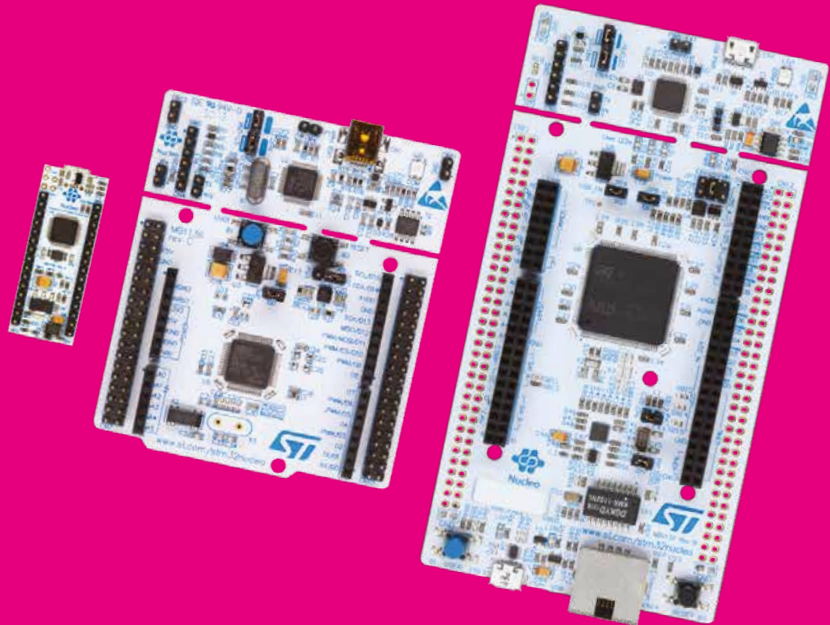# STM32 NUCLEO BOARDS

Unified scalable offering

Open STM32 development platform for flexible prototyping

The highly affordable STM32 Nucleo boards allow anyone to try out new ideas and to quickly create prototypes with any STM32 MCU.

STM32 Nucleo boards can easily be extended with a large number of specialized application hardware add-ons thanks to Arduino Uno Rev3 and ST morpho connectors on Nucleo-144 and Nucleo-64, ST Zio connectors on Nucleo-144, and Arduino Nano connectors on Nucleo-32.

Moreover, Nucleo boards integrate an ST-Link debugger/programmer, so there is no need for a separate probe. A comprehensive STM32 software HAL library together with various software examples are provided with STM32 Nucleo boards, and work smoothly with a wide range of development environments, allowing to build a complete application in only a few minutes.

KEY FEATURES

- Includes one STM32 microcontroller in a 32-pin, 64-pin or 144-pin package
- On-board ST-LINK debugger/programmer:
  - Virtual COM port
  - Mass storage
- Wide extension capabilities with specialized shields:
  - Arduino Uno rev3 connectors on Nucleo-64 and Nucleo-144
  - Access to a wider range of peripherals through Zio connectors on Nucleo-144
  - Access to all MCU pins through ST morpho connectors on Nucleo-64 and Nucleo-144
  - Arduino Nano connectors on Nucleo-32
- Direct access to Mbed online resources for most boards
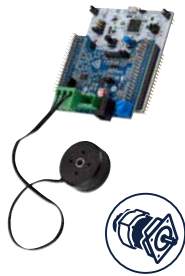- Supported by STM32CubeIDE, IAR, Arm Keil, Arm® Mbed™ online, and more IDEs

www.st.com/stm32nucleo

STM32 Nucleo development boards

www.st.com/stm32nucleo

STM32 Nucleo expansion boards

STM32 Nucleo development boards can easily be expanded through a variety of add-on boards. These expansion boards open the door to any type of application leveraging the appropriate mix of performance/peripherals/power within the comprehensive STM32 family.

