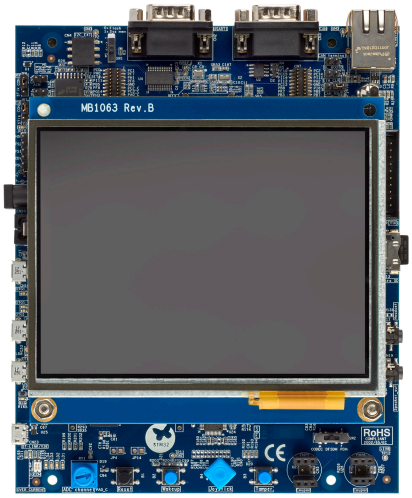
STM32H743I-EVAL STM32H753I-EVAL

Data brief

Evaluation boards with STM32H743XI and STM32H753XI MCUs



STM32H743I-EVAL and STM32H753I-EVAL top view. Picture is not contractual.

Product status link
STM32H743I-EVAL
STM32H753I-EVAL

Features

- STM32H743XIH6 and STM32H753XIH6 Arm® Cortex®-M7 microcontrollers with 2 Mbytes of flash memory and 1 Mbyte of RAM in a TFBGA240+25 package
- 5.7” 640×480 TFT color LCD with touch panel
- Ethernet compliant with IEEE-802.3-2002
- USB OTG HS and OTG FS
- I^2C compatible serial interface
- RTC with rechargeable backup battery
- SAI audio DAC
- MEMS digital microphones
- 8-Gbyte (or more) SDIO 3.0 interface microSD™ card
- 8 M×32-bit SDRAM, 1 M×16-bit SRAM and 8 M×16-bit NOR flash memory
- 1-Gbit twin Quad-SPI NOR flash memory or two 512-Mbit Quad-SPI NOR flash memories
- Potentiometer
- 4 color user LEDs
- Reset, wake up, tamper, or key buttons
- Joystick with 4-direction control and selector
- Board connectors:
  - Power jack
  - 3 USB interfaces with Micro-AB connector
  - RS-232 communications
  - Ethernet RJ45
  - CAN FD-compliant connection
  - Stereo headset jack including analog microphone input
  - 2 audio jacks for external speakers
  - microSD™ card
  - JTAG/SWD and ETM trace
  - Extension connectors and memory connectors for daughterboard or wire-wrap board
- Flexible power-supply options: ST-LINK USB V_{BUS}, USB connector, or external sources
- On-board ST-LINK debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- 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

1 Description

The STM32H743I-EVAL and STM32H753I-EVAL Evaluation boards (STM32H7x3I-EVAL) are high-end development platforms for the Arm® Cortex®-M7-based STM32H743XI and STM32H753XI microcontrollers, respectively. The STM32H7x3I-EVAL Evaluation boards provide access to all the STM32 peripherals for user applications, and include an embedded ST-LINK debugger/programmer.

The full range of the STM32H7x3I-EVAL hardware features helps develop applications and evaluate all peripherals: USB OTG HS and OTG FS, Ethernet, CAN FD, USART, audio DAC and ADC, digital microphone, SRAM, SDRAM, NOR flash memory, twin Quad-SPI flash memory, microSD™ 3.0 card, 5.7” 640×480 TFT color LCD with touch panel, and cryptographic hardware accelerator (available only on STM32H753XI devices).

The expansion connectors provide an easy way to add specialized features, while ETM trace is supported through external probes.

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

2 Ordering information

To order the STM32H743I-EVAL and STM32H753I-EVAL, 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	Differentiating features
STM32H743I-EVAL(1)	• MB1063(2) • MB1246(3) • MB1256(4)	UM2198	STM32H743XIH6	• ST-LINK/V2-1
STM32H743I-EVAL2				• STLINK-V3E
STM32H753I-EVAL(1)			STM32H753XIH6	• Cryptography • ST-LINK/V2-1
STM32H753I-EVAL2				• Cryptography • STLINK-V3E

1. *Obsolete product.*
2. *LCD board.*
3. *Main board.*
4. *microSD™ transceiver 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:

  Product order code
  Product identification
  syywwxxxxx
  MBxxxx-Variant-yzz

  Dual-sticker example:

  Product order code
  Product identification

  and

  MBxxxx-Variant-yzz
  syywwxxxxx

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

  Examples:

  syywwxxxxx
  MBxxxx-Variant-yzz

  or

  MBxxxx-Variant-yzz
  syywwxxxxx

  or

  or

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-EVALT	Description	Example: STM32H753I-EVAL2
STM32XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32H7 series
YY	MCU product line in the series	STM32H743/753 includes the STM32H753xx MCUs
Z	STM32 flash memory size: • I for 2 Mbytes	2 Mbytes
-EVAL	Toolkit type: • Evaluation board	Evaluation board
T	Toolkit configuration: • None: with ST-LINK/V2-1 • 2: with STLINK-V3E	With STLINK-V3E

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 STM32H743I-EVAL and STM32H753I-EVAL product pages at *www.st.com*.

Revision history

Table 3. **Document revision history**

Date	Revision	Changes
07-Apr-2017	1	Initial release.
14-Dec-2018	2	Added STM32H753I-EVAL Evaluation board for STM32H753XI devices. Added STM32H7x3-EVAL2 order codes: added new board picture on cover page, added STLINK-V3E debugger/programmer, updated *Section 5 Ordering information*. Updated *Section 1 Description* to add Arm logo and notice. Updated *Section 2 System requirements*, *Section 3 Development toolchains*, and *Section 4 Demonstration software*.
4-June-2019	3	Reorganized the entire document: • Updated the cover page • Updated *Ordering information* • Added *Product marking* • Added *Codification*
22-Jul-2025	4	Updated the document structure and highlighted the obsolescence of the STM32H743I-EVAL and STM32H753I-EVAL order codes: • Updated the cover picture • Updated Features, Description, and Ordering information • Updated Codification, Product marking, System requirements, and Development toolchains • Added EDA resources