E-LynX™ Mobile SDR Family

Advanced multi-domain networking solutions

Elbit Systems™
of Australia

E-LynX™ Mobile SDR Family
Advanced multi-domain networking solutions

The E-LynX™ Mobile SDR family for advanced multi-domain networking solutions is designed to meet the complex communication and connectivity needs of the modern battlefield for all echelons and operational scenarios. The solution provides net-centric connectivity, enhancing situational awareness and operational effectiveness. The E-LynX™ Mobile SDR family provides robust broadband data communication capabilities for multiple configurations, including dismounted soldiers, land combat vehicles, maritime and airborne platforms.

Robust, Fast and Powerful Network

The E-LynX™ Mobile SDR family offers scalable capabilities in a flexible network structure along the command chain and across domains, providing a robust, fast, and powerful always connected network for short sensor-to-shooter cycles. Unique multi-band and multi-waveform abilities enable network optimization in different types of terrain, with no single point of failure.

The solution provides complete coverage of NATO mobile frequency bands, with simultaneous multiple voice groups sessions, IP data streams and multiple live video streams, including continuous Blue Force Tracking capabilities.

Secured and Immune

The E-LynX™ Mobile SDR family provides unprecedented communication coverage and attendance regardless of terrain and jammers, Low Probability to Detect (LPD) and Low Probability to Intercept (LPI) capabilities. All waveforms are GNSS agnostic synchronization-wise and highly immune to manmade and natural interferences.

Open and Flexible Integrated System

The simple and intuitive user interface, along with modular, flexible, and open architecture abilities, enable future growth with no hardware changes for 3rd party waveforms and national security solutions. The systems easily integrate with sensors, weapon systems, and legacy radios. The E-LynX™ Mobile SDR family is intuitive to operate and rapidly deployed with optimal size, weight and power consumption (SWaP).

The E-LynX™ Mobile SDR family was developed based on more than 40 years of experience deploying communication systems in more than 50 countries worldwide, accompanied by extensive R&D and comprehensive Life Cycle Support.

E-LynX™ Soldier Radio

Dismounted Personal Lightweight SDR

Technical Specifications

General	
Frequency range	225-512 MHz
Bandwidth	200 kHz
Output Power	3 levels: 0.5W, 1W, 2W Vehicular configuration
Voice	Vocoder
Preset Channels	225 (15 banks of 15 channels each)
Built-In Test (BIT)	Start-up, on-line and operator initiated
Power	8-16 V Li-Ion rechargeable battery
Ad-hoc Networking	45 members, multi-hop, self-forming, self-healing
Automatic Voice Relay	Multi-hop
Interfaces	Asynchronous USB/Ethernet
Voice Communications	Full duplex communications conference with up to 6 simultaneous speakers Dual PTT solution enables dynamic network hierarchy
Blue Force Tracking	Embedded GNSS with automatic BFT dissemination
Encryption	AES-256
Synchronization	Automatic self-synchronization, no reliance on GNSS
Late Entry Synchronization	Automatic, no special procedures required
WPTT	Embedded Wireless PTT
Dimensions	
HxWxD	120x72x26 mm
Weight	360 g
Volume	225 cc
Qualifications	
Environmental	MIL-STD-810G
EMC	MIL-STD-461F

E-LynX™ Handheld

Dismounted Handheld SDR

Technical Specifications

General

Frequency range	30-512 MHz
Architecture	SCA 2.2.2
Networking	Multi-hop Mobile Ad-Hoc IP Networking (MANET) implementation via hybrid relay technology: concurrent flooding and store & forward
Preset Channels	100 per waveform
Operation	• 2.8" graphic color display • Cellular-like icon-based operation

Features

Voice	• Analog: F3E, STANAG 4204 Digital: 2.4 & 4.8 kbps Vocoders • VoIP support • Multiple voice groups
Data	IP Layer 3
GNSS	• Internal receiver • Auto/manual location report
Embedded Applications	• Blue Force Tracking (BFT) • Visual network-topology • Network monitoring

