



# IC-F52D-UL IC-F62D-UL

VHF AND UHF DIGITAL TRANSCEIVERS

## UL Approved Intrinsically Safe Digital Radio with 5 W Output Power and Compact Design

The IC-F52D-UL/F62D-UL is a UL approved intrinsically safe radio. A full 5 W of output power is available with this approval. Other safety features such as Man Down, Lone Worker and Emergency Call functions help your team remain connected in hazardous locations.

### ■ Small, light and feature packed

### ■ Multiple operating modes\*1

- Analog FM
- NXDN™/dPMR™ conventional
- Upgradable to NXDN™ Type-D trunking
- Upgradable to dPMR™ Mode 3 trunking\*2

\*1 NXDN/dPMR modes are not compatible with each other. The radio protocol/mode cannot be changed after purchase. \*2 Not available in all regions.

### ■ Full dot-matrix display, rotary channel and volume knob for simple every-day operation

### ■ Built-in Bluetooth® capability, Voice Recording, Active Noise Cancelling functions

### ■ Motion/Stationary Detection, Man Down and Lone Worker functions

### ■ OTAP (Over-the-Air Programming) function easily reconfigures in-the-field radios

### ■ Intelligent battery management helps extend the battery life



IC-F52D-UL

IC-F62D-UL



## General Features

- 136–174, 350–400, 400–470, 450–512, 450–520 MHz versions
- 512 channels / 128 zones
- 14 character dot-matrix display with status icons
- Improved user interface
- Programmable functions and menu items in a language other than English (For example French, Spanish, German, Russian and Turkish)
- Backlit LCD and buttons
- Continuous rotary knob and ON/OFF volume knob
- 800 mW loud and intelligible internal speaker audio
- MIL-STD-810 G shock, vibration, temperature and more
- IP67/66/55/54 waterproof & dust-tight protection
- 29 mm (1.1 inch) slim dimensions (with BP-292UL battery pack)
- Battery information display
- License key upgrade (trunking)

## Operating Mode

- NXDN or dPMR mode 1/mode 2 conventional
- NXDN or dPMR multi-site conventional over IP network
- NXDN Type-D single/multi-site trunking\*  
\* License key (ISL-UGMTR) required.
- dPMR Mode 3 trunking\*  
\* License key (ISL-UGMD3) required. Not available in all regions.
- 12.5 kHz digital mode (NXDN conventional)
- Analog mode
- Analog/digital mixed operation

## Digital Functions (Voice and Data)

- AMBE+2™ vocoder
- Over-the-Air Programming (OTAP) function\*  
\* Optional OTAP manager (CS-OTPM1) required.
- Over-the-Air Alias (OAA) sends own name with a call
- Over-the-Air Update (OTAU) changes the repeater channel data and site code over the air (NXDN Type-D trunking)
- Individual, group and all call
- Late entry for group call
- Status call and polling
- Short data messages
- Call alert (NXDN)
- Transparent data mode (dPMR)



Check our web site to know more about 6.25 kHz FDMA narrow band.  
[www.icomjapan.com/explore/digital](http://www.icomjapan.com/explore/digital)



## Analog Functions

- CTCSS and DTCS tone
- 2-Tone and 5-Tone
- MDC functions (depending on version)
- BIIS 1200 (MSK) (depending on version)
- LTR™ trunking (depending on version)
- DTMF autodial

## Security and Safety

- Digital voice scrambler (Low level encryption)
- Analog voice scrambler (Inversion)
- Power ON password
- Tactical group temporarily reconfigures user talkgroups
- Radio Stun/Revive/Kill
- Remote monitor (NXDN)/ambience listening (dPMR)
- Emergency key for emergency call
- Man Down function
- Lone Worker function
- Motion/stationary detection

## Scan Functions

- Priority scan
- Voting scan for site roaming

## Voice/Audio Functions

- Voice announcement (Channel number and zone)
- Voice recording/playback (Up to 8 minutes)
- TX/RX active noise canceller
- TX/RX audio equalizer
- Audio compander (Analog mode)

