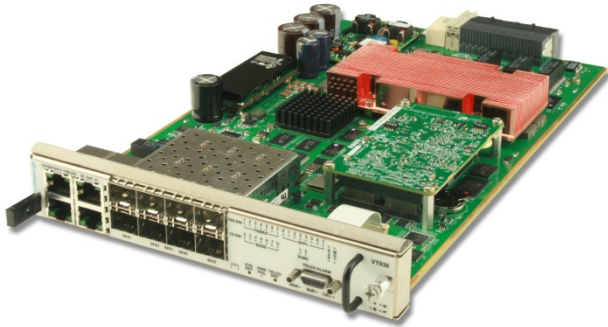


## ATCA Shelf Manager with Integrated 40GbE/GbE Switch – VT031

ATCA Switching Shelf Manager



(actual photo is of 10G VT030)

**Advanced TCA<sup>®</sup>** **40G**

### KEY FEATURES

- 40GbE Switching Shelf Manager eliminates need for separate switch slots
- Compliant to PICMG 3.0 base and PICMG 3.1 fabric interface (40GbE/10GbE/GbE) specifications
- Compact 1.0" H x 5.685" W x 11.096" D size
- Quad 40GbE ports via QSFP+
- Dual GbE, 10/100 out-of-band, and RS-232 ports via RJ-45
- Octal 10GbE ports routed to RTM for optional access
- Software for Sensor Data Record, event logs, FRU inventory monitoring temp and power, e-keying, alarms and more
- Unmatched front panel density, including LED indicators for Base, Fabric, QSFP+, RJ-45, SHMC, Reset, Power Fail, Standby, and more
- Can run as an IPMI protocol analyzer to monitor the I2C busses.
- IPMI 2.0 (or 1.5) compliant
- Telco alarm with Micro DB15 connector front panel interface
- Active/standby redundancy when utilizing two VT031 SSMs in a system

### Benefits of Choosing VadaTech

- Combines functionality of switches and shelf managers in one unit, significantly boosting performance density
- 40GbE managed Layer 3 switch performance
- Incorporates VadaTech's 3<sup>rd</sup> generation shelf manager with HTTP, SNMP, HPI, RMCP, CLI and other software features
- Efficient re-use of existing designs/components reduce costs
- Electrical, mechanical, software, and system-level expertise in house
- Full ecosystem of front and rear boards, enclosures, specialty modules, and test/dev products from one source
- AS9100 and ISO9001 certified company

The VT031 Switching Shelf Manager (SSM) combines VadaTech's 3rd Generation Shelf Manager with integrated 40GbE Layer 3 Managed Switches on the same module. This allows two slots in the system to be used as Nodes versus having the slots otherwise be allocated as dedicated switching hubs in the system.

With two VT031's in the system, there is full redundancy and failover both on the Hub side as well as on the Shelf Manager side. The SSMs are compact, where two switches can be mounted outside of the card cage area, saving space. The VT031 can run as a protocol analyzer to monitor, inject, capture and validate I2C traffic on the Intelligent Platform Management Bus (IPMB). A Graphical User Interface (GUI) validates and displays the IPMB messages for injection into the shelf. The GUI application communicates with the VT031 through the Ethernet port.

The VT031 is fully hot-swappable to minimize service downtime. An ART031 Rear Transition Module (RTM) for routing the I/O to the rear can be ordered separately.

# ATCA Shelf Manager with Integrated 40GbE/GbE Switch – VT031

## 40GBE LAYER 3 MANAGED SWITCH

The Layer 3 managed 40 GbE switch routes 40 GbE across the fabric ports. There are dual uplink ports on the front panel via the QSFP+ connectors for expansion. The features include Spanning Tree (+ Rapid), VLANs, GMRP, GVRP, Port Authentication, IGMP/Snooping Proxy, and Multi-cast Listener Discovery.

