KENWOOD | VIKING

P25 Mission Critical

Viking **VP900**

VHF · 700/800 MHz

P25 Phase 1 & 2 · Viking16

The Viking® VP900 is a dual-band, multi-protocol, P25 Phase 2 radio equipped with industry leading audio, display, and advanced feature capabilities that meet the needs of police, fire, EMS, and other mission critical users.

Features

Mixed protocol operation (P25 Phase 1 & 2 Trunking, P25 Conventional, Viking16, FM Analog)

Mixed protocol zones (each channel in a zone can be from a different system) 2048 channels

Public safety ergonomics with large glove friendly knobs

Top flip display changes text orientation for viewing while in holster

Backlight on top display changes for event indication (ex. emergency turns display orange)

Multiple visual indicators including battery health & signal strength

1 Watt audio output for high noise environments

Voice annunciation & custom announcement creation

Fully ruggedized - IP67 & MIL-STD-810 C/D/E/F/G

Dual Shield design (internal metal housing & an external polycarbonate casing for exceptional durability)

Available in three keypad options (none, limited, full)

Integrated GPS[1]

MDC-1200 & GE-Star signaling

P25 Authentication

Instant Recording Replay (IRR)

Encryption
- ARC4™ software encryption; compatible with Motorola ADP™
- DES-OFB
- AES-256 (FIPS 140-2) Single and Multi-Key
- Over-the-Air-Rekeying (OTAR)
- VK5000 or Motorola KVL3000/KVL4000 Keyloaders

[1]Refer to the Viking VPx00 operating manual for detailed requirements & conditions for proper GPS operation.

Compatible With P25 Systems

ATLAS® P25 Phase 1 and Phase 2

Motorola Astro® 25 - P25 Phase 1 & Phase 2

Harris VIDA® - P25 Phase 1 & Phase 2

Airbus (formerly Cassidian) VESTA™ Radio - P25 Phase 1 & Phase 2

Accessories

Complete line of accessories including microphones, speakers & antennas. Download the accesory catalog at **www.efjohnson.com/products/accessories.**

We combine P25 design expertise with recognized quality & reliability along with advanced technology to make KENWOOD Viking radios simple to use & maintain.

Perpetual Software Licensing

Adds greater value to your radios by extending the life of the software into your next hardware platform — you own the software option forever, and your licenses are simple to manage with our cloud-based tool — Vault™.

Armada® Fleet Management

Update radios in a group rather than one at a time. One template programs both portables & mobiles. Supports either direct computer connection or Over-the-Air Programming (OTAP). Elite battery management enables wireless tracking of battery fleet.

TrueVoice™ Noise Cancellation

Software-based noise cancellation automatically filters out noise source frequencies and eliminates the need for extra configuration. Works in analog or digital mode and with any accessory.

Viking VP900 Portable Specifications

General	700/800	VHF
Frequency Range	763-805 MHz 806-869 MHz	136-174 MHz
Channel Spacing	12.5 kHz, 25 kHz[1]	
Max Frequency Separation	Full Bandsplit	
FCC Type Acceptance Certification	ATH2425780	
Canada Type Certification	IC:933B-2425780	
FCC Emissions Designators	16K0F3E, 14K0F3E, 11K0F3E, 8K10F1D, 8K10F1E, 8K10F7E	11K0F3E, 8K10F1D, 8K10F1E, 8K10F7E
Input Voltage	7.4 V	
Dimensions (w/o antenna) HxWxD	7.5" x 2.62" x 1.75" (19.1 cm x 6.7 cm x 4.4 cm)	
Weight (w/o standard battery)	12.4 oz (351.5 g)	
Case	Polycarbonate - black or high visibility (additional fee)	
Temperature Range	-22°F to +140°F (-30°C to +60°C)	
Vocoder/Noise Cancellation	AMBE+2 version 1.6 | TrueVoice™ noise cancellation and audio enhancement	
Programmable Front Display	Backlit LCD | Status Bar (time, date, signal strength, battery level), icon or text display options Up to 4 rows of 12 character lines	
Programmable Top Display	Backlit LCD | Status Bar (time, date, signal strength, battery level) or text display options Up to 2 rows of 12 character lines	
Transmitter	**700/800**	**VHF**
RF Power Output	2.5/3 W	5 W
Frequency Stability (-30°C to +60°C)	1.5 ppm	
Modulation Limiting 25 kHz Channels	5 kHz[1]	
Modulation Limiting 12.5 kHz Channels	2.5 kHz	
Emissions (Conducted/ Radiated)	75 dB	70 dB
Audio Response	+1 , -3 dB	
FM Hum and Noise 25 kHz Channels	49 dB[1]	
FM Hum and Noise 12.5 kHz Channels	43 dB	
Audio Distortion	1.5%	
Receiver	**700/800**	**VHF**
Audio Power Output	1 W rated	
Frequency Stability (-30°C to +60°C)	1.5 ppm	
Analog Mode Sensitivity: 12 dB SINAD	-121 dBm	-122 dBm
Digital Mode Sensitivity: 5% BER	-121 dBm	-122 dBm
Selectivity: 25 kHz Channels	75 dB[1]	
Selectivity: 12.5 kHz Channels	60 dB	
Intermodulation	75 dB	
Spurious & Image Rejection	80 dB	
FM Hum and Noise 25 kHz Channels	50 dB[1]	
FM Hum and Noise 12.5 kHz Channels	44 dB	
Audio Distortion	1%	

