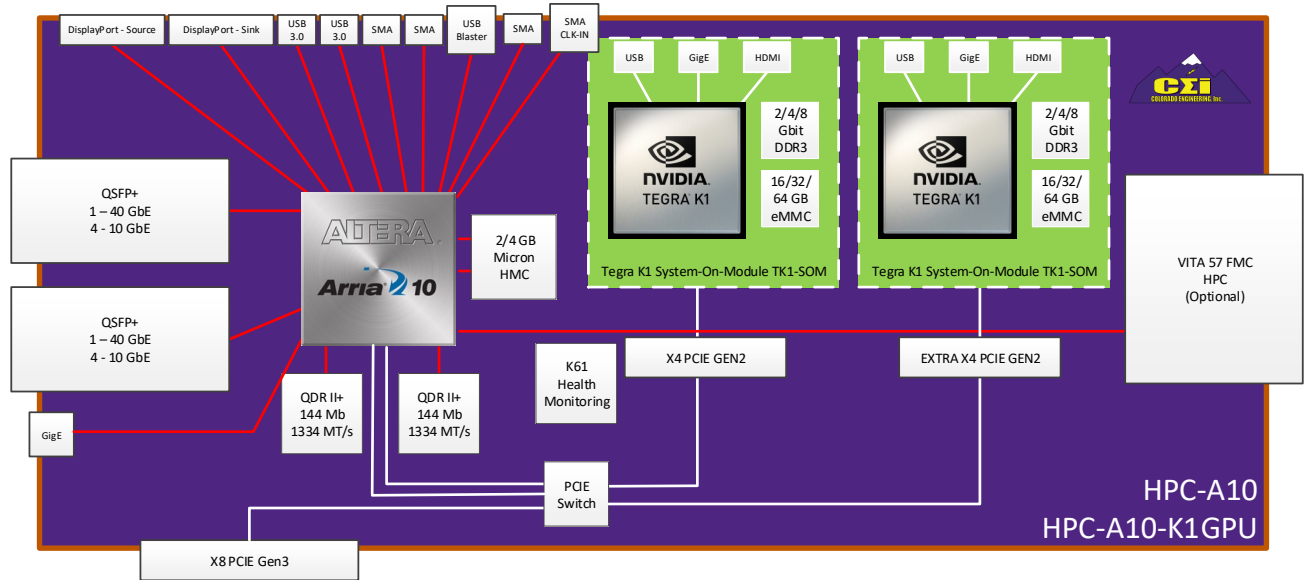


HPC-A10-K1GPU



PRODUCT DESCRIPTION

From video analytics to model & simulation to radar processing to computational finance to cyber security to broadcast video processing to image processing with OpenCV, the HPC-A10-K1GPU is the most versatile and highest performing FPGA accelerator card on the market. With the ability to now run standard OpenCL on the Altera Arria 10, the HPC-A10-K1GPU card can now be easily programmed without the need to dive down into complicated Verilog or VHDL code.

With dual 40 GbE ports, this card is agile enough to handle the most demanding networking applications. Unlike a traditional Host Bus Adapter (HBA), the HPC-A10-K1GPU can smartly pre/post data in the highly capable Altera Arria 10 and then feed external Tesla K40/K80 GPGPUs or Quadro GPU cards via GPUDirect.

The dual Tegra K1 GPU SoCs offer the integrator many new options. NVIDIA CUDA code can run on this card and interact with an Altera FPGA that is running OpenCL, Verilog or VHDL. The designer can preserve previous software and firmware development and move to this flexible platform.

For image processing, this card gives the developer many options. The Altera FPGA has extensive image processing IP available. USB3, DisplayPort, 1 GigE, 10 GbE and 40 GbE video streams can be handled by the FPGA while the NVIDIA GPU SoC handles USB and GigE streaming video. Whether you need to process millions or billions of minutes of video, upscale, downscale, stitch, H.264 encode/decode, H.265 encode/decode or work with 4K video, this card offers you the flexibility to hit your objective.

For radar/sonar processing, this card offers a scalable, backend processor that meets the objective of Modular Open Systems Architecture (MOSA). A highly capable, two channel Digital Receiver/Exciter (DREX) can be implemented using 4DSP FMCs and IP available from Altera.

CEI provides extensive systems engineering consulting and would be glad to discuss your needs.



SPECIFICATIONS

NVIDIA Tegra K1 GPU SoC	Hybrid Memory Cube RAM	MCU-Health Monitor
<ul style="list-style-type: none"> • 326 GLOPs • CUDA 6.5+ • OpenCL • 192 CUDA cores • 4 ARM cores • 16 GB eMMC flash • 2 GB DDR3 RAM • Standard Linux Support 	<ul style="list-style-type: none"> • 2 HMCs with either 2GB or 4GB capacities • 2/4 GB • Up to 17x faster than DDR3 • Up to 70% less power than DDR3 • Up to 80 GB/s raw memory bandwidth per Hybrid Memory Cube 	<ul style="list-style-type: none"> • Freescale Kinetis K61 (K61P144M150SF3) • Up to 150MHz ARM Cortex-M4 core • System configuration • Power sequencing • Power monitoring • User-defined functions
Arria 10 FPGA	FMC Site (VITA 57)	
<ul style="list-style-type: none"> • GX1150—10AX115 (Std) • GX900—10AX090 (Opt) • Native OpenCL support • GPUDirect support • 288 Mb QDR-II+ 	<ul style="list-style-type: none"> • 1150K LEs • 427,200 ALMs • 1,708,800 registers • 96 transceivers • 4 IP Gen3 PCIe blocks • 2,713 M20k memory blocks • 53 M20K memory • 1,518 variable DSP blocks • 3,306 GMACS • 1,366 GFLOPs 	<ul style="list-style-type: none"> • FMC site (VITA 57) • High pin count (HPC) • Rear I/O • Pre-integrated with 4DSP FMCs: ADC, DAC and mixed A/D & D/A options

CONFIGURATIONS

Model Number	Configuration
HPC-A10-K1GPU	Altera Arria 10 (GX1150), x2 NVIDIA Tegra K1
HPC-A10-K1GPU-FMC	Altera Arria 10 (GX1150), x2 NVIDIA Tegra K1 GPU SoCs, VITA 57 HPC FMC
HPC-A10-FMC	Altera Arria 10 (GX1150), VITA 57 HPC FMC
HPC-A10-K1GPU-VIDEO	Altera Arria 10 (GX1150), x2 NVIDIA Tegra K1 GPU SoCs, all video I/O
HPC-K1GPU	x2 NVIDIA Tegra K1 GPU SoCs
CUSTOM	For minimum order quantity of 25, CEI will modify to meet your specific needs

