

Product Selection Guide

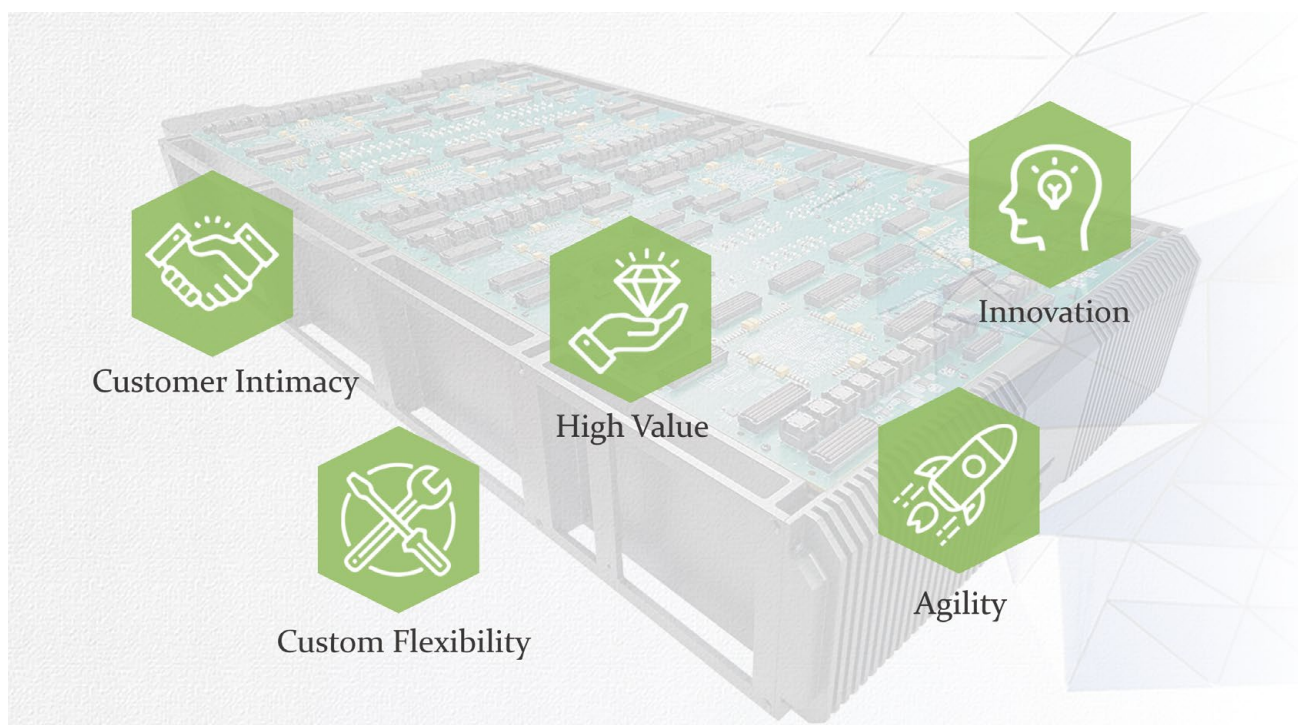
Paving the Way to Digital Innovation

Company

S2C is a global leader of FPGA prototyping solutions for today's innovative SoC/ASIC designs. S2C has been successfully delivering rapid SoC prototyping solutions since 2004. With over 500 customers and more than 3,000 systems installed, our highly qualified engineering team and customer-centric sales team understand our users' SoC development needs. S2C has offices and sales representatives in the US, Europe, Israel, China, Hong Kong, Korea, Japan, and Taiwan.



Core Competencies

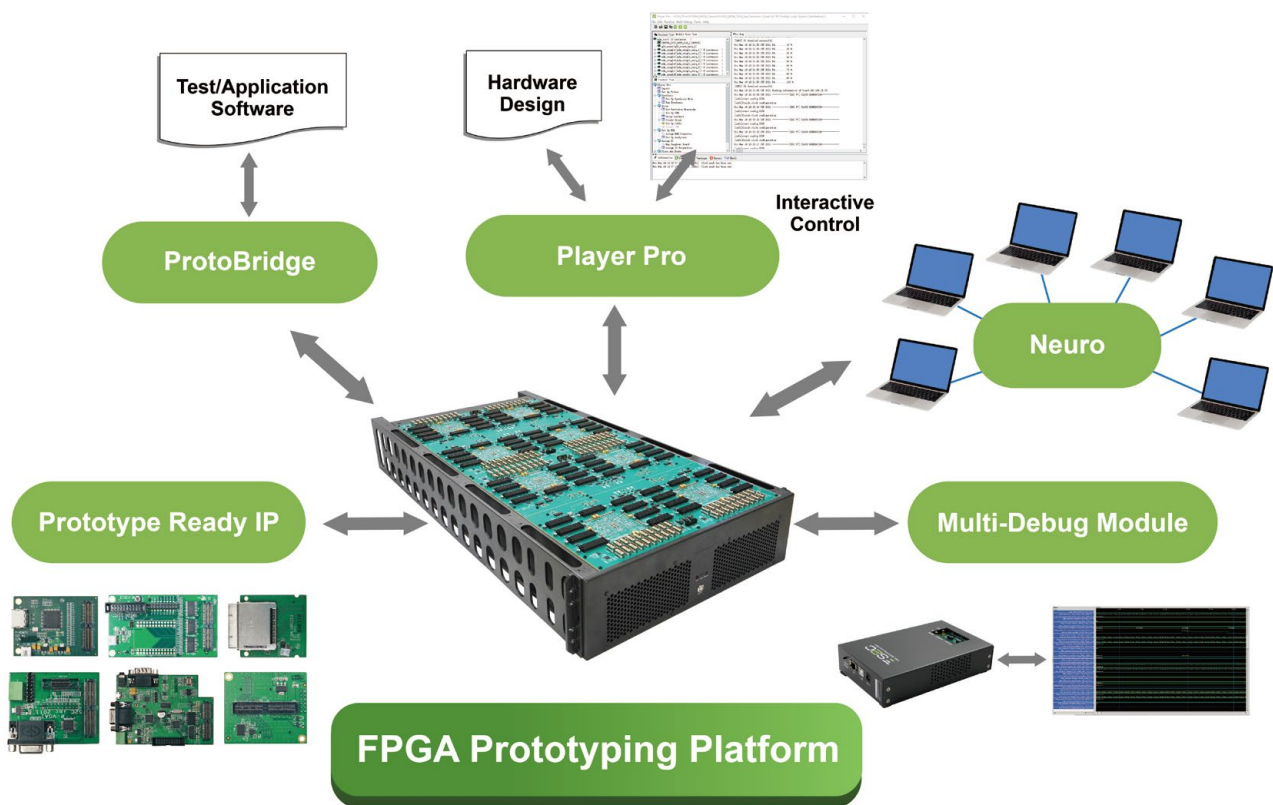


Product

Prodigy™ Complete Prototyping Solutions

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Prodigy Complete Prototyping Solutions



The S2C Prodigy line is a complete prototyping solution capable of addressing a wide spectrum of applications and handle a broad range of design sizes through various development phases. Prodigy provides the convenience, flexibility, and productivity that are essential to FPGA prototyping.

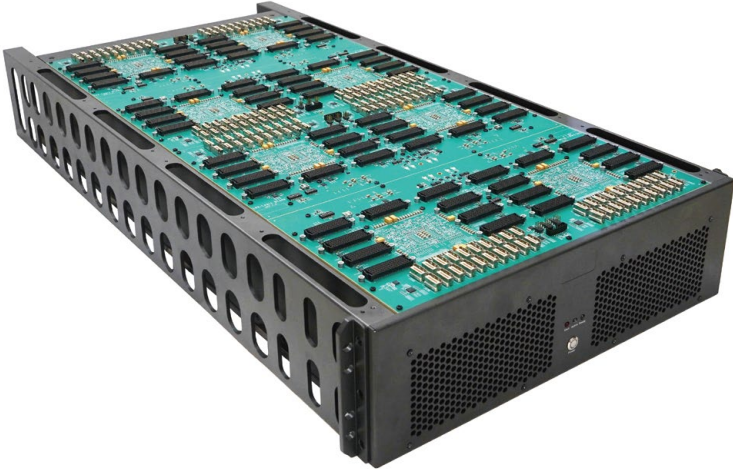
Key features of the Prodigy Prototyping Platform:

- ▶ Scalable/flexible architecture to target designs of various sizes, applications, and development stages
- ▶ High productivity tools to shorten the design-to-test time
- ▶ A vast library of 90+ daughter cards to meet a variety of interface needs

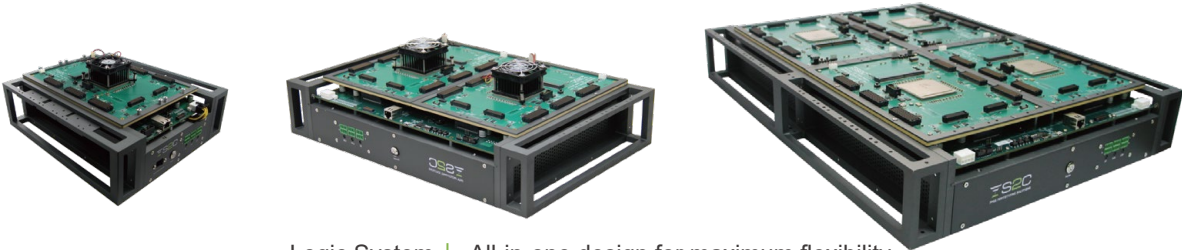
Prototyping Capacity

	Logic Matrix		Logic System							Logic Module				
Model Configuration	LX2	LX1	10M	2800	10A1150	S7-19P	S7-13P	S7-9P	VU440	VU440	KU115	7K410	7K325	VU440P
8 FPGAs	392M	232M	–	–	–	–	–	–	–	–	–	–	–	–
4 FPGAs	–	–	318M	–	–	196M	–	–	116M	116M	–	–	–	–
2 FPGAs	–	–	–	44M	–	98M	–	–	58M	58M	–	–	–	–
1 FPGA	–	–	79M	22M	9.8M	49M	21M	14M	29M	29M	7.6M	4.1M	3.25M	29M

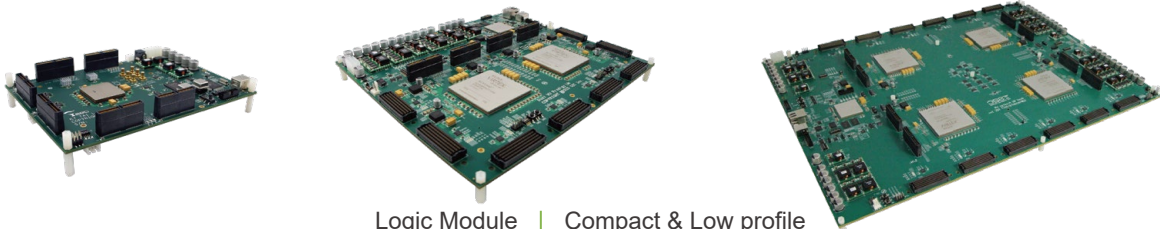
Prodigy Prototyping Platform



Logic Matrix | High performance and high capacity



Logic System | All-in-one design for maximum flexibility

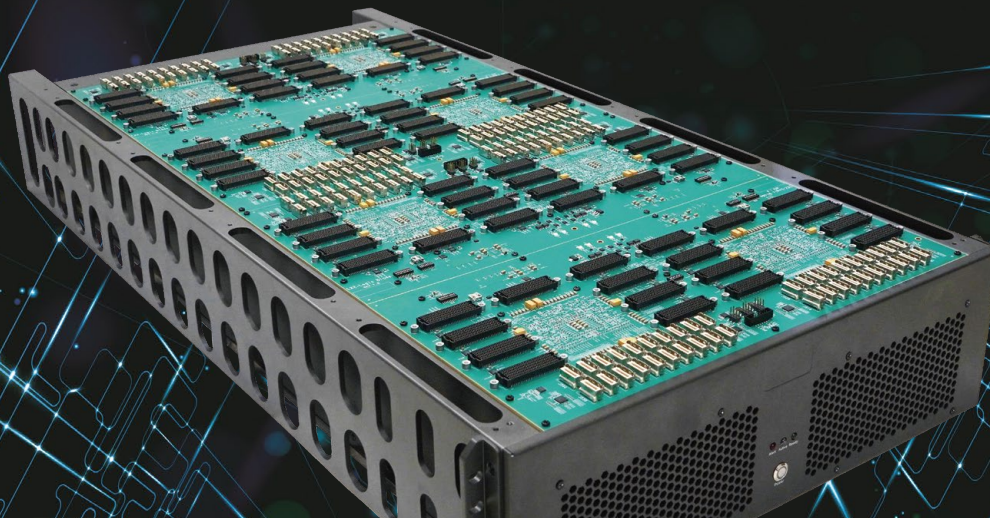


Logic Module | Compact & Low profile

◀ Prototyping Configuration

	Logic Matrix		Logic System												Logic Module						
Model	LX2	LX1	10MQ	10MS	2800S	10A1150	S7-19PQ	S7-19PD	S7-19PS	S7-13P	S7-9P	VU440Q	VU440D	VU440S	VU440Q	VU440D	VU440S	VU440P	KU115	7K410	7K325
Estimated ASIC Gates (M)	392	232	318	79	22	9.8	196	98	49	21	14	116	58	29	116	58	29	29	7.6	4.1	3.2
System LC & LE(K)	71,504	44,328	40,800	10,200	2,753	1,150	35,752	17,876	8,938	3,780	2,586	22,164	11,082	5,541	22,164	11,082	5,541	5,541	1,451	407	326
FPGA Memory (Mb)	1,328	709	1,012	253	229	53	664	332	166	455	346	354	178	89	354	177	89	89	76	28	16
DSP Resources	30,720	23,040	27,648	6,912	11,520	2,026	15,360	7,680	3,840	12,288	6,840	11,520	5,760	2,880	11,520	5,760	2,880	2,880	5,520	1,540	840
User I/O	10,368	9,216	4,376	1,184	896	640	4,736	2,368	1,184	676	676	4,736	2,368	1,184	1,888	1,232	1,176	432	656	432	432
SerDes Transceivers	640	384	160	40	20	44	176	88	44	48	48	176	88	44	112	64	44	12	48	16	16
Max SerDes Rates (Gbps)	28	12	16	16	16	16	16	16	16	25	25	12.5	12.5	12.5	10	10	10	10	10	10	10
PCIe Support	Gen3 ²	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3 ²	Gen3 ²	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen2	Gen2
DDR4 SO-DIMM	–	–	8	2	1	–	8	4	2	–	–	4	2	1	4	2 ¹	1	2	–	–	–
Prodigy Connectors	72	64	32	8	6	4	32	16	8	4	4	32	16	8	12	8	8	3	4	–	–
High Speed SerDes Connectors ³	160 MCIO	8 PGT+ 80 MSAS	8 PGT	2 PGT	2 PGT	4 PGT	8 PGT	4 PGT	2 PGT	2 PGT	2 PGT	8 PGT	4 PGT	2 PGT	8 GT	4 GT	2 GT	–	4 GT	–	–
Dimensions (L*W*H mm)	900*450*145		620*460*150	310*275*150	620*460*150	220*275*120	620*460*170		310*275*170	310*275*150		620*460*150	310*465*150	310*275*145	500*365*80	280*250*80	260*170*80	111.15*280.8*55	200*170*55	200*140*50	

¹ 1 DDR4 + 1 DDR3
² VU19P supports gen4 in compatible mode
³ MCIO provides 4 SerDes + 8 GPIO
MSAS provides 4 SerDes + 8 GPIO
PGT provides 8 SerDes + 16 GPIO
VU440 Logic Module GT provides 4 SerDes + 12 GPIO
KU115 Logic Module GT provides 4 SerDes + 20 GPIO



over 3 billion ASIC gates

Prodigy Logic Matrix LX2

A New Benchmark in High-performance & High-density Prototyping



Robust

Space saving & lower cost
of ownership



Hierarchical

Multi-system & multi-rack
expansion



High Density

Up to 64 FPGAs in standard
server rack

Prodigy Logic Matrix™

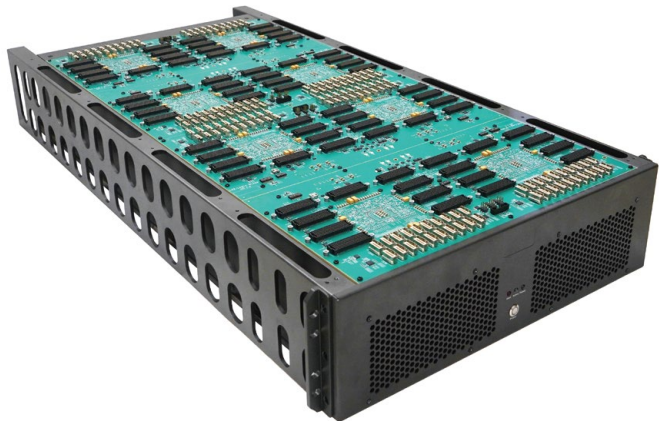
■ Prodigy LX2 Enterprise Prototyping System

High-performance full system validation and software development solution

The Prodigy LX2 Enterprise Prototyping System provides industry-leading performance and capacity. It integrates the scalable prototyping hardware, with Player Pro Runtime, a runtime control software, to meet the verification requirements for a wide range of applications. Prodigy LX2 is part of S2C's Prodigy Complete Prototyping Solution which consist of Player Pro Compile Time, an automatic prototyping compile tool; Player Pro Debug Time, a deep trace debugging tool; Proto-Bridge AXI, an FPGA-assisted verification tool; and Neuro, a cloud-based management tool, plus a rich portfolio of Prototype Ready IP - all designed to accelerate the prototyping process.

