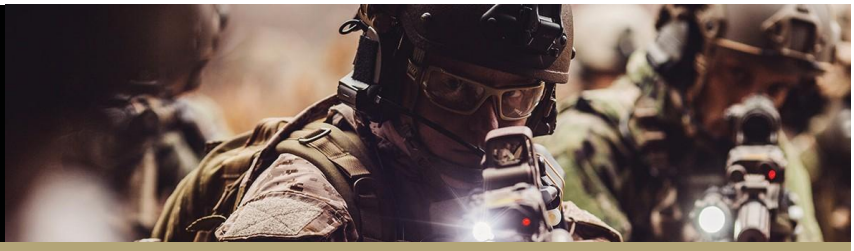
MILPOWER SOURCE | Networking Products



MILTECH™ 9012C-105

Compact, Military-Grade, Managed 16-Port Gigabit Ethernet Router/Switch With Cisco® IOS® - XE 8000V

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:

- Avionics and UAVs
- Mobile equipment in battlefield environments
- Land autonomous vehicles
- Robots

The MILTECH 9012C-105 is specifically designed for battlefield C4ISR, voice, video, and sensor data acquisition, and communications in platforms that require LAN/WAN connectivity.

While platform-internal networks need maximum speed and throughput, WAN interfaces require robust connectivity. The MILTECH 9012C-105 provides the best of both worlds in a single package – with Milpower's proven line-rate internal routing/switching and Cisco-IOS industry-standard routing, security, and mobility protocols.

The MILTECH 9012C-105's switch portion features both L2/ L3 network switching and routing capabilities, including virtual LANS (VLANS), traffic prioritization/QoS, IPv4/ IPv6 support, and bandwidth aggregation.

The integrated Cisco ESR router transparently connects to a mobile world of wired and wireless networks, with IPv4/IPv6 routing and multicast protocols that include BGP, OSPF, GRE, EIGRP, CDP, IGMP, and MLD. Voice and video connection quality are maintained with advanced quality of service (QoS) while external communications are secured with the latest encryption algorithms, IPsec and IKEv2 protocols, authentication, identity management, and integrated threat management. These advanced functions normally require a separate edge router but are now available in Enercon's compact MILTECH 9012C-105.

The MILTECH 9012C-105 offers the best combination of size, weight, and power (SWaP) in the industry, saving valuable real estate for devices that make mobile platforms highly effective. No other military-grade device offers such functionality in such a small package.

The 9012C-105 is a member of the MILTECH 9012 family that offers flexible alternatives for LAN, LAN/WAN, and customizable networking. All family members are MIL-STD, fully managed, and military-grade, with 14 triple-speed (10/100/1000Mbps) Copper ports and 2 1G F/O ports.

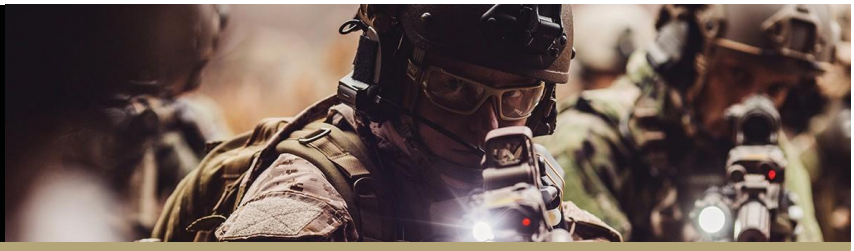
The MILTECH 9012C-105 gigabit-rate transmission and 24VDC power make it instantly compatible with the network device and power systems.

Developed for military and harsh avionic applications, the MILTECH 9012C-105's mechanical packaging enhancements are designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been specially hardened to improve ingress, impact, and shock/ vibration protection, as well as eliminate all moving parts through the use of passive cooling. Sealed Amphenol circular connectors give the MILTECH 9012C-105 an IP67 rating.

