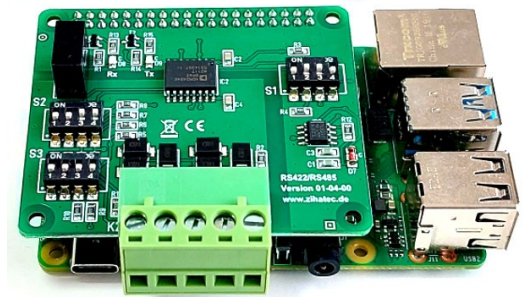
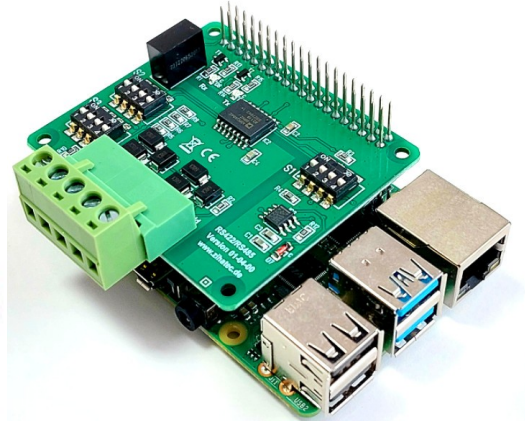
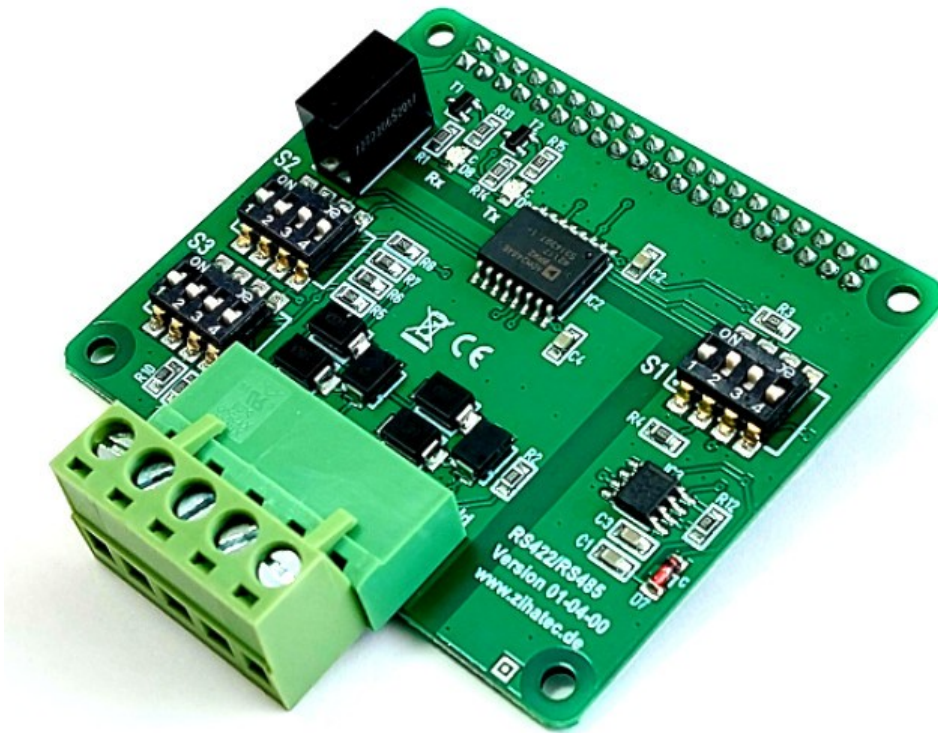


RS422/RS485 Shield



for Raspberry Pi



Features:

- RS485 mode (half duplex)
- RS422 mode (full duplex)
- galvanic isolation between Raspberry Pi and connected RS485 bus
- Enhanced ESD protection
- adjustable automatic transceiver switching for RS485 mode
- adjustable control of transceiver/receiver via GPIO pin
- adjustable Pull-Up, Pull-Down und terminating resistors
- removable block terminal for bus connection
- Indicator LEDs for RX and TX signals
- many options adjustable via DIP switches
- Stacked header (optional)

RS422/RS485 Shield



for Raspberry Pi

Electrical Characteristics:

- Max. Datarate: 500-Kbps
- Number of nodes: 256
- ESD: 4 kV (IEC 61000-4-4) / 16kV (IEC 61000-4-2)
- Isolation Rating: 5000 Vrms
- Working Voltage: 1500 Vpk
- Operating Temp.: 0°C to 80°C
- Power Consumption: 6mA (3,3V) / 28mA (5V)

Compatibility :



Raspberry Pi B+, 2 B, 3 B, 3 B+



Raspberry Pi 4 B



Raspberry Pi A+, 3 A+



Raspberry Pi Zero (w / 2)

