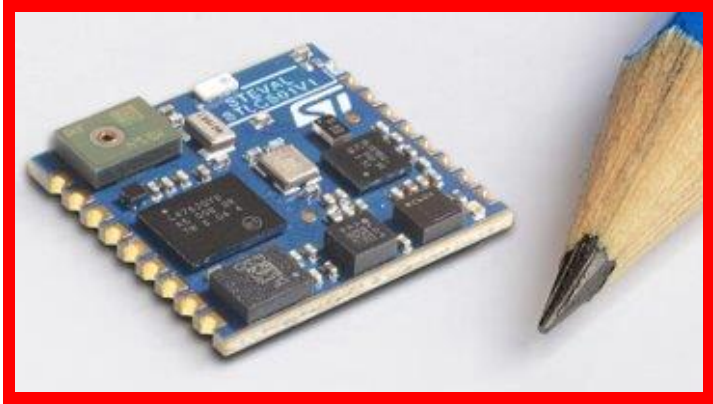
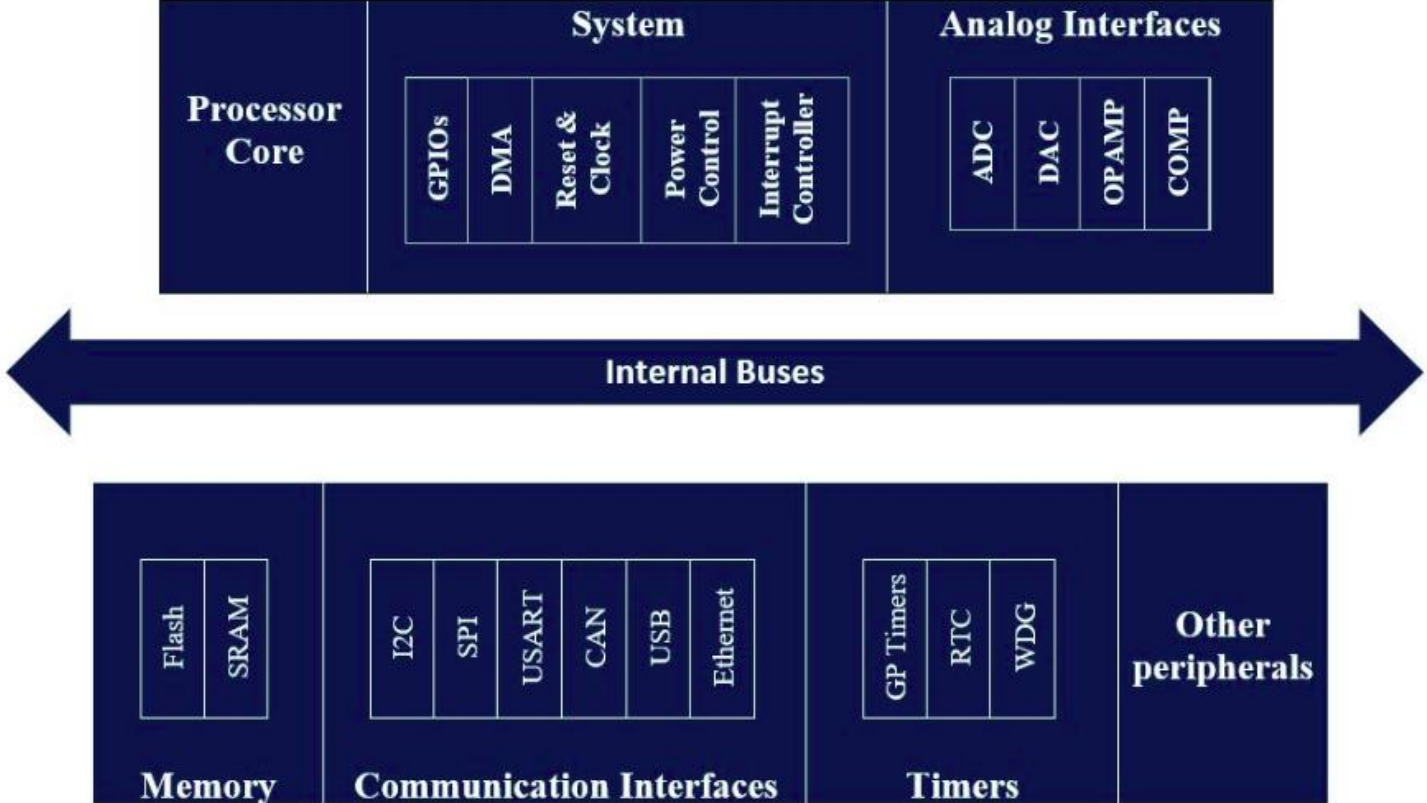


