



## Low-cost, low-power ARM9 microcontrollers

High integration and superior performance  
at an affordable price

# The NXP ARM9 portfolio

ARM968 LPC29xx	ARM926EJ-S LPC313x	ARM926EJ-S LPC3180/01	ARM926EJ-S LPC32x0	ARM922T LH7A40x	ARM926EJ-S LPC314x LPC315x	▲ Performance (125-270 MHz)
LQFP144, LQFP208, LQFP100	TFBGA180	LFBGA320	LFBGA296	LFBGA324, BGA256, LFBGA256	TFBGA208, TFBGA180	Package
768 KB Flash, 24/40/56 KB RAM 16 KB EEPROM	192/96 KB RAM 16 KB I & D caches	64 KB RAM 32 KB I & D caches	256/128 KB RAM 32 KB I & D caches	80 KB frame buffer 8 KB I & D caches	192 KB RAM 16 KB I & D caches	Internal memory
Flash, SRAM, ROM & Burst ROM	NAND Flash, SDRAM & static memory interfaces, SD/MMC	NAND Flash, SDRAM & static memory interfaces, SD/MMC	NAND Flash, SDRAM & static memory interfaces, SD/MMC	NAND Flash, SDRAM & static memory interfaces, SD/MMC	NAND Flash, SDRAM & static memory interfaces, SD/MMC	External memory interfaces
No	No	Yes	Yes	No	No	Vector floating-point coprocessor (VFPv9)
Motor-control unit with QEI, LIN controllers, CAN	HS USB OTG + PHY, LCD interface, ADC	FS USB OTG, ADC 7 UARTs, SPI	Ethernet, FS USB OTG, LCD & touchscreen controllers	LCD & touchscreen controllers, FS USB host & device	HS USB OTG + PHY stereo CODEC, PSU battery charger, LCD interface	Key peripherals

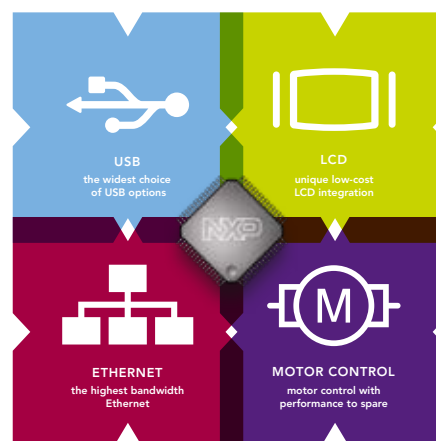


# Give your next ARM9 design a boost

NXP's ARM9 portfolio gives you the right combination of cost, efficiency, integration, and performance, so you can take on the biggest design challenges. We've enhanced the basic ARM9 architecture, optimizing it for speed as well as memory and connectivity performance. We equip our devices with four of the most important interfaces for embedded (USB, LCD, Ethernet, and motor control), and offer a wide selection, so you can always find exactly what you need.

- ▶ **LPC3000 family** – Uses an ARM926 core to generate speeds up to 270 MHz and supports Linux and WinCE environments
  - **LPC313x series** – The lowest-cost ARM926 with HS USB 2.0 OTG
  - **LPC314x series** – Adds a decryption engine and delivers speeds up to 270 MHz
  - **LPC315x series** – Adds stereo codec, power-supply unit, and a battery charger in a cost-effective format
  - **LPC32xx series** – The only ARM9 MCU family that offers a vector floating-point (VFP) coprocessor along with Ethernet, USB OTG, and an LCD controller

- ▶ **LPC2900 series** – The fastest ARM968 MCUs available (with speeds up to 125 MHz) targeting motor-control applications
- ▶ **LH7A family** – Based on the ARM922T core, and designed to make it easy to create everything from cost-conscious consumer systems to advanced systems with media-rich environments



