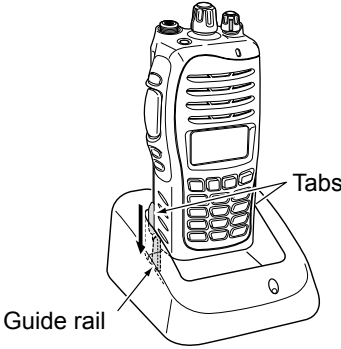


BATTERY CHARGING

IMPORTANT: Battery charging caution

Ensure the guide tabs on the battery pack are correctly aligned with the guide rails inside the charger adapter. This illustration is for the BC-160.



OPTIONS

◇ BATTERY PACKS

- **BP-232H** Li-ion BATTERY PACK
Voltage: 7.4 V, Capacity: 2200 mAh (minimum), 2350 mAh (typical)
Battery life: Approximately 14 hours*
- **BP-232N** Li-ion BATTERY PACK
Voltage: 7.4 V, Capacity: 1900 mAh (minimum), 2000 mAh (typical)
Battery life: Approximately 12 hours*
- **BP-230N** Li-ion BATTERY PACK
Voltage: 7.4 V, Capacity: 950 mAh (minimum), 980 mAh (typical)
Battery life: Approximately 7.35 hours*
*When the Power Save function is ON, and the operating periods are calculated under the following conditions:
TX:RX:standby = 5:5:90
- **BP-240, BP-261** BATTERY CASE
BP-240: For AAA (LR03) × 6 alkaline
BP-261: For AA (LR6) × 6 alkaline
① BP-240 and BP-261 have IPX4 waterproof protection. When in use, the transceiver's waterproof rating meets IPX4.

◇ DC CABLES

- **CP-23L** CIGARETTE LIGHTER CABLE
Used when charging battery packs through a 12 V cigarette lighter socket. For use with the BC-119N, BC-160, or BC-171.
- **OPC-515L, OPC-656** DC POWER CABLES
Used when charging battery packs using a 13.8 V DC power source instead of the power adapter.
OPC-515L: For the BC-119N, BC-160, BC-171
OPC-656: For the BC-121N, BC-197

◇ CHARGERS

- **BC-119N** DESKTOP CHARGER + **AD-106** CHARGER ADAPTER + **BC-145S** POWER ADAPTER
To rapidly charge the battery packs.
Charging time: Approximately 3.5 hours for the BP-232H.
① A power adapter may be supplied, depending on the charger's version.
- **BC-121N** MULTI-CHARGER + **AD-106** CHARGER ADAPTER + **BC-157S** AC ADAPTER
To rapidly charge up to 6 battery packs simultaneously. AD-106s (6 pieces) are required. A power adapter or a DC power source must be purchased separately.
Charging time: Approximately 3.5 hours for the BP-232H.
- **BC-197** MULTI-CHARGER + **AD-122** CHARGER ADAPTER + **BC-157S** AC ADAPTER
To rapidly charge up to 6 battery packs simultaneously. AD-122s (6 pieces) are required. A power adapter or a DC power source must be purchased separately.
Charging time: Approximately 3.5 hours for the BP-232H.
- **BC-160** DESKTOP CHARGER + **BC-145S** POWER ADAPTER
To rapidly charge the battery packs.
Charging time: Approximately 3.5 hours for the BP-232H.
① A power adapter may be supplied, depending on the charger's version.

- **BC-171** DESKTOP CHARGER + **BC-147S** POWER ADAPTER
For regularly charging of battery packs.
Charging time: Approximately 4 hours for the BP-230N.
Approximately 11.5 hours for the BP-232H.
① A power adapter may be supplied, depending on the charger's version.

◇ BELT CLIPS

- **MB-93** SWIVEL BELT CLIP
- **MB-94, MB-94R** BELT CLIP
Alligator-type belt clip.
- **MB-96N, MB-96F** LEATHER BELT HANGER

◇ ANTENNAS

- **FA-SC56VS, FA-SC57VS, FA-SC73US** STUBBY ANTENNAS
Shorter VHF or UHF antennas.
FA-SC56VS: 150–162 MHz FA-SC57VS: 160–174 MHz
FA-SC73US: 450–490 MHz
- **FA-SC25V, FA-SC55V, FA-SC25U, FA-SC57U** FLEXIBLE ANTENNAS
VHF or UHF antennas.
FA-SC25V: 136–150 MHz FA-SC55V: 150–174 MHz
FA-SC25U: 400–430 MHz FA-SC57U: 430–470 MHz
- **FA-SC61VC/FA-SC61UC** cut antennas
FA-SC61VC: 136–174 MHz FA-SC61UC: 380–520 MHz