Note 1: 25 kHz mode is not available in US FCC frequencies in VHF.

Battery	Dimensions (HxWxD)	Weight	Capacity
Lithium Ion	6.5" x 2.3" x .78" (16.5 cm x 5.8 cm x 2.0 cm)	8.1 oz (229.6 g)	4500 mAh

Specifications are measured per TIA-102.CAAA-E, TIA102.CAAB-D and per TIA-603-E.

Environmental Specifications		I
Environment	**Mil Spec**	**810G**
	M	P
Low Pressure	500.5	II
High Temp.	501.5	II
Low Temp.	502.5	II
Temp. Shock	503.5	I-D
Solar Radiation	505.5	I
Rain/Blown Rain	506.5	I
Humidity	507.5	I
Salt Fog	509.5	NA
Dust and Sand	510.5	I
Vibration	514.6	I
Shock	516.6	VI, V
Immersion	512.5	I

M=Method, P=Procedure
Also meets equivalent superseded C, D, E, and F standards.
Immersion meets IEC 529 IP67

Encryption Options	FIPS VALIDATED 140 2
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, OTAR
Mode	OFB-Output Feedback
Encryption Type	Digital
Key Erasure	Keyboard Command
Standards	FIPS 46-3, FIPS 81, FIPS 140-2, FIPS 197

Hazardous Location Certification	
Certification Lab	FM Approvals (FM)
Standard Applied	FM3611
Classification Rating	Class I, Division 2, Groups A, B, C, D

Accessories	
Approved Battery	5875700373 (identified by lack of release button & presence of key slot on bottom of battery)
Approved Speaker Microphones	5893211B18, 5893211B24, 5893211B30, 5893211G18, 5893211G24, 5893211G30 (KENWOOD Viking Premium Speaker Mic w/options for black or high visibility & three cord lengths)

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KENWOOD | VIKING

P25 Mission Critical

Viking **VM900**

VHF · 700/800 MHz
P25 Phase 1 & 2 · Viking16

Dual-band and multi-system radio equipped with industry leading audio, color display, public safety ergonomics, and advanced features including Over-the-Internet (OTIP) programming.

Features

Mixed protocol operation (P25 Phase 1 & 2 Trunking, P25 Conventional, Viking16, FM Analog)

2048 channels

Mixed protocol zones

P25 Authentication (Link Layer Authentication)

P25 IP packet data

GPS AVL data (requires external GPS receiver)

MDC-1200 & GE-Star signaling

Analog & P25 Conventional vote scan

Dash mount

Remote mount

Dash mount with remote control head

Dual control heads

Fixed control station

Encryption
- ARC4™ software encryption; compatible w/Motorola ADP™
- DES-OFB
- AES-256 (FIPS 140-2) Single and Multi-Key
- Over-the-Air-Rekeying (OTAR)
- VK5000 or Motorola KVL3000/KVL4000 Keyloaders

WiFi

Instant Recording Replay (IRR)

Viking Control Head

Public safety knobs & ergonomics

High contrast transmissive color display for direct sunlight & nighttime viewing; not compromised by polarized sunglasses

Resolution of 480 x 128 pixels

Viewing angle of 120°

Accessories

Complete line of accessories including microphones, speakers & antennas. Download the accesory catalog at **www.efjohnson.com/products/accessories.**

Compatible With P25 Systems

ATLAS® P25 Phase 1 and Phase 2 System

Motorola Astro® 25 - P25 Phase 1 & Phase 2

Harris VIDA® - P25 Phase 1 & Phase 2

Airbus (formerly Cassidian) VESTA™ Radio - P25 Phase 1 & Phase 2

We combine P25 design expertise with recognized quality & reliability along with advanced technology to make KENWOOD Viking radios simple to use & maintain.

