

ICOM

INSTRUCTIONS

HYBRID IP TRANSCEIVER

IP730D

IP740D

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.

For Advanced features and instructions, see the INSTRUCTION MANUAL on the Icom website for details.
<https://www.icomjapan.com/support/>

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- 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.

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FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.

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

SAFETY TRAINING INFORMATION



Your Icom radio generates RF electromagnetic energy while transmitting. This radio is designed for and classified as for "Occupational Use Only." This means it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC and IC RF exposure limits for "Occupational Use Only". In addition, your Icom radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC KDB Publication 447498 D03, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1-2010), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-2002), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields– RF and Microwave.
- The antennas, batteries, belt clips, speaker-microphone, and other accessories that are listed in "OPTIONS" on this sheet, are authorized for use with this product. Use of accessories other than those specified may result in RF exposure levels exceeding the FCC and IC requirements for wireless RF exposure.
- Health Canada Safety Code 6 - Limits of Human Exposure to Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz.

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** operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere. This could cause an explosion and death.

 **WARNING! NEVER** use or charge Icom battery packs with non-Icom transceivers or non-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 so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting.

 **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 could result in an accident.

CAUTION: **DO NOT** 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.

CAUTION: **DO NOT** use harsh solvents such as Benzine or alcohol when cleaning. This could damage the equipment surfaces. If the surface becomes dusty or dirty, wipe it clean with a soft, dry cloth.

CAUTION: **DO NOT** place or leave the transceiver in excessively dusty environments. This could damage the transceiver.

NEVER place the transceiver in an insecure place to avoid inadvertent use by unauthorized persons.

DO NOT place or leave the transceiver in areas with temperatures below –30°C (–22°F) or above +60°C (+140°F), or in areas subject to direct sunlight, such as the dashboard.

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 due to the fact that the transceiver may be cracked, or the waterproof seal damaged, and so on.

* Only when the battery pack, antenna, and connector cover or the optional speaker microphone is attached.



To ensure that your expose to RF electromagnetic energy is within the FCC and IC allowable limits for occupational use, always adhere to the following guidelines:

- DO NOT** operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC and IC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio.
- DO NOT** transmit for more than 50% of the total radio use time ("50% duty cycle"). Transmitting more than 50% of the time can cause FCC and IC RF exposure compliance requirements to be exceeded. The radio is transmitting when the status indicator lights red. You can cause the radio to transmit by pushing the [PTT] switch.
- ALWAYS keep** the antenna at least 2.5 cm (1 inch) away from the body when transmitting, and only use the Icom belt-clips listed in "OPTIONS" on this sheet when attaching the radio to your belt, or other place, to ensure FCC and IC RF exposure compliance requirements are not exceeded. The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates within the FCC and IC RF exposure limits of this radio.
- Electromagnetic Interference/Compatibility**
During transmissions, your Icom radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.
- Occupational/Controlled Use**
The radio transmitter is used in situations in which persons are exposed as a consequence of their employment, provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

⚡ Battery caution

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 performance.

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

 **DANGER! NEVER** let fluid from inside the battery get in your eyes. This can cause blindness. Rinse your eyes with clean water, without rubbing them, and immediately get medical treatment from an eye doctor.

 **WARNING! 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.

 **WARNING! NEVER** place or leave battery packs in areas with temperatures above 60°C (140°F). High temperature buildup in the battery cells, 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 cells to rupture or catch fire. Excessive temperatures may also degrade the battery pack's performance or shorten the battery cell's life.

 **WARNING! NEVER** strike or otherwise impact the battery pack. Do not use the battery pack if it has been severely impacted or dropped, or if the pack has been subjected to heavy pressure. Battery pack 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.

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

 **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 cells to rupture.

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

CAUTION: **DO NOT** continue to use 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.

CAUTION: **DO NOT** expose the battery pack to rain, snow, saltwater, or any other liquids. Do not charge or use a wet pack. If the pack gets wet, be sure to wipe it with a clean dry cloth before using.

CAUTION: **DO NOT** use the battery pack out of the specified temperature range for the transceiver –30°C ~ +60°C (–22°F ~ +140°F), and the battery itself –20°C ~ +60°C (–4°F ~ +140°F). Using the battery out of its specified temperature range will reduce its performance and battery cell's 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.

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, and #6,912,495 B2.

RECOMMENDATION

CLEAN THE TRANSCEIVER THOROUGHLY IN A BOWL OF FRESH WATER after exposure to saltwater, and dry it before operating. Otherwise, the transceiver's keys and switches may become unusable, due to salt crystallization, and/or the charging terminals of the battery pack may corrode.

NOTE: If the transceiver's waterproof protection appears defective, carefully clean the transceiver with a soft, damp (fresh water) cloth, then dry it before operating. The transceiver may lose its waterproof protection if the case, jack cap, or connector cover is cracked or broken, or the transceiver has been dropped. Contact your Icom distributor or your dealer for advice.

