Single A10 1150 Prodigy™ Logic System

The Single A10 1150 Prodigy Logic System is based on Intel Arria 10 GX1150 FPGA. The Single A10 Prodigy Logic System is ideally suited for high-performance computing applications as well as prototyping small to medium sized SoCs. The Single A10 1150 Logic System's compact size allows for flexibility and portability. The System is integrated with S2C's market-leading, vast library of daughter cards to quickly build prototype targets.

Highlights

- Large Capacity and Scalability with 1,150K Logic Elements, 53Mb of M20K memory, and 1,518 DSP blocks and ability to connect multiple boards together for even greater capacity
- 44 Gigabit Transceivers that can run up to 16Gbps
- 576 high-performance I/Os through 4 Prodigy Connectors that supports a variety of daughter cards
- Low-cost parallel system integration and software development
- All-in-one form factor: 220mm × 275mm × 94mm (L×W×H)

Features

Large Capacity & Scalability

- 1,150K Logic Elements
- 53 Mb M20K memory
- 1,518 DSP blocks
- Multiple Logic Systems can be conveniently connected together to expand capacity through the use of interconnection modules or cables
- Up to 8GB DDR4/DDR3 memory through optional memory modules on J3 and J4 connectors

High Performance

- Up to 80W of power for each FPGA
- Equal trace length for I/Os from same I/O connector
- 44 high-speed transceivers can run up to 16Gbps

Flexible & Powerful I/Os

- 576 high-performance I/O pins and 12 Gigabit transceivers through 4 Prodigy connectors
- I/O voltage can be adjusted to 1.2V, 1.35V, 1.5V or 1.8V through runtime software in GUI with 4 status LEDs on-board to indicate I/O voltage
- 32 gigabit transceivers and 64 GPIOs through 4 PGT I/O connectors

High Reliability

- Screw-lock design to high-speed I/O connectors
- Self-Tests - Isolate design issues from board issues conveniently with a software GUI
- Monitoring of on-board voltage, current, and temperature with a software GUI
- Automatic shut-down upon detection of over-current, over-voltage, or over-temperatures

Features

Advanced Clock Management

Standalone Mode

- 6 global clocks can be selected from
  - 6 programmable clock sources (0.16 ~ 350MHz)
  - 5 pairs of external clocks through MMCX connectors
  - 1 OSC socket
- 3 design clock outputs through 3 pairs of MMCX connectors
- 2 global resets sourced from push button or MMCX
- Two dedicated fast clocks when using pin-multiplexing through S2C Player Pro software, one clock is fixed to 200MHz and the other clock is adjustable (0.16 ~ 350MHz)
- 1 global reset sourced from on board push button or runtime software in GUI

Multi-System Mode

- 6 global clocks to be selected from
  - 6 local programmable clock sources (0.16 ~ 350MHz)
  - 6 global clock sources
- 3 feedback clocks can be output to global clock sources
- Dedicated fast clock(s) when using pin-multiplexing through S2C Player Pro software
- 2 global resets sourced from global reset sources

Ease-of-Use

- Multiple FPGA configuration options through Ethernet port, USB port, JTAG and micro SD card
- Remote power on / off / recycle through Ethernet
- Auto detection of daughter cards and cables
- Virtual SWs & LEDs for simple tasks such as changing a setting or indicating a condition remotely
- User Test Area - LEDs, Push Buttons, Switches and Pin Headers for testing and debugging
- On-board battery charging circuit makes FPGA bin file encryption easy
- Optional ProtoBridge™ AXI software to co-model with software/simulation models at the transaction-level
- Optional S2C design implementation & debug software
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter boards

Modular and Portable Architecture

The Single A10 1150 Prodigy Logic System is a compact, sleek, all-in-one system that includes all components - FPGA board, extendable power control module, and power supply – for maximum flexibility, durability, and portability.