MILPOWER SOURCE

Ask us about our complete line of power and networking products.
7 Field Lane • Belmont, NH 03220 • 1.603.267.8865
sales@milpower.com • www.milpower.com

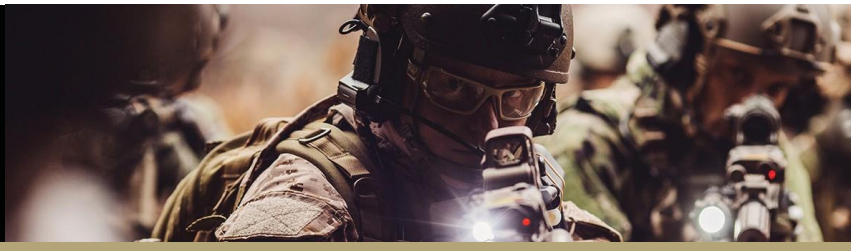
MILPOWER SOURCE | Networking Products



SPECIFICATIONS

ETHERNET PORTS:	• Managed 16 x switched GbE ports (14 x10/100/1000Base-T Copper Ports + 2x1G F/0 Ports)
NETWORKING: GENERAL	• Wire-speed hardware-based 22 ports gigabit Ethernet switch – L2, L3, L4 Capabilities. • L3 – Routing capabilities: Static, RIP V1, V2, OSPF V1/V2/V3, Multicast Routing, BGP4, VRRP • Multicasting (IGMP Snooping), GARP, GMRP, MLD, and GVRP up to 8K groups for both IPv4 and IPv6 • Broadcasting and flooding Control up to 16K Groups • 802.1q Tagged based VLAN up to 4K VLAN groups • Bridge support for VLAN Q-in-Q • Link Aggregation 802.3ad, up to 16 members in group • Link Aggregation mechanism based on L2/ L3/ L4 parameters • Jumbo Frame support up to 10K • WEB, CLI, Telnet Management
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, symmetric and asymmetric
NETWORKING: SECURITY	• Security via Radius Authentication 802.1x, Port / MAC access control • Port Security • Per port ingress and egress port mirroring • Mirroring per VLAN and per content awareness match • Private VLAN support per VLAN (Isolated and Promiscuous ports) • Content Aware Policers: - 128 Content Aware Policers - 16 Content Aware rate policers with rates from 1fps to 32 million fps - 8 UDP/TCP port range policers - Advanced ACL trough hardware based match patterns - Content Aware Policers for generic MAC, ARP, IPv4, IPv6 protocols - No restriction on any mix of entries to Content Aware Policers - Content Aware Policers actions are permit/deny, police, count, snoop and mirror - Special support for IP fragments, UDP/TCP port ranges - Extensive CPU DoS prevention - Surveillance functions by Content Aware Policers counters - Multiple ACLs per port for optimal usage of Content Aware Policers • Storm controllers for flooded broadcast, multicast and unicast
NETWORKING: REDUNDANCY AND RING PROTECTION	• Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings • QoS consistency across stack / ring • Mirroring across stack / ring • Link aggregation groups spanning multiple switches in stack / ring

