

VX-820 Series

VHF/UHF Portable Radios

SPECIFICATION SHEET – NORTH AMERICA

Compact Size With Robust Capabilities

Don't let the size deceive you. The smallest radio offered by Vertex Standard is unobtrusive and easy to wear all day and built with more enhanced features typically not found in other radios of this size. Designed to perform in the most demanding and critical conditions, the VX-820 Series gives you maximum radio performance for less in size and less in total cost of ownership.

Withstands Harsh Environments

Rain, snow, fire suppression spray and dust are no problem for these radios manufactured to strict IP ratings. The VX-820 Series meets international waterproofing standard IP 57 where fresh water does not harm the radio when submersed to a depth of three feet for up to 30 minutes.

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.

Long-Lasting Power for Responsiveness

To give you maximum performance, the VX-820 Series offers a choice of Li-Ion battery power up to 3000 mAh for over 20 hours of battery life (per specifications).

Tailored Communications to Meet Your Demands

Get the ultimate signaling performance with a choice of multiple 2-tone encode and decode or 5-tone signaling to support the most advanced communications needs from individual to fleet operations. The front panel also includes a 7-color LED with a variable flash pattern for custom incoming call alerts.

When Safety Counts – Never Be Alone

When help is needed, the VX-820 Series has Emergency notification that will switch to a designated channel and send an emergency alert. The radios also include Remote Listen which turns the radio on remotely if needed to check out what is happening near the radio.

Loud Audio for Noisy Environments

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

Exclusive Auto-Range Transpond System – ARTS™

Always know your connection status. Only Vertex Standard radios are designed to inform you when you and another ARTS™-equipped radio are within communication range. If out of range, your radio senses no signal has been received and beeps to alert you. A great solution to keep your workers coordinated.



VX-824

VX-821

VX-829



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

- ▶ 512 Channel capacity (VX-829/824)
- ▶ 16 Channel capacity (VX-821)
- ▶ Wide band coverage
- ▶ Nine programmable keys (VX-829)
- ▶ Seven programmable keys (VX-824)
- ▶ Three programmable keys (VX-821)
- ▶ Programmable channel selector
- ▶ Direct channel recall
- ▶ 12-Character alphanumeric display (VX-829/824)
- ▶ RX/TX Battery power save
- ▶ DTMF ANI
- ▶ DTMF Speed Dial (VX-829)
- ▶ Stun/kill/revive (5-tone)
- ▶ Lone Worker
- ▶ Auto-Range Transpond System (ARTS™)
- ▶ Compander
- ▶ Whisper
- ▶ Minimum volume control
- ▶ Scan options: Priority, Dual Watch, Follow-me, Follow-me Dual Watch, Talk Around
- ▶ Programmable home channel function
- ▶ Radio-to-radio cloning

Accessories

- ▶ MH-50D7A: Public Safety speaker mic with toggle[†]
- ▶ MH-66A7A: Submersible noise cancelling speaker mic[†]
- ▶ MH-66B7A: Submersible speaker mic with PF key & toggle[†]
- ▶ VH-111: Over-the-head dual-muff headset
- ▶ VH-115L: Behind the Head, lightweight headset
- ▶ FNB-V129LI-UNI: 3000 mAh Li-Ion battery
- ▶ FNB-V92LI: 3000 mAh Li-Ion battery
- ▶ FNB-V92LIIS: 3000 mAh Intrinsically safe Li-Ion battery
- ▶ FNB-V128LI-UNI: 2300 mAh Li-Ion battery
- ▶ FNB-V87LIA: 2300 mAh Li-Ion battery
- ▶ FNB-V127LI-UNI: 1380 mAh Li-Ion Battery
- ▶ FNB-V86LIA: 1380 mAh Li-Ion battery
- ▶ 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 Carry Case Options
- ▶ FBA-34: Alkaline Battery Case (AA)

Option Boards

- ▶ FVP-25: Voice Inversion Encryption and DTMF Paging[†]
- ▶ FVP-35: Rolling Code Encryption[†]
- ▶ FVP-36: Voice Inversion Encryption[†]
- ▶ DVS-5: Digital voice storage
- ▶ VME-100: MDC-1200®/GE-STAR® ANI Encode[†]
- ▶ VMDE-200: MDC-1200®/GE-STAR® ANI Enc./Dec.[†]

VX-820 Series Specifications

	VHF	UHF
General Specification		
Frequency Range	134 – 174 MHz	400 – 470 MHz; 450 – 512 MHz
Number of Channels and Groups	512 and 32 Groups (VX-829, VX-824) 16 and 1 Group (VX-821)	
Power Supply Voltage	7.4V DC ± 20%	
Channel Spacing	12.5 / 20* / 25* kHz	
PLL Steps	1.25 / 2.5 / 5 / 6.25 kHz	
Battery Life (5-5-90 duty)		
3000 mAh FNB-V129LI-UNI	23 hrs with saver / 18 hrs	21.5 hrs with saver / 16.5 hrs
3000 mAh FNB-92LI / FNB-V92LIIS	23 hrs with saver / 18 hrs	21.5 hrs with saver / 16.5 hrs
2300 mAh FNB-V128LI-UNI	18.4 hrs with saver / 14.3 hrs	17.2 hrs with saver / 13.2 hrs
2300 mAh FNB-V87LIA	18.4 hrs with saver / 14.3 hrs	17.2 hrs with saver / 13.2 hrs
1380 mAh FNB-V127LI-UNI	11 hrs with saver / 8.6 hrs	10.3 hrs with saver / 7.9 hrs
1380 mAh FNB-V86LIA	11 hrs with saver / 8.6 hrs	10.3 hrs with saver / 7.9 hrs
IP Rating	IP 57	
Operating Temperature Range	-22°F to +140°F (-30°C to +60°C)	
Frequency Stability	±2.5 ppm	
RF Input-Output Impedance	50 Ohms	
Dimension (H x W x D)		
VX-821 Model	3.8 x 2.3 x 1.6 in (96.5 x 57.5 x 40.6 mm) FNB-V129LI-UNI 3.8 x 2.3 x 1.7 in (96.5 x 57.5 x 43.5 mm) FNB-V92LI (and IS) 3.8 x 2.3 x 1.6 in (96.5 x 57.5 x 40.6 mm) FNB-V128LI-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-127LI-UNI 3.8 x 2.3 x 1.5 in (96.5 x 57.5 x 37.5 mm) FNB-V86LIA	
Weight (Approx.)	12.7 oz (359 g) FNB-V129LI-UNI 14.0 oz (396 g) FNB-V92LI (and IS) 12.6 oz (356 g) FNB-V128LI-UNI 12.3 oz (348 g) FNB-V87LIA 13.2 oz (373 g) FNB-127LI-UNI 10.9 oz (310 g) FNB-V86LIA	

Receiver Specification: measured by TIA/EIA-603

Sensitivity 12dB SINAD	0.25 µV typical
Adjacent Channel Selectivity	75 dB / 70 dB
Intermodulation	75 dB / 70 dB
Spurious and Image Rejection	75 dB
Audio Output	700 mW (internal @ 16 Ohms, 5% THD)

Transmitter Specification: measured by TIA/EIA-603

Output Power	5 / 2.5 / 1 / 0.25 W
Modulation	16K0F3E, 11K0F3E
Conducted Spurious Emissions	70 dB
FM Hum and Noise	45 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. A1	505.3 / II Cat. A1	505.4 / I, II Cat. A1
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. NSS820_01/2014