

# STM32MP1 Series Microprocessors



## Multicore STM32MP1 architecture accelerates the development of open-source Linux-based applications with real-time and power-constrained subsystems

The STM32MP1 series embeds a dual Arm® Cortex®-A7, a Cortex®-M4 and a 3D GPU. Its flexible architecture allows high processing and real-time tasks in a single chip. Moreover, a large package offering is available to achieve lowest PCB cost structure and smallest footprint. The STM32MP1 comes with a dedicated Power Management companion IC: STPMIC1

The STM32MP1 series drastically reduces development time thanks to ST's mainlined, open-source OpenSTLinux Distribution and our STM32Cube toolset specially upgraded for Cortex®-A7 Linux MPU development. All STM32MP1 peripherals can be seamlessly allocated to either the Cortex®-A7 (Linux) or Cortex®-M4 core (real time).

### TARGETED APPLICATIONS

- Industrial
- Home
- Consumer
- Health and Wellness

### CORE

- Dual Arm® Cortex®-A7 core @ 650 MHz
- 32kB+32kB I/D L1 cache
- 256kB L2 cache
- Arm® Cortex®-M4 core @ 209 MHz

### EXTERNAL MEMORIES SUPPORT

- DDR3, DDR3L, LPDDR2, LPDDR3
- SLC NAND, SPI NAND
- eMMC, SD card, Quad-SPI NOR

### INTERNAL MEMORIES

- 256kB System RAM
- 384kB MCU System RAM
- 64kB MCU Retention RAM

### ANALOG

- 2x 16-bit ADCs
- 2x 12-bit DACs

### GRAPHICS

- 3D GPU OpenGL ES 2.0
- LCD-TFT Controller
- MIPI-DSI® controller

### SECURITY

- TrustZone
- AES 256, TDES
- SHA-256, MD5, HMAC
- Secure Boot, RAMs & peripherals

### OTHER

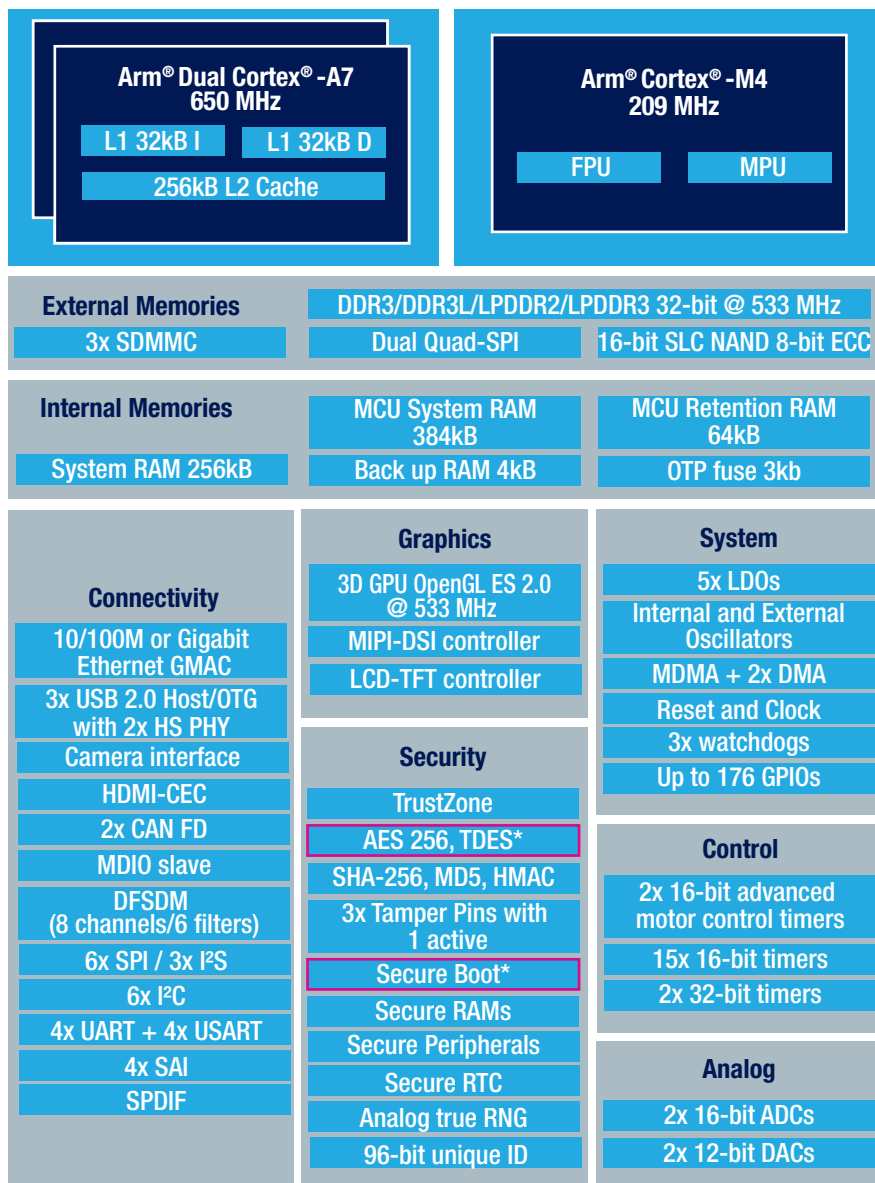
- 37x Communication peripherals
- 29x timers & 3x watchdogs
- 5x LDOs
- Up to 176 GPIOs
- 125°C supported as maximum junction temperature



