

ICOM

**MDC 1200
Compatible**

Limited functions only

INSTRUCTION MANUAL

VHF TRANSCEIVER

IC-F3002

UHF TRANSCEIVER

IC-F4002



The photo shows the VHF transceiver.

Icom Inc.

PREFACE

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the **IC-F3002** VHF TRANSCEIVER and the **IC-F4002** UHF TRANSCEIVER.

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.

Icom is not responsible for the destruction or damage to the Icom transceiver, if the malfunction is because of:

- Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, other natural disasters, disturbances, riots, war, or radioactive contamination.
- The use of Icom transceivers with any equipment that is not manufactured or approved by Icom.

Icom, Icom Inc. and the Icom logo are registered trademarks of Icom Incorporated (Japan) in Japan, the United States, the United Kingdom, Germany, France, Spain, Russia, Australia, New Zealand, and/or other countries.

PRECAUTIONS

⚠ **DANGER! NEVER** short the terminals of the battery pack. Shorting may occur if the terminals touch metal objects such as a key, so be careful when placing the battery packs (or the transceiver) in bags, and so on. Carry them so that shorting cannot occur with metal objects. Shorting may damage not only the battery pack, but also the transceiver.

⚠ **DANGER! NEVER** operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere.

⚠ **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 to be charged by Icom chargers. Using third-party or counterfeit battery packs or chargers may cause smoke, fire, or cause the battery packs to burst.

⚠ **WARNING! NEVER** operate the transceiver with a headset or other audio accessories at high volume levels. The continuous high volume operation may cause a ringing in your ears. If you experience the ringing, 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: DO NOT use harsh solvents such as benzine or alcohol when cleaning the transceiver. They will damage the transceiver's surfaces.

CAUTION: DO NOT operate the transceiver unless the flexible antenna, battery pack and jack cover are securely attached. Confirm that the antenna and battery pack are dry before attaching. Exposing the inside of the transceiver to dust or water can cause serious damage to the transceiver.

PRECAUTIONS (Continued)

CAUTION: DO NOT place or leave the transceiver in direct sunlight or in places with temperatures below -25°C or above $+55^{\circ}\text{C}$. The basic operations of the transceiver are guaranteed within the specified operating temperature range.

CAUTION: DO NOT modify the transceiver. The specifications may change and then the transceiver may not comply with the requirements of required regulations. The transceiver warranty does not cover any problems caused by unauthorized modification.

CAUTION: DO NOT operate the transceiver if it becomes hot after operating it continuously for long periods of time. This may damage the transceiver.

KEEP the transceiver away from heavy rain, and never immerse it in the water. The transceiver meets IP54* requirements for dusttight and waterproof protection. However, once the transceiver has been dropped, dust-protection and splash resistance cannot be guaranteed because of possible damage to the transceiver's case or the waterproof seal.

* Only when the battery pack/case and jack cover are attached.

NOTE: 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.

ALWAYS turn OFF the transceiver power before connecting any external devices.

TABLE OF CONTENTS

PREFACE	i
EXPLICIT DEFINITIONS	i
PRECAUTIONS	ii
1 ACCESSORIES	1-4
■ Supplied accessories	1
■ Accessory attachments	1
2 PANEL DESCRIPTION	5-11
■ Front, top and side panels	5
■ LED indicator	7
■ Preset function keys	8
3 BASIC OPERATION	12-22
■ Turning ON the power	12
■ Channel selection	13
■ Call procedure	14
■ Receiving and transmitting	15
■ Setting the microphone gain	18
■ Setting the squelch level	19
■ Output power level selection	20
■ Priority A channel selection	20
■ MDC 1200 system operation	20
■ Emergency Call	21
■ Lone Worker Emergency Call	22
4 BATTERY CHARGING	23-33
■ Caution (for the BP-264 Ni-MH BATTERY)	23
■ Caution (for the BP-265 Li-ion BATTERY)	25
■ Battery chargers	28
5 BATTERY CASE	34
■ Optional battery case (BP-263)	34
6 OPTIONS	35-40
■ VOX function	38
7 INFORMATION	41
■ Country code list (ISO 3166-1)	41
■ Disposal	41

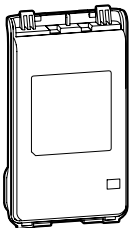
1**2****3****4****5****6****7**

1 ACCESSORIES

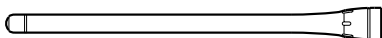
■ Supplied accessories

The following accessories are supplied with the transceiver.

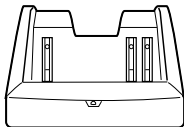
Battery pack*



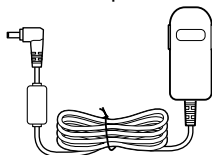
Flexible antenna
(This illustration is for the VHF type.)



Battery charger*



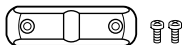
Power adapter*



Belt clip



Jack cover
(with screws)



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

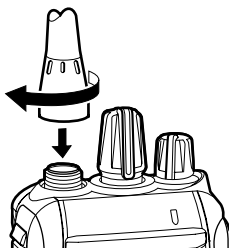
■ Accessory attachments

◇ Flexible antenna

Connect the flexible antenna to the antenna connector.

CAUTION:

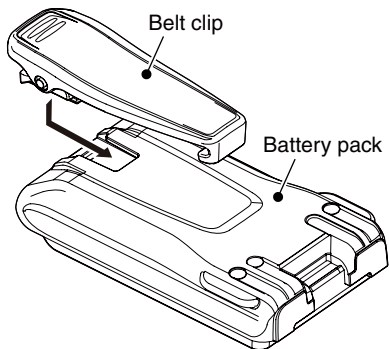
- **NEVER** carry the transceiver by holding the antenna.
- **DO NOT** connect the antenna other than listed on page 36.
- Transmitting without an antenna may damage the transceiver.



◇ Belt clip

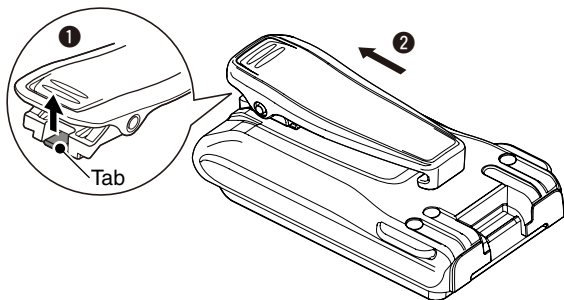
To attach the belt clip:

- ➔ Slide the belt clip in the direction of the arrow until the belt clip locks in place, and makes a 'click' sound.



