



NXP 204-MHz, 32-bit
Cortex-M4/
Cortex-M0 MCU
LPC4300 series

Cortex-M4 MCUs with Cortex-M0 coprocessor, HS USB, and more

Multiple cores and a unique set of configurable peripherals make it easy to develop advanced applications within a single architecture and development environment.

KEY FEATURES

- ▶ 204 MHz, 32-bit ARM Cortex-M4 with FPU
- ▶ 204 MHz, 32-bit ARM Cortex-M0 coprocessor
- ▶ Up to 1 MB dual-bank Flash
- ▶ Up to 282 KB SRAM
- ▶ Up to 16 KB EEPROM
- ▶ Memory Protection Unit (MPU)
- ▶ Two high-speed USB 2.0 interfaces, with on-chip high-speed PHY
- ▶ 10/100T Ethernet MAC with MII and RMII interfaces
- ▶ LCD controller with 1024 x 768 pixel display resolution
- ▶ Innovative Quad SPI Flash Interface (SPIFI)
- ▶ State Configurable Timer with up to 16 PWMs
- ▶ Configurable Serial GPIO
- ▶ Two CAN 2.0B
- ▶ Up to 164 GPIO
- ▶ Pin-compatible with the LPC1800 series

ADDITIONAL FEATURES

- ▶ 8-channel GPDMA controller
- ▶ Two 8-channel, 400 Ksps 10-bit ADCs and one 10-bit DAC, the optional 12-bit 80Msps ADC
- ▶ Motor Control PWM and Quadrature Encoder Interface
- ▶ Four UARTs, smart card interface
- ▶ Two Fast-mode I²C, two I²S, three SSP/SPI
- ▶ Extended temperature range: -45 to +105 °C

KEY APPLICATIONS

- ▶ Industrial automation
- ▶ Instrumentation
- ▶ Embedded audio
- ▶ Automotive accessories
- ▶ Robotics
- ▶ Medical

The NXP LPC4300 series combines industry leading microcontroller performance and advanced peripheral functionality to deliver superior integration for the most challenging embedded applications. The LPC4300 architecture uses multiple cores – a sophisticated Cortex-M4 processor with a floating-point unit (FPU), plus one or two Cortex-M0 coprocessor cores. The multi-core approach makes it easy to partition a design for maximum efficiency, letting the powerful Cortex-M4 core crunch numbers and letting the Cortex-M0 coprocessor(s) manage data movement and I/O handling.

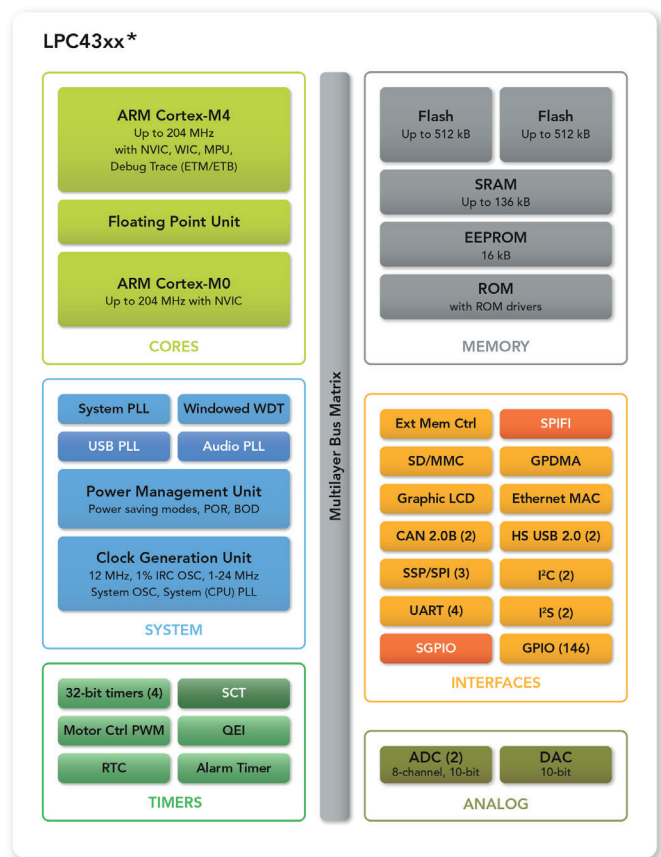


The multi-core approach also reduces time-to-market, since design and debug take place in a single development environment. The processor cores are supported by a long list of high-performance peripherals, integrated interrupt control, and low-power modes that give embedded engineers new ways to solve complex design problems.

Depending on their application needs, designers can choose an LPC4300 device with or without on-chip Flash. There are also options for extended temperature range.

Several LPC4300 features are unique to NXP. The SCT subsystem, consisting of a timer array with a state machine, makes it easy to configure complex PWM and timer functions. The SPIFI peripheral provides a seamless interface to SPI and quad-SPI memories, and the Serial GPIO expand the options for serial interfaces like I²C and I²S.

The LPC4300 series is also equipped with an extensive list of connectivity interfaces and analog functions. Options include two HS USB controllers, an on-chip HS PHY, a 10/100T Ethernet controller with hardware-enabled TCP/IP checksum calculation, and a high-resolution color LCD controller. Analog functionality includes two 8-channel, 10-bit ADCs running at 400 Ksps or a 6-channel, 12-bit ADC running at 80 Msps, and a 10-bit DAC.



*The LPC4370 adds an 80Msps 12-bit ADC and a subsystem with a second Cortex-M0 peripheral handler.

Type	Memory		M4F/M0	LCD	Ethernet	USB	SCT	Serial GPIO	External bus interface	Temperature range	Package
	Flash	Ram									
LPC4310		168 KB	•				•	•	8-16	-40 to +85 °C	LQFP144, TBGA100
LPC4312	512	104 KB	•				•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4313	256x2	104 KB	•				•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4315	768	136 KB	•				•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4317	1024	136 KB	•				•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4320		200 KB	•			1	•	•	8-16	-40 to +85 °C	LQFP144, TBGA100
LPC4322	512	104 KB	•			1	•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4323	256x2	104 KB	•			1	•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4325	768	136 KB	•			1	•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4327	1024	136 KB	•			1	•	•	8-16	-40 to +105 °C	LQFP144, TBGA100
LPC4330		264 KB	•		•	2	•	•	16-32	-40 to +85 °C	BGA256, BGA180, LQFP144, BGA100
LPC4333	512	136 KB	•		•	2	•	•	16-32	-40 to +105 °C	BGA256, BGA180, LQFP144, BGA100
LPC4337	1024	136 KB	•		•	2	•	•	16-32	-40 to +105 °C	BGA256, BGA180, LQFP144, BGA100
LPC4350		264 KB	•	•	•	2	•	•	16-32	-40 to +85 °C	BGA256, LQFP208, BGA180
LPC4353	512	136 KB	•	•	•	2	•	•	16-32	-40 to +105 °C	BGA256, LQFP208, BGA180
LPC4357	1024 (2x512)	136 KB	•	•	•	2	•	•	16-32	-40 to +105 °C	BGA256, LQFP208, BGA180
LPC4370		282 KB	•	•	•	2	•	•	8-32	-40 to +85 °C	BGA256, BGA100

Note: LPC4370 combines a Cortex-M4 with two Cortex-M0 cores

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