

**M4 Series
Two-way Radios**

OWNER'S MANUAL

English

Preface

To help you ward off bodily injury or property loss that may arise from improper operation, please read all the information carefully before using our products.

Intended Use

Our products are designed to provide reliable wireless communication services for users across many industry sectors. In order to use the products safely and to achieve the best performance, they must be used as intended. The operator of the product is responsible for damage to the product or damage caused by the product if the product was used beyond the intended use instructions.

Intended use includes that:

- The product is used by users who have full knowledge of its RF exposure and can exercise control over their RF exposure to meet the occupational limits in FCC/ICNIRP and international standards.
- All the security instructions set forth in this document are always heeded.
- The general, national and in-house safety regulations are heeded.
- The product is exclusively used with the frequencies licensed by the respective authority.
- The product is configured appropriately by the dealer.

Besides, intended use also requires the product operator to be well-trained and to be familiar with the applicable standards, regulations and provisions.

RF Radiation Information

Compliance with RF Exposure Standards

The radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR § 1.1307, 1.1310 and 2.1093
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1:2005; Canada RSS102 Issue 5 March 2015
- Institute of Electrical and Electronic Engineers (IEEE) C95.1:2005 Edition

RF Exposure Compliance and Control Guidelines and Operating Instructions

To control your exposure and ensure compliance with the occupational/controlled environmental 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), press the Push-to-Talk (PTT) key. To receive calls, release the PTT key. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy only when transmitting (in terms of measuring for standards compliance).
- Keep the radio unit at least 2.5 cm away from the face. Keeping the radio at the proper distance is important as RF exposure decreases with distance from the antenna. The antenna should be kept away from the face and eyes.
- When worn on the body, always place the radio in an approved holder, holster, case, or body harness or by use of the correct clip for this product. Use of non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environmental RF exposure limits.
- Use of non-approved antennas, batteries, and accessories causes the radio to exceed the FCC RF exposure guidelines.
- Contact your local dealer for the product's optional accessories.

Radiation Exposure Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. For Remote controller, SAR tests are conducted using standard operating positions accepted by the FCC/ISED with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model device is available for sale

to the public, it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC/ISED, Tests for each device are performed in positions and locations (e.g. at the ear and worn on the body) as required by the FCC/ISED. For body worn operation, this model device has been tested and meets the FCC/ISED RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that Contains no metal and that positions the handset a minimum of 10 mm from the body. Non-compliance with the above restrictions may result in violation of RF exposure guidelines.

Safety Information for Radios

Your wireless handheld portable transceiver contains a low power transmitter. When the talk button is pushed, it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions(FCC) adopted RF exposure guidelines with safety levels for handheld wireless devices.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Important

FCC RF Exposure Requirements: For body-worn operation, this radio has been tested and meets the FCC RF exposure guidelines when used with Pofung accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. Use only the supplied antenna. Unauthorized antennas, modifications or attachments could damage the transmitter and may violate FCC regulations.

FCC Regulations

Federal Communication Commission (FCC) requires that all radio communication products should meet the requirements set forth in the above standards before they can be marketed in the U.S, and the manufacturer shall post a RF label on the product to inform users of operational instructions, so as to enhance their occupational health against exposure to RF energy.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio

communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit to that of the receiver's outlet.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Note: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IC Statement

The device has been tested and complies with SAR limits, users can obtain Canadian information on RF exposure and compliance.

Après examen de ce matériel aux conformité aux limites DAS et/ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes.

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 2014/53/EU. All applicable EU regulations are regarded (2006/66/EC , 2011/65/EU , 2012/19/EU).Please note that the above information is applicable to EU countries only.

Precautions for Portable Terminals

Operating Prohibitions

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

1. Do not operate the product in a location containing fuels, chemicals, explosive atmospheres and other flammable or explosive materials.

In such location, only an approved Ex-protection model is allowed for use, but any attempt to assemble or disassemble it is strictly prohibited.

2. Do not operate the product near or in any blasting area.
3. Do not operate the product near any medical or electronic equipment that is vulnerable to RF signals.
4. Do not hold the product while driving.
5. Do not operate the product in any area where use of wireless communication equipment is completely prohibited.