To detach the belt clip:

- ① Remove the battery pack from the transceiver, if it is attached. (p. 3)
- ② Lift the tab up (①), and slide the belt clip in the direction of the arrow (②).

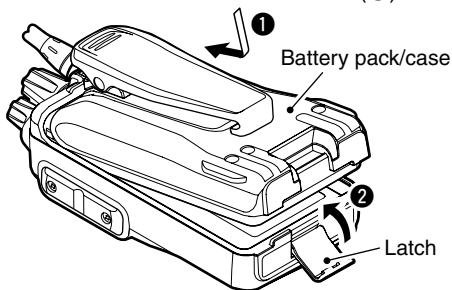


1 ACCESSORIES

◇ Battery pack/case

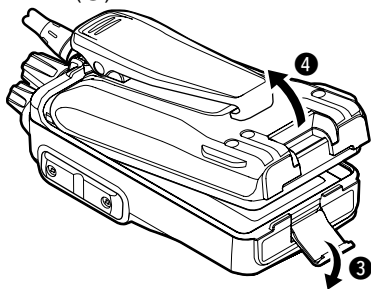
To attach the battery pack/case:

- ① Fit the battery pack/case in the direction of the arrow (①), then close.
- ② Hook the latch until it makes a 'click' sound (②).



To remove the battery pack/case:

Unhook the latch (③), and lift up the battery pack/case in the direction of the arrow (④).



Be careful! The latch is tightly locked, so use caution when releasing it. **DO NOT** use your finger nail. Use the edge of a coin or screwdriver tip to carefully release it.

NEVER remove or attach the battery pack/case when the transceiver is wet or soiled. This may result in water or dust getting into the transceiver, battery pack/case, and may result in them being damaged.

NOTE: Keep the battery terminals clean. It's a good idea to occasionally clean them.

◇ Jack cover

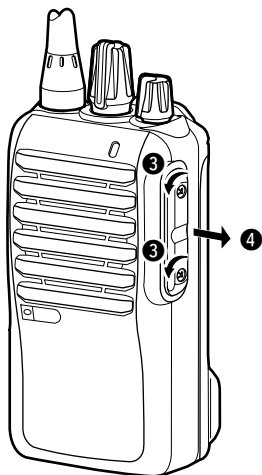
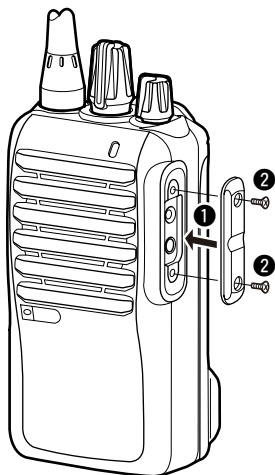
Attach the jack cover when the optional equipment is not used.

To attach the jack cover:

- 1 Attach the jack cover to the [SP MIC] jack.
- 2 Tighten the screws.

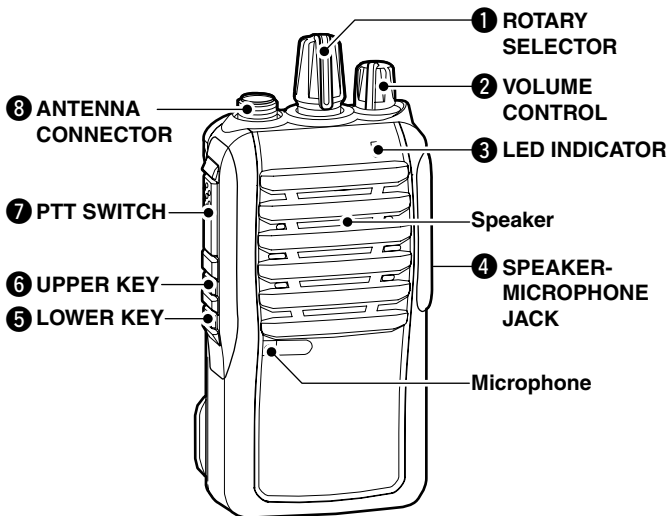
To detach the jack cover:

- 3 Remove the screws with a Phillips screwdriver.
- 4 Detach the jack cover to connect optional equipment.



2 PANEL DESCRIPTION

■ Front, top and side panels



1 ROTARY SELECTOR

Rotate to select the preset memory channels.

2 VOLUME CONTROL [VOL]

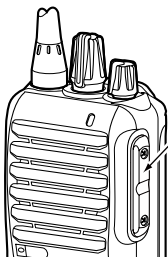
Rotate to turn ON or OFF the power, and adjust the audio level.

3 LED INDICATOR (p. 7)

- ➔ Lights red* while transmitting.
*When the optional battery case is attached, the LED indicator lights orange.
- ➔ Lights green while receiving a signal, or when the squelch is open.
- ➔ Lights/blinks orange when a matched 2/5-Tone code is received, depending on the presetting.

4 SPEAKER-MICROPHONE JACK [SP MIC]

Connect the optional speaker-microphone or VOX adapter cable.



Jack cover

NOTE: Attach the jack cover when optional equipment is not used. (p. 4)

5 LOWER KEY [Lower]**6 UPPER KEY [Upper]**

A function can be assigned by your dealer. (p. 8)

7 PTT SWITCH [PTT]

Hold down to transmit, release to receive.

8 ANTENNA CONNECTOR

Connect the antenna.

■ LED indicator

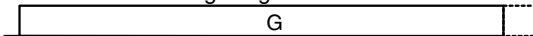
The LED indicator indicates the status of various parameters of the transceiver as follows;
(Ref.; R=Red, G=Green, O=Orange)



- TX: Lights Red while transmitting a signal.



- RX: Lights Green while receiving a signal.



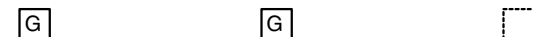
- Call LED (ON): Turns ON while receiving a matched 2/5-Tone.



- Call LED (Blink): Blinks while receiving a matched 2/5-Tone.



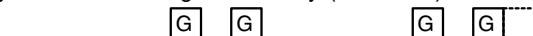
- Fast/Slow scan: Blinks when the Fast/Slow scan is activated.



- Low Battery 1: You should charge the battery. (blinks slowly)



- Low Battery 2: You must charge the battery. (blinks fast)



- TX low Battery 1: Low Battery was detected during TX mode.



- TX low Battery 2: Very Low Battery was detected during TX mode.



- Channel Error: A non-preset channel is selected.



* Lights (or blinks) orange when the optional battery case is attached.

■ Preset function keys

The following functions can be assigned to the [Upper] and [Lower] presettable function keys.

Consult your Icom dealer or system operator for details concerning your transceiver's presetting.

