

XVR19

Intel® Xeon® Based Rugged VME Single Board Computer

The XVR19 rugged single board computer (SBC) from Abaco Systems features the highly integrated Intel Xeon E3-1505 v6 processor platform in either the high performance or low power CPU variation.

Xeon offers integrated graphics and memory controller plus quad core processing up to 3.0 GHz all in one device. Coupled with the Intel CM238 chipset this provides an unmatched level of I/O bandwidth for both on-board and off-board functions.

Features of the Xeon processor

- Graphics support for DirectX 12, OpenCL 2.0, OpenGL 4.4
- 5 to 15% CPU performance boost over 5th generation
- Intel TurboBoost Technology
- Intel AVX 2.0 extensions and AES-NI instructions
- Hardware-assisted security features
- Hyper-Threading Technology – two threads per core
- PCIe GEN3 capable PEG ports

In addition to a comprehensive range of onboard I/O features, the XVR19 also offers up to two on-board mezzanine expansion sites for enhanced system flexibility, both of which offer PMC and XMC capability. Memory resources include up to 32 GB DDR4 SDRAM, 512 KB NVRAM, up to 64 GB BGA NAND SSD, BIOS Flash and BIOS backup Flash.

The XVR19 is designed to meet the requirements of a wide range of applications from commercial and industrial through to fully rugged defense and aerospace programs. It offers extended temperature capability and a range of air cooled build levels.

A rich software choice is planned for the XVR19, including comprehensive Built-in Test (BIT) plus OS (64-bit) support for Windows 10, Fedora and RedHat Linux, and VxWorks®.

FEATURES:

- Single slot 6U VME Single Board Computer
- Intel Xeon E3-1505M or E3-1505L Quad Core CPU (7th Generation Intel Core technology)
- Two channels of soldered DDR4 SDRAM with ECC up to 32 GB
- Up to 8 MB shared cache
- Up to 64 GB BGA NAND SSD
- On-board PMC/XMC Expansion sites
- 1x XMC - x8 PCIe
- 1x optional XMC x4 PCIe
- 2x PMC (1x optional); PCI-X 100
- Comprehensive range of front and rear I/O features
- BIOS backup Flash
- Optional extended operating temperature range
- Windows®, Linux® and VxWorks OS support

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Specifications

Processor

- Intel Xeon processor
 - E3-1505M v6 @ 3.0 GHz (45W) base frequency, up to 4.0 GHz TurboBoost
 - E3-1505L v6 @ 2.2 GHz (25W) base frequency, 3.0 GHz Turbo. (Note: CPU speed is dependent on environment, consult manual for details)
- 14 nm monolithic die processing technology
- 8 MB Last Level Cache

SDRAM

- Maximum memory configuration of dual channels up to 32 GB DDR4 SDRAM soldered with ECC

Onboard SSD

- Up to 64 GB BGA SSD

BIOS

- 1x 16 Mb SPI Flash each for BIT and BIOS plus 1x 16 Mb SPI Flash for BIOS backup

Ethernet

- Gigabit Ethernet interface via Intel I210 Gigabit Ethernet controller – routed to front panel. Second I210 front panel GbE port is optional (precludes use of XMC / PMC site 2)
- Dual Gigabit Ethernet interface via one Intel I210 and one Intel I219 Gigabit Ethernet controllers – routed to rear

VMEbus Backplane Interface

- 2eSST capable via new Vivo interface

USB Ports

- Two USB 2.0 ports routed to rear P2 connector
- One USB 3.0 port routed to front panel
- Two USB 3.0 port (optional) routed to front panel (precludes use of XMC/PMC site 2)

Serial Ports

- Three 16550 compatible full duplex async serial ports
- One routed to front panel RS-232 (COM3)
- Two (COM1-2) routed to P2, with user selectable RS-232/422/485
- Ports feature independent 16-byte FIFO supporting baud rates up to 115 Kbaud

PMC/XMC Expansion

- Up to two on-board mezzanine expansion sites
 - Site 1 PMC (PCI-X up to 64-bit /100 MHz) and XMC (x8 PCIe Gen 2) capable; PMC rear IO routed to P2
 - Site 2 PMC (PCI-X up to 64-bit /100 MHz) and XMC (x4 PCIe); PMC and XMC rear IO routed to P0
- PCI signaling is 3.3V, 5V tolerant
- 25W per site capable mezzanine power supply (combined 3.3V and 5V rails)
- 12.5W per site capable without thermal degradation

Video

- Up to three independent displays
 - One DisplayPort routed to front panel
 - Two DVI ports routed to P0/P2 connectors. P0 DVI port availability is option dependant.

