

MPC830X System on Module

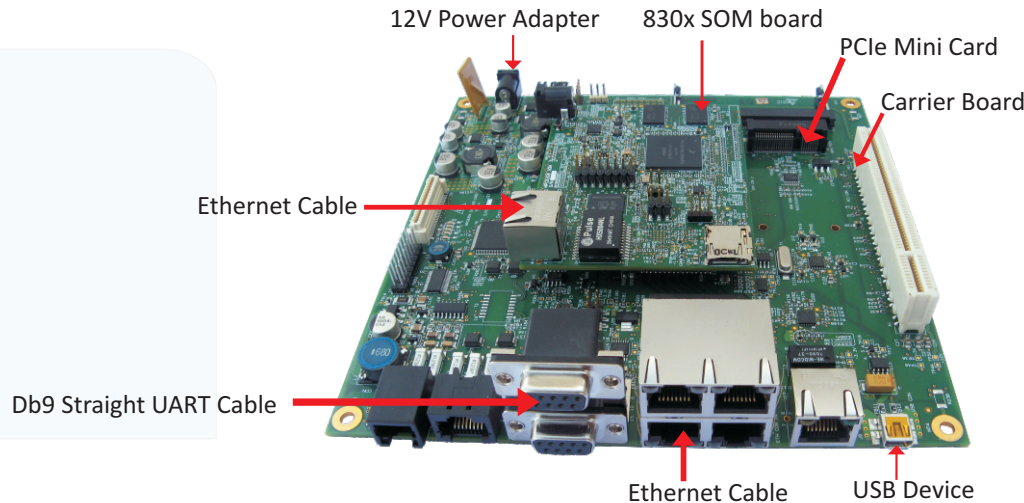
The MPC830X SOM board is optimal cost reference development board for Freescale's MPC830X processor. This board provides flexibility to interface other peripherals on board by using carrier card.

The Linux Target Image Builder (LTIB) is a tools framework used to manage, configure, extend and build Linux software elements to easily build a Linux target image and a root file system. LTIB runs on an x86 PC running the Linux OS.

This MPC830XSOM BSP can be used to customize BSP as per project and take ready to use software for product development. The BSP components provide the tools, device drivers, and additional features needed for embedded Linux project.

Applications

- Network communication
- Low-End Printer CPU
- Smart Energy Metering Gateway
- IEEE Std 1588™ in Test and Measurement and Industrial Automation
- IEEE Std 802.11n™ WLAN Access Point
- Residential Gateway
- Managed Industrial Router



Chip level features for 8306

- e300 core
- DDR2 SDRAM controller without ECC support
- Enhanced Local Bus Controller (eLBC)
- Quicc Engine (QE)
- USB Dual-Role Controller
- Fast Ethernet controller
- Enhanced Secure Digital Host Controller (eSDHC)
- DMA Controller
- Dual I2C interface
- Serial Peripheral Interface (SPI)
- Real Time Clock (RTC), x2 Timers
- Interrupt controller
- General Purpose Input Output (GPIO) -75 bits
- JTAG Boundary Scan

Chip level features for 8308

- e300 Core
- Single PCI Express Interface
- Dual Enhanced Three-Speed Ethernet Controllers (eTSECs)
- DDR2 Memory Controller
- USB Dual-Role Controller
- Enhanced Secure Digital Host Controller (eSDHC)
- Enhanced Local Bus Controller (eLBC)
- Integrated Programmable Interrupt Controller (IPIC)
- DMA Controller
- Single I2C, Serial Peripheral Interface (SPI), DUART, Timers

Chip level features for 8309

- e300c3 Core
- PCI Controller
- QUICC Engine block
- DDR2 SDRAM Memory Controller
- Enhanced local bus controller
- Integrated programmable interrupt controller (IPIC)
- Enhanced Secure Digital Host Controller (eSDHC)
- Universal serial bus (USB) dual-role controller
- eCAN module & Dual I2C interfaces
- DMA Engine 1 & DMA controller (DMA Engine 2)
- I/O sequencer & DUART
- Serial peripheral interface (SPI) with Master and Slave support
- Power management controller (PMC)
- Parallel I/O & System timers
- Real time clock (RTC) module
- IEEE Std. 1149.1™ compliant JTAG boundary scan

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SOM Features

Particulars	MPC8306 SOM	MPC8308 SOM	MPC8309 SOM
CPU speed	Upto 266MHz	Upto 400MHz	Upto 400MHz
DDR Memory	16 bit DDR2 upto 266/333MHz (1 Gigabit)	32-bit (w/ ECC) DDR2 @ 266MHz (2 Gigabit)	16/32 bit DDR/2 upto 266/333MHz With & without ECC
Local Bus	16bit w/NAND/NOR.I2c boot support (Muxed addr/data bus)	16bit w/NAND/NOR.I2c boot support	16bit w/NAND boot support (Muxed addr/data bus)
PCI		x1 PCI Express v1.0a	1-32 bit upto 66MHz (2.3)
HDLC/TDM (using QE ULE)	X2 TDM PROFIBUS support via ucode TDM1: T1/E1 Framer interface on carrier card TDM2: SLIC interface on carrier card		X2 TDM/HDLC PROFIBUS support via ucode
Ethernet (using QE ULE)	<ul style="list-style-type: none"> FEC1 MII: 10/100 Network interface on SOM FEC2 MII: 5-port switch via Carrier Card FEC3 MII: 10/100 Network Interface via Carrier Card 	<ul style="list-style-type: none"> eTSEC1, RGMII: one 10/100/1000 BaseT RJ-45 interface on SOM eTSEC2, RGMII: five 10/100/1000 BaseT RJ-45 interfaces via Carrier Card 	<ul style="list-style-type: none"> X3 10/100 MII/RMII (OR) X2 10/100 MII/RMII + IEEE1588
USB	USB 2.0 high speed host/device/OTG	USB 2.0 high speed host/device/OTG	USB 2.0 high speed host/device/OTG
SDIO	YES upto 4GB	YES upto 4GB	YES
CAN	X4 YES (x1 is interfaced to transceiver on Carrier Card)		X4 YES
Others	1x DUART (One RS-232 One RS-232 supports up to 115200 bps for console display other as RS-485), DMA,2x I2C, SPI, INTERRUPT, 2x TIMERS	DUART interface:(One RS-232 supports up to 115200 bps for console display & other as RS-485)	2x DUART, DMA, 2x I2C, SPI, INTERRUPT, 2x TIMERS
Package	369 PBGA	473 MAPBGA	489 PBGA

Deliverables

The MPC830X-SOM and carrier card kit includes the following items

- MPC8306/08/09 SOM board
- MPC830X carrier card
- UART cable
- Ethernet cable
- The power adaptor (12V – 5A) and cable

