VTX985

Two Slot 3U VPX Rackmount Chassis with RTM for Conduction Cooled Module

Key Features

- Two slot 3U VPX platform for Conduction cooled modules
- 19" Rackmount
- Multiple backplane configurations for VITA 66.4, VITA 66.5, VITA 67.1, etc. by selectable connector options
- Chassis monitors the temperature of the wedge lock and maintains the required level
- Support for Rear Transition Modules (RTMs)
- Health monitoring via shelf manager
- JTAG connector
- User setting of SYSRESET, NVMRO, etc.
- VBAT provided by onboard battery pack

Benefits

- Allows development of conduction cooled modules in standard 19" rack mount
- Shelf manager supports Tier 2 Health Management
- 400W AC Universal Power supply
- Ease of access to board for debug and development
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company
VTX985

The VTX985 is a dual slot 3U VPX chassis conduction cooled for two 3U VPX modules. The chassis can accept a front and a Rear Transition Module (RTM).

The Chassis CPU will monitor and maintain the VPX module wedge temperature, set by the user. This allows testing of the conduction cooled modules without going through the thermal chamber.

The chassis has provision to mount to a 19” Rackmount.

Power Supply

The VTX985 Universal AC power supply provides 400W to the chassis. The chassis supplies all the necessary power (+12V, -12V, +5V, +3.3V etc.) to the module in accordance with VITA 46 specifications.

A battery pack is included that provides VBAT to the module. The chassis provides the current draw on the +12V, +5V and +3.3V by the VPX module and its associated RTM.

Cooling

Variable speed fans controlled by the onboard CPU keeps the wedge at the user defined temp.

Backplane

The backplane provides all the necessary VITA 46 signals set by the user (NVMRO, SYSRESET, SYS_CON, driver the dual clock, etc.). All the connectors are installed P0 thru P6 and are routed from the front to the rear.

The backplane can be ordered with custom routing between the two modules. The default routing, routes all P1 ports between the two modules.

Health Monitoring

The chassis comes with the VadaTech 4th Generation shelf manager (VT040) that monitors the VPX board sensors in compliance to VITA 46.11. The VT040 supports Tier 2 Health Management and comes with the VTX985 chassis. For a more complete and detail description of the VT040, the data sheet may be downloaded from VadaTech web page.

JTAG

The backplane breaks-out the JTAG signals via a header connector to enable external connection of a JTAG probe.
Chassis Layout

Figure 3: VTX985 Chassis Layout - Front View

Figure 4: VTX985 Chassis Layout - Rear View
Backplane Connection Diagrams

- **D** = Data (Rx/Tx to Tx/Rx)
- **E** = Expansion (Rx/Tx to Tx/Rx)
- **C** = Control (Rx/Tx to Tx/Rx)
- **T** = Through (Rx/Tx to Rx/Tx)

*Note for option A = 0:

On the top slot VS1 is connected to +5V which is a violation of the VPX Spec and VS2 is not connected to +3.3V.

On the bottom slot VS1 is not connected to the +12V

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**Figure 5: Backplane, Option A=0**

*Note for option A = 0:

On the top slot VS1 is connected to +5V which is a violation of the VPX Spec and VS2 is not connected to +3.3V.

On the bottom slot VS1 is not connected to the +12V
Payload Slots

Rj0

D1-Lane [J1 1:4]
D2-Lane [J1 5:8]

Rj1

D1-Lane [1:4]
D2-Lane [5:8]
T1-Lane [9:12]
T2-Lane [13:16]

J2

T1-Lane [J1 9:12]
T2-Lane [J1 13:16]
T3-Lane [J2 1:4]
T4-Lane [J2 5:8]

Rj2

T1-Lane [J2 9:12]
T2-Lane [J2 13:16]

VPX 1

VPX 2

D = Data (Rx/Tx to Tx/Rx)
E = Expansion (Rx/Tx to Tx/Rx)
C = Control (Rx/Tx to Tx/Rx)
T = Through (Rx/Tx to Rx/Tx)

Figure 6: Backplane, Option A=1
Figure 7: Backplane, Option A=2

J0
- T1-Lane[1:4]
- T2-Lane[5:8]

RJ0
- T1-Lane[J0 1:4]
- T2-Lane[J0 5:8]

J1
- T1-Lane[1:4]
- T2-Lane[5:8]
- T3-Lane[9:12]
- T4-Lane[13:16]

