

STM32MP13 MPU lines

For entry-level Linux, bare metal or RTOS systems



A cost- & energy-efficient MPU with certified security.

STM32MP13 MPU product lines help you make your applications more power efficient and more secure, in an affordable way. The STM32MP13 MPUs are based on the Arm® Cortex®-A7 core, which runs from 650 MHz up to 1 GHz, enabling real-time performance.

This industrial grade MPU benefits from a strong, user-friendly ecosystem (OpenST Linux, Linux-RT, RTOS) and comes with PCB layout reference designs to accelerate your development.

STM32MP13 MPU lines offer best-inclass energy consumption with over 90% energy savings in standby and V_{BAT} modes, compared to alternative solutions in the market.

ACCESSIBLE

- Strong, user-friendly ecosystem for STM32 MPUs (OpenSTLinux, Linux-RT, RTOS)
- PCB Layout reference designs

SECURE

- Strong robustness
- Certified for faster time to market
 - SESIP Level 3 certification
 - PCI PTS 6.0 pre-certification
 - PSA Level 1 certification
- Cryptographic accelerator
- Memory protections
- Code isolation
- Platform authentication
- Complete security ecosystem

POWER EFFICIENT

- Best-in-class consumption in low power modes
- Over 90% energy savings in Standby and $V_{_{\rm BAT}}$ modes

APPLICATIONS

- Industry 4.0
- Data concentrator and metering
- Point of Sales
- Smart Homes

STM32MP135 block diagram

Arm [©] Cortex [®] -A7 650 MHz up to 1GHz							
128KB L2 cache							
External Memories	External Memories DDR3(L) / LPDDR2 / LPDDR3 16-bit @533MHz						
2x SDMMC	Dual Quad-SPI 16-bit SLC NAND 8-bit EC						
Internal Memories	System RAM 160KB Back up RAM 8KB	OTP fuse 3KB					
Connectivity	Security	System					
2x 10/100M or Gigabit Ethernet GMAC	TrustZone SHA-512, SHA-3, HMAC	3x LDOs Internal and External					
2x USB 2.0 Host/OTG with 2x HS PHY	12x Tamper Pins with 5x active	Oscillators					
Camera interface	Secure RAMs	MDMA + 3x DMA Reset and Clock					
2x CAN FD	Secure Peripherals	2x watchdogs					
DFSDM (4 channels/2 filters)	Secure RTC	135 GPIOs					
5x SPI / 4x I ² S	Analog true RNG 96-bit unique ID	Control 2x 16-bit Advanced PWM control timers					
5x I ² C 4x UART + 4x USART	T°, V, F and 32KHz monitoring						
2x SAI		15x 16-bit timers					
SPDIF	Secure Storage (Hardware Unique Key)	2x 32-bit timers					
Analog	OTF DRAM encode/decode AES-256 w/ SCA,TDES PKA ECC/RSA with SCA	Graphics					
2x 12-bit ADCs	Secure Boot	LCD-TFT Controller					

available for STM32MP135C and STM32MP135F only

STM32MP13x portfolio

Features

Ī	STM32MP135*	Dual Ethernet, 2x ADC, CAN FD, Camera & D	isplay	
	STM32MP133*	Dual Ethernet, 2x ADC & CAN FD		
	STM32MP131*	Single Ethernet & 1xADC		Packages
	TFBGA 289 9 x 9 mm (0.5 mm pitch)	11 x 11 mm 1	.FBGA 289 4 x 14 mm 8 mm pitch)	► size

*650 MHz to 1 GHz with or without crypto and secure boot

Packages can support down to 4-layers PTH PCB (without costly lasers vias)

STM32MP1 MPU embedded software distribution includes:

Linux® distribution based on Yocto, running on the Arm® Cortex®-A processor(s): OpenSTLinux Distribution

OpenSTLINUX Distribution

Hardware tools

Discovery kit to explore the features of the STM32MP135F MPU.



Software tools

STM32MP1 MPU series come with enhanced STM32CubeMX, multi-core IDE solutions (including STM32CubeIDE for device tree management) and STM32CubeProgrammer.





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