



INSTRUCTION MANUAL

VHF/UHF FM TRANSCEIVER

IC-E91

Icom Inc.




FOREWORD

Thank you for purchase of this fine Icom product. We understand you have a choice of many different radios in the market place. Many hours of research and development went into the design of your IC-E91, following Icom's philosophy of "technology first."

The IC-E91 VHF/UHF FM TRANSCEIVER is designed with Icom's superior technology and craftsmanship combining traditional analog technologies with the new digital technologies, Digital Smart Technologies for Amateur Radio (D-STAR), for a balanced packaged.

With proper care, this product should provide you with years of trouble-free operation. We want to take a couple of moments of your time to thank you for making your IC-E91 your radio of choice, and hope you agree with Icom's philosophy of "technology first."

EXPLICIT DEFINITIONS

WORD	DEFINITION
 WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	Recommended for optimum use. No risk of personal injury, fire or electric shock.

FEATURES

- *DV mode (Digital voice + Low-speed data communication) operation is ready*
 - *GPS receiver connection*
 - *Text message and call sign exchange*
(Optional UT-121 DIGITAL UNIT is required.)
- *Simple band scope*
- *Dualwatch operation*
- *Optional PC remote control*

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-E91.

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PRECAUTIONS

⚠ WARNING RF EXPOSURE! This device emits Radio Frequency (RF) energy. 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 5 to 10 cm away from the lips and the transceiver is vertical.

⚠ WARNING! NEVER operate the transceiver with a earphone, headphones 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.

NEVER connect the transceiver to a power source of more than 16 V DC. This will ruin the transceiver.

NEVER connect the transceiver to a power source using reverse polarity. This will ruin the transceiver.

NEVER expose the transceiver to rain, snow or any liquids. The transceiver may be damaged.

NEVER operate or touch the transceiver with wet hands. This may result in an electric shock or damage the transceiver.

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

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

BE CAREFUL! The transceiver will become hot when operating it continuously for long periods.

AVOID using or placing the transceiver in direct sunlight or in areas with temperatures below -20°C or above $+60^{\circ}\text{C}$.

Place the unit in a secure place to avoid inadvertent use by children.

AVOID the use of chemical agents such as benzine or alcohol when cleaning, as they can damage the transceiver's surfaces.

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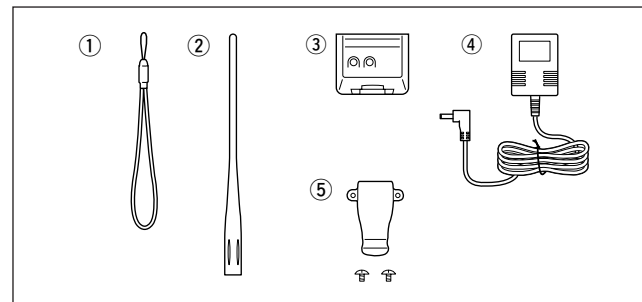
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SUPPLIED ACCESSORIES

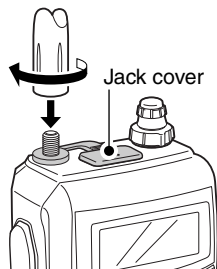
The following accessories are supplied with the transceiver.

① Hand strap	1
② Antenna	1
③ Battery pack*	1
④ Battery charger*	1
⑤ Belt clip (with screws)	1 set

*Not supplied with some versions.



■ Antenna



Insert the supplied antenna into the antenna connector and screw down the antenna as shown at left.

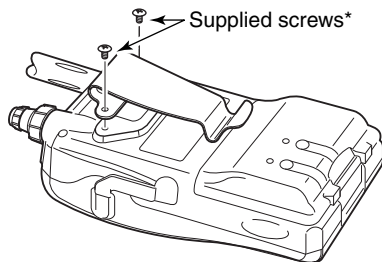
NEVER carry the transceiver by holding the antenna.

KEEP the jack cover attached when jack is not in use to protect the connector from dust and moisture.

✓ For your information

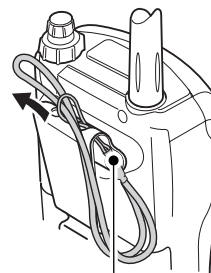
Third-party antennas may increase transceiver performance. An optional AD-92SMA ANTENNA CONNECTOR ADAPTER is available to connect an antenna with a BNC connector.

■ Belt clip



***NOTE:**
USE the supplied screws only. Using screws longer than specified could damage the transceiver.

■ Handstrap



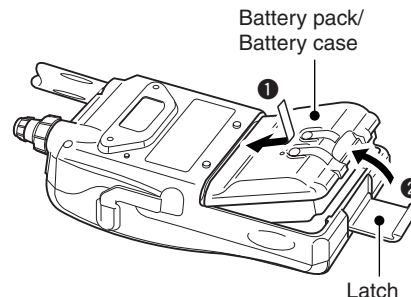
Handstrap

Slide the handstrap through the loop on the top of the belt clip as illustrated at left to facilitate carrying the transceiver.

