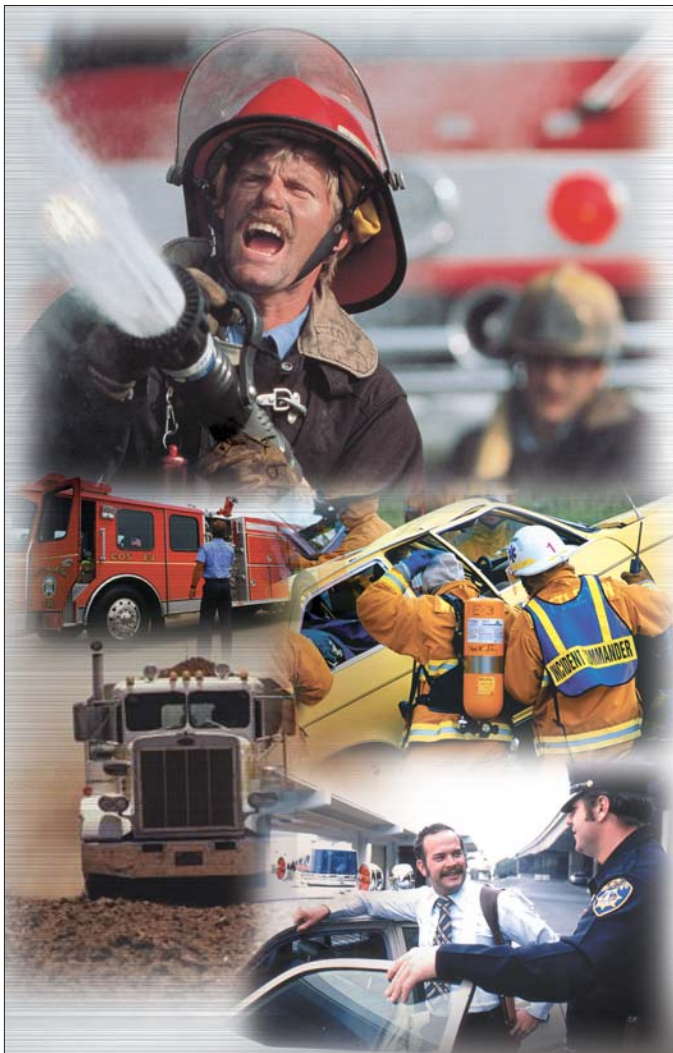


# VXR-9000 SERIES

## 50 Watt Rack-Mount FM Repeater



- **FREQUENCY RANGE:** 148 – 174 MHz (VHF)  
450 – 490 MHz (UHF)
- **32 CHANNELS SYNTHESIZED**
- **POWER OUTPUT:** 50/25/10 W (HIGH/MID/LOW)
- **WIDE OR NARROW BANDWIDTH PROGRAMMABLE PER CHANNEL**
- **PLL STEP SIZES:** 2.5/5.0/6.25 kHz
- **LOW LEVEL AND HIGH LEVEL ENCRYPTION OPTIONS**
- **3.15" SQUARE COOLING FAN WITH "MALFUNCTION" SENSOR OUTPUT**
- **CTCSS REVERSE BURST WITH PROGRAMMABLE LENGTH**
- **MULTI-TONE DECODE**
- **5-STEP COMMAND SEQUENCE FOR STARTUP, POWER SOURCE: MAIN TO SUB, AND SUB TO MAIN**
- **CW ID AND CW MESSAGES SELECTED BY TRIGGER**
- **COAXIAL RELAY DRIVERS FOR SINGLE ANTENNA OPERATION; ALSO TX ATTENUATOR**
- **PROGRAMMED MESSAGE BANKS FOR MAINTENANCE LOGS OR ANY OTHER FREE TEXT**
- **REPEATER OCCUPATION SETTINGS TO HOLD THE LAST TONE CODE (PRESET TIMER)**
- **AUDIO VOICE COMPANDING BUILT IN**
- **CHANNEL SCANNING WITH PRIORITY CHANNEL**
- **AUTOMATIC DC BACKUP SWITCHING WITH ALERT**



# VXR-9000 SERIES

## 50 Watt Rack-Mount FM Repeater



### HIGH PERFORMANCE

#### 50 WATTS OF POWER

The VXR-9000 provides 50 Watts of clean, reliable power output in its standard configuration.

#### EXCELLENT RECEIVER PERFORMANCE

The VXR-9000 is crafted to survive in the most difficult RF environments. Outstanding selectivity, intermodulation rejection, and spurious and image rejection performance ensure reliable service during peak spectrum congestion times.

