INSTRUCTION MANUAL

PMR446 TRANSCEIVER

IC-F27SR

Icom Inc.

FOREWORD

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the IC-F27SR PMR446 TRANSCEIVER.

This instruction manual includes some functions which are usable only when they are preprogrammed by your dealer. Ask your dealer for details.

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.

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			

PRECAUTIONS

⚠ **DANGER! NEVER** short the terminals of the battery pack.

⚠ **DANGER!** Use and charge only specified Icom battery packs with Icom radios or Icom chargers. Only Icom battery packs are tested and approved for use with Icom radios 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. 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: NEVER connect the transceiver to a power source other than the specified battery pack/case. Such a connection will ruin the transceiver.

CAUTION: MAKE SURE the battery pack is securely attached to the transceiver, and that the battery pack is dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.

DO NOT push the PTT when not actually desiring to transmit.

DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below –25°C or above +55°C.
The basic operations, transmission and reception of the transceiver, are guaranteed within the specified operating temperature range.

DO NOT modify the transceiver. 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.

KEEP the transceiver away from heavy rain, and never immerse it in water. The transceiver meets IP54* requirements for dust-protection and splash resistance. 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.

MAKE SURE to turn the transceiver power OFF before connecting the supplied/optional equipment.

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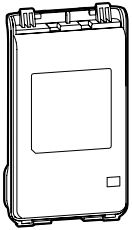
1 ACCESSORIES

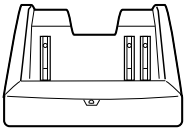
■ Supplied accessories

The following accessories are supplied with the transceiver.

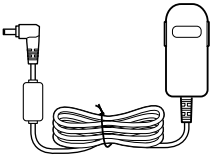
Battery pack*



Battery charger*

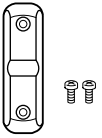


AC adapter*



Belt clip

Jack cover
(with screws)



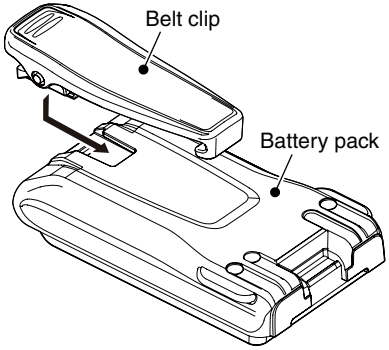
* Not supplied, or the shape is different, depending on the version.

■ Accessory attachments

◇ Belt clip

To attach the belt clip:

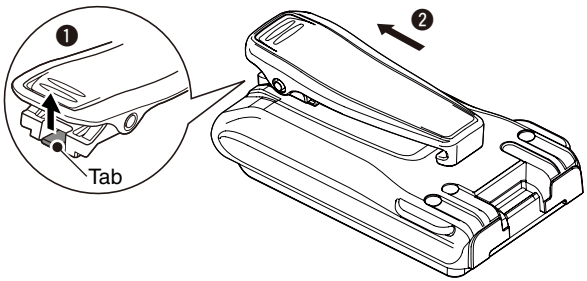
➥ Slide the belt clip in the direction of the arrow until it locks in place, and makes a 'click' sound.



To detach the belt clip:

① Remove the battery pack from the transceiver, if it is attached. (p. 3)

② Lift the tab up (❶), and slide the belt clip in the direction of the arrow (❷).



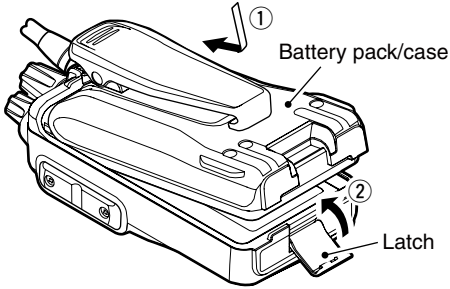
■ Supplied accessories (continued)

◇ Battery pack/case

To attach the battery pack/case:

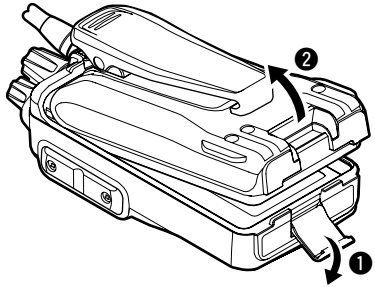
① Fit the battery pack/case in the direction of the arrow, then close.

