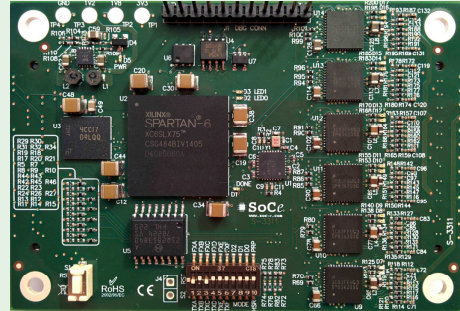


# SMART<sup>oem</sup> : Industrial Networking

Seamless integration of Reliable Ethernet capabilities in your equipment

## General Description

- **SMART<sup>oem</sup>** 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<sup>oem</sup>** for: HSR, PRP, low-latency Ethernet, Profinet and Ethernet IP.



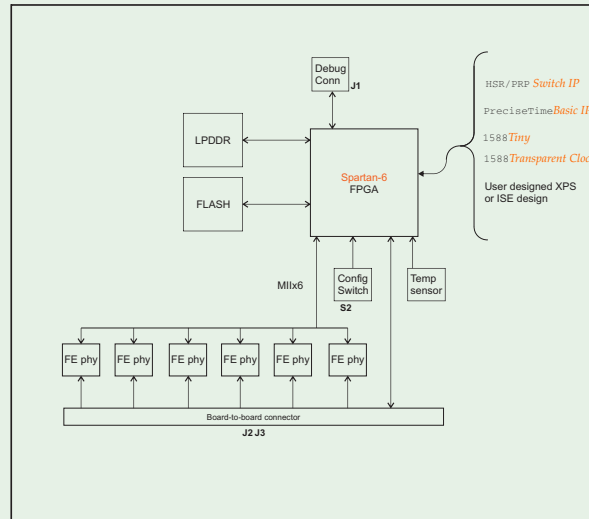
- **SoCe** offers a carrier, **SMART<sup>carrier</sup>**, that can be used by the customers as a reference to design their own one or to include **SMART<sup>oem</sup>** in their equipments.

## 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<sup>oem</sup>** 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<sup>oem</sup> Block Diagram



## Applications

SMART<sup>oem</sup> 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

**HongKe**

虹科

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