



INSTRUCTION MANUAL

dPMR446/PMR446 TRANSCEIVER

IC-F29DR

Icom Inc.



IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains important operating instructions for the **IC-F29DR dPMR446/PMR446 TRANSCEIVER**.

This transceiver includes some functions that are usable only when they are preset by your dealer. Ask your dealer for details.

For more information, download the IC-F29DR operating guide from the Icom web site.

(<http://www.icom.co.jp/world/support/>)

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ DANGER!	Personal death, serious injury or an explosion may occur.
⚠ WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

PRECAUTIONS

⚠ DANGER! NEVER short terminals of the battery pack. Also, current may flow into nearby metal objects such as a key, so be careful when placing the battery packs (or the transceiver) in handbags, etc. Simply carrying with or placing near metal objects such as a key, etc. may cause shorting. This may damage not only the battery pack, but also the transceiver.

⚠ DANGER! Use and charge only specified Icom battery packs with Icom transceivers or Icom chargers. Only Icom battery packs are tested and approved for use with Icom transceivers or charged with Icom chargers. Using third-party or counterfeit battery packs or chargers may cause smoke, fire, or cause the battery to burst.

⚠ WARNING! NEVER hold the transceiver that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The transceiver will perform best if the microphone is 5 to 10 cm away from the lips and the transceiver is vertical.

⚠ WARNING! NEVER operate the transceiver with a headset or other audio accessories at high volume levels. Hearing experts advise against continuous high volume operation. If you experience a ringing in your ears, reduce the volume level or discontinue use.

⚠ **WARNING! NEVER** operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.

CAUTION: MAKE SURE the flexible antenna, battery pack and jack cover are securely attached to the transceiver, and that the antenna and battery pack are dry before attachment. Exposing the inside of the transceiver to dust or water will result in serious damage to the transceiver.

DO NOT operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere.

DO NOT push [PTT] when you do not actually intend to transmit.

DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below -25°C or above $+55^{\circ}\text{C}$. The basic operations, transmission and reception of the transceiver are guaranteed within the specified operating temperature range. However, the LCD display may not be operate correctly, or show an indication in the case of long hours of operation, or after being placed in extremely cold areas.

DO NOT modify the transceiver. The specifications may change and then not comply with the requirements of a corresponded regulation. The transceiver warranty does not cover any problems caused by unauthorized modification.

DO NOT use harsh solvents such as benzine or alcohol when cleaning, as they will damage the transceiver surfaces.

BE CAREFUL! The transceiver will become hot when operating it continuously for long periods of time.

BE CAREFUL! The transceiver meets IP67* requirements for dust-tight and waterproof protection. However, once the transceiver has been dropped, dust-tight and waterproof protection cannot be guaranteed because of possible damage to the transceiver's case or the waterproof seal.

* Only when the jack cover or the optional HM-168LWP, HS-94LWP, or HS-95LWP is attached.

MAKE SURE to turn the transceiver power OFF before connecting the supplied or optional equipment. Even when the transceiver power is OFF, a slight current still flows in the circuits. Remove the battery pack from the transceiver when not using it for a long time. Otherwise, the installed battery pack will become exhausted, and will need to be recharged or replaced.

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DISPOSAL

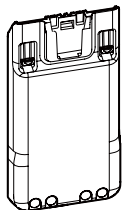


The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the

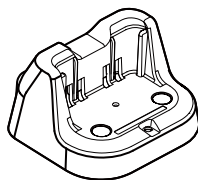
end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.

SUPPLIED ACCESSORIES

Battery pack*



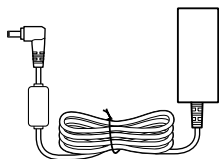
Battery charger



Belt clip



Power adapter*
(for the battery charger)



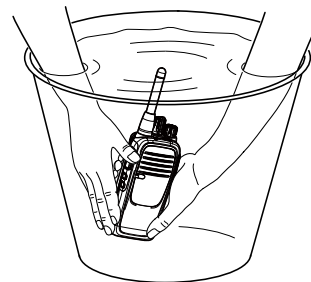
* Not supplied, or the shape is different, depending on the transceiver version.

