S32K312EVB-Q172 Development Board for Automotive General Purpose
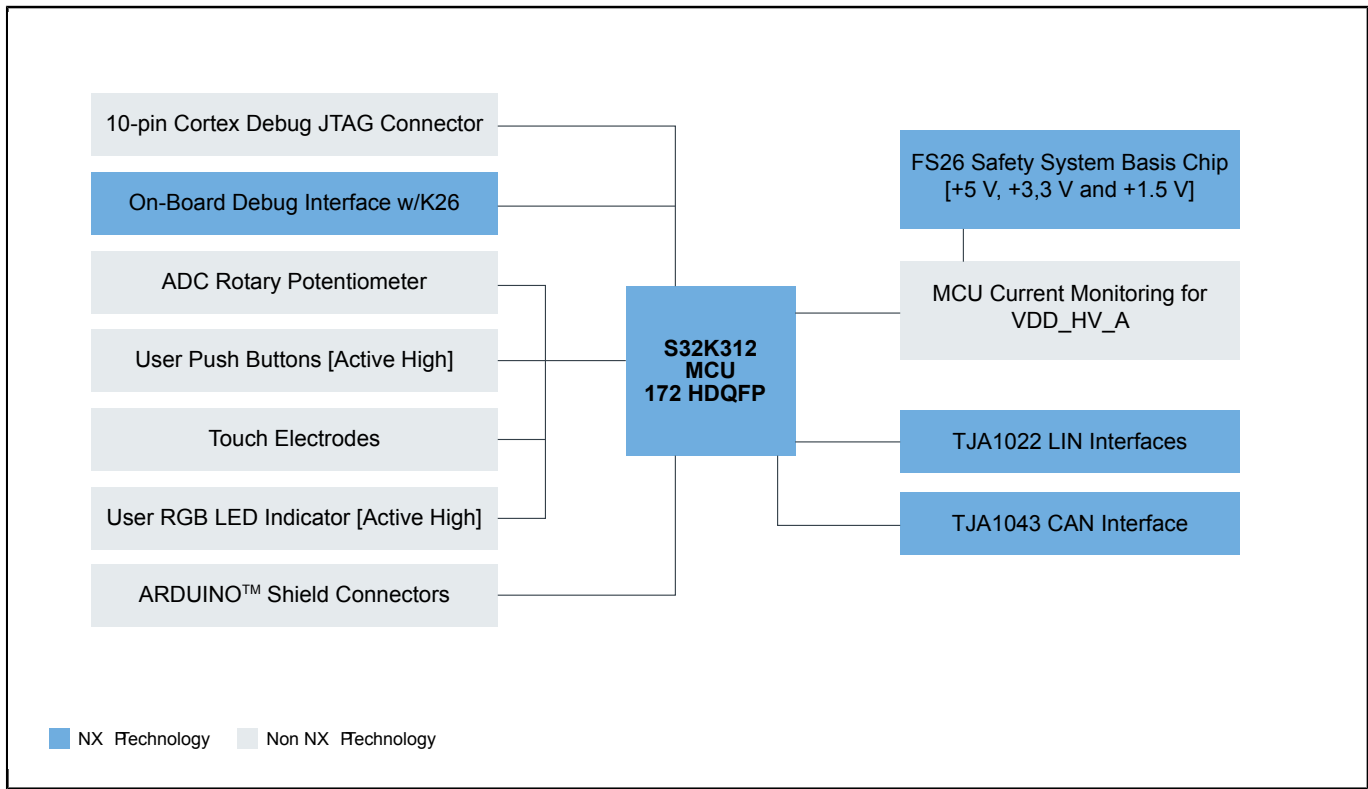
S32K312EVB-Q172

Last Updated: Apr 14, 2023

The S32K312EVB-Q172 is an evaluation and development board for general-purpose industrial and automotive applications.

Based on the 32-bit Arm®Cortex®-M7 S32K3 MCU in a 172 HDQFP package, the S32K312EVB-Q172 offers a single core mode, HSE security engine, OTA support, advanced connectivity and low power.

The S32K312EVB-Q172 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.

S32K312EVB-Q172 Block Diagram

- 10-pin Cortex Debug JTAG Connector
- On-Board Debug Interface w/K26
- ADC Rotary Potentiometer
- User Push Buttons [Active High]
- Touch Electrodes
- User RGB LED Indicator [Active High]
- ARDUINO™ Shield Connectors

S32K312 MCU 172 HDQFP

- FS26 Safety System Basis Chip [+5 V, +3,3 V and +1.5 V]
- MCU Current Monitoring for VDD_HV_A
- TJA1022 LIN Interfaces
- TJA1043 CAN Interface

Legend: ■ NX Technology ■ Non NX Technology

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 @160 MHz	AEC-Q100, 125 °C, 3.3/5 V	2 x Cortex-M7 @160 MHz		1 Lockstep Cortex-M7 @ 160 MHz			2 x Cortex-M7 @ 160 MHz	3 x Cortex-M7 @ 240 MHz	1 LS Cortex-M7 @ 160 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		32-ch. eDMA					32-ch. eDMA			
3 x CAN (3 x FD)	6 x CAN (6 x FD)		ASIL B/D Safety: (ECC Memories, MPU, CRC, Watchdogs)	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)
		100 Mbit/s Ethernet (TSN)		100 Mbit/s Ethernet (TSN)					1 Gbit/s Ethernet (TSN)			
2 x I²C	2 x I²C	2 x I²C	eMIOS Timers, Analogue Comparator, Logic Control Unit, Body Cross Triggering Unit, Trigger Mux	2 x I²C	2 x I²C	2 x I²C	2 x I²C	2 x I²C	2 x I²C			
4 x SPI*		6 x SPI*		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	JTAG	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			
		2 x SAI (I²S)	S32 Design Studio IDE	2 x SAI (I²S)					2 x SAI (I²S)			
		Quad SPI		Quad SPI					Quad SPI + SDHC (SDIO)			
LQFP-48	HDQFP-172		Real-Time Drivers (AUTOSAR® and Non-AUTOSAR)	HDQFP-172					HDQFP-172			
HDQFP-100			Security F/W Safety Software Framework Application Software	HDQFP-100		HDQFP-100	HDQFP-100					
		MAPBGA-257			MAPBGA-257			MAPBGA-257	MAPBGA-289			

View additional information for S32K312EVB-Q172 Development Board for Automotive General Purpose.

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