

To Customers

Thank you for purchasing **PULXING**® two way radios.
Before using this product please read the operating instructions

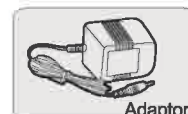
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- Turn radios off prior to entering any area with a potentially explosive atmosphere, such as gas, petroleum chemicals, blasting caps, etc
- Do not place a radio over an air bag or in an air bag's deployment area, as the force with which an air bag is inflated could propel the radio and may cause serious injury.
- Do not charge the battery in a potentially explosive atmosphere.
- Do not use any portable radio that has a damaged antenna, as it can burn skin.
- This equipment is to be serviced only by authorized **PULTEC** technicians. Any service performed by unauthorized technicians will void the warranty.
- Turn radio off when near electrical blasting caps to avoid possible interference with blasting operations. Obey posted signs such as those in hospitals or blasting areas advising people to turn off all two-way radios. Obey pilots and flight attendants instructions to turn off radios on airplanes.
- Do not place the radio close to a heat source or expose the radio to direct sunlight for a prolonged time.
- Hold the radio while in use in a vertical position with the microphone one to two inches away from your lips.
- While wearing a transmitting radio, keep the radio and its antenna at least one inch away from your body.

Thank you for using **PULING®**, prior to unpacking the portable radio, please inspect the packaging for signs of damage and report any damage or missing components immediately to **PULING®** dealers.

Every portable radio comes with the following items:

ITEMS	QUANTITY
ANTENNA	1
BELT CLIP	1
BATTERY	1
CHARGER	1
ADAPTOR	1
WRIST LANYARD	1
USER MANUAL	1



Charging Li-ion battery

The battery pack is not charged at the factory, please charge before using.

Initially charging the battery pack after purchase or extended storage (over two months) will not bring the battery pack to its normal operating capacity. After repeating the charge/discharge cycle two or three times, the capacity will increase to best status.

Battery Type

To reduce the risk of injury, use only batteries specified by **PULING®** Company.

Caution:

- To avoid risk of personal injury, do not dispose of batteries in a fire. Never attempt to disassemble the battery.
- When charging a battery, keep it at a temperature between 5°C~40°C to ensure a full charge. Temperatures outside this range significantly reduce battery life.
- Before charging a battery attached to a radio, turn the radio off to ensure a full charge. Never leave a radio on while in the charger, as it can damage both the battery and the radio.
- Do not cut off the power supply or remove battery while charging.
- The battery operation time is reduced even though charging correctly, please replace a new battery.
- Never charge a battery that is wet. Dry it with soft cloth prior charging.

04 Battery Information

Charging Operation

Assemble the battery, if the radio battery indicator displays  , it means the battery pack is out of power, please charge it. Please always use the original charger. The charger's indicator shows the charging status below.

INDICATOR DISPLAY	STATUS
RED	CHARGING
GREEN	COMPLETED

Please charge the battery pack as follow:

- Plug the adaptor's AC connector into the AC outlet socket.
- Plug the adaptor's DC connector into the DC socket on the back of the charger.
- Place the radio with the battery attached, or the battery alone, in the charger.
- Make sure the battery contact is touching the charging terminals. The charging process begins when the red LED light illuminates.
- The green LED light will illuminate approximately four hours later, indicating the battery is fully charged.

Cautions:

- Before plugging the battery, the charger indicator blinking is abnormal.
- Make sure that battery has been plugged correctly, the charger continues red light means charging, blinking means battery damaged or ambient temperature is too high or too low.

Care and Cleaning 05

- Do not directly handle the radio by its antenna or external microphone.
- Do not place the radio in a dusty or dirty environment.
- Clean the radio with a lint-free cloth moistened with clean water and/or a mild dishwashing liquid to remove dirt, grease and dust.
- Avoid subjecting the radio to corrosives, solvents or spirits.

06 Install Accessory

Install/Remove Battery

The average use time of the battery pack is 10 hours.

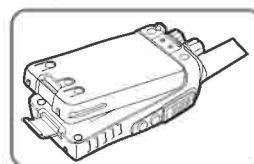
It calculated as 5% TX time, 5% RX time and 90% standby time.



