

Motorola Professional Series ATEX Radios

The choice for professionals in hazardous environments -
GP340 EX, GP380 EX, GP580 EX and GP680 EX



The choice for Professionals in Hazardous Environments

Whether on an oil rig, in a gas installation or another potentially explosive environment, safe and reliable communications are paramount. That is why Motorola has brought together three key elements: its 75 year expertise in communications; its wide experience of producing two-way radios for use in hazardous environments; and its proven Professional Series two-way radio platform.

Launched in 1999, Motorola Professional Series Portable Radios are the de facto standard for on-the-move radio communications. By adding four ATEX versions to the portfolio, it has never been easier to find a radio suited to your organisation's operating environment and communications requirements.

Motorola's ATEX-approved Professional Series Portable Radios give team members instant access to one or many colleagues at the touch of a button, without compromising safety, and allow constant contact should a critical situation need resolving.

Quality & Reliability

Renowned for their durability, Motorola Professional Series Portable Radios offer unrivalled crystal clear audio quality by activating either Motorola's X-Pand™ technology or 'Low Level Expansion.' This reduces noise usually heard during conversational pauses. When discretion is key, the 'whisper' function means that even the quietest message can be transmitted and understood.

Robust and reliable, all radios have passed Motorola's rigorous Accelerated Life Test which simulates five years of hard use in the field, and are IP54 compliant for use in environments where dust ingress can leave other radios standing. In addition, the Motorola Professional Series Portable Radios are designed and built to exceed the 11 applicable tests of the exacting standard MIL Spec 810E; the quality hallmark of the US military.

Safety

Press the highly visible orange Emergency Button to initiate the organisation's defined emergency communications procedure. Providing even greater safety for employees in hazardous environments, Motorola provides a new ATEX-approved mandown option board for the GP340, GP380 and GP680 ATEX radios. This factory-fitted option board automatically summons assistance when the radio falls over or remains motionless for a predetermined time period.

Additional safety features include a specially-designed battery connection that prevents non-ATEX approved batteries from being fitted to the radios. The lockable accessory connector plug features a tamper-proof screw to control the use of accessories.

Productivity

Avoid missed calls as the Channel Scan function allows activity on different communications channels to be monitored and answered. When working offsite or close to other users, 'Talkaround' lets users communicate without using the system or dispatcher.

Economy

All Motorola Professional Series ATEX radios are supplied with a soft leather carry case and a newly designed Lithium Ion battery that will exceed the capacity requirements of most shifts. Organisations that already maintain Motorola Professional Series Portable Radio fleets can use existing chargers.

Customisable

The GP340 EX, GP380 EX, GP580 EX and GP680 EX are supported by a range of ATEX-approved audio accessories including, headsets and remote speaker microphones tailored to the requirements of today's radio users.





GP340 EX & GP380 EX

Users of PL/5-Tone signalling radios can upgrade or add to their fleet with the Popular GP340 EX or the Versatile GP380 EX.

With 16 communication channels, the GP340 EX is the simple two-way radio solution for professionals who need to stay in contact. Its **streamlined features** allow users to concentrate on the job with help only a button press away. When the user is unavailable to receive calls, the Call Forward function means that the message gets through to a colleague who can help. An audible low battery alert helps users **sidestep radio downtime**.

To protect users further, both radios feature a built in 'Lone Worker' tool. Should a user not respond to a regular warning signal then **Emergency Signalling** is activated, as defined by the organisation.

The 255-channel GP380 EX is designed for more sophisticated users who require the **added functionality** of a full keypad and need to communicate with a larger number of users and groups.

In addition to the features of the GP340 EX, GP380 EX users benefit from the **ease-of-use** afforded by a 14-character 7-language alpha-numeric display containing a battery gauge. The contact list function means that callers can be quickly and easily identified and prioritised. In addition, predefined text messages can be sent between GP380 EX users to communicate meaningful messages when it is inconvenient or inappropriate to send a voice message.

GP580 EX

For users of StartSite, SmartZone and SmartNet systems, the Versatile GP580 EX provides organisations with the combined power of a trunked radio system and a Motorola Professional Series radio suitable for use in a potentially hazardous environment.

The RSSI roaming feature extends communications beyond the reach of a single trunked site for **seamless communication**. When moving between trunked sites, the radio will switch to the strongest available signal.