◇ OTHERS

- **SP-13** EARPHONE
Provides clear receive audio in noisy environment.
- **AD-52** EARPHONE ADAPTER
Provides clear receive audio in noisy environment.
- **HM-131SC, HM-159SC** SPEAKER-MICROPHONE
Combination speaker-microphone that provides convenient operation while hanging the transceiver from your belt.
- The HM-131SC does not have any waterproof protection.
- The HM-159SC is dust-protection and water resistance.* When it is connected, the transceiver's waterproof rating is equivalent to IP54.
- **HM-169** SPEAKER-MICROPHONE
Rugged type speaker-microphone.
- **HM-170GP** SPEAKER-MICROPHONE
GPS speaker-microphone for BIIS mode operation.
- **VS-1SC** VOX/PTT CASE + **HS-94, HS-95, HS-97** HEADSET
VS-1SC: VOX/PTT switch box for hands-free operation.
HS-94: Ear-hook type HS-95: Neck-arm type
HS-97: Throat microphone
The VS-1SC meets IPX4* requirment for splash resistance.
When it is connected, the transceiver corresponds to IPX4.
- **MB-130** VEHICLE CHARGER BRACKET
Vehicle mounting bracket for the BC-160 battery charger.

* Once these items have been dropped, dust-protection and water resistance or the IP rating cannot be guaranteed because of possible damage to these cases or the waterproof seal.

ICOM

INSTRUCTIONS

VHF dPMR HANDHELD TRANSCEIVERS

IC-F3162D series

UHF dPMR HANDHELD TRANSCEIVERS

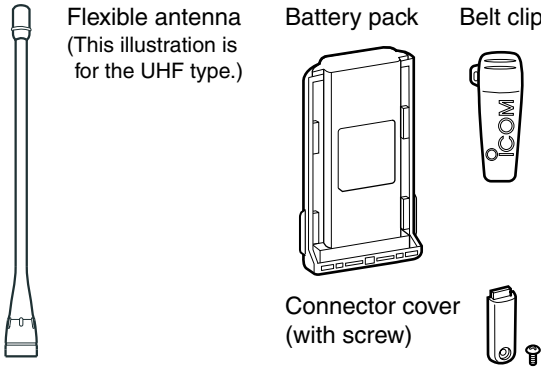
IC-F4162D series

Thank you for choosing this Icom product.
READ ALL INSTRUCTIONS carefully and completely before using this product.

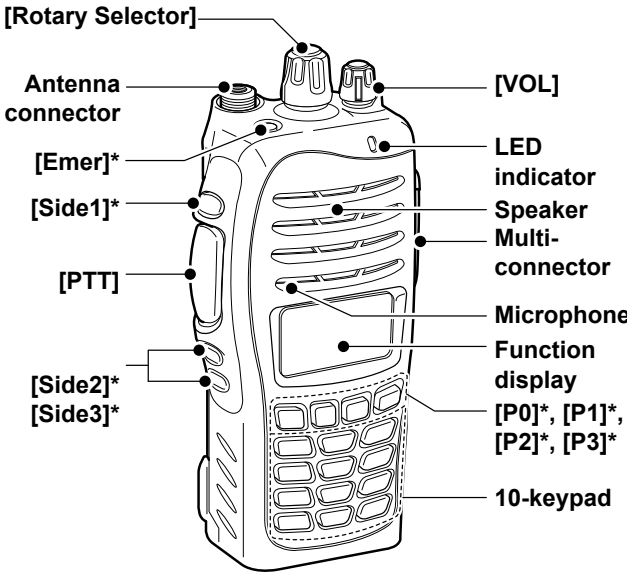
IMPORTANT

This instruction sheet includes some functions that are usable only when they are preset by your dealer. The transceiver may have other functions and operations that are not described in this instruction sheet. Ask your dealer for preset function details.

SUPPLIED ACCESSORIES



PANEL DESCRIPTION



The illustration is of the 10-key type transceivers.

* Dealer assignable

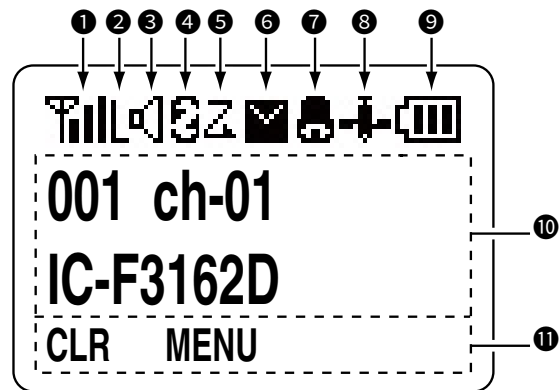
◇ About the LED indicator

- Lights red while transmitting
- Lights green while receiving a signal or when the squelch is open.
- Blinks red when the battery is exhausted.

