



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

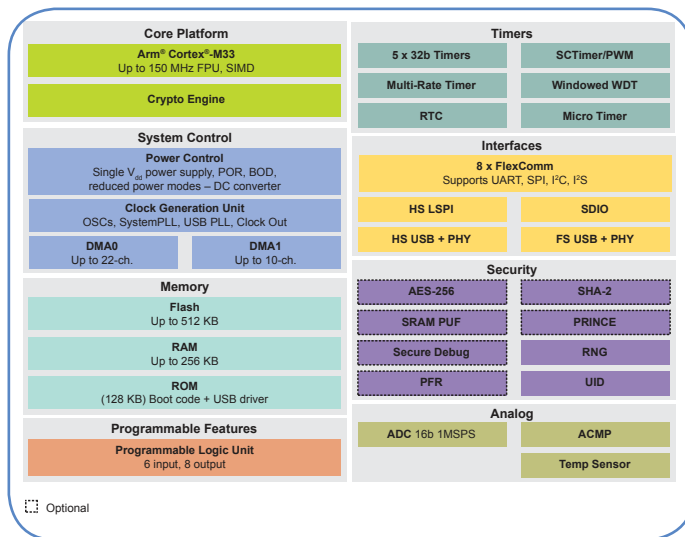
The LPC552x MCU family expands on the world's first general purpose Arm Cortex-M33-based microcontroller introduced with the LPC5500 series. This mainstream family provides a perfect balance between security, performance efficiency and system integration for the general embedded and industrial IoT markets. 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.

TARGET APPLICATIONS

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

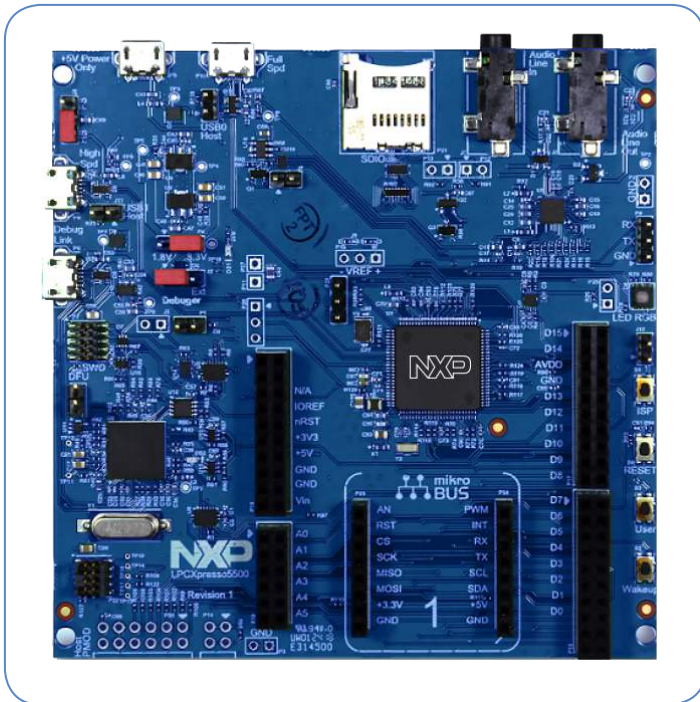
LPC552x MCU FAMILY BLOCK DIAGRAM



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.