

M/A-COM's latest generation software-defined digital radio, the P7100<sup>IP</sup> is designed to excel in the challenging public safety environment. The P7100<sup>IP</sup> portable is a digital two-way radio that operates in multiple applications – Enhanced Digital Access Communications System (EDACS) or ProVoice trunked modes, Project 25 digital trunked mode, and conventional analog mode. A rugged and lightweight mechanical package ensures that the P7100<sup>IP</sup> will stand up to rough handling and be ready when needed in critical situations.



P7170<sup>IP</sup>

P7150<sup>IP</sup>

P7130<sup>IP</sup>

## Product Overview

The P7100<sup>IP</sup> portable provides digital voice and IP data for the critical communication demands of public safety users.

### One Radio – Multiple Applications

The P7100<sup>IP</sup> uses a new high-speed digital signal processor and the latest RF components to support multiple applications in one package:

- Project 25 Digital Conventional
- P25 Trunking
- ProVoice Digital Trunking
- EDACS Trunking (Aegis™ is optional)
- DES Encryption
- New Advanced Encryption Standard (AES) for P25
- Complete Analog Conventional features

### Lightweight with Heavy-Duty Performance

The P7100<sup>IP</sup> is more than just new electronics and software, it is the most robust mechanical package ever offered in a M/A-COM portable radio.

- MIL-STD-810F rugged – including 1-meter drop per TIA (even the knobs)
- Optional Immersion – 1 meter for 4 hours per MIL-STD-810F
- Non-Slip grips on the side
- Knobs with large blades for excellent tactile feel, yet rounded and with set-screws to prevent accidental changes
- Tx/Rx LED and improved clarity display for more visible signaling (including new features such as a battery-level gauge)

- Large speaker and amplified microphone for loud and clear audio
- At 21 ounces with battery, the same weight as an LPE-200 or M-RK
- Intrinsically safe certification (optional)
- Jaguar accessory compatibility – including batteries, chargers, vehicular chargers, carrying accessories, and audio accessories.

### Flexible and Efficient Design

With the software-based design, the P7100<sup>IP</sup> portable is readily configurable and easily expandable with software upgrades.

- Stores up to 800 trunked system/group combinations and up to 400 conventional channels
- Stores 99 individual call numbers and 99 telephone numbers in memory
- ProFile™ offers easy over-the-air programming for efficient updates
- ProScan™ provides smooth, automatic roaming between sites
- Full conventional feature set, including dual priority scan and various tone signaling formats
- EDACS Security Key (ESK) prevents unauthorized users from programming radios or accessing the system.

### Advanced Digital Voice

The P7100<sup>IP</sup> portable is available with M/A-COM's third-generation digital voice technology, ProVoice. ProVoice utilizes the acclaimed IMBE™ vocoder to allow the P7100<sup>IP</sup>

portable to deliver exceptional voice quality in areas where the repeater signal strength is weak.

### Text Messages

With this option, users may receive, display, and respond to text messages sent from authorized users on the EDACS network. This feature improves real-time situation intelligence and communications among first responders while also providing the capability to leave messages with users that are actively engaged in other critical activities.

### Project 25

The P7100<sup>IP</sup> portable is Project 25 compliant and provides P25 trunking and P25 digital conventional operation. The portable facilitates digital interoperability with other Project 25 users during critical communications situations. The P7100<sup>IP</sup> portable is capable of supporting EDACS and P25 simultaneously.

### For More Information

For more information about this or any other M/A-COM Wireless Systems product, call toll free in the U.S. 1-800-368-3277. From outside the U.S. call 1-434-455-9223 (Asia Pacific), 1-434-455-9229 (Latin America and Middle East), and 1-434-455-9219 (Europe).

### General Specifications

**P7100<sup>IP</sup> Portables are available in 3 models:**

**P7170<sup>IP</sup>:** System Model with LCD and DTMF keypad

**P7150<sup>IP</sup>:** Scan Model with LCD and limited keypad

**P7130<sup>IP</sup>:** Select Model with LCD and no front keypad

**Dimensions (H x W x D):**

(Without Knobs and Antenna)

With battery:  
6.75 x 2.58 x 1.79 in.  
(171.4 x 65.5 x 44.7 mm)

**Weight:**

NiCd: 21.3 oz (604g)  
NiMH: 22.3 oz (633g)

**Input Voltage:**

7.5 VDC (nominal)

**Vibration:**

5 G (per U.S. Forest Service)

**Shock:**

1 meter drop (per TIA/EIA-603-A)

**Immersion\*:**

1 meter for 4 hours with 49°F (27°C) differential (MIL-STD-810F)

\*P7100<sup>IP</sup> immersion model only.