RECOMMENDATION

CLEAN THE TRANSCEIVER THOROUGHLY WITH FRESH WATER after exposure to saltwater, and dry it before operating. Otherwise, the transceiver's keys, switches and controllers may become unusable due to salt crystallization.

NOTE: DO NOT submerge the transceiver in water if you suspect the waterproof protection may not be effective, especially after one of the following:

- The transceiver has been dropped
- The transceiver's case or the waterproof seal is cracked or damaged
- The jack cover or the optional HM-168LWP, HS-94LWP, or HS-95LWP is detached from the transceiver.



VOICE CODING TECHNOLOGY

The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment.

The user of this Technology is explicitly prohibited from attempting to extract, remove, decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form. U.S. Patent Nos. #8,595,002, #8,359,197, #8,315,860, #8,200,497, #7,970,606, #6,912,495 B2.

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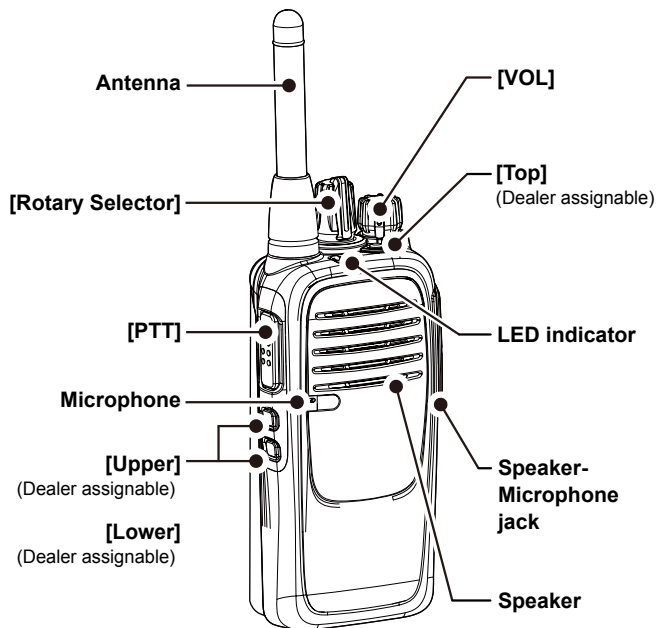
PANEL DESCRIPTION

■ Turning ON the power

For optimum life and operation, the battery must be fully charged before using the transceiver for the first time.

➡ Rotate [VOL] to turn ON the power.

■ Front panel



◇ About the Speaker microphone jack

CAUTION: The transceiver meets IP67 requirements for dust-tight and waterproof protection only when the jack cover or the optional HM-168LWP, HS-94LWP, or HS-95LWP is attached.

◇ About the LED Indicator

- Lights red while transmitting.
- Lights green while receiving a signal.
- You should charge the battery when the indicator slowly blinks green.
- You must charge the battery when the indicator blinks green fast.

◇ Factory default key assignment

[Upper]	Push to make a Smart-Ring call. Hold down to make a Call-Ring call. See the next page for more detail.
[Lower]	Hold down to release the C.Tone* mute. The mute is released even if the received signal does not include a matching C.Tone*.
[Top]	Push to toggle the operating Zone. Each time the user pushes this key, the transceiver selects Zone 1, Zone 2, and then Zone 1 again.

* CTCSS tone or DTCS code

■ Receiving and Transmitting

• Receiving

- 1) Rotate [Rotary Selector] to select a channel.
- 2) When receiving a call, rotate [VOL] to adjust the audio.

• Transmitting

Wait until the channel is clear to avoid interference.

- 1) While holding down [PTT], speak at your normal voice level.
- 2) Release [PTT] to receive.

NOTE:

To insure the readability of your signal:

1. After pushing [PTT], pause briefly before you start speaking.
2. Hold the microphone 5 to 10 cm from your mouth, and then speak at your normal voice level.

■ Call-Ring operation

Sends the preselected ringer to your group members.

• Call your group members with a Call-Ring

- 1) Set the same operating channel and CTCSS tone or Common ID for all of your group transceivers.
- 2) Hold down [Upper] for 1 second to send the preselected ringer to your group members.
 - The ringer sounds while holding down [Upper].
 - The same ringer sounds from your group members' speaker.