Interface and Management

Interfaces	Ethernet, Analog Voice (RS-232, USB optional)
Network Management	NMS interfaces support via SNMP-v3

Waveforms

Bandwidth	25 kHz, 50 kHz, 1 MHz (500 kHz, 2 MHz, 4 MHz optional)
Modulation	FM, BPSK, GMSK, PSK, QAM

Immunity and Robustness

Synchronization	• Autonomous, no master station, no single point of failure • No reliance on GNSS or any external signal
COMSEC	AES-256
ECCM	• Robust frequency hopping • Jamming resistant

Transmitter

Power Output	Up to 5W Nominal
Frequency Stability	0.3 PPM
Spurious Emission	-80 dBc
Harmonic Emission	Better than -50 dBc
Output Protection	Open and short-circuit

Receiver

Typical Sensitivity	FM: -116 dBm for 12 dB SINAD
Squelch	Off, tone, noise, digital

Qualifications

Environmental	MIL-STD-810G
EMC	MIL-STD-461F

Physical

Dimensions (HxWxD)	157X85X57 mm without battery
Weight	950 g

Power

Power Source	14.4V Nominal
Battery	TLI-1008, 17.4Ah

E-LynX™ Manpack

Dismounted Manpack SDR

Technical Specifications

General

Frequency range	30-512 MHz
Optional mission modules (dual channel radio)	30-512 MHz 1.0-1.8 GHz
Architecture	SCA 2.2.2
Networking	Multi-hop Mobile Ad-Hoc IP Networking (MANET) implementation via hybrid technology: concurrent flooding and store & forward
Preset Channels	100 per waveform
Operation	• 2.8" graphic color display • Cellular-like icon-based operation

Features

Voice	• Analog: F3E, STANAG 4204, 4205 Digital: 2.4 & 4.8 kbps Vocoders • VoIP support • Multiple voice groups, up to 12 voice groups
Data	IP Layer 3
GNSS	• Internal receiver • Auto/manual location report
Embedded Applications	• Blue Force Tracking (BFT) • Visual network-topology • Network monitoring

Interface and Management

Interfaces	Ethernet, Analog Voice, (RS-232, USB optional) Multiple software-controlled antenna ports
Network Management	NMS interfaces support via SNMP-v3

Waveforms

Bandwidth	25 kHz, 50 kHz, 1 MHz (500 kHz, 2 MHz, 4 MHz optional)
Modulation	FM, BPSK, GMSK, PSK, QAM

Immunity and Robustness

Synchronization	• Autonomous, no master station, no single point of failure • No reliance on GNSS or any external signal
COMSEC	AES-256
ECCM	• Robust frequency hopping • Jamming resistant

Transmitter

Power Output	Up to 10W Nominal
Frequency Stability	0.3 PPM
Spurious Emission	-80 dBc
Harmonic Emission	Better than -50 dBc
Output Protection	Open and short-circuit

Receiver

Typical Sensitivity	FM: -116 dBm for 12 dB SINAD
Squelch	Off, tone, noise, digital

Qualifications

Environmental	MIL-STD-810G
EMC	MIL-STD-461F

Physical

Dimensions (HxWxD)	156X224X85 mm
Weight without battery pack	3 kg

Power

Power Source	Nominal 14.4V
Battery	TLI-9380E1, 17.4Ah

E-LynX™ Vehicular HH

Single Channel Vehicular SDR

Technical Specifications

General	
Frequency range	30-512 MHz 1.0-1.8 GHz
Architecture	SCA 2.2.2
Networking	Multi-hop Mobile Ad-Hoc IP Networking (MANET) implementation via hybrid technology: concurrent flooding and store & forward
Preset Channels	100 per waveform
Operation	• 2.8" graphic color display • Cellular-like icon-based operation