**Battery Life (at 5% Tx, 5% Rx, and 90% standby):**

NiCd: 8 hours (1600 mAh)  
NiMH: 11 hours (2400 mAh)

**Operating Temperature Range:**

NiCd: -22 to +140°F  
(-30 to +60°C)  
NiMH: +14 to +122°F  
(-10 to +50°C)

**Relative Humidity:**

90% @ 122°F (+50°C)

**Altitude:**

Operational: 15,000 ft (4,572 m)  
In Transit: 50,000 ft (15,240 m)

**Color (case):**

Black

### Options and Accessories

Headset, earpiece, speaker microphones, PC programming software and cables, subminiature surveillance accessories, antennas, cases, straps, belt loops and swivel mounts, desk chargers, wall chargers, and vehicular chargers.

### Intrinsically Safe Options

Factory Mutual Intrinsically Safe for Class I, II, and III, Division 1, Groups C, D, E, F, and G, Temp T3C, TA=+60°C; Nonincendive for Class I, Division 2, Groups A, B, C, and D, Temp T4, TA=+60°C.

CSA Intrinsically Safe for Class I, Groups C and D; Class II, Group G (Coal Dust); Class III; Nonincendive for Class I, Division 2, Groups A, B, C, and D.

### Transmitter

	800
Frequency Range (MHz):	806-825, 851-870
Rated RF Power Trunked (W):	1, 3
Rated RF Power Talkaround (W):	1, 3
Frequency Stability (-30 to +60°C; +25°C Ref) (ppm):	±1.5
Modulation Deviation (kHz):	±5.0 (±4.0 NPSPAC)
FM Hum and Noise (Companion Receiver) (dB):	<-40 (non-NPSPAC), <-38 (NPSPAC)
Audio Response (dB):	+1/-3
Spurious and Harmonics (dBm/dBc):	<-16/-51
Frequency Separation (MHz):	Full bandwidth
Audio Distortion:	<3% (1 kHz tone @ 3 kHz deviation (non-NPSPAC)) <3%, (1 kHz tone @ 2.4 kHz deviation (NPSPAC))
P25 Modulation Fidelity (%):	<5
P25 Adjacent Channel Power (dBc):	>67

### Receiver

	800
Frequency Range (MHz):	851-870*
Channel Spacing (kHz):	25/NPSPAC
Sensitivity (12 dB SINAD) (µV/dBm):	0.28/-118
P25 Reference Sensitivity (dBm):	<-116
Adjacent Channel Rejection @ 25 kHz (dB):	>72
P25 Adjacent Channel Rejection @ 12.5 kHz (dB):	>60
Offset Channel Selectivity @ NPSPAC (dB):	>20
Intermodulation (dB):	>72
Spurious and Image Rejection (dB):	>70
Frequency Stability (-30 to +60°C; +25 Ref) (ppm):	±1.5
Frequency Separation (MHz):	Full bandwidth
Rated Audio Output (mW):	500
Audio Distortion:	<3% @ rated power

\*The following self-quieting frequency cannot be programmed as a receive frequency: 864.000 MHz.

### Environmental Specifications

Standard	Parameter	Methods & Procedures
MIL-STD-810F*	Low Pressure	500.4/1,2
	High Temperature	501.4/1,2
	Low Temperature	502.4/1,2
	Temperature Shock	503.4/1
	Solar Radiation	505.4/2
	Blowing Rain	506.4/1
	Humidity	507.4
	Salt Fog	509.4
	Blowing Dust	510.4/1
	Immersion**	512.4/1
	Vibration (Minimum Integrity)	514.5/1, Category 24
	Vibration (Basic Transportation)	514.5/1, Category 4
	Shock (Functional/Basic)	516.5/1
	Shock (Transit Drop)	516.5/4
IP67	Dust-tight and Water Immersion	IEC 60529
U.S. Forest Service	Vibration (10-60 Hz)	USDA LMR Standard, Section 2.15
TIA/EIA-603-A	Shock	Paragraph 3.3.5.3

\*Also meets equivalent superseded MIL-STD-810C, -D, and -E.  
\*\*P7100<sup>IP</sup> immersion model only.

### Digital Operation

Vocoding Method:	Improved MultiBand Excitation (IMBE)
Data Rate:	9600 bps
Modulation:	GFSK for ProVoice, C4FM for P25

### Regulatory Data

Frequency Range (MHz)	RF Output (W)	Frequency Stability (ppm)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules
806-869	1-3	1.5	OWDTR-0018-E	15, 90	3636B-0018	RSS-119
806-869	1-3	1.5	OWDTR-0023-E	15, 90	3636B-0023	RSS-119

### M/A-COM Wireless Systems

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