Overview

The “mini_mth_STM32_V1” is a small mother-board based on “microMCU_STM32F103CBT” module. It was designed to discover functionality of microMCU module and debug your code before using module within your end device.

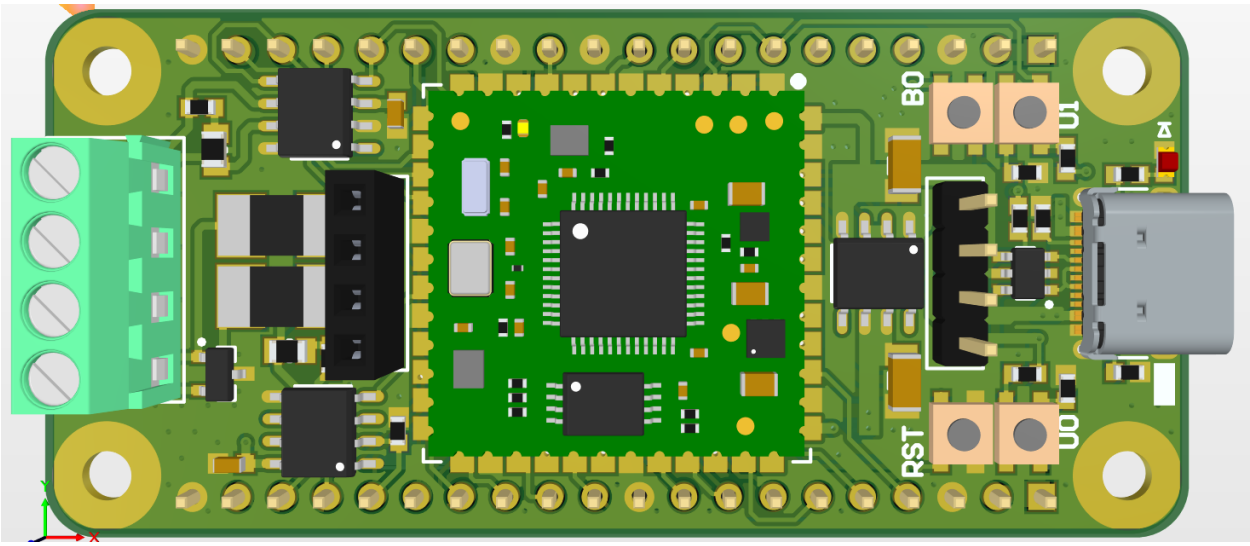

Figure 1. – Top view of the mother-board

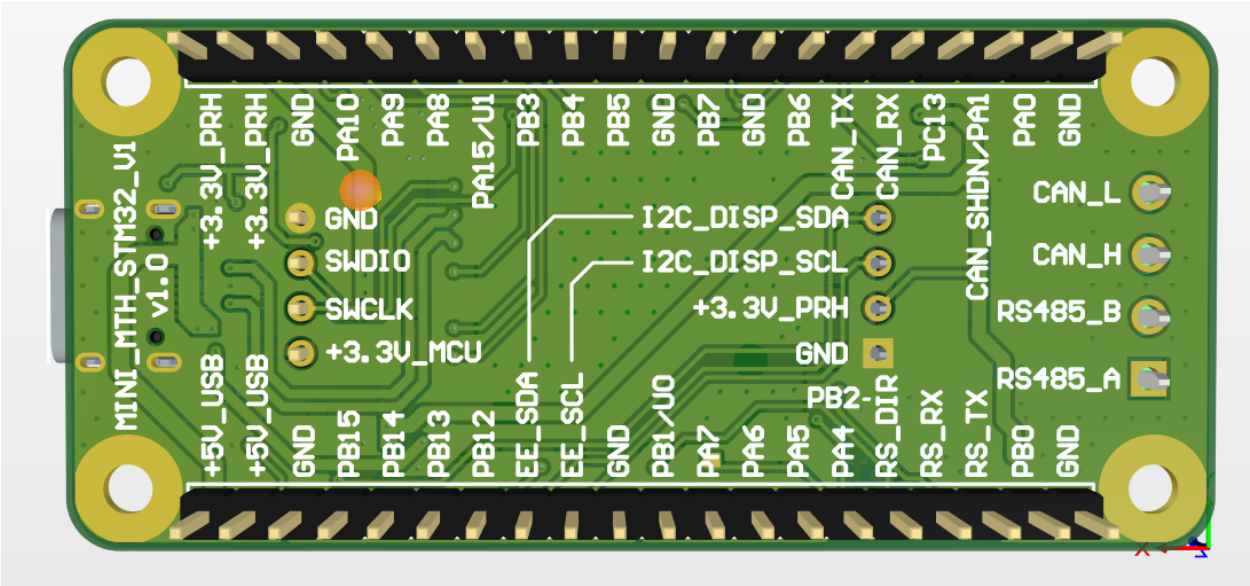

Figure 2. – Bot view of the mother-board

Features

- Small dimensions - 30mm x 65mm
- Input power range – USB power (4.75V – 5.25V)
- Built in LDO for external periphery – 3.3V/500mA
- Built in small buttons for BOOT and nRST
- Built in two USER small buttons (U0 & U1)
- Protection against reverse polarity of the power supply
- CAN interface – CAN1 form MCU (with SHDN pin)
- RS485 interface – UART2 from MCU (with DIR pin)
- Two pin headers for simple connecting to external devices
- Additional I2C connector for connecting small OLED displays (for example)
- Header with SWD pins for programming/debugging
- Temperature range - -20℃ ~ +85℃

Pinout table

Number	Name	Function
1	+3.3V_PRH	Power
2	+3.3V_PRH	Power
3	GND	Power
4	PA10	I/O pin
5	PA9	I/O pin
6	PA8	Power
