
Real-Time Ethernet Analysis Tool

# TAP CURIOUS

# Ethernet monitoring made easy

- Test Access Point
- Comparison of In and Out frames
- Jitter & Delay measurement
- Analysis of CRC errors

For all real-time ethernet protocols, including

PROFINET® EtherCAT® EtherNet/IP®

sercos the automation bus ETHERNET POWERLINK Modbus

# Details

TAP CURIOUS is a mobile device designed to analyse real-time ethernet networks. The device's main tasks include recording and analysing Delay, Jitter and CRC errors in the network. The device can monitor up to two independent ethernet channels simultaneously in full duplex operation. Thanks to the completely passive listening operation, there are zero delays and data communication in the network is not influenced.

The tapped data from the network is furnished with a 20-byte long trailer (including the timestamp) and relayed via the existent uplink port to a PC or laptop for further analysis. The reading and evaluation of the measured package data is done via the freely available Wireshark software. A plugin is available for a trouble-free software integration.

In addition to the recording of faulty telegrams in the network by which the TAP is installed between two devices (see example A), TAP can also be used to specifically analyse data streams of a device to be found in the network (see example B). In doing so, TAP CURIOUS record the frames directly before and directly after the device to be analysed. This enables the measurement of, amongst other things, the delay and jitter of the device and whether, for example, the device swallows or falsifies respectively telegrams.

### Filter functions

TAP CURIOUS comes equipped with a wide range of filter functions that assist the specific search for specific values and therefore significantly reduce the amount of data to be analysed. Errors occurring in the network can thus be found quicker and eliminated. TAP CURIOUS filter functions can be configurated easily and quickly via the graphic, browser-based user-interface of the TAP CURIOUS.

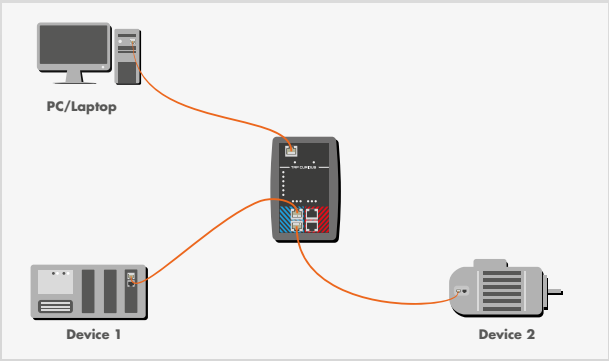
### Trigger functions

By means of the available digital in and output, it is possible to trigger particular network conditions; ideal for specifically narrowing down sporadically appearing errors and then finding and rectifying them. In addition to the digital output, there are also five freely configurable LEDs available to indicate optically, for example, the occurrence of a faulty transmission on the device. The digital input for example ensures that recording can be started at any point in time.

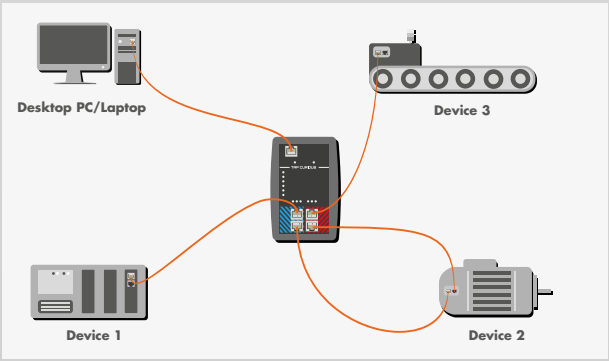
### 100 MBit/s and 10 MBit/s mode

TAP CURIOUS can be operated in 100 Mbit/s and 10 Mbit/s mode. The mode can easily be switched via the configuration menu.


# Application examples




*Application example A*




*Application example B*

# Technical Data

| Size/weight | |
|---|---|
| Width | 91.4 mm |
| Height | 139.7 mm |
| Depth | 27.9 mm |
| Weight | approx. 150 g |

| Environmental conditions | |
|---|---|
| Operating temperature | 0°C…+55°C |
| Storage temperature | -25°C…+85°C |
| Humidity | 95%, non-condensing |
| Protection class | IP20 |

| Output | |
|---|---|
| Power supply | 24 V DC ±20% or<br>230 V AC with mains connector |
| Digital input/output | External power supply 24V DC ±20%;<br>max. output current of 50 mA;<br>pulse length of 1ms;<br>electrically isolated |
| Number of Ethernet ports | 4 for recording 2 lines |
| Uplink port | up to 1 GBit/s (1000BASE-T-Ethernet, RJ45 port) |
| Probe ports | up to 100 MBit/s (100BASE-TX- Ethernet, RJ45 port, full- and half duplex) |
| Throughput delay | ~ 0 µs (zero delay) |
| Time stamp resolution | 1 ns |
| Diagnosis | 3 LEDs per channel<br>6 LEDs for filter and overflow |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