Looking for more 32-bit MCU options?

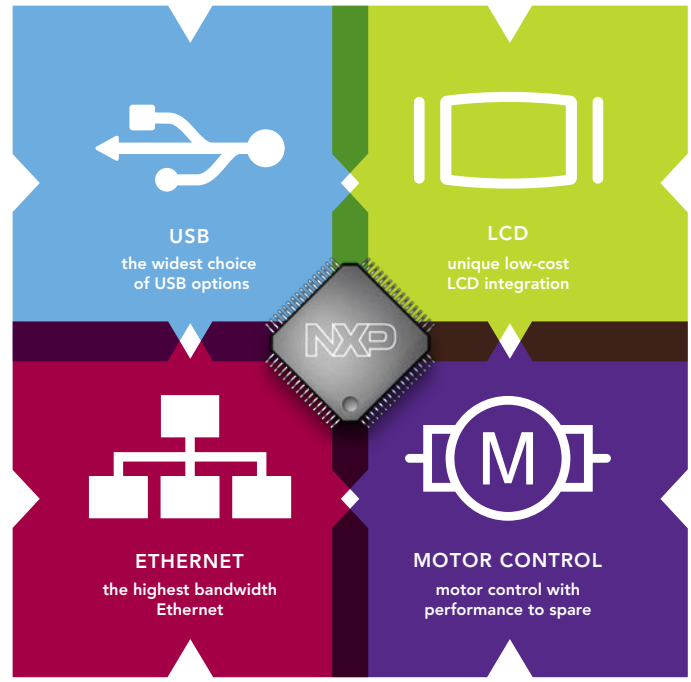
Start here.

NXP
founded by Philips

Take on the biggest design challenges

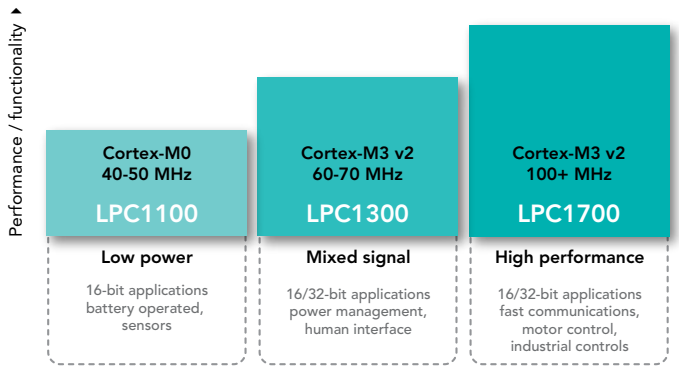
To improve performance and reduce power consumption, NXP has enhanced the basic ARM architecture with four of the most important interfaces for embedded: USB, LCD, Ethernet, and motor control.

We offer one of the broadest selections of USB-equipped ARM MCUs, with more than 50 options. We use an advanced LCD controller block, with 24-bpp color space and up to 1024 x 768 pixels, and deliver peak performance with our 10/100 Ethernet MAC. We also have power-efficient motor control functions, so you can add extra features while maintaining high performance.



Go to the next level with Cortex™

NXP is an early innovator with Cortex, the latest ARM processor architecture. Cortex is widely recognized for its excellent computational capabilities and quick system response. NXP has the fastest Cortex-M3 MCUs in the industry, operating at speeds up to 100 MHz, and is the first ARM partner licensee to deliver Cortex-M0, the smallest, lowest-power ARM processor available today.



LPC1000 series

- Industry-leading implementations of the Cortex processor architecture
  - Recently announced Cortex-M0 core
  - Revision 2 of the Cortex-M3 core
- Speeds up to 100 MHz from Flash or RAM
- Low power consumption
- New Wake-up Interrupt Controller (WIC)
- Memory Protection Unit
- Available with:
  - Ethernet, USB Host/OTG/Device, CAN, I^2S
  - Fast-mode Plus (Fm+) I^2C, SPI/SSP, UARTs
  - 12-bit ADC @ 1-MHz conversion rates
  - Low-power Real Time Clock
  - Motor Control PWM and Quadrature Encoder Interface
- Multiple package options available

NXP ARM + USB

The widest choice of USB options

NXP supports the latest technologies, including device, host, and On-The-Go (OTG). We even support isochronous transfer, a key ingredient for streaming audio. Our USB technology builds on years of leadership in connectivity, and adds extra features like dedicated DMA, SoftConnect™ and GoodLink™, integrated transceivers, and multiple ports. To ensure the very best in reliability and plug-and-play operation, we submit our USB-equipped ARM MCUs for certification by the USB-IF, the organization that maintains the USB specifications.

