

RTOS

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RTOS Overview

Using RTOS on MCU is method to deal with concurrent tasks which need to be handled in real-time without delay. A task is a piece of code that can be scheduled by OS scheduler and dedicated for a specific functionality. Tasks can have different...

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RTOS SysTick and Delay

SysTick is mainly used for delay function in non-RTOS firmware, and is used as the interrupt for RTOS scheduler. If STM32 HAL utilizes another timer as its time base, RTOS has its own right to initialize and handler SysTick. The Delay function also...

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[#systick](#)

I2C - SPI

The Inter-Integrated Circuit (I2C) is a multi-slave, half-duplex, single-ended 8-bit oriented serial bus specification, which uses only two wires to interconnect a given number of slave devices to a master. The Serial Peripheral Interface (SPI) is a...

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[#arm](#) [#stm32](#) [#i2c](#)
[#spi](#)

SSD1306 OLED Controller

SSD1306 0.96" I2C OLED display is very popular as it is used in many project to display system status as it has multiple communication protocols and consumes very low power. It mainly exposes I2C interface or SPI interface. SH1106 is another...

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[#oled](#)
[#ssd1306](#)

Analog to Digital Converter

There are many types of analog devices connected to microcontrollers. These analog device generate a variable voltage in a meaningful range. That voltage level is read and converted to a number through an Analog to Digital Converter.

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#arm #stm32 #adc
#joystick

Lidar

LIDAR is a method for determining ranges in variable distance by targeting an object with a laser and measuring the time for the reflected light to return to the receiver. Lidar is commonly used to make high-resolution maps, with applications in...

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#lidar

Livox SDK

Livox SDK is the software development kit designed for all Livox products. It is developed based on C/C++ following Livox Communication Protocol, and provides easy-to-use C style API. With Livox SDK, users can quickly connect to Livox products and...

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#lidar
#livox

Lidar Mapping - Prototype

Create a mapping system using a Livox Mid-40 Lidar and an APX-15 GNSS-INS module. This system can be used to scan and create a 3D point cloud of an area

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#lidar #livox
#mapping

Virtual machine

A virtual machine is a virtual environment that functions as a virtual computer system with its own CPU, memory, network interface, and storage, created on a physical hardware system. A software, called a hypervisor, separates the machine's resources...

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#virtual
