

# STM32 GUI solutions

## Advanced HMI now achievable on embedded systems



### High-end GUI enabled with real-time determinism, lower software complexity, faster boot time and longer battery life

Our wide offer of graphics-enabled STM32 MCUs brings smartphone-like graphical user interfaces to embedded systems, reducing the amount of time and resources invested in acquiring complex MPU and rich OS know-how.

Thanks to the graphics acceleration, memory integration, advanced display interfaces and smart architecture of STM32 microcontrollers, you can now enrich your applications with a high-end user experience with a limited total cost of ownership.

Graphics-enabled STM32 MCUs are available in different performance ranges and package types and sizes from 100 up to 240 pins.

#### GRAPHICS ACCELERATION

- Chrom-ART Accelerator™
  - Offloads the main CPU from repetitive graphical operations
  - Enables high-end user interfaces in parallel with real-time processing
  - Offers an efficient font management capability enabling multi-language support with limited memory size impact
- Hardware JPEG codec
  - Brings additional branding and tutorial video capabilities to your HMI

#### DISPLAY INTERFACES

- 8080/6800 parallel interface
  - Ideal for small-sized displays
- LCD-TFT controller
  - For mid-sized displays
  - Supports up to XGA resolution
- MIPI-DSI® controller
  - For new-generation displays with higher pixel density, lower EMI and lower pin count

#### INTEGRATION AND MEMORY EXTENSIONS

- Up to 2 Mbytes of internal Flash memory, NOR and NAND Flash extensions, and up to 1 Mbyte of internal SRAM
  - Optimum support of up to WQVGA resolutions with no external RAM
- SDRAM and PSRAM extensions
  - Enabling up to XGA resolution with support through memory extensions

#### POWER EFFICIENCY

All STM32 MCUs bring low or even ultra-low-power capabilities enabling advanced UIs and longer battery life on consumer, medical, and industrial portable devices.



## STM32 GRAPHICS ECOSYSTEM

STM32 graphics-enabled MCUs come with a rich hardware and software ecosystem enabling easy and efficient product prototyping and development.

### Development kits

Each product line offers a discovery kit and an evaluation board that embed a display panel, external memory extensions as well as a rich set of connectivity features enabling easy prototyping of your GUI design.

### Embedded software

STM32Cube software brings all the hardware abstraction layer drivers, software middleware and implementation examples allowing you to quickly and efficiently benefit from STM32 MCUs and their IPs.

### Graphic libraries and tools

A wide choice of leading graphic software libraries and tools taking full advantage of STM32 graphics acceleration, display

interfaces and smart architecture is also available to help you easily achieve the most advanced GUI design for STM32 MCUs.







### Software examples

Development kits come preloaded with a graphics interface and application examples using different display solutions and demonstrating advanced graphical user interfaces.



... and many others

## STM32 ADVANCED GUI-ENABLED MCU PORTFOLIO

Product lines	Core and frequency	Graphic acceleration	Embedded Flash Memory	Embedded RAM	Display Interfaces	External memory interfaces
STM32L496 	Cortex-M4 @ 80 MHz	Chrom-ART Accelerator™	Up to 1 Mbyte	320 Kbytes	Parallel IF	SRAM / PSRAM NOR / NAND parallel Flash Dual Quad-SPI NOR Flash
STM32F429 	Cortex-M4 @ 180 MHz	Chrom-ART Accelerator™	Up to 2 Mbytes	256 Kbytes	Parallel IF LCD-TFT IF	SRAM / PSRAM / SDRAM NOR/NAND parallel Flash
STM32F469 	Cortex-M4 @ 180 MHz	Chrom-ART Accelerator™	Up to 2 Mbytes	384 Kbytes	Parallel IF LCD-TFT IF MIPI-DSI®	SRAM / PSRAM / SDRAM NOR / NAND parallel Flash Dual Quad-SPI NOR Flash
STM32F746 	Cortex-M7 @ 216 MHz	Chrom-ART Accelerator™	Up to 1 Mbyte	320 Kbytes	Parallel IF LCD-TFT IF	SRAM / PSRAM / SDRAM NOR / NAND parallel Flash Dual Quad-SPI NOR Flash
STM32F769 	Cortex-M7 @ 216 MHz	Chrom-ART Accelerator™ Hardware JPEG codec	Up to 2 Mbytes	512 Kbytes	Parallel IF LCD-TFT IF MIPI-DSI®	SRAM / PSRAM / SDRAM NOR / NAND parallel Flash Dual Quad-SPI NOR Flash
STM32H743 	Cortex-M7 @ 400 MHz	Chrom-ART Accelerator™ Hardware JPEG codec	Up to 2 Mbytes	1024 Kbytes	Parallel IF LCD-TFT IF	SRAM / PSRAM / SDRAM NOR / NAND parallel Flash Dual Quad-SPI NOR Flash