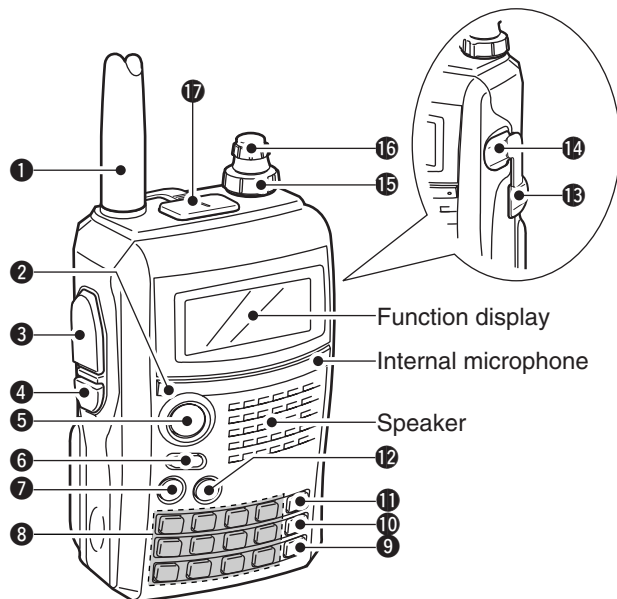
■ Battery pack

Attach the Li-ion battery pack (BP-217) or battery case (BP-216) as illustrated below.

- Charge the Li-ion battery pack before use. (pgs. 10, 11)



■ Front, top and side panels



1 ANTENNA CONNECTOR (p. 1)

Connects the supplied antenna.

- An optional AD-92SMA adapter (p. 121) is available for connecting an antenna with a BNC connector.

2 TX/RX INDICATOR [TX/RX] (p. 24)

Lights green while receiving a signal or when the squelch is open; lights red while transmitting.

3 PTT SWITCH [PTT] (p. 24)

Push and hold to transmit, release to receive.

4 SQUELCH KEY [SQL]

- ➔ Push and hold to open the squelch temporarily and monitor the operating frequency. (p. 22)
- ➔ While pushing and holding this key, rotate **[DIAL]** to adjust the squelch level. (p. 21)

5 MENU/LOCK KEY [MENU/LOCK]

- ➔ Push to toggle menu screen indication ON and OFF. (p. 85)
- ➔ Push and hold for 1 sec. to toggle the lock function ON and OFF. (p. 25)

6 POWER KEY [PWR]

Push and hold for 1 sec. to turn the transceiver power ON and OFF.

7 MAIN/DUAL KEY [MAIN/DUAL]

- ➔ Push to select the main band between A and B bands. (p. 26)
- ➔ Push and hold for 1 sec. to toggle the dualwatch function ON and OFF. (p. 25)

8 KEYPAD (pgs. 4, 5)

⑨ CALL/RX→CS KEY [CALL]/[RX→CS](CALL)

- ➔ Push to select the call channel/TV channel. (p. 16)
- ➔ During DV mode operation, push and hold for 1 sec. to set the received call signs (station and repeaters) for operation. (p. 47)
- ➔ Enters or sends the DTMF code “C.” (pgs. 103, 104)

⑩ MEMORY/SELECT MEMORY WRITE KEY [MR]/[S.MW](MR)

- ➔ Push to select memory mode. (p. 15)
- ➔ During memory mode operation, push to toggle between memory and memory bank mode. (p. 68)
- ➔ Push and hold for 1 sec. to enter select memory write mode. (p. 64)
- ➔ Enters or sends the DTMF code “B.” (pgs. 103, 104)

⑪ VFO/MHz KEY [VFO]/[MHz](VFO)

- ➔ Push to toggle select VFO mode. (p. 15)
- ➔ During VFO mode operation, push and hold for 1 sec. to select and toggle 1 MHz and 10 MHz tuning steps (p. 18)
- ➔ Enters or sends the DTMF code “A.” (pgs. 103, 104)

⑫ BAND KEY [BAND]

- ➔ During VFO mode operation, push to select an operating frequency band. (pgs. 16, 17)
- ➔ During memory bank mode, push to select a memory bank. (p. 68)
- ➔ Enters or sends the DTMF code “D.” (pgs. 103, 104)

⑬ EXTERNAL DC IN JACK [DC IN]

- ➔ Connects the supplied wall charger, BC-167A/D, to charge the attached battery pack. (p. 10)
- ➔ Connect an external DC power supply through the optional CP-19R or OPC-254L for external DC operation. (p. 13)

⑭ DATA JACK [DATA]

- Connects a PC through the optional data communication cable, OPC-1529R, for low-speed data communication or control the transceiver remotely using the optional RS-91 (OPC-1529R is supplied). (p. 56)

⑮ VOLUME CONTROL [VOL]

- Rotate to adjust the audio output level. (p. 20)

⑯ CONTROL DIAL [DIAL]

- ➔ Rotate to tune the operating frequency. (p. 18)
- ➔ During memory mode, rotate to select the memory channel. (pgs. 15, 64)
- ➔ While pushing and holding **[BAND]**, selects the operating band in VFO mode. (p. 18)
- ➔ While scanning, changes the scanning direction. (p. 75)
- ➔ While pushing and holding **[SQL]**, sets the squelch level. (p. 21)
- ➔ While pushing and holding **[BAND]**, selects the programmed bank in memory mode. (p. 68)







⑰ EXTERNAL SPEAKER/MICROPHONE JACK [MIC/SP]

- Connect an optional speaker-microphone or headset, if desired.

