

TSEP

ADAPTER

FOR USB-TMC CONNECTION

USB-TMC FOR SMALLER

MEASURING DEVICE MANUFACTURERS

TSEP ADAPTER: USB-TMC CONNECTION

Newly developed: The TSEP adapter turns any conventional USB port (USB 3.0) into a USB-TMC port – enabling USB-TMC for smaller

measuring device manufacturers as well. The adapter can be installed directly in the device or used as an external adapter.

Development

Solution Finding

For manufacturers requiring small to medium quantities for their measuring devices, the provision of a USB-TMC interface for their measuring devices has so far been difficult. There were only a few options: Developing their own implementation, or purchasing the corresponding chips in large quantities.

During an evaluation, TSEP became aware of an Infineon μ C with a USB 3.0 interface. One of the basic requirements for such a USB-TMC interface is the data transfer rate. Modern measuring devices can now provide IQ data in the Gbps range – which led to the conclusion that a USB-TMC interface must be based on at least USB 3.0. The USB μ C supports USB 3.0 with a data rate of 5 Gbps. Additionally, the USB interface can be operated with USB 3.1 Gen1/Gen2 or USB 3.2.

Prototype and Small Series

Based on the positive evaluation results, TSEP developed a prototype in summer 2024, based on a corresponding Infineon development board with the aforementioned μ C.

The prototype layout was completed in January 2025. After an initial series of 3 adapters, successful commissioning and testing of the prototype, the layout for an initial small series of 10 adapters was created in March 2025.

Basic Concept

The basic concept of the USB-TMC adapter comprises a USB 3.x type A plug for connection to any USB port on the measuring device. The USB-TMC adapter also has a USB 3.0 type B plug, which serves as the actual USB-TMC port. The control computers can connect to the measuring device via this USB port.

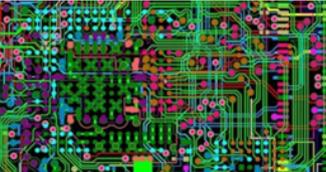
Features

- TSEP offers appropriate drivers for the common operating systems Windows and Linux (Ubuntu, Yocto) to operate the adapter on the measuring device.
- Support for other operating systems – such as Linux derivatives, RealTime or embedded operating systems – is also available on request.
- On the client side (control PC), any manufacturer can control the measuring device via one of the standardized VISA implementations (NI, Keysight or R&S).
- Those using the SCPI remote system Poseidon can use the external adapter natively or as a separate circuit board in their devices. This remote system includes all the necessary drivers and required software extensions (channels). It thus offers a simple and effective solution for integrating the USB-TMC interface.



Your suitable TSEP Adapter

The USB-TMC adapter is available to our customers in different model versions:

USB-TMC VERSION	DESCRIPTION
USB-TMC Adapter 	Customization and resale <p>The USB-TMC adapter is manufactured by TSEP, but not sold directly to end customers. You can purchase the adapter through us and then resell it to your customers. A customized imprint can be realized and a corresponding USB_PID/VID can be programmed for the corresponding quantity. TSEP ensures that the adapter meets all necessary certifications (CE).</p> <p>Price: € 350.00 per piece (minimum purchase quantity: 1000 pieces)</p>
USB-TMC Circuit Board 	Pre-produced and permanently installed in the device <p>The USB-TMC board is used directly in the customer's device and is permanently installed there. TSEP produces the board and provides it to you. A corresponding USB_PID/VID can be programmed for the corresponding quantity. TSEP ensures that the circuit board meets all necessary certifications (CE).</p> <p>Price on request.</p>
USB-TMC Development Package 	Free use in your devices <p>TSEP provides the complete PCB layout, the μC firmware and the necessary drivers as source code. Customers pay once and can then use the USB-TMC adapter in their devices as desired.</p> <p>Price: € 150,000.00 One-time payment (including circuit diagram/ PCB layout with Altium/ microcontroller firmware/ 12 months of hardware and software support)</p>

Do you have any further questions about the TSEP adapter and its options? Feel free to contact us! Find our contact details on the following page.

FURTHER INFORMATION



[TSEP.COM/EN/THEMIS/USB-TMC-ADAPTER/](https://www.tsep.com/en/themis/usb-tmc-adapter/)

Contact

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Technical Software Engineering Plazotta GmbH

Our customers include well-known manufacturers of test and measurement systems as well as users from numerous different industries who benefit from the high efficiency and reliability as well as measurable time and cost savings of our customized THEMIS T&M solutions.



TSEP

Innovation
made
measurable.

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