



## STM32MP15 ecosystem release note



A quality version of this page, approved on 17 November 2020, was based off this revision.

This article describes the content of **STM32MP15-ecosystem-v2.1.0** release of *STM32MPU Embedded Software distributions* and its associated ecosystem.

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## 1 Delivery purpose and scope

The STM32MP15-ecosystem-v2.1.0 release is dedicated to STM32MP15 microprocessors. It is an evolutive maintenance release from STM32MP15-ecosystem-v2.0.0 based on up-to-date community components version (Yocto LTS Dunfell, Kernel 5.4 LTS, U-BOOT v2020-01, TF-A 2.2, OP-TEE 3.9).

As for the previous release, STM32MP15-ecosystem-v2.1.0 aims at:

- providing a full ecosystem for STM32MP15x devices
- working efficiently with STM32MP15 boards, using one of the packages (Starter Package, Developer Package or Distribution Package) developed by STMicroelectronics for STM32 MPUs.

Refer to [Which Package better suits your needs](#) for more information on these packages.

This ecosystem release consists of:

- two STM32MPU distributions
  - the STM32MPU Embedded Software distribution
  - the STM32MPU Embedded Software distribution for Android - **NEW : Delivered in February 2021 as add-on to STM32MP15-ecosystem-v2.1.0, already delivered in November 2020.**
- STM32 referenced tools (more details are provided in the [Referenced tools release notes](#) chapter below)
  - STM32CubeIDE
  - STM32CubeMX
  - STM32CubeProgrammer
  - Keygen tool
  - Signing tool
- Documentation
  - the present user guide in wiki format
  - the documentation package (for more details refer to [Reference documents](#) chapter below)
- Supported STM32MP15 boards (more details are provided in the [Board](#) chapter below)
  - STM32MP15 Evaluation boards (for *STM32MPU Embedded Software distribution* and *STM32MPU Embedded Software distribution for Android*)
  - STM32MP15 Discovery kits (for *STM32MPU Embedded Software distribution*)

More details are provided in the [Board](#) chapter below.



## 2 Intended audience

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The targeted audience is STMicroelectronics customers.



### 3 Licensing

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This software package is licensed under a SOFTWARE LICENSE AGREEMENT FOR ST MATERIALS (SLA). Customers may not use this package except in compliance with the [software license agreement \(SLA\)](#).





## 4 Main features / main highlights

### 4.1 Boards

This STM32MP15-ecosystem-v2.1.0 release supports the same boards as STM32MP15-ecosystem-v2.0.0 plus the STM32MP157D-EV1, STM32MP157F-DK2 and STM32MP157D-DK1 new boards.

Boards	PCBs list	Content	Availability
STM32MP157C-EV1 board (board with Crypto)	<ul style="list-style-type: none"> <li>• MB1263C (Daughter)</li> <li>• MB1262C (Mother)</li> <li>• MB1230C (Display)</li> <li>• MB1379A (Camera)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157CAA3 Rev.B</li> <li>• PMIC STPMIC1APQR cut1.2</li> <li>• External oscillator</li> </ul>	Jan '19
STM32MP157A-EV1 board (board without Crypto)	<ul style="list-style-type: none"> <li>• MB1263C (Daughter)</li> <li>• MB1262C (Mother)</li> <li>• MB1230C (Display)</li> <li>• MB1379A (Camera)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157AAA3 Rev.B</li> <li>• PMIC STPMIC1APQR cut1.2</li> <li>• External oscillator</li> </ul>	Jan '19
STM32MP157F-EV1 board (board with Crypto ; CPU at 800MHz)	<ul style="list-style-type: none"> <li>• MB1263C (Daughter)</li> <li>• MB1262C (Mother)</li> <li>• MB1230C (Display)</li> <li>• MB1379A (Camera)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157FAA3 Rev.Z</li> <li>• PMIC STPMIC1APQR cut2.0</li> <li>• External oscillator</li> </ul>	Jun '20
 STM32MP157D-EV1 board (board without Crypto ; CPU at 800MHz)	<ul style="list-style-type: none"> <li>• MB1263C (Daughter)</li> <li>• MB1262C (Mother)</li> <li>• MB1230C (Display)</li> <li>• MB1379A (Camera)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157DAA3 Rev.Z</li> <li>• PMIC STPMIC1APQR cut2.0</li> <li>• External oscillator</li> </ul>	Nov '20
	<ul style="list-style-type: none"> <li>• MB1272C (Mother)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157CAC3 Rev.B</li> </ul>	



