

SKY LYNX

Data Interface Hardware

Sky Lynx receives, synchronizes, routes, and simulates data from various sensors and platforms via customized link interfaces and protocols. This third-generation system from the Space Dynamics Laboratory (SDL) extends the functionality and capabilities of previous generations with increased processing performance, an updated operating system, a focus toward COTS architecture, and increased storage capacity. Additionally, Sky Lynx offers improved flexibility through multiple sensor interfaces and PCIe card slots while preserving the mission data capture, playback, and simulation functions.

When the aircraft acquires imagery and navigational data, the data is sent via radio frequency or satellite link to a data link receiver. Sky Lynx retrieves and converts the data to Ethernet for ground processing. SDL's VANTAGE™ software then processes the data for near real-time conditioning, display, and distribution.

Sky Lynx's capabilities facilitate maintaining and troubleshooting ground stations. Its simulation functionality enables ground station operators to simulate real sensor flights for mission training exercises.

PHYSICAL CHARACTERISTICS

- 1 Gigabit Ethernet (4 RJ-45 ports)
- 10 Gigabit Ethernet (2 SFP+ ports)
- Each CDL sensor interface provides 12 data channels (6 high-rate ECL & 6 low-rate TTL) via a 100-pin micro-D connector on the rear panel
 - Maximum flexibility on serial channels through support of multiple clock rates
 - Each ATM sensor interface supports up to 4 ATM ports at OC-3/STM1 data rates via duplex LC optical connections
- Front & rear video output for test & configuration
- 4 USB ports (2 front, 2 back)
- Up to 8 front small form factor (SFF) solid state drives (SSDs)
 - Drives configurable based on customer needs
- Web-based user interface for remote access

Power	100 to 120 VAC or 200 to 240 VAC, 500 W
Weight	<36 lb
Dimensions	1.69" H x 17.11" W x 30.5" D
Temperature	Operates at 5°C to 45°C, sea level





Front Panel (without protective bezel)



Rear Panel

BENEFITS

- Fulfills training needs by simulating many mission types
- Able to adapt to new sensors as they become available (via software upgrade)
- Design enables hardware to be removed from a classified environment for update or repair
- Able to transmit/receive data to or from external systems via CDL, ATM & Ethernet
- Integrates into any standard 19" rack
- Features reset/initialize function via software or hardware front panel push button
- Provides dramatic increase in computation capability over previous generation hardware via state-of-the-art processors & Linux operating system
- Receives security patches via Linux OS updates
- Web-based GUI interface enables system feedback & status in stand-alone mode

SIMULATION CAPABILITIES

- Generates pseudo-random bit sequence (PRBS) data
- Provides an individual clock signal for each CDL channel
 - Operators can invert each output clock edge independently, providing realistic CDL simulations

DIAGNOSTIC CAPABILITIES

DEBUGGING/TESTING TOOLS

- Can inject known data/bit errors into a data stream, enabling systems to test robustness & error-detection capabilities
- Can detect, simulate, or pass through PRBS data
- Captures unprocessed data for evaluation
- Provides mission-shadowing capabilities
- Can play back captured IMINT data directly to VANTAGE
- Can play back non-IMINT IP data to external clients

TESTING CABLE INTEGRITY

- Can send PRBS data on each channel (also facilitates integration with other systems)

LOOPBACK & SELF-TEST

- Features extensive self-diagnostic loopback test & the ability to monitor the speed & temperature of the internal electronics for easy maintenance & troubleshooting
- Server system maintenance & troubleshooting available via Linux OS

MISSION READINESS VERIFICATION

- Provides ability to play back captured mission data to validate downstream systems prior to live mission