

STM32H5 MCU SERIES

High performance MCU based on Arm[®] Cortex[®]-M33



The STM32H5 series makes performance and security more accessible

Based on the Arm[®] Cortex[®]-M33, the STM32H5 MCU series runs at 250 MHz. It reaches 375 DMIPS and 1023 CoreMark scores executing from the embedded flash memory.

The STM32H5 series introduces state-of-the-art, scalable security. With STM32H5, you can choose between different security offers, from the secure hardware only, to a full security solution owned & maintained by ST over the product life cycle.

The STM32H5 series offers a large portfolio with 12 packages (from 25 to 176 pins) and supports up to 125°C ambient temperature.

This high performance series is the perfect fit for IoT and industrial applications:

- Smart homes and smart cities
- Factory automation
- Consumer devices and peripherals
- Medical applications

KEY BENEFITS

- Most powerful Arm[®] Cortex[®]-M33 MCU
- Industry-first 32-bit MCU with Arm Cortex-M33 core running as high as 250 MHz.
- Scalable security to address every need
- From the most essential security building blocks to fully certified services maintained by ST.
- Optimized cost/performance trade-off
 - Based on ST's optimized 40 nm process technology. Large choice of memory, peripherals, and package options.

STM32H573 BLOCK DIAGRAM

System		Memory Interfaces			
LDO, SMPS POR/PDR/PVD/BOR		FMC 8-/16-bit (SDRAM, NOR, NAND, TFT-LCD) 1x Octo-SPI			
Xtal oscillators	Arm [®] Cortex [®] -M33				
32 kHz + 4 ~26 MHz Internal RC oscillators	250 MHz	2x SD/SDIO/MMC			
32 kHz + 4,48 & 64 MHz	FPU				
RTC, 128-byte	MPU TrustZone®	Connectivity			
back-up registers	ETM	1x USB 2.0 FS, UCPD			
Analog	2111	6x SPI (including 3x I2S), 2x SAI 3x I ² C, 1x I3C/I2C			
2x 12-bit ADC		HDMI-CEC			
2x 12-bit DACs	2x GPDMA	2x CAN-FD			
1x digital temperature sensor	ART Accelerator™	6x UART, 6x USART			
	CORDIC	1x LPUART			
Crypto/Hash/Security	FMAC	DCMI/PSSI			
AES, SAES	Up to 2 Mbytes of dual	Ethernet MAC 10/100			
SHA-1, SHA-2 (512-bit)	bank flash memory Data Flash	with IEEE 1588			
HMAC, CRC	640 Kbytes RAM	Timers			
RSA,ECC,ECDSA	4 Kbytes of backup RAM	2x 16-bit advanced			
HUK, TRNG, OTFDEC		motor control timers			
96-bit unique ID		2x 32-bit TIM			
Active tampering		6x 16-bit low power timers			
Secure Boot ST-iRot		10x 16-bit TIM			
Secure manufacturing SFI		2x W/D			

STM32TRUST TEE SECURE MANAGER

- A trusted execution environment owned & maintained by ST
- Pre-provisioned for registration to cloud & OEM servers
- A multi-tenant IP protection solution
- Pre-integrated third-party PKI



HARDWARE TOOLS

A full set of development boards enables flexible prototyping as well as full STM32H5 evaluation.



NUCLEO-H503RB Affordable prototyping USB, Arduino uno IF, 64-pin MCU



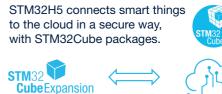
NUCLEO-H563ZI Affordable prototyping USB, Ethernet, Arduino uno IF, 144-pin MCU



STM32H573I-DK* Multi connectivity kit USB, Ethernet, MicroSD, Display, 512-Mbit Octo-SPI flash, Audio, Multi-extension IFs, 176-pin MCU

'Available in June'2023

SOFTWARE TOOLS





Flash memory size / RAM size (bytes)

MIX

Paper from consible sou

FSC* C003379

Order code: FL2303STM32H5

FSC

2 M / 640 K	Legend: Without HW crypto With HW-Crypt & ST-iRoT			STM32H STM32H		STM32H573MI STM32H563MI	STM32H573VI STM32H563VI	STM32H573ZI	STM32H573AI	STM32H573II STM32H563II	
1 M / 640 K	Additional SMPS option Available now, other RPNs will be available in Q2'2023.			STM32H	1562RI		STM32H562VI	STM32H562ZI	STM32H562AI	STM32H562II	
				STM32H	563RG		STM32H563VG	STM32H563ZG	STM32H563AG	STM32H563IG	
I WI / 040 K	+ VEARS			STM32H562RG			STM32H562VG	STM32H562ZG	STM32H562AG	STM32H562IG	
128 K / 32 K	STM32H503EB	STM32H503KB	STM32H503CB	STM32H503RB						Pin c	ount
	WLCSP25	UFQFPN32	LQFP48/ UFQFPN48	LQFP64	VQFPN68	WLCSP80	LQFP100	LQFP144	UFBGA169	LQFP176/ UFBGA176	*



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