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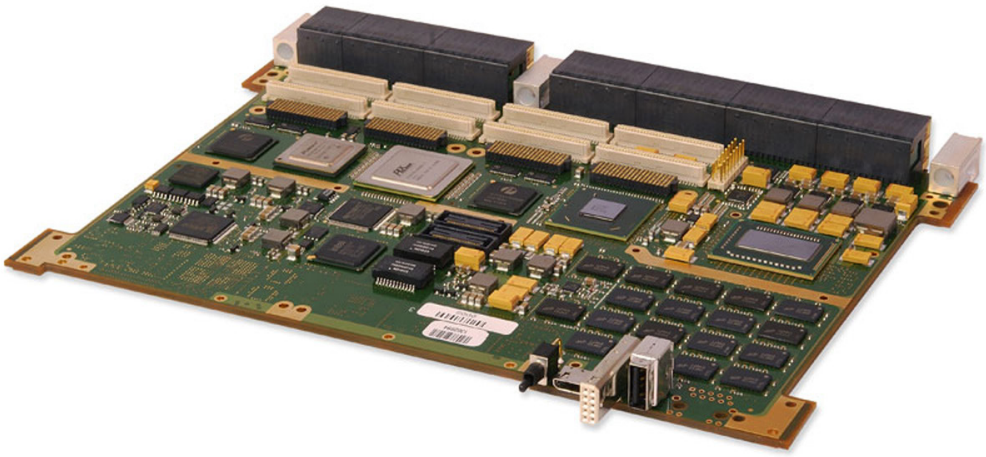
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Find the *Abaco Systems SBC624* at our website: *Click HERE*



SBC624

6U OpenVPX 2nd Generation Intel® Core™ i7 based Single Board Computer

The SBC624 Rugged Single Board Computer (SBC) from Abaco Systems features the high performance, highly integrated 2nd Generation Core i7 processor platform from Intel.

2nd Generation Core i7 with fully integrated graphics and memory controller plus dual and quad core processing up to 2.5 GHz offers better performance per watt — all in one device. Coupled with the Intel QM67 chipset, this provides an unmatched level of I/O bandwidth for both on-board and off-board functions.

Features of the 2nd Gen Core i7 processor

- Advanced Vector Extensions (AVX) signal processing
  - Intel's AVX doubles the vector register size from 128 to 256 bits for up to a 2x FLOP improvement
- Intel® vPro technology:
  - Intel® VT adds hardware assisted performance acceleration
  - Intel® TXT is a hardware based security foundation to build and maintain a chain of trust, to protect the platform from software based attacks
- Advanced Encryption Standard (AES)
- Intelligent performance on-demand with Intel Turbo Boost Technology
- Hyper-Thread Technology – 2 threads per core - provides increased performance and processing efficiency

In addition to a comprehensive range of onboard IO features, the SBC624 also offers on-board XMC mezzanine expansion sites for enhanced system flexibility. Memory resources include up to 16 GB DDR3 SDRAM with ECC, and 16 GB on board SSD (NAND Flash).

The SBC624 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 SBC624, including comprehensive Deployed Test Software (BIT and BCS) plus OS support for Windows 7, Open Linux, VxWorks®, LynxOS® and LynxOS-SE®

FEATURES:

- 6U OpenVPX Single Board Computer
- 2nd Generation Intel Core i7 dual and quad core processors
- Dual channel DDR3 (up to 16 GB) @ 1333 MHz
- Up to 16 GB Solid State Disk Drive
- 512 kB MRAM (non-volatile storage)
- VITA65 OpenVPX Payload
  - MOD6-PAY-4F1Q2U2T-12.2.1-8
- Data Plane Fabric
  - 2x 10Gigabit Ethernet with RDMA or
  - 2x Infiniband ports with RDMA
- Expansion Plane Fabric
  - Multiple PCIe configurations (Gen 2)
  - 1 x16 link, 2 x8 links, 4 x4 links
- Control Plane Fabric
  - 2x 10/100/1000Base-BX (SERDES Ethernet)
- Rear IO
  - 2x 10/100/1000BaseT (one shared with front IO)
  - 2x COM port (RS-232/422)
  - 6x USB 2.0 ports
  - 3x SATA ports
  - 8x GPIO lines
  - VGA
  - DVI / HDMI
  - HD Audio
  - PS2 Keyboard and Mouse
- Front IO
  - 1x 10/100/1000BaseT (shared rear IO)
  - 1x COM port (RS-232/422)
  - 1x USB 2.0 port
  - DVI / HDMI
- Dual on-board Expansion sites
  - XMC's - one x4, one x8 PCIe Gen 2
  - PMC's – both PCI-X 133 MHz
- Baseboard Management Controller
- Trusted Platform Monitor (TPM)
- Elapsed time Indicator (ETI)
- Deployed test Software
- Windows / Linux and Real-Time OS support
- Five Levels of Ruggedization

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SBC624 *6U OpenVPX 2nd Generation Intel® Core™ i7 based Single Board Computer*

