Complete ATCA IPMI Test Suite and Validation or VT027/VT028 Development



ATC001



FIGURE 1: ATCOO1 option load for IPMI Test Suite and Validation

KEY FEATURES

- Capture and store I²C bus data
- Analyzer mode
- Exerciser mode
- Compliance test mode
- Graphical User Interface (GUI)
- Field-upgradable firmware
- Two 10/100 Mbit Ethernet ports routed to the front panel or to zone 2
- Option for VadaTech VT028 for evaluation and testing
- Option for VadaTech VT027 for evaluation and testing
- VT027 option allows four NXP LPC2138's to be programmed at a time
- IPMI 2.0 compliant
- RoHS compliant

VadaTech designed the ATCOO1 simulator in the ATCA form factor to test, capture and validate I²C traffic on the Intelligent Platform Management Bus (IPMB). The ATCOO1 utilizes an integrated VTOO1 IPMI controller to monitor or inject IPMI packets into the shelf. A Graphical User Interface (GUI) validates and displays the IPMI packets or schedules IPMI messages for injection into the shelf. The GUI application communicates with the integrated VTOO1 IPMI controller through an Ethernet port on the front panel or the rear (base channel on Zone 2).

In the Zone 3 area, the ATCO01 has eleven I²C connectors for expansion to other parts of the chassis or external devices. The ATCO01 facilitates creation of a robust test environment and real world simulation.

The ATCO01 can also be loaded with VadaTech VT027 or VT028 IPMI controller based on the NXP LPC2138 Processor. This optional load allows development and evaluation of the VadaTech VT027/VT028 IPMI solution. The VT027 can manage up to eight AMC slots and connects directly to the ATCA IPMI bus while the VT028 is targeted for ATCA modules that don't have any AMC slots.



SPECIFICATIONS

| Physical | Dimensions | Width: 12.687in. (322.25 mm) | | | | |
|----------------------|---|--|--|--|--|--|
| | | Depth: 11.024 in. (280 mm) | | | | |
| | IPMI Test Suite and | Analyzer mode | | | | |
| Гуре | Validation Platform | Exerciser mode | | | | |
| | | Compliance test mode | | | | |
| | VT027 | VadaTech VT027 schematic implementation | | | | |
| Standards | | | | | | |
| Module Management | IPMI | IPMI Version 2.0 | | | | |
| Configuration | | | | | | |
| Power | ATC001 | 2 Watts | | | | |
| | Temperature | Operating Temperature: 0° to 65° C | | | | |
| | | Storage Temperature: -40° to +90° C | | | | |
| Environmental | Vibration | 1G, 5-500Hz each axis | | | | |
| | Shock | 30Gs each axis | | | | |
| | Relative Humidity | 5 to 95 percent, non-condensing | | | | |
| | | One USB Host port and one USB Device port | | | | |
| | Interface Connectors | Three RS-232 ports (DB9) | | | | |
| | (See Ordering Options) | One RS-485 port (DB9) | | | | |
| Front Panel | | Dual 10/100 Ethernet ports with RJ-45 connectors | | | | |
| | LEDs | IPMI Management Control | | | | |
| | | Activity and Link | | | | |
| | Mechanical | Hot Swap Ejector Handle | | | | |
| Other | | | | | | |
| MTBF | MIL Spec 217-F > 221,000 Hrs. (VT027 option) | | | | | |
| Certifications | Designed to meet FCC, CE and UL certifications where applicable | | | | | |
| Standards | VadaTech is certified to both the IS09001:2000 and AS9100B:2004 standards | | | | | |
| Compliance | RoHS and NEBS | | | | | |
| Warranty | Two (2) years | | | | | |
| Trademarks and Logos | gistered trademark of VadaTech, Inc. Other registered trademarks are the property of their cedMC TM and the AdvancedTCA TM logo are trademarks of the PCI Industrial Computers rights reserved. Specification subject to change without notice. | | | | | |