② Hook the latch until it makes a 'click' sound.



To remove the battery pack/case:

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



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 regularly clean them.

◇ Jack cover

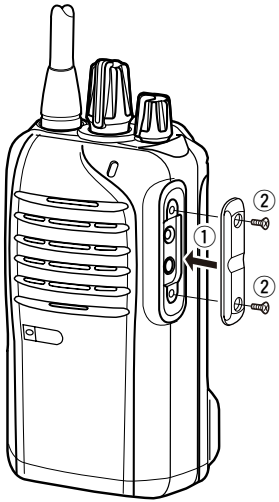
Attach the jack cover when optional equipment is not used.

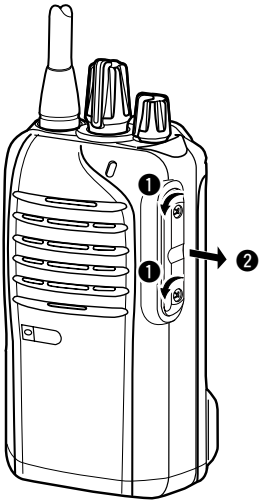
To attach the jack cover:

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

To detach the jack cover:

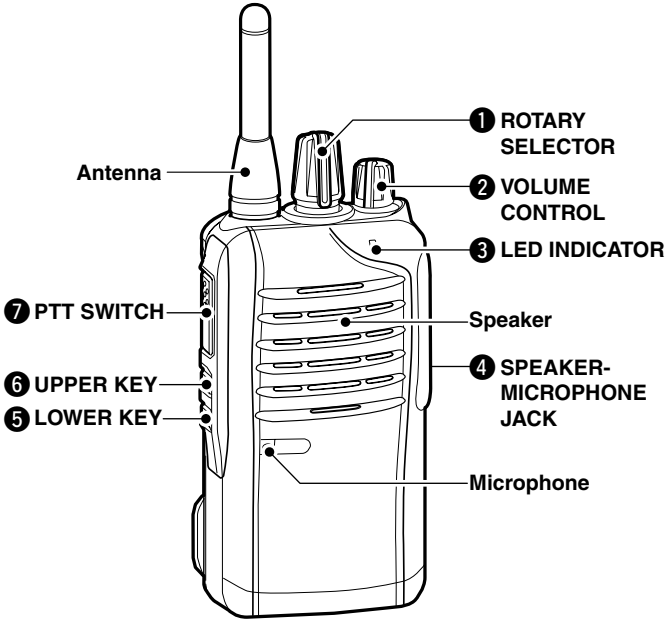
❶ Remove the screws with a Phillips screwdriver.
❷ Detach the jack cover to connect optional equipment.





2 PANEL DESCRIPTION

■ Front, top and side panels



❶ ROTARY SELECTOR
Rotate to select the preprogrammed memory channels.

❷ VOLUME CONTROL [VOL]
Rotate to turn the power ON/OFF, and adjust the audio level.

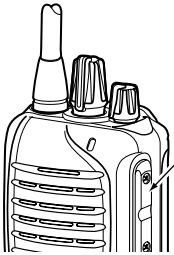
❸ **LED INDICATOR** (p. 9)

➥ 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.

❹ **SPEAKER-MICROPHONE JACK [SP MIC]**

Connect the optional speaker-microphone or plug adapter cable.



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

❺ **LOWER KEY [Lower]**

❻ **UPPER KEY [Upper]**

The desired function can be assigned by your dealer. (p. 7)

❼ **PTT SWITCH [PTT]**

Hold down to transmit; release to receive.

■ Programmable key functions

Various functions can be assigned to the [Upper] and [Lower] programmable function keys.
If [Upper] or [Lower] is preprogrammed, push to activate whichever function is set.
Consult your Icom dealer for details concerning which functions are programmed into the key.

