What is STM32 ?

STM32 is a microcontroller using Arm Cortex-M processor manufactured by STMicroelectronics.

All STM32 series microcontrollers have IIC and SPI communication interfaces, using these interfaces, data is read from the sensors and this data is processed with the help of the program.

STM32 divided into 3;

1-Discovery Kits

2-Eval Boards

3-Nucleo Boards

1-Discovery Kits:

STM32 Discovery kits are a cheap and complete solution for the evaluation of the outstanding capabilities of STM32 MCUs and MPUs. They carry the necessary infrastructure for demonstration of specific device characteristics and comprehensive software examples allow to fully benefit from the devices features and added values.

Extension connectors give access to most of the device's I/Os and make the connection of add-on hardware possible.

With the integrated debugger/programmer the discovery kits are ideal for prototyping.

2-Eval Boards:

The STM32 eval boards have been designed as a complete demonstration and development platform for the STM32 MCUs and MPUs.

They carry external circuitry, such as transceivers, sensors, memory interfaces, displays and many more. The evaluation boards can be considered as a reference design for application development.

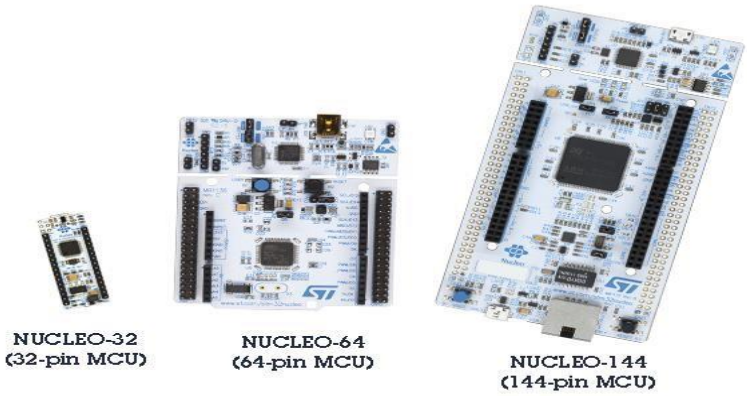
3-Nucleo Boards:

The highly affordable STM32 Nucleo boards allow anyone to try out new ideas and to quickly create prototypes with any STM32 MCU.

Sharing the same connectors, STM32 Nucleo boards can easily be extended with a large number of specialized application hardware add-ons (Nucleo-64 include Arduino Uno rev3 & ST morpho connectors, Nucleo-32 include Arduino Nano connectors).

The STM32 Nucleo boards integrate an ST-Link debugger/programmer, so there is no need for a separate probe.

A comprehensive STM32 software HAL library together with various software examples are provided with the STM32 Nucleo boards, and seamlessly work with a wide range of development environments including IAR EWARM, Keil MDK-ARM, mbed and GCC/LLVM-based IDEs.



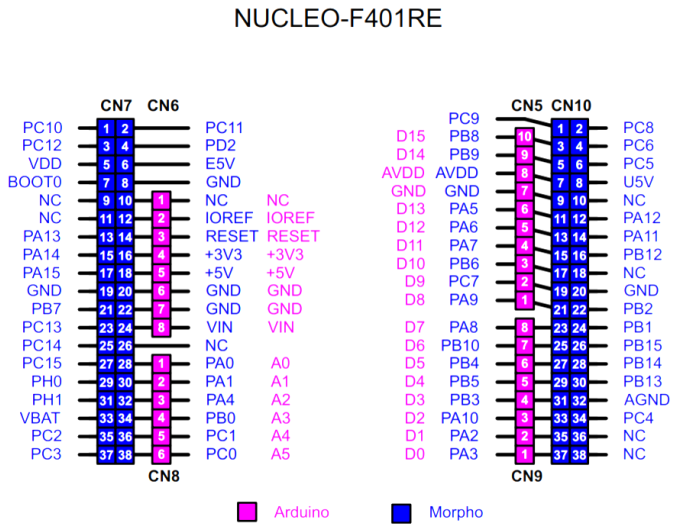
Nucleo F401RE(the most suitable for us)

