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.

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 IP64 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 810F; the quality hallmark of the US military.

SAFETY

The visible blue colour of the ATEX radios is the official ATEX colour recognised by professional users. The blue colour increases safety for user with mixed fleet of ATEX and non-ATEX radios. The dedicated blue ATEX colour will help ensure that users bring only ATEX approved radios into potentially explosive environments.

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.

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.

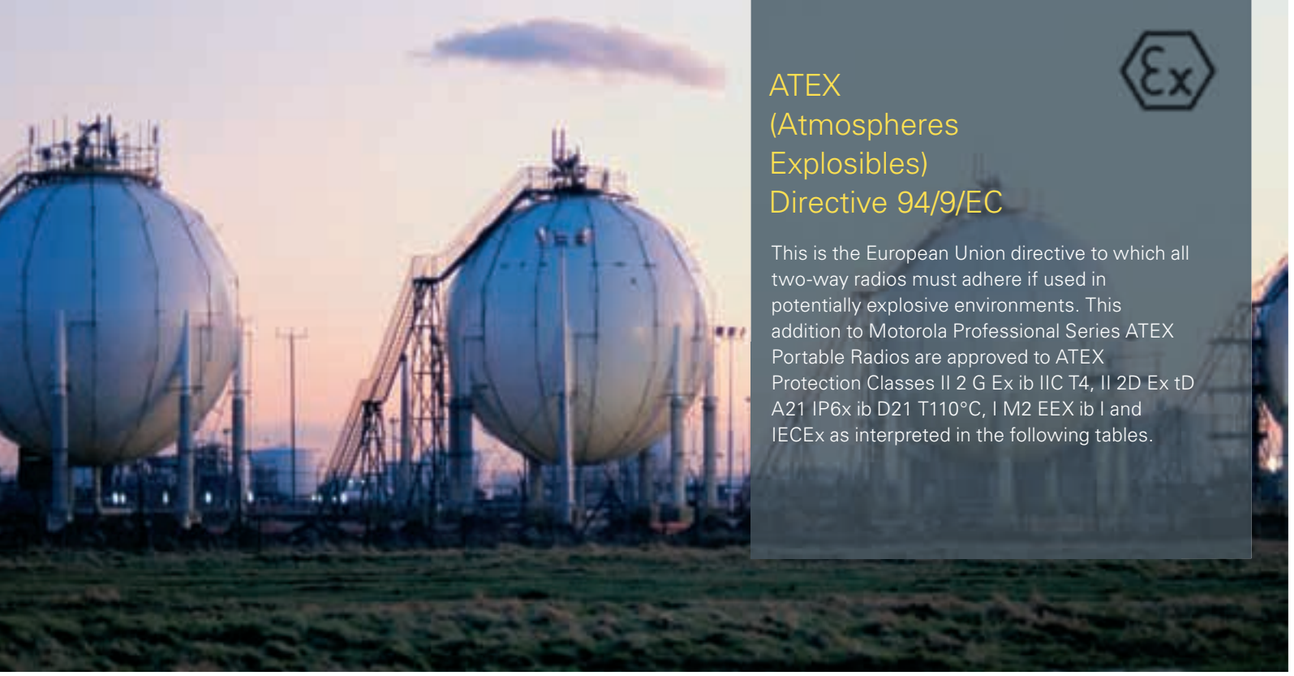
GP680 EX

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

This is the European Union directive to which all two-way radios must adhere if used in potentially explosive environments. This addition to Motorola Professional Series ATEX Portable Radios are approved to ATEX Protection Classes II 2 G Ex ib IIC T4, II 2D Ex tD A21 IP6x ib D21 T110°C, I M2 EEX ib I and IECEx as interpreted in the following tables.

ATEX GAS PROTECTION:

II	2	G	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, certified to European ATEX Directive and IECEx
							G = Gas
							2 = High Protection, category 2 for Zone 1 and 2
							II = Group II 'other' environments, (chemical industries, refineries, etc.)

