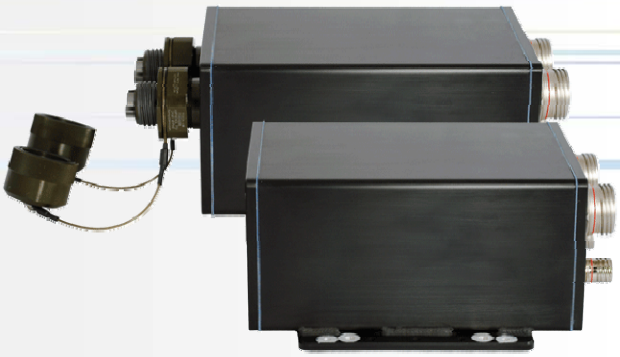
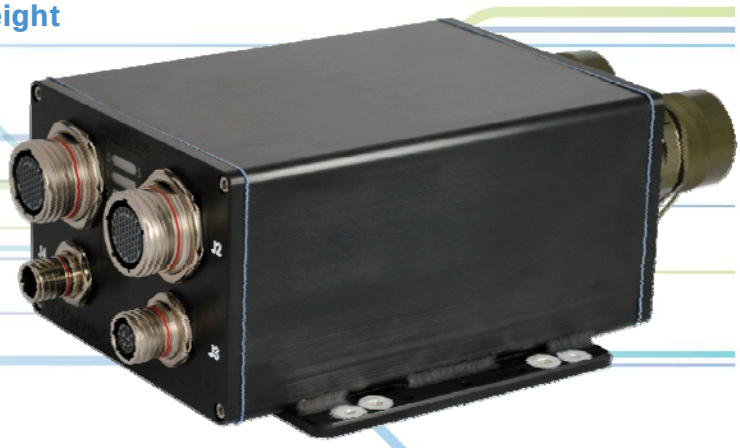
Rugged 10-Port Gigabit Ethernet Switch Subsystem, Lightly Managed

DuraNET 1268

- 10-Port Gigabit Ethernet Switch
- MIL-DTL-38999 / Tactical Fiber Optic Support
- MIL-810G, DO-160G, MIL-461F Qualified
- -40°C to +71°C Fanless Operation
- MIL-704F & 1275D Power Protection
- Small Form Factor: ~5 lbs Weight, <4" Height
- Data Zeroization Support for Secure Data
- Web GUI or CLI Management





DuraNET 1268 Features MIL-DTL-38999 Connections for Copper Gigabit Ethernet (on front panel); Optional TFOCA II Tactical Fiber Optic Connectors (on rear panel)

FEATURES

PORTS: Ethernet - 10x 10/100/1000Mbps Gigabit Ethernet Switch Ports; Management - 1x Serial, 1x 10/100 Ethernet Management/Console Ports for Configuration Management; Interfaces: MIL-DTL-38999 Copper Ethernet on Front Panel and Optional Tactical Fiber Optic Media Assembly (TFOCA II) on Rear

RUGGED SMALL FORM FACTOR: Only ~5 lbs Weight, < 4" Height; Passively Cooled, Aluminum Chassis with Anodize Coating, MIL-DTL-38999 / TFOCA II Connectors, Ingress Protection from Sand, Dust, Water (IP67-like)

MIL-STD QUALIFIED: Tested to MIL-STD-810G (Shock, Vibration, Temp, Humidity, Altitude, Immersion), DO-160G (Temperature, Altitude), MIL-STD-461F (Radiated & Conducted Emissions and Susceptibility)

MANAGEMENT: Unmanaged or Lightly Managed Switch Configurations - Link Speed, Duplex Mode, and Flow Control on Per-Port Basis; Port Monitoring; RS-232 Console w/ Command Line Interface (CLI); Out-of-Band 10/100 Ethernet Port, Web Browser GUI; Telnet Server (for Remote CLI Management over Ethernet)

VLAN: Port-Based and 802.1Q Tagged Virtual Local Area Networks (VLAN)

QoS/CoS: Class of Service (CoS) / Quality of Service (QoS) Traffic Prioritization; Four Traffic Class Queues; Priority Determined by Port, 802.1p Tagged Frames, IPv4 TOS/Diff-Serv, IPv6 TC

REDUNDANCY / FAULT TOLERANCE: Spanning Tree Protocol (STP) Support; Rapid Spanning Tree Protocol (RSTP)

