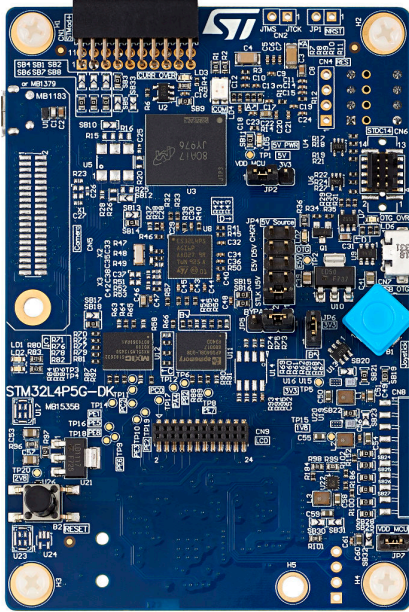


Discovery kit with STM32L4P5AG MCU



STM32L4P5G-DK top view. Picture is not contractual.

Product status link

[STM32L4P5G-DK](#)

Features

- STM32L4P5AGI6P Arm® Cortex® core-based microcontroller featuring 1 Mbyte of flash memory and 320 Kbytes of RAM in a 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)
- 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:
 - 8-bit camera (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_{BUS}, 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 V_{core} 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 Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Description

The [STM32L4P5G-DK](#) Discovery kit is a complete demonstration and development platform for the STMicroelectronics Arm® Cortex®-M4 core-based [STM32L4P5AGI6P](#) microcontroller with four I²C 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, TFT LCD 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 evaluate all the peripherals (USB OTG FS, Octo-SPI flash memory 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. Ordering information

Order code	Board references	User manual	Target STM32
STM32L4P5G-DK	<ul style="list-style-type: none"> MB1535⁽¹⁾ MB1280⁽²⁾ 	<ul style="list-style-type: none"> UM2651 UM2695 	STM32L4P5AGI6P

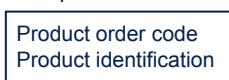
1. Main board.
2. Fanout board.

1.1 Product marking

The stickers located on the top or bottom side of all PCBs provide product information:

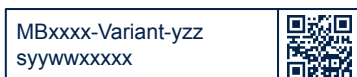
- First sticker: product order code and product identification, generally placed on the main board featuring the target device.

Example:



- Second sticker: board reference with revision and serial number, available on each PCB.

Example:



On the first sticker, the first line provides the product order code, and the second line the product identification.

On the second sticker, the first line has the following format: “*MBxxxx-Variant-yyz*”, where “*MBxxxx*” is the board reference, “*Variant*” (optional) identifies the mounting variant when several exist, “*y*” is the PCB revision, and “*zz*” is the assembly revision, for example B01. The second line shows the board serial number used for traceability.

Parts marked as “*ES*” or “*E*” are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event will ST be liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.

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

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

Some boards feature 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.

To use the same commercial stack in their applications, the developers might 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.

Table 2. Codification explanation

STM32XYZ-DK	Description	Example: STM32L4P5G-DK
XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32L4+ series
YY	MCU product line in the series	STM32L4P5
Z	STM32 flash memory size: <ul style="list-style-type: none">• G for 1 Mbyte	1 Mbyte
DK	Discovery kit	Discovery kit

2 Development environment

The STM32L4P5G-DK runs with the STM32L4P5AGI6P 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

- Multi-OS support: Windows® 10, Linux® 64-bit, or macOS®
- USB Type-A or USB Type-C® to Micro-B cable

Note: macOS® is a trademark of Apple Inc., registered in the U.S. and other countries and regions.

Linux® is a registered trademark of Linus Torvalds.

Windows is a trademark of the Microsoft group of companies.

2.2 Development toolchains

- IAR Systems® - IAR Embedded Workbench®⁽¹⁾
- Keil® - MDK-ARM⁽¹⁾
- STMicroelectronics - STM32CubeIDE

1. 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.

Revision history

Table 3. Document revision history

Date	Revision	Changes
29-Nov-2019	1	Initial release.
05-Oct-2023	2	Updated Ordering information and Product marking .

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