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STM32H7 MCUs for rich and complex applications

Marketing presentation





life.augmented

ff If only

I could add natural language,
cloud-based voice UI
to my product



STM32H7 dual core - Adding natural language cloud-based voice UI to your product



All necessary memory is embedded:
2 MB of Flash and 1 MB of SRAM

Arm® Cortex®-M7 core @480 MHz high
and Arm® Cortex®-M4 core @240 MHz
performances for Audio and voice DSP

Embedded security to protect your
application and secure firmware update

One chip, 2 applications running in parallel

Ready for security : state of the ART cyber
protection and secure firmware update



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ff only

I could address the design challenges
in factory automation systems



STM32H7 single core - Building a factory automation product



High performance for optimized control or HMI

Large embedded memory and external memory support

- Up to 2 MB of Flash & up to 1.4 MB of SRAM
- Fast multiple Octo-SPI interface

Extended connectivity with Ethernet MAC, Multiple FD-CAN and USB

Fast 16-bit and 12-Bit ADC, and extended Temp range support up to 125 °C

SIL ready enabled by native hardware features and safety library



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“If only

I could run deeply embedded
applications with advanced
performance at minimum cost



STM32H7 - Creating a smartphone-like graphic UI for your embedded device



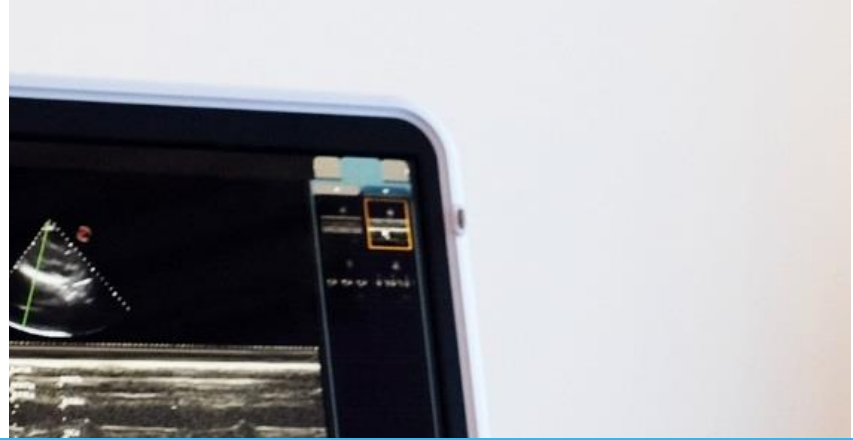
Graphic hardware accelerations for better effects, transitions and fluidity

Up to 1.4 MB SRAM (frame buffer) for integrated and cost-effective single chip solution

Multiple high-speed external memory interface

Graphic support from 64-pin LQFP packages (improved cost effectiveness)

TouchGFX free graphic tool suite for stunning HMI and simplified development



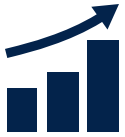
STM32H7





STM32H7 series

New product lines expanding the STM32 portfolio



New Performance Record

Up to 2424 + 800 CoreMark (Cortex[®]-M7 @480MHz + Cortex[®]-M4 @240MHz) in Dual core
Up to 2778 CoreMark (Cortex[®]-M7 @550MHz) in Single core



Single and Dual-core flexible architecture for industrial, security or AI applications
Accelerated graphics, fast data transfer, advanced peripherals



Advanced security features
Crypto Hash, Cortex[®]-M7 Security services



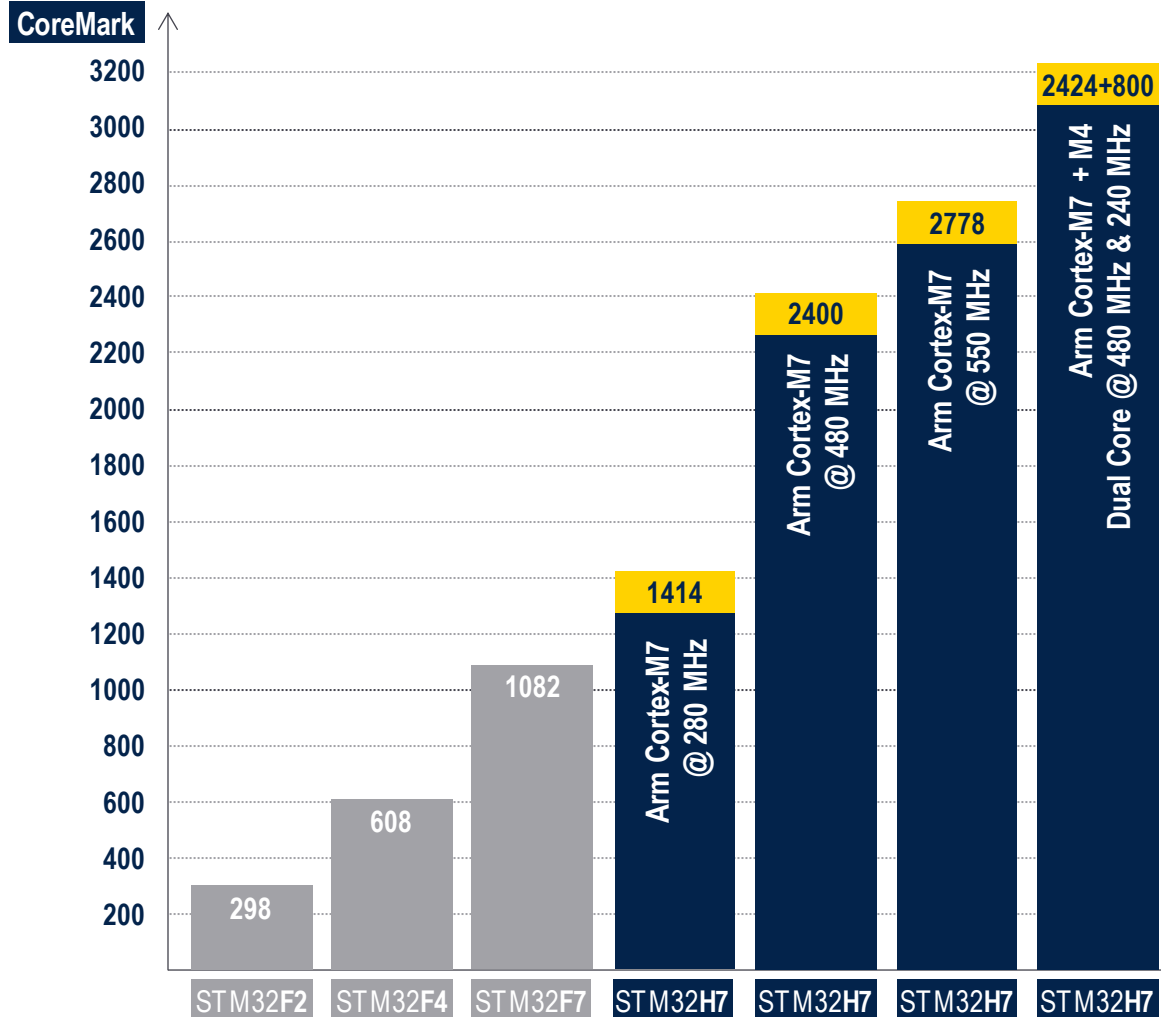
Rich eco-system to speed-up your design
SW tools, HW boards, community and partners

Performance record





High performance range



Arm® Cortex® -M7 up to 550 MHz

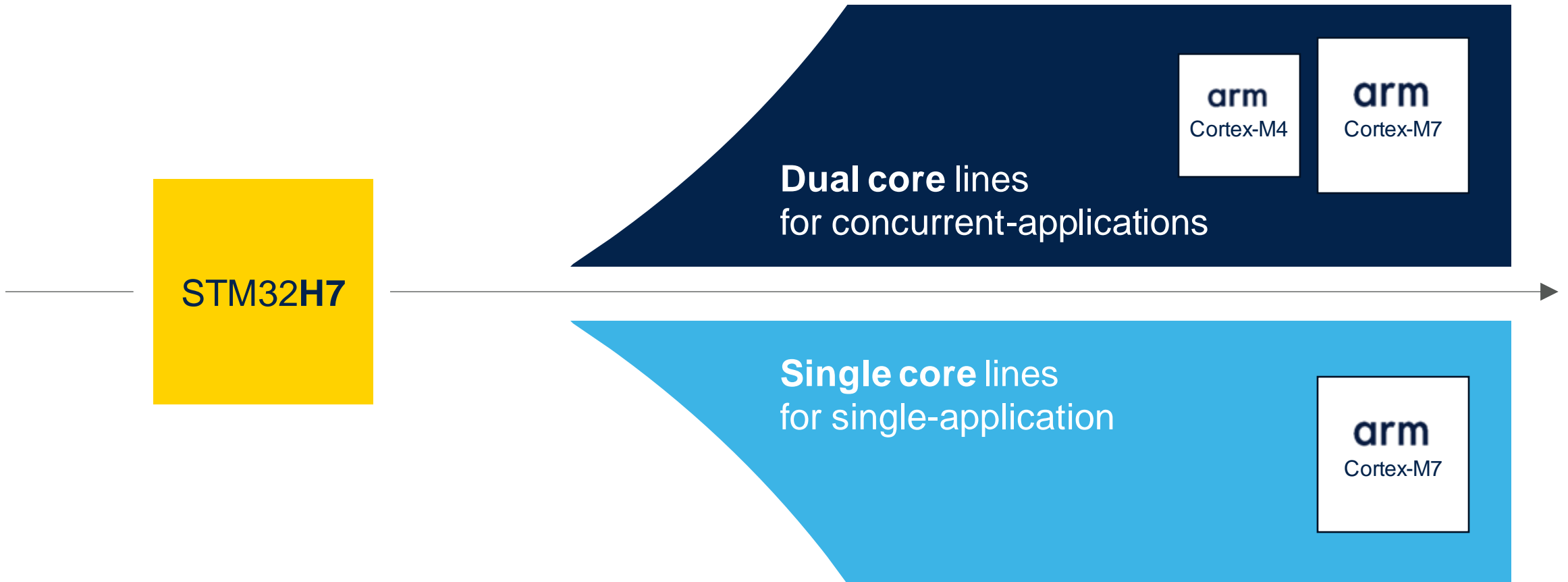
Most powerful Cortex core with double precision FPU, MPU, advanced DSP and L1 cache

Arm® Cortex® -M4 @240 MHz

Best in class core for **real-time** with single precision FPU, DSP, MPU and ART Accelerator™