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

ATEX DUST PROTECTION:

II	2D	Ex	tD	A21	IP6x	ib	D21	T110°C	
									Maximum enclosure surface temperature
									Dust Zone 21
									Max peak RF power is < 2W
									IP Protection level for dust: IP6x
									Enclosure certified for dust Zone 21 by IP rating
									Dust Protection by enclosure
									Explosion-proof equipment, certified to European ATEX Directive and IECEx
									2 = High protection, Category 2 equipment for Zone 21 and 22. D = Dust
									II = Group II, other environments, (chemical industries, refineries, etc.)

ATEX MINING PROTECTION:

I	M2	EX	ib	I	
					Explosion Group, I = Methane
					ib = Type of intrinsic safety protection - One countable fault
					Ex = Explosion-proof equipment
					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?

*Requires additional interface

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	–	–	■	■

MODEL NUMBERS

Name	Model Number	Signalling	Channels	Channel Spacing	Frequency	Power	Factory Fitted Option Boards
GP340 EX	MDH25RCC4AN3BEA	PL/5-Tone	16	12.5kHz	UHF 403-470 MHz	1W	-
GP340 EX	MDH25RCC6AN3BEA	PL/5-Tone	16	20/25kHz	UHF 403-470 MHz	1W	-
GP340 EX	MDH25KCC4AN3BEA	PL/5-Tone	16	12.5kHz	VHF 136-174 MHz	1W	-
GP340 EX	MDH25KCC6AN3BEA	PL/5-Tone	16	20/25kHz	VHF 136-174 MHz	1W	-
GP340 EX	MDH25RCC4AN3BEASP1	PL/5-Tone	16	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP340 EX	MDH25RCC6AN3BEASP1	PL/5-Tone	16	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP340 EX	MDH25KCC4AN3BEASP1	PL/5-Tone	16	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP340 EX	MDH25KCC6AN3BEASP1	PL/5-Tone	16	20/25kHz	VHF 136-174 MHz	1W	Mandown
GP380 EX	MDH25RCH4AN6BEA	PL/5-Tone	255	12.5kHz	UHF 403-470 MHz	1W	-
GP380 EX	MDH25RCH6AN6BEA	PL/5-Tone	255	20/25kHz	UHF 403-470 MHz	1W	-
GP380 EX	MDH25KCH4AN6BEA	PL/5-Tone	255	12.5kHz	VHF 136-174 MHz	1W	-
GP380 EX	MDH25KCH6AN6BEA	PL/5-Tone	255	20/25kHz	VHF 136-174 MHz	1W	-
GP380 EX	MDH25RCH4AN6BEASP1	PL/5-Tone	255	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP380 EX	MDH25RCH6AN6BEASP1	PL/5-Tone	255	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP380 EX	MDH25KCH4AN6BEASP1	PL/5-Tone	255	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP380 EX	MDH25KCH6AN6BEASP1	PL/5-Tone	255	20/25kHz	VHF 136-174 MHz	1W	Mandown
GP580 EX	MDH25RCH4GC6BEA	SmartZone	System Dependent	12.5kHz	UHF 403-470 MHz	1W	-
GP580 EX	MDH25RCH6GC6BEA	SmartZone	System Dependent	20/25kHz	UHF 403-470 MHz	1W	-
GP580 EX	MDH25KCH4GC6BEA	SmartZone	System Dependent	12.5kHz	VHF 136-174 MHz	1W	-
GP580 EX	MDH25KCH6GC6BEA	SmartZone	System Dependent	20/25kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25RCH4CK6BEA	MPT1327	System Dependent	12.5kHz	UHF 403-470 MHz	1W	-
GP680 EX	MDH25RCH6CK6BEA	MPT1327	System Dependent	20/25kHz	UHF 403-470 MHz	1W	-
GP680 EX	MDH25KCH4CK6BEA	MPT1327	System Dependent	12.5kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25KCH6CK6BEA	MPT1327	System Dependent	20/25kHz	VHF 136-174 MHz	1W	-
GP680 EX	MDH25RCH4CK6BEASP1	MPT1327	System Dependent	12.5kHz	UHF 403-470 MHz	1W	Mandown
GP680 EX	MDH25RCH6CK6BEASP1	MPT1327	System Dependent	20/25kHz	UHF 403-470 MHz	1W	Mandown
GP680 EX	MDH25KCH4CK6BEASP1	MPT1327	System Dependent	12.5kHz	VHF 136-174 MHz	1W	Mandown
GP680 EX	MDH25KCH6CK6BEASP1	MPT1327	System Dependent	20/25kHz	VHF 136-174 MHz	1W	Mandown

