

**ICOM**

**INSTRUCTION MANUAL**

VHF TRANSCEIVER

**IC-F30LT**

UHF TRANSCEIVER

**IC-F40LT**

(U.S.A. versions)



**Icom Inc.**

---

## IMPORTANT

---

**READ ALL INSTRUCTIONS** carefully and completely before using the transceiver.

**SAVE THIS INSTRUCTION MANUAL!** This instruction manual contains important safety and operating instructions for the **IC-F30LT** and **IC-F40LT**.

---

## CAUTIONS

---

**NEVER** allow the antenna to come close to, or touch, exposed body parts, especially the face or eyes while transmitting.

**NEVER** allow children to touch the transceiver.

**NEVER** operate the transceiver near unshielded electrical blasting caps or in an explosive area.

**NEVER** expose the transceiver to rain, snow or extreme moisture.

**NEVER** disassemble the transceiver. Incorrect reassembly may result in a fire hazard or electric shock.

**AVOID** the use of chemical agents such as benzene or alcohol when cleaning – use a water-dampened cloth only.

---

# FOREWORD

---

Thank you for purchasing the **IC-F30LT VHF** or **IC-F40LT UHF TRANSCEIVER**. These transceivers employ Icom's state-of-the-art technology and are built to provide communications you can count on in the demanding Land Mobile environment.

## ■ Intrinsicly safe type


The IC-F30LT versions #11, #12 and IC-F40LT versions #11–#13 are intrinsicly safe when operating under the conditions described below:

In Classes I, II and III, division 1, groups C, D, E, F and G atmospheric conditions.

## ■ Nonincentive type

The IC-F30LT versions #11, #12 and IC-F40LT versions #11–#13 are nonincentive when operating under the conditions described below:

In Class I, division 2, groups A, B, C and D atmospheric conditions. Max. temperature range is T4A.

 **NOTE:** See ■ *Unpacking in 5 OPTIONS AND SPECIFICATIONS* for a list of supplied accessories.

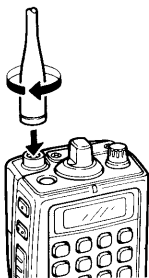
# 1

## PANEL DESCRIPTION

### ANTENNA AND CONNECTOR

Connect the antenna to the connector **BEFORE** operation as illustrated below.

- Screw the antenna onto the antenna connector in a clockwise direction until it is hand-tight.



### DEALER-PROGRAMMABLE SWITCHES/KEYS

[•]/[••]/[Red]/[P0]/[P1]/[P2]/[↵] (p. 7)  
Can each be programmed for one of several functions by your Icom Dealer.

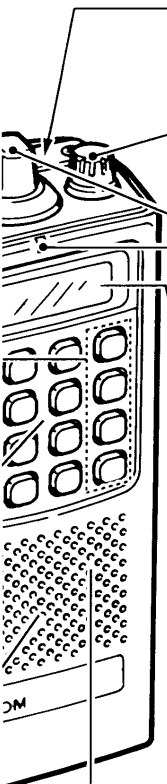
### PUSH-TO-TALK SWITCH [PTT]

(p. 5)  
Push and hold to transmit; release to receive.

### KEYPAD

Used to enter DTMF codes, the operating channel, select channel banks, etc., depending on programming. [P0], [P1], [P2] and [↵] are dealer-programmable keys and can each be programmed for one of several functions by your Icom Dealer (p. 7).

SPEAKER



**MULTI-CONNECTOR** (p. 10)

Attach here for connection to the EM-81 SPEAKER-MICROPHONE, etc.

**VOLUME CONTROL** (p. 3)

Turns the transceiver power ON and OFF and adjusts the audio output.

**ROTARY SELECTOR** (p. 4)

Selects the operating channel. The home position (ch 1) may start scanning. See *SCAN FUNCTION* on p. 7.

