# COM-1268

Rugged PC104+ 10-Port Gigabit Ethernet Switch Card, Lightly Managed

- **Standalone Network Switch or Use in Embedded System Supporting a PC104(+) Bus**
- **10x Gigabit Ethernet Ports**
- **1x Serial & 1x 10/100 Ethernet Console Ports**
- **Fiber and Copper Media Capable**
- **Data Zeroization Support for Secure Data**
- **Web GUI or CLI Management**
- **Qualified to MIL-STD-810G**
- **-40ºC to +85ºC Fanless Operation**
- **Extreme Shock & Vibration Tested for Jet, Helo, Tracked and Wheeled Vehicle Profiles**
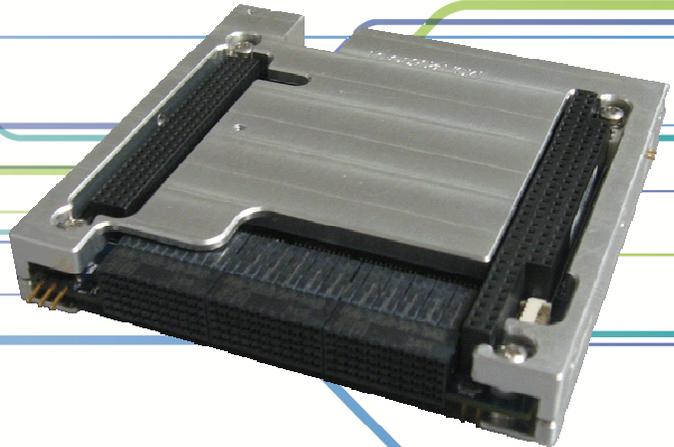
FEATURES

PORTS:
• Ethernet - 10x Gigabit Ethernet (up to 4 Selectable for Fiber)
• Console: 1x 10/100 Ethernet and 1x Serial Port for Management.

VLAN: Port-Based and 802.1Q Tagged Virtual Local Area Networks (VLAN), Up to 4096 VLAN IDs

QoS/CoS: 802.1p Class of Service (CoS)/Quality of Service (Qos) Traffic Prioritization; Packets Switched into 4Traffic Class Queues; Priority Determined by Port, 802.1p Tagged Frames, IPv4 TOS/Diff-Serv, IPv6 TC

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

MANAGEMENT:
• Onboard Microprocessor (No External CPU Required)
• Link Speed, Duplex Mode, and Flow Control on Per-Port Basis
• Port Monitoring, Port Monitoring
• RS-232 Console w/ Command Line Interface (CLI)
• Out-of-Band 10/100 Ethernet Port, HTML Web Browser GUI
• Telnet (for remote management CLI over Ethernet)

DECLASSIFICATION: Data Zeorization Support for Secure Data

RUGGED HIGH SPEED CONNECTOR: C3M HSHM Series Connector to Ensure Gigabit Ethernet Data Integrity under Mechanical Stress, Extended Temp Operation (No onboard RJ-45)

SIMPLE NETWORK INSTALLATION: Auto-MDI/MDIX, Auto-Negotiation and Speed Auto-Sensing

BUS OR EXTERNAL POWERING: Can be Powered via PC/104 (ISA) bus, PC/104-Plus (PCI) bus or 2-Pin Molex Power Header for External Power Connections

STATUS INDICATION: Activity, Link and Speed Indicator Signals Brought Out Through Connectors (No Onboard LEDs)

The COM-1268 is a rugged PC/104+ Gigabit Ethernet switch card equipped with ten (10) triple-speed 10/100/1000Mbps ports for connecting IPv4 and IPv6 compatible computing devices in demanding embedded systems LAN applications. This small form factor Layer 2 switch features an onboard microprocessor for local/remote control and port monitoring, Quality of Service (QoS) traffic prioritization, Virtual Local-Area Network (VLAN) trunking, as well as support for Telnet remote management and Rapid Spanning Tree (RSP) redundancy *.

Designed for robust performance under high shock/vibe and thermal conditions in space-constrained military / civil applications, the COM-1268 serves as an ideal Commercial-Off-the-Shelf (COTS) solution to enhance situational awareness and IP network centricity. The product is available as a standalone board or integrated into a military-hardened enclosed switch subsystem (DuraNET 1268) or mobile router subsystem (DuraMAR 5915). No additional processor is required to operate the board, and power can be drawn through either the ISA/PCI buses or 2-pin Molex connector (for non-PC104 systems).

The COM-1268 is designed with extended temperature components and comes with thermal heatsink plates to simplify systems integration and conductive cooling. A rugged, impedance-matched backplane-style connector brings out high-speed Gigabit Ethernet signals, along with an RS-232 serial console for CLI management, status LEDs, and zeroization. An out-of-band 10/100 Ethernet port is also available for Web GUI management of port settings. Up to four of the board's switch ports can support fiber optic connections. If additional port density is desired, any of the GigE ports can serve as a link for cascading multiple switch modules, while an onboard infrared interface supports recognition and management of two stacked COM-1268 boards under the same console interface.

