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 512 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

## TYPICAL PERFORMANCE SPECIFICATIONS

| GENERAL | 700/800 | VHF | UHF |
|---|---|---|---|
| Frequency Range | 762-806 MHz 806-870 MHz | 136-174 MHz | 380-470 MHz |
| Channel Spacing | 12.5 kHz, 25 kHz | | |
| Max Freq. Separation | Full Bandsplit | | |
| FCC Type Acceptance Certification | ATH2425171 | ATH2425111 | ATH2425131 |
| Canada Type Certification | IC:933B-2425171 | IC:933B-2425112 | IC:933B-2425131 |
| FCC Emissions Designators | 11K0F3E, 16KOF3E, 14K0F3E, 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 |
|---|---|---|---|
| RF Power Output | 2.5/1 W (700 MHz) 3/1 W (800 MHz) | 5/1 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 |
|---|---|---|---|
| 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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TECHNOLOGIES