## GBE LAYER 3 MANAGED SWITCH

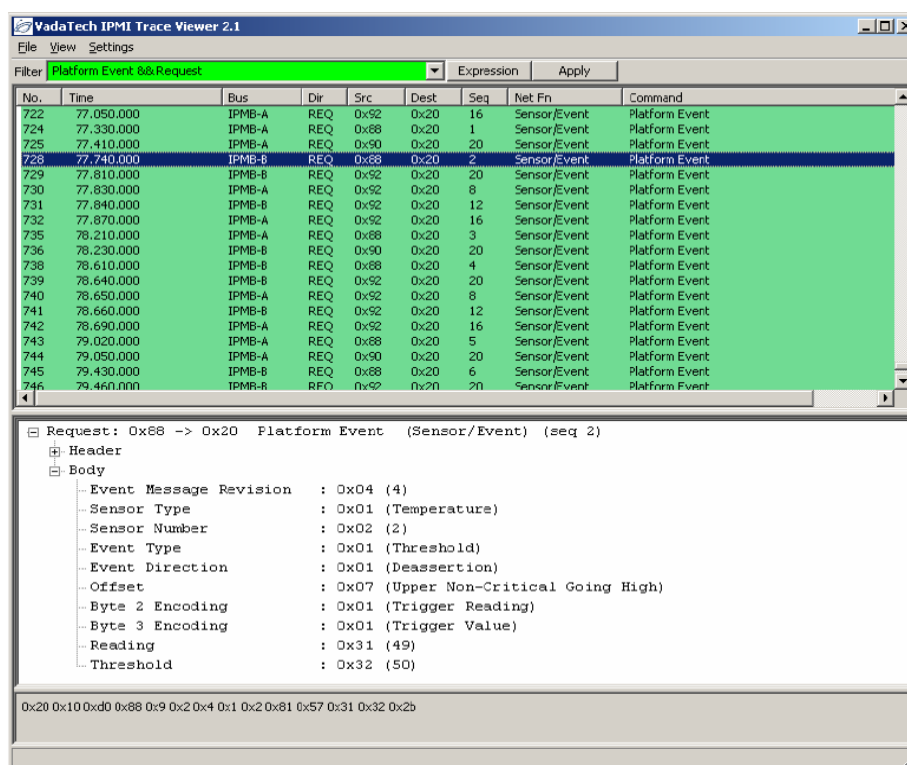
The Layer 3 managed GbE switch routes dual GbE ports via SFP to the backplane base channels. The features include L3 Switching, L3 Multi-cast, Source Port Filtering, Storm Control Per-Port, Spanning Tree, Double Tagging, and Mirroring.

## SCORPIONWARE™ SOFTWARE

VadaTech's Scorpionware software can be used to access information about the current state of the Shelf or the Carrier, obtain information such as the FRU population, or monitor alarms, power management, current sensor values, and the overall health of the Shelf. The software GUI is very powerful, providing a Virtual Carrier and FRU construct for a simple, effective interface.

## IPMI PROTOCOL ANALYZER

VT031 can be used as an IPMI protocol analyzer. Figure 1 shows the trace viewer output from VT031.



The screenshot displays the VadaTech IPMI Trace Viewer 2.1 interface. The main window shows a table of IPMI events with columns for No., Time, Bus, Dir, Src, Dest, Seq, Net Fn, and Command. A filter is set to 'Platform Event &&Request'. The selected event (No. 723) is expanded to show its details:

