STM32G0 Series
Mainstream MCUs

STM32 GO

Our new entry-level STM32G0 Arm® Cortex-M0+ MCUs offer efficiency at its best

The STM32G0 Series is not simply another Arm® Cortex®-M0+ microcontroller. It is setting a new definition of what an efficient microcontroller must offer. This is all about best optimization, down to each and every detail, to offer the best value for money and allow you to achieve your goals with the minimum BOM cost and the maximum flexibility for upgrades.

The STM32G0x0 Value Line embeds an accurate internal clock allowing further cost saving, and makes no compromise on what matters.

The STM32G0x1 line provides upgraded analog features, timer resolution up to 2 x f_{CPU} (7.8 ns) and is IoT-ready with enhanced security features. It supports the latest USB Type-C specification including Power Delivery 3.0.

EFFICIENT

- Arm® Cortex® M0+ at 64 MHz
- Compact cost: maximum I/O count
- Best RAM/Flash memory ratio
- Smallest possible package down to 8 pins
- Large platform with up to 512 Kbytes of Flash memory in small packages
- 500 nA in standby with RTC, 3.5 µA in stop mode, < 100 µA/MHz
- Accurate internal high-speed clock 1% RC
- Best optimization, down to each and every detail
- Offers the best value for money
- Free tool suite
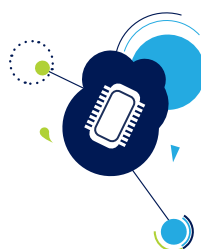
ROBUST

- Low electromagnetic susceptibility (EMC)
- Clock monitoring and 2 watchdogs
- Voltage monitoring with interrupts and reset
- Error correction on Flash memory, parity on RAM
- IoT-ready with embedded security
- Hardware AES-256 encryption or the new Securable Memory Area.
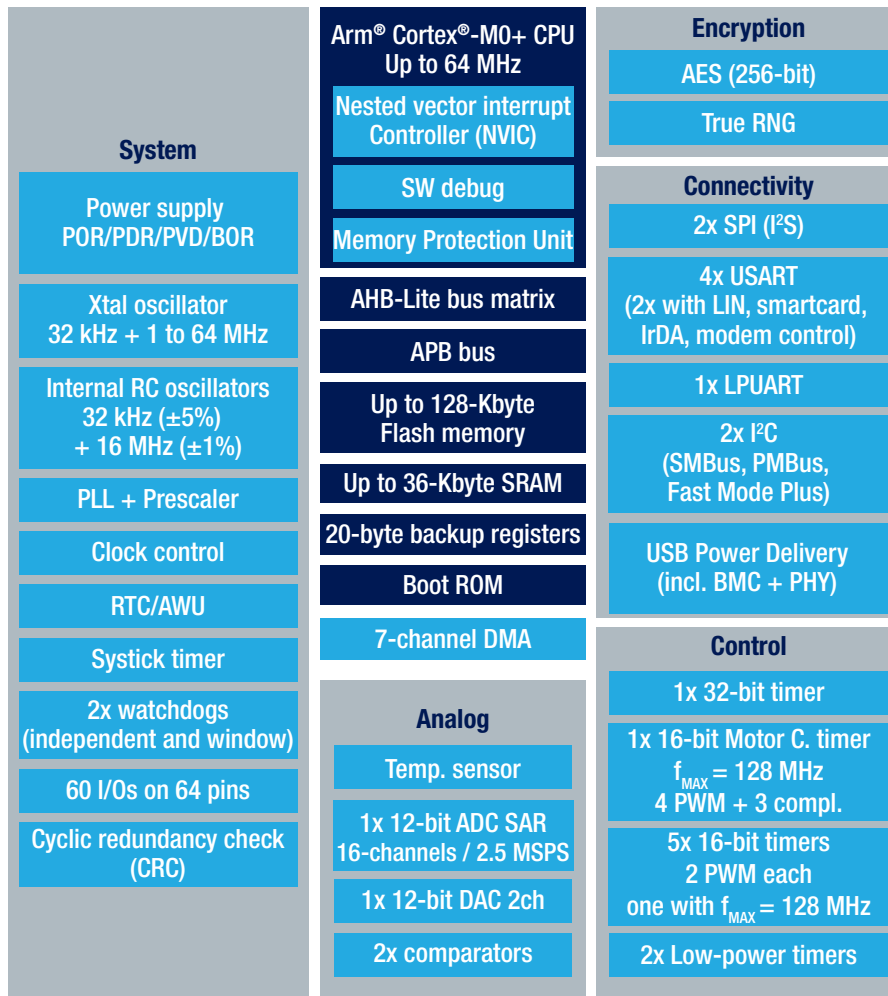- Secure Firmware Upgrade / Install

SIMPLE

- Easy to configure thanks to the intuitive STM32CubeMX configuration tool.
- Easy to develop based on the Hardware Abstraction Layer (HAL) or the low-layer library (LL) allowing maximum re-use and faster time-to-market.

