



## VHF AND UHF TRANSCEIVERS

# IC-F51 IC-F61

(VHF Transceiver)

(UHF Transceiver)

**Waterproof**

1m depth for 30 minutes

**Intrinsically safe**  
versions available



Rugged

**MIL-STD 810**

**BIIS 1200**  
Compatible

Photo includes optional speaker-microphone, HM-138.

Icom Inc.





# Superior Water Supports De

Firefighters, Police, Security  
unique challenges, but all ha  
nications. Icom's IC-F51/F6  
easy to use. Rain or shine,  
ment.

### Dust and Waterproof protection equivalent to IP67\*

The gasket sealed waterproof housing provides superior dust and waterproof\*\* protection, equivalent to IP67. Reliable and dependable use in harsh conditions under water or dust, make the IC-F51 /IC-F61 the radio for all situations.



\* The IC-F51/F61 is equivalent to IP67 of the corresponding international standard IEC 529 (1989). \*\* 1m depth for 30 minutes.



### Built-in Tone signaling

Use the built-in CTCSS, DTCS, 2-Tone and 5-Tone capability to set up your own talk groups and quiet stand-by when other groups are talking. You can also set up selective calls to individuals or control a repeater.

### Multiple 5-Tone

Up to 8 5-Tone codes can be decoded on a single memory channel. This is perfect for professionals who require multiple district paging on one channel. When a matched tone is received, the following items are programmable for each code.

- Bell icon
- Answer back
- Stun
- Beep sound
- Auto transmit
- Scan
- ID decode
- Emergency cancel

### VHF AND UHF TRANSCIVERS

# IC-F51

VHF Transceiver

# IC-F61

UHF Transceiver



# Waterproof Protection Demanding Communication

Police and Public utilities. Each profession has its own requirements. They all have one thing in common: the need for reliable communication. Motorola offers a compact waterproof, MIL STD package, that's rugged. This radio keeps you in contact in nearly any environment.



## Li-Ion battery pack

The large capacity 1700mAh Lithium-Ion (Li-Ion) battery pack, BP-227 provides a practical 10 hours\* of operating time. Li-Ion batteries allow flexible charging and have almost no memory effect.

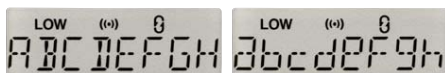
\* Typical operation Tx:Rx:Stand-by=5:5:90

## Up to 7 programmable buttons

The [P0]–[P3], [Red] and [Up], [Down] buttons are programmable to meet specific needs. The [Red] button on the top panel can be assigned as an emergency trigger.

## Alphanumeric display

The 8-character alphanumeric display shows channel, bank, tone code and scanning channel names on the display. 7 operational icons on the sub-line show various status at a glance.



Upper and lower case characters available.

## Wide range coverage and large channel capacity

The IC-F51 covers 136–174MHz and the IC-F61 covers 400–470MHz in one version. The 128 memory channels with 8 memory banks allows you to divide and store a variety of channels from local to wide area network channels. Wide, middle and narrow\* channel bandwidth is programmable to each channel.

(\* Programmable 25/12.5kHz or 20/12.5kHz Ch.)

## Compact body

56(W)×97(H)×36.4(D) mm compact body with durable, dependable construction, has been tested to MIL standard specifications. The compact design fits comfortably in your palm, and is easy to carry around.

## Built-in voice scrambler

The IC-F51/F61 has a built-in inversion type voice scrambler in all versions. When a more secure system is required, versions with a rolling type voice scrambler\* equivalent to the UT-110 are available.

\* Built-in, optional unit not required.

## BIIS 1200 Compatible

The following selective calling and data features are available with the BIIS system.

- 32 abbreviated call memories
- 7 group IDs
- 24-status Messages
- 8-character SDM (Short Data Message)
- RS-232C interface
- Position data transmission with a GPS

## ATEX Intrinsically safe version\*

An intrinsically safe version conforming to the 94/9/EC ATEX Directive, is suitable for use in hazardous areas where flammable gasses or liquids are used.

\* See specification page for applied classes.

## Other features

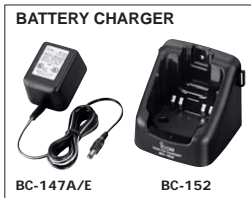
- Built-in compander, compatible with the IC-F31G and IC-F510 series
- 8 DTMF autodial memories
- Powerful 5W output for IC-F51, 4W output for IC-F61
- Normal and priority scans
- 2 step power saver
- Optional AA alkaline battery case, BP-226
- Optional waterproof peaker-microphone, HM-138
- Busy, repeater lockout functions
- Power ON password, and more...

## OPTIONS

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



**BP-226 BATTERY CASE:** AA (LR6)×5 alkaline cells. BP-226 is water-resistant, equivalent to IPX4.  
\* BP-226 is **not approved** as intrinsically safe.  
**BP-227/AX Li-Ion BATTERY PACK,** 7.2V/1700mAh Provides 10 hours operating time\* (approx.). BP-227AX is for ATEX version.  
Operating temp. range: -20°C to +60°C; -4°F to +140°F.  
\* Tx: Rx: standby=5:5:90.



**BC-152 DESKTOP CHARGER + BC-147A/E AC ADAPTER**  
Regularly charges the BP-227 in 9–10 hours.



**BC-119N DESKTOP CHARGER + AD-100 CHARGER ADAPTER + BC-145A/E/V AC ADAPTER**  
Rapidly charges the BP-227 in 2.5–3 hours.



