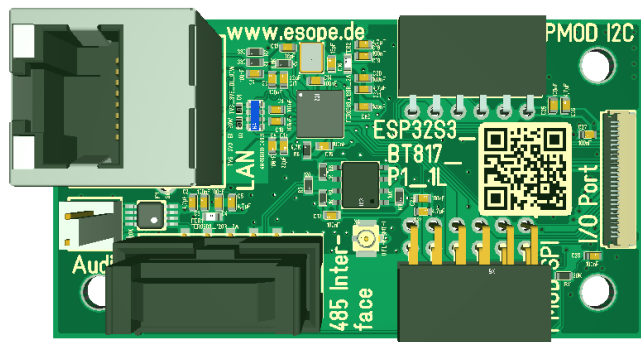# ESP32S3_BT817_P1

Highlights

- ✓ **PMOD-Interface (I²C, SPI)**
- ✓ **LAN-Interface**
- ✓ **Audio-Amplifier**
- ✓ **RS485-Data Interface**
- ✓ **Long range WLAN-Antenna**
- ✓ **Industrial standard**

Features

The ESP32S3_BT817_P1 clip-on module is an interface module of the ESoPe platform and serves as an extension for the ESP32S3_BT817 system.
The plug-on module has the following interfaces:

- PMOD I²C
- PMOD SPI
- RS485-Interface / Power
- LAN-Interface
- Class-D Audio-Amplifier
- WLAN Antenna

The interfaces are used to communicate with peripheral devices and, if necessary, to power the system.
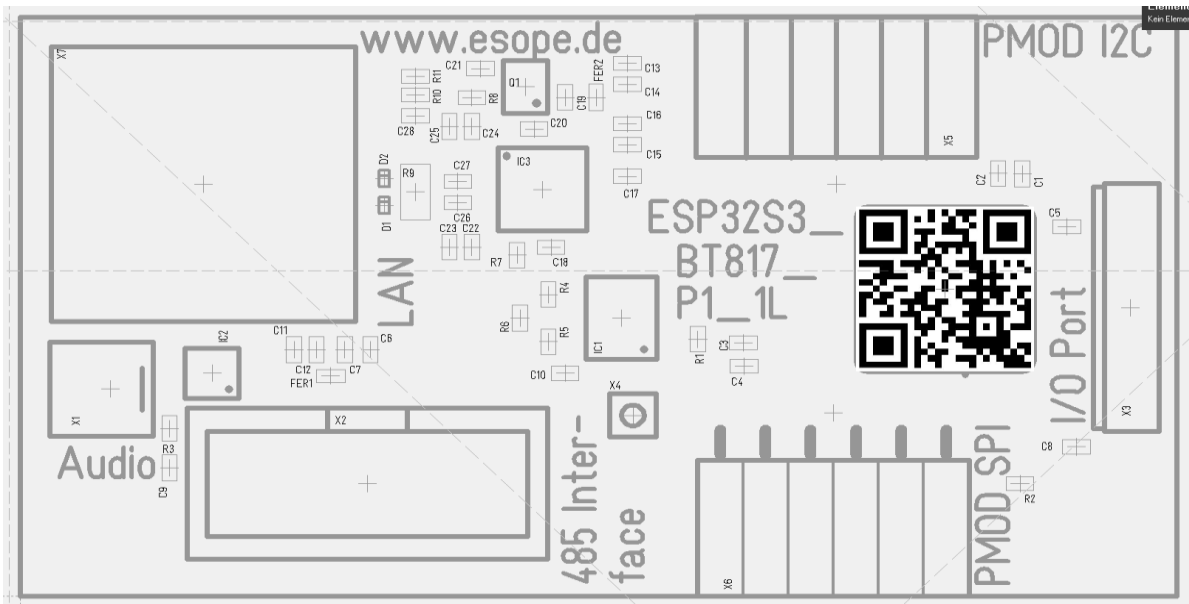
Technical Specification

Parameter	Value
Power Supply	via ESP32S3_BT817
Power Consumption	approx. 125mA
Operating Ambient Temperature	-10…+70°C
Dimensions	80mm x 50mm
Weight	18g
Conformity	RoHs