TECHNICAL INFORMATION

Model	Version	Frequency Range	Output Power	SAR 10g (W/kg)
IP730D	USA-01	136–174 MHz	5 W	0.67
	EXP-01			
	EUR-01			
IP740D	USA-01	400–520 MHz	5 W	6.61
	EXP-01			
	EXP-02 EUR-01	350–470 MHz		

- Channel spacing: 6.25 kHz/12.5 kHz

CAUTION: **DO NOT** leave the pack fully charged, completely discharged, or in an excessive temperature environment (above 60°C, 140°F) 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 pack until the remaining capacity is about half, then keep it safely in a cool and dry place at the following temperature range:

–20°C ~ +50°C (–4°F ~ +122°F) (within a month)
–20°C ~ +40°C (–4°F ~ +104°F) (within three months)
–20°C ~ +20°C (–4°F ~ +68°F) (within a year)

BE SURE to replace the battery pack with a new one approximately five years after manufacturing, even if it still holds a charge. The material inside the battery cells will become weak after a period of time, even with little use. The estimated number of times you can charge the pack is between 300 and 500. Even when the pack appears to be fully charged, the operating time of the transceiver may become short when:

- Approximately 5 years have passed since the pack was manufactured.
- The pack has been repeatedly charged.

⚡ Charging caution

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

CAUTION: **DO NOT** 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.

CAUTION: **DO NOT** 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 pack outside of the specified temperature range: 0°C to 60°C (32°F to 140°F). Icom recommends charging the pack at 25°C (77°F). The pack may heat up or rupture if charged out of the specified temperature range. Additionally, pack's performance or battery cell life may be reduced.

CAUTION: **DO NOT** use the power adapter unless the power outlet is easily accessible and near the unit. Remove it from the AC power outlet when not in use.

Bluetooth® INTERFERENCE

Bluetooth uses the 2.4 GHz band. When using the transceiver in the 2.4 GHz band near a Bluetooth device, interference may occur. This may cause a decrease in communication speed, and an unstable connection. In such case, use the transceiver away from the Bluetooth device communication area, or stop using the Bluetooth device.

ABOUT CE AND DOC

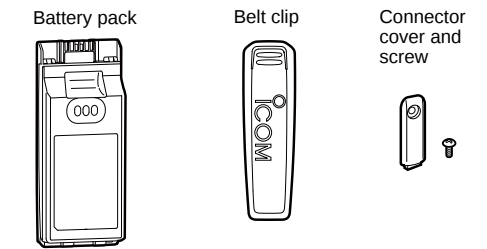
 Hereby, Icom Inc. declares that the versions of IP730D and IP740D which have the "CE" symbol on the product, comply with the essential requirements of the Radio Equipment Directive, 2014/53/EU, and the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive, 2011/65/EU. The full text of the EU declaration of conformity is available at the following Internet address:
<https://www.icomjapan.com/support/>

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

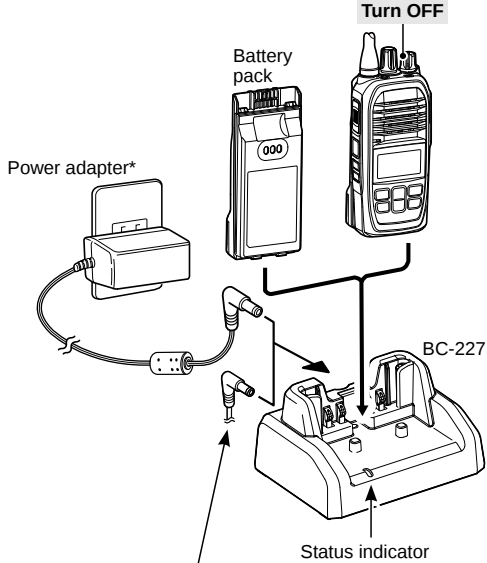


NOTE: Some accessories are not supplied, or the shape is different, depending on the transceiver version.

BATTERY CHARGING

◇ Using the BC-227 DESKTOP CHARGER

Charging time: approximately 4.4 hours for the BP-303.



The CP-23L (for a 12 V cigarette lighter socket) can be used instead of the power adapter.

* The shape may be different, depending on the charger version.

○Status indicator

Light color	Status
Orange	Charging
Green	Charging is completed.
Blinks orange and green	Charging failed. It may have some problems.

NOTE:

- The transceiver MUST be turned OFF while charging. Otherwise:
 - The battery will not be charged properly.
 - The battery life may be shortened.
- Do not transmit while charging. When you need to transmit, remove the transceiver from the charger, and then turn ON the power.
- If the battery pack does not properly charge when it is attached to the transceiver, remove it from the transceiver and insert only the battery pack into the charger.

