



Product Selection Guide

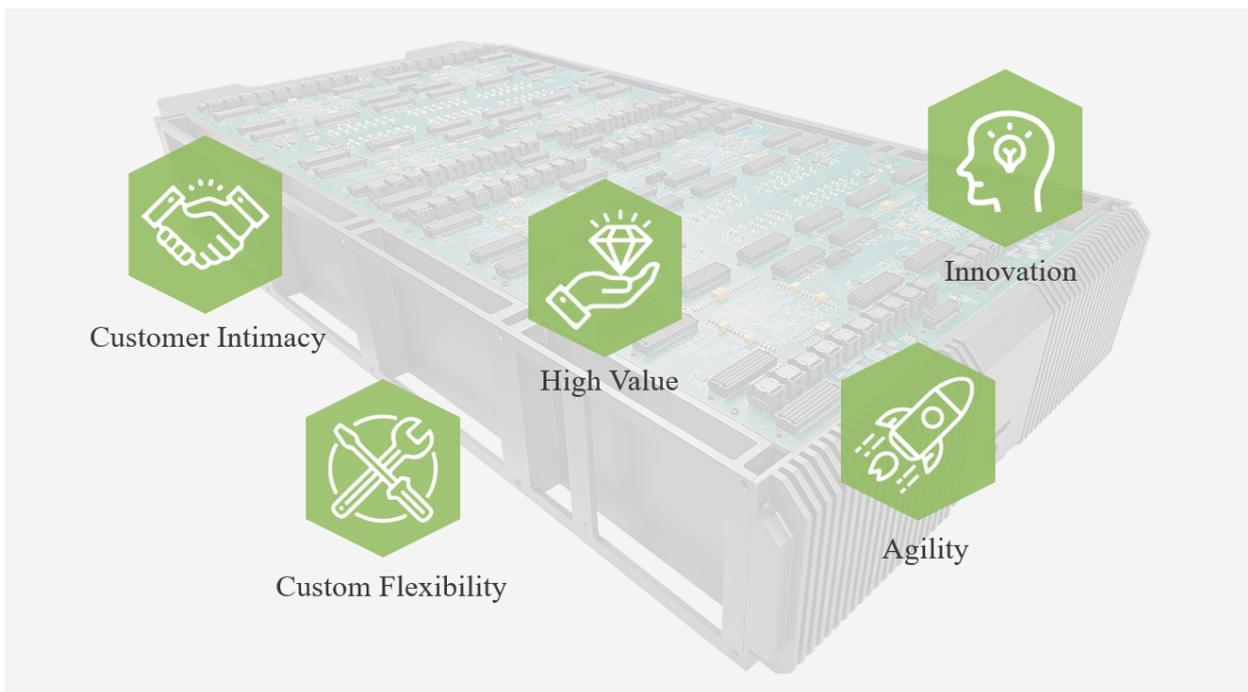
Paving the Way to Digital Innovation

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, including 6 of the world's top 15 semiconductor companies, our world-class engineering team and customer-centric sales team are experts at addressing our customer's SoC and ASIC verification needs. S2C has offices and sales representatives in the US, Europe, Israel, China, Hong Kong, Korea and Japan.



Core Competencies



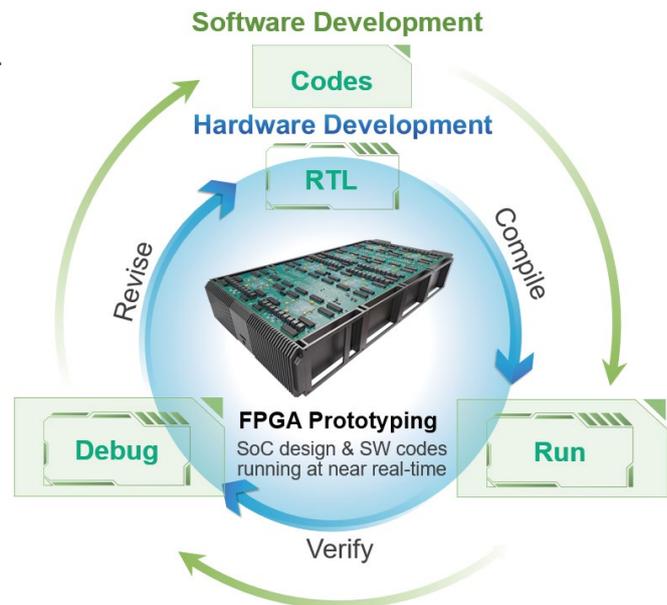
Product

Prodigy™ Complete Prototyping

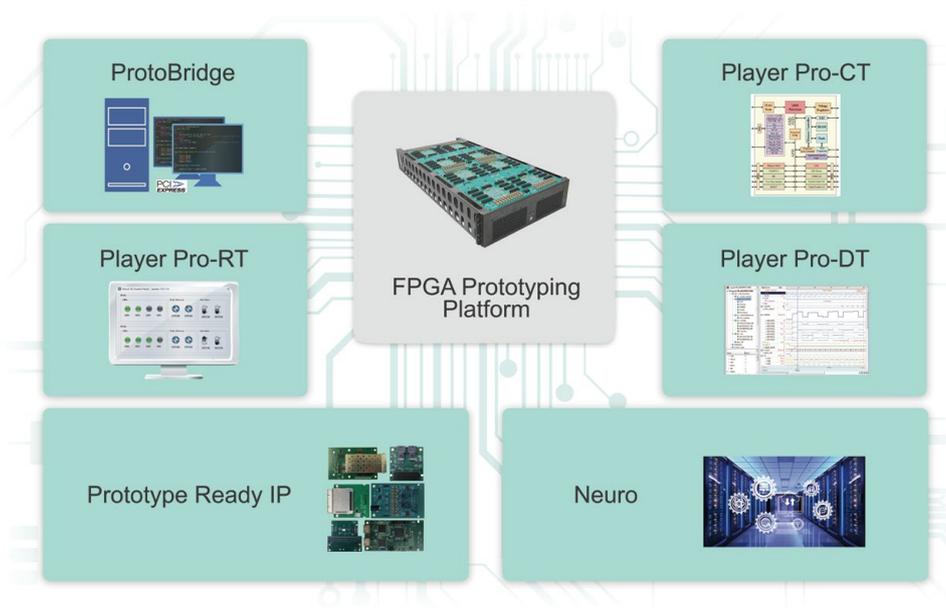
01	Prodigy Logic Matrix™	04
02	Prodigy Logic System™	10
03	Prodigy Logic Module™	32
04	Prodigy Player Pro™	36
05	Prodigy Multi-Debug Module™	38
06	Prodigy ProtoBridge™	40
07	Prodigy Prototype Ready IP™	42

Why FPGA Prototyping

- ▶ **High-performance**
10 - 100 times faster than emulation 1000 - 10000 times faster than simulation
- ▶ **Functional Verification**
Verify hardware, firmware, and application software design functionality before code freeze
- ▶ **Early Software Development**
Start software development and validation before first silicon
- ▶ **Accelerate Time-to-market (TTM)**
Shorten the design cycle by six to nine months



Prodigy™ Complete Prototyping



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.

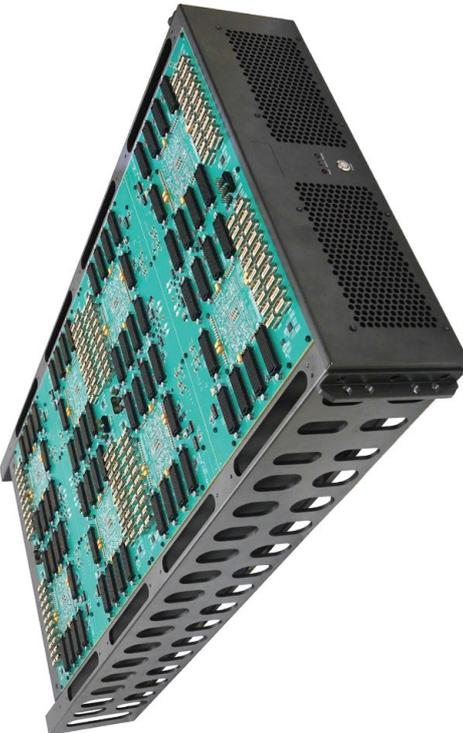
Key features of the Prodigy Prototyping Platform:

- ▶ 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			
Configuration	Model	LX2	LX1	10M	2800	1150	S7-19P	S7-13P	S7-9P	VU440	VU440P	KU115	7K410	7K325	
8 FPGAs	392M	294M	240M	-	-	-	-	-	-	-	-	-	-	-	
6 FPGAs	294M	-	-	-	-	-	-	-	-	120M	-	-	-	-	
4 FPGAs	196M	-	-	318M	-	196M	-	-	-	60M	-	-	-	-	
2 FPGAs	98M	-	-	-	-	98M	-	-	-	-	-	-	-	-	
1 FPGA	-	-	-	79M	22M	9.8M	49M	21M	14M	30M	30M	7.6M	2.9M	2.3M	

Prodigy Prototyping Platform



Logic Matrix | High performance and high capacity



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

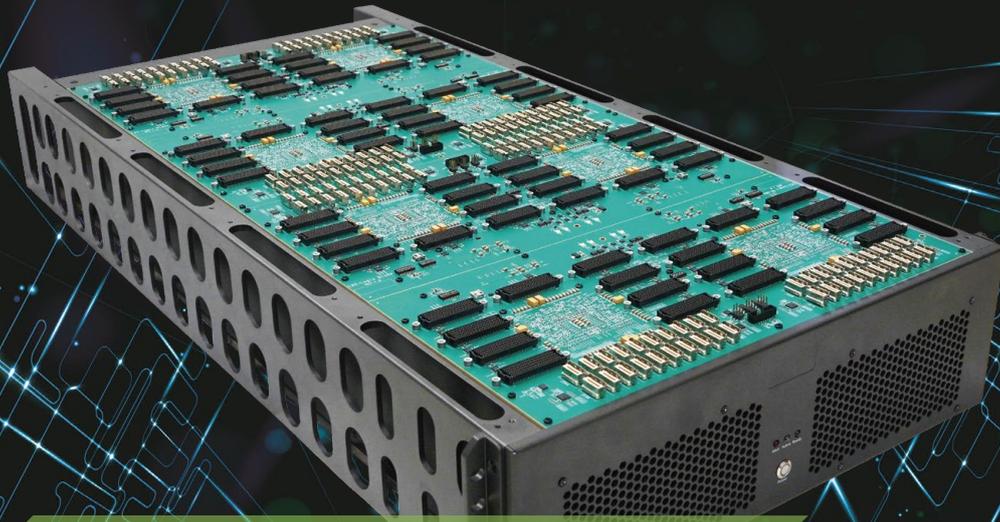
Logic Module | Compact & Low profile

Prototyping Configuration

Model	Logic System													Logic Module				
	LX2	LX1	10MQ	10MS	2800S	1150	S7-19PQ	S7-19PD	S7-19PS	S7-13P	S7-9P	VU440Q	VU440D	VU440S	VU440P	KU115	7K410	7K325
Estimated ASIC Gates (M)	392	240	318	79	22	9.8	196	98	49	21	14	120	60	30	30	7.6	2.9	2.3
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	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	89	76	28	16
DSP Resources	30,720	23,040	27,648	6,912	5,760	2,026	15,360	7,680	3,840	12,288	6,840	11,520	5,760	2,880	2,880	5,520	1,540	840
User I/O	11,648	9,984	4,376	1,184	896	640	5,288	2,368	1,184	676	676	4,736	2,368	1,184	432	656	432	432
SerDes Transceivers	640	384	160	40	20	44	176	88	44	48	48	176	88	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
PCIe Support	Gen3 ¹	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3 ¹	Gen3 ¹	Gen3 ¹	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen3	Gen2	Gen2
DDR4 SO-DIMM	–	–	8	2	1	–	8	4	2	–	–	4	2	1	2	–	–	–
Prodigy Connectors	72	64	32	8	6	4	32	16	8	4	4	32	16	8	3	4	–	–
High Speed SerDes Connectors²	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	Gen3 x 8	4 GT	–	–
Dimensions (L*W*H mm)	450*900*150	620*460*150	620*460*150	310*275*150	220*275*120	220*275*120	620*460*170	310*460*170	310*275*170	310*275*150	310*275*150	620*460*150	310*465*150	310*275*150	111*281*55	200*170*55	200*140*50	–

