

MILTECH™ 9136

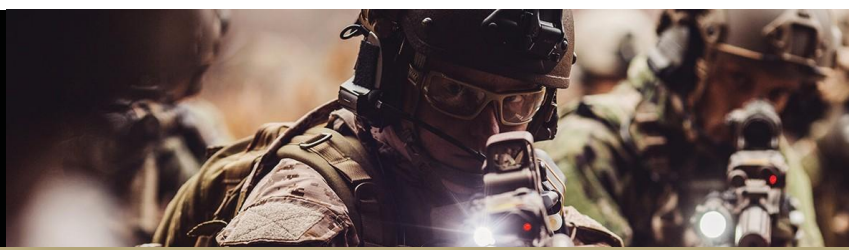
Managed Military Grade Embedded Ethernet Switch up to 52 ports

The MILTECH 9136 is specifically designed for complex traffic applications featuring advanced networking protocols including IEEE-1588 Capabilities, suitable for rugged military mobile tactical platforms, which require network centric interfaces.

With 24 triple-speed (10/100/1000Mbps) ports + 8 SGMII Interfaces + 4 QSGMII interfaces + 4 10G SFI ports, the MILTECH 9136 features both L2/L3 network switching and static 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 9136 measures only 87x87mm to offer performance and a combination of size, weight, and power (SWaP) in the industry, saving valuable real estate for devices that makes mobile platforms highly effective. Its 10GE transmission speeds and 12VDC power input make it compatible with network devices and power systems.

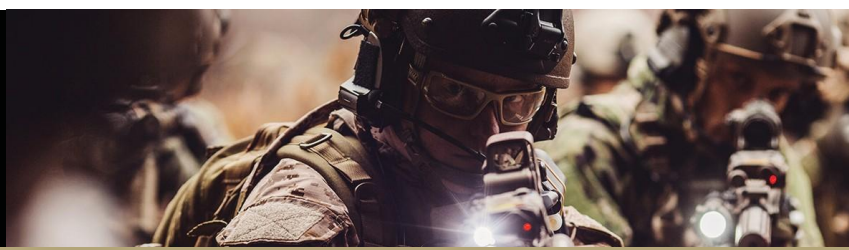
Conformally coated and with board-to-board connectors, it can easily be integrated as a module-based network building block in any military-grade communications platform. The MILTECH 9136 board level communication solution will withstand working temperatures of -40°C to +85°C and will comply with MIL-STD-810 & MILSTD461 (when incorporated in a suitable enclosure).





