



RELY-TSN-REC Time-Sensitive Networking Traffic Recorder

Nowadays, convergence to Ethernet networks is becoming a reality at all levels. Additionally, in critical sectors like automotive, aerospace, railway, industrial automation, etc., this Ethernet convergence must go hand-in-hand with determinism for avoiding critical traffic to be affected by non-critical traffic.

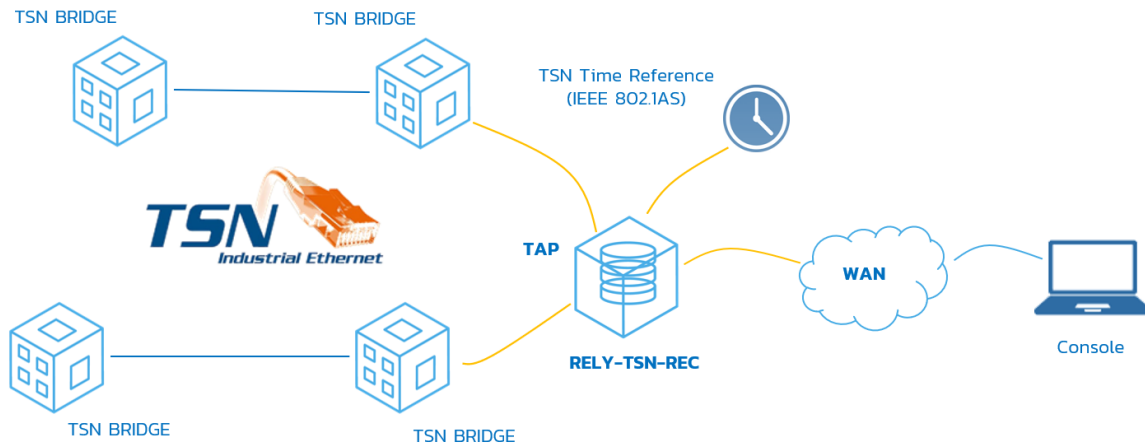
Time-Sensitive Networking has come out as the definite solution for covering these demands.

However, due to the complexity of TSN networks, it is essential to be able to analyze the network communications at the frame level for protocol validation, performance analysis, conformance testing, and forensic purposes.

Furthermore, the validity of this analysis will be constrained by the capability of the infrastructure to correlate the frames with a common time reference.

For that purpose, RELYUM has developed RELY-TSN-REC, a device that can inspect, timestamp, and record regular Ethernet and Time-Sensitive Networking traffic, using the same IEEE 802.1AS timing reference as the other equipment in the network under analysis.

Specifications



Communications

- 2 x SFP cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fibre for TAP or Port recording.
- 1 x SFP cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fiber for connecting the Time Reference for traffic timestamping (support for IEEE 802.1AS synchronization protocol).
- 1 x 10/100/1000Base-TX Ethernet copper port for Console management and non-stop remote access to recorded data.

Synchronization

- Support for IEEE 802.1AS synchronization through expansion port.

Other interfaces

- 1 x Pulse-Per-Second (PPS) SMA output.
- 1 x Sensor expansion module (optional).

Processing capabilities

- Simultaneous read/write data operation supported.
- Industrial temperature grade high-capacity SSD disk.
- Remote access to local storage; standard file format (PCAP) compatible with Wireshark.
- Triggering based on:

- » Direct I/O Signals.
 - » Modbus/S7/MQTT variables.
 - » Packet monitoring tool (for traffic content inspection).
- Filtering:
 - » Based on the standard filtering format used in the sector.

Rugged devices

- Fan-less design.
- Full metal enclosure.
- Redundant Power Supply: 9VDC to 26 VDC.
- Operating temperature: -40°C to +70°C.
- Storage temperature: -40°C to +85°C.
- Mounting: DIN rail.

Configuration and Management

- Dedicated Ethernet service port.
- SNMPv3, SSH.
- Web-based HTML5-GUI access/configuration:
- Accessible through HTTP(S).
- Configuration profiles and Firmware updates.
- Real-time network monitoring.