¹ VU19P supports gen4 in compatible mode

² 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

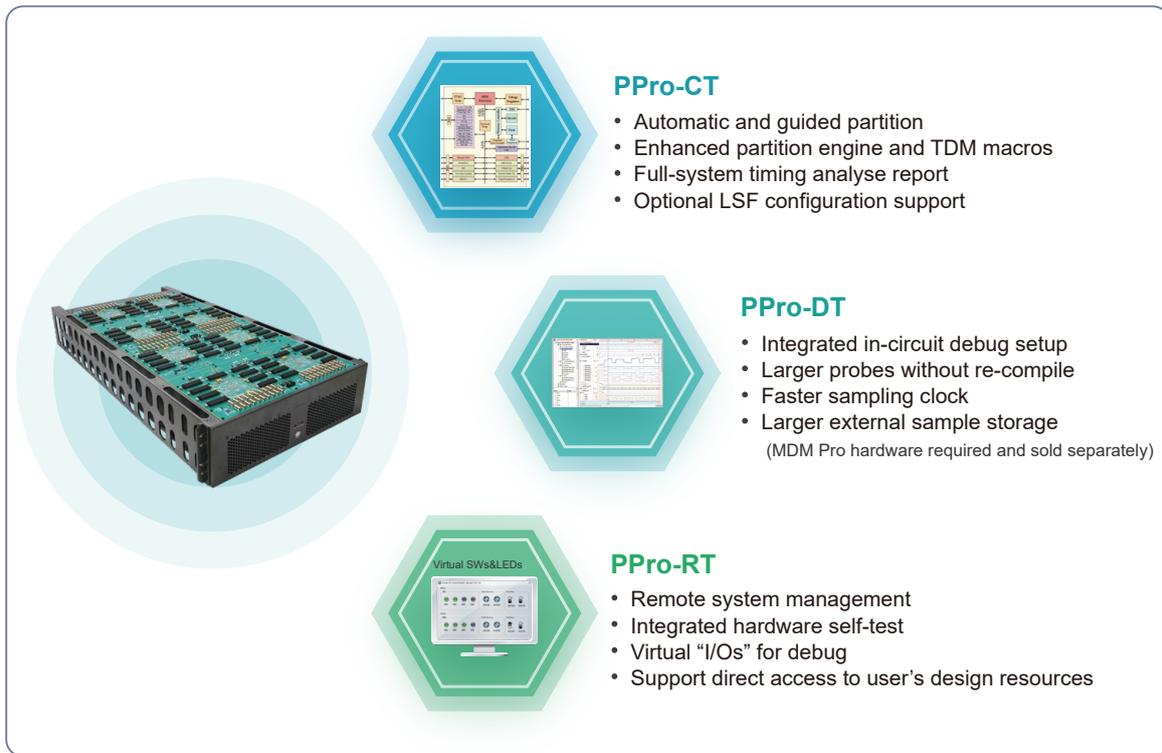
- The LX2 is equipped with 8 Xilinx Virtex UltraScale+ VU19P FPGA, and supports up to:
 - 71.5M System Logic Cells
 - 1,327.2Mb Internal Memory
 - 30,720 DSP Slice
- Scales to large setups, 8 LX2 in a standard 42U rack, up to 64 VU19P FPGAs
- Multi-racks can be cascaded to achieve even larger capacities

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 and guided partition
- Enhanced partition engine and TDM macros
- Full-system timing analyse report
- Optional LSF configuration support

PPro-DT

- Integrated in-circuit debug setup
- Larger probes without re-compile
- Faster sampling clock
- Larger external sample storage
(MDM Pro hardware required and sold separately)

PPro-RT

- Remote system management
- Integrated hardware self-test
- Virtual "I/Os" for debug
- Support direct access to user's design resources

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

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

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

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

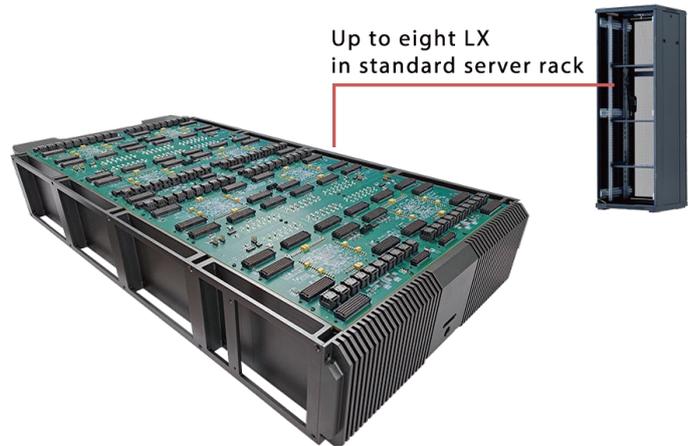
² Each MCIO Connector provides 4 GTY transceivers and 8 GPIOs

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 1.92 billion 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