No.	Time	Bus	Dir	Src	Dest	Seq	Net Fn	Command
722	77.050.000	IPMB-A	REQ	0x92	0x20	16	Sensor/Event	Platform Event
724	77.330.000	IPMB-A	REQ	0x88	0x20	1	Sensor/Event	Platform Event
725	77.410.000	IPMB-A	REQ	0x90	0x20	20	Sensor/Event	Platform Event
723	77.740.000	IPMB-B	REQ	0x88	0x20	2	Sensor/Event	Platform Event
729	77.810.000	IPMB-B	REQ	0x92	0x20	20	Sensor/Event	Platform Event
730	77.830.000	IPMB-A	REQ	0x92	0x20	8	Sensor/Event	Platform Event
731	77.840.000	IPMB-B	REQ	0x92	0x20	12	Sensor/Event	Platform Event
732	77.870.000	IPMB-A	REQ	0x92	0x20	16	Sensor/Event	Platform Event
735	78.210.000	IPMB-A	REQ	0x88	0x20	3	Sensor/Event	Platform Event
736	78.230.000	IPMB-B	REQ	0x90	0x20	20	Sensor/Event	Platform Event
738	78.610.000	IPMB-B	REQ	0x88	0x20	4	Sensor/Event	Platform Event
739	78.640.000	IPMB-B	REQ	0x92	0x20	20	Sensor/Event	Platform Event
740	78.650.000	IPMB-A	REQ	0x92	0x20	8	Sensor/Event	Platform Event
741	78.660.000	IPMB-B	REQ	0x92	0x20	12	Sensor/Event	Platform Event
742	78.690.000	IPMB-A	REQ	0x92	0x20	16	Sensor/Event	Platform Event
743	79.020.000	IPMB-A	REQ	0x88	0x20	5	Sensor/Event	Platform Event
744	79.050.000	IPMB-A	REQ	0x90	0x20	20	Sensor/Event	Platform Event
745	79.430.000	IPMB-B	REQ	0x88	0x20	6	Sensor/Event	Platform Event
746	79.460.000	IPMB-B	REQ	0x92	0x20	20	Sensor/Event	Platform Event

The detailed view of the selected event (Request: 0x88 -> 0x20 Platform Event (Sensor/Event) (seq 2)) shows the following fields:

- Header
- Body
  - Event Message Revision : 0x04 (4)
  - Sensor Type : 0x01 (Temperature)
  - Sensor Number : 0x02 (2)
  - Event Type : 0x01 (Threshold)
  - Event Direction : 0x01 (Deassertion)
  - Offset : 0x07 (Upper Non-Critical Going High)
  - Byte 2 Encoding : 0x01 (Trigger Reading)
  - Byte 3 Encoding : 0x01 (Trigger Value)
  - Reading : 0x31 (49)
  - Threshold : 0x32 (50)

Hex dump: 0x20 0x10 0xd0 0x88 0x9 0x2 0x4 0x1 0x2 0x81 0x57 0x31 0x32 0x2b

Figure 1: VT031 IPMI Protocol Analyzer Trace Viewer Output

## INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

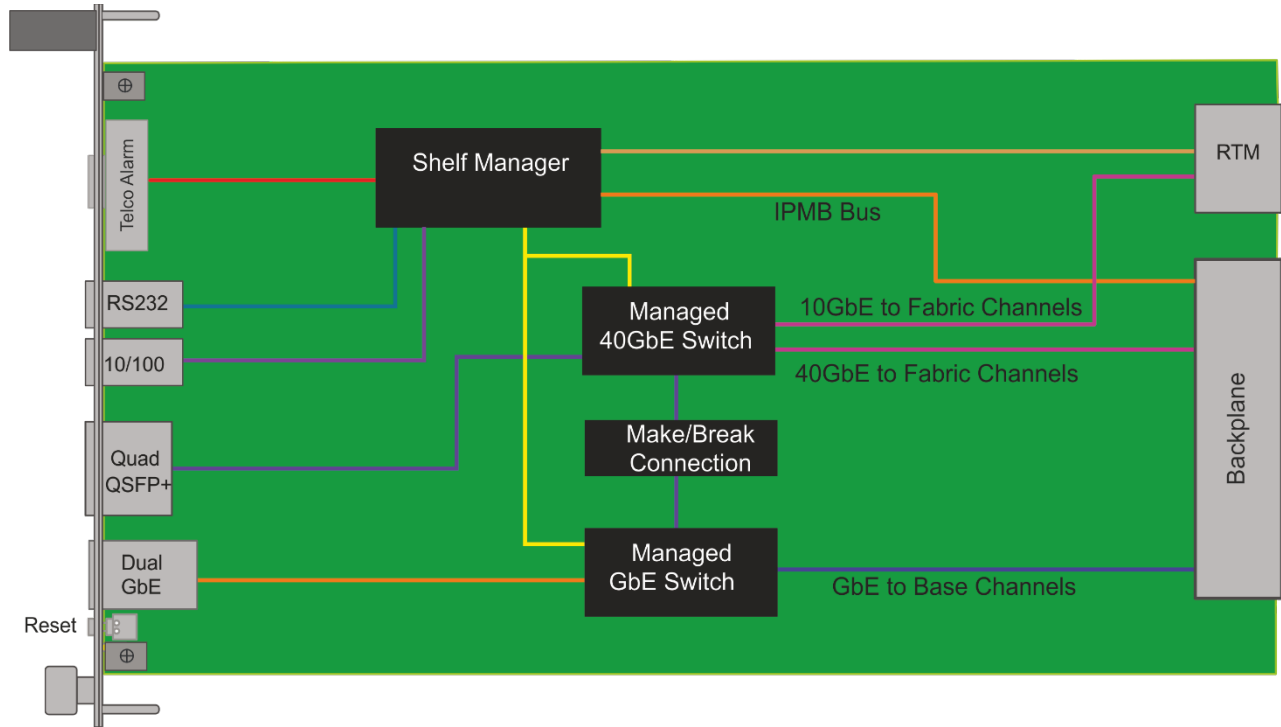
VadaTech has a full ecosystem of ATCA and  $\mu$ TCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms.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

