

53SL Series Mobile Radio



Key Features and Benefits

Robust and Flexible

- ▶ 512 Channels / Talkgroups
- ▶ P25 Digital and Analog
- ▶ Supported Protocols Installed Simultaneously
- ▶ DES & DES-OFB Encryption
- ▶ P25 Conventional & Trunked OTAR
- ▶ Supports Key Elements of MDC1200
- ▶ Compatible with Motorola Astro®
- ▶ Supports Motorola® System v6.5

Trunking

- ▶ SMARTNET II / SmartZone
- ▶ P25

Data and Control Interfaces

- ▶ Supports P25 Conventional IP Packet Data
- ▶ Supports GPS AVL Data

Simplified Feature Updates and Option Selection

- ▶ Flexible Programming
- ▶ PC Configure™ Software Tool

Multiple Configuration Options

- ▶ Dash-Mount
- ▶ Trunk-Mount
- ▶ 2 Control Heads
- ▶ Hand-Held Controller
- ▶ Internal or External Speaker
- ▶ Fixed Control Stations
- ▶ Siren Option

Extensive Accessory Suite

Complete line of accessories including microphones, speakers, and encryption keyloading devices. Visit our website for the EFJohnson *Subscriber Accessories Catalog!*

The 53SL Series Mobile Radio is a very capable and flexible tool designed for demanding public safety communications applications. The ability to seamlessly interoperate with analog and digital, wideband and narrowband, and a wide variety of trunking protocols – all installed simultaneously in the same radio – makes this mobile ideal for migrating critical systems to the latest open standards. This flexibility helps protect your investment in the future as well as maximizing interoperability among most installed systems.

▶ 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.

▶ Enhanced (AMBE+2) P25 Vocoder

Outstanding voice quality and noise reduction. EFJohnson is the only high tier radio vendor with a full implementation of this second generation Enhanced (AMBE+2) P25 preferred vocoder.

▶ 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 DES and industry standard P25 digital DES-OFB. 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.



53SL Series Mobile Radio

Typical Performance Specifications

GENERAL	VHF, 50W	VHF, 100W	UHF R1, 40W	UHF R2, 40W
Frequency Range (band splits)	136-174 MHz	146-174 MHz	380-470 MHz	450-512 MHz
Channel Spacing				
Analog	25,12.5 kHz			
P25 Digital	12.5 kHz			
Maximum Frequency Separation	Full Band Split			
Display	Backlit LCD. 10 alpha-numeric characters plus Zone, Ch, & Status. Electronically adjustable viewing angle			
Power Supply				
Nominal Voltage (negative ground)	13.6 VDC			
Operating Supply Voltage Range	10.9 ~ 16.3 VDC			
Standby Current (back-light off)	700 mA			
Receive Current at Rated Audio Power	2.7 A			
Current at Max Rated Transmit Power	14.5 A	30 A	12 A	12 A
Temperature Range				
Operating	-30°C to +60°C			
Storage	-40°C to +85°C			
Nominal Dimensions (H x W x D) exclusive of mounting, cables, knobs	5.3 x 18.2 x 21.1 cm (2.1 x 7.2 x 8.3 in)	5.3 x 18.2 x 35.5 cm (2.1 x 7.2 x 14 in)	5.3 x 18.2 x 21.1 cm (2.1 x 7.2 x 8.3 in)	5.3 x 18.2 x 21.1 cm (2.1 x 7.2 x 8.3 in)
Nominal Weight	2.3 kg (5.5 lb)	3.9 kg (8.5 lb)	2.3 kg (5.5 lb)	2.3 kg (5.5 lb)
FCC ID	ATH2425311	ATH2425312	ATH2425331	ATH2425341
Industry Canada	IC: 933B-2425311	IC: 933B-2425312	IC: 933B-2425331	IC: 933B-2425341

TRANSMITTER				
RF Output Power (variable)	10 W ~ 50 W	50 W ~ 100 W	10 W ~ 40 W	10 W ~ 40 W
Transmitter Frequency Range(s)	136 ~ 174 MHz	146 ~ 174 MHz	380 ~ 470 MHz	450 ~ 512 MHz
Maximum Frequency Separation	Full Band Split			
Frequency Accuracy* (-30°C ~ +60°C, +25°C ref.)	±1.5 ppm			
Modulation Limiting				
25 kHz channels	±5 kHz			
12.5 kHz channels	±2.5 kHz			
Modulation Fidelity (C4FM, 12.5 KHz Digital)	<5%			
Spurious Emissions	-70 dBc			
Audio				
Analog Freq. Resp. (TIA 6dB/octave pre-emphasis)	+1, -3 dB			
FM Hum and Noise Ratio (25 kHz Analog)	45 dB	45 dB	45 dB	45 dB
FM Hum and Noise Ratio (12.5 kHz Analog)	39 dB	39 dB	39 dB	39 dB
Distortion	2%			
FCC Emission Designators	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E			

RECEIVER				
Receiver Frequency Ranges	136-174 MHz	146-174 MHz	380-470 MHz	450-512 MHz
Maximum Frequency Separation	Full Band Split			
Sensitivity				
Analog Mode:				
12 dB SINAD (25 & 12.5 kHz)	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			
12.5 kHz Channels	-63 dB			
Intermodulation	-75 dB	-75 dB	-75 dB	-75 dB
Spurious Response Rejection	-75 dB	-75 dB	-75 dB	-75 dB
Audio				
Analog Freq. Resp. (TIA 6dB/octave pre-emphasis)	+1, -3 dB			
Output Power (3 Ω load)	12 W rms			
Distortion (1 kHz, 60% Deviation)	<3%			

*FCC Part 90.21

ENVIRONMENTAL SPECIFICATIONS

Environment	Mil Spec 810C		Mil Spec 810D		Mil Spec 810E		Mil Spec 810F	
	M	P	M	P	M	P	M	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
Vibration	514.2	VII, VIII	514.3	I(8)	514.4	I(8)	514.5	II(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
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

ACCESSORIES

- Antennas
- Keypad Microphones
- Desk Microphones
- Hand-Held Controller
- Remote Control Heads
- External Speakers
- Power Supplies
- Control Station Components
- Tone Remotes
- Encryption Key Management Tools
- Radio Programming Tools
- Mounting Hardware
- Siren