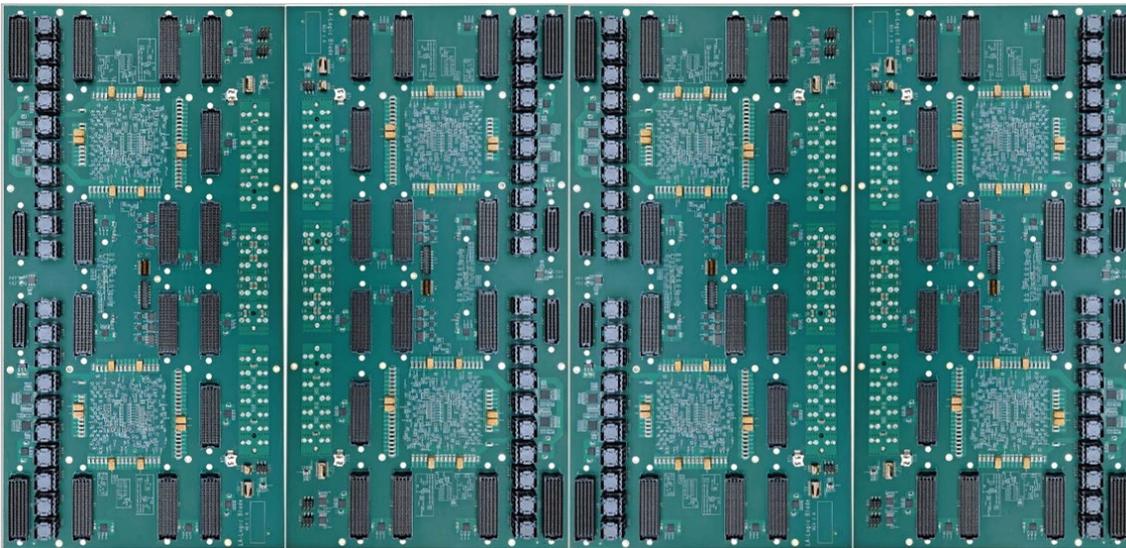
Features

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

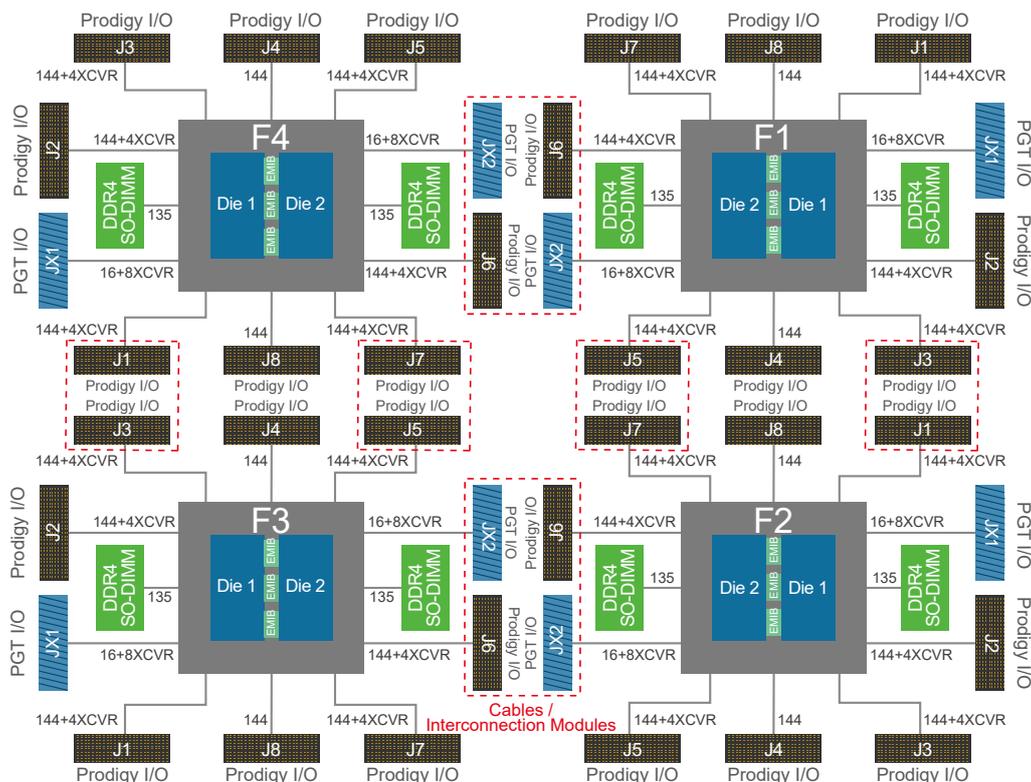
Multi-System Mode

- 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

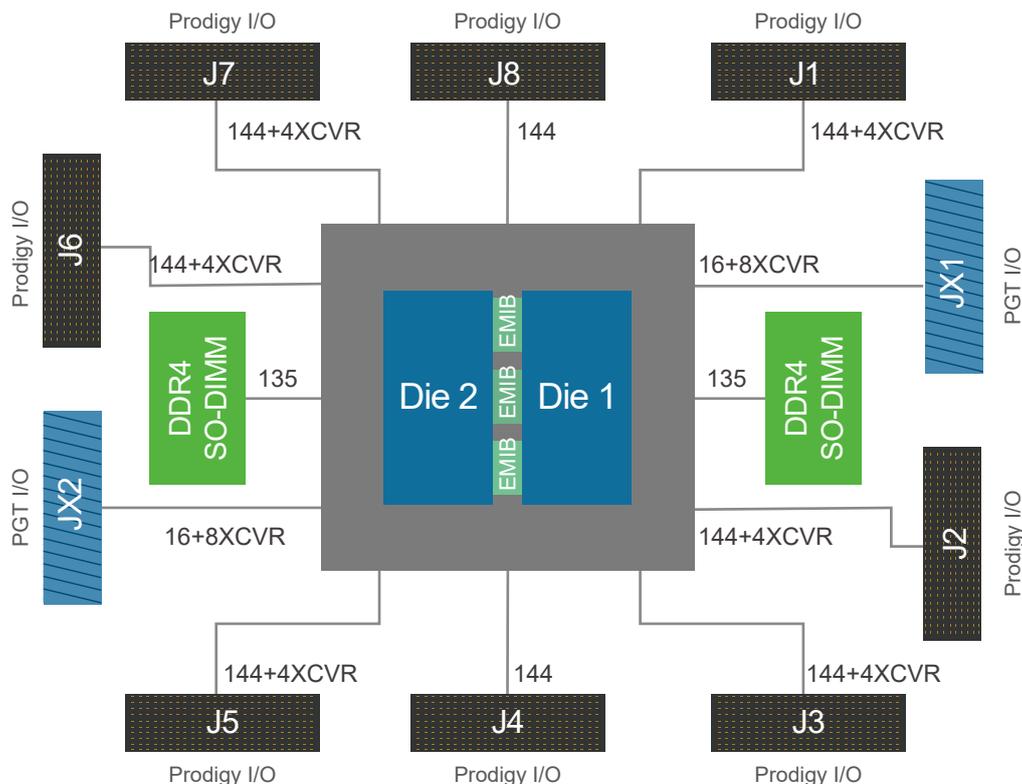
Multi-System Mode

- 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



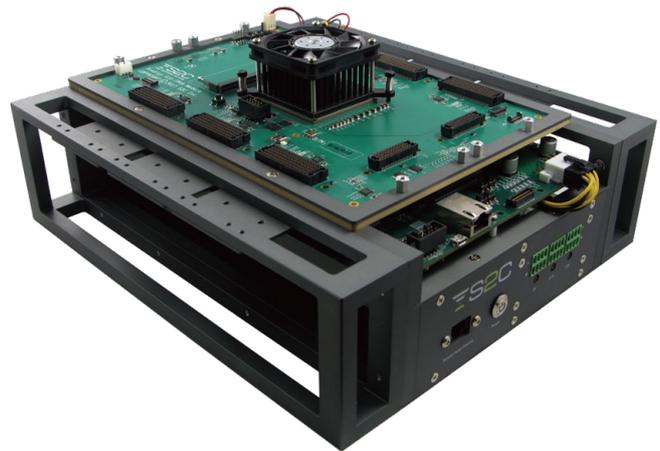
* Data Interface Bus via EMIB, delivers up to 23,040 interconnections

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

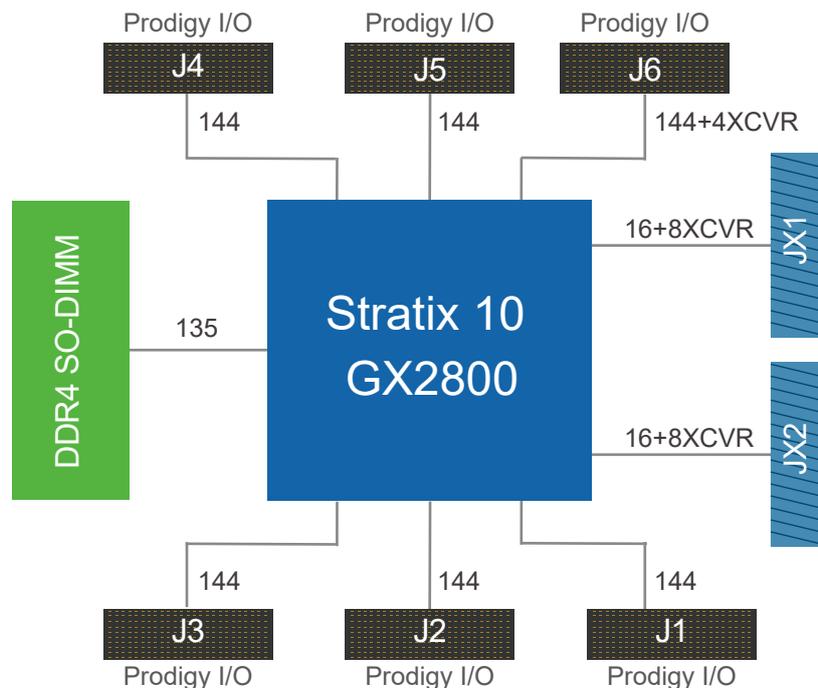
- 6 global clocks to be selected from
 - 6 local programmable clock sources (0.16 ~ 350MHz)
 - 6 global clock sources
- 3 feedback clocks can be output to global clock sources
- Dedicated fast clock(s) for pin-multiplexing
- 2 global resets sourced from global reset sources

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 88 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
- 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 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

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

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, 1.35V, 1.5V or 1.8V through runtime software in GUI
- 138 fixed inter-FPGA connections between F1 and F2, between F2 and F3, between F3 and F4, and between F4 and F1

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

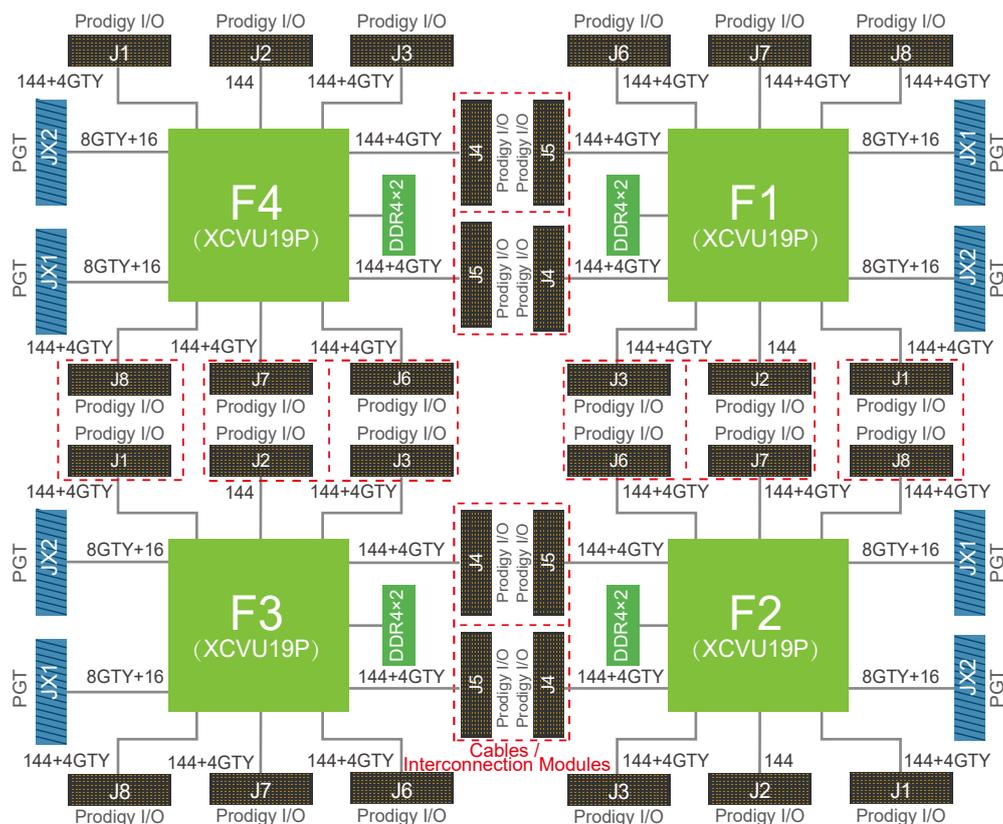
Multi-System Mode

- 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 is a high-performance, modular and scalable prototyping solution, which is creatively designed to build the components of FPGA modules, power control module, and power supply into a compact and all-in-one system, for achieving maximum flexibility, durability and portability. The S7-19PD is based on Xilinx's Virtex UltraScale+ XCVU19P FPGA and provides abundant high speed I/Os and gigabit transceivers for peripheral and interconnection use. The S7-19PD provides an ideal FPGA design prototyping platform in artificial intelligence, machine learning, 5G and GPU.

The Prodigy™ S7-19PD Logic System is part of the 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 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



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/1.35V/1.5V/1.8V through runtime software in GUI
- 274 fixed inter-FPGA connections between F1 and F2

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
- 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