7	PA15/U1	USER BUTTON 1
8	PB3	I/O pin
9	PB4	I/O pin
10	PB5	I/O pin
11	GND	Power
12	PB7	I/O pin
13	GND	Power
14	PB6	I/O pin
15	CAN_TX/PB9	CAN1 TX pin
16	CAN_RX/PB8	CAN1 RX pin
17	PC13	I/O pin and LED within mcu module
18	PA1/CAN_SHDN	CAN SHDN pin for external CAN PHY
19	PA0	I/O pin
20	GND	Power
21	GND	Power
22	PB0	I/O pin
23	RS_TX/PA2	USART2 pin for RS485
24	RS_RX/PA3	USART2 pin for RS485
25	RS_DIR/PB2	RS485 direction pin
26	PA4	Power
27	PA5	I/O pin
28	PA6	I/O pin
29	PA7	I/O pin
30	PB1/U0	USER BUTTON 0
31	GND	Power
32	EE_SCL	I/O pin, I2C_SCL for internal EEPROM with PULL-UPs
33	EE_SDA	I/O pin, I2C_SDA for internal EEPROM with PULL-UPs
34	PB12	I/O pin
35	PB13	I/O pin
36	PB14	I/O pin
37	PB15	I/O pin
38	GND	Power
39	+5V_USB	Power
40	+5V_USB	Power

Electrical characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Additional information
Supply voltage	5V_USB	4.75	5.0	5.25	V	Generic USB voltage
Supply current			30		mA	Depends on project and MCU software
Output voltage	3.3V_MCU	3.25	3.3	3.35	V	
Output current on 3.3V_MCU line		0.0	250	300	mA	
Output voltage	3.3V_PRH	3.25	3.3	3.35	V	
Output current on 3.3V_MCU line		0.0	300	500	mA	