■ Smart-Ring operation

// only for the Analog channels //

This function has an answer back call feature. You can confirm whether or not a call has reached your group members, even if the operators are temporarily away from their transceivers.

The called transceivers automatically send an answer back call to your transceiver.

- 1) Set the same operating channel and CTCSS tone for all of your group transceivers
- 2) Push [Upper] to make a Smart-Ring call.
 - When an answer back call is received, the transceiver sounds beeps and the LED indicator blinks orange.
 - Turn OFF the transceiver to stop the beeps and the LED blinking.
 - When no answer back call is received, the transceiver sounds three short failure beeps.
- 3) Push [PTT] to answer the call and stop the beeps and blinking.

NOTE: You can use this function only when the called stations' transceivers are set to the same CTCSS tone and operating channel.

■ Caution

- Misuse of Lithium-ion batteries may result in the following hazards: smoke, fire, or the battery may rupture. Misuse can also cause damage to the battery or degradation of battery performance.
- Prior to using the battery pack for the first time, or after not using it for a long time, you must fully charge the pack. Otherwise, the transceiver may not turn ON.

◇ Battery caution

⚠ **DANGER! DO NOT** hammer or otherwise impact the battery pack. Do not use the battery pack if it has been severely impacted or dropped, or if it has been subjected to heavy pressure. The damage may not be visible on the outside of the case. Even if the surface of the battery pack does not show cracks or any other damage, the cells inside may rupture or catch fire.

⚠ **DANGER! NEVER** use or leave battery packs in areas with temperatures above +60°C. High temperature buildup in the battery, such as could occur near fires or stoves, inside a sun heated car, or in direct sunlight may cause the battery to rupture or catch fire. Excessive temperatures may also degrade battery performance or shorten battery life.

⚠ **DANGER! DO NOT** expose the battery pack to rain, snow, seawater, or any other liquids. Never charge or use a wet battery pack. If the battery pack gets wet, be sure to wipe it dry before using.

⚠ **DANGER! KEEP** the battery pack away from fire. Fire or heat may cause them to rupture or explode. Dispose of an used battery pack in accordance with local regulations.

⚠ **DANGER! NEVER** solder the battery pack terminals, or modify the battery pack. This may generate heat in the battery, and the battery pack may burst, emit smoke or catch fire.

⚠ **DANGER!** Use the battery pack only with the transceiver for which it is specified. Never use a battery pack with any other equipment, or for any purpose that is not specified in this instruction manual.

⚠ **DANGER!** If fluid from inside the battery pack gets in your eyes, blindness can result. Rinse your eyes with clean water, without rubbing them, and see a doctor immediately.

⚠ **WARNING!** Immediately stop using the battery pack if it emits an abnormal odor, heats up, or is discolored or deformed. If any of these conditions occur, contact your Icom dealer or distributor.

⚠ **WARNING! NEVER** use deteriorated battery packs. They could cause a fire.

⚠ **WARNING!** Immediately wash, using clean water, any part of the body that comes into contact with fluid from inside the battery pack.

⚠ **WARNING! NEVER** put the battery pack in a microwave oven, high-pressure container, or in an induction heating cooker. This could cause a fire, overheating, or cause the battery to rupture.

CAUTION: Always use the battery within the specified temperature range, -20°C to $+60^{\circ}\text{C}$. Using the battery pack out of its specified temperature range will reduce the battery's performance and battery life.

CAUTION: Shorter battery life could occur if the battery pack is left fully charged, completely discharged, or in an excessive temperature environment (above $+50^{\circ}\text{C}$) for an extended period of time. If the battery pack must be left unused for a long time, it must be detached from the transceiver after discharging.

You may use the battery until the remaining capacity is about half, then keep it safely in a cool dry place with the temperature range as below:

- -20°C to $+50^{\circ}\text{C}$ (within a month)
- -20°C to $+40^{\circ}\text{C}$ (within three months)

BE SURE to replace the battery pack with a new one approximately five years after manufacturing, even if it still holds a charge. The inside battery material will become weak after a period of time, even with little use. The estimated number of times you can charge the battery is between 300 and 500.

