M5STACK

CoreS3

SKU:K128

Description

CoreS3 is the third generation of the M5Stack development kit series, its core master adopts the **ESP32-S3** solution, **dual-core Xtensa LX7** processor, the main frequency is**240MHz**, comes with '**WiFi**function, and the onboard **16MFLASH**and **8M-PSRAM**; It can **download the program**through the **TYPE-C** interface, support **OTG and CDC**functions, and facilitate external USB devices and flashing firmware; The front is equipped with a **2.0-inch capacitive touch IPS screen**, and the panel is made of **high-strength glass material**; A **30w pixel camera GC0308** is built into the bottom of the screen, with **proximity sensor LTR-553ALS-WA**; The power supply part adopts **AXP2101 power management core**chip and **4-way power flow control loop**, and the overall adopts **low power consumption** design; On-board **6-axis attitude sensor BMI270 and magnetometer BMM150**; On-board **TF-card (microSD)** card slot; On-board BM8563 **RTC** chip, providing accurate timing and **sleep-timer wake-up** function; In terms of sound output, it adopts high-fidelity **16bits-I2S** power amplifier chip AW88298, and the fuselage has a built-in **1w speaker**; In terms of sound input, ES7210 **audio decoding chip + dual microphone input** is adopted; On the side of the fuselage, there is a **independent power button and restart (RST) button**, self-built delay

circuit, **long press the reset button to enter the program download mode**. The CoreS3 set comes with a **DinBase Base** by default, which is convenient for **Din rail, wall and screw fixing**; It can be powered by external **DC 12V (support 9~24V)** or internal **500mAh lithium battery**; DinBase reserves multiple **proto** locations for users to **DIY**. This finished product is suitable for scenarios such as **Internet of Things development, various DIY project development, smart home control system and industrial automation control system**.

Power on and off operation:

Power on: Click the left power button
shut down: Long press the left power button for 6 seconds
reset: Click the bottom RST button

Features

- Developed based on ESP32, support WiFi @16M Flash, 8M PSRAM
- Built-in camera, proximity sensor, speaker, power indicator, RTC, I2S amplifier, dual microphone, condenser touch screen, power button, reset button, gyroscope
- TF card slot
- High-strength glass
- Support OTG and CDC functions
- AXP2101 power management, low power design
- Supported programming platforms: Arduino, UIFlow

Includes

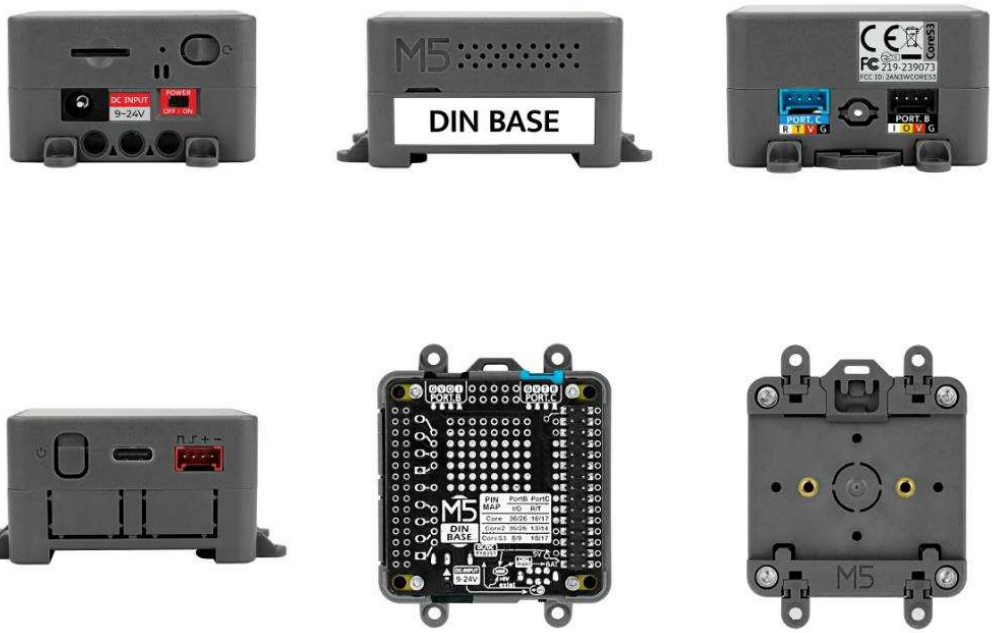
- 1 × CoreS3
- 1 × DinBase

Applications

- IoT development
- Various DIY project development
- Smart home control system
- Industrial automation control system

