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

www.st.com/stm32g4
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 4FS half duplex, SAI

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

Connectivity
- Arm® Cortex®-M4 Up to 170 MHz 213 DMIPS

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 buf + 4x non-buff)
- 6x op-amps (PGA)
- 1x temperature sensor
- Internal voltage reference

Accelerators
- Cordic (trigo...)
- Filtering

Embedded Trace Macrocell
- 16-channel DMA + MUX
- Up to 2x 256-Kbyte Flash memory / ECC
- Dual Bank

Floating Point Unit

Memory Protection Unit

STM32G4 PORTFOLIO

<table>
<thead>
<tr>
<th>Flash memory / RAM size (bytes)</th>
<th>STM32G484CE</th>
<th>STM32G484RE</th>
<th>STM32G484ME</th>
<th>STM32G484VE</th>
<th>STM32G484OE</th>
</tr>
</thead>
<tbody>
<tr>
<td>512 K / 128 K</td>
<td>STM32G474CE</td>
<td>STM32G474RE</td>
<td>STM32G474ME</td>
<td>STM32G474VE</td>
<td>STM32G474OE</td>
</tr>
<tr>
<td>512 K / 112 K</td>
<td>STM32G491CE</td>
<td>STM32G491RE</td>
<td>STM32G491ME</td>
<td>STM32G491VE</td>
<td>STM32G491OE</td>
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<tr>
<td>256 K / 112 K</td>
<td>STM32G491CC</td>
<td>STM32G491RC</td>
<td>STM32G491MC</td>
<td>STM32G491VC</td>
<td>STM32G491OC</td>
</tr>
<tr>
<td>128 K / 32 K</td>
<td>STM32G441KB</td>
<td>STM32G441MB</td>
<td>STM32G441VB</td>
<td>STM32G441VC</td>
<td>STM32G441OC</td>
</tr>
<tr>
<td>64 K / 32 K</td>
<td>STM32G431KB</td>
<td>STM32G431MB</td>
<td>STM32G431VB</td>
<td>STM32G431VC</td>
<td>STM32G431OC</td>
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<tr>
<td>32 K / 32 K</td>
<td>STM32G431KB</td>
<td>STM32G431MC</td>
<td>STM32G431VB</td>
<td>STM32G431VC</td>
<td>STM32G431OC</td>
</tr>
</tbody>
</table>

HARDWARE TOOLS

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

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 ON-LINE TRAINING

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