Even when the battery appears to be fully charged, the operating time of the transceiver may become short when:

- Approximately five years have passed since the battery was manufactured.
- The battery has been repeatedly charged.

◇ Charging caution

⚠ **DANGER! NEVER** charge the battery pack in areas with extremely high temperatures, such as near fires or stoves, inside a sun-heated vehicle, or in direct sunlight. In such environments, the safety/protection circuit in the battery pack will activate, causing the battery pack to stop charging.

⚠ **WARNING! NEVER** charge or leave the battery pack in the battery charger beyond the specified time for charging. If the battery pack is not completely charged by the specified time, stop charging and remove the battery pack from the battery charger. Continuing to charge the battery pack beyond the specified time limit may cause a fire, overheating, or the battery pack may rupture.

⚠ **WARNING!** Occasionally observe the battery pack condition while charging. If any abnormal condition occurs, discontinue using the battery pack.

⚠ **WARNING! NEVER** insert the transceiver (battery pack attached to the transceiver) into the charger if it is wet or soiled. This could corrode the battery charger terminals or damage the charger. The charger is not waterproof.

CAUTION: NEVER charge the battery outside of the specified temperature range: BC-213 ($+10^{\circ}\text{C}$ to $+40^{\circ}\text{C}$). BC-214 ($+15^{\circ}\text{C}$ to $+40^{\circ}\text{C}$). Icom recommends charging the battery at $+20^{\circ}\text{C}$. The battery may heat up or rupture if charged out of the specified temperature range. Additionally, battery performance or battery life may be reduced.

3 BATTERY CHARGING

■ Battery chargers

◇ Rapid charging with the supplied BC-213

The BC-213 DESKTOP CHARGER rapidly charges the Li-ion battery pack.

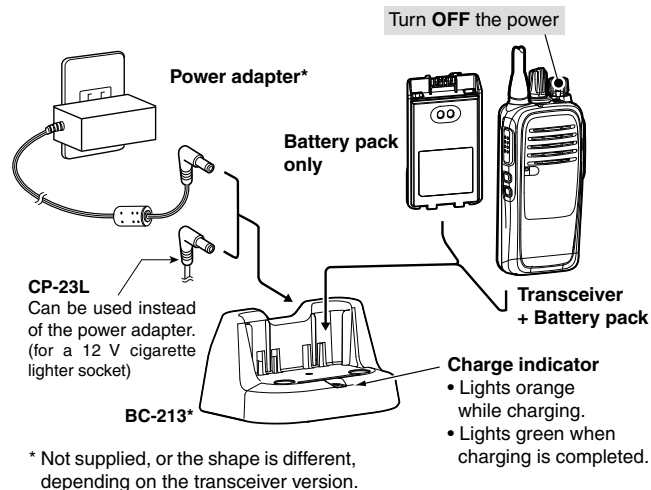
The BC-213 is used with the power adapter or the CP-23L cigarette lighter cable (purchase separately).

• Charging time of the BP-280

Approximately 3.5 hours

CAUTION: STOP charging if the charge indicator lights orange and green alternately. This indicates a charging failure is occurring.

NOTE: Charge the battery within the specified temperature range of +10°C to +40°C. Otherwise, the charging time will be longer, but the battery will not reach a full charge. While charging, at the point where the temperature goes out of the specified range, charging will automatically stop.



