

EUROCOM 600

CompactPCI Serial Intel Atom CPU Board

- Intel Atom E3800 Processor Architecture (Bay Trail)
- Dual Gigabit Ethernet
- CompactPCI Serial 3U Formfactor



III Main Features

- Intel Bay Trail-I platform architecture
- Scalable computing power
- Dual Gigabit Ethernet with support for real-time applications
- Designed for harsh industrial and mobile applications
- CompactPCI Serial system controller
- -40 to +85 °C operating temperature
- BIOS supporting fast boot times

III Description

The EUROCOM 600 is targeted to be used as computing and control platform in industrial and mobile applications. The board is fully compliant to the CompactPCI Serial standard and occupies one slot. Its Intel Bay Trail industrial CPU, the latest member of embedded CPUs, provides scalable computing power, ranging from single core to quad core devices with core frequencies from 1.3 GHz to 1.9 GHz. The board is particularly targeted at cost sensitive applications with modest performance requirements.

The Intel Atom processor E3800 product family is Intel's first system-on-chip (SoC) designed for intelligent systems, delivering outstanding compute, graphical, and media performance while operating in an extended range of thermal conditions. Highlights include high I/O connectivity, integrated memory controller, virtualization, Error Correcting Code (ECC), and built-in security capabilities within a thermal design power (TDP) range of 5 W to 10 W.

These SoCs, based on the Silvermont microarchitecture, deliver numerous enhancements over previous-generation Intel Atom processor micro-architectures. Utilizing 22nm process technology with 3-D Tri-Gate transistors, this new microarchitecture features significant improvements in computational performance and energy efficiency, along with a new out-of-order execution engine for superior compute performance, outstanding power management capabilities, and enhanced security. Intel Virtualization Technology increases virtualization performance by allowing the operating system more direct access to the hardware.

The EUROCOM 600 can fully utilize the dual channel memory interface of the Atom processor by providing up to two soldered DDR3 memory banks with up to 8 GB each. The DDR memory is complemented by an eMMC storage module for storing large amounts of program and user data.

The EUROCOM 600 provides a number of industry standard interfaces for interfacing with its environment. Available at the front panel, the display port delivers the video output of the processor with a maximum resolution of 2560 x 1600 pixels with 24 bpp at 60 Hz. Two USB host controllers are also available, one of them compliant to USB 3.0, providing enough bandwidth for data transfers to external storage devices for example.

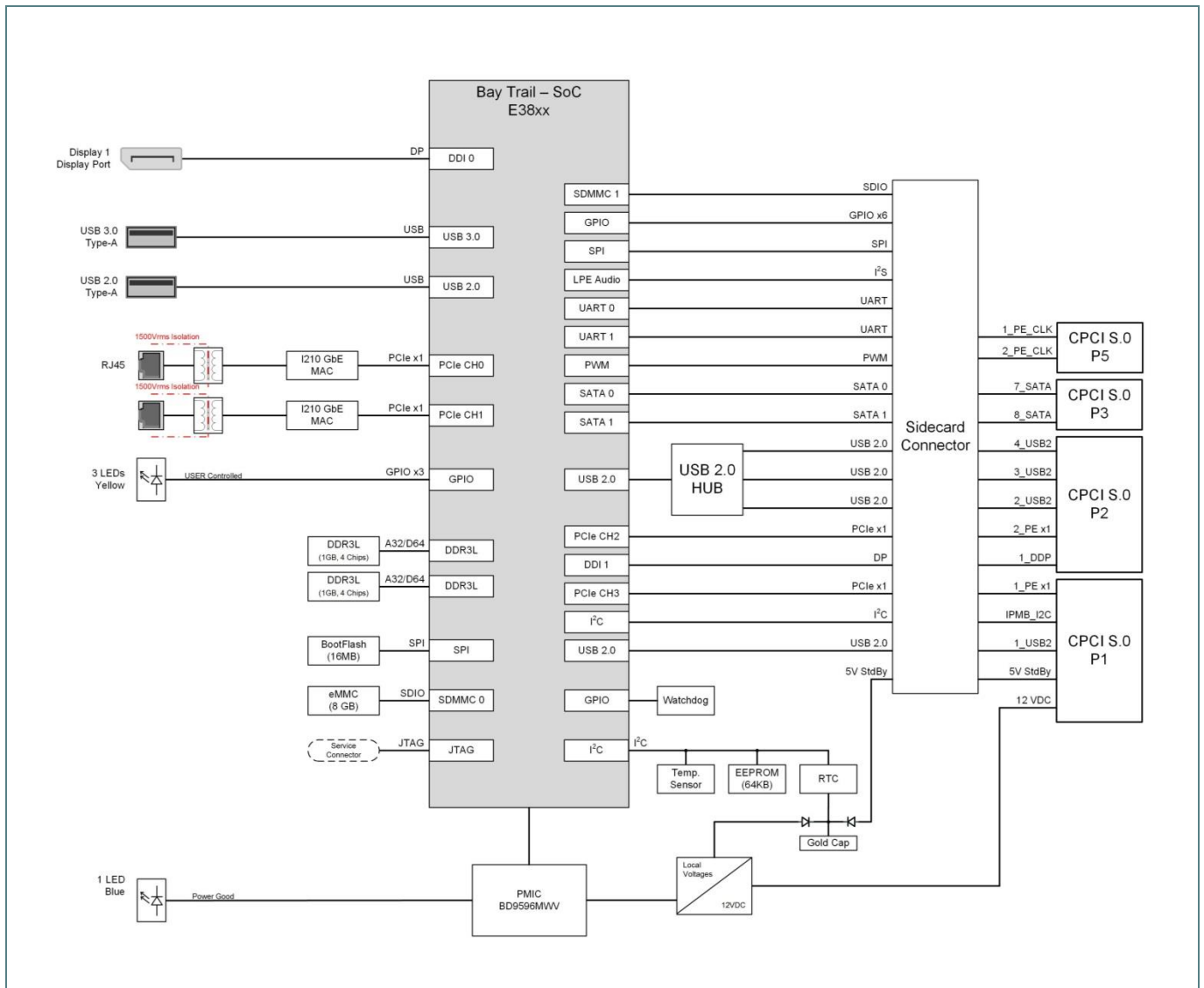
The EUROCOM 600 offers two Gigabit Ethernet Interfaces at its front. The Ethernet MACs are implemented using Intel's state of the art I210 which provides hardware enhancements for the implementation of real-time Ethernet (AVB and IEEE 1588) and is thus a key building block for future technology developments.