**BC-121N MULTI-CHARGER + AD-100 CHARGER ADAPTER + BC-157 AC ADAPTER**  
Rapidly charges up to 6 battery packs (Six AD-100s are required) in 2.5–3 hours.  
**OPC-656 DC POWER CABLE;** For use with the BC-121N. (12–20V DC required).

These chargers are not approved as intrinsically safe. **Do not charge** the BP-227AX in an explosive atmosphere.



**HM-138:** Full sized, waterproof construction corresponds to IPX 7. (1 m depth /30 min.). Approved as intrinsically safe.



**MB-86:** Swivel type. Prevents accidental dropping from your belt.  
**MB-98:** Alligator type. Same as supplied.



**MB-96F:** Fixed type belt hanger for use with MB-98.  
**MB-96N:** Swivel type belt hanger.



**CP-17L:** CIGARETTE LIGHTER CABLE  
**OPC-515L:** DC POWER CABLE  
For use with the BC-152 or BC-119N. (12–16V DC required)

\* These cables are **not approved** as intrinsically safe.



**OPC-966:** RS-232C interface cable for connecting with a PC.

**ANTENNAS**  
**FA-S24V:** 136–150MHz (Blue ring)  
**FA-S59V:** 150–174MHz (Red ring)  
**FA-S27U:** 400–470MHz (Green ring)  
**FA-S56U:** 450–520MHz (Red ring)  
\* The FA-S56U is **not approved** as intrinsically safe.

**STUBBY ANTENNAS**  
**FA-S62VS:** 150–162MHz (Red ring)  
**FA-S63VS:** 160–174MHz (Green ring)  
**FA-S57US:** 450–490MHz (Red ring)  
\* These stubby antennas are **not approved** as intrinsically safe.



**SPECIFICATIONS**

GENERAL	
• Frequency range	: IC-F51 136-174MHz IC-F61 400-470MHz
• Number of Channels	: Max. 128 channels/ 8 banks
• Channel spacing	: 12.5/20/25kHz
• Antenna impedance	: 50Ω (SMA Type)
• PLL channel step	: IC-F51 2.5/3.125kHz IC-F61 5/6.25kHz
• Power supply requirement	: 7.2V DC
• Current drain (approx.)	: Transmit at 5W 1.5A (IC-F51) at 4W 1.5A (IC-F61) at 1W 0.7A (IC-F51) at 1W 0.8A (IC-F61) Receive AF max. 300mA Stand-by 85mA
• Operating temperature range	: -25°C to +55°C
• Dimensions (W × H × D)	: 56 × 97 × 36.4mm (projections not included)
• Weight (approx. ;)	: 280g (With BP-227) 290g (With BP-227AX)

TRANSMITTER	
• Output power	: 5.0W/4.0W (IC-F51/F61) ATEX version 1.0W/1.0W (IC-F51/F61)
• Modulation system	: Variable reactance frequency modulation
• Max. frequency deviation	: ±5kHz (wide) ±4kHz (middle) ±2.5kHz (narrow)
• Frequency error	: ±2.5ppm
• Spurious emissions	: 0.25μW (and below 1GHz) 1.0μW (above 1GHz)
• Modulation limiting	: 60-100% of Max. deviation
• Audio harmonic distortion	: 3% typ. (AF 1kHz, 40% deviation)
• Adjacent channel power	: 70dB Min. (wide, middle) 60dB Min. (narrow)
• Residual modulation (With CCITT filter)	: 55dB typ. (wide) 53dB typ. (middle) 50dB typ. (narrow)
• External MIC impedance	: 9-pin multi connector/2.2kΩ

**ATEX INTRINSICALLY SAFE TYPE APPROVAL**



There are versions that conform to ATEX intrinsically safe. Ask your dealer for details.

The approved rating is II2G EEx ib IIA T3.  
Special conditions for use: Must be used with BP-227AX  
Approved accessories: Speaker-microphone HM-138

RECEIVER	
• Sensitivity	: -4dBμV typ. (emf, at 20dB SINAD)
• Squelch sensitivity	: -4dBμV typ. (emf, at threshold)
• Adjacent channel selectivity	: 75dB typ. (wide) 73dB typ. (middle) 65dB typ. (narrow)
• Spurious response	: 70dB
• Intermodulation	: 67dB typ.
• Hum and noise (With CCITT filter)	: 55dB typ. (wide) 53dB typ. (middle) 50dB typ. (narrow)
• Audio output power	: 0.5W typ. at 5% distortion with an 8Ω load
• External SP connector	: 9-pin multi connector/8Ω

Measurements made in accordance with ETS 300-086.  
All stated specifications are subject to change without notice or obligation.

**Applicable U.S. Military Specifications**

Icom makes rugged products that have been tested to and passed the following MIL-STD requirements and strict environmental standards.

Standard	MIL 810C		MIL 810D		MIL 810E		MIL 810F	
	Method	Proc.	Method	Proc.	Method	Proc.	Method	Proc.
Low Pressure	500.1	I	500.2	I, II	500.3	I, II	500.4	I, II
High Temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low Temp.	502.1	I	502.2	I, II	502.3	I, II	502.4-3	I, II
Temp. Shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	I, II	507.2	II, III	507.3	II, III	507.4	-
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-
Dust Blowing	510.1	I	510.2	I	510.3	I	510.4	I
Vibration	514.2	VIII, X	514.3	I	514.4	I	514.5	I
Shock	516.2	I, II, V	516.3	I, IV	516.4	I, IV	516.5	I, IV

**Supplied accessories:**

- Antenna (Length may differ according to version)



▲ VHF antenna



▲ UHF antenna



- Alligator-type belt clip, MB-98
- Battery pack, BP-227

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