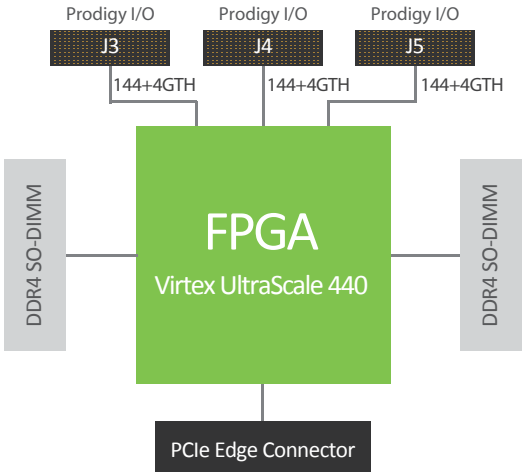
PCIe VU440 Prodigy™ Logic Module

The PCIe VU440 Prodigy Logic Module is S2C's 6th generation SoC/ASIC prototyping system designed to work inside a PC/Server through a PCIe edge connector. The module is equipped with one Xilinx Virtex UltraScale 440 FPGA device and includes 5.54M System Logic Cells, 88.6Mb memory and 2,880 DSP Slices. The module provides 432 I/Os and 12 gigabit transceivers through 3 Prodigy Connectors and up to 32GB of DDR4 memory through 2 on-board SO-DIMM sockets. Users have access to S2C's 80+ daughter cards to quickly build prototype targets. Users can perform an array of runtime features remotely through Ethernet or USB connections.

Highlights

- Built-in PCIe Edge Connector to work inside a PC/server
- 432 general purpose I/Os, 12 GTH transceivers on 3 high-speed connectors
- ×2 DDR4 SO-DIMM sockets to support up to 32GB DDR4 memory
- Compatible with 80+ prodigy daughter card library
- Automatic daughter card recognition
- Abundant add-on features



PCIe VU440 Prodigy™ Logic Module I/O Architecture

Features

Large Capacity

- 5.54M System Logic Cells
- 88.6Mbs of FPGA internal memory
- 2,160 embedded 18X18 multipliers
- Two on-board DDR4 SO-DIMM sockets

Standard Profile Form Factor

- PCIe Gen3, Gen2 and Gen1 in x1, x2, x4, x8 with PCIe card edge connector
- Size is 111.15 × 280.8 mm

Flexible & Powerful I/Os

- 432 I/O pins and 12 gigabit transceivers through 3 Prodigy Connectors
- Compatible with S2C's off-the-shelf pre-tested daughter boards
- Additional user test area: 2 push buttons, 4 switches, 3 LEDs and 7 GPIO pins

Global Clock & Reset management

- 3 programmable clock sources from 0.2 to 350MHz
- 1 on-board 300MHz differential clock for DDR4
- 1 on-board LVDS oscillator
- 1 global reset can be triggered from a push button

FPGA Configurations

- Download through Ethernet, USB, Micro SD card and JTAG
- Store up to 4 designs in a Micro SD card

High Reliability

- Up to 120W of power for FPGA through ATX power connector
- Screw-lock design to Prodigy I/O Connectors
- Automatic shut-down upon detection of over-current, over-voltage or over-temperature
- Isolate design issues from board issues conveniently with a software self-test GUI
- Monitor on-board voltage, current and temperature

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Player Pro Runtime Software

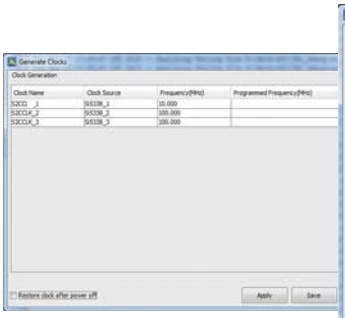
S2C's state-of-art Player Pro™ Runtime Software is included with our PCIe VU440 Prodigy Logic Modules. You can exercise full control over the Prodigy Logic Modules from Linux or Windows machines through Ethernet or USB ports without being a hardware expert.

