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Find the *Kontron VX3058* at our website: ***Click HERE***

VX3058



OCTA CORE INTEL® XEON® PROCESSOR VPX SERVER BLADE

- Fit for Virtual Machines and HPEC Applications
- Extended Life Cycle and 10-year Silicon Reliability
- Dual 10 Gigabit Ethernet, x8 PCI Express Gen3 Bandwidth
- 8 Core Xeon® Processor D, up to 32 GB DDR4 with ECC
- Air-Cooled and Rugged Conduction-Cooled versions

POSSIBILITIES START HERE kontron

VX3058 OCTA CORE INTEL® XEON® VPX SERVER BLADE

Featuring the Intel® Xeon® D processor family (formerly Broadwell-DE), the VX3058 is the first 8-core multiprocessing board of the Kontron 3U VPX ecosystem. The highly integrated 8-core architecture with Dual 10 Gigabit Ethernet, high bandwidth PCI Express 3.0, high speed DDR4 memory, and versatile mezzanine options, is consequently SWaP-C optimized and simply the best choice for high performance embedded computing platforms.

FIT FOR VIRTUAL MACHINES AND HPEC APPLICATIONS

The server class Xeon® D platform is the basis for advanced server applications, built as virtual machines. All capital and operational efficiencies of using isolated workloads which dynamically share common resources will apply. The unchanged application can easily adapt to hardware evolution such as CPU count, memory, I/O availability, or even formfactor. By virtualisation, embedded solutions become a future-proof investment.

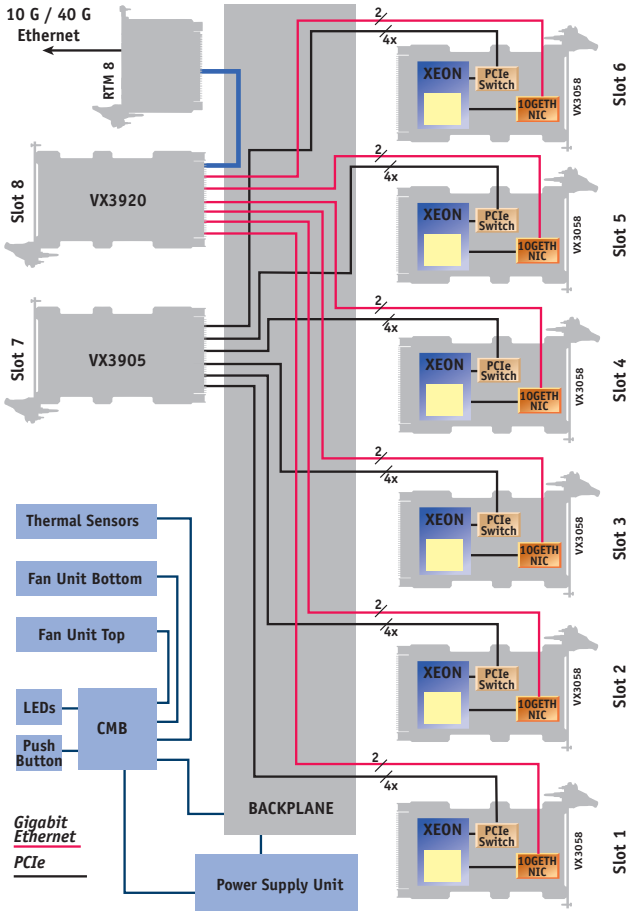
VX3058 brings server class applications into the battlefield. Typical applications are:

- radar, sonar
- imaging systems
- airborne fighter and UAV radar
- long term programs in harsh environments

LEADING EDGE ARCHITECTURE FOR MULTI-CPU SYSTEMS

VX3058 provides two 10 GBASE-KR ports and 8 lanes Gen3 PCI Express to the backplane. Kontron VxFabric™ technology provides a TCP/IP protocol over the PCI Express infrastructure towards the application. A 10 Gigabit Ethernet switch and a PCI Express Switch can be complemented with two single star data planes, for 10 GETH and for PCI Express, respectively. A unique API with TCP/IP sockets makes it a powerful, leading edge Multi-CPU computing node architecture.

Kontron's sample turnkey system StarVX implements this architecture, targeting in maximum bandwidth. While computing power has been continuously increasing in the past, and I/O bandwidth did not, the balance of both is back again by Kontron StarVX.