Highlights

- Industry leading capacity, supports nearly 400M ASIC gates per LX2
- Flexible topology structure and multi-level interconnection capability, increases prototype performance
- Modular design to ease deployment, expansion and maintenance
- Rich validation tool supports to shorten prototype setup time
- Enterprise-based management & control tool to manage prototyping systems, users and projects
- Application Scenarios: Early Software Development, Full system validation and Regression Test



Features

The LX2, S2C's new generation of Logic Matrix uses an advanced structure of "Logic Matrix → Rack → Cluster" which can expand to billions of ASIC gates. The LX2 can meet the most demanding prototyping requirements in a wide variety of applications including 5G, AI, ML and GPU.

Large Capacity & Scalability

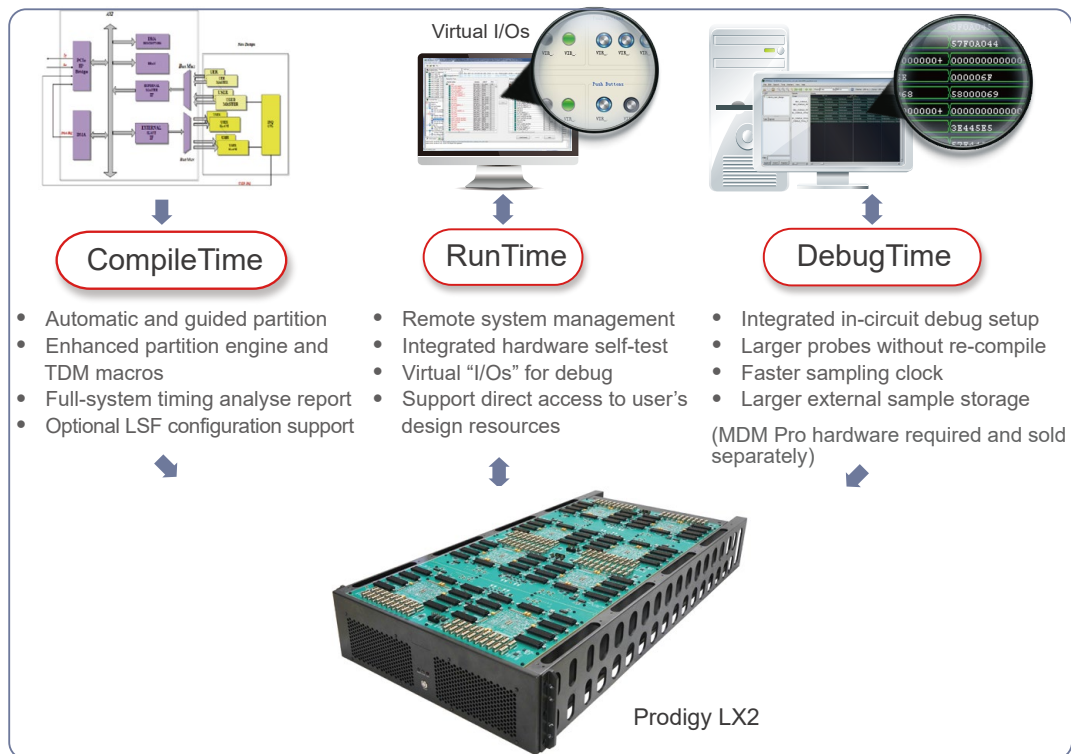
- The LX2 is equipped with 8 Xilinx Virtex UltraScale+ VU19P FPGA, and supports up to:
 - 71.5M System Logic Cells
 - 1,327.2Mb Internal Memory
 - 30,720 DSP Slice
- Scales to large setups, 8 LX2 in a standard 42U rack, up to 64 VU19P FPGAs
- Multi-racks can be cascaded to achieve even larger capacities

High Reliability

- High-speed I/O connectors with secure screw-lock design; hardware self-test, and real-time monitoring system
- Redundant power supply design allows switching supplies without interruption
- High-efficiency heatsink and cooling fan with PWM functions

Flexible topology structure and multi-level interconnection capability

- Advanced Clock Management
 - Each Logic Matrix supports 12 global clock inputs, 3 global clock outputs and 4 global resets
 - Dedicated global clocks and resets control module, synchronizes the
 - clocks and resets in the server rack or across the server racks
- Rich interconnection resources in LX2
 - 11,648 GPIO and 640 GTY transceivers
 - Each GTY transceiver can run up to 28Gbps
- Fast system deployment capabilities
 - Prodigy cables and MCIO cables
 - High performance interconnection boards
 - Simplify the deployment in the server rack or across the server racks



PPro-CT - Automatic Prototyping Compile Tool

Player Pro CompileTime provides an easy-to-use integrated GUI environment and Tcl interface which makes it easy to take an existing design, compile it, partition it into multiple-FPGAs, place & route and generate the individual bin files.

- Full-automatic or user-guided design partition into FPGA logic matrix
- Multiple TDM mode support including SSTL, LVDS and SerDes
- Automatic signal pre-qualification and TDM logic insertion to achieve better performance
- System timing report facilitates quickly analyzing and optimizing system performance
- Supports bus identification partition to achieve optimal high-speed prototyping

PPro-DT - Deep Trace Debugging Tool

The capability of system debugging and troubleshooting directly affects the project progress. Player Pro DebugTime supports concurrent debugging of multiple FPGAs with no need to consume FPGA internal memory.

- Supports two modes including compile and IP modes
- Trace up to 128K probes in 8 groups of 16K probes each
- Sampling frequency at speeds up to 125MHz
- Store up to 64GB of waveform data externally
- Sampling data supports various standard formats for debug and analysis

PPro-RT - Remote Management Tool

Player Pro RunTime provides an integrated GUI environment and Tcl interface that helps users remotely monitor and control their prototyping systems through Ethernet or USB port.

Remote Control through USB or Ethernet

- Automatic detection of cables and daughter cards when plugged in
- Easy setting or monitoring I/O voltage and fan speed
- Remotely open, shut down or reboot the prototyping system

Concise GUI makes the configuration easier

- Download the design to FPGAs through USB or Ethernet
- Supports reading or writing the design to an SD card, and download it from an SD card
- Supports multiple programmable clocks and I/O voltage settings

Powerful Debugging features, easy interacting with DUT

- Virtual I/Os to configure or detect the design status
- Virtual UARTs for firmware debugging
- NT bus for direct access to user design resources

ProtoBridge AXI - FPGA Assistant Tool

ProtoBridge AXI provides a high throughput channel between the host PC and DUT through PCIe interface. It delivers:

- AXI-4 bus protocol between host PC and FPGA
- 8-lane PCIe Gen3 as the physical transmission channel
- Rich coverage of C-API function calls
- Massive data transfer from host PC to FPGA up to 4,000MB/s

The ProtoBridge AXI package includes hardware logic IP, plus drivers and APIs. It supports data transfer through the LX2 system, and offers an easy solution for software and hardware co-verification applications.

Neuro - Cloud Management Tool

Neuro is designed for deploying prototyping systems as a shared IT resource. It can manage and monitor global resources as a data center which can dramatically extend the run time of prototyping systems, lower deployment costs and minimize the impact of space or physical limitations. It supports:

- Coordinate the management of multiple users/projects to avoid resource conflicts
- Monitor maximum system uptime to estimate system availability
- Manage users work order submissions for quick deployment and delivery
- Manage reports and incident recording to make the complete process traceable

Prototype Ready IP

S2C offers a rich portfolio of daughter boards to help quickly implement your prototyping targets including MIPI, PCIe, HDMI, USB, DDR4/DDR3, QSFP+, and more. These have been used to address a broad range of applications including artificial intelligence, high-performance computing, digital signal processing, graph processing, data storage, IoT, data communications, medical devices, automotive electronics, and other market segments. S2C also provides a series of reference designs to accelerate integration and validation of complex systems, saving both prototyping costs and resources.

Configuration Table

	LX2-M1	LX2-M2	LX2-P3	LX2-P4
FPGA Numbers	2	4	6	8
System Logic Cell (M)	17,876	35,752	53,628	71,504
Equivalence ASIC Gate (M)	98	196	294	392
FPGA Internal Memory (Mb)	331.8	663.6	995.4	1327.2
DSP Slices	7,680	15,360	23,040	30,720
User I/O	2,912	5,824	8,736	11,648
High-speed Transceiver	160	320	480	640
Prodigy Connector¹	18	36	54	72
MCIO Connector²	40	80	120	160

¹ Each Prodigy Connector provides 144 single-ended/72 LVDS pairs

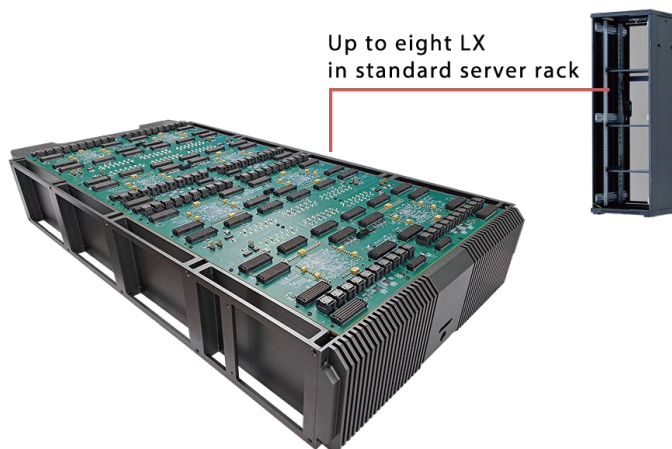
² Each MCIO Connector provides 4 GTY transceivers and 8 GPIOs

◀ Prodigy™ LX1 Logic Matrix

The Prodigy™ LX1 Logic Matrix is a high-density FPGA prototyping platform architected from the ground up to meet today's needs for both large design scaling and performance. Optimized for space and connectivity, LX1 is designed for multi-system expansion to support bills of ASIC gate capacity. LX1 is the ideal solution to address the ever-increasing complexity AND performance requirements found in large scale SoC designs for applications such as 5G, datacenter, AI/ML, and autonomous driving.

Highlights

- Industry leading density and capacity - up to 1.92billion ASIC gates in single standard server rack
- Hierarchical connectivity to support flexible topology and hyperscale design at prototyping performance
- Highly modular design to simplify deployment, maintenance, and expansion in via standard server racks
- Multi-usages: early software development, full system integration, high performance regression



Features

Large Capacity & Scalability

- LX1 available in 2, 4, 6, or 8 Xilinx VU440 FPGA configuration offering up to
 - 44.32M System Logic Cells
 - 708.8Mb of internal memory
 - 23,040 DSP Slice
- House up to 8 LX1 or 64 FPGAs in single standard server rack
- Interconnect multiple server racks for large scale deployment
- Future upgrade made easy - same physical dimension as LX2

Flexible Topology & Hierarchical Connectivity

- Advanced Clock Management
 - 12 global clock inputs, 3 global clock outputs and 4 global resets
 - Dedicated global control module to synchronize clocks & resets across multiple systems
- Hierarchical Connectivity using 9,984 GPIO & 384 GTH transceivers
 - ShortBridge: high throughput connectivity between neighboring FPGAs
 - SysLink: high throughput cable for local and neighboring system connectivity
 - TransLink: long distance links between FPGAs with SerDes over copper or optical cables

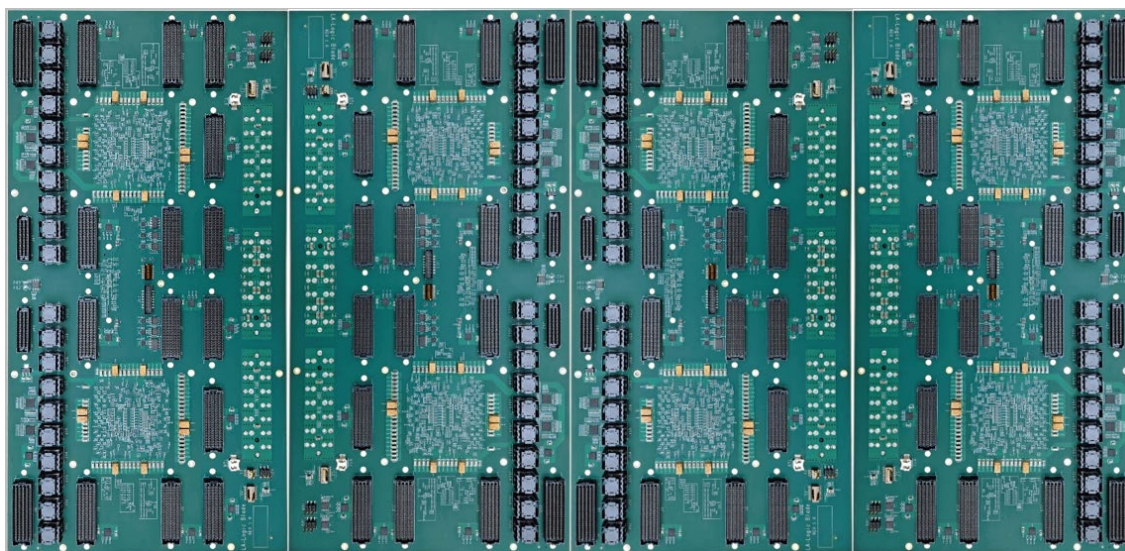
Features

High Reliability

- Redundant hot pluggable power supplies keep the system always online
- Professional air duct & heat pipe design
- Screw-locked high speed I/O connectors

I/O Architecture

- 64 Prodigy Connectors each supports 144 single-ended / 72 LVDS pairs
- I/O voltage can be adjusted to 1.0V ~ 1.8V
- 80 Mini-SAS connectors each supports 4 GTH transceivers and 8 GPIOs
- 8 PGT connectors each supports 8 GTH transceivers and 16 GPIOs



Configuration Table

	LX1-11	LX1-21	LX1-31	LX1-41
FPGA Count	2	4	6	8
System Logic Cells (M)	11.08	22.16	33.24	44.32
Estimated ASIC Gates (M)	60	120	180	240
FPGA Memory (Mb)	177.2	354.4	531.6	708.8
DSP Slices	5,760	11,520	17,280	23,040
External User I/Os	2,496	4,992	7,488	9,984
GTY Transceivers	96	192	288	384
Prodigy Connectors	16	32	48	64
PGT Connectors	2	4	6	8
Mini-SAS Connectors	20	40	60	80

Prodigy Logic System™

◀ Quad 10M Prodigy™ Logic System

The Quad 10M Prodigy Logic System is a complete and modular multi-FPGA prototyping platform based on Intel's Stratix 10 GX 10M FPGA. The system has 4,736 general purpose I/Os and 160 high-speed transceivers on 40 high performance connectors. The Quad S10 10M Prodigy Logic System is well suited for next generation 5G, AI, Networking and system validation of complex SoC designs.

S2C's Prodigy Player Pro™ Software technology streamlines the design compilation and enables users to perform an array of runtime features remotely through both USB and Ethernet port. Users also have access to a rich portfolio of Prototype Ready IP in the form of plug-play daughter cards to quickly build prototyping targets.

Highlights

- Large capacity and scalability with 40.8M Logic Elements, 1,012Mb memory and 13,824 DSP blocks
- 4,608 high-performance I/Os for inter FPGA connections and daughter cards
- 160 high-speed transceivers that can run up to 16Gbps
- Compatible with 90+ Prodigy Daughter Card Library
- Compact, sleek, all-in-one chassis for clean, portable, and well-organized work environment



Features

Large Capacity & Scalability

- 40.8M Logic Elements
- 1,012Mb M20K memory
- 13,824 DSP blocks (27,648 18x19 multipliers)
- 8 on-board DDR4 SO-DIMM sockets, each supports up to 72-bit 16GB DDR4
- Multiple systems can be conveniently connected to prototype even larger designs

High Performance

- Up to 180W of power for each FPGA
- Equal trace length for I/Os from same I/O connector
- 160 high-speed transceivers can run up to 16Gbps

Flexible & Powerful I/Os

- 4,608 high-performance I/O pins and 96 high-speed transceivers through 32 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
- 64 high-speed transceivers and 128 GPIOs through 8 PGT 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

Single-System Mode

- 8 global clocks to be selected from
 - 8 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
- 1 dedicated clock, reference clock and reset for pin-multiplexing
- 2 dedicated programmable clocks for the on-board DDR4 memories
- 3 global resets to be selected from
 - 3 global resets sources from Clock Module Type D
 - 2 global resets sources from on-board push buttons
 - 2 global resets sources from runtime software in GUI

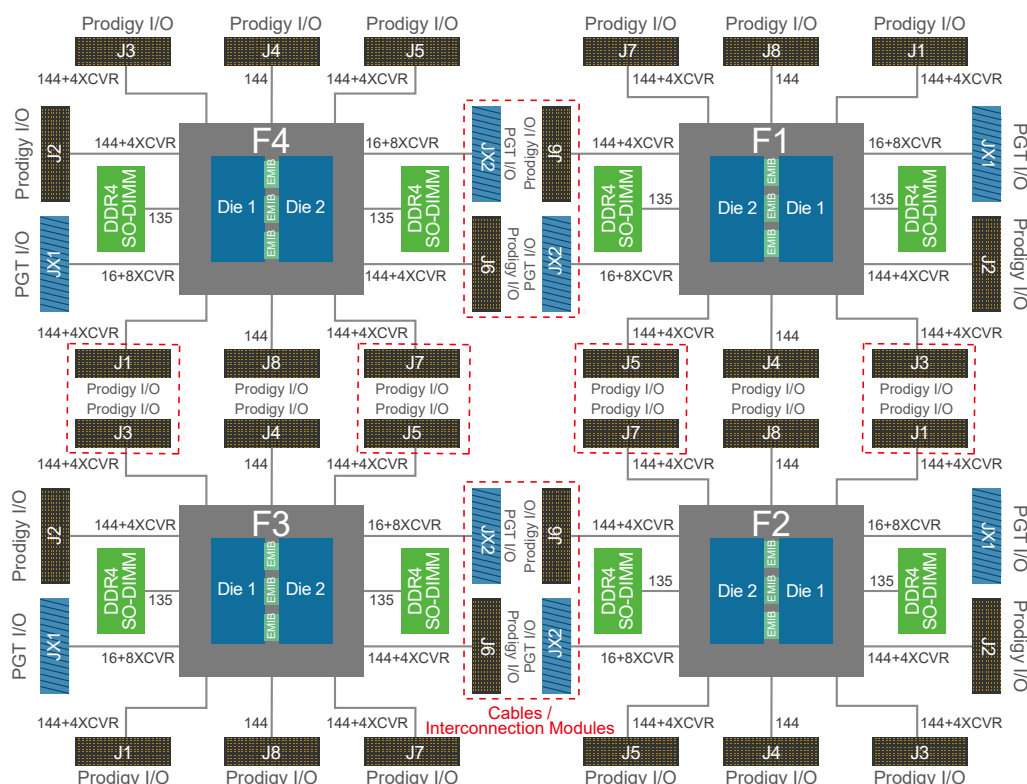
Multi-System Mode

- 8 global clocks to be selected from
 - 8 local programmable clock sources (0.16 ~ 350MHz)
 - 6 global clock sources
- 3 feedback clocks can be output to global clock sources
- 2 global resets sourced from global reset sources
- 1 dedicated clock, reference clock and reset for pin-multiplexing

Ease-of-Use

- Auto partitioning the design to multiple dies and multiple FPGAs with Prodigy Player Pro Compile
- 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
- Compatible with S2C's off-the-shelf pre-tested daughter boards
- Optional ProtoBridge™ AXI software providing a high-throughput data channel of up to 4GB/s
- Optional Prodigy Multi-Debug Module (MDM) for deep trace debugging of multiple FPGAs

I/O Architecture



Single 10M Prodigy™ Logic System

The Single S10 10M Prodigy Logic System is a complete and modular prototyping platform based on Intel's Stratix 10 GX 10M FPGA. The system has 1,184 general purpose I/Os and 40 high-speed transceivers on 10 high performance connectors. The Single S10 10M Prodigy Logic System is well suited for next generation 5G, AI, Networking and system validation of complex SoC designs.