STM32G0 ONLINE TRAINING
www.st.com/stm32g0-online-training

STM32G081 BLOCK DIAGRAM

System

| Power supply POR/PDR/PVD/BOR |
| Xtal oscillator 32 kHz + 1 to 64 MHz |
| Internal RC oscillators 32 kHz (±5%) + 16 MHz (±1%) |
| PLL + Prescaler |
| Clock control |
| RTC/AWU |
| Systick timer |
| 2x watchdogs (independent and window) |
| 60 I/Os on 64 pins |
| Cyclic redundancy check (CRC) |

Arm® Cortex®-M0+ CPU Up to 64 MHz

| Nested vector interrupt Controller (NVIC) |
| SW debug |
| Memory Protection Unit |
| AHB-Lite bus matrix |
| APB bus |
| Up to 128-Kbyte Flash memory |
| Up to 36-Kbyte SRAM |
| 20-byte backup registers |
| Boot ROM |
| 7-channel DMA |

Analog

| Temp. sensor |
| 1x 12-bit ADC SAR 16-channels / 2.5 MSPS |
| 1x 12-bit DAC 2ch |
| 2x comparators |

Encryption

| AES (256-bit) |
| True RNG |

Connectivity

| 2x SPI (I²S) |
| 4x USART (2x with LIN, smartcard, IrDA, modem control) |
| 1x LPUART |
| 2x I²C (SMBus, PMBus, Fast Mode Plus) |
| USB Power Delivery (incl. BMC + PHY) |

Control

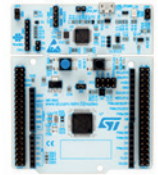| 1x 32-bit timer |
| 1x 16-bit Motor C. timer f_{MAX} = 128 MHz 4 PWM + 3 compl. |
| 5x 16-bit timers 2 PWM each one with f_{MAX} = 128 MHz |
| 2x Low-power timers |

HARDWARE TOOLS

A full set of evaluation boards enables flexible prototyping as well as full STM32G0 evaluation.

STM32G081B-EVAL
Evaluation board

NUCLEO-G070RB* /
NUCLEO-G071RB
(64-pin Nucleo)
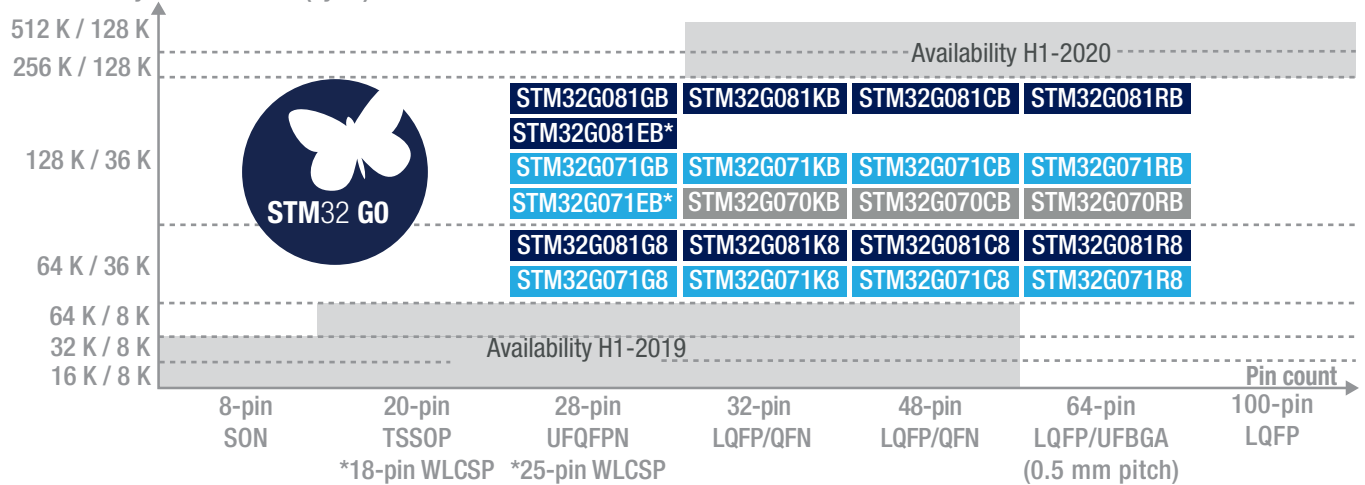
* available soon

SOFTWARE TOOLS

STM32CubeMX enables fast development thanks to its MCU clock configurator, power consumption calculator and code generation tools.

EMBEDDED SOFTWARE

The STM32CubeG0 package includes the STM32Cube HAL and low-layer (LL) API peripheral drivers, plus a integrated set of middleware components (RTOS, USB, FatFS, graphics). All embedded software utilities come with a full set of examples running on STMicroelectronics boards.

STM32G0 PORTFOLIO

Flash memory size / RAM size (bytes)

Flash/RAM	8-pin SON	20-pin TSSOP *18-pin WLCSP	28-pin UFQFPN *25-pin WLCSP	32-pin LQFP/QFN	48-pin LQFP/QFN	64-pin LQFP/UFBGA (0.5 mm pitch)	100-pin LQFP
512 K / 128 K						Availability H1-2020	
256 K / 128 K							
128 K / 36 K			STM32G081GB	STM32G081KB	STM32G081CB	STM32G081RB	
			STM32G081EB*				
			STM32G071GB	STM32G071KB	STM32G071CB	STM32G071RB	
			STM32G071EB*	STM32G070KB	STM32G070CB	STM32G070RB	
64 K / 36 K			STM32G081G8	STM32G081K8	STM32G081C8	STM32G081R8	
			STM32G071G8	STM32G071K8	STM32G071C8	STM32G071R8	
64 K / 8 K			Availability H1-2019				
32 K / 8 K							
16 K / 8 K						Pin count	

Legend:
- STM32G0x1 Access line With 128-/256-bit AES Hardware Encryption
- STM32G0x1 Access line Without 128-/256-bit AES Hardware Encryption
- STM32G0x0 Value line

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