SCAN A

- Push to start and cancel a scan.
- When the Power ON scan function is turned ON, push to pause a scan. The paused scan resumes after the specified time period has passed.

SCAN B

Push to start and cancel a scan.

If the scan pauses for any reason, except being cancelled by this key, it will resume after a specified time period has passed.

PRIORITY A CHANNEL, PRIORITY B CHANNEL

Push to select the Priority A or Priority B channel.

PRIORITY A CHANNEL (REWRITE),

PRIORITY B CHANNEL (REWRITE)


- Push to select the Priority A or Priority B channel.
- Hold down [Prio A (Rewrite)] or [Prio B (Rewrite)] for 1 second. to assign the operating channel to Priority A or Priority B channel, respectively.

MEMORY CHANNELS 1, 2, 3, 4

Push to directly select memory channel 1, 2, 3 or 4, if preset. Consult your dealer for details.

2 PANEL DESCRIPTION

MONITOR, MONITOR (AUDIBLE)

- Push to turn ON or OFF the CTCSS (DTCS) or 2/5-Tone squelch Mute.
 - Only in the LMR mode, push to open any squelch functions, or deactivate any mute functions.
 - Only in the PMR mode, push to activate one or two of the following functions* on each channel.
 - Hold down to unmute the channel (Audible mode).
 - Push to mute the channel (Inaudible mode).
 - Push to send a 'reset code' after the communication is finished.
- *Ask your dealer for details.
-  **NOTE:** The unmute mode may automatically return to the mute mode, after a specified time period.
- Depending on the presetting, holding down this key for 1 second to cancel a scan.

LOCK

Hold down to electronically lock all settable keys except [Moni(Audi)], [Call] (including Call A and Call B), [Emergency], [Surveillance] and [Lone Worker].

LONE WORKER (p. 22)

- Push to turn OFF the Lone Worker function.
- Hold down to turn ON the Lone Worker function.
 - When the Lone Worker function is turned ON, and no operation is performed for the specified time period, the Emergency function is automatically turned ON.

HIGH/LOW (p. 20)

Select the transmit output power level temporarily or permanently, depending on the presetting.

- Ask your dealer for the output power level for each selection.

TALK AROUND

- Push to turn OFF the Talk Around function.
- Hold down to turn ON the Talk Around function.
 - The Talk Around function equalizes the transmit frequency to the receive frequency for transceiver-to-transceiver communication.

WIDE/NARROW

- Push to switch the IF bandwidth to Wide.
 - The wide passband width can be set to 20 or 25 kHz using the optional cloning software (PMR operation only). Ask your dealer for details.
- Hold down to set the IF bandwidth to Narrow.

DTMF AUTODIAL

Push to transmit a preset DTMF code.

CALL, CALL A, CALL B

Push to transmit a 2/5-Tone code.

- Tone call transmission may be necessary before you call another station, depending on your signalling system.
- [Call A] and/or [Call B] keys may be used when your system employs selective 'Individual/Group' calls. Ask your dealer which call is assigned to each key.

2 PANEL DESCRIPTION

EMERGENCY

Hold down for specified time period to transmit an emergency call.

- The emergency call transmits with beeps, and the LED indicator lights red.
- The transceiver can transmit an emergency call without the beep sounding and the LED indicator lighting. Ask your dealer for details.
- If you want to cancel the emergency call, hold down the key again before transmitting the call.
- The emergency call is transmitted one time only, or repeatedly until receiving an acknowledgement signal, or until the power is turned OFF. When a matched 5-Tone code signal is received, the emergency function can be cancelled depending on the presetting. (PMR operation only)

SURVEILLANCE

- Push to turn OFF the Surveillance function.
- Hold down to turn ON the Surveillance function.
 - When this function is turned ON, the beep is not heard and the LED does not light when a signal is received, or a key is pushed.

SIREN

Hold down for 1 second to sound a siren.

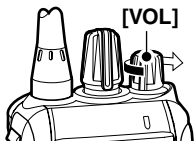
This function can be used for situations other than an emergency alert, such as a security alarm for example.

The siren sounds until the power is turned OFF.

■ Turning ON the power

▨ Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation. (p. 23)

➔ Rotate [VOL] to turn ON the power.



◇ Battery type selection

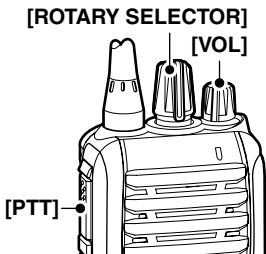
The battery type must be selected according to the battery pack or case when it is changed, but only the first time it is used.

Check the battery type before you begin the selection procedure.

One to three beep(s) sound in sequence, so you must repeat the steps until the number of beeps matches your battery type.

For example, if your battery type is a Li-ion battery pack, you must repeat the procedure until 1 beep is heard.

- ① Set [ROTARY SELECTOR] to any channel other than Channel 16.
- ② Rotate [VOL] to turn OFF the transceiver power.
- ③ While holding down [PTT], rotate [VOL] to turn ON the power.
 - You should hold [PTT] until the battery type confirmation beeps sound. (It takes approximately 5 seconds; while holding down [PTT], the count down beeps sound. After that, the confirmation beeps sound.)
 - 1 beep sounds when the Li-ion battery is selected.
 - 2 beeps sound when the battery case is selected.
 - 3 beeps sound when the Ni-MH battery is selected.



- ④ After the beep sounds, release [PTT].
- ⑤ Repeat steps ② to ④ until you select the correct battery type.

▨ **NOTE:** This operation may not be selectable, depending on the presetting. Ask your dealer for details.

■ Channel selection

There are several ways to select channels. They may differ, according to your system set up.

To select an operating channel, do one of the following.

- Rotate [ROTARY SELECTOR].
- Push one of memory channel keys, [MR-CH 1] to [MR-CH 4].

AUTOMATIC SCAN TYPE:

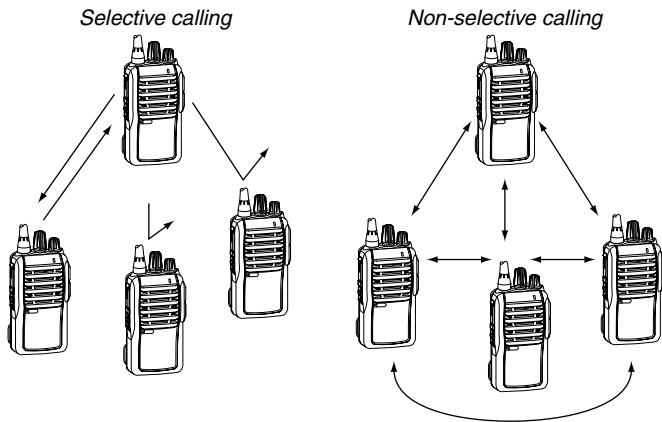
Selecting a channel is not necessary for this type. When turning ON the power, the transceiver automatically starts scanning. Scanning stops when a call is received.