◇ About the Multi-connector

CAUTION: Attach the connector cover when an optional accessory is not used.

FUNCTION DISPLAY



1 SIGNAL STRENGTH ICON

Displays the relative receive signal strength.

2 LOW POWER ICON

Displayed when low output power is selected.

- ① When the battery charge decreases to a specified level, low power is automatically selected.

3 SPEAKER/TELEPHONE ICON

- Displayed when the channel is in the Audible (unmuted) mode.
- Displayed when a matched signal is received.
- "☎" is displayed when connecting to a telephone line.

4 SCRAMBLER ICON

Displayed when the Voice Scrambler function is ON.

5 SCAN ICON

Displayed while scanning.

6 MESSAGE ICON

- Displayed when a received message (Short Data Message or Status Message) is saved in the stack memory.
- Blinks when an unread message is in the stack memory.

7 BELL ICON

Displayed when a matching signal is received, depending on the presetting.

8 GPS/COMPANDER ICON

- Displayed when the GPS receiver acquires the GPS signal from a satellite and the GPS Indicator is set to ON.
- "[(*)]" is displayed when the Compander function is activated and the GPS Indicator is set to OFF.

9 BATTERY ICON

Displays the battery level.

- ① May not be displayed, depending on the presetting.

Indication				
Battery level	Full	Mid	Charging required	Exhausted Battery

- blinks when the battery is over charged.
- blinks when the battery is exhausted.

10 ALPHANUMERIC READOUT

- Displays the operating channel number, channel name, Menu contents, DTMF code, and so on.
- Depending on the presetting, characters are displayed in 1 line or 2 lines on the display.
- ① In this manual, the display illustration is described as having characters displayed in 2 lines.

11 KEY ICONS

Display the assigned function of the [P0], [P1], [P2], and [P3] front panel keys.

BASIC OPERATION

◇ Turning power ON

NOTE: Before using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation. See the next page.

Rotate [VOL] to turn ON the transceiver.

TIP: Ask your dealer for details of entering the password or selecting the battery type.

- If the transceiver is programmed for a start up password, input the password as directed by your dealer.
- The battery type must be selected, according to the attached battery type, when tuning ON the transceiver.

◇ Receiving and Transmitting

Receiving:

- Select a channel.
 - Rotate [Rotary selector].
 - Push [CH Up] or [CH Down].
 - Push one of [MR-CH 1] ~ [MR-CH 4].
- When receiving a call, rotate [VOL] to adjust the audio output level to a comfortable listening level.

Transmitting:

CAUTION: Attach an antenna before transmitting. Transmitting without an antenna may damage the transceiver.

- Wait until the channel is clear to avoid interference.
- While holding down [PTT], speak at your normal voice level.
- Release [PTT] to receive.

IMPORTANT: To maximize the readability of your signal

To maximize the readability of your signal:

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

BATTERY CHARGING

◇ Charging with the BC-160, BC-171

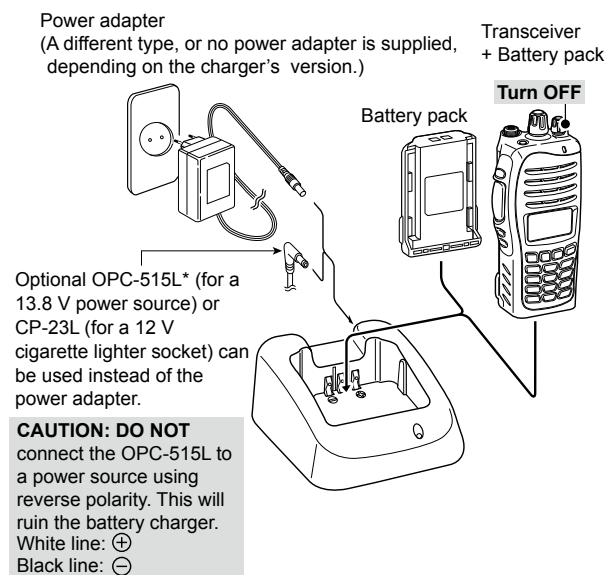
You can rapidly charge the Li-ion battery pack with the BC-160, or regularly charge the pack with the BC-171.

Charging time

BC-160: Approximately 3.5 hours for the BP-232H
BC-171: Approximately 4 hours for the BP-230N
Approximately 11.5 hours for the BP-232H

The following items are additionally required:

A power adapter (may be supplied with the charger, depending on the charger version) or the OPC-515L, CP-23L DC power cable.



