB</td>
</tr>
<tr>
<td>Inter-mediation (Wide/ narrow)</td>
<td>≥ 62dB/≤ 58dB</td>
</tr>
<tr>
<td>Adjacent channel selectivity</td>
<td>≥ 65dB/≥ 60dB</td>
</tr>
<tr>
<td>Receive Current</td>
<td>≤ 380mA</td>
</tr>
<tr>
<td>PM noise</td>
<td>≥ 45dB@25KHz / ≥ <a href="mailto:40dB@12.5KHz">40dB@12.5KHz</a></td>
</tr>
</tbody>
</table>

⚠️ All specifications may be modified without prior notice or liability.

---

**Troubleshooting**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Reason</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The radio doesn’t start.</td>
<td>The battery doesn’t be installed correctly.</td>
<td>Remove and re-install the battery.</td>
</tr>
<tr>
<td></td>
<td>The battery runs out.</td>
<td>Charging or change a new battery.</td>
</tr>
<tr>
<td></td>
<td>The battery is poor contact causing by damaged or dirty.</td>
<td>Clearing the contact. Please get contact with our distributor to repair, if you cannot solve it.</td>
</tr>
<tr>
<td>The sound is small/ intermittent, or on sound when receiving the signal.</td>
<td>The voice is too small.</td>
<td>Turn up the sound.</td>
</tr>
<tr>
<td></td>
<td>The antenna is loose.</td>
<td>Turn off the radio and re-install the antenna.</td>
</tr>
<tr>
<td></td>
<td>The speaker is damaged or dirty.</td>
<td>Clear the speaker. Please get contact with our distributor to repair, if you cannot solve it.</td>
</tr>
<tr>
<td>Cannot talk with the members in the same group</td>
<td>The frequency is different with other members</td>
<td>Reseting the same frequency with them.</td>
</tr>
<tr>
<td></td>
<td>In the different digital or analog channels</td>
<td>Correct to the same channel.</td>
</tr>
<tr>
<td></td>
<td>Too far away from each other</td>
<td>Get close with each other</td>
</tr>
<tr>
<td>Single call or group call does not work in the digital channel</td>
<td>Be different in the frequency/channel/color code/ time slot</td>
<td>Setting the same frequency/channel/color code/ time slot</td>
</tr>
<tr>
<td>Other sound in the channel, which is not from the members</td>
<td>Interference from the same frequency</td>
<td>Change to new frequency, or correct the squelch.</td>
</tr>
<tr>
<td></td>
<td>The signal is not set yet.</td>
<td>Set the signal for all radio in the group.</td>
</tr>
<tr>
<td>The loud noise</td>
<td>Be too away from other members.</td>
<td>Get close with other members.</td>
</tr>
<tr>
<td></td>
<td>Poor location, such as blocked by tall buildings, or located in the basement</td>
<td>Move to open environment, restart the radio.</td>
</tr>
<tr>
<td></td>
<td>Interfere by the environment or electromagnetic</td>
<td>Avoid the device interfering the radio.</td>
</tr>
</tbody>
</table>

⚠️ As above method still cannot solve your problem, or you meet other problem, please get contact with local distributor to get the technological support.
Maintenance and clean
To keep the performance and extend the service life, please note the content below for maintain the clear the radio.

Maintenance
◆ Do not store the radio in an environment containing a corrosive electronic circuit material.
◆ Do not directly lift an antenna or an external microphone in the course of carrying or using a radio.
◆ Cover the appendage interface cover, when attachments are not used.

Clean
◆ Please use clean, dry cloth or brush to wipe off the surface of the walkie-talkie and the dust attached to the charging pole on a regular basis.
◆ Wipe the radio on dirt with dust, lint free cloth, to prevent poor contact.
◆ After long term use of radio, walkie-talkie buttons, control knobs and chassis are easy to dirty. You can use neutral detergent (do not use strong corrosive chemicals) and wet cloth to clean. After cleaning, make sure the radio is completely dry; otherwise please do not use it.
◆ When the walkie-talkie does not in use, please attach the cover on the socket.

WARNING
Please turn off the radio and remove the battery before clearing.

Disclaimer:
The accuracy and completeness of the contents are sought in the process of compilation, but we do not bear any responsibility for the possible errors or omissions. With the continuous development of technology, we reserve the right to change the design and specification of the product without notice. No copy, modification, translation and dissemination of this handbook may be made in any form without the prior written authorization of our department.
The third party products and contents involved in this manual belong to the third party. Our company does not guarantee its accuracy, effectiveness, timeliness, legality or integrity. If you need more information or have any suggestions for this manual, welcome to our website: http://www.retevis.com.

RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE FOR PORTABLE TWO-WAY RADIOS

ATTENTION!
Before using this radio, read this guide which contains important operating instructions for safe usage and RF energy awareness and control for compliance with applicable standards and regulations.

This two-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. RF energy, which when used improperly, can cause biological damage.
All Retevis two-way radios are designed, manufactured, and tested to ensure they meet government-established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of two-way radios. These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it.
Please refer to the following websites for more information on what RF energy exposure is and how to control your exposure to assure compliance with established RF exposure limits: http://www.who.int/en/

LocalGovernment Regulations
When two-way radios are used as a consequence of employment, the Local Government Regulations requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your Retevis two-way radio has a RF Exposure Product Label. Also, your Retevis user manual, or separate safety booklet includes information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

Radio License
Governments keep the radios in classification, business two-way radios operate on radio frequencies that are regulated by the local radio management departments (FCC, ISED, OFCOM, ANFR, BFTK, Bundesnetzagentur...). To transmit on these frequencies, you are required to have a license issued by them. The detailed classification and the use of your two radios, please contact the local government radio management departments.

Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Unauthorized modification and adjustment
Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority granted by the local government radio management departments to operate this radio and should not be made. To comply with the corresponding requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the local government radio management departments equipment authorization for this radio could violate the rules.

FCC Requirements:
This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference. (Licensed radios are applicable); This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (Other devices are applicable)
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Requirements:
• (Simple EU declaration of conformity) Shenzhen Retevis Technology Co., Ltd. declares that the radio equipment type is in compliance with the essential requirements and other relevant provisions of RED Directive 2014/53/EU and the ROHS Directive 2011/65/EU and the WEEE Directive 2012/19/EU; the full text of the EU declaration of conformity is available at the following internet address: www.retevis.com.

Restriction Information
This product can be used in EU countries and regions, including:
Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and United Kingdom (UK).
For the warning information of the frequency restriction, please refer to the package or manual section.

Disposal
DIGITAL TWO WAY RADIO

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.

IC Requirements:

Licence-exempt radio apparatus

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d’Industrie Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes:

1. L’appareil ne doit pas produire de brouillage;
2. L’utilisateur de l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.

RF Exposure Information

• DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio, and the antenna gain shall not exceed the specified gain by the manufacturer declared.

• DO NOT transmit for more than 50% of total radio use time, more than 50% of the time can cause RF exposure compliance requirements to be exceeded.

• During transmissions, your radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.

DIGITAL TWO WAY RADIO

• DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

• Portable Device, this transmitter may operate with the antenna(s) documented in this filing in Push-to-Talk and body-worn configurations. RF exposure compliance is limited to the specific belt-clip and accessory configurations as documented in this filing and the separation distance between user and the device or its antenna shall be at least 2.5 cm.

• Mobile Device, during operation, the separation distance between user and the antenna subjects to actual regulations, this separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements.

• Occupational/Controlled Radio, this radio is designed for and classified as “Occupational/Controlled Use Only”, meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards; NOT intended for use in a General population/uncontrolled environment.

• General population/uncontrolled Radio, this radio is designed for and classified as “General population/uncontrolled Use”.

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures.

Guidelines:

• User awareness instructions should accompany the device when transferred to other users.

• Do not use this device if the operational requirements described herein are not met.

Operating Instructions:

• Transmit no more than the rated duty factor of 50% of the time. To Transmit (Talk), push the Push to Talk (PTT) button. To receive calls (listen), release the PTT button. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy exposure only when transmitting in terms of measuring for standards compliance.
DIGITAL TWO WAY RADIO

Turn off your radio power in the following conditions:

• Turn off your radio before removing (installing) a battery or accessory or when charging battery.
• Turn off your radio when you are in a potentially hazardous environments: Near electrical blasting caps, in a blasting area, in explosive atmospheres (flammable gas, dust particles, metallic powders, grain powders, etc.).
• Turn off your radio while taking on fuel or while parked at gasoline service stations.
• To avoid electromagnetic interference and/or compatibility conflicts
• Turn off your radio in any facility where posted notices instruct you to do so, hospitals or health care facilities (Pacemakers, Hearing Aids and Other Medical Devices) may be using equipment that is sensitive to external RF energy.
• Turn off your radio when on board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

Protect your hearing:

Use the lowest volume necessary to do your job.
• Turn up the volume only if you are in noisy surroundings.
• Turn down the volume before adding headset or earpiece.
• Limit the amount of time you use headsets or earpieces at high volume.
• When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear.
• Use care with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss.

Note: Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.
Avoid Burns

Antennas
• Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with the skin when the radio is in use, a minor burn can result.

Batteries (If appropriate)
• When the conductive material such as jewelry, keys or chains touch exposed terminals of the batteries, may complete an electrical circuit (short circuit the battery) and become hot to cause bodily injury such as burns. Exercise care in handling any battery, particularly when placing it inside a pocket, purse or other container with metal objects.

Long transmission
• When the transceiver is used for long transmissions, the radiator and chassis will become hot.

Safety Operation

Forbid
• Do not use charger outdoors or in moist environments, use only in dry locations/conditions.
• Do not disassemble the charger, that may result in risk of electrical shock or fire.
• Do not operate the charger if it has been broken or damaged in any way.
• Do not place a portable radio in the area over an air bag or in the air bag deployment area. The radio may be propelled with great force and cause serious injury to occupants of the vehicle when the air bag inflates.

To reduce risk
• Pull by the plug rather than the cord when disconnecting the charger.
• Unplug the charger from the AC outlet before attempting any maintenance or cleaning.
• Contact Retevis for assistance regarding repairs and service.
• The adapter shall be installed near the equipment and shall be easily accessible.

Approved Accessories

• This radio meets the RF exposure guidelines when used with the Retevis accessories supplied or designated for the product. Use of other accessories may not ensure compliance with the RF exposure guidelines and may violate regulations.
• For a list of Retevis-approved accessories for your radio model, visit the following website: http://www.Retevis.com

EU Importer:
Importer: Germany Retevis Technology GmbH
Address: Uetzenacker 29, 38176 Wendeburg