DSP282A Dual Intel 5th Gen Quad Core i7

6U OpenVPX Deployed Server Platform

The Abaco Systems DSP282A is a rugged 5th generation, COTS multiprocessor that brings data center performance and scalability to deployed defense and aerospace applications.

Designed for size, weight and power (SWaP) sensitive applications, Abaco's high performance embedded computing (HPEC) platforms deliver expanded mission capabilities across a wide range of manned- and un-manned airborne, ground and naval platforms.

More GigaFLOPS , same SWaP

The DSP282A delivers up to 665.6 GFLOPS per card slot, and increased system bandwidth with two Intel® 5th gen quad Core™ i7 CPUs, up to 16 GB DDR3L main memory per processor, inter-node communication over PCIe™ gen 3 and OFED RDMA or Ethernet data plane via the latest Mellanox ConnectX™ -3 network interface controller (rNICs).

Planned technology insertion

Abaco launched the DSP28X platform architecture in 2011 with the DSP280 COTS Processor. Developers can leverage proven software support for this open architecture now with a clear path to the new DSP282A platform.

Open System Architecture (OSA)

Abaco Systems provides a rugged, scalable solution that builds on open standards from the wider high performance computing (HPC) and 'Big Data' communities to exploit widely used application programing interfaces (APIs), high performance middleware, libraries and productivity tools that greatly reduce cost of ownership, technical risk and time-to-deployment .

Sensor-, image- and data processing

Abaco goes further to fully exploit Intel's hyper-threaded multi-core platform with AXIS Advanced Multiprocessor Integrated Software. Developers can optimize and scale applications across Abaco's 3U and 6U OpenVPX HPEC solution sets that include Ethernet, GPGPU processors, SBCs and I/O modules.

Typical applications

- Back-end sensor- and image processing
- Radar, sonar, Multi-INT
- Display and mission computing
- Data and network gateways
- HPC clusters
- Distributed Ethernet clusters

FEATURES:

- Two Intel® Core™ i7-5700EQ (Broadwell class) CPUs - 2.6GHz:
  - 16 GB DDR3L with ECC
- Two platform controller hubs:
  - 16 MB BIOS Flash per PCH
  - 16 GB SATA NAND Flash
  - 256 KB NVRAM
- PCIe Gen 3
- Ethernet data plane: 10/40 Gigabit
- 2x HDMI/DVI outputs
- Control plane:
  - 2x 1000BASE SERDES
- User I/O:
  - 2x 1000BASE-T
  - 2x Serial
  - 2x USB-2
  - 2x USB-3
  - 4x SATA-3
  - GPIO
  - HD Audio
- UEFI BIOS
- Open Linux SDK
- AXISPro
- AXISLib
- AXIS ImageFlex
- Air cooled Level 1 - 3 (VITA 48.1 - 1" pitch)

abaco
S Y S T E M S

DSP282A *Dual Intel 5th Gen Quad Core i7 6U OpenVPX Deployed Server Platform*

Specifications

Processors
- 2x Intel ® Core ™ i7-5700EQ (Broadwell class) CPUs 0 2.6GHz
- Four cores, eight threads per CPU
- 16 GB DDR3L with ECC
- AVX2.0 Advanced vector Extensions

Two Platform Controlled Hubs
- 16 MB BIOS Flash per PCH
- 16 GB SATA NAND Flash
- 256 KB NVRAM

PCIe Gen 3
- 48-lane switch for P1 data plane Ethernet comms and P2 expansion plane
- 16-lane for inter-node comms with DMA

Ethernet Data Plane
- 10/40 Gigabit

Two HDMI/DVI
- via HD-5600 on-chip graphics (from Core™ i7-5700EQ CPUs)
- 1920 x 1200 @ 60Hz

Control Plane and User I/O
- Control plane: 2x 1000BASE SERDES with IEEE-1588 PTP (precision time protocol) support
- User I/O: 2x 1000BASE-T, 2x Serial, 2x USB-2, 2x USB-3, 4x SATA-3, GPIO, HD Audio

