



# MILTECH™ 9022

## Military Managed 12 Ports Gigabit Switch Router

### FEATURES DESCRIPTION

The MILTECH™ 9022 is a MIL-STD Fully managed Military-grade network switch router offering 12 triple speed (10/100/1000) ports. The MILTECH™ 9022 is compatible with all the newest military industry network protocols for redundant link topology, security, multi-cast and management requirements.

Developed specifically for military and harsh mobile applications, the MILTECH™ 9022 features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive

cooling, and interface through sealed circular connectors. Leveraging best-in-class switching technology from Techaya, the MILTECH™ 9022 serves as a robust COTS solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. The MILTECH™ 9022 is particularly useful for expanding port density to tactical IP routers in space-constrained airborne and ground vehicle environments. MILTECH™ 9022 is specifically designed for Data Acquisition & Transmission, Battlefield Communication C4ISR, Rugged Networks, Mobile Communications, Combat vehicles, Avionic & Shipboard Systems.

### SPECIFICATIONS

<b>ETHERNET PORTS:</b>	<ul style="list-style-type: none"> <li>Router/switch layer 3 managed 12x10/100/1000 TX ports + 4x1G/10G fiber ports – Total of up to 16 x 1G 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*, VRRP,ECMP 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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<b>NETWORKING:</b> Quality of Service:	<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>
<b>NETWORKING:</b> Security:	<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>
Redundancy and ring protection:	<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>
<b>CONNECTORS:</b>	<ul style="list-style-type: none"> <li>• 1 x Power Connector Type: D38949/24WC04PN</li> <li>• 12 x LAN Connector Type: SCE2-B-76A07-14SN</li> <li>• Fiber connector types: See ordering information table</li> <li>• 1 x Serial interface, shared with LAN port #1</li> <li>• LED Indication: Per Port (Speed, Link/Activity)</li> </ul>
<b>CHASSIS:</b>	<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> <li>• Anodize Coating, MIL-A-8625, Type II, Class 2</li> </ul>
<b>STANDARDS:</b>	<ul style="list-style-type: none"> <li>• MIL-STD-1275B   MIL-STD-704A   MIL-STD-461E   MIL-STD-810F GM   IP67</li> </ul>



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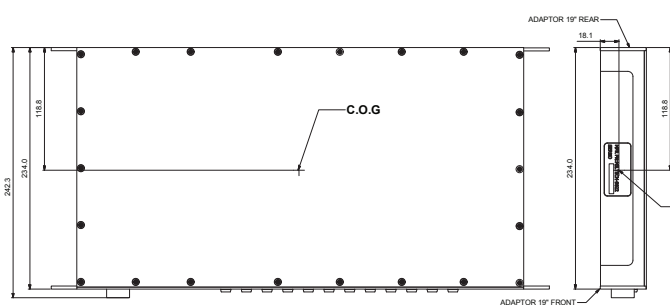
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### SPECIFICATIONS

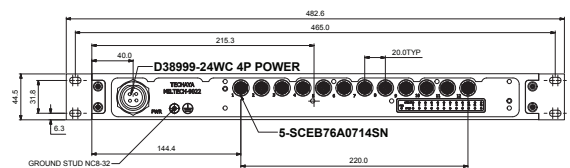
<b>PERFORMANCE:</b>	<ul style="list-style-type: none"> <li>96.8 Mpps wire speed forwarding rate</li> <li>56 Gbps maximum forwarding bandwidth</li> <li>8K MAC Address</li> </ul>
<b>POWER:</b>	<ul style="list-style-type: none"> <li>Voltage Input: 24Vdc Nominal (18-32Vdc or 90-230VAC)</li> <li>Power Consumption: 20W Max</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, C5-114, C5-115, C5-116, RE-102, R5-103</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: 482mm (L) x 242mm (W) x 44mm(H), including connectors &amp; hardware, 1U, 19" rack.</li> <li>Dimensions: 18.97"(L) x 9.52"(W) x 1.73"(H), including connectors &amp; hardware, 1U, 19" rack. Weight: 3.1kg</li> </ul>
<b>INSTALLATION:</b>	<ul style="list-style-type: none"> <li>19" standard mounting ears.</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.

**A**



**B**





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## ORDERING INFORMATION Options for MILTECH 9022/9022DC\*

1-9022-**A**-**B**-**C**-**D**-**E**

A	Number of 10G fiber ports
0	None
1	1X10G fiber port
2	2X10G fiber ports
3	3X10G fiber ports
4	4X10G fiber ports

B	Number of 1G fiber ports
0	None
1	1X1G fiber port
2	2X1G fiber ports
3	3X1G fiber ports
4	4X1G fiber ports

C	Fiber types
0	None
1	MM fiber
2	SM fiber
3	WDMA fiber
4	WDMB fiber

D	Connector type
0	None
1	D38999 - 2 pins
2	D38999 - 4 pins
3	ARINC801 - 2 Pins
4	ARINC801 - 4 Pins

E	Reserved for special configurations

\*Ordering Information for AC power supply version use 1-9022DC

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
2-CBL9028LAN	• LAN Harness for MILTECH9022/9028/9012/918/904
2-CBL9028PWR	• Power Harness for MILTECH9028
2-CBL9028LN+	• LAN and management Harness for MILTECH9022/9028/9012/918/904