12 Port cPCI Managed Layer Two Switch

CP219

KEY FEATURES

- Compact PCI (cPCI) compliant
- Managed Layer two switch
- 12 ports (double slot)
- 10 ports of 10/100/1000 via RJ-45
- 2 ports via P2 connector
- Support up to 8K MAC address
- 4K IEEE 802.1Q VLANs
- VLAN-based packet filtering
- Packet classification using IEEE802.1p QoS
- 9K Jumbo frames
- Spanning tree
- Mirroring
- QoS
- SNMP and RMON
- OS support for:
  - OS independent

The CP219 is a 3U single slot Compact PCI (cPCI) module that has 12 ports of 10/100/1000 GbE ports. The Module come with an optional for having two ports on it’s P2 Connector.

The switch is managed via http and supports a rich set of features such as VLAN, Spanning tree, QoS, Mirroring, etc.

VadaTech can modify this product to meet special customer requirements without NRE (minimum order placement is required).
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Physical Dimensions</th>
<th>3U Double slot</th>
</tr>
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<tbody>
<tr>
<td>Type</td>
<td>cPCI Ethernet GbE switch</td>
<td>12 ports, 10/100/1000 per port</td>
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<table>
<thead>
<tr>
<th>Standards CompactPCI Type</th>
<th>cPCI</th>
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<table>
<thead>
<tr>
<th>Configuration Power</th>
<th>CP219</th>
<th>6W</th>
</tr>
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<tbody>
<tr>
<td>Environmental Temperature</td>
<td>Operating Temperature: 0° to 65° C (Air flow requirement is to be greater than 200 LFM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage Temperature: -40° to +90° C</td>
<td></td>
</tr>
<tr>
<td>Vibration</td>
<td>1G, 5-500Hz each axis</td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td>30Gs each axis</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>5 to 95 percent, non-condensing</td>
<td></td>
</tr>
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| Front Panel Interface Connectors | RJ-45 on the front and 2 ports via P2 connector |
| LEDs | Run/Fail |
|      | Link/Activity |
| Mechanical | Hot Swap Ejector Handle |

<table>
<thead>
<tr>
<th>Software Support Operating Systems</th>
<th>Independent</th>
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| Other MTBF | MIL Handbook 217-F > TBD Hrs. |
| Certification | Designed to meet FCC, CE and UL certifications where applicable |
| Standards | VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards |
| Compliance | RoHS and NEBS |
| Warranty | Two (2) years. |

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FIGURE 1. CP219 Functional Block Diagram
Managed Layer Two GbE

The GbE layer two managed switch fabric routes six GbE to front panel and two to the rear.

**Key features:**

- **Configuration**
  - Ethernet/IEEE 802.3 Packet size (64 bytes to 1522 bytes)
  - Jumbo packets up to 9216 bytes

- **L2 Switching**
  - Supports up to 8K MAC address
  - Line rate switching for all packet sizes
  - Independent VLAN learning
  - VLAN flooding for broadcast and DLF packets
  - Hardware-based address learning
  - Six CPU-managed learning (CML) modes per port
  - Hardware-and-software-based aging
  - Software insertion/deletion/lookups of the L2 table
  - Same port bridging supported
  - Station movement control

- **L2 Multicast**
  - 4K VLANs
  - Protocol-based VLANs
  - IEEE 802.1p
  - IEEE 802.1Q
  - Independent VLAN learning (IVL)
  - Ingress filtering for IEEE 802.1Q VLAN security
  - VLAN-based packet filtering
  - MAC-based VLAN

- **Source Port Filtering**
  - Egress port block masks
  - Trunk group blocking masks

- **Storm Control Per-Port:**
  - Unknown unicast packet rate control
  - Broadcast packet rate control
  - Multicast packet rate control

- **Spanning Tree:**
  - IEEE 802.1D spanning tree protocol (single spanning tree per port)
  - IEEE 802.1s for multi spanning trees
  - IEEE 802.1w rapid spanning tree protocol-delete and/or replace per:
    - Port
    - VLAN
    - Port, per VLAN
  - Spanning tree protocol packets detected and sent to the CPU

- **Double-Tagging:**
  - Unqualified learning/forwarding
  - IEEE 802.1 Q-in-Q

- **Mirroring**
  - Ingress/egress mirroring support

- **Content Aware Filter Processing**
  - Intelligent Protocol Aware processor with backward-compatible, byte-based classification option
  - Parses up to 128 bytes per packet
  - 512 ACL rules support
  - Multiple matches and actions per packet
  - ACL-based policing
  - Ingress/egress port based filtering
  - MAC destination address remarking
  - Traffic class definition based on the filter
  - Programmable meters allows policing of flows
  - Metering granularity from 64 Kbps to 1Gbps
  - Multiple look-ups per packet
  - Metering support on ingress ports and CPU queues

- **QoS Features**
  - Four CoS queues per port
  - Per-port, per CoS drop profiles
  - Port level shaping
  - Traffic shaping available on CPU queues
  - Programmable priority to CoS queue mapping
  - Provides two levels of drop precedence per queue
  - Strict Priority (SP), Weighted Round Robin (WRR), and Deficit round Robin (DRR) mechanisms for shaped queue selection

- **DSCP**
  - DSCP-based prioritization
  - Back pressure metering
  - DSCP to IEEE 802.1p mapping

- **Port Security**
  - Per port blocking
  - Supports IEEE 802.1x
  - MAC address blocking

- **DoS Prevention**
  - Denial of Service detection/prevention

- **Management Information Base**
  - SMON MIB, IETF RFC 2613
  - RMON statistics group, IETF RFC 2819
  - SNMP interface group, IETF RFC 1213, 2836
  - Ethernet-like MIB, IETF RFC 1643
  - Ethernet MIB, IEEE 802.3u
  - Bridge MIB, IETF RFC 1493
# ORDERING OPTIONS

<table>
<thead>
<tr>
<th>CP219 - A00 - 000- 0HJ</th>
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<tbody>
<tr>
<td>A = P2 Connector</td>
</tr>
<tr>
<td>0 = Installed</td>
</tr>
<tr>
<td>1 = No Installed</td>
</tr>
<tr>
<td>H = Operating Temp</td>
</tr>
<tr>
<td>0 = Commercial</td>
</tr>
<tr>
<td>1 = Industrial</td>
</tr>
<tr>
<td>J = Conformal Coating</td>
</tr>
<tr>
<td>0 = None</td>
</tr>
<tr>
<td>1 = Humiseal 1A33 Polyurethane</td>
</tr>
<tr>
<td>2 = Humiseal 1B31 Acrylic</td>
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