Boards	PCBs list	Content	Availability
STM32MP157C-DK2 board (board with Crypto)	<ul style="list-style-type: none"> <li>• MB1407B (Display)</li> </ul>	<ul style="list-style-type: none"> <li>• PMIC STPMIC1APQR cut1.2</li> <li>• External oscillator</li> </ul>	Jan '19
 STM32MP157F-DK2 board (board with Crypto ; CPU at 800MHz)	<ul style="list-style-type: none"> <li>• MB1272C (Mother)</li> <li>• MB1407B (Display)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157FAC3 Rev.Z</li> <li>• PMIC STPMIC1APQR cut2.0</li> <li>• External oscillator</li> </ul>	Nov '20
STM32MP157A-DK1 board (board without Crypto)	<ul style="list-style-type: none"> <li>• MB1272C (Mother)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157AAC3 Rev.B</li> <li>• PMIC STPMIC1APQR cut1.2</li> <li>• External oscillator</li> </ul>	Jan '19
 STM32MP157D-DK1 board (board without Crypto ; CPU at 800MHz)	<ul style="list-style-type: none"> <li>• MB1272C (Mother)</li> </ul>	<ul style="list-style-type: none"> <li>• STM32MP1 STM32MP157DAC3 Rev.Z</li> <li>• PMIC STPMIC1APQR cut2.0</li> <li>• External oscillator</li> </ul>	Nov '20

## Information

STLINK in EVAL and DISCO Rev.C boards integrates the latest firmware STLINK (V2J32M22) which requires upgraded USB PC drivers - [Windows USB driver](#)

## 4.2 Embedded software

### 4.2.1 OpenSTLinux (Cortex<sup>®</sup>-A7)

Openstlinux-5.4-dunfell-mp1-20-11-12 is the new version delivered with the STM32MP15-ecosystem-v2.1.0 release. This software set consists of the following components:

- Build process
  - OpenEmbedded LTS Dunfell (v3.1.3)
  - GCC version v9.3
- Software components
  - Kernel version LTS v5.4.56
  - TF-A version v2.2
  - U-Boot version v2020.01
  - OP-TEE version v3.9.0
  - OpenOCD version v0.10.0-r9
- Applicative components
  - Weston version v8.0.0
  - GStreamer version v1.16.2



- GCnano version v6.4.3 - **NEW** version versus STM32MP15-ecosystem-v2.0.0 release
- **Main NEW features of the STM32MP15-ecosystem-v2.1.0 release**
  - Authentication service for co-processor firmware
    - see [How\\_to\\_protect\\_the\\_coprocessor\\_firmware](#) article
  - SCMI support in Linux and U-boot for remote-proc
  - Add pm runtime support for SAI Linux driver
  - Duty cycle management in Clock linux driver and in ADC linux driver
  - New Vivante gcnano 6.4.3 library
  - Full FMC External Bus Interface (controller // NOR + controller // NAND) in Linux
    - see [FMC\\_device\\_tree\\_configuration](#) article
    - see [FMC\\_internal\\_peripheral](#) article
  - Ubuntu 20.04 support
  - X11 sample image was removed from OpenSTLinux distribution as X11 will be tagged as a future "Abandonware" versus Wayland
    - see [\[link\]](#)
  - QT eglfs sample image was improved to reach better performances
  - QT wayland sample image was added: more relevant for the OpenSTLinux distribution
    - see [How\\_to\\_build\\_and\\_use\\_an\\_SDK\\_for\\_QT](#)

### Warning

Basic boot has been removed since STM32MP15-ecosystem-v2.0.0, if you were using basic boot with U-BOOT-SPL to load U-BOOT and the Kernel, then you need to use now the ST reference boot scheme in replacing U-BOOT-SPL by TF-A as FSBL as explained in [Boot chain overview](#).