STM32 MPU wiki by

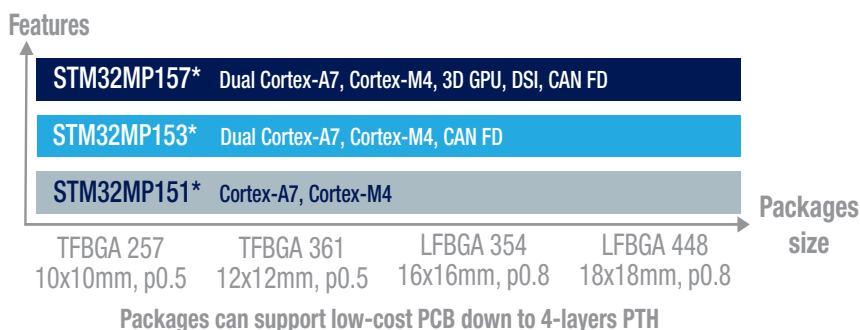
<https://wiki.st.com/stm32mpu>

## STM32MP157 BLOCK DIAGRAM



□ \*available for STM32MP157C only

## STM32MP1 PORTFOLIO



\*With or without HW crypto and secure boot

## HARDWARE TOOLS

A full set of evaluation boards enables flexible prototyping as well as full STM32MP1 evaluation.



STM32MP157A-EV1  
STM32MP157C-EV1  
2 Evaluation boards



STM32MP157A-DK1  
STM32MP157C-DK2  
2 Discovery Kits

## SOFTWARE TOOLS

The STM32MP1 Series comes with enhanced STM32CubeMX, Multi-Core IDE solutions and STM32CubeProgrammer.



## STM32MP1 EMBEDDED SOFTWARE DISTRIBUTION

It includes:

- Linux® distribution based on Yocto, running on the Arm® Cortex®-A processor(s): **OpenSTLinux Distribution**
- STM32Cube MPU Package, running on the Arm® Cortex®-M processor: **STM32CubeMP1 Package**



## SOFTWARE PACKAGES

To optimize development at each stage of a project, 3 OpenSTLinux Distribution software packages let developers select the supports that best meet their needs:

- Starter Package** (STM32MP1Starter) to quickly and easily start with any STM32MP1 microprocessor
- Developer Package** (STM32MP1Dev) to add your own developments on top of the STM32MP1 Embedded Software distribution
- Distribution Package** (STM32MP1Distrib) to create your own Linux® distribution or your own Starter and your own Developer packages



**ST COMMUNITY**

[community.st.com/stm32mpu](http://community.st.com/stm32mpu)