High-Performing yet Power-Efficient Arm® Cortex®-M0+ based MCUs

LPC51U68 MCUs

Offering an advanced low-power design, USB integration and flexible serial port configuration, the LPC51U68 MCU supports up to 100 MHz of computing performance and provides additional memory resources with 256 KB Flash and 96 KB SRAM.

TARGET APPLICATIONS

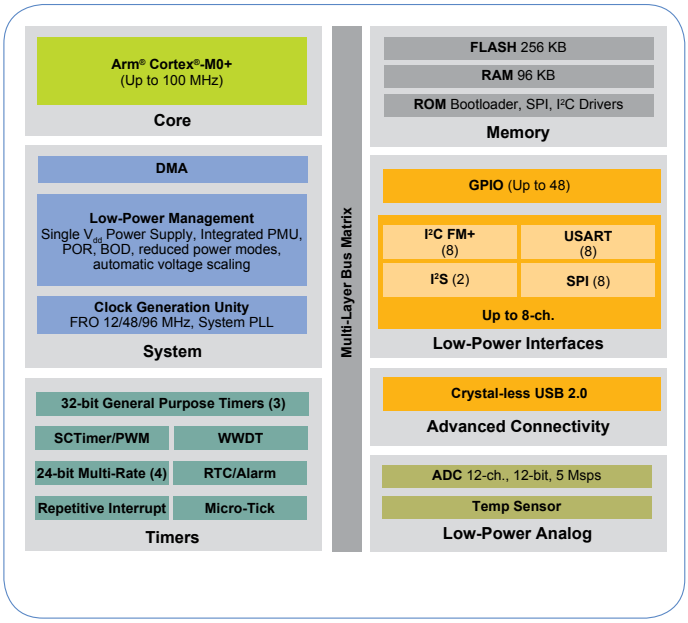
- High-performing gaming keyboard/mice
- Industrial grade USB to serial port bridge
- E-meter
- Fingerprint recognition
- USB audio device
- Sensor hub with USB interface
- Entry-level mobile POS

OVERVIEW

Based on the highly energy-efficient Arm® Cortex®-M0+ core and operating at CPU frequencies of up to 100 MHz, NXP's 32-bit LPC51U68 microcontroller for embedded applications feature additional memory resources including 96 KB of on-chip SRAM and 256 KB of on-chip flash programming memory with flash accelerator.

NXP's LPC51U68 MCU includes a USB 2.0 full-speed device controller supporting crystal-less operations, eight flexible serial communication peripherals, each of which can be enabled as USART, SPIs or I²C interfaces. Two flexcomm interfaces also include an I²S interface, for a total of 2 channel pairs.

LPC51U68 MCU FAMILY BLOCK DIAGRAM



ADVANCED LOW-POWER DESIGN

While providing excellent computing power with the Arm Cortex-M0+ core, the LPC51U68 displays ultra low-power consumption and a unique low-power design. The microcontroller supports four low-power modes and API-driven power profiles, providing developers with easy-to-use dynamic current management at runtime.

ADC & TEMP SENSOR

The on-chip ADC features 12 input channels with a 12-bit resolution, and performs conversion rates at up to 5 Msps. The on-chip temperature sensor provides an absolute accuracy of better than ±3 °C over the full temperature range of -40 to +105 °C.

COMPATIBILITY

The LPC51U68 MCU devices are pin-function compatible with LPC5410x and LPC5411x MCU families in the same packages and pinout versions.

COMPREHENSIVE ENABLEMENT SOLUTIONS

MCUXpresso SDK

- Extensive suite of robust peripheral drivers, stacks, and middleware
- Software examples demonstrating use of peripheral drivers and middleware

Integrated Development Environments (IDE)

- IAR® Embedded Workbench
- Arm Keil® Microcontroller Development Kit

ROM

- Dedicated Bootloader for the LPC51U68 MCU
- In-system flash programming over serial connection: erase, program, verify
- ROM or flash-based bootloader with open-source software and host-side programming utilities

Development Hardware

- LPCXpresso development boards
  - Low-cost evaluation
  - Built-in MCU power consumption and supply voltage measurement
  - Expansion options including Arduino UNO and PMod

LPCXpresso51U68 (OM40005) Development Board

LPC51U68 MCU SELECTION GUIDE

Family	Flash (KB)	Total SRAM (KB)	GPIO	Package
LPC51U68JBD48	256	96	37	LQFP48
LPC51U68JBD64	256	96	48	LQFP64

www.nxp.com/LPC51U68

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