

ICOM

INSTRUCTION MANUAL

MULTIBAND FM TRANSCEIVER

IC-E90

Icom Inc.



FOREWORD

Thank you for purchasing this Icom product. The IC-E90 MULTI BAND TRANSCEIVER is designed and built with Icom's superior technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

The IC-E90 is a tri-band, 50 MHz, 144 MHz, 430 MHz FM transceiver that offers a wide-band AM, FM and WFM scanning receiver*. Not only you can hear your favorite TV programs with the pre-programmed TV memories*, but you can also listen to short wave, AM and FM broadcast radio stations, aircraft, various amateur bands and more.

New DMS(Dynamic Memory Scan) bank scanning provides 555 alphanumeric memory channels, including 50 band edges, with a maximum of 18 banks or 100 channels per bank. You can pick and choose any desired channel for scanning from the 500 memories.

The supplied BP-217 LITHIUM-ION BATTERY PACK provides full 5 W of output. Along with the energy conserving settings, the BP-217 provides up to 5 to 6 hours of operating time. The newly designed antenna also provides stable signal strength. We want to thank you for making your IC-E90 your radio of choice, and hope you agree with Icom's philosophy of "technology first." Many hours of research and development went into the design of your IC-E90.

◆ **FEATURES**

- *Tri-band FM transceiver*
- *Wide-band receiver*
 - *Covers 495 KHz to 999.990* MHz*
- *New DMS (Dynamic Memory Scan) bank scan*
- *Lithium-Ion technology*
- *Rugged palm sized, weather-resistant construction*
- *DTCS and CTCSS tone squelch*
- *Simple operation*

* Available frequency range and/or the pre-programmed TV memories may differ depends on version. See p. 85 for details.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains important operating instructions for the IC-E90.

EXPLICIT DEFINITIONS

The explicit definitions below apply to this instruction manual.

WORD	DEFINITION
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.

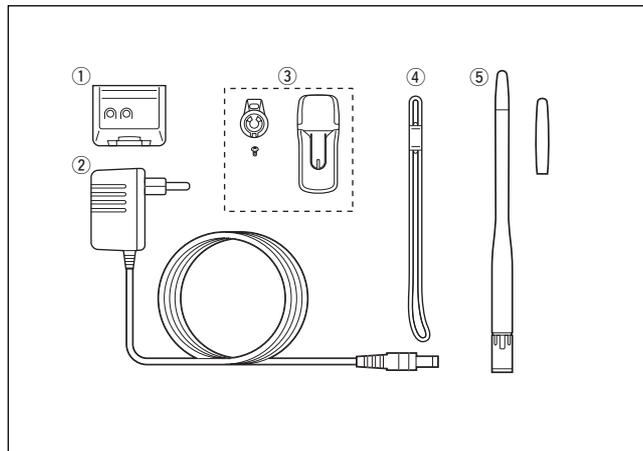
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SUPPLIED ACCESSORIES

Accessories included with the transceiver: Qty.

- ① Li-Ion battery pack (BP-217) 1
- ② Wall charger* (BC-110D/DR) 1
- ③ MB-83 (Swivel belt clip) 1 set
- ④ Handstrap..... 1
- ⑤ Antenna (FA-S6270D; with 50 MHz band adapter) .. 1 set

* Not supplied with some versions.



CAUTIONS

⚠ WARNING RF EXPOSURE! This device emits Radio Frequency (RF) energy. Extreme caution should be observed when operating this device. If you have any questions regarding RF exposure and safety standards please refer to the Federal Communications Commission Office of Engineering and Technology's report on Evaluating Compliance with FCC Guidelines for Human Radio Frequency Electromagnetic Fields (OET Bulletin 65)

⚠ 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 1 to 2 in (2 to 5 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.

⚠ DAMAGE WILL BE OCCUR IF THESE LIMITS ARE EXCEEDED, when charging the IC-E90 with the BP-217 battery pack from the external DC power jack on the radio, the DC input voltage must between **10.5 to 11.5 V**, except when using optional CP-19R Cigarette Lighter cable.

NEVER connect the transceiver to an AC outlet . Such a connection will damage the transceiver.

NEVER connect the transceiver to a power source that is DC fused at more than 5 A. Accidental reverse connection will be protected by this fuse, but higher fuse values will not give protection against such accidents and the transceiver will be ruined.

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

AVOID using or placing the transceiver in direct sunlight or in areas with temperatures below -10°C ($+14^{\circ}\text{F}$) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

RF output power is automatically reduced to 0.5 W (Low) in cold environments (below 0°C) while operating with the BP-217 Li-Ion battery pack, to protect the battery pack. Keep the battery pack warm, then select high power again. (p. 28)

The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

Even when the transceiver power is OFF, a slight current still flows in the circuits. Remove the battery pack or case from the transceiver when not using it for a long time. Otherwise, the battery pack or installed batteries will become exhausted.