#### AUDIO COMPANDING PER CHANNEL

The VXR-9000's versatile configuration capability permits inclusion of narrow-band, compandered channels among wide-band, non-compandered channels.

#### DC BACKUP WITH ALERT

Should DC power fail at the repeater site, the VXR-9000 will automatically revert to a backup DC power source, if available. Under emergency DC power, the repeater will transmit an alert message, to alert the communications supervisor that the DC power situation requires immediate attention at the repeater site.



### CONSERVATIVE DESIGN FOR HIGH RELIABILITY

The large-diameter cooling fan (3+ inches) is thermostatically controlled, ensuring a stable temperature environment for the VXR-9000. Fan operation may be programmed via software (Off, Continuous, or Temperature-Controlled), and a "Malfunction" alarm is provided.

### VERSATILITY

#### READY FOR RACK MOUNTING

For easy integration into existing repeater sites, the VXR-9000 is shipped ready for mounting in a standard 19" rack.

#### 32 CHANNEL CAPACITY

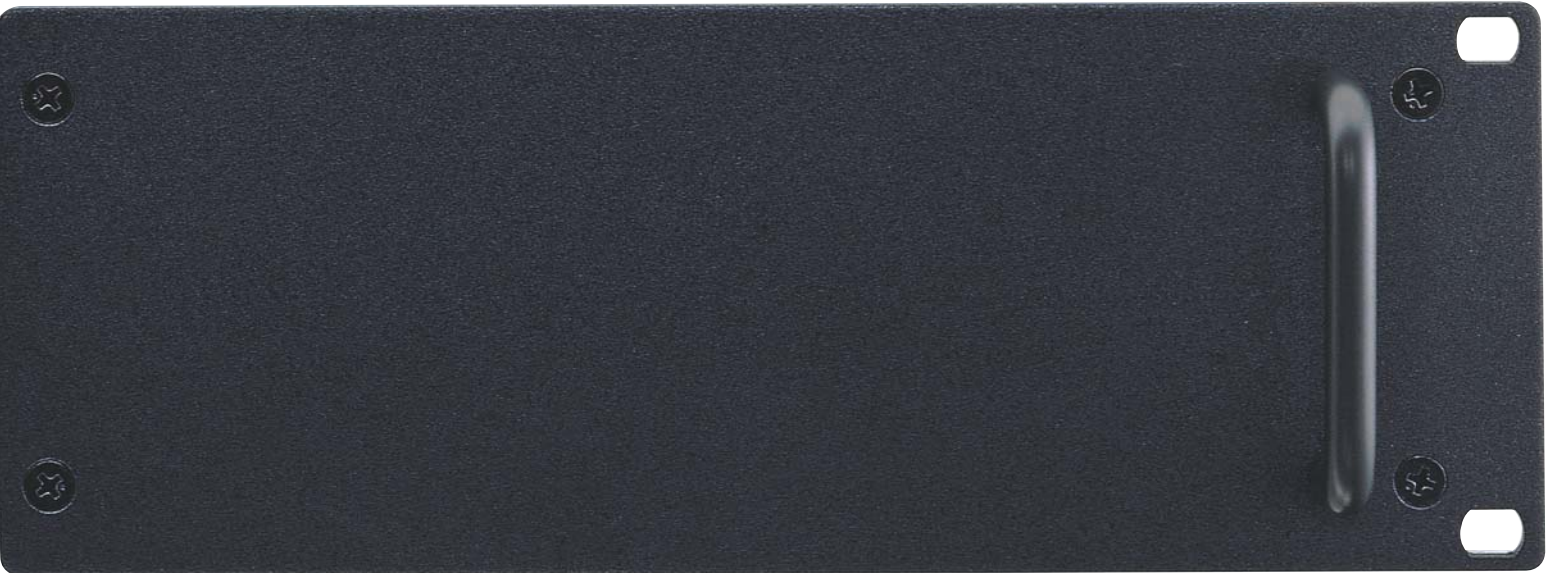
The VXR-9000 may be dealer-programmed with up to 32 channels over a wide frequency range, and may be operated either in a "Repeater" or "Base Station" mode, depending on your application.

#### SIX DUAL-FUNCTION PROGRAMMABLE KEYS ON FRONT PANEL

Over twenty different functions are available for selection and assignment to any of the six dual-function programmable keys on the front panel of the VXR-9000. These functions include Channel Up/Down, High/Low Power, Repeater/Base mode, Encryption On/Off, Transmit/Receive, Panel Lights On/Off, and many more!



