



60-MHz, 32-bit microcontroller with ARM7TDMI-S core LPC2109

ARM7-based MCU with CAN, 10-bit ADC, and 64-KB Flash

This powerful yet cost-effective microcontroller is equipped with 64 KB of Flash, 8 KB of SRAM, a CAN 2.0B bus, a 10-bit A/D converter, and multiple serial interfaces. It is available in a package that measures only 10 x 10 x 1.4 mm.

Key features

- ▶ 60-MHz, 32-bit ARM7TDMI-S with AHB/APB interfaces
- ▶ 64 KB of ISP/IAP Flash
- ▶ 8 KB of SRAM
- ▶ CAN 2.0B interface
- ▶ 10-bit A/D converter
- ▶ Very fast Flash programming via on-chip boot-loader software
- ▶ Multiple serial interfaces: Fast I²C-bus, two UART, two SPI
- ▶ Two 32-bit timers, PWM unit
- ▶ Real-time clock and Watchdog timer
- ▶ 46 I/O ports
- ▶ Temperature range: -40 to +85 °C
- ▶ LQFP64 (10 x 10 x 1.4 mm)

Applications

- ▶ Industrial control, medical systems, access control, point-of-sale
- ▶ Communication gateways, protocol converters, embedded soft modems
- ▶ General-purpose applications

The NXP microcontroller LPC2109 uses a high-performance 32-bit ARM7 core that operates at up to 60 MHz. It has 64 KB of on-chip Flash and 8 KB of on-chip SRAM memory.

In-System Programming (ISP) and In-Application Programming (IAP) software minimize programming time — each 256-byte line takes only 1 ms to program, and a single-sector or full-chip erase takes only 400 ms.

It integrates a CAN 2.0B interface with advanced acceptance filters, and has a four-channel, 10-bit A/D converter that offers conversion times as low as 2.44 μs.

Multiple serial communications interfaces increase design flexibility, provide larger buffer size, and deliver higher processing power. There are two 16C550 UARTs, a Fast I²C-bus (400 kbps) interface, and two SPI serial interfaces (one with buffering and variable data-length capabilities).

There are two 32-bit timers with four combined capture/match channels for pulse measurements, a six-channel PWM, a real-

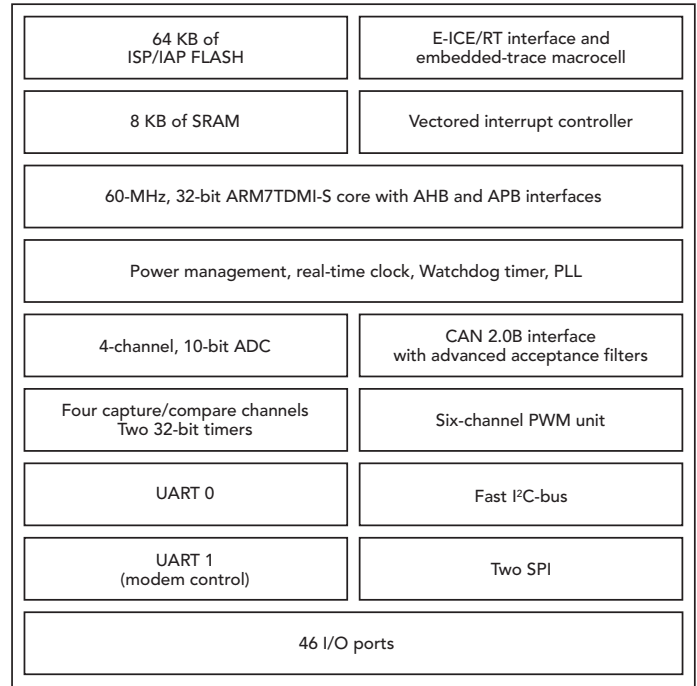
time clock, and a Watchdog timer. A CPU clock, operating at a maximum of 60 MHz, is available from the on-chip phase-locked loop (PLL).

For debugging, the LPC2109 supports real-time emulation and embedded trace support and has an integrated vectored interrupt controller (VIC). Also, for compatibility with existing tools, each device uses the standard ARM test/debug JTAG interface.

Housed in a small LQFP64 package that measures only 10 x 10 x 1.4 mm, the LPC2109 also has forty-six I/O pins that are tolerant to 5 V, and an operating temperature range of -40 to +85 °C.

Third-party development tools

Through third-party suppliers, we offer a range of development and evaluation tools for our microcontrollers. For the most current listing, please visit www.nxp.com/microcontrollers.



LPC2109 block diagram

LPC2109 selection guide

Type	Memory		Serial interfaces			ADC channels (10-bit)	Package
	Flash (KB)	SRAM (KB)	Fast I ² C-bus	UART	SPI		
LPC2109	64	8	1	2	2	4	LQFP64