S2C's 6th generation Prodigy Player Pro™ Software technology streamlines the design compilation and enables users to perform an array of runtime features remotely through both USB and Ethernet port. Users also have access to a rich portfolio of Prototype Ready IP in the form of plug-play daughter cards to quickly build prototyping targets.

Highlights

- Highest Logic Density with up to 10.2 million Logic Elements
- 40 high-speed transceivers that can run up to 16Gbps
- Abundant high-performance I/Os ease the application extension
- Compatible with over 80 Prodigy DaughterCard Library
- Complete software-stack eases the design compilation, runtime control and system debug effort



Features

Large Capacity & Scalability

- 10.2M Logic Elements
- 253Mb M20K memory
- 3,456 DSP blocks (6,912 18x19 multipliers)
- Two on-board DDR4 SO-DIMM sockets, each supports up to 72-bit 16GB DDR4
- Multiple systems can be conveniently connected to prototype even larger designs

High Performance

- Up to 180W of power for an FPGA
- Equal trace length for I/Os from same I/O connector
- 40 high-speed transceivers can run up to 16Gbps

Flexible & Powerful I/Os

- 1,152 high-performance I/O pins and 24 high-speed transceivers through 8 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 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

Single-System 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
- Two dedicated programmable clocks for the on-board DDR4 memories
- 3 design clock outputs through 3 pairs of MMCX connectors
- 2 global resets sourced from push button or MMCX or runtime
- 1 global reset sourced from push button

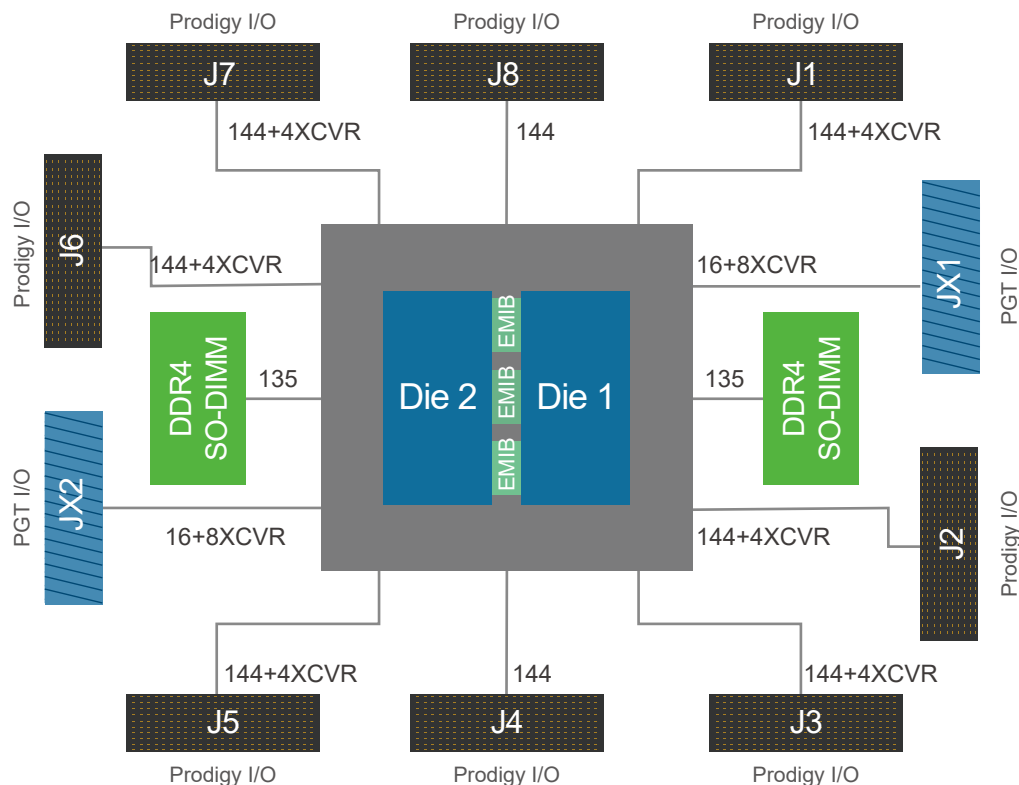
Multi-System Mode

- 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
- 2 global resets sourced from global reset sources

Ease-of-Use

- Auto partitioning the design to multiple dies and multiple FPGAs with Prodigy Player Pro Compile
- 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
- Compatible with S2C's off-the-shelf pre-tested daughter boards
- Optional ProtoBridge™ AXI software providing a high-throughput data channel of up to 4,000MB/s
- Optional Prodigy Multi-Debug Module (MDM) for deep trace debugging of multiple FPGAs

I/O Architecture



* Data Interface Bus via EMIB, delivers up to 23,040 interconnections

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

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

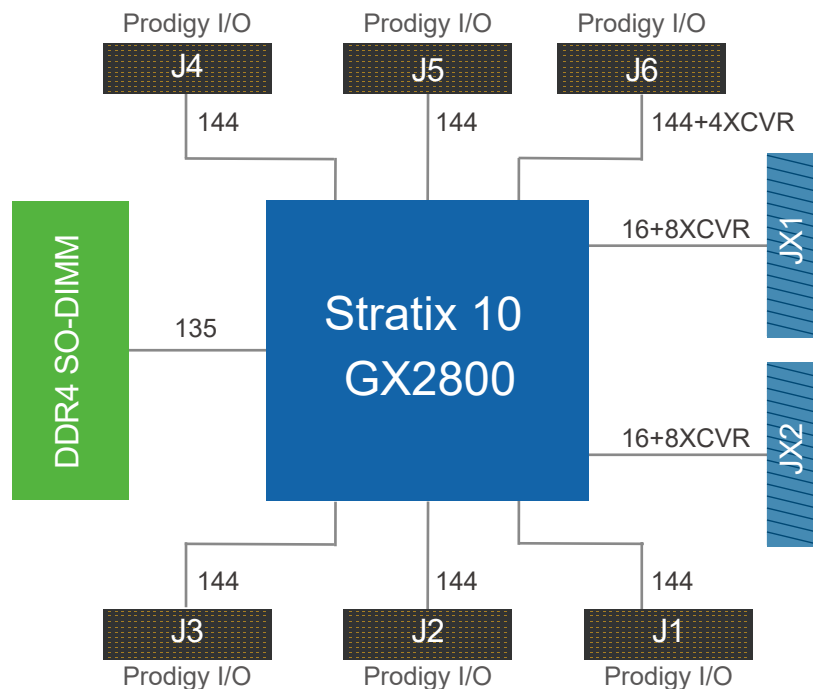
- 6 global clocks to be selected from
 - 6 local programmable clock sources (0.16 ~ 350MHz)
 - 6 global clock sources
- 3 feedback clocks can be output to global clock sources
- Dedicated fast clock(s) for pin-multiplexing
- 2 global resets sourced from global reset sources

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.



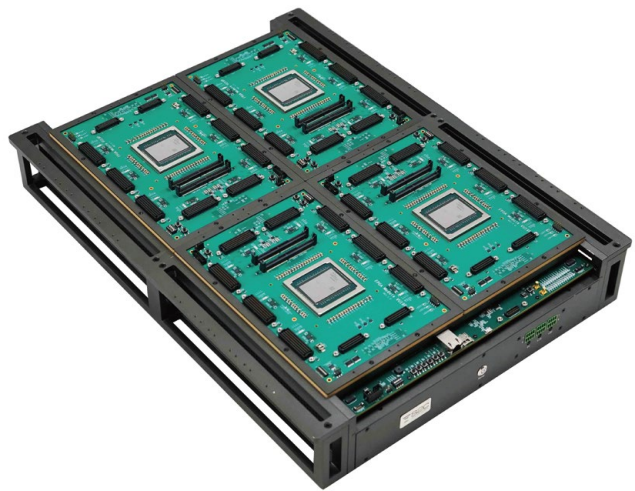
■ Prodigy S7-19PQ Logic System

The Prodigy™ S7-19PQ Logic System delivers an efficient and high-performance solution for early firmware/software development and system validation. The S7-19PQ is a compact and all-in-one system that includes all components - FPGA modules, power control module, and power supply - for maximum flexibility, durability and portability. The S7-19PQ is based on Xilinx's Virtex UltraScale + VU19P FPGA and provides 4,736 general purpose I/Os and 176 high-speed transceivers on 40 high performance connectors.

The Prodigy™ S7-19PQ Logic System is part of the S2C Prodigy Complete Prototyping Solutions, which consists of industry-leading design partition, debug solutions and remote capabilities that ensures users FPGA-based prototype comes up quickly. Users also have access to a rich portfolio of Prototype Ready IP in the form of plug-play daughter cards to quickly build prototyping targets.

Highlights

- Delivers up to 196M equivalent ASIC gates
- 5,288 high-performance I/Os for peripheral expansions & multi-system connectivity
- 176 high-speed transceivers at 16Gbps
- 8 on-board DDR4 SODIMMs at up to 2,400Mbps totaling 128GB
- Compatible with over 90 Prototype Ready IPs
- Feature-rich remote management and runtime controls



Features

Large Capacity & Scalability

- 35.76M System Logic Cells and 663.6Mb of internal memory
- 15,360 DSP Slice
- Eight on-board DDR4 SO-DIMM sockets can hold up to 72-bit 16GB DDR4 in each socket
- Multiple Logic Systems can be conveniently connected together to expand capacity

High Performance

- Demanding length matched and impedance controlled
- Up to 200W of power for each FPGA
- On-board support of DDR4 memory can run up to 2,400 Mbps
- 176 high-speed transceivers can run up to 16Gbps

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

Flexible & Powerful I/Os

- 4,608 I/O pins and 112 high-speed transceivers through 32 Prodigy connectors
- 64 high-speed transceivers and 128 GPIOs through 8 PGT I/O connectors
- I/O voltage can be adjusted between 1.2V ~ 1.8V through runtime software in GUI

Features

Advanced Clock Management Standalone Mode

- 8 global clocks to be selected from
 - 8 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
- 3 global resets to be selected from
 - 3 from on-board push buttons
 - 2 from Clock Module Type D
 - 2 from runtime software in GUI

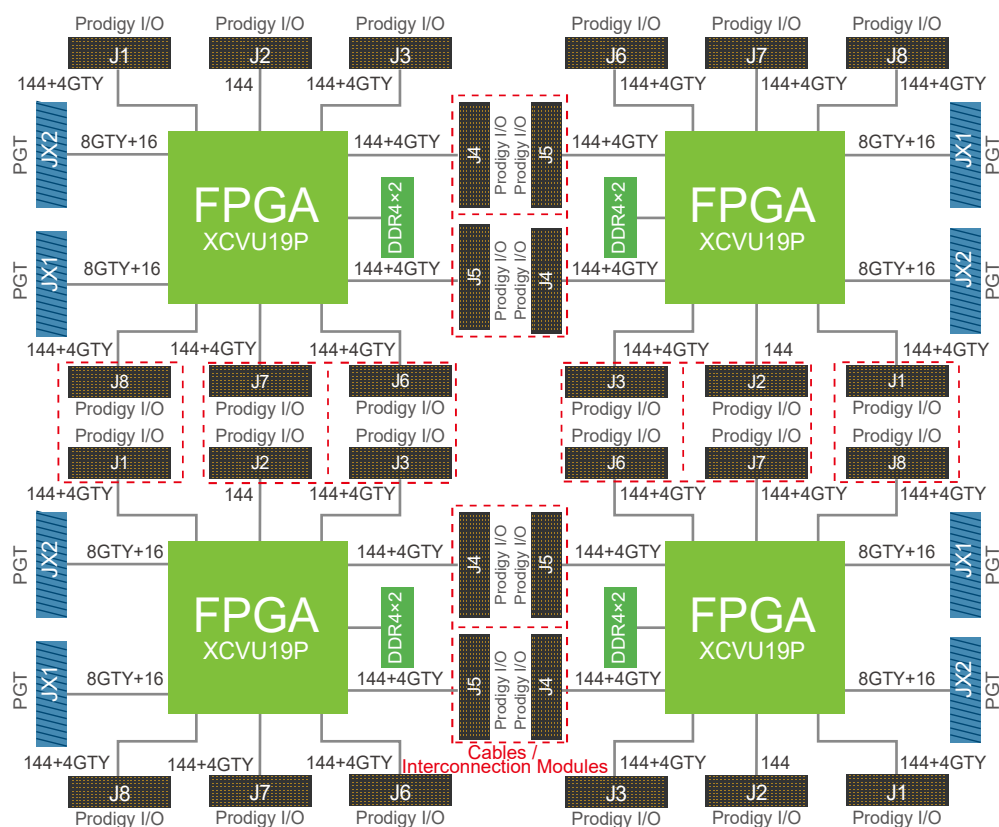
Multi-System Mode

- 8 global clocks to be selected from
 - 8 local programmable clock sources (0.16 ~ 350MHz)
 - 8 global clock sources
- 3 feedback clocks can be output to global clock sources
- 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
- Virtual UART for firmware debugging
- 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 (battery not included)
- Optional ProtoBridge™ AXI software to co-model with software/simulation models at transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



◀ Prodigy S7-19PD Logic System

The Prodigy™ S7-19PD Logic System delivers an efficient and high-performance solution for early firmware/software development and system validation. The S7-19PD is a compact and all-in-one system that includes all components - FPGA modules, power control module, and power supply - for maximum flexibility, durability and portability. The S7-19PD is based on Xilinx's Virtex UltraScale + VU19P FPGA and provides 2,368 general purpose I/Os and 88 high-speed transceivers on 20 high performance connectors.

The Prodigy™ S7-19PD Logic System is part of the S2C Prodigy Complete Prototyping Solutions, which consists of industry-leading design partition, debug solutions and remote capabilities that ensures users FPGA-based prototype comes up quickly. Users also have access to a rich portfolio of Prototype Ready IP in the form of plug-play daughter cards to quickly build prototyping targets quickly build prototyping targets.

