DSP281 Dual Intel® 4th Gen Quad Core™ i7
6U OpenVPX Deployed Server Platform

Features
- Two Intel Core i7-4700EQ CPUs:
  - Four cores, eight threads per CPU
  - Two channels ECC 1600-DDR3L
  - 16GBytes DDR3L, 32GBytes future option
  - AVX2.0 Advanced Vector Extensions
  - HD-4600 on-chip graphics
- Two platform controller hubs:
  - 16MBytes BIOS Flash per PCH
  - 16GBytes SATA NAND Flash
  - 512KBytes NVRAM
- Platform security:
  - Configurable security hub FPGA
  - Intel Trusted Execution
  - Intel vPRO/AMT technology
  - Intel AES new instructions
- Firmware support:
  - Built-in Test
  - UEFI BIOS
- Operating system support:
  - Linux® SDK
  - Windows® SDK
  - WRS VxWorks® BSP
  - WRS Hypervisor

Middlewares and libraries:
- AXISPro application dev. framework
- AXISLib VSIPL and RSPL multi-threaded DSP and math libraries for VxWorks, Linux and Windows
- GE signal- and image processing quick start examples
- Intel OpenCL SDKs, IPP and MKL

Planning technology insertion
- Back-end sensor and image processing
- Radar, sonar, multi-INT
- Display and mission computing
- Data and network gateways
- InfiniBand HPC clusters
- Distributed Ethernet clusters

Developers can leverage proven software support from this open architecture now with a clear path to the new DSP281 Intel ‘Haswell’ platform to capture the latest micro-architecture/performance boost.

Open System Architecture (OSA)
GE Intelligent Platforms 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 programming interfaces (APIs), high performance middlewares, libraries and productivity tools that greatly reduce cost of ownership, technical risk and time to deployment.

Sensor-, image- and data processing
GE goes further to fully exploit Intel’s hyper-threaded multi-core platform with AXIS Advanced Multiprocessor Integrated Software. Developers can optimize and scale application across GE’s 3U and 6U OpenVPX HPEC solution sets that include Ethernet and InfiniBand SFMs, 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
- InfiniBand HPC clusters
- Distributed Ethernet clusters
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Specifications
- **6U OpenVPX VITA65**
  - SLT6-PAY-4F1Q2U2T-10.2.6
  - MOD6-PAY-4F1Q2U2T-12.2.1-8
- **Build options:**
  - VITA48.1-1” pitch convection cooled
  - VITA48.2-1” pitch conduction cooled
  - VITA48.5-1.2” pitch air flow through
- **Wide temperature, extended shock and vibration builds - consult factory**
- **Intel 4th gen Core processors:**
  - Quad core i7-4700EQ (eight threads)
  - 2.4GHz base frequency
- **Memory per CPU node:**
  - 6MBytes on-chip last level cache
  - 16GBytes DDR3L 1600 with ECC per CPU
  - 32GBytes per CPU future build option
  - 16MBytes BIOS, BIT & back-up Flash
  - 16GBytes SATA NAND Flash disk
  - 512KBytes NVRAM
- **OpenVPX I/O planes:**
  - **Management:** I2C with BMM
  - **Data:** 4 x Fat Pipes – InfiniBand or Ethernet via 2 x dual port Mellanox ConnectX-3 FDR InfiniBand / 56GE RDMA NICs
  - **Expansion:** 2 x Double Fat Pipes or 4 x Fat Pipes – PCIe via PLX Tech gen 3 switch with inter-node DMA via NT port
  - **Control:** 2 x 1000Base-T and 2 x 1000Base SERDES with IEEE-1588 PTP (precision time protocol) support
  - On-board Ethernet Switch network
  - **User I/O:** 2 x 1000Base-T vPRO ports, Serial, 4 x USB-2, 2 x USB-3, 4 x SATA-3, GPIO, HD audio
  - **Display:** 2 x HDMI/DVI, 2 x display port
  - **Front I/O:** 1000Base-T, 2 x SATA, 2 x Serial, 2 x display port (convection cooled builds only)

**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.

**Contact GE Intelligent Platforms for pricing and availability.**

**About GE Intelligent Platforms**

GE Intelligent Platforms is a division of GE that offers software, control systems, services, and expertise in automation and embedded computing. We offer a unique foundation of agile and reliable technology providing customers a sustainable competitive advantage in the industries they serve, including energy, water, consumer packaged goods, oil and gas, government and defense, and telecommunications. GE Intelligent Platforms is headquartered in Charlottesville, VA. For more information, visit www.ge-ip.com.

**GE Intelligent Platforms Contact Information**

Americas: 1 800 433 2682 or 1 434 978 5100
Global regional phone numbers are listed by location on our web site at defense.ge-ip.com/contact

defense.ge-ip.com

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