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-PERFORMANCE**

- **STM32F7**: very high performance MCUs with advanced features
  - Cortex®-M7 with 512 Kbytes to 1 Mbyte of Flash
- **STM32F4**: from access to the high performance up to advanced features with DSP and FPU instructions
  - Cortex®-M4 with 128 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

**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 (100 DMIPS/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 16 to 192 Kbytes of Flash

**HIGH DEGREE OF INTEGRATION AND RICH CONNECTIVITY**

**TINY POWER BUDGET APPLICATIONS**

- **STM32L4**: excellence in ultra-low-power with performance
  - Cortex®-M4 with 128 Kbytes to 1 Mbyte of Flash (100 DMIPS/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 16 to 192 Kbytes of Flash
### STM32® THE LEADING CORTEX-M PORTFOLIO

#### High-performance

**STM32F7 series** – Very high performance with DSP and FPU (STM32F7x6)
- 200 MHz Cortex-M7 CPU
- Up to 1-Mbyte Flash
- Up to 336-Kbyte SRAM
- 2x USB 2.0 OTG FS/HS
- 36-bit advanced MC timer
- 2 CAN CEC FMC
- SDIO 2x P’s audio Camera IF
- Crypto Ethernet IEEE 1588 2x SAI
- LCD-TFT SDRAM I/F Quad SPI SPDIF input

- Up to 180 MHz Cortex-M4 DSP/FPU
- Up to 2-Mbyte Flash
- Up to 256-Kbyte SRAM
- 2x USB 2.0 OTG FS/HS
- 36-bit advanced MC timer
- 2 CAN CEC FMC
- SDIO 3x P’s audio Camera IF
- Crypto Ethernet IEEE 1588 2x SAI
- LCD-TFT SDRAM I/F Quad SPI SPDIF input

**STM32F2 series** – High performance (STM32F2x5 and 2x7)
- 120 MHz Cortex-M3 CPU
- Up to 1-Mbyte Flash
- Up to 128-Kbyte SRAM
- 2x USB 2.0 OTG FS/HS
- 36-bit advanced MC timer
- 2 CAN 2.0B FSMC
- SDIO 2x P’s audio Camera IF
- Crypto Ethernet IEEE 1588

#### Mainstream

**STM32F3 series** – Mixed-signal with DSP (STM32F301/302/303/334/373/3x8)
- 72 MHz Cortex-M4 with DSP/FPU
- Up to 512-Kbyte Flash
- Up to 80-Kbyte SRAM CCAR-28
- 3x 16-bit advanced MC timer
- CAN CEC FSFMC
- 7x comparator 4x PGA
- HR-Timer
- 3x 16-bit ΣΔ ADC

**STM32F1 series** – Mainstream (STM32F100/101/102/103 and 105-107)
- Up to 72 MHz Cortex-M3 CPU
- Up to 1-Mbyte Flash
- Up to 96-Kbyte SRAM CCAR-28
- 2x USB 2.0 OTG FS
- 2x CAN CEC FSFMC
- SDIO 2x P’s audio
- Ethernet IEEE 1588

**STM32F0 series** – Entry-level (STM32F0x0/0x1/0x2 and 0x8)
- 48 MHz Cortex-M0 CPU
- Up to 256-Kbyte Flash
- Up to 32-Kbyte SRAM 20-byte backup data
- USB 2.0 FS device
- Crystal less
- CAN CEC
- DAC
- Comparator

#### Ultra-Low-Power

**STM32L4 series** – Ultra-Low-Power (STM32L4x6)
- 80 MHz Cortex-M4 CPU
- Up to 1-Mbyte Flash
- Up to 128-Kbyte SRAM
- USB 2.0 OTG FS
- 2x 16-bit advanced MC timer
- LCD up to 8x40
- Op-amps comparator
- FSMC SDIO CAN DFSDM
- AES 256-bit T-RNG 2 x SAI

**STM32L1 series** – Ultra-Low-Power (STM32L100/151-152/151-152/162)
- 32 MHz Cortex-M3 CPU
- Up to 512-Kbyte Flash
- Up to 80-Kbyte SRAM
- Up to 16-Kbyte EEPROM
- USB 2.0 FS Device
- LCD up to 8x40
- Op-amps comparator
- FSMC SDIO
- AES 128-bit

**STM32L0 series** – Ultra-Low-Power (STM32L0x1/0x2/0x3)
- 32 MHz Cortex-M0+ CPU
- Up to 192-Kbyte SRAM
- Up to 20-Kbyte SRAM
- Up to 6-Kbyte EEPROM
- USB 2.0 FS device
- Crystal less
- LCD 8x40 4x52
- T-RNG comparator
- LP Timer LP UART LP 12-bit ADC
- AES 128-bit

### ST MCU Finder

Free mobile application to find the right STM32 MCU

[www.st.com/stm32safety](http://www.st.com/stm32safety)  [www.st.com/stmcufinder](http://www.st.com/stmcufinder)
STM32 ECOSYSTEM

Hardware tools

- STM32 Nucleo board
- Discovery kit
- Evaluation board

Software tools

- STM32CubeMX
- Partners IDEs
- STMStudio

Embedded software

- STM32Snippets
- STM32Cube and Std Libraries
- CMSIS and Mbed SDK
- Virtual machines and models

- High optimization
- Average optimization
- Low optimization

- Low portability
- STM32 portability
- ARM portability
- Large portability

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

For more information on ST products and solutions, visit www.st.com/stm32

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