



# MILTECH™ 9012

Compact, Portable Military Managed Gigabit Ethernet Switch

## FEATURES DESCRIPTION

Driven by rapid advancement and lower costs, Ethernet is becoming the standard for IP-based components in a wide range of military and commercial applications, including:

- Battle management systems (BMSs)
- UAVs
- Land autonomous vehicles (UGVs)
- Robots
- Mobile equipment fielded in harsh environments

Modern platforms contain dozens of network devices that must be interconnected. The MILTECH9012 is an ideal solution for mobile Ethernet-equipped platforms. With the best combination of size, weight, power and cost (SWaP-C) in the industry, it saves valuable real estate for computers, sensors, targeting systems, and other devices that make mobile platforms highly effective.

The MILTECH9012 is a MIL-STD, fully managed military grade network switch offering 12 triple-

speed (10/100/1000Mbps) ports. It can be remotely managed to optimize communications and prioritize critical information traffic. Advanced network features, never before found in a package of this size, include switching protocols, virtual LANS (VLANS), traffic prioritization (QoS), and bandwidth aggregation are standard.

The MILTECH9012's gigabit speeds and 24VDC power make it instantly compatible with any network device and power systems.

The MILTECH9012 is widely used in battlefield communications C4ISR, video, sensor data acquisition and transmission. Its mechanical packaging enhancements, including sealed SCE2 circular connectors, is designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. Leveraging best-in-class switching technology, the MILTECH912 serves as a robust commercial off-the-shelf (COTS) solution for rugged LAN connectivity.

## SPECIFICATIONS

<b>ETHERNET PORTS:</b>	<ul style="list-style-type: none"> <li>• Router / switch Layer 3 managed 12X10/100/1000 TX Ports.</li> </ul>
<b>NETWORKING:</b>	<ul style="list-style-type: none"> <li>• Wire-speed hardware-based 12 ports gigabit Ethernet switch – L2, L3, L4 Capabilities</li> <li>• L3-Routing capabilities:static,RIPV1,V2,OSPF V2/V3 Multicast Routing, BGP4*,VRRPECMP Routing</li> <li>• Multicasting (IGMP Snooping), GARP, GMRP, MLD and GVRP up to 8K groups for both IPv4 and IPv6</li> <li>• Broadcasting and flooding Control up to 8K Groups</li> <li>• 802.1q Tagged based VLAN up to 4K VLAN groups</li> <li>• Bridge Support for VLAN Q-in-Q , manual tunneling</li> <li>• Link Aggregation 802.3ad, up to 16 members in group</li> <li>• Link Aggregation mechanism based on L2/ L3/ L4 parameters</li> <li>• Jumbo Frame support up to 10K</li> <li>• WEB, CLI, Telnet , SNMP V2/V3 management</li> </ul>





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<p><b>NETWORKING:</b> Quality of Service:</p>	<ul style="list-style-type: none"> <li>• QoS Multi-Layer Classifier: 802.1p, EtherType, VLAN-ID, IPv4/6 DSCP/ToS, and UDP/TCP ports &amp; ranges traffic classification.</li> <li>• Per port WFQ and Strict Queuing scheduling</li> <li>• DSCP remarking for both IPv4 and IPv6 frames</li> <li>• Ingress policer and ingress shaper per port with 500Kbps granularity</li> <li>• Egress shaper per port with 500Kbps granularity</li> <li>• Full-duplex flow control (IEEE802.3X) and half-duplex backpressure, symmetric and asymmetric</li> </ul>
<p><b>NETWORKING:</b> Security:</p> <p>Redundancy and ring protection:</p>	<ul style="list-style-type: none"> <li>• Security via Radius Authentication 802.1x, Port / MAC access control</li> <li>• Port Security</li> <li>• Per port ingress and egress port mirroring</li> <li>• Mirroring per VLAN and per content awareness match</li> <li>• Private VLAN support per VLAN (Isolated and Promiscuous ports)</li> <li>• Content Aware Policers: <ul style="list-style-type: none"> <li>• 128 Content Aware Policers</li> <li>• 16 Content Aware rate policers with rates from 1fps to 32 million fps</li> <li>• 8 UDP/TCP port range policers</li> </ul> </li> <li>• Advanced ACL through hardware based match patterns</li> <li>• Content Aware Policers for generic MAC, ARP, IPv4, IPv6 protocols</li> <li>• No restriction on any mix of entries to Content Aware Policers</li> <li>• Content Aware Policers actions are permit/deny, police, count, snoop and mirror</li> <li>• Special support for IP fragments, UDP/TCP port ranges</li> <li>• Extensive CPU DoS prevention</li> <li>• Surveillance functions by Content Aware Policers counters</li> <li>• Multiple ACLs per port for optimal usage of Content Aware Policers</li> <li>• Storm controllers for flooded broadcast, multicast and unicast</li> </ul> <ul style="list-style-type: none"> <li>• Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings</li> <li>• RPR for up to 30 units per ring with recovery time &lt;50ms hardware based</li> <li>• 20-Gbps bandwidth for ring topology</li> <li>• QoS consistency across stack / ring</li> <li>• Mirroring across stack / ring</li> <li>• Link aggregation groups spanning multiple switches in stack / ring</li> </ul>
<p><b>CONNECTORS:</b></p>	<ul style="list-style-type: none"> <li>• 1 x Power Connector Type: SCE2-B-76A07-10ASN</li> <li>• 12 x LAN Connector Type: SCE2-B-76A07-14SN</li> <li>• 1 x Serial interface, shared with LAN port #1</li> <li>• LED Indication: Per Port (Speed, Link/Activity) Per Unit (Power)</li> </ul>
<p><b>CHASSIS:</b></p>	<ul style="list-style-type: none"> <li>• Low profile rugged aluminum extrusion</li> <li>• Conductively cooled w/custom internal heat-sinks</li> <li>• Ingress protection against sand, dust and moisture</li> </ul>
<p><b>STANDARDS:</b></p>	<ul style="list-style-type: none"> <li>• MIL-STD-1275B   MIL-STD-704A   MIL-STD-461E   MIL-STD-810F GM   IP68</li> </ul>



