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## STM32MP15 microprocessor



A quality version of this page, accepted on 25 October 2019, was based off this revision.

In a first part, this article shows the STM32MP157 line block diagram. STM32MP157 belongs to STM32MP1 Series (refer to the list of part numbers provided below).

The second part of this article digs into technical aspects, and provides entry points to:

- STM32MP15 **documentation**
- articles dedicated to **Internal peripherals** that make the transition towards the software frameworks required to control these peripherals
- the list of **boards** supporting STM32MP15 devices
- the supported **software distributions**, that can be downloaded into the STM32MP15 device.

## Contents

1 Introduction .....	3
2 Part number codification .....	4
3 Block diagrams .....	5
4 Technical documentation .....	6
5 Internal peripherals .....	7
6 How to get further with STM32MP15 ecosystem .....	8
6.1 Boards .....	8
6.2 Supported software distributions .....	8
7 References .....	9



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## 1 Introduction

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STM32MP15 microprocessors are based on the Arm<sup>®</sup>Cortex<sup>®</sup>-A7 dual core. They support Trustzone mode for secure operations, a **Vivante GPU** and an Arm<sup>®</sup>Cortex<sup>®</sup>-M4 coprocessor.

Arm<sup>®</sup> Cortex<sup>®</sup>-M4 coprocessor and its peripheral set are directly inherited from the STM32 MCU family <sup>[1]</sup>.



## 2 Part number codification

The table below shows the STM32MP15 microprocessor different part numbers available, together with their corresponding internal peripherals, security options and packages.

- STM32MP15x

	<b>STM32MP15 1 Access line</b>	<b>STM32MP153 Foundation line</b>	<b>STM32MP157 Advanced line</b>
Cortex-A7	Single	Dual	Dual
Cortex-M4	Yes	Yes	Yes
GPU	No	No	Yes
Display	TFT	TFT	TFT/DSI
CAN	No	Yes	Yes

- Security:

STM32MP15xA	Basic
STM32MP15xC	Secure boot + Cryptography (CRYP)

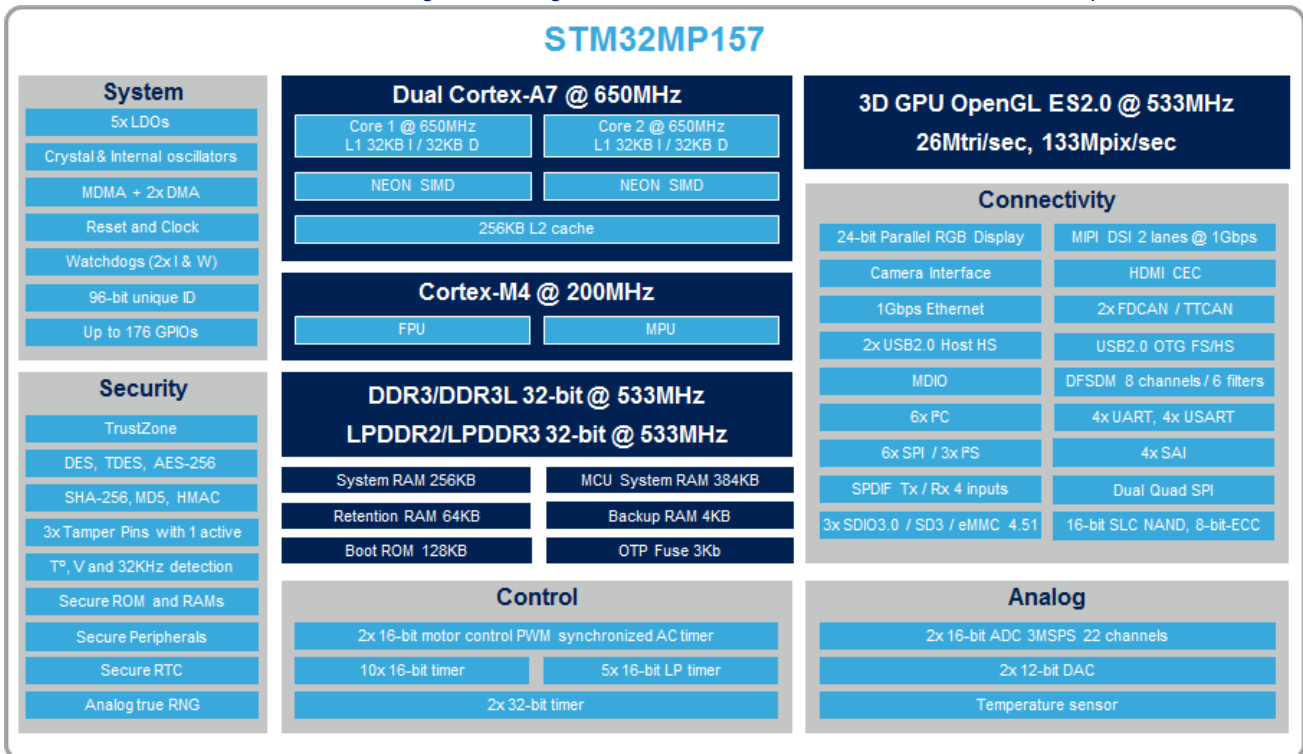
- Packages:

STM32MP15xxAA	TFBGA448 18x18
STM32MP15xxAB	LFBGA354 16x16
STM32MP15xxAC	TFBGA361 12x12
STM32MP15xxAD	TFBGA257 10x10



### 3 Block diagrams

Here below is the STM32MP157 block diagram offering the richest features set of the STM32MP15 microprocessor.





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## 4 Technical documentation

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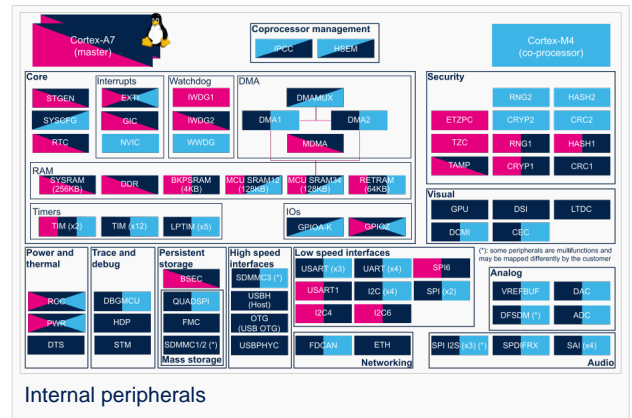
- [STM32MP15 Reference Manual](#): device and internal peripheral user specifications
- [STM32MP15 Datasheet](#): package and pinout descriptions



## 5 Internal peripherals

STM32MP15 peripherals overview article gives a description of all the internal peripherals available on STM32MP15 devices, with direct links to the articles where you can find:

- an overview of each peripheral
- the list of instances available for each peripheral type,
- information on the way each instance can be shared between Arm® Cortex®-A7 and Cortex®-M4 cores,
- direct links to the software frameworks used to control the peripheral from different Arm® cores and security modes such as Cortex®-A7 non secure, Cortex®-A7 secure or Cortex®-M4 (non secure).





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## 6 How to get further with STM32MP15 ecosystem

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### 6.1 Boards

The list of boards that integrate STM32MP15 devices can be found in [STM32MP15 boards](#) article.

### 6.2 Supported software distributions

 <b>STM32MPU Embedded Software distribution</b>	 <b>STM32MPU Embedded Software distribution for Android</b>
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Click the links above to find information on:

- [Distribution composition and associated software architecture](#)
- [Associated release notes](#)





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## 7 References

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- STM32 MCU family

Graphics Processing Units

Microcontroller Unit (MCUs have internal flash memory and are intended to operate with a minimum amount of external support ICs. They commonly are a self-contained, system-on-chip (SoC) designs.)

Display Serial Interface (MIPI<sup>®</sup> Alliance standard)

Controller Area Network (robust bus mainly used for automotive applications)