100BASE-T1-TX-N

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1. General Description:

1. Establishes a direct point-to-point conversion between automotive ECU's using 100BASE-T1(100 Mbit/s Fullduplex,) and any standard Fast Ethernet (100 Mbit/s, 100BASE-TX) device with an standard ethernet RJ45 connector.

2. Comes with 1x TE MATEnet and 1x MOLEX adapter. Do not provide the over unshielded twisted pair (UTP) cables.

3. By using the NXP TJA1101 IEEE 802.3bw compliant ethernet PHY transceiver, ensure a trustworthy and effective tool to customers that are looking for a cost-efficient, quick and manageable solution for testing requirements, with no latency and no packet loss.

4. Features with 100BASE-T1 Master / Slave configuration and link LED.

5. Plug and Play, No need to install the drivers.

2. Features

The device features bi-directional conversion between Standard Ethernet (100BASE-TX) and Automotive Ethernet (100BASE-T1). A massive stainless-steel housing, coupled with switches for ease of configuration enables the user to interact with the converter, effortlessly.

No customized driver is needed to interact with our 100BASE-T1-TX-N Media Converter. The device communicates with standard Ethernet through an RJ-45 connector. Comes with a TE adapter and a MOLEX adapter,help the 100BASE-T1-TX-N Media Converter works well in different scenarios.

Its design makes it portable and easy to install in test racks. The galvanized sheet steel with black powder coating housing makes it robust. The device is capable to function in a variating temperature range from 0 Celsius to +70 Celsius. With the in-built link LEDs, the operation of the device is transparent and helps the tester to detect Link up and data transmission visually.

No extra hardware or software is needed to connect the device with a PC or a Laptop. The device can be coupled with any hardware or software tool that runs on standard Ethernet with an RJ-45 connector.

Thus, the 100BASE-T1-TX-N Media Converter is the ideal solution for working quickly and efficiently with the new 100BASE-T1 technology without the hustle of extra- wiring, customized connectors, and vendor-specific tools.

3. Hardware Description

3.1 General Information

Items	Description
Power Input Requirement	TYPE C (5V/2A) Or DC-JACK (9V-12V/1A)
Power Consumption	＜1W
Size W* L * H	84mm x 83mm x 28mm
Weight	0.148kg
Operating Temperature	-40 ~85 ℃
PHY Chip	TJA1101

3.2 Interface

(1) Power Input

Alternative DC-JACK, 9V-24V/ 1A Power input.

(2) Power Led

Red Power indicate Led

(3) Power Input

Alternative 5V/1A input, type-C interface. You could use the phone chargers for it.

(4) Ethernet Port

There is one RJ45 Standard Ethernet connector for Fast Ethernet(100 Mbit/s, 100BASE-TX)

(5) 100Base-T1

100Base-T1 port, 2xpins and 5.08mm Pitch.

(6) Link LED

The link Link led will be lit when the 100BASE-T1-TX is paired with the DUT.

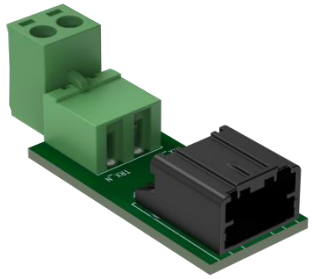
(7) SQI LED

The link Link led indicate the signal strength. The brighter the light, the stronger the signal.

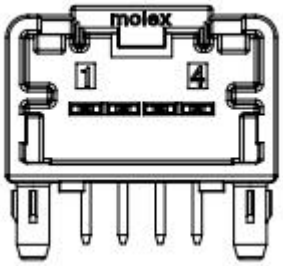
(8) Master / Slave configuration Key

In a 100BASE-T1 Link one device has to be set as Master, the other has to be set as Slave. If you don’t know the mode of DUT, you could switch the mode of 100BASE-T1-TX for testing. The Link led will be lit when the 100BASE-T1-TX-N is paired with the DUT.

