14 Port AMC Managed Layer Two Switch

AMC219

The AMC219 is a single-width, mid-height AdvancedMC™ (AMC) based on the AMC.2 specification (full-height option available). The AMC219 provides 12 front panel 10/100 Mbit ethernet ports via MRJ-21. It has two GbE ports that are routed to the rear per the AMC.2 specification.

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).

KEY FEATURES

- AMC.2 compliant
- Managed Layer two switch
- Twelve 10/100 Mbit Ethernet ports
- Front panel I/O via MRJ-21
- Two GbE ports routed to the rear
- 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
## SPECIFICATIONS

### Architecture

<table>
<thead>
<tr>
<th>Physical</th>
<th>Dimensions</th>
<th>Single-Width, Mid-Height Front Panel (option for full-height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>2.89 in. (73.5 mm)</td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>7.11 in. (180.6 mm)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>AMC Ethernet</th>
<th>GbE switch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14 ports</td>
<td>Front 10/100 Mbit/s and rear 1000Mbit/s</td>
</tr>
</tbody>
</table>

### Standards

<table>
<thead>
<tr>
<th>AMC</th>
<th>Type</th>
<th>AMC.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Management</td>
<td>IPMI</td>
<td>IPMI Version 2.0</td>
</tr>
<tr>
<td>1000BASE-BX</td>
<td>Ports</td>
<td>0 and 1</td>
</tr>
</tbody>
</table>

### Configuration

<table>
<thead>
<tr>
<th>Power</th>
<th>AMC219</th>
<th>7W</th>
</tr>
</thead>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Operating Temperature: 0° to 65° C (Air flow requirement is to be greater than 200 LFM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Storage Temperature: -40° to +90° C</td>
</tr>
<tr>
<td>Vibration</td>
<td>1G, 5-500Hz each axis</td>
</tr>
<tr>
<td>Shock</td>
<td>30Gs each axis</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>5 to 95 percent, non-condensing</td>
</tr>
</tbody>
</table>

### Front Panel

<table>
<thead>
<tr>
<th>Interface Connectors</th>
<th>MRJ-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEDs</td>
<td>IPMI Management Control</td>
</tr>
<tr>
<td></td>
<td>Activity</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Hot Swap Ejector Handle</td>
</tr>
</tbody>
</table>

### Software Support

<table>
<thead>
<tr>
<th>Operating Systems</th>
<th>Independent</th>
</tr>
</thead>
</table>

### Other

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

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FIGURE 1. AMC219 Functional Block Diagram

FIGURE 2. AMC219 Front Panel
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 remapping
  - 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
  - Programs 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

**AMC219 - 00C - 000 - 00J**

- **J** = Conformal Coating
  - 0 = None
  - 1 = Humiseal 1A33 Polyurethane
  - 2 = Humiseal 1B31 Acrylic

- **C** = Front Panel Height
  - 1 = Reserved
  - 2 = Mid-Height
  - 3 = Full-Height