



EFJohnson's Viking® Solution portfolio offers products catering to mission critical communication systems. Viking P25 subscribers offer a broad set of capabilities to fully meet the communication needs of our customer networks with interoperability, reliability, and maximum flexibility.

# Viking® VM600

700/800 MHz

Next generation P25 Phase 2 mobile radio with the industry's only electroluminescent display providing unmatched visibility in daylight, with sunglasses, and from any angle.



Designed for outstanding mission critical performance, ruggedness, and reliability, the Viking VM600 is the next generation of EFJohnson's mobile radio. The Viking VM600 is a P25 Phase 2 radio equipped with industry leading audio, display, and advanced feature capabilities for police, fire, EMS, and other mission critical users.

## ROBUST & FLEXIBLE

- Compatible with Motorola® System v 7.x, Motorola Astro® and SMARTNET® II/SmartZone®
- All supported protocols (Phase 1 & 2, Motorola SMARTNET® II/SmartZone®, FM Analog) available simultaneously
- Advanced P25 features such as Authentication and Over-the-Air-Rekeying
- Industry-standard encryption capabilities: AES and DES-OFB
- ARC4™ software encryption; compatible with ADP™
- Conventional vote scan is standard
- Supports MDC-1200 and GE-Star signaling
- Up to 1024 channels
- Over-the-Air programming (OTAP) option enables you to program radios in the field
- Over-the-Intranet programming (OTIP) allows you to program radios through a wireless access point or Ethernet interface
- Enhanced radio security using software and hardware system keys
- Armada® programming software provides simple fleet management of radios with features including profile templates and sorting/filtering by function or agency

## OPTIONAL LIGHTNING™ CONTROL HEAD

- Electroluminescent display (visible through polarized glasses - does not cause birefringence)
- Four display modes
- Viewing angle > 160°

## DATA & CONTROL INTERFACES

- Supports P25 IP packet data
- GPS AVL data (requires external GPS receiver)

## MULTIPLE CONFIGURATION OPTIONS

- Dash mount
- Remote mount
- Dash mount with remote control head
- Dual remote control heads
- Internal or external speaker
- Fixed control stations
- Complete line of accessories including microphones, speakers, and encryption keyloading devices