ACCESSORIES

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

DESCRIPTION	PART NUMBER
Carry Cases	
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
ATEX Audio Accessories (for direct connection into radio)	
Remote Speaker Microphone	GMMN1111
ATEX Over the Head Heavy Duty Headset	PMLN5151
ATEX Behind the Head Heavy Duty Headset	PMLN5152
ATEX Over the Head Lightweight Headset	PMLN5153
ATEX Behind the Head Lightweight Headset	PMLN5154
ATEX Throat Microphone with 80mm PTT	PMMN4055
ATEX Skull Microphone with 80mm PTT	PMMN4056
ATEX Battery	
High Capacity Li Ion Battery	NNTN5510CR
Chargers (ATEX Exempt)	
120V Impres Display Multi Unit Charger (US Plug) (not CE compliant)	WPLN4204
120V Impres Multi Unit Charger (US Plug) (not CE compliant)	WPLN4205
120V Single Unit Rapid Charger	MDHTN3000
230V Single Unit Rapid Charger Euro Plug	MDHTN3001
230V Single Unit Rapid Charger UK Plug	MDHTN3002
IMPRES™ SUC UK	WPLN4183
IMPRES™ SUC Euro	WPLN4184
IMPRES™ MUC (Non-display) UK	WPLN4188
IMPRES™ MUC (Non-display) Euro	WPLN4189
IMPRES™ MUC (Display) UK	WPLN4193
IMPRES™ MUC (Display) Euro	WPLN4194

DESCRIPTION	PART NUMBER
Antennas	
Whip, 430-520MHz[1]	PMAE4016[1]
VHF, 14cm, 136-155 MHz[1]	PMAD4042[1]
VHF, 14cm, 136-155 MHz[1]	PMAD4049[1]
UHF, 403-520MHz	NAE6483
UHF, 9cm Helical, 430-470MHz	NAE6522
UHF, 9cm, 403-433MHz	PMAE4002
UHF, 9cm Helical, 430-470MHz	PMAE4003
VHF, 9cm, 136-155MHz	PMAD4012
VHF, 9cm, 155-174MHz	PMAD4013
VHF, 14cm, 136-155MHz	PMAD4014
VHF, 14cm, 155-174MHz	PMAD4015
VHF, 14cm, 150-161MHz	PMAD4023
VHF, 9cm, 150-161MHz	PMAD4025

[1]certified for ATEX category 2G, 2D and M2 / IECEx group II gas, dust and group I. Remaining antennas are not certified to ATEX dust specifications.1 certified for ATEX category 2G, 2D and M2 / IECEx group II gas, dust and group I. Remaining antennas are not certified to ATEX dust specifications.

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 810F and IP64 (IEC 529)	
Shock and Vibration	Protection provided via impact resistant housing exceeding MIL STD 810F and TIA/EIA 603	
Dust and Humidity	Protection provided via environment resistant housing exceeding MIL STD 810F and TIA/EIA 603	

Environmental Specifications and Standards

Operating Temperature:	-20°C to +60°C
Storage Temperature:	-40°C to +85°C
Humidity	Per MIL-STD
Water and Dust Intrusion	IP64, MIL-STD

Radios meet all applicable regulatory requirements:

ATEX EC Directive: 94/9/EC:

– Applicable Standards: EN 60079-0:2006, EN 60079-11:2007, EN 61241-0:2006, EN 61241-1:2004, EN 60529:1992, IECEx: IEC 60079-11:2006, IEC 60079-0:2004, IEC 61241-0:2004, IEC 60529:1991

R&TTE Directive: 99/5/EC:

– Applicable Standards: EN300 086-2, EN300 113-2, EN301 489-01, EN301 489-05, EN 60950-1, EN300 219-2

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

Portable Military Standards 810E		
Applicable MIL-STD	810F	
	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

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

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GP.ATEX.FB-RE (02/08)