Discovery kit with STM32F769NI MCU
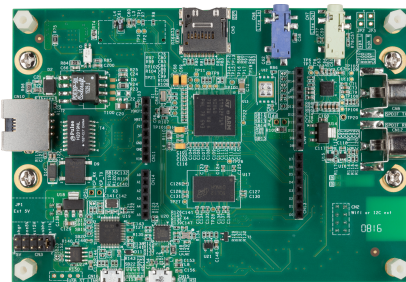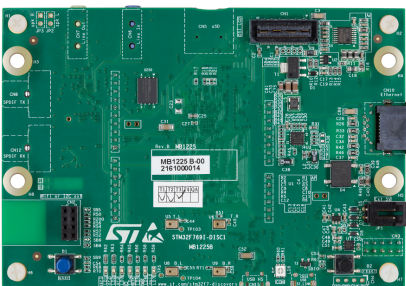

From top to bottom: STM32F769I-DISCO top view, STM32F769I-DISC1 top view, STM32F769I-DISCO and STM32F769I-DISC1 bottom view. Pictures are not contractual.

Product status link

32F769IDISCOVERY

Features

- STM32F769NIH6 Arm® Cortex®-M7 core-based microcontroller with 2 Mbytes of flash memory and 532 Kbytes of RAM, in a TFBGA216 package
- 4-inch 800 x 472-pixel capacitive touch TFT color LCD with serial interface (on STM32F769I-DISCO only)
- Optional display accessories: HDMI and DSI adapters
- SAI audio codec
- Four digital ST MEMS microphones on DFSDM inputs
- 128-Mbit SDRAM
- 512-Mbit Quad-SPI flash memory
- Reset and user push-buttons
- Board connectors:
  – MIPI DSI®
  – SPDIF RCA input and output
  – Audio line input and output jacks
  – Stereo speaker output
  – microSD™ card holder with an included card
  – Wi-Fi® or Ext-EEP daughterboard
  – USB Micro-B
  – USB Micro-AB
  – IEEE-802.3-2002 compliant Ethernet
  – ARDUINO® Uno V3
- On-board ST-LINK/V2-1 debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Flexible power-supply options:
  – ST-LINK/V2-1 USB connector
  – USB OTG HS connector
  – 5 V delivered by RJ45 (Power over Ethernet)
  – 5 V delivered by ARDUINO® or external connector
  – USB charger
- Power over Ethernet based on IEEE 802.3af (powered device from 48 to 5 V, 3 W)
- External application power supply: 3.3 V and 5 V
- Comprehensive free software libraries and examples available with the STM32Cube MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

DB2876 - Rev 4 - December 2022
For further information contact your local STMicroelectronics sales office.

www.st.com

Description

The 32F769IDISCOVERY Discovery kit is a complete demonstration and development platform for STMicroelectronics Arm® Cortex®-M7 core-based STM32F769NI microcontroller.

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.

1 Ordering information

To order the 32F769IDISCOVERY 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
STM32F769I-DISCO	• MB1225[1] • MB1166[2]	UM2033	STM32F769NIH6

1. *Main board*
2. *4-inch WVGA TFT LCD daughterboard*

To order the optional display accessories for the 32F769IDISCOVERY Discovery kit, refer to Table 2

Table 2. List of display accessories

Order code	Product description
B-LCDAD-RPI1	15-pin single-row flexible printed circuit DSI adapter board
B-LCDAD-HDMI1	DSI to HDMI adapter

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:

> Product order code
> Product identification

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

> MBxxxx-Variant-yzz
> syywwxxxxx

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-yzz"*, 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 3.

Table 3. Codification explanation

32F7XXYDISCOVERY	Description	Example: 32F769IDISCOVERY
32F7	MCU series in STM32 32-bit Arm Cortex MCUs	STM32F7 Series
XX	MCU product line in the series	STM32F7x9 product line
Y	STM32 flash memory size: • I for 2 Mbytes	2 Mbytes
DISCOVERY	Discovery kit	Discovery kit

2 Development environment

The 32F769IDISCOVERY board runs with the STM32F769NIH6 32-bit microcontroller based on the Arm® Cortex®-M7 processor.

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

arm

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.*

Revision history

Table 4. Document revision history

Date	Revision	Changes
20-Apr-2016	1	Initial release.
26-Aug-2016	2	Updated *Ordering information* to introduce the STM32F769I-DISC1 order code.
13-Apr-2022	3	Reshuffled document to the latest format, including the removal of *Demonstration software* and *Technology partners* obsolete sections. Removed STM32F769I-DISC1 and B-LCD40-DSI1 obsolete order codes from *Ordering information*.
22-Dec-2022	4	Updated: • Features with digital camera connector removed • Product marking

IMPORTANT NOTICE – READ CAREFULLY