**ACTIVITY LED** (pgs. 5-7)

Lights red while transmitting;  
lights green while receiving;  
flashes red slowly when battery capacity is becoming low;  
flashes red rapidly when battery capacity is low;  
flashes orange when receiving a 2-TONE code. (2-TONE decode)

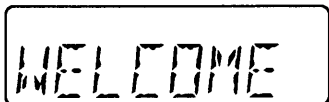
**FUNCTION DISPLAY**

Indicates the selected channel, power output, battery condition, etc.

**MICROPHONE**

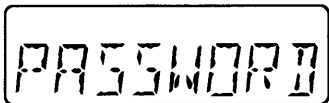
## Turning power ON

- ① Rotate the volume control to the 12 o'clock position.
  - A power-up alert tone sounds for about 1 second and an opening message may appear.

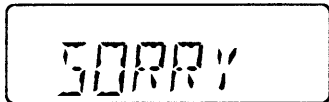


Opening message may differ from this.

- ② If the transceiver is programmed for a startup passcode, input digit codes as directed by your system operator.



Input your passcode if this display appears.



When an incorrect code is input, this display appears. Turn power OFF and start over in this case.

- ③ To turn power OFF, rotate the volume control fully counterclockwise until a click is heard .

**NOTE:** If the power-up alert tone does not sound or if a second low alert tone sounds, turn the transceiver OFF, check the battery, then turn the transceiver back ON. If the power-up alert tone still does not sound, charge the battery or replace it.

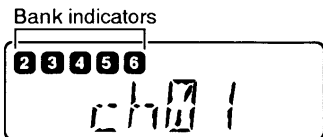
## ■ Channel selection

One of the following methods may be programmed for channel selection:

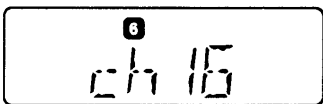
### ◇ ROTARY SELECTOR-TYPE

- ① Push the BANK key, or a digit key, [1]–[6], (according to your system operator's instructions) to select the desired bank.


- When no banks are programmed, skip this step.

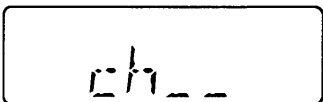


- ② Select the desired channel using the rotary selector.



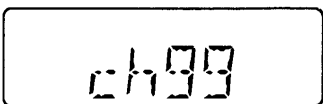
### ◇ KEYPAD ENTRY-TYPE

- ① Push a channel key.
- The channel key may be assigned to the  key.



- ② Push a 2-digit channel number.

- When an incorrect channel number is entered, the previous channel appears.



Non-bank type indication

# Receiving and transmitting

**NOTE:** Transmitting without an antenna may damage the transceiver. See p. 1 for antenna attachment.

### Receiving:

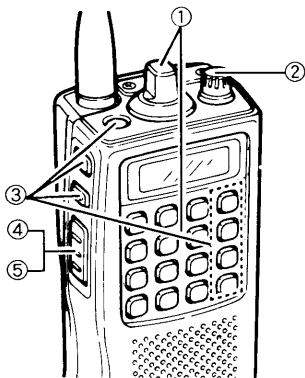
- ① Select a channel. See *Channel selection* on page 4.
- ② Listen for a transmission and adjust the volume to a comfortable listening level.
  - The activity LED lights green while receiving a signal.
  - When no transmission is heard, push and hold monitor to adjust the volume (your transceiver may not be programmed with the monitor function).

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

### Transmitting:

Wait for the channel to become clear, then:


- ③ Push a programmed switch (e.g. to transmit a tone, etc.) if instructed to do so by your system operator.
  - Refer to **DEALER-PROGRAMMABLE FUNCTIONS** on p. 7.
- ④ While pushing and holding [PTT], speak into the microphone at a normal voice level.
  - The activity LED lights red while transmitting.
  - **DO NOT** hold the transceiver too close to your mouth or speak too loudly. This may distort the signal.
- ⑤ Release [PTT] to receive.






## ■ Transmitting notes

### ◇ LOW BATTERY CONDITION

-When the activity LED flashes red slowly, and/or “” appears and does not flash, battery capacity is becoming low and transmitting is impossible.

