

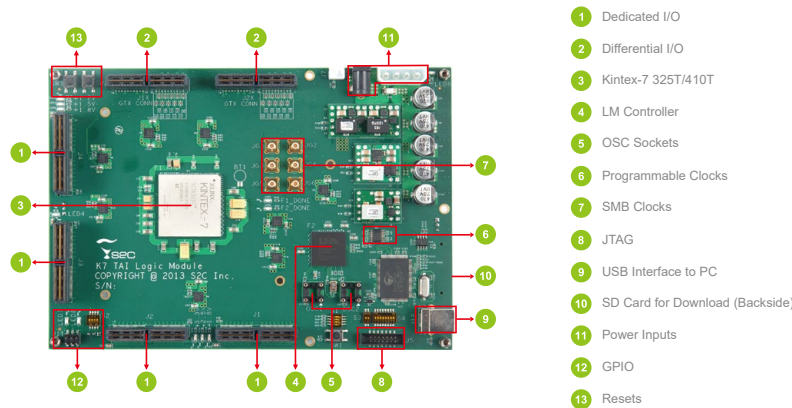
# S2C K7 Prodigy Logic Module Series

## 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.

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.



## Features

### Large Capacity

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

### Flexible & Powerful I/Os

- 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 of power for an 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

### 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

## Features

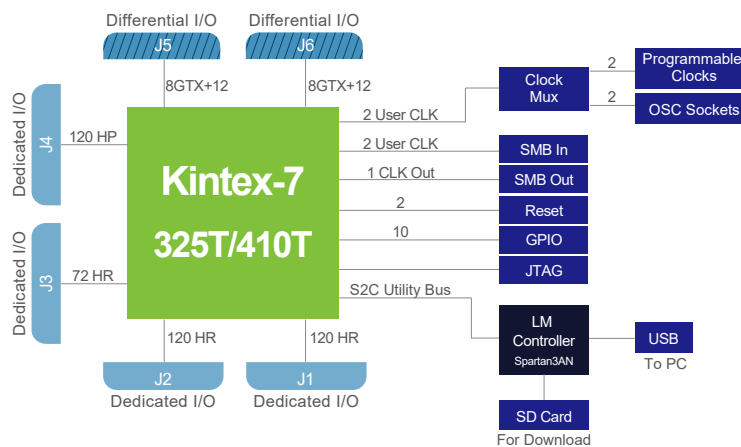
### Advanced Global Clock & Reset Management

- 2 single-ended global clocks can be selected from:
  - 2 programmable clock sources (1 ~ 195MHz)
  - 1 oscillator socket
- 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

## I/O Architecture



## Configuration Table

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