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

**LPC800 BLOCK DIAGRAM**

**LPC800 SERIES MCU FAMILIES**

<table>
<thead>
<tr>
<th>Family</th>
<th>Cortex-M0+ Core</th>
<th>Memory</th>
<th>Differentiated Features</th>
<th>Package Options</th>
<th>Development Board</th>
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<tr>
<td>LPC800 MCU Family</td>
<td>15 MHz</td>
<td>Up to 32 KB EEPROM Flash Up to 4 KB SRAM</td>
<td>Up to 30 GPIO 12-bit ADC, 10-bit DAC, Comparator -40 °C to +105 °C</td>
<td>TSSOP16</td>
<td>LPCXpresso802/803/804</td>
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<tr>
<td>LPC810 MCU Family</td>
<td>30 MHz</td>
<td>Up to 16 KB Flash Up to 4 KB SRAM</td>
<td>Up to 18 GPIO SCTimer/PWM Comparator -40 °C to +105 °C</td>
<td>TSSOP16</td>
<td>LPCXpresso812/814</td>
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<tr>
<td>LPC820 MCU Family</td>
<td>30 MHz</td>
<td>Up to 32 KB Flash Up to 8 KB SRAM</td>
<td>Up to 29 GPIO SCTimer/PWM Comparator -40 °C to +105 °C</td>
<td>TSSOP20</td>
<td>LPCXpresso824/825/826</td>
</tr>
<tr>
<td>LPC830 MCU Family</td>
<td>30 MHz</td>
<td>Up to 32 KB Flash Up to 4 KB SRAM</td>
<td>Up to 29 GPIO SCTimer/PWM 12-bit ADC -40 °C to +85 °C</td>
<td>TSSOP20</td>
<td>LPCXpresso832/834/835</td>
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<tr>
<td>LPC840 MCU Family</td>
<td>30 MHz</td>
<td>Up to 64 KB Flash Up to 16 KB SRAM</td>
<td>Up to 54 GPIO SCTimer/PWM Fast Initialization Memory (FAIM) 12-bit ADC, Dual 10-bit DAC, Comparator -40 °C to +105 °C</td>
<td>HVQFN33</td>
<td>LPCXpresso843/844/845</td>
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<tr>
<td>LPC860 MCU Family</td>
<td>60 MHz</td>
<td>Up to 64 KB Flash Up to 8 KB SRAM</td>
<td>Up to 54 GPIO 13C FlexTimer 12-bit ADC, Comparator -40 °C to +105 °C</td>
<td>HVQFN33</td>
<td>LPCXpresso860/862/863</td>
</tr>
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</table>

*Available on certain products*

**LPCXpresso800**

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