Specifications

Processor

- Intel 2nd Generation Core i7 Processor, options include but are not limited to
  - i7-2715QE (Quad core) @ 2.1 GHz (45W)
  - i5-2515E (Dual core) @ 2.5 GHz (35W)
  - i7-2655LE (Dual core) @ 2.2 GHz (25W)
  - i7-2610UE (Dual core) @ 1.5 GHz (17W)

(Actual speed/power is dependent on environment)

- 32nm monolithic die processing technology
- Last Level Cache
  - 6 MB (Quad i7)
  - 4 MB (Dual i7)
  - 3 MB (Dual i5)

SDRAM

- Maximum memory configuration of up to 16 GB DDR3 SDRAM @ 1333 MHz with ECC

Solid State Disk Drive (on board NAND Flash)

- Up to 16 GB

Gigabit Ethernet

- 2x 10/100/1000BaseT – routed to P4 (one also routed to front panel)
- 2x 10/100/1000BaseBX – routed to P4

USB Ports

- 6x USB 2.0 ports routed to P4/P5
- 1x USB 2.0 ports routed to front panel

Fabric Interface

- Expansion plane: x16 PCIe, 2 x8 PCIe, or 4 x4 PCIe to P2 (1 port non-transparent capable)
- Data plane: 2x 10Gigabit Ethernet or 2x Infiniband ports to P1 with RDMA capability

OpenVPX Profile

- Module Profile: MOD6-PAY-4F1Q2U2T-12.2.1-8

Serial Ports

- Three 16550 compatible serial ports
  - COM1 routed to P3 RS-232/422
  - COM2 routed to P4 RS-232/422
  - COM3 routed to front panel RS-232/422

Serial ATA

- 2x SATA 3 capable (6 Gb/s)
- 1x SATA 2 capable (3 Gb/s)
- Routed to P6

Audio

- High Definition Audio (connects to external CODEC) routed to P5

Video Controller

- 1x VGA port routed to P6
- 2x DVI/HDMI ports routed to P6 and front panel

General Purpose I/O

- Up to 8x GPIO, 5V tolerant, each capable of generating an interrupt.

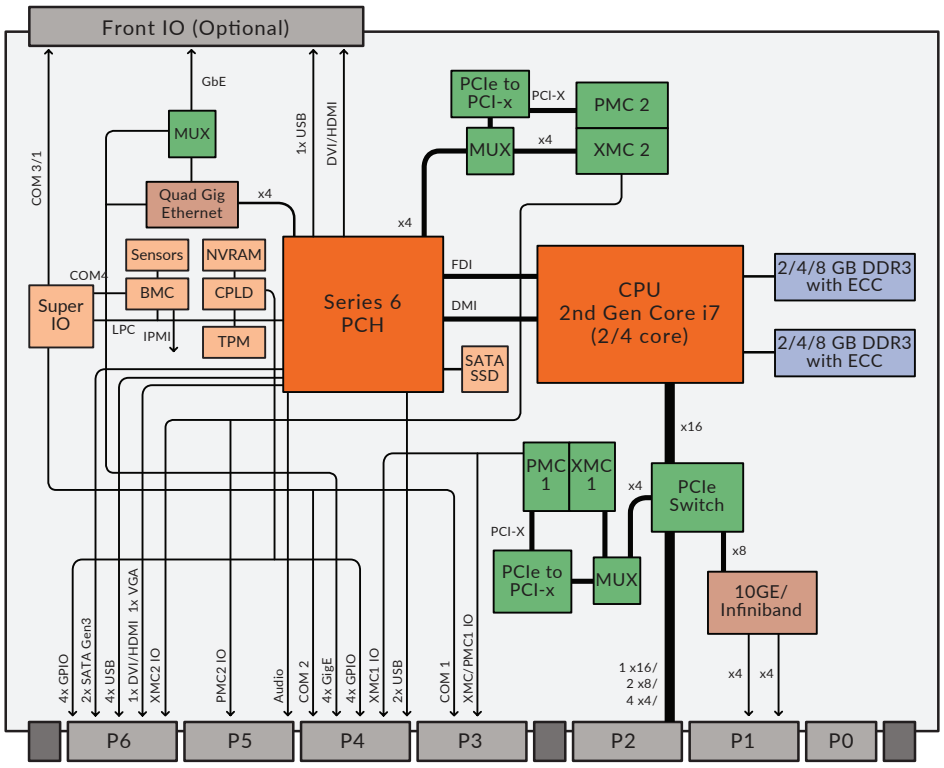
LED

- 1x power, 4x BIT status (software control

Power Requirements

- + 12V and +5V

Block diagram



PMC / XMC Extension Slots

- Site 1
  - x8 PCIe XMC site / PCI-X 133 MHz PMC site (P3/4)
- Site 2
  - x4 PCIe XMC site / PCI-X 133 MHz PMC site (P5/6)

NVRAM / Watchdog / ETI / TPM

- 512kB non-volatile RAM (MRAM)
- Watchdog timer (software programmable)
- Elapsed Time Indicator
- Temperature Sensors
- TPM (Trusted Platform Module)
- Baseboard Management Controller (IPMI)

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: The SBC624 is designed to provide flexibility and scalability to the user. Use of the XMC I/O affects the availability of other I/O features. Due to the nature of multiplexed signals, I/O configurations also may be limited. Please contact your Abaco Systems representative for viable configurations.

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