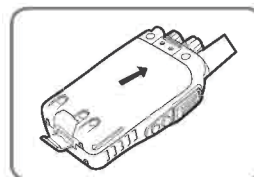
CAUTION

- ◆ Don't short circuit the battery charger contacts or threw the battery into fire.
- ◆ Don't disassemble the case of the battery.

Match the top of the battery pack with the corresponding grooves on the radio.



Push the battery onto the bottom of the radio, buckle the safety lock.



START 07

To remove the battery pack, lift the safety lock and pull the battery pack away from the radio.



Install Antenna

Hold the radio; screw the antenna into the connector on the top of the radio. Hold the antenna and turn it clockwise until being tight.

Note:

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



Install Belt Clip

When necessary, you can install the belt clip to the back of the radio.

Note:

Without installing the belt clip, the installing area will become hot due to continuous communication or in hot environment.

Remove the belt clip first before disassemble the battery pack.



**Caution**

◆ Please don't use glue to fix the screws of the belt clip; otherwise it may ruin the housing!

Install Speaker/Microphone

Insert the speaker/microphone plugs into the speaker/microphone jack.

Note:

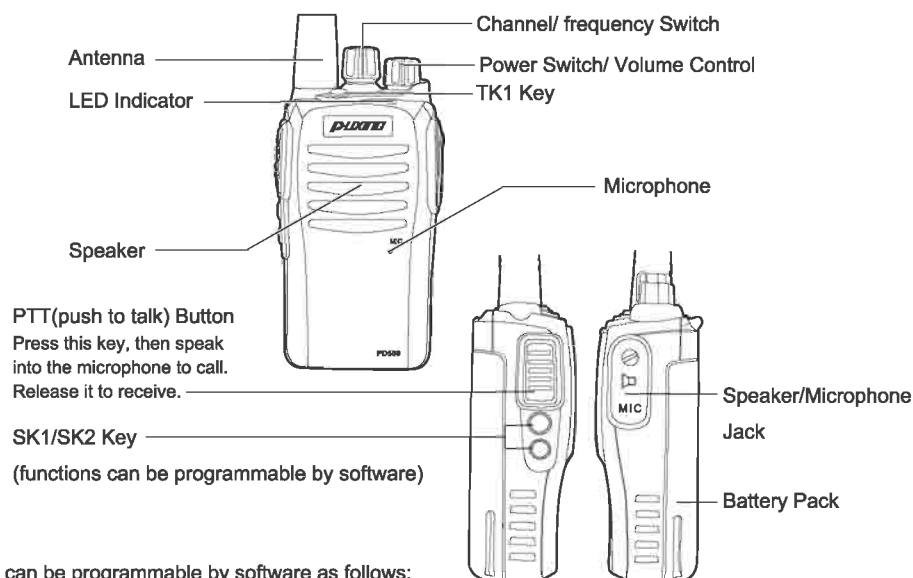
The radio is not entirely waterproof when use the speaker/microphone.

**Install Speaker/Microphone Jack Cover**

If not use a speaker/microphone, please use the screw to install the cover over the speaker/microphone jack.

Note:

If you want your radio to be waterproof, you should cover the speaker /microphone cover.

**NOTE:**

TK1/SK1/SK2 Key can be programmable by software as follows:

1. none
2. Monitor
3. Scan
4. Noise Channel Temporary Remove
5. VOX
6. High/ Low Power
7. Power Detect
8. Emergency Alarm
9. Work Alone
10. One Key Call 1
11. One Key Call 2
12. Encryption
13. Talk Around
14. Reverse
15. Channel Type
16. Priority Channel Scan
17. Area Switch

Turn On/ Off Two Way Radio

Rotate clockwise the volume knob until heard a short prompt sound "KA DA", means turn on successfully. To turn off the radio, rotate counterclockwise the volume knob until heard "KA DA" sound.

Note: If set prohibit turn on prompt sound, it will not have prompt sound.

Adjust Volume

Rotate clockwise the volume knob to turn up radio volume, to turn down the volume, rotate counterclockwise.

Channel Select

Use the channel knob to select the desired channel. If turn on the voice broadcast function (programming software setting), rotate the channel knob, it will report the channel number.