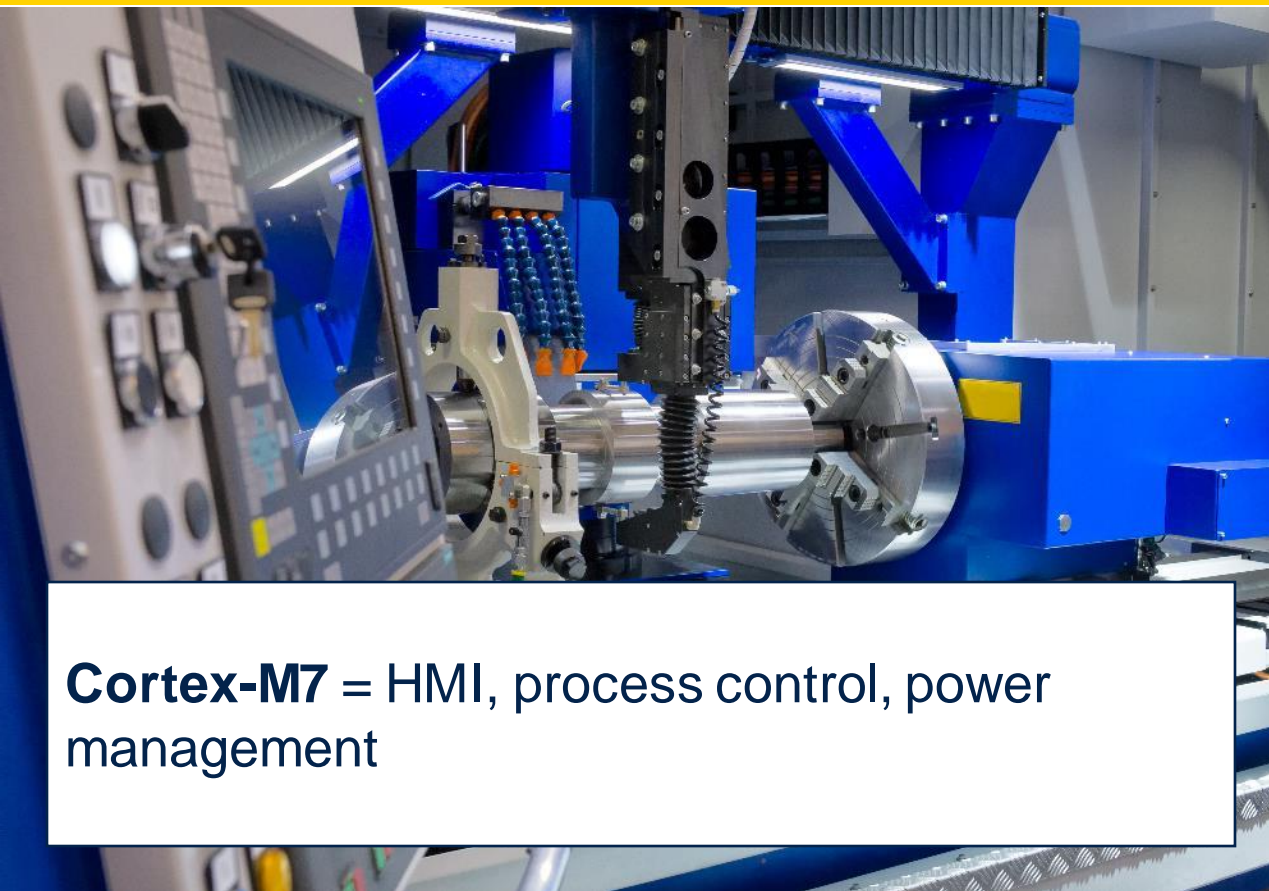


The extended STM32H7 experience



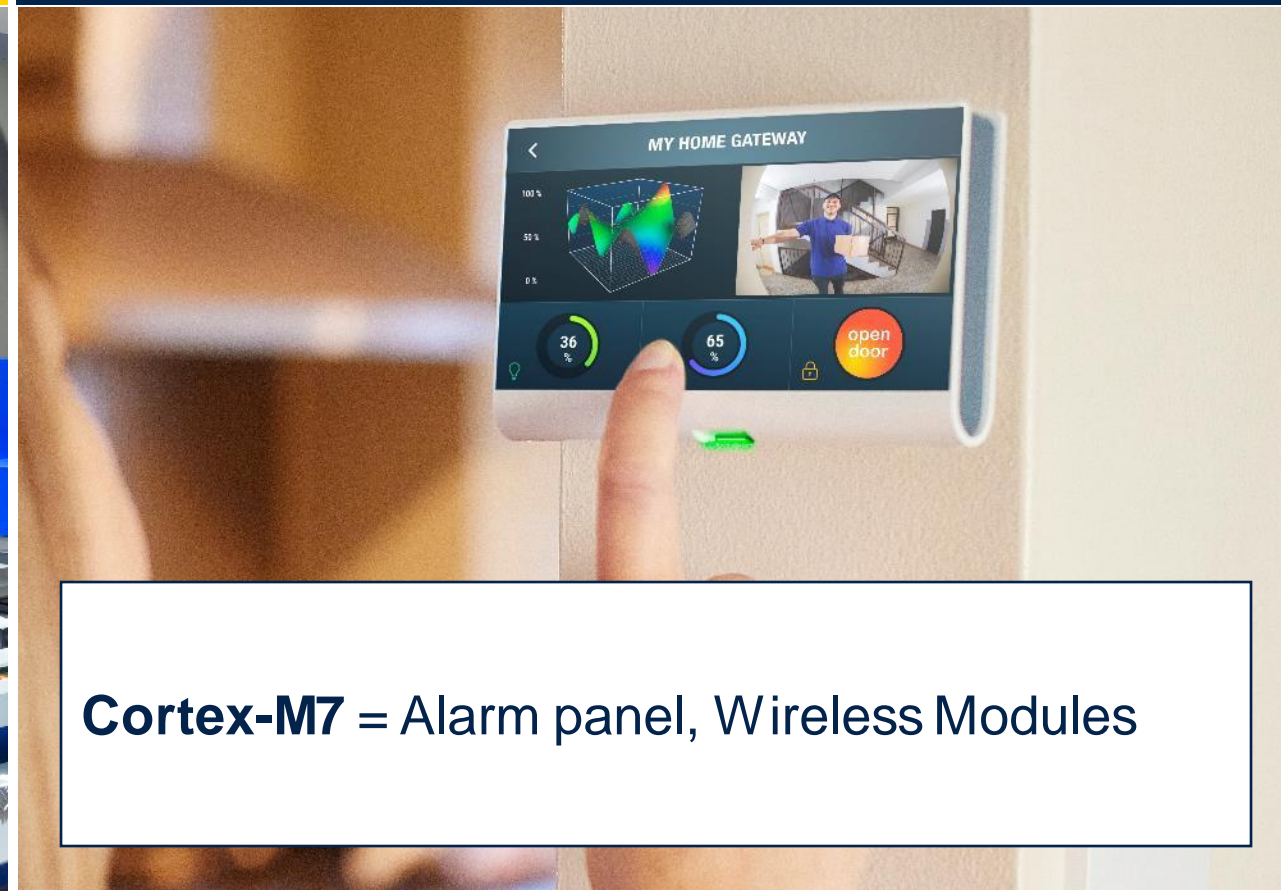
Single Core Architecture Approach for performance and advanced HMI

