



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

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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



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 |
|--|---------------------------|--|----------------------------|--|----------------------------|
| GENERAL | | | | | |
| 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) | | | |
| TRANSMITTER | | | | | |
| 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) | | | |
| RECEIVER | | | | | |
| 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 & 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

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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