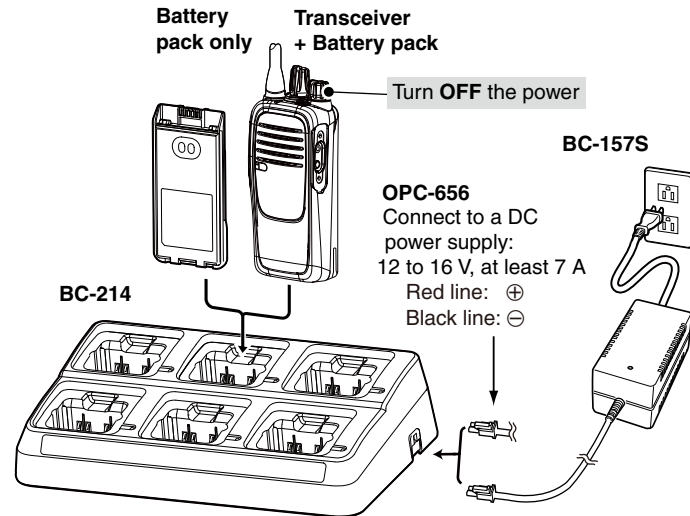
◇ Rapid charging with the BC-214

The BC-214 MULTI CHARGER can simultaneously charge up to 6 Li-ion battery packs.

The BC-214 is used with the BC-157S AC ADAPTER or the OPC-656 DC POWER CABLE (purchase separately).

- **Charging time of the BP-280**

Approximately 3.5 hours



◇ BATTERY PACKS

- **BP-278/BP-279/BP-280** BATTERY PACK

Battery pack	Voltage	Capacity	Battery life*
BP-278	7.2 V	1130 mAh (minimum) 1190 mAh (typical)	12 hours
BP-279		1485 mAh (minimum) 1570 mAh (typical)	17 hours
BP-280		2280 mAh (minimum) 2400 mAh (typical)	26 hours

* When the power save function is turned ON, and the operating periods are calculated under the following conditions:

TX:RX:standby = 5:5:90

◇ CHARGERS

- **BC-213** DESKTOP CHARGER + **BC-123S** AC ADAPTER
- **BC-214** MULTI CHARGER + **BC-157S** AC ADAPTER

◇ DC CABLES

- **CP-23L** CIGARETTE LIGHTER CABLE
For BC-213.
- **OPC-656** DC POWER CABLE
For BC-214.

◇ OTHERS

- **MB-130** VEHICLE CHARGER BRACKET
- **MB-133** BELT CLIP
- **HM-158LA, HM-159LA, HM-168LWP*** SPEAKER MICROPHONE
HM-168LWP: Waterproof
Adjust the microphone gain before use.
- **HM-153LA, HM-166LA** EARPHONE MICROPHONE
HS-94LWP*, HS-95LWP*, HS-97 HEADSET
+ **VS-4LA** PTT SWITCH CABLE
/ **OPC-2004LA** ADAPTER CABLE
HS-94LWP: Ear-hook type
HS-95LWP: Neck-arm type
HS-97: Throat microphone
VS-4LA: To connect headset and for PTT use
OPC-2004LA: To connect to headsets for VOX operation
Adjust the both microphone and VOX gain before use.

* When in use, the transceiver meets IP67 requirements for dust-tight and waterproof protection.

Some options may not be available in some countries. Ask your dealer for details.

Approved Icom optional equipment is designed for optimal performance when used with an Icom transceiver. Icom is not responsible for the destruction or damage to an Icom transceiver in the event the Icom transceiver is used with equipment that is not manufactured or approved by Icom.

CHANNEL FREQUENCY LIST

5

Channel	Zone 1 (Analog mode)		Zone 2 (Digital mode)	
	Frequency (MHz)* ¹	C.Tone * ²	Frequency (MHz)* ¹	Common ID* ³
1	446.006250	94.8	446.103125	85
2	446.093750	88.5	446.109375	87
3	446.031250	103.5	446.115625	93
4	446.068750	79.7	446.121875	95
5	446.043750	118.8	446.128125	117
6	446.018750	123.0	446.134375	119
7	446.081250	127.3	446.140625	125
8	446.056250	85.4	446.146875	127
9	446.006250	107.2	446.153125	213
10	446.093750	110.9	446.159375	215
11	446.031250	114.8	446.165625	221
12	446.068750	82.5	446.171875	223
13	446.043750	132N	446.178125	245
14	446.018750	155N	446.184375	247
15	446.056250	134N	446.190625	253
16	446.081250	243N	446.196875	254

*1 All operating channel frequencies are fixed.

*2 CTCSS tone or DTCS code can be programmed manually. Ask your dealer for details.

*3 Common ID can be programmed manually. Ask your dealer for details.

4

5

MEMO

[illegible]

Count on us!