CoreMP135

SKU:K135

Description

CoreMP135 is an integrated **Linux** industrial control host based on the **STM32MP135DAE7** chip. It features a single-core ARM Cortex-A7 processor with a frequency of up to 1GHz and is equipped with 4Gb DDR3L SDRAM for running memory. The device boasts a rich array of functional interfaces: it has 2 GbE ports, 1 HD video output, 2 USB 2.0-A ports, 1 USB-C port (supporting OTG and power supply), a MicroSD card slot, 2 CAN FD interfaces, and 1 PWR485 interface (9~24V power input + RS485), along with 2 Grove (I2C & UART) interfaces. In terms of human-machine interaction, it features a 2.0-inch IPS capacitive touch screen and a 1W speaker (16 bits I2S driven). The device is designed for low power consumption, utilizing an AXP2101 power management chip and an integrated RTC (BM8563) for scheduled wake-up and sleep functions, and supports a rechargeable battery. It includes a DC power socket supporting an external DC12V@2A power supply. The host comes with a MicroSD card preloaded with Debian system, ready to use upon booting. Suitable for various installation scenarios, the device’ s bottom is equipped with a DIN rail base plate for easy wall mounting and screw fixing. It is applicable in advanced industrial automation, smart home and multimedia entertainment devices, industrial IoT edge gateways, and as a central hub for robot motion control.

Tutorial

Linux Program

CoreMP135

This tutorial will show you how to program and control CoreMP135 devices through Linux

Features

- STM32MP135DAE7@Arm Cortex-A7@1GHz
- Linux Standard Platform

- Rich peripheral interfaces (CAN\RS485\ gigabit network port, etc.)
- 2.0 "touch screen
- PMU
- Audio Output
- MicroSD and 4Gb DDR3L SDRAM running memory
- M5BUS&PORT A / C
- DIN Rail rails are easy to install

Includes

- 1x CoreMP135
- 1x M3 hex wrench
- 1x VH3.96-4P
- 2x Terminal 2.54mm-2P(green)
- 1x MicroSD Card(already installed in the machine)
- 1x User Manual

Applications

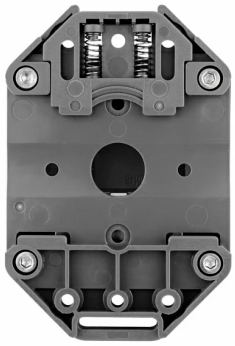
- Automation in Industry
- Smart Home
- Industrial IoT Edge Gateway
- Education and development
- Robot motion center controller

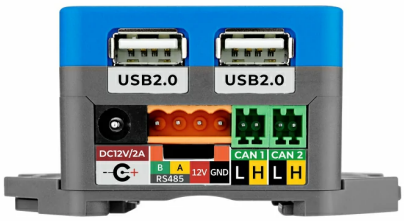
Specification

Resources	Parameters
Resources MCU	STM32MP135DAE7@single-core Arm Cortex-A7 processor, main

MCU	frequency 1 GHz
Power Management Chip	AXP2101
485 Communication	MAX3485
CAN Communications	Two-channel SIT1051T/3 (High speed FDCAN)
USB Hub Interface	GL852G (2x USB2.0) 1x USBC (Support OTG and power supply)
HD Video Interface Chip	LT8618SXB, supports up to 24 bits of color depth
DDR3L SDRAM	4Gb
Ethernet	RTL8211F (supports up to 1Gbps data rate) 2x RJ45
RTC	BM8563
Screen	ILI9342C(2.0IPS LCD) Resolution: 240*320px
Touch	FT6336U
Power Amplifier	NS4168 (mono Class D power amplifier) I2S serial digital audio input Supports a wide range of sampling rates: 8kHz~96kHz

Speaker	1W@4Ω
Dc power input	DC12V/2A
Operating Temperature	0-40°C
Power Supply	DC12V@2A OR USB-C 5V@3A
Product Size	54*54*34.5mm
Package Size	81*54*39.5mm
Product Weight	99.5g
Package Weight	155.9g