(9) Molex BR Adapter

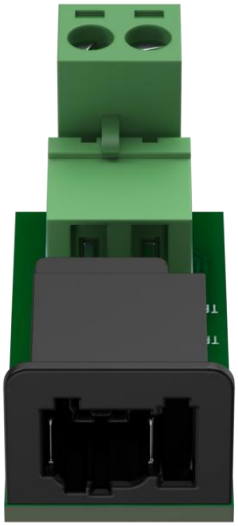


Manufactory: Molex
Part Number: 34793-0040



Pin (from left to right)	Description
1	NC
2	Data Line Plus (Positive)
3	Data Line Minus (Negative)
4	NC

(10) TE MATEnet Adapter

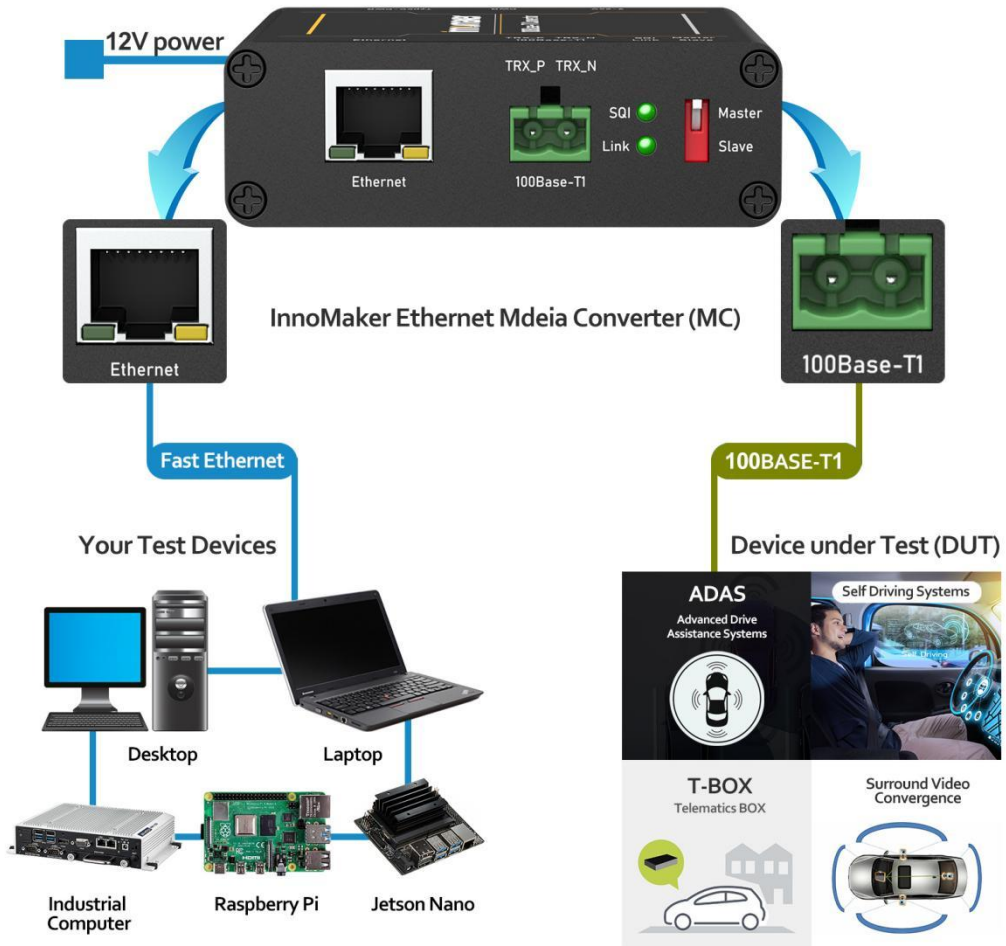


Manufactory: TE Connectivity
Part Number: 2304372-1

Pin (from left to right)	Description
1	Data Line Plus (Positive)
2	Data Line Minus (Negative)