See page 121 for a list of available options.

2 PANEL DESCRIPTION

◆ KEYPAD

KEY	Pushed momentarily	Pushed and held for 1 sec.
	<ul style="list-style-type: none"> • Inputs digit '1' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "1." 	<ul style="list-style-type: none"> • Displays the simple band scope for a single sweep. (p. 23)
	<ul style="list-style-type: none"> • Inputs digit '2' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "2." 	<ul style="list-style-type: none"> • Starts a scan. (p. 75)
	<ul style="list-style-type: none"> • Inputs digit '3' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "3." 	<ul style="list-style-type: none"> • Toggles the transmit output power between high and low. (p. 24) <ul style="list-style-type: none"> - "LOW" appears when low power is selected. - While pushing and holding this key, with [DIAL] rotation selects the output power.
	<ul style="list-style-type: none"> • Inputs digit '4' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "4." 	<ul style="list-style-type: none"> • Activates the following duplex functions in order. <ul style="list-style-type: none"> - Minus duplex operation— "-DUP" appears. - Plus duplex operation— "+DUP" appears. - Simplex operation— no duplex indicator appears. - While pushing and holding this key, with [DIAL] rotation selects the duplex function.
	<ul style="list-style-type: none"> • Inputs digit '5' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "5." 	<ul style="list-style-type: none"> • Turn the frequency skip function ON and OFF in VFO mode, or set the memory channel as the following skip channel in memory mode in order (p. 79). <ul style="list-style-type: none"> - Skip channel— "SKIP" appears. - Frequency skip channel— "PSKIP" appears. - Non-skip channel— no skip indicator appears.
	<ul style="list-style-type: none"> • Inputs digit '6' for frequency input, memory channel selection, etc. • While pushing [PTT], this key sends the DTMF code "6." 	<ul style="list-style-type: none"> • Turn the memory name or bank name indication ON and OFF. (p. 70)

Count on us!

#22 Europe

<Intended Country of Use>			
<input checked="" type="checkbox"/> GER	<input type="checkbox"/> FRA	<input checked="" type="checkbox"/> ESP	<input checked="" type="checkbox"/> SWE
<input checked="" type="checkbox"/> AUT	<input checked="" type="checkbox"/> NED	<input checked="" type="checkbox"/> POR	<input checked="" type="checkbox"/> DEN
<input type="checkbox"/> GBR	<input checked="" type="checkbox"/> BEL	<input checked="" type="checkbox"/> ITA	<input checked="" type="checkbox"/> FIN
<input checked="" type="checkbox"/> IRL	<input checked="" type="checkbox"/> LUX	<input checked="" type="checkbox"/> GRE	<input type="checkbox"/> SUI
<input type="checkbox"/> NOR			

#23 UK

<Intended Country of Use>			
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<input type="checkbox"/> AUT	<input type="checkbox"/> NED	<input type="checkbox"/> POR	<input type="checkbox"/> DEN
<input checked="" type="checkbox"/> GBR	<input type="checkbox"/> BEL	<input type="checkbox"/> ITA	<input type="checkbox"/> FIN
<input type="checkbox"/> IRL	<input type="checkbox"/> LUX	<input type="checkbox"/> GRE	<input type="checkbox"/> SUI
<input type="checkbox"/> NOR			

#24 Italy

<Intended Country of Use>			
<input type="checkbox"/> GER	<input type="checkbox"/> FRA	<input type="checkbox"/> ESP	<input type="checkbox"/> SWE
<input type="checkbox"/> AUT	<input type="checkbox"/> NED	<input type="checkbox"/> POR	<input type="checkbox"/> DEN
<input type="checkbox"/> GBR	<input type="checkbox"/> BEL	<input checked="" type="checkbox"/> ITA	<input type="checkbox"/> FIN
<input type="checkbox"/> IRL	<input type="checkbox"/> LUX	<input type="checkbox"/> GRE	<input type="checkbox"/> SUI
<input type="checkbox"/> NOR			

#30 France

<Intended Country of Use>			
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<input type="checkbox"/> AUT	<input type="checkbox"/> NED	<input type="checkbox"/> POR	<input type="checkbox"/> DEN
<input type="checkbox"/> GBR	<input type="checkbox"/> BEL	<input type="checkbox"/> ITA	<input type="checkbox"/> FIN
<input type="checkbox"/> IRL	<input type="checkbox"/> LUX	<input type="checkbox"/> GRE	<input type="checkbox"/> SUI
<input type="checkbox"/> NOR			

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