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### The 10-year Promise

To provide a stable supply of MCUs, NXP's Longevity products are available for a minimum of ten years after product launch.

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#### NXP Semiconductors LPC4300 Cortex™-M4 / M0 Dual-Core MCUs

NXP Semiconductors LPC4300 series microcontrollers (MCUs) boast the world's first asymmetrical dual-core digital signal controller architecture, featuring ARM® Cortex™-M4 and Cortex-M0 processors. These NXP Cortex-M4 MCUs with Cortex-M0 co-processors bring the advantage of developing digital signal processor (DSP) and MCU applications within a single architecture and development environment.

The LPC4300 series Cortex-M4 processor combines the benefits of an MCU with high-performance digital signal processing features such as single-cycle MAC, Single Instruction Multiple Data (SIMD) techniques, saturating arithmetic, and a floating point unit. The Cortex-M0 co-processor off-loads many of the data movement and I/O handling duties that can drain the bandwidth of the Cortex-M4 core. With its dual-core architecture and unique set of configurable peripherals, NXP Semiconductors LPC4300 MCUs enable development of a wide range of applications, such as motor control, power management, industrial automation, robotics, medical, automotive accessories, and embedded audio.

Also available! [View the Embedded Artists LPC4088/4357 Development Boards](#)

##### Features

- 204 MHz, 32-bit ARM Cortex-M4
- 204 MHz, 32-bit ARM Cortex-M0 asymmetrical coprocessor
- Up to 1MB Flash
- Up to 282kB SRAM
- Two High-speed USB 2.0 interfaces
- On-chip High-speed PHY
- LCD Interface
- Ethernet MAC
- Unique Quad-SPI Flash Interface
- Unique State Configurable Timer Subsystem
- Unique Serial GPIO
- Up to 146 GPIO
- Pin-compatible with the LPC1800 series
- 8-channel GPDMA controller
- Two 8-channel, 400 Ksps 10-bit ADCs and one 10-bit DAC
- Motor Control PWM and Quadrature Encoder Interface
- Four UARTs, smart card interface
- Two Fast-mode I<sup>2</sup>C, two I<sup>2</sup>S, three SSP/SPI
- Temperature range: -40 to +85°C

##### Applications

- Motor control
- Power management
- Industrial automation
- Robotics
- Medical
- Automotive accessories
- Embedded audio



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##### Additional Resources

- [LPC4300 Datasheet](#)
- [LPC4300 Brochure](#)
- [AN10778: PCB layout guidelines for NXP MCUs in BGA packages](#)
- [ARM Cortex™-4 Technology](#)
- [LPC4370 ARM Microcontrollers](#)
- [Learn More About NXP LPC Family of Microcontrollers](#)

#### NXP Hitex LPC4350 Evaluation Board

The NXP Hitex LPC4350 Evaluation Board has a variety of special features showcasing the high-performance DSC capability of LPC4350 MCUs. The LPC4350 Evaluation Board is USB-powered but can also be driven by external power supply or via power-over-Ethernet. It is equipped with 65MB SDRAM, 32MB parallel flash, 512kB SRAM, and a serial EEPROM. The board features a small onboard display and NXP standard display as well as Audio IN an OUT, microphone IN, headphones OUT, and a D-Class amplifier.



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##### LPC4300 Block Diagram



Part Number	Flash (KB)	RAM (KB)	LCD	Ethernet	USB	Max Frequency (MHz)	External Bus Interface	Package
LPC4330	—	264	—	Yes	2	204	16-32	BGA256, BGA180, LQFP144, BGA100
LPC4350	—	264	Yes	Yes	2	204	16-32	BGA256, LQFP208, BGA180
LPC4310	—	168	—	—	—	204	8-16	LQFP144, TBGA100
LPC4312	512	104	—	—	—	204	8-16	LQFP144, TBGA100
LPC4313	256x2	104	—	—	—	204	8-16	LQFP144, TBGA100
LPC4315	768	136	—	—	—	204	8-16	LQFP144, TBGA100
LPC4317	1024	136	—	—	—	204	8-16	LQFP144, TBGA100
LPC4320	—	200	—	—	1	204	8-16	LQFP144, TBGA100, LQFP100
LPC4322	512	104	—	—	1	204	8-16	LQFP144, TBGA100
LPC4323	256x2	104	—	—	1	204	8-16	LQFP144, TBGA100
LPC4325	768	136	—	—	1	204	8-16	LQFP144, TBGA100
LPC4327	1024	136	—	—	1	204	8-16	LQFP144, TBGA100, LQFP100
LPC4333	512	264	—	Yes	2	204	16-32	BGA256, BGA180, LQFP144, BGA100
LPC4337	1024	136	—	Yes	2	204	16-32	BGA256, BGA180, LQFP144, BGA100
LPC4353	512	136	Yes	Yes	2	204	16-32	LQFP208, BGA256, BGA180
LPC4357	1024 (2x512)	136	Yes	Yes	2	204	16-32	LQFP208, BGA256, BGA180
LPC4370	—	282	Yes	Yes	2	204	16-32	LBGA256, TBGA100

**SPIFI - Quad SPI Flash Interface**

- What is Quad SPI?
  - A couple of years ago, PCs started using Quad SPI Flash for booting BIOS. The main PC vendor (NXP) drove this to low cost.
  - Advantages: High capacity, low cost, high performance, low read latency, high speed write (up to 100 MB/s) - UFS, NVMe
- SPI Flash Interface using SPIFI (SPIFI)
  - Standard SPI Flash uses CS, CE, WE and MISO
  - Quad SPI Flash uses CS, CE, WE, DT, MISO and MISO2

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**NXP LPC4300 Overview**

NXP LPC4300 Overview

**Cortex-M4 Graphic LCD...**

Cortex-M4 Graphic LCD Controller

**LPC4300 USB streaming...**

LPC4300 USB streaming and multi-channel audio demo

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