Factory automation



Cortex-M7 = HMI, process control, power management

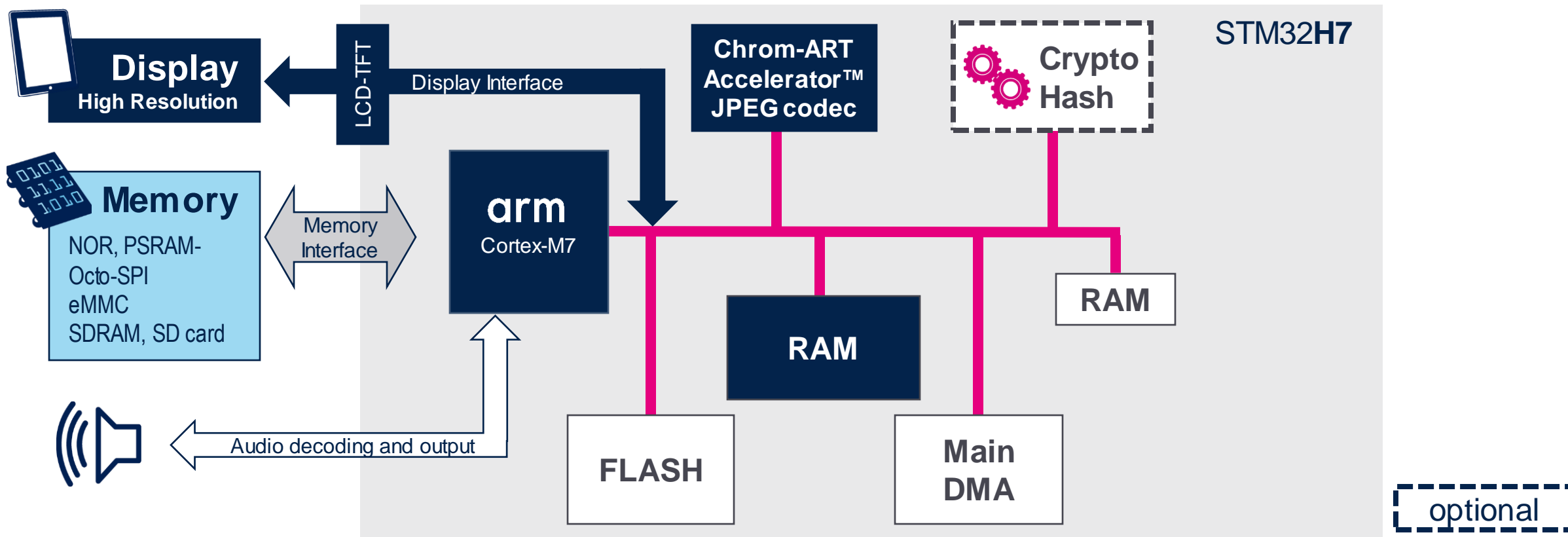
Connectivity & security



Cortex-M7 = Alarm panel, Wireless Modules

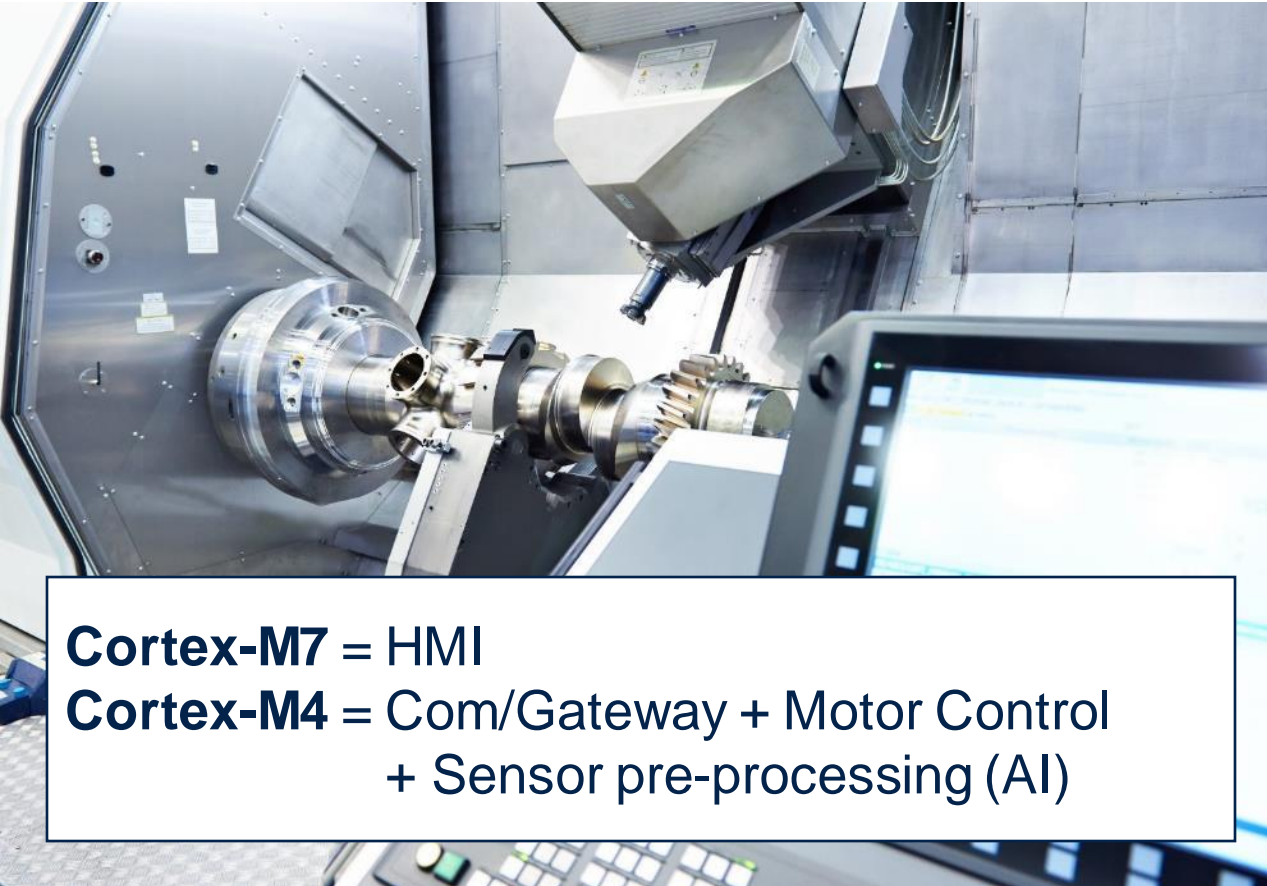
Create a rich human machine interface

Cortex-M7 - handling audio and rich HMI, Real Time control tasks



Dual-core architecture approach for richer and more complex applications

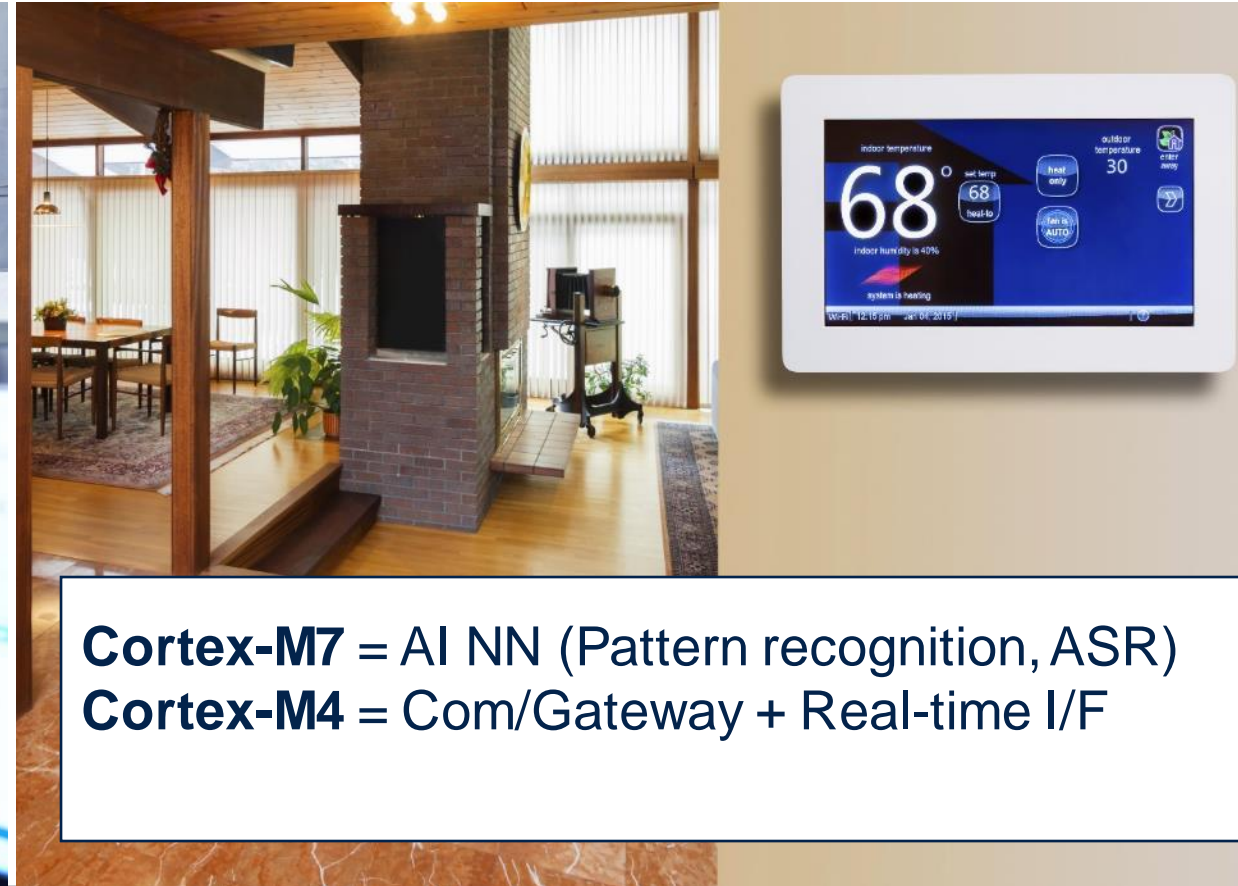
Industrial tool machine



Cortex-M7 = HMI

Cortex-M4 = Com/Gateway + Motor Control
+ Sensor pre-processing (AI)

Home automation & security



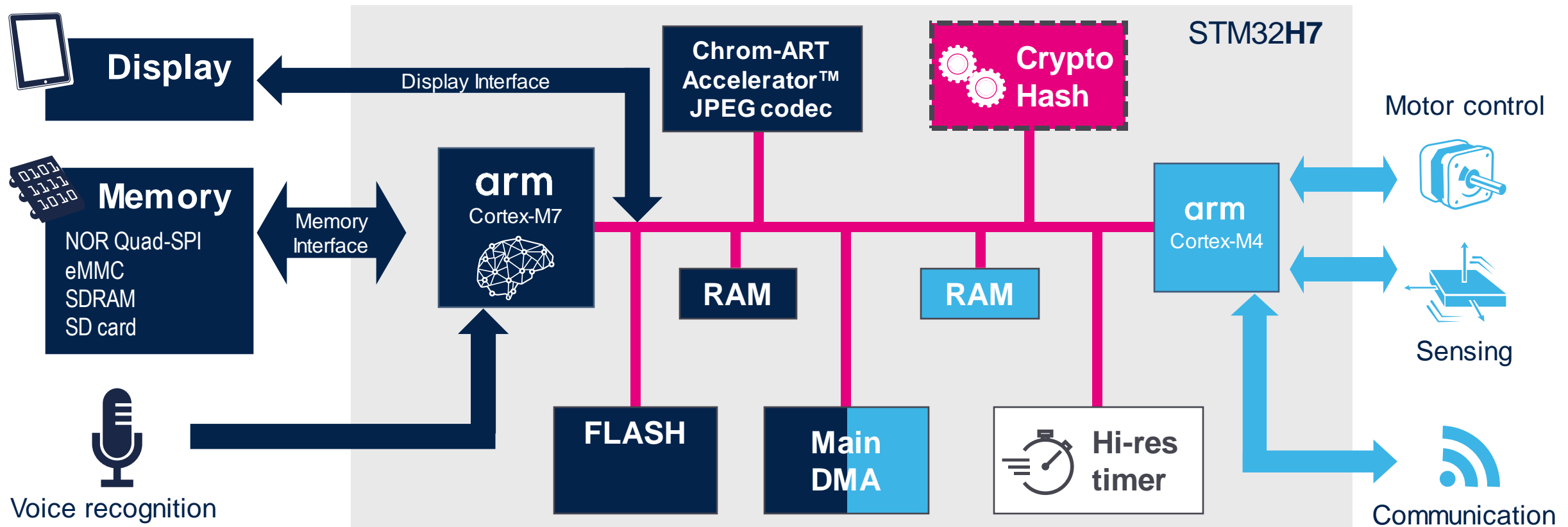
Cortex-M7 = AI NN (Pattern recognition, ASR)

Cortex-M4 = Com/Gateway + Real-time I/F



Build complex applications mixing AI and real-time control

Connected Kitchen Aid with advanced HMI (Large display and Voice recognition)



optional



Powerful cores supported by a powerful architecture

Display nice graphic

The Chrom-ART Accelerator™ and MJPEG codec offload the CPU by more than 90%



Manage security

Use dedicated **cryptography** and **Hashing** HW acceleration to offload the CPU by more than 90%



Transfer data efficiently across peripherals

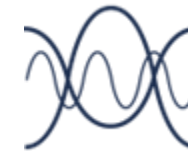
The Main DMA takes care of the most complex schemes between memories and peripherals with up to 16 channels to offload the CPU



STM32H7

Generate complex wave forms

High-Resolution timer (2.1ns) can generate complex wave forms synchronized on multiples events, with no CPU assist



STM32H7 line-up





STM32 MCUs and MPUs portfolio



 MPU

STM32MP1
4158 CoreMark
Up to 800 MHz Cortex-A7
209 MHz Cortex-M4

 High Perf MCUs

STM32F2 Up to 398 CoreMark 120 MHz Cortex-M3	STM32F4 Up to 608 CoreMark 180 MHz Cortex-M4	STM32F7 1082 CoreMark 216 MHz Cortex-M7	STM32H7 Up to 3224 CoreMark Up to 550 MHz Cortex -M7 240 MHz Cortex -M4
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 Mainstream MCUs

STM32F0 106 CoreMark 48 MHz Cortex-M0	STM32G0 142 CoreMark 64 MHz Cortex-M0+	STM32F1 177 CoreMark 72 MHz Cortex-M3	STM32F3 245 CoreMark 72 MHz Cortex-M4	STM32G4 569 CoreMark 170 MHz Cortex-M4	<i>Mixed-signal MCUs</i>
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 Ultra-low Power MCUs

STM32L0 75 CoreMark 32 MHz Cortex-M0+	STM32L1 93 CoreMark 32 MHz Cortex-M3	STM32L4 273 CoreMark 80 MHz Cortex-M4	STM32L4+ 409 CoreMark 120 MHz Cortex-M4	STM32L5 443 CoreMark 110 MHz Cortex-M33	STM32U5 651 CoreMark 160 MHz Cortex-M33
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 Wireless MCUs

STM32WL 162 CoreMark 48 MHz Cortex-M4 48 MHz Cortex-M0+	STM32WB 216 CoreMark 64 MHz Cortex-M4 32 MHz Cortex-M0+ ●
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■ Latest product generation ● Radio co-processor only