- 50+ options for ARM7, ARM9, and Cortex-M3
- Complete USB functionality: device, host, OTG
- Certified USB operation
- Special USB features you won't find anywhere else
- Pin- and software-compatible options across NXP families
- State-of-the-art software

NXP ARM + LCD

Unique low-cost LCD integration

NXP's LCD-based MCUs support high bandwidth and constant refreshes, with less CPU involvement and better power efficiency. Extra features, like a dedicated DMA controller and a larger cache size, enhance performance while saving power. The integrated touchscreen interface makes it easy and cost-effective to add touch capabilities. Also, since we use the same LCD architecture across our ARM families, you can move your system to a next-generation ARM without having to redesign the LCD components.

- 24-bpp color space
- Up to 1024 x 768 pixels
- STN & TFT colors
- Dedicated DMA controller
- Support for hardware cursor
- Larger cache size
- Software-compatible across NXP families

NXP ARM + Ethernet

The highest bandwidth Ethernet

The NXP Ethernet block is a full-featured 10/100 Ethernet MAC that uses DMA hardware acceleration to improve throughput. It delivers peak performance, even when Ethernet is used in combination with USB. It performs all the functions specified in the IEEE 802.3 standard, and includes several added features that enhance efficiency. Software tools simplify design, reducing the time it takes to implement the complex protocols used with the Ethernet channel.

- 10/100 Ethernet MAC with multilayered bus structure
- Full Ethernet operation (IEEE 802.3)
- Special features for added efficiency
- DMA hardware acceleration
- No performance penalty when combined with USB
- Pin- and software-compatible options across NXP families

