RelyUm® Industrial

HSR/PRP/PTP Network Recorder

RELY-REC

Overview

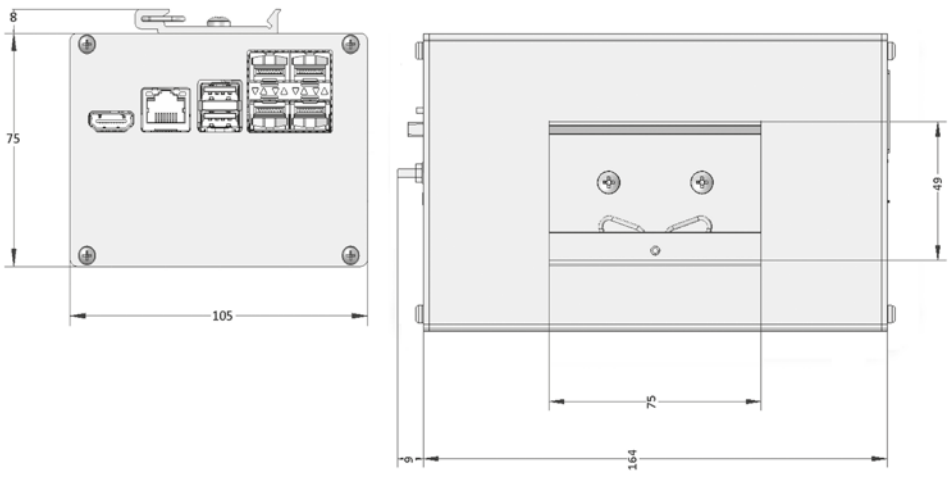
In critical systems, it is essential being able to analyse the network communications at frame level for testing and forensic purposes. Furthermore, the validity of this analysis will be constrained by the capability of the infrastructure to correlate the frames with a common time reference.

For that purpose, SOC-E has developed RELY-REC, a device that is able to inspect, timestamp and record regular Ethernet and high-availability Ethernet (HSR/PRP) traffic, using the same PTP (IEEE 1588) or NTP timing reference than the network under analysis.

Key Features

- Sustained **Ethernet capture and record** (PCAP format) in both conventional Ethernet networks and high-availability networks, like **HSR** and **PRP**.
- Synchronized using **NTP** or **PTP** (IEEE 1588) through the same network being monitored or through a separate port.
- Up to **256GB SSD** of local data storage.
- Data format (PCAP) compatible with popular network monitoring tools like **Wireshark**.
- **Simplified management and monitoring** via a user-friendly HTTPS web interface or SSH accessible CLI.
- Rugged design built for High Reliability & 24/7 Operation.

Dimensions



Technical Specifications

Communication Interfaces

- 2x 100/1000BASE-SFP Recorder Ethernet ports
- 1x 100/1000BASE-SFP Expansion Ethernet port (alternative PTP Source, Modbus /MQTT, etc.)
- 1x 10/100/1000BASE-T(X) Ethernet Service port
- 1 x PPS output (MCX connector)

Network Recording

- High data rate, large capacity streaming network recording system
- Remote access to captured traffic in PCAP format and event logs
- Capture triggering based on:
  - IEC 61850 GOOSE messages events
  - Modbus/S7/MQTT variable values
  - Pattern recognition within a packet
  - Date / hour
  - Link status
- Capture filtering based on the standard filtering format used in the sector
- 256GB SSD of local data storage
- Simultaneous read/write data operation supported

Layer 2 Features

- IEEE 802.3-2008 (Ethernet)
- Automatic MAC address learning and aging
- Zero-Recovery Time redundancy:
  - High-availability Seamless Redundancy (HSR) - IEC 62439-3 Clause 5
    - Supported modes: H, N, U, HSR-SAN, PRP-HSR, HSR-HSR
    - Cut-through operation for the HSR ring to minimize the latency in the ring
  - Parallel Redundancy Protocol (PRP) - IEC 62439-3 Clause 4
    - Supported modes: Duplicate discard, duplicate accept, transparent reception, PRP-HSR
    - Store & Forward for PRP and Ethernet operation

Synchronization

- IEEE 1588-2008 v2 (PTPv2)
- IEEE 1588 Stateless Transparent Clock (TC)
- IEEE 1588 Ordinary Clock (Master-Slave)
- Supported PTP profiles: Default, Power, IEC 61850-9-3
- NTP (Server/Client)

Security

- RBAC (Role Based Access Control)
- Selective ports disabling capability
- Unsecure protocols disabling capability
- HTTPS for web interface
- Secure Shell (SSH) Protocol v2 for command line interface
- Encryption/authentication & signature for firmware and bitstream

Configuration & Management

- HTTPS web interface
- SSHv2 command line interface (CLI)
- SNMP V1/V2c/V3 protocol support
- SNMP V3 encrypted authentication and access security
- Encrypted and digitally signed firmware/bitstream upgrades
- Saving and restoring configuration
- Internal status monitoring and logging
- Graphic representation of Network status (only in HSR/PRP networks)
- Statistics independent per port
- In-band management via any Ethernet recording port or out-of-band via Ethernet service port or expansion port

Processing

- Xilinx Zynq-7000 SoC device:
  - 2x 32bit CPU ARM-Cortex-A9
  - 1x 28nm Programmable FPGA
- 1GB DDR3 RAM memory
- 16GB eMMC Flash memory
- 256Mb QSPI Flash memory