- **Internal peripheral assignment at boot time**

At boot time, you can select two kernel configurations:

  - Configuration 1: all internal peripherals are assigned to Cortex-A7 for Linux drivers. Cortex-M4 coprocessing firmware TTY is executed by default.
  - Configuration 2: some internal peripherals are assigned to Cortex-M4 to execute Cortex-M4 delivered examples on the board (EVAL or DISCO) see ([How to run Cortex-M4 examples](#)).

Configuration 1 is activated by default if you do not specify "2" in the U-Boot console.  
More information can be found in the [How to assign an internal peripheral to a runtime context](#) article.

#### 4.2.2 STM32CubeMP1 (Cortex<sup>®</sup>-M4)

- STM32CubeMP1-v1.3.0 version - **NEW** version versus STM32MP15-ecosystem-v2.0.0 release
- **Main NEW features of STM32CubeMP1-v1.3.0, delivered within STM32MP15-ecosystem-v2.1.0 release**
  - General updates to fix known defects and enhancements implementation for HAL, LL, CMSIS, BSP
  - New SMARTCARD HAL driver

#### 4.2.3 STM32MP15 distribution for Android (Cortex<sup>®</sup>-A7)

STM32MP15 distribution for Android™ v2.0.0 (**st-android-11.0.0-2021-01-29** tag) is the version delivered within STM32MP15-Ecosystem-v2.1.0 release.

The objectives of this release are the following:

- **Android™ 11.0.0** porting on OpenSTLinux BSP v2.1.0 (TF-A, U-Boot, OP-TEE, Linux kernel), provided as **demonstrator**
- Android™ certifications are not ensured





See STM32MP15 distribution for Android release note for more details.

### 4.3 STM32CubeProgrammer, Signing tool, Keygen

STM32CubeProgrammer v2.6.0 is the version delivered within the STM32MP15-ecosystem-v2.1.0 release. This is an evolutive maintenance release for STM32CubeProgrammer.

- **Main NEW features of STM32CubeProgrammer-v2.6.0, delivered within STM32MP15-ecosystem-v2.1.0 release**
  - Ubuntu 20.04 support thanks to JRE OpenJDK integration
- **Features already available in previous version**
  - STM32CubeProg installer includes STM32CubeProgrammer, Keygen and Signing tools
  - Flashload SDCard, eMMC, NAND, NOR images through USB and UART for STM32MP157C-EV1, STM32MP157A-EV1, STM32MP157A-DK1, STM32MP157C-DK2 boards
  - Private and public key generation
  - Image signatures
  - Flashlayout file format change
  - STM32MP1 fuse management (with console interface only)
  - PMIC NVM management (with console interface only)
  - SSP (Secure Secrets Provisioning) UI.

### 4.4 STM32CubeMX

STM32CubeMX-v6.1 is the version delivered within STM32MP15-ecosystem-v2.1.0 release

- **Main NEW features of STM32CubeMX-v6.1, delivered within the STM32MP15-ecosystem-v2.1.0 release**
  - New Boards 800 MHz support - STM32MP157F-DK2
    - STM32MP157D-DK1 and STM32MP157D-EV1 boards not yet supported - #STM32CubeMX\_2
  - Ubuntu 20.04 support
  - Device tree (A7)
    - RS485 UART support
    - FMC EBI mode support
    - Device tree compliance with `openstlinux-5.4-dunfell-mp1-20-11-12` tag
- **Features already available in previous version**
  - STM32CubeMP1 (M4): Compliance with STM32CubeMP1 v1.2.0
  - I/O muxing and clock tree configuration
  - STM32MP1 contexts management (A7 non-secure, A7 secure, M4)
  - STM32MP1Cube code generation
  - Tuning of DDR settings
  - Device tree code generation
    - dtsti and header file inclusions
    - pinctrl and clock generation
    - System-on-chip device node positioning
    - multi-core related configurations (ETZPC binding, resources manager binding, peripheral assignment).
    - DMA config generation - DMA nodes