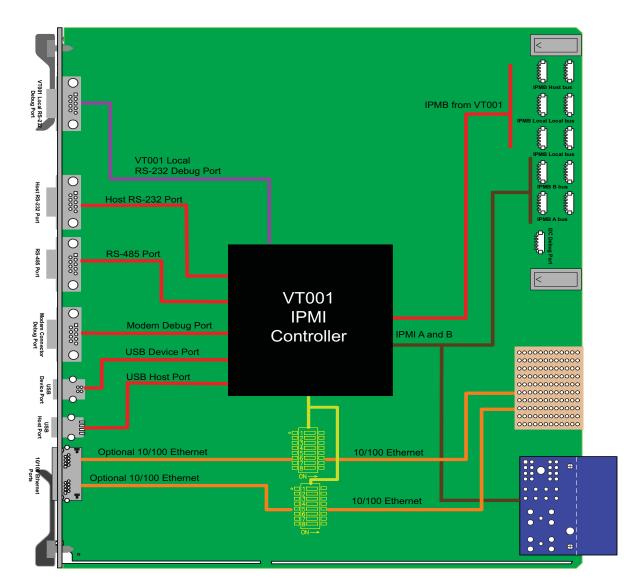
For Use as a Protocol Analyzer:

The ATCOO1 bus analyzer offers the ability to simultaneously monitor up to four I²C buses. The accompanying software interprets and displays the IPMI and ATCA messages, enabling rapid analysis and diagnosis of communication and protocol problems. Important features include:

- AdvancedTCA shelf IPMB-A and IPMB-B monitoring
- External bus support via I²C connectors
- · Configurable Ethernet interface to packet analysis software

The ATCOO1 includes an onboard VTOO1 Intelligent Platform Management Interface (IPMI) controller. This management controller provides four general-purpose I^2C buses, which are routed to the Zone 1 Connector and to a standard I^2C connector.

FIGURE 2: ATCOO1 Functional Block Diagram as Protocol Analyzer option



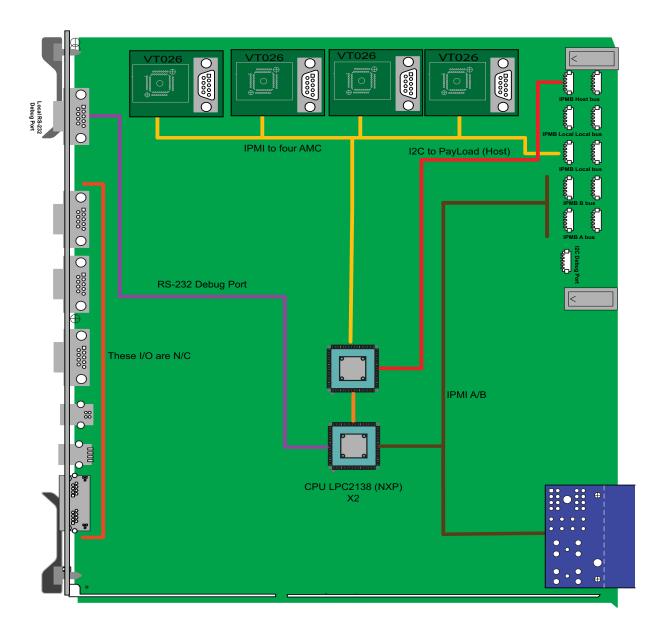
VadaTech Incorporated • 11540 South Eastern Avenue, Henderson, NV 89052 • Tel: (702) 896-3337 • Fax (702) 896-0332 Email: info@vadatech.com • www.vadatech.com FIGURE 3: Viewing a captured trace