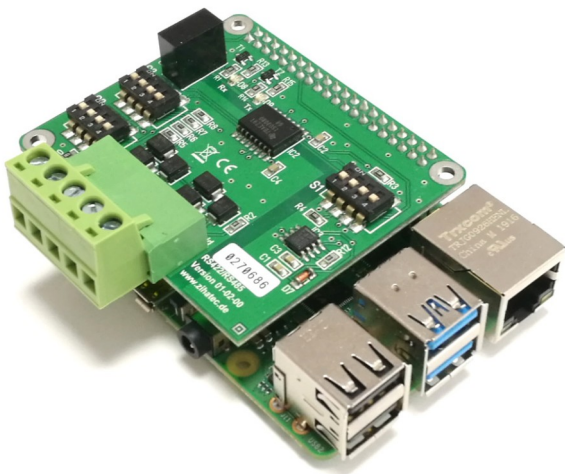
RS422/RS485 Shield



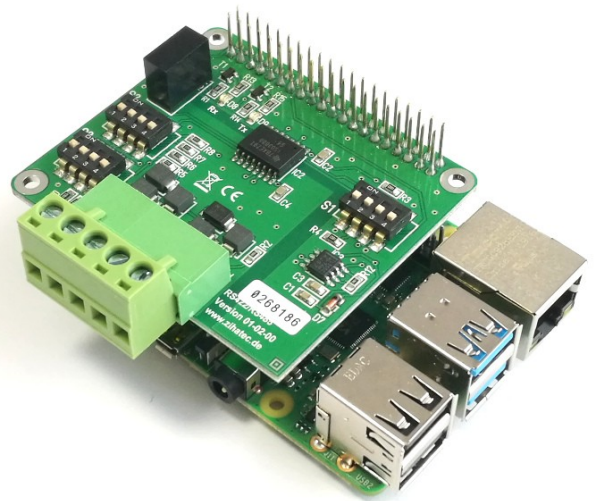
for Raspberry Pi

Part number table:

Part-No.	EAN	Version
RPIHT485	729389521547	With standard header
RPIHT485S	676424951367	With stacked header



RPIHT485



RPIHT485S

Applications:

- Smart Home
- Building Control
- Industrial Control
- Lighting Control
- Video Surveillance

Protocols:

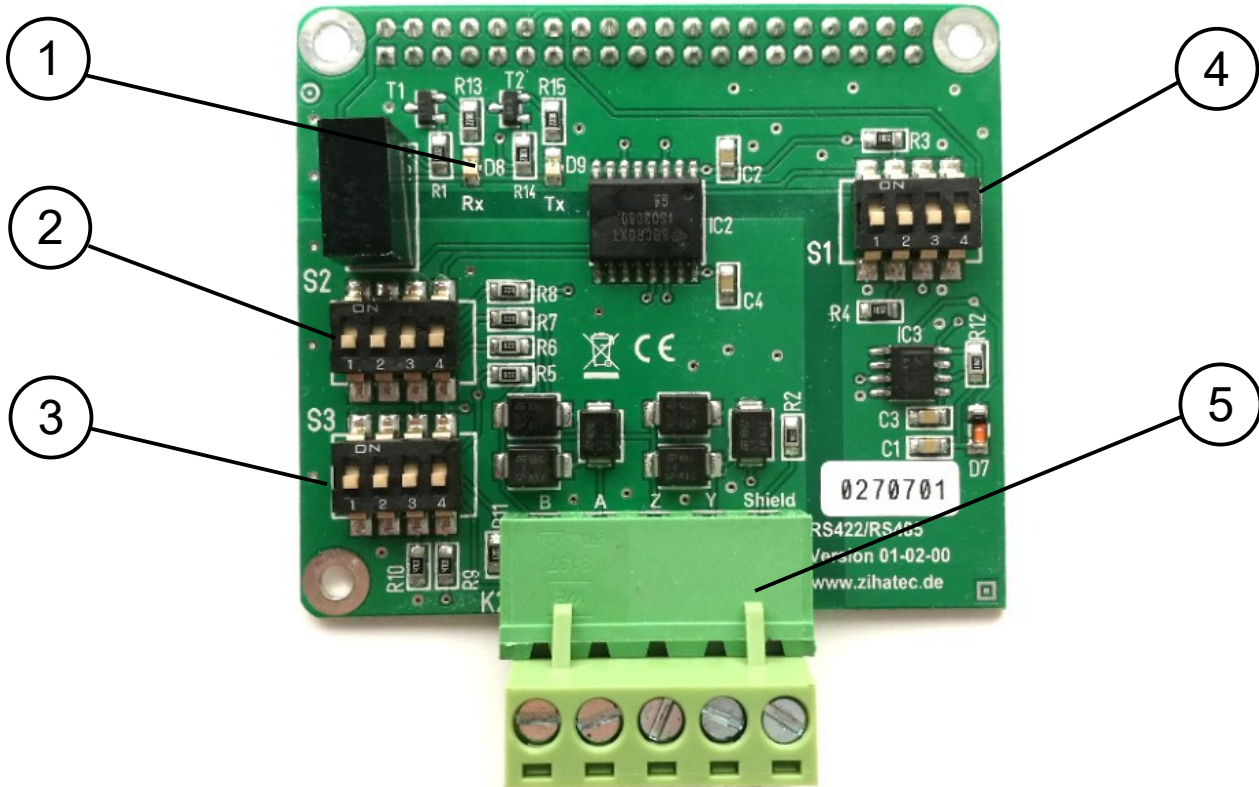
- Modbus
- DMX
- NMEA0183
- Profibus
- etc

