DE5a-Net-DDR4 Arria® 10 GX Acceleration Card

Accelerate and Compute for Ultimate Performance!

Introduction

With the rapidly-rising demand in today's data and compute-intensive applications, Terasic's DE5a-Net-DDR4 is purpose-built to accelerate artificial intelligence, high frequency trading and high performance computing workloads to provide the industry-leading platform for a spectrum of industries that rely on HPC to maintain their competitive edge.

The DE5a-Net-DDR4 takes advantage of the powerful Intel Arria 10 FPGA to enable higher speed data processing. The board is armed with 16GB DDR4 memory module, running at over 75 Gbps, up to 7.876 GB/s data transfer via PCIe Gen 3 x8 edge between FPGA and host PC, and 4 on-board QSFP+ connectors. The on-board QDRII memory and DDR4 module can obtain lower application latency and higher application throughput, making it an excellent platform to achieve breakthrough performance in data filtering and algorithmic acceleration.

In addition to these offerings, the DE5a-Net-DDR4 fully supports Intel Open VINO™ toolkit to provide optimal Computer Vision and Deep Learning solutions. Our clients' systems can achieve highest computing performance and lowest cost for their AI applications by leveraging the Arria® 10 FPGA on DE5a-Net-DDR4.

What You Can Do

- Data center acceleration
- FinTech
- Video and Broadcast
- Military and Aerospace
- AI and Deep Learning

OpenVINO™ and OpenCL™ Services

- Support Intel OpenVINO™ toolkit
- Support OpenCL™ (HPC and Networking) board support package (BSP)

As Intel certified service provider for OpenCL services and development, Terasic also provides customized service to meet the exact needs of our clients.

Customized Services

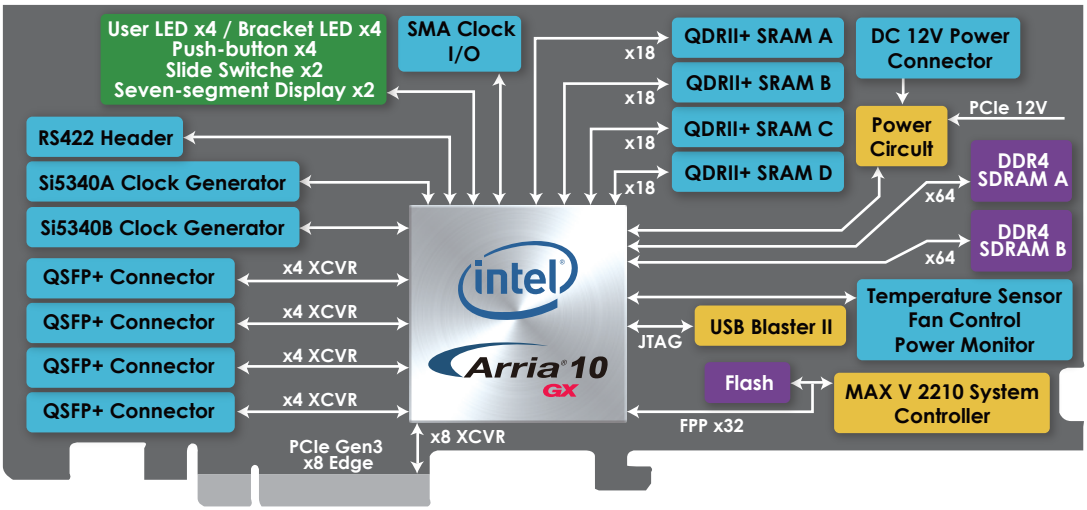
Hardware and Software Solution

- Terasic has a strong design expertise in FPGA hardware and software.
- Terasic creates FPGA-based products to meet our clients' specific requirements. We excel at delivering ready-to-use and highly optimized systems. Terasic rugged FPGA systems have been deployed in various extreme environments, such as Wall Street's zero-downtime data center and 5G base station in desert.

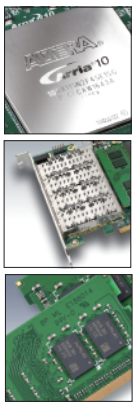
Consultancy Services

- At Terasic, we offer assistance to our clients in aspects such as porting, optimization and benchmarking of applications executed on Terasic FPGA Boards. Our support includes software upgrade and OpenCL design services.

Block Diagram



Major Specs and Interfaces



- Intel Arria® 10 GX FPGA : 1150K LE ; Speed Grade : -1
- Full-height, 3/4-length form-factor package
- Allows ultra-low-latency, straight connections to 4 external 40G QSFP+ modules
- High-speed parallel Flash memory
- PCIe Gen 3x8
- With 2x5 timing expansion header for 1pps or other high precision clock inputs
- 2 independent banks of DDR4 SO-DIMM socket, up to 16GB 1066MHz or 8GB 1200MHz for each socket
- 4 Independent 550 MHz QDRII+SRAMs, 18-bits data bus and 72Mbit for each
- Cooling Option: 1-Slot Air Cooling System: 50mm 6000 RPM fan, Thermal resistance: 1.18 °C/W

Power and Thermals

- 65W TDP and 85W peak power
- 55 °C TLA

Global Solution Partner

Enyx is a leading, independent provider of FPGA-enabled, ultra-low latency trading and market access technologies. We specialize in high performance market data acquisition and distribution, order execution, and network connectivity management.

We help investment banks, hedge funds, technology service providers, and exchanges streamline their trading infrastructures by providing end-to-end, high performance solutions for latency sensitive trading infrastructures, with global customer service and dependable support.