Programming Embedded Platforms

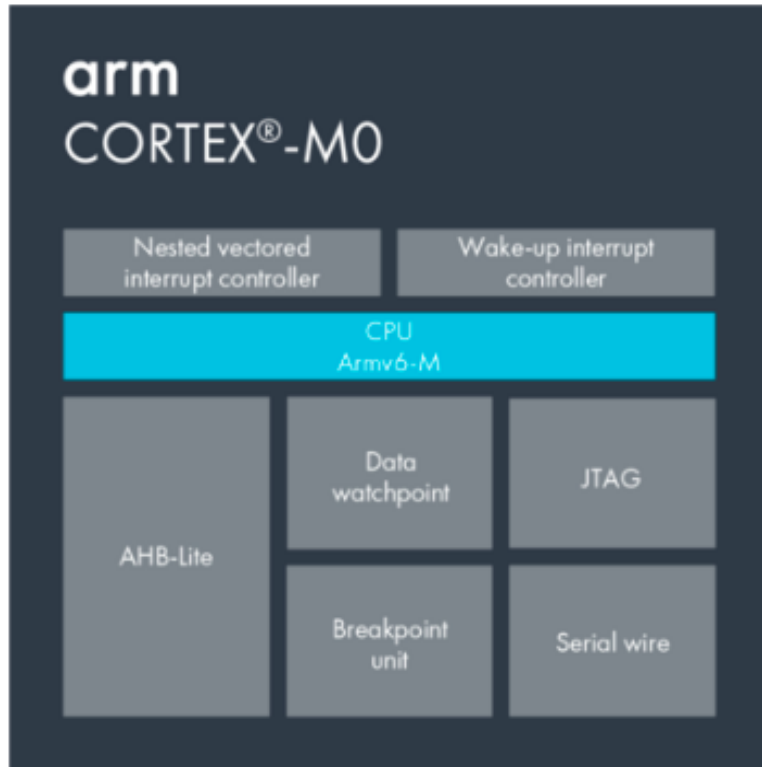
Hands-on with STM32 platforms



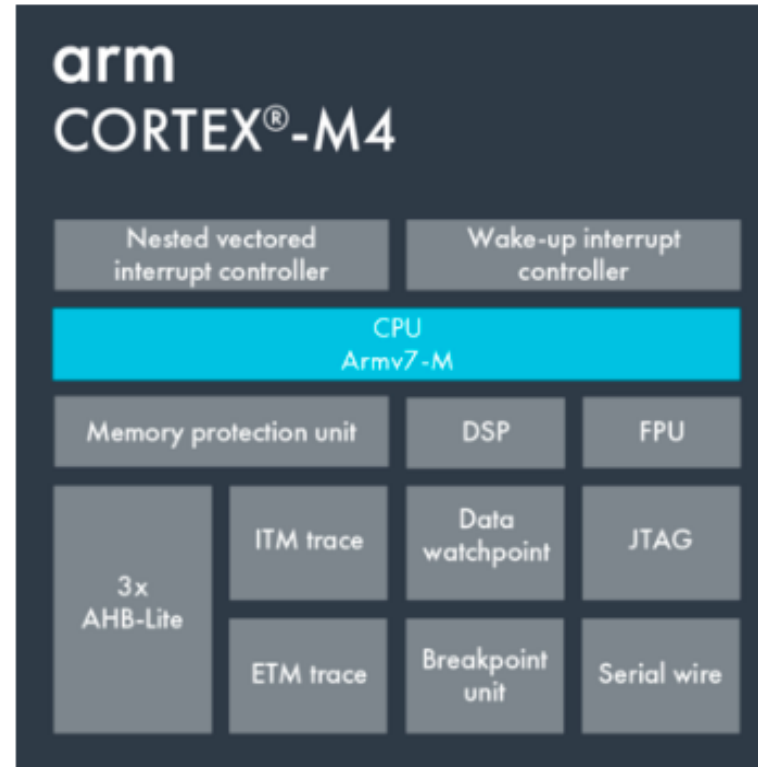
Micro-controllers



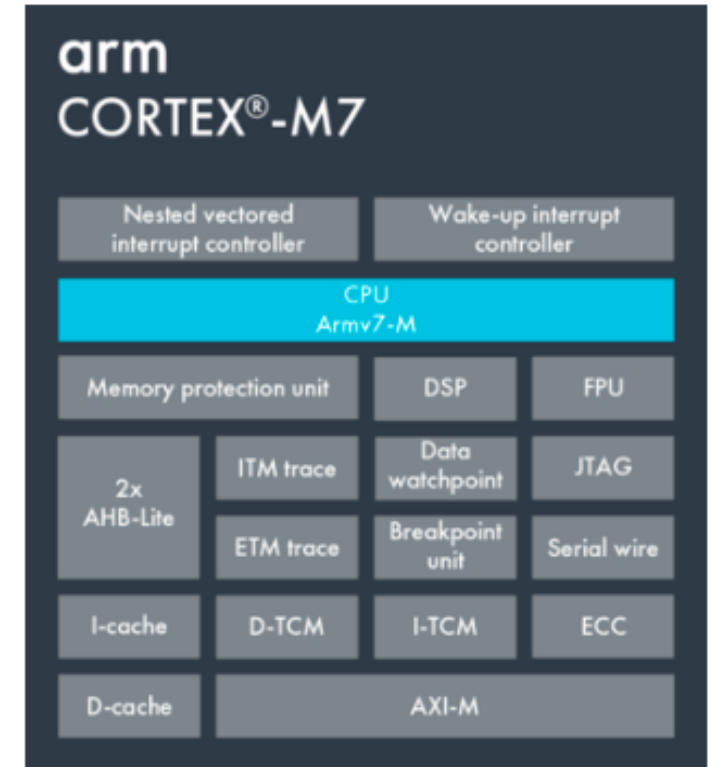
Nucleo board (M0), Sensortile (M7)



