



S32K39/37 Microcontrollers for Electrification Applications

S32K39-37

Preproduction

This page contains information on a preproduction product. Specifications and information herein are subject to change without notice. For additional information [contact support](#) or your sales representative.

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S32K39 and S32K37 silicon and enablement (documentation, software and boards) are available for select customers (NDA required). For additional information and sample availability, [contact support](#) or your local sales representative.

S32K39 is a purpose-built device addressing the new electric vehicle (EV) traction inverter control needs with a compelling combination of performance, integration, networking, security and functional safety capabilities.

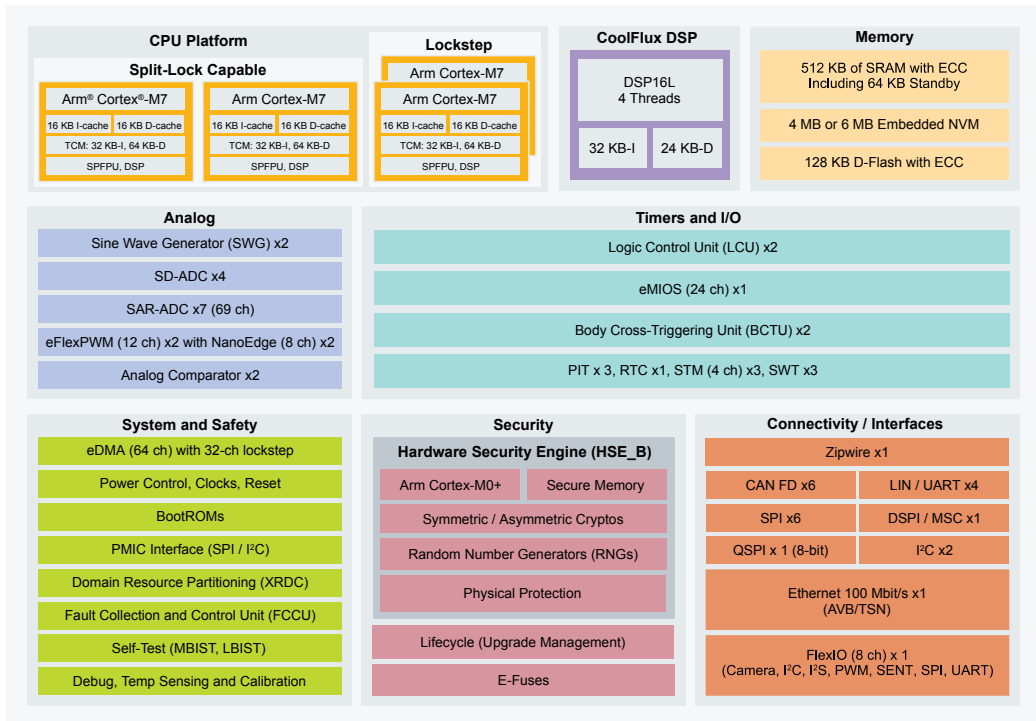
It has enough compute power to support six-phase or two three-phase motors controlled by over 200 kHz control loops, while hosting AI/ML algorithms or other monitoring applications. It supports remote smart actuation applications using Time-Sensitive Networking (TSN) Ethernet for new zonal vehicle architectures. And it reduces system cost with ASIL D software resolver and analog integration.

The S32K37 high-compute capabilities are ideal for high-end [battery management systems](#) (BMS) applications.

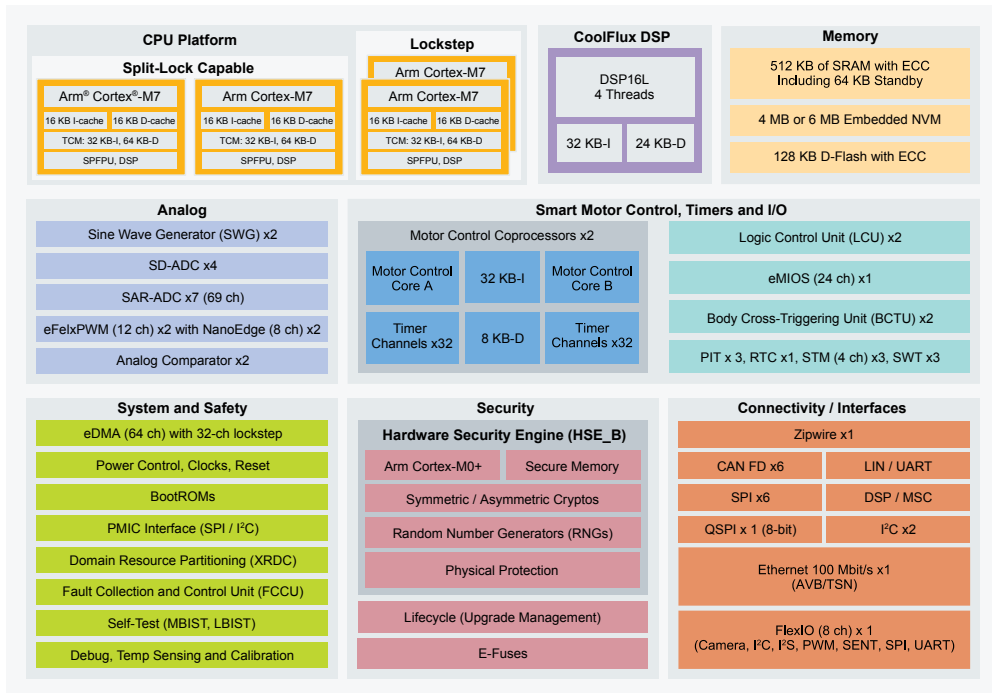
S32K39/37 MCUs Family Features Block Diagram