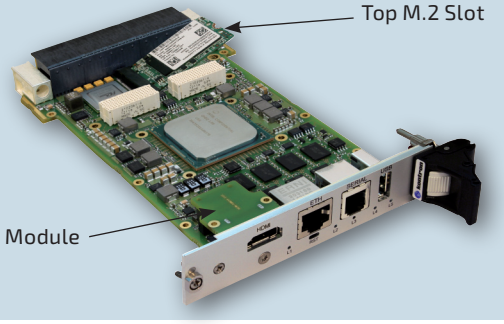
LONG TERM PROGRAMS: HIGH RELIABILITY, LOW TCO

Kontron is providing outstanding elements to increase reliability and to lower Total-Cost-of-Ownership (TCO) for VX3058. Kontron provides a Long Term Supply program service (LTS) for over 15 years. Intel Communications silicon reliability is 10 years. A comprehensive Health Management is optionally available to support easy field maintenance. All this makes the VX3058 the ideal candidate for long term programs.

VERSATILE OPTIONS: XMC, STORAGE, GRAPHICS, M.2, I/O

The M.2 interface can be used for storage or for integration of customized personality modules. A XMC slot and 2-D graphics are additional options. Front-I/O module options are selectable for DVI/HDMI or Ethernet or other interfaces.

More capabilities in 3U space



CENTRALIZED HEALTH MANAGEMENT

A shelf manager is optionally available for centralized health management. Moreover, sequenced system power-up and Temperature/Power/Performance management are available. The Power-On Built-in Test (PBIT) option is a comprehensive package for board and system diagnosis.

VITA 48-REDI CONDUCTION-COOLED VERSIONS

The high-performance VX3058 server blade is available as Conduction-cooled Plug-in units according to VITA 48.2 Type 2, Secondary Side Retainer.

The Kontron Optimized Conduction-Cooling technologies enables the VX3058 to sustain 70°C or 85°C edge temperature according to VITA 47 depending on the reference and the processing load.

The VX3058 is also available with the VITA 48 Ruggedized Enhanced Design Implementation (REDI) Two-Level Maintenance bottom cover option.

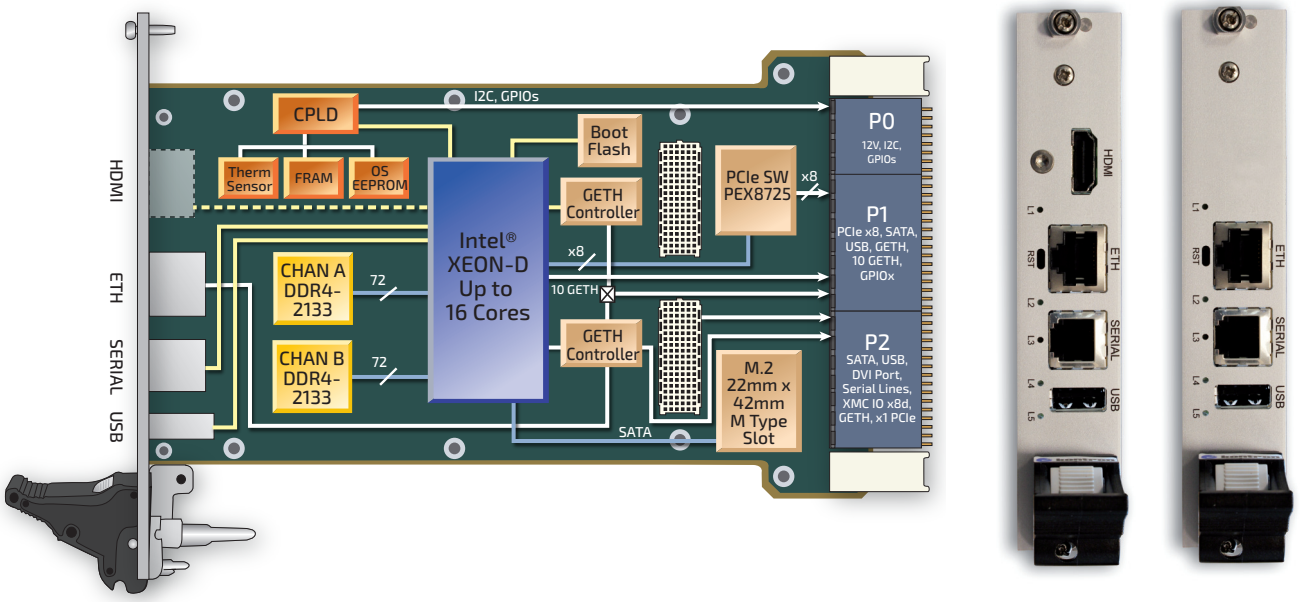
KONTRON VPX ECO SYSTEM AND VALIDATED SOLUTION

