

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.



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. AI | 505.3 / II 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. NSS820_01/2014