NXP ARM + Motor control

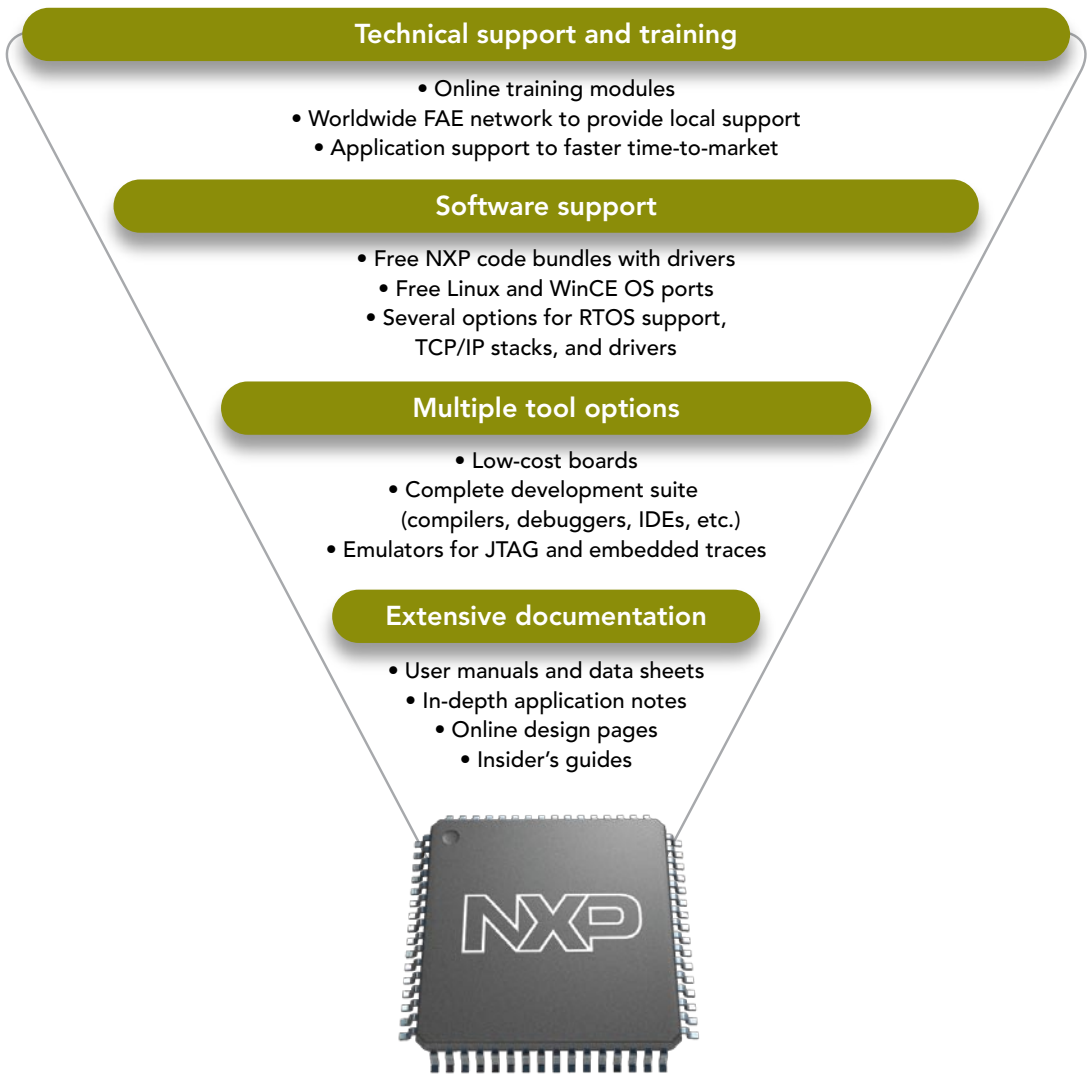
Motor control with performance to spare

NXP's integrated features for motor control let you take advantage of today's smaller, more efficient motors. Every NXP ARM MCU is equipped to provide basic control of universal, brushed DC, and other single-phase motors. For more complex requirements, we offer sophisticated functions that improve performance. All of NXP's motor-control functions require very little CPU interaction, so new systems can do more while using less power.