Highlights

- Delivers up to 98M equivalent ASIC gates
- 3,182 high-performance I/Os for peripheral expansions & multi-system connectivity
- 88 high-speed transceivers at 16Gbps
- 4 on-board DDR4 SODIMMs at up to 2,400Mbps totaling 64 GB
- Compatible with over 90 Prototype Ready IPs
- Feature-rich remote management and runtime controls



Features

Large Capacity & Scalability

- 17.88M System Logic Cells and 331.8Mb of internal memory
- 7,680 DSP Slice
- Four on-board DDR4 SO-DIMM sockets can hold up to 72-bit 16GB DDR4 in each socket
- Multiple Logic Systems can be conveniently connected together to expand capacity

High Performance

- 88 high-speed transceivers can run up to 16Gbps
- On-board support of DDR4 memory can run up to 2,400Mb/s
- Demanding length matched and impedance controlled
- Up to 200W of power for each FPGA

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

Flexible & Powerful I/Os

- 2,304 I/O pins and 56 high-speed transceivers through 16 Prodigy connectors
- 32 high-speed transceivers and 64 GPIOs through 4 PGT I/O connectors
- I/O voltage can be adjusted between 1.2V ~ 1.8V through runtime software in GUI

Features

Advanced Clock Management Standalone Mode

- 8 global clocks to be selected from
 - 8 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
- 3 global resets to be selected from
 - 3 from on-board push buttons
 - 3 from Clock Module Type D
 - 3 from runtime software in GUI

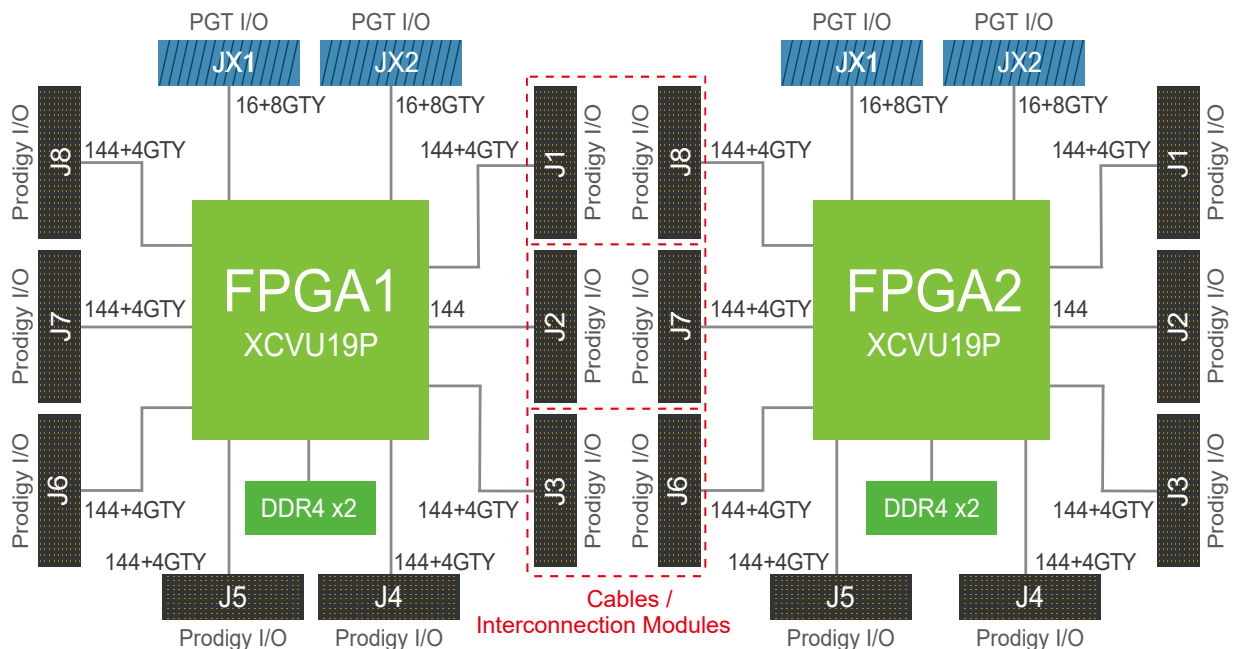
Multi-System Mode

- 8 global clocks to be selected from
 - 8 local programmable clock sources (0.16 ~ 350MHz)
 - 6 global clock sources
- 3 feedback clocks can be output to global clock sources
- 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
- Virtual UART for firmware debugging
- 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 (battery not included)
- Optional ProtoBridge™ AXI software to co-model with software/simulation models at transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



◀ Prodigy S7-19PS Logic System

The Prodigy™ S7-19PS Logic System is a compact, sleek, all-in-one system that includes all components - FPGA module, extendable power control module, and power supply for maximum flexibility, durability and portability. The system is based on Xilinx's Virtex UltraScale+ VU19P FPGA and provides 1,184 general purpose I/Os and 44 GTY transceivers on 10 high-speed connectors. Utilizing the 7th generation Prodigy Player Pro™ technology, user can perform an array of runtime features remotely through both Ethernet and USB. User also have access to S2C's vast library of over 90 daughter cards to quickly build prototyping targets.

Highlights

- Delivers up to 49M equivalent ASIC gates
- 1,184 high-performance I/Os for peripheral expansions & multi-system connectivity
- 44 high-speed transceivers at 16Gbps
- 2 on-board DDR4 SODIMMs at up to 2,400Mbps totaling 32GB
- Compatible with over 90 Prototype Ready IPs
- Feature-rich remote management and runtime controls



Features

Large Capacity & Scalability

- 8.94M System Logic Cells and 165.9Mb of internal memory
- Two on-board DDR4 SO-DIMM sockets can hold up to 72-bit 16GB DDR4 in each socket
- Multiple Logic Systems can be conveniently connected together to expand capacity

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

High Performance

- Equal trace length for all the Prodigy I/O connectors
- Up to 200W of power for an FPGA
- On-board support of DDR4 memory can run up to 2,400 Mbps
- High-speed transceivers can run up to 16Gbps

Flexible & Powerful I/Os

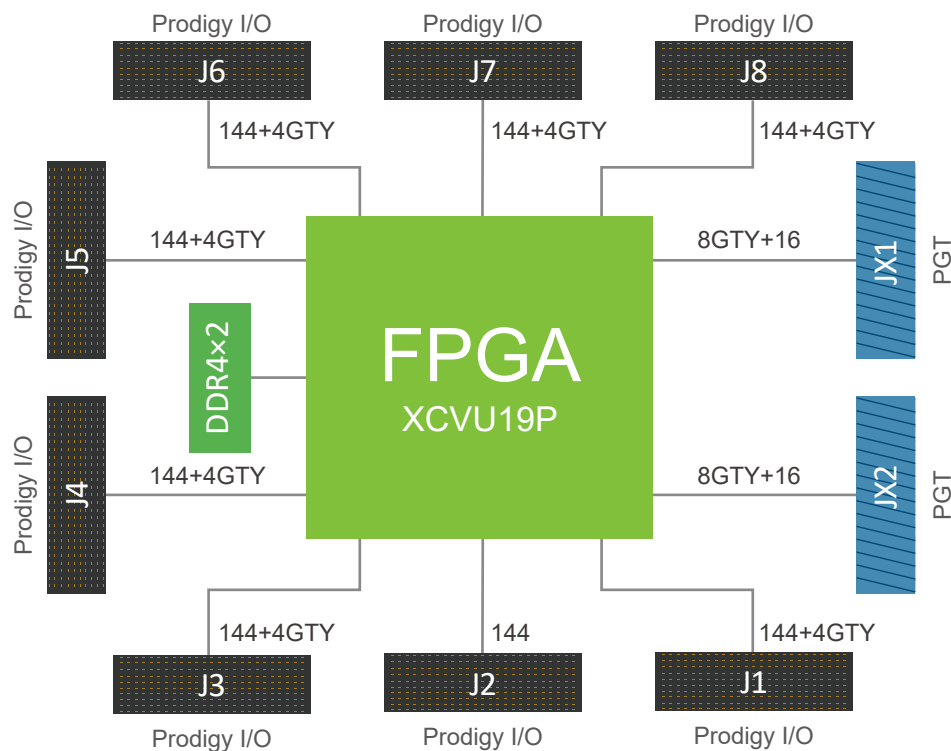
- 1,152 I/Os and 28 high-speed transceivers through 8 Prodigy connectors
- 16 high-speed transceivers and 32 GPIOs through 2 PGT I/O connectors
- I/O voltage can be adjusted to 1.2V, 1.35V, 1.5V or 1.8V through runtime software in GUI with 4 status LEDs on-board to indicate I/O voltage

Features

- 8 global clocks to be selected from
 - 8 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
- 3 global resets to be selected from
 - 3 from on-board push buttons
 - 2 from Clock Module Type D
 - 2 from runtime software in GUI

- 8 global clocks to be selected from
 - 8 local programmable clock sources (0.16 ~ 350MHz)
 - 8 global clock sources
- 3 feedback clocks can be output to global clock sources
- 2 global resets sourced from global reset sources

I/O Architecture



- 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
- Virtual UART for firmware debugging
- 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 (battery not included)
- Optional ProtoBridge™ AXI software to co-model with software/simulation models at transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

◀ Prodigy S7-13P Logic System

The Prodigy S7-13P Logic System is a high-performance, compact, all-in-one prototyping system that includes all components - FPGA module, power control module, and power supply - for maximum flexibility, durability, and portability. The system is based on Xilinx's Virtex UltraScale+ VU13P FPGA and provides 676 general purpose I/Os and 48 GTY transceivers on 11 high-speed connectors. Utilizing the 7th generation Prodigy Player Pro™ technology, user can perform an array of runtime features remotely through both Ethernet and USB. User also has access to S2C's vast library of over 90 daughter cards to quickly build prototyping targets.

Highlights

- Supports 25Gbps transceivers
- 3.78M System Logic Cells, 455 Mb of internal memory, and 12,288 DSP Slices
- 676 high-performance I/Os
- 4x QSFP28 optical interfaces, each supporting 100G applications
- Supports MIPI and x8 PCIe Gen3
- Abundant remote management capability



Features

Large Capacity & Scalability

- 3.78M System Logic Cells
- 455Mb internal memory
- 12,288 DSP slices
- Multiple Logic Systems can be conveniently connected to expand capacity

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

High Performance

- Equal trace length for all the Prodigy I/O connectors
- Up to 100W of power for an FPGA

Flexible & Powerful I/Os

- 576 I/Os and 15 GTY transceivers through 4 Prodigy I/O connectors
- 16 GTY transceivers and 32 GPIOs through 2 PGT I/O connectors
- 16 GTY transceivers through 4 QSFP28 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

Features

Advanced Clock Management Standalone Mode

- 6 global clocks to 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
- 1 dedicated clock, reference clock, and reset for pin-multiplexing
- 2 global resets sourced from push button or MMCX
- 1 global reset sourced from runtime software in GUI

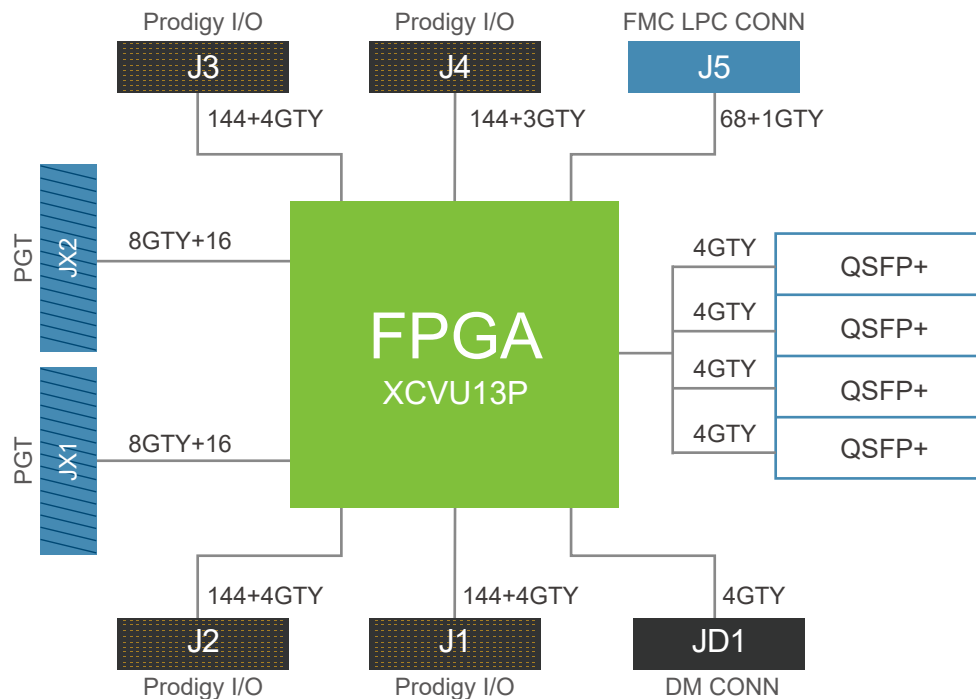
Multi-System Mode

- 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
- 2 global resets sourced from global reset sources
- 1 dedicated clock, reference clock, and reset for pin-multiplexing

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 Switches & LEDs for simple tasks such as changing a setting or indicating a condition remotely
- Virtual UART for firmware debugging
- 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 transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



◀ Prodigy S7-9P Logic System

The Prodigy S7-9P Logic System is a high-performance, compact, all-in-one prototyping system that includes all components - FPGA module, power control module, and power supply - for maximum flexibility, durability, and portability. The system is based on Xilinx's Virtex UltraScale+ VU9P FPGA and provides 676 general purpose I/Os and 48 GTY transceivers on 11 high-speed connectors. Utilizing the 7th generation Prodigy Player Pro™ technology, user can perform an array of runtime features remotely through both Ethernet and USB. User also has access to S2C's vast library of over 90 daughter cards to quickly build prototyping targets.

Highlights

- Supports 25Gbps transceivers
- 2.59M System Logic Cells, 345.9Mb of internal memory, and 6,840 DSP Slices
- 676 high-performance I/Os
- 4x QSFP28 optical interfaces, each supporting 100G applications
- Supports MIPI and x8 PCIe Gen3
- Abundant remote management capability



Features

Large Capacity & Scalability

- 2.59M System Logic Cells
- 345.9Mb internal memory
- 6,840 DSP slices
- Multiple Logic Systems can be conveniently connected to expand capacity

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

High Performance

- Equal trace length for all the Prodigy I/O connectors
- Up to 100W of power for an FPGA

Flexible & Powerful I/Os

- 576 I/Os and 15 GTY transceivers through 4 Prodigy I/O connectors
- 16 GTY transceivers and 32 GPIOs through 2 PGT I/O connectors
- 16 GTY transceivers through 4 QSFP28 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

Features

Advanced Clock Management Standalone Mode

- 6 global clocks to 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
- 1 dedicated clock, reference clock, and reset for pin-multiplexing
- 2 global resets sourced from push button or MMCX
- 1 global reset sourced from runtime software in GUI

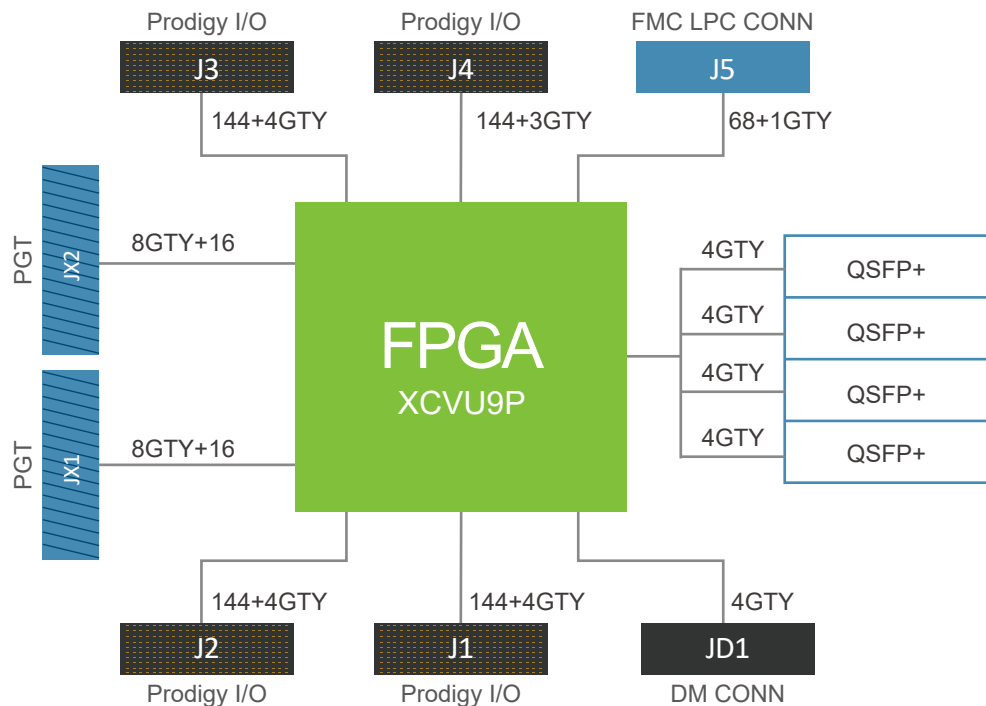
Multi-System Mode

- 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
- 2 global resets sourced from global reset sources
- 1 dedicated clock, reference clock, and reset for pin-multiplexing

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 Switches & LEDs for simple tasks such as changing a setting or indicating a condition remotely
- Virtual UART for firmware debugging
- 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 transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



◀ Quad VU440 Prodigy™ Logic System

The Quad VU Prodigy Logic System is a sleek, all-in-one system that includes all components - FPGA boards, extendable power control module, and power supply - for maximum flexibility, durability, and portability. The system is based on Xilinx's Virtex UltraScale XCVU440 FPGA and provides 4,736 general purpose I/Os and 176 GTH transceivers on 40 high-speed connectors, and users have access to the cast library of over 80 daughter cards to quickly build prototype targets. In addition, users can perform an array of runtime features remotely through both Ethernet and USB. The modular system can be re-configured to Single or Dual system.

