

ESW6100 Series

Heavy-Duty 10G Core Backbone for Mobile Tactical Hubs

Built to serve as the high-speed central switching core for mobile communication hubs, armoured command vehicles, and joint network nodes. This heavy-duty 10G switch aggregates and switches massive concurrent video feeds, radar data, and multi-vehicle sensor networks. With line-rate hardware encryption across all interfaces and an advanced management operating system, it ensures that your entire tactical network backbone remains secure from intercept and manipulation.

Key Features

Primary Network Role	Fully Managed Heavy-Duty Layer 3 Core Backbone Switch
Ethernet Interfaces	Dedicated high-speed 10 ports operating at native 10G speeds
Non-Blocking Throughput	Up to 100 Gbps line-rate capacity
Multicast Switching	Line-Rate L3 multicast processing optimized for concurrent video and heavy sensor streams
MACsec Encryption	Full line-rate hardware encryption simultaneously across all 10G interfaces
Secure Boot	Advanced multi-stage cryptographically validated boot code execution
Tactical Zeroization	Support to wipe encryption keys and configuration data during an emergency

Capabilities

The ESW6100 series represents the pinnacle of tactical network processing and data protection, purpose-built for heavy-duty mobile backbones and high-capacity system aggregation. Operating as a dedicated Layer 3 Core switch, it is designed to process and switch massive, simultaneous streams of raw sensor telemetry, multi-vehicle radar data, and tactical video feeds over native 10G interfaces.

What sets the ESW6100 apart is its uncompromised security envelope: it executes full line-rate hardware MACsec encryption simultaneously across all 10G interfaces, protecting data integrity and confidentiality on the wire with zero impact on latency or CPU performance. Backed by multi-stage secure boot, tactical zeroization, and fail-safe software architecture resilience, it ensures your central network hub remains bulletproof.

The capabilities of the ESW6100 series include:

- **Wire-Speed 10G MACsec:** Full hardware-based Layer 2 encryption across all 10G ports with zero latency.
- **Heavy-Duty Core Switching:** Optimized Layer 3 engine built for massive concurrent data aggregation.
- **Advanced Software Resilience:** Fail-safe switch architecture prevents packet loss during system faults.
- **Total Defense Envelope:** Multi-stage secure boot and tactical zeroization for classified data protection.
- **Strategic Backbone Security:** Certified for high-security military usage within strategic communication hubs and tactical command nodes.

Form factors

The ESW6100 series offers different form factors depending on best fit for a particular use case.

Standard 19"/2 form factor	Customized form factor
	
▪ Form, fit and function over multiple generations ▪ Long-term roadmaps	▪ Project driven form factor

MilDef 19"/2 modular design

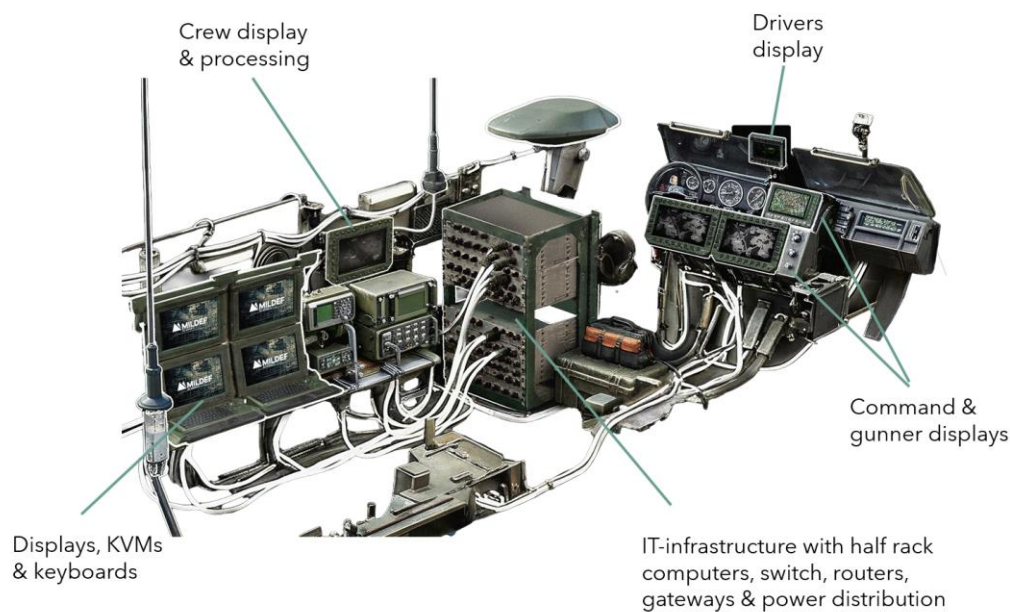
The MilDef 19"/2® addresses the requirements for small, high performance IT hardware. The modular design and broad product offering (computer, network, power and peripherals) enables the use of 19"/2® units as building blocks for creating built to purpose solution. Same form factor over multiple generations enable reuse of cable, mounting solution etc for midlife upgrades along the system life cycle.

