

# VTX951

1U Open VPX Rackmount Chassis,  
Two 3U Payload Slots, RTM Slot  
with Integrated Intel W-11865MRE



VTX951

## Key Features

- 1U Open VPX Rackmount platform with two 3U VPX payload slots. Compatible with 0.8-inch, 0.85-inch and 1.0-inch modules
- Integrated Intel® Xeon® Processor W-11865MRE (Tiger Lake-H) with 8 cores.
- PCIe Gen4 x8 to each of the VPX module
- Dual Display Port (DP) for Video and dual 10GBaset-T
- Serial Over LAN (SOL)
- 32 GB of DDR4 memory with ECC
- M.2 NVMe removable storage
- Support for Rear Transition Modules (RTMs)
- Shelf Manager for health management with Tier two support
- Layer two managed switch supports IEEE1588V2
- Sophisticated clocking features
- Virtual JTAG capabilities for remote programming and debugging eases FPGA Code development
- Redundant cooling in push/pull side-to-side airflow configuration (front and rear), removable fan tray and air filter

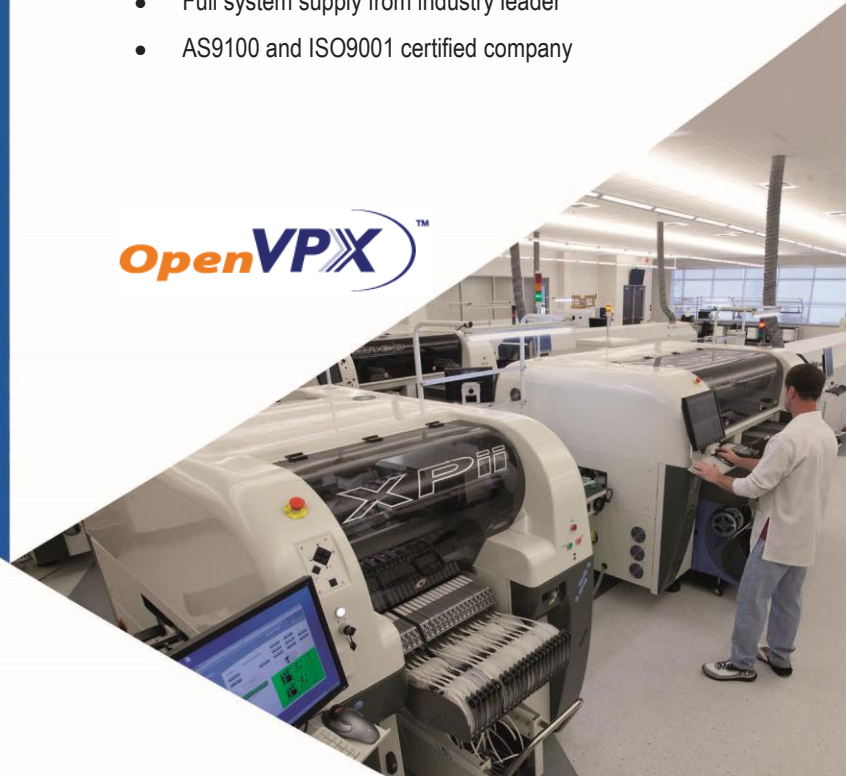
## Benefits

- 500W Universal AC Power Input
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

OpenVPX™



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# VTX951

The VTX951 is a 1U Open VPX chassis with two 3U VPX payload slots. It can accept 0.8-inch, 0.85-inch and 1.0-inch pitch modules and is ideal for commercial deployment. The Chassis incorporates a VadaTech third generation shelf manager that provides tier 2 health management. The VTX951 can accept convection cooled modules in VITA 48 pitch.

A layer 2 GbE switch supports 802.1D Spanning Tree Protocol, 802.1W Rapid Spanning Tree, 802.1s Multiple VLAN Spanning Tree, programmable per-port VLAN configurations, 802.1Q, etc. The switch supports IEEE1588V2 and has two ports to each of the VPX modules and two ports to the front of the chassis via RJ-45.

The module accepts GPS antenna input or other clocking options as input/output to the chassis and generation of any clock frequency to the backplane for the VPX modules clock references.