Channel Mode

- **Analog Channel:** To direct audio signal modulation carrier on the mode of transmission is analog two way radio
- **Digital Channel:** This channel can only receive /transmit digital signal
- **Mixed Digital Channel:** On a mixed digital mode, if initiative transmit then within the communication time is digital mode. If receive the analog signal first then this channel will work on analog mode during the communication time, it means receive/transmit analog signal; If receive the digital signal first, then the two way radio will work on digital mode during the communication time, it means only can receive/transmit digital signal.
- **Mixed Analog Channel:** On mixed analog mode, if initiative transmit then within the communication time is analog mode. Others same as mixed digital mode.

Transmit

- **Analog Transmit:** If you want to send a call, press PTT key then speak to microphone with a normal tone.
- **Three States of Digital Transmit**
 - ◆ When free, press [PTT] key to call the contact person default setting

- ◆ After quick selective call, in the reset time, Press [PTT] key to start transmit, then call the current selective call contact person
- ◆ After receive the call, in the reset time, press[PTT] key will reply to the calling party

Busy Channel Lockout

If the channel have set busy channel lockout, when busy press [PTT] to prohibit transmit and have prompt tone, release [PTT] button and within 1s press [PTT] button 0.5s again, the busy ignored., and forced start the impolite transmit.

Time-out Timer

- **TOT timeout:** set the longest time for continues transmit when the time of timer is over, the radio will alert and stop transmitting.
- **TOT pre-alert:** This function is to set the radio to send pre-alert in advance before TOT time end. After pre-alert sound within specific time, TOT time's up.
- **TOT re-key time:** Programmed time to wait until the PTT key can be used for a follow-on transmission to start.
- **TOT reset time:** Press the PTT key, then release it within the TOT reset time programmed, then if

the the PTT key is pressed again within the reset time the TOT timer continue to count down. If the PTT key is pressed the second time after the reset time timeout the timer starts from zero again.

Receive

- **Analog receive:** receive the same carrier and matched signaling will open the SQ.
- **Digital receive options:**
 - ◆ Voice receive: When receive the correct call (code is matched: single call, group call, full calling), the radio will start to receive, open the speaker, and hear the voice from other side.
 - ◆ SMS receive, when receive the SMS, you can hear the prompt tone "Di, Di, ", you can read the SMS by software.

Making a Call

Use the pre-programmed key to set the quick call1/call2, the content of the call corresponding to the information set in the channel editor. Quick call feature can let you make a group call or single call to the pre-defined ID or contacts conveniently, this feature can allocate to long programming button initiate, and you can only allocate an ID or pre-set a fixed contact to a quick call button, the radio can have multiple programming quick call button.

14 Function Description

1>. Analog call: use DTMF signaling to transmit PTT-ID, receive kill/ activation code.

2>. Digital call: voice call and send SMS two options

- Use digital signaling to realize single call and group call.
 - ◆ Single call: if contact call type is single call, then realize single call function. Single call is an individual radio call to another individual radio.
 - ◆ Group call: if contact call type is group call, then realize the group calls function. When set group call the contact person will be added to group receive list automatically, when receiving the user group call, the radio must be configured belong to the group.

● Short message:

Only suitable for digital channel, do not supports Chinese message, the radio supports a maximum of 16 short message as pre-written, each message can edit 128 character

1. Press pre-programmed call button to send a pre-written message to a pre-set fixed contacts.
2. LED indicator light turns red.
3. If the message is sent successfully, you will hear two Di Di sound.

3>. Mixed digital call

Channel default set a fixed contact person, it will send this ID once you press PTT to transmit each time.

Function Description

15

Press call1/call2 to send the call, call to the pre-set contact and message (can be programmable by software)

4> Mixed analog call

Press call1/call 2 to send the call, call to the pre-set ID code of DTMF auto-dial list (can be programmable by software).

Receiving a Call

Analog/mixed analog

When channel have set DTMF signaling, you only can receive the call from other side once the signaling decode successfully, receiving the matched signaling enter into the corresponding operation (pre-set decode response, such as ringing, reply etc.)

Digital/mixed digital

When receive the correct call (code is matching: single call, group call), the radio will start to receive, open the speaker and hear the voice from other party.

PTT ID Type (Analog/Mixed Analog)

On-Line: press PTT button, it will send the pre-written PTT ID code.