Highlights

- Large capacity and scalability with 22.16M System Logic Cell and 354.4Mb of internal memory
- 4,608 high-performance I/Os for inter FPGA connections and daughter cards
- 176 GTH transceivers for high-bandwidth data transmission
- On-board support for two 72-bit 8GB ECC DDR4 SO-DIMM sockets
- Compatible with 80+ Prodigy Daughter Card Library
- Stackable design for easy capacity expansion
- Compact, sleek, all-in-one chassis for clean, portable, and well-organized work environment



Features

Large Capacity & Scalability

- 22.16M System Logic Cells and 354.4Mb of internal memory
- Four On-board DDR4 SO-DIMM socket can hold at least 72-bit 8GB DDR4 in each socket
- Multiple Quad VU Prodigy Systems can be conveniently stacked to expand capacity

High Reliability

- Screw-lock design to 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

High Performance

- Up to 100W of power for each FPGA
- Equal trace length for I/Os from same I/O connector
- On-board support of DDR4 memory can run up to 2,400 Mbps
- 176 high-speed GTH transceivers can run up to 12.5Gbps

Flexible & Powerful I/Os

- 4,608 high-performance I/O pins and 112 GTH transceivers on 32 Prodigy I/O connectors for inter FPGA connections and daughter cards
- 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
- 64 high-speed GTH transceivers and 128 GPIOs through 8 PGT I/O connectors

Features

Advanced Clock Management Standalone Mode

- 6 global clocks to 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
- 1 global reset sourced from runtime software in GUI

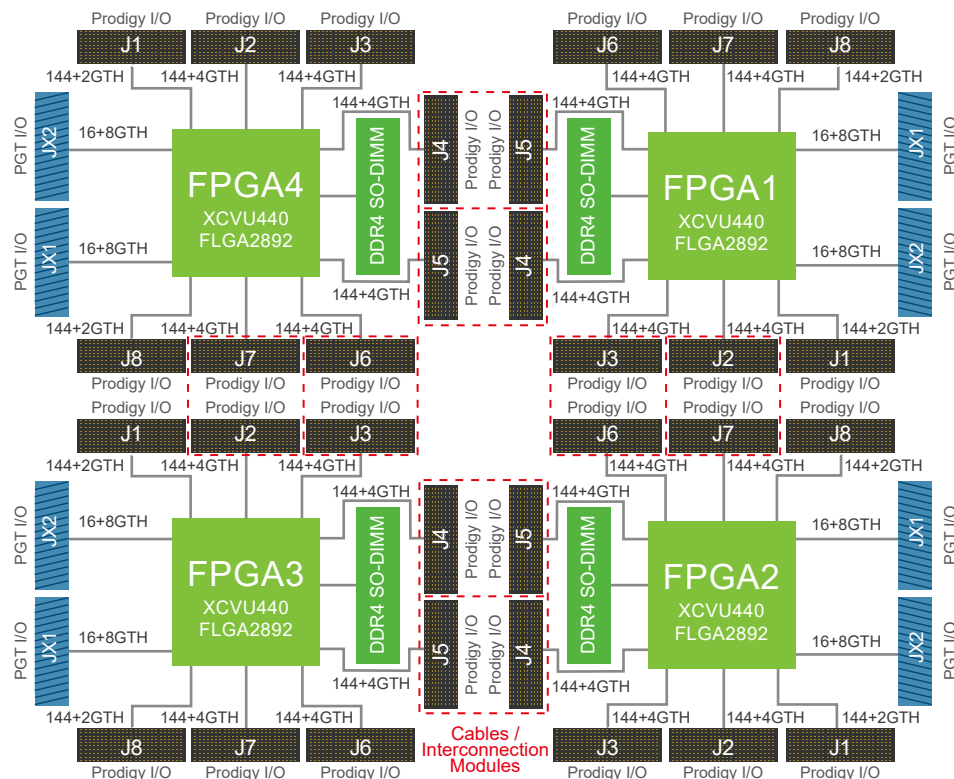
Multi-System Mode

- 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
- 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
- Virtual UART for firmware debugging
- 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 transaction-level
- Optional Prodigy Player Pro Compile for design partition & implementation
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



◀ Dual VU440 Prodigy Logic System

The Dual VU440 Prodigy Logic System is a compact, sleek, all-in-one system that includes all components - FPGA module, extendable power control module, and power supply for maximum flexibility, durability, and portability. The system is based on Xilinx's Virtex UltraScale XCVU440 FPGA and provides 2,368 general purpose I/Os and 88 GTH transceivers on 20 high-speed connectors. Utilizing the 6th generation Prodigy Player Pro™ technology, user can perform an array of runtime features remotely through both Ethernet and USB. User also have access to S2C's vast library of over 80 daughter cards to quickly build prototyping targets. The modular system can be re-configured to a Single or Quad system.

Highlights

- Large capacity and scalability with 11.08M System Logic Cell and 177.2Mb of internal memory
- 2,304 high-performance I/Os for inter FPGA connections and daughter cards
- 88 GTH transceivers for high-bandwidth data transmission
- On-board support for two 72-bit 8GB ECC DDR4 SO-DIMM sockets
- Compatible with 80+ Prodigy Daughter Card Library
- Stackable design for easy capacity expansion
- Compact, sleek, all-in-one chassis for clean, portable, and well-organized work environment



Features

Large Capacity & Scalability

- 11.08M System Logic Cells and 177.2Mb of internal memory
- Two On-board DDR4 SO-DIMM socket can hold at least 72-bit 8GB DDR4 in each socket
- Multiple Logic Systems can be conveniently connected together to expand capacity

High Reliability

- Screw-lock design to 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

High Performance

- Up to 100W of power for each FPGA
- Equal trace length for I/Os from same I/O connector
- On-board support of DDR4 memory can run up to 2,400 Mbps
- 88 high-speed GTH transceivers can run up to 12.5Gbps

Flexible & Powerful I/Os

- 2,304 high-performance I/O pins and 56 GTH transceivers on 16 Prodigy I/O connectors for inter FPGA connections and daughter cards
- 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 high-speed GTH transceivers and 64 GPIOs through 4 PGT I/O connectors

Features

Advanced Clock Management Standalone Mode

- 6 global clocks to 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
- 1 global reset sourced from runtime software in GUI

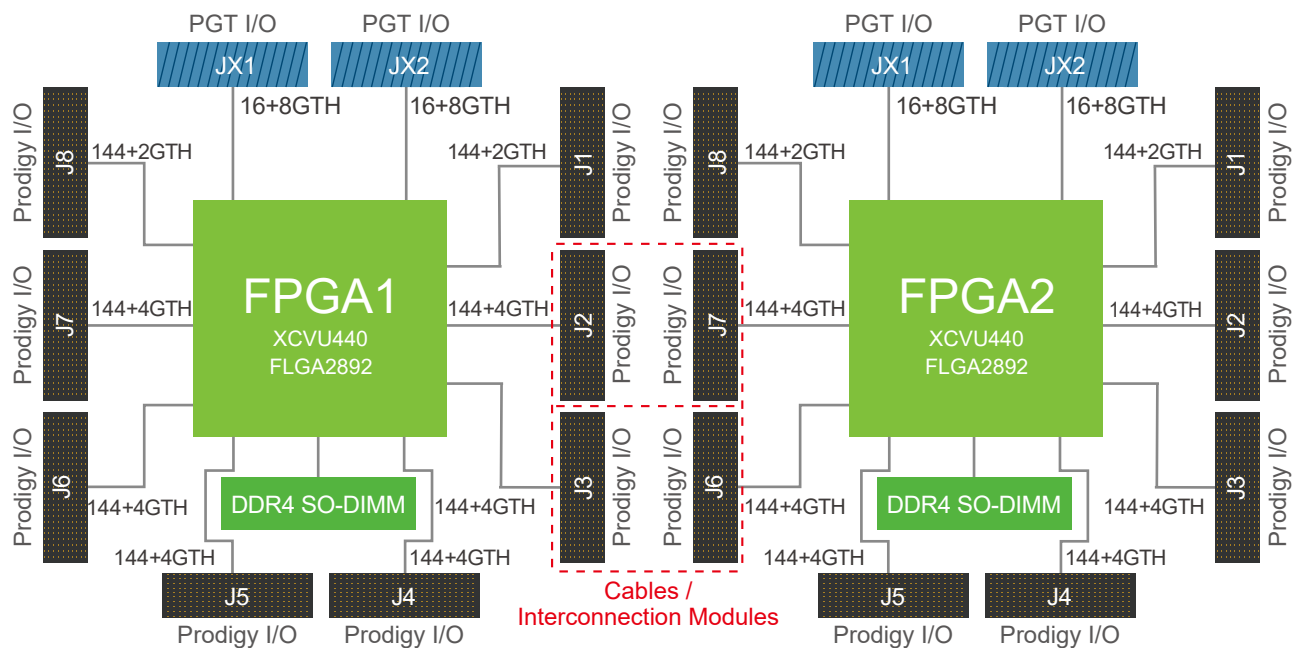
Multi-System Mode

- 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
- 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
- Virtual UART for firmware debugging
- 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 transaction-level
- Optional Prodigy Player Pro Compile for design partition & implementation
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



Single VU440 Prodigy Logic System

The Single VU440 Prodigy Logic System is a compact, sleek, all-in-one system that includes all components - FPGA module, extendable power control module, and power supply for maximum flexibility, durability, and portability. The system is based on Xilinx's Virtex UltraScale XCVU440 FPGA and provides 1,184 general purpose I/Os and 44 GTH transceivers on 10 high-speed connectors. Utilizing the 6th generation Prodigy Player Pro™ technology, user can perform an array of runtime features remotely through both Ethernet and USB. User also have access to S2C's vast library of over 80 daughter cards to quickly build prototyping targets. The modular system can be extended and upgraded into a Dual or Quad system.

Highlights

- Large capacity and scalability with 5.54M System Logic Cells and 88.6Mb of internal memory with ability to connect multipleboards together for even greater capacity
- 1,152 high-performance I/Os through 8 Prodigy connectors that support a variety of daughter cards
- 44 high-speed transceivers that can run up to 12.5Gbps
- Compact, sleek, all-in-one chassis for clean, portable, and well-organized work environment
- Abundant add-on remote management capability



Features

Large Capacity & Scalability

- 5.54M System Logic Cells and 331.8Mb of internal memory
- On-board DDR4 SO-DIMM socket supports up to 8GB memory
- Modular design can be extended and upgraded into a Dual or Quad system
- Multiple Logic Systems can be conveniently connected together to expand capacity

High Performance

- Up to 100W of power for each FPGA
- Equal trace length for I/Os from same I/O connector
- On-board support of DDR4 memory can run up to 2,400 Mbps

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

Flexible & Powerful I/Os

- 1,152 I/O pins through 8 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 gigabit transceivers and 32 GPIOs through 2 PGT I/O connectors

Features

Advanced Clock Management Standalone Mode

- 6 global clocks to 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 through Prodigy Player Pro
 - One is fixed to 200MHz
 - The other one is adjustable (0.16 ~ 350MHz)
- 2 global resets sourced from push button or MMCX
- 1 global reset sourced from runtime software in GUI

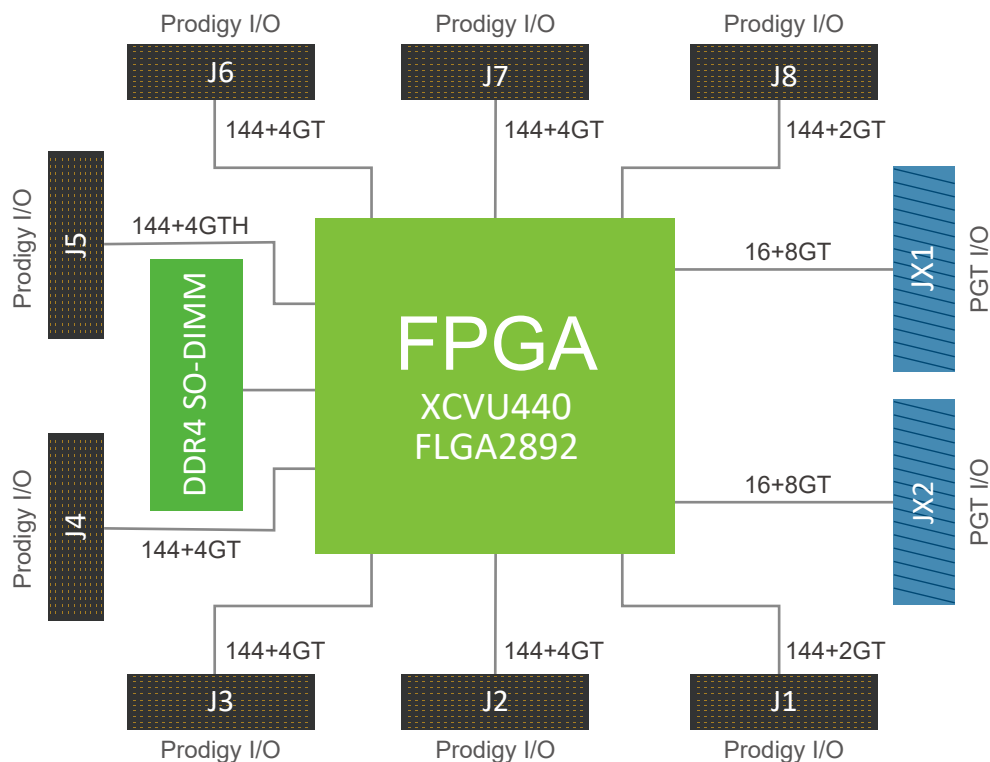
Multi-System Mode

- 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
- 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
- Virtual UART for firmware debugging
- 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 transaction-level
- Optional Prodigy Multi-Debug Module (MDM) for the concurrent deep trace debugging of multiple FPGAs
- Compatible with S2C's off-the-shelf pre-tested daughter cards

I/O Architecture



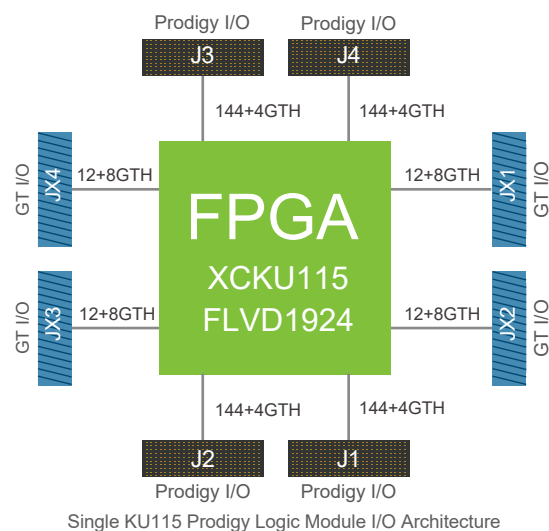
Prodigy Logic Module™

Single KU115 Prodigy™ Logic Module

The Single KU115 Prodigy Logic Module, based on Xilinx's Kintex UltraScale XCKU115 FPGA, is the ideal solution for today's consumer-based Internet of Things (IoT) designs and other small to medium-sized SoCs. Prodigy KU is well-suited for calculation-intensive applications with 5,520 DSP slices, the most of any other solution on the market. The system has 656 general purpose I/Os and 48 GTH transceivers on 8 high-speed connectors enabling high-speed communications. This low cost, all-purpose, stand-alone prototyping system is integrated with S2C's market-leading, vast library of daughter cards to quickly build prototype targets.

Highlights

- Ideal for IoT designs and other small to medium sized SoCs
- Low cost parallel system integration and software development
- 48 Gigabit Transceivers for high-speed communications
- Largest DSP resources on a single FPGA well-suited for calculation intensive applications



Features

Large Capacity & Scalability

- 1.45M System Logic Cells
- 75.9 Mb of FPGA internal memory
- 5,520 DSP Slices
- Multiple Logic Modules can be conveniently connected together to expand capacity through the use of interconnection modules or cables
- Up to 16 Single KU Logic Modules can be configured in a Cloud Cube

High Performance

- Up to 80W of power for an FPGA
- Equal trace length for I/Os from same I/O connector
- 48 Gigabit Transceivers can run at 12.5Gbps

Flexible & Powerful I/Os

- 576 high-performance I/O pins and 16 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 48 GPIOs through 4 GT 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-temperature

Features

Advanced Clock Management Standalone Mode

Standalone Mode

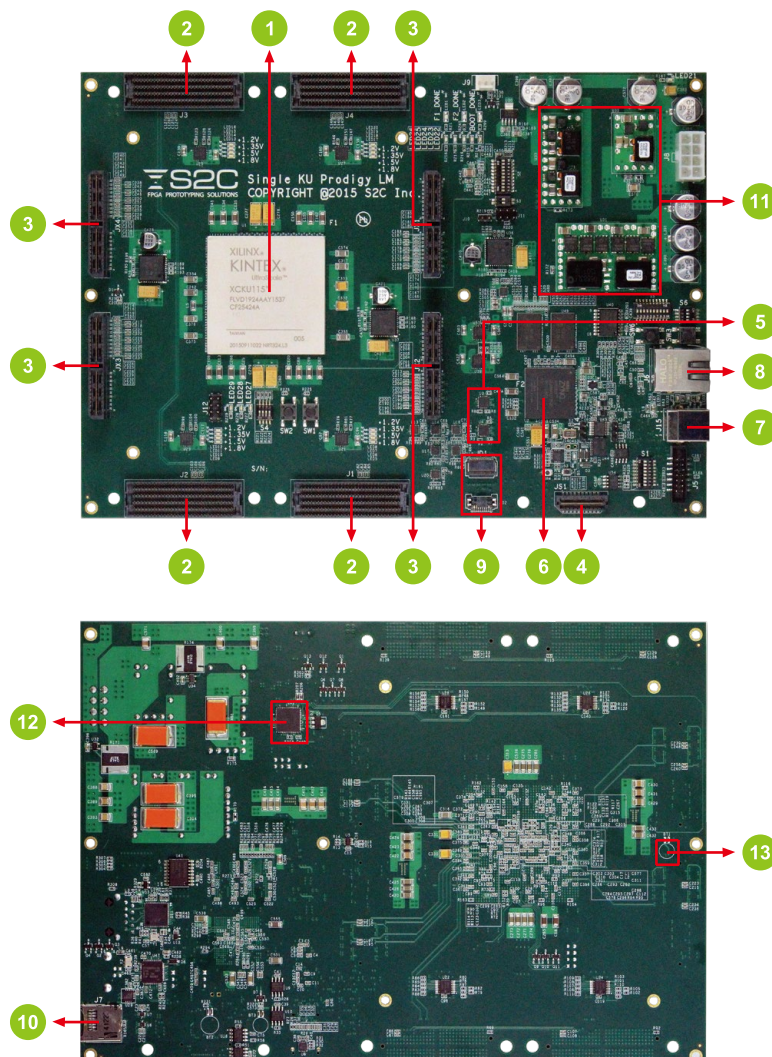
- 6 global clocks can be selected from
 - 6 programmable clock sources (0.2-700MHz)
 - 5 pairs of external clocks through MMCX connectors
 - 1 OSC socket
- 3 design clock outputs
 - through 3 pairs of MMCX connectors

Cloud Cube Mode

- 6 global clocks to be selected from
 - 6 local programmable clock sources (0.2-700MHz)
 - 6 Cloud Cube global clock resources
- 3 feedback clocks
 - Internally generated clocks can be output to Cloud Cube global clock sources

Ease-of-Use

- Multiple FPGA configuration options through Ethernet port, USB port, JTAG and micro SD card
- 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
- Compatible with S2C's off-the-shelf pre-tested daughter boards



- 1 Xilinx Kintex UltraScale 115 FPGA
- 2 Prodigy I/O Connector
- 3 GT I/O Connector
- 4 System Control Port
- 5 Advanced Clock Management
- 6 LM Controller
- 7 USB Port
- 8 Gigabit Ethernet Port
- 9 Debug Module Port
- 10 Micro SD Card
- 11 Power Module
- 12 Smart Power Monitors
- 13 Battery for Encryption

Low-Cost Fifth Generation Rapid FPGA-based Prototyping Hardware

K7 Prodigy Logic Module Configuration Table		
	XC7K410T	XC7K325T
ASIC Logic Gates (Max)	4.1M	3.2M
FPGA Memory	28Mbits	16Mbits
DDR3 Memory	Optional 1GB*	Optional 1GB*
DDR2 Memory	Optional 1GB*	Optional 1GB*
Global Clocks	4	4
External I/O	432	432
Gigabit Transceivers	16	16
GPIO	12	12

In addition, the S2C K7 Prodigy Logic Module series has a similar footprint to S2C's high design capacity series, V7 Prodigy Logic Modules, and therefore K7 Prodigy Logic Modules can also be used to prototype a subset of SoC designs targeted on V7 Prodigy Logic Modules in parallel to shorten time-to-market of larger SoC designs.



