

# VX-820 Series

## VHF/UHF Portable Radios

SPECIFICATION SHEET – AUSTRALIA & NEW ZEALAND



Meets the following standards:  
AS/NZS4295, ISO9001 and ISO4001.



### 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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## Compact size with robust capabilities

Don't let the size deceive you. The smallest radios offered by Vertex Standard are 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 many options to choose from, all at an affordable price.

### 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 IP57, where fresh water does not harm the radio when submersed to a depth of one metre for up to 30 minutes.

### Loud audio for noisy environments

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

### 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 signalling performance with a choice of multiple two-tone encode and decode or five-tone signalling to support the most advanced communications needs from individual to fleet operations. The front panel also includes a seven-colour LED with a variable flash pattern for custom incoming call alerts.

### When safety counts – never be alone

When you need help, the VX-820 Series has emergency notification that will switch to a designated channel and send an emergency alert. These radios also include a Lone Worker function whereby you notify a central control point at timed intervals so you're never truly alone. There is also a Remote Listen function, which turns the radio on remotely if needed to check out what is happening near the radio.

## The Vertex Standard Difference

### Universal chargers

Vertex Standard portable two-way radios can be used in the same universal single unit and multi unit chargers (with a compatible UNI battery attached) reducing the equipment you need to stay connected.

### What's in the box

Vertex Standard portable two-way radios come complete with a radio, antenna, belt-clip, charger, adapter and choice of high capacity or slim line battery. (Battery options available on selected models only).

### 3 Year Warranty

All Vertex Standard radios come backed with an industry leading 3 year warranty.



## VX-820 Series Mode Options

### Conventional

The VX-820 Series is available in a standard analogue version combining superior durability with a number of safety and emergency features all in a highly compact radio.

### Intrinsically Safe

Intrinsic safety is an engineered explosion protection method that is integral to the electrical circuit. The VX-820 IS Series are Intrinsically Safe (IS), meeting the globally recognised UL-913 certification (5th Edition for use in Class I, II, III, Division I; Groups C, D, E, F, G; Temp T3C hazardous locations.) This certification covers all zones and categories (within hazardous environments) except underground coalmines and areas high in hydrogen. Please speak to your Authorised Vertex Standard reseller for a copy of the UL-913 certificate.

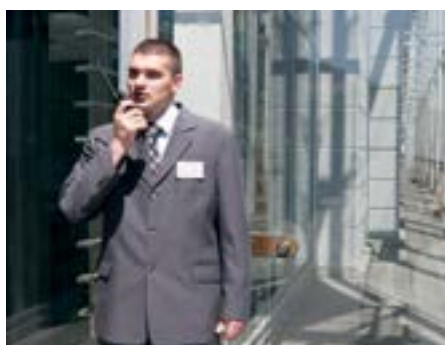
### ATEX

The VX-820 Series is also available with ATEX (Atmosphere Explosive) certification to the ATEX directive 94/9/EC for gas protection to use in explosive, hazardous settings.

VX-820 ATEX SERIES APPROVED FOR GAS PROTECTION							
II	2	G	E	Ex	ib	IIC	T4
							T4 = Device surface temperature will not exceed 135°C
							IIC = Protection in the most explosive gas environment (hydrogen)
							ib = Type of intrinsic safety protection
							Ex = Explosion-proof equipment
							E = Certified to European ATEX Standard
							G = Gas
							2 = Likely hazardous atmosphere
							II = Group II "other" environments, (chemical industries, refineries, etc.)

### P25

The VX-P820 Series is the world's smallest submersible APCO Project 25 (P25) portable radio. This option allows users to switch seamlessly between analogue and P25 digital mode on each channel, based on the call type received and on programming for transmit. P25 Digital Mode Options are 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. These features allow a more secure communication than standard analogue.



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## Additional Features

- ▶ 16 Channel capacity (VX-821)
- ▶ 512 Channel capacity (VX-829/824)
- ▶ Three programmable keys (VX-821)
- ▶ Seven programmable keys (VX-824)
- ▶ Nine programmable keys (VX-829)
- ▶ Wide band coverage
- ▶ 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
- ▶ Voting

## Accessories

### Remote Speaker Mics

- ▶ MH-66A7A: Submersible speaker mic†
- ▶ MH-50D7A: Noise cancelling speaker mic†
- ▶ MH-66B7A: Submersible speaker mic with PF key & toggle†

### Ear Pieces

- ▶ VH-131: 2-Wire earpiece microphone
- ▶ VH-121: 3-Wire earpiece microphone
- ▶ VH-111: Over-the-head dual-muff heavy duty headset

### Carry Cases

- ▶ LCC-820S/TT: Heavy duty leather case to suit 820 Series with 2300 mAh UNI battery
- ▶ LCC-820S/TT92: Heavy duty leather case with swivel to suit 820 Series with 3000 mAh UNI battery

### Chargers & Battery Options

- ▶ CD-58: Single unit desktop charger for UNI batteries (included)
- ▶ PA-55H: AC adaptor for CD-58 (included)
- ▶ VAC-6058: 6 unit desktop charger for UNI batteries
- ▶ VCM-5: Vehicular charger kit for CD-58
- ▶ FBA-34: Alkaline Battery Case (AA)
- ▶ FNB-V128LI-UNI: 2300 mAh (included with VX820 Conventional & P25)
- ▶ FNB-V129LI-UNI: 3000 mAh (option for VX820 Conventional & P25)
- ▶ FNB-V92LIIS-UNI: 3000 mAh (included with VX820 Intrinsically Safe)
- ▶ FNB-V100LIEX: 1500 mAh (included with VX820 ATEX)

## VX-820 Series Specifications

	Conventional analogue	P25	IS	ATEX
<b>General Specification</b>				
Frequency Range:				
VHF	134 – 174 MHz			
UHF I	400 – 470 MHz			
UHF2	450 – 520 MHz			N/A
Number of channels and Groups	16 and 1 Group (VX-821) 512 and 32 Groups (VX-829, VX-824)			
Power Supply Voltage	7.4V DC ± 20%			
Channel Spacing	12.5 / 20* / 25* kHz			
Operating Temperature Range	-22°F to +140°F (-30°C to +60°C)			
Frequency Stability	±2.5 ppm			
RF Input-Output Impedance	50 Ohms			
IP Rating	57			
Audio Output	700 mW (internal @ 16 Ohms, 5% THD)			
Battery Compatibility and Life (5-5-90 duty):				
2300 mAh FNB-V128LI-UNI	17.2 hrs with saver / 13.2 hrs		N/A	N/A
3000 mAh FNB-V129LI-UNI	21.5 hrs with saver / 16.5 hrs		N/A	N/A
3000 mAh FNB-V129LI/IS-UNI	N/A		21.5 hrs with saver / 16.5 hrs	N/A
1500 mAh FNB-V100LIEX	N/A		N/A	10.3 hrs with saver / 9 hrs
Dimensions (H x W x D)	96.5 x 57.5 x 40.6 mm 2300 mAh FNB-V128LI-UNI			
VX-821 Model	96.5 x 57.5 x 40.6 mm 3000 mAh FNB-V129LI-UNI (and IS)			
	96.5 x 57.5 x 40.6 mm 1500 mAh FNB-V100LIEX			
<b>Receiver Specification: measured by TIA/EIA-603</b>				
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)			
<b>Transmitter Specification: measured by TIA/EIA-603</b>				
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

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