Internal mother-board structure

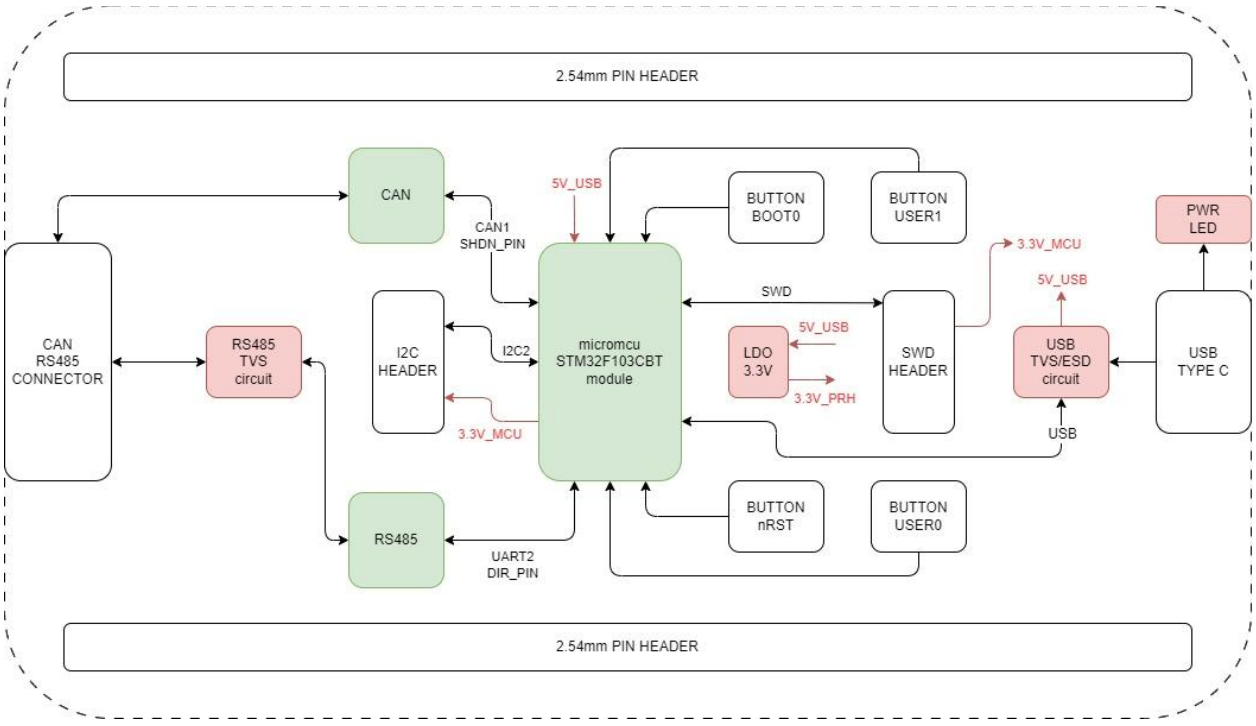

Figure 3. – mother-board structure

Dimensions

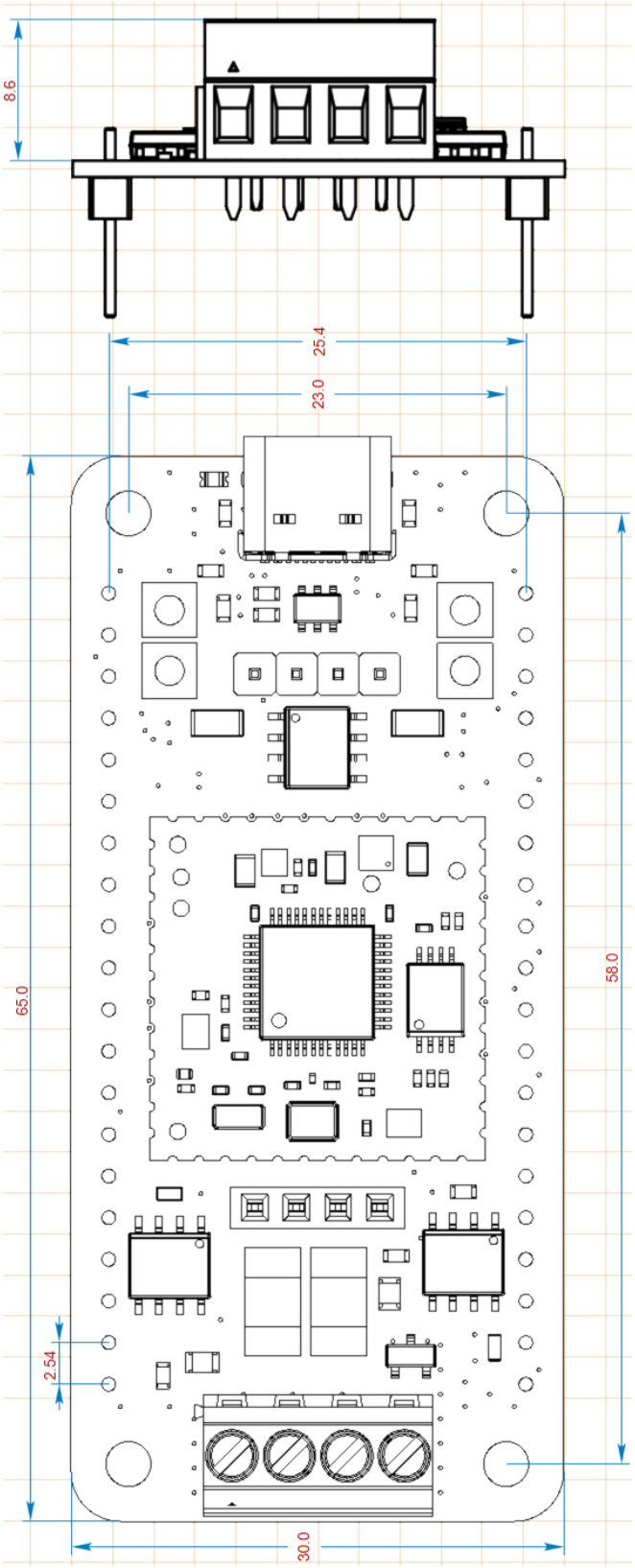

Figure 4. – Mother-board dimensions, mm.

Version list

version	date	notes
1.0	24.02.2025	First release