Features

Large Capacity

- Up to 4.1M ASIC gates
- Up to 28Mbits of FPGA internal memory
- Up to 1540 embedded 18X18 multipliers

High Speed Transceivers

- 16 GTX Gigabit Transceivers can run up to 10Gbps through 2 high-speed Differential I/O connectors
- Each Differential I/O connector has 8 channels of GTX transceivers and 12 single-ended I/O for control signals

Flexible & Powerful I/O

- Each FPGA can access up to 432 I/O through 4 Dedicated I/O connectors
- The HP (high performance) Dedicated I/O connector is fully populated with 120 I/O and I/O voltage can be adjusted to 1.2V, 1.5V or 1.8V
- Two HR (high range) Dedicated I/O connector is fully populated with 120 I/O and I/O voltage can be adjusted to 1.8V, 2.5V or 3.3V
- One HR I/O connector has 72 I/O and I/O voltage can be adjusted to 2.5V
- Dedicated I/O voltages are adjusted through runtime software in GUI

High Performance

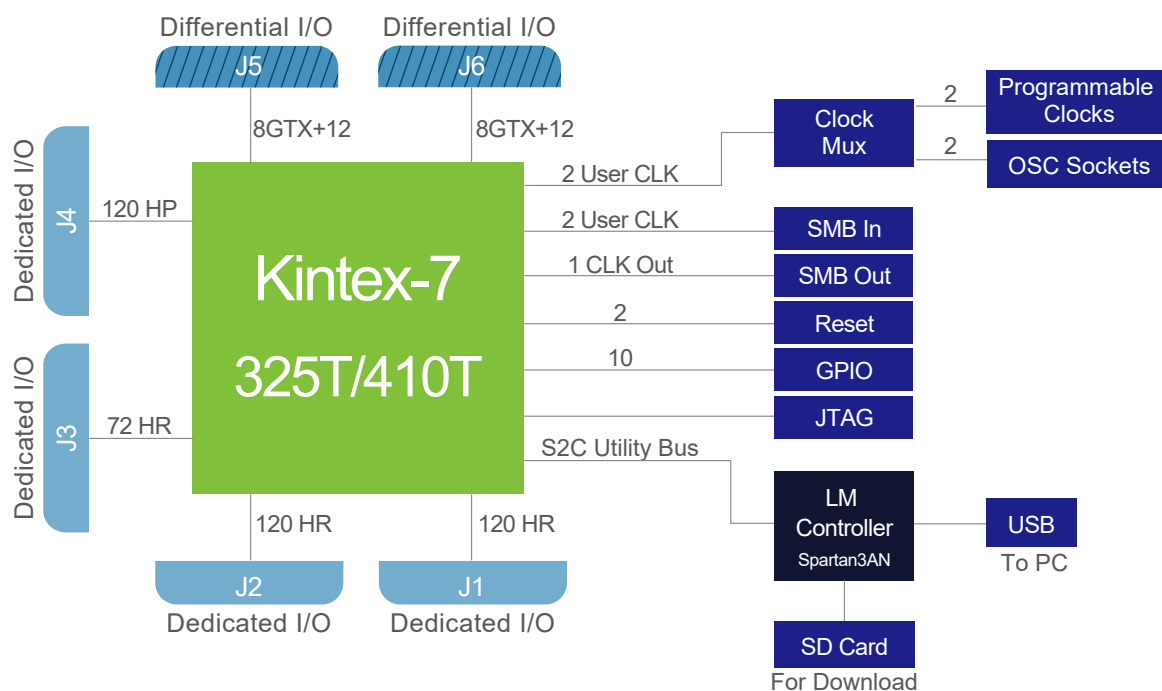
- Up to 60W power for FPGA
- Equal trace length for I/Os from same I/O connector
- Optional 1GB 32-bit DDR3 memory module at up to 667Mbps or
- 1GB 32-bit DDR2 memory module at up to 400Mbps data rate

Advanced Global Clock & Reset Management

- 2 single-ended global clocks can be selected from:
 - 2 programmable clock source (1-195MHz)
 - 2 oscillator sockets
- 2 pairs of differential global clocks from SMB connectors
- Clocks are programmed conveniently in S2C TAI Player runtime software
- 1 design clock can be output through SMB connector
- 2 global resets can be triggered from push-buttons

Ease-of-Use

- Multiple FPGA configuration options through USB2.0 Port, JTAG and SD Card
- Less than 1 second FPGA configuration through SD card
- Runtime features include self-test, clock generation, setting I/O voltage, read hardware status through software
- User Test Area - LEDs, Push Buttons, Switches and GPIO Headers for testing and debugging
- Use many off-the shelf pre-tested daughter boards



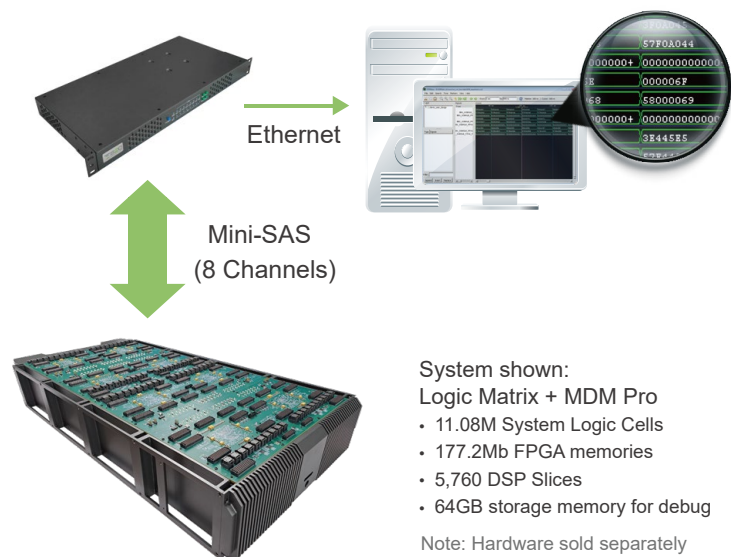
Prodigy Multi-Debug Module™

◀ Prodigy Multi-Debug Module Pro

Prodigy Multi-Debug Module Pro (MDM Pro™) is an innovative deep trace debugging solution for FPGA prototyping and allows for the concurrent debugging of multiple FPGAs. Prodigy MDM Pro works within the Prodigy Player Pro™ cockpit to go beyond debug set up to specify trigger conditions then debug multiple FPGAs with the help of the dedicated hardware. The MDM Pro hardware enables massive data acquisition and transferring through high speed giga transceivers, and deep tracing of the cause of bugs with the ability to store up to 64GB of waveforms. The MDM Pro captures and stores waveforms continuously removing the need to consume design FPGA memory for debug.

Highlights

- Debug across up to 8 FPGAs simultaneously using a single logic analyzer
- Sampling frequency at speeds up to 125MHz
- Trace up to 2K probes per FPGA and support 8 sample groups
- Easy get the value of any internal DFF/BRAM
- Supports trigger state machine languages to ease the debugging
- Store up to 64GB of waveform data externally



Features

The MDM Pro supports two usage modes: Compiler mode and IP mode. In IP mode, users can instantiate the debug IP in the DUT directly, no need to run the Player Pro compile time flow. When running the compiler mode, it is embedded in Prodigy Player Pro, the advanced multiple FPGA debug capabilities include:

RTL-level Probing

The GUI allows you to mark and upload internal signals to the external MDM Pro hardware for easy setting of trigger conditions and signal tracing.

Large Number of Probes Without Re-Compile

- Mark an unlimited number of internal FPGA probes before synthesis
- Trace up to 16K probes per FPGA in 8 groups of 2K probes each without FPGA re-compilation

Integrated In-Circuit Debug Setup

- Set up trigger and trace signals in multiple FPGAs from a single console
- Preserve internal FPGA probes before synthesis
- Probes are distributed to multiple FPGAs automatically based on partition results
- Support compile mode and IP mode

Features

Trigger Condition Specification

General Trigger

Users can easily set trigger events and combinational events

- Trigger events support: ==, !=, >=, <=, >, < and counting
- Combinational events support: !, &, |, ^, -> and counting
- Supports up to 8 event trigger blocks. Each block can run comparison, sequencing, occurrence and combination operations

Advanced Trigger

- Up to 8 trigger comparators
- State machines - support up to 16 states
- One, two- and three-way conditional branching
- Four built-in 16-bits counters used to events, implement timers, etc.
- Four built-in flags used for monitoring trigger state machine execution status

64GB Deep Trace

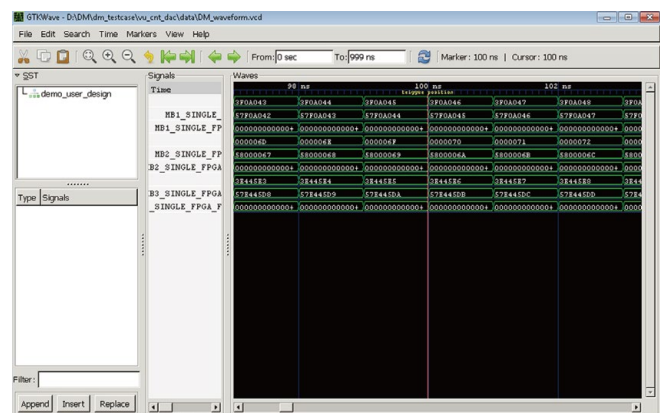
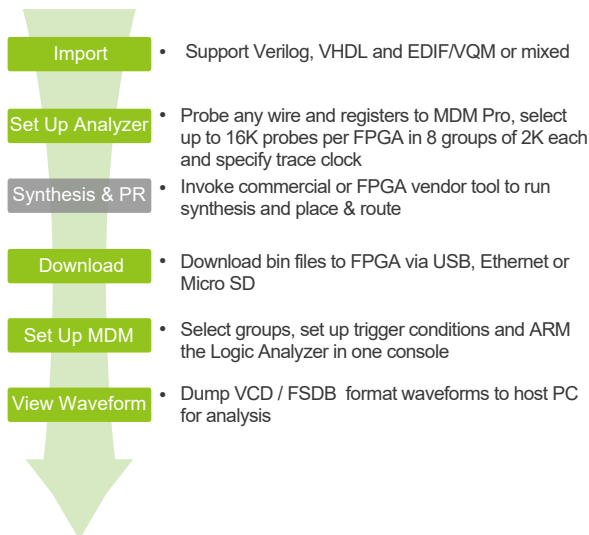
- Store 64GB of waveforms on external DDR4 memory, minimize the consumption of user FPGA resources
- Transfer captured waveforms to host computer through Gigabit Ethernet
- Capture and store waveforms continuously

Concurrent Debug of Multiple FPGAs

- Debug across multiple FPGAs simultaneously using a single Logic Analyzer
- Easy get the value of any internal DFF / BRAM
- Transmit trigger and trace data from multiple FPGAs to the MDM Pro hardware through high-speed transceivers
- Write the sample data in VCD / FSDB format for analysis

Integrated with Prototyping Setup Flow

Prodigy MDM Pro works within the Prodigy Player Pro cockpit to go beyond debug set up to specify trigger conditions then debug.



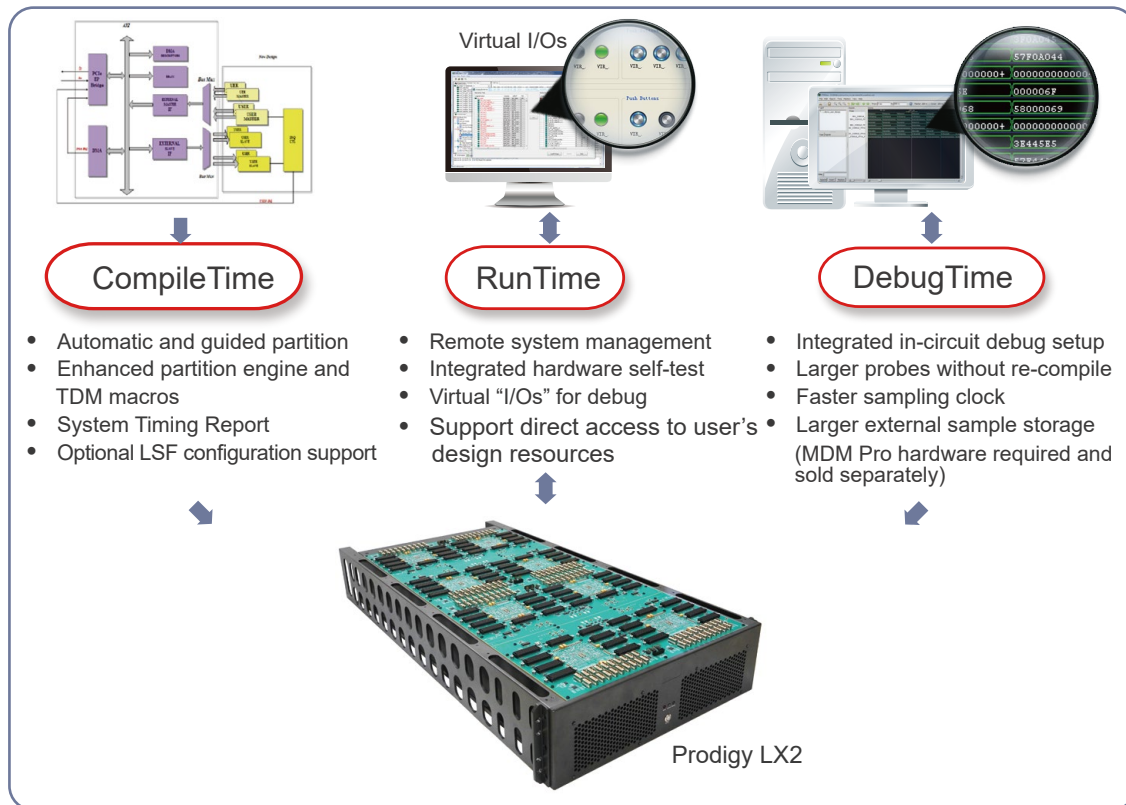
Concurrent Debugging of Multiple FPGAs in one console

Prodigy Player Pro™

Prodigy™ Player Pro

Cockpit for Prototype Design and Multi-Debug Set Up

Prodigy Player Pro is a tool that works with the FPGA-based prototyping platforms from S2C. Prodigy Player Pro plays three roles in speeding your development process - it configures the prototype, runs remote system management and provides set up for multi-FPGA debugging.



CompileTime

An integrated GUI environment and Tcl interface makes it easy to take an existing design, compile it, partition it into multi-FPGAs, and generate the individual bit files.

Automated Compile Flow

Prodigy Player Pro has an intuitive GUI environment to guide all compile steps. After a design is compiled once, you can perform an ECO flow automatically in Tcl mode:

- Import design
- Set up probes
- Run synthesis
- Partition design
- Assign & I/Os
- Run FPGA place and route
- Generate bit file(s)

I/O Assignment

Prodigy Player Pro provides a library of S2C daughter board pin-map files, and automatically matches them to I/O connectors. GUI-based clock and I/O properties assignment minimizes chance of error.

Partition

- Automatic and guided partitioning to multiple boards
 - User-guided performance optimization
 - User configurable cable connection setup
- Black-box approach to save partitioning time
- Enhanced system performance by TDM optimization
- Pre-qualification of signals before automatic pin-multiplexing insertion
- Timing estimation to quickly understand the performance before place and route
- System timing report to guide the optimization

RunTime

For compiled designs, Prodigy Player Pro enables you to control the target Prodigy Logic Module or Prodigy Logic System directly from the same software console, through either Ethernet or USB connections.

Multiple FPGA Configurations

Prodigy Player Pro can download the design to the FPGA(s) through USB or Ethernet. It can also write the design to an SD card on the Prodigy Logic Module/System and download the design from an SD card.

Virtual I/Os

Prodigy Player Pro provides virtual switches and indicators that you can use just like real hardware.

- Virtual LEDs for quick monitoring of design status
- Virtual push buttons and switches to set design input conditions quickly
- Virtual UART for convenient firmware debugging

DebugTime

Prodigy Player Pro allows users to pre-select the signals to be observed before compilation and define the trigger conditions to start a data capture. During runtime, the selected signals are captured and stored in an external DDR4 memory for analysis.

Integrated In-Circuit Debug Setup

- Preserve internal FPGA probes
- Probes are distributed to multiple FPGAs automatically based on the partition results
- Set up trigger and trace signals in multiple FPGAs from a single console

Multi-FPGA Debug

Prodigy Multi-Debug Module Pro (MDM Pro) is an optional tool with multiple FPGAs debug setup ready. MDM Pro includes Player Pro for Debug Time and external MDM Pro hardware. It features:

Trigger Condition Specification

Users can easily set the trigger events and combinational events through the Prodigy Player Pro Debug panel.