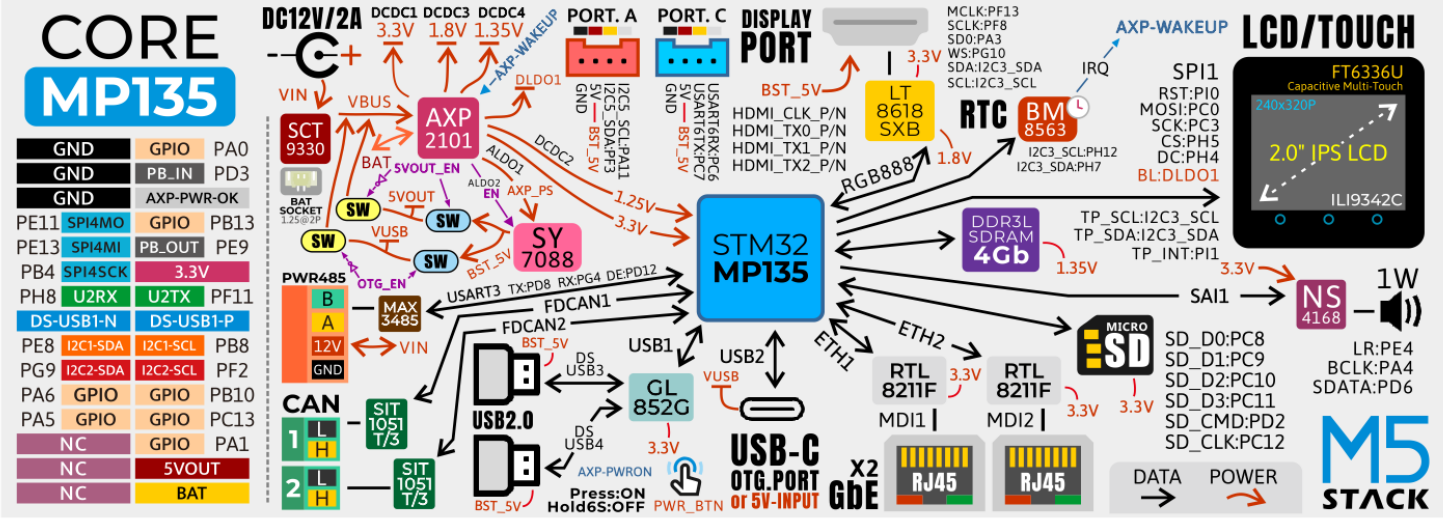




Related Link

- STM32MP135DAF7
- GL852G（USB Hub Chip）
- LT8618SXB
- RTL8211F（Ethernet chip）
- FT6336U（Touch Screen Driver）
- NS4168（amplifier chip）
- BM8563（Clock Chip）
- AXP2101(PMU)
- SIT1051T/3(CAM Comunication)
- ILI9342C（Screen Driver）

Schematic



CoreMP135

CoreMP1_MidLayer

PinMap

MBUS

MBUS	U2RX	U2TX	I2C1-SDA	I2C1-SCL	I2C2-SDA	I2C2-SCL	
STM32MP1 35DAE7	PH8	PF11	PE8	PB8	PG9	PF2	/(

PORT A

PORT A	I2C5_SCL	I2C5_SDA	I2C5 Linux Device Name
STM32MP135DAE7	PA11	PF3	/dev/i2c-1

PORT C

PORT C	USART6RX	USART6TX	USART6 Linux Device Name
STM32MP135DAE7	PC6	PC7	/dev/ttySTM0

RS485

MAX3485EIM	USART3RX	USART3TX	DE/RE	USART3 Linux Device Name
STM32MP135DAE7	PG4	PD8	PD12	/dev/ttySTM3

CAN

STM32MP135DAE7	PE3	PE10	PG0	PE0
SIT1051T/3(FDCAN1)	FDCAN1_TX	FDCAN1_RX		
SIT1051T/3(FDCAN2)			FDCAN2_TX	FDCAN2_RX

Display

LT8618SXB	MCLK	SCLK	SD0	WS	I2C3_SDA	I2C3_SCL	I2
STM32MP135DAE7	PF13	PF8	PA3	PG10	PH7	PH12	/(

RTC

PORT A	I2C3_SCL	I2C3_SDA	I2C3 Linux Device Name
STM32MP135DAE7	PH7	PH12	/dev/i2c-0

