NXP 50-MHz, 32-bit
ARM Cortex-M0™
microcontrollers LPC11U00

Low-cost Cortex-M0 USB solutions with Smart Card interface

Delivering robust USB performance at a low price point, these low-cost devices are compelling replacements for 8/16-bit USB microcontrollers. The highly flexible USB architecture is, quite simply, a better approach to USB. NXP offers the widest range of ARM-based USB solutions, as well as easy-to-use software and integrated development platforms that make NXP a one-stop shop for USB.

Features

▸ ARM Cortex-M0 processor, running at frequencies of up to 50 MHz
▸ Memory:
  - Up to 32 kB on-chip flash program memory
  - Total of 6 kB SRAM data memory (4 kB main SRAM and 2 kB USB SRAM)
  - 16 kB boot ROM
  - In-System Programming (ISP) and In-Application Programming (IAP) via on-chip bootloader software
▸ Debug options:
  - Standard JTAG test/debug interface. Serial Wire Debug
  - Boundary scan for simplified board testing
▸ Up to 40 General-Purpose I/O (GPIO) pins with configurable pull-up/pull-down resistors, repeater mode, and open-drain mode
  - Two GPIO grouped interrupt modules enable an interrupt based on a programmable pattern of input states of a group of GPIO pins
  - High-current source output driver (20 mA) on one pin (P0_7)
  - High-current sink driver (20 mA) on two true open-drain pins (P0_4 and P0_5)
▸ Four general-purpose counter/timers with a total of up to 5 capture inputs and 13 match outputs
▸ Programmable Windowed WatchDog Timer (WWDT) with a dedicated, internal low-power WatchDog Oscillator (WDO)
▸ Analog peripherals:
  - 10-bit ADC with input multiplexing among eight pins
▸ Serial interfaces:
  - USB 2.0 full-speed device controller
  - USART with fractional baud-rate generation
  - USART supports an asynchronous Smart Card interface (ISO 7816-3)
  - Two SSP controllers with FIFO and multi-protocol capabilities
  - I^2C-bus interface supporting the full I^2C-bus specification and Fast-mode Plus (Fm+)

▸ Clock generation:
  - Crystal oscillator with an operating range of 1 to 25 MHz (system oscillator)
  - 12 MHz high-frequency Internal RC oscillator (IRC)
  - Internal low-power, low-frequency WatchDog Oscillator
  - PLL allows CPU operation up to the maximum CPU rate with the system oscillator or the IRC as clock sources A second, dedicated PLL is provided for USB
  - Clock output function
▸ Power control:
  - Four reduced power modes: Sleep, Deep-sleep, Power-down, and Deep power-down
  - Power profiles residing in boot ROM
  - Processor wake-up from Deep-sleep and Power-down modes via reset, selectable GPIO pins, watchdog interrupt, or USB port activity
▸ Power-On Reset (POR)
▸ Brownout detect with four separate thresholds for interrupt and forced reset

LPC11U1x

▸ Unique device serial number for identification
▸ Single 3.3 V power supply (1.8 to 3.6 V)
▸ Temperature range -40 to +85 °C
▸ Available in 48-pin LQFP, 48-pin TFBGA, and 33-pin HVQFN package
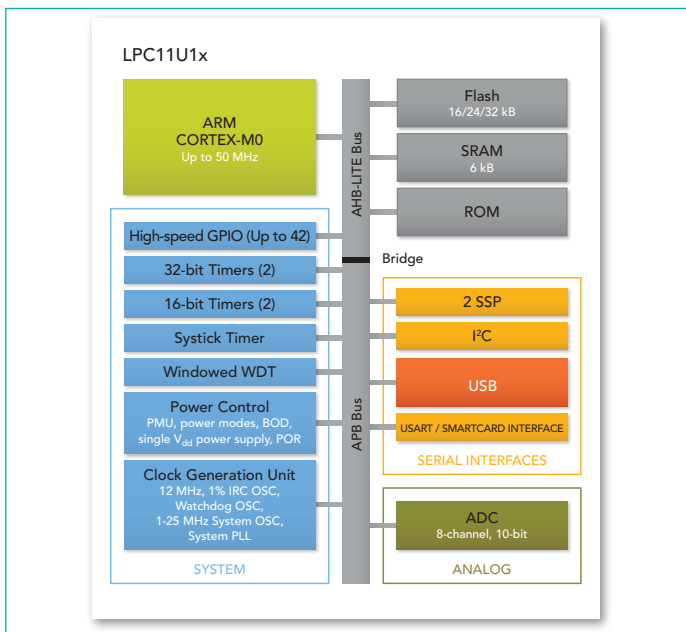▸ Pin-compatible with the LPC134x series

Maximizing connectivity, minimizing power
Connectivity options on the LPC11U00 series include two Synchronous Serial Port (SSP) interfaces, I²C with Fast-mode Plus feature for 10x higher bus-drive capability, a Universal Synchronous-Asynchronous Receiver/Transmitter (USART) and a Smart Card interface. The Smart Card interface (ISO7816-3) provides a plug-and-play interface for Smart Cards, making the LPC11U00 a good fit for e-commerce applications.

Small form-factor mobile & consumer apps
As an extension of NXP's proven LPC1100 family, the LPC11U00 series delivers up to 32 kB Flash, 6 kB SRAM, a variety of serial interfaces, four system timers with PWM functionality, an 8-channel, 10-bit ADC, and up to 40 GPIOs. In addition to several standard package offerings, the LPC11U00 series is offered in a miniature 4.5 x 4.5 mm TFBGA48 package, making it especially suited for small form-factor mobile and consumer applications.

Type number	Flash	Total SRAM	USB	USART/Smart Card Interface	I²C / Fm+	ADC channels	SSP	Package
LPC11U12FHN33/201	16 kB	6 kB	1	1	1	8	2	HVQFN33
LPC11U12FBD48/201	16 kB	6 kB	1	1	1	8	2	LQFP48
LPC11U13FBD48/201	24 kB	6 kB	1	1	1	8	2	LQFP48
LPC11U14FHN33/201	32 kB	6 kB	1	1	1	8	2	HVQFN33
LPC11U14FBD48/201	32 kB	6 kB	1	1	1	8	2	LQFP48
LPC11U14FET48/201	32 kB	6 kB	1	1	1	8	2	TFBGA48