**NXP has the industry's fastest ARM9 with embedded Flash and the industry's lowest-cost ARM9 with HS USB 2.0 OTG.**

## NXP ARM9 advantages

Advantage	Technology feature
High performance	<ul style="list-style-type: none"><li>• Fastest Flash performance (up to 125 MHz)</li><li>• ARM926 with VFP coprocessor (up to 266 MHz)</li><li>• Fast concurrent operation (100 Mbps Ethernet &amp; FS USB)</li><li>• ARM926 with HS USB (up to 270 MHz)</li></ul>
Very low power consumption	<ul style="list-style-type: none"><li>• Ultra-low-power ARM926 (down to 0.9 V)</li><li>• Dynamic power management</li><li>• On-chip power supply unit</li></ul>
Comprehensive on-chip debug	<ul style="list-style-type: none"><li>• Embedded trace</li><li>• On-chip buffers</li><li>• JTAG solutions</li></ul>
Design flexibility and scalability	<ul style="list-style-type: none"><li>• Pin- and software-compatible options</li><li>• Widest selection of on-board peripherals</li><li>• Common architecture for LCD controller</li></ul>
Optimal price/performance	<ul style="list-style-type: none"><li>• Lowest-cost HS USB 2.0 OTG</li><li>• ARM926 with VFP coprocessor</li></ul>
Fast-growing support ecosystem	<ul style="list-style-type: none"><li>• Multiple options</li><li>• Training materials and design consultants</li><li>• Evaluation boards and emulators</li><li>• C-code generators, compilers, debuggers, OS/RTOSs, software stacks, etc.</li></ul>



