

MEC140X/MEC141X Family

Low-Power Embedded Controllers for Notebook and Tablet PCs

Summary

The MEC140X/MEC141X family of low-power embedded controllers are customized for notebook and tablet platforms with an eSPI or LPC interface to the host core logic. The MEC140X/MEC141X family is a highly configurable, mixed-signal, advanced I/O controller architecture. Every device in the family incorporates a 32-bit MIPS32 M14K™ microcontroller core with a closely coupled SRAM for code and data. A secure bootloader is used to download your firmware from the system's shared SPI Flash device, thereby allowing you to customize the device's behavior.

The MEC140X/MEC141X family may be configured to communicate with the system host through one of three host interfaces. The MEC140X devices support two host interfaces: Intel's Low Pin Count (LPC) and I²C™. The MEC1418 supports three host interfaces: Intel's new Enhanced Serial Peripheral (eSPI), LPC or I²C. This allows you to manage your product plans and migration from LPC to eSPI with a pin and register compatible embedded controller family. Designers can start today with LPC based designs, easily migrate to eSPI, thereby preserving their investment during their transition to eSPI.

The MEC140X/MEC141X family is based on Microchip's PIC32 architecture and is supported by Microchip's award winning development tools.

Product Roadmap

SRAM Code Storage

MEC1404

32-bit RISC Core: 48 MHz
128 KB SRAM
LPC, I²C™, DAC, ADC
Analog Comparators
128-pin VTQFP, 144-WFBGA

MEC1406

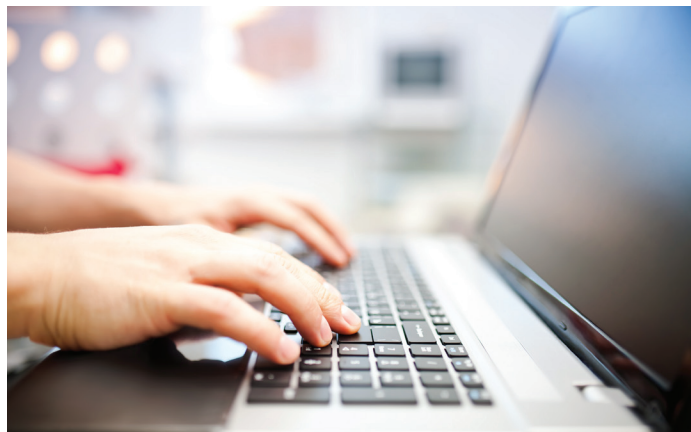
32-bit RISC Core: 48 MHz
160 KB SRAM
LPC, I²C, DAC, ADC
Analog Comparators
128-pin VTQFP

MEC1418

32-bit RISC Core: 48 MHz
192 KB SRAM
eSPI, LPC, I²C, DAC, ADC
Analog Comparators
128-pin VTQFP, 144-WFBGA

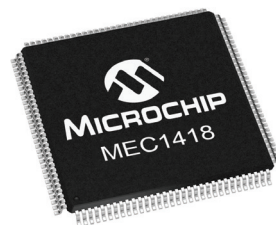
MEC1408

32-bit RISC Core: 48 MHz
192 KB SRAM
LPC, I²C, DAC, ADC
Analog Comparators
128-pin VTQFP



Features

- Flexible host interface with easy LPC to eSPI migration path
- MEC1418 is pin and register compatible with MEC140X products and adds the eSPI interface
- Supported by Microchip's award winning development tools
- Flexible support of 1.8 V and 3.3 V I/O
- SRAM option of 128 KB, 160 KB and 192 KB
- Best in class power consumption with multiple sleep state options



Applications

- Low-power embedded controller for mobile applications
 - Notebook or tablet platforms

Development Tools

The MEC140X/MEC141X is supported by Microchip's award winning development tools including the MPLAB® XC32 Compiler and MPLAB REAL ICE™ In-Circuit Emulator, the ICD 3 In-Circuit Debugger and the PICkit™ 3 Programmer/Debugger.

