

# IC-M87 ATEX



## INTRINSICALLY SAFE VERSION

IPX7



### ATEX Intrinsically Safe Marine Radio

#### ATEX Intrinsically Safe Type Approval

The IC-M87 ATEX and designated options are certified to the ATEX Directive. It is suitable for use in hazardous areas where flammable gases or liquids are used such as petroleum tankers and bulk cargo carrier.

The approved rating is **II2G Ex ib IIA T3 Gb**.

Special conditions for use: Must be used with **BP-227AX**

When the transceiver is used in hazardous areas, either the jack cover or HM-138 must be attached to the connector. Ambient operating temperature: -20°C to +55°C  
EN 60079-0: 2012 + A11: 2013, EN 60079-11: 2012

#### IPX7, Waterproof Construction

The IC-M87 ATEX is built tough to withstand hazardous and inhospitable environments at sea and on land. Even if the IC-M87 ATEX is dropped into water, the IPX7 waterproof construction will protect it from harm (1 m depth for 30 minutes). The compact and durable body also has been tested to US military specifications (MIL-STD 810).

#### Li-ion Battery for Extra Long Battery Life

With the standard 1950 mAh (typ.) rechargeable Li-ion battery pack, BP-227AX, the IC-M87 ATEX allows you up to 19 hours of operating time.\*

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

#### 22 Programmable Channels for PMR Use

The IC-M87 ATEX has 22 programmable channels for PMR use (146-174 MHz). Wide/narrow channel spacing is programmable for each channel, and CTCSS and DTCS signaling is built-in.

\*Appropriate license will be required.

#### Built-in Voice Scrambler

The IC-M87 ATEX has a built-in 32 code voice scrambler. The voice scramble is compatible with the UT-112 which is adopted to some Icom marine radios.

#### Optional Waterproof Speaker-Microphone, HM-138

An optional waterproof speaker-microphone, HM-138, provides reliable operation, allowing you to wear the IC-M87 ATEX on your belt for added portable convenience.



Photo includes optional speaker-microphone, HM-138.

**Additional Features**

- Simple Up/Down buttons for operating channel selection
- Instant access to Ch. 16 and call channel
- Simple add/delete TAG scanning operation • Automatic scan function

- 4 level battery indicator • Desktop charger, BC-152N supplied
- Key lock and monitor function • Programmable beep sound
- 2 step power saver • The self check functions

**SPECIFICATIONS**

IC-M87 ATEX		
GENERAL	Marine channels	PMR channels
Frequency coverage Tx Rx	156.000–161.450 MHz 156.000–163.425 MHz	146.000–174.000 MHz
Usable channel groups, Number of channels	INT, USA* channels (* Varies according to version)	22 PMR channels
Type of emission	16K0G3E	16K0F3E/8K50F3E 14K0F3E/8K50F3E
Channel spacing	25 kHz	12.5/25 kHz, 20/25 kHz
Power supply requirement	7.4 V DC nominal	
Current drain (approx.)		
Tx (at 1 W)	0.7 A typ.	
Rx Max. audio	200 mA typ.	
Antenna impedance	50 Ω (SMA type)	
Operating temperature range	-15°C to +55°C -25°C to +55°C	
Dimensions (W × H × D) (Projections not included)	62 × 97 × 39 mm (With BP-227AX)	
Weight (approx.)	280 g (With BP-227AX)	
TRANSMITTER		
Output power (at 7.2 V DC)	1/0.5 W	1 W
Max. frequency deviation	±5.0 kHz	±5.0/±4.0/±2.5 kHz (W/M/N)
Frequency stability	±1.5 kHz	
Spurious emissions	0.25 μV (≤ 2 GHz), 1.0 μV (> 2 GHz)	
Residual modulation	40 dB	40/34 dB (W/N)
Audio harmonic distortion	Less than 10% (at 60% deviation)	
Modulation limiting	60–100% of Max. deviation	
RECEIVER		
Sensitivity (at 20 dB SINAD)	-2 dBμ typ. (emf)	-4 dBμ typ. (emf)
Adjacent channel selectivity	70 dB	70/60 dB (W/N)
Spurious response	70 dB	
Intermodulation	68 dB	65 dB
Hum and noise	40 dB	40/34 dB (W/N)
Audio output power (at 10% distortion with 8 Ω load)	200 mW	350 mW

Measurements made in accordance with EN 301-178-2 or EN 300 086.  
All stated specifications are subject to change without notice or obligation.

**Applicable U.S. Military Specifications & IP Rating**

Standard	MIL 810 F	
	Method	Procedure
Low Pressure	500.4	I, II
High Temperature	501.4	I, II
Low Temperature	502.4	I, II
Temperature Shock	503.4	I
Solar Radiation	505.4	I
Rain Blowing/Drip	506.4	I, III
Humidity	507.4	-
Salt Fog	509.4	-
Dust Blowing	510.4	I
Vibration	514.5	I
Shock	516.5	I, IV

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

Ingress Protection Standard	
Water	IPX7 (Waterproof protection)

Supplied accessories:	
• Battery pack, BP-227AX	• Battery charger, BC-152N
• Swivel belt clip, MB-86	• Antenna, FA-S59V
• AC adapter, BC-147SE*	• Hand strap

(\* AC adapter is not supplied depending on version.)

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**OPTIONS**

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

<p><b>BATTERY PACK</b></p>  <p><b>BP-227AX</b> Rechargeable Li-ion 7.4 V 1850 mAh (min.) 1950 mAh (typ.)</p>	<p><b>DESKTOP CHARGER<sup>2</sup></b></p>  <p><b>BC-147S<sup>1</sup></b> Charges the BP-227AX in 9–10 hours. (approx.)</p> <p><b>BC-152N</b></p>	<p><b>RAPID CHARGER<sup>2</sup></b></p>  <p><b>BC-145S<sup>1</sup></b> <b>BC-119N+AD-100</b> Rapidly charges the BP-227AX in 2–2.5 hours. (approx.)</p>
<p><b>MULTI-CHARGER<sup>2</sup></b></p>  <p><b>BC-121N+AD-100</b> (6 pcs.) Rapid charges up to 6 battery packs in 2–2.5 hours.</p>	<p><b>LEATHER BELT HANGER</b></p>  <p><b>MB-96F</b></p>	<p><b>SPEAKER-MICROPHONE HM-138</b></p>  <p><b>IPX7</b></p>
<p><b>BELT CLIPS</b></p>  <p><b>MB-98</b> Alligator type <b>MB-86</b> Swivel type</p>		

<sup>1</sup> BC-145SA/BC-147SA for 120 V AC. SE for 230 V AC. SV for 240 V AC. BC-145SUK for 230 V AC.  
<sup>2</sup> These chargers are not approved as intrinsically safe. Do not charge the BP-227AX in an explosive atmosphere.

**Examples of Applicable Gas and Vapor Types\***

	T1: 450°C	T2: 300°C	T3: 200°C	
I	Methane			
	Acetone	Ethyl alcohol	Benzene	
	Ethane	I-amyl acetate	Diesel fuel	
	Ethyl acetate	n-butane	Aircraft fuel	
	Ammonia	n-butyl alcohol	Heating oil	
	IIA	Benzene (pure)		n-hexane
		Acetic acid		
		Carbon Monoxide		
		Methanol		
		Propane		
	Toluene			

\* Please ensure the IC-M87 ATEX rating is acceptable for intended place of use.