- Trigger Events support: ==, !=, >=, <=, >, < and counting
- Combinational Events support: !, &, |, ^, -> and counting
- Supports up to 8 event trigger blocks
- Supports trigger state machine language

Specifications

Hardware Support

- Compile Time: VU+, VU, KU, S10 and A10 •
- Runtime: VU+, VU, KU, S10 and A10
- Debug Set Up: VU+ and VU

Language Support

- Synthesizable RTL (Verilog, VHDL, System Verilog)
- Synthesizable gate-level netlist
- Mixed languages

Hardware Self-Test

A step-by-step wizard enables users to check for potential broken I/O pins, interconnection nets and clock lines.

Users can also verify the global clock frequencies and I/O voltage settings.

Remote System Control

All system features can be controlled remotely through USB or Ethernet.

- Automatic detection of daughter cards when plugged in
- Easy monitoring I/O voltages, currents and temperatures
- Support direct access to the internal registers and BRAM
- Controlling multiple Prodigy Logic Modules/Systems conveniently from one console

Large Number of Probes Without Re-Compile

- Mark an unlimited number of internal FPGA probes
- Trace up to 16K probes per FPGA in 8 groups of 2K probes each without FPGA re-compilation

Concurrent Multiple FPGAs Debug

MDM Pro hardware is required.

- IP mode and Compile mode simplify the process and usage
- Transmit trigger and trace data from multiple FPGAs to MDM through high-speed transceivers
- Write the sample data in VCD/FSDB format for analysis
- Store large external 8GB of waveform

OS Support

CompileTime

- 64-bit Red Hat 7.8+
- CentOS 7.4+

Runtime & DebugTime

- 64-bit Windows 10
- Red Hat 7.8+
- CentOS 7.4+
- Ubuntu 16.04+

Prodigy ProtoBridge™

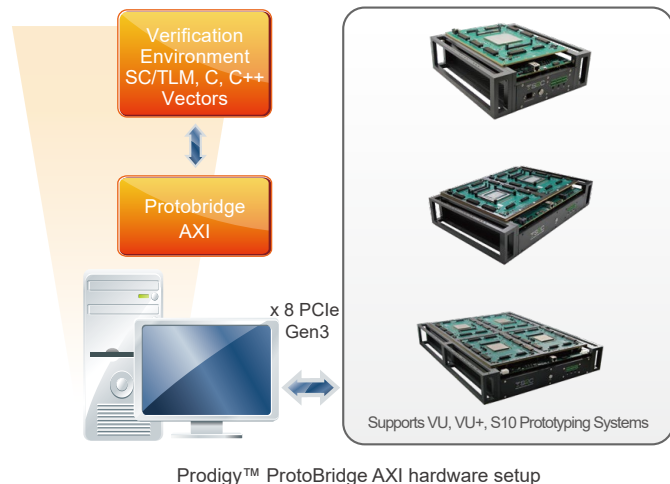
◀ Prodigy ProtoBridge AXI

An FPGA-Assisted Verification Tool

Overview

FPGA-based prototypes closely resemble final silicon chips in speed and accuracy, providing significant value in full-chip validation and early software development. Realizing these benefits has historically been met with the need to build additional hardware with significant resources and specialized expertise having to be employed to obtain the necessary FPGA connectivity.

The unique Prodigy ProtoBridge AXI FPGA-Assisted Verification Tool uses the widely adopted AXI-4 bus protocol within its patented technology to link the design to the FPGA-based prototyping environment. The result is a high-throughput channel that allows for the transfer of large amounts of transaction-level data between the FPGA(s) and a host PC.



Benefits

Technology

Early IP Verification without the complete SoC design

- IP blocks connected to the AXI bus can be verified without processor cores or peripheral blocks
- Early algorithm/architectural exploration can be performed on the FPGA while taking advantage of the FPGA environment's speed performance

Shorten Design Verification Time with a high-throughput channel

- Transaction-level verification is utilized to ensure system-level result accuracy
- C-code is used as a stimulus to reduce the time and effort in creating RTL test benches

Achieve High Product Reliability with improved test coverage

- Create corner test cases in software and run exercises on an FPGA-based prototype
- Run high-performance regression tests on an FPGA-based prototype with vectors stored in host PC

Business

- Eliminate Resource & Expertise Constraints by removing the need for the creation of additional specialized hardware and software
- Reuse Across Multiple Projects as the flexibility of Prodigy ProtoBridge makes it ideal for any design
- Get World-Class Support to help design teams with any issues that arise – something not available with in-house solutions leaving design teams to fend for themselves

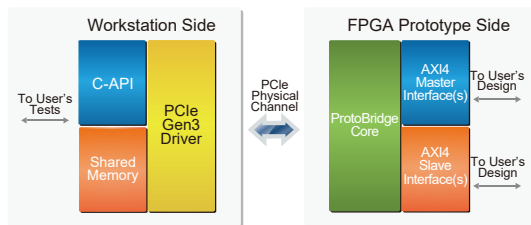
Features

Exercise of Large Amounts of Verification Data at High Speed

- Transmission through 8-lane PCIe Gen3 between Host PC and FPGA
- Massive data transfer from Host PC to FPGA up to 4,000 MB/s
- Support for direct and DMA access modes

AXI-4 Bus Protocol Between Host PC and FPGA

- Instantiation of AXI-4, AXI4-Lite, AXI-3 and AHB bus connections on FPGA ports
- Configurable data width from 32-bit to 1024-bit
- Support for an independent clock for each Master/Slave instance



Architecture diagram of ProtoBridge AXI

Rich Coverage of C Function Calls Between Host PC and FPGA

- System initialization function calls to manage the tool environment
- Interrupt control function calls to identify the source of an interrupt signal for C-API's follow-up actions
- Data read/write function calls to communicate with and operate the FPGA circuit
- DMA transfer function calls to perform DMA operations for large amounts of data

Unique Shared Memory Operation Increases FPGA Prototyping Memory Capacity

- Uses PC memory to store data alleviating the need to store data on the design under test's (DUT's) memory
- Allows DUT to exchange data with host PC's memory
- Simplifies DUT operations of moving the generated data for further design and debug
- Provides easy access to memory content by other tasks running on the host PC at the same time

Specifications

FPGA Platforms Supported

- Single/Dual/Quad VU440 Prodigy Logic System
- Single/Dual/Quad VU19P Prodigy Logic System
- Single/Quad S10 10M Prodigy Logic System
- User's design can reside on one prototyping system or expanded to multiple systems

OS Support

- Centos 7.4
- RHEL 7.6
- Win10
- Ubuntu16.04

Product Inclusions

- AXI-4 transaction-level interconnection module and Master/Slave interfaces for FPGA integration
- A set of C-API function calls to perform AXI bus transactions in the host computer
- PCIe driver for Linux or Windows operating systems to control Logic Module operations
- C-API reference operations with sample access to FPGA internal memory
- System integration guide to connect user RTL code with the ProtoBridge AXI-4 bus module

Prodigy Prototype Ready IP™

◀ Prototype Ready IP

S2C provides the largest library of off-the-shelf interfaces and accessories for FPGA-prototyping. All interfaces and accessories work with the Prodigy Logic Modules to further speed up and simplify your system prototyping process. Accessory modules are supplied as daughter boards that plug into the Prodigy Logic Module, providing pre-tested interfaces and reference design flows for easy bring-up. S2C also provides professional services to customize interface and accessory modules to meet the needs of your application.



▶ General Peripherals

Product List

Product Number	Product Name	Product Description
P-JTAG-8 V2*	Multi-FPGA JTAG Chain Tool Kitv	<ul style="list-style-type: none">• Supports to chain JTAG ports of up to 8 Xilinx FPGA Modules of Prodigy LS into one JTAG Chain
P-MICTORINT	Mictor Interface Module	<ul style="list-style-type: none">• enables debugging with external Agilent Logic Analyzer• 8 switches, 8 LED, 3 push buttons and many jumper pins• V7/K7 Prodigy Logic Modules• Occupies one LM I/O connector
P-PM-ETM4	Prodigy ETM4 Module	<ul style="list-style-type: none">• One ARM ETM4 interface• One ARM JTAG interface• One 9-pin UART interface• One 3-pin UART interface• One SD card socket• One Micro SD card socket• Occupies one Prodigy I/O connector
P-PM-GPHY1x3	Prodigy 3 Channel GMII PHY Interface Module	<ul style="list-style-type: none">• 10/100/1000 BASE-T IEEE 802.3 compliant• Support for RGMII Interface• Full integrated digital adaptive equalizers, echo cancellers and crosstalk cancellers• Two-wire Serial Interface and MDC/MDIO• CRC checker, packet counter• Auto-calibration for MAC interface outputs• Occupies one Prodigy I/O connector

Product List

General Peripherals

P-PM-GPHY1x6	Prodigy 6Channel SGMII PHY Interface Module	<ul style="list-style-type: none"> • 10/100/1000 BASE-T IEEE 802.3 compliant • Support 2 channels RGMII Interface and 4 channels SGMII Interface • Full integrated digital adaptive equalizers, echo cancellers and crosstalk cancellers • Two-wire Serial Interface and MDC/MDIO • CRC checker, packet counter • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector
P-PM-GPIOE	Prodigy GPIO Extension Module	<ul style="list-style-type: none"> • Two RS232s interfaces • Two I2C interfaces • One Micror-38 connector • One ARM JTAG interface • 8 LEDs, 4 push buttons & 8 Switches • Two 20*2 pin headers • 2 channels of SerDes through MMCX connectors • Occupies one Prodigy I/O connector
P-PM-PCI	Prodigy PCI Interface Module	<ul style="list-style-type: none"> • Provide a 32-bit 3.3V PCI Edge Connector • Occupies one Prodigy I/O connector
P-PM-PPM	Prodigy Processor Peripheral Module	<ul style="list-style-type: none"> • Provide a 32-bit 3.3V PCI Edge Connector • Occupies one Prodigy I/O connector
P-PM-RGPHY1x3	Prodigy 3 Channel RGMII PHY Interface Module	<ul style="list-style-type: none"> • 10/100/1000 BASE-T IEEE 802.3 compliant • Support for RGMII Interface • Full integrated digital adaptive equalizers, echo cancellers and crosstalk cancellers • Two-wire Serial Interface and MDC/MDIO • CRC checker, packet counter • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector
P-PM-USB2	Prodigy USB2.0 Interface Module	<ul style="list-style-type: none"> • Support host, device and OTG mode • x2 16bits UTMI interface & x1 8bits ULPI interface • 2x5 Pin Headers on board • 3 LEDs on board • 2 Push Buttons • Occupies one Prodigy I/O connector
P-RS232I	RS232 Interface Module	<ul style="list-style-type: none"> • Two RS232 interfaces • Application of voltage standards to RS232 interface <ul style="list-style-type: none"> ◦ 3.0V ◦ 1.8V ◦ 1.5V
P-PM-GPIM*	Prodigy General Peripheral Interface Module V3.0	<ul style="list-style-type: none"> • Provides 5 I2C connections • Provides a 20-pin ARM JTAG interface • Provides a SGPIO interface • Provides a PWM pin header • Provides 2 SPI flash sockets • Provides a RJ45 to 2 UART interface • Provides a 4-bit GPIO switch • Occupies one Prodigy I/O connector
P-PM-GPIM_V2.0*	Prodigy USB 2.0 Interface Module	<ul style="list-style-type: none"> • Support host, device and OTG mode • x2 16bits UTMI interface & x1 8bits ULPI interface • 2x5 Pin Headers on board • 3 LEDs on board • 2 Push Buttons • Occupies one Prodigy I/O connector

Product List

General Peripherals

P-PM-MSAS*	Prodigy Mini-SAS Module	<ul style="list-style-type: none"> • Convert 136 GPIOs between two Prodigy connectors • Convert 4 SerDes from Prodigy connector to Mini-SAS connector • Support synchronous and asynchronous reference clock • Support 10 ~ 810MHz programmable clock as reference clock • Support 6 SIDEBAND signals for Mini-SAS connector • No external power supply needed • Occupies one Prodigy I/O connector
P-PM-MSAS V2.0*	Prodigy Mini-SAS V2.0 Module	<ul style="list-style-type: none"> • Convert 136 GPIOs between two Prodigy connectors • Convert 4 SerDes from Prodigy connector to Mini-SAS connector • Support synchronous and asynchronous reference clock • Support 10 ~ 810MHz programmable clock as reference clock • Support 6 SIDEBAND signals for Mini-SAS connector • No external power supply needed • Occupies one Prodigy I/O connector

*Please confirm the exact ordering number with S2C Sales

► High Speed GT Peripherals

Product List

Product Number	Product Name	Product Description
P-GM-2DMB	GT to DM Converter Module Type B	<ul style="list-style-type: none"> Converts one GT connector to two Firefly connectors Provides two LEDs Occupies one GT I/O connector
P-GM-CX4x2	2 Channel CX4 GT Module	<ul style="list-style-type: none"> Two 10GE Base-CX4 connectors to link to external Ethernet devices On-board 156.25MHz LVDS OSC to supply the reference clock One pair of SMB input supply the reference clock 3.3V power supply Occupies one GT I/O connector
P-GM-DP	DisplayPort GT Module	<ul style="list-style-type: none"> One DisplayPort connector to link to external DisplayPort device Four SerDes through MMCX connectors One 100MHz clock supply the reference clock One differential clock through MMCX connector supply the reference clock Occupies one GT I/O connector
P-GM-IOSC	GT I/O Splitter Module Type C	<ul style="list-style-type: none"> Two FireFly connector 1x on board 100MHz LVDS OSC 1x on board 156.25MHz LVDS OSC Transceivers run up to 10.3125Gbps Occupies one GT I/O connector
P-GM-SATA	SATA GT Module	<ul style="list-style-type: none"> Four SATA connectors, includes 2x host & 2x device On-board 100MHz LVDS oscillator supply the reference clock 8 MMCX connectors for 2 channel SerDes 2 MMCX connectors for reference clock input Occupies one GT I/O connector
P-GM-SFP+	SFP+ GT Module	<ul style="list-style-type: none"> x1 SFP/SFP+ connector to link to external device x1 XFP connector to link to external device One onboard Si5315 clock multiplier or LVDS oscillator supply the SerDes reference clock Occupies one GT I/O connector
P-GM-SMAx4	4-Channel Transceivers on SMA GT Module	<ul style="list-style-type: none"> 4-channel transmitter of GT to SMA 4-channel receiver of GT to SMA One pair of differential reference clock of GT to SMB Occupies one GT I/O connector
P-GM-x4PCIE2C	4-Lane PCIe Gen2 GT Module Type C	<ul style="list-style-type: none"> PCIe Gen1/Gen2 4-Lane cable connector to link to external host PC through OSS PCIe Kit One 40-pin mini GT connector Low-jitter precision 100MHz LVDS OSC supply the reference clock Occupies one GT I/O connector
P-GM-x4PCIE3RCx2	2 Slot 4-Lane PCIe Gen3 Root Complex GT Module	<ul style="list-style-type: none"> One physical * 16, electrical * 4 PCIe slot One physical * 8, electrical * 4 PCIe slot 100M differential reference clock for GT I/O connector and PCIe slots 12V power supply Occupies one GT I/O connector
P-GM-x4QSFP+	4 Channel QSFP+ GT Module	<ul style="list-style-type: none"> Provide 100MHz and 156.25MHz reference clocks Provide 4 channel QSFP+ connector and one 1x4 cage Occupies two GT I/O connectors

Product List

High Speed GT Peripherals

P-GM-x8PCIE3B	8-Lane PCIe Gen3 GT Module Type B	<ul style="list-style-type: none"> 8-Lane PCIe Gen3 cable connector to link to external PCIe Gen 3.0 devices Occupies one GT I/O connector
P-GTIOT	PGT I/O Testing Module	<ul style="list-style-type: none"> Provide loop back circuits for testing PGT I/O connectors of Prodigy LS / LX
P-PGM-2DM	PGT to DM Converter Module	<ul style="list-style-type: none"> Convert one PGT I/O connector to two Firefly connectors Provide 2 LEDs Occupies one PGT I/O connector
P-PGM-CSM	PGT Connector Spacer Module	<ul style="list-style-type: none"> Adds approximately 9.7 mm of height between a a PGT Socket and a PGT Mezzanine Connector Occupies one PGT I/O connector
P-PGM-IOT	PGT I/O Testing Module	<ul style="list-style-type: none"> Provide loop back circuits for testing PGT I/O connectors of Prodigy LS / LX
P-PGM-MIOC	PGT Mezzanine Connector	<ul style="list-style-type: none"> SEAM-20-02.0-S-06-2-A-K-TR mates with the PGT Socket Connector (SEAF-20-06.5-S-6-2-A-K-TR) 5.6mm height
P-PGM-SATA	SATA PGT Module	<ul style="list-style-type: none"> Four SATA connectors, includes 2x host & 2x device On-board 100MHz LVDS oscillator supply the reference clock 8 MMCX connectors for 2 channel SerDes 2 MMCX connectors for reference clock input Occupies one PGT I/O connector
P-PGM-SIOC	PGT Mezzanine Connector	<ul style="list-style-type: none"> SEAF-20-06.5-S-6-2-A-K-TR
P-PGM-SMAx8	8-Channel Transceivers on SMA PGT Module	<ul style="list-style-type: none"> 8-channel transmitter of PGT to SMA 8-channel receiver of PGT to SMA Provides two reference clocks Provides two LEDs Occupies one PGT I/O connector
P-PGM-x2QSFP+	2 Channel QSFP+ PGT Module	<ul style="list-style-type: none"> Provide x2 QSFP+ connectors with 1x2 cage Provide 100MHz and 156.25MHz on-board LVDS oscillator Provide x2 Push Buttons and x2 LEDs No external power supply needed Occupies one PGT I/O connector
P-PGM-X4PCIEA	4-Lane PCIe Gen2 PGT Module Type A	<ul style="list-style-type: none"> PCIe 4-Lane cable connector to link to external host PC through OSS PCIe Kit Provides one Firefly connector Low-jitter precision 100MHz LVDS OSC supply the SerDes reference clock Provides 3 LEDs and 1 Push Button Occupies one PGT I/O connector
P-PGM-x4SFP+	4 Channel SFP+ PGT Module	<ul style="list-style-type: none"> Provide 100MHz and 156.25MHz reference clocks Provide 4x SFP+ connectors with 2x2 cage Provide 8 LEDs and 8 Switches Occupies one PGT I/O connector

