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.

51FIRE ES

7/800 MHz | VHF | UHF

Designed and engineered specifically for firefighters, the award-winning 51FIRE ES features standard yellow housing and blade knobs for ease of operation even with fire gloves.

FLEXIBLE

- Both round & blade knobs are included
- Compatible with Motorola® System v 7.x and Motorola Astro®
- SMARTNET® II/SmartZone® interoperability
- Up to 864 talkgroups
- Supports narrowband (12.5 kHz) & wideband (25 kHz) channel spacing with multiple system protocols
- MDC-1200 and GE-Star signaling
- Over-the-Air programming (OTAP) option enables you to program radios in the field
- Industry-standard encryption capabilities such as AES, DES-OFB, and DES
- Easy radio programming & feature updating with EFJohnson's PC Configure™ software

P25 COMPLIANT

- Supports P25 CAI (Common Air Interface)
- Trunked and conventional system protocols
- Over-the-Air rekeying (OTAR) functionality

ACCESSORY SUITE

- Complete line of accessories including speaker mics, cases, batteries, and chargers

RUGGED & RELIABLE

- Aluminum casting & polycarbonate housing is strong, yet lightweight
- Meets applicable MIL Standard 810 C, D, E, and F specs
- FM intrinsically safe
- Immersible to a depth of 1 meter for 30 minutes *(per MIL Spec 810F & IP67 standards)*
- AMBE+2 P25 vocoder significantly enhances audio quality and clarity in high noise environments (upgrade to the AMBE+2 v1.6 to reduce background noise even more when a PASS alarm is sounding)

OPTIONAL FIRESAFE™ SOFTWARE

- Set & Forget
- Evacuation Alert
- Visual & Audible Range Indicator
- Out of Range Alert
- IP25™ System "Heartbeat"
- P25 Auto Switch
- Com Check

AMBE+2 ENHANCED DIGITAL VOCODER

P25 DIGITAL WIRELESS • SANS FIL NUMÉRIQUE • INALÁMBRICO DIGITAL

MADE IN U.S.A.

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TYPICAL PERFORMANCE SPECIFICATIONS

GENERAL	700/800	VHF	UHF R1	UHF R2
Frequency Range	762-806 MHz 806-870 MHz	136-174 MHz	380-470 MHz	450-512 MHz
Channel Spacing	12.5 kHz, 25 kHz			
Max Freq. Separation	Full Bandsplit			
FCC Type Acceptance Certification	ATH2425171	ATH2425111	ATH2425131	ATH2425141
Canada Type Certification	IC:933B-2425171	IC:933B-2425112	IC:933B-2425131	IC:933B-2425141
FCC Emissions Designators	11K0F3E, 16KOF3E, 14K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D
Input Voltage	7.2 V			
Dimensions (w/o antenna) HxWxD	6.7" x 2.52" x 1.8" (6.4 cm x 17.0 cm x 4.6 cm)			
Weight (w/o standard battery)	11 oz. (312 g)			
Case	Polycarbonate-yellow | Immersion rated option available for all housings			
Temperature Range	-30°C to +60°C			
Vocoder	AMBE+2			

Transmitter	700/800	VHF	UHF R1	UHF R2
RF Power Output	2.5/1 W (700 MHz) 3/1 W (800 MHz)	5/1 W	4/1 W	4/1 W
Frequency Stability (-30°C to +60°C)	±1.5 ppm			
Modulation Limiting 25 kHz Channels	±5 kHz			
Modulation Limiting 12.5 kHz Channels	±2.5 kHz			
Emissions (Conducted/Radiated)	-75 dBc			
Audio Response	+1 , -3 dB			
FM Hum and Noise 25 kHz Channels	-40 dB	-45 dB		
FM Hum and Noise 12.5 kHz Channels	-35 dB	-40 dB		
Audio Distortion	2%			

Receiver	700/800	VHF	UHF R1	UHF R2
Audio Power Output	500 mW			
Frequency Stability (-30°C to +60°C)	±1.5 ppm			
Analog Mode Sensitivity: 12 dB SINAD	0.25 uV (-119 dBm)			
Digital Mode Sensitivity: 5% BER	0.25 uV (-119 dBm)			
Selectivity: 25 kHz Channels	-75 dB			
Selectivity: 12.5 kHz Channels	-63 dB			
Intermodulation	-75 dB			
Spurious & Image Rejection	-75 dB			
FM Hum and Noise 25 kHz Channels	-40 dB			
FM Hum and Noise 12.5 kHz Channels	-35 dB			
Audio Distortion	2%			

Battery	Dimensions (HxWxD)	Weight	Approx. Life (5/5/90)
Extra-High Capacity NiMH, IS	6.0" x 2.3" x 0.85"	12.96 oz	UHF/VHF: Minimum 10 hours 700/800 MHz: Minimum 12 hours

Specifications are measured per TIA 102.CAA-B, TIA 102.CAAB-B and per TIA 603-C.
All EFJohnson radios are made in the U.S.A.

Environmental Specifications

Environment	Mil Spec	810F
	M	P
Low Pressure	500.4	II
High Temp.	501.4	I, II
Low Temp.	502.4	I, II
Temp. Shock	503.4	I
Solar Radiation	505.4	I
Rain/Blown Rain	506.4	I, III
Humidity	507.4	NA
Salt Fog	509.4	NA
Dust and Sand	510.4	I
Vibration	514.5	I (24)
Shock	516.5	I, IV
Immersion*	512.4	I

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

Encryption Options

Supported Encryption	AES, DES, DES-OFB
Encryption Key/ Radio	64 Common Key Reference (CKR), 64 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

Factory Mutual Approvals

Intrinsically Safe		
Class I/ Class II	Division 1 An area where there is or could be an explosive atmosphere most of the time in normal conditions.	C. Ethylene D. Propane and Methane E. Conductive metal F. Carbonaceous material coal, coke dust G. Grain dust and flour
Class III	Division 1 Location in which easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used.	Ignitable fibers or flyings
Non-Incendive		
Class I	Division 2 An area where an explosive atmosphere exists only as a result of a fault.	A. Acetylene B. Hydrogen C. Ethylene D. Propane and Methane

All specifications are subject to change without notice.
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