## Intel W-11865MRE (Tiger Lake-H)

The Intel® Xeon® Processor W-11865MRE (Tiger Lake-H) with 8 cores. The processor base frequency is 2.6 GHz with max turbo frequency of 4.7 GHz. The Intel CPU interfaces to each of the VPX modules via x8 PCIe Gen4. It also provides dual 10GbE to the front panel. The VTX951 has 32 GB of DDR4 memory with ECC, 2TB of NVMe M.2 removable storage and 64GbE of SSD on board. The BIOS allows booting from the NVMe module, PXE boot as well as USB. There are dual USB 3.0 type C connectors for extended storage or peripherals.

## JTAG Master/JTAG via Ethernet Virtual Probe

The VTX951 provides JTAG Master Capability. Data streams sent out via the chassis JTAG Switch Module (JSM) configure arbitrary JTAG Slave devices on VPX cards. Virtual Probe services are available as an option to provide JTAG via Ethernet for Xilinx FPGAs. This allows for standard development tools such as Xilinx iMPACT/ChipScope to treat the switch/JSM combination as if it were a standard JTAG probe. This approach frees the developer from having to attach JTAG probes directly to the VPX module or JSM which can be difficult when systems are already fully assembled. It also allows for remote debugging across long distances without the need to install additional JTAG equipment on-site.

## Power Supplies

The VTX951 has a 500W AC universal input power supply that provides 100W per slot.

## Cooling and Temperature Sensors

The VTX951 is designed to meet the ANSI/VITA 65 standard. It provides right to left push/pull cooling (18 CFM per payload slot at 0.24 in-H<sub>2</sub>O @ 5000 feet) to the VPX payload and RTM slots. The Chassis has a removable Air Filter at the front. The module provides cooling to the RTM.

## Backplane

The backplane provides two 3U VPX payload slots in a star configuration, fully compliant to VITA 46.0 baseline specification, with additional support to the RTMs, compliant to VITA 46.10 and OpenVPX VITA 65. VadaTech is open to modify the backplane to meet customer requirements.



Figure 1: VTX951 Front View



Figure 2: VTX951 Rear View

# Backplane Configuration

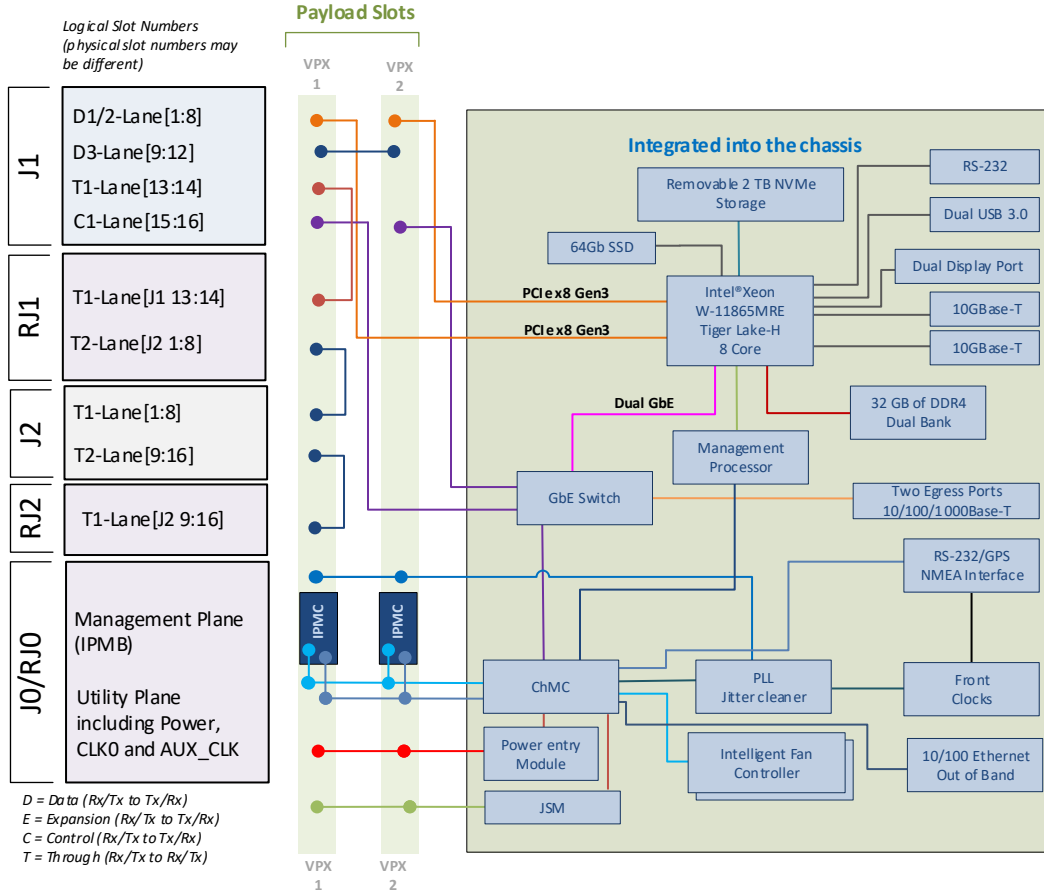


Figure 3: VTX951 Backplane Connections

VadaTech can also design additional VITA standard backplane profiles for customer specific applications. Please contact your local sales team for more information.