Solution provider

MilDef offers solution and integration delivering seamless, end-to-end solutions by integrating hardware and software into complete systems that meet customer requirements. Managing integration projects/programs to ensure alignment with mission objectives/business strategy and technological capabilities.

Hardware ECO-system

Our hardware offering including all the building blocks for complete IT infrastructure for the tactical edge, such as displays, network products, power products, docking stations, mounting solutions etc.



Use case

The ESW6100 series is a core component of many tactical platform designs. Some use case examples are:

- **Tactical Command & Communication Networks:** Serves as a secure Layer 3 core for command posts, communication hubs, and mission-critical backbone networks.
- **Multi-Sensor & ISR Systems:** Aggregates high-volume data from radar, cameras, sensors, and processing nodes over high-speed 10G interfaces.
- **Armoured Vehicle & Platform Backbones:** Provides centralized switching for mission systems, avionics, communications equipment, and vehicle-wide networks.
- **High-Security Defense Networks:** Protects classified data with wire-speed MACsec encryption, secure boot, and tactical zeroization capabilities.

Specifications

System & Interfaces			
Switch Platform	Cisco ESS9300	Switching Architecture	Managed Layer 3
Primary Network Role	Core Switch - Intended for high-speed network transport - Natural tactical backbone switch - Interconnecting major network segments	Boot-up Time (typical)	3-5 minutes
Ethernet Ports & Interfaces	Up to 10 ports 10 x dedicated 10G fiber ports - Role (access/uplink) determined by network design and switch configuration	PoE Capability	No
Switching Capacity	Up to 100 Gbps Non-blocking line-rate		
Core Capabilities			
Network Services	Core Layer 3 Switching & Aggregation	Secure Boot	Yes
Security Functions	Cisco TrustSec, ISE Integration, VRF-lite	Zeroization	Yes
Traffic Prioritization (QoS)	Line-Rate QoS for High-Speed Traffic	MACsec	Full Support MACsec on all ports
Tactical & Mission Services			
Time-Sensitive Networking (TSN)	- PTP (IEEE 1588v2) - NTP (RFC 5905)	Resilience Features	Cisco REP, HSRP, VRRP, Non-Stop Routing (NSR), MSTP
Multicast Services	Line-Rate Layer 3 Multicast Routing		
Deployment & Architecture			
Primary Mission Use Case	Tactical Core Backbone and Network Aggregation	Network Position	Core Layer
Typical Deployment	Command Posts, Tactical Data Centers, Core Backbone Networks		
Environmental			
MIL-STD-810			
Shock operating	Functional Shock. 40G/11ms	Noise level	Max noise level of 40 dB SPL 1 m (3.3 ft)
Temp. operating	-40 to 65°C (-40 to 149 °F)*	Salt fog	5 ± 1%
Temp. storage	-40 to 71°C (-40 to 160 °F)*	Temp. shock	55 °C (131 °F) / -40 °C (-40 °F)*
Humidity	Aggravated, 95 ± 4% RH	Vibration	Rotary wing aircraft - helicopter
IP Class	IP65*		Truck/trailer - loose cargo
Low air pressure	Rapid Decompression 8000 ft / 40000 ft		Ground vehicles - ground mobile tracked
	Operation/Air Carriage 15,000 ft		Ground vehicles - ground mobile wheeled
Optional standards			
RTCA/D0160, VG, DEFSTAN, MIL-STD, etc can be included on request.			
EMC			
MIL-STD-461			
EMI/EMS	Ground Army	ESD	CS118
Optional standards			
RTCA/D0160, VG, DEFSTAN, MIL-STD, etc can be included on request.			
Power			
Vehicle Power	MIL-STD-1275		
Optional standards			
VG, DEFSTAN, MIL-STD, etc can be included on request.			

*Higher available on request