

# VX-P820 Series

## P25 VHF/UHF Portable Radios

SPECIFICATION SHEET – NORTH AMERICA

### Smallest Submersible P25 Portable Radio

Includes APCO P25 interoperability combined with more advanced features not typically found in a radio of this size. Designed to perform in the most demanding and critical conditions, the VX-P820 Series gives you maximum radio performance for less in size and less in total cost of ownership.

### P25 Digital Mode Capabilities

**Expanded Signaling:** Supports selective calling, Talk Group IDs (TGID), Network Access Codes, Individual ID lists and Paging Group lists for flexible communications.

**Secure Communication:** Options available to support both Advanced Encryption Standard (AES) and Data Encryption Standard (DES) as required by APCO Project 25. Multiple encryption keys can also be stored in the radio.

**Mixed Mode:** Seamlessly switch between analog to P25 digital mode on each channel based on call type received and on programming for transmit.

**Enhanced Voice Quality:** Featuring the AMBE+2™ Vocoder, for exceptional voice quality. Suppresses background noise and improves clarity of radio transmission.

**Connectivity Assurance:** The RSSI indicator emits an audible alert when the receive signal strength drops to a level not suitable for reliable communications.

### When Safety Counts – Never Be Alone

The VX-P820 Series has Emergency notification that will switch to a designated channel and send an emergency alert. The radios also include Remote Monitor which lets you monitor the situation happening near a target radio if someone is unresponsive.

### Loud Audio for Noisy Environments

With 700 mW audio output, be assured of hearing critical information you need in most situations.

### Intrinsically Safe

Intrinsically safe models are SGS certified to the requirements of ANSI/UL913 5th Edition for use in Class I, II, III, Division I; Groups C, D, E, F, G; Temp T3C hazardous locations.



### The Vertex Standard Difference

Our number one goal is achieving superior customer satisfaction by delivering products and services that exceed your expectations. Vertex Standard radios are built to last and are backed by an industry-leading 3 year warranty.

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www.vertexstandard.com/lmr

#### Additional Features

- 12-Character alphanumeric display (VX-P824/P829)
- Field programmable (VX-P829)
- 9 programmable keys (VX-P829)
- 7 programmable keys (VX-P824)
- 3 programmable keys (VX-P821)
- Scan options: Priority, Dual Watch, Follow-me, Follow-me Dual Watch, Talk Around
- User set mode (VX-P824/P829)
- Direct channel recall (VX-P824/P829)

#### P25 Digital Mode Only

- Caller ID display (VX-P824/P829)
- BCLO and TOT

#### Analog Mode Only

- RX/TX Battery power save
- DTMF ANI
- 2-Tone Encode and Multi 2-Tone Decoding
- CTCSS/DCS Encode and Decode
- Lone Worker
- BCLO/BTLO and TOT
- Auto-Range Transpond System (ARTS™)
- Compander
- Audio pitch control
- User selectable tone (VX-P824/P829)
- MDC-1200® Encode (PTT ID, Emergency ID)
- 7-color LED (2-tone mode)
- Radio-to-radio cloning

#### Accessories

- MH-50D7A: Public Safety speaker mic with toggle†
- MH-66A7A: Submersible noise canceling speaker mic†
- MH-66B7A: Submersible speaker mic with PF key & toggle†
- VH-111: Over-the-head dual-muff headset
- VH-115L: Behind-the-head headset with boom mic
- VH-215L: Over-the-head single-muff headset
- FNB-VI29LI-UNI: 3000 mAh Li-Ion battery
- FNB-VI29LIIS-UNI: 3000 mAh Intrinsically safe Li-Ion battery
- FNB-VI28LI-UNI: 2300 mAh Li-Ion battery
- FNB-V87LIA: 2300 mAh Li-Ion battery
- FNB-VI27LI-UNI: 1380 mAh Li-Ion battery
- FNB-V86LIA: 1380 mAh Li-Ion battery
- FBA-34: Alkaline battery case (holds 6 AA batteries)
- VAC-UNI: Single unit charger for UNI batteries
- VAC-6058: Multi unit charger for UNI batteries
- VAC-921: Desktop rapid charger (non-UNI)
- VAC-6920: 6-Unit rapid charger (non-UNI)
- VCM-2: Vehicular charger kit for VAC-921
- LCC-820: Leather case options
- CLIP-17B: Swivel belt clip