SCAN A

➥ Push to start or cancel the scanning operation.
➥ When the Power ON scan function is turned ON, push to pause the scanning. The paused scan resumes after the specified time period has passed.

SCAN B

Push to start or cancel scanning.
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 CHANNEL 1, MEMORY CHANNEL 2,
MEMORY CHANNEL 3, MEMORY CHANNEL 4

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

MONITOR

➥ Hold down for 1 second to temporarily release the CTCSS*1 (or DTCS*2) squelch mute.
➥ Push to activate the CTCSS*1 (or DTCS*2) squelch mute.
➥ Holding down [MONI] opens any squelch and deactivates any mute.

*1 Contiuous Tone Coded Squelch System
*2 Digital Tone Coded Squelch

LOCK

Hold down for 1 second to electronically lock all programmable keys except [MONI], [LOCK], [SURVEILLANCE] and [SIREN].

SURVEILLANCE

➥ Push to turn the Surveillance function OFF.
➥ Hold down for 1 second to turn the Surveillance function ON.
  • When this function is turned ON, the beep is not heard and the LED does not light, even if a signal is received, or you push a key.

SIREN

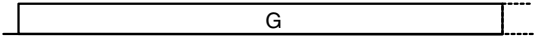
Hold down for 1 second to emit a siren sound.
You can use this function for situations other than an emergency alert, such as a security alarm for example.
The transceiver will emit the siren sound until you turn OFF the power.

■ LED indicator

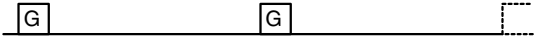
The LED indicator indicates the status of various parameters of the transceiver, as follows;
(Ref.; R=Red, G=Green, O=Orange)

• TX: Lights Red while transmitting a signal.

• RX: Lights Green while receiving a signal.

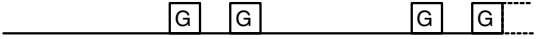


• Fast/Slow scan: Blinks when the Fast/Slow scan is activated.

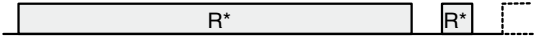


• Low Battery 1: You should charge the battery. (blinks slowly)

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



• TX low Battery 1: Low Battery was detected during transmit.



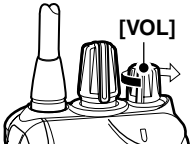
• TX low Battery 2: Very Low Battery was detected during transmit.

• Channel Error: A non-programmed channel is selected.

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

■ Turning ON the power

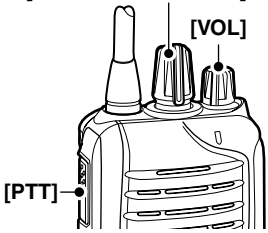
Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation. (p. 19)



➥ 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 Ni-MH battery pack, you must repeat the procedure until 3 beeps are 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 beep sounds. (It takes approximately 5 seconds; while holding down [PTT], the count down 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 available, depending on the preprogramming. Ask your dealer for details.

■ Channel selection

Several types of channel selecting methods are available. They may differ, according to your system set up.

To select a desired 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 the power ON, the transceiver automatically starts scanning. Scanning stops when a signal is received, and then the channel is set.

NOTE: If the Move to Priority A channel at Power ON function (p. 17) is turned ON, the transceiver does not start scanning at power ON, and the Priority A channel is automatically selected.

■ Receiving and transmitting

Receiving:

① Rotate [VOL] to turn ON the 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.
- When the received signal contains the same CTCSS tone or DTCS code, the LED indicator lights green.
- If no audio is heard, hold down [MONI] while adjusting the audio output level. Release to receive.

④ The transceiver is now set to receive on the selected channel.

NOTE: The transceiver may be equipped with CTCSS tone or DTCS code capability. The CTCSS tone squelch or DTCS squelch opens only when the received signal includes a matching tone or code. You can silently wait to receive calls from only stations using the same tone or code. The default settings for each channel are listed on the next page.

Transmitting:

Wait for the channel to become clear to avoid interfering.