NOTE: If the Move to Priority A channel at Power ON function (p. 20) is turned ON, the transceiver does not start scanning at power ON.

■ Call procedure

When your system employs tone signalling (excluding CTCSS and DTCS), the tone call procedure may be necessary prior to voice transmission. The tone signalling that is employed in the transceiver may be a selective calling system, which allows you to call only specific station(s), and prevent unwanted stations from contacting you.

- ① Select a TX code channel or 2/5-Tone code, according to your System Operator's instructions.
 - This may not be necessary, depending on presetting.
- ② Push [Call] (assigned to one of the dealer presettable keys.) (p. 10)
- ③ After transmitting a 2/5-Tone code, the remainder of your communication can be carried out normally.



■ Receiving and transmitting

CAUTION: Transmitting without an antenna will damage the transceiver. See page 1 for antenna attachment.

Receiving:

- ① Rotate [VOL] to turn ON power.
- ② Rotate [ROTARY SELECTOR], or push one of the memory channel keys, [MR-CH 1] to [MR-CH 4], to select a channel.
- ③ When receiving a call, adjust the audio output to a comfortable listening level.

NOTE: When a matched RX code signal is received, audio from the microphone is automatically transmitted for a specified time period.*

* Depending on the presetting. Ask your dealer for details.

Transmitting:

Wait for the channel to become clear to avoid interference.

- ① While holding down [PTT], speak into the microphone at a normal voice level.
- ② Release [PTT] to return to receive.

IMPORTANT: To maximize the readability of your signal;

1. Pause briefly after pushing [PTT].
2. Hold the microphone 5 to 10 cm from your mouth, then speak into the microphone at your normal voice level.

◇ Transmitting notes

• Transmit inhibit function

The transceiver has several inhibit functions, which restrict transmitting under the following conditions:

- The channel is muted. (PMR mode only)
- The channel is busy.
- A signal with an un-matched (or matched) CTCSS (or DTCS) tone is received.
- The selected channel is a 'receive only' channel.

• Time-out timer

After continuously transmitting longer than the preset time period, the time-out timer activates, and stops further transmitting.

• Penalty timer

Once the time-out timer activates, transmitting is further inhibited for a time period determined by the penalty timer.

• PTTID call

The transceiver automatically sends a ID code (5-Tone, DTMF, BIIS or MDC system) when [PTT] is pushed (beginning of the transmission) and/or released (end of transmission), depending on the presetting.

3 BASIC OPERATION

◇ **DTMF transmission**

If the transceiver has [DTMF Autodial] assigned to it, the automatic DTMF transmission function is usable.

➡ Push [DTMF Autodial] to transmit the DTMF code.

◇ **Receiving a Stun, Kill and Revive command**

The dispatcher can send a 2/5-Tone signal that will stun, kill or revive your transceiver.

When the Stun command is received, a beep sounds*, and the transceiver becomes unusable. Receiving a Revive command is necessary to operate the transceiver again in this case.

When the Kill command is received, a beep sounds*, and the transceiver becomes unusable (the transceiver switches to the cloning required mode). Cloning the transceiver is necessary to use the transceiver again in this case.

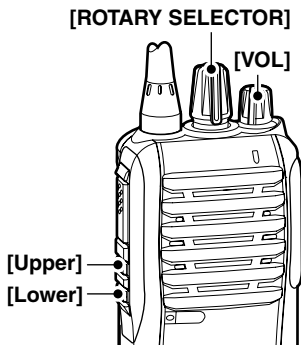
* Depending on the presetting. Ask your dealer for details.

■ Setting the microphone gain

Adjusts the microphone gain.

- ① Rotate [VOL] to turn OFF the transceiver power.
- ② Set [ROTARY SELECTOR] to any channel other than Channel 16.
- ③ While holding down [Lower], rotate [VOL] to turn ON the power and enter the Microphone Gain Adjustment mode.
- ④ Push [Upper] to increase, or push [Lower] to decrease the microphone gain.
 - The adjustable range is 1 (minimum) to 4 (maximum).
 - A beep sounds after pushing [Upper] or [Lower].
If the level is set on 1 or 4, an error beep sounds after pushing.

Therefore, you can determine the current level setting by the type of beep that sounds.
- ⑤ Rotate [VOL] to turn OFF the power, then ON to exit the Microphone Gain Adjustment mode.



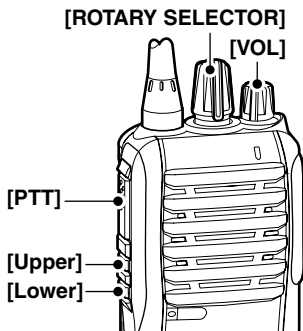
NOTE:

- This operation may not be usable, depending on the presetting. Ask your dealer for details.
- When using the VOX function, we recommend setting the microphone gain to 3. However, you can adjust it to suit your operating environment (including your headset performance).

■ Setting the squelch level

The squelch circuit mutes the received audio signal, depending on the signal strength.

- ① Rotate [VOL] to turn OFF the transceiver power.
- ② Set [ROTARY SELECTOR] to any channel other than Channel 16.
- ③ While holding down [PTT] and [Lower], rotate [VOL] to turn ON the power and enter the Squelch Level Adjustment mode.
- ④ Push [Upper] to increase the squelch level (tight squelch), or push [Lower] to decrease the squelch level (loose squelch).
 - The adjustable range is 0 (loose squelch) to 9 (tight squelch).
 - A beep sounds after pushing [Upper] or [Lower].
If the level is set on 0 or 9, an error beep sounds after pushing.
Therefore, you can determine the current level setting by the type of beep that sounds.
- ⑤ Rotate [VOL] to turn OFF the power, then turn ON again to exit the mode.



NOTE: This operation may not be usable, depending on the pre-setting. Ask your dealer for details.

■ Output power level selection

If the transceiver has [High/Low] assigned to it, the transmit output power level can be selected, depending on the presetting.

When the battery case is selected as the battery type, or the battery voltage drops to a low power level and the LED indicator status is “Low Battery 2,” the output power automatically switches to “Low 1.” (pp. 7, 12)

- ➔ Push [High/Low] to select the transmit output power level.
 - 1 beep sounds when “Low 1” is selected.
 - 2 beeps sound when “Low 2” is selected.
 - 3 beeps sound when “High” is selected.

