Connect Tech's Xtreme/GbE Managed Carrier Ethernet Switch provides Carrier Grade Ethernet switching capabilities in an extremely small embedded form factor.

Excellent for high-end applications such as Mobile and Microwave backhaul, the Xtreme/GbE Managed Carrier Ethernet Switch is also a highly reliable way to communicate with 10/100/1000 devices in an embedded system. Powered by the latest generation Carrier Ethernet Switch engine the Vitesse 7428/7429. Its embedded 416 MHz MIPS 32-bit CPU, 1Gb DDR2 external memory and DMA-based frame extraction and insertion support timing over packet, Ethernet OAM, and performance monitoring.

Available in models with RJ-45 or Rugged Positive Locking Headers, making this embedded Ethernet switch ideal for any type of environment.

### Hardware Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet Switch Engine</td>
<td>Vitesse VSC7428 Carrier Grade Ethernet Switch Chipset (XDG004-009)</td>
</tr>
<tr>
<td></td>
<td>Vitesse VSC7429 Carrier Grade Ethernet Switch Chipset (XDG010, XDG013)</td>
</tr>
<tr>
<td></td>
<td>WA powerful embedded 416 MHz RISC 32-bit CPU, with DDR2 external memory and DMA-based frame extraction and insertion support timing over packet, Ethernet OAM, and performance monitoring.</td>
</tr>
<tr>
<td>Memories</td>
<td>1Gb DDR2 SDRAM</td>
</tr>
<tr>
<td>Port Type</td>
<td>Gigabit ethernet (10/100/1000 Mbps)</td>
</tr>
<tr>
<td>Connectors</td>
<td>RJ-45’s or Rugged Locking Pin Headers (see part numbers on page 2)</td>
</tr>
<tr>
<td>Layer 2 Switching</td>
<td>802.1Q VLAN switch with 8K MACs and 4K VLANs</td>
</tr>
<tr>
<td></td>
<td>Push/pop up to two VLAN tags</td>
</tr>
<tr>
<td></td>
<td>IPv4/IPv6 multicast</td>
</tr>
<tr>
<td></td>
<td>Policing with storm control and MC/BC protection</td>
</tr>
<tr>
<td></td>
<td>RSTP and MSTP support</td>
</tr>
<tr>
<td></td>
<td>Hardware and software-based learning</td>
</tr>
<tr>
<td></td>
<td>Link aggregation (IEEE 802.3ad)</td>
</tr>
<tr>
<td></td>
<td>Independent and shared VLAN learning (IVL, SVL)</td>
</tr>
<tr>
<td></td>
<td>Jumbo frame support</td>
</tr>
<tr>
<td>Management Access</td>
<td>Web Interface</td>
</tr>
<tr>
<td></td>
<td>RS-232 Serial Interface (CLI)</td>
</tr>
<tr>
<td></td>
<td>Software API</td>
</tr>
<tr>
<td></td>
<td>PCIe/104 Bus</td>
</tr>
<tr>
<td>Indicator LEDs</td>
<td>2 LEDs per port (available on RJ-45 and through external connector)</td>
</tr>
<tr>
<td></td>
<td>Power Rail LEDs</td>
</tr>
<tr>
<td></td>
<td>Status LEDs</td>
</tr>
<tr>
<td>Standalone Operation</td>
<td>Switch can be used as a standalone unit OR it can be paired with an embedded SBC.</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>Wide input rage: +9V to +36V DC with Reverse Polarity Protection Can be powered from external connector OR directly from expansion bus</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Idle: 0.3A, 3.6W Typical: 0.35A, 4.2W Max: 0.5A, 6W (with +12V input)</td>
</tr>
<tr>
<td>Bus Interface</td>
<td>No bus connector populated</td>
</tr>
<tr>
<td></td>
<td>PC/104 bus pass through (for sourcing power only)</td>
</tr>
<tr>
<td></td>
<td>PCIe/104 bus (sourcing power and management interface)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>PC/104 compliant: 3.775” x 3.550”</td>
</tr>
<tr>
<td></td>
<td>Tallest Top Side Component: Heatsink 0.375” (9.5mm)</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-40°C to +85°C (chipset rated to +125°C thermales)</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.

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FEATURES

- Conduction cooled Heatplate or Air cooled Heatsink option
- **8 or 12 Port 10/100/1000 Mbps Switch**
- Web GUI or CLI Management
- **Carrier Grade Ethernet Switching**
- Available with RJ-45 or Rugged Locking connectors
- **PC/104 Compliant: 4.550” x 4.393” or Smaller**
- Extended Temperature Range -40°C to +85°C
Xtreme/GbE
Managed Carrier Ethernet Switch

Software Specifications

**Port control**
- Port Speed/Duplex Mode/Flow Ctrl
- Port Frame Size (Jumbo frames)
- Port State (administrative status)
- Port Status (link monitoring)
- Port Statistics (MIB counters)
- Port VeriPHY (cable diagnostics)

**QoS**
- Traffic Classes (8 active priorities)
- Port Default Priority
- QoS User Priority
- Input priority mapping
- QoS Control List (QCL Mode)
- Storm Control for UC, MC and BC
- Port policers
- Global/VCAP (ACL) policers
- Port egress shaper
- Queue egress shapers
- TRTCM (two rate three color market)
- Scheduler mode (Strict or Weighted Fair Queuing)

**L2 Switching**
- Auto MAC addr. Learning/Ageing
- MAC Addresses – Static
- Virtual LAN
- Private VLAN – Static
- Port Isolation – Static
- IEEE-802.1ad Provider Bridge (Native or Translated VLAN)
- Rapid Spanning tree – RSTP, STP
- Loop Guard
- Link Aggregation – Static
- Link Aggregation – LACP
- IGMPv2 snooping
- Port Mirroring (Ingress and Egress Mirroring)

**L3 Switching**
- IPv4 Unicast: RIPv1/RIPv2

**Security**
- Port-Based 802.1X
- Multiple 802.1X
- Web & CLI Authentication
- ACLs for filtering/policing/port copy

Software Specifications Continued

**Synchronization**
- SNTP & client

**Power Saving**
- Cold start
- Cool start
- ActiPHY
- PerfectReach
- EEE Power Management
- LED Power Management
- Thermal Protection

**Management**
- DHCP Client
- HTTP Server
- CLI - Console Port
- Industrial Standard CLI
- Industrial Standard Configuration
- Management access filtering
- HTTPS
- System Syslog
- Software Upload via web
- SNMP v1 / v2c / v3 Agent
- SNMP multiple trap destinations
- IEEE 802.1AB-2005 Link Layer Discovery – LLDP
- Configuration Download/Upload - XML
- Configuration Download/Upload - Industrial Standard
- Loop detection restore to default
- Symbolic Register Access

**MIBs**
- RFC 1213 MIB II
- RFC 1215 TRAPS MIB
- RFC 4188 Bridge MIB
- RFC 3635 Ethernet-like MIB
- RFC 3411 SNMP Management Frameworks
- IEEE 802.1 MSTP MIB
- IEEE 802.1AB LLDP-MIB (LLDP MIB included in a clause of the STD)
- RFC 3621 LLDP-MED Power (POE) (No specific MIB for POE+ exists)
- Private MIB framework

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