Off-Line: release PTT button, it will send the pre-written PTT ID code.

Both: press and release PTT button, both will send the pre-written PTT ID code.

Encryption (only in digital mode)

You can preprogram 16 groups privacy, encryption keys by software, press programmed encryption button to turn on /turn off encryption.

Emergency

To initiate an Emergency Alarm press the programmed Emergency button. (can be programmable), Press PTT to exit the Emergency mode.

Emergency alarm type (can be programmed by software):

- **Off:** radio cannot transmit alarm signal, but can receive alarm from other radios.
- **Local:** radio transmit alarm tone.
- **Local+Remote:** radio transmits an identification code and alarm tone, transmit a certain time (set by software) and then receive a certain time (set by software), cycle like this for a certain number of times (set by software);
- **Remote:** radio do not alarm but send the alarm ID code, the receiving radio will make alarm (without

any audio or visual indicators.

- **Remote+voice:** initiate the emergency alarm and in the alarm condition, without any audio or visual indicators, until you press the PTT button to call.

Work Alone

Use pre-programmed key to turn on/turn off this function,

In order to ensure the security of the master when the transceiver is working alone, you can use pre-programmed key to turn on/ turn off work alone function. When the transceiver is in the work alone mode, the transceiver will sound when beyond the setting time, and you have to press the key (safe) to indicate that you are in the safe condition, or the transceiver will enter into the auto alarm mode.

Remote Monitor

Use the remote monitor feature to turn on the microphone of a target radio. No audible or visual indication is given to the target radio. You can use this feature to monitor, remotely, any audible activity surrounding the target radio.

Scan

Press the programmed Scan /priority channel scan button (can be programmable) to start the scan

feature and press this button again to exit scan mode.

- **Noise Channel Temporary Remove**

When scan stops, press [Noise Channel Temporary Remove] button (can be set by software), then it will continue to scan the next channel, and it will not scan the channel which has been removed. But if exit the scan function and start the scan function again, it will still resume scan the channels.

- **Priority Scan**

If have set the priority channel, it allows initiating priority scan function. Priority scan is using cycle scanning mode, when you scan the normal channels each time it will also scan the priority channel.

- **Scan Indicator**

During scanning, the LED lights up red. (Programming software scan status indicator available). When scan stops, the red light turn off, and the receive indicator will be on if the radio receive the signal.

VOX

VOX feature allows you to transmit with hands-free, but you should set the VOX sensitivity level (set by software), and turn on the VOX before using this feature.

Kill Function

When the radio receive the correct kill code, the radio will automatically TX disable, RX /TX disable, you can't receive the voice signal at this time, only can receive the activation code, you can set this function via software.

Activation Function

The radio in TX disable, RX/TX disable status, when receive the activation code the radio will return to normal operation.

One Key Call

The One Key Call feature allows you to make a Group call or Single call to a predefined ID or contacts easily. This feature can be assigned to a long programmable button initiate. You can only have one ID or predefined contacts assigned to a One Key Call, radio can have multiple One Key Call buttons programmed.

DTMF (Analog)

Wait for response/don't wait for response

If set wait for response, the caller have to wait for the reply information from the called party, then into the communication.

Don't wait for response, the caller initiate the call and no matter the other parties have response or not, they can go into the communication.

The called party: the called party can set the response decode via software, as follow,

None:

If receive the matching ID code, do not response, the radio will go into the communication directly.

Remind: If receive the matching ID code it will ring or send the prompt tone to remind the user.

Response: If receive the matching ID code, the called party will send some reply code to the caller, then go into the communication.

Remind+response: If receive the matching ID code, after sending some reply code to caller, the radio will ring/sound prompt tone then go into the communication.

Analog/Digital ID Code Setting

- **Single call ID code:** it consists of the number from 0-9, at most 16 bits.

- **Group call code:** 1 bit, consists of A-D,*,# ,default is *,group call ID code can replace any code among the single call ID code.

For example, set the single call ID code to be 12345, group call code is *, if receive 12345 or any code of 12345/any ID replaced by *. For example, 1234*, 123**, *2345, 1*345, all codes recognized to be matched codes.