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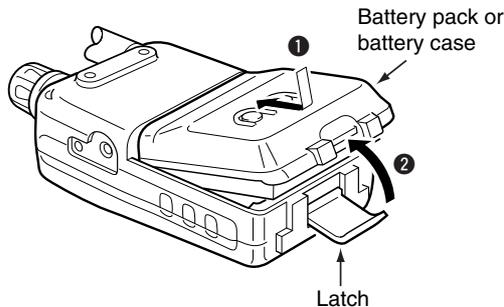
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■ Installing the battery pack

- ① Open the latch. Then, attach the BP-217 Li-Ion battery pack or optional BP-216 battery case.
 - Be sure to observe the correct direction.
 - Charge Li-Ion battery pack before use.
- ② Lock the latch.



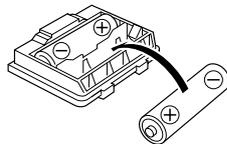
NOTE: The battery pack is provided uncharged. BE SURE to charge the battery before using it with the transceiver.

◇ Installing the alkaline batteries

Install 2 R6 (AA) size alkaline batteries into BP-216.

- Be sure to observe the correct polarity.

Keep battery contacts clean. It's a good idea to clean battery terminals once a week.

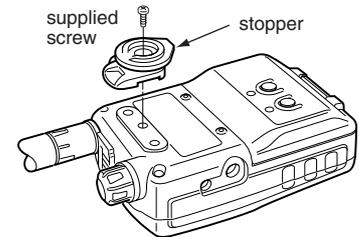


■ Accessory attachment

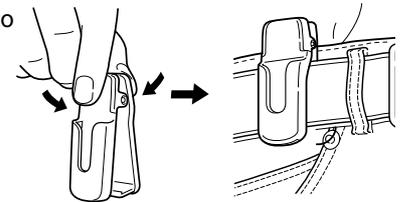
◇ Attaching the swivel belt clip

The supplied swivel belt clip is useful for easy attaching/detaching the transceiver to/from the belt.

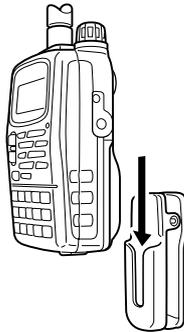
- ① Attach the stopper to the transceiver with the supplied screw.



- ② Clip the belt clip to your belt.



- ③ Insert the transceiver to the end of the clip as shown at right.

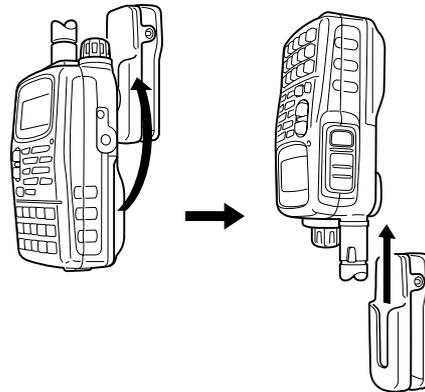


- Once the transceiver is locked in place, it will swivel 360 degrees as shown at right.



CAUTION!
HOLD THE TRANSCEIVER TIGHTLY, WHEN ATTACHING OR REMOVING THE TRANSCEIVER TO/FROM THE BELT CLIP.

If the transceiver accidentally dropped and the swivel belt clip's stopper is scratched, the swivel belt clip may not work properly.



To remove:

- ④ Turn the transceiver upside down, and then lift to release the transceiver from the belt clip as shown at upper right.

◆ **Handstrap**

Slide the handstrap through the loop on the top of the belt clip as shown at right.



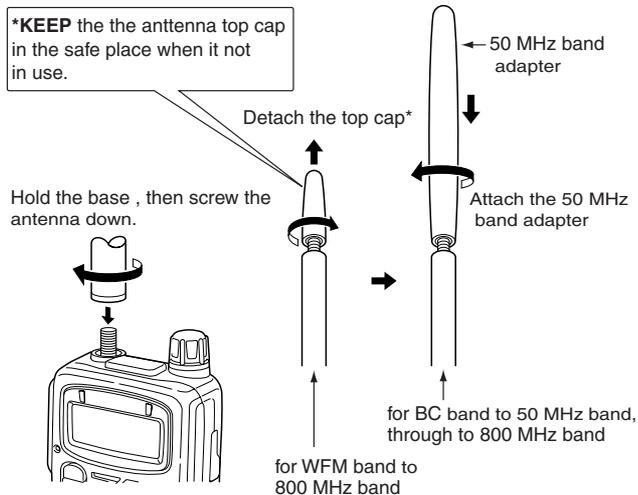
1 QUICK REFERENCE GUIDE

◇ Installing the antenna

Insert the supplied wide band antenna into the antenna connector and screw down the antenna as shown below.

•50 MHz band adapter

Attach the 50 MHz band antenna adapter before operating 50 MHz band or receiving the signal below 50 MHz band. Be sure to use this 50 MHz band adapter during the operation below 50 MHz band. You can operate the whole band with this adapter.



⚠ CAUTION!

TRANSMITTING WITHOUT AN ANTENNA MAY DAMAGE THE TRANSCEIVER.

NEVER HOLD the antenna when carrying the transceiver.

KEEP the jack covers attached when the jack is not in use, to avoid bad contacts from dust and moisture.