Specification

Resources	Parameters
MCU	ESP32-S3@Xtensa LX7, 16MFLASH AND 8M-PSRAM, WIFI, OTGCDC functions
Touch the IPS LCD screen	2.0"@320*240 ILI9342C
Camera	GC0308@30 megapixels
Proximity sensors	LTR-553ALS-WA
Power management chip	AXP2101
Six-axis attitude sensor	BMI270
magnetometer	BMM150
RTC	BM8563
Speaker	16bits-I2S power amplifier chip AW88298@1W
Audio decoding chip	ES7210, dual microphone inputs
Product Size	54 x 54 x 16mm
Package Size	101x64x34mm
Product Weight	73.3g
Package Weight	97.8g



EasyLoader

EasyLoader is a concise and fast program writer, which has a built-in case program related to the product. It can be burned to the main control by simple steps to perform a series of function verification.

Download Windows Version Easyloader

Pin Map

LCD Screen & TF Card

LCD Pixel:320x240 TF cards support up to 16GB

ESP32S3 Chip	GPIO35	GPIO37	GPIO36	GPIO3	GPIO15	AXP2101_DO1
ILI9342C	MISO	MOSI	SCK	CS	RST	BL

ESP32S3 Chip	GPIO35	GPIO37	GPIO36	GPIO4
TF Card	MISO	MOSI	SCK	CS

Camera

ESP32S3 Chip	GPIO12	GPIO11	AW9523B_P1_0	GPIO45	GPIO46	GPIO38
GC0308	SDA	SCL	CAM_RST	CAM_PCLK	CAM_VSYNC	CAM_HREF

CAP.TOUCH (I2C Addr: 0x58)

ESP32S3 chip	GPIO12	GPIO11	AW9523B_P1_2	AW9523B_P0_0
FT6336U	SDA	SCL	INT	RST

Microphone & amplifier

ESP32S3 Chip	GPIO12	GPIO11	AW9523B_P1_3	AW9523B_P0_2	GPIO34	GPIO33	GPIO13
ES7210(0x40)	SDA	SCL	AW_INT	AW_RST	I2C_BCK	I2C_WCK	I2C_DATO
AW88298(0x36)	SDA	SCL					

AXP Power Led

AXP2101	AXP_CHGLED
Red LED	Vcc

RTC

ESP32S3 Chip	GPIO12	GPIO11	AXP2101_WAKEUP
BM8563	SDA	SCL	INT

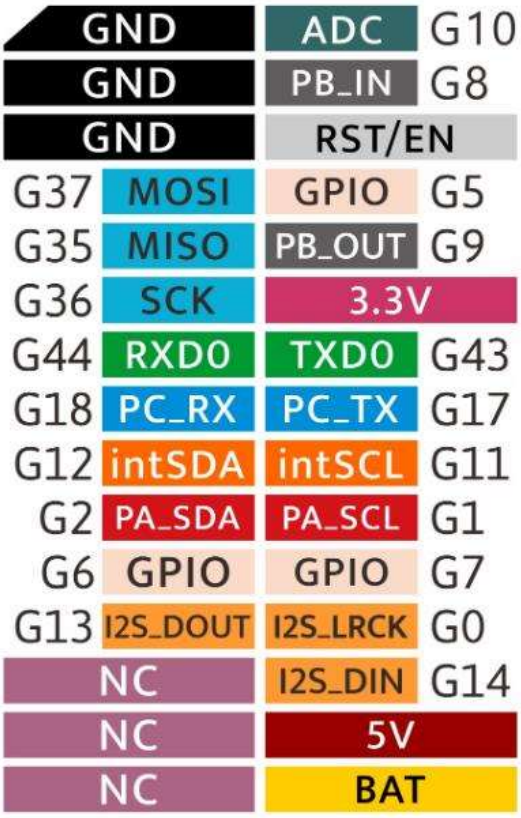
IMU (3-axis gyroscope + 3-axis accelerometer)

