



VHF AND UHF DIGITAL TRANSCEIVERS (NXDN™)

# IC-F3201DEX

(VHF transceiver)

# IC-F4201DEX

(UHF transceiver)

## IECEX/ATEX INTRINSICALLY SAFE RADIO



**iDAS™**  
COM DIGITAL ADVANCED SYSTEM

**NXDN™**

**IP67**



### IEC Certifications

Mining : Ex ib I Mb  
Gas : Ex ib IIC T4 Gb  
Dust : Ex ib IIIC T110°C Db  
-20°C ≤ Ta ≤ +55°C  
IEC 60079-0 (2011), IEC 60079-11 (2011)

### ATEX Certifications

Mining : I M2 Ex ib I Mb  
Gas : II 2G Ex ib IIC T4 Gb  
Dust : II 2D Ex ib IIIC T110°C Db  
-20°C ≤ Ta ≤ +55°C  
EN 60079-0 (2012), EN 60079-11 (2012)

### IP67 Dust-tight & Waterproof Protection

The IC-F3201DEX/F4201DEX provides rugged protection against dust and water that is equivalent to IP67. The IC-F3201DEX/F4201DEX can withstand 1m depth of water for 30 minutes and its dust-tight construction shuts out powder dust, sand and other objects.

### iDAS™ Digital Mode Operation

The IC-F3201DEX/F4201DEX provides can program NXDN™ Type-D single-site trunking and digital conventional as well as analog mode per channel. The following digital features are programmable.

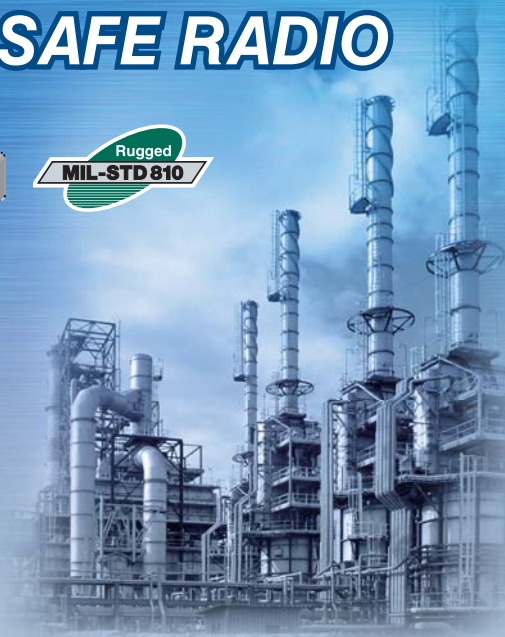
- PTT ID (TX)
  - Radio check (RX)
  - Remote monitor (RX)
  - Power ON/OFF status call (TX)
  - Voting scan for multi-site conventional operation
  - Individual/Group calls
  - Stun/kill/revive (RX)
  - Emergency (TX)
  - RAN (Radio Access Number)
  - Block decode
  - Call alert (RX)
  - Digital voice scrambler (15-bit)
- TX: Transmit, RX: Receive

### Analogue Mode Compatible

The IC-F3201DEX/F4201DEX has built-in 5-Tone, 2-Tone, CTCSS and DTCS signaling capability for analogue mode group communication and selective calling. The lone worker and man down functions automatically send an emergency signal to assist in worker safety. The radio is perfect for use as an analogue transceiver ready for future digital migration.

### Other Features

- 16 memory channels with channel announcement function
- MDC 1200 PTT ID and emergency transmission
- DTMF autodial
- Three programmable buttons (including emergency red button)
- Low electrical resistivity body; Carrying case is not required
- 19.5–21 hours\* operating time with BP-277EX (\* 5: 5: 90 duty cycle with Power save.)
- Optional waterproof speaker-microphone, HM-203EX