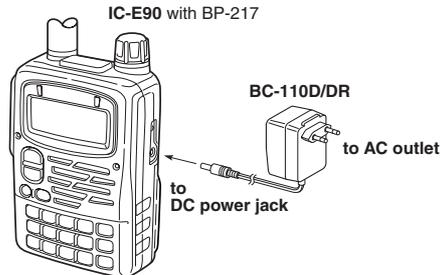


NOTE:

Commercially available antennas may increase transceiver performance. An optional AD-92SMA ANTENNA CONNECTOR ADAPTER is available to connect an external antenna with a BNC connector.

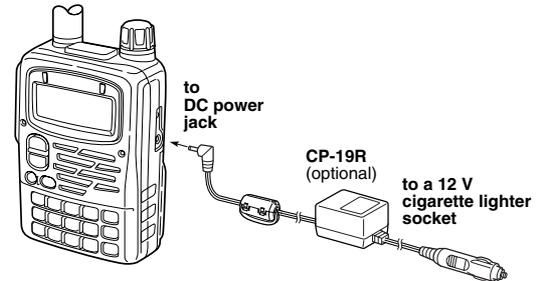
■ Charging the Li-Ion battery pack

◇ Charging with the wall charger



- ① Push and hold [PWR] to turn the transceiver power OFF.
- ② Insert the charger plug into the DC power jack of the transceiver.
- ③ Plug the charger into an AC wall outlet.
- ④ Charging starts and the battery indicator “■” on the display blinks.
- ⑤ It takes approximately 15 hours to charge an empty BP-217 Li-Ion battery pack.
- ⑥ Unplug the charger from the AC wall outlet when charging is completed.

◇ Charging with the CP-19R Cigarette Lighter cable (option)



- ① Insert the cigarette lighter adapter cable into the DC power jack of the transceiver.
- ② Connect the CP-19R cigarette lighter adapter cable to the cigarette lighter socket.
- ③ Charging starts and the battery indicator on the display blinks.

NOTE:

- The BP-217 can be charged while you operating the transceiver. (p. 5).
- Charging will be suspended during transmitting of the transceiver.
- “CHG_F” appears when the charging is completed with the power turned OFF.
- **NEVER** connect the cigarette lighter socket or external regulated DC power supply directly to the transceiver. Such a connection will damage the transceiver.
- Remove CP-19R from the transceiver when not using it. Otherwise, the vehicle battery will become exhausted.

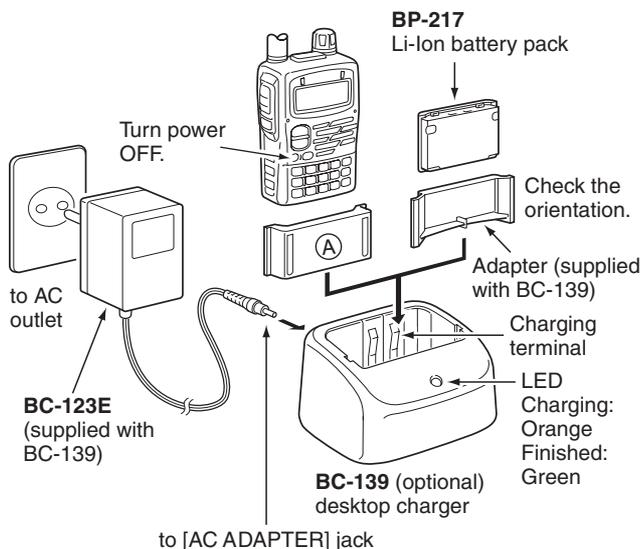
1 QUICK REFERENCE GUIDE

■ Rapid charging

The optional BC-139 provides rapid charging of the battery pack.

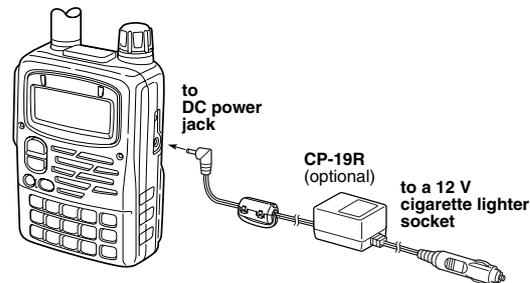
CAUTION: To avoid damage to the transceiver, turn the transceiver OFF while charging.

- **Charging period:** 2.5 hours (w/BP-217)



■ External power operation

An optional CP-19R cigarette lighter cable can be used for external power operation from cigarette lighter socket.



- External power supply range is between **5.5–11.0 V DC**. **NEVER** connect **over 11.5 V DC** directly into the DC power jack of the transceiver. **DAMAGE WILL OCCUR IF THESE LIMITS ARE EXCEEDED.**
- **BE SURE** to use the **CP-19R** when connecting a regulated 12 V DC power supply.
- The maximum output power is 5.0 W regardless of the power supply voltage.
- Remove the cables from the transceiver when not using it. Otherwise, the vehicle battery will become exhausted

Count on us!

#02 Europe

#10 Europe-1

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