■ Priority A channel selection

Depending on the presetting, the Priority A channel is selected each time the transceiver power is turned ON.

■ MDC 1200 system operation

The MDC 1200 signaling system enhances your transceiver’s capabilities. It allows PTT ID* and Emergency signaling.

*When [PTT] is pushed and/or released, the transceiver transmits your station ID.

◇ Transmitting an Emergency Call

The MDC 1200 system’s Emergency feature can be accessed using the [Emergency] key. The transceiver will send an Emergency MDC 1200 system command once, or repeatedly for a entered number of times until it receives the acknowledgement signal.

The emergency call can be transmitted without a beep sound depending on how the emergency function is presetting. Ask your dealer for details.

■ Emergency Call

When [Emergency] is pushed for the specified time period*, the emergency signal is transmitted once, or repeatedly, on the specified emergency channel.

A repeat emergency signal is automatically transmitted until the transceiver receives an acknowledgement signal, or you turn OFF the transceiver power.

When no emergency channel is specified, the signal is transmitted on the previously selected channel.

If you want to cancel the emergency call, hold down [Emergency] again before transmitting the call.

If your transceiver is preset for Silent operation, you can transmit an Emergency call without the beep sounding and the LED indicator lighting.

/// IMPORTANT: It is recommended to set an emergency channel individually to provide the certain emergency call operation.

◇ NOTES

Depending on the presetting, the following functions are automatically activated. Ask your dealer for details.

• Auto TX function

After the emergency call transmission, audio from the microphone is automatically transmitted for a specified time period.*

• Auto RX function

After the emergency call transmission, the transceiver stands by in the audible mode for the specified time period.*

* Depending on the presetting. Ask your dealer for details.

■ Lone Worker Emergency Call

When the Lone Worker function is turned ON, and no operation is performed for the specified time period*, the transceiver enters the Emergency mode, and then the countdown for the emergency call transmission starts.

After the specified time period* has passed, an emergency call is automatically transmitted once, or repeatedly*.

If someone operates the transceiver before the call is transmitted, the transceiver exits the Emergency mode, and the emergency call is cancelled.

* Depending on the presetting. Ask your dealer for details.

- ① Hold down to turn ON the Lone Worker function.
- ② Push to turn OFF the Lone Worker function.

4 BATTERY CHARGING

■ **Caution** (for the BP-264 Ni-MH BATTERY)

⚠ **DANGER! NEVER** incinerate used battery packs. Internal battery gas may cause an explosion.

⚠ **DANGER! NEVER** immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry **BEFORE** attaching it to the transceiver.

⚠ **DANGER! NEVER** charge the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power adapter before a storm.

CAUTION: Always use the battery within the specified temperature range for the transceiver (-25°C to $+55^{\circ}\text{C}$) and the battery itself (-5°C to $+65^{\circ}\text{C}$). Using the battery out of its specified temperature range will reduce the battery's performance and battery life. Please note that the specified temperature range of the battery may exceed that of the transceiver. In such cases, the transceiver may not work properly because it is out of its operating temperature range.

CAUTION: Shorter battery life could occur if the battery is left completely discharged, or in an excessive temperature environment (above $+55^{\circ}\text{C}$) for an extended period of time. If the battery must be left unused for a long time, it must be detached from the transceiver after charging. Keep it safely in a cool dry place at the following temperature range:

- 20°C to $+45^{\circ}\text{C}$ (up to a month)
- 20°C to $+35^{\circ}\text{C}$ (up to 6 months)
- 20°C to $+25^{\circ}\text{C}$ (up to a year*)

* We recommend charging the battery pack every 6 months.

Clean the battery terminals to avoid rust or misscontact.

Keep the battery terminals clean. It's a good idea to regularly clean them.

If your Ni-MH battery pack seems to have no capacity, even after being charged, completely discharge it by leaving the power ON overnight. Then, fully charge the battery pack again. If the battery pack still does not retain a charge (or only very little charge), a new battery pack must be purchased. (p. 35)

Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation.

- Recommended temperature range for charging:
between +10°C and +40°C (rapid charge: with BC-191) or
between +10°C and +45°C (regular charge: with BC-192)
- Use the supplied charger or optional charger (BC-191 for rapid charging, BC-192 for regular charging) only. **NEVER** use other manufacturers' chargers.

The battery pack contains a rechargeable battery.

Charge the battery pack before first operating the transceiver, or when the battery pack becomes exhausted.

If you want to prolong the battery life, the following points should be observed:

- Avoid over charging. The charging time period by the BC-192 should be less than 48 hours.
- Use the battery pack until it becomes almost completely exhausted, under normal conditions. We recommend battery charging after transmitting becomes impossible.

■ **Caution** (for the BP-265 Li-ion BATTERY)

- Misuse of Li-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's performance.

◇ **Battery caution**

⚠ **DANGER! NEVER** leave battery pack in places with temperatures above +60°C. High temperature buildup in the battery, such as could occur near fires or stoves, inside a sun-heated vehicle, or in direct sunlight for long periods of time may cause the battery to rupture or catch fire. Excessive temperatures may also degrade battery's performance or shorten battery life.

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

⚠ **DANGER! NEVER** expose the battery to rain, snow, seawater, or any other liquids. Do not charge or use a wet battery. If the battery gets wet, be sure to wipe it dry before using. The battery is not waterproof.

⚠ **DANGER! NEVER** strike or otherwise impact the battery. Do not use the battery if it has been severely impacted or dropped, or if the battery has been subjected to heavy pressure. Battery damage may not be visible on the outside of the case. Even if the surface of the battery does not show cracks or any other damage, the cells inside the battery may rupture or catch fire.

⚠ **DANGER! NEVER** place or leave battery packs near fire. Fire or heat may cause them to rupture or explode. Dispose of used battery packs in accordance with local regulations.

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

⚠ **DANGER! NEVER** let fluid from inside the battery get in your eyes. If it does blindness can result. Rinse your eyes with clean water, without rubbing them, and immediately go to a doctor.

⚠ **WARNING! NEVER** put the battery 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.

⚠ **WARNING! NEVER** use the battery 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** let fluid from inside the battery come in contact with your body. If it does, immediately wash with clean water.

CAUTION: Always use the battery within the specified temperature range for the transceiver (-25°C to $+55^{\circ}\text{C}$) and the battery itself (-20°C to $+60^{\circ}\text{C}$). Using the battery out of its specified temperature range will reduce the battery's performance and battery life. Please note that the specified temperature range of the battery may exceed that of the transceiver. In such cases, the transceiver may not work properly because it is out of its operating temperature range.

