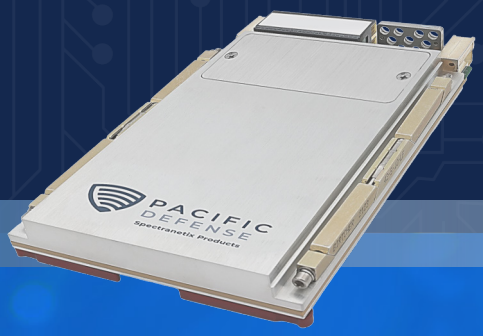
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PACIFIC DEFENSE

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SX-620

CMOSS MN-MIMO Radio Card

Integrated Multi-Mission Comms/EW/C5ISR Solutions



The SX-620 MN-MIMO Radio Card is the first product of its kind to bring MN-MIMO capabilities to the SOSA™/CMOSS ecosystem. This rugged 3U OpenVPX™ plug-in card, fully aligned with the SOSA™ Technical Standard, introduces state-of-the-art mobile ad-hoc networking (MANET) capabilities to enable scalable communication across Air, Land, and Sea platforms. By embedding the enhanced Silvus StreamCaster 4400 4x4 MIMO radio, the SX-620 supports a network of over 550 nodes, facilitating simultaneous voice, data, and Position Location Information (PLI) communications.

The SX-620 employs advanced MIMO techniques such as Spatial Multiplexing, Space-Time Coding, and Eigen Beamforming, ensuring high data throughput and resilience against interference in the most contested environments. With a broad frequency range from 300 MHz to 6 GHz, built-in COMSEC encryption, and compliance with stringent MIL-STD environmental standards, the SX-620 is engineered for mission-critical operations that demand secure and reliable connectivity. Designed for easy integration into CMOSS/SOSA architectures, the SX-620 delivers robust communication capabilities for even the most demanding operational scenarios.

KEY FEATURES

- Built to CMOSS, SOSA™, and OpenVPX™ standards
- 3U VPX form factor
- Embeds Silvus StreamCaster 4400 Enhanced 4x4 MIMO radio
- Fully interoperable with radios and devices utilizing MN-MIMO waveform
- Supports Spatial Multiplexing, Space-Time Coding, TX/RX Eigen Beamforming
- Scalable solution supports 550+ nodes in a single network with simultaneous voice and data messaging
- Built-in COMSEC with DES56 and AES256 encryption
- L-UHF, U-UHF, L/S, and C Bands
- Supports MORA interfaces
- Slot profiles
  - SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-4
  - Supports other aperture options
- Conduction cooled, VITA 48.2
- Meets VITA 47 ECC3 environmental class

General Characteristics

- Mobile Networked MIMO (MN-MIMO) waveform
- Spatial Multiplexing, Space-Time Coding, TX/RX Eigen Beamforming MIMO techniques
- HD quality G.711/G.722/Opus Codec push-to-talk (PTT) voice options and RTP audio streaming
- ML2B Data Plane connectivity via Gigabit Ethernet interface
- Built-in COMSEC with DES56 and optional AES256 encryption (FIPS140-3 Level 2 with Suite B algorithms)
- Intelligent Platform Management Interface (IPMI)

Frequency / Bandwidth / Data Rate

- Frequency bands hardware configured from 300MHz to 6GHz
  - L-UHF (300-450 MHz)
  - U-UHF (698-970 MHz)
  - L/S (1350-2500 MHz)
  - C (4400-5000 MHz)
- Configurable channel bandwidths: 1.25/2.5/5/10/20 MHz
- Up to 100 Mbps (adaptive) high data rate

Sensitivity / Transmit Power

- Sensitivity of -102dBm @ 5MHz bandwidth
- Output Power
  - 1mW to 20W (native, user adjustable)
  - Up to 80W (effective with Beamforming)

Spectrum Dominance / Anti-Jam

- MANET Spectrum Analyzer (MAN-SA)
- MANET Interference Avoidance (MAN-IA)
- MANET Power Control (MAN-PC)
- MANET Protected Waveform (MAN-PW)
- MANET Interference Cancellation (MAN-IC)

Software Support

- MORA transport layer supported on the ML2B interface
- Full software API for status and control of the radio through an Internet Protocol (IP) and the MORA interfaces
- Embedded network management GUI with advanced tools and diagnostics

Accessories

- Optional quad antenna and L/S band amplifier

Applications

- Audio Communication
- Video Communication
- Networking
- Fixed or Mobile Tactical Operations
- Cyber Security Solutions
- Other low power embedded communication solutions

INNOVATIVE

DEFENSE & COMMERCIAL SOLUTIONS

CMOSS SOSA Sensor Open Systems Architecture MEMBER OpenVPX

Pacific Defense is designed to support the DoD's disciplined movement to modular open standards and to mirror the way military services address EMS warfare – holistic mission planning and execution. The company's approach inherently enables what it refers to as a rapid prototyping paradigm – embedding a commercial mentality into the defense industry. Products are designed from the outset for modern, AI-driven autonomy and CMOSS and SOSA-aligned hardware and software solutions. This includes state-of-the-art processing that can readily follow the evolution of commercial technology with complete data sharing across networks and platforms.

Headquartered in El Segundo, California, Pacific Defense takes an organic, commercial-minded approach to military-use electromagnetic spectrum technologies, and solutions. Focus areas include autonomous systems, command and control, communications, cyber operations, intelligence collection, and electronic warfare. Spectranetix, Perceptronics, and Spear Research are part of the Pacific Defense family, specializing in highly-advanced RF spectrum technologies, and engineering with innovative AI-backed algorithms.

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