RELY-10TSN20
16 copper ports + 4 SFP ports 10G Time-Sensitive Networking Switch

Time-Sensitive Networking (TSN) allows the combining of critical and best-effort traffic in a unique deterministic and interoperable Ethernet network. This offers significant cost reductions in terms of equipment investment, maintenance, seamless integration, and single-vendor dependence reduction.

All these benefits have led to the fast expansion of TSN among critical networks and to the success of RELYUM's first TSN switch, RELY-TSN-BRIDGE.

However, as new TSN mechanisms are released, the market demands new products to support them and offer a higher number of switching ports.

In response to these requirements, RELYUM has launched the **RELY-TSN-BRIDGE+** platform. Based on SoC-e*'s TSN technology, this device benefits from a

robust and field-proven design used in the most demanding sectors (railway, aerospace, automotive, industrial automation, etc.).

The **RELY-10TSN20** model performs as a **21-port TSN Bridge** providing the following switching ports:

- 16x 10/100/1000Mbps copper ports.
- 4x multi-media 10G ports.
- 1x 1G internal port.

Through all these ports, the device supports the largest number of TSN standards in the market, which makes it suitable for any specific profile.

These key features make the **RELY-TSN-BRIDGE+** platform the most reliable and multipurpose networking device for critical environments.

*Selected as one of the 17 key industry players in the Automotive Ethernet Markets to 2024 Report.

Specifications

Communications

- 4x SFP+ 10GBase-R TSN Ethernet ports.
- 8x 10BASE-T/100BASE-TX/1000BASE-T TSN Ethernet ports.
- 8x 10BASE-T/100BASE-TX/1000BASE-T Regular Ethernet ports.
- 1 x 10BASE-T/100BASE-TX/1000BASE-T Ethernet Service port.
- 1 x PPS output (SMA connector).

TSN features

- IEEE 802.1AS - Timing and Synchronization for Time-Sensitive Application.
- IEEE 802.1Qbv – Time Aware Shaper.
- IEEE 802.1Qav – Credit-Based Shaper.
- IEEE 802.1CB – Frame Replication and Elimination for Reliability).
- IEEE 802.1Qci – Per-Stream Filtering and Policing*.
- IEEE 802.1Qcc – TSN Configuration to allow centralized configuration management (CNC) to coexist with decentralized.

L2 Features

- Supports VLAN: MAC-based VLAN, IP subnet-based VLAN.
- Spanning Tree Protocols: IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s (MSTP) & TE-MSTID.
- Stream Identification:
  » Default: **Null** Stream ID, **Source** MAC and VLAN Stream ID, Active Destination MAC, and VLAN Stream ID, **IP** Stream ID.
  » Optional possibility under demand: IEEE 802.1CBdb – Mask and Match.
- IEEE 802.1AB – LLDP support.
- Multicast Filtering, IGMP Snooping.
- Session-based **Port Mirroring.**
- Traffic prioritization (**QoS**), strict priority, and 8-level priority for switching: IEEE 802.1p, IEEE 802.1Q VLAN TAG.
- IEEE 802.1AX – Static Link Aggregation (under demand).

Processing performance

- On-board UltraScale™ FPGA for high-speed network switching and PTP timestamping.
- Multi-core CPU unit to support autonomous software applications.

Security functions

- Access Control List: ACL based on IP address (IPv4)*.
- Security:
  » Port security.
  » Command Line authority based on user level.
  » Static MAC address.
- RADIUS client*.
- Network Access Control:
  » IEEE 802.1X port-based network access control: port blocking, MAC filtering, message marking/unmarking, and forwarding.
  » MAC-based authentication.
  » RADIUS authentication.

Configuration and Management

- SNMPv3*, SSH, Netconf (YANG model-based configuration) support.
- On-board integrated Web Server to provide HTML5-GUI configuration access:
  » Accessible through HTTP(S).
  » Configuration profiles and Firmware updates.
  » Real-time network monitoring.

Rugged devices

- Fanless design and full metal enclosure.
- Adapter power supply voltage range 100-240 Vac (included). Max. power consumption: 22.7W.
- Equipment power supply 5V@10A. Max. power consumption: 22.6W.
- Operating temperature of the set (equipment and adapter): 0°C to +40°C.
- Operating temperature of the device: -35°C to +45°C.
- Storage temperature.: -20°C to +80°C.
- Coldplate mounting possible.
- Dimensions & weight: 202,75x232x106mm, 3,2kg.

* **Note:** *This functionality will be available soon. Stay tuned for updates!*