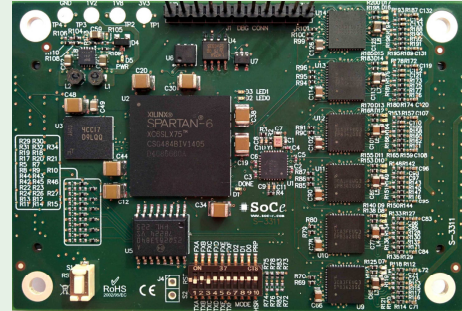


SMART^{oem} : Industrial Networking

Seamless integration of Reliable Ethernet capabilities in your equipment

General Description

- **SMART^{oem}** 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 **SMART^{oem}** for: HSR, PRP, low-latency Ethernet, Profinet and Ethernet IP.



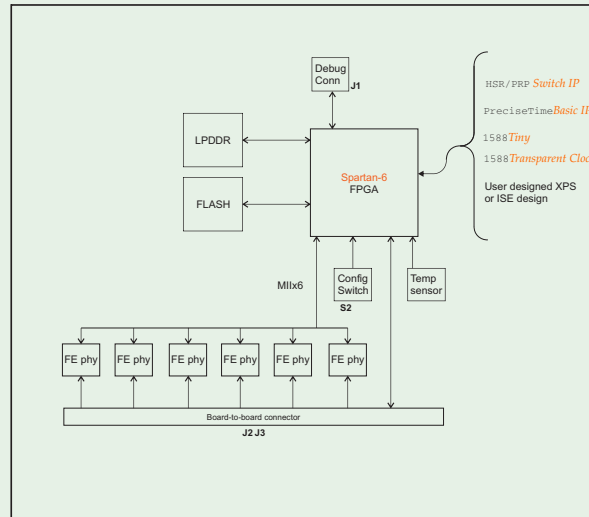
- **SoCe** offers a carrier, **SMART^{carrier}**, that can be used by the customers as a reference to design their own one or to include **SMART^{oem}** in their equipments.

Key Features

- **Scalable Industrial Grade Xilinx FPGA:** The Spartan-6 family provides leading system integration capabilities with the lowest total cost for high-volume applications. Devices supported: XC6SLX45, XC6SLX75, XC6SLX100 and XC6SLX150.
- **512 Mb LPDDR:** Fast SDRAM memory to store software applications, protocols stacks or large buffers. Only necessary if an internal soft-CPU want to be included. None of **SoCe**'s IP requires external RAM memory.
- **128 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.
- **6x Ethernet Phytors:** Each one can be configured independently to work in 10/100TX (copper) or 100FX (fibre). The number of PHYs can be reduced according to the customer necessities.
- **Size:** 88x60mm.
- **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 and SPI.
- **High-reliability board-to-board connectors:** Two board-to-board connectors attach **SMART^{oem}** module to the customer carrier.
- **Pin-out compatible** with other modules available on the market.
- We provide **full access** to the schematics, PCB layout and Gerber for **SoCe**'s IP customers.



SMART^{oem} Block Diagram



Applications

SMART^{oem} 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



- 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

For any further question, ordering information or quotation contact SoCe:
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