RelyUm® Rugged



L2/L3 SFF
Military Secure Switch Router

MILS0802-SSR

Overview

The MILS0802-SSR is a compact military-grade switch engineered to deliver secure, high-reliability communications in space-constrained, high-risk operational environments. Designed with tactical flexibility in mind, its minimal size allows for seamless integration into space-constrained platforms, tactical vehicles, and forward-deployed systems, without compromising on performance.

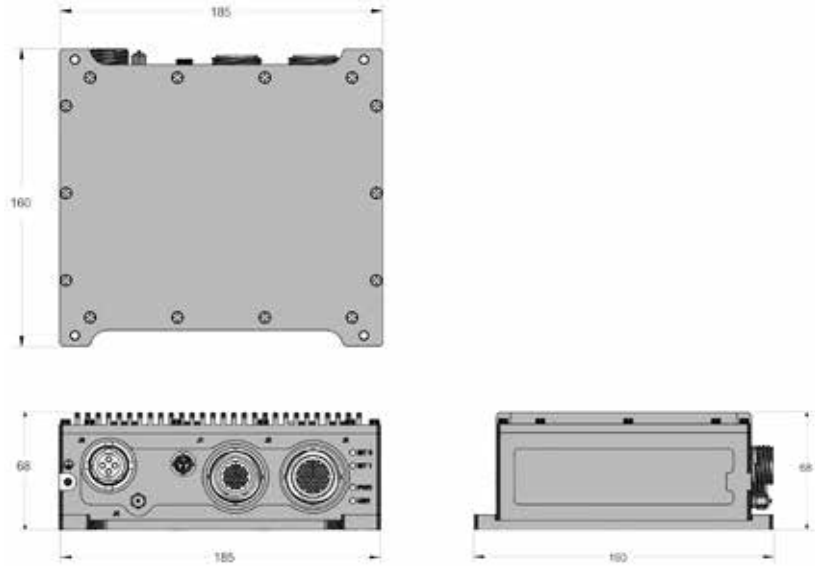
With embedded encryption and advanced cybersecurity features, it ensures data confidentiality, integrity, and availability even in contested or electronically hostile zones.

Small in form. Secure in function. Built for the mission.

Key Features

- **8x 10/100/1000BASE-T** Copper Ethernet ports, **2x 1000BASE-SX/LX Fiber Optic** Ethernet ports.
- Full in-house design (including networking and synchronization IP Cores) based on a **reconfigurable MPSoC** platform with edge computing capabilities.
- Firewall and VPN capabilities, combined with advanced security means including IEEE 802.1X and MACsec, among others.
- **Clock bridging** capabilities with accurate time distribution via IEEE 1588 (PTP).
- **Simplified management and monitoring** via a user-friendly HTTPS web interface or a flexible console port.
- **Sealed military grade and compact enclosure** with MIL-STD-704/MIL-STD-1275E power supply.

Dimensions



All measurements are in mm.

Technical Specifications

Communication Interfaces

- 8x 10/100/1000BASE-T Copper Ethernet ports
- 2x 1000BASE-SX/LX Fibre Optic Ethernet ports
- 1x 10/100/1000BASE-T Ethernet Service port
- 1x 50 ohms PPS output (Miscellaneous connector)
- 1x RS-422 PPS output (Miscellaneous connector)
- 2x RS-232 serial line (Miscellaneous connector)

Layer 2 Features

- IEEE 802.3-2008 (Ethernet)
- Automatic MAC address learning and aging
- Static MAC Table
- Port-Based Virtual LANs (VLANs):
  - Logical segmentation of network for optimal use of bandwidth
  - IEEE 802.1Q for VLAN tagging (up to 4K VLAN groups)
  - IEEE 802.1p for Class of Service (CoS) / Quality of Service (QoS)
- IEEE 802.1AB for Link Layer Discovery Protocol (LLDP)
- Port rate limiting
- Storm control for flooded broadcast, multicast and unicast
- Layer 2 multicast filtering
- IGMP Snooping (up to 1024 multicast filters)

Redundancy

- Spanning Tree Protocol:
  - IEEE 802.1D (STP)
  - IEEE 802.1w (RSTP)
  - IEEE 802.1s (MSTP)