- One high performance STM32F401RET6 microcontroller with LQFP64 package
- ARM Cortex-M4 CPU with FPU at 84MHz
- 512 KByte Flash
- 12bit ADC 2.4 Msps, up to 10 channels
- Up to 10 timers
- 3x I2C, 3x USART, 4x SPI, SDIO
- USB 2.0 Full Speed, with on-chip PHY
- 96 bit unique ID
- Two types of extension sources
- Arduino Uno Revision 3 connection
- STMicroelectronics Morpho expansion pin headers with full access to all STM32F401RET6 I / Os
- Flexible board power supply: USB VBUS or external source (3.5 V, 5 V, 7 V - 12 V)
- ST-LINK / V2.1 on-board interfacing with PC, three different communication channels via USB
- Debug and programming port, for STM32 Nucleo standard toolkits / debuggers / programmers
- Virtual Com port for sending back traces to PC
- Mass storage (USB Disk drive) for drag-and-drop programming.

- There are 51 I/O pins.

En uygun site:

https://ozdisan.com/maker-products/evaluation-platforms/evaluation-boards-and-accessories/NUCLEO-F401RE



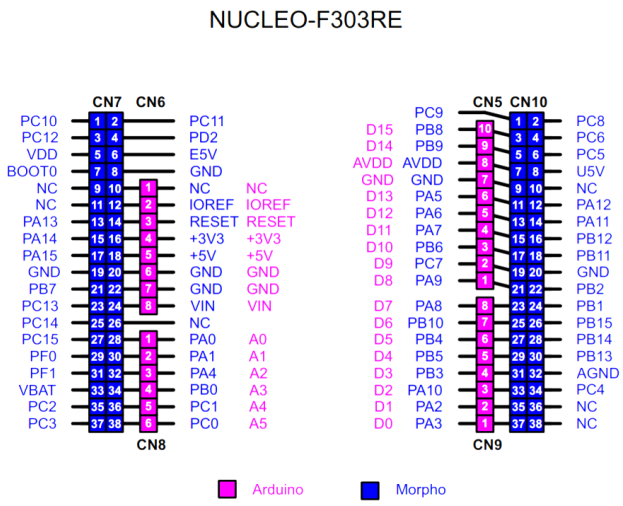
Nucleo-F303RE

- One high performance STM32F401RET6 microcontroller with LQFP64 package
- ARM Cortex-M4 CPU with FPU at 84MHz
- 512 KByte Flash
- 12bit ADC 2.4 Msps, up to 10 channels
- Up to 10 timers
- 3x I2C, 3x USART, 4x SPI, SDIO
- USB 2.0 Full Speed, with on-chip PHY
- 96 bit unique ID
- Two types of extension sources
- Arduino Uno Revision 3 connection
- STMicroelectronics Morpho expansion pin headers with full access to all STM32F401RET6 I / Os
- Flexible board power supply: USB VBUS or external source (3.5 V, 5 V, 7 V - 12 V)
- ST-LINK / V2.1 on-board interfacing with PC, three different communication channels via USB
- Debug and programming port, for STM32 Nucleo standard toolkits / debuggers / programmers
- Virtual Com port for sending back traces to PC
- Mass storage (USB Disk drive) for drag-and-drop programming.

- There are 51 I/O pins.

En uygun site:

https://www.ozdisan.com/maker-products/evaluation-platforms/evaluation-boards-and-accessories/NUCLEO-F303RE