#### Information

Note: The other device tree parameters must be filled in manually through user section tags (from /\*



```
USER CODE BEGIN <node> */ to /* USER CODE END <node> */)
```

## 4.5 STM32CubeIDE

STM32CubeIDE-v1.5.0 is the version delivered within STM32MP15-ecosystem-v2.1.0 release

- **Main NEW features of STM32CubeIDE v1.5.0, delivered within the STM32MP15-ecosystem-v2.1.0 release**
  - New Boards 800 MHz support - STM32MP157F-DK2
    - STM32MP157D-DK1 and STM32MP157D-EV1 boards not yet supported - #STM32CubeIDE\_2
  - Ubuntu 20.04 support
  - A toolchain manager now available with v7 by default (STM32CubeIDE v1.4.0)
- **Features already available in previous version**
  - STM32CubeMP1 v1.2.0 M4 support as STM32MP15-ecosystem-v1.2.0 release
  - Cortex-M4 STM32CubeMP1 in "Production mode" and "Engineering mode"
  - Cortex-M4 Firmware compilation, loading and debugging
  - PC Linux with Ethernet (recommended) or serial link
  - PC Windows with Ethernet or Ethernet over USB link
  - Cortex-M4 Firmware installation directory configurable.
  - OpenSTLinux developer package support with
    - TF-A component project with native dt selected or external dt (for example, generated from CubeMX)
    - U-BOOT component project with native dt selected or external dt (for example, generated from CubeMX)
    - OP-TEE component project with native dt selected or external dt (for example, generated from CubeMX)
    - KERNEL component project with native dt selected or external dt (for example, generated from CubeMX)
    - KERNEL artefacts update on running target
    - refer to [How\\_to\\_manage\\_OpenSTLinux\\_project\\_in\\_STM32CubeIDE](#) article

## 4.6 Miscellaneous

- Detailed features are available in the release notes of the different components of this delivery.
- See sections [STM32MPU Embedded Software distribution detailed release notes](#), [Referenced tools release notes](#) and [Reference documents](#)



## 5 Main restrictions

### 5.1 Embedded software

#### 5.1.1 OpenSTLinux (Cortex<sup>®</sup>-A7)

- M-CAN Bus is not functional if power management is activated ("sleep" state defined in pinctrl): the issue is corrected thanks to this patch

#### 5.1.2 STM32CubeMP1 (Cortex<sup>®</sup>-M4)

- Examples projects for STM32MP157X-EV1 not migrated on STM32CubeIDE and still on SW4STM32 (deprecated) – To use them on STM32CubeIDE, need to use STM32CubeIDE import menu
- Please use the HAL RTC with caution since this driver is also used by Linux. To remove any risk of contention between Linux and the HAL, proceed as follows:
  - The write protect (wpr) must be disabled by default and it must never be enabled in any driver (Linux nor HAL).
  - The HAL must use only Alarm B, since Linux uses Alarm A.
  - The RTC interrupt must be shared between Linux and the HAL to be able to receive alarm notifications on both sides.

### 5.2 STM32CubeProgrammer, Signing tool and Keygen

- Key generation is not functional with STM32MP\_KeyGen\_CLI on Linux under Ubuntu 16.04 (functional with Ubuntu 18.04 and upper versions).

### 5.3 STM32CubeMX

- **Warning:** To generate a device tree for new Boards STM32MP157D-DK1, STM32MP157D-EV1, please select respectively the ST boards project STM32MP157F-DK2, STM32MP157F-EV1. The generated device trees will work but with some probe errors on Crypto, Display DSI, Wifi, BT linux drivers for STM32MP157D-DK1 board and on Crypto Linux driver for STM32MP157D-EV1
- **Warning:** When opening a previous project built with STM32CubeMX version older than V6.1, the migration does not take into account the user section part. This part needs to be updated manually according the **Openstlinux-5.4-dunfell-mp1-20-11-12** manifest.