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

■ Receiving and transmitting (continued)

◇ Preprogrammed frequency and CTCSS tone list (Default)

CH	Frequency (MHz)*1	Tone (Hz)*2
1	446.006250	No setting
2	446.018750	No setting
3	446.031250	No setting
4	446.043750	107.2
5	446.056250	110.9
6	446.068750	114.8
7	446.081250	118.8
8	446.093750	123.0
9	446.006250	127.3
10	446.018750	131.8
11	446.031250	136.5
12	446.043750	141.3
13	446.056250	146.2
14	446.068750	151.4
15	446.081250	156.7
16	446.093750	159.8

*1 The operating channel frequencies cannot be changed.

*2 The DTCS codes or different CTCSS tone frequencies may be preprogrammed instead of the CTCSS tones as listed above. Ask your dealer for details.

◇ Transmitting notes

• Transmit inhibit function

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

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

• Time-out timer

The transceiver has a time-out timer function which prevents continuous, extend transmissions.

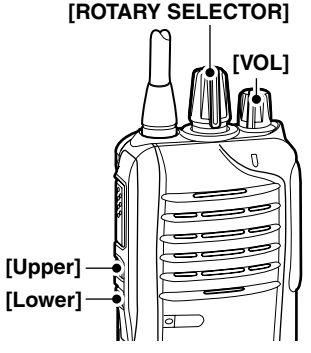
After continuously transmitting longer than the preprogrammed time period, the Time-out timer function activates, and stops further transmitting.

• Penalty timer

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

■ 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 pushing and holding [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, a low tone error beep sounds.
  Therefore, you can determine the current level setting by the type of beep that sounds.

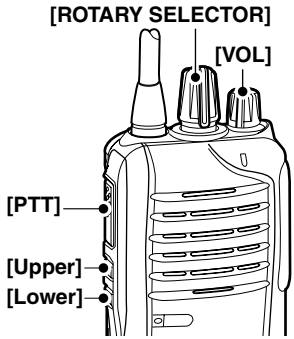
⑤ Rotate [VOL] to turn OFF the power, then turn ON again to exit the microphone gain adjustment mode.

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

✓ ***INFORMATION:***
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 and the squelch setting.



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 [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 squelch level adjustment mode.

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

■ Priority A channel selection

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

■ Auto scan function

The Auto scan function sequentially scans from the selected channel. Scanning automatically searches for signals and makes it easier for you to find stations to contact or to just listen to.

① Set [ROTARY SELECTOR] to any channel that the Auto scan function is ON.
② Scan starts automatically.
- The LED indicator slowly blinks green.
- When receiving a signal, scan pauses until the signal disappears.

■ Power save function

The power save function reduces the current drain to conserve battery power.

- Depending on the preprogramming, the power save function is automatically turned ON when no operation is performed or no signal is received for the preprogrammed time period. Ask your dealer for details.

4 BATTERY CHARGING

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

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

⚠ **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.

CAUTION: Always use the battery within the specified temperature range for the transceiver (–25˚C to +55˚C) and the battery itself (–5˚C to +65˚C). Using the battery out of its specified temperature range will reduce the battery's performance and battery life.

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

–20˚C to +45˚C (up to a month)
–20˚C to +35˚C (up to six months)
–20˚C to +25˚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. 31)

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/BC-197) or between 0°C and +45°C (regular charge: with BC-192)
- Use the supplied charger or optional charger (BC-191/BC-197 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.

■ 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 performance.

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

◇ Battery caution

⚠ **DANGER! DO NOT** hammer 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** 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 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** incinerate used battery packs, since internal battery gas may cause them to rupture, or may cause an explosion.

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

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

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

⚠ **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.

CAUTION: Always use the battery within the specified temperature range for the transceiver (–25˚C to +55˚C) and the battery itself (–20˚C to +60˚C). Using the battery out of its specified temperature range will reduce the battery's performance and battery life.

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

CAUTION: Shorter battery life could occur if the battery is left fully charged, completely discharged, or in an excessive temperature environment (above +50˚C) for an extended period of time. If the battery must be left unused for a long time, it must be detached from the radio 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˚C (up to a month)
–20˚C to +35˚C (up to three months)
–20˚C to +20˚C (up to a year)

◇ Charging caution

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

⚠ **WARNING! DO NOT** 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/BC-197 (+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.