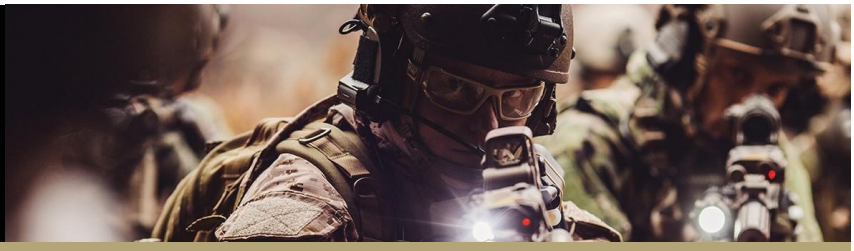
MILPOWER SOURCE | Networking Products



SPECIFICATIONS

CISCO NETWORKING GENERAL	• Routing Information Protocol (RIP) Versions 1 and Open Shortest Path First (OSPF) • Enhanced Interior Gateway Routing Protocol (EIG Border Gateway Protocol (BGP) • Cisco Discovery Protocol IP Policy Routing • IP Multicast Protocol Independent Multicast (PIM) Versions 1 and 2 Internet Group Management • Protocol (IGMP) Versions 1, 2, and 3 IP Multicast Load Splitting • Cisco Group Management Protocol (GMP) Up to 32 VLANs supported per router IPv4 support • IPv6 routing and Cisco Express Forwarding switching • IPv6 QoS - IPv6 tunneling support - Cisco IOS Zone-Based Firewall for IPv6 traffic Encapsulations - Point-to-Point Protocol (PPP) - PPP over Ethernet (PPPoE) client and server for Fast Ethernet - 802.1q VLAN trunking support - Generic routing encapsulation (GRE)
CISCO NETWORKING: RADIO	• Radio-Aware Routing - Optimizes IP routing over fixed or temporary radio networks - Factors radio link metrics into route calculations - Immediately recognizes and adapts to changes in network neighbor status - Supports Dynamic Link Exchange Protocol (DLEP) - Supports Router Radio Control Protocol (R2CP) - Supports RFC 5578 (authored by Cisco) Mobile Ad-Hoc Networks - OSPFv3 enhancements for mobile ad-hoc networks
CISCO NETWORKING: QUALITY OF SERVICE	• QoS • Generic traffic shaping • Class-based Ethernet matching and mobile access routing (802.1p class of service [CoS]) • Committed access rate • Flow-based Weighted Random Early Detection (WRED) • Class-Based Weighted Fair Queuing (CBWFQ) • Low Latency Queuing (LLQ) • Priority Queuing • Weighted Fair Queuing (WFQ) • Traffic Policing Resource Reservation Protocol (RSVP)
CISCO NETWORKING: SECURITY	• Authentication - Route and router authentication - Password Authentication Protocol (PAP) - Challenge Handshake Authentication Protocol (CHAP) - Microsoft CHAP (MS-CHAP) local password - IP basic and extended access lists - Time-based access control lists (ACLs) • Secure Connectivity Secure collaborative communications with Group Encrypted Transport VPN, Dynamic Multipoint VPN (DMVPN), or Enhanced Easy VPN • Integrated Threat Control Responds to sophisticated network attacks and threats using Cisco IOS Intrusion Prevention System (IPS), Cisco IOS Firewall, Cisco IOS Zone-Based Firewall, Cisco IOS Content Filtering, and Flexible Packet Matching (FPM) • Identity Management Intelligently protecting endpoints using technologies such as AAA and public key infrastructure (PKI) • Security Protocols - IPsec - SSL/TLS - 3DES - AES - IKE

