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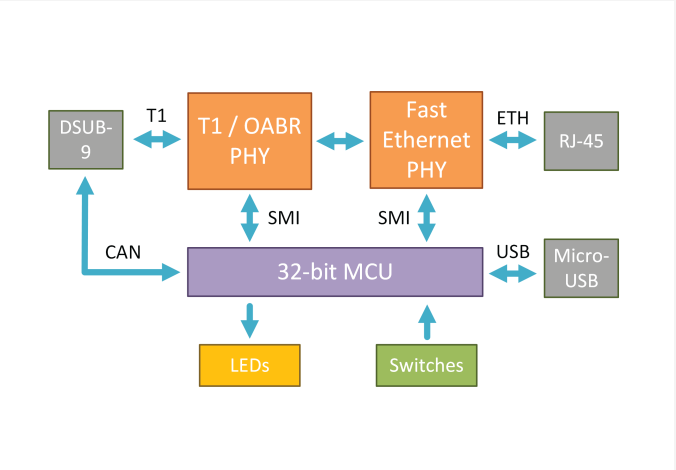
100BASE-T1 Media Converter

A bi-directional converter between 100BASE-T1 (BroadR-Reach) and 100BASE-TX (Fast Ethernet) physical layer. Easily connects automotive devices with OPEN Alliance BroadR-Reach (OABR) port, such as cameras or ECUs, to a standard computer network.

FEATURES

- Physical Layer conversion between 100BASE-T1 and 100BASE-TX
- Master / Slave configuration for OABR
- Automatic polarity detection for Slave
- 6 Status LEDs
- Powered via DSUB9 or Micro-USB connector
- PHY SMI registers accessible via CAN bus or USB virtual serial port
- Table or DIN-rail mount

The device establishes a point-to-point link between an unshielded twisted-pair OABR port and a Fast Ethernet port. The converter features one DSUB9 (BroadR-Reach, CAN bus), one Fast Ethernet port with RJ-45 connector, and a Micro-USB connector. The OABR channel is configurable as either Master or Slave by a switch button or programmatically, and the device can be powered either via DSUB connector or via USB.



The converter offers a possibility to access SMI registers of both transreceivers (PHYs) via a CAN bus or a USB's virtual serial port. This enables the user to evaluate signal strength, detect polarity of the T1 port, carry out a BroadR-Reach media test to diagnose cable errors, fine-tune the PHYs parameters, and generally to read and write the registers.

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TECHNICAL SPECIFICATION

ELECTRICAL

Ports	1x 100BASE-T1 (BroadR-Reach / OABR), 1x 100BASE-TX (Fast Ethernet), 1x CAN bus, 1x Virtual COM Port (USB CDC)
Power	9 - 30 V DC with polarity protection, either via DSUB or Micro-USB
Consumption	150mA @ 12 V, approx. 2 W
LEDs	5x Status Indicator, 1x Power
Button and Switches	2x DIP switch (Master/Slave, User), 1x Tactile switch (Reset factory defaults)
Transreceivers	100BASE-T1: TJA1102, 100BASE-TX: KSZ8041
Firmware	Upgradable via USB
Microcontroller	32-bit

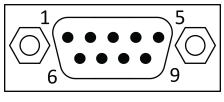
MECHANICAL

Connectors	1x D-SUB9M, 1x RJ-45, 1x Micro-USB
Dimensions (L x W x H)	108 x 54 x 30 mm
Weight	83 g
Operating Temperature	0 to 70 °C
Protection	IP20
Placement	Table (adhesive pads included), DIN-rail mount (clip sold separately)

PIN ASSIGNMENT

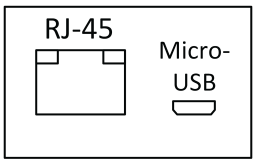
100BASE-T1 & CAN & POWER

PIN	NAME
1	
2	CAN_L
3	GND / Power-
4	T1-BP (OABR)
5	T1-BM (OABR)
6	
7	CAN_H
8	
9	Power+ (or via Micro-USB)



D-SUB9M
Front view

100BASE-TX (FAST ETHERNET) AND USB



Both RJ-45 and Micro-USB connectors use a standard pinout.

The converter can be powered either via a DSUB connector or via a Micro-USB connector.

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ORDERING INFORMATION

PRODUCT NUMBER	DESCRIPTION
100BASET1-MC-ETH	Media Converter
DIN-CLIP	Clip for mounting on a DIN rail

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