

## Discovery kits with STM32H745XI and STM32H750XB MCUs



Board top and bottom views. Pictures are not contractual. PCB colors may differ.

### Product status link

[STM32H745I-DISCO](#)

[STM32H750B-DK](#)

### Features

- Arm® Cortex® core-based microcontroller with 2 Mbytes (STM32H745XIH6) or 128 Kbytes (STM32H750XBH6) of flash memory and 1 Mbyte of RAM, in a TFPGA240+25 package
- 4.3" RGB interface LCD with touch panel connector
- Ethernet compliant with IEEE-802.3-2002, and PoE
- USB OTG FS
- SAI audio codec
- One ST-MEMS digital microphone
- 2× 512-Mbit Quad-SPI NOR flash memory
- 128-Mbit SDRAM
- 4-Gbyte on-board eMMC
- 1 user and reset push-button
- Fanout daughterboard
- 2× CAN FDs
- Board connectors:
  - USB FS Micro-AB connectors
  - ST-LINK Micro-B USB connector
  - USB power Micro-B connector
  - Ethernet RJ45
  - Stereo headset jack including analog microphone input
  - Audio header for external speakers
  - Tag-Connect™ (TAG) 10-pin footprint
  - Arm® Cortex® 10-pin 1.27 mm pitch debug connector over STDC14 footprint
  - ARDUINO® Uno V3 expansion connectors
  - STMod+
- Flexible power-supply options:
  - STLINK-V3E USB connector, USB FS connector
  - 5 V delivered by RJ45 (Power over Ethernet)
  - 5 V delivered by ARDUINO® or external connector
  - USB charger
  - USB power
- On-board STLINK-V3E 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 [STM32H745I-DISCO](#) and [STM32H750B-DK](#) Discovery kits are complete demonstration and development platforms for STMicroelectronics Arm® Cortex®-M7 and Cortex®-M4 core-based [STM32H745XI](#) (STM32H745XIH6 order code), and Cortex®-M7 core-based [STM32H750XB](#) (STM32H750XBH6 order code) microcontrollers.

The [STM32H745I-DISCO](#) and [STM32H750B-DK](#) Discovery kits are used as reference designs for user application development before porting to the final product, thus simplifying the application development.

The full range of hardware features available on the board helps users enhance their application development by an evaluation of almost all peripherals (such as USB OTG FS, Ethernet 10/100Mb/s, eMMC, USART, SAI audio DAC stereo with audio jack input and output, MEMS digital microphone, SDRAM, Quad-SPI flash memory, and RGB interface LCD with capacitive multi-touch panel). ARDUINO® Uno V3 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.

The [STM32H745I-DISCO](#) and [STM32H750B-DK](#) boards come with the [STM32CubeH7](#) MCU Package, which provides an STM32 comprehensive software HAL library as well as various software examples.

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



## 2 Ordering information

To order the [STM32H745I-DISCO](#) and [STM32H750B-DK](#) Discovery kits, refer to [Table 1](#). For a detailed description of each board, 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
STM32H745I-DISCO	MB1381	UM2488	STM32H745XIH6
STM32H750B-DK			STM32H750XBH6

### 2.1 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:

MBxxx-Variant-yyz	
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: “*MBxxx-Variant-yyz*”, where “*MBxxx*” 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](http://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.

## 2.2 Codification

The meaning of the codification is explained in Table 2.

**Table 2. Codification explanation**

STM32XXYYZ-DISCO STM32XXYYZ-DK	Description	Example: STM32H745I-DISCO
STM32XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32H7 Series
YY	MCU product line in the series	STM32H745/755 includes the STM32H745xx MCUs
Z	STM32 flash memory size: <ul style="list-style-type: none"> <li>• B for 128 Kbytes</li> <li>• I for 2 Mbytes</li> </ul>	2 Mbytes
DISCO / DK	Toolkit type: <ul style="list-style-type: none"> <li>• DISCO or DK: Discovery kit</li> </ul>	Discovery kit

## 3 Development environment

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### 3.1 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.

### 3.2 Development toolchains

- IAR Systems® - IAR Embedded Workbench®<sup>(1)</sup>
- Keil® - MDK-ARM<sup>(1)</sup>
- STMicroelectronics - STM32CubeIDE

1. On Windows® only.

### 3.3 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	Revision	Changes
9-Janv-2019	1	Initial release.
1-Apr-2019	2	Updated pictures on the cover page and reorganized the entire document: <ul style="list-style-type: none"><li>• Updated <i>Features</i></li><li>• Updated <i>Ordering information</i></li><li>• Added <i>Product marking</i></li><li>• Added <i>Codification</i></li><li>• Added <i>Development environment</i></li></ul>
15-Dec-2022	3	Updated <a href="#">Ordering information</a> and <a href="#">Development environment</a> .

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