Physical & Electrical Characteristics

- Fanless design and full metal enclosure
- Dimensions (mm): 105 (W) | 164 (D) | 74.6(H)
- Weight: 1kg
- Power input: 9VDC to 30VDC
- Operating temperature: -40°C to +70°C
- Storage temperature: -40°C to +85°C
- Optional mounting: DIN rail

Warranty

- 2 years

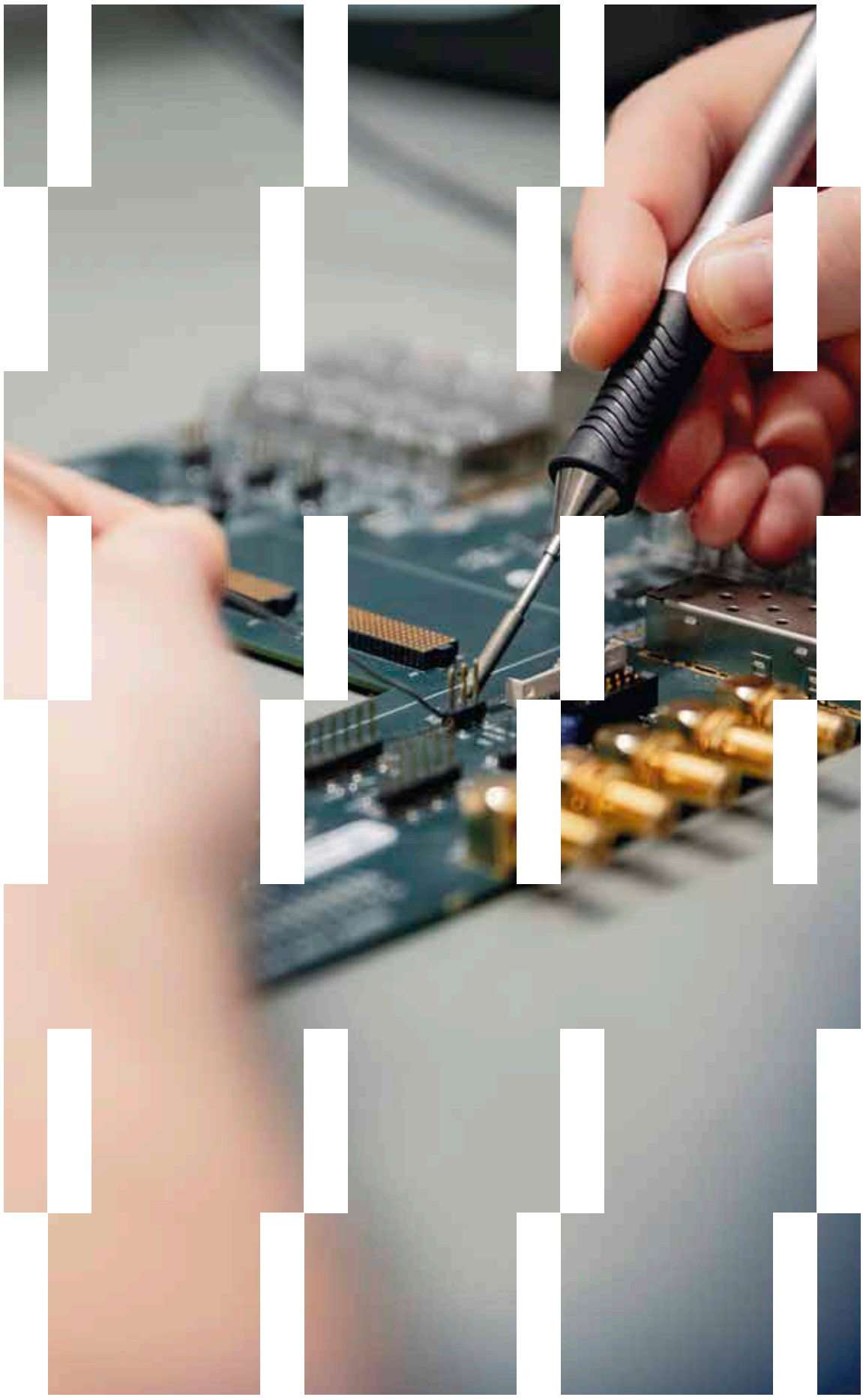
Certifications

- UNE-EN 61326-1:2013
- UNE-EN 61326-2-1:2013
- IEC 61850-3:2013

Ordering Code

Ordering code	Model and description
RB13.12	RELY-REC: HSR/PRP/PTP Network Recorder
Accessories	
A-SFP-CU-02.01	COPPER SFP (10/100/1000): Copper tri-speed RJ45 SFP Module
A-SFP-FO-MM-01.01	FIBRE SFP (100) – 1310/MM/LC: Multimode Fibre Optic LC Connector 1310nm 100Mbps SFP Module
A-SFP-FO-SM-01.01	FIBRE SFP (100) – 1310/SM/LC: Singlemode Fibre Optic LC Connector 1310nm 100Mbps SFP Module
A-SFP-FO-MM-02.01	FIBRE SFP (1000) – 850/MM/LC: Multimode Fibre Optic LC Connector 850nm 1000Mbps SFP Module
A-SFP-FO-MM-02.02	FIBRE SFP (1000) – 1310/MM/LC: Multimode Fibre Optic LC Connector 1310nm 1000Mbps SFP Module

To know more about other available references, please contact your sales representative.



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By

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SOC-E®

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