The CompactPCI Serial backplane interface supports two SATA channels, four USB 2.0 interfaces, and two PCIe x1 links.

Many interfaces of the Atom SoC are available on a side card connector, which can be utilized to route them to a second 3U side card, next to the EUROCOM 600. This has the advantage of making those interfaces available to an application, even though they are not supported by the CompactPCI Serial standard at the backplane level. In addition, interface signals that are normally routed to the CompactPCI Serial backplane can optionally be routed to the side card connector. The side card connector can be mounted on either side of the EUROCOM 600, so side cards can be placed left or right of the EUROCOM 600.

The BIOS of the EUROCOM 600 is an implementation of the open-source coreboot. The BIOS supports both Windows and Linux operating systems and provides very fast boot times. The fact that the BIOS is maintained in-house provides potential for customization. While the BIOS executes from SPI flash, the operating system is loaded from SD-card.

III Block Diagram



III Technical Data

Physical Interfaces

Display Port	Display Port Jack
LAN	2 x 10/100/1000BaseT(X), RJ 45
USB 3.0	USB 3.0 Jack, Type-A
USB 2.0	USB 2.0 Jack, Type-A
LED Indicators	Power, 2x LAN Link/Act, 3 x user programmable
CPCI-S.o Interface	P1, P2, P3, P5 connectors
Side Card	2x SATA, 4x USB, 1x DP, 2x UART, I2C, SPI, HDA, PWM, GPIO

III Specification

Board Characteristics

CPU

- Intel Atom E3845, 1.91 GHz, Quad Core

Memory

- Up to 8 GB DDR3 soldered system memory
- 16 MB SPI boot flash
- 8 GB eMMC memory
- 64 kB serial EEPROM

Graphics

- Integrated in Atom SoC
- Maximum resolution of 2560 x 1600 pixels with 24 bpp at 60 Hz
- One DisplayPort connector at front panel, one at rear I/O

Mass Storage

- Two SATA 2.0 channels via rear I/O or side card connector

I/O

- Two 10/100/1000BaseT Ethernet channels at the front panel (RJ45)
- One USB 3.0 host port at the front panel
- Two USB 2.0 host ports at the front panel
- Four USB 2.0 host ports via rear I/O or side card connector
- Two PCIe x1 links via rear I/O or side card connector

Mechanical Specifications

Dimensions: conforming to Compact PCI Serial specification for 3U boards
Weight: 200 g (TBC)

Electrical Specifications

- +12 V (10..36 V), 2 A nominal (TBC)
- +5 V (±5%) standby voltage optional

Environmental Conditions

Temperature range (operation): -40 to +85 °C
Temperature range (storage): -40 to +85 °C
Relative humidity (operation): max. 90 % non-condensing
Relative humidity (storage): max. 95 % non-condensing
Altitude: -300 m to + 2,000 m
Climatic tests according to EN 68068



EMC

- EN 55022 (radio disturbance)
- EN 61000-4-2 (ESD)

Standard Configurations

Article No.	CPU	Memory	Operating Temp.	eMMC	SC
E-600-V-E3IN1211XXX	E3845	2 x 2 GB	-40.. 70 °C	8 GB	right

Software Support

- Windows 7 Embedded
- Linux

Options

- CPU:
 - Intel Atom E3845, 1.91 GHz, Quad Core, 10 W, I-temp.
 - Intel Atom E3827, 1.75 GHz, Dual Core, 8 W, I-temp.
 - Intel Atom E3826, 1.46 GHz, Dual Core, 7 W, I-temp.
 - Intel Atom E3825, 1.33 GHz, Dual Core, 6 W, I-temp.
 - Intel Atom E3815, 1.46 GHz, Single Core, 5 W, I-temp.
- Up to 4 GB DDR3 Memory
- Up to maximum available eMMC

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