CP218

24 Port cPCI Managed Layer Two Switch

CP218

Key Features

- Compact PCI (cCPI) compliant
- Managed Layer Two Switch
- 24 Ports (double slot)
- 12 Ports of 10/100/1000 via RJ-45
- 12 Ports via Small Form-factor Pluggable (SFP)
- Supports up to 8K Mac address
- 4K IEEE 802.1Q VLANs
- VLAN based packet filtering
- Packet classification using IEEE 802.1p QoS
- 9K Jumbo frames

Benefits

- Design utilizes proven VadaTech subcomponents and engineering techniques
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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CP218

The CP218 is a 6U single slot Compact PCI (cPCI) module that has 12 Ports of 10/100/1000 GbE via RJ-45 connectors. Also, an optional daughter board can be ordered to provide an additional 12 Ports of GbE via SFP (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).

Figure 1: CP218

Managed Layer 2 GBE

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

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

DoS Prevention
- Denial of Service detection/prevention

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

Mirroring
- Ingress/egress mirroring support
- Mirror-to-port receives the unmodified packet for ingress mirroring
- Mirror-to-port receives the modified packet for egress mirroring

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 allow policing of flows
- Metering granularity from 64 Kbps to 1 Gbps
- Multiple look-ups per packet
- Metering support on ingress ports and CPU queues

QOS Features
- Four QoS queues per port
- Per-port, per QoS drop profiles
- Port level shaping
- Traffic shaping available on CPU queues
- Programmable priority to QoS 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

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

Block Diagram

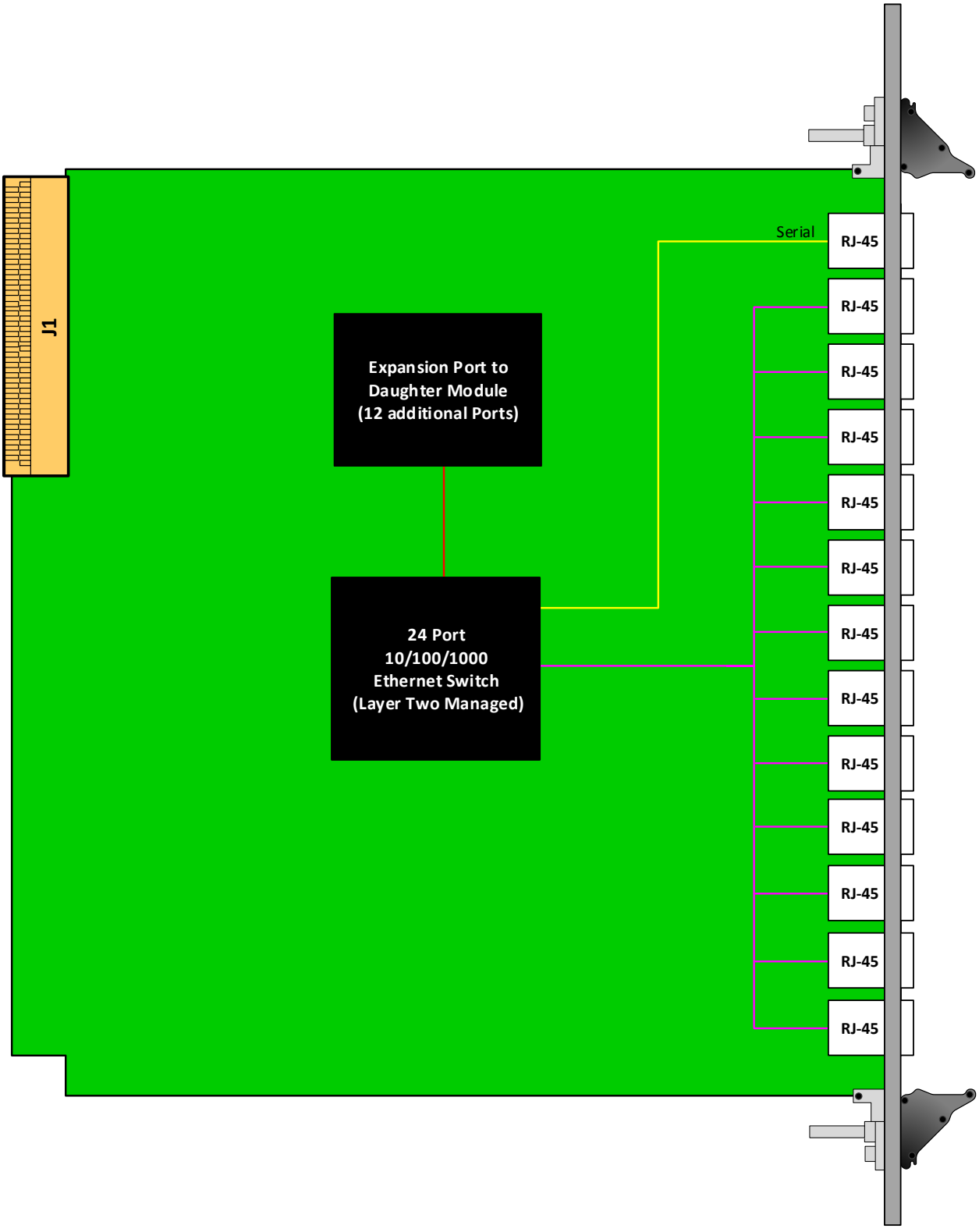

Figure 2: CP218 Functional Block Diagram

Specifications

Architecture		
Physical	**Dimensions**	6U, Single slot on base board and Double slot with daughter card
Type	**cPCI**	GbE
		24 Ports
		10/100/1000 per Port
Standards		
Compact PCI	**Type**	cPCI
Configuration		
Power	**CP218**	~6W
Environmental	**Temperature**	See Ordering Options
		Storage Temperature: –40° to +90°C
	Vibration	Operating 9.8 m/s^2 (1G), 5 to 500 Hz on each axis
	Shock	Operating 30G on each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	**Interface Connectors**	RJ-45 (x13)
	LEDs	Run/Fail and Link/Activity
	Mechanical	Hot swap ejector handle
Software Support	**Operating System**	Independent
Other		
MTBF	MIL Hand book 217-F@ TBD hrs	
Certifications	Designed to meet FCC, CE and UL certifications, where applicable	
Standards	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards	
Warranty	Two (2) years, see VadaTech Terms and Conditions	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

Ordering Options

CP218 – AAB-BCC-0HJ

AA = Number of Fiber SX TXCVRs		
0 = No TXCVRs X = Number of TXCVRs		
BB = Number of Fiber LX TXCVRs		**H = Operating Temperature**
0 = No TXCVRs X = Number of TXCVRs		0 = Commercial 1 = Industrial
CC = Number of Copper TXCVRs		**J = Conformal Coating**
0 = No TXCVRs X = Number of TXCVRs		0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic

Notes: Total number of TXCVRs must not exceed 12.

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