



VHF MARINE TRANSCEIVER

# 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 94/9/EC ATEX Directive. It is suitable for use in hazardous areas where flammable gasses or liquids are used such as petroleum tankers and bulk cargo carrier.

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

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

#### 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 (1m 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 1950mAh (typ.) 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 (146-174MHz). 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	156.000–161.450MHz 156.000–163.425MHz	146.000–174.000MHz
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	25kHz	12.5/25kHz, 20/25kHz
Power supply requirement	7.4V DC nominal	
Current drain (approx.) Tx (at 1W) Rx Max. audio	0.7A typ. 200mA typ.	
Antenna impedance	50Ω (SMA type)	
Operating temperature range	-15°C to +55°C -25°C to +55°C	
Dimensions (W×H×D) (Projections not included)	62×97×39mm (With BP-227AX)	
Weight (approx.)	280g (With BP-227AX)	
TRANSMITTER		
Output power (at 7.2V DC)	1/0.5W	1W
Max. frequency deviation	±5.0kHz	±5.0/±4.0/±2.5kHz (W/M/N)
Frequency stability	±1.5kHz	
Spurious emissions	0.25μW (≤2GHz), 1.0μW (>2GHz)	
Residual modulation	40dB	40/34dB (W/N)
Audio harmonic distortion	Less than 10% (at 60% deviation)	
Modulation limiting	60–100% of Max. deviation	
RECEIVER		
Sensitivity (at 20dB SINAD)	-2dBμ typ. (emf)	-4dBμ typ. (emf)
Adjacent channel selectivity	70dB	70/60dB (W/N)
Spurious response	70dB	
Intermodulation	68dB	65dB
Hum and noise	40dB	40/34dB (W/N)
Audio output power (at 10% distortion with 8Ω load)	200mW	350mW

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	• AC adapter, BC-147SE*
(* AC adapter is not supplied depending on version.)	• Antenna, FA-S59V
	• Hand strap

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

\*1 BC-145SA/BC-147SA for 120V AC. SE for 230V AC. SV for 240V AC. BC-145SUK for 230V AC.  
\*2 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
IIA	Methane		
	Acetone	Ethyl alcohol	Benzene
	Ethane	I-amyl acetate	Diesel fuel
	Ethyl acetate	n-butane	Aircraft fuel
	Ammonia	n-butyl alcohol	Heating oil
	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.