PL-STM

STM32 Series Cortex-M7 Based Embedded Development Kit



FEATURES

- The STM32H7B3I-EVAL Evaluation board is a complete demonstration and development platform for the Arm® Cortex®-M7-based. The STM32H7B3I-EVAL Evaluation board provides access to all the STM32 peripherals for user applications and includes an embedded STLINK-V3E debugger/programmer, Power Supply. STM32H7B3I-EVAL platform for the STM32H7B3 family (Cortex-M7).
- Use cases: High-performance MCU evaluation, graphics/HMI, high-speed interfaces (USB HS), and advanced lab development.The full range of the STM32H7B3I-EVAL hardware features helps to develop applications and evaluate all the peripherals, such as USB OTG HS and FS, CAN FD, USART, ADC and DAC, digital microphones, SRAM, SDRAM, NOR flash memory, Octo-SPI flash memory with OTFDEC, microSD™ 3.0 card, 7" 800x480 WVGA TFT color RGB LCD with capacitive touch panel (I2C), and DCMI camera.

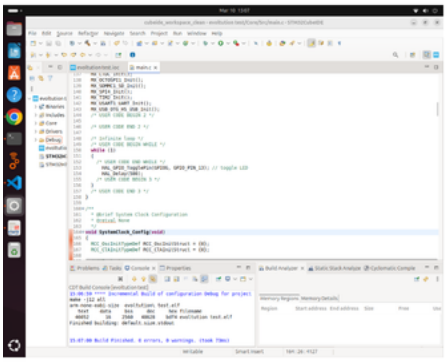
SPECIFICATIONS

- STM32H7B3LIH6Q Arm® Cortex® microcontroller with 2 Mbytes of flash memory and 1.4 Mbyte of RAM in TFBGA225 package
- 7" 800x480 WVGA TFT LCD color module with RGB parallel interface and capacitive touch panel with I2C interface
- 1/4" color CMOS QSXGA (5 Mpixels) camera module with DCMI and I2C interface
- USB OTG HS and USB OTG FS
- On-board current measurement
- I2S/SAI audio codec
- 512-Mbit Octo-SPI NOR flash, 8-Mx32bit SDRAM, 1-Mx16bit SRAM, and 8-Mx16bit NOR flash
- Four color user LEDs
- Reset, wake up, and tamper push-buttons
- 4-direction joystick with a selection button
- Potentiometer
- Coin-battery cell holder for power backup
- Power-metering and temperature-monitoring demonstration with 2 dual-channel, sigma-delta modulators
- Wi-Fi® module compliant with 802.11 b/g/n
- Board connectors:
  Two USB Micro-AB
  Two microSD™ cards
- Octo-SPI NOR flash module connector
- Stereo line out headset jack including analog microphone input
- Stereo line in headset jack
- Two DB9 for external RS-232 port and CAN FD
- JTAG and ETM trace debugger
- Connectors for ADC and DAC
- I/O expansion connectors
- DFSDM microphone daughterboard expansion connector
- Motor-control interface expansion connector
- I2C expansion connector
- Flexible power-supply options: ST-LINK USB VBUS, USB connector, or external sources
- On-board STLINK-V3E debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Comprehensive free software libraries and examples available with the STM32Cube MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) Embedded STM32CubeMX, STM32CubeIDE, STM32CubeProgrammer,
  (NOTE : IDE Refer or General)
- Support to Windows® 10 or 11, Linux® 64-bit

Integrated Development Environment for STM32

- **STM32CubeIDE** is a multi-OS, C/C++ integrated development environment for STM32 code development. It helps developers minimize the time and cost required to bring an STM32-based product to market.STM32CubeIDE is an environment for editing, compiling, and debugging. Users often use it with other

tools from the STM32Cube ecosystem such as the STM32CubeMX graphical configuration tool. It is also compatible with several vertical solution tools, including TouchGFXDesigner, STM32Cube AI Studio, and motor control workbench.



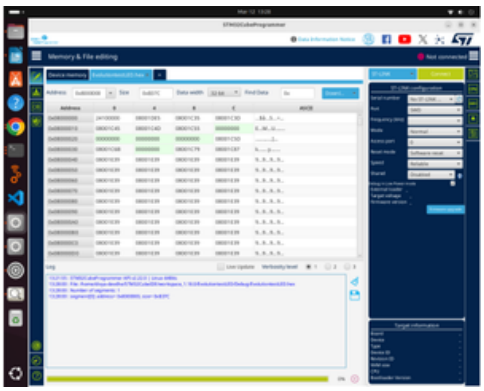
STM32CubeMX STM32Cube initialization code generator

- **STM32CubeMX**, which includes the STM32CubeMX and STM32CubeMX2, is a graphical tool that simplifies the configuration of STM32 products, and generates the corresponding initialization code through a guided step-by-step process.



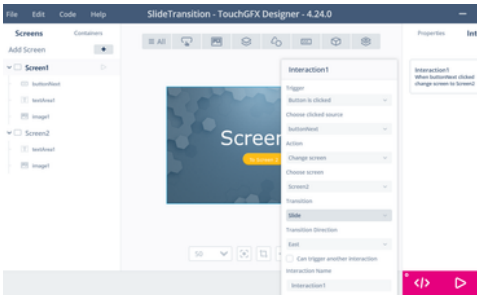
STM32CubeProgrammer software for all STM32

- **STM32CubeProgrammer** (STM32CubeProg) is an all-in-one multi-OS software tool for programming STM32 products.



X-CUBE-TOUCHGFXSTM32CubeIDE

- **TouchGFX** is an advanced, free-of-charge GUI optimized for STM32 microcontrollers. Taking advantage of the STM32 graphical hardware acceleration, architecture, and ecosystem, TouchGFX accelerates the HMI-of-Things revolution through the creation of stunning smartphone user interfaces on embedded devices ranging from simple low-color UI applications up to high-resolution and high-color UI applications.



EXPERIMENTS

- Input switch and Output LED interface
- Acquire ADC data wrt POT.
- Internal DAC waveform generation.
- UART data transmission.
- Interface TFT
- RTC interface
- Test Sample code for I2C
- Test Sample code for SPI
- Test Sample code for CAN
- Camera real time data Display on TFT
- The Development Platform provides you with the flexibility and capabilities to build and develop your own applications efficiently.