DECLASSIFICATION: Data Zeorization Support for Secure Data

- Civil and Military Tactical In-Vehicle Networking
- 24/28V Vehicle/Aircraft Installations
- Network-Centric Operations / Situational Awareness
- Layer 2 Switching in Local Area Network (LAN)

The DuraNET® 1268 is a rugged Layer 2 Gigabit Ethernet switch subsystem equipped with ten (10) triple-speed 10/100/1000Mbps ports for connecting IPv4 and IPv6 compatible sensors and computing devices onboard demanding tactical network-centric (un)manned vehicle and aircraft platforms. The unit has been qualification tested for extreme MIL-STD-461F EMI/EMC and MIL-STD-810G thermal, shock, vibe, humidity, altitude, and ingress conditions, as well as RTCA/DO-160G airworthiness tests for low temperature and high altitude operation. Gigabit Ethernet interfaces are brought out over rugged MIL-DTL-38999 connectors on the front panel and optionally Tactical Fiber Optic Cable Assembly (TFOCA II) connectors on the rear. Managed and unmanaged switch configuration are available for configurable or "plug and play" Gigabit Ethernet LAN applications.

Designed for rugged extremes, this Size, Weight, and Power (SWaP)-optimized Commercial-Off-the-Shelf (COTS) solution is well suited for C4ISR technology refresh and situational awareness upgrade programs. To enhance reliability, the unit features no moving parts, a near cable-less internal design, all industrial temperature grade components, EMI filtering, and a sealed dust/ waterproof aluminum chassis with isolated MIL-STD-1275/704 power supply that protects against vehicle/aircraft voltage surges, spikes and transients.

The DuraNET 1268 features an onboard microprocessor for local/remote control and port monitoring, as well as support for Quality of Service (QoS) traffic prioritization, Virtual Local-Area Network (VLAN) trunking, Telnet remote CLI management, and Rapid Spanning Tree (RSTP) redundancy. To enhance security and system management, the unit integrates recoverable data zeroization capabilities for declassifying switch data, along with RS-232 Command Line Interface (CLI) and Ethernet management ports. Status LEDs indicate zeroization signal, power, and port link/speed/activity.

