

SMARTZynq : Industrial Networking

Seamless integration of Reliable Ethernet capabilities in your equipment

General Description

- **SMARTZynq** is a pluggable module designed to enable easy integration of Ethernet Industrial Networks in equipments for Electric, Transportation, and Industrial Automation sectors.
- This powerful module allows the implementation of custom routers switches or end-equipments with powerful networking capabilities. Network frame processing can be performed by hardware using specific IP cores.
- **SoCe** offers solutions implementable on **SMARTZynq** for: HSR, PRP, low-latency Ethernet, Profinet and Ethernet IP.



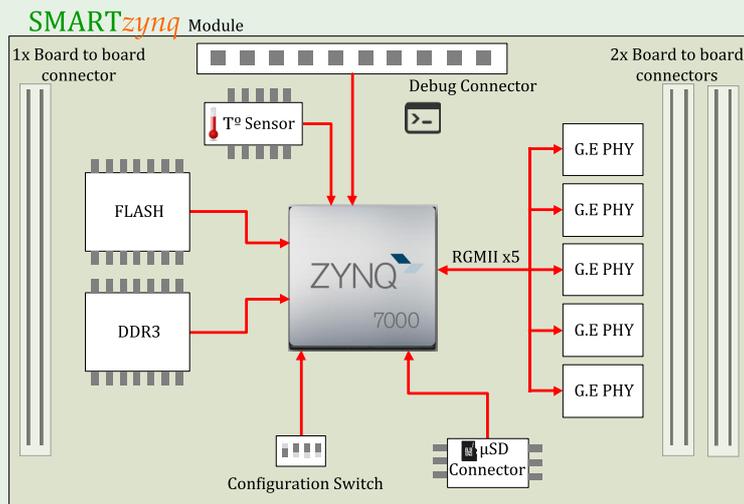
- **SoCe** offers a carrier that can be used by the customers as a reference to design their own one or to include **SMARTZynq** in their equipments.

Key Features

- **Scalable Industrial Grade Xilinx All Programmable SoC:** The Zynq family are processor-centric platforms that offer software, hardware and I/O programmability in a single chip. The multicore processor and industry-leading programmable logic enable better processing systems with fewer and faster devices. Devices supported: XC7Z010 and XC7Z020.
- **8 Gb DDR3:** Fast DDR memory to store operating systems, software applications, protocols stacks or large buffers. None of **SoCe**'s IP requires external RAM memory.
- **256 Mb Quad SPI Flash:** Memory for firmware and bitstream storage.
- **EEPROM with unique MAC integrated:** Ready to use unique MAC in each module to reduce the time-to-market of the customer product.
- **5x Ethernet Phytors:** One 10/100/1000TX for configuration and management plus four 10/100/1000TX or 1000FX. The number of PHYs can be reduced according to the customer necessities.
- **Size:** 88x60mm.
- **μSD connector:** High density and low cost large storage for complex operating systems, permanent data storage and quick upgrade.
- **Temperature Sensor:** Each module is provided with an I2C temperature sensor mounted on the PCB.
- **4x Leds indicator:** 1 Power up led, 1 FPGA done led and 2 General purpose LEDs. Also 2x LED for each PHY (link status and activity).
- **Generic GPIOs:** Up to 20 GPIOs ready to be used in the carrier.
- **Debug connector:** Easy accessible connector on the top of the module that accepts stand-alone powering, JTAG, I2C, SPI and UART.
- **High-reliability board-to-board connectors:** Three board-to-board connectors attach **SMARTZynq** module to the customer carrier.
- We provide **full access** to the schematics, PCB layout and Gerber for **SoCe**'s IP customers.



SMARTZynq Block Diagram



- User designed Vivado, XPS or ISE design
- HSR/PRP Switch IP
- Unmanaged Ethernet Switch IP
- 1588 Tiny IP
- PreciseTime Basic IP
- 1588 Transparent Clock IP

Applications

SMARTZynq may be used in a wide range of products and applications. A simple way to introduce redundancy capacities. Thanks to the utilization of Reconfigurable Logic, the module allows full upgradeability and the combination of different protocols. The Zynq inside ARM processor allows to run software that can cwork with the Reconfigurable Logic, expanding the possibilities.



- Energy market products
- Power electric protections
- Substations interconnection (IEC 61850)
- Industrial Networking
- Transport
- Defence and Aerospace
- Education and R&D



About the company

SoCe offers specialized design services of FPGAs, SoPCs, IPs and embedded systems. It focuses on FPGA based Ruggedized Systems, Industrial Networking and Video processing.

Ordering information and contact

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