



100/1000BASE-T1 Media Converter v2 H-MTD

Fast/Gigabit Automotive Ethernet Converter with MACsec and TC10

FEATURES

- Automotive Ethernet to Standard Ethernet conversion
- 1000BASE-T1 and 100BASE-T1 support
- MACsec (TC17) support
- Sleep/wake-up (TC10) support
- 100/1000 Mbit full-duplex communication
- Speed auto-negotiation or manual selection
- Master/slave auto-negotiation or manual selection
- Automatic polarity detection on T1 port
- Frame generator mode
- USB for configuration, status and port diagnostic
- Free-of-charge PC application
- Can be used as a USB to CAN(/FD) interface
- USB or externally powered
- DIN rail mounting possibility



The 100/1000BASE-T1 Media Converter v2 H-MTD establishes a point-to-point link between the Automotive Ethernet and Standard Ethernet, supports both 100 Mbit and 1000 Mbit speeds, and supports **MACsec (TC17)** and **sleep/wake-up (TC10)** features the Rosenberger H-MTD connector.

The media converter realizes a full-duplex physical-layer conversion between 1000BASE-T1 and 1000BASE-T (Gigabit Ethernet), or 100BASE-T1 and 100BASE-TX (Fast Ethernet) networks, and features Rosenberger H-MTD and RJ-45 connectors. Communication speed and master/slave settings can be auto-negotiated with a link partner or set manually by the user. The in-built status LEDs and dip switches allow to easily use the converter without a PC.

The device offers advanced features such as frame generator, cable diagnostic, as well as a possibility to be used as a USB to CAN(/FD) interface simultaneously with the media conversion function.

The open communication protocol over USB or CAN(/FD), which allows to read status information and configure port parameters, enables to easily integrate the converter into any system. The user can programmatically configure the device (such as T1 port parameters, TC10, MACsec), and read its status. A free-of-charge PC application is available to visualise the device's status, configure its parameters and use the advanced functions.



TECHNICAL SPECIFICATION

FEATURES

Media conversion	1000BASE-T1 to 1000BASE-T 100BASE-T1 to 100BASE-TX
Status information	Link status / activity / error
Configuration	Speed: 100 / 1000 / Auto-negotiation Mode: Master / Slave / Auto-negotiation 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	1000BASE-T1 (IEEE 802.3bp) / 100BASE-T1 (IEEE 802.3bw) MACsec (TC17, IEEE 802.1AE) and sleep/wake-up (TC10) support
Ethernet	1000BASE-T (IEEE 802.3ab – Gigabit Ethernet) / 100BASE-TX (IEEE 802.3u – Fast Ethernet)
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 External 7 – 30 V DC (polarity and surge protection) over 2-pin or 6-pin terminal block
Consumption	1000 Mbit: 150 mA @ 12 V 100 Mbit: 100 mA @ 12 V
LEDs	4 Dual-colour LEDs 2 LEDs (RJ-45 connector) 1 Power LED
Transceivers	1000BASE-T1: 88Q2220M 1000BASE-T: KSZ9131



MECHANICAL

Connectors	1000BASE-T1: Rosenberger H-MTD 1000BASE-T: RJ-45 CAN bus and power: 6-pin terminal block (Molex Micro-Fit) Power: 2-pin terminal block (TE) USB 2.0: USB Type-C
Switches	4 DIP switches 1 Push button
Dimensions (L x W x H)	84 x 82 x 33 mm
Weight	142 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

1000BASET1-V2-HMTD	100/1000BASE-T1 Media Converter v2 H-MTD
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
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
1000BASET1-NET-SDK	.NET SDK API (DLL) to access the device over USB (VCP) or CAN/FD. The API allows to read the status and configure the device (including MACsec and TC10), run cable test, and to use the device as a USB-CAN(FD) interface.
DIN-BRACKET-UNI	Universal holder for mounting any enclosure on a DIN rail