### 5.4 STM32CubeIDE

- **Warning:** v9 toolchain already available and installable through the toolchain manager but no yet validated with STM32CubeMP1
- **Warning:** To use an project based on new Boards STM32MP157D-DK1, STM32MP157D-EV1, please select respectively the ST boards project STM32MP157F-DK2, STM32MP157F-EV1. The generated device trees by STM32CubeMX will work but with some probe errors on Crypto, Display DSI, Wifi, BT Linux drivers for STM32MP157D-DK1 board and on Crypto Linux driver for STM32MP157D-EV1 board.
- Using OpenOCD with ST-LINK does not check and force ST-LINK firmware update at debug launch. It is therefore recommended to manually update to the latest ST-LINK firmware for the best debug experience. Use the Help > ST-LINK Upgrade menu".



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## 5.5 Miscellaneous

Restriction lists are available in each subcomponent release note. They are available in the following chapters in the present article:

- [STM32MPU Embedded Software distribution detailed release notes](#)
- [Referenced tools release notes](#)

Moreover, the software workarounds implemented in the ecosystem to provide solutions to the STM32MPU device errata are listed in [STM32MP15 ecosystem errata sheet](#).



## 6 Minor release updates

STMicroelectronics regularly delivers updates through the following github<sup>®</sup> components: tf-a, u-boot, optee-os, Linux kernel. You can decide to incorporate them into your Developer Package (refer to STM32MP1 Developer Package or Distribution Package below).

To update the Distribution package, proceed as follows:

1. Switch your Distribution package reference source code to github mode.
2. Use the `devtool modify <recipe name>` command to have direct access to the source code git repository used by the build process.
3. In the freshly cloned source code, check out the revision you want to start from via `git checkout -b WORK <github® TAG>`.

STMicroelectronics also delivers dedicated fixes on layers through github<sup>®</sup>. These changes can be integrated (via git commands) into your local STM32MP1 Distribution Package environment. Below the github<sup>®</sup> links corresponding to each layers:

- [meta-st-stm32mp](#)
- [meta-st-openstlinux](#)
- [meta-st-stm32mp-addons](#)

### 6.1 v2.1.3

- Update to Yocto 3.1.9 (2020-04.9-dunfell)
- correct syntax changed for fit

Layer name	github <sup>®</sup> commit SHA1 reference
meta-st-stm32mp	86260861f4bffd9fb97541e83d5f1c2db34e2e84
oe-manifest	0acb085ce0c7dfe01cd03c766620eba8851f7cb0

```
repo init -u https://github.com/STMicroelectronics/oe-manifest -b dunfell-2.x
repo sync
```

### 6.2 v2.1.2

Component	Recipe name	new github <sup>®</sup> release
tf-a	tf-a-stm32mp	<b>v2.2-stm32mp-r2.2</b>
u-boot	u-boot-stm32mp	<i>v2020.01-stm32mp-r2.1</i>
kernel	linux-stm32mp	<b>v5.4-stm32mp-r2.2</b>
optee-os	optee-os-stm32mp	<b>3.9.0-stm32mp-r2.2</b>



### 6.3 v2.1.1

Component	Recipe name	new github® release
tf-a	tf-a-stm32mp	<b>v2.2-stm32mp-r2.1</b>
u-boot	u-boot-stm32mp	<b>v2020.01-stm32mp-r2.1</b>
kernel	linux-stm32mp	<b>v5.4-stm32mp-r2.1</b>
optee-os	optee-os-stm32mp	<b>3.9.0-stm32mp-r2.1</b>



## 7 Reference documents

All the resources for the STM32MP1 Series are located in the Resources area of the STM32MP1 Series web page.

The resources below are referenced in some of the articles of this user guide.

### Information

The different **STM32MP15** microprocessor **part numbers** available (with their corresponding internal peripherals, security options and packages) are described in the [STM32MP15 microprocessor part numbers](#).



means that the document (or its version) is new compared to what was delivered within the previous ecosystem release.