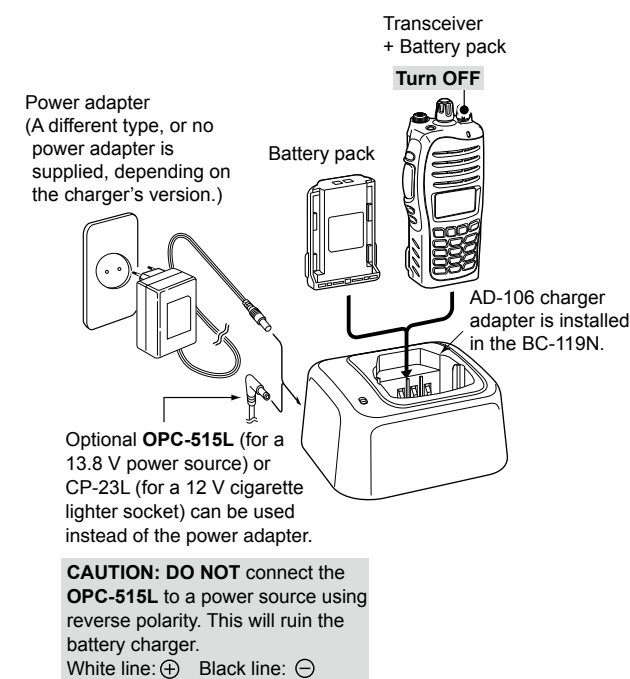
◇ Rapid charging with the BC-119N+AD-106

You can rapidly charges the Li-ion battery pack with the optional BC-119N.

Charging time: Approximately 3.5 hours for the BP-232H

The following items are additionally required.

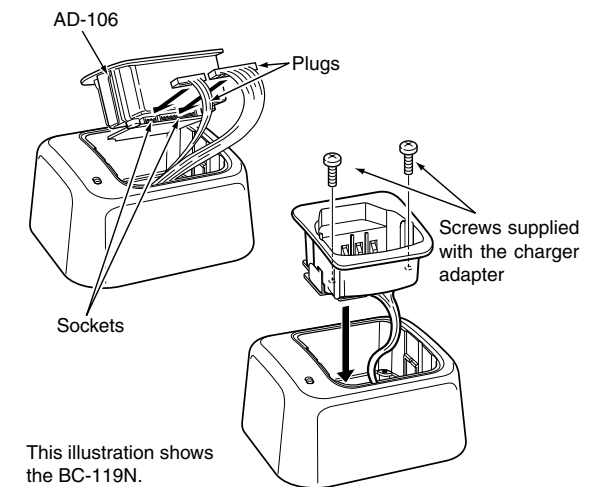
- AD-106 charger adapter (purchase separately)
- A power adapter (may be supplied with BC-119N, depending on the charger version) or the OPC-515L, CP-23L DC POWER CABLE.



◇ AD-106 installation

You must install the AD-106 charger adapter into the BC-119N DESKTOP CHARGER or BC-121N MULTI-CHARGER before charging any batteries.

- Connect the AD-106 and the BC-119N or BC-121N.
- Install the AD-106 into the holder space of the BC-119N or BC-121N with the supplied screws.



◇ Rapid charging with the BC-121N+AD-106

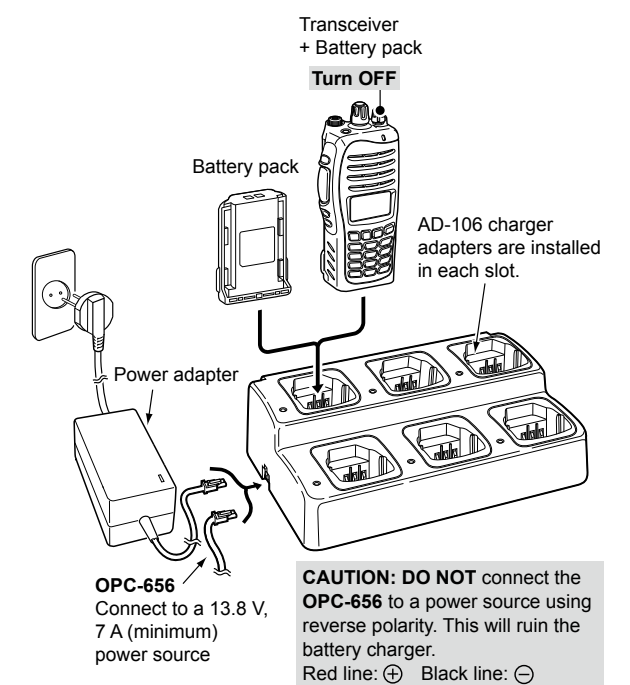
You can charge up to 6 battery packs with the optional BC-121N.

Charging time: Approximately 3.5 hours for the BP-232H

The following items are additionally required.

(purchase separately)

- AD-106 charger adapters
- BC-157S POWER ADAPTER or the OPC-656 DC POWER CABLE



NOTE: For the instructions on the BC-197 MULTI-CHARGER, see the instruction manual supplied with the charger.