## Hardware Features

- Programmable vibration alert
- Wireless radio programming over Bluetooth®

## SPECIFICATIONS

## IC-F52D-UL • IC-F62D-UL

		IC-F52D-UL NXDN Version	IC-F52D-UL dPMR Version	IC-F62D-UL NXDN Version	IC-F62D-UL dPMR Version
<b>GENERAL</b>					
Frequency coverage (Depending on the version)		136–174 MHz	136–174 MHz	350–400, 400–470, 450–512, 450–520 MHz	400–470 MHz
Number of channels		512 channels /128 zones			
Type of emission (Depending on the version)	Analog	16K0F3E*1, 11K0F3E, 8K50F3E	16K0F3E*1, 8K50F3E	16K0F3E*1, 11K0F3E, 8K50F3E,	16K0F3E*1, 8K50F3E
	Digital Narrow (DN)	8K30F1E/D	–	8K30F1E/D	–
	Digital Very Narrow (DVN)	4K00F1E/D	4K00F1E/D	4K00F1E/D	4K00F1E/D
Power supply requirement		7.5 V DC nominal			
Current drain (approx.)	Tx	1.8 A			
	Rx	500 mA /170 mA (Max. audio (internal SP)/Standby)		600 mA /170 mA (Max. audio (internal SP)/Standby)	
Antenna impedance		50 Ω			
Operating temperature range		–30 °C to +60 °C; –22 °F to +140 °F (Radio specifications)			
Dimensions (W × H × D; Projections not included)		56 × 92 × 34.1mm; 2.2 × 3.6 × 1.3 in (with BP-292UL)			
Weight (approx.)		125 g; 4.4 oz (main unit) 270 g; 9.5 oz (with BP-292UL and MBB-3)			
<b>TRANSMITTER</b>					
Output power (Hi, L2, L1)		5 W, 2 W, 1 W			
Frequency stability		±1.0 ppm			
Spurious emissions		80 dB typical			
FM Hum and noise		57 dB typical (@25 kHz), 55 dB typical (@12.5 kHz)		57 dB typical (@25 kHz), 56 dB typical (@12.5 kHz)	
Audio harmonic distortion		0.4% typical (AF 1 kHz 40% deviation)			
FSK error		1% typical (@DVN/DN*2)			
<b>RECEIVER</b>					
Sensitivity	Digital (1% BER)	–5.0 dBμV emf typical (0.28 μV typical) (@DVN), –3.0 dBμV emf typical (0.35 μV typical) (@DN*2)		–4.0 dBμV emf typical (0.32 μV typical) (@DVN), –3.0 dBμV emf typical (0.35 μV typical) (@DN*2)	
	Analog (12 dB SINAD)	0.23 μV typical		0.23 μV typical	
Adjacent channel selectivity	Digital	70 dB typical (@DVN), 72 dB typical (@DN*2)		66 dB typical (@DVN), 68 dB typical (@DN*2)	
	Analog	79 dB typical (@25 kHz), 77 dB typical (@12.5 kHz)		76 dB typical (@25 kHz), 73 dB typical (@12.5 kHz)	
Spurious response rejection		76 dB typical		78 dB typical	
Intermodulation rejection	Digital	73 dBμV emf typical (@DVN), –40 dBm typical (@DN*2)		73 dBμV emf typical (@DVN), –40 dBm typical (@DN*2)	
	Analog	76 dB typical		74 dB typical	
Audio output power	Internal SP	800 mW typical (at 5% distortion, 12 Ω load)			
	External SP	1000 mW typical (at 5% distortion, 8 Ω load)			

Measurements made in accordance with TIA-603, EN300 086, EN301 166, EN300 113. All stated specifications are subject to change without notice or obligation.

\*1 25 kHz bandwidth is no longer available for FCC Part 90 licensees for USA versions. \*2 DVN: Digital Very Narrow (6.25 kHz), DN: Digital Narrow (12.5 kHz). DN is for NXDN version only. NXDN/dPMR modes are not compatible with each other. The radio protocol/mode cannot be changed after purchase.

## Applicable U.S. Military Specifications &amp; IP Rating

Standard	MIL 810G	
	Method	Procedure
Low Pressure	500.5	I, II
High Temperature	501.5	I, II
Low Temperature	502.5	I, II
Temperature Shock	503.5	I-C
Solar Radiation	505.5	I
Rain Blowing/Drip	506.5	I, III
Humidity	507.5	II
Salt Fog	509.5	–
Dust Blowing	510.5	I
Immersion	512.5	I
Vibration	514.6	I
Shock	516.6	I, IV

Also meets equivalent MIL-STD-810-C, -D, -E and -F.