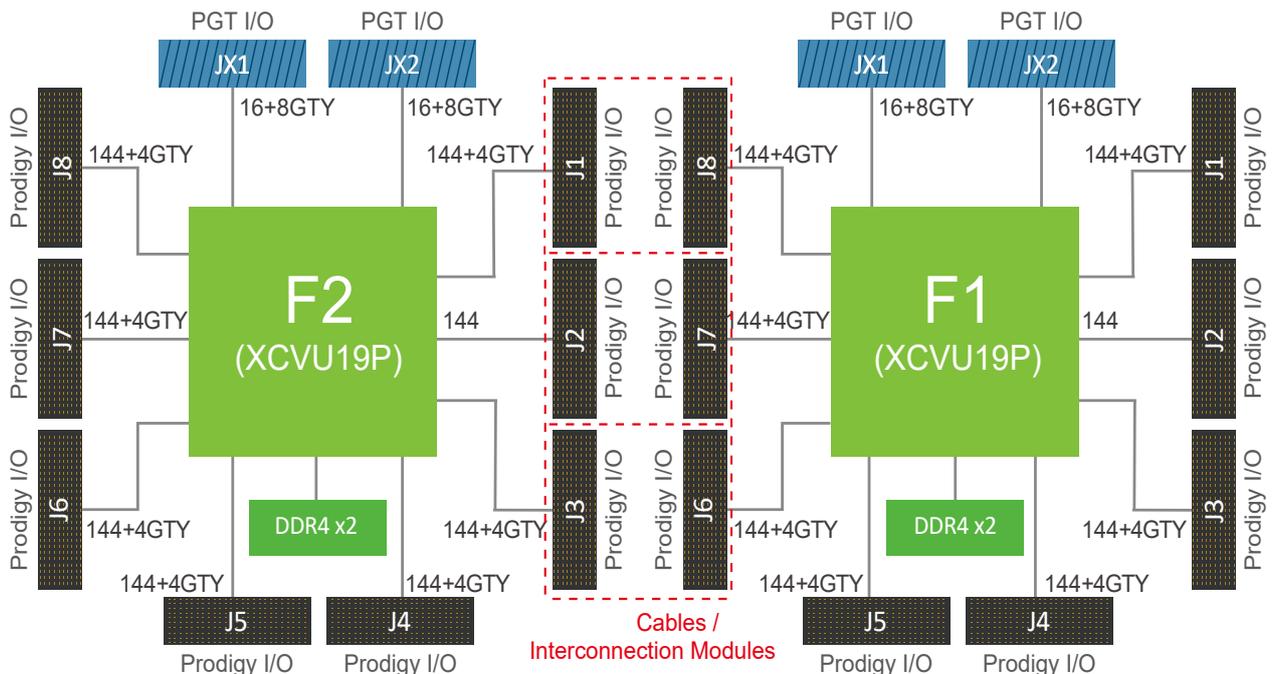
Multi-System Mode

- 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

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

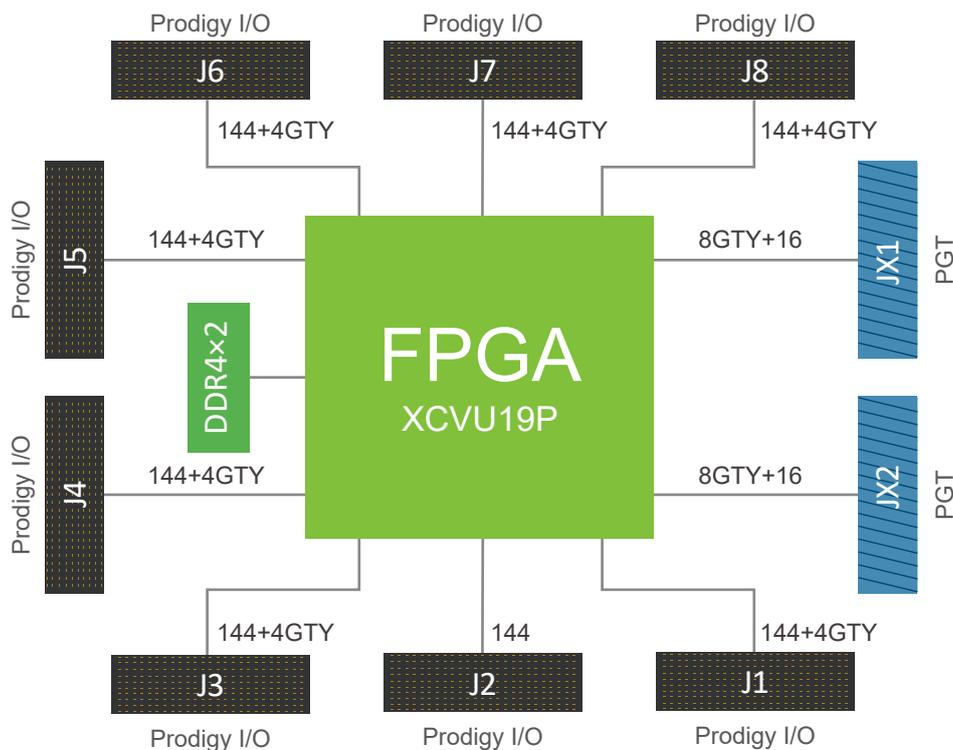
Multi-System Mode

- 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 S7-13P 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

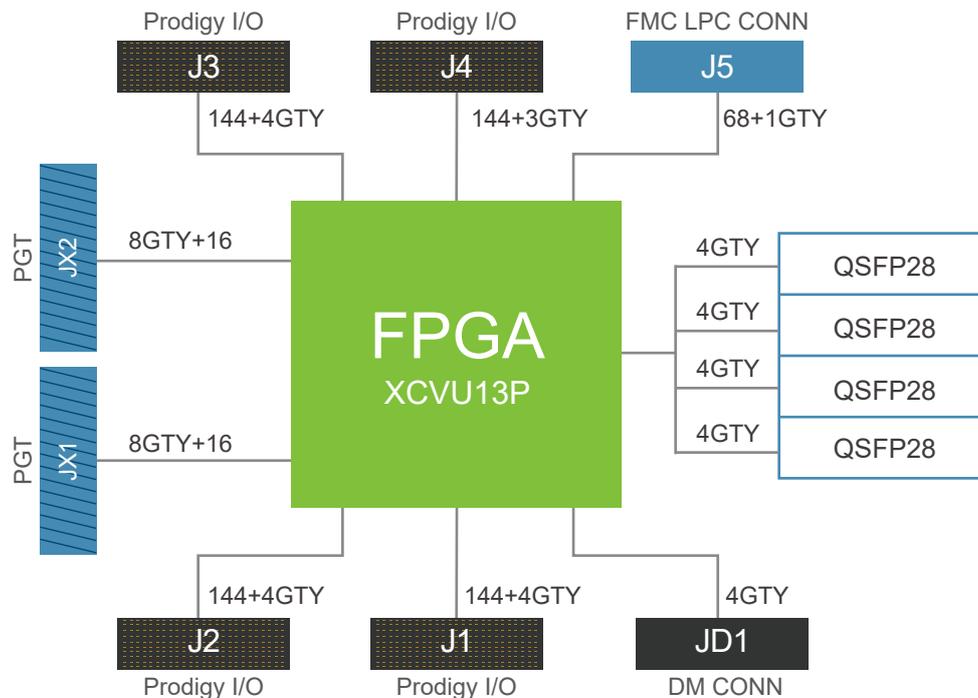
Multi-System Mode

- 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

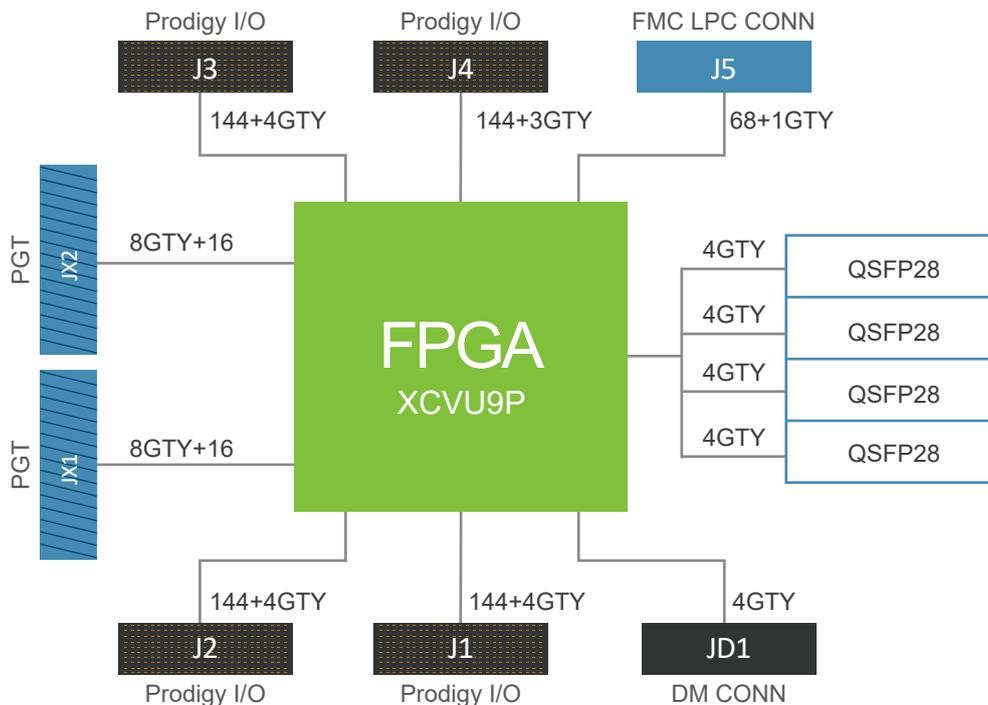
Multi-System Mode

- 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

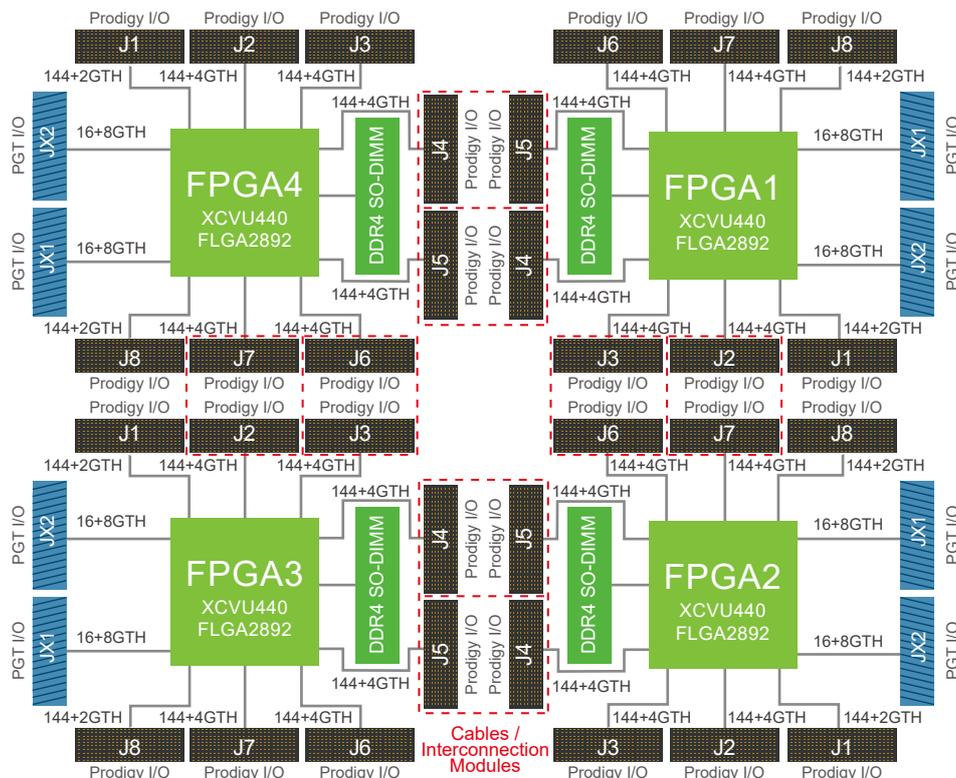
Multi-System Mode

- 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

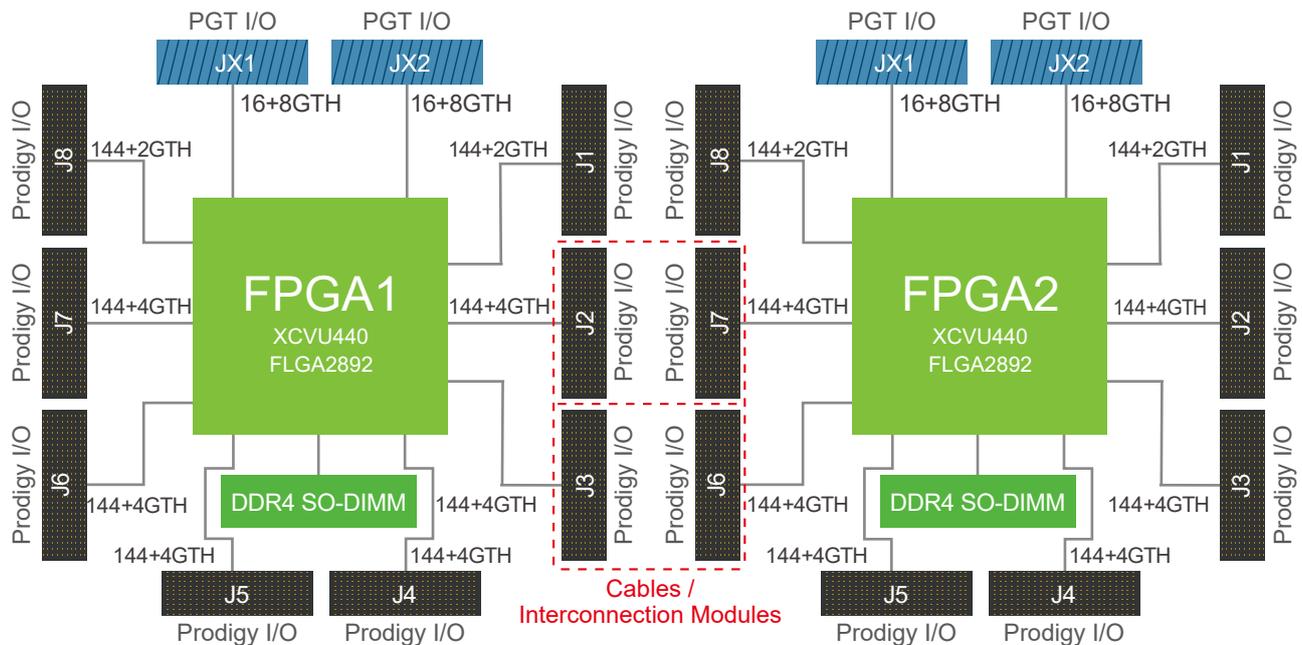
Multi-System Mode

- 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/refresh 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

