

LPC552x/S2x: Mainstream Arm® Cortex®-M33-based Microcontroller Family

LPC552x-S2x

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The LPC552x/S2x MCU family is part of the EdgeVerse™ edge computing platform and further expands the world's first general purpose Cortex-M33-based MCU series, offering significant advantages for developers, including pin-, software- and peripheral-compatibility for ease of use and accelerating time to market, while leveraging the cost-effective 40-nm NVM process technology.

The LPC552x/S2x is a mainstream family within the LPC5500 MCU series inclusive of LPC55S28, LPC55S26, LPC5528, LPC5526 MCUs, providing a perfect balance between security, performance efficiency and system integration for general embedded and industrial IoT markets. The LPC552x/S2x 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.

LPC552x/S2x MCU Block Diagram

Arm® Cortex®-M33 Up to 150 MHz FPU, SIMD Crypto Engine System Control Power Control Single V _{sic} power supply, POR, BOD, reduced power modes – DC converter Clock Generation Unit OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Features Programmable Logic Unit 6 input, 8 output 5 x 32b Timers Multi-Rate Timer Windowed WDT RTC Micro Timer Windowed WDT RTC Micro Timer St FlexComm Supports UART, SPI, FC, FS HS LSPI SDIO Security AES-256 SHA-2 SRAM PUF PRINCE Secure Debug RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor	Core Platform		Timers	
Crypto Engine Multi-Rate Timer Micro Timer System Control Power Control Single V _{ob} power supply, POR, BOD, reduced power modes – DC converter Clock Generation Unit OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit Multi-Rate Timer Micro Timer Micro Timer Micro Timer Micro Timer Micro Timer Micro Timer Nimdowed WDT Micro Timer Nimdowed WDT Micro Timer Nomicro Timer Sa x FlexComm Supports UART, SPI, I°C, I°S HS LSPI SDIO Security AES-256 SHA-2 SRAM PUF PRINCE PFR UID Analog ADC 16b 1MSPS ACMP			5 x 32b Timers	SCTimer/PWM
System Control Power Control Single Voor power supply, POR, BOD, reduced power modes – DC converter Clock Generation Unit OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output RTC Micro Timer Interfaces 8 x FlexComm Supports UART, SPI, PC, PS BSDIO HS USB + PHY FS USB + PHY FS USB + PHY FS USB + PHY Security AES-256 SHA-2 SRAM PUF PRINCE PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			Multi-Rate Timer	Windowed WDT
Power Control Single V _{se} power supply, POR, BOD, reduced power modes – DC converter Clock Generation Unit OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Up to 10-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output Interfaces 8 x FlexComm Supports UART, SPI, PC, PS HS LSPI SDIO HS USB + PHY FS USB + PHY FS USB + PHY Security AES-256 SHA-2 SRAM PUF PRINCE PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			RTC	Micro Timer
Single V ac power supply, POR, BOD, reduced power modes – DC converter Clock Generation Unit OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Wemory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output Supports UART, SPI, I²C, I²S HS LSPI SDIO HS USB + PHY FS USB + PHY FS USB + PHY FS USB + PHY Security AES-256 SRAM PUF PRINCE Secure Debug RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			Interfaces	
OSCs, SystemPLL, USB PLL, Clock Out DMA0 Up to 22-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output HS USB + PHY FS USB + PHY Security AES-256 SHA-2 SRAM PUF PRINCE RAM Secure Debug RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor	Single V _{dd} power supply, POR, BOD,			
DMAT Up to 22-ch. Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output BMAT Up to 10-ch. Security AES-256 SHA-2 SRAM PUF PRINCE Secure Debug RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			HS LSPI	SDIO
Memory Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output Security AES-256 SHA-2 PRINCE RNG PRINCE RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			HS USB + PHY	FS USB + PHY
Flash Up to 512 KB RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output Flash Up to 512 KB SRAM PUF PRINCE RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			Security	
RAM Up to 256 KB ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output SRAM PUF PRINCE RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			AES-256	SHA-2
ROM (128 KB) Boot code + USB driver Programmable Features Programmable Logic Unit 6 input, 8 output RNG PFR UID Analog ADC 16b 1MSPS ACMP Temp Sensor			SRAM PUF	PRINCE
(128 KB) Boot code + USB driver Analog Programmable Features ADC 16b 1MSPS ACMP Programmable Logic Unit 6 input, 8 output Temp Sensor			Secure Debug	RNG
Programmable Features ADC 16b 1MSPS ACMP Programmable Logic Unit 6 input, 8 output ACMP Temp Sensor			PFR	UID
Programmable Logic Unit 6 input, 8 output Temp Sensor			Analog	
6 input, 8 output Temp Sensor			ADC 16b 1MSPS	ACMP
Optional				Temp Sensor
i optional	Ontional			
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View additional information for LPC552x/S2x: Mainstream Arm® Cortex®-M33-based Microcontroller Family.

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