



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® VM400

700/800 MHz

High performance public safety radio without the extra features required by larger departments. The Viking VM400 is equipped with industry leading audio, display and advanced feature capabilities such as Over-the-Air programming (OTAP).



Designed for outstanding mission critical performance, ruggedness, and reliability, the Viking VM400 is the next generation of EFJohnson's mobile radio. The Viking VM400 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.

## SINGLE-PROTOCOL/DIGITAL-MODE CAPABILITY

Choose operation in either:

- Motorola SMARTNET® II/SmartZone® protocol  
----- OR -----
- P25 Phase 1 trunked/conventional & P25 Phase 2 trunked
- Compatible with Motorola® System v 7.x, Motorola Astro® and SMARTNET® II/SmartZone®
- FM analog included, supports MDC-1200 & GE-Star signaling

## 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

## ROBUST & FLEXIBLE

- Advanced P25 features such as Authentication
- Industry-standard encryption capabilities: AES or DES-OFB
- ARC4™ software encryption; compatible with ADP™
- Conventional vote scan is standard
- 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



Standard Control Head



## TYPICAL PERFORMANCE SPECIFICATIONS

# Viking® VM400 700/800 MHz

GENERAL		700/800, 30/35 W
Frequency Range (band splits)		762-805 MHz 806-869 MHz
Channel Spacing		Analog: 25 kHz, 12.5 kHz 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. 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 Storage: -40°C to +85°C
Nominal Dimensions (H x W x D) 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) 15-35 W (806-869 MHz)
Transmitter Frequency Range(s)		762-775 MHz, 792-805 MHz, 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 12.5 kHz Channels (Analog): ±2.5 kHz
Modulation Fidelity (C4FM, 12.5 kHz Digital)		<5% C4FM (Phase 1) <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>		3%
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>		<3%

## 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-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
Synchronization	CFB-Cipher Feedback 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 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