Communication security is key and Selective Radio Inhibit allows a radio to be blocked remotely should it be lost or stolen, and unblocked upon retrieval. The Remote Monitor Function lets authorised individuals listen to voice traffic should a security issue be identified.

Manage Emergencies with the integrated emergency alarm that gives priority access to defined talkgroups and identifies the radio user who requires assistance. Emergency calls can be directed to specific talkgroups, sites or announcement groups.

The alpha-numeric and iconic display allows **easy access** to the intuitive menu, talkgroup identities, phone book and contact list. Along with a battery gauge icon, these are all features that make using the GP580 EX easy.

GP680 EX

Organisations with MPT1327/MPT1343 systems can harness the power of an ATEX-approved Motorola Professional Series Portable Radio with the Versatile GP680 EX.

GP680 EX users benefit from the **ease-of-use** afforded by a 14-character 9-language alpha-numeric display containing a battery gauge and signal strength indicator. The contact list function makes calls easy and allows inbound callers to be quickly and easily identified and prioritised. In addition, predefined text messages can be sent between GP680 EX users to communicate meaningful messages when it is inconvenient or inappropriate to use voice.

Avoid radio downtime thanks to Dynamic Regrouping for over-the-air reconfiguration of the radio plus download of group names.

ATEX (Atmospheres Explosibles) Directive 94/9/EC



Introduced in 2003, this is the European Union directive to which all two-way radios must adhere if used in potentially explosive environments. It replaces the Cenelec classification in all European Union member states and EFTA countries. All Motorola Professional Series ATEX Portable Radios are approved to ATEX Protection Classes II 2 G EEx ib IIC T4, II 3D IP5X T60°C and I M2 EEX ib I as interpreted in the following tables when used in the supplied leather carry case:

ATEX Gas Protection:

II 2 G E Ex ib IIC T4	T4 = Device surface temperature will not exceed 135°C
	IIC = Protection in the most explosive gas environment (hydrogen)
	ib = Type of intrinsic safety protection - one countable fault
	Ex = Explosion-proof equipment
	E = Certified to European ATEX Standard
	G = Gas
	2 = High protection
	II = Group II 'other' environments, (chemical industries, refineries, etc.)

ATEX Gas Classification Table:

	T1: 450°C	T2: 300°C	T3: 200°C	T4: 135°C
IIA	Acetone	Ethyl alcohol	Benzene	Acetaldehyde
	Ethane	l-amyl acetate	Diesel fuel	Ethyl ether
	Ethyl acetate	n-butane	Aircraft fuel	
	Ammonia	n-butyl alcohol	Heating Oil	
	Benzene (pure)		n-hexane	
	Acetic acid			
	Carbon Monoxide			
	Methanol			
	Propane			
	Toluene			
IIB	Town Gas (Coal Gas)	Ethylene		
IIC	Hydrogen	Acetylene		

Class T4 automatically covers classes T3, T2 and T1. Gas Group IIC includes Gas Groups IIA and IIB

ATEX Dust Protection:

II 3D IP5X T60°C	T60°C = Maximum temperature of device surface
	IP5X = Protection against dust deposits
	II 3D = For use in Dust Zone 22 environments (occasional hazardous atmosphere)

ATEX Mining Protection:

I M2 E EX ib I	Explosion Group, I = Methane
	ib = Type of intrinsic safety protection - One countable fault
	Ex = Explosion-proof equipment
	E = Approved in accordance with European standards
	M2 = Category, equipment is intended for use in underground parts of mines as well as surface installation of such mines likely to be endangered by firedamp and/or combustible dust
	I = Group I

Which radio is right for me?

Feature	GP340 EX	GP380 EX	GP580 EX	GP680 EX
Channels	16	255	System dependent	System dependent
Signalling	PL/5-Tone	PL/5-Tone	SmartZone	MPT1327
Menu Languages	–	7	1	9
Programmable buttons	3	3	3	3
Keypad	–	■	■	■
Contact List	–	■	■	■
Speed Dials	–	■	■	■
Backlit 14 character display	–	■	■	■
Option Board Capable	■	■	–	■
Mandown Option Available	■	■	–	■
Lone Worker Function	■	■	–	–
Make Telephone calls*	–	■	■	■
Receive Telephone calls*	■	■	■	■
Status Messaging	–	■	■	■
Dynamic Regrouping	–	–	■	■