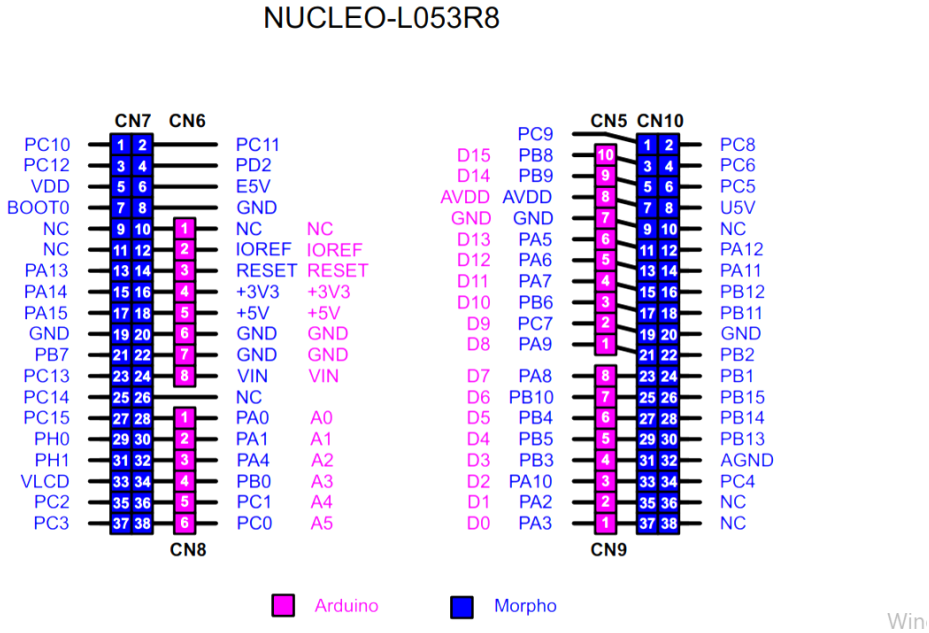
NUCLEO-L053R8

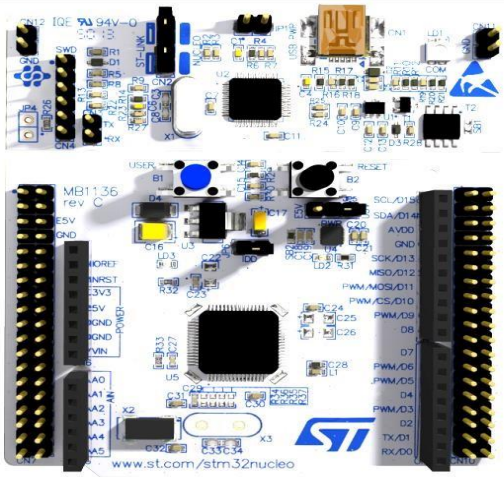
- One high performance STM32F401RET6 microcontroller with LQFP64 package
- ARM Cortex-M4 CPU with FPU at 84MHz
- 512 KByte Flash
- 12bit ADC 2.4 Msps, up to 10 channels
- Up to 10 timers
- 3x I2C, 3x USART, 4x SPI, SDIO
- USB 2.0 Full Speed, with on-chip PHY
- 96 bit unique ID
- Two types of extension sources
- Arduino Uno Revision 3 connection
- STMicroelectronics Morpho expansion pin headers with full access to all STM32F401RET6 I / Os
- Flexible board power supply: USB VBUS or external source (3.5 V, 5 V, 7 V - 12 V)
- ST-LINK / V2.1 on-board interfacing with PC, three different communication channels via USB
- Debug and programming port, for STM32 Nucleo standard toolkits / debuggers / programmers
- Virtual Com port for sending back traces to PC
- Mass storage (USB Disk drive) for drag-and-drop programming.

- There are 49 I/O pins.

En uygun site:

https://www.empastore.com/stm32-islemci-kiti-nucleo-l053r8





STM32 Nucleo-64 board

Nucleo F401RE	Nucleo-F303RE	NUCLEO-L053R8
• 512 KByte Flash	• 512 KByte Flash	• 512 KByte Flash
• 3x I2C, 3x USART, 4x SPI, SDIO	• 3x I2C, 3x USART, 4x SPI, SDIO	• 3x I2C, 3x USART, 4x SPI, SDIO
• 6 timers	• 6 timers	• 5 timers
• ARM Cortex-M4 CPU with FPU at 84MHz	• ARM Cortex-M4 CPU with FPU at 84MHz	• ARM Cortex-M4 CPU with FPU at 84MHz
• 12bit ADC 2.4 Msps, up to 10 channels	• 12bit ADC 2.4 Msps, up to 10 channels	• 12bit ADC 2.4 Msps, up to 10 channels
• There are 51 I/O pins.	• There are 51 I/O pins.	• There are 49 I/O pins.
• External source (3.5 V, 5 V, 7 V - 12 V)	• External source (3.5 V, 5 V, 7 V - 12 V)	• External source (3.5 V, 5 V, 7 V - 12 V)