STM32F730 & STM32F750
High-performance Value lines

Extra flexibility to create affordable performance-oriented systems

Focusing on real-time performance and scalability, ST's new Value lines lower the barrier to access STM32F7 microcontrollers with products keeping just the essential Flash memory.

With execution performance up to 1082 CoreMark at the heart of a secure, power-efficient architecture, the new Value line microcontrollers are the entry point to IoT innovation in medical, industrial and consumer applications.

STM32F730 and STM32F750 devices embed 64-Kbyte Flash memory to accommodate the most critical and secure code, while supporting external memory extension using NOR, NAND, SDRAM and dual-mode Quad SPI Flash memory.

**CORE, MEMORIES**
- Arm® Cortex®-M7 core up to 216 MHz
- Up to 8-Kbyte data and 8-Kbyte instruction cache
- Up to 2 DMA controllers
- 64-Kbyte Flash memory and up to 320-Kbyte RAM
- ITCM/DTCM<sup>1</sup>: 16-Kbyte ITCM RAM + 64-Kbyte DTCM RAM for time-critical routines

**ENERGY EFFICIENT**
- Flexible power mode
- Gated power domains
- On-chip power management

**CONNECTIVITY**
- Up to 2 x USB 2.0 OTG FS/HS with optional embedded HS PHY
- USART, UART, SPI, and I²C
- Ethernet MAC
- FMC (supporting SDRAM in 32-bit mode up to 133 MHz) and dual-mode Quad SPI Flash memory
- 2 x SDMMC

**AUDIO**
- 3 x I²S + audio PLL
- 2 x SAI
- 2 x 12-bit DAC
- SPDIF-RX

**GRAPHICS**
- LCD TFT controller
- Chrom-ART Accelerator™

**OTHER**
- 8- to 14-bit Camera interface
- Crypto and Hash hardware acceleration
- 16- and 32-bit timers
- 3x ADCs with up to 12-bit resolution (up to 2.4 MSPS)
- Power supply down to 1.7 V

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Note:
1. Tightly Coupled Memories

www.st.com/stm32f7vl
STM32F730 & STM32F750 VALUE LINE BLOCK DIAGRAM

<table>
<thead>
<tr>
<th>Feature</th>
<th>STM32F730</th>
<th>STM32F750</th>
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<tbody>
<tr>
<td>Arm® Cortex®-M7, MPU, ETM</td>
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<tr>
<td>Frequency</td>
<td>216 MHz, SFPU</td>
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<tr>
<td>Cache</td>
<td>2 x 8-Kbyte cache</td>
<td>2 x 4-Kbyte cache</td>
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</tbody>
</table>

Embedded memories:
- 256-Kbyte RAM including 64-Kbyte DTCM
- 16-Kbyte ITCM
- 64-Kbyte Flash memory
- 4-Kbyte backup RAM
- 2 x DMAs

Memory Interfaces:
- FMC (SDRAM, NOR, NAND)
- Dual-mode Quad SPI Flash
- 2 x SD/SDIO/MMC

Accelerators:
- ART Accelerator™
- Chrom-ART Accelerator™
- Crypto/Hash accelerator and tamper detection

Peripherals:
- Advanced connectivity

HARDWARE TOOLS

All existing STM32F7 hardware development tools are fully compatible with the new Value lines.

Evaluation boards:
- STM32F756G-EVAL2

Discovery kits:
- STM32F723E-DISCO
- STM32F746G-DISCO, STM32F7508-DK

Nucleo-144 development boards:
- NUCLEO-F722ZE, NUCLEO-F756ZG

STM32 Trust ecosystem:
The STM32Trust ecosystem combines knowledge, design tools, and ready-to-use original ST software to build strong cyber-protection into new IoT devices, leveraging industry best-practices. [www.st.com/stm32trust](http://www.st.com/stm32trust)

STM32 HIGH-PERFORMANCE VALUE LINES

Flash memory size / RAM size (bytes)

<table>
<thead>
<tr>
<th>Flash Memory Size</th>
<th>RAM Size (bytes)</th>
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<tbody>
<tr>
<td>64 K / 256 K</td>
<td>STM32F730R8</td>
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<tr>
<td>64 K / 320 K</td>
<td>STM32F730V8, STM32F750Z8, STM32F750N8</td>
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Pin count:
- 64-pin LQFP
- 100-pin LQFP
- 144-pin LQFP (0.65 mm pitch)
- 176-pin UFBGA (0.65 mm pitch)
- 216-pin TFBGA (0.8 mm pitch)

Order code: FLSTM32F7VL0120
For more information on ST products and solutions, visit [www.st.com/stm32f7vl](http://www.st.com/stm32f7vl)