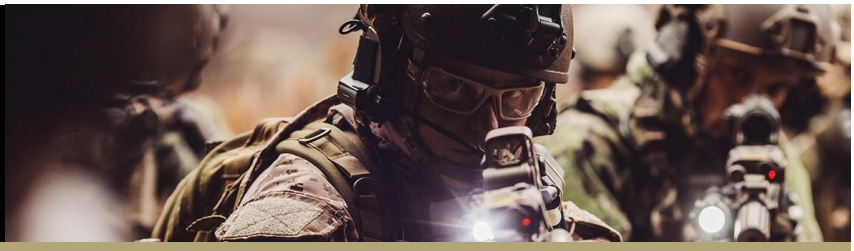
MILPOWER SOURCE | Networking Products



SPECIFICATIONS

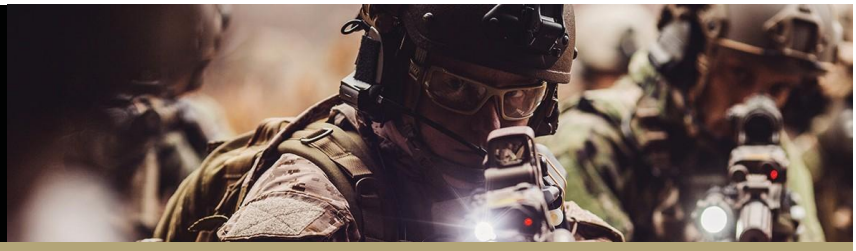
CISCO NETWORKING: SECURITY	• Authentication - Route and router authentication - Password Authentication Protocol (PAP) - Challenge Handshake Authentication Protocol (CHAP) - Microsoft CHAP (MS-CHAP) local password - IP basic and extended access lists - Time-based access control lists (ACLs) • Secure Connectivity Secure collaborative communications with Group Encrypted Transport VPN, Dynamic Multipoint VPN (DMVPN), or Enhanced Easy VPN • Integrated Threat Control Responds to sophisticated network attacks and threats using Cisco IOS Intrusion Prevention System (IPS), Cisco IOS Firewall, Cisco IOS Zone-Based Firewall, Cisco IOS Content Filtering, and Flexible Packet Matching (FPM) • Identity Management Intelligently protecting endpoints using technologies such as AAA and public key infrastructure (PKI) • Security Protocols - IPsec - SSL/TLS - 3DES - AES - IKE
CHASSIS:	• Rugged machined aluminum • Conductively cooled w/custom internal heat-sinks • Ingress protection against sand, dust and moisture • Anodize Coating, MIL-A-8625, Type II, Class 2
STANDARDS:	• MIL-STD-1275B, MIL-STD-704A, MIL-STD-461E, MIL-STD-810F, IP67
PERFORMANCE:	• 96.8 Mpps wire speed forwarding rate for switching • 56 Gbps maximum forwarding bandwidth for switching • 10/25/50Mbps for Cisco IOS routing – Based on Cisco 5921 Router • 25Mbps/200Mbps/1Gbps for Cisco IOS routing – Based on Cisco XE 8000V Router • 8K MAC Address
POWER:	• Exceed MIL-STD-1275B and MIL-STD-704A Surge and Spike protection • Voltage Input: 24Vdc Nominal (18-36V) • Power Consumption: 40W Maximum • Chassis grounding
ELECTROMAGNETIC:	• MIL-STD-461E Electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
SHOCK/VIBRATION/ HUMIDITY	• MIL-STD-810F; 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4