Schematic

Details in document ESP32S3_BT817_P1_1A_SCH.pdf

Board

Connection Plan

Audio / Loudspeaker

X1: connection loudspeaker, NSL25 / 2-pole

pin	function
1	loudspeaker +

2	loudspeaker -

RS485-Interface
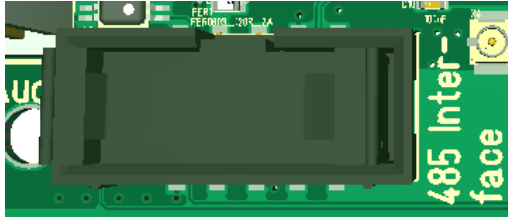
X2: connection, male box header, 10-pole, grid 2.54

pin	function
1	+12V
2	+12V
3	GND
4	NC
5	GND
6	GND
7	485 A
8	485 B
9	GND
10	GND

I/O – port / communication with ESP32S3_BT817 board

X3: ZIF-connector 26-pole

pin	function
1	Audio_L
2	PMOD SPI2 /CS
3	PMOD SPI2 /CS2
4	PMOD SPI2 /INT
5	PMOD SPI2 /RESET
6	PMOD SPI MISO
7	PMOD SPI MOSI
8	PMOD SPI Clock

9	PMOD SPI /CS
10	PMOD SPI /CS2
11	/SD SGM2820 (Audio)
12	PMOD SPI /INT
13	PMOD SPI /RESET
14	GND
15	I^2C SDA
16	I^2C SCL
17	I^2C /RESET
18	I^2C INT
19	GND
20	RS485 /RE_DE
21	RS485 RXD
22	RS485 TXD
23	+3V3 DC
24	+3V3 DC
25	+12V DC
26	+12V DC

Connection Antenna
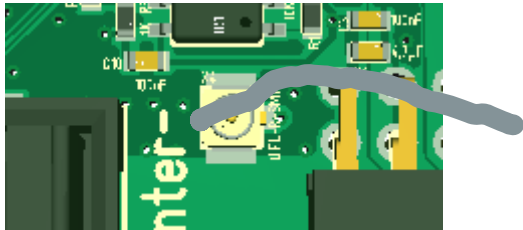
X4: U.FL-R-SMT-1

pin	function
1	GND
2	HF-signal

Connection antenna cable:
Connection between ESP32S3_BT817_P1 (antenna) and ESP32S3_BT817 board. The antenna cable enables the WLAN functionality.

PMOD I²C

X5: connection socket header, 6-pole, grid 2.54, connection acc. to PMOD I²C
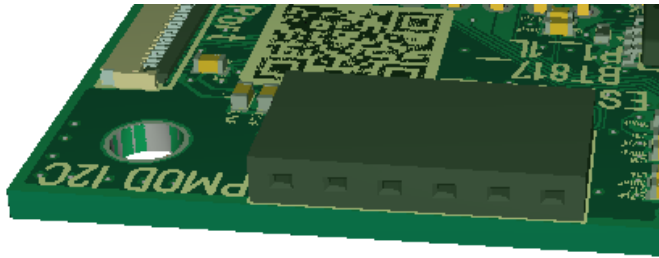
pin	function
1	PMOD I^{2}C INT
2	PMOD I^{2}C /RESET
3	PMOD I^{2}C SCL
4	PMOD I^{2}C SDA
5	GND
6	+3V3

PMOD SPI
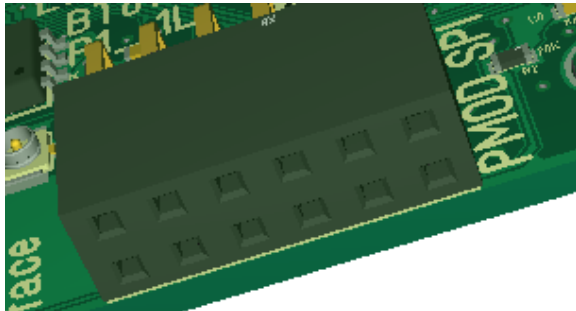
X6: connection socket header, 12-pole, grid 2.54, connection acc. to PMOD SPI

pin	function
1	PMOD SPI CS
2	PMOD SPI MOSI
3	PMOD SPI MISO
4	PMOD SPI CLK
5	GND
6	+3V3
7	PMOD SPI /INT
8	PMOD SPI /RESET
9	PMOD SPI CS2
10	NC
11	GND
12	+3V3

Connection LAN
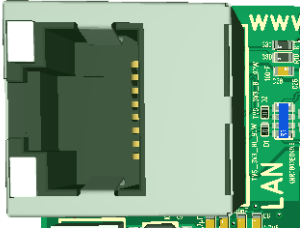
X7: RJ45 connector / 8-pole

PIN	Function
1	Send +
2	Send -
3	Receive +
4	NC
5	NC
6	Receive -
7	NC
8	NC

Function LEDs:

LED	State	Meaning
Green	LED dark	No LAN-connection
	LED aktive	LAN-connection
Yellow	LED dark	No LAN-data
	LED flashes	Data connection

Copyrights and Trademarks

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Change History

File: ESP32S3_BT817_P1_1A_DS_en

Revision	Date	State	Author
1.0	2024-02-25	Initial release	Stefan Peters

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