P-PGM-X8PCIEA	8-Lane PCIe Gen3 PGT Module Type A	<ul style="list-style-type: none"> • PCIe Gen1/Gen2/Gen3 8-Lane cable connector to link to external host PC through OSS PCIe Kit • Provide 3 LEDs and 1 Push Button • Occupies one PGT I/O connector
P-PGM-x8PCIERCx2	2 Slot 8-Lane PCIe Root Complex PGT Module	<ul style="list-style-type: none"> • Provides two x16 PCIe Slots, only support 8 lanes • Provides one 100MHz reference clock • Provides 3 LEDs and 2 Push Buttons • Occupies two PGT I/O connectors • Supports Prodigy S7-19P only
P-PGM-x8PCIERCx2B	2 Slot 8-Lane PCIe Root Complex PGT Module Type B	<ul style="list-style-type: none"> • Provides two x16 PCIe Slots, only support 8 lanes • Provides one 100MHz reference clock • Occupies two PGT I/O connectors • Supports Prodigy S7-19P only
P-PGM-MSAS V3.0*	PGT Mini-SAS V3.0 Module	<ul style="list-style-type: none"> • Convert 8 SerDes from one PGT connector to two Mini-SAS connectors • Support synchronous and asynchronous reference clock • Support 10 ~ 810MHz programmable clock as reference clock • Support 6 SIDEBAND signals for Mini-SAS connector • No external power supply needed • Occupies one PGT I/O connector

*Please confirm the exact ordering number with S2C Sales

► Memory Modules

Product List

Product Number	Product Name	Product Description
P-1GBK7DDR3M	1GB DDR3 Memory Module for K7 Logic Module	<ul style="list-style-type: none"> Two Micron MT41J256M16HA-125 or equivalent DDR3 SDRAM devices On-board 200MHz system clock Up to 800Mbps data rate I/O voltage operating at 1.5V Occupies one LM I/O connector
P-9MBNBLSRAM	9MB No Bus Latency SRAM Module	<ul style="list-style-type: none"> 9MB of Cypress No Bus Delay SRAM for Prodigy Logic Module Configured as 2M*36 bit Occupies one LM I/O connector
P-DDR3-8GB	Pre-tested 8GB DDR3 SO-DIMM Memory Module	<ul style="list-style-type: none"> @ Up to 800MHz clock rate
P-DDR4-8GB	Pre-tested 8GB DDR4 SO-DIMM Memory Module	<ul style="list-style-type: none"> High speed 8GB DDR4
P-PM-18MBSRAM	Prodigy 18MB SRAM Module	<ul style="list-style-type: none"> Contains two 72Mbit 'NO WAIT' state bus SRAMs Memory width selectable as 36bits or 72bits Up to 117MHz access frequency SRAM I/O Voltage is +1.8V Occupies one Prodigy I/O connector
P-PM-DDR3	Prodigy DDR3 Memory Module	<ul style="list-style-type: none"> Supports VU/KU Prodigy LM except Single/PCIe
P-PM-DDR3B	Prodigy DDR3 Memory Module Type B	<ul style="list-style-type: none"> Supports A10/S10 Prodigy LS only
P-PM-DDR3VUS	Prodigy DDR3 Memory Module for Single VU	<ul style="list-style-type: none"> Supports Single VU440 Prodigy LM only
P-PM-DDR4	Prodigy DDR4 Memory Module	<ul style="list-style-type: none"> Supports all Xilinx LM and LS except Single VU440 LM
P-PM-DDR4VUS	Prodigy DDR4 Memory Module for Single VU (P-PM-DDR4VUS)	<ul style="list-style-type: none"> Extends DDR4 ECC/Non-ECC memory through J6 connector Includes one Single-rank 8GB DDR4 Non-ECC Pre-tested SO-DIMM Memory Module (P-DDR4-8GB) Occupies one Prodigy I/O connector Supports Single VU440 Logic Module only
P-PM-DDR4D	Prodigy DDR4 Memory Module Type D	<ul style="list-style-type: none"> Supports A10/S10 Prodigy LS only
P-PM-DDR4E	Prodigy DDR4 Memory Module Type E	<ul style="list-style-type: none"> Recommend to use on LX

Product List

Memory Modules

P-PM-DDR4BVUS	Prodigy DDR4 Memory Module Type B for Single VU	<ul style="list-style-type: none"> • Extends DDR4 ECC/Non-ECC memory through J6 connector • Includes one Single-rank 8GB DDR4 Non-ECC Pre-tested SO-DIMM Memory Module (P-DDR4-8GB) • Occupies one Prodigy I/O connector • Supports Single VU440 Logic Module only
P-PM-eMMC	Prodigy eMMC Memory Module	<ul style="list-style-type: none"> • JEDEC/MMC standard version 5.0 compliant, MMC V4.41 compatible, and fully backward compatible with previous Multi-Media Card system • Support high priority interrupt scheme and back ground operation • Default data bus width is 1-bit, can be configure to 4-bit or 8-bit • Occupies one Prodigy I/O connector
P-PM-RLDRAM3	Prodigy RLDRAM3 Memory Module	<ul style="list-style-type: none"> • 144MB RLDRAM3 memory • Supports VU/KU/S10 Prodigy Logic Modules/Systems • Occupies one Prodigy I/O connector

► ARM Processor Adapters

Product List

Product Number	Product Name	Product Description
P-PM-ZCINT	Prodigy Zynq Interface Module	<ul style="list-style-type: none">• Provide the bridge between Xilinx ZC7(ZC702/ZC706/ZCU102) EVB and Prodigy Logic Module/System• Provide 8 differential clocks input and 2x7 pin headers• Occupies two Prodigy I/O connectors
P-PM-ARMJUNOIK	Prodigy ARM Juno Interface Module Kit	<ul style="list-style-type: none">• Bridge the ARM Juno Development Platform and Prodigy LM / LS / LX• Occupies one Prodigy I/O connector

► Embedded & Multimedia

Product List

Product Number	Product Name	Product Description
P-PM-DVIO	Prodigy DVI Output Interface Module	<ul style="list-style-type: none">• One DVI video output using HDMI/DVI transmitter ADV7511KSTZ• Four user LEDs• Two user push buttons• Two RS232 and two I2C interfaces• Supports LVCMOS 1.8V I/O standards• Occupies one Prodigy I/O connector
P-PM-HDMI	Prodigy HDMI Interface Module	<ul style="list-style-type: none">• Provide a HDMI video output• Provide a HDMI video input• Provide a I2C interface to HDMI transmitter• Provide 3 LEDs, 1 Push button and a 7-pin headers• Occupies one Prodigy I/O connector
P-PM-MIPIDPHY	Prodigy MIPI D-PHY Interface Module	<ul style="list-style-type: none">• Supports 4 channel MIPI D-PHY RX using Meticom MC20901 RX chip• Supports 4 channel MIPI D-PHY TX using Meticom MC20902 TX chip• Occupies one Prodigy I/O connector
P-PM-MIPIDPHYB	Prodigy MIPI D-PHY Interface Module Type B	<ul style="list-style-type: none">• Supports up to x3 4 channel MIPI D-PHY RX/TX using ZUCG-2• Provide 12 user GPIOs• Provide 3 user LEDs• Provide 2 user Push Buttons• Occupies one Prodigy I/O connector

► Expansions & Accessories

Product List

Product Number	Product Name	Product Description
P-CONNSM-1	Connector Spacer-1 Module	Connector Spacer Module adds about 5 mm of height between a LM I/O Terminal Connector and a Logic Module I/O Socket connector. This module supports V7/K7 Prodigy Logic Modules, and occupies one LM I/O connector.
P-CONNSM-5	Connector Spacer-5 Module	Connector Spacer -5 Module adds about 19 mm of height between a LM I/O Terminal Connector and a Logic Module I/O Socket connector. This module supports V7/K7 Prodigy Logic Modules, and occupies one LM I/O connector. Occupies one LM I/O connector.
P-DDR32PM	Prodigy DDR32PM Module	<ul style="list-style-type: none"> • Converts a DDR3 SODIMM socket to a Prodigy I/O connector • Occupies one DDR3 SO-DIMM socket
P-DDR42PM	Prodigy DDR42PM Module	<ul style="list-style-type: none"> • Converts a DDR4 SODIMM socket to a Prodigy I/O connector • Occupies one DDR4 SO-DIMM socket
P-FCBLB1000	Prodigy 1000mm FireFly Cables Type B	<ul style="list-style-type: none"> • Prodigy Firefly Cables link connections between two Firefly connectors • Support the differential voltage standard Standard cable lengths: 1000mm
P-FCBLB500	Prodigy 500mm FireFly Cables Type B	<ul style="list-style-type: none"> • Prodigy Firefly Cables link connections between two Firefly connectors • Support the differential voltage standard Standard cable lengths: 500mm
P-FMCIOT	Prodigy FMC I/O Testing Module	Prodigy FMC I/O Testing Module provides loop back circuits with LED status lights for testing Prodigy to FMC Converter Module. This module supports VU/KU/S10/A10 Prodigy Logic Modules and Logic Systems, and occupies one Prodigy I/O connector.
P-GCLKM	Global Clocks Management Module	Global Clocks Management Module outputs 3 clocks (2 differential and 1 single-ended) and 1 reset signal with equal timing to up to 4 different boards through SMB connectors. All 3 clock frequencies can be programmed via USB. The reset input comes from either an on-board push button or a SMB input.
P-GCLKMB	Global Clocks Management Module Type B	<ul style="list-style-type: none"> • 3 reset inputs through push button or MMCX, and output to 4 SC connectors synchronized • 6 pairs of LVDS clock inputs through programmable chip or MMCX, and output to 4 SC connectors synchronized • 3 pairs of LVDS clock outputs from each SC connector • 1 USB interface for clock programming • Single 3.3V power supply
P-GCLKMD	Global Clocks Management Module Type D	<ul style="list-style-type: none"> • Support 6 global clocks and 3 global resets • 1 Ethernet interface for clock programming • 4 SC connectors to connect up to 4 Prodigy LM / LS

Product List

Expansions & Accessories

P-HT3IOT	Prodigy to HT3 I/O Testing Module	Prodigy to HT3 I/O Testing Module provides loop back circuits with LED status lights for testing HT3 connectors. This module supports V7/K7 Prodigy Logic Modules, and occupies one Prodigy I/O connector.
P-IMV	LM Interconnection Module Type V	LM Interconnection Module Type V connects 2 vertically aligned LM connectors on Logic Modules. This module supports V7/K7 Prodigy Logic Modules, and occupies two LM I/O connectors.
P-IOPT	I/O Performance Testing Module	I/O Performance Testing Module provides loop back circuits with LVDS testing or Single-ended testing for Logic Module I/O connectors.
P-IOT	I/O Testing Module	I/O Testing Module provides loop back circuits with LED status lights for testing Logic Module I/O connectors.
P-MMCX2SMB	300mm MMCX to SMB Cable	<ul style="list-style-type: none"> Converts 6 single-ended 2.5V MMCX clock inputs to 6 pairs of LVDS SMB clock outputs
P-PAKUS	Power Adapter for Single KU	Power Adapter for Single KU provides the 12V power to the Single KU115 Prodigy Logic Module.
P-PCBLB150	150mm Prodigy Cable Type B	<ul style="list-style-type: none"> Links two S2C Prodigy Socket connectors Length is 150mm
P-PCBLB254	254mm Prodigy Cable Type B	<ul style="list-style-type: none"> Links two S2C Prodigy Socket connectors Length is 254mm
P-PCBLB635	635mm Prodigy Cable Type B	<ul style="list-style-type: none"> Links two S2C Prodigy Socket connectors Length is 635mm
P-PM-2HT3	Prodigy to HT3 Converter Module	<ul style="list-style-type: none"> Converts a Prodigy I/O connector to three HAPS TRAK3 I/O connector Provide one 2x8 and two 2x7 Pin Headers Occupies one Prodigy I/O connector
P-PM-2LM	Prodigy to LM Converter Module	<ul style="list-style-type: none"> Converts a Prodigy I/O connector to a LM I/O connector Occupies one Prodigy I/O connector
P-PM-2PH	Prodigy to Pin Header Module	<ul style="list-style-type: none"> Converts a Prodigy I/O connector to four 21x2 Pin Headers and MMCX connectors Occupies one Prodigy I/O connector
P-PM-CSM	Prodigy Connector Spacer Module	<ul style="list-style-type: none"> Adds approximately 17.5 mm of height between a Prodigy Socket and a Prodigy Mezzanine Connector. Occupies one Prodigy I/O connector
P-PM-FMCHPC*	Prodigy to FMC-HPC Converter Module	<ul style="list-style-type: none"> Converts two Prodigy I/O connectors to a FMC-HPC & FMC-LPC I/O connector Provides 2 Push Buttons Provides 2x7 Pin Headers Provides 3 LEDs Occupies two Prodigy I/O connectors
P-PM-IMA	Prodigy Interconnection Module Type A	<ul style="list-style-type: none"> Connect two horizontally aligned Prodigy connectors of two VU/KU Prodigy Logic Modules

Product List

Expansions & Accessories

P-PM-IMC	Prodigy Interconnection Module Type C	<ul style="list-style-type: none"> • Interconnect two Prodigy I/O connectors • Provides 144 I/O interconnections and 4 lanes Gigabit Transceivers • 100MHz reference clock for transceivers. • Center distance between to I/O connectors is 75mm.
P-PM-IMCP	Prodigy Programmable Interconnection Module Type C	<ul style="list-style-type: none"> • Interconnect two Prodigy I/O connectors • Provides 144 I/O interconnections and 4 lanes Gigabit Transceivers • Programmable reference clock for transceivers • Center distance between to I/O connectors is 75mm
P-PM-IMD	Prodigy Interconnection Module Type D	<ul style="list-style-type: none"> • Interconnect two Prodigy I/O connectors • Provides 144 I/O interconnections and 4 lanes Gigabit Transceivers • 100MHz reference clock for transceivers • Supports VU440/KU/S10/A10 Prodigy Logic Modules and Logic Systems • Center distance between to I/O connectors is 35mm
P-PM-IMDP	Prodigy Programmable Interconnection Module Type D	<ul style="list-style-type: none"> • Interconnect two Prodigy I/O connectors • Provides 144 I/O interconnections and 4 lanes Gigabit Transceivers • Programmable reference clock for transceivers • Center distance between to I/O connectors is 35mm
P-PM-IMH	Prodigy Interconnection Module Type H	<ul style="list-style-type: none"> • Connects 2 horizontally aligned Prodigy I/O connectors
P-PM-IOLS	Prodigy IO Level Shifting Module	<ul style="list-style-type: none"> • Converts the signal level from 1.8V to 3.3V • No need external power supply • Occupies one SEAM connector • Occupies one SEAF connector
P-PM-IOT	Prodigy I/O Testing Module	<ul style="list-style-type: none"> • Provides loop back circuits with LED status lights for testing Prodigy I/O connectors • Occupies one Prodigy I/O connector
P-PM-MIOC	Prodigy Mezzanine Connector	<ul style="list-style-type: none"> • SEAM-30-02.0-S-10-2-A-K-TR • Mates with the Prodigy Socket Connector • Height of 4.6mm itself and a height is 8.5mm after mating with a Socket Connector
P-PM-MTIOC	Prodigy Mezzanine Tall Connector	<ul style="list-style-type: none"> • SEAM-30-11.0-S-10-2-A-K-TR • Mates with the Prodigy Socket Connector used on VU440/KU/S10/A10 Prodigy Logic Modules and Logic Systems • Height of 11.6mm itself and a height is 15.5mm after mating with a Socket Connector
P-PM-SIOC	Prodigy Socket Connector	<ul style="list-style-type: none"> • SEAF-30-06.5-S-10-2-A-K-TR

Product List

Expansions & Accessories

P-PSM	Smart Power Switch Module	<ul style="list-style-type: none"> • Power on/off the ATX power supply • One 5V power supply, current up to 3A • One 3.3V power supply, current up to 3A • One 1.8V power supply, current up to 3A • Programmable power sequence for 5V, 3.3V and 1.8V • Support for remote power recycling of Prodigy LM
P-SC-CMC	System Control Clock Module Type C	<ul style="list-style-type: none"> • 5 pairs of LVDS clock inputs on MMCX • 1 single-ended OSC socket • 3 reset inputs through push button or SMB • 3 pairs of LVDS clock outputs on MMCX • One I2C interface for power recycle function • Occupies one System Control Connector
P-SC-CMD	System Control Clock Module Type D	<ul style="list-style-type: none"> • 5 pairs of LVDS clock inputs on MMCX • 1 single-ended OSC socket • 3 reset inputs through push button or SMB • 3 pairs of LVDS clock outputs on MMCX • One I2C interface for power recycle function • Occupies one System Control Connector
P-SPSMB	Smart Power Switch Module Type B	<ul style="list-style-type: none"> • Power on/off the ATX power supply • One 5V power supply, current up to 3A • One 3.3V power supply, current up to 3A • One 1.8V power supply, current up to 3A • Programmable power sequence for 5V, 3.3V and 1.8V • Support for remote power recycling of Prodigy Logic Module • One Ethernet port for remote control
USB-BLAST-ER-GFEC-1	GFEC Altera USB Blaster	<ul style="list-style-type: none"> • Supports Intel FPGA download and debug through JTAG interface when connect to PC through USB connection
USB-XLNX-WS	WaterSpirit Xilinx USB Download Cable	<ul style="list-style-type: none"> • Supports Xilinx FPGA configuration and debug via JTAG interface



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