

LPC553x/S3x: Advanced Analog Arm®Cortex®-M33-Based MCU Family

LPC553x

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The LPC553x/S3x MCU family further expands the general purpose Cortex-M33-based MCU series, offering significant performance enhancement, all on-chip RAM with Parity or ECC, renewed security features and precision analog additions, leveraging the cost-effective 40-nm NVM process technology.

The LPC553x/S3x family includes a proprietary DSP accelerator offering 10x clock cycle reduction, bringing significant signal processing efficiency gains.

LPC553x/55S3x MCU Block Diagram

Core Platform				Timers				
Arm [®] Cortex [®] -M33 Up to 150 MHz				5 x 32b Timers Multi-Rate Timer		SCTimer/PWM Windowed WDT		
TrustZone, MPU, FPU, SIMD, DSP								
DSP Accelerator (PowerQuad)				RTC	RTC		Micro Timer	
System Control							OS Event Timer	
Power Control				Interfaces				
Single $\rm V_{ad}$ power supply, POR, BOD, reduced power modes – DC converter + LDO					8 x FlexComm Supports UART, SPI, I ² C, I ² S		FlexSPI 8 kB CACHE + PRINCE	
Clock Generation Unit FROs, 2x PLLs, XTAL32k/32m, Clock Out				HS LSPI	HS LSPI		FS USB + PHY	
Secure	Secu		Secure	13C		DMIC		
DMA0	DMA		AHB Bus	CAN-FD	CAN-FD		Flex-PWM	
Memory				Security				
Flash and Flash Cache 256 KB w Cache 8 KB		ROM Boot + Secure Boot (LPC55S3x)		AES-256	Code WDG		DICE + UUID	
RAM 112 KB Parity + 16 KB ECC				SRAM PUF	SHA-512		Tamper Detect and Response	
Analog				Debug Auth.	PRINCE		PKC	
4x ADC 16b 2MSPS			4x CMP	PFR + OTP	RNG		ECC	
3x DAC 12b 1MSPS		2x Temp Sensors			Motor Contro	l Subsystem		
3x OpAMP + 1x VREF				2x FlexPWM Time		2x QEIs, 2x AOI		

View additional information for LPC553x/S3x: Advanced Analog Arm®Cortex®-M33-Based MCU Family.

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