Extensive STM32H7 portfolio

Dual-core Line

STM32H745/755
480+240 MHz **SMPS**
 1027 + 300 DMIPS
 RAM 1 MB
 Flash up to 2 MB

STM32H747/757
480+240 MHz **SMPS**
 1027 + 300 DMIPS
 RAM 1 MB
 Flash up to 2 MB

Single-core Line

STM32H7A3/B3
 280 MHz **LDO**
 599 DMIPS
 RAM 1.4 MB
 Flash up to 2 MB

STM32H742
 480 MHz **LDO**
 1027 DMIPS
 RAM 692 KB
 Flash up to 2 MB

STM32H743/753
 480 MHz **LDO**
 1027 DMIPS
 RAM 1 MB
 Flash up to 2 MB

STM32H723/733
 550 MHz **LDO**
 1177 DMIPS
 RAM 564 KB
 Flash up to 1 MB

STM32H725/735
 550 MHz **SMPS**
 1177 DMIPS
 RAM 564 KB
 Flash up to 1 MB

Extended temperature range 125 °C ambient

Value Line

STM32H7B0
 280 MHz **LDO**
 599 DMIPS
 RAM 1.4 MB
 Flash 128 KB

STM32H750
 480 MHz **LDO**
 1027 DMIPS
 RAM 1 MB
 Flash 128 KB

STM32H730
 550 MHz **LDO**
 1177 DMIPS
 RAM 564 KB
 Flash 128 KB

STM32H730Q
 550 MHz **SMPS**
 1177 DMIPS
 RAM 564 KB
 Flash 128 KB

Arm® Cortex® core

Cortex-M7

Cortex-M7 & -M4





Tailored for your needs

CORE, MEMORIES AND ACCELERATION	Product line	f _{CPU} (MHz)	Dual-Bank Flash memory (bytes)	RAM (bytes)	OctoSPI & OTFDEC ³	Ethernet	Graphic	Power supply	Stop mode (typical) / RAM retention
<ul style="list-style-type: none"> Single-core Cortex-M7 up to 550 MHz Dual-core Cortex-M7 480 MHz and Cortex-M4 240 MHz Flash and RAM acceleration SP-FPU and DP-FPU 4 x DMA Mathematics (only H723/733/725/735/730) 	Dual-core lines								
	STM32H747/757 ¹	480 + 240	Up to 2 Mbytes	1 Mbyte (incl.128 Kbytes DTCM + 64 Kbytes ITCM + 64 Kbytes backup ¹) + 4 Kbytes backup ²			TFT-LCD JPEG codecs MIPI-DSI	SMPS + LDO	360 µA / 1MB 250 µA / 768KB
	STM32H745/755 ¹	480 + 240	Up to 2 Mbytes	1 Mbyte (incl.128 Kbytes DTCM + 64 Kbytes ITCM + 64 Kbytes backup ¹) + 4 Kbytes backup ²			TFT-LCD JPEG codecs	SMPS + LDO	360 µA / 1MB 250 µA / 768KB
CONNECTIVITY <ul style="list-style-type: none"> Up to 2 x USB2.0 OTG FS/HS 2 x SDMMC USART, UART, SPI, PC Up to 3 x CAN (2 x FD and 1 x TT) HDMI-CEC FMIC, Dual-mode Quad-SPI or 2 x Octo-SPI Camera I/F AUDIO <ul style="list-style-type: none"> 3 x FS + audio PLL 4 x SAI 2 x 12-bit DAC SPDIF-RX GRAPHIC <ul style="list-style-type: none"> Chrom-ART Accelerator™ OTHER <ul style="list-style-type: none"> Crypto/Hash option (except H742) Security services option (except H742) TRNG DFSDM 16- and 32-bit timers HRTimer (except STM32H7A/H7B/H7B0/H723/H725/H730/H733/H735) Up to 3 x 16-bit ADC (up to 3.6 MSPS) Analog (compt.AOP) Voltage range 1.62 to 3.6 V (except 100-pin and VQFPN68 packages : 1.71 to 3.6 V) Multi-power domains -40°C up to 105°C ambient -40°C up to 125°C ambient² 	Single-core lines								
	STM32H7A3/7B3 ¹	280	Up to 2 Mbytes	1,4MB (incl.128K DTCM, 64K ITCM, 1184K+SRAM, 4K backup)			TFT-LCD JPEG codecs Chrom-GRC	SMPS + LDO	32 µA / 1.4MB 28 µA / 32KB
	STM32H743/753 ¹	480	Up to 2 Mbytes	1 Mbyte (incl.128 Kbytes DTCM + 64 Kbytes ITCM + 64 Kbytes backup ¹) + 4 Kbytes backup ²			TFT-LCD JPEG codecs	LDO	1270 µA / 1MB 910 µA / 768KB
	STM32H742	480	Up to 2 Mbytes	692 Kbytes (incl.128 Kbytes DTCM + 64 Kbytes ITCM + 16 Kbytes backup ¹) + 4 Kbytes backup ²				LDO	1270 µA / 692KB 910 µA / 704KB
	STM32H725/735 ³	550	Up to 1 Mbyte	564KB (incl.128K DTCM, 432KB Syst + 4K bckup)			TFT-LCD	SMPS ⁵ + LDO	200 µA / 564KB
	STM32H723/733 ³	550	Up to 1 Mbyte	564KB (incl.128K DTCM, 432KB Syst + 4K bckup)			TFT-LCD	LDO	520 µA / 564KB
	Value line								
	STM32H7B0	280	128 Kbytes	1,4MB (incl.128K DTCM, 64K ITCM, 1184K+SRAM, 4K backup)			TFT-LCD JPEG codecs Chrom-GRC	SMPS + LDO	32 µA / 1.4MB 28 µA / 32KB
	STM32H750	480	128 Kbytes	1 Mbyte (incl.128 Kbytes DTCM + 64 Kbytes ITCM + 64 Kbytes backup ¹) + 4 Kbytes backup ²			TFT-LCD JPEG codecs	LDO	1270 µA / 1MB 910 µA / 768KB
	STM32H730	550	128 Kbytes	564KB (incl.128K DTCM, 432KB Syst + 4K bckup)			TFT-LCD	SMPS ⁴ + LDO	200 µA / 564KB 520 µA / 564KB

- Single and Dual core versions
- High performance up to 480 MHz in Dual core and up to 550 MHz in Single core
- 128 KB to 2 MB Flash Dual Bank
- Up to 1.4 MB RAM
- More security features (Boot, Tamper ...), OTFDEC on external memories, Crypto/Hash and security services (optional)
- 35 communication peripherals
- 16-bit ADC up to 3.6 Msps, up to 5 MSPS in 12-bit, Comparators, Op Amp
- TT-FD-CAN and FD-CAN
- High-Resolution timer (2.1 ns)
- Low-Power Timers
- LDO and SMPS option
- Up to 140 °C junction temperature / 125 °C ambient (optional)

Notes :
1. Optional - dedicated CPN, STM32H733, STM32H735, STM32H753, STM32H755, STM32H757, STM32H7B3 for the Crypto Variants
2. 125 °C ambient / 140 °C junction. Dedicated part numbers on STM32H725/H735, STM32H745/H755
3. Crypto and Security services on CPN : STM32H733, STM32H735 and STM32H730
4. SMPS available only on STM32H730Q CPN
5. SMPS only on the QFN68 variant (no LDO)



STM32H7 72x/73x series links to product pages

ST's new STM32H7 microcontrollers combine the high performance of a single core with/and rich feature integration



- System integration
- Advanced connectivity and control
- Security services

- ▶ STM32H723/733 [here](#)
- ▶ STM32H725/735 [here](#)
- ▶ STM32H730 [here](#)
- ▶ ST blog article [here](#)



www.st.com/STM32H7



STM32H7 74x/75x series links to product pages

New STMicroelectronics' STM32H7 Microcontrollers Combine
Dual-Core Performance with Rich Feature Integration



- System integration
- Advanced connectivity and control
- Security services

- ▶ STM32H745/755 [here](#)
- ▶ STM32H747/757 [here](#)
- ▶ STM32H742 [here](#)
- ▶ STM32H743/753 [here](#)
- ▶ STM32H750 [here](#)
- ▶ ST blog article [here](#)



www.st.com/STM32H7



STM32H7 Ax/Bx series links to product pages

New STM32H7 Microcontrollers for best combination of performance,
integration and power saving inside an MCU



- ▶ STM32H7A3/H7B3 [here](#)
- ▶ STM32H7B0 Value line [here](#)



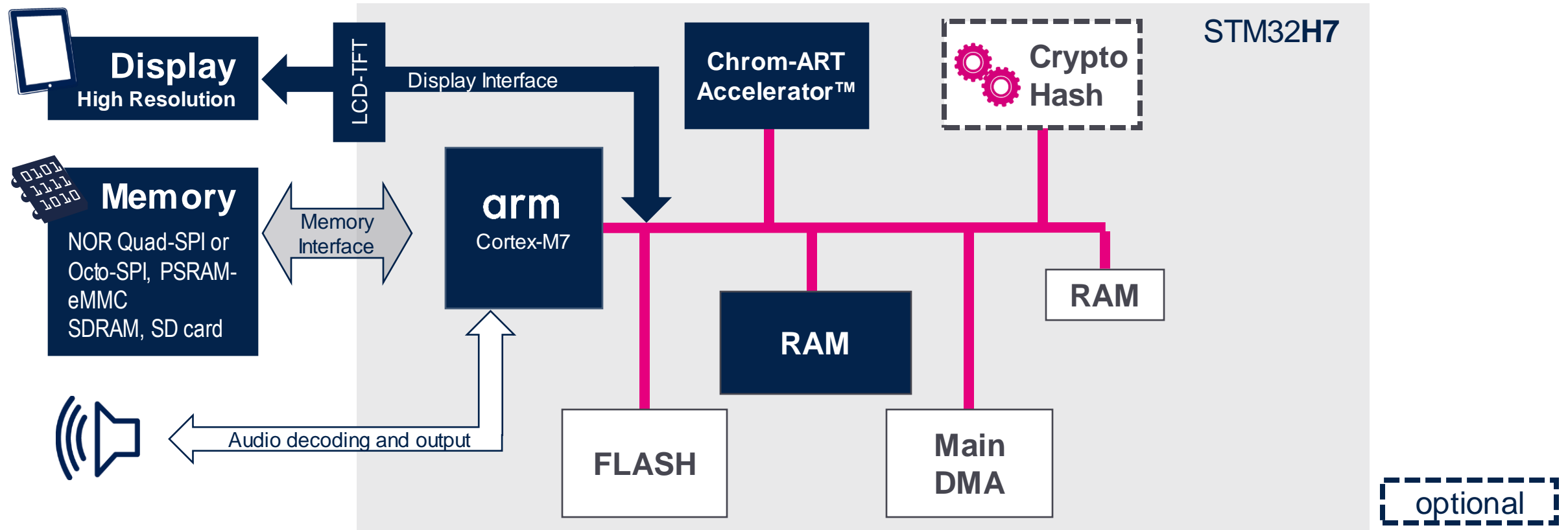
Performance and smart architecture are yours to innovate





Create a rich human machine interface

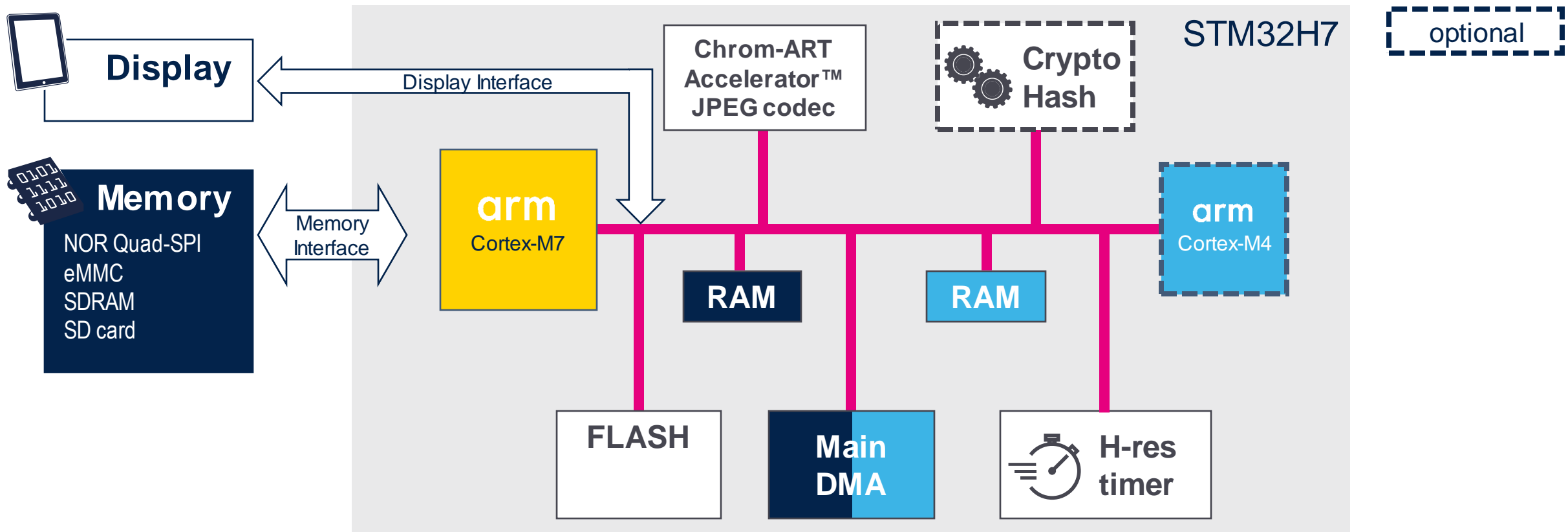
Cortex-M7 - handling audio and rich HMI, Real Time control tasks





Seamlessly move and format data

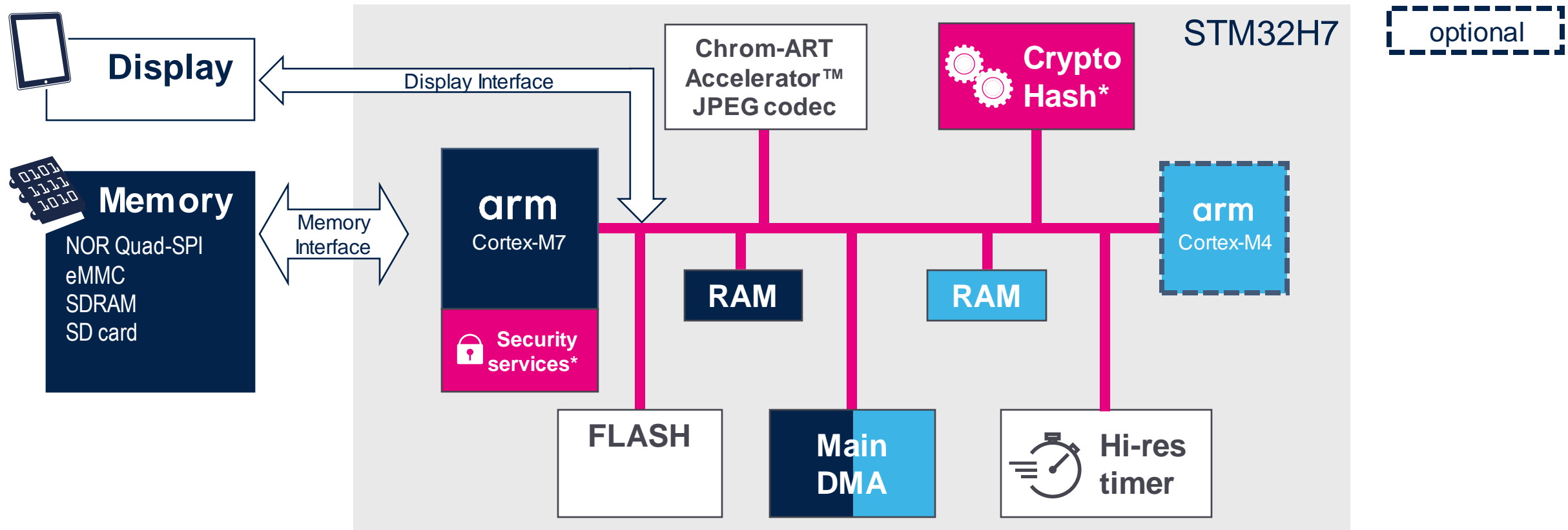
Main DMA - Flexible and high-speed data transfers schemes without CPU load