| _ | Platform Event && Request | | | | • | Express | ion Apply | | |
|--------|---|--------------------------------------|---|--|--|--|------------------------------|----------------------------------|--|
|). | Time | Bus | Dir | Src | Dest | Seq | Net Fn | Command | |
| 2 | 77.050.000 | IPMB-A | REQ | 0x92 | 0x20 | 16 | Sensor/Event | Platform Event | |
| 4 | 77.330.000 | IPMB-A | REQ | 0x88 | 0x20 | 1 | Sensor/Event | Platform Event | |
| 5 | 77.410.000 | IPMB-A | REQ | 0x90 | 0x20 | 20 | Sensor/Event | Platform Event | |
| 3 | 77.740.000 | IPMB-B | REQ | 0x88 | 0x20 | 2 | Sensor/Event | Platform Event | |
| 9) | 77.810.000 77.830.000 | IPMB-B IPMB-A | REQ REQ | 0x92 0x92 | 0x20 0x20 | 20 8 | Sensor/Event Sensor/Event | Platform Event Platform Event | |
| 1 | 77.840.000 | IPMB-A | REQ | 0x92 0x92 | 0x20 0x20 | 0 12 | Sensor/Event | Platform Event | |
| 2 | 77.870.000 | IPMB-A | REQ | 0x92 | 0x20 | 16 | Sensor/Event | Platform Event | |
| 5 | 78.210.000 | IPMB-A | REQ | 0x88 | 0x20 | 3 | Sensor/Event | Platform Event | |
| 5 | 78.230.000 | IPMB-B | REQ | 0x90 | 0x20 | 20 | Sensor/Event | Platform Event | |
| 3 | 78.610.000 | IPMB-B | REO | 0x88 | 0x20 | 4 | Sensor/Event | Platform Event | |
|) | 78.640.000 | IPMB-B | REQ | 0x92 | 0x20 | 20 | Sensor/Event | Platform Event | |
|) | 78.650.000 | IPMB-A | REQ | 0x92 | 0x20 | 8 | Sensor/Event | Platform Event | |
| 1 | 78.660.000 | IPMB-B | REQ | 0x92 | 0x20 | 12 | Sensor/Event | Platform Event | |
| 2 | 78.690.000 | IPMB-A | REQ | 0x92 | 0x20 | 16 | Sensor/Event | Platform Event | |
| 3 | 79.020.000 | IPMB-A | REQ | 0x88 | 0x20 | 5 | Sensor/Event | Platform Event | |
| 1 | 79.050.000 | IPMB-A | REQ | 0x90 | 0x20 | 20 | Sensor/Event | Platform Event | |
| 5 | 79.430.000 | IPMB-B | REQ | 0x88 | 0x20 | 6 | Sensor/Event | Platform Event | |
| 5 | 79.460.000 | IPMB-B | REO | 0x92 | 0x20 | 20 | Sensor/Event | Platform Event | |
| _ | | | | | | | | | |
| | | | | | | | | | |
| R | equest: 0x88 -> (| Ox2O Plat | form | Event | (Sens | or/Eve | nt) (seq 2) | | |
| | equest: Ox88 -> (LHeader | Ox2O Plat | form | Event | (Sens | or/Eve | nt) (seq 2) | | |
| E | Header | Ox2O Plat | form | Event | (Sens | or/Eve | nt) (seq 2) | | |
| E | Header Body | | | | | or/Eve | nt) (seq 2) | | |
| E | Header | | | Event Dx04 (| | or/Eve | nt) (seq 2) | | |
| E | Header Body | | ı :(|)xO4 (| | | nt) (seq 2) | | |
| E | - Header - Body - Event Message | e Revisior | ı : (: (|)xO4 (| 4) Tempera | | nt) (seq 2) | | |
| E | - Header - Body - Event Message - Sensor Type - Sensor Number | e Revisior | . : (: (: (|)x04 ()x01 ()x02 (| 4) Tempera 2) | ature) | nt) (seq 2) | | |
| E | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type | e Revisior | · : (: (: (|)x04 ()x01 ()x02 ()x01 (| 4) Tempera 2) Thresho | ature) old) | nt) (seq 2) | | |
| E | Header Body Sensor Type Sensor Number Event Type Event Directi | e Revisior | · : (: (: (: (|)x04 ()x01 ()x02 ()x01 ()x01 (| 4) Tempera 2) Thresho Deasser | ature) old) rtion) | | | |
| E | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type | e Revisior | · : (: (: (: (|)x04 ()x01 ()x02 ()x01 ()x01 (| 4) Tempera 2) Thresho Deasser | ature) old) rtion) | nt) (seq 2) itical Going | High) | |
| E | Header Body Sensor Type Sensor Number Event Type Event Directi | e Revisior : ion | · : (: (: (: (: (|)x04 ()x01 ()x02 ()x01 ()x01 ()x01 (| 4) Tempera 2) Thresho Deasser | ature) old) stion) Jon-Cr | itical Going | High) | |
| E | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type - Event Directi - Offset - Byte 2 Encodi | e Revision : ion ing | · : (: (: (: (: (: (|)xO4 ()xO1 ()xO2 ()xO1 ()xO1 ()xO7 ()xO1 (| 4) Tempers 2) Thresho Deasser Upper I Trigger | ature) old) stion) Non-Cr s Read | itical Going ing) | High) | |
| Ð | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type - Event Directi - Offset - Byte 2 Encodi - Byte 3 Encodi | e Revision : ion ing | L : (: (: (: (: (: (: (|)x04 ()x01 ()x02 ()x01 ()x01 ()x07 ()x01 ()x01 (| 4) Tempers 2) Thresho Deasser Upper I Trigger Trigger | ature) old) stion) Non-Cr s Read | itical Going ing) | High) | |
| Ð | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type - Event Directi - Offset - Byte 2 Encodi - Byte 3 Encodi - Reading | e Revision : ion ing | | DxO4 (DxO1 (DxO2 (DxO1 (DxO1 (DxO1 (DxO1 (DxO1 (DxO1 (DxO1 (| 4) Tempers 2) Thresho Deasser Upper I Trigger Trigger 49) | ature) old) stion) Non-Cr s Read | itical Going ing) | High) | |
| E | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type - Event Directi - Offset - Byte 2 Encodi - Byte 3 Encodi | e Revision : ion ing | |)x04 ()x01 ()x02 ()x01 ()x01 ()x07 ()x01 ()x01 (| 4) Tempers 2) Thresho Deasser Upper I Trigger Trigger 49) | ature) old) stion) Non-Cr s Read | itical Going ing) | High) | |
| | - Header - Body - Event Message - Sensor Type - Sensor Number - Event Type - Event Directi - Offset - Byte 2 Encodi - Byte 3 Encodi - Reading | e Revision : ion ing ing | | DxO4 (DxO1 (DxO2 (DxO1 (DxO1 (DxO1 (DxO1 (DxO1 (DxO1 (Dx31 (Dx32 (| 4) Tempers 2) Thresho Deassen Upper I Triggen Triggen 49) 50) | ature) old) stion) Non-Cr s Read | itical Going ing) | High) | |