CAUTION: Shorter battery life could occur if the battery 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 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 within the temperature range as shown below:

- 20°C to $+50^{\circ}\text{C}$ (within a month)
- 20°C to $+35^{\circ}\text{C}$ (within 3 months)
- 20°C to $+20^{\circ}\text{C}$ (within a year)

4 BATTERY CHARGING

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 will activate, causing the battery to stop charging.

⚠ **DANGER! NEVER** charge the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power adapter before a storm.

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

⚠ **WARNING! NEVER** insert the transceiver (battery 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: DO NOT charge the battery outside of the specified temperature range: BC-193 (+10°C to +40°C). Icom recommends charging the battery at +20°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.

■ Battery chargers

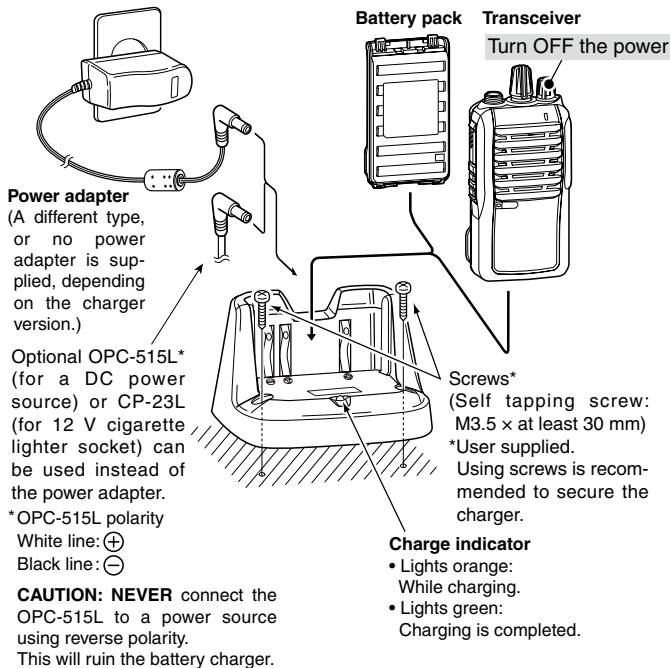
◇ Using the BC-191 to rapid charge the BP-264

The BC-191 can rapid charge only the BP-264 Ni-MH battery pack. Never use it for any other battery pack.

Charging time for the BP-264: Approximately 2 hours

The following item is additionally required:

- A power adapter (not supplied with some versions) or the DC power cable (OPC-515L/CP-23L).



4 BATTERY CHARGING

◇ Using the BC-192 to regular charge the BP-264

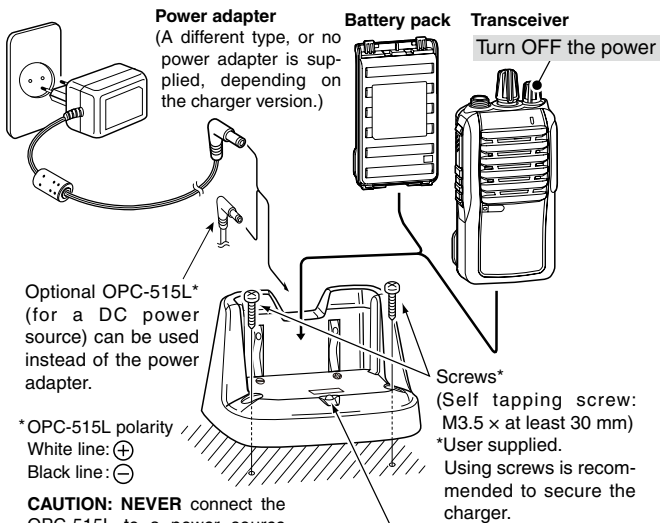
The BC-192 can regular charge only the BP-264 Ni-MH battery pack. Never use it for any other battery pack.

Charging time for the BP-264 (with the BC-206SE)

: Approximately 16 hours (at 16 V)

The following item is additionally required:

- A power adapter (not supplied with some charger versions) or the OPC-515L DC power cable.



Charge indicator

Lights green while charging.

NOTE:

The charge indicator will not go out even after a battery pack is fully charged.

Charging time period differs depending on the input voltage.

12 V:	Approx. 36 hours
13.8 V:	Approx. 21 hours
16 V:	Approx. 16 hours

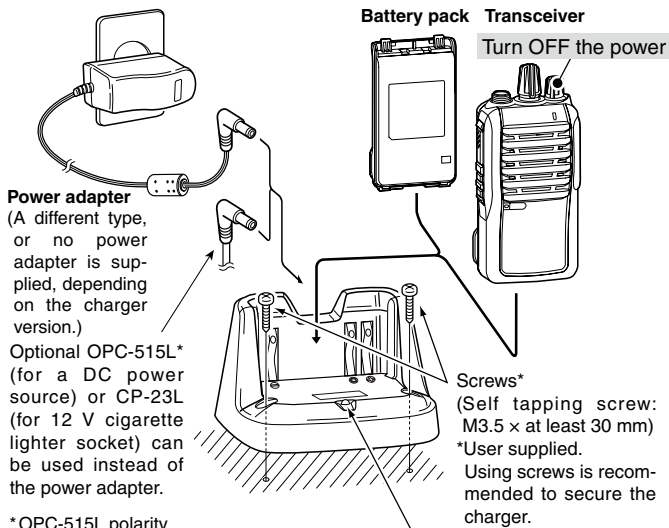
◇ Using the BC-193 to rapid charge the BP-265

The BC-193 provides rapid charging of the Li-ion battery pack (BP-265 only). Never use for any other battery pack.

Charging time for the BP-265: Approximately 2.5 hours

The following item is additionally required:

- A power adapter (not supplied with some versions) or the DC power cable (OPC-515L/CP-23L).



*OPC-515L polarity

White line: ⊕

Black line: ⊖

CAUTION: NEVER connect the OPC-515L to a power source using reverse polarity.

This will ruin the battery charger.

Charge indicator

- Lights orange:
While charging.
- Lights green:
Charging is completed.

