



NXP® entry-level MCUs at the right price

LPC800 Series MCUs

LPC800 series MCUs offer a range of low-power, space efficient, low-pin-count options.

TARGET APPLICATIONS

- ▶ Communications interface for wireless protocols
- ▶ Human machine interface (HMI)
- ▶ IoT end nodes
- ▶ Sensor gateways

OVERVIEW

LPC800 series MCUs are extremely power-efficient and provide a straightforward development experience.

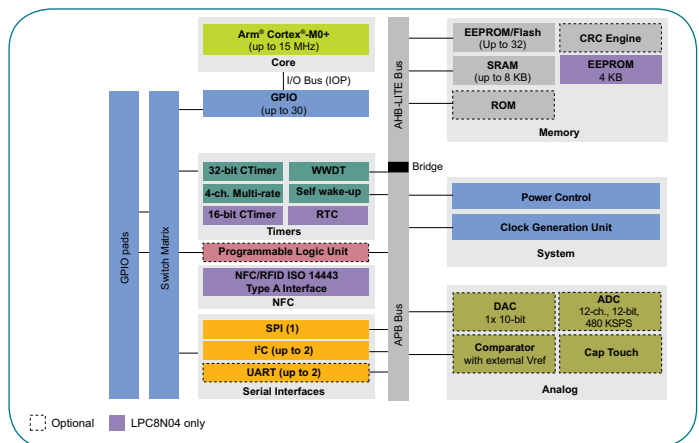
Based on an ultra-low-power Arm® Cortex®-M0+ core, LPC800 MCUs are fully compatible with the Cortex-M architecture and instruction set. The LPC800 series of MCUs efficiently handles 32-bit data, requiring less code, memory and 30% less dynamic power outperforming 8- and 16-bit MCUs.

The LPC800 series is available in a range of package options, including WLCSP, SO, TSSOP, LQFP, HVQFN and XSON.

DIFFERENTIATED FEATURES

Within the LPC800 series is the LPC80x MCU family, offering significant mixed signal integration, along with a programmable logic unit, capacitive touch and level shifting options bundled in a power optimized and cost-effective core. And with the recently announced LPC8N04, developers are able to leverage an ISO14443 certified NFC communication interface integrated as part of the LPC800 series offering.

LPC80X AND LPC8N04 MCU FAMILIES



COMPREHENSIVE ENABLEMENT SOLUTIONS

Software Development

LPC800 series MCUs are supported by our free example code bundle, as well as LPCOpen Driver Code.

The primary platform for LPC800 software development is our example code bundle, a basic, complete working example code for each peripheral, giving 8- and 16-bit MCU users a fast transition to the 32-bit LPC800 series.

Although the LPCOpen Driver Code is no longer our supported platform, a release for the LPC81x/82x/83x families is available. The LPCOpen Driver Code is an Application Programming Interface (API) base for users who have less concern about overall code size. LPCOpen provides ease of use without diving into details of each peripheral registers, making it an easy transition from LPC8xx to LPC1xxx MCUs.

LPC800 SERIES MCU FAMILIES

Family	Core	Memory	Differentiated Features	Package Options
LPC8N04 MCU	8 MHz Cortex-M0+ core	32 KB Flash 8 KB SRAM 4 KB EEPROM	Up to 12 GPIO NFC/RFID ISO 14443 type A interface Temperature sensor with ± 1.5 °C accuracy -40 °C to +85 °C	HVQFN24
LPC80x MCU Family	15 MHz Cortex-M0+ core	Up to 32 KB EEPROM Flash Up to 4KB RAM	Up to 30 GPIO 12-bit ADC, 10-bit DAC, Comparator Capacitive touch, Programmable Logic Unit -40 °C to 105 °C	TSSOP16 TSSOP20 TSSOP24 HVQFN33 WLCSP16*
LPC81x MCU Family	30 MHz Cortex-M0+ core	Up to 16 KB Flash Up to 4 KB SRAM	Up to 18 GPIO SCTimer/PWM Comparator -40 °C to 105 °C	TSSOP16 TSSOP20 SO20 XSON16
LPC82x MCU Family	30 MHz Cortex-M0+ core	Up to 32 KB Flash Up to 8 KB SRAM	Up to 29 GPIO SCTimer/PWM 12-bit ADC, Comparator -40 °C to +105 °C	TSSOP20 HVQFN33
LPC83x MCU Family	30 MHz Cortex-M0+ core	Up to 32 KB Flash Up to 4 KB SRAM	Up to 29 GPIO SCTimer/PWM 12-bit ADC -40 °C to +85 °C	TSSOP20 HVQFN33
LPC84x MCU Family	30 MHz Cortex-M0+ core	Up to 64 KB Flash Up to 16 KB SRAM	Up to 54 GPIO SCTimer/PWM Fast Initialization Memory (FAIM) 12-bit ADC, Dual 10-bit DAC, Comparator Capacitive Touch -40 °C to +105 °C	HVQFN33 HVQFN48 LQFP48 LQFP64

*Available Q2 2018

Our LPC800 example code bundle is the fastest, simplest way to learn how to program each peripheral before progressing to its more advanced features.

New users of LPC800 series devices can easily step through the example code like a tutorial. Concise and accurate explanations in 'readme' files and comments in source files help you to start/debug quickly. It's easy to, understand how the peripheral registers are accessed without going through many levels of API. The example code project and source code directory structures are kept simple, flat, and consistent (as much as possible) between MCUXpresso, Arm Keil® and IAR®. An added benefit is that it offers significantly smaller code size vs LPCOpen; greater than 25% code size reduction for a simple 'blinky' example. To try the LPC800 example code bundle, please visit the software download tab of your preferred LPC800 product page.

Hardware Development

- ▶ LPCXpresso and LPCXpresso-MAX development boards
 - Low-cost evaluation
 - Flexible expansion options

Integrated Development Environments (IDEs)

- ▶ MCUXpresso IDE
- ▶ IAR® Embedded Workbench
- ▶ Arm Keil® Microcontroller Development Kit

OM40000: LPCXPRESSO802 BOARD

