

"ALWAYS COMPLETE"

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CSB1880 - MPC8536E System On a Module (SOM)

The CSB1880, designed, developed and manufactured by Cogent Computer Systems, Inc., is a high performance, network oriented, PowerPC based System on a Module (SOM). The CSB1880 provides a small, powerful and flexible engine for embedded Linux based 10/100/1000 networking applications of all kinds.

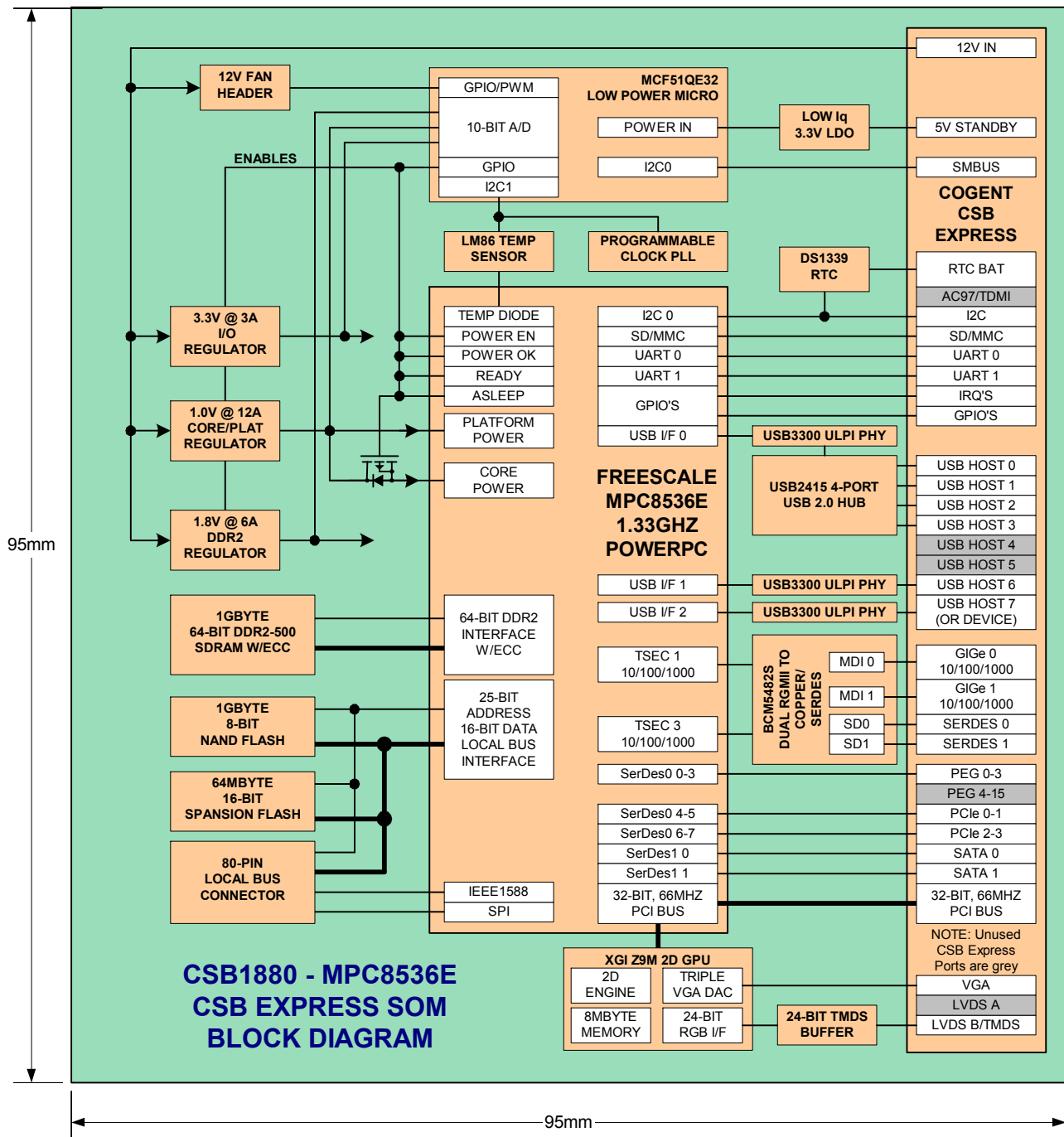
Specifications and Features

- **CPU** - Power Efficient 1.25Ghz e500v2 PowerPC Core with Jog Mode
- **CACHE** - 32KByte Instruction and Data Caches, plus On-Chip 512KByte L2 Cache
- **FPU** - IEEE 754 Compliant Floating Point Unit and Vector Coprocessor Unit
- **SDRAM** - 1GByte Option 64-Bit Wide DDR2-500 Memory with 8-Bit ECC
- **NOR FLASH** - 64Mbyte Spansion Flash with Secure 256 Byte Sector and 128-Bit Unique ID
- **NAND FLASH** - On-Board 512MByte NAND and 4-Bit SDIO Port (socket is off board)
- **PCI Express** - One x4 Link and Two x2 Links (may also be configured as one x8, or two x4's)
- **PCI BUS** - 32-Bit, 66Mhz V2.2 with 4 Bus Request/Grant Pairs
- **VIDEO OUTPUT** - Z9M 2D Graphics Controller with integrated 8MB Frame Buffer, Analog VGA and 24-Bit TMDs Output (DVI Compliant) up to 1280 x 1024
- **GIGABIT ETHERNET** - Two Copper or SGMII (Auto selected via PHY) 10/100/1000 Ports
- **SECURITY** - On-Chip Offload Engines Support Various Encryption/Decryption Algorithms including: IPsec/SSL; DES/3DES; MD-5 and SHA1 hashing; Kasumi f8 and f9; and others
- **XOR/RAID** - High Speed XOR DMA Engine for RAID Storage Applications
- **Serial Attached Storage (SATA)** - Dual SATA Gen 2 (1.5Gbit or 3Gbit/sec) Channels
- **USB** - Six 480Mbit USB 2.0 Ports (Four Host via Hub, One Direct Host and One Direct Device)
- **SERIAL I/O** - Two 4-wire TTL Serial Ports, One SPI and One I2C Port
- **GPIO/Interrupts** - Eight GPIO lines, Four PCI Interrupts and Two PCIe Wake Inputs
- **JTAG** - Standard PowerPC 16-Pin JTAG Header
- **POWER MANAGEMENT** - 12V Input; On-Board 3.3V (I/O), 1.8V (SDRAM), 1.0V (CPU Core); and IPM Micro for Power Sequencing, Boot Configuration, FAN Control and Thermal Monitoring
- **OPERATING TEMPERATURE** - 0C to 70C Operation with Supplied Heatsink
