CP217

24 Port cPCI Managed Layer Two Switch

KEY FEATURES

- Compact PCI (cPCI) compliant
- Managed Layer two switch
- 24 ports in double slot
- Single slot
  - 8 ports of 10/100/1000 via RJ-45
  - 4 ports via SFP
- 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 CP217 is a 6U single slot Compact PCI (cPCI) module that has 24 ports of GbE. Eight ports via RJ-45 and four ports via SFP as a single slot. The Module come with an optional daughter board which has an additional 12 ports of GbE via SFP which can provide Fiber or Copper interface.

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

### Architecture

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Physical</strong></td>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td></td>
<td>6U</td>
</tr>
<tr>
<td></td>
<td>6.366 x 9.187 (PCB size)</td>
</tr>
<tr>
<td></td>
<td>Single slot on the base board and double slot with the daughter card</td>
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<table>
<thead>
<tr>
<th><strong>Type</strong></th>
<th><strong>cPCI Ethernet</strong></th>
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<tbody>
<tr>
<td></td>
<td>GbE switch</td>
</tr>
<tr>
<td></td>
<td>24 ports</td>
</tr>
<tr>
<td></td>
<td>10/100/1000 per port</td>
</tr>
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### Standards

<table>
<thead>
<tr>
<th><strong>CompactPCI</strong></th>
<th><strong>Type</strong></th>
<th><strong>cPCI</strong></th>
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### Configuration

<table>
<thead>
<tr>
<th><strong>Power</strong></th>
<th><strong>CP217</strong></th>
</tr>
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<tbody>
<tr>
<td></td>
<td>6W Base module without the SFP modules transceiver</td>
</tr>
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</table>

| **Environmental** | **Temperature** | Operating Temperature: 0° to 65° C (Air flow requirement is to be greater than 200 LFM) |
|                   | Storage Temperature: -40° to +90° C |
|                   | **Vibration** | 1G, 5-500Hz each axis |
|                   | **Shock** | 30Gs each axis |
|                   | **Relative Humidity** | 5 to 95 percent, non-condensing |

| **Front Panel** | **Interface Connectors** | RJ-45 on the base board and SFP on the daughter module |
|                 | **LEDs** | Run/Fail |
|                 |         | Link/Activity |
|                 | **Mechanical** | Hot Swap Ejector Handle |

<table>
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<tr>
<th><strong>Software Support</strong></th>
<th><strong>Operating Systems</strong></th>
<th>Independent</th>
</tr>
</thead>
</table>

### Other

<table>
<thead>
<tr>
<th><strong>MTBF</strong></th>
<th>MIL Handbook 217-F &gt; TBD Hrs.</th>
</tr>
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<tbody>
<tr>
<td><strong>Certifications</strong></td>
<td>Designed to meet FCC, CE and UL certifications where applicable</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td>VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards</td>
</tr>
<tr>
<td><strong>Compliance</strong></td>
<td>RoHS and NEBS</td>
</tr>
<tr>
<td><strong>Warranty</strong></td>
<td>Two (2) years.</td>
</tr>
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Features include:
• Hot Swap Compatible
• 24 Ports

FIGURE 1. CP217 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

- **QoS Features**
  - Four CoS queues per port
  - Per-port, per CoS drop profiles
  - Port level shaping
  - Traffic shaping available on CPU queues
  - 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>CP217 - AAB - BCC - DHJ</th>
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<tbody>
<tr>
<td><strong>AA</strong> = Number of Fiber SX Transceivers</td>
</tr>
<tr>
<td>0 = None</td>
</tr>
<tr>
<td>X = Number of Transceivers</td>
</tr>
<tr>
<td><strong>BB</strong> = Number of Fiber LX Transceivers</td>
</tr>
<tr>
<td>0 = None</td>
</tr>
<tr>
<td>X = Number of Transceivers</td>
</tr>
<tr>
<td><strong>CC</strong> = Number of Copper Transceivers</td>
</tr>
<tr>
<td>0 = None</td>
</tr>
<tr>
<td>X = Number of Transceivers</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*Total number of transceivers must not exceed 18.*