*Requires additional interface

Model Numbers

Name	Model Number	Signalling	Channels	Channel Spacing	Frequency	Power	Factory Fitted Option Boards
GP340 EX	MDH25RCC4AN3_EA	PL/5-Tone	16	12.5kHz	UHF 403-470 MHz	1W	-
GP340 EX	MDH25RCC6AN3_EA	PL/5-Tone	16	20/25kHz	UHF 403-470 MHz	1W	-
GP340 EX	MDH25KCC4AN3_EA	PL/5-Tone	16	12.5kHz	VHF 136-174 MHz	1W	-
GP340 EX	MDH25KCC6AN3_EA	PL/5-Tone	16	20/25kHz	VHF 136-174 MHz	1W	-
GP340 EX	MDH25RCC4AN3_EASP1	PL/5-Tone	16	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP340 EX	MDH25RCC6AN3_EASP1	PL/5-Tone	16	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP340 EX	MDH25KCC4AN3_EASP1	PL/5-Tone	16	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP340 EX	MDH25KCC6AN3_EASP1	PL/5-Tone	16	20/25kHz	VHF 136-174 MHz	1W	Mandown
GP380 EX	MDH25RCH4AN6_EA	PL/5-Tone	255	12.5kHz	UHF 403-470 MHz	1W	-
GP380 EX	MDH25RCH6AN6_EA	PL/5-Tone	255	20/25kHz	UHF 403-470 MHz	1W	-
GP380 EX	MDH25KCH4AN6_EA	PL/5-Tone	255	12.5kHz	VHF 136-174 MHz	1W	-
GP380 EX	MDH25KCH6AN6_EA	PL/5-Tone	255	20/25kHz	VHF 136-174 MHz	1W	-
GP380 EX	MDH25RCH4AN6_EASP1	PL/5-Tone	255	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP380 EX	MDH25RCH6AN6_EASP1	PL/5-Tone	255	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP380 EX	MDH25KCH4AN6_EASP1	PL/5-Tone	255	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP380 EX	MDH25KCH6AN6_EASP1	PL/5-Tone	255	20/25kHz	VHF 136-174 MHz	1W	Mandown
GP580 EX	MDH25RCH4GC6_EA	SmartZone	System Dependent	12.5kHz	UHF 403-470 MHz	1W	-
GP580 EX	MDH25RCH6GC6_EA	SmartZone	System Dependent	20/25kHz	UHF 403-470 MHz	1W	-
GP580 EX	MDH25KCH4GC6_EA	SmartZone	System Dependent	12.5kHz	VHF 136-174 MHz	1W	-
GP580 EX	MDH25KCH6GC6_EA	SmartZone	System Dependent	20/25kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25RCH4CK6_EA	MPT1327	System Dependent	12.5kHz	UHF 403-470 MHz	1W	-
GP680 EX	MDH25RCH6CK6_EA	MPT1327	System Dependent	20/25kHz	UHF 403-470 MHz	1W	-
GP680 EX	MDH25KCH4CK6_EA	MPT1327	System Dependent	12.5kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25KCH6CK6_EA	MPT1327	System Dependent	20/25kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25RCH4CK6_EASP1	MPT1327	System Dependent	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP680 EX	MDH25RCH6CK6_EASP1	MPT1327	System Dependent	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP680 EX	MDH25KCH4CK6_EASP1	MPT1327	System Dependent	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP680 EX	MDH25KCH6CK6_EASP1	MPT1327	System Dependent	20/25kHz	VHF 136-174 MHz	1W	Mandown



Accessories

All radios are supplied with a high capacity Li ion battery, soft leather carry case, accessory cover plate and antenna