Reinforce the security in your solution

Cryptography and Hashing hardware assist
Authenticate your chip and securely install your code in memory

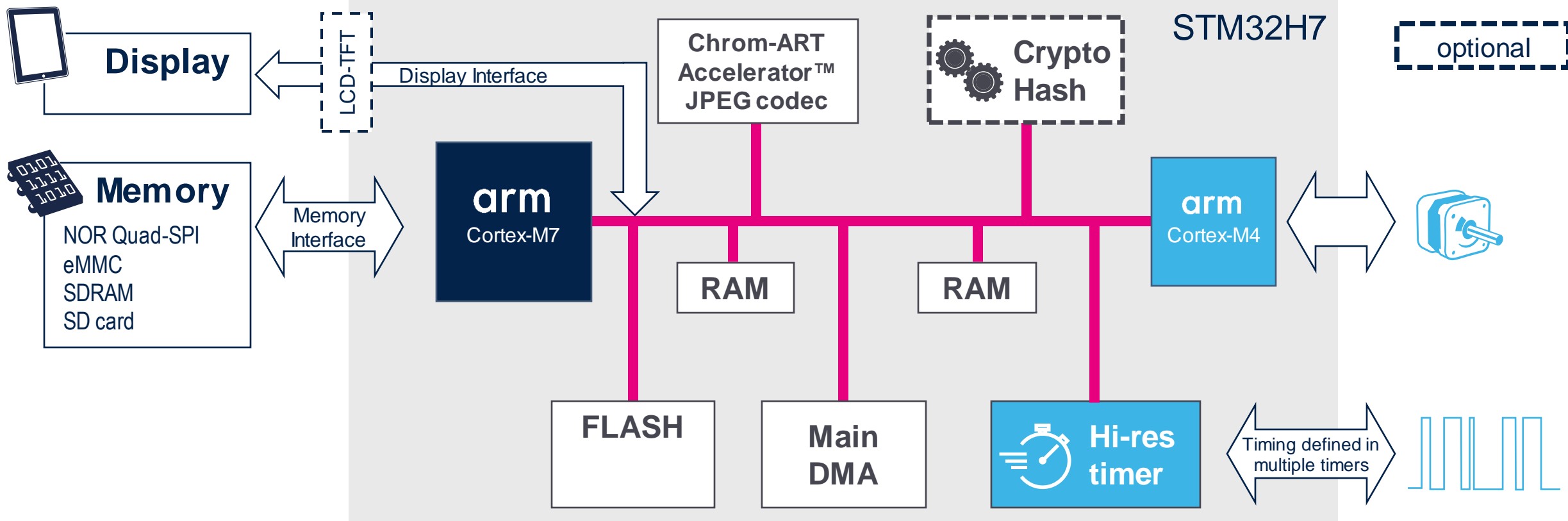


* requires part numbers with integrated security options



Control real-time applications

High resolution timer: advanced wave forms generation





Industrial and health & wellness DNA

Industrial

- Error Code Correction on all Flash and RAM and dual core for safety
- Large choice of packages
- Advanced digital and analog
(High resolution timer, 16-bit and 12-bit ADC, Op-Amp, Ethernet, CANFD...)
- High temperature -40°C up to 140°C junction temperature (125°C ambient)

Health & Wellness



Industrial and health & wellness DNA

Industrial

- **Inverters**
Advanced timers and analog peripherals
- **Communication gateway**
Rich connectivity and optional dual core
- **Human Machine Interface**
Chrom-ART Accelerator and display interfaces for TFT and MIPI-DSI

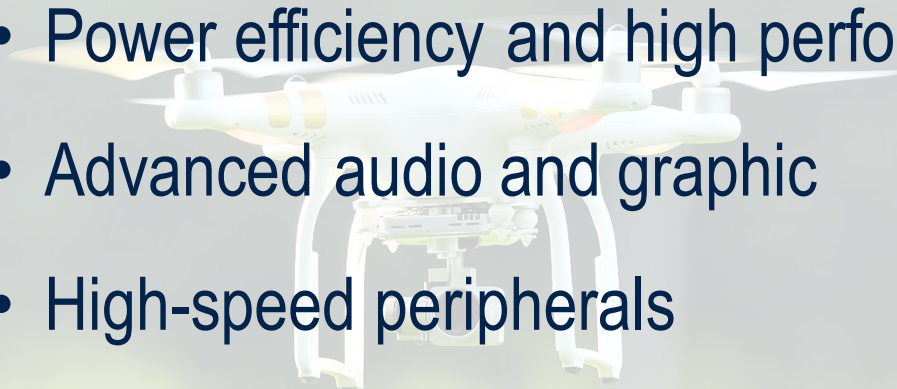
Health & Wellness

- **Health and wellness**
Chrom-ART Accelerator™ and display interfaces for TFT and MIPI-DSI
- **Individual assistance** (hearing, respiratory)
Advanced timers and analog
- **Measurements and Data logger**
Advanced Analog



Consumer

- Small packages
- Power efficiency and high performance
- Advanced audio and graphic
- High-speed peripherals
- Large expandable memories to support ever increasing communication protocols





Consumer

- **IoT gateway**
Large memory and rich communication peripherals
- **Access control**
Chrom-ART Accelerator™ and display interfaces for TFT and MIPI-DSI
- **Drones**
High processing architecture with dual core option,
advanced timers and analog peripherals, small packages

Secure your production and your applications



STM32Trust on STM32H7 Series



www.st.com/stm32trust

Global security
ecosystem and services

STM32 concept
Support customer's
Secure Boot / Root Of Trust

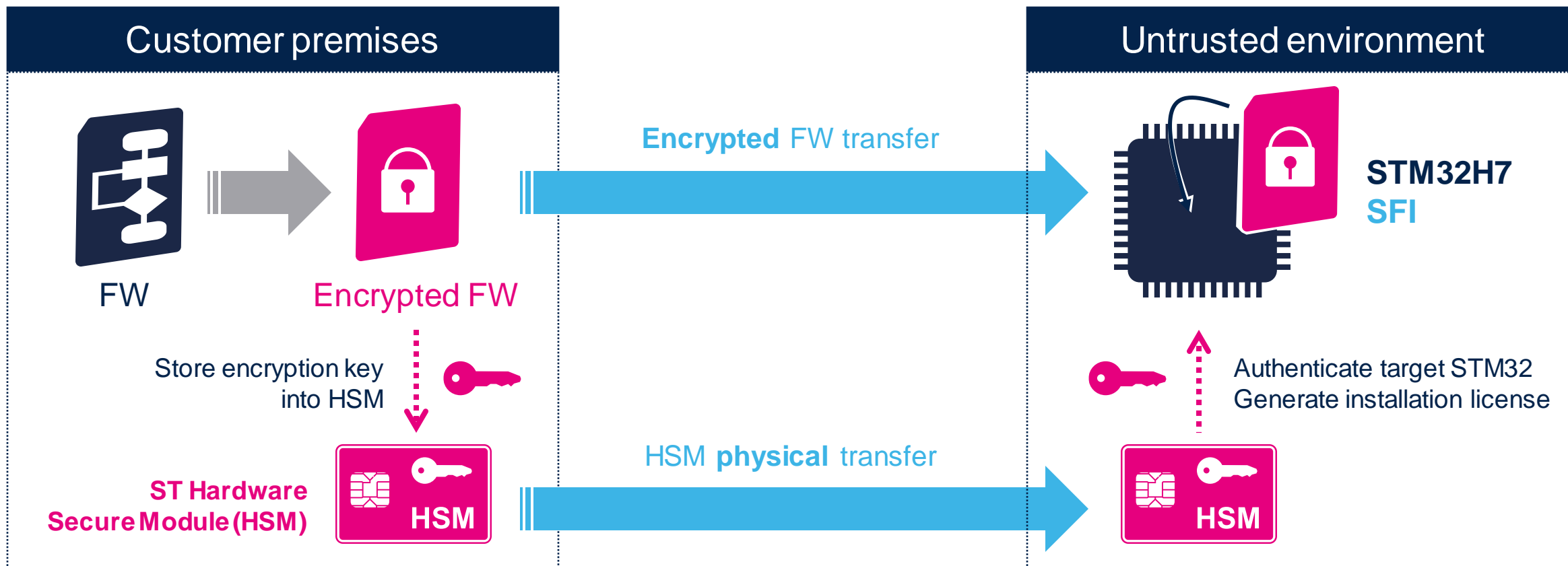
SFI
A Secure Installer of
Secure Boot / Root Of Trust

SBSFU
A reference SW package for **FW Update**
and **Secure Boot / Root Of Trust**

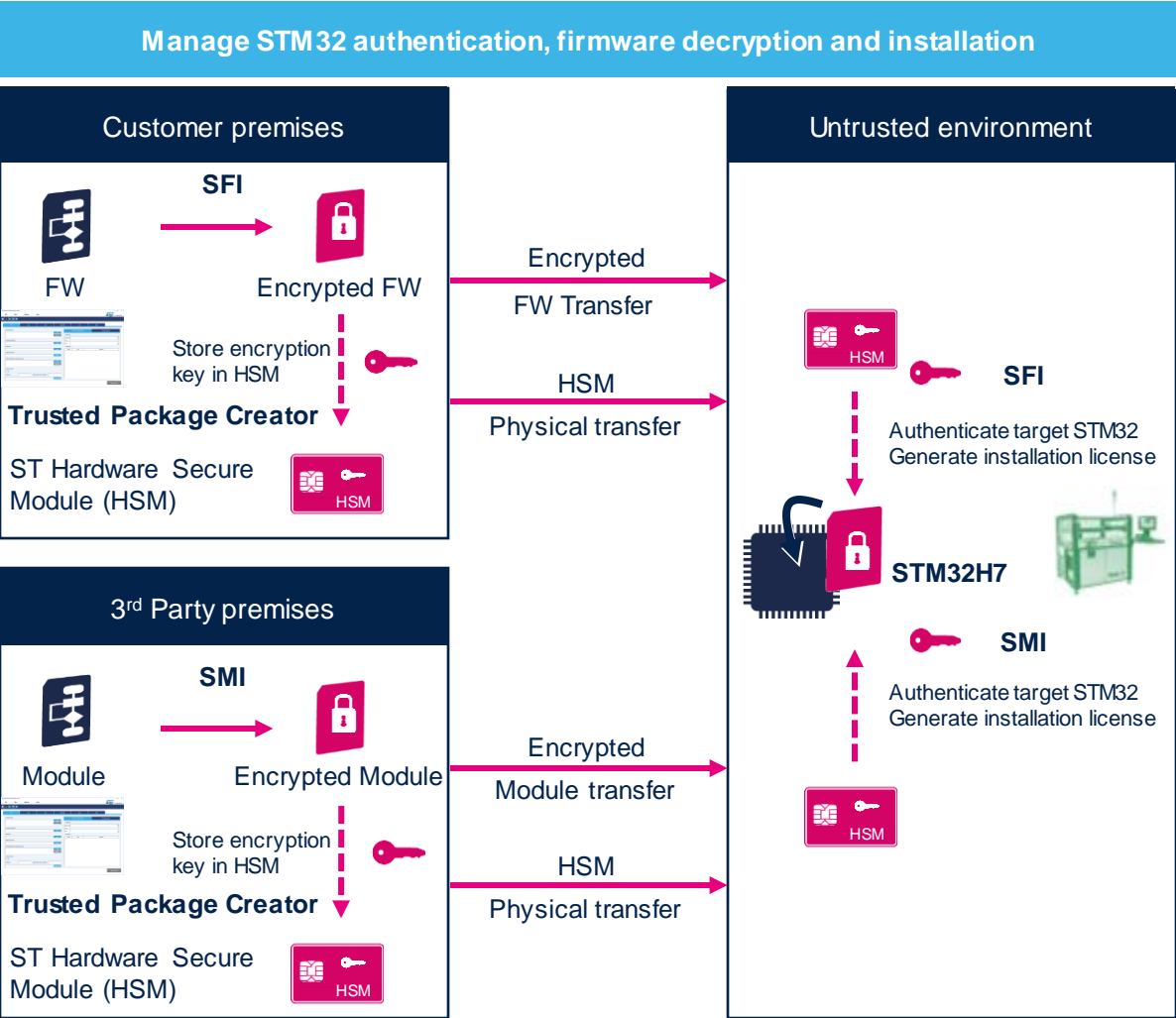


Secure your production flow with secure firmware install (SFI*)

