



**GEB Enterprise S.r.l.**

General Electronics Business

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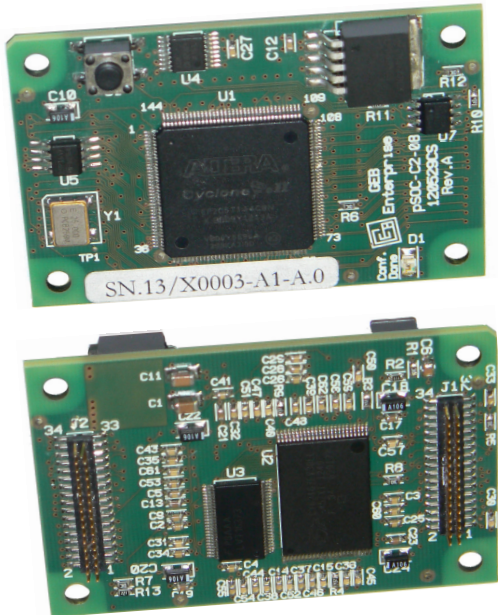
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**SOM**  
**System on Module**

## Pico SOM Card Model: pSOC-C2-08

### Features

- Low cost
- Single 3V3 Power Supply
- Simply, easy to user, Two Dual Row 34 ways I/O connectors.
- 57 LVTTTL 3V3 digital I/O channels, with independent sense, drive, bi-directional, and tri-state capabilities
  - Up to 48 I/O signals, 3 of which can be PLL clock output
- Up to 9 Inputs signals, 5 of which can be PLL clock reference
- EEPROM, 32 Kbytes
- SRAM, 2Mbytes (1Mx16)
- 1xRS232 input & 1xRS232 Output
- 1 reset push button
- 1 Power monitor and Reset
- 1 Core Power Supply
- 1Crystal Oscillator
- Fully-compatible with JTAG/IEEE 1149.1 boundary-scan standard
- Board Size 60x40x8mm
- Multilayer (6 Layers) PCB.



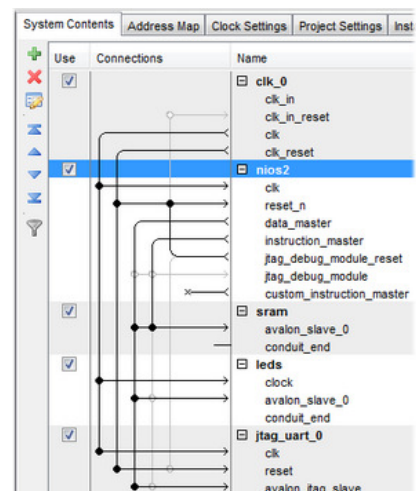
### Description

This GEB Low Cost System on Card (Soc-Card) is tailored to build the I/O and communication controller in the smart sub systems. It contains everything you need to start using the advanced features of Altera CycloneII family and features a socketed board with an EP2C5 device in a TQFP144 package, allowing other devices from the CycloneII family to be fitted to the board.

All technology Fpga requirements, power management, distribution and decoupling, fine pitch package connection, multilayer PCB manufacturing, double side PCB mounting and testing are met by Soc-Card board. One programming interface on the board support in-system programming (ISP) using Altera Byte Blaster and JTAG programming and testing.

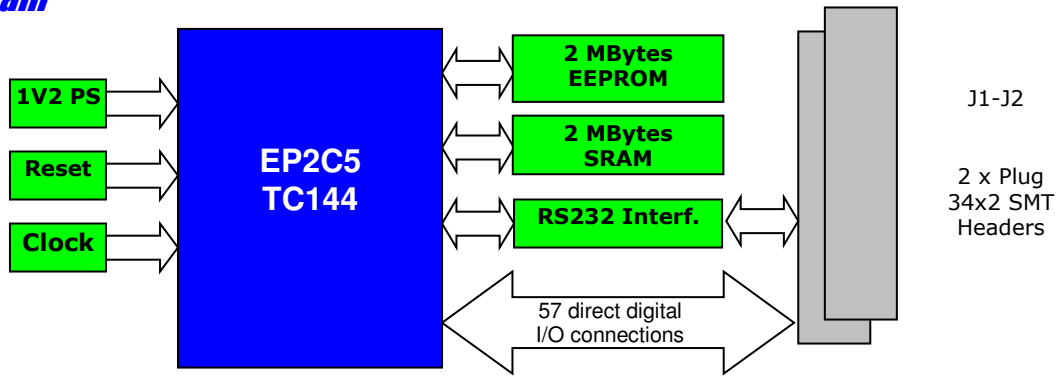
The SocCard has on-board the resources to allow to efficient use of the FPGA, NIOS-II Cpu softcore and all available IP, make simple the implementation of subsystems infrastructure (boot device, Power on reset, core power supply and decoupling, clock distribution, USB and/or RS232 and/or CAN interface). This providing a benefit to the user that can focus only on its system.

