

User Manual

100Base-T1 – SFP Module

Version 0.4
08. September 2017



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1 Feature List

The Technica Engineering 100Base-T1 SFP module fits into a standard Small Form-factor Pluggable slot.

It uses the SGMII and generates 100 Mbit/s full-duplex BroadR-Reach[®].

Note: SERDES interface is not supported!

After PowerUp it self-configures to Automotive BroadR-Reach[®].

Registers of the integrated transceiver are accessible via I2C interface for diagnosis and re-configuration.

One Link LED shows link status.

Power requirement: 3.3 Volt DC +/- 0.03 Volt

Power dissipation: 0.5709 W

Size: 68 x 14 x 14 mm

Wight: 0,1 Kg

International Protection IP 2 0

Operating Temperature 0 to +70 °Celsius

"BroadR-Reach is a trademark of Broadcom Limited"

2 Warranty and Safety Information



Before operating the device, read this manual thoroughly and retain it for your reference.



Use the device only as described in this manual.
Use only in dry conditions.
Do not apply power to a damaged device.



Do not open the device. Otherwise warranty will be lost.



This device is designed for engineering purpose only.
Special care has to be taken for operation.
Do not use this device in a series production car.
As this device is likely to be used under rough conditions, warranty is limited to 1 year.
Manufacturer liability for damage caused by using the device is excluded.

EG-Konformitätserklärung

**gemäß der EG-Richtlinie 2004/108/EG (elektromagnetische Verträglichkeit)
vom 15. Dezember 2004**

Hiermit erklären wir, dass das nachstehend bezeichnete Gerät in seiner Konzeption und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie 2004/108/EG entspricht. Bei einer mit uns nicht abgestimmten Änderung des Gerätes verliert diese Erklärung ihre Gültigkeit.

Hersteller: Technica Engineering
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80807 München

Bevollmächtigter: Joseba Rodriguez

Beschreibung des Gerätes:
BR_SFP_Modul

Datum der Erklärung: 04.08.2017

Name des Unterzeichners: Joseba Rodriguez

Unterschrift:.....

3 Pinning

The BroadR-Reach[®] line is connected by a Molex connector.

Hardware Version 2.4 and above use:

- Molex 0533250260 Header 2.0mm
- Molex 510900200 Housing
- Molex 50212-8000 Crimp Contact



Pin	Function	Pin	Function
1	BroadR-Reach [®] Plus	2	BroadR-Reach [®] Minus

SFP Socket connector:

Pin	Function	Pin	Function
1	GND	20	GND
2	Tx_Faul – Connected to GND	19	SGMII_TXD_N
3	n.c.	18	SGMII_TXD_P
4	I2C_DAT	17	GND
5	I2C_CLK	16	3.3 Volt
6	GND	15	3.3 Volt
7	n.c.	14	GND
8	Rx_Los – Connected to GND	13	SGMII_RXD_P
9	n.c.	12	SGMII_RXD_N
10	GND	11	GND

4 Startup and Configuration

4.1 Startup

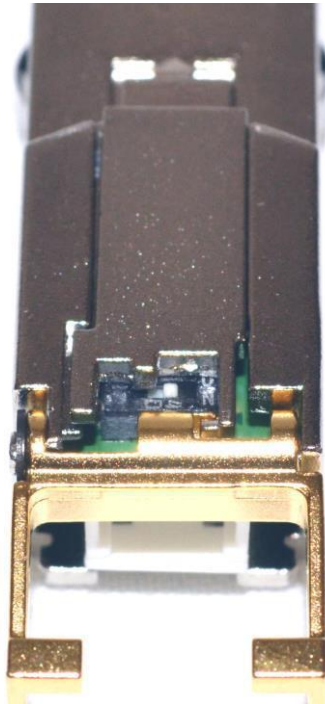
After 3.3 Volt power is applied, the SFP module starts up and self-configures the BCM54811S transceiver by I2C interface. This lasts 100ms. In the first 100ms the processor on the module acts as I2C master. Do not apply any master activity on the bus during this time!

4.2 Self-Configuration

The SFP Module configures itself to Automotive BroadR-Reach[®] after power up.

Master / Slave Configuration is done according to the DIP switch on the bottom of the device. To reconfigure the DIP switch the lock has to be opened (see picture).

ON/S = Master
OFF/Y = Slave



6 Frequently Asked Questions – FAQ

Q: What is the maximum BroadR-Reach[®] cable length?

A: The BroadR-Reach[®] Port is optimized for automotive UseCase. The maximum line length for each BroadR-Reach[®] segment is limited to 10 meters.

Q: The BR Link LED is lit but I have no valid BR Link. What is going wrong?

A: There is a bug in the used BroadR-Reach PHY. When the BR Plus and Minus lines are swapped and the MediaConverter Port is set to BR Slave then the Link LED is lit, but there is no data transmission possible. So please connect the BR lines correctly.

7 Contact

If you have any questions regarding this product please feel free to contact us:

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