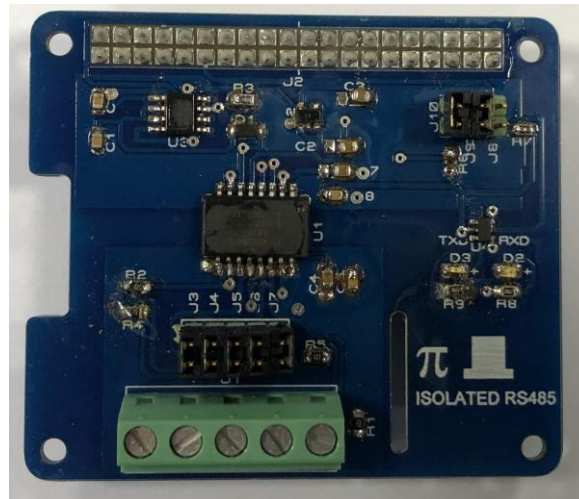


# Raspberry Pi Isolated RS422/485 Hat

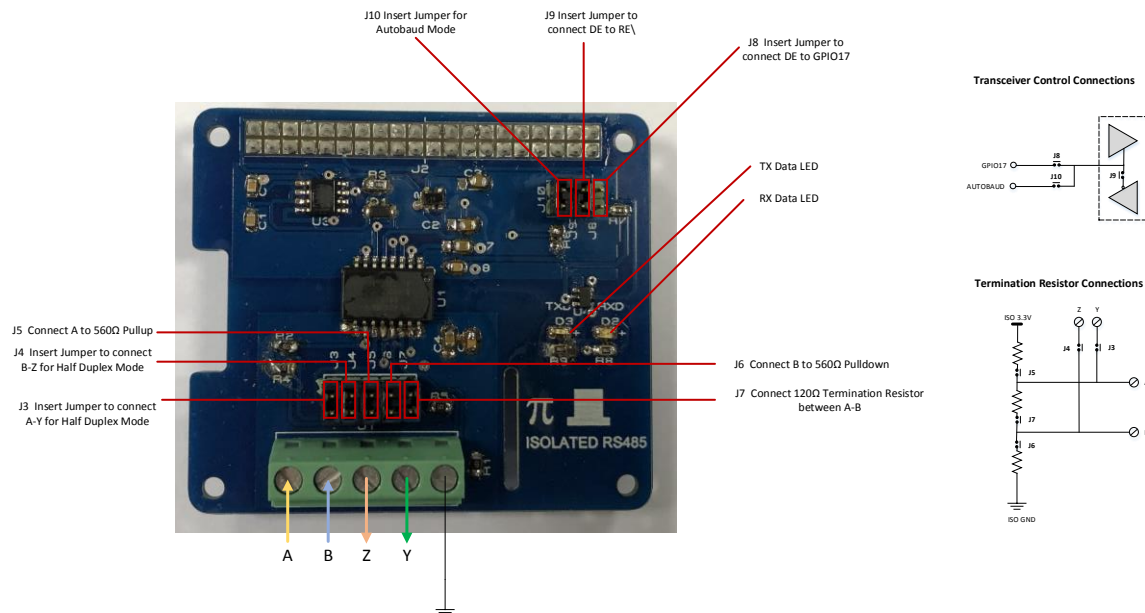


## Isolated RS422/485 Hat Features

- RS485 Mode (Half Duplex)
- RS422 Mode(Full Duplex)
- Auto-baud Mode
- Galvanic Isolation between the Raspberry Pi and RS422/485 Bus
- Selectable pull-Up, pull-Down and terminating resistors
- Indicator LED's for RX and TX
- Control of TX/RX by GPIO pin 17

The raspberry pi isolated RS422/485 hat board is designed to allow a raspberry pi to communicate with an RS422/RS485 bus systems such as Modbus, DMX512 and NMEA.

## Quick Jumper Setting Diagram



## Auto-baud mode

Auto-baud mode can be used when using the board in half duplex mode to automatically change board to receive after a character has been transmitted.

The Auto-Baud mode is enabled by fitting jumper J10, in this mode J8 should not be fitted. Auto-Baud works by using a mono stable timer based on a 555 timer circuit. Every time the TXD pin is driven low then the mono stable is reset. Shortly after the last low pulse the mono stable times out and enables the receiver.

## Jumper Settings

Transceiver control settings	
Jumper	Function
J8	Connects DE to GPIO17 on the raspberry pi. Connect J8 if the software will control the direction flow through GPIO 17
J9	Connects drive enable (DE) to receive enable(RE) typically this is used for half duplex RS485 communication.
J10	Connect J10 for Auto-baud mode in Auto-baud mode the DE/RE pins are automatically controlled to switch the transceiver into receive mode when not transmitting data.
Termination resistor and output connections	
J3	Connect J3 to connect A to Y for half duplex mode for full duplex mode leave J3 unconnected
J4	Connect J4 to connect B to Z for half duplex mode for full duplex mode leave J3 unconnected
J5	Connect J5 to connect A to a 560Ω pull up resistor. This must be fitted in Auto-baud Mode
J6	Connect J6 to connect B to a 560Ω pull up resistor. This must be fitted in Auto-baud Mode
J7	Connect J7 to terminate A to B with 120Ω termination resistor usually these are connected at the first and last node on the network