Reliable in operation, and flexible in setup options, the VXR-9000 is a high-tech 50-Watt FM Repeater designed for advanced commercial applications. Its slim-line design is crafted for easy installation in a standard 19-inch rack mount, and all programming parameters may be accomplished by the Dealer in minutes using a personal computer and Vertex Standard's CE60 Programming Software.



#### **DSUB 25-PIN ACCESSORY CONNECTOR ON REAR PANEL**

For convenient interfacing to external controllers or other accessories, the rear-panel DSUB 25-Pin Accessory Jack provides access to important repeater circuitry without the need for a specialized connector.

#### **PROGRAMMABLE MESSAGE BANKS**

Enter date, subject, and notes such as programming or service memos, for recall at any time in the future.

## **SECURITY**

#### **SELECTABLE ENCRYPTION OPTIONS**

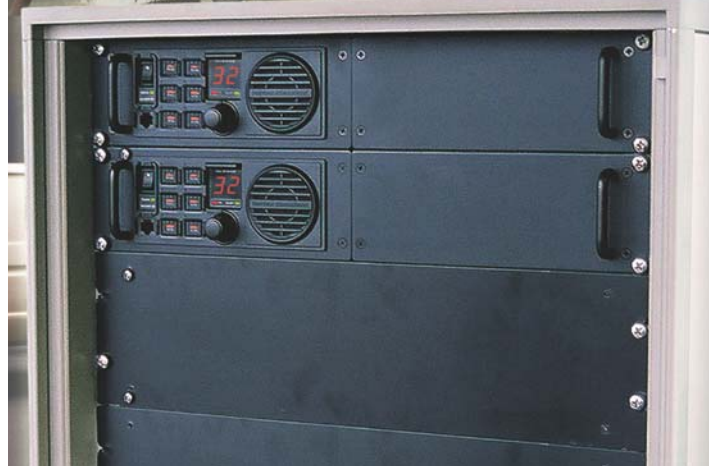
The VXR-9000 may be set up for either rolling code or inversion-type encryption (optional module required). The security required by your customer is available for easy installation.

#### **FIVE-STEP AUTOMATIC COMMAND SEQUENCE**

During certain operating events (such as Startup, switch from main DC to backup DC, etc.) the VXR-9000 may be programmed to undertake an automatic sequence of commands, so it can be configured for the particular event. For example, if DC fails and the repeater switches to emergency DC, the repeater can be set up to switch to Low Power, send a CW ID advising of the DC power situation, and other auto-command sequences, as well.

#### **TWO-TONE DECODE STARTUP**

The VXR-9000 may be booted up using two-tone commands. Four popular two-tone formats are supported, and the precise frequencies of each of the two tones may be manually adjusted from 100 Hz to 5 kHz, in 0.1 Hz steps.