Micro SD

Micro SD	SD_DAT0	SD_DAT1	SD_DAT2	SD_DAT3	SD_CMD	SD_CLK
STM32MP135DAE7	PC8	PC9	PC10	PC11	PD2	PC12

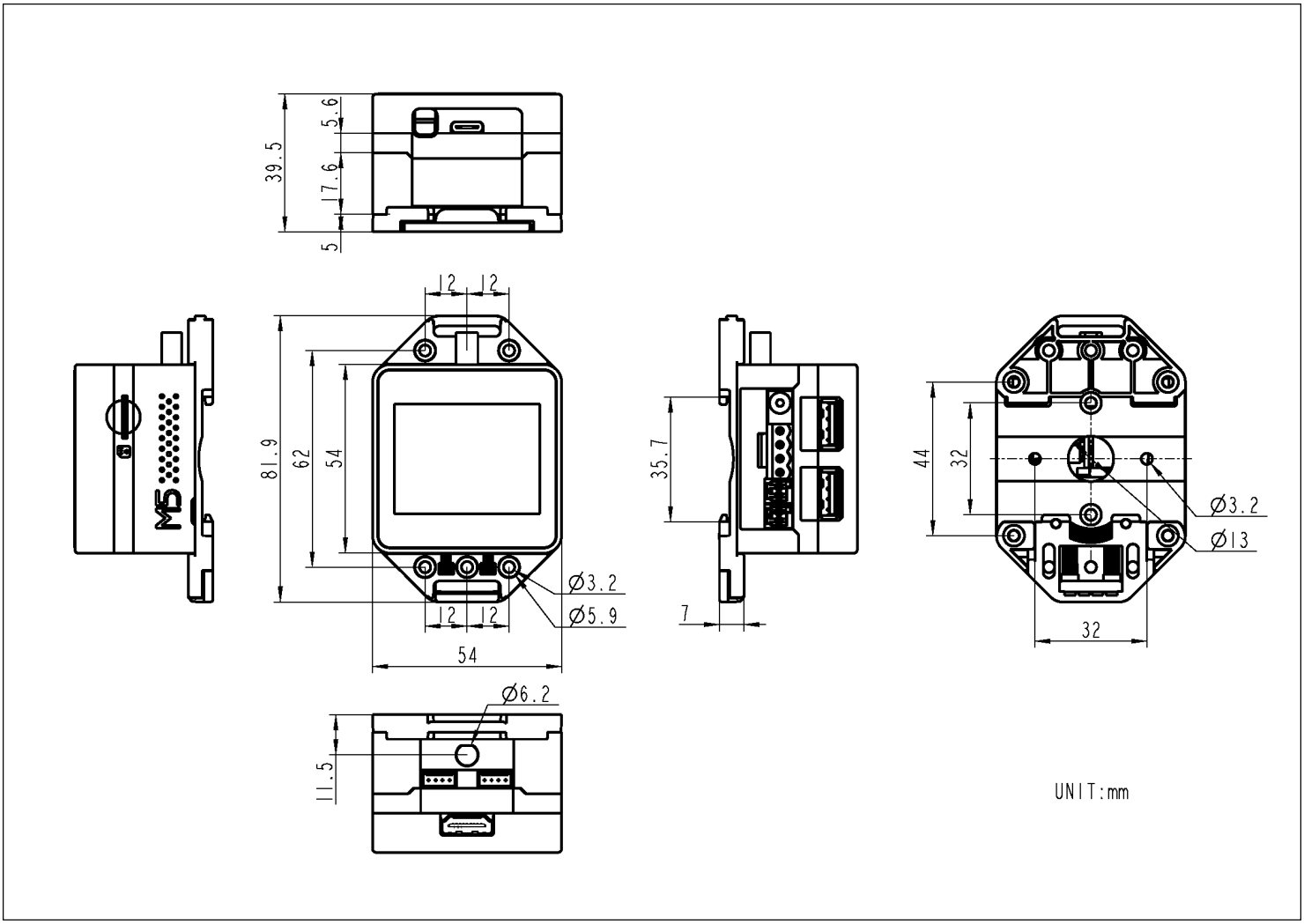
NS4168

NS4168	LRCLK	BCLK	SDATA	WS	I2C3_SDA	I2C3_SCL	I2
STM32MP135DAE7	PE4	PA4	PD6	PG10	PH7	PH12	/(

Screen & Touch

STM32MP135DAE7	RST	MOSI	SCK	CS	DC	BL	(I
ILI9342C	PI0	PC0	PC3	PH5	PH4		
AX2101						DLDO1	
FT6336U							

Module Size



Code

M5Stack_Linux_Libs

CoreMP135_buildroot

> **Buildroot is a simple, efficient and easy to use embedded build tool**

buildroot-external-st

> **The repository is a Buildroot BR2_EXTERNAL tree specifically designed to support the STM32MP1 platform.**

Image File

Image version	Kernel version	Download link
M5_CoreMP135_buildroot_20240515	5.15.118	Download
M5_CoreMP135_buildroot_20240628	5.15.118	Download
M5_CoreMP135_debian12_20240515	5.15.118	Download
M5_CoreMP135_debian12_20240628	5.15.118	Download
M5_CoreMP135_debian12_20240919	5.15.118	Download

Video

- CoreMP135 introduction

K135 CoreMP135 视频.mp4

- CoreMP135 image burning

coremp135_image.mp4

- Based on M5Stack Linux application development framework, the peripheral hardware on CoreMP135 is programmed and controlled

coremp135_develop.mp4

MBUS Power

CoreMP135 MBUS power bus input and output control:

Refer to the schematic diagram and set BUS_OUT_EN to low level, then the bus 5V is in input mode, and high level, then the bus 5V is in output mode. You can use the following command to turn on the downward output:

```
echo 131 > /sys/class/gpio/export && echo out >
/sys/class/gpio/PI3/direction
echo 1 > /sys/class/gpio/PI3/value
# echo 0 > /sys/class/gpio/PI3/value
```