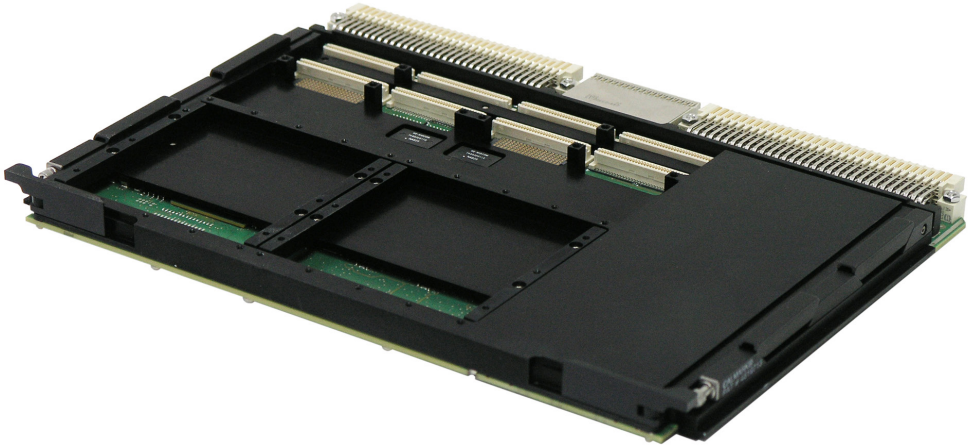


XVR15

3rd Generation Intel® Core™ i7 Based Rugged VME Single Board Computer

Features of the 3rd Generation Core i7 processor

- Up to 20% (compute) and 30% (3D graphics) performance improvement over previous generation
- Advanced Vector Extensions (AVX) signal processing
- Intelligent performance on-demand with Intel Turbo Boost Technology
- PCIe GEN 3 (8 GT/sec) and USB 3.0 (10x the Bandwidth of 2.0) data transfer capability
- Hyper-Thread Technology – 2 threads per core

In addition to a comprehensive range of onboard I/O features, the XVR15 also offers two on-board mezzanine expansion sites for enhanced system flexibility, both of which offer PMC and XMC capability. Memory resources include up to 16 GB DDR3 SDRAM, 8 GB Solid State Disk Drive, optional SATA hard drive, BIOS Flash and BIOS backup Flash.

The XVR15 is designed to meet the requirements of a wide range of applications from industrial through to fully rugged Defense and Aerospace programs. It offers extended temperature capability and a range of air and conduction cooled build levels.

A rich software choice is planned for the XVR15, including comprehensive Deployed Test Software (BIT and BCS) plus OS support for Windows 7, Open Linux, Wind River Linux, VxWorks®.

FEATURES:

- Single slot 6U VME Single Board Computer
- 3rd Generation Intel® Core™ i7 dual and quad core processors
- Integrated two channels up to 16 GB soldered DDR3 SDRAM with ECC
- Up to 6 MB shared cache
- Up to 8 GB Solid State Disk Drive
- Dual on-board Expansion Sites: two PCI-X PMC and two x8 PCIe XMC
- BIOS backup Flash
- Optional on-board SATA HDD
- Front I/O:
  - 2x Gigabit Ethernet ports
  - 1x VGA
  - 1x USB port
  - 1x COM port
  - 1x eSATA (optional)
  - 1x USB 3.0 (optional)
- Rear IO:
  - 2x Gigabit Ethernet ports (VITA 31.1)
  - 1x VGA (2 ports possible if front IO not required)
  - 2x DVI
  - Up to 4x SATA ports
  - 2x COM ports
  - 2x USB 2.0 ports (1 upgradable to USB3.0 in place of 1 SATA port)
  - 1x Audio
  - 12x GPIO
  - 2x PMC rear I/O
  - 1x XMC rear I/O
- Optional conduction cooling
- Optional extended operating temperature range
- Deployed Test Software
- Microsoft® Windows®, Linux® and Real-Time OS support

abaco SYSTEMS

XVR15 *3rd Generation Intel® Core™ i7 Based Rugged VME Single Board Computer*

Specifications

Processor
- Intel 3rd Gen. Core i7 Processor, options include but are not limited to
  - i7-3615QE (Quad Core) @ 2.3 GHz (45W)
  - i7-3555LE (Dual Core) @ 2.5 GHz (25W)
  - i7-3517UE (Dual Core) @ 1.7 GHz (17W)
  - (CPU speed is dependent on environment, consult manual for details)
- 22nm monolithic die processing technology
- Last Level Cache
  - 6 MB (Quad i7)
  - 4 MB (Dual i7)

SDRAM
- Maximum memory configuration of dual channels up to 16 GB DDR3 SDRAM soldered with ECC