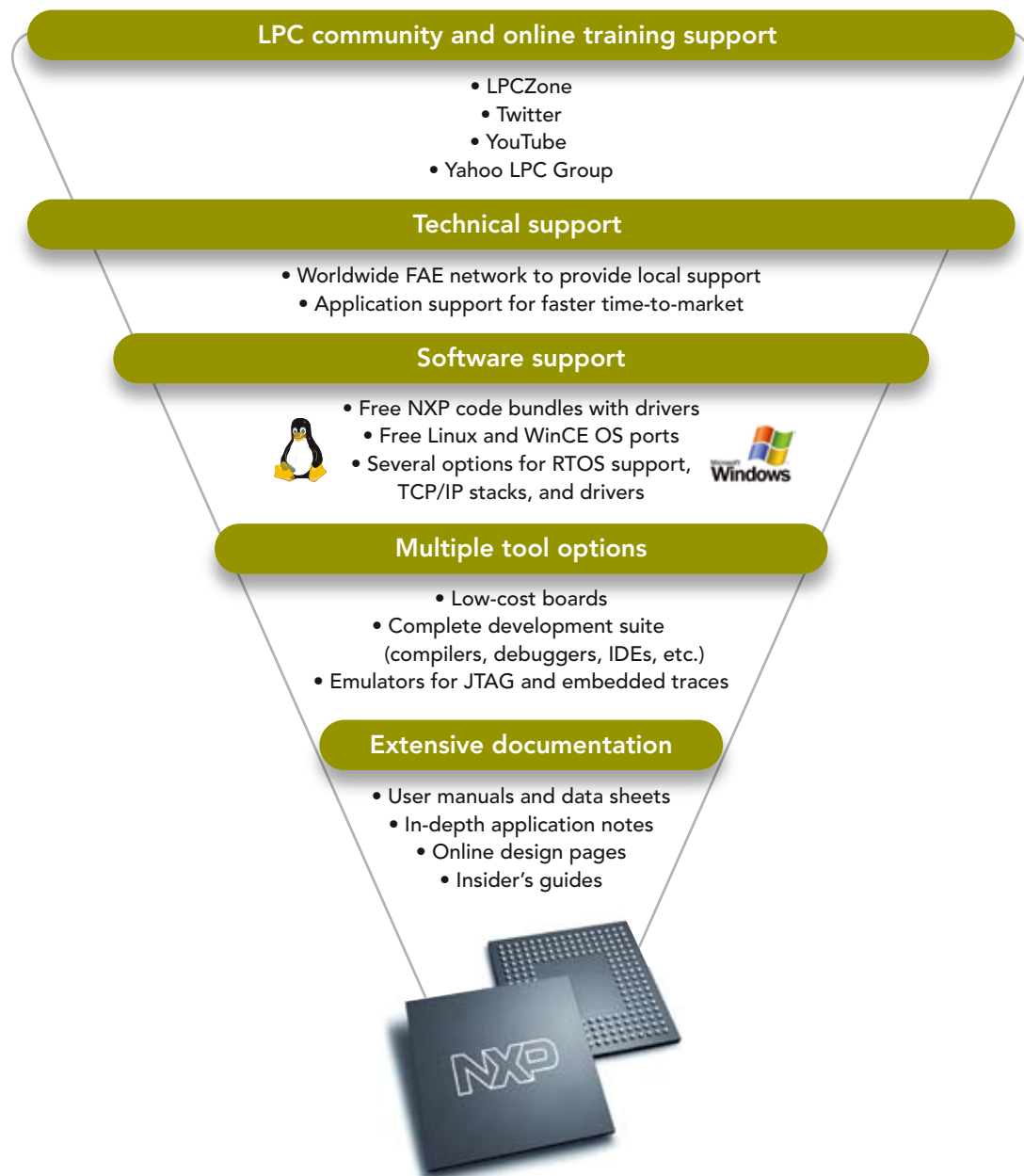
# Choose from the best in support

All of NXP's ARM9 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, OS/RTOSs, software stacks, and more.

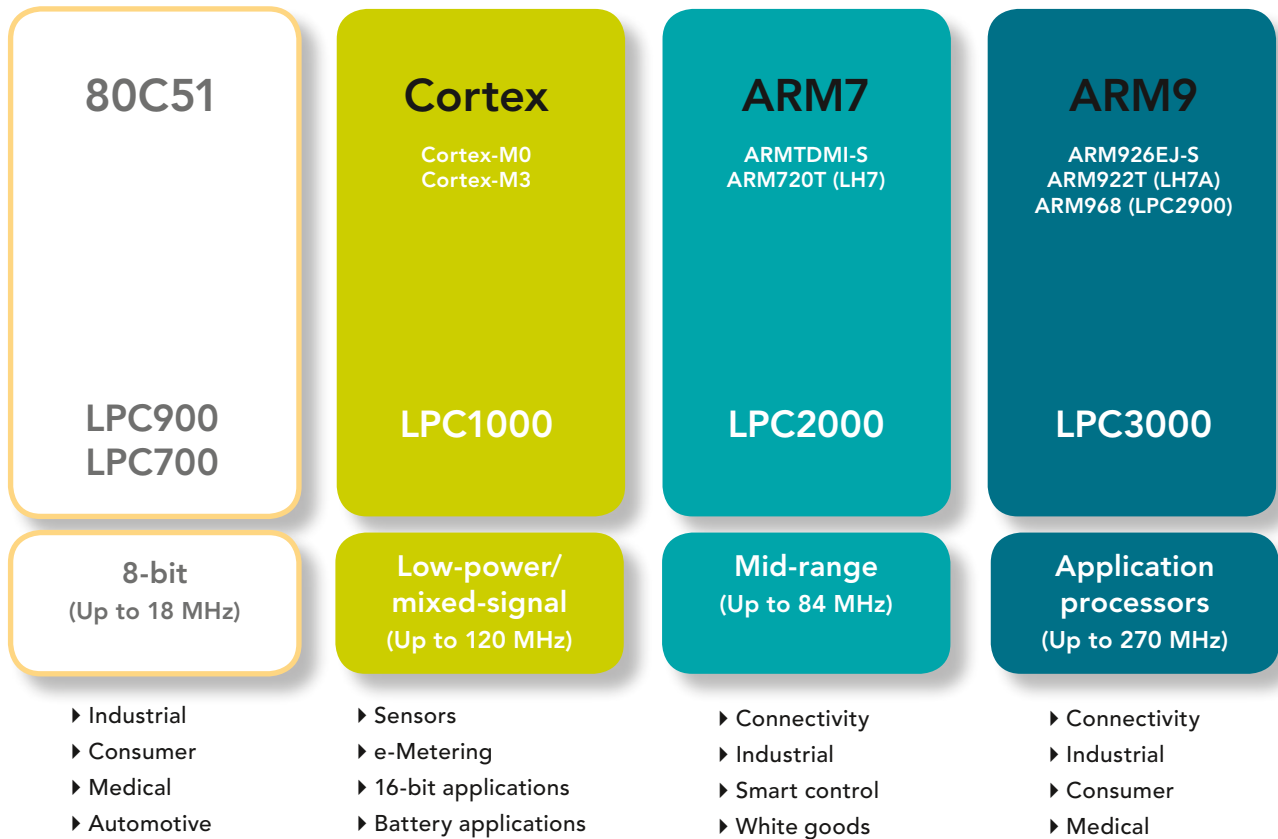
We offer free-to-view training videos and downloadable application notes, and can recommend design experts in locations around the world.