USING THE CELLULAR MODE

You can make a call with other IP transceivers using the cellular network.

◇ Selecting a call-to party

- Push [Address] to display the Address book.
 - ① The Address book is displayed.
- Push [Address] several times to toggle the call type.
 - ① The selectable call type may differ, depending on the presetting.
- Rotate Rotary Selector or push [▲] or [▼] to select a call-to party.

◇ Receiving and transmitting

Receiving:

- When a Call is received, the Status indicator lights green.

Transmitting:

- While holding down [PTT], speak at your normal voice level.
 - ① The Status indicator lights red while [PTT] is pushed.

Talk while receiving a call:

- While receiving a call, push [PTT] to talk in the Full-Duplex mode* like a telephone call.
 - ① In the Full-Duplex mode, the Status indicator lights yellow.

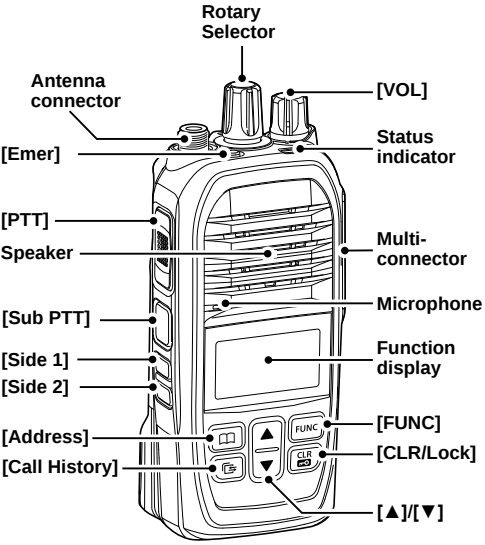
* Usability depends on a presetting. Ask your dealer for details.

About the call type:

- All call: Transmit to all of the transceivers that belong to the network.
- Group call: Transmit to the transceivers that belong to the same group.
- Talkgroup call: Transmit to the transceivers that belong to the same Talkgroup.
- Individual call: Transmit to an individual transceiver.
- Telephone call: Transmit to an IP phone.*

*Transmittable, depending on the presetting.

PANEL DESCRIPTION



◇ Status indicator

Lights red: Transmitting.
Lights green: Receiving or squelch is open.
Lights yellow: Receiving and transmitting in the Full-Duplex mode.

◇ Multi-connector

Connects to an optional speaker microphone or headset.

CAUTION: DO NOT use the transceiver without the connector cover or optional equipment attached. The transceiver meets IP67 requirements for dust-tight and waterproof protection only when the connector cover or the optional speaker microphone is attached. See "OPTIONS" for the usable speaker microphones.

USING THE IDAS MODE

You can make a call with other transceivers registered to the IDAS system.

◇ Receiving and transmitting

Receiving:

- Rotate Rotary Selector or push [▲] or [▼] to select a channel.
- When a Call is received, the Status indicator lights green.

Transmitting:

CAUTION: DO NOT transmit without an antenna.

- 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:

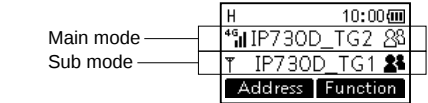
- After pushing [PTT], pause briefly before you start speaking.
- Hold the microphone 5 to 10 cm (2 to 4 inches) from your mouth, then speak at your normal voice level.

USING THE DUAL MODE

You can use the Cellular mode and IDAS mode at the same time.

◇ Main mode and Sub mode

When the Dual mode is selected, the Main mode and Sub mode are displayed as shown below.



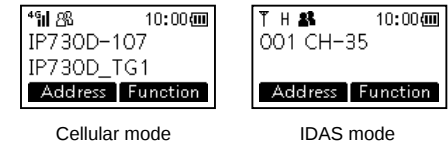
Switching the operating mode:

- Hold down [FUNC] for 1 second to toggle the Main mode and Sub mode.

◇ Transmitting

- Hold down [PTT] to transmit in the Main mode.
- Hold down [Sub PTT] to transmit in the Sub mode.
- You can also simultaneously transmit* in both modes by holding down both [PTT] and [Sub PTT].
 - *The Status indicator lights yellow.
- A channel, call to - party, or call type are not selectable in the Sub mode. To select those, switch to the Main mode.

FUNCTION DISPLAY



◇ Cellular mode

	Displays the signal strength level by 3 bars. ① A connected network type (4G or 3G) is displayed on the left top.
	- Blinks when the transceiver location is out of the service area, or cannot receive a control signal. - Displayed if transceiver has not been authenticated. ① A connected network type (4G or 3G) is displayed on the left top.
	All/Group Call
	Talkgroup Call*
	Individual Call
	Phone Call*
	- Displayed when the Pocket Beep function is ON. - Blinks when a call is received. It blinks until the transceiver returns to the standby mode after a received signal disappears.
	Displayed when the P-Bell function is ON.