## SPECIFICATIONS

	IC-F3201DEX	IC-F4201DEX
<b>GENERAL</b>		
Frequency coverage	136–174 MHz	400–470 MHz
Number of channels	16 channels	
Type of emission	11K0F3E, 8K50F3E, 4K00F1E/F1D	
Power supply requirement	7.4 V DC nominal	
Current drain (approximate)		
Tx High	550 mA	
Rx Max. audio/Standby	300 mA (Internal SP)/110 mA (Digital mode)	
Antenna impedance	50Ω	
Operating temperature range	–20°C to +55°C; –4°F to +131°F	
Dimensions (W × H × D) (Projections not included)	63 × 144 × 50 mm; 2.48 × 5.67 × 1.97 in (With BP-277EX)	
Weight (approximate)	258 g; 9.1 oz (Radio only) 466 g; 1.03 lb (With MB-94EX, BP-277EX & FA-SC55V)	250 g; 8.8 oz (Radio only) 460 g; 1.01 lb (With MB-94EX, BP-277EX & FA-SC57U)
<b>TRANSMITTER</b>		
Output power (at 7.4 V DC)	1 W, 0.8 W, 0.6 W (Hi, L2, L1)	
Max. permissible deviation	±2.5 kHz (Narrow)	
Frequency stability	±1.0 ppm	
Spurious emissions	66 dB min.	
FM Hum and Noise	46 dB typ. (Narrow)	40 dB typ. (Narrow)
Audio harmonic distortion	1.5% typ. (Narrow @ AF 1 kHz 40% deviation)	
FSK error	2.0% typ. (Digital)	1.5% typ. (Digital)
Ext. microphone connector	14-pin multi-connector/2.2 kΩ	
<b>RECEIVER</b>		
Sensitivity Analog (12 dB SINAD)	0.24 μV typ.	0.22 μV typ.
Digital (5% BER)	–8 dBμV emf typ.	–9 dBμV emf typ.
Adjacent channel selectivity	70/62 dB typ. (Narrow/Digital)	66/57 dB typ. (Narrow/Digital)
Spurious response	85 dB typ. (Narrow), 87 dBμV emf typ. (Digital)	75 dB typ. (Narrow), 79 dBμV emf typ. (Digital)
Intermodulation	75/67 dB typ. (Narrow/Digital)	74/73 dB typ. (Narrow/Digital)
Hum and noise	43 dB typ. (Narrow)	37 dB typ. (Narrow)
Audio output power	400 mW typ. (at 5% distortion with 32 Ω load)	
External speaker connector	14-pin multi-connector/32 Ω	

Measurements made in accordance with TIA-603, EN 300-086, EN 301-166.

All stated specifications are subject to change without notice or obligation.

### 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 (Dust-tight and waterproof)

### Supplied accessories: (May differ according to version)

- Battery pack, BP-277EX
- Belt clip, MB-94EX
- Antenna
- Battery charger, BC-212EX
- AC adapter, BC-123S

## OPTIONS

**BATTERY PACK**

**IP67**



**BP-277EX**  
Rechargeable  
Li-ion, 7.4 V  
1800 mAh (min.)  
1900 mAh (typ.)

**RAPID CHARGER**



**BC-123SA**      **BC-212EX**

Charges the BP-277EX in 2 hours (approx.).

**SPEAKER-MICROPHONE**

**IP67**



**HM-203EX**

**BELT CLIP**



**MB-94EX** Alligator type  
Same as supplied.

**ANTENNAS**

- FA-SC25V : 136–150 MHz
- FA-SC55V : 150–174 MHz
- FA-SC25U : 400–430 MHz
- FA-SC57U : 430–470 MHz

DO NOT use the transceiver with any other equipment other than the above options. The battery charger, BC-212EX must not be used in an explosive atmosphere.

### ATEX mining protection and meaning

I	M2	Ex	ib	I	Mb	Mb = Mining equipment protection level: High protection
						I = Protection in mining group: Methane
						ib = Intrinsic safety
						Ex = Explosion proof equipment
						M2 = Must be switched OFF in case of firedamp
						I = Group I, Mining

### ATEX gas protection and meaning

II	2	G	Ex	ib	IIC	T4	Gb	Gb = GAS equipment protection level: High protection
								T4 = Device surface temperature will not exceed 135°C
								IIC = Protection in GAS group: Acetylene, Hydrogen
								ib = Intrinsic safety
								Ex = Explosion proof equipment
								G = Gas, vapour and mist
								2 = High level protection for use in Zone 1 (gas)
								II = Group II, other (non-mining) areas

### ATEX dust protection and meaning

II	2	D	Ex	ib	IIIC	T110°C	Db	Db = Dust equipment protection level: High protection
								T110°C = Maximum temperature of device surface
								IIIC = Dust group: Conductive dust (R≤10 <sup>2</sup> Ωm)
								ib = Intrinsic safety
								Ex = Explosion proof equipment
								D = Dust
								2 = High level protection for use in Zone 21 (dust)
								II = Group II, other (non-mining) areas

\* Please ask your dealer to ensure the ATEX and IECEx ratings are acceptable for the intended place of use.