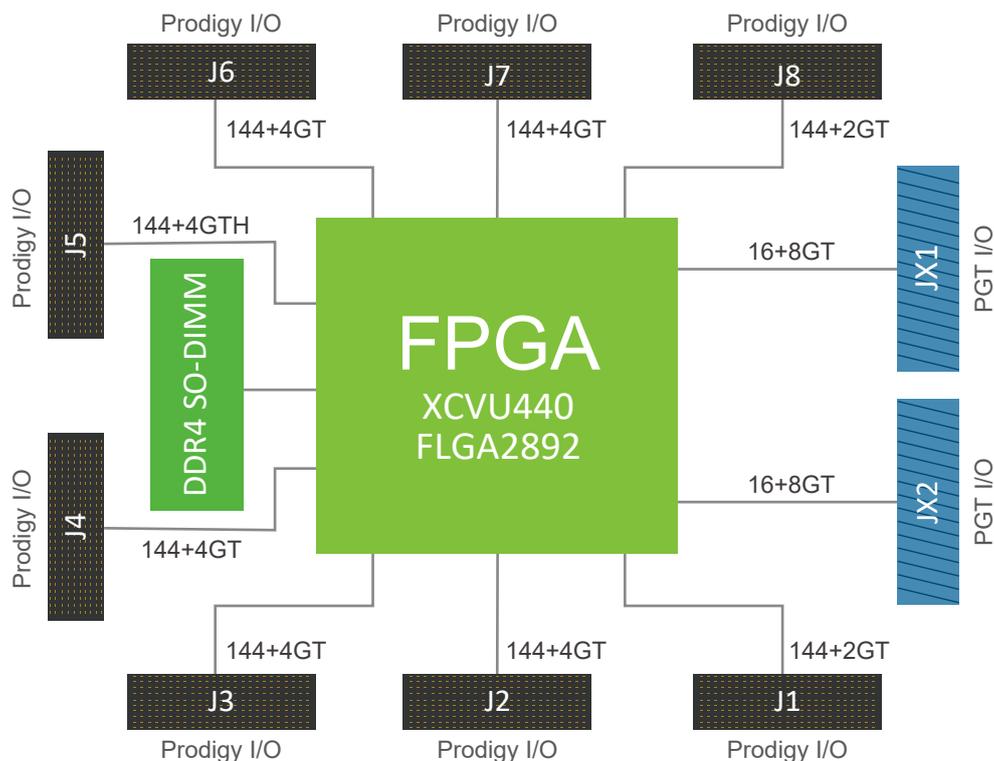
Multi-System Mode

- 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



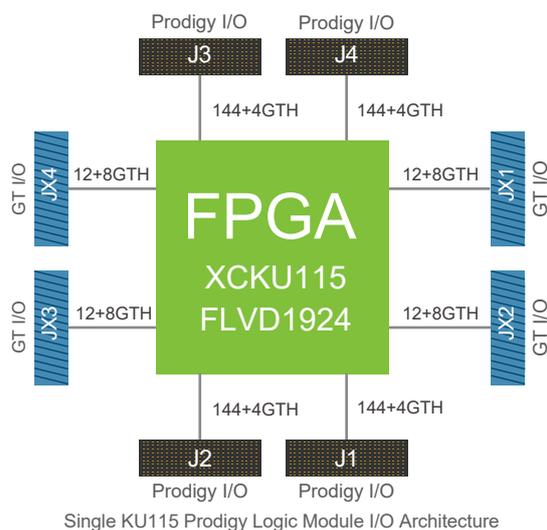
Prodigy Logic Module™

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

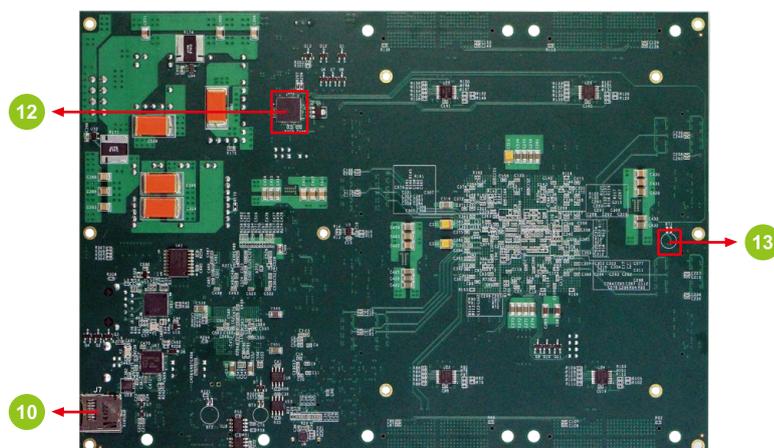
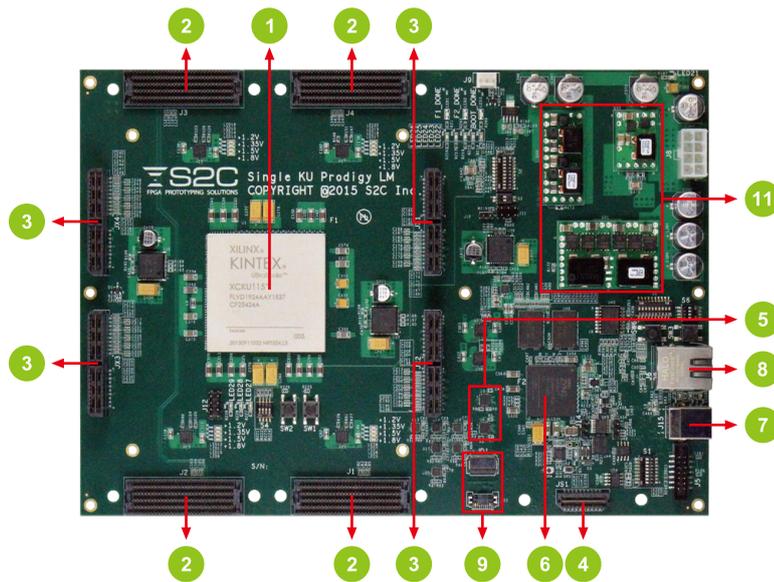
- 6 global clocks can be selected from
 - 6 programmable clock sources (0.2-700MHz)
 - 5 pairs of external clocks through MMCX connectors
 - 1 OSC socket
- 3 design clock outputs
 - through 3 pairs of MMCX connectors

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

◀ S2C K7 Prodigy Logic Module - 7K410/7K325

Low-Cost Fifth Generation Rapid FPGA-based Prototyping Hardware

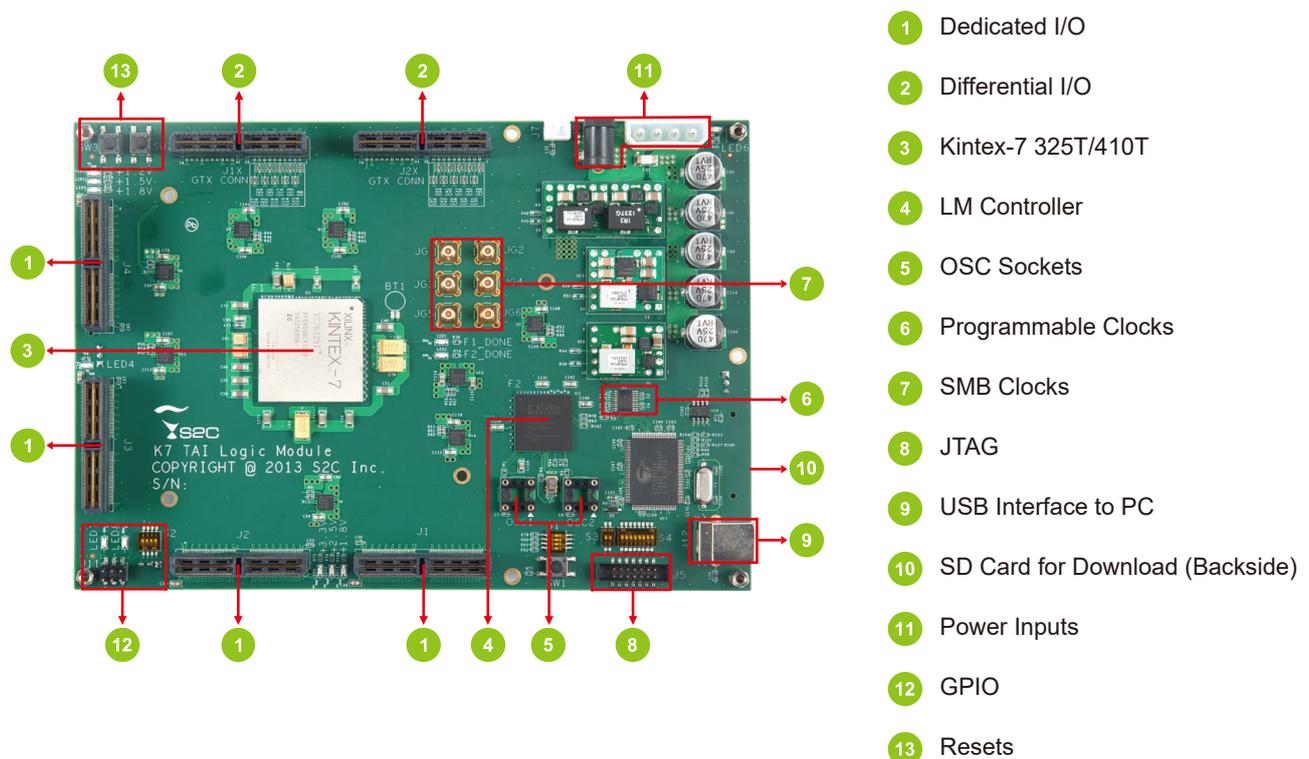
The S2C K7 Prodigy™ Logic Module is equipped with one Xilinx Kintex-7 XC7K410T or XC7K325T FPGA device and can prototype a design with a capacity up to 4.1M gates. The K7 Prodigy Logic Module features the largest number of user I/Os in its class with 432 I/Os on four Dedicated I/O connectors and 16 channels of GTX transceivers on two Differential I/O connectors. The GTX transceivers are capable of running up to 10Gbps with - 2 grade FPGA devices. Users can easily download to FPGAs, generate programmable clocks, adjust I/O voltages and run self-tests on hardware from S2C's Prodigy Player Pro Runtime Software via a straightforward USB2.0 interface.