■ Important Tips

To help you make better use of the product, be sure to observe the following instructions:

1. Do not use any unauthorized or damaged accessory.
2. Keep the product at least 2.5 centimeters away from your body during transmission.
3. Do not keep the product receiving at high volume for a long time.
4. For vehicles with an air bag, do not place the product in the area over the air bag or in the air bag deployment area.
5. Keep the product and its accessories out of reach of children and pets.
6. Please operate the product within the specified temperature range.
7. Continuous transmission for a long time may lead to heat accumulation within the product. In this case, please keep it at a proper location for cooling.
8. Handle the product with care.
9. Do not disassemble, modify or repair the product and its accessories without authorization.

■ Protect your hearing

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

Precautions for Batteries

■ Charging Prohibitions

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

1. Do not charge or replace your battery in a location containing fuels, chemicals, explosive atmospheres and other flammable or explosive materials.
2. Do not charge your battery that is wet. Please dry it with a soft and clean cloth prior to charge.
3. Do not charge your battery suffering deformation, leakage and overheat.
4. Do not charge your battery with an unauthorized charger.
5. Do not charge your battery in a location where strong radiation is present.
6. Overcharge shall always be prohibited for it may shorten the life of your battery.

■ Maintenance Instructions

To help your battery work normally or prolong its life, be sure to observe the following instructions:

1. Accumulated dust on charging connector may affect normal charging. Please use a clean and dry cloth to wipe it on a regular basis.
2. It is recommended to charge the battery under 5°C~40°C. Violation of the said limit may cause battery life reduction or even battery leakage.
3. To charge a battery attached to the product, turn it off to ensure a full charge.
4. Do not remove the battery or unplug the power cord during charging to ensure a smooth charging process.
5. Do not dispose of the battery in fire.
6. Do not expose the battery to direct sunlight for a long time nor place it close to other heating sources.
7. Do not squeeze and penetrate the battery, nor remove its housing.

■ Transportation Instructions

1. Damaged batteries must not be transported.
2. To avoid short circuit, separate the battery from metal parts or from each other if two or more batteries are transported in one packaging.
3. The radio must be switched off and secured against switch-on, if the battery is attached.

The content of the shipment must be declared in the shipping documents and by a Battery Shipping Label on the packaging. Contact your

hauler for the local regulations and further information.

Precautions for Disposal

Once the service life of our products (including but not limited to radios and batteries) has ended, they shall not be disposed as household garbage. Their recycling and disposal shall satisfy your local regulations.

Content of the packaging

- | | | | |
|-----|-------------|-----|---------------------|
| • 1 | Radio | • 1 | Li-Ion battery pack |
| • 1 | Wrist strap | • 1 | Owner's Manual |
| • 1 | Belt clip | • 1 | Antenna |

If any item is missing, please verify with your dealer.

Main characteristics

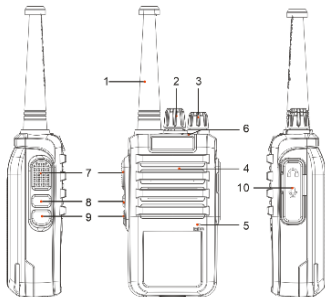
- | | |
|-----------------------------|-------------------------------|
| • 16 Channels | • Output power: Max 2W |
| • Channel spacing: 12.5 KHz | • Channel Scan |
| • Vocal tuning | • Battery save |
| • Monitor | • Squelch |
| • Flashlight | • 2pin Kenwood accessory jack |

- 260 Sub-codes (50 CTCSS tones and 210 DCS codes)
- TOT (Time out timer)

- Li-Ion 1500mAh battery pack
- FCC ID: 2BBGD-AT888S

Main controls and parts of the radio

1. Antenna
2. Encoder: rotate clockwise or counter-clockwise to select the desired channel
3. Power/volume knob-turn clockwise to power on and increase the volume level. Turn counter-clockwise to decrease the volume level and power off.
4. Speaker
5. Built-in microphone
6. Led indicator: RED: TX; GREEN: RX.
7. PTT: push this key to transmit, release it to receive.
8. SK1: Custom function keys that allow for Long Press Monitor, Power Adjustment, and Emergency Alarm functions
9. SK2: Monitor key
10. External Speaker/Mic Jack- allows the connection with external devices such as headsets, microphones.



LED Status Indications

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

LED Indication	Radio Status
Constant Red	Transmitting
Constant Green	Receiving
Flashes Green	Analog Scan

Battery recharge

The radio is equipped for using a 3.7V Li-ion rechargeable battery pack which can be recharged connecting the socket of the AC/DC wall adaptor to a mains power socket and inserting the jack of the wall adaptor into the desktop charger plug. It takes 4-5 hours to fully recharge the radio. For maximum battery life, we recommend charging the battery pack when the radio is off and the battery pack is fully discharged.