Parvus

DuraNET 1268

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Specifications

SWITCHING ARCHITECTURE	• Non-Blocking OSI Data Layer 2, Low-Latency • Ten Fully Independent 802.3 Media Access Controllers (MACs) • High-Speed Four Traffic Class QoS Switch Fabric • 8K MAC Address Look-Up Engine w/Integrated 1MB Frame Buffer Memory • Back-Pressure and Pause Frame-Based Flow Control • Unmanaged or Managed Ethernet Switch Configurations
STANDARDS COMPLIANCE	• IEEE 802.3 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u 100BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3ab 1000BASE-T 1000 Mbps (Gigabit Ethernet) • IEEE 802.1d Spanning Tree (Bridging) • IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) • IEEE 802.1p LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization • IEEE 802.1Q Virtual LANs (VLAN) and Trunking, Up to 4096 VLAN IDs • RFC 2460 IP Protocol Support for IPv4 and IPv6 addressing • Telnet Server (for Remote CLI Management over Ethernet) Note: Legacy models with firmware prior to version 5.X may not support RSTP, Telnet, Web Server functionality
PORT FEATURES	• Data Transfer: 10 Mbits/sec, 100 Mbits/sec, or 1000Mbps/sec • Duplex: Each Port Works at 10 /100 Mbps, full or half-duplex mode; or 1000Mbps full-duplex mode • Auto-MDI/MDIX, Auto-Negotiation, Auto-Detect; Speed Auto-Sensing, Auto-Crossover; Port Mirroring, Port Monitoring
MEDIA SUPPORT (model dependent)	• 10x 1000BaseT Ports (Copper Ethernet) on Front Panel over MIL-DTL-38999 Connectors • 2x or 4x 1000BaseSX Ports Fiber Optic Ethernet on Rear Panel over Tactical Fiber Optic Cable Assembly II (TFOCA II) Connectors – 1.25 GBd, 850nm Wavelength, Multi-Mode Optical Transceiver; Switch Fiber Detect Signal Disables Associated Copper Channel as Fiber Port(s) are Utilized
DECLASSIFICATION	Data Zeorization Support for Secure Data (Initiated by Offboard Signal Trigger)
POWER	MIL-STD-704F and MIL-STD-1275D Compliant: • 28Vdc Vehicle Power Input Voltage (18V to 33VDC Continuous) • 1500V Galvanic Isolation with Support for 250V spike and 100V surge • Power Consumption: less than 25W (max)
PHYSICAL	• Dimensions (LxWxH): 8.32" (211.30mm) x 6.45" (163.83mm) x 3.80" (96.52mm), including Connectors & Mounting Plate (7.56" x 5.30" x 3.80" Excluding Connectors) • Weight: Approximately 5.0 lbs (2.3 kg) • Degree of Ingress Protection: Similar to IP67 / NEMA 6 (Dust Proof, Water Proof) • Connectors: MIL-DTL-38999 (Front Panel) for Management, Power, Console, Zeroize,10x GigE; Optionally TFOCA II Tactical Fiber Optic Connector Assembly (Rear Panel) for 2x / 4x Optical GigE • Installation: Flange Mount Baseplate • Chassis: Aluminum Alloy, Corrosion Resistant, Watertight O-rings • Cooling: No Fans or Cold Plate Required; Passively Cooled via Natural Convection • Finish: Black Anodize (MIL-A-8625, Type II, Class 2)
ENVIRONMENTAL	Qualified to MIL-STD-810G and RTCA/DO-160G: • Operating Temperature: -40° to +71°C / -40° to +160°F (MIL-810G, Methods 501,502) ; -55°C Operating Low Temperature (RTCA/DO-160G) • Storage Temperature: -50° to +85°C / -58° to 185°F (MIL-810G, Methods 501,502) ; -55°C Ground Survival Low Temperature (RTCA/DO-160G) • Operating Shock: 40g, 11ms, 3 pos/neg per axis, 18 terminal peak sawtooth pulses (MIL-STD-810G, Method 516) • Crash Hazard Shock: 75g, 11ms, 2 pos/neg per axis, 12 terminal peak sawtooth pulses (MIL-STD-810G, Method 516) • Random Vibration: 5Hz to 2000Hz, 7.98 GRMS Power Spectral Density (PSD) Integral, 3 Axes, 1 Hour/Axis (MIL-STD-810G, Method 514, Hybrid Jet/Helo/Tracked Vehicle Profile) • Humidity: Up to 95% RH @ 40C, Non-Condensing, Conformal Coated (by analysis) • Water Immersion: 1 Meter, 30 Minutes (MIL-STD-810G, Method 512) • Ingress: Blowing Dust/Blowing Rain (by analysis); Sealed Enclosure (similar to IP67) • Altitude: 50,000 ft / 15,240 m (RTCA/DO-160G); 15,000 ft / 4572 m (MIL-810G, Method 500)
EMI / EMC	Qualified to MIL-STD-461F: • CE102 Cond. Emissions, Input Power Leads, 10 KHz to 10MHz, figure CE102-1 for 28VDC • CS101 Cond. Susceptibility, Power Leads, 30 Hz to 150 KHz, CS101-1, curve 2 • RE102 Rad. Emissions, Electric Field, 10 KHz to 18 GHz, Fixed Wing Internal <25 Meters, Figure 102-3 (Aircraft & Space Systems) • RS103 Rad. Susceptibility, 30 MHz to 18 GHz, 200 V/m, table VII (Aircraft & Space Systems)
RELIABILITY	• No Moving Parts. Near Cableless Design; Assembled to IPC-A-610 Class III Workmanship • All Industrial Temperature Grade Components • MTBF for PRV-1268-01/-00 per MIL-HDBK-217F @ 25°C / @ 60°C: 358,554 Hours / 252,747 Hours (Ground Benign, Controlled); 38,824 Hours / 24,301 Hours (Ground Mobile); 41,443 Hours / 25,774 Hours (Airborne Inhabit Fighter); 17,251 Hours / 11,045 Hours (Airborne Rotary Winged)
OPTIONAL ACCESSORIES	Breakout Wiring Harness Set for Lab / Testing (MIL Connectors to Standard Commercial Type): • CBL-1927-01: Starter Breakout Cable Set, Mating MIL-C-38999 to RJ-45/Serial/Power, 1 Meter • CBL-1927-02: Starter Breakout Cable, Mating TFOCA II to LC Optics, 1 Meter Length (for 2 Ports

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