

P5100 Portable 800 MHz

The P5100 portable is a digital two-way radio that provides

- Operation on multiple applications
- Subset of P7100^{IP} features
- Rugged mechanical package



P5130 P5150

The P5100 portable provides digital voice and Internet Protocol (IP) data to meet a wide range of customer applications and requirements. The P5100 is available in Select (P5130) and Scan (P5150) models and can be customized with a variety of software options and accessories.

One Radio for Multiple Applications

The P5100 uses a 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
- Enhanced Digital Access Communications Systems (EDACS®) Trunking
- Complete Analog Conventional features included

High Performance

The P5100 has a lightweight and robust mechanical package that provides reliable performance in demanding environments.

- MIL-STD-810F rugged – including 1-meter drop per TIA (even the knobs)
- Rated for MIL-STD-810F wind-driven rain exposure (not immersion rated)

- 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 a P7100^{IP}, LPE-200™, or M-RK™
- Intrinsically safe certification (optional)
- Common mechanical package with P7100^{IP} allows accessory compatibility with Jaguar™ and P7100^{IP}, including batteries, chargers, vehicular chargers, carrying accessories, and audio accessories.

Flexible and Capable Trunking

With its software-based design, the P5100 portable is readily configurable and easily expandable with software upgrades using the robust EDACS trunking feature set.

- Stores up to a maximum of 128 trunked system/group combinations and up to 512 conventional channels
- Stores 255 individual call numbers and 255 telephone numbers in memory
- Includes Emergency as standard

- ProFile™ option offers easy over-the-air programming for efficient updates
- ProScan™ option provides smooth, automatic roaming between sites
- Full conventional feature set, including dual priority scan and tone signaling
- EDACS Security Key (ESK) option prevents unauthorized users from programming radios or accessing the system.

Advanced Digital Voice

The P5100 portable is available with an unencrypted version of Harris' third-generation digital voice technology, ProVoice. ProVoice utilizes the acclaimed IMBE™ vocoder to allow the P5100 portable to deliver exceptional voice quality in areas where the repeater signal strength is weak.

Project 25 Interoperability

The P5100 portable is Project 25 compliant and provides P25 trunking and P25 digital conventional operation. The portable facilitates unencrypted digital interoperability with other Project 25 users during critical communications situations. The P5100 portable is capable of supporting ProVoice or EDACS and P25 simultaneously.

General Specifications

P5100 Portables are available in 2 models:

P5150: Scan Model with LCD and limited keypad

P5130: 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:

Li-Ion: 19.8 oz (561g)

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)

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

Li-Ion: 16.5 hours (3200 mAh)

NiCd: 8 hours (1600 mAh)

NiMH: 11 hours (2400 mAh)

Operating Temperature Range:

Li-Ion: +14 to +122°F

(-10 to +50°C)

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):

Gray

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 Typical Performance Specifications
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
Frequency Separation (MHz):	Full Bandwidth
Modulation Deviation (kHz):	±5.0 (±4.0 NPSPAC)
FM Hum and Noise (Companion Receiver) (dB):	-42 (non-NPSPAC), -40 (NPSPAC)
Spurious and Harmonics (dBm/dBc):	-35/-70
Audio Response (dB):	+1/-3
Audio Distortion:	1.5% (1 kHz tone @ 3 kHz deviation (non-NPSPAC)) 1.5% (1 kHz tone @ 2.4 kHz deviation (NPSPAC))
P25 Modulation Fidelity (%):	<5
P25 Adjacent Channel Power (dBc):	>67

Receiver

	800 Typical Performance Specifications
Frequency Range (MHz):	851-870*
Frequency Separation (MHz):	Full Bandwidth
Channel Spacing (kHz):	25/NPSPAC
Frequency Stability (-30 to +60°C; +25 Ref) (ppm):	±1.5
Sensitivity (12 dB SINAD) (µV/dBm):	0.25/-119
Adjacent Channel Rejection @ 25 kHz (dB):	72
Intermodulation (dB):	75
Spurious and Image Rejection (dB):	75
Rated Audio Output (mW):	500 rated (1310 maximum)
Audio Distortion:	1.5% @ rated power
Offset Channel Selectivity @ NPSPAC (dB):	>20
P25 Reference Sensitivity (µV/dBm):	0.28/-118
P25 Adjacent Channel Rejection @ 12.5 kHz (dB):	>60

*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
	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
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.

Digital Operation

Vocoding Method:	Improved MultiBand Excitation (IMBET™)
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