## SPECIFICATIONS

Architecture		
Physical	Dimensions	Width: 5.685" (144 mm)
		Depth 11.096" (281 mm)
Type	Shelf Manager	VadaTech ATCA Shelf
Standards		
Module Management	IPMI	IPMI version 2.0 and PICMG 3.0
Configuration		
Operating Temperature		Operating Temperature: 0° to 65°C (Air flow requirements is to be greater than 200 LFM). Available in industrial temperature range
Environmental	Temperature	Storage Temperature: -40° to +90°C
	Vibration	1 G, 5 to 500 Hz on each axis
	Shock	30 Gs on each axis
	Relative Humidity	5 to 95 per cent, non-condensing
Front Panel	Interface Connectors	Micro DB15 connector for Telco Alarm
		RJ-45 for RS-232 port
		Single 10/100 out-of-band port support to the shelf manager
		Dual GbE ports (10/100/10000)
		Quad QSFP+ ports <sup>1</sup>
	LEDs	IPMI management control Activity / Link user LEDs
	Push Button	Reset Switch
Software Support	Operating System	Linux
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
Other		
Certifications	Designed to meet FCC, CE and UL certifications where applicable	
Compliance	PICMG 3.0 Rev 3.0, RoHS 2. Designed to meet NEBS Level 3	
Standards	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards	
Warranty	Two (2) years	
Trademarks and Disclaimer	The VadaTech logo is a registered trademark of VadaTech, Inc. Other registered trademarks are the property of their respective owners. AdvancedTCA™ and the AdvancedMC™ logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice	

<sup>1</sup> Four QSFP+ front panel connectors support 40GbE. In addition, eight 10GbE connections are routed to RTM for rear access via optional ART031.

## BLOCK DIAGRAM



# ATCA Shelf Manager with Integrated 40GbE/GbE Switch – VT031

## ORDERING OPTIONS

### VT031 – ABC – 000 – 0HJ

#### A = GbE Switch

- 0 = None
- 1 = GbE Layer 3 Managed

#### B = 40GbE Switch

- 0 = None
- 1 = 10GbE/40GbE Layer 3 Managed\*

#### C = QSFP+ Transceiver-SR

- 0 = None
- 1 = One QSFP+
- 2 = Two QSFP+
- 3 = Three QSFP+
- 4 = Four QSFP+

#### H = Temperature Range

- 0 = Commercial
- 1 = Industrial

#### J = Conformal Coating

- 0 = None
- 1 = Humiseal 1A33 Polyurethane
- 2 = Humiseal 1B31 Acrylic

\*320Gbps aggregate switch bandwidth, user defined allocation across slots and front-panel QSFP+ ports

## RELATED PRODUCTS

Photo coming soon



ART031

VT830 – 6U ATCA Shelf

VT000 – Power Board for Bench Top Development

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