



Key Features and Benefits

Future Proof

- ▶ The 53SL protects your investment with a TDMA upgrade solution

Robust and Flexible

- ▶ Up to 512 Channels / Talkgroups
- ▶ P25 Digital and Analog
- ▶ SMARTNET II®/SmartZone® P25 Digital and Analog
- ▶ All Supported Protocols Available Simultaneously
- ▶ DES & DES-OFB Encryption with 64 keys
- ▶ P25 Conventional & Trunked OTAR
- ▶ Conventional Vote Scan is Standard
- ▶ Supports MDC1200 and GE-Star Signaling
- ▶ Compatible with Motorola Astro®
- ▶ Supports Motorola® System v7.7
- ▶ Simplified cabling with a single multi-function accessory connection in the rear

Data and Control Interfaces

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

Simplified Feature Updates and 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

Multiple Configuration Options

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

Extensive Accessory Suite

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

Future-proof your radio investment.

The 53SL ES Mobile Radio from EFJohnson Technologies 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 budget. The 53SL ES Series is packed with features that are normally found in radios costing thousands of dollars more. Specifically designed for public safety, the 53SL ES Series offers crisp and powerful digital audio with the Enhanced (AMBE+2) Project 25 Vocoder, Project 25 trunked and conventional operation, TDMA upgrade, and a simplified cable design. Keep your fleet safe for the future. Make the 53SL ES Series Mobile Radio your right choice.

EFJohnson Technologies focuses on innovating, developing and marketing the highest quality secure communications solutions to organizations whose mission is to protect and save lives.



▶ 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 for Outstanding Voice Quality and Noise Reduction

Hear the difference! EFJohnson is the only radio vendor with a full implementation of this second generation Enhanced (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.



53SL ES Series Mobile Radio 700/800 MHz UHF VHF

Typical Performance Specifications

GENERAL	7/800, 30/35W	UHF R1, 40W	VHF
Frequency Range (band splits)	762-870 MHz	380-470 MHz	136 - 174 MHz
Channel Spacing			
Analog	25kHz, 12.5kHz	25kHz, 12.5kHz	25 kHz, 12.5 kHz
P25 Digital	12.5kHz	12.5kHz	12.5 kHz
Maximum Frequency Separation	Full Band Split	Full Band Split	Full Band Split
Display	Backlit LCD. 10 alpha-numeric characters plus Zone, Channel and Status. Electronically adjustable viewing angle		
Power Supply			
Nominal Voltage (negative ground)	13.6 VDC	13.6 VDC	13.6 VDC
Operating Supply Voltage Range	10.9 ~ 16.3 VDC	10.9 ~ 16.3 VDC	10.9 ~ 16.3 VDC
Standby Current (back-light off)	700 mA	400 mA	400 mA
Standby Current (Lightning™ Control Head)	900 mA	700 mA	700 mA
Receive Current at Rated Audio Power	2.65A	2.65A	2.65A
Receive Current at Rated Audio Power (Lightning)	2.85A	2.85A	2.85A
Current at Max Rated Transmit Power	12.5A	10A	12.5A
Temperature Range			
Operating	-30°C to +60°C	-30°C to +60°C	-30°C to +60°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Nominal Dimensions (H x W x D)	2.1" x 7.2" x 8.3"	2.1" x 7.2" x 8.3"	2.1" x 7.2" x 8.3"
exclusive of mounting, cables, knobs	(5.3 cm x 18.2 cm x 21.1 cm)	(5.3 cm x 18.2 cm x 21.1 cm)	(5.3 cm x 18.2 cm x 21.1 cm)
Nominal Weight	6.5 lbs (2.3 kg)	6.5 lbs (2.3 kg)	6.5 lbs (2.3 kg)
FCC ID	ATH2425372	ATH2425333	ATH2425313
Industry Canada	IC: 933B-2425372	IC: 933B-2425333	IC: 933B-2425313
Vocoder	Enhanced (AMBE+2) Project 25 Vocoder		

TRANSMITTER

RF Output Power (variable)	15 ~ 30 W (762-806MHz) 15 ~ 35 W (806-870MHz)	10W ~ 40 W	15W ~ 50 W
Transmitter Frequency Range(s)	762~776, 792~806, 806~825, 851~870 MHz	380 ~ 470 MHz	136 ~ 174 MHz
Maximum Frequency Separation	Full Band Split	Full Band Split	Full Band Split
Frequency Accuracy (-30°C ~ +80°C, +25°C ref.)	±1.5 ppm	±1.5 ppm	±1.5 ppm
Modulation Limiting			
25kHz channels	±5 kHz	±5 kHz	±5 kHz
12.5kHz channels	±2.5 kHz	±2.5 kHz	±2.5 kHz
Modulation Fidelity (C4FM, 12.5kHz Digital)	< 5%	< 5%	< 5%
Spurious Emissions	-75 dBc	-75 dBc	-75 dBc
Audio			
Analog Frequency Response (TIA 6dB/octave pre-emphasis)	+1dB, -3dB	+1dB, -3dB	+1dB, -3dB
FM Hum and Noise Ratio (25kHz Analog)	40 dB	45 dB	45 dB
FM Hum and Noise Ratio (12.5kHz Analog)	34 dB	39 dB	39 dB
Distortion	2%	2%	2%
FCC Emission Designators	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E	8K10F1D, 8K10F1E, 11K0F3E, 16K0F3E	

RECEIVER

Receiver Frequency Ranges	762~776, 851~870 MHz	380 ~ 470 MHz	136 - 174 MHz
Maximum Frequency Separation	Full Band Split	Full Band Split	Full Band Split
Sensitivity			
Analog Mode: 12dB SINAD (25 & 12.5kHz)	.25µV (-119 dBm)	.25µV (-119 dBm)	.25µV (-119 dBm)
Digital Mode: (5% BER)	.25µV (-119 dBm)	.25µV (-119 dBm)	.25µV (-119 dBm)
Selectivity (Adjacent Channel Rejection)			
25kHz channels, Analog	> 80 dB	>75 dB	>75 dB
12.5kHz channels	> 63 dB	> 63 dB	> 63 dB
Offset, Digital	< 9 dB / kHz	< 9 dB / kHz	< 9 dB / kHz
Intermodulation	-80 dB	-75 dB	-75 dB
Spurious Response Rejection	-83dB	-75 dB	-75 dB
Audio			
Analog Frequency Response (TIA 6dB/octave pre-emphasis)	+1dB, -3dB	+1dB, -3dB	+1dB, -3dB
Output Power (3Ω load)	12W rms	12W rms	12W rms
Distortion (1kHz, 60% Deviation)	< 3%	< 3%	< 3%

ENVIRONMENTAL SPECIFICATIONS

Environment	Mil Spec M	810G P
Low Pressure	500.5	II
High Temp.	501.5	I, II
Low Temp.	502.5	I, II
Temp. Shock	503.5	I (D)
Solar Radiation	505.5	I (A1)
Rain/Blow Rain	506.5	I, III
Humidity	507.5	--
Salt Fog	509.5	--
Sand and Dust	510.5	I, II
Vibration	514.6	I (4), II
Shock	516.6	I, II, V, VI

M = Method P = Procedure

Also meets equivalent superseded C, D, and E standards

ENCRYPTION OPTIONS

Supported Encryption Algorithms	AES, DES, DES-OFB
Encryption Keys/Radio	64 Common Key Reference (CKR) 64 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 Control Kit

All EFJohnson radios are made in the U.S.A.