4.Usecase

4.1 Standard Usecase

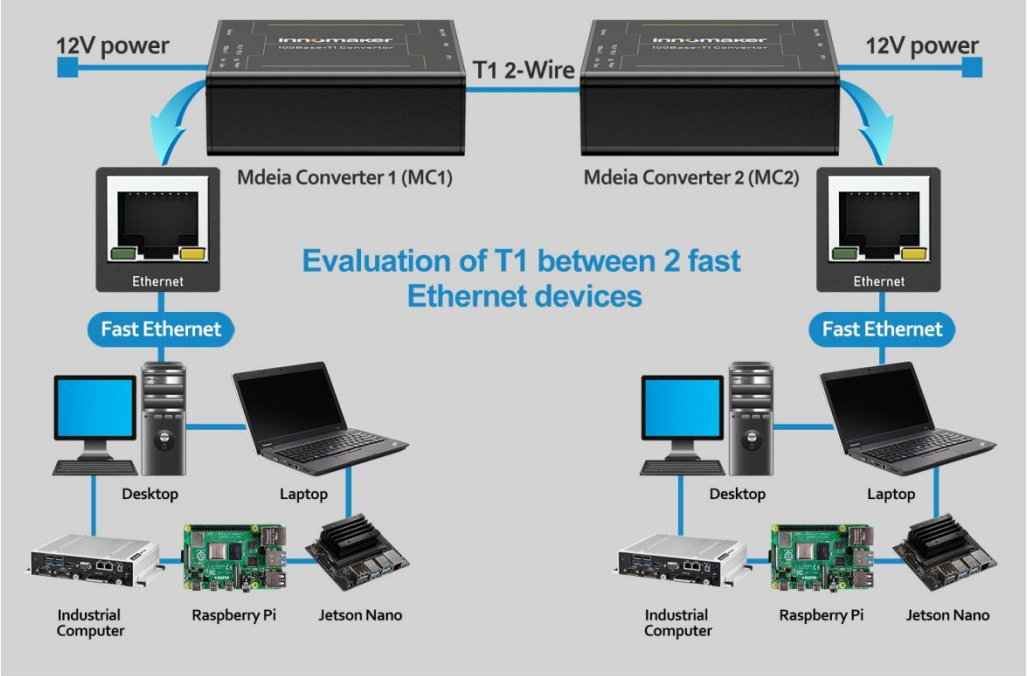


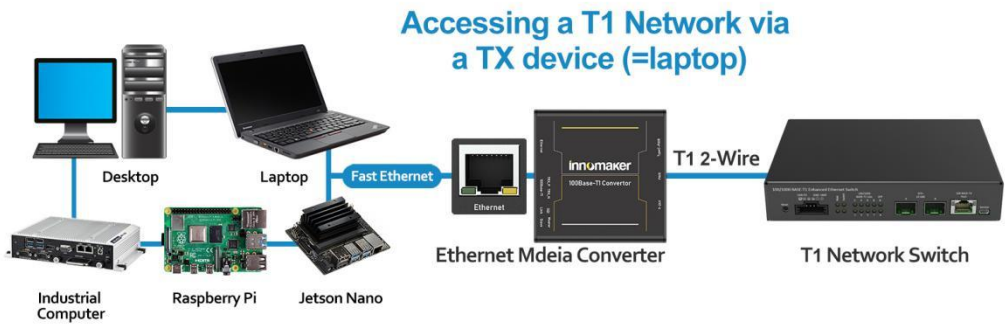
100BASE-T1-TX device is used to connect a PC/SBC to a T1 peripheral.

The mode of device is dependent on the DUT. If DUT is Master, MC must be configured as Slave (DIP-switch : S) and vice versa. If you don't know the mode of DUT, you could switch the mode of 100BASE-T1-TX for testing. The BR Link led will be lit when the 100BASE-T1-TX is paired with the DUT.

4.2 Evaluating T1 between two 100BASE-TX devices

You could use two 100BASE-T1-TX and two standard PCs/SBC with RJ45 connectors together over a 2-wire T1 network. The converters communicate with each other via T1 2-Wire.





5.User Manual Version Descriptions

Version	Description	Date	E-mail
V1.0		2023.08.04	support@inno-maker.com sales@inno-maker.com

If you have any suggestions, ideas, codes and tools please feel free to email to me. Look forward to your letter and kindly share.