Cortex-M0 [↗](#)



Cortex-M4 [↗](#)



Cortex-M7 [↗](#)

Microcontrollers based on application requirement


	Family	Core	Max Frequency	Flash
High Performance	STM32H7	Cortex-M7 - Cortex-M4	480 MHz - 240 MHz	1 to 2 Mbytes
	STM32F7	Cortex-M7	216 MHz	256 Kbytes to 2 Mbytes
	STM32F4	Cortex-M4	180 MHz	64 Kbytes to 2 Mbytes
	STM32F2	Cortex-M3	120 MHz	128 Kbytes to 1 Mbyte
Mainstream	STM32G4	Cortex-M4	170 MHz	32 to 512 Kbytes
	STM32F3	Cortex-M4	72 MHz	16 to 512 Kbytes
	STM32F1	Cortex-M3	72 MHz	16 Kbytes to 1 Mbyte
	STM32G0	Cortex-M0+	64 MHz	16 to 512 Kbytes
	STM32F0	Cortex-M0	48 MHz	16 to 256 Kbytes
Ultra-low-power	STM32U5	Cortex-M33	160 MHz	1024 to 2048 Kbytes
	STM32L5	Cortex-M33	110 MHz	256 to 512 Kbytes
	STM32L4+	Cortex-M4	120 MHz	512 Kbytes to 2 Mbytes
	STM32L4	Cortex-M4	80 MHz	64 Kbytes to 1 Mbyte
	STM32L1	Cortex-M3	32 MHz	32 to 512 Kbytes
	STM32L0	Cortex-M0+	32 MHz	8 to 192 Kbytes
Wireless	STM32WB	Cortex-M4 - Cortex-M0+	64 MHz - 32 MHz	256 Kbytes to 1 Mbyte
	STM32WL	Cortex-M4	48 MHz	64 Kbytes to 256 Kbytes

How to program Sensortile?



<https://www.youtube.com/watch?v=dEJTiGXs93w>

Sample applications with Android/iOS App

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Part number	Status	Description	Type	Supplier
EdgeST-SDK	ACTIVE	Edge computing software development kit (SDK)	Evaluation Tool Software	ST
STSW-STLKT01	ACTIVE	Embedded software samples for SensorTile, including sensor data streaming via USB and BLE, data logging on SD card, audio acquisition and playback	Evaluation Tool Software	ST

MCU & MPU Embedded Software

Part number	Status	Description	Type	Supplier
FP-AI-SENSING1	ACTIVE	STM32Cube function pack for ultra-low power IoT node with artificial intelligence (AI) application based on audio and motion sensing	STM32 ODE Function Pack SW	ST
FP-SNS-ALLMEMS1	ACTIVE	STM32 ODE function pack for IoT node with BLE connectivity, digital microphone, environmental and motion sensors	STM32 ODE Function Pack SW	ST
FP-SNS-ALLMEMS2	ACTIVE	STM32Cube function pack for ultra-low power IoT node with BLE connectivity, digital microphone, environmental and motion sensors	STM32 ODE Function Pack SW	ST
X-CUBE-MEMS1-V4	NRND	Version 4 legacy sensor and motion algorithm software expansion for STM32Cube	STM32Cube Expansion Packages	ST

<https://www.st.com/en/evaluation-tools/steval-stlkt01v1.html#tools-software/>

Variety of SDKs

- ARM Keil
<https://developer.arm.com/Tools%20and%20Software/Keil%20MDK>
- IAR
<https://www.iar.com/products/architectures/arm/iar-embedded-workbench-for-arm/>
- Nordic Semi nRF5-SDK
- Texas Instruments TivaWare
- NXP MCUXpresso
- STM32 Cube
- Atmel START

support for
hardware configuration,
code editing, compiling,
flashing micro-controller,
debugging

System Softwares Related to Embedded Systems

- SDKs
- Operating system (scheduler, page management)
 - Device drivers
- Bootloader