4 BATTERY CHARGING

◇ Using the BC-197 to rapid charge the BP-264 or BP-265

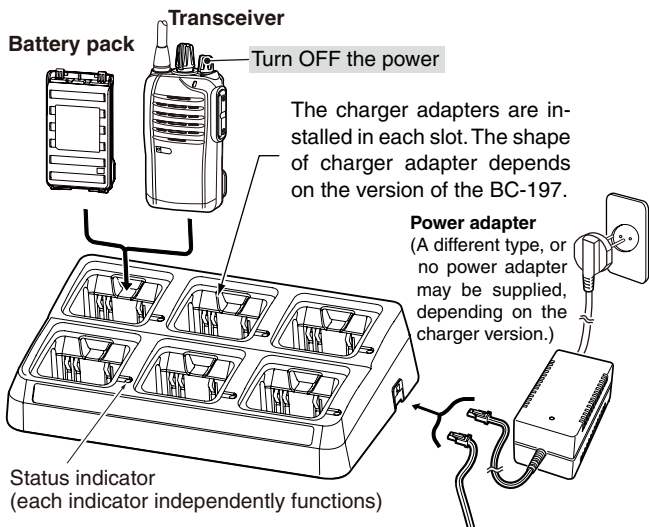
The BC-197 rapidly charges up to six battery packs.

Charging time for the BP-264: Approximately 2 hours

Charging time for the BP-265: Approximately 2.5 hours

The following additional item is required:

- A power adapter (not supplied with some charger versions) or the OPC-656 DC POWER CABLE



CAUTION: NEVER connect the OPC-656 to a power source using reverse polarity. This will ruin the battery charger.

OPC-656 (DC power cable)
(Connect to a DC power source:
12 to 16 V/at least 7 A)
Red line : ⊕ Black line : ⊖

There are two types of BC-197 chargers for the IC-F3002 and IC-F4002. One is for Ni-MH batteries, and the other is for Li-ion batteries.

Before you purchase a BC-197, check the type of battery you are using, and then be sure to choose the suitable charger type.

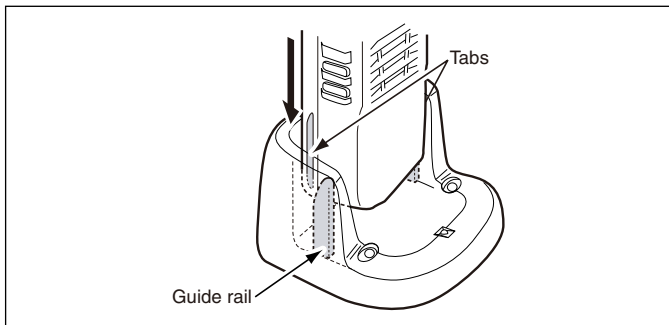
BC-197 Charger Type	Chargeable Battery
With AD-120* charger adapters	BP-264 Ni-MH battery
With AD-121* charger adapters	BP-265 Li-ion battery

* The charger adapter type, AD-120 or AD-121, is printed on the inside bottom of the charger adapter. The type of battery it holds is printed on the top right corner of the adapter.

4 BATTERY CHARGING

/// IMPORTANT:

Ensure the tabs on the battery pack are correctly aligned with the guide rails inside the charger.

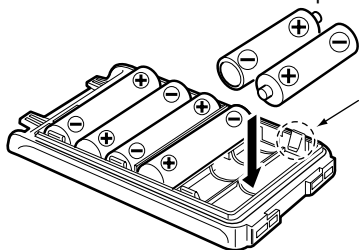


BATTERY CASE 5

■ Optional battery case (BP-263)

When using the optional battery case, install six AA (LR6) size alkaline batteries, as shown below.

- ① Remove the battery case if it is attached. (pp. 3, 4)
- ② Install six AA (LR6) size alkaline batteries, as shown below.
 - Install only alkaline batteries.
 - Be sure to observe the correct polarity.



Be careful! The negative terminals of the battery case protrude from the body, so pay attention not to injure your fingers when inserting the batteries.

- ③ Attach the battery case. (pp. 3, 4)

CAUTION:

- When installing batteries, make sure they are all the same brand, type and capacity. Also, do not mix new and old batteries together.
- Keep the battery terminals clean. It's a good idea to occasionally clean them.
- Never incinerate used battery cells since internal battery gas may cause them to rupture.
- Never expose a detached battery case to water. If the battery case gets wet, be sure to wipe it dry before using it.
- Never use batteries whose insulated cover is damaged.

NOTE: When the optional battery case is attached, the battery type must be selected as "Battery case operation" when turning ON the transceiver. Ask your dealer for details. (p. 12)

4

5

6 OPTIONS

◇ BATTERY PACK

Battery pack	Voltage	Capacity	Battery life*1	
BP-263	Battery case for AA (LR6) × 6 alkaline		__*2	
BP-264	7.2 V	1400 mAh (min.) 1420 mAh (typ.)	VHF	14.1 hrs.
			UHF	13.7 hrs.
BP-265	7.4 V	1900 mAh (min.) 2000 mAh (typ.)	VHF	20.2 hrs.
			UHF	19.6 hrs.

*1 When the power save function is turned ON, and the operating time is calculated under the following conditions;

TX : RX : standby = 5 : 5 : 90

*2 The average operating time depends on the alkaline cells used.

◇ CHARGERS

• **BC-191** DESKTOP CHARGER + **BC-123S** AC ADAPTER

For rapid charging of the Ni-MH battery pack. A power adapter is supplied with the charger, depending on the version.

Charging time: Approximately 2 hours for the BP-264.

• **BC-192** DESKTOP CHARGER + **BC-206S** AC ADAPTER

For regular charging of the Ni-MH battery pack. A power adapter is supplied with the charger, depending on the version.

Charging time: Approximately 16 hours for the BP-264.

• **BC-193** DESKTOP CHARGER + **BC-123S** AC ADAPTER

For rapid charging of the Li-ion battery pack. A power adapter is supplied with the charger, depending on the version.

Charging time: Approximately 2.5 hours for the BP-265.

• **BC-197** MULTI-CHARGER

For rapid simultaneously charging of up to six battery packs. A power adapter may be supplied with the charger, depending on the version. There are two types of BC-197 chargers for the IC-F3002 and IC-F4002.

BC-197 Charger Type	Chargeable Battery	Charging time
With AD-120*	BP-264 Ni-MH battery	Approx. 2 hrs.
With AD-121*	BP-265 Li-ion battery	Approx. 2.5 hrs.

*Either AD-120 or AD-121 charger adapters are installed in the BC-197, depending on the chargeable battery pack.

◇ **DC POWER CABLES**

• **CP-23L** CIGARETTE LIGHTER CABLE

Allows charging of the battery pack through a 12 V cigarette lighter socket. (For BC-191/BC-193)

• **OPC-515L** DC POWER CABLE

Allows charging of the battery pack using a power source instead of the power adapter.

◇ **BELT CLIPS**

• **MB-124** BELT CLIP

Exclusive alligator-type belt clip.

