

Processor Enablement

Cost-Effective MPC830x PowerQUICC II Pro Processor Evaluation Kit

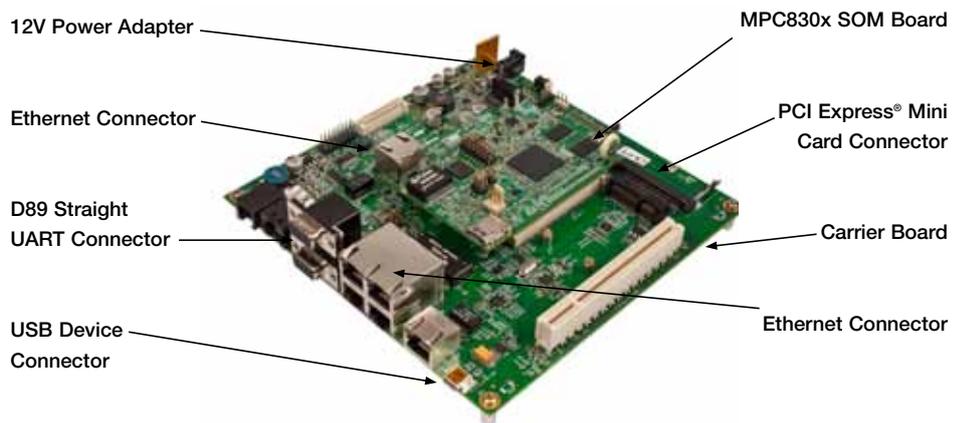
Overview

The MPC830x evaluation kit (MPC830x-KIT) is a cost-optimized reference design board for Freescale's MPC830x PowerQUICC II Pro processor portfolio, built on Power Architecture® technology. The kit consists of a carrier card and a system on module (SoM) representing each of the three processors (MPC8306, MPC8308 and MPC8309).

The MPC830x-KIT can be customized per project and combined with off-the-shelf software for product development. The module components provide the tools, device drivers and additional features needed for embedded Linux® OS projects.

Target Applications

- Network communication
- Low-end printers
- Smart energy metering gateway
- IEEE® 1588 in test and measurement equipment and industrial automation
- IEEE 802.11n for WLAN access point
- Residential gateway
- Managed industrial router



Tools

The Linux Target Image Builder (LTIB) is a tool framework used to manage, configure, extend and build Linux software elements to develop a u-boot boot loader, Linux target image and a root file system. LTIB runs on a personal computer with Linux OS.

Evaluation Kit Pricing		
MPC8306-KIT	MPC8308-KIT	MPC8309-KIT
USD \$759	USD \$789	USD \$779

MPC830x Reference Design Kit Contents

The MPC830x evaluation kit includes the following items:

- MPC830x SOM board
- MPC830x carrier card
- Two UART cables
- Board support package
- Ethernet cable
- Two power adaptors (12V-5A) and cable

Production quantity SOMs may be purchased from partner elfnochips at elfnochips.com.

MPC830x PowerQUICC II Pro Processor Portfolio				
	MPC8308	MPC8309	MPC8306	MPC8306S
Core	e300	e300	e300	e300
I-Cache/ D-Cache	16K/16K	16K/16K	16K/16K	16K/16K
Floating Point Unit	Yes	Yes	Yes	Yes
Core Frequency	266/333/400	266/333/400	133/200/266	133/200/266
QUICC Engine Subsystem	No	32-bit RISC	32-bit RISC	32-bit RISC
Memory Controller	16/32-bit DDR2 with ECC	16/32-bit DDR2 with ECC	16-bit DDR2	16-bit DDR2
Local Bus	8/16-bit up to 66 MHz	8/16-bit up to 66 MHz	8/16-bit up to 66 MHz	8/16-bit up to 66 MHz
PCI Interface	No (1 x PCI Express)	32-bit up to 66 MHz	No	No
Ethernet	2 x 10/100/1000 MII/RGMI	3 x 10/100 MII/RMII or 2 x 10/100 with IEEE 1588 V2	3 x 10/100 MII/RMII or 2 x 10/100 with IEEE 1588 V2	3 x 10/100 MII/RMII
USB 2.0	Yes	Yes	Yes	Yes
UART	Yes (2 x)	Yes (4 x)	Yes (4 x)	Yes (4 x)
I ² C Controller	Dual	Dual	Dual	Dual
SPI	Yes	Yes	Yes	Yes
Interrupt Controller	IPIC	IPIC	IPIC	IPIC
IEEE 1588 Support	Yes	Yes	Yes	No
eSDHC	Yes	Yes	Yes	No
eCAN	Yes	Yes	Yes	No
Package	473-pin MAPBGA	489-pin MAPBGA	369-pin MAPBGA	369-pin MAPBGA

MPC830x SOM Features			
Particulars	MPC8306 SOM	MPC8308 SOM	MPC8309 SOM
CPU Speed	Up to 266 MHz	Up to 400 MHz	Up to 400 MHz
DDR Memory	16-bit DDR2 up to 266/333 MHz (1 Gigabit)	32-bit (w/ECC) DDR2 at 266/333 MHz (2 Gigabit)	16/32-bit DDR2 up to 266/333 MHz with and without ECC
Local Bus	16-bit w/NAND/NOR, I ² C boot support (Muxed addr/data bus)	16-bit w/NAND/NOR, I ² C boot support	16-bit w/NAND boot support (Muxed addr/data bus)
PCI	NA	1 x PCI Express [®] v1.0a	1 x 32-bit up to 66 MHz (2.3)
HDLC/TDM (using QUICC Engine Lite)	2 x TDM PROFIBUS support via ucode TDM1: T1/E1 Frammer interface on carrier card TDM2: SLIC interface on carrier card	NA	2 x TDM/HDLC PROFIBUS support via ucode
Ethernet (using QUICC Engine)	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	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	3 x 10/100 MII/RMII (OR) 2 x 10/100 MII/RMII + IEEE 1588
USB	High-Speed USB 2.0 host/device/OTG	High-Speed USB 2.0 host/device/OTG	High-Speed USB 2.0 host/device/OTG
SDIO	Yes, up to 4 GB	Yes, up to 4 GB	Yes
CAN	4 x (1 x is interfaced to transceiver on carrier card)	NA	4 x
Others	1 x DUART (one RS-232 supports up to 115200 bps for console display RS-485), DMA, 2 x I ² C, SPI, interrupt, 2 x timers	DUART interface (one RS-232 supports up to 115200 bps for console display and one RS-485)	2 x DUART, DMA, 2 x I ² C, SPI, interrupt, 2 x timers

Learn More: For current information about Freescale products and documentation, please visit freescale.com/PowerQUICC.



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