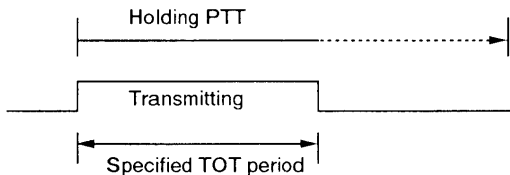
-When the activity LED flashes red rapidly, and/or “” appears and flashes, battery capacity is nearly exhausted.

### ◇ TRANSMITTING WHILE SCANNING

If the scan function is assigned to channel 1 and scan is activated, you can transmit on a pre-programmed channel during the scan (depending on programming, transmit may be inhibited).

### ◇ TIME-OUT TIMER (TOT)

After continuous transmission for a pre-programmed period, the time-out timer is activated causing the transceiver to stop transmitting and automatically select receive.




### ◇ PENALTY TIMER

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

## General

Ask your Icom Dealer or System Operator for details concerning your transceiver's programming. When available, programmed functions are assigned to one of [•], [••], [Red], [P0], [P1], [P2] or [↵].

 In the following explanations, [S] is meant to stand for one of the dealer-programmable switches/keys (which one depends on the transceiver's programming).

## Channel selection

### ◇ BANK FUNCTION

This function enables you to change memory "banks." There are 6 memory banks available, each with a maximum of 16 programmable channels.

*To change memory banks:*

Push [S] one or more times; or push a digit key, [1]–[6].

- **2** – **6** indicate banks 2 to 6 (there is no indicator for bank 1).

### ◇ PRIORITY FUNCTION

This allows you to access a channel quickly and easily.

*To select a pre-programmed priority channel:*

Push [S] momentarily.

- The pre-programmed priority channel is automatically selected regardless of the rotary selector position.
- Push and hold [PTT] to transmit if desired.
- Rotate the rotary selector to exit the priority channel.

## ◇ SCAN FUNCTION

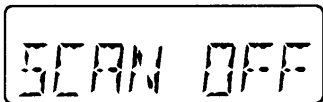
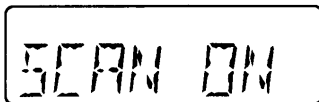
- ① Push [S] momentarily; or set the rotary selector to the home position (channel 1).
  - The activity LED flashes green.
  - Scan pauses when a signal is received.
  - Transmitting may be possible depending on programming.
- ② Push a digit key to select a different scan list (scanning channels group) if necessary.
- ③ To stop the scan, push [S] momentarily again or rotate the channel selector off of the home position.

## ◇ SCAN LIST MODIFICATION (scan lockout)

A selected channel can be subtracted from or added to a scan list (scanning channels group).

"Bank" channels and scan list channels are related so that channels which do not appear in a "bank" cannot be added to or subtracted from a list.

- ① Select the desired channel to be added or subtracted.
- ② Push and hold [S] to add or subtract the selected channel from the scan list.
  - One of the following displays appears to indicate that the selected channel was added to or subtracted from the scan list, respectively.



- Some channels cannot be added or subtracted to a list because of dealer-programming.

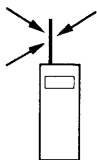
### 3 DEALER-PROGRAMMABLE FUNCTIONS

## Receive

### ◇ MONITOR FUNCTION

The monitor function allows you to open the transceiver's squelch manually to check whether a channel is busy or not. The transceiver has 2 squelch systems as follows.

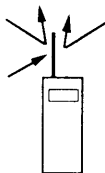
*Noise squelch:*



all signals  
are  
received

The squelch mutes audio **ONLY** when no carrier is present. You can receive (or monitor) any signals on a channel.

*Tone squelch:*



only signals  
containing  
the proper  
tone are  
received

The squelch mutes **ALL** signals except those directed to you. Therefore, you should check a channel's condition (busy or not) with the monitor function before transmitting.