## Board support packages (BSPs)

For Linux, we have BSPs and target boards for the LH7A404, LPC313x/4x/5x and LPC32x0 microcontrollers. Our partner Timesys has incorporated NXP's LPC3131 Linux BSP into Timesys' LinuxLink framework. For WinCE, there is a free BSP for the LPC32xx series that runs the WinCE 6.0 operating system, and a WinCE BSP for LH7A404. Our partner, Adeneo, provides a professional-grade WinCE BSP for both the LPC32x0 and the LH7A404. Our support also extends to the VxWorks BSP from WindRiver and, for LPC29xx products, the SMX RTOS from Micro Digital.



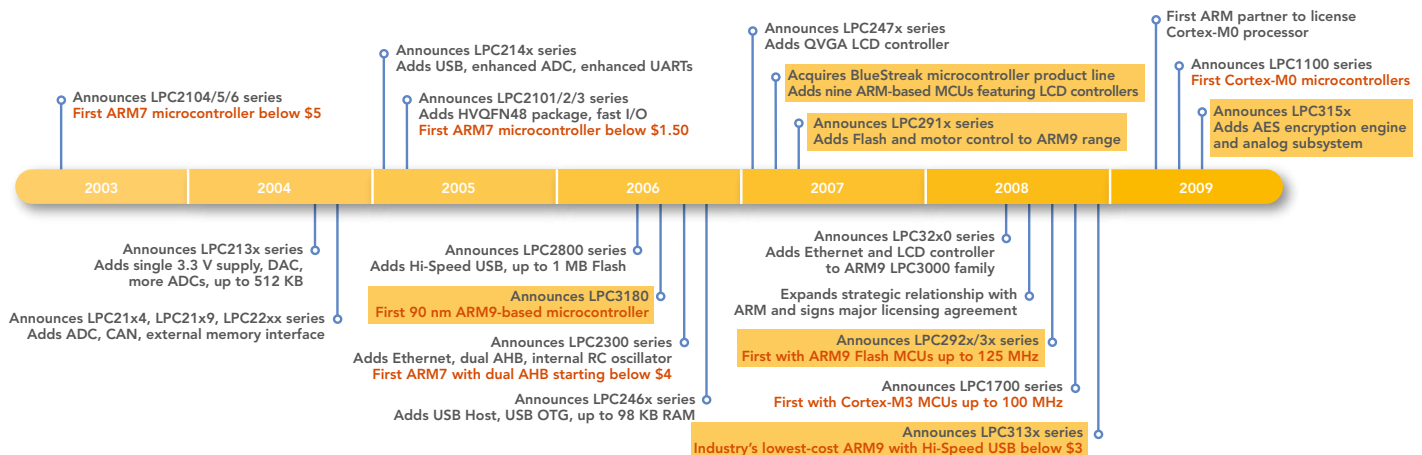
## NXP ARM microcontroller continuum



## 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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Date of release: November 2009

Document order number: 9397 750 16819

Printed in the Netherlands