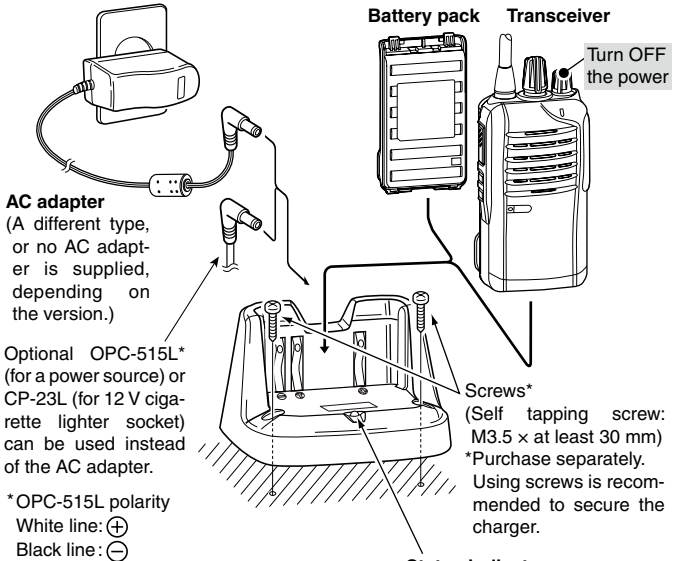
■ Battery chargers

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

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

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

The following item is additionally required: An AC adapter (not supplied with some versions), OPC-515L DC POWER CABLE or CP-23L CIGARETTE LIGHTER CABLE.



■ Battery chargers (continued)

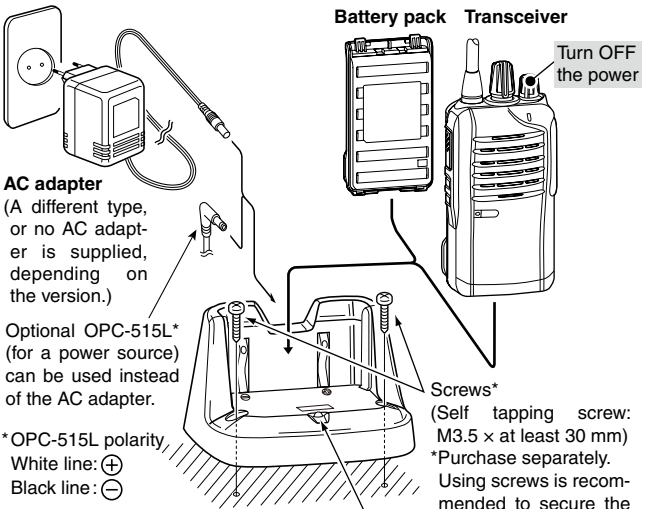
◇ Using the BC-192 to regular charge the BP-264

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

Charging time period for the BP-264 (with BC-147S)

: Approximately 16 hours (at 16 V)

The following item is additionally required: An AC adapter (not supplied with some versions) or OPC-515L DC POWER CABLE.



CAUTION: NEVER connect the OPC-515L to a power source using reverse polarity. This will ruin the battery charger.

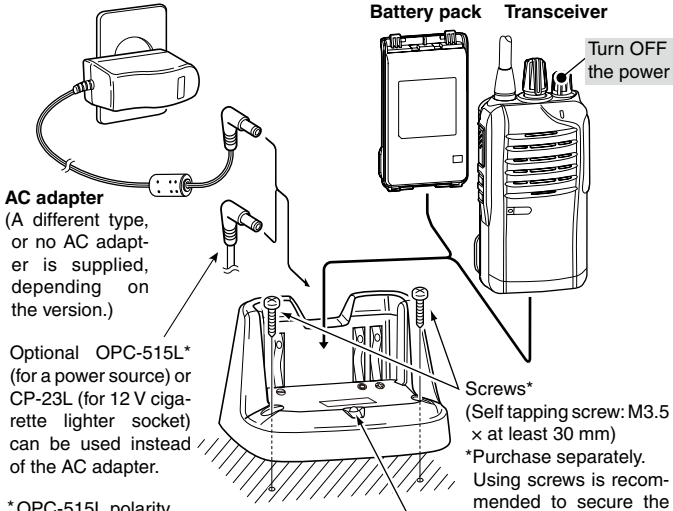
NOTE:
The charge indicator will not go out even after a battery pack is fully charged.