RS422/RS485 Shield



for Raspberry Pi

Control Elements:



- ① Indicator LEDs
- ② DIP Switch S2
- ③ DIP Switch S3
- ④ DIP Switch S1
- ⑤ Removable Terminal Block

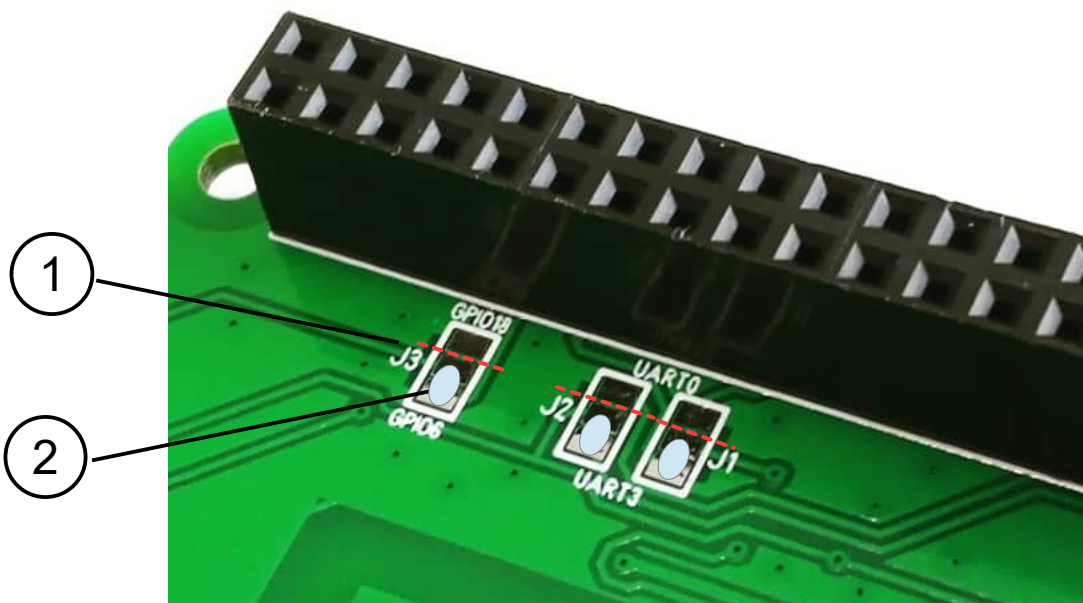
RS422/RS485 Shield



for Raspberry Pi

UART selection via soldering jumpers:

When using a Raspberry Pi 4, UART3 can also be used as an alternative to UART0. To do this, the solder jumpers on the back must be set accordingly.



- ① cut existing connections for UART0
- ② solder new connections for UART3

Used Raspberry Pi Pins:

Depending on the selected UART via jumper J1-3 different pins are used:

UART	TX	RX	TX_EN *	3,3V	5V	GND
UART0	GPIO14 (8)	GPIO15 (10)	GPIO18 (12)	(1)	(2, 4)	(6, 9, 25, 39)
UART3	GPIO4 (7)	GPIO5 (29)	GPIO6 (31)			

* only used if SW1:4 is set

S1 - DIP Switch Configuration – send/receive control:

Channel	Description
1	Receiver always on
2	Transmitter connected to Receiver
3	Automatic DE/RE control
4	DE/RE control via GPIO18

S2 - DIP Switch Configuration – RS422/485 mode:

Channel	Description
1	Connect Y to terminal K2
2	Connect Z to terminal K2
3	Connect internally Y to A
4	Connect internally Z to B

S3 - DIP Switch Configuration – termination resistors:

Channel	Description
1	Terminating Resistor on
2	Not used
3	4k7 Pull-down Resistor on B
4	4k7 Pull-up Resistor on A

RS422/RS485 Shield



for Raspberry Pi

Example RS422 mode:

SW1	
1	ON
2	OFF
3	OFF
4	ON *

SW2	
1	ON
2	ON
3	OFF
4	OFF

SW3	
1	ON
2	OFF
3	ON
4	ON

Examples RS485 mode:

Send/receive control via GPIO18, no terminating resistor

SW1	
1	OFF
2	ON
3	OFF
4	ON *

SW2	
1	OFF
2	OFF
3	ON
4	ON

SW3	
1	OFF
2	OFF
3	ON
4	ON

automatic send/receive control, terminating resistor on

SW1	
1	OFF
2	ON
3	ON
4	OFF

SW2	
1	OFF
2	OFF
3	ON
4	ON

SW3	
1	ON
2	OFF
3	ON
4	ON

* Set GPIO18 to high level to transmit protocols