#### VX-P820 Series Specifications

	VHF	UHF
<b>General Specification</b>		
Frequency Range	134 – 174 MHz	380 – 450 MHz; 450 – 512 MHz
Number of Channels and Groups	512 and 32 Groups (VX-P824, VX-P829) 16 and 1 Group (VX-P821)	
Power Supply Voltage	7.4V DC ± 10%	
Channel Spacing	12.5 / 20* / 25* kHz	
PLL Steps	1.25 / 2.5 / 5 / 6.25 kHz	5 / 6.25 kHz
Battery Life P25 Mode (5-5-90 duty)		
3000 mAh FNB-VI29LI-UNI / FNB-VI29LIIS-UNI	19.7 hrs with saver / 15.6 hrs	18.7 hrs with saver / 14.3 hrs
2300 mAh FNB-VI28LI-UNI	16 hrs with saver / 12.4 hrs	15 hrs with saver / 11.5 hrs
2300 mAh FNB-V87LIA	16 hrs with saver / 12.4 hrs	15 hrs with saver / 11.5 hrs
1380 mAh FNB-VI27LI-UNI	9.6 hrs with saver / 7.5 hrs	9 hrs with saver / 6.9 hrs
1380 mAh FNB-V86LIA	9.6 hrs with saver / 7.5 hrs	9 hrs with saver / 6.9 hrs
IP Rating	IP 57	
Operating Temperature Range	-22°F to +140°F (-30°C to +60°C)	
Frequency Stability	±2.5 ppm	
Dimension (H x W x D)	3.8 x 2.3 x 1.6 in (96.5 x 57.5 x 40.6 mm) FNB-VI29LI-UNI (and IS) 3.8 x 2.3 x 1.6 in (96.5 x 57.5 x 40.6 mm) FNB-VI28LI-UNI 3.8 x 2.3 x 1.6 in (96.5 x 57.5 x 40.6 mm) FNB-V87LIA 3.8 x 2.3 x 1.4 in (96.5 x 57.5 x 35.0 mm) FNB-VI27LI-UNI 3.8 x 2.3 x 1.5 in (96.5 x 57.5 x 37.5 mm) FNB-V86LIA	
Weight (Approx.)	14.0 oz (396 g) FNB-VI29LI-UNI (and IS) 12.6 oz (356 g) FNB-VI28LI-UNI 12.3 oz (348 g) FNB-V87LIA 13.2 oz (373 g) FNB-VI27LI-UNI 10.9 oz (310 g) FNB-V86LIA	

#### Receiver Specification: measured by TIA/EIA-603, TIA-102 CAAA (Digital)

Sensitivity 12dB SINAD	0.25 µV	0.32 µV
Digital 5% BER	0.25 µV	0.32 µV
Digital 1% BER	0.35 µV	0.40 µV
Adjacent Channel Selectivity (W/N)	75 dB / 70 dB	
Intermodulation	75 dB / 70 dB	
Hum and Noise	46 / 40 dB	
Audio Output	700 mW @ 16 Ohms, 5% THD	

#### Transmitter Specification: measured by TIA/EIA-603, TIA-102 CAAA (Digital)

Output Power	5 / 2.5 / 1 / 0.25 W	
Modulation		
Analog	16K0F3E, 11K0F3E	
Digital	8K10F1D / 8K10F1E	
Spurious Emissions	70 dB	
FM Hum and Noise (W/N)	46 dB / 40 dB	
Audio Distortion	< 3 % @ 1 kHz	

#### Applicable MIL-STD

Standard	Methods/Procedures			
	MIL 810C	MIL 810D	MIL 810E	MIL 810F
Low Pressure	500.1	500.2	500.3	500.4
High Temperature	501.1 / I, II	501.2 / I, II	501.3 / I, II	501.4 / I, II
Low Temperature	502.1 / I, II	502.2 / I, II	502.3 / I, II	502.4 / I, II
Temperature Shock	–	–	–	503.4 / I
Solar Radiation	505.1 / I	505.2 / I Cat. AI	505.3 / I Cat. AI	505.4 / I, II Cat. AI
Rain	506.1 / I	506.2 / I	506.3 / I, II	506.4 / I
Humidity	507.1 / I, II	507.2 / II, III	507.3 / II, III	–
Salt Fog	509.1 / I	509.2 / I	509.3 / I	509.4 / I
Dust	–	510.2 / I	510.3 / I	510.4 / I, III
Vibration	514.2 / VIII, X	514.3 / I Cat. 10	514.4 / I Cat. 10	514.5 / I Cat. 20, 24
Shock	516.2 / I	516.3 / I	516.4 / I	516.5 / I

Specifications are subject to change without notice or obligation. Vertex Standard is a trademark of Vertex Standard LMR, Inc. All other trademarks are the property of their respective owners. †Intrinsically Safe system approved. Complete list of IS accessories in Owners Manual. \*25 kHz will not be available on new equipment in the U.S.A. after 1/1/2013. © 2014 Vertex Standard LMR, Inc. All rights reserved. NSSP820\_05/2014