SPECIFICATIONS

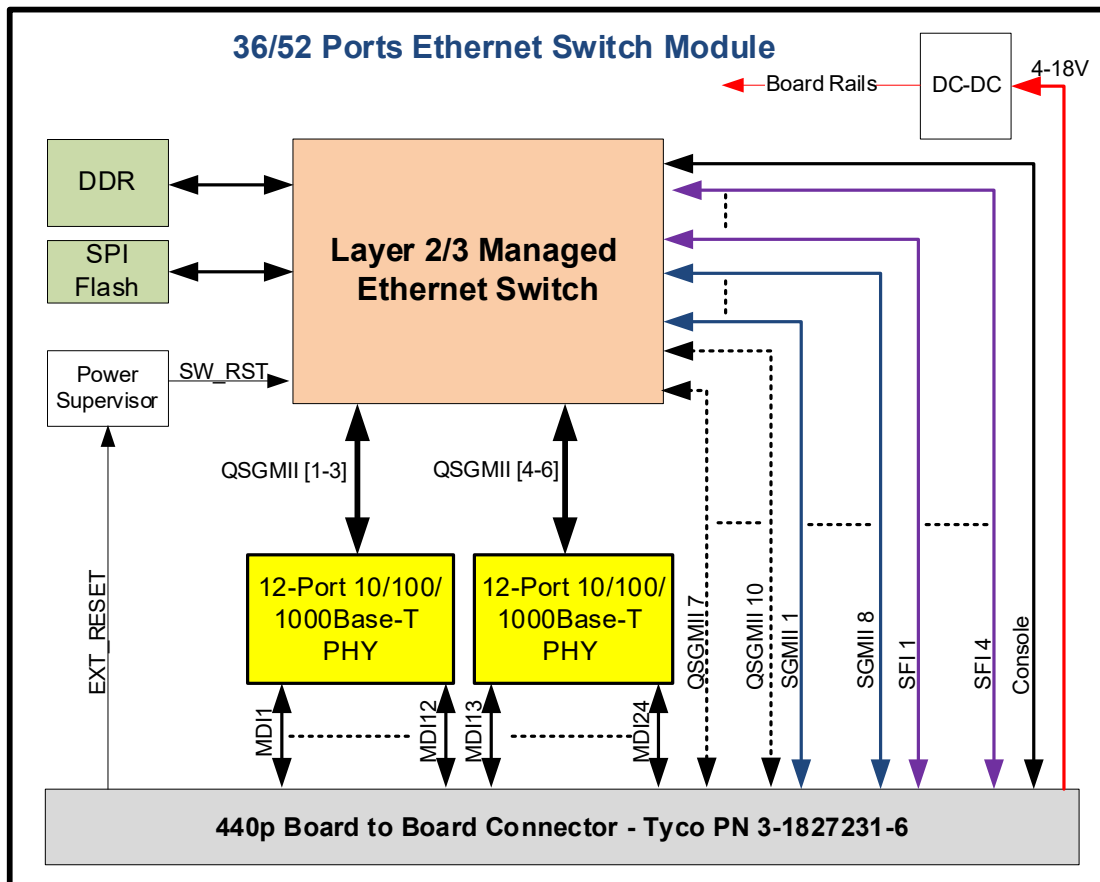
ETHERNET PORTS:	24 x 10/100/1000Base-T (PHYs on modules, magnetics on target carrier) 8 x SGMII/1000Base-X (typically used for 8 x 1G SFP fiber interfaces on target carrier) 4 x 10G SFI (typically used for 4 x 10G SFP+ fiber interfaces on target carrier) 4 x QSGMII (typically used for 4 x QUAD 1G PHYs on target carrier) – optional, unused in the 36 ports EVB/Carrier version
MANAGEMENT PORTS:	- CLI Port – UART - External carrier reset - Serial LEDs bit stream (SGPIO, typically decoded by carrier for the 36/52 ports indications) - WEB, CLI, Telnet, SNMP V2/V3 management
NETWORKING:	- Energy efficient Ethernet, IEEE 802.3az - Wire-speed hardware-based 32 ports Gigabit and 10 Gigabit Ethernet Switch - L2 & L3-Static Routing capabilities - TSN/IEEE-1588 Capabilities: 1588 v2 PTP, PTP over IPv4, Peer-to-peer transparent clock over Ethernet/IPv4, End-to-end transparent clock over Ethernet/IPv4, End-to-end transparent clock over Ethernet/IPv6, Boundary Clock, PTP Profile, NTPv4 Client - 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 - Link Aggregation 802.3ad - Multiple ACLs per port for optimal usage of Content Aware Policers - Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings - Up to 4K egress VLAN tag operations
NETWORKING: Quality of Service	- QoS Multi-Layer Classifier: 802.1p, EtherType, VLAN-ID, IPv4/6 DSCP/ToS, and UDP/TCP ports & ranges traffic classification. - Per port WFQ and Strict Queuing scheduling - DSCP remarking for both IPv4 and IPv6 frames - Ingress policer and ingress shaper per port with 500Kbps granularity - Egress shaper per port with 500Kbps granularity - Full-duplex flow control (IEEE802.3X) and half-duplex backpressure
Security	- Security via Radius Authentication 802.1x, Port / MAC access control - Port Security - Per port ingress and egress port mirroring - Mirroring per VLAN - Private VLAN support per VLAN (Isolated and Promiscuous ports) - Advanced ACL through hardware based match patterns - Content Aware Policers for generic MAC, ARP, IPv4, IPv6 protocols - Content Aware Policers actions are permit/deny, police, count - Multiple ACLs per port for optimal usage of Content Aware Policers - Storm controllers for flooded broadcast, multicast and unicast
PERFORMANCE:	253.4 Mpps wire speed forwarding rate 128 Gbps maximum forwarding bandwidth 8K MAC Address
CONNECTOR:	440p Board to board connector : TE P/N: 3-1827231-6
EMC/ENVIRONEMNTAL	- Designed to Meet: MIL-STD-461E MIL-STD-810F (when installed in appropriate enclosure) - ROHS/REACH compliant
POWER:	- Carrier DC input: 12VDC (4Vdc – 18Vdc) - Power Consumption: 15W Typical



SPECIFICATIONS

PHYSICAL:	• Dimensions: 87mm (L) x 87mm (W) • Dimensions: 3.42" (L) x 3.42"(W) • Weight: 250g • Mounting Holes: 8 x NC 6-32
COOLING::	• No Moving Parts. Passive Cooling.
OPERATING TEMP:	• -40°C to +85°C (-49°F to +185°F) Cold Start-Up
STORAGE TEMP:	• -45°C to +85°C (-49°F to +185°F)

