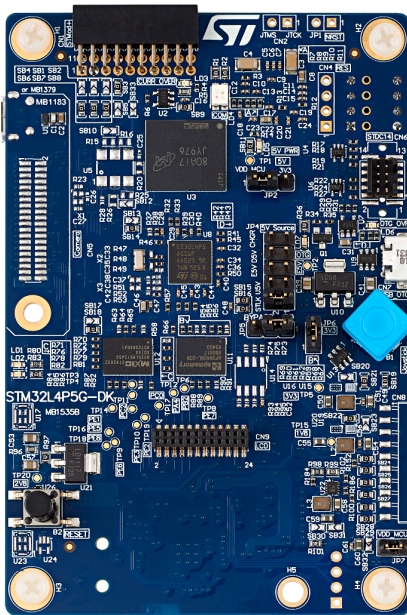


## Discovery kit with STM32L4P5AG MCU



STM32L4P5G-DK top view. Picture is not contractual.

Product status link

[STM32L4P5G-DK](#)

### Features

- STM32L4P5AGI6PU Arm® Cortex® core-based microcontroller featuring 1 Mbyte of Flash memory and 320 Kbytes of RAM in UFBGA169 package
- 240x240 64-bit color LCD with RGB interface (connector only)
- 4-Gbyte onboard eMMC
- On-board current measurement
- SAI audio codec (footprint only)
- ST-MEMS digital microphone (footprint only)
- 512-Mbit Octo-SPI NOR Flash memory with DDR mode
- 64-Mbit Octo-SPI PSRAM memory with DDR mode
- 2 user LEDs
- Reset buttons
- 4-direction joystick with a selection button
- Board connectors:
  - Camera (8-bit) (footprint only)
  - Stereo headset jack (footprint only)
  - USB with Micro-AB
  - User interface through USB Virtual COM port
  - Arm® Cortex® 10-pin 1.27 mm-pitch debug connector over STDC14 footprint
  - ARDUINO® Uno V3 expansion connector
  - STMod+ expansion connector
- Flexible power-supply options:
  - ST-LINK USB V<sub>BUS</sub>, USB OTG connector, or external sources
- On-board STLINK-V3E debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Microcontroller supply voltage: fixed 3.3 V and extern SMPS to generate Vcore logic supply
- Comprehensive free software libraries and examples available with the STM32CubeL4 MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR™, Keil®, and GCC-based IDEs

## Description

The [STM32L4P5G-DK](#) Discovery kit is a complete demonstration and development platform for the STMicroelectronics Arm® Cortex®-M4 core-based STM32L4P5AGI6PU microcontroller with four I<sup>2</sup>C buses, three SPI and six USART ports, CAN port, two SAI ports, 12-bit ADC, 12-bit DAC, internal 320-Kbyte SRAM and 1-Mbyte Flash memory, two Octo-SPI memory interfaces, touch-sensing capability, USB OTG FS port, LCD-TFT controller, flexible memory controller (FMC), 8- to 14-bit DCMI interface and JTAG debugging support.

The STM32L4P5G-DK Discovery kit is used as a reference design for user application development before porting to the final product.

The full range of hardware features on the board helps the user to evaluate all the peripherals (USB OTG FS, Octo-SPI Flash and PSRAM memory device, eMMC, and others) and to develop applications. The ARDUINO® Uno V3 and STMod+ connectors provide easy connection to extension shields or daughterboards for specific applications.

STLINK-V3E is integrated into the board, as an embedded in-circuit debugger and programmer for the STM32 MCU and the USB Virtual COM port bridge.

# 1 Ordering information

To order the STM32L4P5G-DK Discovery kit, refer to [Table 1](#). For a detailed description, refer to its user manual on the product web page. Additional information is available from the datasheet and reference manual of the target STM32.

**Table 1. List of available products**

Order code	Board reference	User manual	Target STM32
STM32L4P5G-DK	MB1535	UM2651	STM32L4P5AGI6PU

## 1.1 Product marking

Evaluation tools marked as “ES” or “E” are not yet qualified and therefore not ready to be used as reference design or in production. Any consequences deriving from such usage will not be at ST charge. In no event, ST will be liable for any customer usage of these engineering sample tools as reference designs or in production.

“E” or “ES” marking examples of location:

- On the targeted STM32 that is soldered on the board (for illustration of STM32 marking, refer to the STM32 datasheet “Package information” paragraph at the [www.st.com](http://www.st.com) website).
- Next to the evaluation tool ordering part number that is stuck or silk-screen printed on the board.

This board features a specific STM32 device version, which allows the operation of any bundled commercial stack/library available. This STM32 device shows a “U” marking option at the end of the standard part number and is not available for sales.

In order to use the same commercial stack in his application, a developer may need to purchase a part number specific to this stack/library. The price of those part numbers includes the stack/library royalties.

## 1.2 Codification

The meaning of the codification is explained in [Table 2](#). The order code is mentioned on a sticker placed on the top side of the board.

**Table 2. Codification explanation**

STM32TXXY-DK	Description	Example: STM32L4P5G-DK
STM32TT	MCU series in STM32 Arm Cortex MCUs	STM32L4+ Series
XX	MCU product line in the series	STM32L4P5
Y	STM32 Flash memory size: • G for 1 Mbyte	1 Mbyte

## 2 Development environment

The STM32L4P5G-DK runs with the STM32L4P5AGI6PU 32-bit microcontroller based on the Arm® Cortex®-M4 core.

*Note:* Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



### 2.1 System requirements

- Windows® OS (7, 8 and 10), Linux® 64-bit, or macOS®
- USB Type-A to Micro-B cable

*Note:* macOS® is a trademark of Apple Inc. registered in the U.S. and other countries.  
All other trademarks are the property of their respective owners.

### 2.2 Development toolchains

- Keil® MDK-ARM (see [note](#))
- IAR™ EWARM (see [note](#))
- GCC-based IDEs

*Note:* On Windows® only.

### 2.3 Demonstration software

The demonstration software, included in the STM32Cube MCU Package corresponding to the on-board microcontroller, is preloaded in the STM32 Flash memory for easy demonstration of the device peripherals in standalone mode. The latest versions of the demonstration source code and associated documentation can be downloaded from [www.st.com](http://www.st.com).

## Revision history

**Table 3. Document revision history**

Date	Version	Changes
29-Nov-2019	1	Initial release

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