

1-Wire® Communication Board

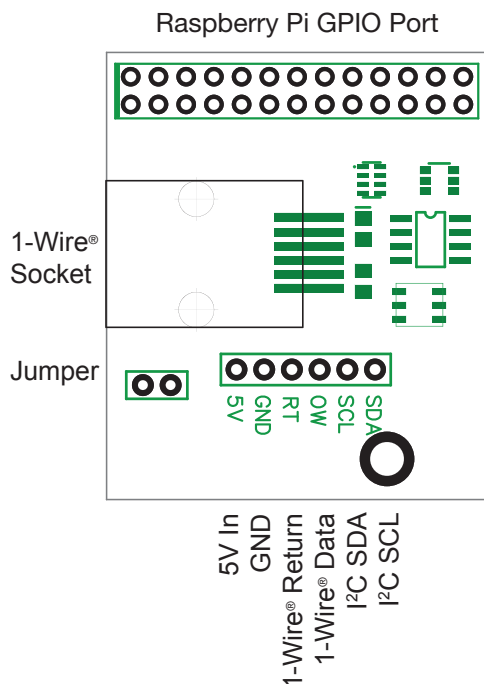
Introduction

The 1-Wire Pi from AB Electronics is a communication board supporting the 1-Wire® protocol. A 5V buffered I²C port is also provided on the board.

The 1-Wire® port is based around a DS2482-100 I²C to 1-Wire® bridge device. The DS2482-100 provides bi-directional protocol conversion between the I²C port on the Raspberry Pi and any attached 1-Wire® slave devices. An ESD Protection Diode is used to protect the 1-Wire Pi and Raspberry Pi from electrostatic spikes on the 1-Wire® port. Connections to the 1-Wire® port can be made through the RJ-12 socket or the solder points on the PCB. For details on configuring and using the 1-Wire® port on your Raspberry Pi visit <http://www.abelectronics.co.uk/owfs-and-compi/info.aspx>

A 5V input port is also provided allowing you to use an external power supply on the 1-Wire® interface, reducing the load on the Raspberry Pi. If you choose to use the external 5V input please remove the jumper on the board to isolate the Raspberry Pi 5V bus.

Board Layout



Features

- 1-Wire® to I²C host interface with ESD protection diode.
- Stackable with other Raspberry Pi accessory boards.
- Buffered 5V I²C port.
- External 5V power input for 1-Wire® interface.

Electrical Characteristics

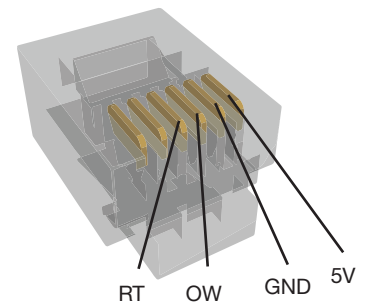
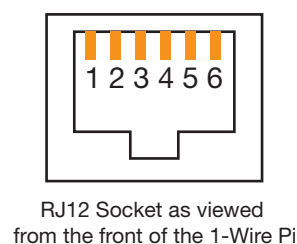
Vdd (5V input pin)	5.0V
Maximum current on 1-Wire® pins	±20 mA
I ² C SDA/SCL voltage	5.0 V
I ² C port current	100 mA

Connecting to the 1-Wire® Port

The 1-Wire® port on the 1-Wire Pi can be accessed through the female RJ12 socket or the solder points on the PCB. An ESD protection diode is fitted between the RJ12 port and the 1-Wire® interface IC.

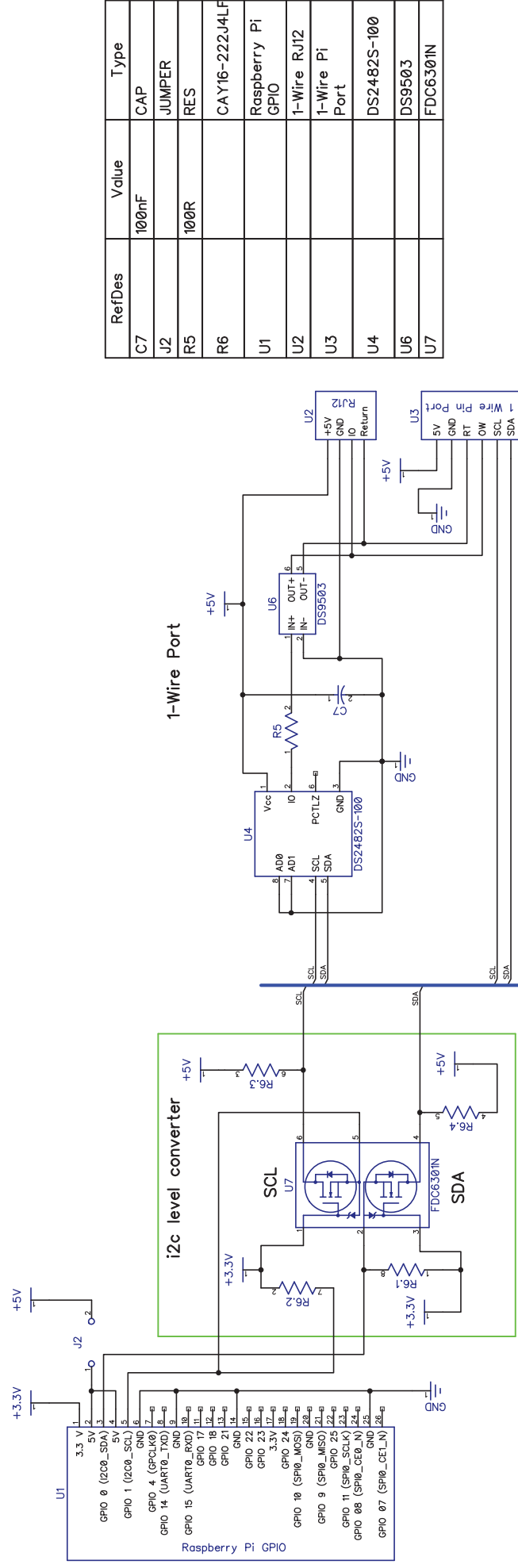
The pinout connections for the RJ12 port are shown below:

Pin	Usage
1	5V
2	Ground
3	OW (1-Wire® Data, ESD Protected)
4	RT (1-Wire® Return/Ground, ESD Protected)
5	NC
6	NC



Installation

To install the 1-Wire Pi press it down onto the Raspberry Pi GPIO connector as shown below.



RefDes	Value	Type
C7	100nF	CAP
J2		JUMPER
R5	100R	RES
R6		CAY16-222J4LF
U1		Raspberry Pi GPIO
U2		1-Wire RJ12
U3		1-Wire Pi Port
U4		DS2482S-100
U6		DS9503
U7		FDC6301N