P5100 Portables
VHF

P5130 P5150

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

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

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^{TM} Digital Trunking
- Enhanced Digital Access Communications Systems (EDACS®) Trunking
- Complete Analog Conventional features included with the models above

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 512 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: 19.20 oz (544g)
NiCd: 21.00 oz (595g)
NiMH: 22.10 oz (626g)

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

	VHF Typical Performance Specifications
Frequency Range (MHz):	136-174
Rated RF Power (W):	1, 5
Frequency Stability (-30 to +60°C; +25°C Ref) (ppm):	±1.5
Frequency Separation (MHz):	Full Bandwidth
Modulation Deviation (kHz):	5.0 (wideband), 2.5 (narrowband)
FM Hum and Noise (Companion Receiver) (dB):	-44 (wideband). -39 (narrowband)
Spurious and Harmonics (dBm/dBc):	-38/-75
Audio Response (dB):	+1/-3
Audio Distortion (1 kHz tone):	1% (3 kHz deviation (wideband)) 1% (1.5 kHz deviation (narrowband))
Project 25 Modulation Fidelity (%):	<5
Project 25 ACP (dBc):	>67

Receiver

	VHF Typical Performance Specifications
Frequency Range (MHz):	136-174*
Frequency Separation (MHz):	Full Bandwidth
Channel Spacing (kHz):	25/30 (wideband), 12.5/15 (narrowband)
Frequency Stability (-30 to +60°C: +25°C Ref) (ppm):	±1.5
Sensitivity (12 dB SINAD) (µV/dBm):	0.20/-121
Squelch Sensitivity (dB SINAD):	8 ± 2
Adjacent Channel Selectivity @ ±25 kHz (wideband) (dB): @ ±15 kHz (narrowband) (dB): @ 12.5 kHz (narrowband) (dB):	 79 >65 66
Intermodulation (dB):	77
Spurious and Image Rejection (dB):	80
Audio Output (mW):	500 rated (1390 maximum)
Audio Distortion:	1.5% @ rated power
Project 25 Reference Sensitivity (µV/dBm):	0.20/-121
Project 25 Adjacent Channel Rejection (dB):	>60

*The following self-quieting frequencies cannot be programmed as receive frequencies: 144.000, 153.600, 163.200, and 172.800 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 (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**	**NTIA Certification Number**
136-174	1-5	1.5	OWDTR-0013-E	15, 22, 74, 80, 90	3636B-0013	RSS-119 RSS-182	JF-1208072

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