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

*Extended through optional 1GB DDR3 or DDR2 memory module on J4 Dedicated I/O connector

With the S2C K7 Prodigy Logic Module's affordable pricing, project managers can deploy a large number of FPGA-based prototypes to accelerate hardware verification and software development in parallel.

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.



- 1 Dedicated I/O
- 2 Differential I/O
- 3 Kintex-7 325T/410T
- 4 LM Controller
- 5 OSC Sockets
- 6 Programmable Clocks
- 7 SMB Clocks
- 8 JTAG
- 9 USB Interface to PC
- 10 SD Card for Download (Backside)
- 11 Power Inputs
- 12 GPIO
- 13 Resets

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

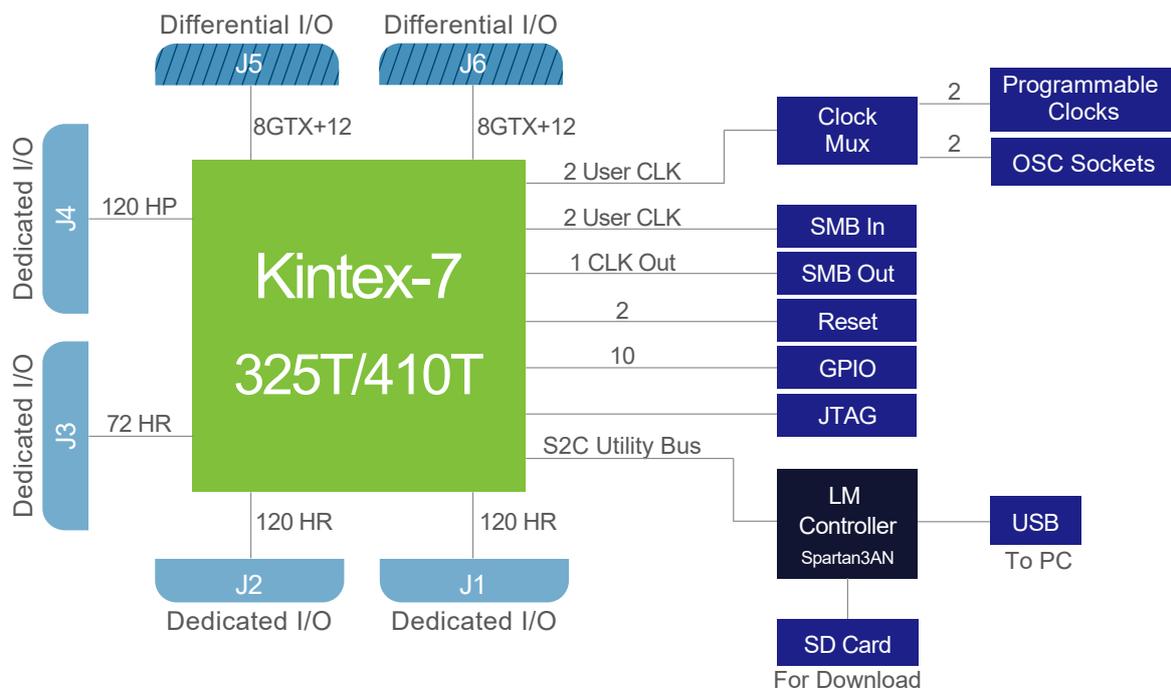
- Up to 60W power for FPGA
- Equal trace length for I/Os from same I/O connector
- Optional 1GB 32-bit DDR3 memory module at up to 667Mbps or
- 1GB 32-bit DDR2 memory module at up to 400Mbps data rate

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

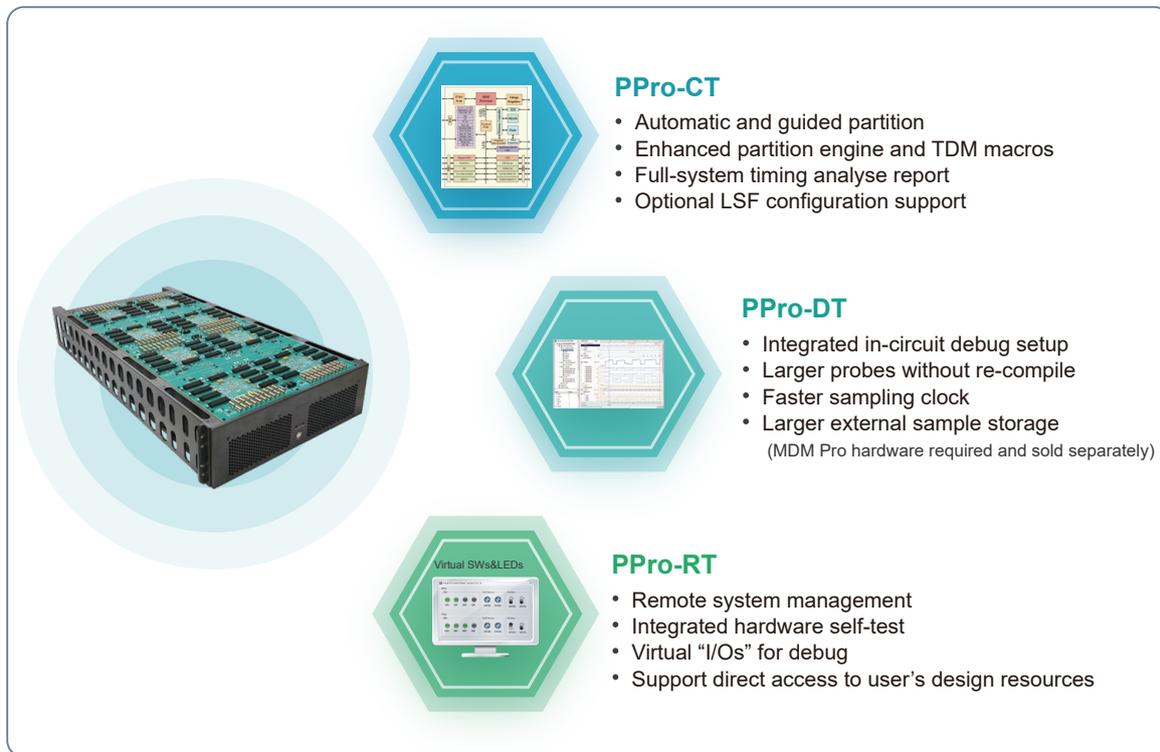


Prodigy Player Pro™

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.



PPro-CT 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

PPro-RT 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

PPro-DT 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+

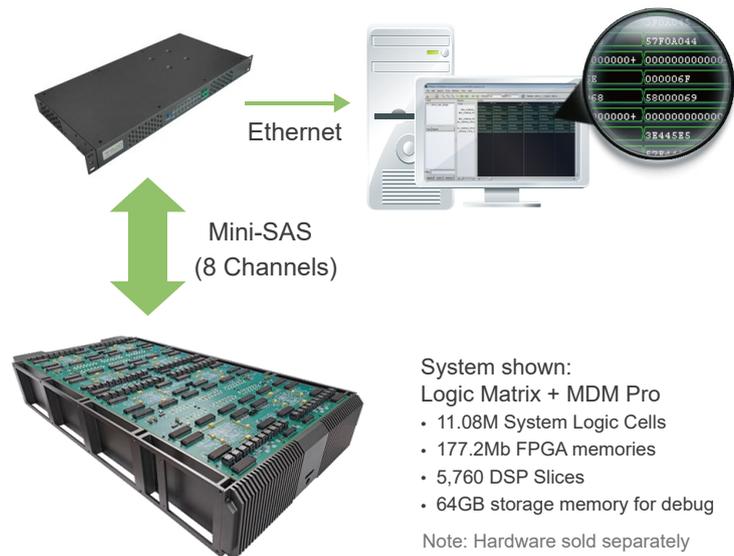
Prodigy Multi-Debug Module™

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

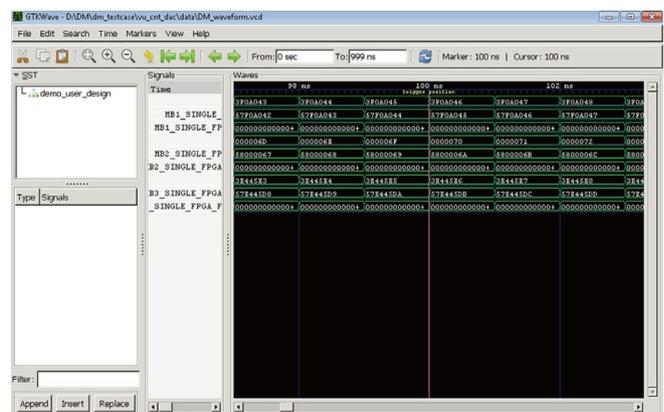
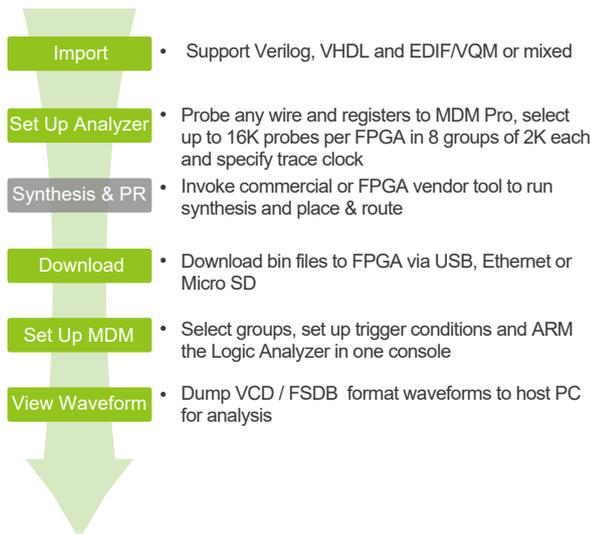
- Store 64GB of waveforms on external DDR4 memory, minimize the consumption of user FPGA resources
- Transfer captured waveforms to host computer through Gigabit Ethernet
- Capture and store waveforms continuously

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

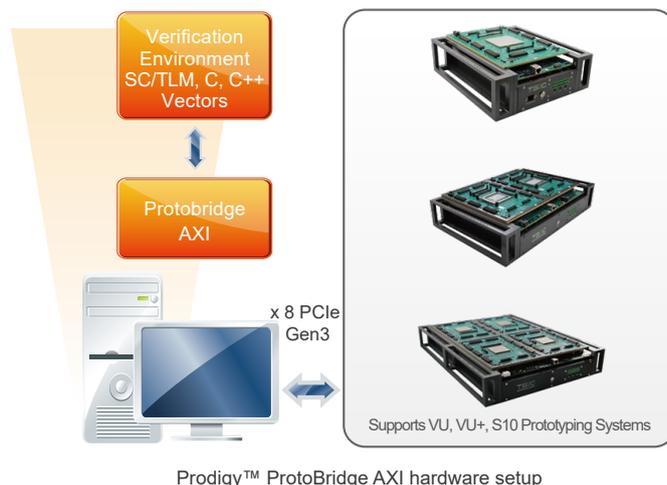
Prodigy ProtoBridge™

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 to link software running on host PC to the FPGA-based prototyping environment.