For VT027 Development with Four Slot AMC Simulation:

With the VT027 evaluation and development option, the ATC001 has a total of six NXP LPC2138's: two on-board (representing the VT027 design) and four in sockets to simulate the four out of eight AMC slots (representing the VT026 design). These four are loaded with VadaTech VT026 code (VT026 is a single LPC2138 running the IPMI code as an AMC module). The sockets can also be used to program the LPC2138's. The board has on-board switches to simulate the insertion and extraction of the AMC modules as well as the front panel switch for the AMC. The VT027 option is capable of communicating with the payload via I2C or RS-232.





For VT028 Development:

With the VT028 evaluation and development option, the ATC001 has a single NXP LPC2138. The VT028 is targeted for the ATCA modules that do not have any AMC slots. The VT028 option is capable of communicating with the payload via I2C or RS-232.

FIGURE 5: ATCOO1 Functional Block Diagram for VTO28 Development option

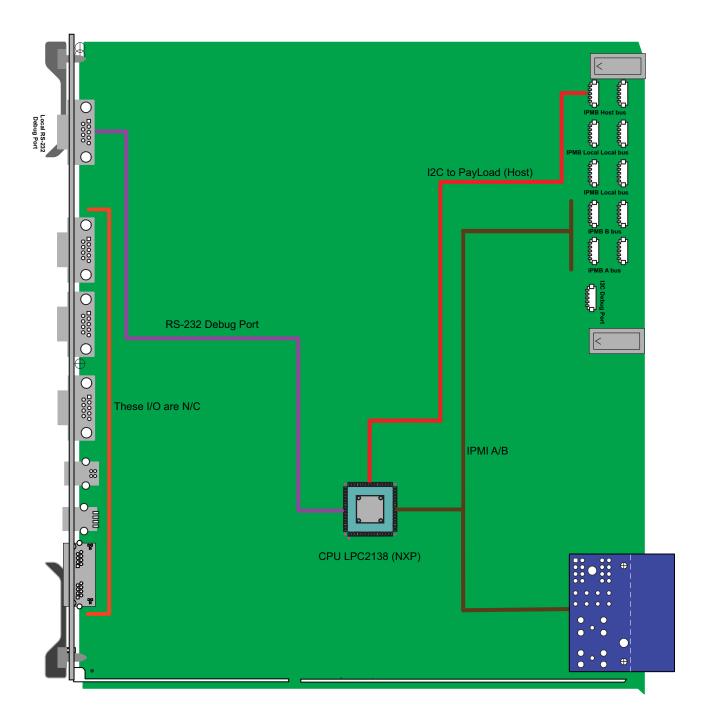




FIGURE 6: ATCOO1 option load for VTO27 Development

ORDERING OPTIONS

A = Built Option

- 1 = Protocol Analyzer
- 2 = VT027 Development
- 3 = VT028 Development

ATC001 - A00 - 000 - 00J

J = Conformal Coating

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



Document No_

Date:. August 27 2007