Multicore STM32MP1 architecture is ideal for Open Source Linux based applications with real-time and power constrained subsystems

The STM32MP1 series embed a dual Arm® Cortex®-A7, Cortex®-M4 and a 3D GPU. This flexible architecture allows high processing and real-time tasks in a single chip. It comes with large packages offer supporting lowest PCB cost structure and smallest board space.

STM32MP1 series is drastically reducing development time thanks to OpenSTLinux Distribution as a Mainlined Open Source Linux Distribution and STM32Cube Tools specially upgraded to cope with Linux MPU development.

TARGETED APPLICATIONS
- Industrial
- Home
- Consumer
- Health and Wellness

CORE
- Arm® Dual Cortex®-A7 up to @ 800 MHz
- 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
- System RAM 256kB
- MCU RAM 484kB

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

GRAPHICS
- 3D GPU OpenGL ES 2.0
- LCD-TFT Controller
- MIPI-DSI 2 lanes

SECURITY
- TrustZone
- AES 256, TDES
- SHA-256, MD5, HMAC
- Secure boot, RAMs & Peripherals

OTHER
- Up to 176 GPIOs
- Up to 125°C supported as maximum junction temperature

www.st.com/stm32mp1
STM32MP157 Block diagram

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

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<tbody>
<tr>
<td>STM32MP157A-EV1</td>
<td>STM32MP157A-EV1</td>
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<tr>
<td>2 Evaluation boards</td>
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<td>STM32MP157C-EV1</td>
<td>STM32MP157C-EV1</td>
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<td>STM32MP157A-DK1</td>
<td>STM32MP157C-DK2</td>
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<td>2 Discovery Kits</td>
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### Software tools
STM32MP1 Series come with enhanced STM32CubeMX, Multi-Core IDE solutions (including STM32CubeI DE for device tree management) and STM32CubeProgrammer.

### STM32MP1 Portfolio

#### Features

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<tr>
<td>STM32MP157*</td>
<td>Dual Cortex-A7, Cortex-M4, 3D GPU, DSI, CAN FD</td>
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<tr>
<td>STM32MP153*</td>
<td>Dual Cortex-A7, Cortex-M4, CAN FD</td>
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<tr>
<td>STM32MP151*</td>
<td>Cortex-A7, Cortex-M4</td>
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#### Packages and size

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<tr>
<td>TFBGA 257</td>
<td>TFBGA 361</td>
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<tr>
<td>10x10mm, p.0.5</td>
<td>12x12mm, p.0.5</td>
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<tr>
<td>LFBGA 354</td>
<td>LFBGA 448</td>
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<tr>
<td>16x16mm, p.0.8</td>
<td>18x18mm, p.0.8</td>
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Packages can support low-cost PCB down to 4-layers PTH

*With or without crypto and secure boot

### STM32MP1 Embedded software distribution 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

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**Order code:** FLSTM32MP0320

For more information on ST products and solutions, visit www.st.com/stm32mp1