Reference	Name	Link	Version
<b>Application notes</b>			
AN4803	High-speed SI simulations using IBIS and board-level simulations using HyperLynx® SI on STM32 MCUs and MPUs	<a href="#">AN4803.pdf</a>	v2.0
AN5027	Interfacing PDM digital microphones using STM32 MCUs and MPUs	<a href="#">AN5027.pdf</a>	v2.0
AN5031	Getting started with STM32MP15 Series hardware development	<a href="#">AN5031.pdf</a>	v2.0
AN5036	Thermal management guidelines for STM32 applications	<a href="#">AN5036.pdf</a>	v3.0
AN5109	STM32MP1 Series using low-power modes	<a href="#">AN5109.pdf</a>	 v4.0
AN5122	STM32MP1 Series DDR memory routing guidelines	<a href="#">AN5122.pdf</a>	v3.0
AN5168	STM32MP1 series DDR configuration	<a href="#">AN5168.pdf</a>	v1.0
AN5225	USB Type-C™ Power Delivery using STM32xx Series MCUs and STM32xxx Series MPUs	<a href="#">AN5225.pdf</a>	 v3.0
AN5253	Migration of microcontroller applications from STM32F4x9 lines to STM32MP151, STM32MP153 and STM32MP157 lines microprocessor	<a href="#">AN5253.pdf</a>	v1.0
AN5256	STM32MP151, STM32MP153 and STM32MP157 discrete power supply hardware integration	<a href="#">AN5256.pdf</a>	v2.0
AN5260	STM32MP151/153/157 MPU lines and STPMIC1B integration on a battery powered application	<a href="#">AN5260.pdf</a>	v1.0






Reference	Name	Link	Version
<b>Application notes</b>			
AN5275	USB DFU/USART protocols used in STM32MP1 Series bootloaders	<a href="#">AN5275.pdf</a>	v1.0
AN5284	STM32MP1 series system power consumption	<a href="#">AN5284.pdf</a>	v1.0
AN5348	FDCAN peripheral on STM32 devices	<a href="#">AN5348.pdf</a>	v1.0
AN5431	The STPMIC1 PCB layout guidelines	<a href="#">AN5431.pdf</a>	v1.0
AN5438	STM32MP1 Series lifetime estimates	<a href="#">AN5438.pdf</a>	v1.0
AN5510	Overview of the secure secret provisioning (SSP) on STM32MP1 Series	<a href="#">AN5510.pdf</a>	v1.0
<b>Datasheets<sup>[1]</sup></b>			
DS12505	STM32MP157C/F datasheet (secure)	<a href="#">DS12505.pdf</a>	 v4.0
DS12504	STM32MP157A/D datasheet (basic)	<a href="#">DS12504.pdf</a>	 v4.0
DS12503	STM32MP153C/F datasheet (secure)	<a href="#">DS12503.pdf</a>	 v4.0
DS12502	STM32MP153A/D datasheet (basic)	<a href="#">DS12502.pdf</a>	 v4.0
DS12501	STM32MP151C/F datasheet (secure)	<a href="#">DS12501.pdf</a>	 v4.0
DS12500	STM32MP151A/D datasheet (basic)	<a href="#">DS12500.pdf</a>	 v4.0
DS12792	STPMIC1 datasheet	<a href="#">stpmic1.pdf</a>	 v5.0
<b>Errata sheets</b>			
ES0438	STM32MP15xx device errata	<a href="#">ES0438.pdf</a>	v5.0
<b>Reference manuals<sup>[1]</sup></b>			
RM0436	STM32MP157 reference manual (STM32MP157xxx advanced Arm <sup>®</sup> -based 32-bit MPUs)	<a href="#">RM0436.pdf</a>	v4.0
RM0442	STM32MP153 reference manual (STM32MP153xxx advanced Arm <sup>®</sup> -based 32-bit MPUs)	<a href="#">RM0442.pdf</a>	v4.0
	STM32MP151 reference manual	<a href="#">RM04</a>	