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

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## Icom Inc.

1-1-32, Kamiminami, Hirano-Ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013

[www.icom.co.jp/world](http://www.icom.co.jp/world)

## Count on us!

### Icom America Inc.

12421 Willows Road NE,  
Kirkland, WA 98034, U.S.A.  
Phone: +1 (425) 454-8155  
Fax: +1 (425) 454-1509  
E-mail: [sales@icomamerica.com](mailto:sales@icomamerica.com)  
URL: <http://www.icomamerica.com>

### Icom (Europe) GmbH

Communication Equipment  
Auf der Krautweide 24  
65812 Bad Soden am Taunus, Germany  
Phone: +49 (6196) 76685-0  
Fax: +49 (6196) 76685-50  
E-mail: [info@icom-europe.com](mailto:info@icom-europe.com)  
URL: <http://www.icomeurope.com>

### Icom France s.a.s.

Zac de la Plaine,  
1 Rue Brindejonc des Moulinais, BP 45804,  
31505 Toulouse Cedex 5, France  
Phone: +33 (5) 61 36 03 03  
Fax: +33 (5) 61 36 03 00  
E-mail: [icom@icom-france.com](mailto:icom@icom-france.com)  
URL: <http://www.icom-france.com>

### Asia Icom Inc.

6F No. 68, Sec. 1 Cheng-Teh Road,  
Taipei, Taiwan, R.O.C.  
Phone: +886 (02) 2559 1899  
Fax: +886 (02) 2559 1874  
E-mail: [sales@asia-icom.com](mailto:sales@asia-icom.com)  
URL: <http://www.asia-icom.com>

Your local distributor/dealer:

### Icom Canada

Glenwood Centre #150-6165  
Highway 17A, Delta, B.C.,  
V4K 5B8, Canada  
Phone: +1 (604) 952-4266  
Fax: +1 (604) 952-0090  
E-mail: [info@icomcanada.com](mailto:info@icomcanada.com)  
URL: <http://www.icomcanada.com>

### Icom Spain S.L.

Ctra. Rubi, No. 88 "Edificio Can Castanyer"  
Bajos A 08174, Sant Cugat del Valles,  
Barcelona, Spain  
Phone: +34 (93) 590 26 70  
Fax: +34 (93) 589 04 46  
E-mail: [icom@icomspain.com](mailto:icom@icomspain.com)  
URL: <http://www.icomspain.com>

### Icom (Australia) Pty. Ltd.

Unit 1 / 103 Garden Road,  
Clayton, VIC 3168 Australia  
Phone: +61 (03) 9549 7500  
Fax: +61 (03) 9549 7505  
E-mail: [sales@icom.net.au](mailto:sales@icom.net.au)  
URL: <http://www.icom.net.au>

### Shanghai Icom Ltd.

No.101, Building 9, Caifuxingyuan Park,  
No.188 Maoting Road, Chedun Town,  
Songjiang District, Shanghai, 201611, China  
Phone: +86 (021) 6153 2768  
Fax: +86 (021) 5765 9987  
E-mail: [bjicom@bjicom.com](mailto:bjicom@bjicom.com)  
URL: <http://www.bjicom.com>

### Icom Brazil

Rua Itororó, 444 Padre Eustáquio  
Belo Horizonte MG,  
CEP: 30720-450, Brazil  
Phone: +55 (31) 3582 8847  
Fax: +55 (31) 3582 8987  
E-mail: [sales@icombrasil.com](mailto:sales@icombrasil.com)

### Icom (UK) Ltd.

Blacksole House, Alitra Park,  
Herne Bay, Kent, CT6 6GZ, U.K.  
Phone: +44 (0) 1227 741741  
Fax: +44 (0) 1227 741742  
E-mail: [info@icomuk.co.uk](mailto:info@icomuk.co.uk)  
URL: <http://www.icomuk.co.uk>

### Icom New Zealand

39C Rennie Drive, Airport Oaks,  
Auckland, New Zealand  
Phone: +64 (09) 274 4062  
Fax: +64 (09) 274 4708  
E-mail: [inquiries@icom.co.nz](mailto:inquiries@icom.co.nz)  
URL: <http://www.icom.co.nz>