Common Features	K396	K394	K376	K374
AEC-Q100, 125°C, 3.3/5 V	1 lockstep Cortex-M7 + 2 split-lock Cortex-M7 @ 320 MHz			
HSE_B Hardware Security Engine	4x sigma-delta ADC with programmable DSP			
FOTA Firmware Over-the-Air	2x motor control coprocessors			
Low-Power Operating Modes and Peripherals LPUART, FlexIO	6 MB Flash	4 MB Flash	6 MB Flash	4 MB Flash
ASIL D Safety (ECC Memories, Lockstep Cores, CRC, Watchdog)	800 KB SRAM (512 KB System RAM + 288 KB TCM)			
eMIOS Timer, Analog Comparators, Logic Control Units, Trigger Mux (es)	Up to 211 I/Os			
JTAG	64-ch DMA with 32-ch lockstep			
S32 Design Studio IDE	6x CAN (FD), 4x LPUART (LIN)			
Real-Time Drivers (AUTOSAR® and non-AUTOSAR)	100 Mbit/s Ethernet (AVB/TSN)			
Security Firmware S32 Safety Software Framework Application Software	Zipwire			
	2 x I ² C, 6x SPI			
	2x eFlexPWM with 12-ch each (8-ch each high-resolution PWM)			
	7x SAR-ADC 12-bit, 1 Msps (69 analog inputs) 2x SWG (Sine Wave Generator)			
	QuadSPI			
	MAPBGA-289			
	176LQFP-EP			

S32K37 MCUs Features Block Diagram

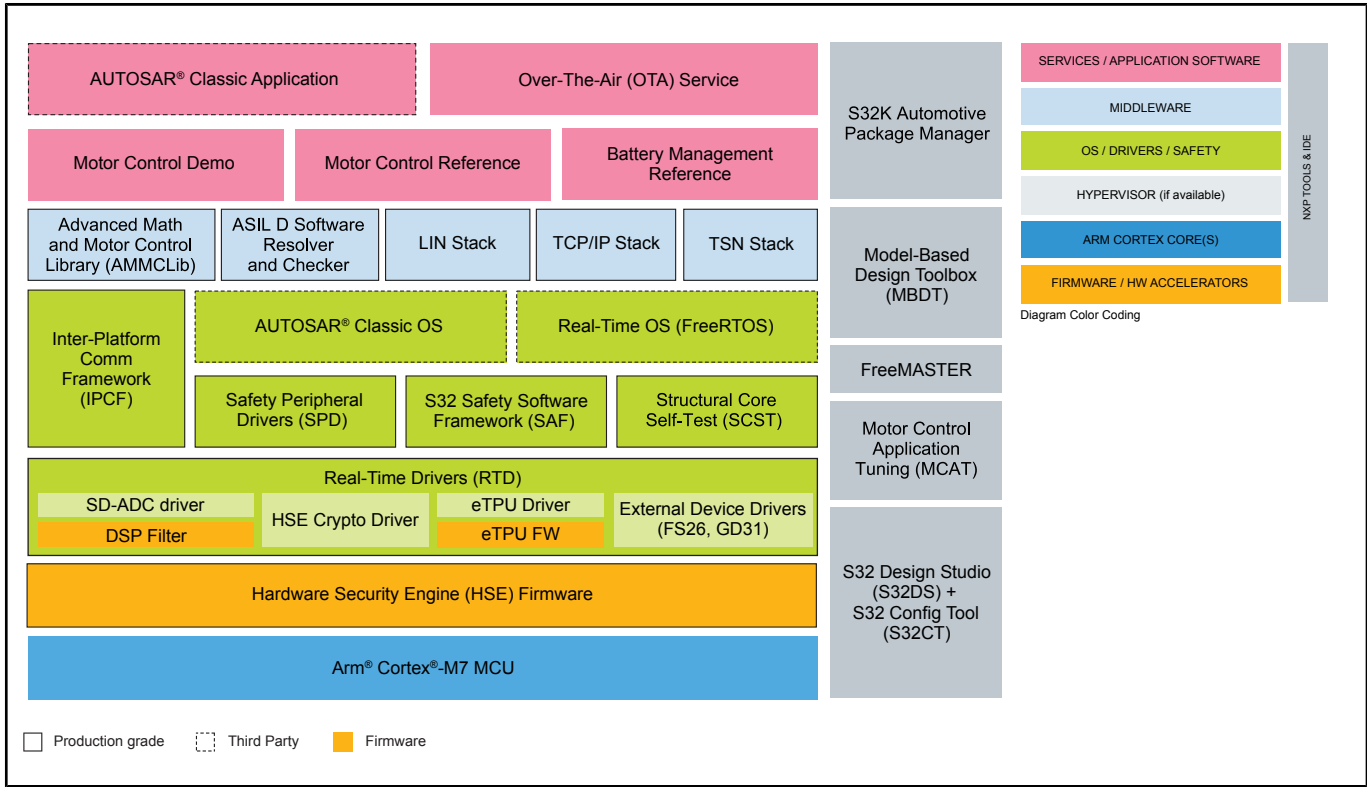


S32K39 MCUs Features Block Diagram



■ Features added from the S32K37x

S32K39 Software Enablement Block Diagram



View additional information for [S32K39/37 Microcontrollers for Electrification Applications](#).

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