



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.

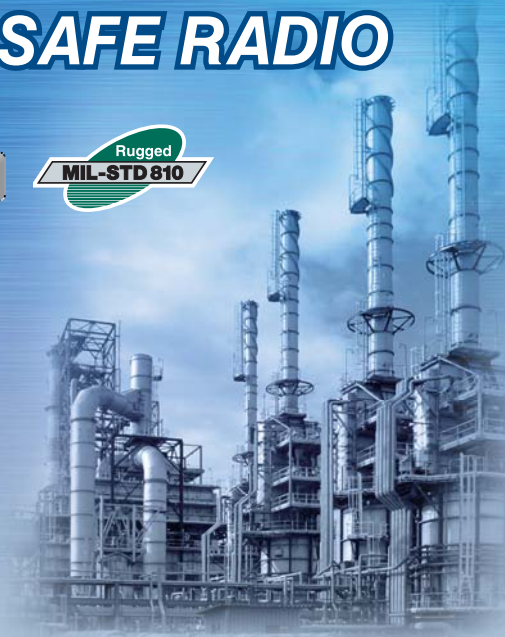
- PTT ID (TX)
 - Individual/Group calls
 - Block decode
 - Radio check (RX)
 - Stun/kill/revive (RX)
 - Call alert (RX)
 - Remote monitor (RX)
 - Emergency (TX)
 - Digital voice scrambler (15-bit)
 - Power ON/OFF status call (TX)
 - RAN (Radio Access Number)
 - Voting scan for multi-site conventional operation
- 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
GENERAL		
Frequency coverage	136–174MHz	400–470MHz
Number of channels	16 channels	
Type of emission	11K0F3E, 8K50F3E, 4K00F1E/F1D	
Power supply requirement	7.4V DC nominal	
Current drain (approximate)		
Tx High	550mA	
Rx Max. audio/Standby	300mA (Internal SP)/110mA (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)	258g; 9.1 oz (Radio only) 466g; 1.03 lb (With MB-94EX, BP-277EX & FA-SC55V)	250g; 8.8 oz (Radio only) 460g; 1.01 lb (With MB-94EX, BP-277EX & FA-SC57U)
TRANSMITTER		
Output power (at 7.4V DC)	1W, 0.8W, 0.6W (Hi, L2, L1)	
Max. permissible deviation	±2.5kHz (Narrow)	
Frequency stability	±1.0ppm	
Spurious emissions	66dB min.	
FM Hum and Noise	46dB typ. (Narrow)	40dB typ. (Narrow)
Audio harmonic distortion	1.5% typ. (Narrow @ AF 1kHz 40% deviation)	
FSK error	2.0% typ. (Digital)	1.5% typ. (Digital)
Ext. microphone connector	14-pin multi-connector/2.2kΩ	
RECEIVER		
Sensitivity Analog (12dB SINAD) Digital (5% BER)	0.24μV typ. –8dBμV emf typ.	0.22μV typ. –9dBμV emf typ.
Adjacent channel selectivity	70/62dB typ. (Narrow/Digital)	66/57dB typ. (Narrow/Digital)
Spurious response	85dB typ. (Narrow), 87dBμV emf typ. (Digital)	75dB typ. (Narrow), 79dBμV emf typ. (Digital)
Intermodulation	75/67dB typ. (Narrow/Digital)	74/73dB typ. (Narrow/Digital)
Hum and noise	43dB typ. (Narrow)	37dB typ. (Narrow)
Audio output power	400mW typ. (at 5% distortion with 32Ω load)	
External speaker connector	14-pin multi-connector/32Ω	

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
Li-Ion, 7.4V
1800mAh (min.)
1900mAh (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 : 136–150MHz
- FA-SC55V : 150–174MHz
- FA-SC25U : 400–430MHz
- FA-SC57U : 430–470MHz

DO NOT use the transceiver with any other equipment other than the above options.

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	IIC	T110°C	Db	Db = Dust equipment protection level: High protection
								T110°C = Maximum temperature of device surface
								IIC = Dust group: Conductive dust (R≤10 ¹⁰ 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 ensure the IC-F3201DEX/F4201DEX rating is acceptable for the intended place of use.

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