High Efficiency Arm® Cortex®-M33-Based Microcontroller Family
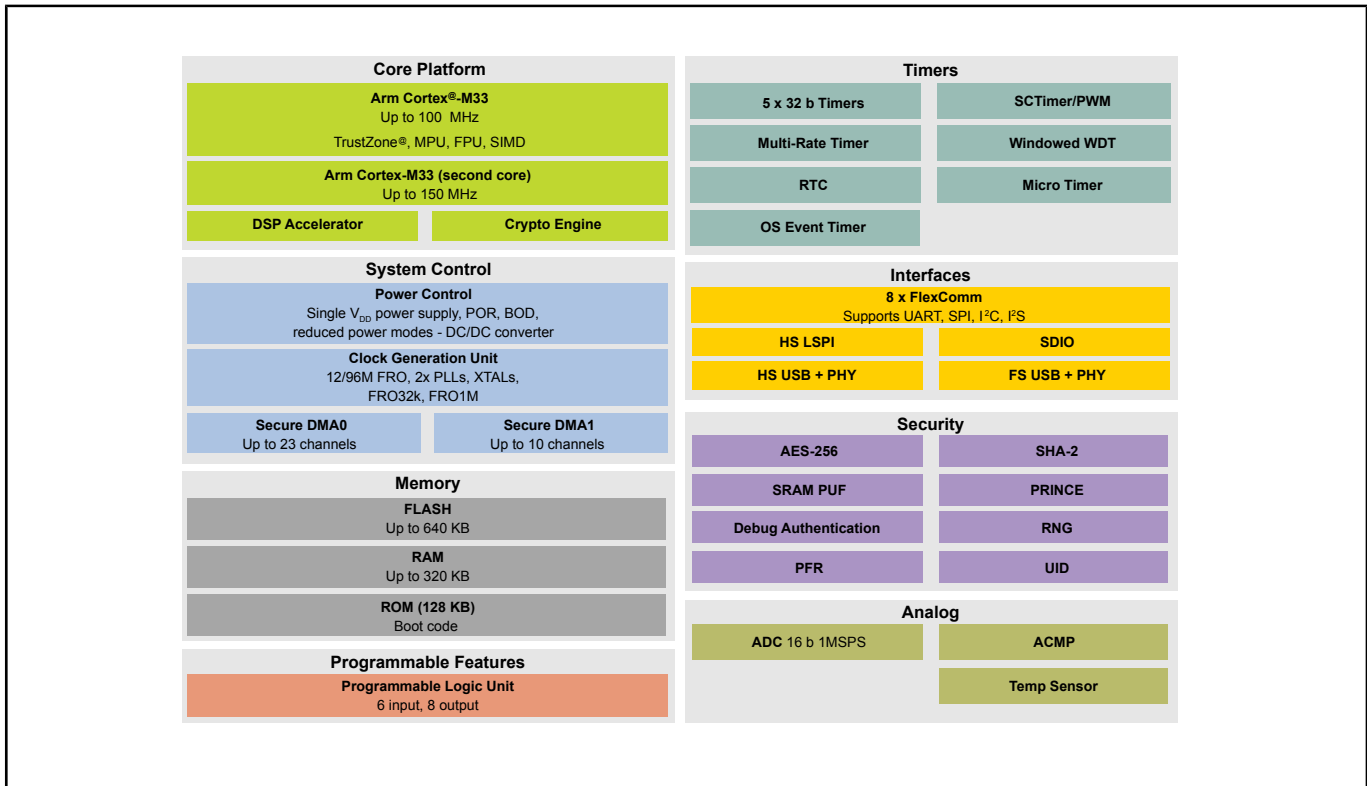
LPC55S6x

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The LPC55S6x MCU family is part of the EdgeVerse™ edge computing platform and builds on the world's first general-purpose Cortex-M33 based microcontroller introduced with the LPC5500 series. This high-efficiency family, inclusive of LPC55S69JBD100, LPC55S66JBD100, LPC55S69JEV98, LPCS66JEV98, LPC55S69JBD64, LPCS66JBD64 MCUs, leverages the new Armv8-M architecture to introduce new levels of performance and advanced security capabilities including TrustZone-M and co-processor extensions. The LPC55S6x family enables these co-processors extensions and leverages them to bring significant signal processing efficiency gains from a proprietary DSP accelerator offering a 10x clock cycle reduction. An optional second Cortex-M33 core offers flexibility to balance high performance and power efficiency.

In addition, the LPC55S6x MCU family provides benefits from 40nm NVM based process technology cost advantages, broad scalable packages, and memory options, as well as a robust enablement including MCUXpresso Software and Tools ecosystem and low-cost development boards.

LPC55S6x MCU Block Diagram

Core Platform

Arm Cortex®-M33
Up to 100 MHz

TrustZone®, MPU, FPU, SIMD

Arm Cortex-M33 (second core)
Up to 150 MHz

DSP Accelerator	Crypto Engine

System Control

Power Control
Single V_{DD} power supply, POR, BOD,
reduced power modes - DC/DC converter

Clock Generation Unit
12/96M FRO, 2x PLLs, XTALs,
FRO32k, FRO1M

Secure DMA0	Secure DMA1
Up to 23 channels	Up to 10 channels

Memory

FLASH
Up to 640 KB

RAM
Up to 320 KB

ROM (128 KB)
Boot code

Programmable Features

Programmable Logic Unit
6 input, 8 output

Timers

5 x 32 b Timers	SCTimer/PWM
Multi-Rate Timer	Windowed WDT
RTC	Micro Timer
OS Event Timer	

Interfaces

8 x FlexComm
Supports UART, SPI, I²C, I²S

HS LSPI	SDIO
HS USB + PHY	FS USB + PHY

Security

AES-256	SHA-2
SRAM PUF	PRINCE
Debug Authentication	RNG
PFR	UID

Analog

ADC 16 b 1MSPS	ACMP
	Temp Sensor

View additional information for High Efficiency Arm® Cortex®-M33-Based Microcontroller Family.

Note: The information on this document is subject to change without notice.