DESCRIPTION	PART NUMBER
Carry Cases (Use mandatory in ATEX environments)	
Soft Leather Case for GP340 EX	GMLN1113
Soft Leather Case for GP380 EX, GP580 EX and GP680 EX	GMLN1112
Heavy Duty Leather Case for GP340 EX	GMLN1111
Heavy Duty Leather Case for GP380 EX, GP580 EX and GP680 EX	GMLN1110
ATEX Chest Pack	MDHLN6602
ATEX Radio Pack	MDRLN4815
Replacement Belt Loop for GMLN110/1111	4280483B07
Carrying Strap for GMLN110/1111	NTN5243
ATEX Audio Accessories (for direct connection into radio)	
Remote Speaker Microphone	GMMN1111
Ambient Sound Reception Headset with PTT	GMLN1114
Comfort Light Weight Headset	GMLN1117
12 PIN HIROSE Adaptor	GMLN1108
ATEX Battery	
High Capacity Li Ion Battery	NNTN5510
Chargers (ATEX Exempt)	
115V Single Unit Charger (US Plug)	MDHTN3000
230V Single Unit Charger (Euro Plug)	MDHTN3001
230V Single Unit Charger (UK Plug)	MDHTN3002
115V Multi Unit Charger (US Plug)	MDHTN3003
230V Multi Unit Charger (Euro Plug)	MDHTN3004
230V Multi Unit Charger (UK Plug)	MDHTN3005





Technical Specifications

Channel Capacity	GP340 EX	16
	GP380 EX	255
	GP580 EX	System dependent
	GP680 EX	System dependent
Power Supply	7.5V rechargeable battery	
Dimensions H x W x D (mm) with Li Ion battery	148 x 60 x 39 (at base)	
Weight (grams)		
With Li Ion battery, soft leather carry case, accessory cover plate and antenna	GP340 EX	562
	GP380 EX	570
	GP580 EX	570
	GP680 EX	570
Average Battery Life @5:5:90 cycle With Li-ion battery	11 hours	
Sealing	Withstands rain testing per: MIL STD 810E and IP54 (IEC 529)	
Shock and Vibration	Protection provided via impact resistant housing exceeding MIL STD 810E and TIA/EIA 603	
Dust and Humidity	Protection provided via environment resistant housing exceeding MIL STD 810E and TIA/EIA 603	

Receiver	
Frequencies - Full Bandsplit	VHF: 136-174 MHz UHF: 403-470 MHz
Channel Spacing	12.5 or 20/25 kHz
Sensitivity (@20dB SINAD) EN	0.50 µV typical
Intermodulation EN	65 dB
Adjacent Channel Selectivity	60 dB @ 12.5 kHz, 70 dB @ 20/25 kHz
Spurious Response Rejection	70 dB
Rated Audio	0.5 W
Audio Distortion @ 0.5W	3% typical
Conducted Spurious Emissions	-57 dBm < 1 GHz
	-47 dBm > 1 GHz EN300 086-2

Transmitter	
Frequencies - Full Bandsplit	VHF: 136-174 MHz UHF: 403-470 MHz
Channel Spacing	12.5 or 20/25 kHz
Frequency Stability (-20°C to +50°C, +25°C Ref)	+/-2.5 ppm
Power	VHF: 136-174 MHz 1W UHF: 403-470 MHz 1W
Modulation Limiting	+/-2.5@12.5 kHz, +/-4.0@20 kHz, +/-5.0@25 kHz
Conducted/Radiated Emission	-36 dBm < 1 GHz
	-30 dBm > 1 GHz
Adjacent Channel Power	-60 dB @ 12.5 kHz -70 dB @ 20/25 kHz
Audio Distortion	3% typical

Other Environmental Specifications and Standards

Operating Temperature:	-20°C to +50°C
Storage Temperature:	-50°C to +85°C
Thermal Shock:	-40°C to +80°C
Dust & Water Intrusion:	IP54

Radios meet all applicable regulatory requirements:

ATEX EC Directive: 94/9/EC:

- Applicable Standards: EN50020, EN50014, EN50281-1-1

R&TTE Directive: 99/5/EC:

- Applicable Standards: EN300 086-2, EN300 113-2, EN301 489-01, EN301 489-05, EN 60950-1

ISO 9001 Standard - Compliance with ISO 9001, an international quality system of assurance on design, development, production, installation and servicing of a product.

Portable Military Standards 810E		
Applicable MIL-STD	810E	
	Methods	Procedures
Low Pressure	500.3	2
High Temperature	501.3	1,2
Low Temperature	502.3	1,2
Temperature Shock	503.3	1
Solar Radiation	505.3	1
Rain	506.3	1,2
Humidity	507.3	2,3
Salt Fog	509.3	1
Dust	510.3	1
Vibration	514.4	1
Shock	516.4	1,4



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