EFJohnson®

5100 Series Portable Radio

700/800 VHF UHF

EFJohnson's 5100 Series Portable Radio is rugged, lightweight, versatile, and designed to operate in analog and digital applications. It provides a seamless evolution to next generation networks while offering investment protection for your present communications system; all in a powerful software-controlled device that is easy on your mind and your budget. If you need a multi-protocol portable radio that leads the industry in feature richness and system interoperability, then the 5100 Series Portable Radio is your clear product choice.

Project 25 Compliance

Supports Project 25 CAI (Common Air Interface), Project 25 Trunked and Conventional system protocols, and Project 25 Over-The-Air Rekeying (OTAR) functionality.

Industry's Only SMARTNET® II / SmartZone® Licensee

Industry's only supplier licensed to support both analog and digital SMARTNET II and SmartZone trunking protocols.

Numerous Encryption Protocols

Supports industry standard encryption capabilities such as AES, DES-OFB, and DES. Ask about our free Single Key DES-OFB encryption for P25.

EFJohnson is a leading provider of Project 25 compliant two-way radios and communication systems for law enforcement, fire fighters, EMS, and military.

More Key Features and Benefits

Multiple Configuration Offerings

Includes a Model I (no display or keypad), Model II (display, basic keypad) and a Model III (display, DTMF keypad) version that features an enhanced backlit display and backlit keypad for easier viewing and usage.

Significant Product Flexibility

Enables programming of up to 512 channel/talkgroups, supports both narrowband (12.5 kHz) and wideband (25 kHz) channel spacing, and multiple system protocols.

Simplified Feature Modifications and Updates

Easy radio programming and feature updating using EFJohnson's PC Configure™ application.

Extensive Accessory Suite

Complete line of accessory products including speaker microphones, headsets, surveillance kits, batteries, chargers, carrying apparatus, and encryption "keyloading" devices.

Enhanced Product Robustness

Meets applicable Mil Standard 810C, D, E, and F specifications, as well as approved by Factory Mutual as intrinsically safe for use in hazardous environments.

Submersibility

Immersible to a depth of 1 meter for 30 minutes (option - Model I only)

5100 Series Portable Radio

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	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
FCC Type Acceptance Certification	ATH2425171	ATH2425111	ATH2425131	ATH2425141
Industry Canada Type Certification	IC: 933B-2425171	IC: 933B-2425111	IC: 933B2425131	IC: 933B-2425141
FCC Emissions Designators	11K0F3E, 16K0F3E, 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)	6.65" x 2.55" x 1.80"			
Weight (with standard battery)	24 oz. (675 g)			
Case	Polycarbonate–black, yellow, orange			
Temperature Range	–30°C to +60°C			

TRANSMITTER				
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	±1.5 ppm	±1.5 ppm	±1.5 ppm
Modulation Limiting				
25 kHz channels	±5 kHz	±5 kHz	±5 kHz	±5 kHz
12.5 kHz channels	±2.5 kHz	±2.5 kHz	±2.5 kHz	±2.5 kHz
Emissions (Conducted/Radiated)	–75 dBc	–75 dBc	–75 dBc	–75 dBc
Audio Response	+1, -3dB	+1, -3dB	+1, -3dB	+1, -3dB
FM Hum and Noise				
25 kHz channels	-40 dB	-45 dB	-45 dB	-45 dB
12.5 kHz channels	-35 dB	-40 dB	-40 dB	-40 dB
Audio Distortion	2%	2%	2%	2%

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

All specifications are measured per TIA 102.CAAA, TIA 102.CAAB and per TIA 603 standards.

BATTERIES

Battery Type	Dimensions (HxWxD)	Weight	Approx. Life (5/5/90)
Extra-High Capacity NiMH	6.0" x 2.3" x 0.85"	0.81 lbs	UHF/VHF: Minimum 10 hours 700/800 MHz: Minimum 12 hours
Extra-High Capacity NiMH, IS	6.0" x 2.3" x 0.85"	0.81 lbs	UHF/VHF: Minimum 10 hours 700/800 MHz: Minimum 12 hours
Alkaline Battery Clamshell	7.2" x 2.6" x 2.0"	0.98 lbs (w/12 AA batt.)	14-16 hours

* Option Model I only

ENVIRONMENTAL SPECIFICATIONS

Environment	Mil Spec 810C M	Mil Spec 810C P	Mil Spec 810D M	Mil Spec 810D P	Mil Spec 810E M	Mil Spec 810E P	Mil Spec 810F M	Mil Spec 810F P
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low Temp.	502.1	I	502.2	I, II	502.3	I, II	502.4	I, II
Temp. Shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain/Blown Rain	506.1	I, II	506.2	II	506.3	I, II	506.4	I, II
Humidity	507.1	II	507.2	II, III	507.3	II, III		
Salt Fog	509.1	I	509.2	I	509.3	I		
Dust and Sand	510.1	I	510.2	I	510.3	I	510.4	I
Immersion*	512.1	I	512.2	I	512.3	I	512.4	I
Vibration	514.2	VII, VIII	514.3	I(8)	514.4	I(8)	514.5	I(24)
Shock	516.2	I, II, V	516.3	I, IV, VI	516.4	I, IV, VI	516.5	I, IV, VI

M=Method P=Procedure

ENCRYPTION OPTIONS

Supported Encryption Algorithms	DES, DES-OFB, AES
Encryption Keys/Radio	16 Common Key Reference (CKR) 16 Physical Identifier (PID) Compatible with 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	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
Class II		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

FM APPROVED

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EFJohnson
Our Mission—Your Safety

1440 Corporate Drive, Irving, TX 75038-2401
Phone: 972-819-0700, 1-800-328-3911 Fax: 972-819-0639
www.EFJohnson.com