



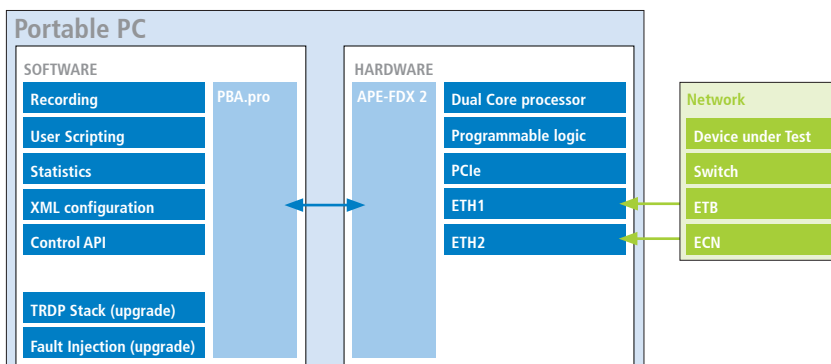
NTOnTrack

NTOnTrack TRDP Analyzer: Network protocol analyzer for TRDP

Analyzing network traffic

NTOnTrack Analyzer, the protocol analysis tool for TRDP and other Ethernet protocols, is focused on train manufacturers, component suppliers and testing facilities that want to efficiently develop and/or test TRDP based systems. Thanks to its highly performant hardware, minimally invasive in-line capturing of Ethernet frames up to 1000 Mbit/s becomes possible using tap-mode. Thus, each network segment of your train can easily be analyzed. Using single mode, traffic can be logged on two different ports.

The system captures and monitors TRDP telegrams and offers many functions for testing, filtering, sorting, evaluation and visualization of TRDP datasets. A scripting tool including a dialog engine and GUI panels offers the possibility to evaluate the content of arbitrary TRDP fields and develop user-defined visualization and controls accessing e.g. dissected datasets. All these useful functionalities are combined in the PBA.pro Software module.



NTOnTrack: Test and Development Environment

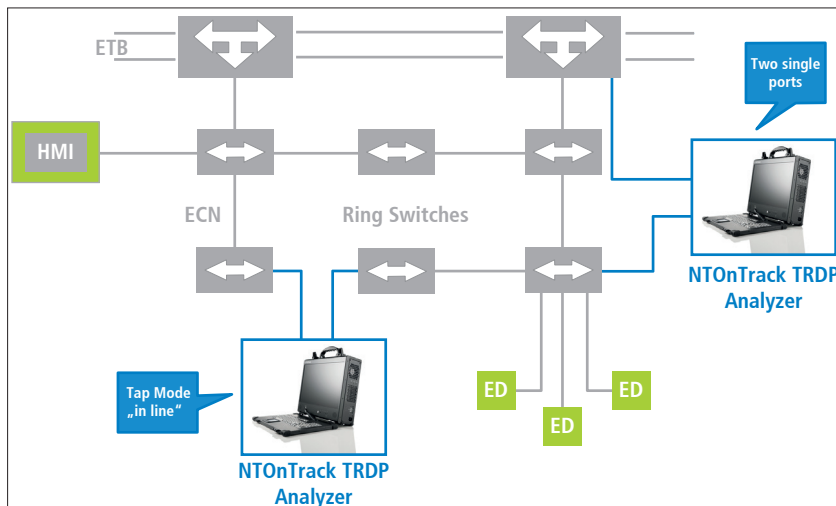
The NTONTrack Test and Development Environment for TRDP offers all the tools and support to create interoperable, robust and safe TRDP solutions.

- NTONTrack TRDP Analyzer
- NTONTrack TRDP Responder (GUI & Scripting)
- NTONTrack TRDP High Layer (C-API & Scripting-API)
- NTONTrack Conformance Tester (planned, extension of NTONTrack TRDP Analyzer)

Customer benefits

- Faster and more cost-effective product development
- More reliable products
- Easier development of safety-relevant systems
- Future-proof due to TRDP expertise inside

System overview



Features

- Network tap: Separate FPGA based capture of Port 1 and 2 traffic incl. merge function (in-line)
- Each network segment of a train can be analyzed using in-line/tap mode
- Single mode for capture of traffic on two separate switch ports
- Support of TRDP and other Ethernet-based protocols
- Chronological monitoring and recording of TRDP telegrams (header and datasets)
- Visualization of Ethernet frames with IP and UDP / TCP headers
- Dissection of TRDP datasets via XML file definition including SDTv2 for safety
- Export of recorded frame values to pcap, CSV, Excel, PDF formats
- Support of reserved ComIds (IEC 61375-2-3)
- Filtering and sorting of TRDP telegrams by different TRDP fields (header and dataset fields)
- Statistical evaluations of incoming TRDP telegrams (PD, MD, error, jitter etc.)
- Scripting tool for the evaluation of random TRDP fields
- Dialog engine / GUI panels for user-defined visualization and controls
- Open and modular design
- CRC calculation and evaluation of incoming TRDP telegrams
- Visualization of communication patterns (color highlighting)
- Size of recording files only limited by disk space (not by RAM size)

APE-FDX-2 module

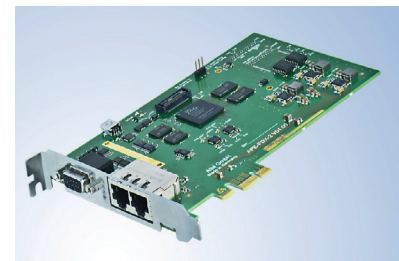
- Monitors Ethernet networks with a data rate of 10/100/1000 Mbit/s
- Two independent receivers feature multiple error detection (2 x RJ 45)
- Advanced hardware architecture provides ample resources.
- SoC with integrated Dual-Core RISC processors tightly coupled to a large programmable logic
- Trigger In/out, Discrete I/O, accurate IRIG Time In/Out (Dsub)
- Ready for simulation and injection of protocol errors with its two independent transmitters down to MAC-Layer
- Prepared for TSN (Time-Sensitive Networking)

Consists of

- **Portable Computer LitePAC** with 2xPCIe *16 (2x8) slots
- **PBA.pro Software**
The Testing Framework + GUI designed by AIM GmbH and NewTec GmbH. APE-FDX-2-G module for PCIe Bus with 2 Ethernet interfaces, programmable for 10/100/1000 Mbit/s designed by AIM GmbH

Your advantages

- Tap mode or single mode highly performant capturing
- Dataset dissection via XML file definitions
- Statistical analysis
- Scripting tool, dialog engine/GUI panels
- Extendable to NTOntTrack Conformance Tester (planned)



APE-FDX-2 module