Reference	Name	Link	Version
<b>Application notes</b>			
RM0441	(STM32MP151xxx advanced Arm <sup>®</sup> -based 32-bit MPUs)	<a href="#">41.pdf</a>	v4.0
<b>Boards schematics</b>			
MB1262 schematics	STM32MP157C-EV1 motherboard schematics MB1262-C01 board schematic (Evaluation board)	<a href="#">MB1262-C01.pdf</a>	v1.0
MB1263 schematics	STM32MP157C-EV1 daughterboard schematics MB1263-C01 board schematic (Evaluation board)	<a href="#">MB1263-C01.pdf</a>	v1.0
 MB1263 schematics	STM32MP157F-EV1 daughterboard schematics MB1263-C04 board schematic (Evaluation board)	<a href="#">MB1263-C04.pdf</a>	v4.0
MB1230 schematics	DSI 720p LCD display daughterboard schematics MB1230-C board schematic (Evaluation board)	<a href="#">MB1230-C.pdf</a>	v1.1
MB1379 schematics	Camera daughterboard schematics MB1379-A01 board schematic (Evaluation board)	<a href="#">MB1379-A01.pdf</a>	v1.0
MB1272 schematics	STM32MP157x-DKx motherboard schematics MB1272-DK2-C01 board schematic (Discovery kit)	<a href="#">MB1272-C01.pdf</a>	v1.0
MB1407 schematics	STM32MP157x-DKx daughterboard schematics MB1407-LCD-C01 board schematic (Discovery kit)	<a href="#">MB1407-C01.pdf</a>	v1.0
<b>Boards user manuals</b>			
UM2535	STM32MP157x-EV1 evaluation board user manual	<a href="#">UM2535.pdf</a>	v2.0
UM2534	STM32MP157x-DKx discovery board user manual	<a href="#">UM2534.pdf</a>	v1.0
<b>Tools user manuals</b>			
UM2563	STM32CubeIDE installation guide	<a href="#">UM2563.pdf</a>	v1.0
UM2579	Migration guide from System Workbench to STM32CubeIDE	<a href="#">UM2579.pdf</a>	v1.0
UM2553	STM32CubeIDE quick start guide	<a href="#">UM2553.pdf</a>	v1.0
AN5360	Getting started with projects based on the STM32MP1 Series in STM32CubeIDE	<a href="#">AN5360.pdf</a>	v1.0



Reference	Name	Link	Version
<b>Application notes</b>			
UM2609	Description of the integrated development environment for STM32 products	<a href="#">UM2609.pdf</a>	v1.0
UM1718	STM32CubeMX user manual	<a href="#">UM1718.pdf</a>	 v32.0
UM2237	STM32CubeProgrammer tool user manual	<a href="#">UM2237.pdf</a>	 v12.0
UM2238	STM32 Trusted Package Creator tool user manual	<a href="#">UM2238.pdf</a>	 v7.0
UM2542	STM32 Series Key Generator tool user manual	<a href="#">UM2542.pdf</a>	v1.0
UM2543	STM32 Series Signing tool user manual	<a href="#">UM2543.pdf</a>	v1.0



## 8 How to download the software and start with this release?

The list of embedded software packages available for download depends on the selected package.

The table below provides the available board part numbers as well as information in order to:

- get started with one of the three available Packages (Starter, Developer or Distribution Package)
- get started with the board
- find the associated embedded software distributions
- **download** source code
- **build** a piece of embedded software.

Board part number	Jump to
<b>STM32MP157x-EV1</b> Evaluation board	<a href="#">STM32MP15 Evaluation boards - getting started, including software download</a>
<b>STM32MP157x-DKx</b> Discovery kit	<a href="#">STM32MP15 Discovery kits - getting started, including software download</a>



## 9 STM32MPU Embedded Software distribution detailed release notes

The table below lists the software packages available in the STM32MPU Embedded Software distributions, and provides the corresponding release notes.

The release notes give more information and details about the features and content of the packages.

They do not explain how to download the software. Refer to [How to get the software and start with this release](#).

