



# DE10-Agilex Accelerator

## Empower for Ultimate Performance in Modern Data Centers!



## Introduction



Targeting the compute and acceleration needs from the edge to the core to the cloud, Terasic's DE10-Agilex accelerator is purpose-designed to meet the ever-increasing demands for acceleration, compute, and fast data movement.



The DE10-Agilex is based on the powerful Intel® Agilex™ FPGA to obtain speed and power breakthrough, with 40% higher performance, 40% lower power for equivalent performance. The accelerator includes PCI Express Gen 4.0 x16, two 200G QSFP-DD connectors and offers 32GB of DDR4 up to 680Gbps bandwidth to provide adaptable acceleration, maximum throughput and highly customizable processing of data for compute intensive applications.



The DE10-Agilex fully supports Intel® OpenVINO™ toolkit, OpenCL™ BSP and Intel® oneAPI Toolkits to provide optimal Computer Vision and Deep Learning solutions. Our clients' systems can achieve highest computing performance and lowest cost for their Data Center and AI applications by leveraging the Agilex® FPGA on DE10-Agilex accelerator.

## What You Can Do

- Data center acceleration
- Hardware security solutions and gateways
- NFV networking connection
- High frequency trading
- AI and Deep Learning

## Software Services

The DE10-Agilex accelerator supports the following development tools:

- Support Terasic-optimized OpenCL™ BSP version 20.2.
- Support Intel® oneAPI Toolkits
- Support Intel® OpenVINO™ toolkit

Version updates will be provided on Terasic website

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

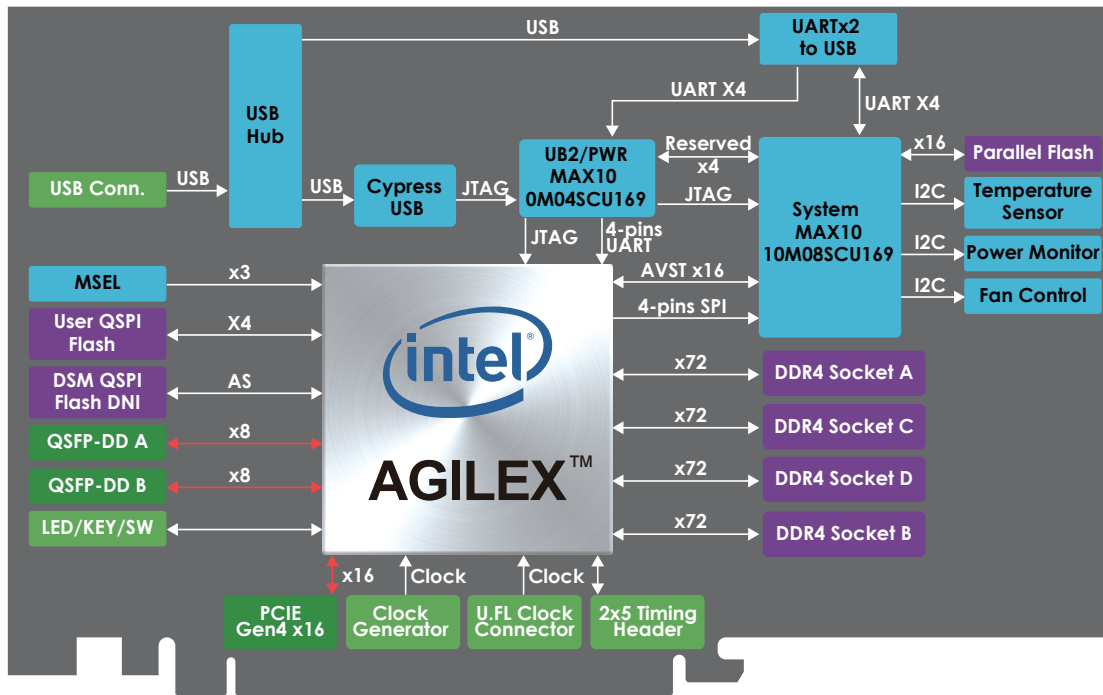
### Hardware and Software Solution

- 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® Agilex™ F-Series FPGA with 1437K LEs. Core Speed Grade: -2/ XCVR Speed Grade :-2
- Full-height, 3/4-length form-factor package
- Two QSFP-DD connectors for 200/100/40/25/10 GbE network interface
- PCI Express Gen 4.0 x16

- 2x5 timing expansion header for high precision clock synchronization
- 4 independent banks of DDR4 SO-DIMM sockets with error correction code (ECC), up to 8GB@2666MT/s or 16GB@2400MT/s for each socket

## Power and Thermals

- 110W TDP and 130W peak power
- 55 °C TLA

## Cooling Systems

- 2-slot Air Cooling System: Dual 60mm 5300 RPM fans with four heat pipes, Thermal resistance: 0.26 °C/W



- 1-slot Passive Cooling System: 0.55 °C/W at 650 Linear Feet per Minute (LFM) air flow