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 only the BP-265 Li-ion battery pack. Never use it for any other battery pack.
Charging time period for the BP-265: Approximately 2.5 hours

The following item is additionally required: An AC adapter (not supplied with some versions), OPC-515L DC POWER CABLE or CP-23L CIGARETTE LIGHTER CABLE.



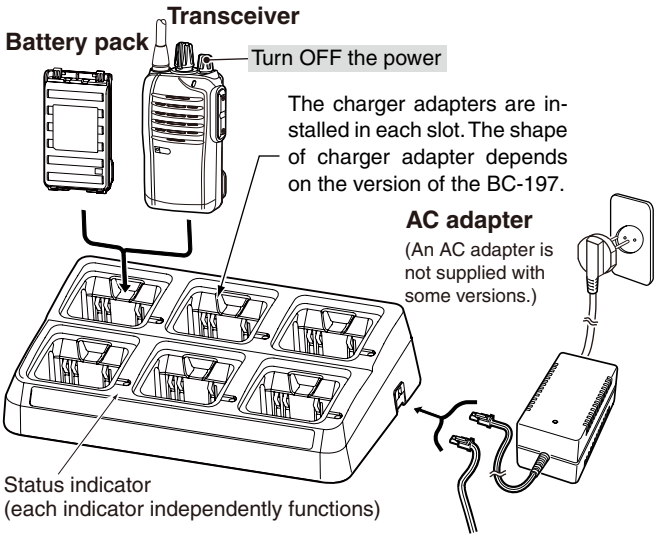
■ Battery chargers (continued)

◇ 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:

- An AC adapter (not supplied with some versions) or the OPC-656 DC POWER CABLE



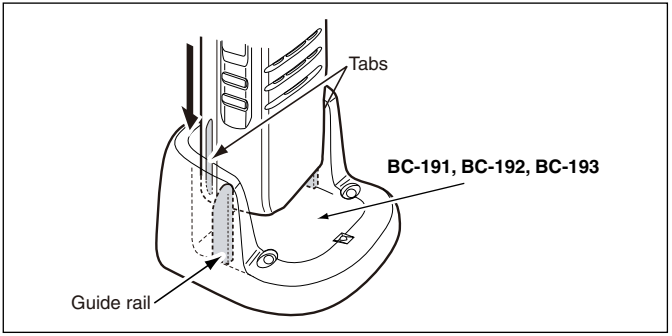
There are two types of BC-197 chargers for the IC-F27SR; one is for Ni-MH batteries, and the other is for Li-ion batteries.
Before you purchase a BC-197, check the type of battery you are using, and then be sure to choose the suitable charger type.

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.

■ Battery chargers (continued)

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

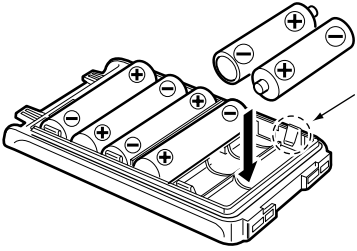


■ Optional BP-263 BATTERY CASE

When using the optional battery case, install 6 × AA (LR6) size alkaline batteries, as illustrated below.

① Remove the battery case if it is attached. (p. 3)

② Install 6 × 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 Reattach the battery case. (p. 3)

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 regularly 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 the transceiver ON. See page 10 for details.

6 OPTIONS

◇ BATTERY PACK/CASE

Battery pack/case	Voltage	Capacity	Battery life*1
BP-263	Battery case for AA (LR6) × 6 alkaline		—*2
BP-264	7.2 V	1400 mAh (typ.)	24.8 hrs.
BP-265	7.4 V	1900 mAh (min.) 2000 mAh (typ.)	35.3 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-123SE** AC ADAPTER
  For rapid charging of the Ni-MH battery pack. An AC adapter may be supplied with the charger, depending on the version.
  Charging time period for the BP-264: Approximately 2 hours.