Lightning™ Control Head



Standard Control Head



# TYPICAL PERFORMANCE SPECIFICATIONS

# Viking® VM600 700/800 MHz

| GENERAL  |  | 700/800, 30/35 W   |
|--|--|--|
| Frequency Range (band splits)  |  | 762-805 MHz<br>806-869 MHz   |
| Channel Spacing  |  | Analog: 25 kHz, 12.5 kHz<br>P25 Digital (Phase 1 & 2): 12.5 kHz; Supports 2 slot P25 Phase 2 TDMA                    |
| Max Frequency Separation   |  | Full Band Split  |
| Display  |  | Backlit ELD, 10 alpha-numeric characters plus Zone, Channel, and Status.<br>Electronically adjustable viewing angle. |
| Power Supply   |  |  |
| <i>Nominal Voltage (negative ground)</i>                                   |  | 13.6 VDC   |
| <i>Operating Supply Voltage Range</i>                                      |  | 10.9 - 16.3 VDC  |
| <i>Standby Current</i>   |  | 900 mA   |
| <i>Receive Current at Rated Audio Power</i>                                |  | 2.85 A   |
| <i>Current at Max Rated Transmit Power</i>                                 |  | 12.5 A   |
| Temperature Range  |  | Operating: -30°C to +60°C<br>Storage: -40°C to +85°C   |
| Nominal Dimensions (H x W x D)<br>exclusive of mounting, cables, and knobs |  | 2.1" x 7.2" x 8.3" (5.3 cm x 18.3 cm x 21.1cm)   |
| Nominal Weight   |  | 6.5 lbs (2.3 kg)   |
| FCC ID   |  | ATH2425870 (Pending)   |
| Industry Canada  |  | IC: 933B-2425870 (Pending)   |
| Vocoder  |  | AMBE+2 (version 1.6)   |
| Transmitter  |  | 700/800, 30/35 W   |
| RF Output Power (variable)   |  | 15-30 W (762-805 MHz)<br>15-35 W (806-869 MHz)   |
| Transmitter Frequency Range(s)   |  | 762-775 MHz, 792-805 MHz,<br>806-824 MHz, 851-869 MHz  |
| Maximum Frequency Separation   |  | Full Band Split  |
| Frequency Accuracy (-30°C to +80°C, +25°C ref.)                            |  | ±1.5 ppm   |
| Modulation Limiting  |  | 25 kHz Channels (Analog): ±5 kHz<br>12.5 kHz Channels (Analog): ±2.5 kHz   |
| Modulation Fidelity (C4FM, 12.5 kHz Digital)                               |  | <5% C4FM (Phase 1)<br><5% H-CPM (Phase 2)  |
| Spurious Emissions   |  | 75 dB  |
| Audio  |  |  |
| <i>Analog Frequency Response</i>   |  | +1 dB, -3 dB (Per TIA-603-D)   |
| <i>FM Hum and Noise Ratio (25 kHz Analog)</i>                              |  | 46 dB  |
| <i>FM Hum and Noise Ratio (12.5 kHz Analog)</i>                            |  | 40 dB  |
| <i>Distortion</i>  |  | 2%   |
| FCC Emission Designators   |  | 8K10F1D, 8K10F1E, 8K10F7E, 11K0F3E, 16K0F3E  |
| Receiver   |  | 700/800, 30/35 W   |
| Receiver Frequency Ranges  |  | 762-775 MHz, 851-869 MHz   |
| Maximum Frequency Separation   |  | Full Band Split  |
| Sensitivity  |  |  |
| <i>Analog Mode: 12 dB SINAD</i>  |  | -119 dBm   |
| <i>Digital Phase 1: (5% BER)</i>   |  | -119 dBm   |
| <i>Digital Phase 2: (5% BER)</i>   |  | -119 dBm   |
| Selectivity (Adjacent Channel Rejection)                                   |  |  |
| <i>25 kHz Channels, Analog</i>   |  | 80 dBm   |
| <i>12.5 kHz Channels, Analog</i>   |  | 60 dBm   |
| <i>Digital Phase 1</i>   |  | 60 dBm   |
| <i>Digital Phase 2</i>   |  | 60 dBm   |
| Intermodulation  |  | 80 dB  |
| Spurious Response Rejection  |  | 85 dB  |
| Audio  |  |  |
| <i>Analog Frequency Response</i>   |  | +1 dB, -3 dB (per TIA-603-D)   |
| <i>Hum and Noise Ratio (25 kHz Analog)</i>                                 |  | 46dB   |
| <i>Hum and Noise Ratio (12.5 kHz Analog)</i>                               |  | 40dB   |
| <i>Output Power (3Ω load)</i>  |  | 15 W   |
| <i>Distortion</i>  |  | <2%  |

## Environmental Specifications

| Environment     | Mil Spec | 810F         |
|-----------------|----------|--------------|
|                 | M        | P            |
| Low Pressure    | 500.5    | II           |
| High Temp.      | 501.5    | I, II        |
| Low Temp.       | 502.5    | I, II        |
| Temp. Shock     | 503.5    | I (D)        |
| Solar Radiation | 505.5    | I (A1)       |
| Rain/Blown Rain | 506.5    | I, III       |
| Humidity        | 507.5    | NA           |
| Salt Fog        | 509.5    | NA           |
| Dust and Sand   | 510.5    | I, II        |
| Vibration       | 514.6    | I (4), II    |
| Shock           | 516.6    | I, II, V, VI |

M=Method, P=Procedure  
Also meets equivalent superseded C, D and E standards.



## Encryption Options

|                                   |   |
|-----------------------------------|---|
| Supported Encryption              | AES, DES, DES-OFB, ARC4   |
| Encryption Key/ Radio             | 126 Common Key Reference (CKR), 126 Physical Identifier (PID), Compatible w/ Motorola Key Variable Loader |
| Encryption Frame Re-sync Interval | P25 CAI 360 MSEC  |
| Encryption Keying                 | External Key Loader, OTAR   |
| Synchronization                   | CFB-Cipher Feedback<br>OFB-Output Feedback  |
| Vector Generator                  | National Institute of Standards and Technology (NIST) Approved random number generator                    |
| Encryption Type                   | Digital   |
| Key Erasure                       | Keyboard Command  |
| Code Key Initialization           | Internal Pseudorandom Generator   |
| Standards                         | FIPS 46-3, FIPS 81, FIPS 140-2, FIPS 197  |

## Accessories

- Antennas
- Keypad microphones
- Desk microphones
- Remote control heads
- External speakers
- Power supplies
- Control station components
- Tone remotes
- Encryption key management tools
- Radio programming tools
- Mounting hardware
- Siren control kit