Compression Accelerator

GX 1700 Series

The GX 1700 Series Compression Accelerator is pre-configured for high performance data storage applications. At the center of the GX 1700 Series are the GZIP v2 and GUNZIP v2 cores integrated on Altera's FPGAs. The GX 1700 Series Compression Accelerator is highly scalable and flexible to match the user's application requirements offering throughput in excess of 10Gbps.

The GX 1700 Series Advantage

Semiconductor IP cores can provide tremendous acceleration for compute intensive applications. However, systems integrators have had difficulty using IP cores, because they must be incorporated into an ASIC before it can be put to use in a system. The GX 1700 Series Compression Accelerator is a flexible framework of hardware and software that simplifies and speeds up the process of system IP integration.

The GX 1700 Series allows for multiple cores onto a single platform to achieve required system throughput. The cores are then connected through the GX 1700 Series Interconnect and a flexible "core wrapper" with the outer system using high performance, multi-channel DMA and PCI-Express interfaces. The GX 1700 Series Compression Accelerator provides command and status interfaces for each core.

The hardware platform operates under the control of Linux device drivers and enablement software that allows systems integrators to operate it with a high level, easy to use API.

The card is optimized to accelerate Exar's CeDeFS data compression system.

PRODUCT SPECIFICATIONS

GX 1741 Compression Accelerator

- Up to 10.8 Gb/sec of stateless compression performance
- Compression ratio up to 3:3:1 with Dynamic Huffman Tables

FPGA-based design offers maximum flexibility

- Uses industry leading FPGA
- On-board flash stores FPGA image
- Programmable FPGA image provides ability to easily offer additional product SKUs to address customer requirements
  ~ Compression/Decompression
  ~ Decompression only
  ~ On-board SODIMM for stateful compression

Hardware

- PCI-Express Gen 1 (x8), Gen 2(x4)
- Half-length Half-height form factor (6.6" x 4.2" x 0.5.75")
- Power Consumption 16.5W
- Status LED visible from bracket
- JTAG connector for FPGA debug and loading

Software

- Linux reference drivers
- CeDeFS Data Optimization SW

Operating Conditions

Temperature
- Operating 0°C to 55°C
- Non-operating: –20° to 70°C

Humidity
- Operating: 20% to 80% non-condensing
- Operating: 5% – 93% non-condensing
- Operating Altitude: 0 to 3,000M

Safety and Emissions
- FCC Class A
- CE
- cULs listing (UL60950-1 1nd Ed.)
- CB (IEC/EN 60950-1)
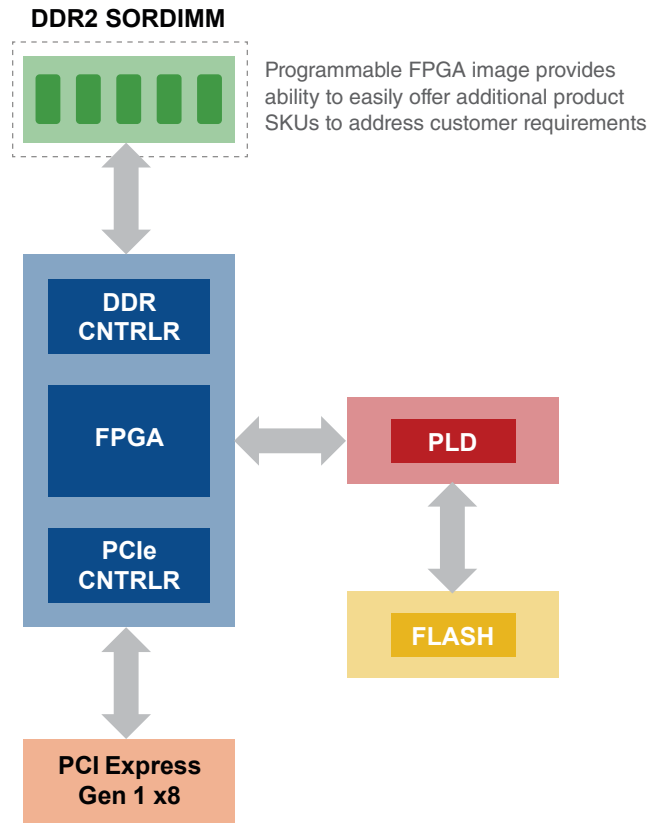- RoHS & REACH compliant

EXAR

A New Direction in Mixed-Signal

Compression Accelerator

GX 1700 Series

SUB-SYSTEM ARCHITECTURE

DDR2 SORDIMM

Programmable FPGA image provides ability to easily offer additional product SKUs to address customer requirements

DDR CNTRLR

FPGA

PCIe CNTRLR

PLD

FLASH

PCI Express Gen 1 x8

BENEFITS

- Boosts Host Performance up to 5X
- Eliminates Disk IOPS bottlenecks
- Enables Faster Time to Market Solutions with CeDeFS
- Field Upgradable, enabling after-market upgrades
- Lowers Host System power consumption

NETWORKING APPLICATIONS

- WAN Optimization
- Web Servers
- Application Delivery Controllers
- Proxy Servers
- Firewalls and Security

STORAGE APPLICATIONS

- Remote and Local Back Ups
- Storage Attached Network Systems
- Host Bus Adapters
- SSD and Flash Controllers
- RAID Controllers

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