- **BC-192** DESKTOP CHARGER **+ BC-147SE** AC ADAPTER
  For regular charging of the Ni-MH battery pack. An AC adapter may be supplied with the charger, depending on the version.
  Charging time period for the BP-264: Approximately 16 hours.
  (at 16 V)

- **BC-193** DESKTOP CHARGER **+ BC-123SE** AC ADAPTER
  For rapid charging of the Li-ion battery pack. An AC adapter may be supplied with the charger, depending on the version.
  Charging time period for the BP-265: Approximately 2.5 hours.

• **BC-197** MULTI-CHARGER **+ BC-157SE** AC ADAPTER
For rapid simultaneously charging of up to six battery packs. An AC adapter may be supplied with the charger, depending on the version. There are two types of BC-197 chargers for the IC-F27SR.

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/OPC-656** DC POWER CABLE
For charging of the battery packs using a 12 V DC power source instead of the AC adapter.
OPC-515L : BC-191/BC-192/BC-193
OPC-656 : BC-197

◇ BELT CLIPS

• **MB-124** BELT CLIP
Exclusive alligator-type belt clip.

◇ OTHER OPTIONS

- **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 or HS-97 to the transceiver. After connection, the VOX function can be used.

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.

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

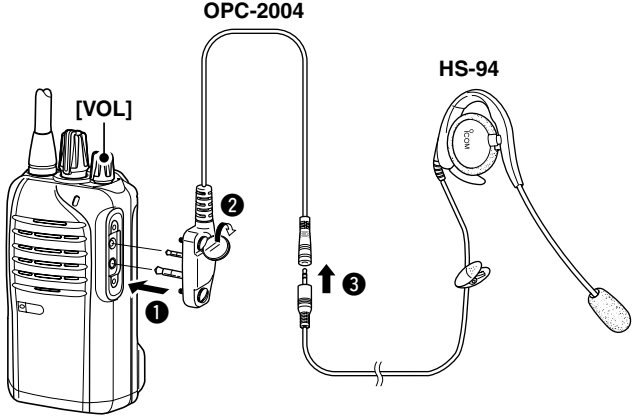
■ VOX function

The transceiver has a VOX (voice operated transmission) function, which allows you hands-free operation.
In addition, an HS-94, HS-95 or HS-97 headset and an OPC-2004 plug adapter cable are required.

- The VOX function starts transmission when you speak into the microphone, then automatically returns to receive when you stop speaking without needing to push or release the PTT switch.

◇ Optional unit connection

① Rotate [VOL] to turn OFF the transceiver power.
② Remove the jack cover. (p. 4)
③ Connect an optional HS-94, HS-95 or HS-97 headset and OPC-2004, as illustrated below.

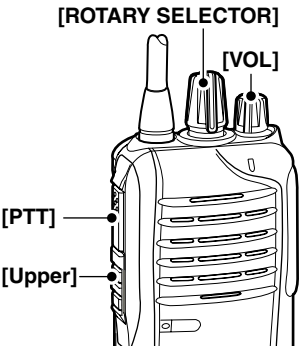


■ VOX function (continued)

◇ Turning the VOX function ON or OFF

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

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



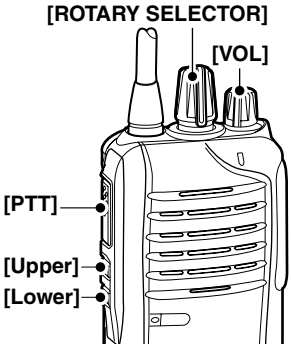
NOTE: This operation may not be available, depending on the preprogramming. Ask your dealer for details.

◇ Setting the VOX gain

The VOX sensitivity level can be adjusted from 1 (minimum) to 10 (maximum). Higher values make the VOX function more sensitive to your voice.

✓ ***IMPORTANT!***

Set the microphone gain before setting the VOX gain. (p. 15)



① Connect the optional HS-94, HS-95 or HS-97 headset and the OPC-2004. (p. 34)
② Rotate [VOL] to turn OFF the transceiver power.
③ Set [ROTARY SELECTOR] to Channel 16.
④ While holding down [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.

