MOTOROLA
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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 and water 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.

A separately available third party plug in option board offers 'Mandown' capability. Should the user fall whilst wearing the radio, an emergency procedure is activated.

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 vehicle adaptors and chargers.

CUSTOMISABLE

The GP340 Ex, GP380 Ex, GP580 Ex and GP680 Ex are supported by a range of ATEX-approved audio accessories including, headsets, remote speaker microphones and earpieces 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.

Users avoid missed calls with Priority Scan. The radio will switch to the talkgroup with the highest priority when activity is detected. Thanks to the GP580 Ex's dual mode capability, this can be a trunked or conventional unit-to-unit channel. And in the unlikely event of infrastructure outage, the radio will automatically revert to a pre-assigned conventional voice channel.

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.

When out in the field, Dynamic Regrouping lets different talk groups be amalgamated to create a temporary work group without taking radios out of service for reprogramming.

When voice communication is inconvenient, one of eight status codes or 16 preprogrammed messages can be sent to other radios without disrupting productivity.

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 FM (Factory Mutual) and Cenelec classifications 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 E Ex ib IIC T4 and II 3D T130°C IP54 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
								Ex	=	Explosion-proof equipment
								E	=	Certified to European ATEX Standard
								G	=	Gas
								2	=	Likely hazardous atmosphere
								II	=	Group II 'other' environments, (chemical industries, refineries, etc.)

II 2 G E Ex ib IIC T4

ATEX GAS CLASSIFICATION TABLE:

	T1: 450°C	T2: 300°C	T3: 200°C	T4: 135°C
I	Methane			
IIA	Acetone	Ethyl alcohol	Benzine	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	T130°C	IP54			
			IP54	=	Protection against dust deposits and jet water
			T130°C	=	Maximum temperature of device surface
			II 3D	=	For use in Dust Zone 3 environments (occasional hazardous atmosphere)

II 3D T130°C IP54

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	MPT1327/1343
Menu Languages	–	7	1	9
Programmable buttons	3	3	3	3
Keypad	☐	■	■	■
Contact List	–	■	■	■
Speed Dials	–	■	■	■
Backlit 14 character display	☐	■	■	■
Option Board Capable	■	■	■	■
Lone Worker Function	■	■	☐	☐
Make Telephone calls*	☐	■	■	■
Receive Telephone calls*	■	■	■	■
Status Messaging	–	■	■	■
Dynamic Regrouping	☐	☐	■	■

*Requires additional interface

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 Audio Accessories (for direct connection into radio)	
Noise Cancelling Remote Speaker Microphone	GMMN1111
3.5 mm Earpiece (plugs into Remote Speaker Microphone GMMN1111)	ELN4648
Bone Inductive Ear Microphone	GMMN1108
Bone Inductive Contact Com	GMLN1109
Ambient Sound Reception Headset with PTT	GMLN1114
Dual PTT Light Weight Headset	GMLN1117
ATEX Audio Accessories (requiring 12-Pin Hirose Connector Adaptor GMLN1108, ordered separately)	
Ambient Sound Reception Headset with PTT	EDN7702
Bone Inductive Contact Com	ELN4638
Dual PTT Light Weight Headset	ELN4640
Bone Inductive Ear Microphone	GMMN1109
ATEX Battery	
High Capacity Li Ion Battery	NNTN5510
Chargers and Vehicle Adapters (ATEX Exempt)	
VHF Vehicle Adapter	EN1006
UHF Vehicle Adapter	EN1007
115V Single Unit Charger (US Plug)	HTN3000
230V Single Unit Charger (Euro Plug)	HTN3001
230V Single Unit Charger (UK Plug)	HTN3002
115V Multi Unit Charger (US Plug)	HTN3003
230V Multi Unit Charger (Euro Plug)	HTN3004
230V Multi Unit Charger (UK Plug)	HTN3005
Single Unit Charger Pocket	HTN9000
Travel Charger	RLN4883

AMBIENT SOUND RECEPTION HEADSET WITH PTT
GMLN1114

NOISE CANCELLING REMOTE SPEAKER MICROPHONE
GMMN1111

BONE INDUCTIVE EAR MICROPHONE
GMMN1108

HEAVY DUTY PTT BUTTON

TECHNICAL SPECIFICATIONS

General 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 IP5 4(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	

MODEL NUMBERS

Name	Model Number	Signalling	Channels	Frequency
GP340 Ex	MDH25KDC9AN3AEA	5-Tone	16	VHF 136-174MHz
GP340 Ex	MDH25RDC9AN3AEA	5-Tone	16	UHF 403-470MHz
GP380 Ex	MDH25KDH9AN6AEA	5-Tone	255	VHF 136-174MHz
GP380 Ex	MDH25RDH9AN6AEA	5-Tone	255	UHF 403-470MHz
GP580 Ex	MDH25KDH9GC6AEA	SmartZone	System Dependent	VHF 136-174MHz
GP580 Ex	MDH25RDH9GC6AEA	SmartZone	System Dependent	UHF 403-470MHz
GP680 Ex	MDH25KDH9CK6AEA	MPT1327	System Dependent	VHF 136-174MHz
GP680 Ex	MDH25RDH9CK6AEA	MPT1327	System Dependent	UHF 403-470MHz

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:	IP 54

Radios meet all applicable regulatory requirements:

ATEX EC Directive: 94/9/EC:
– Applicable Standards: EN50020-2, EN50014-2

R&TTE Directive: 99/5/EC:
– Applicable Standards: EN300 086-2, EN300 113-2, EN301 489-01, EN301 489-05, EN 60950

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

All specifications are subject to change without notice and are issued for guidance purposes only.
Specifications at 25°C unless stated otherwise.

Receiver	
Frequencies - Full Bandsplit	VHF: 136-174 MHz UHF: 403-470 MHz
Channel Spacing	12.5/20/25 KHz
Sensitivity (@20dB SINAD) ETS	0.50 µV typical
Sensitivity (@12dB SINAD) EIA	0.25 µV typical
Intermodulation ETS	65 dB
Adjacent Channel Selectivity	60 dB @ 12.5 KHz, 70 dB @ 20/25 KHz
Spurious Rejection	70 dB
Rated Audio	0.5 W
Audio Distortion @ 0.5W	3% typical
Hum & Noise	-40 dB @ 12.5 KHz -50 dB @ 20/25 KHz
Audio Responses (300-3000Hz)	+1 to -3 dB
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	12.5/20/25 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@12.5KHz, +/-4.0@20KHz, +/- 5.0@25KHz
FM Hum and Noise	-38dB typical
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 Responses (300-3000Hz)	+1 to -3 dB
Audio Distortion	3% typical

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	1,5

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