Player Pro - FPGA Configuration

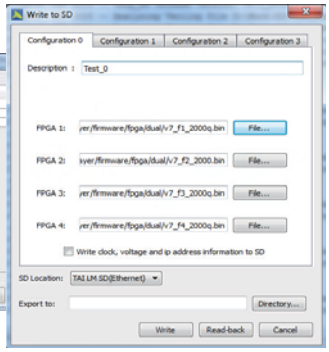
- GUI-Based FPGA Download
  - Direct FPGA download through Ethernet or USB port
  - Read and write to on-board Micro SD card
  - Re-download FPGA from Micro SD card
- Powerful Download Options
  - Micro SD card supports up to 4 sets of user design downloads

Player Pro – Virtual I/Os

- Large number of virtual I/Os for simple tasks such as changing a setting or indicating a condition remotely
  - LEDs
  - Push buttons
  - Switches
- Virtual I/Os are displayed in Player Pro Software and accessed remotely through Ethernet or USB connections



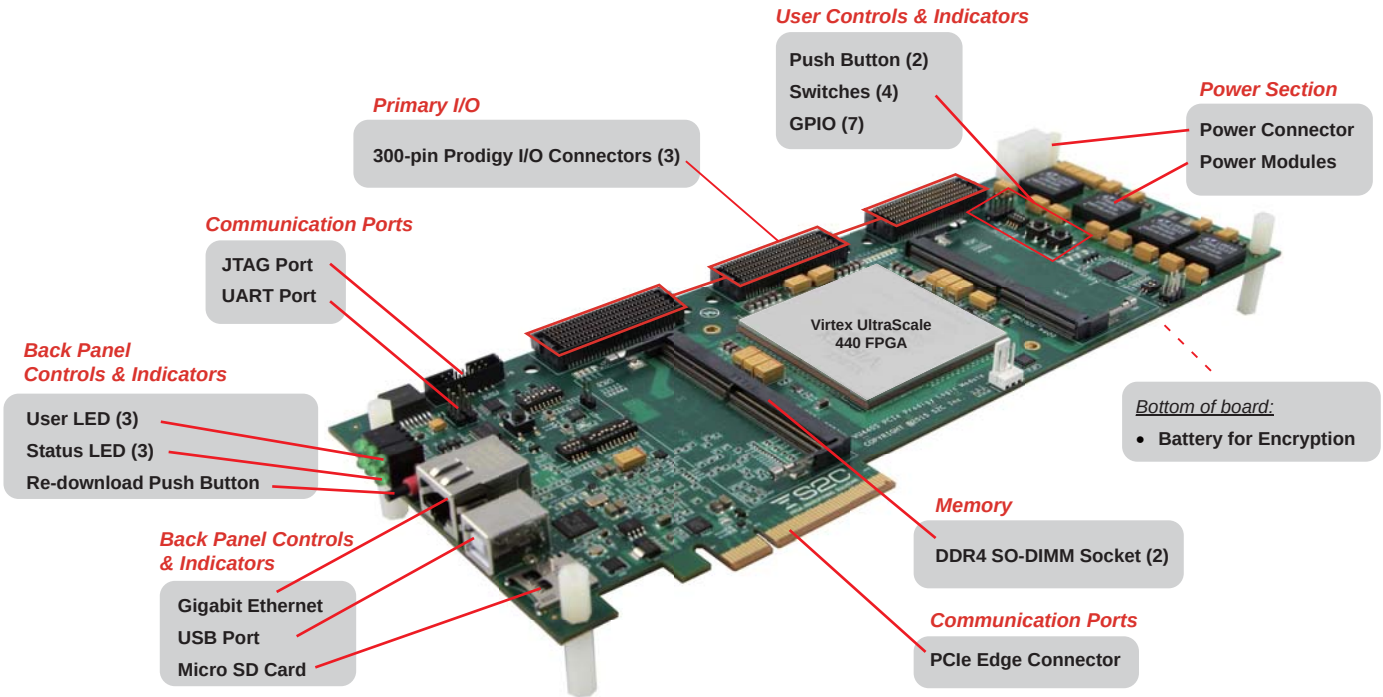
Clock generation



Remote SD card access

Player Pro - Remote System Control

- Conveniently program 3 clock sources from 0.2 to 350MHz
- Reset PCIe VU440 Prodigy Logic Module remotely from GUI
- Read back hardware info and measure on-board clock frequencies
- Change IP address



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