Firmware and OS Support
- UEFI BIOS
- Open Linux SDK

AXIS Advanced Multiprocessor Integrated Software
- AXISPro
- Open IPC Middleware Intel OpenCL SDKs, IPP and MKL
- AXISLib-AVX - AXISLib VSIPL and RSPL multi-threaded DSP and math libraries for VxWorks, Linux and Windows

Circuit Card Assembly (CCA) Build Levels
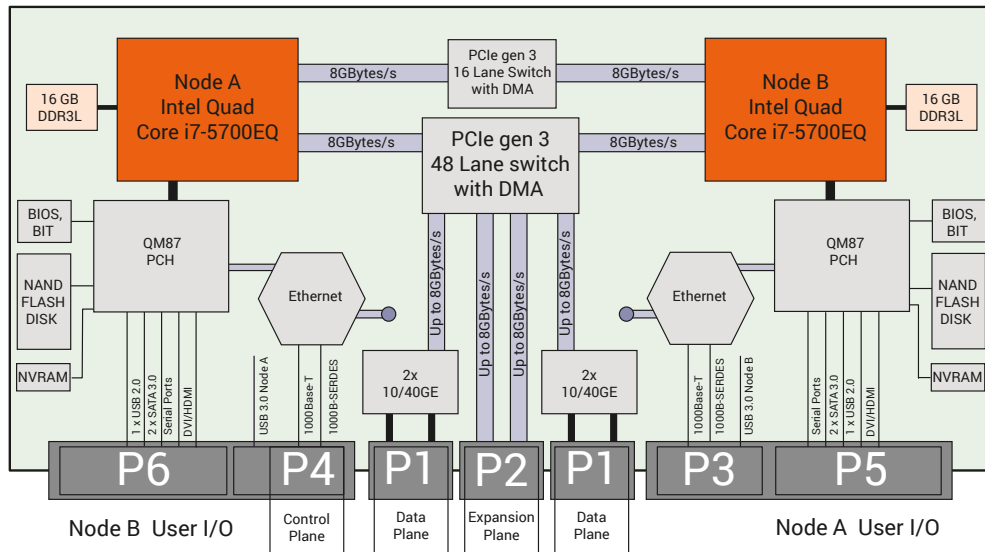- Air cooled Level 1-3 (VITA 48.1-1" pitch)

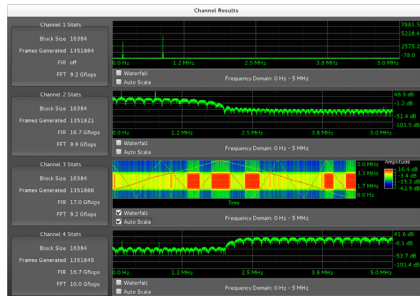### Weight
- Level 1-3 = 1300 g maximum

Dimensions
- The DSP282A occupies a single 6U VPX slot that includes a keying module in accordance with ANSI/VITA 46.0
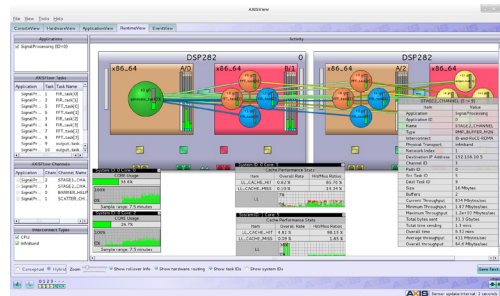
Block diagram

The AXISPro-01M development environment supports application optimization on multi-core, multi-threaded and multi-node distributed system architectures across multiple operating systems including Linux, Windows and VxWorks and includes quick start signal and image processing examples to accelerate time-to-solution.

AXIS RuntimeView screen shot – multi-threaded application on dual Intel Core-7 processor.

AXIS Quick Start application.

Ordering information

Contact Abaco Systems for pricing and availability.

WE INNOVATE. WE DELIVER. YOU SUCCEED.

Americas: 866-OK-ABACO or +1-866-652-2226   **Asia & Oceania:** +81-3-5544-3973

Europe, Africa, & Middle East: +44 (0) 1327-359444

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