Features	
Voice	• Analog: F3E, STANAG 4204 Digital: 2.4 & 4.8 kbps Vocoders • VoIP support • Multiple concurrent voice sessions in all waveforms
Data	IP Layer 3
GNSS	• Internal receiver • Auto/manual location report
Embedded Applications	• Blue Force Tracking (BFT) • Visual network-topology • Network monitoring

Interface and Management	
Interfaces	Ethernet, Analog Voice, (RS-232, USB optional) Multiple software-controlled antenna ports
Network Management	NMS interfaces support via SNMP-v3

Waveforms	
Bandwidth	25 kHz, 50 kHz, 1 MHz, 4 MHz (500 kHz, 2 MHz optional)
Modulation	FM, BPSK, GMSK, PSK, QAM

Immunity and Robustness	
Synchronization	• Autonomous, no master station, no single point of failure • No reliance on GNSS or any external signal
COMSEC and TRANSEC	AES-256
ECCM	• Robust frequency hopping • Jamming resistant

Transmitter	
Power Output	Up to 50W Nominal L-band 10W
Frequency Stability	40 PPB
Spurious Emission	-80 dBc
Harmonic Emission	Better than -60 dBc
Output Protection	Open and short-circuit

Receiver	
Typical Sensitivity	FM: -116 dBm for 12 dB SINAD
Squelch	Off, tone, noise, digital

Qualifications	
Environmental	MIL-STD-810G
EMC	MIL-STD-461F

Physical	
Dimensions (HxWxD)	180x230x252 mm
Weight	9.25 kg W/O HH

Power	
Power Source	Nominal 24V
Standard	MIL-STD-1275A/AT

E-LynX™ Vehicular MP

Single Channel Vehicular SDR

Technical Specifications

General	
Frequency range	30-512 MHz 1.0-1.8 GHz
Architecture	SCA 2.2.2
Networking	Multi-hop Mobile Ad-Hoc IP Networking (MANET) implementation via hybrid technology: concurrent flooding and store & forward
Preset Channels	100 per waveform
Operation	• 2.8" graphic color display • Cellular-like icon-based operation

Features	
Voice	• Analog: F3E, STANAG 4204 Digital: 2.4 & 4.8 kbps Vocoders • VoIP support • Multiple concurrent voice sessions in all waveforms
Data	IP Layer 3
GNSS	• Internal receiver • Auto/manual location report
Embedded Applications	• Blue Force Tracking (BFT) • Visual network-topology • Network monitoring

Interface and Management	
Interfaces	Ethernet, Analog Voice, (RS-232, USB optional) Multiple software-controlled antenna ports
Network Management	NMS interfaces support via SNMP-v3

Waveforms	
Bandwidth	25 kHz, 50 KHz, 1 MHz, 4 MHz (500 KHz, 2 MHz optional)
Modulation	FM, BPSK, GMSK, PSK, QAM

Immunity and Robustness	
Synchronization	• Autonomous, no master station, no single point of failure • No reliance on GNSS or any external signal
COMSEC and TRANSEC	AES-256
ECCM	• Robust frequency hopping • Jamming resistant

Transmitter	
Power Output	Up to 50W Nominal
Frequency Stability	40 PPB
Spurious Emission	-80 dBc
Harmonic Emission	Better than -60 dBc
Output Protection	Open and short-circuit

Receiver	
Typical Sensitivity	FM: -116 dBm for 12 dB SINAD
Squelch	Off, tone, noise, digital

Qualifications	
Environmental	MIL-STD-810G
EMC	MIL-STD-461F

Physical	
Dimensions (HxWxD)	160X230X252 mm
Weight	18 kg

Power	
Power Source	Nominal 24V
Standard	MIL-STD-1275A/AT

E-LynX™ Vehicular MP

Dual Channel Vehicular SDR

Technical Specifications

General

Frequency range	30-512 MHz 1.0-1.8 GHz
Architecture	SCA 2.2.2
Networking	Multi-hop Mobile Ad-Hoc IP Networking (MANET) implementation via hybrid technology: concurrent flooding and store & forward
Preset Channels	100 per waveform
Operation	• 2.8" graphic color display • Cellular-like icon-based operation

