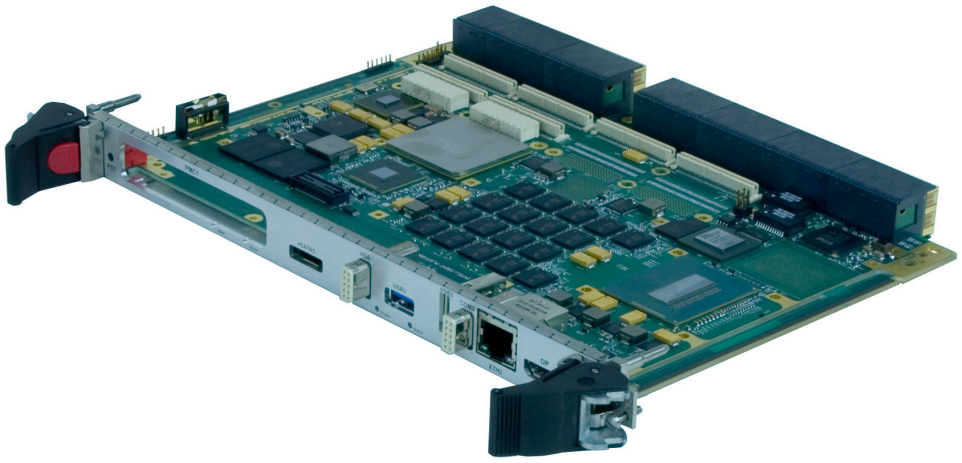


SBC627

6U OpenVPX 5th Generation Intel® Core™ i7-based Single Board Computer

The SBC627 Rugged Single Board computer (SBC) features the high performance, highly integrated 5th Generation Intel Core i7 processor platform, which offers integrated graphics and ECC memory controllers plus quad-core processing up to 2.7 GHz all in one device (14 nm monolithic process).

Coupled with the Mobile Intel QM87 Express Chipset this provides an unmatched level of I/O bandwidth for both on-board and off-board functions.

Features of the 5th Generation Core i7

- Graphics support for DX11.1, OpenCL 1.2, OpenGL 3.2
- 5 to 15% CPU performance boost over 4th generation
- Intel TurboBoost Technology
- Intel AVX 2.0 extensions and AES-NI instructions
- Hardware-assisted security features
- Hyper-Threading Technology – two threads per core

In addition to a comprehensive range of onboard I/O features, the SBC627 also offers on-board XMC mezzanine expansion sites for enhanced system flexibility. Memory resources include up to 32 GB DDR3 SDRAM with ECC, and 32 GB onboard SSD (NAND Flash).

The SBC627 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 SBC627, including comprehensive Deployed Test Software (FSP-enabled BIT, and BCS) plus operating system support for Microsoft Windows 7, Open Linux (Fedora), Red Hat® Enterprise Linux, Wind River Linux, and VxWorks®. Examples and assistance are also available for integrating 'chain of trust' operation (from power-up to application start), plus Wind River's FSP-enabled VxWorks Boot Loader, into system scenarios.

Security Hub

The SBC627 includes an optional Security Hub FPGA. The FPGA combines a mix of passive and active features to allow customers to develop a robust on-board anti-tamper capability. The SBC627 also incorporates a range of security features designed to assist with user defined Anti-Tamper and Information Assurance strategies. These include an inherently secure FPGA solution (SmartFusion2 from Microsemi), and support for Intel's Trusted Execution Technology.

FEATURES:

- SmartFusion2
- 6U OpenVPX single board computer
- 5th Generation Intel® Core™ i7
- Soldered DDR3 SDRAM with ECC
- Up to 32 GB solid state disk drive
- Up to 6 MB shared cache
- Multiple Data Plane Fabric Configurations
- Multiple PCIe® Expansion Plane Fabric configurations
- Both rear & front I/O ports
- On-board expansion sites
- Trusted Platform Monitor (TPM)
- Elapsed Time Indicator (ETI)
- Rich software choice, including Deployed Test Software, plus operating systems support for Microsoft® Windows / Open Linux® and real-time operating system support

abaco SYSTEMS

SBC627 *6U OpenVPX 5th Generation Intel® Core™ i7-based Single Board Computer*

Specifications

Processor
- Intel 5th Gen. Core i7 Processor, options include but are not limited to
- I7-5850EQ (Quad Core) @ 2.7 GHz (47W) (CPU speed is dependent on environment, consult manual for details)
- 14 nm monolithic die processing technology
- Last Level Cache
  - 6 MB

SDRAM
- Maximum memory configuration of up to 32 GB DDR3 SDRAM @ 1333/1600 MHz with ECC

