

# Cost-Effective MPC830x PowerQUICC II Pro Processor Evaluation Kit

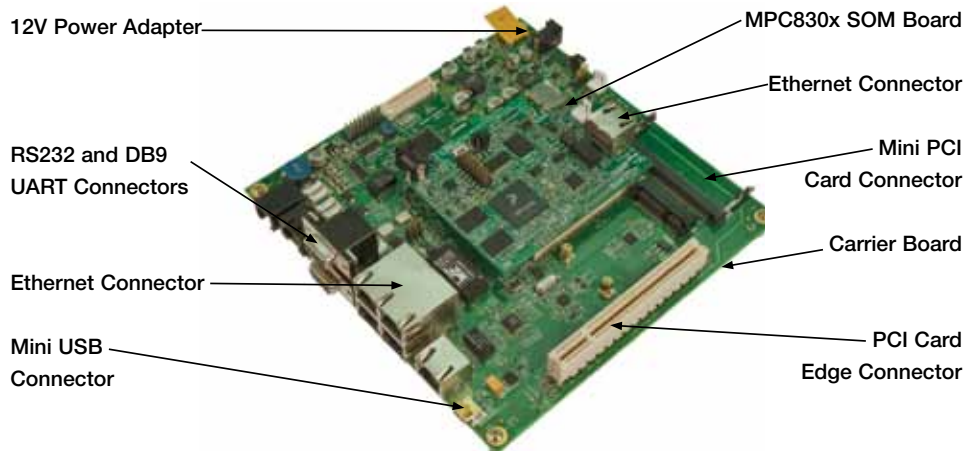
## Overview

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

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
- Factory or building automation
- IEEE® 1588 in test and measurement equipment and industrial automation
- Programmable logic controller
- Managed industrial router



## Tools

- 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.
- CodeWarrior Power Architecture 8.8 Service Pack 2
- NetComm Software for MPC830x Rev 1.0

## 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
- Power adaptor (12V-5A) and cable

Production quantity SoMs may be purchased from partner elnfochips at [elnfochips.com](http://elnfochips.com).

## Evaluation Kit Pricing

MPC8306-KIT	MPC8309-KIT
USD \$759	USD \$779

MPC830x PowerQUICC II Pro Processors on SoM			
	MPC8309	MPC8306	MPC8306S (Supported on the MPC8306-KIT)
Core	e300	e300	e300
I-Cache/D-Cache	16K/16K	16K/16K	16K/16K
Floating Point Unit	Yes	Yes	Yes
Core Frequency	266/333/400/417	133/200/266	133/200/266
QUICC Engine Subsystem	32-bit RISC	32-bit RISC	32-bit RISC
Memory Controller	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
PCI Interface	32-bit up to 66 MHz	No	No
Ethernet	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
UART	Yes (4 x)	Yes (4 x)	Yes (4 x)
IC Controller	Dual	Dual	Dual
SPI	Yes	Yes	Yes
Interrupt Controller	IPIC	IPIC	IPIC
IEEE® 1588 Support	Yes	Yes	No
eSDHC	Yes	Yes	No
FlexCAN	Yes	Yes	No
Package	489-pin MAPBGA	369-pin MAPBGA	369-pin MAPBGA

MPC830x Kit Features		
	MPC8306-KIT	MPC8309-KIT
CPU	MPC8306 PowerQUICC II Pro	MPC8309 PowerQUICC II Pro
CPU Frequency Supported on SoM	133/266 MHz	266/333 MHz
Memory Subsystem	<ul style="list-style-type: none"> <li>128 MB DDR2 SDRAM</li> <li>8 MB NOR flash memory</li> <li>512 MB NAND flash memory</li> <li>256 KB serial EEPROM</li> </ul>	<ul style="list-style-type: none"> <li>256 MB DDR2 SDRAM</li> <li>8 MB NOR flash memory</li> <li>512 MB NAND flash memory</li> <li>256 KB serial EEPROM</li> </ul>
Ethernet	1 x 10/100 MII/RMII, 2 x 10/100 MII	3 x 10/100 MII/RMII
USB 2.0	1	1
eSDHC	1 (microSD)	1 (microSD)
UART	2	2
IC	2	2
FlexCAN	1	1
Connectors—SOM	<ul style="list-style-type: none"> <li>3-pin power jack</li> <li>3-pin UART header for console</li> <li>JTAG/COP for debug</li> <li>120-pin and 140-pin board-to-board connector</li> <li>6-pin BDM header for KA2 programming</li> <li>RJ-45 for Ethernet</li> <li>microSD card</li> <li>6-pin header for boot device (NAND/NOR) selection</li> </ul>	<ul style="list-style-type: none"> <li>3-pin power jack</li> <li>3-pin UART header for console</li> <li>JTAG/COP for debug</li> <li>120-pin and 140-pin board-to-board connector</li> <li>6-pin BDM header for KA2 programming</li> <li>RJ-45 for Ethernet</li> <li>microSD card</li> <li>6-pin header for boot device (NAND/NOR) selection</li> </ul>
Connectors—Carrier Board	<ul style="list-style-type: none"> <li>Dual stack DB9 connector for RS-232 console and RS-485</li> <li>RJ45 connector for T1/E1</li> <li>RJ45 connector for FEC-3</li> <li>MiniAB USB</li> <li>Microcontroller UART header</li> <li>Microcontroller BDM header</li> <li>4-pin CAN header</li> <li>RJ-11 for SLIC/PSTN phone interface</li> <li>60-pin local bus</li> <li>120-pin and 140-pin board-to-board connector</li> <li>16-pin SPI and IEEE® 1588 header</li> <li>16-pin GPIO header</li> </ul>	<ul style="list-style-type: none"> <li>PCI card edge connector</li> <li>Mini PCI card edge connector</li> <li>Dual stack DB9 connector for RS-232 console and RS-485</li> <li>RJ45 connector for T1/E1</li> <li>RJ45 connector for FEC-3</li> <li>MiniAB USB</li> <li>Microcontroller UART header</li> <li>Microcontroller BDM header</li> <li>4-pin CAN header</li> <li>RJ-11 for SLIC/PSTN phone interface</li> <li>60-pin local bus</li> <li>120-pin and 140-pin board-to-board connector</li> <li>16-pin SPI and IEEE 1588 header</li> <li>16-pin GPIO header</li> </ul>
Form Factor—SOM	90 mm x 70 mm	90 mm x 70 mm
Form Factor—Carrier Board	170 mm x 170 mm	170 mm x 170 mm
Certification	FCC Class A, CE	FCC Class A, CE
RoHS	Yes	Yes

**Learn More:** For current information about Freescale products and documentation, please visit [freescale.com/PowerQUICC](http://freescale.com/PowerQUICC).



Freescale, the Freescale logo and PowerQUICC are trademarks of Freescale Semiconductor, Inc., Reg. U.S. Pat. & Tm. Off. QUICC Engine is a trademark of Freescale Semiconductor, Inc. All other product or service names are the property of their respective owners. The Power Architecture and Power.org word marks and the Power and Power.org logos and related marks are trademarks and service marks licensed by Power.org.  
© 2010–2011 Freescale Semiconductor, Inc.  
Document Number: MPC830XSOMFS / REV 3