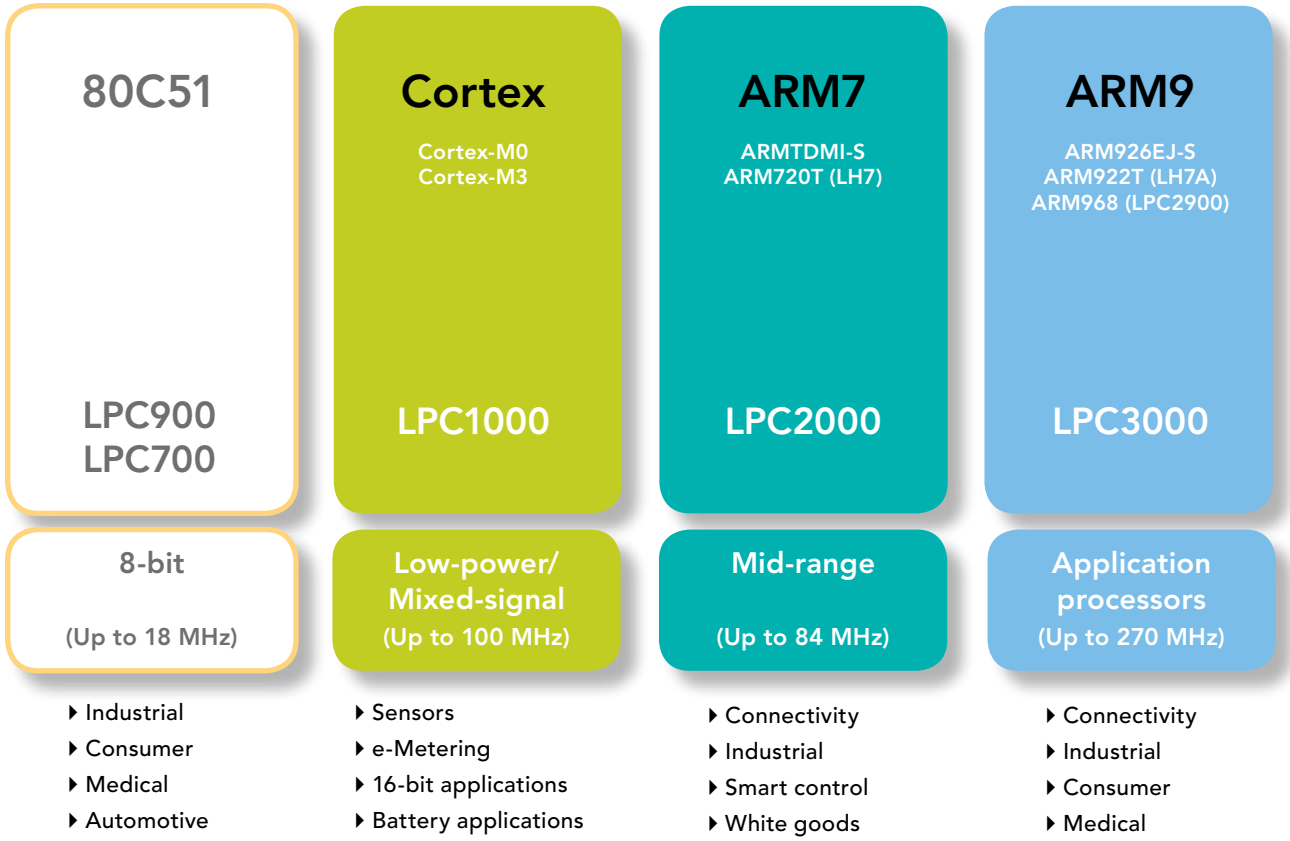
- Dedicated motor-control PWMs
- Quadrature Encoder Interface (QEI) for highest precision
- Simple single-phase to complex three-phase motors
- Lower power consumption & EMI
- Richer feature set with extended MCU capacity

Select from the best in support

All of NXP's ARM products are supported by a well established — and rapidly growing — network of third-party partners. Customers have direct access to a wide set of options, from evaluation boards and emulators to C-code generators, compilers, debuggers, RTOSs, software stacks, and more. We offer free-to-view training videos and downloadable application notes, and can recommend design experts in locations around the world.



NXP ARM microcontroller continuum



Get the right mix of features

NXP has been a leader in ARM technology since the beginning. We helped found ARM, Ltd. more than a decade ago and were one of the original licensees of the ARM architecture. Today, we have more than 80 options for ARM7, ARM9, and Cortex. That includes the industry's fastest Cortex-M3 MCUs, and the lowest-cost ARM9 with Hi-Speed USB 2.0 OTG.

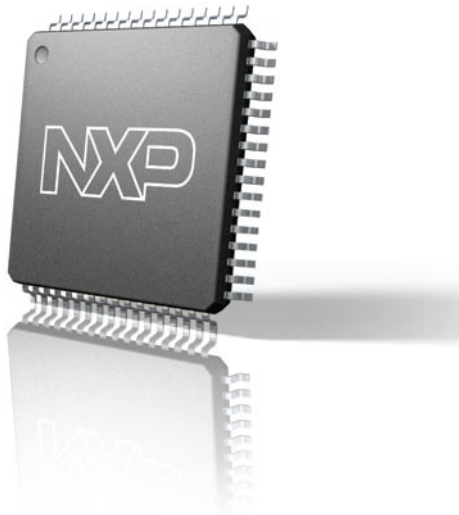
Our integrated technologies, like USB, LCD, Ethernet, and motor control, enhance embedded applications of all kinds.

To support design reuse, and to make development easier and faster, we use the same building blocks in many of our MCUs and offer pin- and software-compatible options across product families.

Our long-term strategic relationship with ARM gives us early access to next-generation IP, so our portfolio always has the latest technologies.