# Chassis Layout



Figure 4: Chassis Layout – Front



Figure 5: Chassis Layout – Rear

# Specifications

Architecture		
Physical	Dimensions	Height: 1U
		Width: 19"
		Depth: 12.26"
		Weight: TBD
Type	VPX Shelf	2 Payload Slots up to 1.0" pitch
Standards		
VPX	Type	VITA 46.0 Baseline Specification
Configuration		
Power	VTX951	500W Universal AC input (90-264 Vrms, 47-63 Hz; 360-440 Hz higher leakage)
Environmental		See <a href="#">Ordering Options</a>
Front Panel	Interface Connectors	Micro USB for CPU RS-232
		2x USB 3.0
		2x Display Ports
		2x RJ-45 for 10GbE
		4x RJ-45 for GbE and RS-232 (two GbE for egress ports)
		JTAG for JSM (JTAG Switch Module)
		GPS NMEA/RS-232
		Clock in/out
Cooling		Right to left with redundant fan trays for both front and back
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 ISO9001:2015 and AS9100D standards
Warranty		One (1) year, see <a href="#">VadaTech Terms and Conditions</a>

## 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

## VTX951 – ABC-DEF-GHJ

<b>A = Module Pitch Type</b> 0 = Reserved 1 = VITA48 2 = Reserved 3 = Reserved 4 = Reserved	<b>D = Front Panel Clocking</b> 0 = No clocking 1 = Dual LVCMOS Clock In/Out 2 = Sine Wave in + LVCMOS In/Out 3 = Build-in GPS receiver + LVCMOS In/Out 4 = Dual Sine Wave in 5 = GPS receiver + Sine Wave in	<b>G = Backplane routing option</b> 0 = Default (Figure 3) 1 = Reserved 2 = Reserved 3 = Reserved 4 = Reserved 5 = Reserved
<b>B = VPX Connector Type</b> 0 = Standard 50u Gold Rugged 1 = KVPX Connectors 2 = High speed 50u Gold Rugged (>16G) 3 = Reserved	<b>E = Clock Holdover Stability</b> 0 = Reserved 1 = Stratum-3 (TCXO) 2 = OCXO	<b>H = Environmental</b> See <a href="#">Environmental Specification</a>
<b>C = Removable NVMe Storage</b> 0 = No NVMe 1 = NVMe (1 TB) 2 = NVMe (2 TB)	<b>F = JTAG Virtual Probe</b> 0 = No JTAG Virtual Probe 1 = JTAG Virtual Probe	<b>J = Conformal Coating</b> 0 = No coating 1 = Humiseal 1A33 polyurethane 2 = Humiseal 1B31 acrylic

## Environmental Specification

Option H	H = 0	H = 1
Operating Temperature	AC1* (-5°C to +55°C)	AC3* (-40°C to +70°C)
Storage Temperature	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)
Operating Vibration	V2* (0.04 g2/Hz max)	V2* (0.04 g2/Hz max)
Storage Vibration	OS1* (20 g)	OS1* (20 g)
Humidity	95% non-condensing	95% non-condensing

Notes: \*Nomenclature per ANSI/VITA 47. Contact local Sales office for other specifications.

## Related Products

VPX518



- AMC FPGA carrier for FMC per VITA 57
- Xilinx Zynq-7000 FPGA in FFG-900 package (XC7Z100 or XC7Z045) with embedded ARM®
- Supported by DAQ Series™ data

VPX592



- 3U FPGA carrier for FPGA Mezzanine Card (FMC) per VITA 46 and VITA 57
- Xilinx Kintex UltraScale™ XCKU115 FPGA
- High-performance clock jitter cleaner

VPX599



- 3U FPGA Dual DAC and dual ADC per VITA 46
- Xilinx Kintex UltraScale™ XCKU115 FPGA
- Dual ADC 12-bit @ 6.4 GSPS



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