

# Single S10 2800 Prodigy™ Logic System

The Single S10 2800 Prodigy Logic System is based on Intel's Stratix 10 GX2800 FPGA. The system has 896 general purpose I/Os and 20 high-speed transceivers on 8 high-speed connectors. The Single S10 2800 Prodigy Logic System is well suited for medium to large SoC designs. S2C's 6th generation Player Pro™ software technology enables users to perform an array of runtime features remotely through both Ethernet and USB. Users also have access to S2C's vast library of over 80 daughter cards to quickly build prototyping targets.

## Highlights

- Large Capacity and Scalability with 2,753K Logic Elements, 229Mb memory and 5,760 DSP blocks with ability to connect multiple boards together for even greater capacity
- 20 high-speed transceivers that can run up to 16Gbps
- 864 high-performance I/Os through 6
- Prodigy Connectors that support a variety of daughter cards
- Compact, sleek, all-in-one chassis for clean, portable, and well-organized work environment
- All-in-one form factor: 310mm × 275mm × 94mm (L × W × H)



## Features

### Large Capacity & Scalability

- 2,753K Logic Elements
- 229Mb M20K memory
- 5,760 DSP blocks
- Multiple Logic Systems can be conveniently connected together to expand capacity through the use of interconnection modules or cables
- Footprint is compatible with the S10 5500 FPGA to offer an easy path to upgrade (S10 5500 FPGA must be purchased separately)

### High Performance

- Up to 100W of power for an FPGA
- Equal trace length for I/Os from same I/O connector
- 20 high-speed transceivers can run up to 16Gbps

### Flexible & Powerful I/Os

- 864 high-performance I/O pins and 4 high-speed transceivers through 6 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
- 16 high-speed transceivers and 32 GPIOs through 2 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
- Two dedicated fast clocks when using pin-multiplexing, one clock is fixed to 200MHz and the other clock is programmable (0.16 ~ 350MHz)
- 2 global resets sourced from push button or MMCX
- 1 global reset sourced from 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) for pin-multiplexing
- 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
- Optional 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 S10 2800 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. The modular system can be extended and upgraded into a Dual or Quad system.

