



# MILTECH™ 9128

PCB level Ethernet Switch, 1GE Managed 24-Port Ethernet Router/Switch + 4 ports 10G

## FEATURES DESCRIPTION

The MILTECH 9128 is specifically designed for the complex traffic management of advanced optics with ultra-high megapixel resolution on rugged manned and unmanned military and civilian mobile, tactical, airborne vehicle platforms for situational awareness and network-centric operations.

With 24 triple-speed (10/100/1000Mbps) ports + 4 ports 10G, the MILTECH 9128 features both L2/L3 network switching and routing capabilities, including virtual LANS (VLANS), traffic prioritization/QoS, IPv4/IPv6 support, and bandwidth aggregation. It supports all the latest networking protocols for redundancy, security, multicast, and management.

With the industry's smallest footprint, the MILTECH 9128 measures only 90mm by 90mm to offer the best

performance and combination of size, weight, and power (SWaP) in the industry, saving valuable real estate for devices that make mobile platforms highly effective. Its 1GE transmission speeds and 3.3VDC power make it instantly compatible with network devices and power systems.

Conformally coated and with board-to-board connectors, it can easily be integrated as a module-based network building block in any military-grade communications platform. The MILTECH 9128 PCB level communication solution will withstand working temperatures of -45°C to +85°C and will comply with MIL-STD-810 & MIL-STD-461 (when incorporated in a suitable enclosure).

## SPECIFICATIONS

### NETWORKING:

- Wire-speed hardware-based 24 Ports Gigabit + 4 ports 10 Gigabit Ethernet switch – L2, L3, L4 Capabilities
- L3-Routing capabilities:static,RIPV1,V2,OSPF V2/V3 Multicast Routing, BGP4\*,VRRPECMP Routing
- Multicasting (IGMP Snooping), GARP, GMRP, MLD and GVRP up to 8K groups for both IPv4 and IPv6
- Broadcasting and flooding Control up to 8K Groups
- 802.1q Tagged based VLAN up to 4K VLAN groups
- Bridge Support for VLAN Q-in-Q , manual tunneling
- Link Aggregation 802.3ad, up to 16 members in group
- Link Aggregation mechanism based on L2/ L3/ L4 parameters
- WEB, CLI, Telnet , SNMP V2/V3 management





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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 including 10G 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> <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> </ul> </li> <li>• Storm controllers for flooded broadcast, multicast and unicast</li> <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>• 3 x SAMTEC ERM8-050-09.0-L-DV</li> </ul>
<p><b>STANDARDS:</b></p>	<ul style="list-style-type: none"> <li>• MIL-STD-461E   MIL-STD-810F GM   IP67</li> <li>*When incorporated in a suitable enclosure</li> </ul>



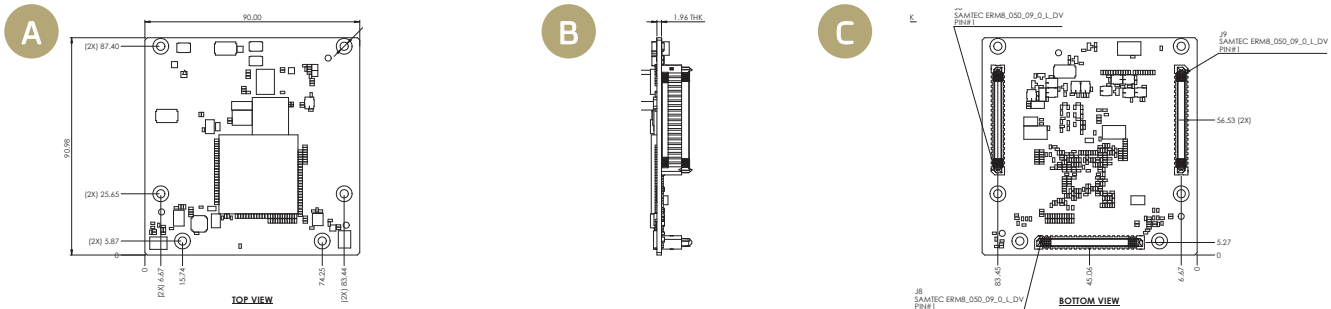
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<b>PERFORMANCE:</b>	<ul style="list-style-type: none"> <li>96.8 Mpps wire speed forwarding rate</li> <li>56 Gbps maximum forwarding bandwidth</li> <li>8K MAC Address</li> </ul>
<b>POWER:</b>	<ul style="list-style-type: none"> <li>3.3VDC</li> <li>Power Consumption: 25W Typical</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> <li>*When incorporated in a suitable enclosure</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> <li>*When incorporated in a suitable enclosure</li> </ul>
<b>PHYSICAL:</b>	<ul style="list-style-type: none"> <li>Dimensions: 90mm (L) x 90mm (W)</li> <li>Dimensions: 3.5" (L) x 3.5" (W)</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.



\*All measurements are in millimeters

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
1-9128-000	<ul style="list-style-type: none"> <li>PCB Level Ethernet Gigabit Switch, 24 x 10/100/1000TX + 4 x 10G ports</li> </ul>
1-9128EV-000	<ul style="list-style-type: none"> <li>Evaluation board for MILTECH9128</li> </ul>
1-CP-9128-000	<ul style="list-style-type: none"> <li>Cooling base plate for MILTECH9128</li> </ul>