![ST life.augmented logo]

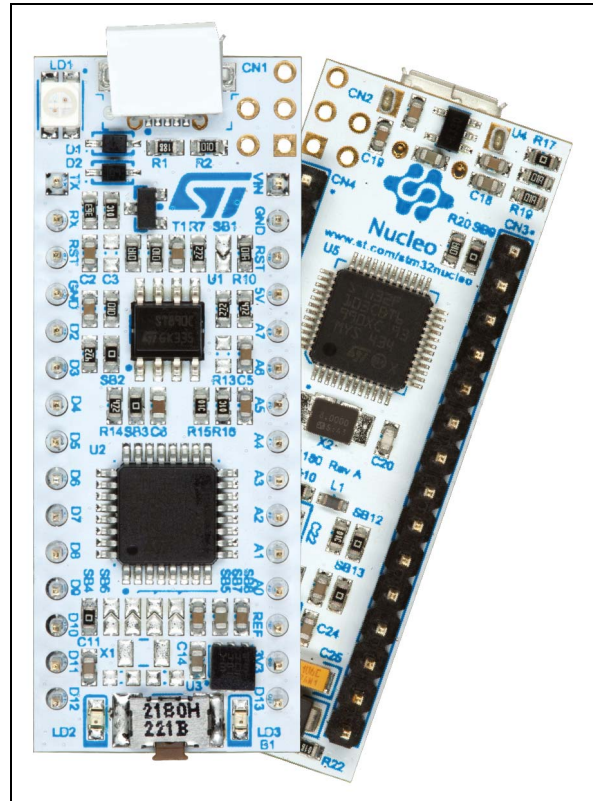# NUCLEO-XXXXKX

STM32 Nucleo-32 boards

Features

- STM32 microcontrollers in 32-pin packages
- Three LEDs: USB communication (LD1), power LED (LD2) and user LED (LD3)
- Reset push-button
- Board expansion connector:
  – Arduino™ Nano
- Flexible power-supply options: ST-LINK USB V_{BUS} or external sources
- 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, Arm® Mbed™
- Arm® Mbed Enabled™ compliant (only for some Nucleo part numbers)

Description

The STM32 Nucleo-32 boards provide an affordable and flexible way for users to try out new concepts and build prototypes with the STM32 microcontrollers, choosing from various combinations of performance, power consumption and features.The Arduino™ Nano connectivity makes it easy to expand the functionality of the STM32 Nucleo open development platform with a choice of specialized shields. The STM32 Nucleo-32 board does not require any separate probe as it integrates the ST-LINK/V2-1 debugger/programmer and comes with the STM32 comprehensive software HAL library, together with various packaged software examples, as well as direct access to the Arm® Mbed Enabled™ on-line resources.

Picture is not contractual.

Table 1. Device summary

Reference	Part number
NUCLEO-XXXXKX	NUCLEO-F031K6, NUCLEO-F042K6, NUCLEO-F301K8, NUCLEO-F303K8, NUCLEO-L011K4, NUCLEO-L031K6, NUCLEO-L412KB, NUCLEO-L432KC.

![arm MBED Enabled logo]

For further information contact your local STMicroelectronics sales office.

www.st.com

System requirements

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

Development toolchains

- Keil® MDK-ARM[b]
- IAR™ EWARM[b]
- GCC-based IDEs
- Arm® Mbed™[c] online[d] (see http://mbed.org)

Demonstration software

The demonstration software, included in the STM32Cube MCU Package, 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 the *www.st.com* webpage.

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

b. On Windows® only.

c. Arm and Mbed are registered trademarks or trademarks of Arm Limited (or its subsidiaries) in the US and or elsewhere.

d. Refer to the https://www.mbed.com website and to *Table 2: Ordering information*, to determine which Nucleo board order codes are supported.

Ordering information

To order the STM32 Nucleo-32 board, refer to *Table 2*.

Table 2. Ordering information

Order code	Reference board	Target STM32
NUCLEO-F031K6[1]		STM32F031K6T6
NUCLEO-F042K6[1]		STM32F042K6T6
NUCLEO-F301K8		STM32F301K8T6
NUCLEO-F303K8[1]	MB1180	STM32F303K8T6
NUCLEO-L011K4[1]		STM32L011K4T6
NUCLEO-L031K6[1]		STM32L031K6T6
NUCLEO-L412KB		STM32L412KBU6U[2]
NUCLEO-L432KC[1]		STM32L432KCU6U[2]

1. Arm® Mbed Enabled™.

2. Refer to the *Product marking* section of user manual UM2303 for details.

The meaning of the codification is explained in *Table 3*.

Table 3. Codification explanation

NUCLEO-TXXXKY	Description	Example: NUCLEO-L412KB
TXXX	STM32 product line	STM32L412
K	STM32 package pin count	32 pins
Y	STM32 Flash memory size: – 4 for 16 Kbytes – 6 for 32 Kbytes – 8 for 64 Kbytes – B for 128 Kbytes – C for 256 Kbytes	128 Kbytes

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

Revision history

Table 4. Document revision history

Date	Revision	Changes
08-Sep-2015	1	Initial release.
15-Jan-2016	2	Updated *Table 1: Device summary* and *Table 2: Ordering information*.
09-Jun-2016	3	Updated *Section : Description* and *Section : System requirements* to add NUCLEO-L432KC.
07-Jul-2017	4	Updated *Features*.
23-Aug-2018	5	Extended document scope to NUCLEO-L412KB. Updated *Table 1: Device summary*, *System requirements*, *Development toolchains*, and *Ordering information*. Added *Demonstration software*.
13-Nov-2018	6	Extended document scope to NUCLEO-F301K8: updated *Features*, *Table 1: Device summary*, and *Table 2: Ordering information*.

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