

# AN/PRC127EFJ Portable Radio

## KEY FEATURES & BENEFITS

### Reliable & Rugged

- ▶ Aluminum casting and polycarbonate housing provide exceptional strength in a light weight package
- ▶ Meets applicable Mil Standard 810C, D, E, and F specifications
- ▶ Approved by Factory Mutual as intrinsically safe for use in hazardous environments

### Submersibility Option

- ▶ Immersible to a depth of 1 meter for 30 minutes (per MIL Spec 810F and IP67 standards)

### Significant Product Flexibility

- ▶ Enables programming of up to 864 channel/talkgroups
- ▶ Supports both narrowband (12.5 kHz) and wideband (25 kHz) channel spacing, and multiple system protocols

### Simplified Configuration Updates & Option Selection

- ▶ Over the Air Programming (OTAP) option enables you to program radios without having to send them to a service shop, saving time and costs
- ▶ Easy radio programming and feature updating using EFJohnson's PC Configure™ software for portable and mobile radios

### Extensive Accessory Suite

- ▶ Complete line of accessories including speaker microphones, headsets, surveillance kits, batteries, chargers, carrying apparatus, and encryption keyloading devices. Visit our website for the *EFJohnson Subscriber Accessories Catalog!*



### RT 5100 ES Model I UHF (380-470 MHz)

Analog & Digital (Project 25) CAI  
Project 25 Trunking  
DES/DES-OFB & AES Encryption  
P25 OTAR  
Operator's Manual on CD  
Receiver-Transmitter Only  
*(does not include battery or antenna)*



### RT 5100 ES Model III VHF (136-174 MHz)

Factory Mutual Intrinsically Safe (FM-IS)  
Analog & Digital (Project 25) CAI  
Project 25 Trunking  
DES/DES-OFB & AES Encryption  
P25 OTAR  
Keypad Programming  
Operator's Manual on CD  
Receiver-Transmitter Only  
*(does not include battery or antenna)*

## Combat Land Mobile Radio (CLMR)

The AN/PRC127EFJ radio provides tactical and secure AES, intra-squad communications at the lowest echelons for Counterinsurgency Operations Command and Control. In addition, the AN/PRC127EFJ radio provides secure AES communications for team-sized elements of combat service support units whose mission requires the use of a secure radio to communicate with supply and construction areas, convoys, base defense and dismounted rear battle operations.

### ▶ 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.

### ▶ AMBE+2 Vocoder for Outstanding Voice Quality and Noise Reduction

Hear the Difference! EFJohnson is one of the only radio manufacturers with a full implementation of this second generation digital vocoder (AMBE+2), P25 preferred vocoder.

### ▶ SMARTNET® II / SmartZone® Interoperability

EFJohnson is the 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.

SMARTNET®  
Licensed Since 1994  
SmartZone®



EFJohnson  
TECHNOLOGIES

We Respond.

www.efjohnsontechnologies.com

# AN/PRC127EFJ Portable Radio

VHF • UHF

Typical Performance Specifications

GENERAL	VHF	UHF
Frequency Range	136–174 MHz	380–470 MHz
Channel Spacing	12.5 kHz, 25 kHz	12.5 kHz, 25 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit
FCC Type Acceptance Certification	ATH2425111	ATH2425131
Canada Type Certification	IC: 933B-2425112	IC: 933B-2425131
FCC Emissions Designators	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D	16K0F3E, 11K0F3E, 8K10F1E, 8K10F1D
Input Voltage	7.2V	
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 (without standard battery)	11 oz. (312 g)	
Case	Polycarbonate—black, yellow, orange Immersion rated option available for all housings	
Temperature Range	–30°C to +60°C	
Vocoder	Enhanced Full-Rate Digital Vocoder (AMBE+2) Project 25	

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%

BATTERIES			
Battery Type	Dimensions (HxWxD)	Weight	Approx. Life (5/5/90)
Extra-High Capacity NiMH	6.0" x 2.3" x 0.85"	12.96 ounces	UHF/VHF: Minimum 10 hours 700/800 MHz: Minimum 12 hours
Extra-High Capacity NiMH, IS	6.0" x 2.3" x 0.85"	12.96 ounces	UHF/VHF: Minimum 10 hours 700/800 MHz: Minimum 12 hours
Alkaline Battery Clamshell	7.2" x 2.6" x 2.0"	15.68 ounces (w/12 AA batt.)	14–16 hours
High Capacity Lithium Ion	6.5" x 2.3" x .78"	8.1 ounces	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  
Also meets equivalent superseded C, D, and E standards  
\*Optional



## ENCRYPTION OPTIONS

<b>Supported Encryption Algorithms</b>	DES, DES-OFB, AES
<b>Encryption Keys/Radio</b>	64 Common Key Reference (CKR) 64 Physical Identifier (PID) Compatible with Motorola Key Variable Loader
<b>Encryption Frame Re-sync Interval</b>	P25 CA1 360 msec
<b>Encryption Keying</b>	External Key Loader, OTAR
<b>Synchronization</b>	CFB – Cipher Feedback OFB – Output Feedback
<b>Vector Generator</b>	National Institute of Standards and Technology (NIST) approved random number generator
<b>Encryption Type</b>	Digital
<b>Key Erasure</b>	Keyboard Command
<b>Code Key Initialization</b>	Internal pseudorandom generator
<b>Standards</b>	FIPS 46-3, FIPS 81, FIPS 140-2, FIPS 197



## FACTORY MUTUAL APPROVALS

<b>Intrinsically Safe</b>		
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 G Grain dust and flour
Class II		
Class III	Division 1: Location in which easily ignitable fibers or materials producing combustible flyings are handled, manufactured, or used.	Ignitable fibers or flyings
<b>Non-incendive</b>		
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



12/10 Printed in U.S.A.

Specifications subject to change without notice.  
© Copyright 2010 EFJohnson. PC Configure is a trademark of EFJohnson. SMARTNET, SmartZone, and Motorola are trademarks of Motorola, Inc. All other trademarks are the property of their respective owners.



1440 Corporate Drive, Irving, TX 75038-2401  
Phone: 972.819.0700  
Toll Free: 1.800.328.3911  
Fax: 972.819.2307  
www.EFJohnsonTechnologies.com