Manage STM32 authentication, firmware decryption and installation



Embedded Secure Firmware Install - SFI



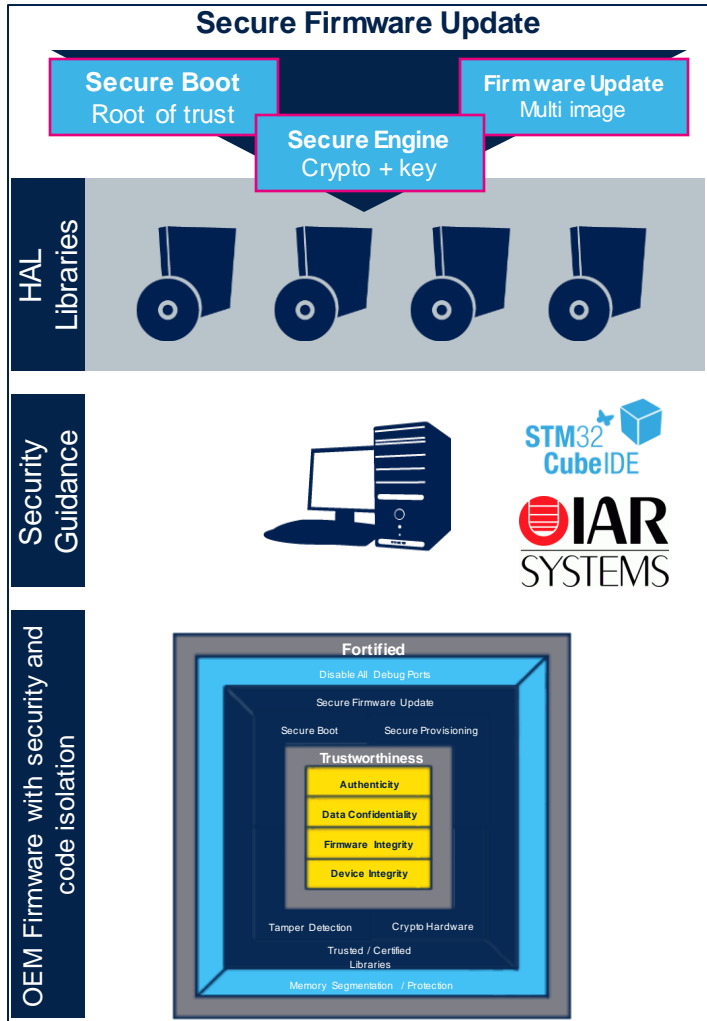
Secure Loader embedded services provisioned by ST → Mass Market approach

ST ecosystem with Encryption, HSM and programming tools

Firmware cloning protection on the first installation via UART / SPI / USB

Protect 3rd party Software IP (SMI)

Secure Boot Secure FW Update - SBSFU



Reference library source code for IAP

Demonstrate SW modules for:

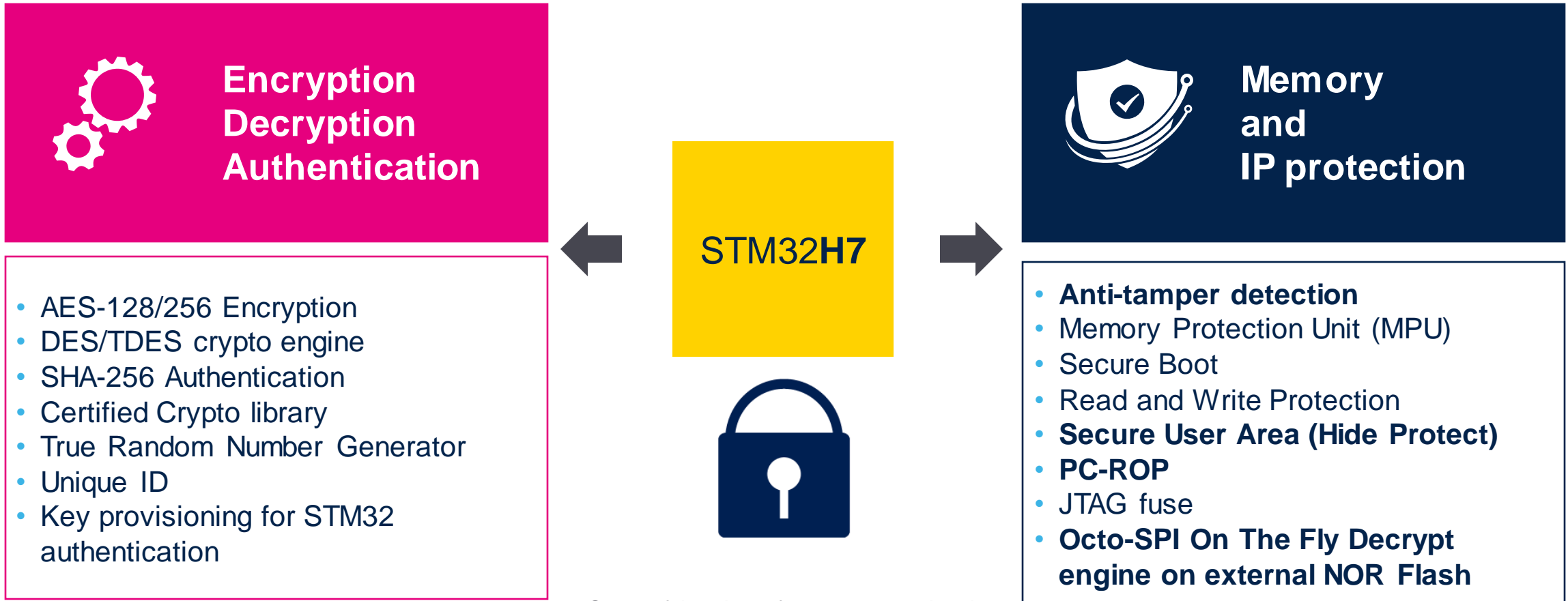
- Secure Boot
- Secure Engine for Crypto and key
- Firmware Update image management

Ensure authentication and secure programming of in the field products

Reference implementation of STM32H7 hardware memory protections



A full set of security



Some of the above features are optional and require specific part numbers. See the next slide for more details.

STM32H7 detailed security functions

STM32Trust Security function	CM7 CM7/CM4 STM32H72x STM32H74x STM32H7Ax	CM7 Crypto CM7/CM4 Crypto STM32H75x	CM7 STM32H73x STM32H7Bx
Secure Boot Secure User Memory for SBSFU software package		•	•
Secure Install/Update By SBSFU software package		•	•
Secure Storage for Boot only		•	•
Access Debug Read Out Protection RDPL0/1/2	•	•	•
Resource Isolation Memory Protection Unit	•	•	•
Secure Execution By SBSFU software package		•	•
Crypto Engine Hardware crypto accelerator	TRNG Fips	AES / DES / SHA / TRNG Fips	AES / DES / SHA / TRNG Fips
Crypto Engine On-the-fly decryption from external memories			•
SWIP Protection/Collaborative Dev Secure Module Install (SMI)		•	•
Secure Manufacturing Secure Firmware Install (SFI)		•	•

Note: a crypto library is available on request for both crypto and non crypto parts.

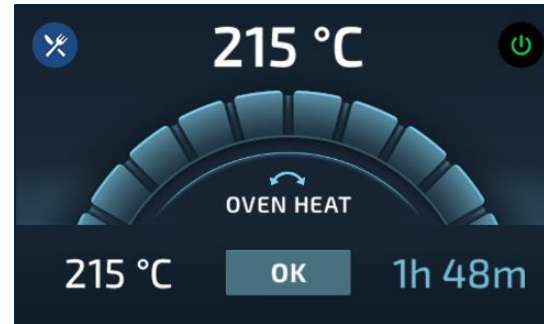
Solutions for STM32H7 Graphics



Enhance your product with great graphic



 Smart home
[Watch video](#)



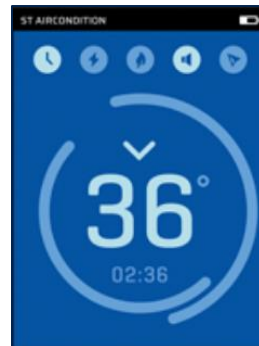
 Kitchen appliances
[Watch video](#)



 Industrial
[Watch video](#)



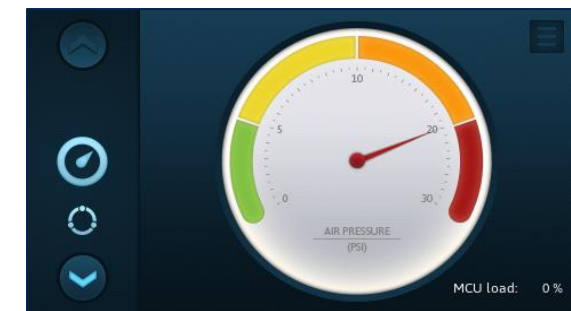
 Smart home
[Watch video](#)



 Smart home

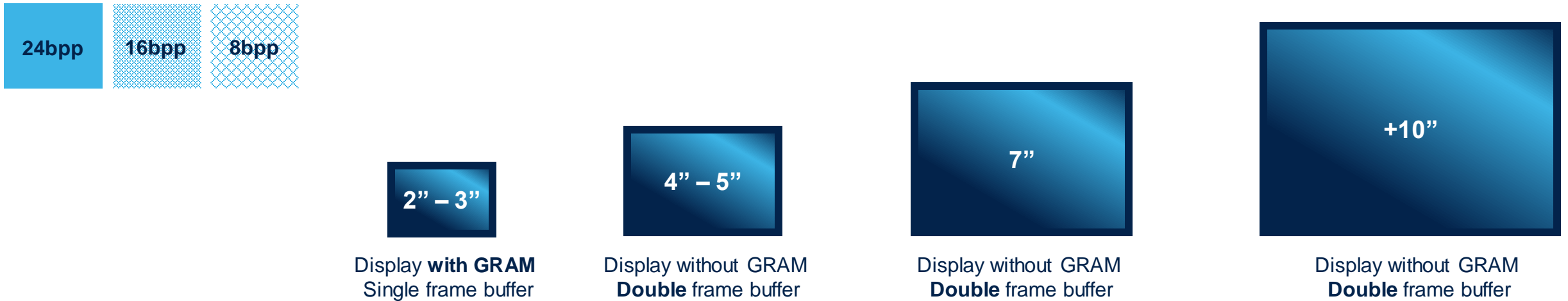


 Industrial
[Watch video](#)



 Industrial
[Watch video](#)