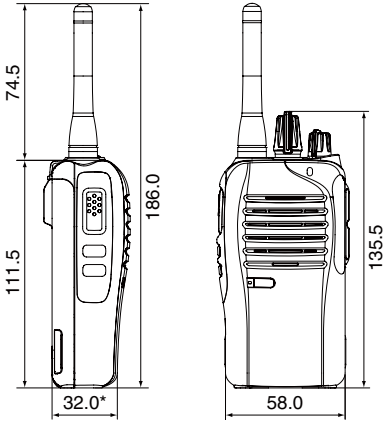
NOTE: This operation may not be available, depending on the preprogramming. Ask your dealer for details.

7 SPECIFICATIONS

◇ General

• Frequency coverage	: 446.00625–446.09375 MHz	
• Mode	: 8K50F3E (FM)	
• Current drain (at 7.2 V)	: TX	400 mA approx.
	RX Max. audio	330 mA approx.
• Power supply requirement	: 7.2 V DC nominal* (negative ground)	
	*Only specified Icom's battery pack	
• Frequency stability	: ±2.5 ppm (–25°C to +55°C)	
• Antenna impedance	: 50 Ω nominal	
• Weight	: Approximately 330 g (with BP-264)	
	: Approximately 270 g (with BP-265)	

◇ Dimensions



Unit: mm
*with a BP-264
36.5 mm with a BP-265

◇ Transmitter

- Output power : 0.5 W ERP
- Modulation system : Variable reactance frequency modulation
- Max. frequency deviation : ±2.5 kHz
- Spurious emissions : 0.25 µW (1 GHz or below)
  1.00 µW (above 1 GHz)
- Adjacent channel power : 60 dB
- External mic. connector : 3 conductor 2.5 (d) mm/2.2 kΩ

◇ Receiver

- Receive system : Double conversion superheterodyne
- Sensitivity (20 dB SINAD) : −4 dBµV(EMF) (typical)
- Squelch sensitivity : 26.5 dBµV/m (Threshold)
- Intermodulation rejection ratio : 86.29 dBµV/m
- Spurious response rejection ratio : 91.29 dBµV/m
- Adjacent channel selectivity : 81.29 dBµV/m
- Audio output power : 0.8 W (typical) at 5% distortion with a 12 Ω load
  0.4 W (typical) at 5% distortion with an 8 Ω load
- External speaker connector : 2 conductor 3.5 (d) mm/8 Ω

All stated specifications are subject to change without notice or obligation.

8 INDEX

Count on us!

#91 EUR-22, #92 EUR-23

< 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				

#93 UK-02, #94 UK-03

< Intended Country of Use >						
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□FI	□FR	□DE	□GR	□HU	■IE	
□IT	□LV	□LT	□LU	□MT	□NL	
□PL	□PT	□SK	□SI	□ES	□SE	
■GB	□IS	□LI	□NO	□CH	□BG	
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1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003, Japan

ABOUT CE

ICOM

DECLARATION OF CONFORMITY

We Icom Inc. Japan
1-1-32, Kamiminami, Hirano-ku
Osaka 547-0003, Japan

CE

Declare on our sole responsibility that this equipment complies with the essential requirements of the Radio and Telecommunications Terminal Equipment Directive, 1999/5/EC, and that any applicable Essential Test Suite measurements have been performed.

Kind of equipment: **PMR446 TRANSCEIVER**

Type-designation: **IC-F27SR**

Version (where applicable):

This compliance is based on conformity with the following harmonised standards, specifications or documents:

i) EN 60950-1:2006/A1:2010
ii) EN 300 296-2 V1.3.1 (2010-07)
iii) EN 301 489-1 V1.8.1 (2008-04)
iv) EN 301 489-5 V1.3.1 (2002-08)
v)
vi)

Bad Soden 4th Jul. 2011
Place and date of issue

Icom (Europe) GmbH
Communication Equipment
Auf der Krautweide 24,
65812 Bad Soden am Taunus,
Germany
Authorized representative name

Y. Furukawa
General Manager

Signature

Icom Inc.

CE The IC-F27SR complies with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.