## Specifications

|                                   | VXR-9000 (VHF)                                    | VXR-9000 (UHF)  |
|-----------------------------------|---|---|
| <b>General Specifications</b>     |   |   |
| Frequency Range                   | 134~160 MHz (A)<br>148~174 MHz (C)                | 400~430 MHz (A)<br>450~490 MHz (D)<br>480~512 MHz (F) |
| Number of Channels                | 32 Channels                                       |   |
| Channel Spacing                   | 2.5 kHz/5 kHz/6.25 kHz                            |   |
| Operating Voltage                 | 13.6V DC $\pm$ 10 %                               |   |
| Current Drain                     | 12A Maximum                                       |   |
| Duty Cycle                        | Receive : 100 % , Transmit : 100 % (@25 W output) |   |
| Frequency Stability               | 1.5 ppm , 1.0 ppm (30 min after wake up)          |   |
| Operating Temperature Range       | -22° F to +140° F (-30° C to +60° C)              |   |
| Dimensions (W x H x D)            | 19" x 3.5" x 13.5" (483 x 88 x 343 mm)            |   |
| Weight (approx.)                  | 21.4 lbs. (9.7 kg)                                |   |
| <b>Receiver Specifications</b>    |   |   |
| Antenna Impedance                 | 50 Ohms   |   |
| Antenna Connector                 | BNC   |   |
| Receiver Type                     | Double-Conversion Superheterodyne                 |   |
| Sensitivity                       | 0.25 $\mu$ V (12dB SINAD)                         | 0.30 $\mu$ V (12dB SINAD)                             |
|                                   | 0.35 $\mu$ V (20dB Noise Quieting)                | 0.45 $\mu$ V (20dB Noise Quieting)                    |
| Selectivity                       | 84 dB (Wide), 77 dB (Narrow)                      |   |
| Intermodulation                   | 82 dB (Wide), 80 dB (Narrow)                      |   |
| Image Rejection                   | 90 dB   |   |
| Squelch Threshold                 | 0.4 $\mu$ V (Adjustable)                          |   |
| Audio Output                      | 4 W @ 4 Ohms                                      |   |
| Audio Distortion                  | < 3 %   |   |
| Hum and Noise                     | > 50 dB   |   |
| Audio Frequency Response          | De-emphasis : 6 dB/oct (From 300 Hz to 3 kHz)     |   |
| Conducted Spurious                | < -90 dBm   |   |
| <b>Transmitter Specifications</b> |   |   |
| RF Output Power (50 W)            | 50/25/10 W (High/Mid/Low)                         |   |
| Antenna Impedance                 | 50 Ohms   |   |
| Antenna Connector                 | Type-N  |   |
| Modulation Type                   | 16K0F3E/11K0F3E                                   |   |
| System Deviation                  | $\pm$ 5.0 kHz (Wide), $\pm$ 2.5 kHz (Narrow)      |   |
| Hum and Noise                     | >50 dB (Wide), >45 dB (Narrow)                    |   |
| Microphone Sensitivity            | 5mV   |   |
| Audio Frequency Response          | Pre-emphasis : 6dB/oct (From 300 Hz to 3 kHz)     |   |
| Spurious Emission                 | 80dB below carrier                                |   |
| Audio Distortion                  | 2.5% @1 kHz                                       |   |
| Microphone Impedance              | 600 Ohms  |   |

Measurements per EIA standards unless noted above. Specifications subject to change without notice or obligation. Various accessories listed may not be available in some countries.

## Accessories & Options



MD-11A&J Desktop Microphone



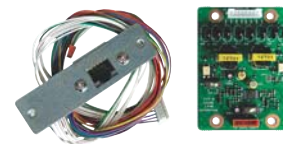
MH-27A&J Hand Microphone



FVP-25 Encryption Unit



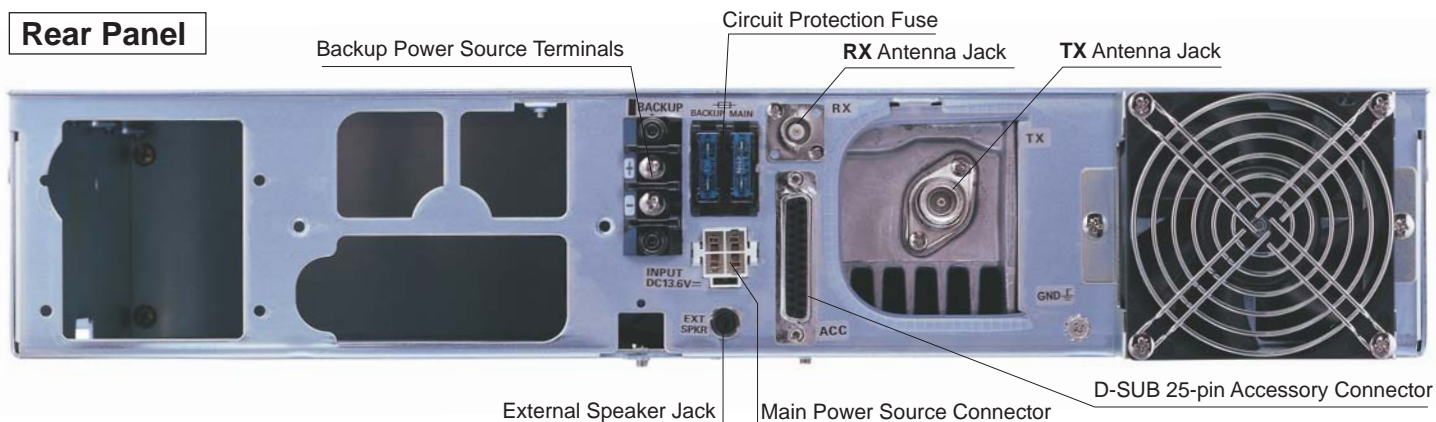
FVP-35 Rolling Code Encryption Unit



FIF-9 4 Wire Line Interface Unit

Supplied Accessories  
DC Power Cord, 15-A Blade Fuse,  
Knob Cap

## Rear Panel



## Vertex Standard US Headquarters

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