Prodigy™ ProtoBridge AXI hardware setup

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

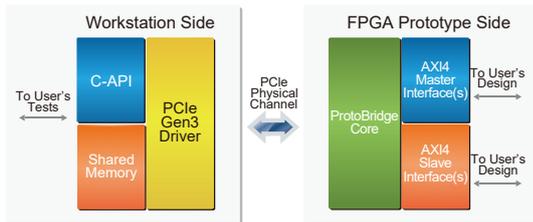
Features

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-PM-ETM4	Prodigy ETM4 Module	<ul style="list-style-type: none"> • Provides one ARM ETM4 and one ARM JTAG interface • Provides one SD card and one microSD card socket • Provides one DB9-F UART and one 3-pin UART interface • Occupies one Prodigy I/O connector • No external power supply needed
P-PM-GPHYx3	Prodigy 3 Channel GMII Interface Module	<ul style="list-style-type: none"> • 10/100/1000 BASE-T IEEE 802.3 compliant • Supports 3 channel of GMII Interface • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector
P-PM-GPHYx6	Prodigy 6 Channel GMII Interface Module	<ul style="list-style-type: none"> • 10/100/1000 BASE-T IEEE 802.3 compliant • Supports 2-channel of RGMII Interface • Supports 4-channel of GMII Interface • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector • Supports self-powered mode
P-PM-SGPHYx6	Prodigy 6 Channel SGMII Interface Module	<ul style="list-style-type: none"> • 10/100/1000 BASE-T IEEE 802.3 compliant • Supports 6-channel of SGMII Interface • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector • Supports self-powered mode
P-PM-PCI	Prodigy PCI Interface Module	<ul style="list-style-type: none"> • Provides a 32bit 3.3V PCI Edge connector • Occupies one Prodigy I/O connector • No external power supply needed

Product List

General Peripherals

P-PM-GPIOE	Prodigy GPIO Extension Module	<ul style="list-style-type: none"> • Provides two Channels of Gigabit Transceivers on MMCX • Provides one ARM JTAG, two RS232 and two I2C interface • Provides a Mictor-38 Connector • Provides two 20x2 Pin Headers, 8 LEDs, 8 Slide Switches and 4 Push Buttons • Occupies one Prodigy I/O connector
P-PM-PPM	Prodigy Processor Peripheral Module	<ul style="list-style-type: none"> • Provides one 152-ball BGA socket for NAND Flash • Provides one 64-ball BGA socket for NOR Flash • Provides one 8-Lead SOIC socket for I2C EEPROM • Provides one 16-Lead SOIC socket for SPI Flash • Provides one MicroSD card socket • Provides one ARM JTAG, one ARM ETM4 debugger, two I2C, four LEDs, one 4-position DIP Switch and ten GPIOs • 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 • Supports 3 channel of RGMII Interface • Auto-calibration for MAC interface outputs • Occupies one Prodigy I/O connector
P-PM-USBPHY	Prodigy USB Interface Module	<ul style="list-style-type: none"> • Supports USB2.0 device mode only • Provides one 2x7 Pin Header, four LEDs, one 8-pole switch and two push buttons • Occupies one Prodigy I/O connector
P-PM-USB3T	Prodigy USB3 Data Transfer Module	<ul style="list-style-type: none"> • Supports USB peripheral functionality compliant with USB 3.1 • Provides one 2x7 Pin Header, three LEDs and one push button • Occupies one Prodigy I/O connector
C-PM-GPIM V3.0*	Customized Prodigy General Peripheral Interface Module V3.0	<ul style="list-style-type: none"> • Provides five I2C connections • Provides one ARM JTAG, one SGPIO pin header and one PWM pin header • Provides two SPI FLASH sockets and one RJ45 to 2xUART interfaces • Provides one 4-bit GPIO switch • Support level shift for UART or ARM JTAG or SPGIO or PWM between 3.3V and 1.8V • Occupies one Prodigy I/O connector • No external power supply needed
C-PM-MSAS V2.0*	Customized Prodigy Min-SAS Module V2.0	<ul style="list-style-type: none"> • Converts 136 GPIOs between two Prodigy I/O connectors • Converts 4 Gigabit Transceivers from Prodigy I/O connector to Mini-SAS connector • Supports synchronous and asynchronous reference clock of gigabit transceivers • Provides a 10~810MHz programmable clock as reference clock • Support 6 SIDEBAND signals for Mini-SAS connector • Occupies one Prodigy I/O connector. • No external power supply needed
C-PM-x4SFP+	Customized 4 Channel SFP+ Module	<ul style="list-style-type: none"> • Provides 4x SFP+ connectors with a 2x2 cage • Provides 10~810MHz on-board programmable reference clock • Occupies one Prodigy I/O connector • No external power supply needed
C-JTAG-8	Customized 8-Chain JTAG Tool Kit	<ul style="list-style-type: none"> • Provides eight JTAG Ports • Provides a 8-position DIP switch
C-JTAG-16	Customized 16-Chain JTAG Tool Kit	<ul style="list-style-type: none"> • Provides sixteen JTAG Ports

*Please confirm the exact ordering number with S2C Sales

► High Speed GT Peripherals

Product List

Product Number	Product Name	Product Description
P-PGM-CSM	PGT Connector Spacer Module	<ul style="list-style-type: none"> PGT Connector Spacer Module
P-PGM-MIOC	PGT Mezzanine Connector	<ul style="list-style-type: none"> PGT Mezzanine Connector
P-PGM-SATA	SATA PGT Module	<ul style="list-style-type: none"> Provides 4 x SATA connectors, 2 x HOST and 2 x DEVICE Provides on-board 150 MHz LVDS oscillator for reference clock Provides 8 MMCX connectors for 2 channel GT Provides 2 MMCX connectors for reference clock input Supports self-powered from PGT connector Occupies one PGT I/O connector
P-PGM-SIOC	PGT Socket Connector	<ul style="list-style-type: none"> PGT Socket Connector
P-PGM-SMAx8	8 Channel Transceivers on SMA PGT Module	<ul style="list-style-type: none"> Converts 8 channel transceivers from PGT connector to SMA connectors Provides two debugging LEDs Occupies one PGT I/O connector No external power supply is required
P-PGM-x2QSFP+	2 Channel QSFP+ PGT Module	<ul style="list-style-type: none"> Provides 2x QSFP+ connectors with 1x2 cage Provides 100MHz and 156.25MHz on-board LVDS oscillator Provide 2 Push Buttons and 2 LEDs Occupied one PGT I/O connector External power supply is not required
P-PGM-X4PCIEA	4-Lane PCIe Gen2 PGT Kit Type A	<ul style="list-style-type: none"> Provides one X4 PCIe Gen2 Cable connector Provides on-board 100MHz reference clock for Firefly connector Provides three user LEDs, one Push Button Occupies one PGT I/O connector
P-PGM-x4SFP+	4 Channel SFP+ PGT Module	<ul style="list-style-type: none"> Provides 4 Channel SFP+ connectors and 2x2 cage Provides 100MHz and 156.56MHz LVDS Oscillator as reference clock Provides SFP+ channel status indication Occupies one PGT IO connector External power supply is not required
P-PGM-X8PCIEA	8-Lane PCIe Gen3 PGT Kit Type A	<ul style="list-style-type: none"> Provides one PCIe X8 Cable connector Provide three user LEDs and one 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 (support 8 lanes) Provides three LEDs and two push buttons Occupies two PGT I/O connector
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 (support 8 lanes) Provides three LEDs and two push buttons Occupies two PGT I/O connector

Product List

High Speed GT Peripherals

C-PGM-MSAS V3.0*	Customized PGT Mini-SAS Module V3.0	<ul style="list-style-type: none"> • Converts one PGT connector to two Mini-SAS connectors • Supports synchronous and asynchronous reference clock of gigabit transceivers • Provides a 10~810MHz programmable clock as reference clock • Provides 6 SIDEBAND signals for Mini-SAS connector • Occupies one PGT I/O connector • No external power supply needed
P-MINISAS1000	1000mm Mini-SAS cable	<ul style="list-style-type: none"> • 1000mm Mini-SAS cable
P-MCIO1500	1500mm MCIO Cable	<ul style="list-style-type: none"> • 1500mm MCIO Cable
P-MCIO3000	3000mm MCIO Cable	<ul style="list-style-type: none"> • 3000mm MCIO Cable

*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 Modules	<ul style="list-style-type: none"> • Provides two Micron MT41J256M16HA-125 or equivalent DDR3 SDRAM devices • Provides on-board 200MHz system clock • Run on I/O voltage 1.5V • Dedicated to design for J4 connector on Kintex-7 TAI LM • Single external 3.3V power source with on-board voltage regulators • Occupies one LM I/O connector
P-DDR3-8GB	8GB DDR3 Pre-tested SO-DIMM Memory Module	<ul style="list-style-type: none"> • 8GB DDR3 Pre-tested SO-DIMM Memory Module
P-DDR4-8GB	8GB DDR4 Pre-tested SO-DIMM Memory Module	<ul style="list-style-type: none"> • 8GB DDR4 Pre-tested SO-DIMM Memory Module
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 36 or 72-bit • Fast access frequency up to 117MHz • SRAM IO voltage is +1.8V • Occupies one Prodigy I/O connector
P-PM-DDR3	Prodigy DDR3 Memory Module	<ul style="list-style-type: none"> • Provides one 64bit DDR3 SODIMM Socket • Provides one push button and three LEDs • Occupies one Prodigy I/O connector. • Requires only a single 3.3V Power Supply
P-PM-DDR3B	Prodigy DDR3 Memory Module Type B	<ul style="list-style-type: none"> • Provide one 64-bits, single rank, 4GB capacity DDR3 memory • Provides one push button and three LEDs • Occupies one Prodigy I/O connector. • Supports self-powered mode and external 3.3V power supply
P-PM-DDR4	Prodigy DDR4 Memory Module	<ul style="list-style-type: none"> • Provides one 72 bits DDR4 SODIMM socket • Provides one push button and three LEDs • Occupies one Prodigy I/O connector
P-PM-DDR4D V2.0	Prodigy DDR4 Memory Module Type D	<ul style="list-style-type: none"> • Provides one 64-bits, single rank, 4GB capacity DDR4 memory • Provides on board 100MHz LVDS Oscillator for DDR4 system clock • Supports external DDR4 system clock through MMCX • Provides one push button and three LEDs • Occupies one Prodigy I/O connector • Support self-powered mode
P-PM-DDR4E	Prodigy DDR4 Memory Module Type E	<ul style="list-style-type: none"> • Provides one SODIMM socket, supports dual rank, 72-bit ECC DDR4 • Provides one on-board 200MHz LVDS oscillator • Provides one push button and three LEDs • Occupies one Prodigy I/O connector • No External power supply needed

