DATASHEET

MEDIACONVERTER MultiGigabit

General description

MediaConverters of Technica Engineering are compact and reliable devices for development and testing activities. They establish a direct point-to-point conversion between Automotive ECUs using the 2.5/5/10GBASE-T1 MultiGigabit standard and an SFP+ module compatible with MultiGigabit Ethernet interfaces.
Additionally, MediaConverter TE-1416 supports the MACsec technology implemented in hardware, allowing MACsec to run at full speed, up to 10Gpbs.

Physical layer conversion

MediaConverters provide direct point-to-point conversion uses the 2.5G/5G/10GBASE-T1 IEEE 802.3ch compliant Automotive Ethernet PHY with MACsec/TC10 support. It supports bi-directional conversion across Ethernet standards.

Application areas

Technica Engineering's MediaConverters can be used on the development desk and even in harsh vehicle environments. These devices are adapted for continuous operation in Testbenches, which also corresponds temperature range in which they can work and their robust casing.

MediaConverter MultiGigabit

Configuration Options

MediaConverters can be statically configured for standalone operation but also controlled remotely for dynamic operation.
Standalone operation is defined via 4x DIP switches for basic configuration of the MultiGigabit MediaConverter:

DIP Sw.	Status	Description
1	ON (up) OFF (down)	Master Slave
2	ON (1) OFF (0)	2-3 Switch status: 00: 5GBASE-T1 01: 2.5GBASE-T1 10: Auto Search Enabled 11: 10GBASE-T1
3	ON (1) OFF (0)	
4	ON (up) OFF (down)	Packet gen. enabled* Packet gen. disabled

* Packet generator available only for PT-1416

Remote-controlled operation without computer is available through GPIOs in MQS connector

Finally for advanced use cases, to control remotely the operation or additional debugging purposes, there is a serial interface (console), which is accessible through via USB. This interface enables the users to read TX/RX register counters, SQI values of the channels, CRC errors, and other information as well as dynamically change the MediaConverters configuration overriding DIP switches. It can also be used for Firmware updates of the device.
For more user-friendly interface for configuration and management, can be used a WEB GUI PC application.

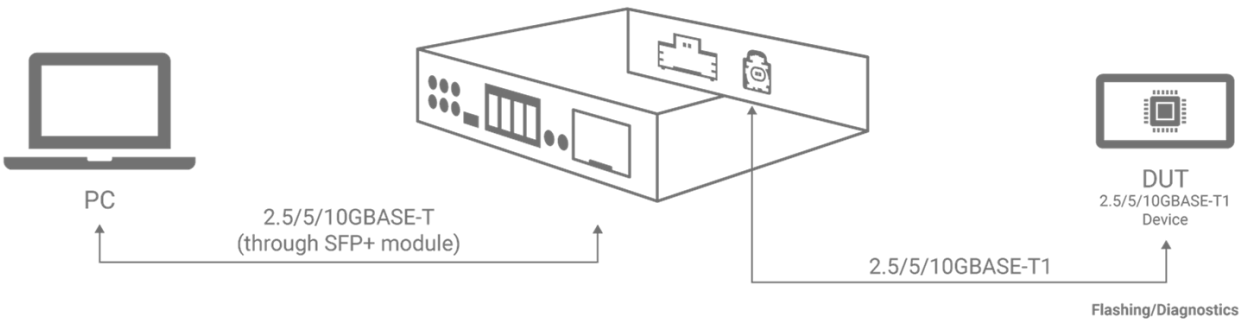
Technical Data

Operating Temperature	-40 °C to +85 °C
Supply Voltage	6 V to 30 V DC (typ. 12 V)
Power connector	MQS 6 pin (plug counterpart BU-GEH 6P)
Power consumption	3.5 Watt
IP Protection Class	IP 20
Housing Dimensions	100 mm (W) x 93.5 mm (L) x 27 mm (H)
Weight	0,3 kg (approx.)
Interfaces	1x 2.5/5/10GBASE-T1 (H-MTD) 1x 2.5/5/10GBASE-T (SFP+ Port) Micro USB-B

Characteristics of MediaConverters variants		PT-1416 Marvell variant	TE-1415 BCM variant
Conversion from TX to T1	2.5/5/10GBASE-T1	✓	✓
Ports/Connectors	MQS power connector	✓	✓
	SFP+ port	✓	✓
	H-MTD	✓	✓
	Micro USB-B debug port	✓	✓
Configuration method	DIP Switches	✓	✓
	Console (serial Interface)	✓	✓
	WEB GUI PC Application	✓	✓
Features	Open Alliance TC10 (Wake/Sleep)	✓	✓
	Status LEDs and diagnostics	✓	✓
	Auto-search feature	✓	✓
	Frame generator	✓	-
	IEEE test modes	✓	✓
	Firmware updates	✓	✓
	Import/Export configuration	✓	✓
Transceiver	Marvell MVQ3244-A2	✓	-
	Broadcom BCM89890-B1	-	✓
MACsec feature package*	MACsec (802.1AE) configuration MACsec with hardcoded keys (no MKA)	✓	-

* Needs to be ordered separately

Use case



Order Information

Name	Product article number	Article number cable set*	MACsec Feature package*
MediaConverter MultiGigabit Broadcom	TE-1415	KS-141X	Not available
MediaConverter MultiGigabit Marvell	PT-1416	KS-141X	TE-1416_MACsec

*Needs to be ordered separately