Precompiled Board Support Package (BSP) and SOPC or QSYS System Editors allows the user to easy fit on the Soc Boards customized version of Altera NIOS-II softcore. A large set of NIOS-II Peripherals or GEB peripherals IP can be connected to NIOS-II I/O bus to generate a specific application control system on SocCard.



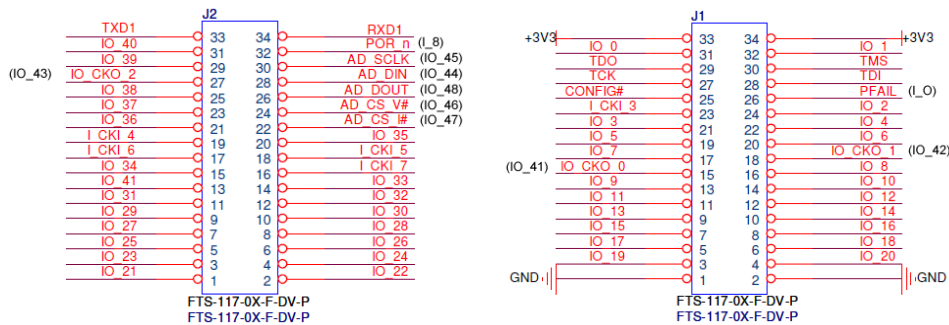
The SRAM allows the integration of NIOS cpu softcore and the execution of downloaded program from local boot device (EPCS) or remote boot device via HDLC, CAN, RS232 or USB. The EEPROM Module allows storing of setup parameter and/or events data logging.

## Block Diagram



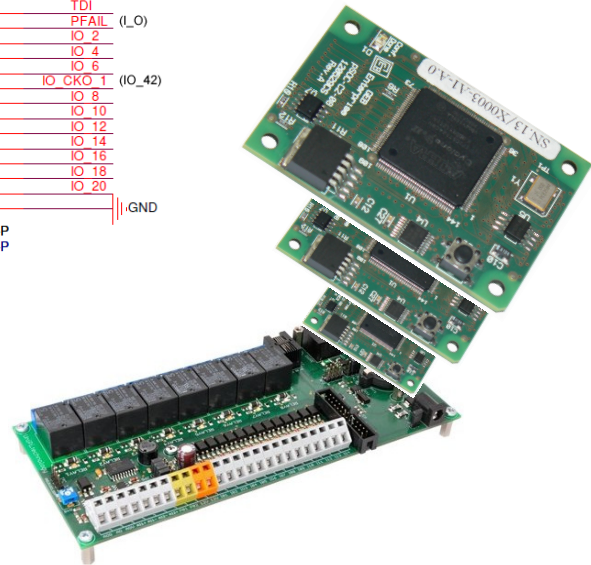
## I/O connectors

The two SMT header connector, 32 ways, make easy the installation on simple cards 2-4 layers "carrier" thus allowing a quick assessment of the potential of the Soc card itself.



## Application

Typical applications of this SOM are in the "Smart Core" of smart subsystem such as Motors, sensors position, graphic leds matrix, communication controller in digital, analog and power signals, management of setup parameters, command, status and faults. In the typical application, the SOM module is hosted on an application board such as a daughter. The application board must host the application interfaces circuitries and the physical interfaces of the SOM communication channel, such as RS4222/RS485, USB, CAN and so on.



## Specifications and Operating Conditions

Digital I/O	LVTTTL, Vol=0.4V, Voh=2.4V Vil=0.8V Vih=2.0/3.3 (min/max)
Power in	3.3V+/- 5% (0.2A Typical)
Temperatura Operativa	-40+85 °C
Temperatura Storage	-40/+150 °C

## Ordering Information

Product Name	GEB Code	Description
SOC-C2-05	120529A1	FPGA Cyclone II EP2C5T14C8N, 32Kbytes EEPROM, 2Mbytes SRAM, 1xRS232
SOC-C2-05-NR	120529A2	FPGA Cyclone II EP2C5T14C8N, 32Kbytes EEPROM, 1xRS232



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