LoRa

| P-NUCLEO-IHM03 | P-NUCLEO-USB001 / USB002 | I-NUCLEO-LRWAN1 | X-NUCLEO-LPM01A |

www.st.com/x-nucleo

Multiple IDE support

EMPROG   IAR SYSTEMS   arm KEIL*   aC6

RAISONANCE   TASKING   arm MBED   STM32 CubeIDE

SEGGER   SYSPROGS   iSYSTEM   ARDUINO

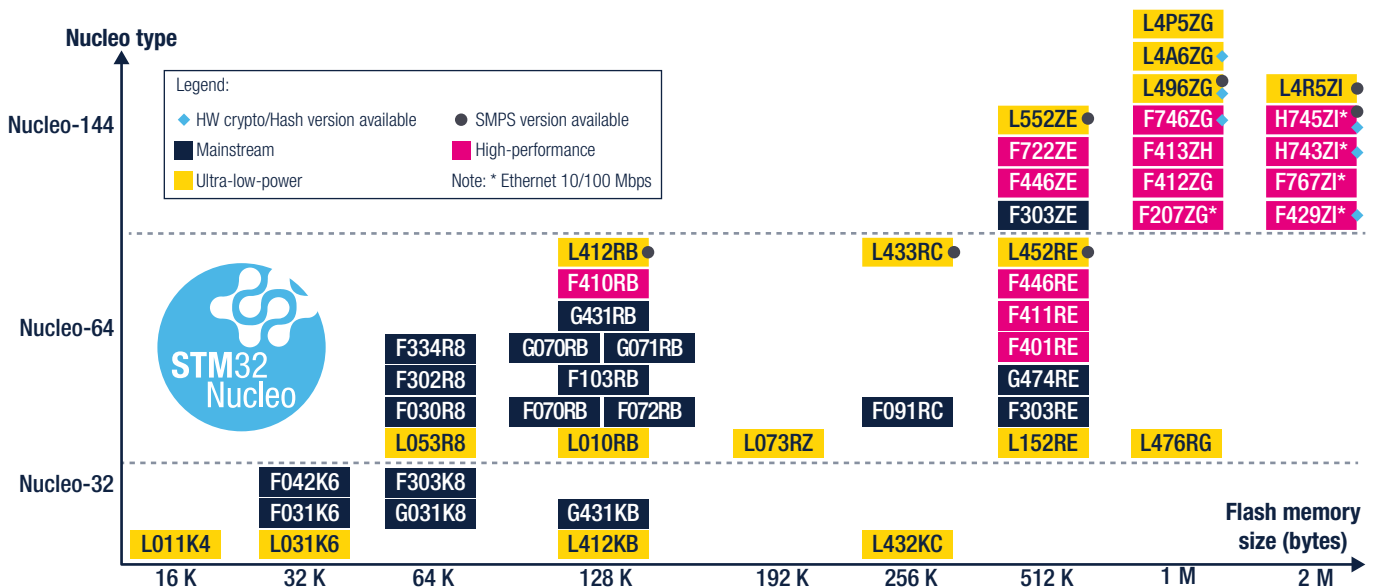○ Free IDEs   Note(*): free for STM32F0/G0/L0

EMBEDDED SOFTWARE

STM32 Nucleo boards are supported in the corresponding STM32 MCU packages with many pre-configured example projects for IAR, Keil and AC6 SW4STM32.

- STM32Cube Expansion package available at: **www.st.com/x-cube**
- STM32Cube MCU package available at **www.st.com/stm32cubemcupack**
- STM32CubeIDE is a free all-in-one multi-OS development tool available at **www.st.com/stm32cubeide**

STM32 Cube

STM32 Nucleo board portfolio

Nucleo type

Legend:
- ◆ HW crypto/Hash version available
- ● SMPS version available
- ■ Mainstream (dark blue)
- ■ High-performance (magenta)
- ■ Ultra-low-power (yellow)
- Note: * Ethernet 10/100 Mbps

Nucleo type	16 K	32 K	64 K	128 K	192 K	256 K	512 K	1 M	2 M
Nucleo-144							L4P5ZG		
							L4A6ZG ◆		
							L496ZG ◆●	L4R5ZI ●	
					L552ZE ●	F746ZG ◆	H745ZI* ●◆		
					F722ZE	F413ZH	H743ZI* ◆		
					F446ZE	F412ZG	F767ZI* ◆		
					F303ZE	F207ZG*	F429ZI* ◆		
Nucleo-64			L412RB ●		L433RC ●	L452RE ●			
			F410RB			F446RE			
			G431RB			F411RE			
	F334R8	G070RB	G071RB			F401RE			
	F302R8	F103RB				G474RE			
	F030R8	F070RB	F072RB	F091RC	F303RE				
	L053R8	L010RB	L073RZ			L152RE	L476RG		
Nucleo-32		F042K6	F303K8						
		F031K6	G031K8	G431KB					
	L011K4	L031K6	L412KB		L432KC				

Flash memory size (bytes)

FSC MIX Paper from responsible sources FSC® C003379

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