Features

Dual Channel	Enables the SDR to be active in two radio networks simultaneously
Voice	• Analog: F3E, STANAG 4204 Digital: 2.4 & 4.8 kbps Vocoders • VoIP support • Multiple concurrent voice sessions in all waveforms
Data	IP Layer 3
GNSS	• Internal receiver • Auto/manual location report
Embedded Applications	• Blue Force Tracking (BFT) • Visual network-topology • Network monitoring

Interface and Management

Interfaces	Ethernet, Analog Voice, (RS-232, USB optional) Multiple software-controlled antenna ports
Network Management	NMS interfaces support via SNMP-v3

Waveforms

Bandwidth	25 kHz, 50 kHz, 1 MHz, 4 MHz (500 kHz, 2 MHz optional)
Modulation	FM, BPSK, GMSK, PSK, QAM

Immunity and Robustness

Synchronization	• Autonomous, no master station, no single point of failure • No reliance on GNSS or any external signal
COMSEC and TRANSEC	AES-256
ECCM	• Robust frequency hopping • Jamming resistant

Transmitter

Power Output	Two channels, up to 50W Nominal (each) L-band 10 W
Frequency Stability	40 PPB
Spurious Emission	-80 dBc
Harmonic Emission	Better than -60 dBc
Output Protection	Open and short-circuit

Receiver

Typical Sensitivity	FM: -116 dBm for 12 dB SINAD
Squelch	Off, tone, noise, digital

Qualifications

Environmental	MIL-STD-810G
EMC	MIL-STD-461F

Physical

Dimensions (HxWxD)	160x342x252 mm
Weight	23 kg

Power

Power Source	Nominal 24V
Standard	MIL-STD-1275A/AT

E-LynX™ AR

SDR for airborne platforms and airborne mission applications computer

Technical Specifications

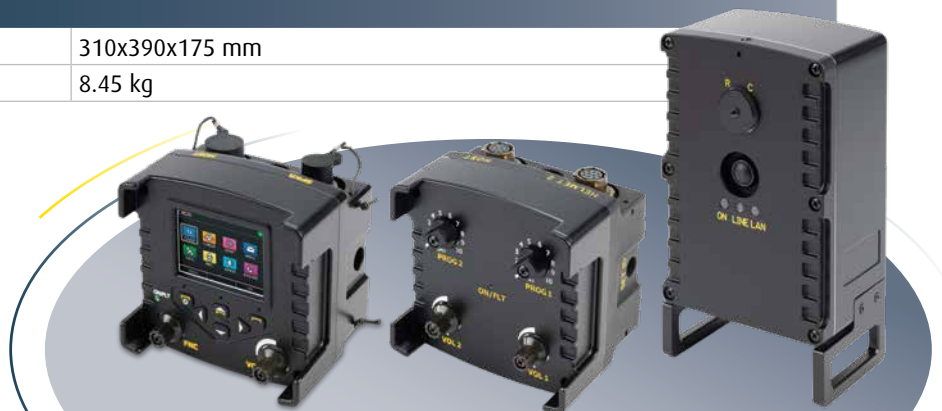| Feature	
Radio Architecture	SDR - with red/black separation SCA 2.2.2 platform compliant
Frequency Band	VHF/UHF: 30-512 MHz L-Band: 960-1240 MHz
Channel Bandwidth	NB and WB up to 4MHz
RF Channels	3 independent RX/TX channels simultaneously (V/U/L + Guard channel)
TX Output Power	Up to 50W per channel
GNSS	Integral GNSS receiver, enables radio position
Waveforms	Legacy WF: NB Clear (CLR) mode for analog voice (FM or AM) MANET WB-WF: Wideband waveform (voice, data and video)
Data	IP Layer 2/Layer 3 support
Control I/F	SNMP control
Modem Modulation	NB: 8DPSK, FM, AM WB: GMSK, 16QAM, 64QAM
Networking	IP data network (MANET) No single point of failure Decentralized net management with relay
Number of Network members	64 members in a WB net (voice and data) Optional configuration for a greater number of users
Adaptive Mode	Adaptive rate, modulation and power
Antenna Diversity	Automatic
Security	SEC mode and anti-jamming immunity built-in encryption - Legacy and AES-256
Voice	Support for voice groups both analog and digital voice
Video	Support for video transfer (multi-hop), built-in video codec
Size	1/2 ATR short (ARINC 600 4 MCU)
Interfaces	• MIL-STD-1553B / ARINC 429 • Ethernet 10/100/1000Mbps • RS232, RS422, USB • Analog video • Analog audio • GNSS

