

DMR DIGITAL RADIO

DR-1801UV SERIES

Operating Manual



PREFACE

Thank you very much for choosing our DMR DIGITAL RADIO. This radio adopts the latest advances in technology, providing reliable communication in today's demanding communication environment.

This radio offers both DMR digital and analog communication, introduces innovative DMR digital processing system to achieve SMS, high-audio quality and digital encryption. It offers great stability, and reliability, together with long distance communication as well as fashionable design and compact exterior lines. The radios has Text Messaging, Voice Message, Digital Encryption, Emergency Alarm, Work Alone, Analog DTMF, CTCSS/DCS encode/decode functions.

ATTENTION!

- >> When programming the radio, start by reading the factory software data, and then rewrite this data with your frequency etc., to a new saved code plug, otherwise errors may occur.
- >> You can use the programming cable with a PC to program the frequency, power etc. your programming must comply with your FCC (or other country) license certification.

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

ATTENTION!

Before using this product, read the RF Energy Exposure and Product Safety Guide that ship with the radio which contains instructions for safe usage and RF energy awareness and control for compliance with applicable standards and regulation.

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GETTING STARTED

1. Regulations and Safety Warnings

FCC Licensing Information

This device complies with Part 90 and 15 of the federal Communications Commission (FCC) Rules.

Operation is subject to the condition that that this device does not cause harmful interference. The radio operates on radio frequencies that are regulated by the Federal Communications Commission (FCC). To transmit on these frequencies, you are required to have a license issued by the FCC. 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). Before filling out you application, you must decide which frequency you can operate on.

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

FCC Regulatory Conformance

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 circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

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, (EU)2015/863, 2012/19/EU). **NOTE: It can be operating under 2000m.**

WARNING ! European Users should note that operation of this unit in Transmit mode requires the operator to have a valid Amateur Radio License from their respective Countries Amateur Radio Licensing Authority for the Frequencies and Transmitter Power levels that this Radio transmits on. Failure to comply may be unlawful and liable for prosecution. At this subject, refer to the “EU” specification guide 2014/53/EU.

Please note that the above information is applicable to EU countries only.

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

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- 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 2.5cm 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.

■ 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.

■ 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.

2. Feature Overview

- **Large-capacity storage to meet complex application needs**

1024 channel storage, 1024 digital contacts can be manually programmed

- **DMO True 2-Slot Two time slots**

Direct-mode Dual-Slot communication, enabling two groups of calls to be simultaneously performed at one frequency, to make double communication efficiency; while saving frequency resources

- **Rich digital signaling**

It not only supports Private Call, Group Call, All Call and alarm call of DMR protocol; also supports radio detection, Call Alert, Remote Monitor, Remote Active and Remote Kill and short message data transmission.

- **Digital and analog compatible, smooth transition**

Support DMR digital and analog two communication modes, ensure that the original analog products smooth transition to digital products to meet different communication needs.

- **SMS function**

Support Chinese and English language, support for 64-character text messaging, text editing, and draft box functions. When it is not convenient to make a voice call, you can send a message by sending a message to the other party.

- **Excellent sound quality compatible with Motorola**

This digital radio uses advanced AMBE+2™ voice processing technology to achieve excellent call quality.

- **Digital encryption function**

Digital signal encoding and decoding, improves voice call quality; digital encryption provides security for your voice calls

- **Digital alarm function, protect the safety of the team**

Supports regular alarms .silent alarms and working alone in emergencies

- **Support DMR system, easy to interconnect**

Support DMR digital repeater function, easy network scheduling and control globally through IP interconnection

3. Unpacking and checking the equipment

Unpack the radio carefully. We recommend that you identify the items listed in the following table before discarding the packing materials.

NOTE: If any of these items are missing from the box, contact your place of purchase immediately.

Supplied Accessories

Antenna	1	Li-ion Battery Pack	1
Battery Charger	1	AC Adaptor	1
Belt Clip	1	Hand Strap	1
Instruction Manual	1	Programming Cable	1

4. Battery Information

Charging the Battery Pack

The Li-ion battery pack is not charged at the factory; please charge it before use. Charging the battery pack for the first time after purchase or extended storage (more than 2 months) may not bring the battery pack to its normal maximum operating capacity. Best operation will require fully charging/ discharging the battery two or three times before the operating capacity will reach its best performance. The battery pack life may be depleted when its operating time decreases even though it has been fully and correctly charged. If this is the case, replace the battery pack.