ESP32S3 Chip	GPIO12	GPIO11
BMI270&BMM150	SDA	SCL

Internal I2C connection

ESP32S3 Chip	GPIO12	GPIO11
BMI270&BMM150	SDA	SCL
AXP2101	SDA	SCL
BM8563	SDA	SCL
ES7210	SDA	SCL
AW88298	SDA	SCL

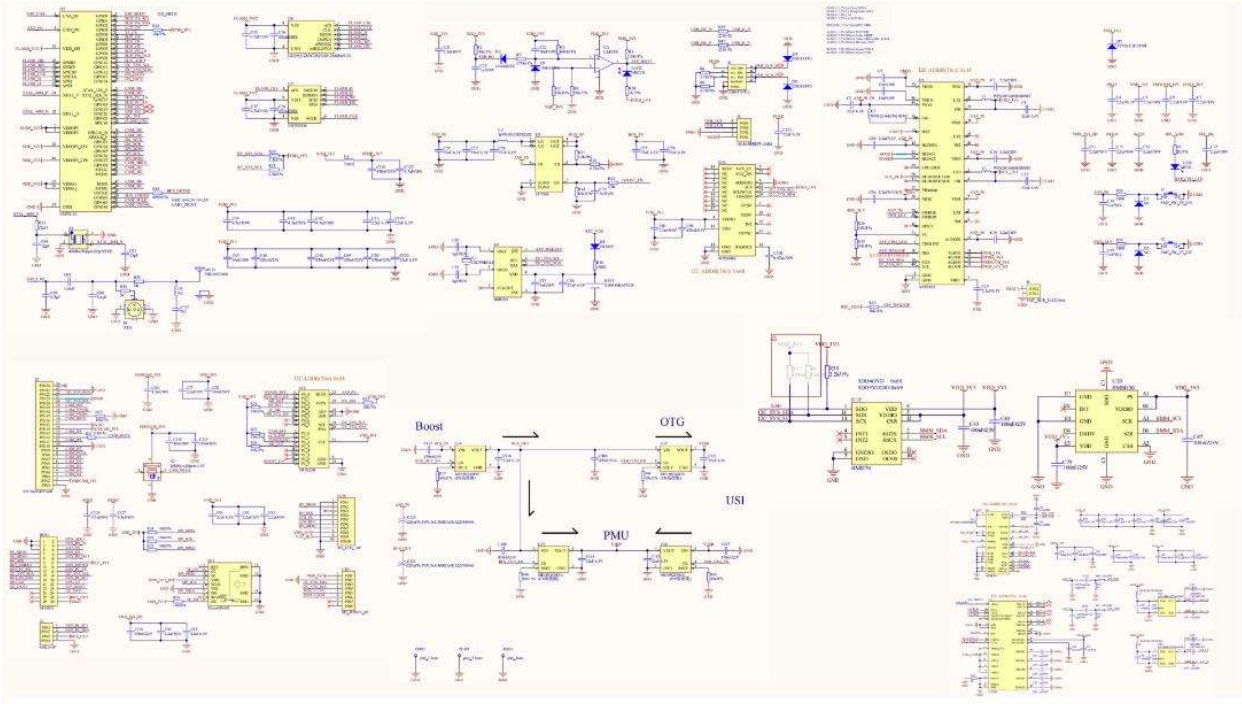
M5CoreS3 M-BUS Schematic diagram



Related Link

- esp32-s3
- LTR-553ALS-WA
- GC0308
- ES7210
- BMM150
- BMI270
- BM8563
- AXP2101
- AW88298

Schematic



- Complete schematic pdf