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

• Personal Computer (PC)

• 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.

DIFFERENTIATED FEATURES

Within the LPC800 series is the LPC840 MCU family, offering significant mixed signal integration, along with 256-bit of user configurable memory (FAIM) for device configuration

at start-up. The latest LPC860, we offer the new I3C interface which can achieve 12 Mbps communication, and the embedded flexible timer module would help developers implement a light motor control application easily.
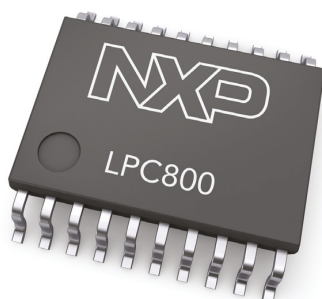
COMPREHENSIVE ENABLEMENT SOLUTIONS

Software Development

LPC800 series MCUs are supported by our free example code bundle, MCUXpresso software development kei 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.

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 for the LPC810/820/830 families without diving into details of each peripheral registers, making it an easy transition from LPC800 to LPC1000 MCUs.

The Software Development Kit (SDK) are designed to simplify and accelerate application development on LPC800/840/860 families. It's a collection of comprehensive software enablement that includes system startup, peripheral drivers, middleware, and real-time operating system (RTOS) kernels. The SDK also includes getting started and API documentation along with usage examples and demo applications.
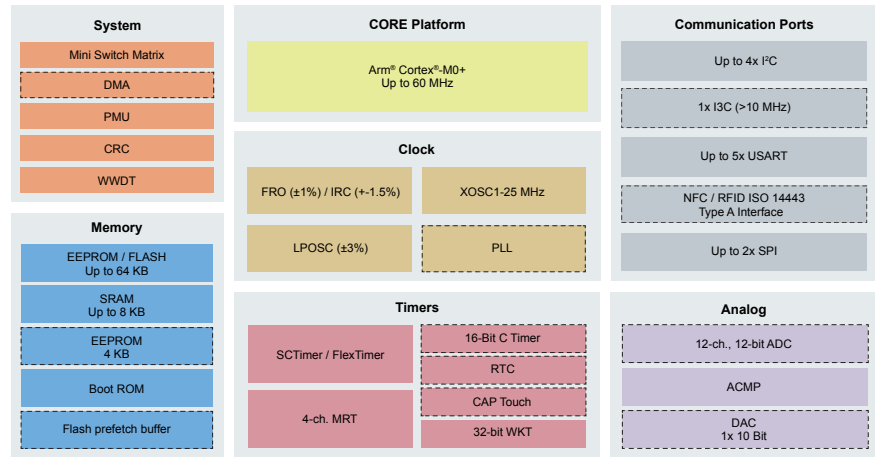
Integrated Development Environments (IDEs)

- MCUXpresso software development kit (SDK)
- Integrated development environments (IDE)
  - MCUXpresso IDE
  - IAR Embedded Workbench®
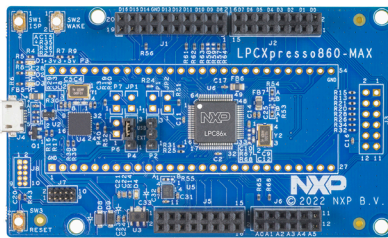 - Arm Keil® MDK

Hardware Development

- LPCXpresso and LPCXpresso-MAX development boards

LPC86X DEVELOPMENT BOARD

LPC800 BLOCK DIAGRAM

Available on certain products

LPC800 SERIES MCU FAMILIES

Family	Cortex-M0+ Core	Memory	Differentiated Features	Package Options	Development Board
LPC800 MCU Family	15 MHz	Up to 32 KB EEPROM Flash Up to 4 KB SRAM	Up to 30 GPIO 12-bit ADC, 10-bit DAC, Comparator -40 °C to +105 °C	TSSOP16 TSSOP20 TSSOP24 HVQFN32	LPCXpresso802 LPCXpresso804
LPC810 MCU Family	30 MHz	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	LPCXpresso812
LPC820 MCU Family	30 MHz	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	LPCXpresso824
LPC830 MCU Family	30 MHz	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	LPCXpresso812
LPC840 MCU Family	30 MHz	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 9 Button Mutual Capacitive Touch -40 °C to +105 °C	HVQFN33 HVQFN48 LQFP48 LQFP64	LPCXpresso845
LPC860 MCU Family	60 MHz	Up to 64 KB Flash Up to 8 KB SRAM	Up to 54 GPIO I3C FlexTimer 12-bit ADC, Comparator -40 °C to +105 °C	HVQFN33 HVQFN48 LQFP64	LPCXpresso860

www.nxp.com/LPC800