



Expanding the market's first Arm[®] Cortex[®]-M33-based MCU Series

LPC551x/S1x MCU Family

LPC551x/S1x MCUs bring new levels of cost and performance efficiency in addition to the embedded security and protection originally introduced with the series.

OVERVIEW

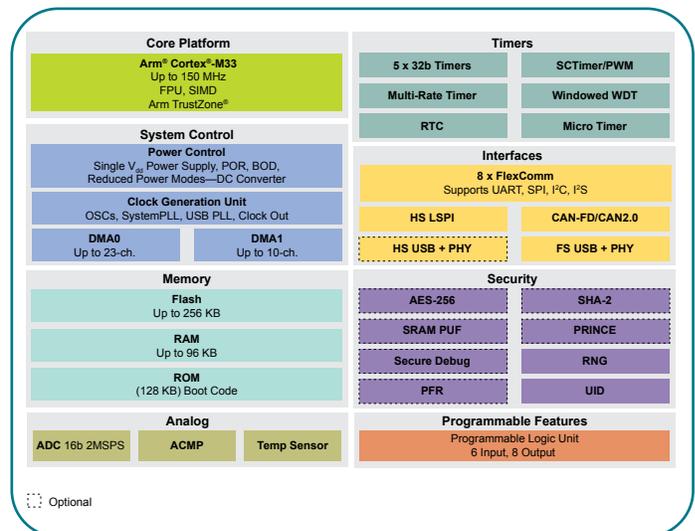
The LPC551x/S1x MCU family expands on the general-purpose Cortex-M33-based LPC5500 MCU series. This baseline family introduces new levels of cost and performance efficiency in addition to security and system integration for industrial and general embedded markets.

The LPC5500 MCU series offers advantages for developers, including cost-effective 40-nm NVM process technology, along with pin-, software- and peripheral-compatibility for ease of use and to help accelerate time to market. NXP's comprehensive enablement package includes the MCUXpresso Software and Tools ecosystem along with low-cost development boards

TARGET APPLICATIONS

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

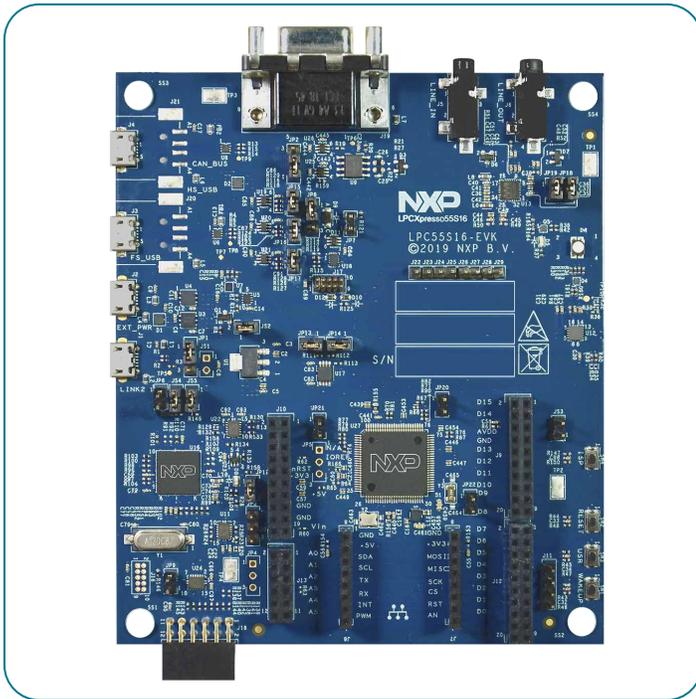
LPC551x/S1x MCU FAMILY BLOCK DIAGRAM



HIGH INTEGRATION AND ADVANCED SECURITY

The LPC551x/S1x MCU family offers a combination of feature integration, low power consumption and security capabilities. With multiple connectivity options including CAN FD, high-speed USB with on-chip PHY, high-speed SPI, SDIO and FlexComm interfaces (configurable as either SPI/I²C/I²S, UART) this MCU family features a versatile integration for today's high-demand needs. The security capabilities of the LPC551x/S1x MCU family include Arm TrustZone® technology—enabling robust levels of protection, 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.

LPCXpresso55S16 Development Board (LPC55S16-EVK)



COMPREHENSIVE ENABLEMENT SOLUTIONS

- ▶ 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
- ▶ LPCXpresso Development Board
 - LPC55S16 Cortex-M33-based processor
 - Onboard, high-speed USB, Link2 debug probe
 - Flexible expansion – Arduino®, Mikroe and PMod headers
 - Various on-board interfaces and components



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SYSTEMS

LPC551x/S1x MCU FAMILY OPTIONS

Part Number	CPU Freq (MHz)	Flash	SRAM	TrustZone	Secure Boot	Crypto Accel	Real-Time Encrypt/Decrypt	SRAM PUF	CAN	USB	Packages
LPC55S16x	150	256 KB	96 KB	Yes	Yes	Yes	Yes	Yes	CAN FD	FS + HS	HLQFP100, VFBGA98, HTQFP64
LPC55S14x	150	128 KB	80 KB	Yes	Yes	Yes	Yes	Yes	CAN FD	FS + HS	HLQFP100, HTQFP64
LPC5516x	150	256 KB	96 KB	-	-	-	-	-	CAN FD	FS + HS	HLQFP100, VFBGA98, HTQFP64
LPC5514x	150	128 KB	80 KB	-	-	-	-	-	CAN FD	FS + HS	HLQFP100, HTQFP64
LPC5512x	150	64 KB	48 KB	-	-	-	-	-	CAN 2.0	FS	HLQFP100, HTQFP64

www.nxp.com/LPC551x

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