MILPOWER SOURCE | Networking Products

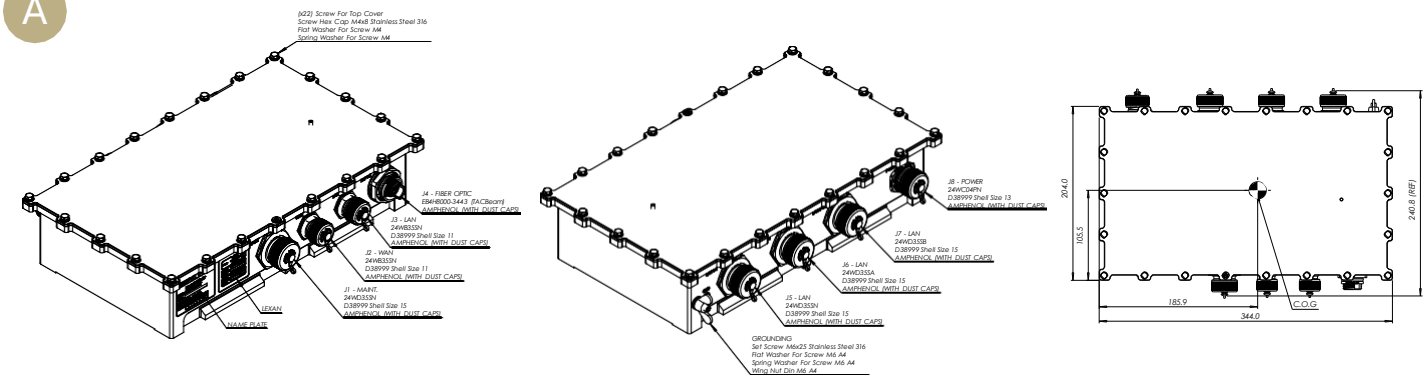


SPECIFICATIONS

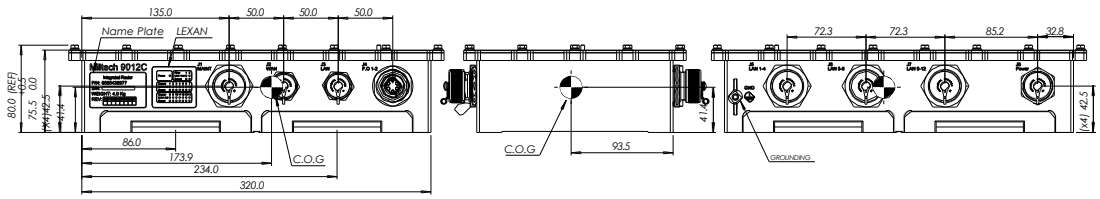
PHYSICAL	• Dimensions: 344mm (L) x 241mm (W) x80(H), including connectors & hardware • Dimensions: 13.54”(L) x 9.49”(W) x 3.15”(H), including connectors & hardware • Weight: 4Kg
COOLING	• No moving parts • Passive Cooling
OPERATING TEMP:	• -45ºC to +85ºC (-49ºF to +185ºF) Cold Start-Up
STORAGE TEMP:	• -45ºC to +85ºC (-49ºF to +185ºF)
CONNECTORS:	• 1 x MAINT. Connector – D38999/24WD35SN (J1, Front Panel) • 1 x WAN Connector – D38999/24WB35SN (J2, Front Panel) • 1 x LAN Connector – D38999/24WB35SN (J3, Front Panel) • 1 x F/O Connector – EB4H800-3443 (TACBeam, J4, Front Panel) • 1 x QUAD LAN Connector – D38999/24WD35SN (J5, Back Panel) • 1 x QUAD LAN Connector – D38999/24WD35SA (J6, Back Panel) • 1 x QUAD LAN Connector – D38999/24WD35SB (J7, Back Panel) • 1 x Power Connector – D38999/24WC04PN (J8, Back Panel) • LED Indications: Per Port (Speed, Link/Activity) and Power
PHYSICAL	• Dimensions: 344mm (L) x 241mm (W) x80(H), including connectors & hardware • Dimensions: 13.54”(L) x 9.49”(W) x 3.15”(H), including connectors & hardware • Weight: 4Kg
COOLING	• No moving parts • Passive Cooling



A



B



ORDERING INFORMATION

PART NUMBER	DESCRIPTION
1-9012C-105	Compact, Military-Grade, Managed 16-Port Gigabit Ethernet Router/Switch
2-CBL9012C005J1	Cable for M9012C-105 J1 Maintenance
2-CBL9012C005J2	Cable for M9012C-105 J2 WAN
2-CBL9012C005J3	Cable for M9012C-105 J3 LAN
24-008928	F.O Cable, Tacbeam Plug to LC duplex – J4
2-CBL9012C005J5	Cable for M9012C-105 J5 LAN 1-4
2-CBL9012C005J6	Cable for M9012C-105 J6 LAN 5-8
2-CBL9012C005J7	Cable for M9012C-105 J7 LAN 9-12
2-CBL9012C005J8	Power Cable for M9012C-105 J8

MILPOWER SOURCE
Ask us about our complete line of power and networking products.
7 Field Lane • Belmont, NH 03220 • 1.603.267.8865
sales@milpower.com • www.milpower.com