Charger Supplied

Please use the designated charger provided by our company. Other models may cause explosion and personal injury. After installing the battery pack, and if the radio displays low battery with a red flashing lamp or voice prompt, please charge the battery.

Use Caution with the Li-ion Battery

- (1) Do not short the battery terminals or throw the battery into a fire. Never try to remove the case from the battery pack, as our company is not responsible for any accidents caused by modified batteries.
- (2) The ambient temperature should be between 5°C-40°C (40°F - 105°F) while charging the battery. Charging outside this range may not fully charge the battery.
- (3) Please turn off the radio before inserting it into the charger. It may otherwise interfere with correct charging.
- (4) To avoid interfering with the charging cycle, please do not cut off the power or remove the battery during charging until the green light is on.
- (5) Do not recharge the battery pack if it is fully charged. This may shorten the life of the battery pack or damage the battery pack.
- (6) Do not charge the battery or the radio if it is damp. Dry it before charging to avoid damage.

WARNING:

» When keys, ornamental chain or other electric metals contact the battery terminal, the battery may become damaged or injure a human. If the battery terminals are short circuited it will generate a lot of heat.

Take care when carrying and using the battery. Remember to put the battery or radio into an insulated container. Do not put it into a metal container.

How to Charge

Follow these steps to hook up and use the charger:

- (1) Plug the DC connector of the power adaptor into the charger base.
- (2) Plug the AC connector of the power adaptor into a main AC wall outlet.
- (3) Place the radio in the charging slot on the charger.
- (4) Make sure the radio is making contact with the charger. When the red LED comes on steady, your radio is charging.

- (5) The radio is fully charged once the charger's green status LED goes steady. Please remove the radio at that time to avoid over-charging your battery.

Charger LED codes

Red LED Green LED	Green LED	Status
Flashing	Steady	Standby (charger empty) Error (charger with radio)
Steady	Off	Charging
Off	Steady	Charge complete.

The charger and battery are fitted with matching notches so that you can charge your battery on its own! Practical if you have two batteries. That way you can charge one battery while still using your radio.

Radio should be turned OFF during charge cycle.

How to Store the Battery

- (1) If the battery needs to be stored, keep it in status of 80% discharged.
- (2) It should be kept in low temperature and dry environment.
- (3) Keep it away from hot places and direct sunlight.
- (4) To avoid severe capacity degradation of your battery while in long-term storage, please cycle the battery at least every six (6) months.

NOTE:

»Do not short circuit the battery terminals.

» Never attempt to remove the casing from the battery pack.

» Never store the battery in unsafe surroundings, as a short may cause an explosion.

» Do not put the battery in a hot environment or throw it into a fire, as it may cause an explosion.

PREPARATION

Assembly

Before the radio is ready for use we need to attach the antenna and battery pack, as well as charge the battery.

1. Installing / Removing the Battery

Before attaching or removing the battery make sure your radio is turn off by turning the power/volume knob all the way counter-clockwise.

(1) Installation

Make sure the battery is aligned in parallel with the radio body with the lower edge of the battery about 1-2cm below the edge of the radio.

Once aligned with the guide-rails, slide the battery upward until you hear a click as the battery locks in place.

(2) Removal

To remove the battery, press the battery release above the battery pack, as you slide the battery downward.

2. Installing / Removing the Antenna

(1) Installing the Antenna: Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

(2) Removing the Antenna: Turn the antenna counter-clockwise to remove it.

3. Installing / Removing the Belt Clip

(1) Installing the Belt Clip: Place the belt clip above the corresponding holes on the back of the radio, and screw it into place clockwise with the two supplied screws.

(2) Removing the Belt Clip: Unscrew counter-clockwise to remove the belt clip.

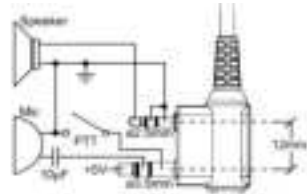
4. Installing the Additional Speaker/Microphone (Optional)

Pry open the rubber MIC-Headset jack cover and then insert the Speaker / Microphone plug into the double jack.

Accessory jack

The accessory jack on the radios is a Kenwood compatible two (2)-pin design. Typical 2 pin Kenwood headset configuration.

- *To attach accessories such as headsets, speaker-mics or programming cables, align the connectors and push in fully.*
- *The fit isn't always perfect on cheap or clone cables and connectors and may require a bit of force to wiggle them in completely.*
- *Make sure the radio is off before attaching any accessories.*



RADIO OVERVIEW