## Ingress Protection Standard

Dust & Water	IP67/66/55/54
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## Approved UL Classifications

Intrinsically safe:

Class I, Division 1, Groups C, D;  
Class II, Division 1, Groups E, F, G;  
Class III, T3C.

Non-incendive:

Class I, Division 2, Groups A, B, C, D.

Ambient temperature:

–20°C (–4°F) to +60°C (+140°F)

Standards of safety:

ANSI/TIA-4950-A

ANSI/UL 121201

\* Intrinsically Safe when used with Icom BP-292UL battery pack.

## Battery Life

Battery pack	Type	Capacity	Operating time*
BP-292UL	Li-Ion 7.2 V	2010 mAh (typ.), 1910 mAh (min.)	10 hours (Approx.)

\* Tx: Rx: standby = 5:5:90 (3 sec.: 3 sec.: 54 sec.) duty cycle. Power save function ON.

**Supplied accessories:** (May differ depending on the transceiver version)

• Battery pack, BP-292UL • Belt clip, MBB-3



## OPTIONAL ACCESSORIES

## IC-F52D-UL • IC-F62D-UL

## ■ BATTERY PACK

**BP-292UL:** Rechargeable Li-ion 7.2 V/1910 mAh (min.), 2010 mAh (typ.). IP67 protection.

## ■ BATTERY CHARGERS

**BC-226:** Multi-connectable rapid charger (connects up to six BC-226 units). Charges the BP-292UL in 2.7 hours (approx.).

+ **BC-228:** AC adapter. One AC adapter is required for up to six charger units.

**BC-227:** Compact desktop charger. Charges the BP-292UL in 2.7 hours (approx.). AC adapter BC-123S supplied with the BC-227.



BC-228

BC-226

(Connectable up to six BC-226)

BC-227

## ■ POWER SUPPLY CABLES

**CP-23L:** Vehicle charger cable for use with the BC-227.

**OPC-515L:** DC power cable for use with the BC-227.

## ■ SPEAKER-MICROPHONE

**HM-184UL:** Speaker-microphone. IP67 protection.



HM-184UL

## ■ BELT CLIPS, BELT HANGERS AND CARRYING CASES

**MBB-3:** Alligator belt clip. Same as supplied.

**MB-136:** Swivel belt clip.

**MB-96N:** Swivel type leather belt hanger.

**MB-96F:** Fixed type leather belt hanger. For use with the MBB-3.

**MB-96FL:** Long fixed type leather belt hanger. For use with the MBB-3.

**LC-191:** Hard type carrying case. Charging is possible while the case is attached.



MBB-3

MB-136

MB-96N

MB-96F

MB-96FL

## ■ CABLE

**OPC-1870:** Zone copy cable. Handheld to handheld type.

## ■ SOFTWARE AND ACTIVATION KEYS

**CS-OTPM1:** OTAP manager software.

**ISL-UGMTR:** NXDN™ Type-D trunking upgrade key.

**ISL-UGMD3:** dPMR™ Mode 3 trunking upgrade key. (Not available in all regions.)

**ISL-AK25K:** 25 kHz activation key.

## ■ ANTENNAS

**FA-SC25V:** 136–150 MHz

**FA-SC28V:** 148–162 MHz

**FA-SC29V:** 160–174 MHz

**FA-SC01U:** 350–400 MHz

**FA-SC25U:** 400–430 MHz

**FA-SC57U:** 430–470 MHz

**FA-SC72U:** 470–520 MHz

## ■ STUBBY ANTENNAS

**FA-SC26VS:** 136–144 MHz

**FA-SC27VS:** 142–150 MHz

**FA-SC56VS:** 150–162 MHz

**FA-SC57VS:** 160–174 MHz

**FA-SC26US:** 400–450 MHz

**FA-SC73US:** 450–490 MHz

## ■ HIGH GAIN ANTENNAS

**FA-SC62V:** 150–160 MHz

**FA-SC63V:** 155–165 MHz

## ■ CUT-TYPE ANTENNAS

**FA-SC61VC:** 136–174 MHz

**FA-SC61UC:** 380–520 MHz

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

**DO NOT use the transceiver with any other equipment other than the above accessories. The battery charger, BC-226 or BC-227 must not be used in an explosive atmosphere.**

**Read all instructions enclosed with the transceiver carefully and completely before using the transceiver.**

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