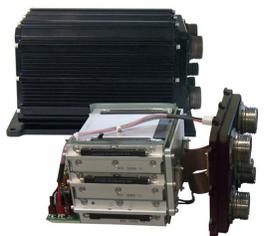## Parvus

Specifications

Top View with Thermal Plates
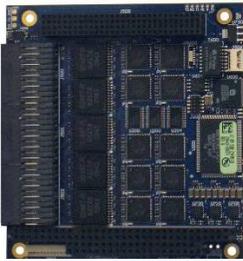
Top View without Thermal Plates

Optional Rj-45 Breakout Adapter (for Lab Use)

2x COM-1268 Shown Integrated into DuraMAR 3230 Router Card Stack

DuraNET 1268 Integrates COM-1268 GigE Functionality in Standalone MIL-STD Qualified Switch Subsystem

SWITCHING ARCHITECTURE
- Chipset: Marvel 88E6185
- Non-Blocking OSI Data Layer 2, Low-Latency
- Ten (10) 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

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
- RFC 2460 IP Protocol Support for IPv4 and IPv6 addressing
- Telnet Server (for remote CLI management over Ethernet)
- * Note: Legacy COM-1268 models with firmware prior to version 5.X may not support RSTP, Telnet, Web Server functionality

PORT FEATURES
- Expansion: Any port can serve as link port for cascading multiple switches; Onboard IrDA interface supports recognition and management of two stacked COM-1268 boards under same console interface.
- Data Transfer: 10 Mbits/sec, 100 Mbits/sec, or 1000Mbps
- Duplex: Each Port Works at 10 Mbps or 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
- Copper and Fiber Optic Capable: Up to 10 Ports Copper, Up to 4 Ports Fiber (1.25-GHz high-speed differential)
- Fiber Detect Signal Switches Off Associated Copper Channel as Fiber Ports are Utilized

DECLASSIFICATION
Data Zeorization Support for Secure Data (Initiated by Offboard Signal Trigger); Recoverable Declassification (Erase Function Returns Board to Basic Unmanaged State)

POWER
- Power Input: +5V Only (via ISA bus / PCI bus / Molex 2-pin connector)
- Power Consumption: ~ 18 Watts max

PHYSICAL
- Form Factor: PC/104-Plus
- Dimensions (L x W): 3.550" x 3.775" (90x96 mm); 3.91" x 4.14" (99.31x105.16mm) w/thermal plates, excluding interface connector extension
- Passive Thermal Management: Integrated Clam-Shell Heatsink Thermal Plates for Conductive Cooling to Optimize/Ease Integration with System Thermal Interface
- Connectors: Stack-through PC104 and PC/104+ Buses (Power only); 3M HSHM Series Connectors (10x Copper Ethernet, 2x Fiber, RS-232, Zeroize, Reset, LEDs); Molex 2-pin right angle (Power); 12-pin (2x Fiber); Molex 4-pin (Fast Ethernet Mgmt)

ENVIROMENTAL
Qualified to MIL-STD-810G:
- Operating Temperature: -40° to +85°C / -40° to +185°F (MIL-810G, Methods 501,502) with proper thermal management
- Storage Temperature: -50° to +85°C / -58° to 185°F (MIL-810G, Methods 501,502)
- Operating Shock: 40g, 11ms, 3 pos/neg per axis, 18 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, per Hybrid Jet, Helo, Ground Mobile & Tracked Vehicle Profile)
- Humidity: Up to 95% RH @ 40C, Non-Condensing (by analysis)

WARRANTY
- 1 Year RTF Warranty (Extended Service Contracts Available)

RELIABILITY
- No Moving Parts
- Assembled to IPC-A-610 Class III Workmanship
- Industrial Temperature Grade Components
- Mean Time Between Failure (MTBF) per MIL-HDBK-217F @ 25°C
  - 283,438 Hours (32.3 Years), Ground Benign, Controlled
  - 42,038 Hours (4.8 Years), Airborne Inhibit Cargo, Commercial
  - 26,501 Hours (3.0 Years), Ground Mobile

SPECIAL ORDER / CUSTOM OPTIONS
- PRV-1336-02: Stacking PC104 Breakout Board Set (Mates 3M HSHM Connectors to RJ-45 for Testing/Configuration of COM-1268 in Lab Environments)
- Custom Heatsink / Thermal Interface
- Conformal Coating
- 3.3V Power Input on PCI Bus; Removal of PCI / ISA Bus

- Fully Enclosed MIL-Qualifed Switch Subsystem: See **DuraNET 1268** Datasheet
- Full Enclosed MIL-Qualified Cisco Mobile Router with Integrated Switch Subsystem: See **DuraMAR 5915** Datasheet

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