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NUCLEO-XXXXRX

STM32 Nucleo-64 board

Features

- STM32 microcontroller in QFP64 package
- Two types of extension resources:
  - Arduino™ Uno V3 connectivity
  - ST morpho extension pin headers for full access to all STM32 I/Os
- ARM® mbed™ (see http://mbed.org)
- On-board ST-LINK/V2-1 debugger/programmer with SWD connector:
  - Selection-mode switch to use the kit as a standalone ST-LINK/V2-1
- Flexible board power supply:
  - USB VBUS or external source (3.3V, 5V, 7 - 12V)
  - Power management access point
- Three LEDs:
  - USB communication (LD1), user LED (LD2), power LED (LD3)
- Two push-buttons: USER and RESET
- USB re-enumeration capability. Three different interfaces supported on USB:
  - Virtual COM port
  - Mass storage
  - Debug port
- Support of wide choice of Integrated Development Environments (IDEs) including IAR™, ARM® Keil®, GCC-based IDEs

Description

The STM32 Nucleo board provides an affordable and flexible way for users to try out new concepts and build prototypes with the STM32 microcontroller, choosing from the various combinations of performance, power consumption and features. The Arduino™ Uno V3 connectivity support and the ST morpho headers allow to expand easily the functionality of the STM32 Nucleo open development platform
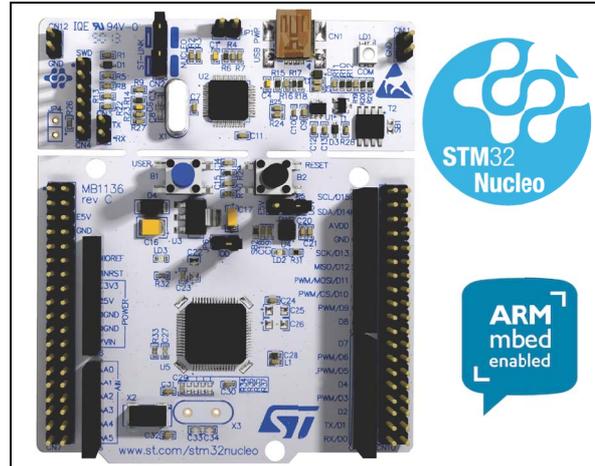
1. Picture is not contractual

with a wide choice of specialized shields. The STM32 Nucleo board does not require any separate probe as it integrates the ST-LINK/V2-1 debugger and programmer. The STM32 Nucleo board comes with the STM32 comprehensive software HAL library together with various packaged software examples, as well as direct access to the ARM® mbed™ online resources at http://mbed.org.

Table 1. Device summary

Reference	Part number
NUCLEO-XXXXRX	NUCLEO-F030R8, NUCLEO-F070RB, NUCLEO-F072RB, NUCLEO-F091RC, NUCLEO-F103RB, NUCLEO-F302R8, NUCLEO-F303RE, NUCLEO-F334R8, NUCLEO-F401RE, NUCLEO-F410RB, NUCLEO-F411RE, NUCLEO-F446RE, NUCLEO-L053R8, NUCLEO-L073RZ, NUCLEO-L152RE, NUCLEO-L452RE, NUCLEO-L476RG.

System requirement

- Windows® OS (XP, 7, 8) or Linux 64-bit or Mac OS® X
- USB Type-A to Mini-B cable

Development toolchains

- ARM® Keil®: MDK-ARM[a]
- IAR™: EWARM[a]
- GCC-based IDEs (free AC6: SW4STM32, Atollic TrueSTUDIO®[a] and others)
- ARM® mbed™ online

Demonstration software

Demonstration software is preloaded in the STM32 Flash memory for easy demonstration of the device peripherals in standalone mode. For more information and to download the latest version, refer to the demonstration software for the STM32 Nucleo board at the www.st.com/stm32nucleo website.

Ordering information

Table 2 lists the order codes and the respective targeted STM32.

Table 2. Ordering information

Order code	Targeted STM32
NUCLEO-F030R8	STM32F030R8T6
NUCLEO-F070RB	STM32F070RBT6
NUCLEO-F072RB	STM32F072RBT6
NUCLEO-F091RC	STM32F091RCT6
NUCLEO-F103RB	STM32F103RBT6
NUCLEO-F302R8	STM32F302R8T6
NUCLEO-F303RE	STM32F303RET6

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a. On Windows® only.

Table 2. Ordering information (continued)

Order code	Targeted STM32
NUCLEO-F334R8	STM32F334R8T6
NUCLEO-F401RE	STM32F401RET6
NUCLEO-F410RB	STM32F410RBT6
NUCLEO-F411RE	STM32F411RET6
NUCLEO-F446RE	STM32F446RET6
NUCLEO-L053R8	STM32L053R8T6
NUCLEO-L073RZ	STM32L073RZT6
NUCLEO-L152RE	STM32L152RET6
NUCLEO-L452RE	STM32L452RET6
NUCLEO-L476RG	STM32L476RGT6

The meaning of the NUCLEO-TXXXRY codification is explained in *Table 3* with an example:

Table 3. Codification explanation

NUCLEO-TXXXRY	Description	Example: NUCLEO-L452RE
TXXX	STM32 product line	STM32L452
R	STM32 package pin count	64 pins
Y	STM32 Flash memory size (8 for 64 Kbytes, B for 128 Kbytes, C for 256 Kbytes, E for 512 Kbytes, G for 1 Mbyte, Z for 192 Kbytes)	512 Kbytes

The order code is printed on a sticker placed at the top or bottom side of the board.

Revision history

Table 4. Document revision history

Date	Revision	Changes
10-Feb-2014	1	Initial release.
13-Feb-2014	2	Added *Table 1: Device summary* and updated *Table 2: Ordering information*.
11-Apr-2014	3	Extended the applicability to NUCLEO-F302R8. Updated *Table 1: Device summary* and *Table 2: Ordering information*.
26-May-2014	4	Extended the applicability to NUCLEO-L053R8, NUCLEO-F072RB, NUCLEO-F334R8 and NUCLEO-F411RE Updated *Table 1* and *Table 2*.
09-Sep-2014	5	Extended the applicability to NUCLEO-F091RC and NUCLEO-F303RE. Updated *Features*. Updated *Table 1: Device summary* and *Table 2: Ordering information*.
16-Dec-2014	6	Extended the applicability to NUCLEO-F070RB, NUCLEO-L073RZ and NUCLEO-L476RG. Updated *Table 1: Device summary* and *Table 2: Ordering information*.
08-Jul-2015	7	Extended the applicability to NUCLEO-F410RB, NUCLEO-F446RE. Updated *Table 1: Device summary* and *Table 2: Ordering information*.
29-Nov-2016	8	Extended the applicability to NUCLEO-L452RE. Updated *Table 1: Device summary* and *Table 2: Ordering information*. Added *Table 3: Codification explanation*.

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