- **OPERATING POWER** - <8W typ., <12W Max and <10mw Power Down (via 3.3V Standby rail)
- **CSB Express Compliant** - Derived from COM Express Type III with Cogent Enhancements
- **Compact Size** - 95mm (3.75") x 95mm (3.75") x 9mm high (Total Height is 32mm with Heatsink)
- **BOOTLOADER/OS** - UBOOT with 2.6.25+ Linux Kernel in Flash

Introduction and Overview

The high-performance Superscalar e500 PowerPC Core, multiple PCI Express links, high speed USB, Dual Serial ATA; Dual 10/100/1000 Ethernet, and highly efficient on-board regulators all combine to make the CSB1880 the ideal engine for size restricted, high performance, Gigabit Ethernet based applications. For the lowest power consumption, the IPM Micro can power the board down completely while remaining on standby power. In this mode the consumption drops to <10milliwatts with IPM bus wakeup events still active. Additionally, the IPM Micro controls power sequencing; thermal, current and voltage monitoring; FAN Control; and boot configuration.

The CSB1880 is constructed using state of the art PCB layout and packaging technology such as: 500Mhz DDR2 balanced tree routing; 3GHZ+ high-speed differential signaling; 15 Amp peak switching regulators; and 8-layer, low EMI, impedance controlled PCB stackup. The CSB1880 gives you access to this technology without the learning curve or the risk. You can integrate the CSB1880 using a simple, low cost 4 or 6-layer PCB, in just weeks, not months! We can even do it for you through our custom design services group.



Development Boards and I/O Expansion

The CSB1880 is fully compatible with the CSB1801 Flex-ATX Development Carrier Board. This board provides a CSB Express Compatible Socket (standard size as well as small size) RS-232 COM Port, SDIO Socket, Dual 10/100/1000 Ethernet. The CSB1801 also has one 3.3V PCI Slot, Three PCIe Slots (lanes per socket are CPU specific), and three SERDES IO Sites for additional custom or off the shelf high-speed serial expansion. The CSB1801 and CSB1880 are installed in a compact (12.7" x 11" x 5.5"), easy to use (cover removes using only two thumb screws) Micro-ATX Case with 300W Power Supply. Contact Cogent for more detailed information about the CSB1801 and the KIT1880 Development kit.