Flash Memory
- Soldered Solid State Disk Drive up to 8 GB

BIOS
- 1x 16 Mb for BIT and BIOS plus 1x 16 Mb for redundancy

Ethernet
- Dual Gigabit Ethernet interface via two Intel 82574 Gigabit Ethernet controllers – routed to front panel
- Dual Gigabit Ethernet interface via two Intel 82574 Gigabit Ethernet controllers – routed to rear

USB Ports
- Two USB 2.0 ports routed to rear P2 connector (one of which is upgradable to USB 3.0 in place of 1 SATA port)
- One USB 2.0 port routed to front panel
- One USB 3.0 port (optional) routed to front panel (precludes use of XMC / PMC site 2)

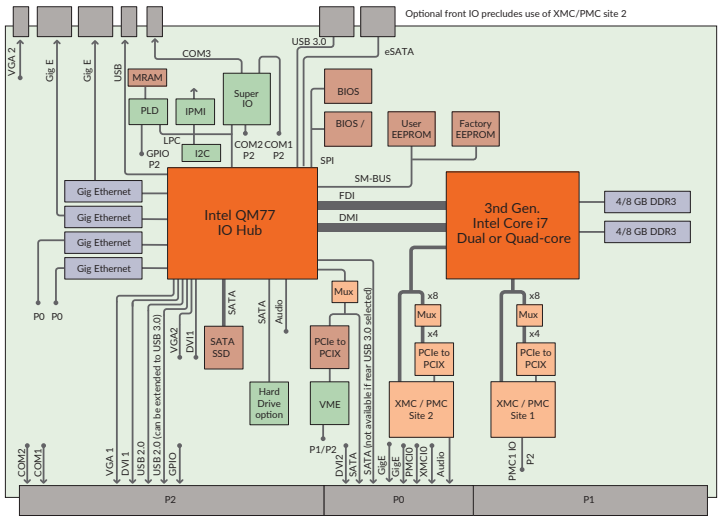
VME Backplane Interface
- 2eSST capable via TSi148 (ANSI/VITA 1.5-2003 offering bandwidths up to 320 MB/s)

Serial Ports
- Three 16550 compatible full duplex async serial ports
- One routed to front panel RS-232 (COM3)
- Two 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 /133 MHz) and XMC (x8 PCIe Gen 2) capable; PMC rear IO routed to P2
  - Site 2 PMC (PCI-X up to 64-bit /133 MHz) and XMC (x8 PCIe Gen 2) capable; PMC and XMC rear IO routed to P0
- PCI signaling is 3.3V, 5V tolerant; +/- 12V mezzanine only
- 25W per site capable mezzanine power supply

Audio
- High Definition Audio Codec
- Stereo line in and stereo line out

Block diagram



Video
- One VGA port routed to front panel
- One VGA port routed to P2; can be two ports if front I/O not used
- Two DVI ports routed to rear I/O P0/P2

SATA
- Up to four SATA ports to rear I/O
- One eSATA port (optional) routed to front panel (precludes use of XMC / PMC site 2)

GPIO
- 12 GPIO pins – software configurable

On-board Hard Drive
- SATA hard drive or SSD can be optionally ordered (precludes use of PMC/XMC site 2)

LED (not in conduction-cooled style)
- 3x status LEDs and four BIT status on front panel
- Two status LEDs on rear

Power Requirements
- +5, +3.3V
- +12V for mezzanine only

MRAM/Watchdog/Real-Time Clock/TPM
- 512 kB non-volatile RAM (MRAM)
- SuperIO watchdog
- Real-time clock in Cougar Point PCH

Temperature Sensor
- Onboard ambient temperature; CPU

Other HW Features
- Hardware Write Protection
- Front power button LED
- IPMI 2.0 Controller (PICMG 2.9)

Transition Module
- VTM26

Environmental

	Level 1	Level 2	Level 3	Level 4	Level 5
Cooling Method	Convection	Convection	Convection	Conduction	Conduction
Conformal Coating	Optional	Standard	Standard	Standard	Standard
High/Low Temp	0 to 55°C	-20 to +65°C	-40 to +75°C	-40 to +75°C	-40 to +85°C
Operational	(300 ft/m)	(300 ft/m)	(600 ft/m)	At cold wall	At cold wall
Random Vibration	0.002g2/Hz*	0.002g2/Hz*	0.04g2/Hz**	0.1g2/Hz**	0.1g2/Hz**
Shock	20g***	20g***	20g***	40g***	40g***

* With a flat response to 1000 Hz, 6 dB/Oct roll-off from 1000 to 2000 Hz ** From 10 to 1000 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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