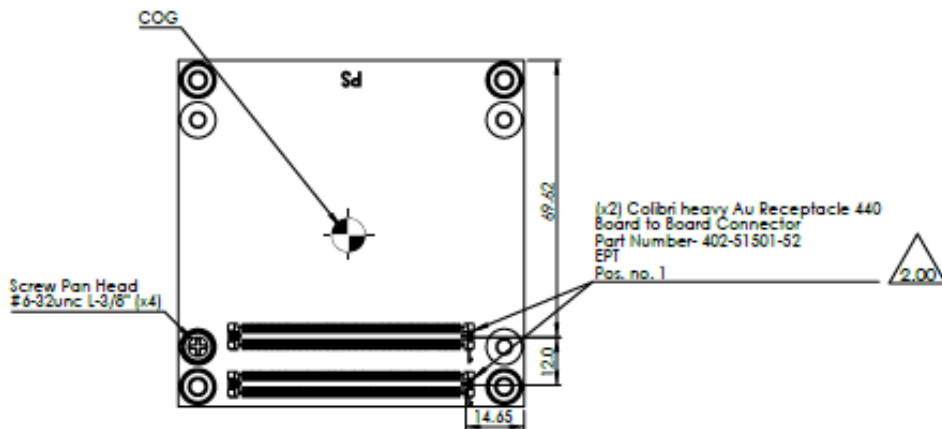
Module Diagram



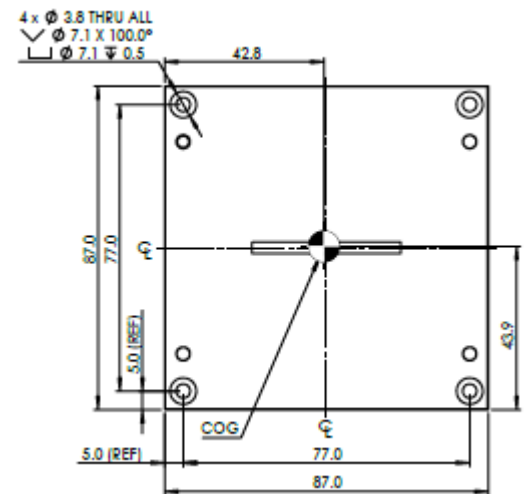


Mechanical Drawing

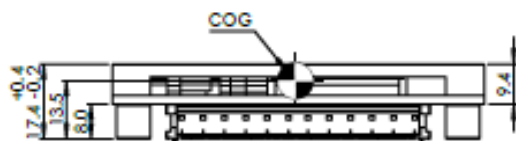
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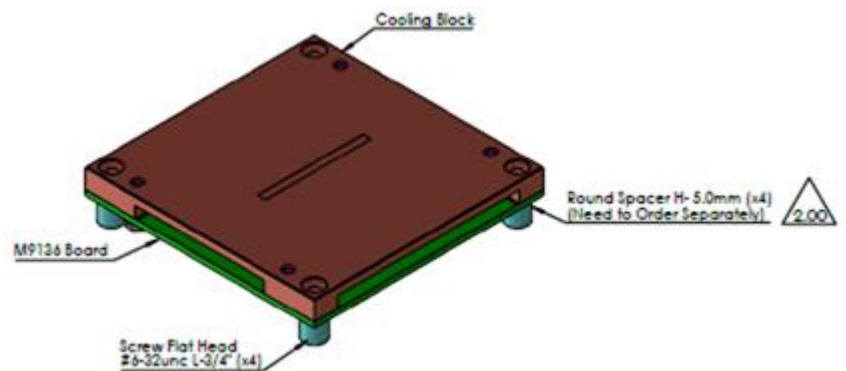
B



C



D





ORDERING INFORMATION

PART NUMBER	DESCRIPTION
1-9136-002	Board Level Ethernet Managed Switch, 24 x 1G Copper ports + 8 x 1G SGMII interfaces + 4 x QSGMII interfaces + 4 x 10G SFI ports
1-9136-005	Board Level Ethernet Managed Switch, 24 x 1G Copper ports + 8 x 1G SGMII interfaces + 4 x QSGMII interfaces + 4 x 10G SFI ports, Including Cooling base plate
1-CP9136-000	Cooling Plate Kit for MILTECH9136
1-9136EV-001	Evaluation board for MILTECH9136 - 36 ports (24 x 10/100/1000Base-T, 8 x 1G Fiber, 4 x 10G Fiber)
1-9136EV-002	Evaluation board for MILTECH9136 - 52 ports (24 x 10/100/1000Base-T, 24 x 1G Fiber, 4 x 10G Fiber)
1-CP-9136-000	Cooling base plate for MILTECH9136

Note: earlier module/EVB variations are obsolete and are no longer supported