SATA

- Two SATA ports to rear I/O P2
- Two SATA ports to rear I/O P0 (option dependant)
- One eSATA port (optional) routed to front panel (precludes use of XMC/PMC site 2)

GPIO

- 8 GPIO pins -- software configurable

LED

- 3x status LEDs and four BIT status

Power Requirements

- +5V, +3.3V
- ±12V for mezzanine only

NVRAM/Watchdog/Timers/TPM

- 512 KB non-volatile RAM (NVRAM)
- Software programmable watchdog timer
- Two 32-bit Timers in CPLD (SW programmable)
- HW support for TXT [VPRO]

Temperature Sensor

- Onboard ambient temperature; CPU

Transition Modules

- New RTM with Mezzio sites (VTM29)

Other HW Features

- Hardware Write Protection
- Front power button
- BMC (IPMI)

Environmental

	Level 1	Level 2	Level 3
Cooling Method	Convection	Convection	Convection
Conformal Coating	Optional	Standard	Standard
High/Low Temp	0 to +55° C	-20 to +65° C	-40 to +75° C
Operational	(300 ft/m)	(300 ft/m)	(600 ft/m)
Random Vibration	0.002g2/Hz*	0.002g2/Hz*	0.04g2/Hz**
Shock	20g***	20g***	20g***

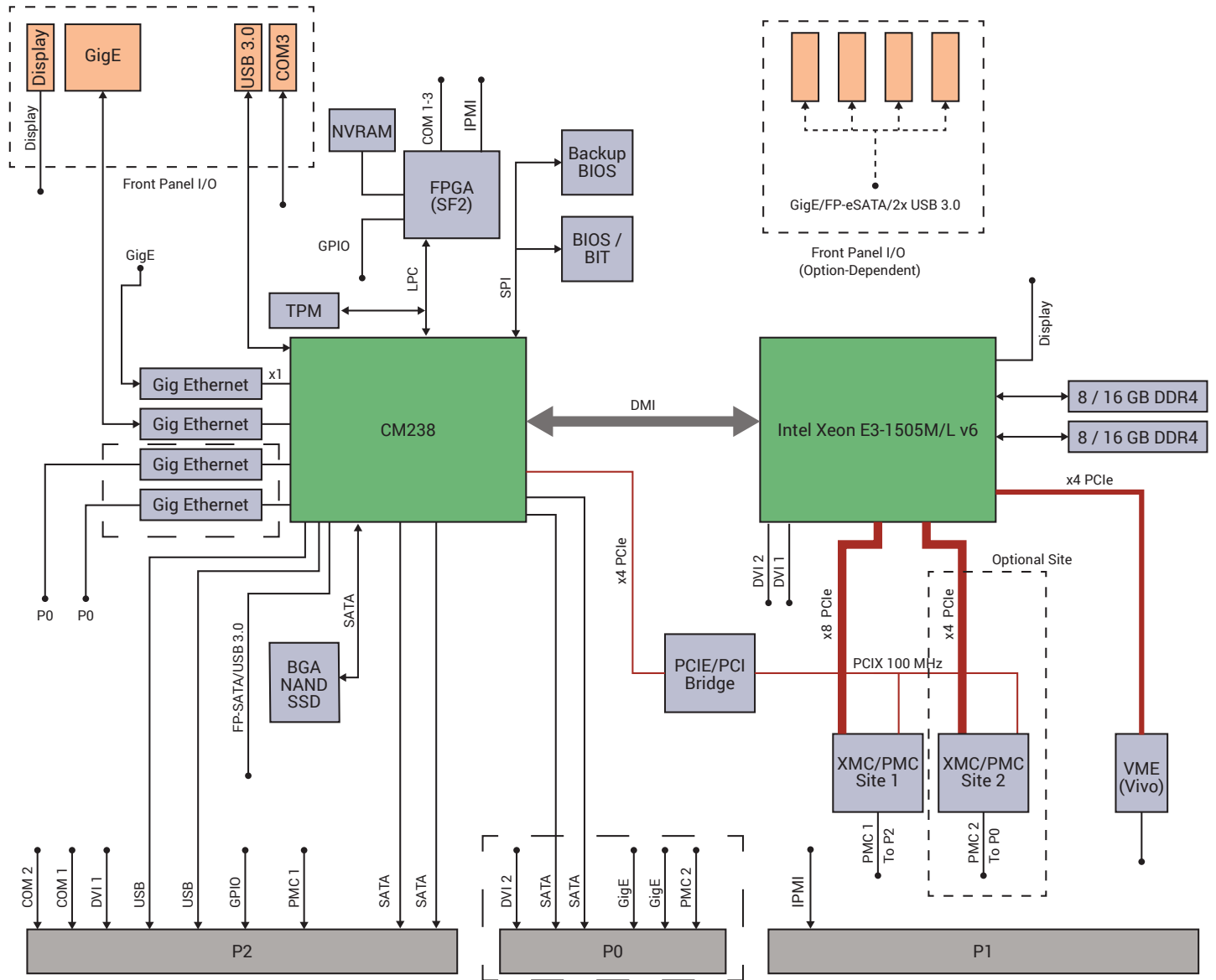
* from 10 to 2000 Hz random and 2g sinusoidal from 5 to 500 Hz. ** With a flat response to 1000 Hz, 6 dB/Oct roll-off from 1000 to 2000 Hz *** Peak sawtooth 11 ms duration