Enhanced graphic UI for any resolution



RAM Type	Model	24bpp	16bpp	8bpp
Internal RAM	STM32H7A3/7B3/7B0	Yes	Yes	Yes
	STM32H723/725/730	Yes	Yes	No
	STM32H743/745/747/750	Yes	Yes	No
External RAM	STM32H7A3/7B3/7B0	Yes	Yes	Yes
	STM32H723/725/730	Yes	Yes	No
	STM32H743/745/747/750	Yes	Yes	No

STM32H7 detailed graphic features

	Features	STM32H7A3/7B0	STM32H723/725/730	STM32H745/747	STM32H743/750
Hardware acceleration	Chrom-ART Accelerator™ Hardware acceleration for graphical operations	•	•	•	•
	Chrom-GRC™ Minimizing memory usage for round displays	•	-	-	-
	JPEG CODEC Optimized video playback	•	-	•	•
Memory interfaces	Quad-SPI Connecting QSPI Flash	•	•	•	•
	Octo-SPI Connecting Octo SPI flash or Octal RAM	•	•	-	-
	FMC Connecting parallel flash, SDRAM, PSRAM	•	•	•	•
	SDMMC Connecting eMMC, MMC,	•	•	•	•
Display interfaces	LCD-TFT display controller	•	•	•	•
	MIPI-DSI	-	-	•	-
	Parallel 8080/6800	•	•	•	•
Embedded memory	Embedded SRAM for framebuffers	Up to 1024 Kbytes	Up to 364 Kbytes	Up to 512 Kbytes	Up to 512 Kbytes
	Embedded flash for code and data	128 Kbytes to 2048 Kbytes	128 Kbytes to 1024 Kbytes	1024 Kbytes to 2048 Kbytes	128 Kbytes to 2048 Kbytes

X-CUBE-TouchGFX

Graphical User Interface development

Faster and easier GUI Development

Free for all STM32 Developers

Maximum Performance on minimum footprint

Interoperable with STM32Cube Ecosystem



TouchGFX

STM32 Graphics Extended Ecosystem

TouchGFX Implementers

World-wide network for TouchGFX expertise and design services

Advanced Graphics Solutions

Software partners taking the full advantages of STM32 graphic capabilities



BRESSLERGROUP



E3MBEDDED PARTNERS



Solutions for STM32H7 Artificial Intelligence



Embed AI in your applications with STM32H7

People detection



Food classification



Voice recognition

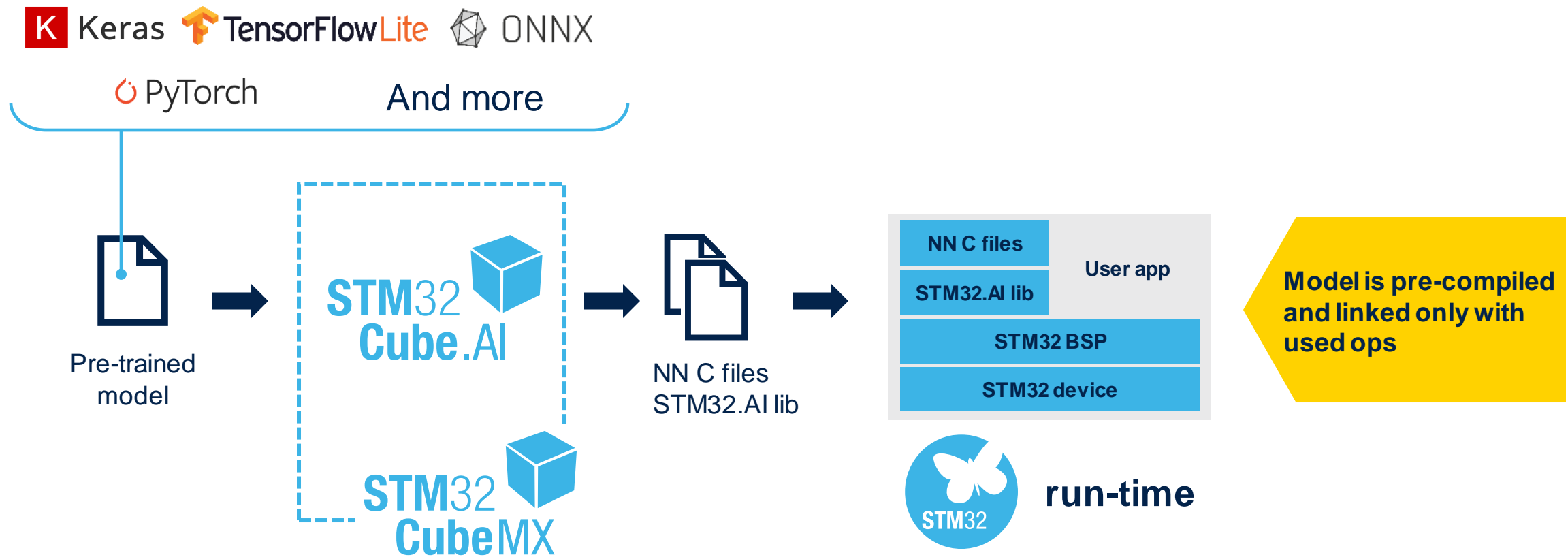


Industrial applications



The key steps behind Neural Networks on STM32

Optimized C code generated by STM32Cube.AI



Model is pre-compiled and linked only with used ops

Solutions for STM32H7

Functional safety





SIL functional safety package for STM32

Reduce time and cost to build STM32-based systems certified to IEC 61508 industrial safety standard





SIL functional safety package for STM32



ST provides a complete, certified offering to

- Lower project costs
- Reduce design complexity
- Ease SIL certification assessment



without design package

with design package



STM32 high performance built-in safety features

Features	STM32F2/F4	STM32F7	STM32H7
Dual watchdogs: Independent watchdog and system window watchdog	•	•	•
Backup clock circuitry with clock security system (CSS)	•	•	•
Hardware CRC unit / Programmable polynomial	• / -	• / •	• / •
Supply monitoring (POR, BOR, PVD)	•	•	•
I/O function locking	•	•	•
PWM critical register protections (write-once registers)	•	•	•
Memory protection unit (MPU) 8 zones – to ensure data integrity from invalid behavior	•	•	•
Multiple Flash memory protection levels	•	•	•
ECC Error Code Correction (SECEDED) for SRAM	-	-	•
ECC Error Code Correction (SECEDED) for Flash memory	-	-	•

Note: Arm Cortex-M cores also have built-in safety features (dual stack pointer, fault exceptions, and debug module).

Solutions for STM32H7 Motor control



Drive your motor with STM32H7

Robotic



High end Appliance



Servo motor - Industrial

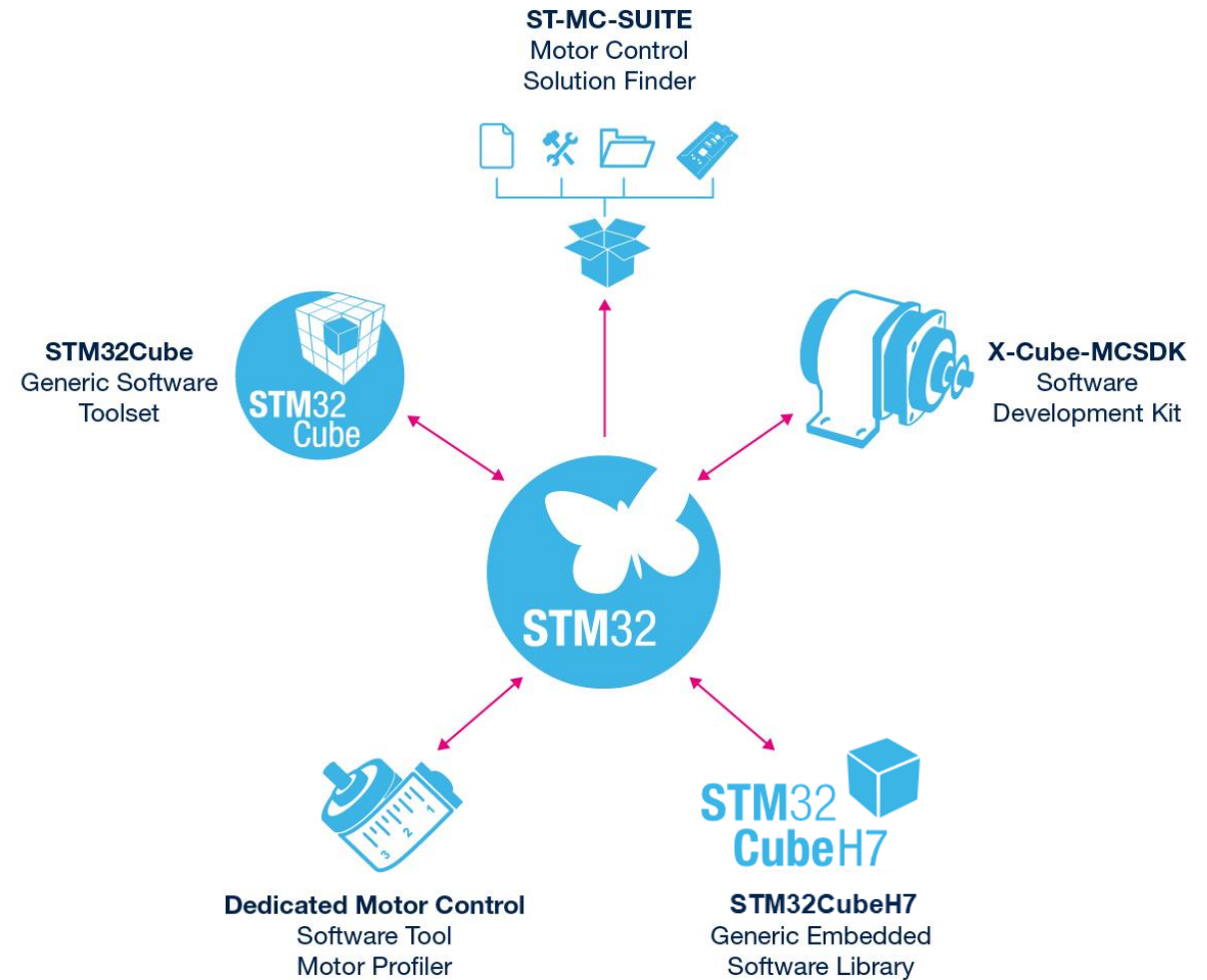


Medical



FOC (field-oriented control) for BLDC/PMSM motors

STM32 tools and software provide an **integrated development environment** to ease and support the design of motor control solutions.