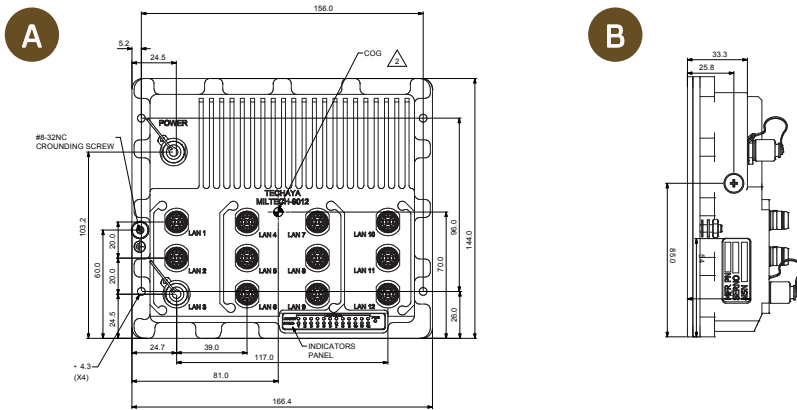
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<b>PERFORMANCE:</b>	<ul style="list-style-type: none"> <li>96.8 Mpps wire speed forwarding rate</li> <li>56 Gbps maximum forwarding bandwidth</li> <li>8K MAC Address</li> </ul>
<b>POWER:</b>	<ul style="list-style-type: none"> <li>Exceed MIL-STD-1275B and MIL-STD-704A Surge and Spike protection</li> <li>Voltage Input: 24Vdc Nominal (18-70V)</li> <li>Power Consumption: 13W Typical</li> <li>Chassis grounding</li> </ul>
<b>ELECTROMAGNETIC:</b>	<ul style="list-style-type: none"> <li>MIL-STD-461E Electromagnetic compatibility</li> <li>CE-102, CS-114, CS-115, CS-116, RE-102, RS-103</li> </ul>
<b>SHOCK/VIBRATION/HUMIDITY:</b>	<ul style="list-style-type: none"> <li>MIL-STD-810F; 501.4I   501.4II   502.4I   502.4II   507.4   500.4II   514   516I   516VI   514.5   512.4</li> </ul>
<b>PHYSICAL:</b>	<ul style="list-style-type: none"> <li>Dimensions: 166.4mm (L) x 144mm (W) x 56mm(H) including connectors</li> <li>Dimensions: 6.55" (L) x 5.67" (W) x 2.20" (H) including connectors</li> <li>Weight: 1.1Kg</li> </ul>
<b>INSTALLATION:</b>	<ul style="list-style-type: none"> <li>Four 4.5mm mounting holes on bottom for mounting to any flat surface.</li> </ul>
<b>COOLING:</b>	<ul style="list-style-type: none"> <li>No Moving Parts. Passive Cooling.</li> </ul>
<b>OPERATING TEMP:</b>	<ul style="list-style-type: none"> <li>-45°C to +85°C (-49°F to +185°F) Cold Start-Up</li> </ul>
<b>STORAGE TEMP:</b>	<ul style="list-style-type: none"> <li>-45°C to +85°C (-49°F to +185°F)</li> </ul>

\* Currently not supported – software upgrade option.



## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
1-9012-000	Managed Military Grade Gigabit Switch, 12 x 10/100/1000TX
1-9012-002	Managed Military Grade Gigabit Switch, 12 x 10/100/1000TX, With black zinc nickel plating Connectors
2-CBL9012PWR	PWR Harness for M9012
2-CBL9028LAN	LAN Harness for MILTECH9028/9012
2-CBL9028LN+	LAN and management Harness for MILTECH9028/9012