- Push [S] to turn OFF the tone squelch for reception of all signals (even those not directed to you specifically).
- Push and hold [S] for 2 sec. or more to monitor all signals (or noise) regardless of the active squelch system.
  - After releasing [S], tone squelch is activated.

# ■ Transmit

## ◇ OUTPUT POWER SELECTION

This function allows you to change the output power of individual channels. Low power conserves battery power; high power output allows longer distance communications.

Push [S] momentarily to change the power output.

- "LOW" appears when one of the low output powers is selected.
- Push and hold [S] for 2 sec. to return to the original power output.
- **NOTE:** On some channels, high power cannot be selected.

## ◇ DTMF TRANSMISSION

This function allows you to send a pre-programmed DTMF code to control a repeater, open another transceiver's squelch, etc.

### *Manual transmission:*

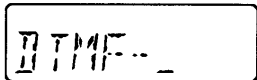
Push desired digit keys in sequence while pushing [PTT].

- Pushing [PTT] may not be necessary depending on programming.

### *Automatic pre-programmed transmission:*

-CH SEL TYPE\*: Rotary selector

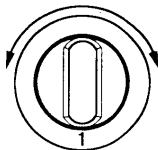
Push [S], then a digit key (1 to 8).



Appears after pushing [S]

-CH SEL TYPE\*: Keypad entry

Set the rotary selector (1 to 8), then push [S].



\*See *Channel Selection*, p. 4.

---

### 3 DEALER-PROGRAMMABLE FUNCTIONS

#### ◇ DTMF RE-DIAL FUNCTION

This function allows you to transmit the last-used DTMF code at the push of a switch/key.

*To activate the function:*

Push [S] momentarily.

- The previously transmitted DTMF code is automatically transmitted.
- If no code has been transmitted since turning the power ON, this function does not activate.

#### ◇ EMERGENCY FUNCTION

The emergency function allows you to send your ID quickly and easily to your Base Station, etc. in case of emergency.

*To activate the emergency function:*

Push and hold [S] for 1 sec.

- The transceiver selects a pre-programmed channel, then sends an emergency signal to your Base Station.
- The pre-programmed channel remains selected until a control signal is received from the Base Station or power is turned OFF.
- The emergency call is repeatedly transmitted at pre-programmed intervals.

#### ◇ TALK AROUND FUNCTION

The talk around function changes duplex channels to simplex channels. **Duplex** allows you to contact your Base Station, repeaters, etc.; **Simplex** allows you to contact other portable transceivers directly (portable-to-portable contact).

---

*To activate the talk around function:*

Push and hold [S] for 1 sec. (for portable-to-portable communications).

- Push [S] momentarily to turn the function OFF (for portable-to-Base Station, -repeater, etc.).

### ◇ VOX FUNCTION

This function provides hands-free operation.

*To activate the function:*

Turn the power OFF and connect an optional headset to the multi-function connector.

- Speak into the headset to transmit automatically without pushing [PTT]

## ■ Others

### ◇ KEYPAD LOCK FUNCTION

This function allows you to lock the keypad to prevent accidental input.

*To activate the function:*

Push and hold [S] for 2 sec.

- "🔑" appears, the keypad is electronically locked and no keys can be accessed.
- The following functions and controls can be operated normally: PTT, call, emergency, lock, DTMF re-dial, rotary selector, volume and power ON/OFF.
- Push and hold [S] for 2 sec. again to turn the function OFF.

---

### 3 DEALER-PROGRAMMABLE FUNCTIONS

#### ◇ CUSTOM PROGRAM

Custom programming of functions provides tremendous operating versatility. Custom programs can be written to meet almost any operating needs.

*To activate a custom program:*

Push [S].

- Operation proceeds according to the nature of the custom program.


#### ◇ MAN DOWN FUNCTION

This function provides a measure of safety when working in hazardous environments, etc., automatically sending an emergency signal to your Base Station. This is particularly useful if you get knocked down and become unconscious, etc. Ask your dealer when you require this function as an internal switch is necessary.