Product List

Memory Modules

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• Provides four LEDs and two push-buttons• Occupies one Prodigy I/O connector
P-PM-RLDRAM3	Prodigy RLDRAM3 Memory Module	<ul style="list-style-type: none">• Prodigy RLDRAM3 Memory Module
P-DDR4-8	8GB DDR4 Pre-tested SO-DIMM Memory Module	<ul style="list-style-type: none">• 8GB DDR4 Pre-tested SO-DIMM Memory Module

► 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/Z-CU102) EVB and Prodigy Logic Module/System • Provide 8 differential clocks input and 2x7 pin headers • Occupies two Prodigy I/O connectors

► Embedded & Multimedia

Product List

Product Number	Product Name	Product Description
P-PM-DVIO	Prodigy DVI Output Interface Module	<ul style="list-style-type: none"> • Provides a DVI video Output interface • Provides two UART, two I2C, one Pushbutton and four LEDs • Supports LVCMOS 1.8V I/O standard • Occupies one Prodigy I/O connector
P-PM-HDMI	Prodigy HDMI Interface Module	<ul style="list-style-type: none"> • Provides a HDMI video Output and input interface • Provides a I2C interface to the HDMI transmitter and receiver • Provides one 1x7 Pin Header, one Pushbutton and three LEDs • Supports LVCMOS 1.8V I/O standard • Occupies one Prodigy I/O connector
P-PM-HDMI2	Prodigy HDMI2.0 Interface Module	<ul style="list-style-type: none"> • Provide a HDMI 2.0 output and input interface • Provide one pin header, two pushbutton and three LEDs • Supports LVCMOS 1.8V I/O standards • Occupies one Prodigy I/O connector
P-PM-MIPIADPT	Prodigy MIPI Adapter Module	<ul style="list-style-type: none"> • Supports 4x4-lane or 2x8-lane MIPI interfaces through MMCX connector • Supports 16 GPIO, and I/O voltage can be 1.8V or 3.3V • Supports 200MHz Constant clock • Provide three LEDs and two push buttons • Occupies one Prodigy I/O connector • No external power supply required
P-PM-MIPIDPHYB	Prodigy MIPI D-PHY Type B Interface Module	<ul style="list-style-type: none"> • Provides a MIPI D-PHY interface with a ZU2CG FPGA • Provides two Pushbuttons, three LEDs and twelve GPIOs • Occupies one Prodigy I/O connector • No external power supply required

► Expansions & Accessories

Product List

Product Number	Product Name	Product Description
P-DDR42PM	Prodigy DDR42PM Module	<ul style="list-style-type: none"> • Prodigy DDR42PM Module
P-FMCIOT V2	FMC I/O Testing Module V2.0	<ul style="list-style-type: none"> • FMC I/O Testing Module V2.0
P-GCLKMB (for LS)	Global Clocks Management Module Type B (for LS)	<ul style="list-style-type: none"> • Provides 3 reset inputs through push button or MMCX, and output them to four SC connectors synchronized • Provides 6 pairs of LVDS clock inputs through on-board programmable chip or MMCX and output them to four SC connectors synchronized • Provides 3 pairs of LVDS clock outputs from each SC connectors and use 4-to-1 mux (selectable by switches) to output them by MMCX connectors • Provide one USB interface to program the clock chip • Requires only a single 3.3V Power Supply
P-GCLKMD V3.0 (for LS)	Global Clocks Management Module Type D V3.0 (for LS)	<ul style="list-style-type: none"> • Provides 3 reset inputs through push button or MMCX, and output them to four SC connectors synchronized • Provides 6 pairs of LVDS clock inputs through on-board programmable chip or MMCX, and output them to four SC connectors synchronized • Provides 3 pairs of LVDS clock outputs from each of SC connectors and use 4-to-1 mux (selectable by switches) to output them by MMCX connectors • Provides one Ethernet interface to program the clock chip • Requires only a single 3.3V Power Supply
P-GCLKMD V3.0 (for LM)	Global Clocks Management Module Type D V3.0 (for LM)	<ul style="list-style-type: none"> • Provides 3 reset inputs through push button or MMCX, and output them to four SC connectors synchronized • Provides 6 pairs of LVDS clock inputs through on-board programmable chip or MMCX, and output them to four SC connectors synchronized • Provides 3 pairs of LVDS clock outputs from each of SC connectors and use 4-to-1 mux (selectable by switches) to output them by MMCX connectors • Provides one Ethernet interface to program the clock chip • Requires only a single 3.3V Power Supply
P-GCLKME	Global Clocks Management Module Type E	<ul style="list-style-type: none"> • Provides 3 reset inputs through push button or MCU, and outputs them to twelve SC connectors synchronized • Provides 6 pairs of LVDS clock inputs through on-board programmable chip and outputs them to twelve SC connectors synchronized • Provides one connector (JS13) that supports cascading • Provides one Ethernet interface to program the clock chip • Requires only a single 3.3V Power Supply
P-GCLKMX V2.0	Global Clocks Management Module V2.0 for LX	<ul style="list-style-type: none"> • Provides 4 reset inputs through push button or MCU, and output them to eight SC connectors synchronized • Provides 12 pairs of LVDS clock inputs through on-board programmable chip and output them to eight SC connectors synchronized • Provide one connector (JS13) that supports cascading • Provides one Ethernet interface to program the clock chip • Requires only a single 3.3V Power Supply

Product List

Expansions & Accessories

P-PM-2HT3 V2	Prodigy to HT3 Converter Module V2	<ul style="list-style-type: none"> • Converts one Prodigy I/O connector to three HT3 connectors • Provides three 7x2 Pin Headers • Occupies one Prodigy I/O connectors • No external power supply required
P-PM-2LM	Prodigy to LM Converter Module	<ul style="list-style-type: none"> • Converts one Prodigy I/O connector to one LM I/O connector • Provides two 7x2 Pin Headers, twenty LEDs and four Push Buttons • Occupies one Prodigy I/O connectors • External power supply is not required
P-PM-2PH	Prodigy to Pin Header Module	<ul style="list-style-type: none"> • Converts the Prodigy I/O connector to four 2x21 Pin Headers and nine MMCX connectors.(3 single-ended and 3 LVDS pairs) • Occupies one Prodigy I/O connectors • No external power supply required
P-PM-CSM V2.0	PGT Connector Spacer Module V2.0	<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 V2.0*	Prodigy to FMC-HPC Converter Module	<ul style="list-style-type: none"> • Converts two Prodigy I/O connectors to one FMC-HPC and one FMC-LPC connectors • Provides two Push Button , one 2x7 Pin Header and three LEDs • Occupies two Prodigy I/O connectors
P-PM-FMCLPC	Prodigy to FMC-LPC Converter Module	<ul style="list-style-type: none"> • Converts one Prodigy I/O connectors to one FMC-LPC connector • Provides 2 pairs of LVDS clock input and outputs on MMCX • Provides one switch, two 2x8 Pin Header and four LEDs • Occupies one Prodigy I/O connectors
P-PM-IMC	Prodigy Interconnection Module Type C	<ul style="list-style-type: none"> • Connects 144 GPIO and 4 SerDes between two Prodigy I/O connectors • Occupies two Prodigy I/O connectors and the spacing between two connectors is 75mm • Provides a fixed 100MHz reference clock • External power supply is not required
P-PM-IMCP	Prodigy Programmable Interconnection Module Type C	<ul style="list-style-type: none"> • Connects 144 GPIO and 4 SerDes between two Prodigy I/O connectors • Occupies two Prodigy I/O connectors and the spacing between two connectors is 75mm • Provides a 10~810 programmable reference clock • External power supply is not required
P-PM-IMD	Prodigy Interconnection Module Type D	<ul style="list-style-type: none"> • Connects 144 GPIO and 4 SerDes between two Prodigy I/O connectors • Occupies two Prodigy I/O connectors and the spacing between two connectors is 35mm • Provides a fixed 100MHz reference clock • External power supply is not required

Product List

Expansions & Accessories

P-PM-IMDP	Prodigy Programmable Interconnection Module Type D	<ul style="list-style-type: none"> Connects 144 GPIO and 4 SerDes between two Prodigy I/O connectors Occupies two Prodigy I/O connectors and the spacing between two connectors is 35mm Provides a 10~810 programmable reference clock External power supply is not required
P-PM-IMDP	Prodigy Programmable Interconnection Module Type D	<ul style="list-style-type: none"> Connects 144 GPIO and 4 SerDes between two Prodigy I/O connectors Occupies two Prodigy I/O connectors and the spacing between two connectors is 35mm Provides a 10~810 programmable reference clock External power supply is not required
P-PM-IMHX	Prodigy Interconnection Module Type H for LX	<ul style="list-style-type: none"> Occupies two Prodigy I/O connectors External power supply is not required
P-PM-IMVX	Prodigy Interconnection Module Type V for LX	<ul style="list-style-type: none"> Occupies two Prodigy I/O connectors External power supply is not required
P-PM-IOLS	Prodigy I/O Level Shifting Module	<ul style="list-style-type: none"> Converts the signal level from 1.8V to 3.3V Occupies one Prodigy I/O connectors No need external power supply
P-PM-IOT	Prodigy I/O Testing Module	<ul style="list-style-type: none"> Prodigy I/O Testing Module
P-PM-MIOC	Prodigy Mezzanine Connector	<ul style="list-style-type: none"> Prodigy Mezzanine Connector
P-PM-MTIOC	Prodigy Mezzanine Tall Connector	<ul style="list-style-type: none"> Prodigy Mezzanine Tall Connector
P-PM-SIOC	Prodigy Socket Connector	<ul style="list-style-type: none"> Prodigy Socket Connector
P-SC-CMC	System Control Clock Module Type C	<ul style="list-style-type: none"> Provides 5 pairs of LVDS clock input on MMCX Provides 1 single-ended OSC socket Provides 3 reset inputs through push button or MMCX Provides 3 pairs of LVDS clock outputs on MMCX Provides power recycle control port for VU/KU Prodigy Logic Module External power supply is not required Occupies one SC connector
P-SC-CMD	System Control Clock Module Type D	<ul style="list-style-type: none"> Provides 5 pairs of LVDS clock input on MMCX Provides 1 single-ended OSC socket Provides 3 reset inputs through MMCX Provides 3 pairs of LVDS clock outputs on MMCX No need external power supply Occupies one SC connector
USB-BLASTER-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 Intel FPGA download and debug through JTAG interface when connect to PC through USB connection

Product List

Expansions & Accessories

P-MINISAS200	200mm Mini-SAS cable	<ul style="list-style-type: none">• 200mm Mini-SAS cable
P-MINISAS600	600mm Mini-SAS cable	<ul style="list-style-type: none">• 600mm Mini-SAS cable
P-PCBLB150	150mm Prodigy Cable Type B	<ul style="list-style-type: none">• 150mm Prodigy Cable Type B
P-PCBLB254	254mm Prodigy Cable Type B	<ul style="list-style-type: none">• 254mm Prodigy Cable Type B
P-PCBLB635	635mm Prodigy Cable Type B	<ul style="list-style-type: none">• 635mm Prodigy Cable Type B

*Please confirm the exact ordering number with S2C Sales



S2C Limited

🌐 www.s2cinc.com

✉ sales@s2ceda.com

Israel | Paris | Silicon Valley | Seoul | Shanghai | Tokyo