



# FRDM Automotive S32K312 Development Board for General Purpose

FRDM-A-S32K312 UPDATED

Active

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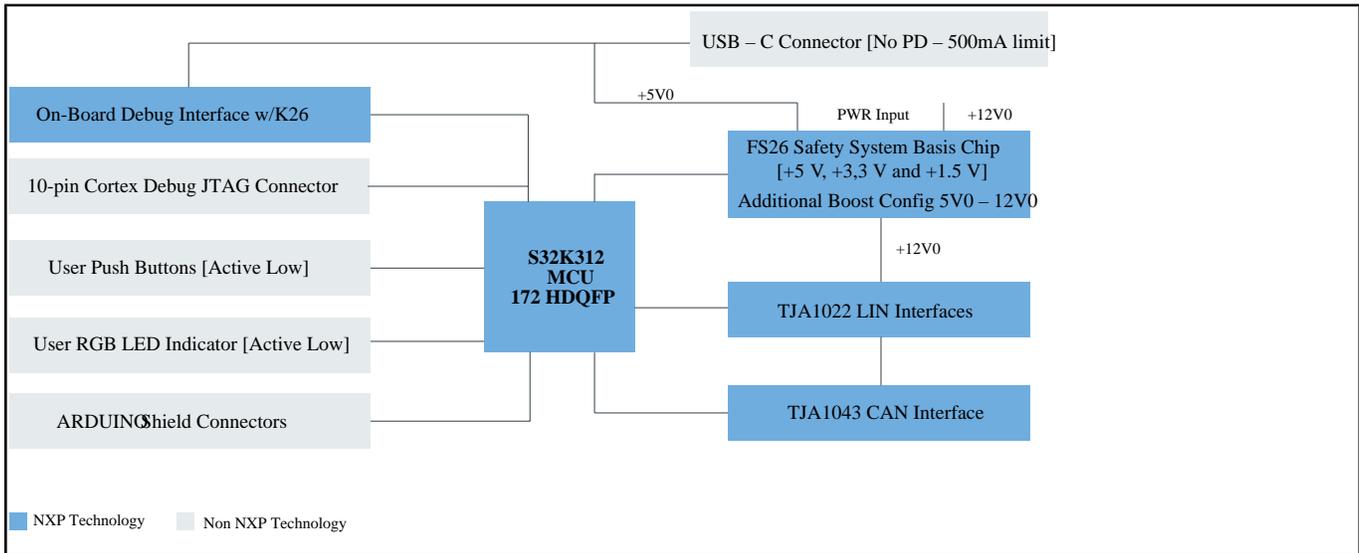
S32K312MINI#EVB Renamed to FRDM#A#S32K312: Now part of the FRDM Automotive Ecosystem under its new name, the board keeps the same hardware and adds full ecosystem compatibility for flexible, scalable development.

The FRDM-A-S32K312 is a development board for general-purpose industrial and automotive applications.

Based on the 32-bit Arm® Cortex®-M7 S32K3 microcontroller unit (MCU) in a 172 High Density Quad Flat Package (HDQFP) package, the FRDM-A-S32K312 offers a single-core mode, Hardware Security Engine (HSE), over-the-air (OTA) support, advanced connectivity and low-power.

The FRDM-A-S32K312 offers a standard-based form factor compatible with the Arduino® UNO pin layout, providing a broad range of expansion board options for quick application prototyping and demonstration.

## FRDM-A-S32K312 Development Board Block Diagram



## S32K3 Family Block Diagram

K311	K312	K314	Common Features	K322	K324	K341	K342	K344	K328	K338	K348	K358	
1 x Arm® Cortex-M7 @120 MHz		1x Cortex-M7 @240MHz	AEC-Q100, 125 °C, 3,3/5 V	2 x Cortex-M7 @240 MHz		1 Lockstep Cortex-M7 @ 240 MHz			2 x Cortex-M7 @ 240 MHz	3 x Cortex-M7 @ 240 MHz	1 LS Cortex-M7 @ 240 MHz	1 LS Cortex-M7 + 1 Cortex-M7 @ 240 MHz	
1 MB Flash	2 MB Flash	4 MB Flash	HSE-B Crypto Security Engine	2 MB Flash	4 MB Flash	1 MB Flash	2 MB Flash	4 MB Flash	8 MB Flash				
128 K SRAM	192 K SRAM	512 K SRAM	FOTA (Firmware Over-the-Air)	256 k SRAM	512 k SRAM	256 k SRAM	256 k SRAM	512 k SRAM	1152 KB SRAM	1152 KB SRAM	1152 KB SRAM	1152 KB SRAM	
up to 84 I/Os	up to 143 I/Os	up to 218 I/Os	Low-Power Operating Modes and Peripherals (LP UART, FlexIO)	up to 143 I/Os	up to 218 I/Os	up to 143 I/Os	up to 143 I/Os	up to 218 I/Os	up to 218 I/Os				
16-ch, eDMA		32-ch, eDMA	ASIL B/D Safety: (ECC Memories, MPU, CRC, Watchdogs)	32-ch, eDMA					32-ch, eDMA				
3 x CAN (3 x FD)	6 x CAN (6 x FD)		100 Mbit/s Ethernet (TSN)	4 x CAN (4 x FD)	6 x CAN (6 x FD)	4 x CAN (4 x FD)	4 x CAN (4 x FD)	6 x CAN (6 x FD)	8 x CAN (8 x FD)	8 x CAN (8 x FD)	8 x CAN (8 x FD)	8 x CAN (8 x FD)	
			eMIOS Timers, Analogue Comparator, Logic Control Unit, Body Cross Triggering Unit, Trigger Mux	100 Mbit/s Ethernet (TSN)					1 Gbit/s Ethernet (TSN)				
2 x I2C	2 x I2C	2 x I2C	JTAG	2 x I2C	2 x I2C	2 x I2C	2 x I2C	2 x I2C	2 x I2C				
4 x SPI*		6 x SPI*	S32 Design Studio IDE	4 x SPI*	6 x SPI*	4 x SPI*	4 x SPI*	6 x SPI*	6 x SPI*				
2 x 24-ch, 12-bit ADC		3 x 24-ch, 12-bit ADC	Real-Time Drivers (AUTOSAR® and Non-AUTOSAR)	2 x 24-ch, 12-bit ADC	3 x 24-ch, 12-bit ADC	2 x 24-ch, 12-bit ADC	2 x 24-ch, 12-bit ADC	3 x 24-ch, 12-bit ADC	3 x 24-ch, 12-bit ADC				
			Quad SPI	2 x SAI (FS)					2 x SAI (FS)				
			HDQFP-48	HDQFP-172					HDQFP-172				
			HDQFP-100	HDQFP-100		HDQFP-100	HDQFP-100		Quad SPI + SDHC (SDIO)				
			MAPBGA-257	MAPBGA-257		MAPBGA-257			MAPBGA-289				
			Security FW Safety Software Framework Application Software										

View additional information for [FRDM Automotive S32K312 Development Board for General Purpose](#).

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

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