RJ1
- T1-Lane[J1 1:4]
- T2-Lane[J1 5:8]
- T3-Lane[J1 9:12]
- T4-Lane[J1 13:16]

VITA 67.1

Payload Slots

VPX 1
- VPX 1
- VPX 2

VCX
- VITA 67.1
- VITA 67.1

RJ0
- T1-Lane[J0 1:4]
- T2-Lane[J0 5:8]

Payload Slots

VITA 67.1

D = Data (Rx/Tx to Tx/Rx)
E = Expansion (Rx/Tx to Tx/Rx)
C = Control (Rx/Tx to Tx/Rx)
T = Through (Rx/Tx to Rx/Tx)
Specifications

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Dimensions</th>
<th>Height: 2U; 19”</th>
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</thead>
<tbody>
<tr>
<td>Standards</td>
<td>VPX Type</td>
<td>VITA 46.0 and VITA 66.4, VITA 66.5, VITA67.1, etc. Baseline Specification</td>
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**Configuration**

<table>
<thead>
<tr>
<th>Power</th>
<th>VTX985</th>
<th>400W AC universal</th>
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<tbody>
<tr>
<td>Environmental</td>
<td>See <a href="#">Ordering Options</a></td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Front to rear</td>
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**Other**

<table>
<thead>
<tr>
<th>MTBF</th>
<th>MIL Hand book 217-F@ TBD hrs</th>
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<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 ISO9001:2015 and AS9100D standards</td>
</tr>
<tr>
<td>Warranty</td>
<td>One (1) year, see <a href="#">VadaTech Terms and Conditions</a></td>
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OpenVPX allows for a wide range of pin assignments and use cases. Prior to purchasing VadaTech products as standalone items (i.e. not part of an integrated platform) please consult with VadaTech on the system architecture to ensure compatibility.

**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

**VTX985 – AB0-D00-GHJ**

<table>
<thead>
<tr>
<th>A = Backplane</th>
<th>D = Mounting</th>
<th>G = VPX Connector Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Per Figure 5</td>
<td>0 = Bench Top</td>
<td>0 = Standard 50u Gold Rugged</td>
</tr>
<tr>
<td>1 = Per Figure 6</td>
<td>1 = 19&quot; Rackmount</td>
<td>1 = KVPX Connectors</td>
</tr>
<tr>
<td>2 = Per Figure 7</td>
<td>2 = Reserved</td>
<td></td>
</tr>
<tr>
<td>3 = Reserved</td>
<td>3 = Reserved</td>
<td></td>
</tr>
<tr>
<td>4 = Reserved</td>
<td></td>
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<td>5 = Reserved</td>
<td></td>
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<td>6 = Reserved</td>
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<table>
<thead>
<tr>
<th>B = VPX Module 5HP Pitch</th>
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<th>H = Environmental</th>
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<tbody>
<tr>
<td>0 = VITA48</td>
<td></td>
<td>See <a href="#">Environmental Specification</a></td>
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<tr>
<td>1 = IEEE1101.1</td>
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<table>
<thead>
<tr>
<th>Environmental Specification*</th>
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<tbody>
<tr>
<td>Option H</td>
<td>H = 0</td>
<td>H = 1</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-5°C to +55°C</td>
<td>AC3* (-40°C to +70°C)</td>
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<tr>
<td>Storage Temperature</td>
<td>-40°C to +85°C</td>
<td>C3* (-50°C to +100°C)</td>
</tr>
<tr>
<td>Operating Vibration</td>
<td>0.04 g2/Hz max</td>
<td>V2* (0.04 g2/Hz max)</td>
</tr>
<tr>
<td>Storage Vibration</td>
<td>20g</td>
<td>OS1* (20 g)</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
</tr>
</tbody>
</table>

*Please contact VadaTech Sales for other specification

**Related Products**

**VPX102**
- 3U VPX Dual ADC 12-bit @ 6.4 GSPS or Quad ADC @ 3.2 GSPS
- Virtex UltraScale+ XCVU13P with large internal memory
- ANSI/VITA 42.3 (XMC PCI Express)

**VPX572**
- 3U VPX NVMe Host Bus Adapter with Full support for RAID
- Dual Core ARM A15 RAID on Chip (ROC)
- Health Management through dedicated Processor

**VTX995**
- Two Slot 6U VPX Rackmount Chassis with RTM for Conduction Cooled Module
- Optional backplane configurations for VITA 66.4, VITA 66.5, VITA 67.2, etc.
- Chassis monitors the temperature of the wedgelock and maintains the level