Note : Processor performance and temperature are inter-dependent. For a given temperature, a maximum speed is achievable, and conversely for a given processor speed a maximum temperature is achievable. Consult the product manual for details

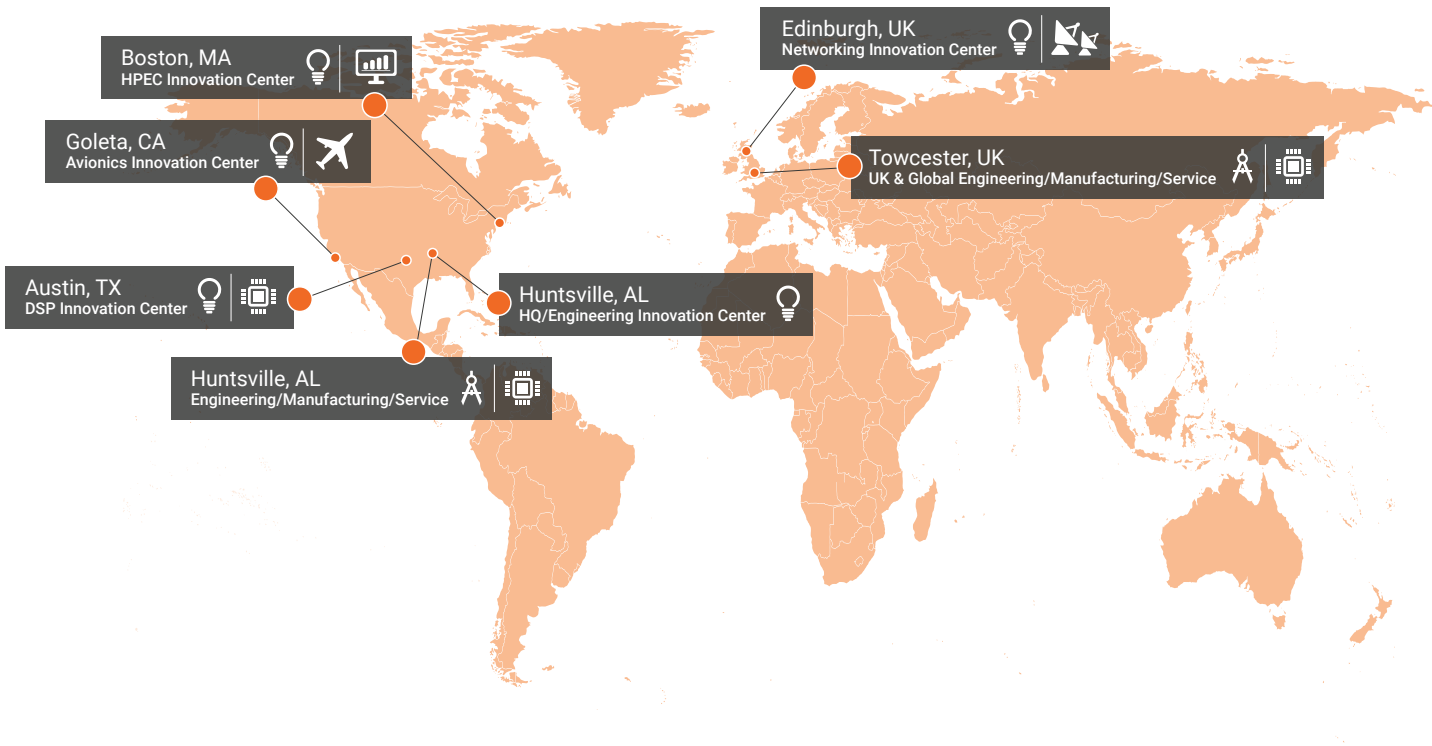


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Block diagram



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