*To activate the function:*

No action is necessary on your part – an emergency signal is automatically sent after a pre-programmed period in which the transceiver remains in a **horizontal** position.

- To deactivate the function, turn the power OFF, then ON again.





 **NOTE: BE CAREFUL!** If your transceiver is programmed with this function, **DO NOT** lie it down on its side while the power is turned ON, otherwise, an emergency signal will be sent unnecessarily.



## ■ Programmable switch reference

Use this page to record the functions which have been assigned to the dealer-programmable switches on your transceiver. (Use a pencil as your transceiver may be reprogrammed in the future.)

The diagram shows a central transceiver with four programmable switches. Lines connect these switches to four record boxes on the right. The switches are: a circular button (top left), a rectangular button with a dot (middle left), a rectangular button with two dots (bottom left), and a square button with a directional arrow (bottom right). The record boxes are labeled P0, P1, P2, and the arrow button respectively. Each box has three horizontal lines for text entry.

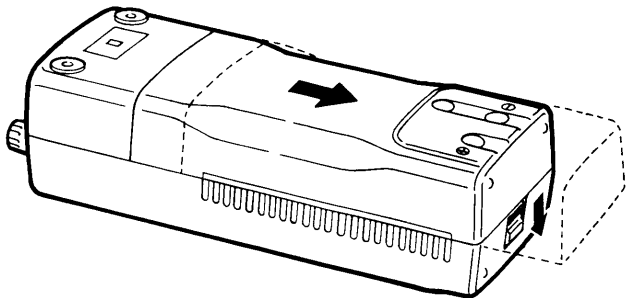
	_____	<b>P0</b>	_____
	_____		_____
	_____		_____
	_____	<b>P1</b>	_____
	_____		_____
	_____		_____
	_____	<b>P2</b>	_____
	_____		_____
	_____		_____
			_____
			_____
			_____

## ■ Battery pack replacement

Before replacing the battery pack, the volume control **MUST** be rotated fully counterclockwise, until a click is heard, to turn the power OFF.

- To *REMOVE* the battery pack from the transceiver:  
Push and hold the battery pack release button forward (in the direction of the transceiver's front panel), then slide the battery off the transceiver.
- To *ATTACH* the battery pack to the transceiver:  
Align the 4 holes in the battery pack with the 4 prongs on the exposed transceiver chassis, then slide the battery pack until it snaps into place.

See diagram below.



---

## ■ Cautions


**NEVER** use an unauthorized battery pack or charger. This may damage the transceiver and/or invalidate the warranty.

**NEVER** discard a used battery pack into a fire. Internal battery gas may cause an explosion. Nickel-cadmium sealed battery packs should be delivered to your dealer for proper disposition.

**NEVER** immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry.

**NEVER** short terminals of the battery pack. Internal components may become damaged. Current may flow into nearby metal objects, so be careful when placing battery packs in handbags, etc.

**AVOID** charging battery packs in extreme cold (under +32°F) or extreme heat (over +104°F). The battery pack may not fully charge under these conditions.

 **CAUTION:** The CM-141 BATTERY PACK must be used for the intrinsically safe versions, otherwise the transceiver will NOT be intrinsically safe.

---

## 4 BATTERY PACKS

### ■ Charging

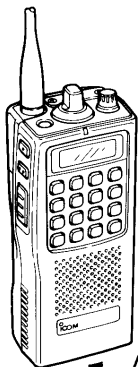
Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation.\*

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

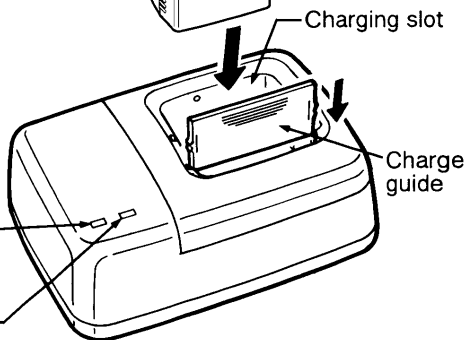
- ① Connect the AC adapter (supplied with a desktop charger) between a domestic AC power outlet and the desktop charger.
  - The [PWR] indicator lights.
- ② Insert the charge guide in its proper position (refer to the charger's instruction manual).
- ③ Insert the transceiver with attached battery pack (or the battery pack by itself) into the charger.
  - The [CHG] indicator lights.
- ④ When charging is complete, the charging indicator [CHG] automatically turns OFF.

