STM32G4 Series
Mainstream MCUs

STM32G4 mixed-signal MCUs shaped for analog-rich applications

The STM32G4 series combines powerful Arm® Cortex®-M4 plus FPU and DSP capability with rich and advanced analog peripherals. It introduces two new mathematical accelerators (Cordic and Filtering), CAN-FD (Flexible Datarate), USB-C Power Delivery 3.0 and advanced security and safety features. Its new high-resolution timer V2.0 continues the Digital Power success story.

KEY FEATURES

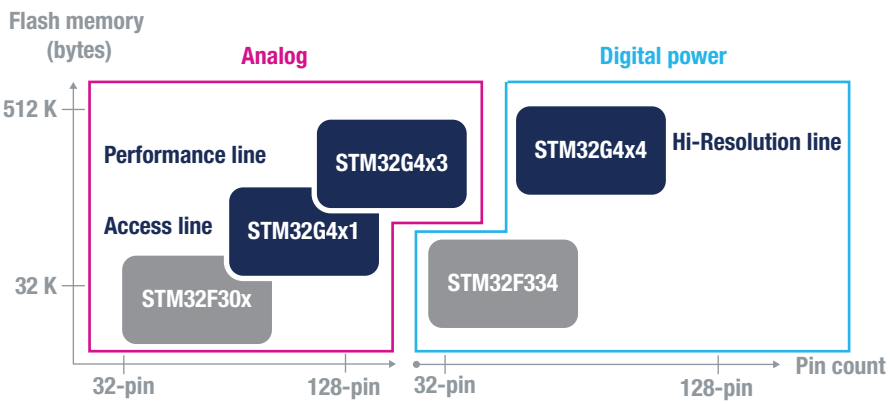
- Performance
  - Arm® Cortex®-M4 with FPU
  - Up to 170 MHz CPU frequency
  - Up to 213 DMIPS and 550 CoreMark® results
- Rich and advanced analog peripherals
- Safety and security focus
- Complete portfolio
  - 32- to 128-pin packages
  - 32 to 512 Kbytes of Flash memory
  - Full set of development and evaluation boards
  - Code examples and software tools

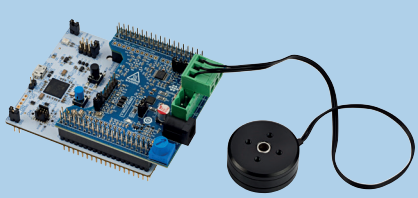
KEY BENEFITS

- Reduced PCB size and BOM cost
- Mixed-signal SoC for a wide variety of
- applications
- Designed for motor control applications

KEY APPLICATIONS

- Home appliances and E-bikes
- Air conditioning
- Industrial equipment
- Rechargeable devices, drones and toys
- Servers, telecom equipment, and EV charging stations
- Instrumentation and measurement equipment





Dedicated Motor Control Nucleo Pack (P-NUCLEO-IHM03)

STM32G474 BLOCK DIAGRAM

Connectivity
- 4x SPI, 4x I²C, 6x UxART
- 1x USB 2.0 FS, 1x USB-C PD3.0 (+PHY)
- 3x CAN-FD
- 2x I²S half duplex, SAI

External interface
- FSMC 8-/16-bit (TFT-LCD, SRAM, NOR, NAND)
- Quad SPI

Accelerators
- ART Accelerator™
- 32-Kbyte CCM-SRAM

Math Accelerators
- Cordic (trigo...) Filtering

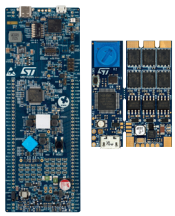
Arm® Cortex®-M4 Up to 170 MHz 213 DMIPS
- Floating Point Unit
- Memory Protection Unit
- Embedded Trace Macrocell
- 16-channel DMA + MUX
- Up to 2x 256-Kbyte Flash memory / ECC Dual Bank
- 96-Kbyte SRAM

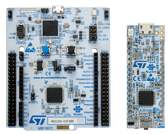
Timers
- 5x 16-bit timers
- 2x 16-bit basic timers
- 3x 16-bit advanced motor control timers
- 2x 32-bit timers
- 1x 16-bit LP timer
- 1x HR timer (D-Power) 12-channel w/ 184ps (A. delay line)

Analog
- 5x 12-bit ADC w/ HW overspl
- 7x Comparators
- 7x DAC (3x buff + 4x non-buff)
- 6x op-amps (PGA)
- 1x temperature sensor
- Internal voltage reference

HARDWARE TOOLS

A full set of evaluation boards enables flexible prototyping as well as full STM32G4 evaluation.





Discovery kits
B-G474E-DPOW1*
B-G431B-ESC1*

Evaluation boards
STM32G474E-EVAL
STM32G484E-EVAL

Nucleo boards
NUCLEO-G431KB*
NUCLEO-G431RB
NUCLEO-G474RE

Note *: available in Q3-2019

SOFTWARE TOOLS

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

EMBEDDED SOFTWARE

The STM32CubeG4 embedded software solution, featuring HAL, Low-Layer APIs and CMSIS (CORE, DSP, RTOS), USB, file system, RTOS, and graphics, comes with real-life example code for all boards.

STM32G4 PORTFOLIO

Flash memory / RAM size (bytes)

	32-pin LQFP/QFN	48-pin LQFP/QFN/WLCSP	64-pin LQFP/BGA	80-pin LQFP/WLCSP	100-pin LQFP/BGA	128-pin LQFP
512 K / 128 K		STM32G484CE STM32G474CE STM32G483CE STM32G473CE	STM32G484RE STM32G474RE STM32G483RE STM32G473RE	STM32G484ME STM32G474ME STM32G483ME STM32G473ME	STM32G484VE STM32G474VE STM32G483VE STM32G473VE	STM32G484QE STM32G474QE STM32G483QE STM32G473QE
512 K / 112 K	STM32G491KE	STM32G491CE	STM32G491RE	STM32G491ME	STM32G491VE	
256 K / 128 K		STM32G474CC STM32G473CC	STM32G474RC STM32G473RC	STM32G474MC STM32G473MC	STM32G474VC STM32G473VC	STM32G474QC STM32G473QC
256 K / 112 K	STM32G491KC	STM32G491CC	STM32G491RC	STM32G491MC	STM32G491VC	
128 K / 128 K		STM32G474CB STM32G473CB	STM32G474RB STM32G473RB	STM32G474MB STM32G473MB	STM32G474VB STM32G473VB	STM32G474QB STM32G473QB
128 K / 32 K	STM32G441KB STM32G431KB	STM32G441CB STM32G431CB	STM32G441RB STM32G431RB	STM32G441MB STM32G431MB	STM32G441VB STM32G431VB	
64 K / 32 K	STM32G431K8	STM32G431C8	STM32G431R8	STM32G431M8	STM32G431V8	
32 K / 32 K	STM32G431K6	STM32G431C6	STM32G431R6	STM32G431M6	STM32G431V6	

Pin count

STM32 G4

Legend: Crypto AES-256 | Available soon

STM32G4 ON-LINE TRAINING
www.st.com/stm32g4-online-training

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