Further expanding the market's first Arm® Cortex®-M33 MCU Series

LPC552x MCU Family

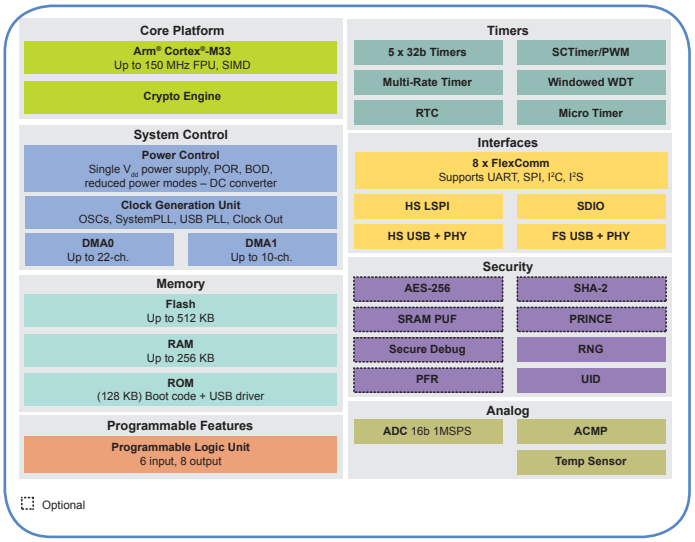
Building on the LPC55S6x MCU family, LPC552x MCUs bring to market advanced energy efficiency and real-time performance with embedded security and protection, leveraging NXP's cost effective 40-nm embedded flash technology.

OVERVIEW

The LPC552x MCU family expands on the world's first general purpose Arm Cortex-M33-based microcontroller introduced with the LPC5500 series. This mainstream family provides a perfect balance between security, performance efficiency and system integration for the general embedded and industrial IoT markets. The LPC552x MCU family combines the high performance efficiency of the Cortex-M33 core with multiple high-speed interfaces, an integrated power management IC, and rich analog integration.

The LPC5500 MCU series offers significant advantages for developers, including cost-effective 40-nm NVM process technology, along with pin-, software- and peripheral-compatibility for ease of use and accelerating time to market. This series is supported by NXP's comprehensive enablement package, including MCUXpresso software and tools along with low-cost development boards.

LPC552x MCU FAMILY BLOCK DIAGRAM



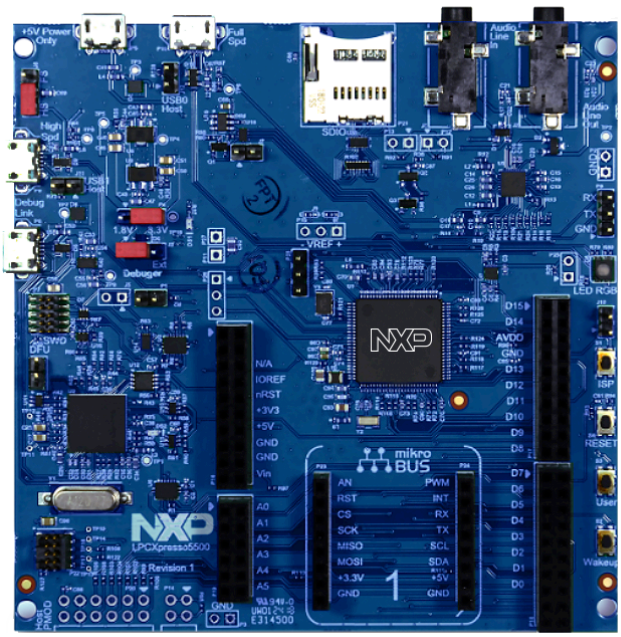
TARGET APPLICATIONS

- Consumer electronics
- Diagnostic equipment
- Building control and automation
- Secure applications
- Industrial IoT
- General embedded

HIGH INTEGRATION AND ADVANCED SECURITY

The LPC552x MCU family offers the right combination of feature integration, low power consumption and security capabilities. With multiple connectivity options including high-speed USB with on-chip PHY, high-speed SPI, SDIO and the popular FlexComm interfaces (configurable as either SPI/I²C/I²S,UART) this MCU family features a versatile integration for today's demanding applications. The security capabilities of the LPC552x MCU family include SRAM PUF for root of trust and provisioning, a hardware symmetric encryption/decryption engine, secure debug and the PRINCE engine for real-time execution from encrypted images.

LPCXpresso55S28 Development Board (LPC55S28-EVK)



COMPREHENSIVE ENABLEMENT SOLUTIONS

- Comprehensive MCUXpresso SDK
  - Extensive suite of robust peripheral drivers, stacks and middleware
  - Example code, including SHA/AES, SRAM PUF and secure boot startup enablement
- Integrated Development Environments (IDE)
  - MCUXpresso IDE
  - IAR® Embedded Workbench
  - Arm Keil® Microcontroller Development Kit
- ROM
  - Dedicated bootloader for the LPC5500 MCU Family
  - 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
    - LPC55S2x Cortex-M33 based MCU
    - Onboard, high-speed USB, Link2 debug probe
    - Flexible expansion – Arduino®, Mikroe and PMod headers
    - Various on-board interfaces and components

LPC552x MCU FAMILY OPTIONS

Part Number	CPU Freq (MHz)	Flash	SRAM	Secure Boot	Crypto Accel	On the Fly Encrypt/ Decrypt	SRAM PUF	FS&HS USB	SDIO	Packages
LPC55S28	150	512 KB	256 KB	√	√	√	√	√	√	HLQFP100, VFBGA98, HTQFP64
LPC55S26	150	256 KB	144 KB	√	√	√	√	√	√	HLQFP100, VFBGA98, HTQFP64
LPC5528	150	512 KB	256 KB	-	-	-	-	√	√	HLQFP100, VFBGA98, HTQFP64
LPC5526	150	256 KB	144 KB	-	-	-	-	√	√	HLQFP100, VFBGA98, HTQFP64

Note: LPC55S2x/2x does not support Arm TrustZone technology.

www.nxp.com/LPC552x

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Document Number: LPC552xFAMFS REV 1