◇ **ANTENNAS**

• **FA-SC73US/FA-SC56VS/FA-SC57VS** STUBBY ANTENNAS

FA-SC73US : 450–490 MHz FA-SC56VS : 150–162 MHz

FA-SC57VS : 160–174 MHz

• **FA-SC25U/FA-SC57U/FA-SC72U/**

FA-SC25V/FA-SC55V ANTENNAS

FA-SC25U : 400–430 MHz FA-SC57U : 430–470 MHz

FA-SC72U : 470–520 MHz FA-SC25V : 136–155 MHz

FA-SC55V : 146–174 MHz

• **FA-SC61VC/FA-SC61UC** CUT ANTENNAS

FA-SC61VC : 136–174 MHz FA-SC61UC : 380–520 MHz

6 OPTIONS

◇ OTHER OPTIONS

- **AD-98FSC** ANTENNA CONNECTOR CONVERTER

Allows you to connect an external antenna with a BNC connector.

- **HM-158L/HM-159L** SPEAKER-MICROPHONE

Combination speaker-microphone that provides convenient operation while hanging the transceiver on your belt.

- **HS-94/HS-95/HS-97** HEADSET + **OPC-2004** PLUG ADAPTER CABLE

HS-94 : Ear hook type

HS-95 : Neck-arm type

HS-97 : Throat microphone

OPC-2004 : Allows you to connect the HS-94/HS-95/HS-97 to the transceiver. After connection, the VOX function can be used.

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

■ VOX function

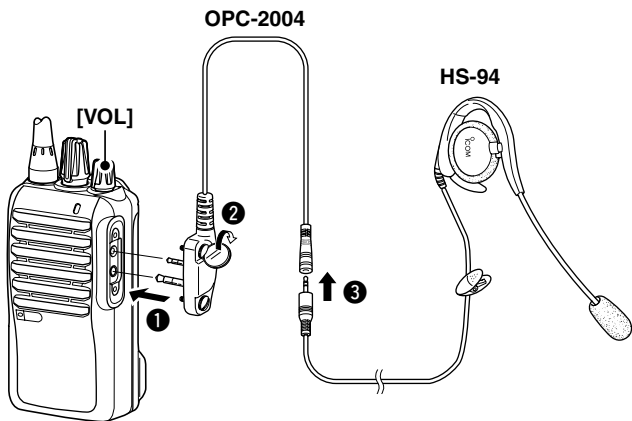
The transceiver has a VOX function, which allows you hands-free operation.

An optional HS-94, HS-95, or HS-97 headset and OPC-2004 plug adapter cable are additionally required for operation.

- The VOX (voice operated transmission) function starts transmitting when you speak into the microphone, without needing to push the PTT switch. The transceiver automatically returns to receive when you stop speaking.

◇ Optional unit connection

- ① Rotate [VOL] to turn OFF the transceiver power.
- ② Remove the jack cover. (p. 4)
- ③ Connect an optional headset and OPC-2004 as shown below.

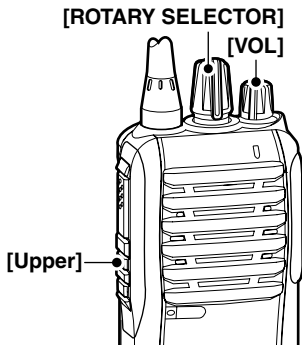


6 OPTIONS

◇ Turning ON or OFF the VOX function

The VOX function can be turned ON or OFF when turning ON the transceiver power.

- ① Rotate [VOL] to turn OFF the transceiver power.
- ② Set [ROTARY SELECTOR] to any channel other than Channel 16.
- ③ While pushing and holding [Upper], turn ON the transceiver power to switch the VOX function ON or OFF.
 - One beep sounds when the VOX function is turned OFF.
 - Two beeps sound when the VOX function is turned ON.

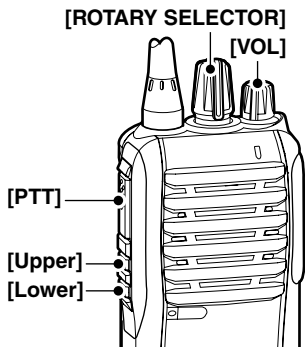


/// **NOTE:** This operation may not be available, depending on the presetting. Ask your dealer for details.

◇ Setting the VOX gain

The VOX sensitivity level can be adjusted from 1 (minimum) to 10 (maximum).

- ① Connect the HS-94, HS-95, or HS-97 optional headset and OPC-2004. (p. 38)
- ② Rotate [VOL] to turn OFF the transceiver power.
- ③ Set [ROTARY SELECTOR] to Channel 16.
- ④ While pushing and holding [PTT] and [Upper], rotate [VOL] to turn ON the power and enter the VOX Gain Adjustment mode.
- ⑤ Push [Upper] to increase, or push [Lower] to decrease the VOX gain while speaking into the optional headset.
 - The adjustable range is 1 (minimum) to 10 (maximum).
 - A beep sounds after pushing [Upper] or [Lower].
If the level is set on 1 or 10, an error beep sounds after pushing. Therefore, you can determine the current level setting by the type of beep that sounds.
- ⑥ Rotate [VOL] to turn OFF the power, then turn ON again to exit the VOX Gain Adjustment mode.



NOTE:

- This operation may not be available, depending on the presetting. Ask your dealer for details.
- Set the microphone gain before setting the VOX gain. (p. 18)

7 INFORMATION

■ Country code list (ISO 3166-1)

	Country	Codes		Country	Codes
1	Austria	AT	18	Liechtenstein	LI
2	Belgium	BE	19	Lithuania	LT
3	Bulgaria	BG	20	Luxembourg	LU
4	Croatia	HR	21	Malta	MT
5	Czech Republic	CZ	22	Netherlands	NL
6	Cyprus	CY	23	Norway	NO
7	Denmark	DK	24	Poland	PL
8	Estonia	EE	25	Portugal	PT
9	Finland	FI	26	Romania	RO
10	France	FR	27	Slovakia	SK
11	Germany	DE	28	Slovenia	SI
12	Greece	GR	29	Spain	ES
13	Hungary	HU	30	Sweden	SE
14	Iceland	IS	31	Switzerland	CH
15	Ireland	IE	32	Turkey	TR
16	Italy	IT	33	United Kingdom	GB
17	Latvia	LV			

■ 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.

Count on us!

< Intended Country of Use >

AT BE CY CZ DK EE
FI FR DE GR HU IE
IT LV LT LU MT NL
PL PT SK SI ES SE
GB IS LI NO CH BG
RO TR HR

A-6798H-1EU-④

Printed in Japan

© 2009–2016 Icom Inc.

Printed on recycled paper with soy ink.

Icom Inc.

1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003, Japan