



STM32U5 SERIES

The flagship of ultra-low power MCUs with advanced graphics and security



Discover the secure, high-performance, and ultra-low power STM32 microcontrollers that will revolutionize your design.

The STM32U5 series offers advanced power-saving microcontrollers, based on Arm® Cortex®-M33 to meet the most demanding power/ performance requirements for smart applications, including wearables, HMI, personal medical devices, home automation, and industrial sensors.

Offering up to 4 Mbytes of flash memory (dual bank) memory and 3 Mbytes of SRAM, the STM32U5 series of microcontrollers takes performance to the next level with advanced graphics capabilities.

ULTRA-LOW POWER

- Down to 16 μ A/MHz in active mode,
- Down to 110 nA in low power mode
- Low power background autonomous mode (LPBAM)

EMBEDDED SECURITY

- AES and PKA side-channel hardware resistant
- PSA Certified level 3 and SESIP3 target certification
- Arm® Cortex®-M33 with TrustZone®

HIGH INTEGRATION

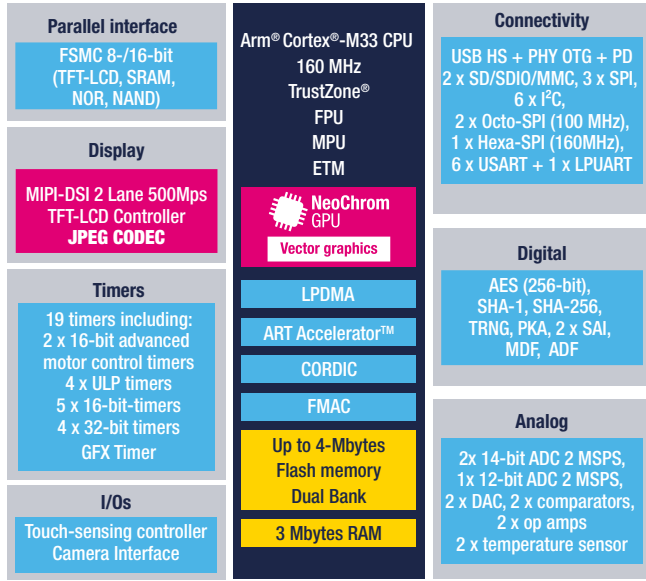
- Up to 4 Mbytes of flash memory
- Up to 3 Mbytes SRAM
- Rich set of peripherals

OUTSTANDING GRAPHICS

2.5D graphic accelerator for

- Scaling
- Rotation
- Perspective correct texture mapping
 - JPEG Codec
- Vector operations:
 - SVG, fonts, maps
- Lower memory consumption
- Higher GUI Performance

STM32U5G9 block diagram



Graphics

All STM32U5 display kits are full supported in TouchGFX ST's free-to-use framework that helps create graphical user interfaces on STM32 microcontrollers.

www.st.com/touchgfx

TouchGFX

Security

The STM32Trust framework combines ST's knowledge, design tools, and ready-to-use software to build strong cyber-protection into new IoT devices, leveraging industry best practices. www.st.com/stm32trust

STM32 Trust

STM32 COMMUNITY

community.st.com/stm32

STM32U5 ONLINE TRAINING

www.st.com/stm32u5-online-training

Hardware tools

Evaluation board

Full-featured development platform



STM32U575I-EV

Discovery kit

Flexible prototyping with wireless connectivity or graphics



B-U585I-I0T02A



STM32U5A9J-DK
STM32U5G9J-DK1



STM32U5G9J-DK2

STM32 Nucleo board

An affordable and flexible way to try out new concepts



NUCLEO-U575ZI-Q
NUCLEO-U5A5ZJ-Q



NUCLEO-U545RE-Q

STM32U5 Portfolio

	STM32U535/545	STM32U595/5A5	STM32U575/585	STM32U599/U5A9	STM32U5F9/U5G9
Core	Arm® Cortex®-M33	Arm® Cortex®-M33	Arm® Cortex®-M33	Arm® Cortex®-M33	Arm® Cortex®-M33
Flash size	512 Kbytes	4 Mbytes	2 Mbytes	4 Mbytes	4 Mbytes
RAM size	274 Kbytes	2.5 Mbytes	786 Kbytes	2.5 Mbytes	3 Mbytes
JPEG codec	-	-	-	-	Yes
Display interface	SPI	SPI, Parallel 8080	SPI, Parallel 8080	RGB, MIPI DSI	RGB, MIPI DSI
Graphics accelerator	-	-	ChromART	 NeoChrom GPU ChromART	 NeoChrom GPU Vector graphics ChromART
Packages available	LQFP from 48 to 100 pins	From LQFP 64 to TFBGA 169 pins	From LQFP 48 to UFBGA 169 pins	From LQFP 100 to TFBGA 216 pins	From LQFP 100 to TFBGA 216 pins



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