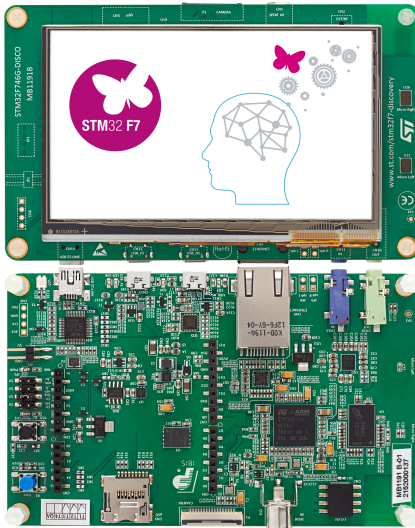


## Discovery kit with STM32F746NG MCU



Board top and bottom views. Pictures are not contractual.

Product status link

[32F746GDISCOVERY](#)

**arm** MBED

### Features

- STM32F746NGH6 Arm® Cortex® core-based microcontroller with 1 Mbyte of Flash memory and 340 Kbytes of RAM, in BGA216 package
- 4.3" RGB 480×272 color LCD-TFT with capacitive touch screen
- Ethernet compliant with IEEE-802.3-2002
- USB OTG HS
- USB OTG FS
- SAI audio codec
- Two ST-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<sub>BUS</sub> or external sources
- Power supply output for external applications: 3.3 V 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™, Keil®, GCC-based IDEs, and Arm® Mbed™

## 1 Description

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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** Discovery kit is used as reference design for user application development before porting to the final product, thus simplifying the application development.

The Discovery kit enables a wide diversity of applications taking benefit from audio, multi-sensor support, graphics, security, video and high-speed connectivity features.

The ARDUINO® 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 an STM32 comprehensive software HAL library as well as various software examples.

## 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
<a href="#">STM32F746G-DISCO</a>	MB1191	<a href="#">UM1907</a>	<a href="#">STM32F746NGH6</a>

### 2.1 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.

### 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: <ul style="list-style-type: none"> <li>• E for 512 Kbytes</li> <li>• G for 1 Mbyte</li> </ul>	1 Mbyte
DISCO	Discovery kit	Discovery kit

The order code is mentioned on a sticker placed on the top side of the board.

## 3 Development environment

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### 3.1 System requirements

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

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

### 3.2 Development toolchains

- Keil® MDK-ARM<sup>(1)</sup>
- IAR™ EWARM<sup>(1)</sup>
- GCC-based IDEs
- Arm® Mbed™<sup>(2)</sup> online<sup>(3)</sup> (see [mbed.org](http://mbed.org))

*Note:*

1. On Windows® only.
2. Arm and Mbed are registered trademarks or trademarks of Arm Limited (or its subsidiaries) in the US and or elsewhere.
3. Refer to the [www.mbed.com](http://www.mbed.com) website and to the “Ordering information” section to determine which order codes are supported.

### 3.3 Demonstration software

The demonstration software, included in the STM32Cube MCU Package corresponding to the onboard 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
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 <a href="#">Section Features</a> , <a href="#">Section 1 Description</a> , <a href="#">Section 2 Ordering information</a> and <a href="#">Section 3.2 Development toolchains</a> . Removed <i>Section 5: Technology partners</i> .

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