Layer 3 Features

- IPv4/IPv6 unicast and multicast routing
- Static routing
- Virtual Router Redundancy Protocol (VRRP)
- DSCP ToS/QoS
- Source/Destination NAT
- Proxy ARP
- Dynamic routing:
  - OSPFv2, OSPFv3
  - RIPv1, RIPv2, RIPng
  - BGPv4
  - EIGRP
  - PIM-SM (IPv4 and IPv6)
- Policy Based Routing (PBR)*

*Supported in 2026

Gateway

- Edge-computing capabilities for user defined applications
- Support for DDS standard and MQTT protocol in KVM Virtual Machine for user application

Synchronization

- IEEE 1588-2008 v2 (PTPv2)
- IEEE 1588 Stateless Transparent Clock (TC)
- IEEE 1588 Ordinary Clock (Master-Slave)
- Time Bridge operation: NTP <-> PTP
- NTP (Server/Client)

Security

- IEEE 802.1X for port-based network access control
- MAC port binding & authentication for login security
- RADIUS authentication
- RBAC (Role Based Access Control)
- Selective ports disabling capability
- Unsecure protocols disabling capability
- Per port ingress and egress port mirroring
- HTTPS for web interface
- Secure Shell (SSH) Protocol v2 for command line interface
- TPM 2.0 IC for identity authentication
- Encryption/authentication & signature for firmware and bitstream
- IEEE 802.1AE - MACsec (Media Access Control Security) support
- Custom ACL level 2,3,4 for routed traffic
- Virtual Private Network (VPN):
  - Site to site and remote VPN support
  - IPsec VPN tunnels
  - L2TP VPN tunnels
  - PPTP VPN tunnels
  - Gretap VPN tunnels
  - SSL-based OpenVPN
- Stateful inspection firewall

Configuration & Management

- HTTPS web interface
- SSHv2 command line interface (CLI)
- SNMP V1/V2c/V3 protocol support
- SNMP V3 encrypted authentication and access security
- SNMP over TLS support
- Encrypted and digitally signed firmware / bitstream upgrades
- Saving and restoring configuration
- Internal status monitoring and logging
- Statistics independent per port
- Event notification through Syslog
- DHCP server and relay
- Built-in-Test capability including:
  - PBIT (Power-on BIT)
  - CBIT (Continuous BIT)
  - IBIT (Initiated BIT)
- In-band management via any Ethernet switch port or out-of-band via Ethernet service port
- RS-232 serial console

Processing

- Xilinx UltraScale+ MPSoC device:
  - 2x 64bit CPU ARM-Cortex-A53
  - 2x 32bit CPU ARM-Cortex-R5F
  - 1x 16nm UltraScale+ FPGA
- Up to 4GB DDR4 RAM memory
- 32GB eMMC Flash memory
- 512Mb QSPI Flash memory

Physical & Electrical Characteristics

- Military certified fanless rugged design
- Dimensions (mm): 185(W) | 160(D) | 68(H)
- Weight: 1.9kg (combination of metalwork, PSU and payload)
- Power Input: 28VDC
- Power consumption: TBD
- Copper, fibre optic, power supply and Miscellaneous port with RS-232/PPS capability via D38999 connector

MTBF

- TBD hours GB@25
- MTTR = TBD hours

Warranty

- 2 years

Export Control

- ITAR Free

Certifications

The following certifications are expected to be achieved by the switch:

- MIL-STD-461G: CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103
- MIL-STD-810G Methods: 500.5, 501.5, 502.5, 506.5, 507.5, 508.6, 509.5, 510.5, 513.6, 514.6, 516.6
- RTCA DO-160G: Sections 4, 7, 8, 15, 16, 17, 18, 19, 20, 21, 25, 26
- MIL-STD-1275E
- ESD EN61000-4-2
- IEC-60529 - IP67
- CE Certification

For more information, please contact your sales representative.

Ordering Code

Ordering code	
0802-SSR-71.49	MILS0802-SSR: 1G L2/L3 SFF Military Switch Router - 1000Base-SX Fibre Optic ports

To know more about other available references, please contact your sales representative.

RelyUm®
By

MILS0802-SSR

L2/L3 SFF
Military Secure Switch Router

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