SSD Drive (on board NAND Flash)
- Up to 32 GB via SATA interface

OpenVPX Module Profiles
- MOD6-PAY-4F1Q2U2T-12.2.1-8
- MOD6-PAY-4F1Q2U2T-12.2.1-13
- MOD6-PAY-4F1Q2U2T-12.2.1-15

USB Ports
- 6x USB 2.0 ports routed to P4/P6
- [Up to 2 ports can be upgraded to USB 3.0, replacing 2 SATA ports]
- Up to 2x USB ports routed to front panel.
  - 1x USB 2.0 port
  - 1x USB 3.0 (optional) precludes use of XMC/PMC site 2

Expansion Plane
- x16 PCIe, 2 x8 PCIe, or 4 x4 PCIe from a Gen3 capable switch to P2 (1 port non-transparent capable)

Data Plane
- 2x 10/40 Gigabit Ethernet
  or
- 2x DDR Infiniband ports
  Either routed to P1 with RDMA capability

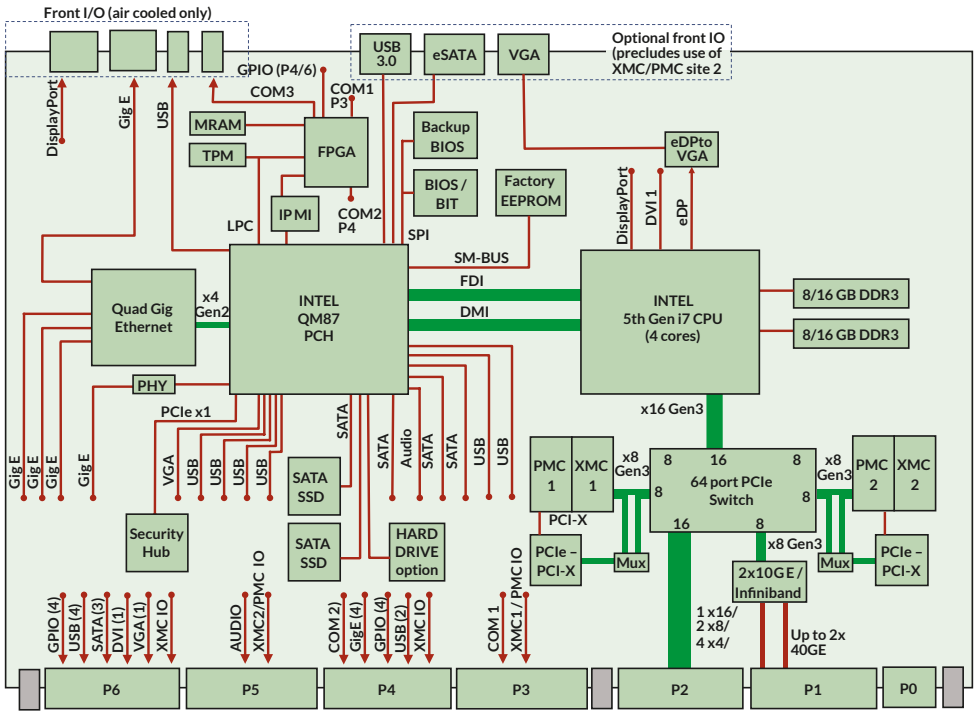
Control Plane
- 2x 10/100/1000BASE-BX – routed to P4
- 2x 10/100/1000BASE-T – routed to P4
- 1x 10/100/1000BASE-T - routed to front panel (air-cooled only)

Management Plane
- IPMI (Baseboard Management Controller)

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), routed to P6
- 1x SATA 2 capable (3 Gb/s), routed to P6
- Optional 1x eSATA port routed to front panel (precludes use of XMC/PMC site 2)

Block diagram



Audio
- High Definition Audio [routed to P5] with option for CODEC either on-board or on RTM

Video Controller
- 1x VGA port routed to P6
- 1x DVI/HDMI port routed to P6
- 1x DisplayPort routed to front panel
- 1x Front Panel VGA (optional) precludes use of XMC/PMC site 2

General Purpose I/O
- Up to 8x GPIO, 5V tolerant, each capable of generating an interrupt.

PMC / XMC Expansion Slots
- Both sites (one routed to P3/P4, one to P5/P6)
  - XMC - x8 PCIe Gen3
  - PMC - PCI-X 133 MHz

FPGA
- SmartFusion2 FPGA with advanced security features
  - Enhanced Anti-Tamper features
  - Zeroization
- Option Xilinx 7 Security Hub

LED
- 1x power
- 4x BIT status (software control)

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

Power Requirements
- +12V and +5V

WE INNOVATE. WE DELIVER. YOU SUCCEED.

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