STM32™ 32-bit MCU family
Leading supplier of ARM® Cortex®-M microcontrollers
By choosing one of ST’s microcontrollers for your embedded application, you gain from our leading expertise in MCU architecture, technology, multi-source manufacturing and long-term supply.

The STM32® portfolio offers an extraordinary variety of options, now including ARM® Cortex®-M cores (M0, M0+, M3, M4 and M7), giving developers flexibility to find the perfect STM32 for their applications. Particular attention is paid to accommodate porting of applications from one device to another. The binary compatibility combined with the similar pinout assignment, hardware IPs proliferation and higher level programming language makes the development job far more convenient when dealing with the STM32 families.

**HIGH-DEGREE OF INTEGRATION AND RICH CONNECTIVITY**

- **STM32F7**: very high performance MCUs with advanced features
  Cortex®-M7 with 256 Kbytes to 2 Mbytes of Flash
- **STM32F4**: from access to the high performance up to advanced features with
  DSP and FPU instructions
  Cortex®-M4 with 64 Kbytes to 2 Mbytes of Flash
- **STM32F2**: mid-range MCUs with excellent price-performance ratio
  Cortex®-M3 with 128 Kbytes to 1 Mbyte of Flash

**SCALABLE SET OF MCUS FOR A LARGE VARIETY OF APPLICATIONS**

- **STM32F3**: upgraded F1 series with various level of advanced analog peripherals
  Cortex®-M4 with 16 to 512 Kbytes of Flash
- **STM32F1**: foundation series based on Cortex-M3 from 16 Kbytes to 1 Mbyte of Flash
- **STM32F0**: entry-level MCUs extending to 8-/16-bit world
  Cortex®-M0 with 16 to 256 Kbytes of Flash

**HIGH-PERFORMANCE**

- **STM32F4**: very high performance MCUs with advanced features
  Cortex®-M7 with 256 Kbytes to 2 Mbytes of Flash
- **STM32F4**: from access to the high performance up to advanced features with
  DSP and FPU instructions
  Cortex®-M4 with 64 Kbytes to 2 Mbytes of Flash
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**MAINSTREAM**

- **STM32F3**: upgraded F1 series with various level of advanced analog peripherals
  Cortex®-M4 with 16 to 512 Kbytes of Flash
- **STM32F1**: foundation series based on Cortex-M3 from 16 Kbytes to 1 Mbyte of Flash
- **STM32F0**: entry-level MCUs extending to 8-/16-bit world
  Cortex®-M0 with 16 to 256 Kbytes of Flash

**ULTRA-LOW-POWER**

- **STM32L4**: excellence in ultra-low-power with performance
  Cortex®-M4 with 128 Kbytes to 1 Mbyte of Flash (205 ULPMark/273 CoreMark)
- **STM32L1**: market-proven answer for 32-bit applications
  Cortex®-M3 with 32 to 512 Kbytes of Flash
- **STM32L0**: perfect fit for 8-/16-bit applications and cost-down designs
  Cortex®-M0+ with 8 to 192 Kbytes of Flash (161 ULPMark/75 CoreMark)

**TINY POWER BUDGET APPLICATIONS**

- **STM32L4**: excellence in ultra-low-power with performance
  Cortex®-M4 with 128 Kbytes to 1 Mbyte of Flash (205 ULPMark/273 CoreMark)
- **STM32L1**: market-proven answer for 32-bit applications
  Cortex®-M3 with 32 to 512 Kbytes of Flash
- **STM32L0**: perfect fit for 8-/16-bit applications and cost-down designs
  Cortex®-M0+ with 8 to 192 Kbytes of Flash (161 ULPMark/75 CoreMark)

Functional Safety Design Packages for STM32
(including SIL and CLASSB standards)

www.st.com/stm32safety
### STM32® THE LEADING CORTEX-M PORTFOLIO

#### High-performance

<table>
<thead>
<tr>
<th>Series</th>
<th>Microcontroller</th>
<th>Up to</th>
<th>SRAM</th>
<th>USB</th>
<th>16-bit</th>
<th>ADC</th>
<th>Crypto</th>
<th>CAN</th>
<th>HR-Timer</th>
<th>ADC</th>
<th>LCD-TFT</th>
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<td>L1-Cache</td>
<td>dual-bank Flash</td>
<td>512-Kbyte SRAM</td>
<td>USB</td>
<td>2.0 OTG</td>
<td>SF/H</td>
<td>2.0 OTG</td>
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<td>dual-bank Flash</td>
<td>384-Kbyte SRAM</td>
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<td>2.0 OTG</td>
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<td>128-Kbyte SRAM</td>
<td>USB</td>
<td>2.0 OTG</td>
<td>SF/H</td>
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<td>MC timer</td>
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#### Mainstream

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<tr>
<th>Series</th>
<th>Microcontroller</th>
<th>Up to</th>
<th>SRAM</th>
<th>USB</th>
<th>16-bit</th>
<th>Crypto</th>
<th>FMC</th>
<th>SMC</th>
<th>CAN</th>
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<th>HDMI-CEC</th>
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#### Ultra-Low-Power

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<th>USB</th>
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### ST MCU Finder

Free mobile application to find the right STM32 MCU

www.st.com/stmcufinder
STM32 ECOSYSTEM

Hardware tools
www.st.com/stm32hardwaretools

- STM32 Nucleo board
- Discovery kit
- Evaluation board

Flexible prototyping
Creative demos
Full-feature evaluation

Software tools
www.st.com/stm32softwaretools

- STM32CubeMX
- Partners IDEs
- STMStudio

Configure and generate code
Compile and debug
Monitor

Note: Free full version of Keil MDK-ARM on all STM32L0 and STM32F0

Embedded Software
www.st.com/stm32embeddedsoftware

- STM32Cube LL
- STM32Cube HAL and middleware
- CMSIS and Mbed SDK

STM32Cube LL (Low Layer)
STM32Cube HAL and middleware
Std Libraries

High optimization
Average optimization
Low optimization

low portability
STM32 portability
ARM portability
large portability

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