Perpetual Software Licensing

Adds greater value to your radios by extending the life of the software into your next hardware platform — you own the software option forever, and your licenses are simple to manage with our cloud-based tool — Vault™.

Armada® Fleet Management

Update your radios in a group rather than one at a time. One template programs both portables & mobiles. Supports either a direct computer connection, Over-the-Air Programming (OTAP), or Over-the-Internet Programming (OTIP).

TrueVoice™ Noise Cancellation

Software-based noise cancellation automatically filters out noise source frequencies and eliminates the need for extra configuration. Works in analog or digital mode and with any accessory.

Viking VM900 Mobile Specifications

General	VHF	700/800 MHz
Frequency Range (band splits)	136 - 174 MHz	762 - 805 MHz 806 - 870 MHz
Channel Spacing	Analog: 25 kHz, 12.5 kHz P25 Digital (Phase 1 and 2): 12.5 kHz; supports 2-slot Phase 2 TDMA	
Max Frequency Separation	Full Band Split	
Display	Viking Control Head - transmissive color display, 16 display text characters plus Zone, Channel, and Status, blue illumination theme	
Power Supply		
Nominal Voltage (negative ground)	13.6 VDC	
Operating Supply Voltage Range	10.9 - 16.3 VDC	
Standby Current	1.0 A	
Receive Current at Rated Audio Power	2.95 A	
Current at Max Rated Transmit Power	12.5 A	
Temperature Range	Operating: -22°F to +140°F (-30°C to +60°C) Storage: -40°F to +185°F (-40°C to +85°C)	
Nominal Dimensions (H x W x D) exclusive of mounting, cables, & 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:	ATH2425M80	
Industry Canada	IC:933B-2425M80	
Vocoder	AMBE+2 (version 1.6)	

Transmitter	VHF	700/800 MHz
RF Output Power (variable)	15W/50W	15W/25W (700 MHz) 15W/35W (800 MHz)
Transmitter Frequency Ranges	136 - 174 MHz	762 - 776 MHz, 792 - 825 MHz, 851 - 870 MHz
Maximum Frequency Separation	Full Band Split	
Frequency Accuracy [-22°F to +140°F, +77°F ref. (-30°C to +60°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 (Digital)	<5% C4FM (Phase I) <5% H-CPM (Phase 2)	
Spurious Emissions	75 dB	
Audio		
Analog Frequency Response	+1 dB, -3 dB (Per TIA-603-D)	
FM Hum and Noise Ratio (25 kHz Analog)	46 dB	
FM Hum and Noise Ratio (12.5 kHz Analog)	40 dB	
Distortion	2%	
FCC Emission Designators	8K10F1D, 8K10F1E, 8K10F7E, 11K0F3E, 14K0F3E, 16K0F3E	

Receiver	VHF	700/800 MHz
Receiver Frequency Ranges	136 - 174 MHz	762 - 776 MHz 851 - 870 MHz
Maximum Frequency Separation	Full Band Split	
Sensitivity		
Analog Mode: 12 dB SINAD	-119 dBm (0.25 µV)	
Digital Phase I: (5% BER)	-119 dBm (0.25 µV)	
Digital Phase 2: (5% BER)	-119 dBm (0.25 µV)	
Selectivity (Adjacent Channel Rejection)		
25 kHz Channels, Analog	75 dBm	
12.5 kHz Channels, Analog	60 dBm	
Digital Phase I	60 dBm	
Digital Phase 2	60 dBm	
Intermodulation	75 dB	
Spurious Response Rejection	80 dB	
Audio		
Analog Frequency Response	+1 dB, -3 dB (per TIA-603-D)	
Hum and Noise Ratio (25 kHz Analog)	46dB	
Hum and Noise Ratio (12.5 kHz Analog)	40dB	
Output Power (Internal Speaker)	4 W	
Output Power (3-Ω External Speaker)	12 W	
Distortion	<2%	

Environmental Specifications		
Environment	Mil Spec	810G
	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	II
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.

International Protection Standard	
Dust & Water	IP54 (Standard control head with VM900) IP56 (Viking control head with VM900)

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 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

Viking® Control Head

Standard Control Head

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