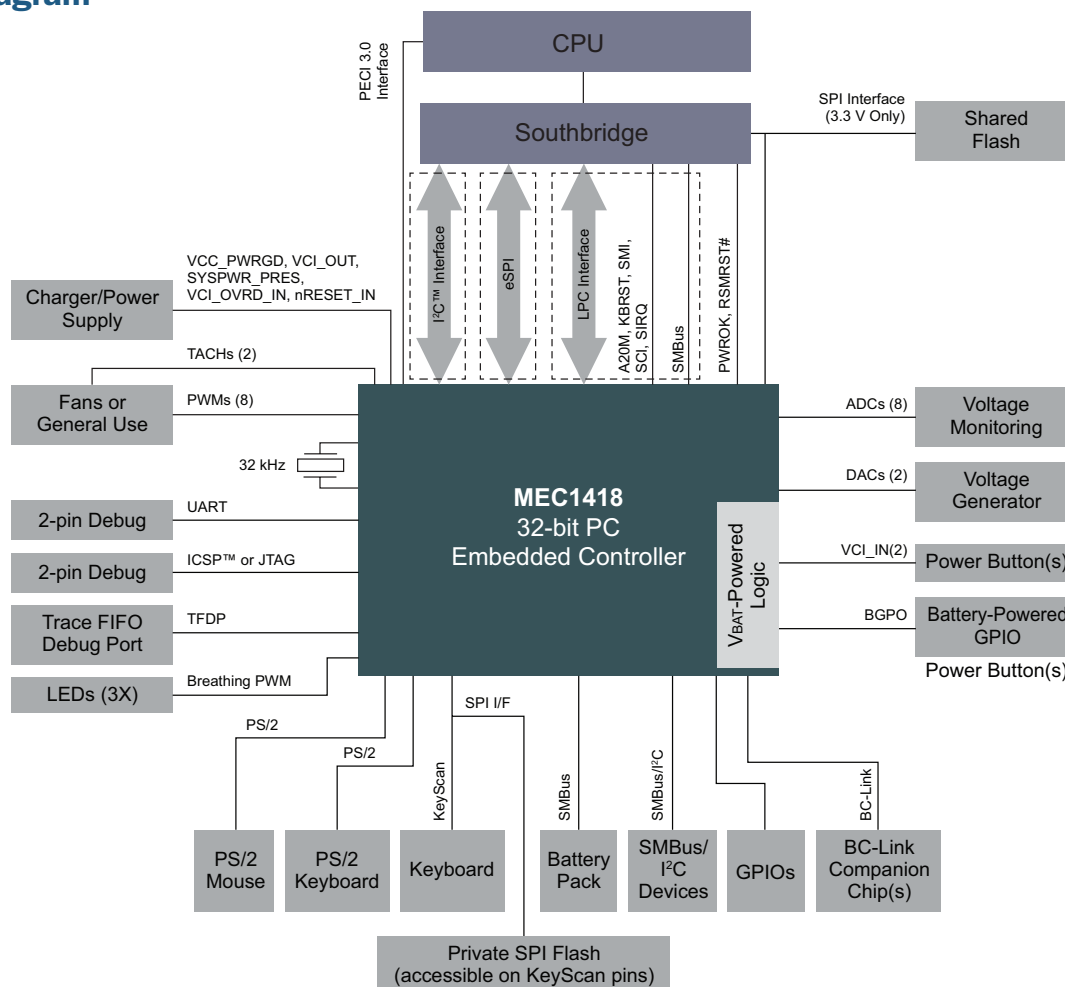


MICROCHIP

Keyboard and Embedded Controller Products for Consumer Notebook PCs

Product	Host Interfaces	SRAM Memory (Code + Data)	Keyboard Matrix Scan Controller	SMBus 2.0 Ports	PS/2 Controllers	GPIOs	SPI Interfaces	BC-Link Interfaces	ADCs	DACs	PWMs	TACHs	UART	Package
MEC1404	LPC, I ² C™	128 KB	✓	6	2	106	3	2	7	2	8	2	Full	128-pin VTQFP
MEC1406	LPC, I ² C	160 KB	✓	6	2	106	3	2	8	2	8	2	Full	128-pin VTQFP
MEC1408	LPC, I ² C	192 KB	✓	6	2	106	3	2	8	2	8	2	Full	128-pin VTQFP
MEC1418	LPC, I ² C, eSPI	192 KB	✓	6	2	106	3	2	8	2	8	2	Full	128-pin VTQFP, 144-pin WFBGA

System Diagram



MICROCHIP

www.microchip.com/computing

Visit our web site for additional product information and to locate your local sales office.

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