VX3058 boards are compatible with all Kontron 3U VPX and 6U VPX building blocks (payload boards, carriers, switches, backplanes, OS, and drivers) and offer backward compatibility with the previous product generations.

The VX3920 is a Standard Fabric OpenVPX 3U Rugged Ethernet Switch with 24x 10 Gbps channels providing Layer 2 and Layer 3 switching/routing functions. The VX3920 is available both in Forced Air-Cooled and Rugged Conduction-Cooled versions.

PROCESSOR		Intel® Xeon® D-1500 Octa Core™, TDD 35W, 1.6/1.7 GHz (8 execution cores, 16 threads, 12 MB) DDR4 dual channel memory with ECC, 2133 Mbits/s over 144 bits, up to 16 Gbytes PCIe gen3 x8 ports to VPX and XMC, up to 8 GT/s
ONBOARD CONTROLLER	Integrated Platform Controller Hub	PCI Express* Base Specification, Revision 2.0 support for up to eight ports with transfers up to 5 GT/s Integrated Serial ATA host controllers with independent DMA operation on up to six ports xHCI USB controller provides support for up to 8 USB ports, of which four can be configured as SuperSpeed USB 3.0 ports Two Integrated serial lines
	Gigabit Ethernet	One I210 Ethernet controller connected on front panel or VPX backplane (user selection) for 1000BASE-T operation 2nd I210 Ethernet controller connected on VPX backplane for 1000BASE-T operation, and optionally to the front panel (user selection) if the I/O profile option for "2nd RJ-45 Ethernet 1000BASE-T to the front option" is selected.
	Watchdog	PLD-based, timeout ranging from 2 µs to 510s, IRQ, Reset, dual-stage
	System CPLD	One CPLD Board controller for power sequencing, reset handling, monitoring, failure detection, VPX I2C communication. Provides configuration/status registers on LPC interface
	RTC	Separated low power RTC with optional onboard battery
MEMORY	System Memory	Up to 32 GB dual channel DDR4 SDRAM running at 2133 MT/s, with ECC, soldered
	Flash (uEFI BIOS)	2x16 MB FLASH, with recovery image and uEFI BIOS settings
	EEPROM	One serial 256 Kbit EEPROM dedicated to system data One serial 256 Kbit EEPROM dedicated to application data
	M.2 SSD option	M.2 SSD module option: Type M, 22 mm x 42 mm
FRONT INTERFACES 5HP (1")	USB	1x USB 2.0 port
	Gigabit Ethernet	1x RJ-45 connector: 10/100/1000BASE-T Ethernet Note: This port is configurable from the BIOS to be routed to the VPX rear connector instead
	HDMI (option)	HDMI connector as option. This includes a HDMI front-I/O module and a M.2 mezzanine for 2D graphics. Remark: HDMI front I/O and XMC support are exclusive.
	Serial	1x RJ-11 connector: Two EIA-232 interfaces or one EIA-485 interface from CPU, without hardware flow control
	LEDs	5 LEDs reporting the board CPU health status and activity
	Reset	Reset push button
ONBOARD INTERFACES	Spare PCIe Link	Spare x1 PCIe link with clock
	M.2 module interface	Top M.2 slot for a 2D graphic module or a SSD module, compatible with a 12mm stacking height XMC slot. M.2 type M standard ping mapping for SSD module or 2D graphic module option Supported module: Type M, 22 mm x 42 mm.
	XMC Slot option	One x8 PCIe 2 provision for XMC slot option. X8d+X4s VITA 46.9 XMC I/O routing, 8 differential pairs plus 4 single ended pins For XMC slot option, please contact us because of thermal aspects.
VPX INTERFACE	Slot Profiles	SLT3-PAY-2F2U-14.2.3 SLT3-PAY-1F1F2U-14.2.4 SLT3-PAY-1F1U-14.2.10
	Rear I/O via P0/ P1/P2	▶ x8 PCIe 3.0, non transparent capability, on P1. Configurable as 1 x8, 2 x4, or 4 x2. ▶ 2 SATA 6 Gb/s links on P1, 2 additional SATA 6 Gb/s links on P2 ▶ 2 USB 2.0 and 1 USB 3.0 port on P1, 1 additional USB 2.0 link on P2 ▶ 2 serial lines (Rx, Tx only) on P2, for RS-232 or RS-422/485 by using dynamic configuration ▶ 2 10GBASE-KR or 1000BASE-KX on P1 ▶ 1 1000BASE-T on P1, 2nd 1000BASE-T on P2 (both front/rear switchable, onboard magnetics) ▶ GPIOs on P1: GPIO1, GPIO2/Maskable reset, OpenVPX GDISCRETE1, VBAT, SYSCON. 2x multiplexed GPIO3/4 or SFI I2C on P0 ▶ DVI port on P2 as option. This includes a M.2 mezzanine for 2D graphics.
	Supervisory Functions	▶ Non Maskable RESET ▶ NVMRO, Master SMBus and Master/Slave SMBus interfaces for system management. Compatible with Kontron CMB (Monitoring Board), temperature and voltage sensors on the board ▶ PCIe optional use of common reference clock feature
	Power Supplies	On P0: VS1=12V and 3.3V_AUX; VS2 not used; VS3=5V not used; -12V_AUX for XMC slot option
OS SUPPORT		Linux Fedora 21, ask for: Windows, VxWorks