NOTE: Using a different battery charger other than the one specified can cause damage to your device or may even cause explosions and personal injuries.

The Battery power saving feature enables a reduction in consumption of up to 50%. If it has been set, it automatically activates when the transceiver does not receive any signal for more than 5 seconds in order to save the battery life. Power saving can be disabled only through Programming software.

To charge batteries in radio:

1. Insert the random original adapter into the AC socket, and then insert the adapter cable into the C-shaped socket on the right side of the radio (open the protective cover).
2. Ensure that the Type-C socket on the right side of the radio is in good contact with the charging terminal of the cable. The indicator light on the top of the radio turns orange and charging begins.
3. It takes approximately 2-5 hours to fully charge the battery. The indicator light on the top of the radio is off - charging is complete. When the indicator light on the top of the radio goes out, it indicates that the charging is complete. Remove the cable from the C-shaped port on the right side of the radio and cover it with a protective cover.

Alervites recommends your radio is turned off while being charged.

Operations

Power on/off and volume adjustment

Rotate the **[Power/Volume]** knob clockwise to turn the radio on. Rotate the control clockwise /counter-clockwise to adjust the volume level as you prefer.

Rotate the **[Power/Volume]** knob to adjust the volume. Turn clockwise to increase the volume and counterclockwise to decrease

the volume.

- To turn the radio off, rotate the control counter-clockwise till hearing a mechanical "click".
- If voice prompts are enabled, they will be accompanied by "Power on and channel number".

Transmission

To communicate, all radios in your group must be set to the same channel. Briefly press the Side key 1 to enable the Monitor feature in order to make sure that the frequency is not busy, and then press the PTT button. Release the PTT key to receive. Only one user at a time can talk during radio communications. Therefore, it is important not to transmit when you are receiving a communication and use the transmission mode sparingly to allow other users to talk. Transmission consumes a significant amount of energy and should therefore be used sparingly to prolong the battery life. If you are unable to contact a station that you have no problems in receiving, the station may be using CTCSS tones or DCS codes.

Monitor

The Monitor feature is for excluding (opening) the Squelch, in order to listen to signals that are too weak to keep the Squelch permanently opened. Hold down the **Side key 1** to enable such function.

Scan

This function can be activated only by means of the optional programming software. To enable the Scan function, all 16 channels must be programmed. If you turn on the radio on channel 16, the scanning will automatically start. Whenever any signal is detected, the scanning will stop on a busy channel. If the PTT is pressed, you will transmit on the latest busy channel. Channel 16 is the priority channel; therefore if you don't pick up any signal when you press PTT, the radio will transmit on channel 16.

Squelch

The Squelch function suppresses noises on free channels and allows receiving even weak signals. The radio has 10 different Squelch levels that can be set by programming software: 0 means that the Squelch is turned off; from level 1 to level 9 you will have different levels of noise reduction. The higher is the level, the louder will be the Squelch. By default, the Squelch level of the radio is set on level 4. Make sure you do not set an excessively high squelch level because in this case you may not be able to receive weaker signals. On the other hand an excessively low Squelch value could enable the Squelch even when no signals are

present. Squelch must always be adjusted when no signals are present. The Time Out timer is settable from 30 sec to 270 sec. only through the programming software. This feature is disabled by default.

CTCSS/DCS tones

CTCSS and DCS tones are similar to access codes and enable the radio to communicate only with the users that are tuned on the same channel and have set the same code. For each channel, you can set up to 50 CTCSS tones and 210 DCS codes. The CTCSS/DCS tones are a sort of "access codes" and enable the radio to communicate only with the other users set on the same frequency and on the same CTCSS/DCS tone. Undesired signals coming from other stations set on the same frequency but with different CTCSS/DCS tones won't be received.

Prompt voice switch settings

The encoder is selected to the **10th** channel. Press and hold the **PTT** and **Side Key 1** to turn on the radio, and turn the prompt voice on or off.

Turn on the prompt voice function, and there will be voice prompts when the encoder is turned on or operated. If you turn off the prompt voice function, there is only a "beep" prompt when you turn on or operate the encoder.