**\*NOTE:** Be sure and read the instructions supplied with the optional BM-96 or BM-97 DESKTOP CHARGER.

• **Charging with the optional BM-96 or BM-97  
DESKTOP CHARGER**



IC-F30LT/F40LT  
with attached  
battery pack



Power  
indicator  
[PWR]

Charge  
indicator  
[CHG]

**Charging time: approx. 110 min. w/BM-96  
approx. 15 hrs. w/BM-97**

## ■ Unpacking

The following accessories are included with the transceiver:

	Qty.
① Battery pack (CM-140 or CM-141* <sup>1</sup> ).....	1
② Flexible antenna.....	1
③ Belt clip and screws* <sup>2</sup> .....	1 set

\*<sup>1</sup>Intrinsically safe version.

\*<sup>2</sup>Some versions do not include a belt clip.

## ■ Options

### • BATTERY PACKS AND CHARGERS

BATTERY PACK		CHARGING PERIOD		INTRINSICALLY SAFE
MODEL	VOLT./CAP.	BM-96	BM-97	
<b>CM-140</b> (Ni-Cd)	7.2 V 1400 mA	110 min.	15 hr.	No
<b>CM-141</b> (Ni-Cd)	7.2 V 1400 mA	110 min.	15 hr.	Yes
<b>CM-142</b> (Ni-MH)	7.2 V 1600 mA	120 min.	15 hr.	No

#### • **EM-81** SPEAKER-MICROPHONE

Provides convenient, lightweight operation while hanging the transceiver on your belt, etc.

#### • **MB-54** CHARGER MOUNT BRACKET

Allows you to secure the BM-96/BM-97 DESKTOP CHARGER inside a vehicle. A strap is supplied to support the transceiver during charging.

#### • **UT-83** 2-TONE UNIT

Provides the transceiver with 2-TONE decode capability.

# ■ Specifications

## GENERAL

- Frequency coverage\* : IC-F30LT 136–150 MHz  
146–174 MHz  
IC-F40LT 400–430 MHz  
430–470 MHz  
470–512 MHz

\*Varies according to version.

- Mode : 16K0F3E
- Useable temp. range : –30°C to +55°C  
–22°F to +131°F
- Dimensions : 60(W) × 140(H) × 42(D) mm  
(projections not included) 2.4(W) × 5.5(H) × 1.7(D) in
- Weight : 520 g (1.1 lb)

## TRANSMITTER

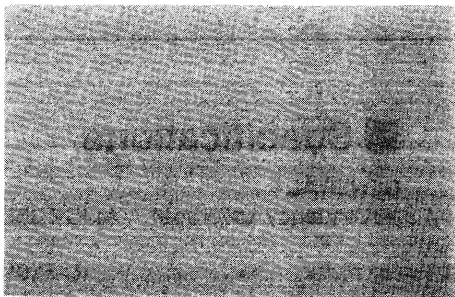
- Output power : High 5 W  
Low 2 or 1 W (dealer programmable)

## RECEIVER

- Sensitivity : 0.35  $\mu$ V  
(for 12 dB SINAD)
- Audio output power : 500 mW at 10% distortion with an 8  $\Omega$  load

All specifications are subject to change without notice or obligation.

**Count on us!**



**A-5290S-1US**

Printed in Japan

Copyright © 1994 by Icom Inc.



**Icom Inc.**

6-9-16, Kamihigashi, Hirano-ku, Osaka 547, Japan

---