ATCA Shelf Manager/Node

VT002

KEY FEATURES

- 32-bit RISC processor @ 400 MHz
- 64 Mbytes of DDR @ 266Mhz
- 128 Mbytes of flash
- 32KByte FRAM for log messages
- Form, fit, functional to VadaTech VT001 first generation product
- Firmware is field upgradable with dual boot
- Dual 10/100 Ethernet ports
- Three RS-232 ports
- Linux release 2.6.21
- IPMI 2.0 compliant
- Low power (3W)
- RTC with 10 year battery life span
- Runs as the Shelf Manager and/or Node
- Each I^2C bus has a 128-byte FIFO
- Rich set of management software such as HPI, RMCP+, SNMP, CLI, HTTP, HPM, E-Keying, etc.

The VT002 incorporates the Intelligent Platform Management Interface (IPMI Version 2.0) and the PICMG 3.x specification on a mezzanine module. The VT002 is VadaTech next generation shelf manager product. It provides a complete IPMI hardware and software solution in the size of a credit card and dissipates less than 3W.

The VT002 is deployed on any custome management carriers (i.e. VadaTech VT004, VT005, VT006, VT007 or VT008) for the rapid development of dedicated Shelf Managers. The VT002 can also be configured to run as a Shelf Manager on an ATCA module (such as the VadaTech ATC800, ATC120, ATC109, etc.). This allows the ATCA module itself to replace the dedicated Shelf Manager, thereby reducing overall system cost.

If configured as a Node (such as the VadaTech ATC104), it can manage up to 8 AMC modules .

The VT002 is mated to the host/carrier board through a dual source connector (Tyco/Samtec). A choice in connector height allows the flexibility to place components underneath the VT002.

Advanced TCA®

SPECIFICATIONS

Architecture		
Physical	Dimensions	Width: 2.125 in. (54 mm)
		Length: 3.375 in. (85.7 mm)
Type	Shelf Manager	Mezzanine module to mount to a management carrier or an ATCA module
Standards		
Module Management	IPMI	IPMI Version 2.0 and PICMG 3.x
Configuration		
Power	VT002	3W.
Environmental	Temperature	Operating Temperature: 0° to 65° C (Available in Industrial Temp)
		Storage Temperature: -40° to +90° C
	Vibration	1G, 5-500Hz each axis
	Shock	30Gs each axis
	Relative Humidity	5 to 95 percent, non-condensing
Mechanical	Interface Connectors	Tyco/Samtec 120 pin
Software	Operating Systems	Linux version 2.6.21 with VadaTech Shelf and/or Node management as application
Other		
MTBF	MIL Spec 217-F > 242,000 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	
Compliance	RoHS and NEBS	
Warranty	Two (2) years	
Trademarks and Logos	The VadaTech logo is a registered trademark of VadaTech, Inc. Other registered trademarks are the property of their respective owners. AdvancedMC^{TM} and the AdvancedTCA^{TM} logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice.	

Key Software Features:

- ❖ Linux 2.6.21
- ❖ IPMI version 2.0
- ❖ Interface to Sensor Data Record repositories, System Event logs, FRU inventory storage devices
- ❖ Monitors temperature, voltage and current sensors
- ❖ Shelf cooling policy
- ❖ Shelf activation and power management
- ❖ Alarm controls
- ❖ Event notification and flexible alerting policies
- ❖ E-Keying
- ❖ CLI, SNMP, RMCP+, HTTP and HPI
- ❖ IPMI 1.5 compatibility
  - ◆ IPMI device global
  - ◆ Watchdog timer
  - ◆ Session management
  - ◆ Event management
  - ◆ PEF and alerting
  - ◆ Sensor device
  - ◆ FRU device access and update
  - ◆ SDR device access and update
  - ◆ SEL device access and management
  - ◆ LAN device configuration

- ❖ IPMI 2.0 extension
  - ◆ Enhanced encryption
  - ◆ Firmware firewall
  - ◆ Enhanced authentication

PICMG 3.x Compliance:

- ❖ Hot-swap architecture
- ❖ Power management
- ❖ FRU activation policies
- ❖ Electronic keying
- ❖ Payload control
- ❖ Cooling policies
- ❖ LED controls
- ❖ Shelf cooling management
  - ◆ User-configurable shelf cooling regions and cooling entities (Fan trays)
  - ◆ Discovers and monitors cooling regions and manages all cooling entities
  - ◆ Provides interface to obtain cooling entity properties and present run levels
  - ◆ Manages FRU power draws in response to temperature events. Upon detecting critical temperature spikes, takes actions by decreasing or powering off the FRU
- ❖ Sensor monitoring and alerting
  - ◆ Actively monitors local and remote temperature, voltage and current sensors on the shelf FRUs
  - ◆ Access to raw sensor readings
  - ◆ Logs all critical events reported by shelf FRUs
  - ◆ Events are processed using Platform Event Filtering (PEF)
  - ◆ Alerts using SNMP trap and PEF alert policy
  - ◆ Capability to reset major/minor alarms with timeout
  - ◆ Controls major/minor/critical alarm LEDs
- ❖ Shelf manager interface
  - ◆ Command Line Interface (CLI)
    - CLI connects to the Shelf Manager and the boards on the shelf
    - IPMI-based library of commands
    - Accessible via telnet, SSH or shelf serial port
    - Commands provide access to information such as the current state of the system, sensor values, events, health, fan speeds, FRU storage, etc
  - ◆ SNMP
    - Supports v1 and v3 of the Simple Network Management Protocol (SNMP)
    - The Shelf Manager can support SNMP queries and send SNMP traps in either v1 or v3
    - Provides custom *Management Information Base (MIB)* tree accessed using SNMP
    - The MIB hierarchy is defined in a text file that describes the shelf and platform objects to be managed and can be used by a remote application such as an SNMP/MIB manager
  - ◆ HPI
    - Provides HPI interface to the shelf resources
    - Access to resource tables to enable applications to discover, manage, and monitor the resources in the system:
      - Reset state management
      - Power state management
      - Managed hot swap
      - Alarm management
      - Management instruments associated with entities
      - Event notifications
      - Configuration
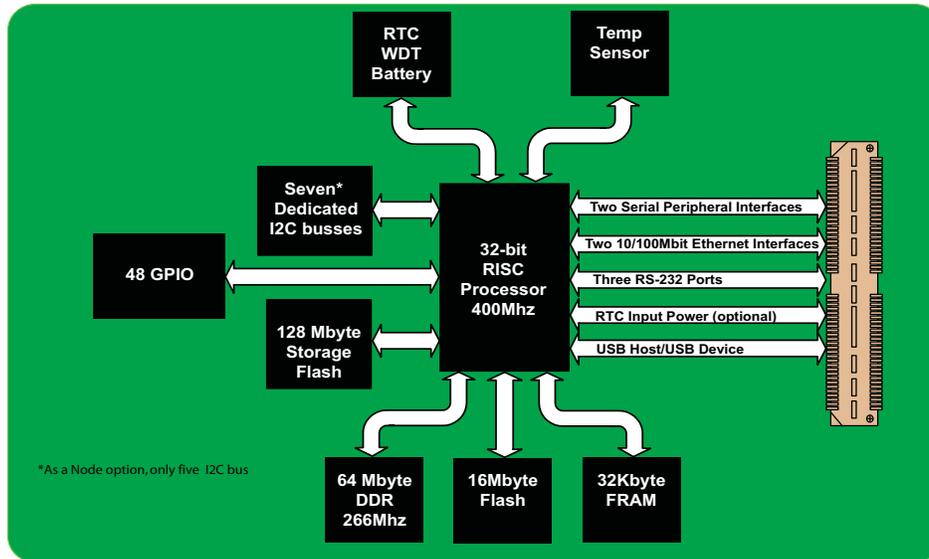   - System and resource event logs
- ❖ HPM.1

FIGURE 2. VT002 Functional Block Diagram

ORDERING OPTIONS

VT002 - AB0 - 000 - 0HJ

A = Software option**

1 = Shelf Manager
2 = Node
3 = Shelf Manager and Node

B = SPI/Modem option

1 = SPI interface
2 = Modem interface

H = Operating Temp

1 = Commercial
2 = Industrial

J = Conformal Coating

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

**As the Shelf Manager there are seven I^2C busses. As the node there are five I^2C busses. As the shelf manager and the node there are seven I^2C busses.

Document No_____ Date:. December 8 2007

VadaTech Incorporated • 198 N. Gibson Rd., Henderson, NV 89014 • Tel: (702) 896-3337 • Fax (702) 896-0332
Email: info@vadatech.com • www.vadatech.com