



STM32H7R/S LINES

Unlocking new innovation possibilities
with a scalable & secure bootflash MCU



Embrace design freedom and simplicity thanks to an innovative architecture and MCU ecosystem

The STM32H7RS lines, powered by the STM32 Cortex-M7, offer max performance with a 600 MHz bootflash MCU, making these lines ideal for high-speed real-time applications. Its external memory interfaces support eExecute-in-Place (XiP) applications, while the 2.5D GPU can handle up to WSVGA with minimal CPU load. This MCU offers advanced security features such as ST-iRoT, memory protection, crypto, and authentication, making it a secure and cost-effective choice for building future-proofed applications.

KEY FEATURES AND BENEFITS

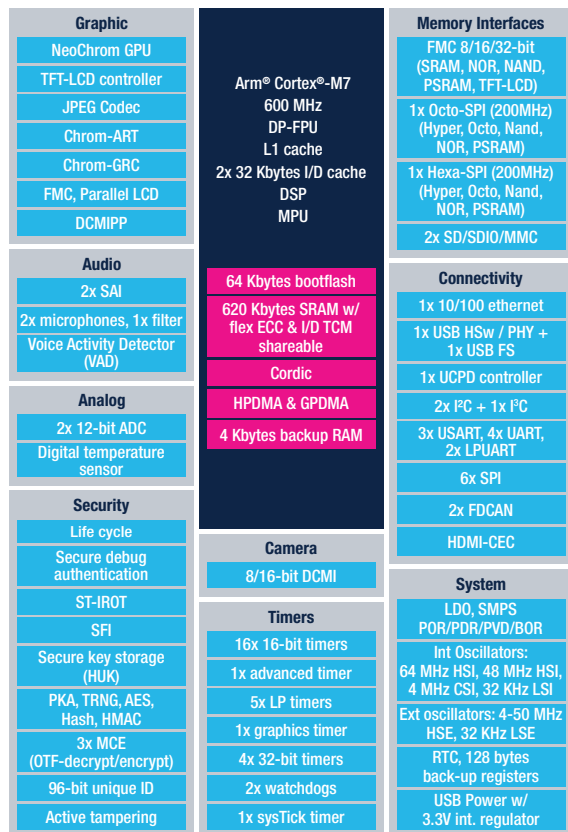
- **NeoChrom GPU:**
Accelerating 2.5D GUIs, making it easier to reach 60FPS GUIs with low MCU load.
- **Advanced security:**
Debug authentication, secure application & silicon life-cycle, secure key-storage, immutable root of Trust (ST-iRoT), target SESIP3 and PSA certified level 3 certifications.
- **200 MHz xSPI:**
High speed, real-time capabilities from int./ext. Memories with on-the-fly decrypt/encrypt.
- **USB HS/FS PHY, I3C:**
For USB power delivery support, 2 type-C connectors, dedicated DMA &

dual USB FS/HS with PHY. I3C comm, enabling lower cost implementation with DMA for zero CPU interventions.

KEY APPLICATIONS

- **IoT for Smart Industry applications:**
Gateways, robotics, security systems, sensor fusion, point of sales
- **Smart home and professional appliances:**
Kitchen appliances, vacuum cleaners, robot lawn mowers, air purifiers, thermostats
- **Medical and healthcare:**
Digital health, medical imaging, therapy equipment

STM32H7RS BLOCK DIAGRAM

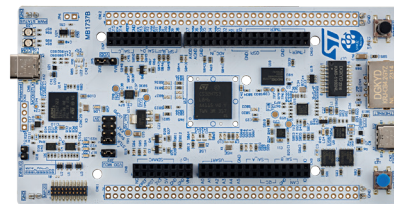


HARDWARE TOOLS

A full set of development boards enables flexible prototyping as well as full STM32H7S evaluation.

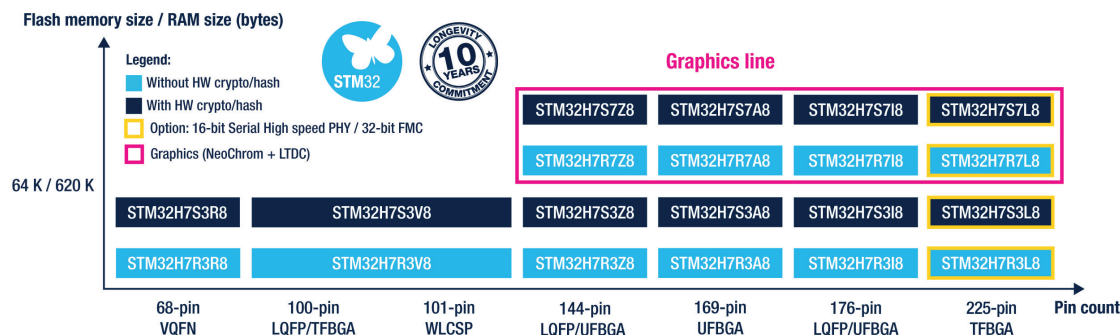


STM32H7S78-DK
Essential prototyping
256-Mbit Octo-SPI NOR Flash, Ethernet, USB, Stlink debugger, Arduino UNO extension interface.



NUCLEO-H7S3L8
Feature-rich prototyping
1 Gbit Octo-SPI NOR Flash, 256 Mbit Octo-SPI PSRAM, WVGA TFT display, Ethernet, USB, microSD, audio, microphone mems, Stlink debugger, Arduino UNO and Camera extension interfaces.

STM32H7RS PORTFOLIO



START DEVELOPING NOW!

STM32Cube ecosystem
More than **1 million developers** have chosen STM32Cube, making it the reference in the industry.

STM32CubeH7RS
firmware package



STM32 for GUI



STM32 Cloud Solutions



© STMicroelectronics - March 2024 - Printed in the United Kingdom - All rights reserved
ST and the ST logo are registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, ST and the ST logo are Registered in the US Patent and Trademark Office. For additional information about ST trademarks, please refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