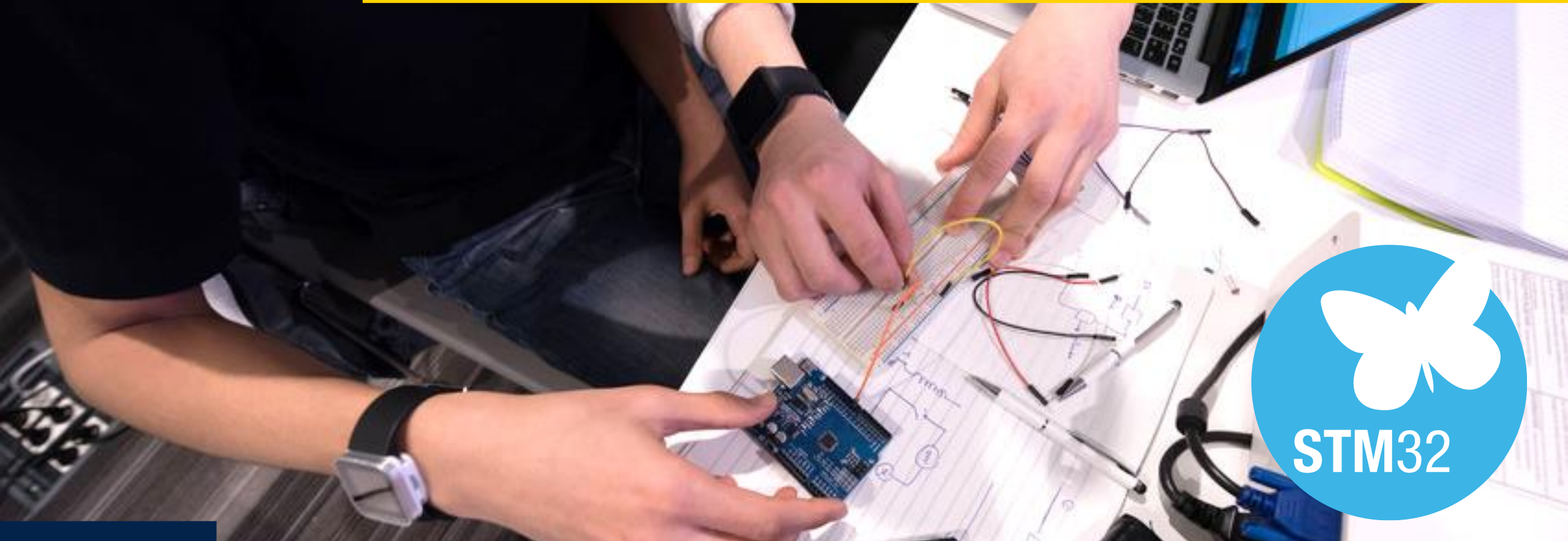
STM32H7 features for Motor control

Features	STM32H742/743/745/747/750	STM32H723/725/730	STM32H7A3/7B0	Benefit
Core	Cortex-M7 + Cortex-M4(*)	Cortex-M7	Cortex-M7	Performance and efficiency
FPU	yes	yes	yes	Performance and efficiency
MPU	yes	yes	yes	Safety
Freq CPU max	480 MHz +240 MHz(*)	550 MHz	280 MHz	Performance and efficiency
DMIPS	1027 (single core), 1027+300(*)	1177	599	Performance and efficiency
Flash / SRAM data size	128KB to 2MB / Up to 1MB	128KB to 1MB / 564KB	128KB to 2MB / 1.4MB	Performance and integration/cost
Including : ITCM/DTCM RAM	64KB / 128KB	Up to 256KB (configurable) / 128KB	64KB / 128KB	Performance and efficiency
Error Code Correction	SECEDED on full memory map	SECEDED on full memory map	SECEDED on Flash and partial RAM (I/D-TCM and caches)	Safety
ADC SAR	3 x 16-bit 3.6 Msps	2x16-bit 3.6 Msps, 1x12-bit 5 Msps	2x16-bit 3.6 Msps	Efficiency
Other Analog	2x Comp, 2x PGA, 2xDAC, 1xDFSDM	2x Comp, 2x PGA, 2xDAC, 1xDFSDM	2x Comp, 2x PGA, 2xDAC, 2xDFSDM	Integration/cost
Advanced Motor Control timer	2x (240 MHz)	2x (275 MHz)	2x (280 MHz)	Performance and efficiency
Cache and Accelerator	16KB+16KB L1 cache + ART (*) Graphic, Crypto(**)	32KB+32KB L1 cache Graphic, Cordic, FMAC, Crypto(**)	16KB+16KB L1 cache Graphic, Crypto(**)	Performance and efficiency
Security Services (SFI and SB-SFU)	yes(**)	yes(**)	yes(**)	System Integrity
Package	LQFP100/144/176/208; BGA100/169/176/240; WLCSP156	VFQFPN68; LQFP100/144/176; BGA100/144/169/176; WLCSP115	LQFP64/100/144/176; BGA100/169/176/216/225; WLCSP132	Cost/Integration/flexibility
Max Temperature range °C	[-40 .. +125] Tj max 140 °C	[-40 .. +125] Tj max 140 °C	[-40 .. +85] Tj max 130 °C	Integration and cost

(*) : on Dual core versions

(**) : on crypto part numbers

A complete ecosystem for single and dual-core architecture

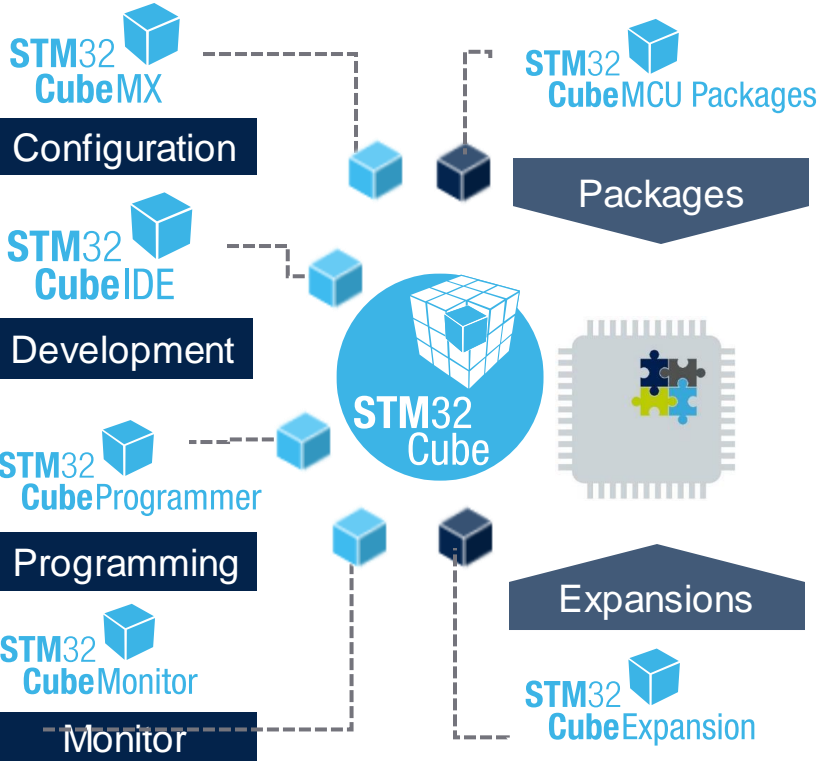
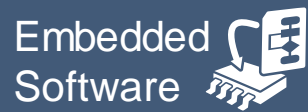


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Supported by the STM32 ecosystem

Software



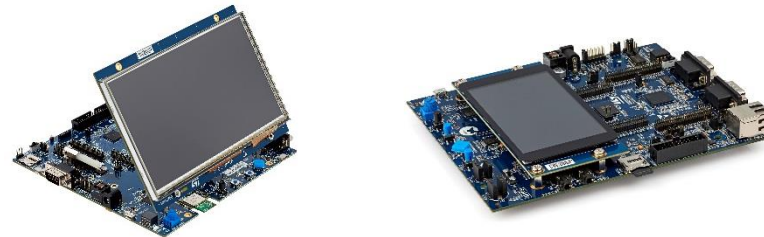
Hardware



STM32 Nucleo boards



Discovery kits



Evaluation boards

Customer support



FAE - Worldwide Customer Support



community.st.com

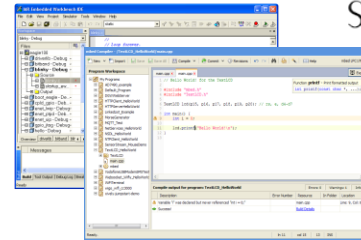
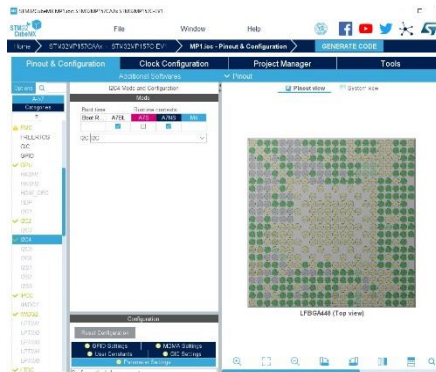
MOOC





Software tools for STM32H7

Complete support of Arm Cortex-M architecture



STM32CubeMX

STM32CubeMX enhanced for Dual-core

- Configure and generate Code
- Multi-core resources allocation
- Peripherals configuration

IDEs Compile and Debug

Multi-Core Solutions

- Partners IDE
- Free IDE based on Eclipse
- **Multi-core** debugging

STM32 Programming & Monitoring tools

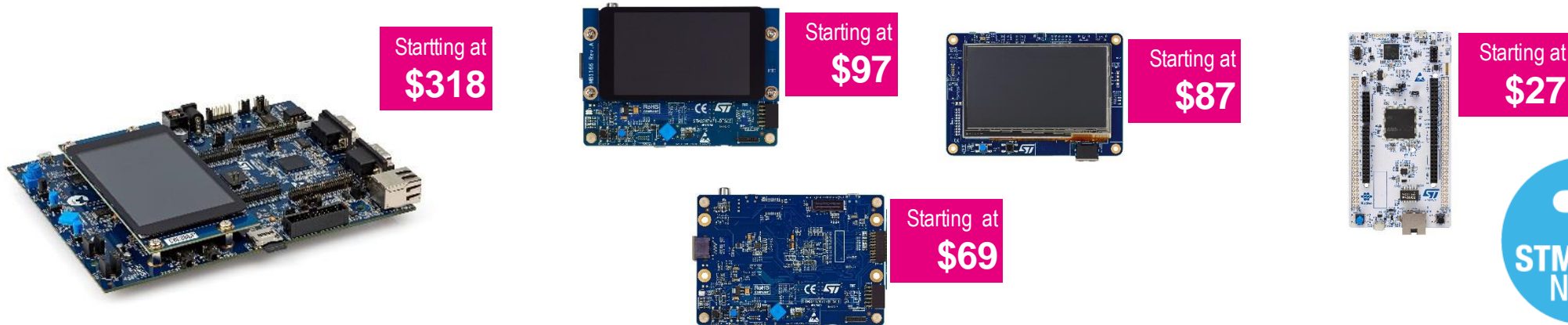
STM32CubeProg STM32CubeMonitor

- Program the application into the chip
- Sign the application and generate license
- Monitor variables at run-time



STM32H7 hardware solutions

Speed-up evaluation, prototyping and design
(board selection guide available at the end of this presentation)



5 Evaluation Boards

Full feature STM32H7 evaluation

6 Discovery Kits

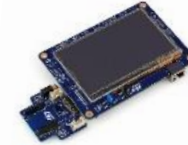
Flexible prototyping & demo

6 Nucleo Boards

Affordable and quick prototyping



Pick the right STM32H7 development tool

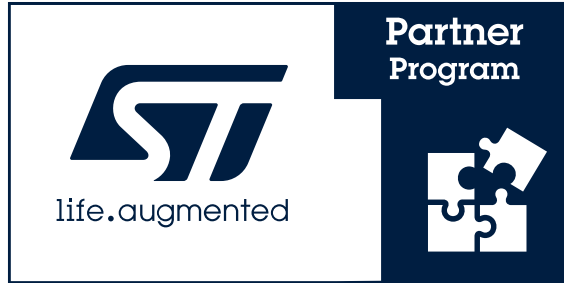


STM32H7 class	Cores/Speed	Part numbers	Evaluation boards	Discovery Kits	Nucleo boards
STM32H74/5	Single Core 480 MHz	STM32H743	STM32H743I-EVAL2	-	NUCLEO-H743ZI2
		STM32H753, Crypto enabled	STM32H753I-EVAL2	-	NUCLEO-H753ZI
		STM32H750 Value Line, Crypto enabled	-	STM32H750B-DK	-
	Dual Core 480 MHz + 240 MHz	STM32H745	-	STM32H745I-DISCO	NUCLEO-H745ZI-Q
		STM32H747	STM32H747I-EVAL	STM32H747I-DISCO STM32H747I-DISC1	-
		STM32H755/757, Crypto enabled	STM32H757I-EVAL	-	NUCLEO-H755ZI-Q
STM32H7A/B	Single Core 280 MHz	STM32H7A3	-	-	NUCLEO-H7A3ZI-Q
		STM32H7B3, Crypto enabled	STM32H7B3I-EVAL	STM32H7B3I-DK	-
		STM32H7B0, Value line, Crypto enabled	STM32H7B3I-EVAL *	STM32H7B3I-DK *	-
STM32H72/3	Single Core 550 MHz	STM32H723/733	-	-	NUCLEO-H723ZG
		STM32H725/735	-	STM32H735G-DK	-
		STM32H730, Value line, Crypto enabled	-	STM32H735G-DK *	-

* Recommended board (no dedicated board for this part number)



Software, tools and services a broad ecosystem to support development



Large selection of partners
already engaged for:

- Embedded software
- Software tools
- Graphics UI
- Security
- Training and services



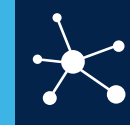
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Our technology starts with You



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