E-LynX™ VIC-500 IP

Advanced decentralized IP vehicular intercommunication system

Technical Specifications

General	
UU-500IP Operation	2.8" graphical color display with multi-function buttons and knobs
UU-501IP/UU-501IP-D Operation	Simple blind-operation program selector and volume control
UU-502IP Operation	User unit including field telephone line (POTS)

Features
· Decentralized system architecture
· Compact design for combat platforms
· Support for IP Routing and VoIP services
· Seamless integration with IP and legacy radios
· Digital audio processing including VAD and ANR
· Voice groups – for use with SDR-Radios
· 10 easily customizable operation modes
· Simple and intuitive multilingual user interface

Environmental and EMC
MIL-STD-810G, MIL-STD-461F

Power	
Power Source	Nominal 24V
Standard	MIL-STD-1275E

Additional Interface Protocols
Ethernet, RS-232, USB, fixed audio, Alerts

User Units Physical	
Dimensions (HxWxD)	98X120X120 mm
Weight	1.25 kg

ES-500 Physical	
Dimensions (HxWxD)	175X95X112 mm
Weight (Optional Batteries)	1.782 kg, 1.976 kg

MEU-500IP Physical	
Dimensions (HxWxD)	190 x 106 x 77 mm
Weight	1.1 kg

Remote Case Plus Physical	
Dimensions (HxWxD)	310x390x175 mm
Weight	8.45 kg

E-LynX™ SAT

Tactical satellite communications for voice and data transmission

Technical Specifications

General	
Modem Data Rates	4Kbps ~ 40Kbps – depending on satellite performance
Modem Modulations	BPSK, OQPSK, QPSK
Spreading Factor	5 to 20dB
Receiver Lock Time	50msec
Frequency Switching Time	1msec
Modem Board Power Consumption	< 5W
Transmission Power	30dBm (1W) Max
Receiver Eb/No	2dB
Transmit Antenna Frequency Range	27.5 GHz to 30 GHz
Receive Antenna Frequency Range	17.7 GHz to 20.2 GHz
Angle Coverage (from the horizon)	AZ: 360° EL: 30° to 90°
Transmit / Receive Antenna Gain	≥21dBi at 90° ≥19dBi at 40°
Transmit / Receive Antenna Beamwidth	13° at 90° EL/AZ 18° at 40° EL/AZ
Operating Temperature	-20°C to 50°C

Features
• Speared spectrum capability enabling LPD – Low Probability of Interception / Low Probability of Detection • Integration on a wide range of platforms stationary or on-the-move configurations • Automatic electronic satellite tracking phased-array antennas for both transmission and reception • Low data rate for voice and data transmission over standard Ku, Ka-band GEO/MEO/LEO satellites • Connected to secured military encrypted radio equipment and ruggedized tablet computers

E-LynX™ Mobile SDR Family

Advanced multi-domain networking solutions

E-LynX™
Networking the Battlefield

www.elbitsystems.com.au

PO Box 6148 Kingston, ACT 2604
Within Australia: 03 8644 1600
Outside Australia: +61 3 8644 160

Elbit Systems™
of Australia