▶ VX3058 BLOCK DIAGRAM AND FRONT PANEL



▶ ENVIRONMENTAL SPECIFICATION

	SA - Standard Commercial (1" single height passive module heat sink, forced air)	RC - Rugged Conduction-Cooled (Depending on processor frequency) VITA 48 REDI 2LM Cover as an option
CONFORMAL COATING	Optional	Standard
AIRFLOW	20 cfm typ. for 35 W TDP	NA
COOLING METHOD	Convection	Conduction
OPERATING TEMPERATURE	0° to +55°C	-40° to +70°C or +85°C
STORAGE TEMPERATURE	-45° to +85°C	-45° to +100°C
VIBRATION SINE (OPERATING)	20-500 Hz - 2g	20-2,000 Hz - 5g
RANDOM	VITA 47-Class V1	VITA 47-Class V3
SHOCK (OPERATING)	20g/11 ms Half Sine	40g/11 ms Half Sine
ALTITUDE (OPERATING)	-1,500 to 60,000 ft	-1,500 to 60,000 ft
RELATIVE HUMIDITY	90% without condensation	95% without condensation

▶ ORDERING INFORMATION

Preferred versions. For ordering information of any other configurations, please ask your local sales representative.

ARTICLE	ORDER CODE	DESCRIPTION
VX3058	VX3058SA8F1150000	3U VPX SBC AIR COOLED 5HP (1''), 8 core Intel® Xeon® D processor, D-1537 1.7 GHz, 16 GB DDR4-SDRAM with ECC, I/O: 2x 10 GbE, 3x USB (1 USB3), 4x SATA, PCIe x8 gen3, Air Cooled 'SA' (0°C to +55°)
VX3058	VX3058SA8F1151000	3U VPX SBC AIR COOLED 5HP (1''), 8 core Intel® Xeon® D processor, D-1537 1.7 GHz, 16 GB DDR4-SDRAM with ECC, I/O: 2x 10 GbE, 3x USB (1 USB3), 4x SATA, PCIe x8 gen3, Front/Rear 2D Graphics HDMI Air Cooled 'SA' (0°C to +55°)
VX3058	VX3058RC8F0150000	3U VPX SBC CONDUCTION COOLED 5HP (1''), 8 core Intel® Xeon® D processor D-1539 1.6 GHz 16 GB DDR4-SDRAM with ECC, I/O: 2x 10 GbE, 2x 1GbE, 4x USB (1 USB3), 4x SATA, PCIe x8 gen3 Rugged 'RC' build, Operating -40°C to +70°C , see User's Guide

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