Emergency alert function

If necessary, you can pre-program the **Side Key 1** into the Alarm function via CPS programming software.

Turn on the radio, short press the **Side Key 1** to turn on the alarm function. Press the **Side Key 1** again to release the emergency alarm status.

VOX

The VOX feature enables hands free conversations without using PTT: just speak in the direction of the microphone and the communication will be automatically activated. The VOX sensitivity can be adjusted in 5 different levels (1...5) through the programming software:

Level 2 is set by default and has the lowest VOX sensitivity, 5 is the lowest one.

With the programming software you can enable/disable the VOX feature and select the sensitivity levels.

Quick operation radio

Without CPS programming software, you can perform the following quick operations through the combination of **PTT + SK 1**:

- On the 5th channel, press and hold the **PTT + Side Key 1** key to turn on the radio and turn the VOX function on or off.
- On the 10th channel, press and hold the **PTT + Side Key 1** to turn on the radio and turn on or off the prompt voice function.
- On the 15th channel, press and hold the **PTT + Side Key 1** to turn on the radio and switch the prompt language between Chinese and English.

Trouble shooting guide

PROBLEM	SOLUTION
The radio doesn't switch on	The battery may be exhausted. Recharge it. Uncorrected installation.
Battery recharge doesn't last long	The battery pack is over. Change it with a new one. Battery pack is not completely charged.
Reception led turns on but no sound heard	Make sure the volume is not too low. Make sure to have the same CTCSS and DCS codes of your group
The keypad doesn't work	Keypad lock function hasn't been enabled
Reception of other group signal while transmitting	Change another CTCSS/DCS for your group

NOTE: If the above solutions cannot fix your problems, or you may have some other queries, please contact your dealer for more technical support.

Appendix A. – Technical Specifications

Frequency Range	400-470MHz*
Working temperature	-10°C to +50°C
Operation Voltage	DC 3.7 V ±10%

Operation Mode	Simplex
Antenna Impedance	50ohm
Duty cycle	5/5/90%
RF Output Power	2W (Max)
Transmission current	$\leq 1200\text{mA}$
Receive Sensitivity	$0.25\mu\text{V}$ (12dB SINAD)
Rated Audio Power Output	0.5W @8 ohms
Receive current	$\leq 380\text{mA}$
Rated Audio Distortion	$\leq 5\%$

NOTE: All specifications may be modified without prior notice or liability.

FCC Licensing Information

The FCC ID is indicated on the label of the device. The radio operates on Commercial / Land Mobile frequencies which require a license from the Federal Communications Commission (FCC) for business, personal, education and recreational use. To obtain forms, call the FCC forms hotline at: 1-800-418-3676 or go to <http://www.fcc.gov>. For questions concerning commercial licensing, contact the FCC at 1-888-CALL-FCC (1-888-225-5322).

Appendix B. – Trouble shooting guide

Phenomena	Analysis	Solution
You cannot turn on the radio.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirty or damaged battery contacts.	Clean the battery contacts or replace the battery.
During receiving, the voice is weak or intermittent.	The battery voltage maybe low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume.
	The antenna maybe loose or maybe installed incorrectly.	Turnoff the radio, and then remove and reattach the antenna.
	The speaker maybe blocked.	Clean the surface of the speaker.
You cannot communicate with other group members.	The frequency or signaling type maybe inconsistent with that of other members.	Verify that your TX/RX frequency and signaling type are correct.
	You may be too far away from other members.	Move towards other members.
You hear unknown voices or noise.	You may be interrupted by radios using the same frequency.	Change the frequency, or adjust the squelch level.
	The radio in analog mode maybe set with no signaling.	Request your dealer to set signaling for the current channel to avoid interference
You are unable to hear anyone because of too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	You may be in an unfavorable position. For example, your communication may be blocked by high buildings or blocked in an underground area.	Move to an open and flat area, restart the radio, and try again.
	It may be the result of external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.
The radio keeps transmitting.	VOX may be turned on or the headset is not installed in place	Turn off the VOX function. Check that the headphones are in place.

NOTE: If the above solutions cannot fix your problems, or you may have some other queries, please contact your dealer for more technical support.

Disclaimer

The Company endeavors to achieve the accuracy and completeness of this manual, but no warranty of accuracy or reliability is given. All the specifications and designs are subject to change without notice due to continuous technological development. No part of this manual may be copied, modified, translated, or distributed in any manner without the prior written consent of the Company.

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