STM32H745I-DISCO STM32H750B-DK

Data brief

Discovery kits with STM32H745XI and STM32H750XB MCUs

Main board top and bottom views. Pictures are not contractual. PCB color 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 TFBGA240+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 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
- STMod+ fan-out expansion board
- 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
- Comprehensive free software libraries and examples available with the STM32CubeH7 MCU Package
- 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 through an evaluation of almost all peripherals (such as USB OTG FS, Ethernet 10/100 Mbit/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	• MB1280(1) • MB1381(2)	UM2488	STM32H745XIH6
STM32H750B-DK			STM32H750XBH6

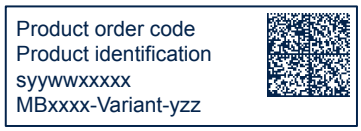
1. *STMod+ fan-out expansion board.*
2. *Main board.*

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:

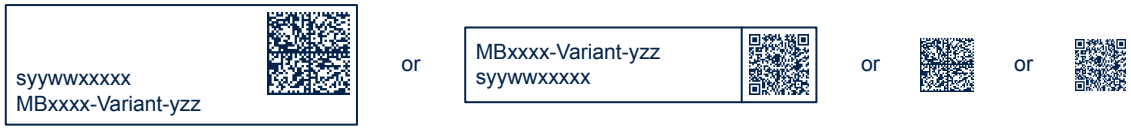
  

  Dual-sticker example:

- 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-yzz"* 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

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: • B for 128 Kbytes • I for 2 Mbytes	2 Mbytes
DISCO/DK	Toolkit type: • 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 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®(1)
- Keil® - MDK-ARM(1)
- 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*.

3.4 EDA resources

All board design resources, including schematics, EDA databases, manufacturing files, and the bill of materials, are available from the STM32H745I-DISCO and STM32H750B-DK product pages at *www.st.com*.

Revision history

Table 3. **Document revision history**

Date	Revision	Changes
09-Janv-2019	1	Initial release.
01-Apr-2019	2	Updated pictures on the cover page and reorganized the entire document: • Updated *Features* • Updated *Ordering information* • Added *Product marking* • Added *Codification* • Added *Development environment*
15-Dec-2022	3	Updated *Ordering information* and *Development environment*.
22-May-2025	4	Updated Features, Ordering information, and Product marking. Added EDA resources.