Firmware	Release note	Version
OpenSTLinux Distribution	<a href="#">STM32MP15 OpenSTLinux release note - v2.1.0</a>	openstlinux-5.4-dunfell-mp1-20-11-12
STM32Cube MPU Package	<a href="#">STM32CubeMP1 Package release note - v1.3.0</a>	STM32CubeMP1-v1.3.0



## 10 STM32MPU Embedded Software distribution for Android detailed release notes

The table below lists the software packages available in the *STM32MPU Embedded Software distributions for Android*, and provides the corresponding release notes.

The release notes give more information and details about the features and content of the packages.

They do not explain how to download the software. Refer to [How to get the software and start with this release](#).

Firmware	Release note	Version
STM32MPU Distribution for Android	<a href="#">STM32MP15 distribution for Android release note - v2.0.0</a>	st-android-11.0.0-2021-01-29
STM32Cube MPU Package	<a href="#">STM32CubeMP1 Package release note - v1.3.0</a>	STM32CubeMP1-v1.3.0



## 11 Referenced tools release notes

The table below lists the available tools, and provides links to the corresponding release notes.

Each release note gives information on how to install and use the corresponding tool.

The set of tools that can be downloaded depends on the package that is used (double check [Which Package better suits your needs](#) article for more information on each package).

Tools	Release notes	Host PC		Which Package may need the tool ?		
		Linux version	Windows version	Starter Package	Developer Package	Distribution Package
STM32MPU ecosystem v2.1.0 release	Availability on ST.com targeted on 12th November 2020					
STM32Cube IDE	<a href="#">STM32Cube IDE_release_note</a>	1.5.0	1.5.0			
STM32Cube MX	<a href="#">STM32Cube MX release note</a>	from 6.1	from 6.1			
STM32Cube Prog	<a href="#">STM32Cube Programmer release note</a>	2.6.0	2.6.0			
Keygen	<a href="#">KeyGen release note</a>	1.0.0	1.0.0			
Signing tool	<a href="#">Signing tool release note</a>	1.0.0	1.0.0			



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## 12 References

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- 1.01.1 The part numbers are specified in STM32MP15 microprocessor part numbers



## 13 Archives

STM32MP15 release	Ecosystem release note
STM32MP15-Ecosystem-v2.0.0	<a href="#">STM32MP15 ecosystem release note - v2.0.0</a>
STM32MP15-Ecosystem-v1.2.0	<a href="#">STM32MP15 ecosystem release note - v1.2.0</a> page for the v1 ecosystem releases (in archived wiki)
STM32MP15-Ecosystem-v1.1.0	<a href="#">STM32MP15 ecosystem release note - v1.1.0</a> page for the v1 ecosystem releases (in archived wiki)
STM32MP15-Ecosystem-v1.0.0	<a href="#">STM32MP15 ecosystem release note - v1.0.0</a> page for the v1 ecosystem releases (in archived wiki)

Trusted Firmware for Arm Cortex-A

Open Portable Trusted Execution Environment

Power Management Integrated Circuit

Central processing unit

Evaluation board

Discovery kit

Cortex<sup>®</sup>

Das U-Boot -- the Universal Boot Loader (see [U-Boot\\_overview](#))

System control and management interface

Linux<sup>®</sup> is a registered trademark of Linus Torvalds.

Serial Audio Interface (Mechanism used to transfer non-buffered audio data between processors and/or audio converters.)

Analog-to-digital converter. The process of converting a sampled analog signal to a digital code that represents the amplitude of the original signal sample.

Secondary Program Loader, *Also known as **U-Boot SPL***

First Stage Boot Loader

TeleTYpewriter

Hardware Abstraction Layer

Low layer of STM32Cube

Cortex Microcontroller Software Interface Standard

Board support package

former spelling for e•MMC ('e' in italic)





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Universal Asynchronous Receiver/Transmitter

Non Volatile Memory, like a flash memory

Secure Secret Provisioning

Secure secrets provisioning

User Interface

Doubledata rate (memory domain)

Extended TrustZone Protection Controller

Direct Memory Access

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

Real Time Clock

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

BlueTooth

USB port or connector

Microprocessor Unit

Device Firmware Upgrade

Universal Synchronous/Asynchronous Receiver/Transmitter

Printed Circuit Board

*Arm<sup>®</sup> is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.* **arm**