*May be usable, depending on a presetting.

◇ IDAS mode

	Displays the relative receive signal strength level.
	Displayed when the signal level is low.
	All/Group Call
	Individual Call
	Displayed when the Encryption function is ON.
	Displayed* when high output power is selected.
	Displayed* when low output power is selected. ① "L2" is displayed for 2 W, "L1" is displayed for 1 W.
	Displayed* when a receive-only channel is selected.
	Displayed when the channel is in the audible (unmuted) mode.

*Blinks when the transceiver temperature becomes hot.

OPTIONS

◇ Battery pack/Battery case

- BP-302/BP-303 BATTERY PACK

Battery pack	Voltage	Capacity	Approximate battery life*
BP-302	7.2 V	1950 mAh (Minimum) 2010 mAh (Typical)	15 hours
BP-303	7.2 V	3250 mAh (Minimum) 3350 mAh (Typical)	25 hours

*In the Cellular mode, the operating periods are calculated under the following conditions.
TX : RX : standby = 5 : 5 : 90
The battery life may shorter, depending on the distance with the cellular station or the signal strength.

- BP-305 BATTERY CASE
Battery case with 5 AA battery cells.

◇ Chargers

- BC-227 DESKTOP CHARGER + BC-242 AC ADAPTER, BC-123S AC ADAPTER, OPC-515L DC POWER CABLE
To rapidly charge the battery pack.
Charging time: Approximately 4.4 hours for the BP-303.
① OPC-515L must be purchased separately.
- BC-226 DESKTOP CHARGER + BC-228 AC ADAPTER
You can connect up to 6 BC-226 together.
Charging time: Approximately 4.2 hours for the BP-303.
① A power adapter may be supplied, depending on the charger's version.

◇ Antennas

- FA-SC25V/FA-SC28V/FA-SC29V/FA-SC55V
VHF ANTENNAS
FA-SC25V 136–150 MHz
FA-SC28V 148–162 MHz
FA-SC29V 160–174 MHz
FA-SC55V 150–174 MHz
- FA-SC26VS/FA-SC27VS/FA-SC56VS/FA-SC57VS
VHF STUBBY ANTENNAS
FA-SC26VS 136–144 MHz
FA-SC27VS 142–150 MHz
FA-SC56VS 150–162 MHz
FA-SC57VS 160–174 MHz
- FA-SC61VC VHF CUT ANTENNAS
FA-SC61VC 136–174 MHz
- FA-SC01U/FA-SC02U/FA-SC03U/FA-SC25U/
FA-SC57U/FA-SC72U UHF ANTENNAS
FA-SC01U 350–400 MHz
FA-SC02U 330–380 MHz
FA-SC03U 380–430 MHz
FA-SC25U 400–430 MHz
FA-SC57U 430–470 MHz
FA-SC72U 470–520 MHz
FA-SC26US/FA-SC73US UHF STUBBY ANTENNAS
FA-SC26US 400–450 MHz
FA-SC73US 450–490 MHz
- FA-SC61UC UHF CUT ANTENNAS
FA-SC61UC 380–520 MHz
- FA-SC62V/FA-SC63V HIGH GAIN ANTENNAS
FA-SC62V 155 MHz
FA-SC63V 160 MHz

◇ Cellular/IDAS mode

	- Displayed when the Record function is ON. - Blinks while recording audio.
	Displayed when Bluetooth is activated.
	Displayed when a Bluetooth device is connected.
	Displayed when the Key Lock function is ON.
	Displayed when the VOX function is ON.
	Displayed when the Emergency Call function is ON.
	Displays the remaining battery charge. Full : Full Mid : Mid Charging required : Charging required Battery exhausted : Battery exhausted
	Blinks when the transceiver downloading a new firmware.
	Displayed when the Surveillance function is ON.

BASIC OPERATION

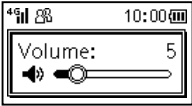
◇ Turning ON the transceiver

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

- Rotate [VOL] clockwise to the 12 o'clock position to turn ON the transceiver.
 - ① The dial is made tight for dust and water resistance.
 - ① To turn OFF the transceiver, rotate [VOL] counter-clockwise until it makes a "click" sound.

◇ Adjusting the volume level

- Rotate [VOL] to adjust the volume level.
 - ① The Adjustment screen is displayed while adjusting.



◇ Using the Key Lock function

You can use the Key Lock function to prevent accidental channel changes and unnecessary function access, depending on the presetting.

- Hold down [CLR/Lock] for 1 second to turn the Key Lock function ON or OFF.
 - ① "m" is displayed while the function is ON.
 - ① [PTT], [Sub PTT], and [VOL] are usable even while the function is ON.