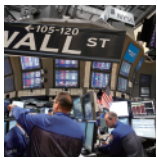




# DE10-PRO Stratix® 10 GX/SX PCIe Acceleration Board

*Essential Instrument of High Performance Systems*

## Introduction



Inspired by the demands of AI, Data Center, and High Performance Computing, Terasic's DE10-PRO is purpose-built for acceleration and high-speed connectivity applications to address the demands of the next-generation high-performance systems.



The board itself takes advantage of the latest Intel® Stratix® 10 to obtain speed and power breakthrough (with up to 70% lower power). Also, armed with 32GB DDR4 memory module running at over 150 Gbps, up to 15.754 GB/s data transfer via PCIe Gen 3 x16 edge between FPGA and host PC, and 4 on-board QSFP28 connectors, the board delivers more than 2X the performance of previous generation acceleration cards.



The DE10-PRO 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 Stratix® 10 FPGA on DE10-PRO.

## What You Can Do

- Data center acceleration
- Hardware security solutions and gateways
- NFV networking connection
- High frequency trading
- Missile guidance and avionics simulator
- 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.

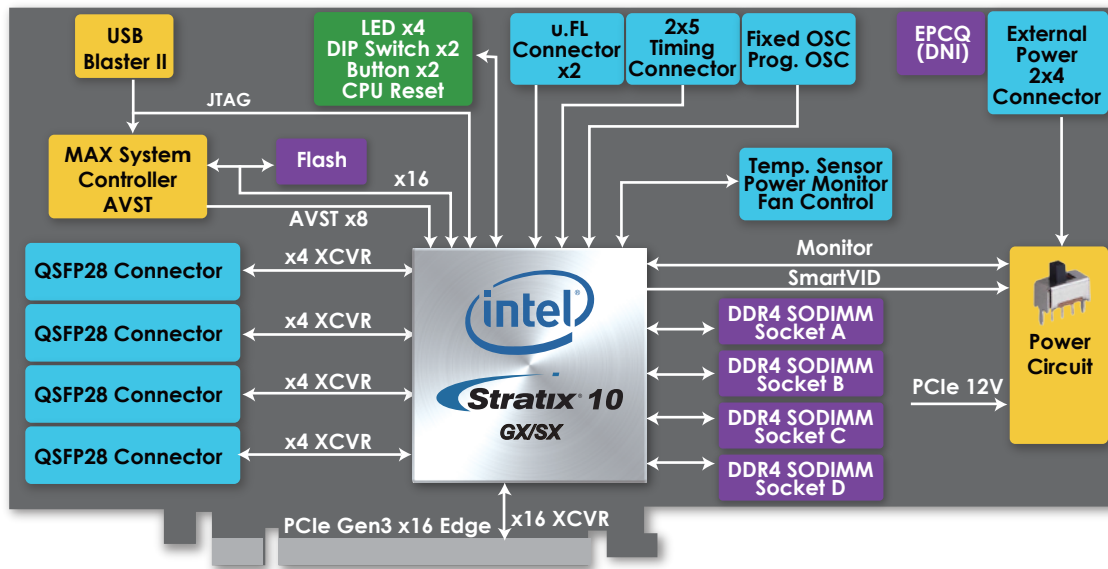
## Customized Services

### 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.



## Major Specs and Interfaces



- Stratix® 10 GX/SX FPGA. FPGA Fabric Speed Grade: -2/ XCVR Speed Grade : -1
- Full-height, 3/4-length form-factor package
- Allows ultra-low-latency, straight connections to 4 external 100G QSFP28 modules
- High-speed parallel Flash memory
- PCIe Gen3 x16
- With 2x5 timing expansion header for 1pps or other high precision clock inputs
- 4 independent banks of DDR4 SO-DIMM sockets with error correction code (ECC), up to 8GB@1200MHz for each socket (paired flexibly with Terasic's 576-Mbit QDR-II+ or 144-Mbit QDR-IV modules)

## Cooling Options



- 2-slot Air Cooling System: Dual 60mm 5300 RPM fans with four heat pipes, Thermal resistance: 0.3 °C/W
- 1-slot Passive Cooling System: Thermal Resistance: 0.46 °C/W at 10 CFM air flow

## Power and Thermals

- 180W TDP and 210W peak power
- 55°C TLA

### More Information and Support



Intel DSN

DE10-Pro