

53SL Series Mobile Radio

700/800 VHF UHF

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), P25 Trunked and Conventional system protocols, and P25 Over-The-Air Rekeying (OTAR).



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



Encryption

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.

More 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
- Radio Control Available to 3rd Party Developers

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

53SL Series Mobile Radio

Typical Performance Specifications

GENERAL	700/800 30/35 W	VHF, 50W	VHF, 100W	UHF, R1 40 W	UHF, R2 40 W
Frequency Range (band splits)	762-870 MHz	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	15 A	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)	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)	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)
exclusive of mounting, cables, knobs					
Nominal Weight	2.3 kg (5.5 lb)	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	ATH2425371	ATH2425311	ATH2425312	ATH2425331	ATH2425341
Industry Canada	IC: 933B-2425371	IC: 933B-2425311	IC: 933B-2425312	IC: 933B-2425331	IC: 933B-2425341

TRANSMITTER					
RF Output Power (variable)	10-30 W (762-806 MHz) 10-35 W (806-870 MHz)	10 W ~ 50 W	50 W ~ 100 W	10 W ~ 40 W	10 W ~ 40 W
Transmitter Frequency Range(s)	762-776, 792-806, 806-825, 851-870 MHz	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	-75 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	45 dB
FM Hum and Noise Ratio (12.5 kHz Analog)	40 dB	39 dB	39 dB	39 dB	39 dB
Distortion	2%				
FCC Emission Designators	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E			

RECEIVER					
Receiver Frequency Ranges	762-776, 851-870 MHz	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)	0.35 uV (-116 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)	0.25 uV (-119 dBm)
Selectivity					
25 kHz Channels	-75 dB				
12.5 kHz Channels	-63 dB				
Intermodulation	-73 dB	-75 dB	-75 dB	-75 dB	-75 dB
Spurious Response Rejection	-75 dB	-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 90.213

**Measured in digital mode per TIA/EIA 102. CAAA and TIA 102.CAAB Standards.

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	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
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

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Our Mission—Your Safety

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