



10GBASE-T1 Media Converter

2.5/5/10 Gbps Automotive Ethernet to SFP+ Converter with MACsec and TC10

FEATURES

- MultiGig-T1 media converter
- 2.5/5/10GBASE-T1 support (IEEE 802.3ch)
- MACsec support (TC17)
- Sleep/wake-up support (TC10)
- H-MTD automotive Ethernet connector
- SFP+ slot compatible with any module
- On-board switches for configuration
- On-board status LEDs
- PC application for status monitoring and configuration
- USB-CAN(/FD) interface function
- Open communication protocol over USB and CAN(/FD)
- USB VCP for status information, advanced configuration, and cable diagnostic
- Powered over USB PD (Type-C), terminal block, or Molex connector
- Aluminium enclosure
- DIN rail mounting possibility



The **10GBASE-T1 Media Converter** is a Multigigabit Automotive Ethernet (MultiGBASE-T1) to Standard Ethernet (MultiGBASE-T) converter that supports 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 standards. The media converter provides bidirectional physical-layer conversion between a 2.5/5/10 Gbps Automotive Ethernet port (IEEE 802.3ch) and an SFP+ module.

The device supports OPEN Alliance's MACsec (TC17) and sleep/wake-up (TC10), and features an H-MTD connector (USCAR 777-U-002-1-Z01 compliant) and an SFP+ slot, allowing the use of any SFP+ compatible wire / optical fibre module. Additionally, the media converter can function as a USB to CAN(/FD) interface, operating simultaneously with its conversion function.

The master/slave T1 mode and speed selection can be easily configured using the on-board switches. Status information, cable diagnostics, and advanced configuration of TC10 and MACsec are available via USB through a free PC application.

An open communication protocol is available to access the media converter over USB or CAN(/FD). The protocol allows to remotely read status and configure both T1 port and the SFP module, configure TC10 and MACsec, and use the device as a USB-CAN(FD) interface.



TECHNICAL SPECIFICATION

FEATURES

Media conversion	2.5/5/10GBASE-T1 to SFP+ slot
Status information	Link status / activity / error
Configuration	Speed: 2.5 / 5 / 10 Gbps Mode: Master / Slave Frame generator: On / Off MACsec: On/Off + SAKs TC10: On / Off
Integration	Open communication protocol over USB VCP or CAN(/FD) allows to configure port parameters (including MACsec and TC10), read port status, and run cable diagnostic
USB-CAN(/FD) Interface	Possibility to use the device as a USB-CAN(/FD) interface (open communication protocol over USB VCP) – simultaneously to the media conversion function
PC application	Free-of-charge PC application to read status information, configure the converter, run cable diagnostic, configure MACsec and TC10, use USB-CAN(/FD) function
Firmware update	Over USB

COMMUNICATION CHANNELS

Automotive Ethernet	2.5GBASE-T1 / 5GBASE-T1 / 10GBASE-T1 (IEEE 802.3ch) MACsec (TC17, IEEE 802.1AE) and sleep/wake-up (TC10) support
SFP+	Wire or optical SFP module; XFI or USXGMII; speeds at both ports need to match
CAN	CAN-HS channel with CAN FD support (ISO 11898-1:2015; CAN2.0A/B; ISO CAN FD)
USB	USB 2.0 CDC

ELECTRICAL

Power	USB PD (Type-C; ≥ 10 W) External 7 – 30 V DC (polarity and surge protection) over 3-pin or 6-pin terminal block
Consumption	1.5 W (10 Gbps speed; SFP module excluded)
LEDs	2 Multi-colour LEDs 3 Dual-colour 1 Power LED
Transceivers	10GBASE-T1: Q3244 CAN FD: TCAN337GDR



MECHANICAL

Connectors	10GBASE-T1: Rosenberger H-MTD SFP+ slot: standard SFP+ cage CAN bus and power: 6-pin terminal block (Molex Micro-Fit) Power: 3-pin terminal block (TE) USB PD: USB Type-C
Switches	4 DIP switches 1 Push button
Dimensions (L x W x H)	113 x 82 x 33 mm
Weight	185 g
Operating temperature	-40 to 85 °C
Enclosure	Aluminium profile
Protection	IP20
Placement	Table (adhesive pads included) DIN-rail mount (clip sold separately)

ORDERING INFORMATION

PRODUCT NUMBER	DESCRIPTION
10GBASET1-MC	10GBASE-T1 Media Converter with H-MTD connector; a 3-pin removable terminal block is included
10GSFP1-RJ45	1/2.5/5/10GBASE-T SFP+ module with RJ-45 connector. Note: 5 Gbps and 10 Gbps speeds can be used with the 10GBASET1-MC only.
2.5GSFP1-RJ45	2.5GBASE-T SFP+ module with RJ-45 connector. Allows to use 2.5 Gbps speed with the 10GBASET1-MC.
MS-HMTD01-0M5	Rosenberger H-MTD female to H-MTD female STP cable; length 0.5 m
MS-HMTD01-2M	Rosenberger H-MTD female to H-MTD female STP cable; length 2 m
MS-HMTD01-5M	Rosenberger H-MTD female to H-MTD female STP cable; length 5 m
ADAPTER-MATENET-HMTD-M	TE MATEnet male to Rosenberger H-MTD male PCB adapter
ADAPTER-HMTD-TERMINAL-M	Rosenberger H-MTD male adapter to terminal block PCB adapter
HARNESS-MOLEX6-OPEN-1M	6-pin Molex Micro-Fit to open end; length 1 m
HARNESS-MOLEX6-OPEN-5M	6-pin Molex Micro-Fit to open end; length 5 m
DIN-BRACKET-UNI	Universal holder for mounting any enclosure on a DIN rail

