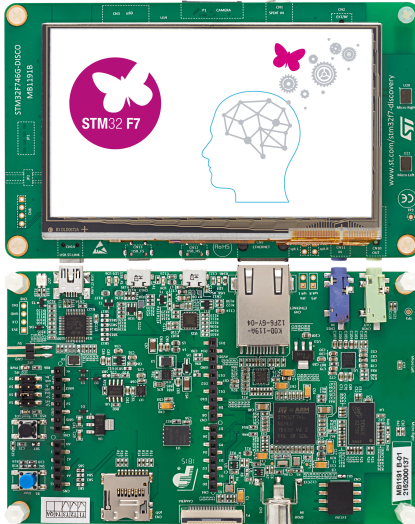


Discovery kit with STM32F746NG MCU



Board top and bottom views. Pictures are not contractual.

Product status link

[32F746GDISCOVERY](#)

Features

- STM32F746NGH6 Arm® Cortex® core-based microcontroller with 1 Mbyte of flash memory and 340 Kbytes of RAM, in a BGA216 package
- 4.3" RGB 480×272 color TFT LCD with capacitive touch panel
- Ethernet compliant with IEEE-802.3-2002
- USB OTG HS
- USB OTG FS
- SAI audio codec
- Two MEMS digital microphones
- 128-Mbit Quad-SPI flash memory
- 128-Mbit SDRAM (64 Mbits accessible)
- Two user and reset push-buttons
- Board connectors:
 - Camera
 - microSD™ card
 - RF-EEPROM daughterboard connector
 - 2×USB with Micro-AB
 - Ethernet RJ45
 - SPDIF RCA input connector
 - Audio line in and line out jack
 - Stereo speaker outputs
 - ARDUINO® Uno V3 expansion connectors
- Flexible power-supply options: ST-LINK USB V_{BUS}, USB connector, or external sources
- Power supply output for external applications: 3.3 or 5 V
- Comprehensive free software libraries and examples available with the STM32Cube MCU Package
- On-board ST-LINK/V2-1 debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

1 Description

The 32F746GDISCOVERY Discovery kit is a complete demonstration and development platform for STMicroelectronics Arm® Cortex®-M7-core-based STM32F746NG (STM32F746NGH6 order code) microcontroller.

The 32F746GDISCOVERY board is used as a reference design for user application development before porting to the final product, simplifying application development. It enables a wide range of applications with audio, multi-sensor support, graphics, security, video, and high-speed connectivity features.

The ARDUINO Uno V3 connectivity support provides unlimited expansion capabilities with a large choice of specialized add-on boards. The 32F746GDISCOVERY board is provided with the STM32CubeF7 MCU Package, which offers a comprehensive STM32 software HAL library, as well as various software examples.



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2 Ordering information

To order the 32F746GDISCOVERY 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 microcontroller.

Table 1. List of available products

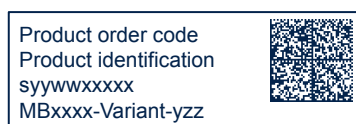
Order code	Board reference	User manual	Target STM32
STM32F746G-DISCO	MB1191	UM1907	STM32F746NGH6

2.1 Product marking

The product and each board composing the product are identified with one or several stickers. The stickers, located on the top or bottom side of each PCB, provide product information:

- Main board featuring the target device: product order code, product identification, serial number, and board reference with revision.

Single-sticker example:



Dual-sticker example:



- Other boards if any: board reference with revision and serial number.

Examples:



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

On all board stickers, the line formatted as “MBxxxx-Variant-yyz” shows the board reference “MBxxxx”, the mounting variant “Variant” when several exist (optional), the PCB revision “y”, and the assembly revision “zz”, for example B01. The other line shows the board serial number used for traceability.

Products and parts labeled as “ES” or “E” are not yet qualified or feature devices that are not yet qualified. STMicroelectronics disclaims any responsibility for consequences arising from their use. Under no circumstances will STMicroelectronics be liable for the customer's use of these engineering samples. Before deciding to use these engineering samples for qualification activities, contact STMicroelectronics' quality department.

“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 ordering part number of the evaluation tool 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.

2.2 Codification

The meaning of the codification is explained in [Table 2](#).

Table 2. Codification explanation

STM32F7XXY-DISCO	Description	Example: STM32F746G-DISCO
STM32F7	MCU series in STM32 32-bit Arm® Cortex® MCUs	STM32F7 series
XX	MCU product line in the series	STM32F746
Y	STM32 flash memory size: - E for 512 Kbytes - G for 1 Mbyte	1 Mbyte
DISCO	Discovery kit	Discovery kit

3 Development environment

3.1 System requirements

- Multi-OS support: Windows® 10 or 11, Linux® 64-bit, or macOS®
- USB Type-A or USB Type-C® to Mini-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.

3.2 Development toolchains

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

1. On Windows® only.

3.3 Demonstration software

The demonstration software, included in the 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.

3.4 EDA resources

All board design resources, including schematics, EDA databases, manufacturing files, and the bill of materials, are available from the corresponding product page at www.st.com.

Revision history

Table 3. Document revision history

Date	Version	Changes
4-Jun-2015	1	Initial release.
29-Jun-2015	2	Updated <i>Section : Features</i> adding 2 bullets: mbed-enabled, supported by a wide choice of integrated development environments. Added mbed-enabled logo. Updated <i>Section : Description</i> . Updated <i>Section 1: System requirements</i> adding OS at windows. Updated <i>Section 2: Development toolchains</i> adding ARM®mbed™ online.
16-Dec-2019	3	Revised the entire document and reorganized Section Features , Section 1: Description , Section 2: Ordering information and Development toolchains. Removed <i>Section 5: Technology partners</i> .
28-Apr-2026	4	Updated: • Features • Section 1: Description • Section 2.1: Product marking • Section 2.2: Codification • Section 3: Development environment Removed all references to Arm® Mbed™.

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