NXP ARM advantages

Advantage	Technology feature
High performance	• Fastest Flash performance (up to 125 MHz) • Fastest Cortex-M3 MCU (up to 100 MHz) • ARM9 with VFP coprocessor • Fast concurrent operation (100-Mb Ethernet & Full-Speed USB)
Very low power consumption	• Lowest-power RTC (<1 µA) • Ultra-low-power ARM9 (down to 0.9 V) • Dynamic power management • On-chip power supply unit
Comprehensive on-chip debug	• Embedded trace • On-chip buffers • JTAG and single-wire solutions
Design flexibility and scalability	• Pin- and software-compatible options • Widest selection of on-board peripherals • Scaleable memory sizes • Common architecture for LCD controller
Optimal price/ performance	• Lowest-cost Hi-Speed USB 2.0 OTG • ARM9 with VFP coprocessor • Largest ARM7 portfolio
Fast-growing support ecosystem	• Dozens of options • Training materials and design consultants • Evaluation boards and emulators • C-code generators, compilers, debuggers, RTOSs, software stacks, etc.

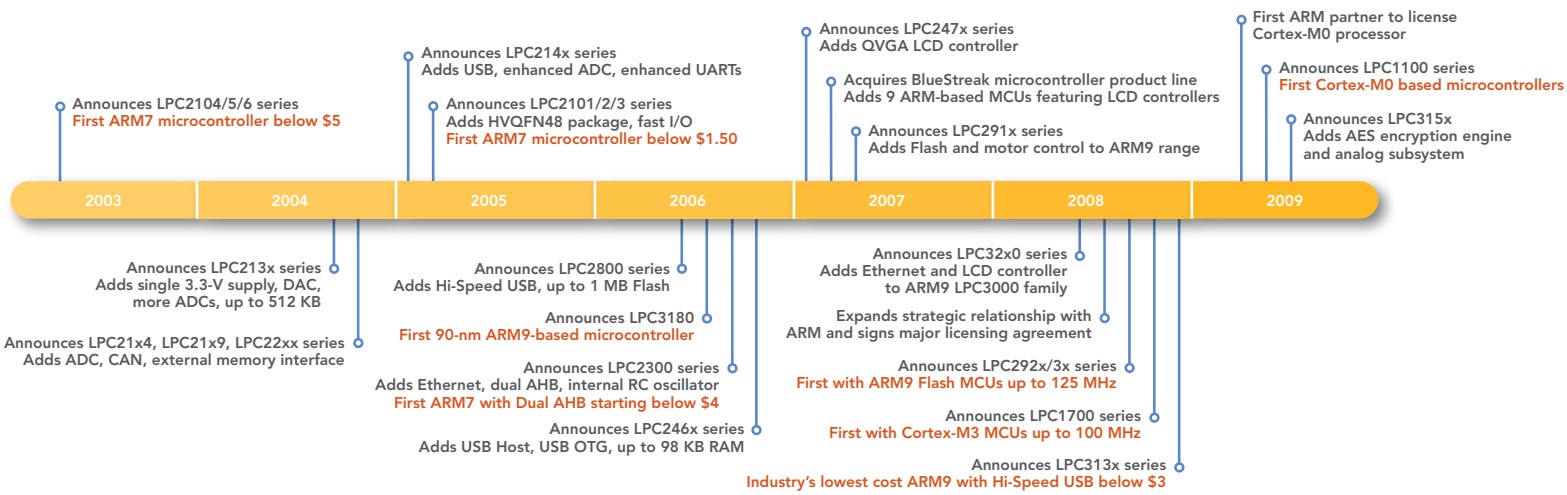


NXP has the industry's fastest Cortex-M3 MCUs and the industry's lowest-cost ARM9 with Hi-Speed USB 2.0 OTG.

NXP's history of firsts

NXP has continuously set the standard for performance, integration, and price. We've been first to introduce low-cost versions of high-performance products, and first with integrated features, like Flash/EEPROM memory, real-time debug, and embedded trace.

We were first to add independent bus systems and local bus I/O, and we've had several firsts with smaller geometries that deliver higher speed, more advanced functionality, and lower power consumption.



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