- When the received matched ID code includes group call code, then recognized to be group call, otherwise is single call.
- **Digital single call:** ID code consists of the numbers 0-9.
- **Digital group call:** digital group call ID code consists of the numbers 0-9, when the call type is group call the contact will be automatically added to group receive list.

Parameter Setting

Two Way Radio Name

Two way radio name stands for the identity of the radio, if your name in the control centre contacts list or the other radios have LCD display, when they receive your ID code, the radio will show your name.

Two Way Radio ID

It stands for the identity of the two way radio.

22 Function Description

Group Call Hold

The timer starts that when receiving group call digital code but didn't press PTT status.

Private Call Hold

The timer starts that when receiving private call digital code but didn't press PTT status.

Kill Type

You have TX disable、RX/TX disable optional.

TX disable: when the radio receive correct kill code, the radio TX disable but can receive.

RX/TX disable: when the radio receives correct kill code, the radio TX/RX can't work.

Kill Code

When receive kill code, the radio will work as the same kill type you selected.

Activation decode

The radio has been killed, receiving the activation decode can activate the killed radio.

Troubleshooting 23

Symptom	Solution
No Power	◆ The battery needs charging. Recharge the battery or replace it with a new one. ◆ The battery is not properly installed. Remove the battery and reattach it.
The operating time is shorter than normal even though the battery is properly charged.	◆ The battery has worn out; it's time to buy a new one.
Cannot talk to or hear group members	◆ Make sure that your radio operates on the same channel and/or has the same CTCSS/DCS settings as your group members. ◆ Maybe your group members are too far away from you. Make sure you are within their communication range. ◆ If in digital mode, make sure that the frequency is correct. ◆ If in digital mode, make sure you have set the correct encryption group in current channel. ◆ If in digital mode, make sure that the TX contact and RX group list setting is correct.

Troubleshooting

Symptom	Solution
Can hear other persons' (not group members) voice	◆ Change the CTCSS/DCS. All radio CTCSS/DCS in the group must be changed.

Technical Specifications

GENERAL		TRANSMITTER	
Frequency range	406.1 MHz-470MHz	ANALOG PART	
Temperature Range	-20℃ ~+55℃	Frequency stability	± 2.5ppm
Rated voltage	DC7.4V	Output power	4W
Work mode	Co-frequency simplex or Differ-frequency simplex	Audio distortion	≤ 5%
Dimension	110mmx50mmx35mm (not including the antenna)	Modulation character	+3dB~-3dB
Weight	About 226.7g (including the battery pack)	Adjacent channel power	≥ 65dB
Antenna impedance	50Ω	Occupied bandwidth	≤ 16KHz
DIGITAL PART	4FSK digital modulation method	4KCOFIE	
	Digital voice encoder	AMBE+2C	

RECEIVER	
RF sensitivity	$\leq -120.0\text{dBm}@12\text{SINAD}$ (Analog mode) $3\%\text{BER}<0.25\mu\text{v}$ (Digital mode)
Audio distortion	$\leq 5\%$
Audio response	$+2\text{dB}\sim-10\text{dB}$
Co-channel rejection	$> -8\text{dB}$
Adjacent channel selectivity	$> 55\text{dB}$
Intermodulation rejection	$> 55\text{dB}$
Spurious response	$> 55\text{dB}$
Block character	$> 85\text{dB}$

RF Exposure Compliance and Control Guidelines **and Operating Instructions**

This equipment complies with FCC radiation exposure limits set forth for a controlled environment .

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

Guidelines:

- Do not remove the RF Exposure Label from the device.
- User awareness instructions should accompany 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, release the PTT button. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).
- Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from eyes.
- When worn on the body, always place the radio in a Xiamen Puxing Electronics Science& Technology Co., Ltd approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Xiamen Puxing Electronics Science& Technology Co., Ltd or other manufacturer' s non-approved accessories may result in exposure levels, which exceed the FCC's occupational/controlled environment RF exposure limits.
- If you are not using a body-worn accessory and are not using the radio in the position in front of the face, then ensure the antenna and the radio are kept at least 2.5 cm (one inch) from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.
- Use only Xiamen Puxing Electronics Science&Technology Co., Ltd approved supplied or replacement antennas, batteries, and accessories. Use of non- Xiamen Puxing Electronics Science&Technology Co., Ltd approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.