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# 1-Wire Breakout Board

User Manual

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*March 2013*

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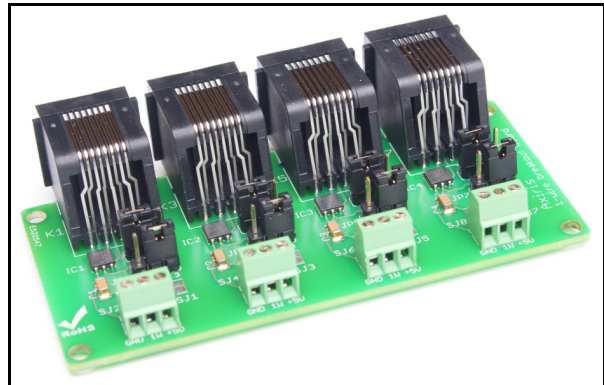
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## Revision History

Date	Authors	Description
2013-03-06	Peter S'heeren	Initial release.

## 1 Features

- Breaks out 1-Wire connections to RJ45 receptacles.
- Four fully independent breakout circuits.
- Jumper-selectable identification chip per 1-Wire bus.
- Configurable impedance matching resistors to improve certain host adapters.
- Configurable low-pass filter to improve certain host adapters.
- Jumper-selectable 5 V interconnection between terminal block connector and RJ45 receptacle.

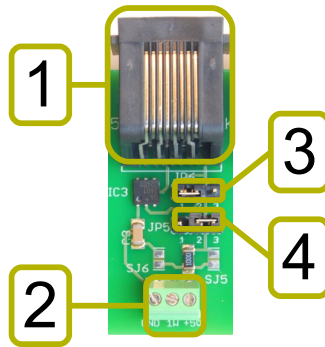


## 2 Technical Specifications

<b>Weight</b>	33 g
<b>Dimensions</b>	85 mm x 47 mm x 20 mm (W x D x H)

### 3 1-Wire Breakout

#### Board Overview

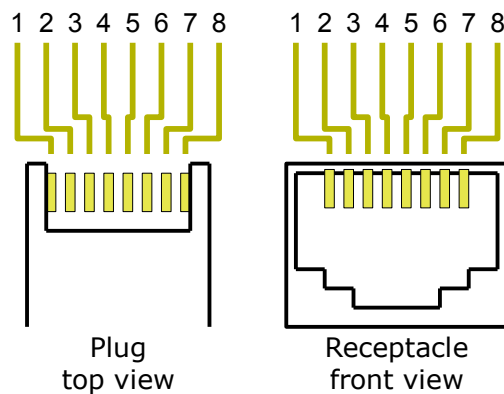


Showing one of four breakout circuits

Mark	Label	Description
1	K1, K3, K5, K7	1-Wire RJ45 receptacle
2	K2, K4, K6, K8	1-Wire Terminal Block Connector
3	JP2, JP4, JP6, JP8	Jumper for enabling or disabling the identification chip
4	JP1, JP3, JP5, JP7	Jumper for enabling or disabling the 5 V line

#### 1-Wire RJ45 Connectors (K1, K3, K5, K7)

Mark	Description
1	N.C.
2	+5 V power
3	N.C.
4	1-Wire DQ (data)
5	1-Wire ground
6	N.C.
7	N.C.
8	N.C.



The RJ45 receptacle provides a means to set up a 1-Wire bus in daisy chain using UTP cables.



### 1-Wire Terminal Block Connector (K2, K4, K6, K8)

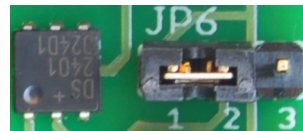
Mark	Description
+5V	5 V supply
1W	1-Wire DQ line (data)
GND	Ground



The 1-Wire terminal block connector is typically used to connect the breakout board to an AbioWire or similar adapter.

### Identification Chip Jumper (JP2, JP4, JP6, JP8)



1	2	3	Description
			Chip enabled
			Chip disabled

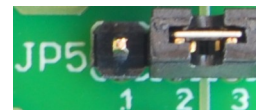


With this jumper the identification chip can be enabled and disabled. When enabled, the chip appears as a 1-Wire slave on the 1-Wire bus.

The identification chip is a Maxim DS2401. Its family code is 01h. This chip always uses parasite power mode.

### 5 V Line Jumper (JP1, JP3, JP5, JP7)

1	2	3	Description
			5 V line connected
			5 V line not connected



The position of this jumper determines whether the 5 V pin of the 1-Wire terminal block connector and the 5 V pin of the RJ45 receptacle are interconnected.

### Solder Jumpers (SJ[1..8])

The solder jumpers allow one to configure the impedance matching resistor and the low-pass filter per breakout circuit.

When you connect a DS2480 or DS2490 adapter to the 1-Wire terminal block connector and you connect a UTP cable between 1 m and 100 m to the corresponding RJ45 receptacle, it's recommended to activate the low-pass filter in the breakout circuit.

Default configuration (all breakout circuits):

- Impedance matching resistor is active (100 ohm). This configuration is optimized for standard UTP cable.
- Low-pass filter is not active.

For more information, refer to the following information sources:

- Springbok 1-Wire Design Guide.
- 1-Wire Breakout Board circuit diagram.

## 4 Disclaimer

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## 5 Contact Information

Official website: <http://www.axiris.be/>

