



RELY-TSN-BRIDGE+ TSN-12

8 copper ports + 4 SFP ports 1G Time-Sensitive Networking Switch

Time-Sensitive Networking (TSN) allows to combine 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 lead 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 capable to support them and to offer a higher number of switching ports.

In response to these requirements, RELYUM has launched **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.).

RELY-TSN-BRIDGE+ performs as a **13-port TSN Bridge** providing the following switching ports:

- 8x 10/100/1000Mbps copper ports
- 4x multi-media 1/10G** ports
- 1x 1G internal port.

Though 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 **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

**TSN-12 model only supports 1Gbps throughput in all its ports. 10TSN-12 model to be released in Q4 2022 will support 10Gbps throughout in the 4x multi-media ports. Upgrade from TSN-12 to 10TSN-12 will be available on demand, at extra cost.

Specifications



Communications

- 4x SFP+ 1/10*Gbps TSN Ethernet ports
- Media options (SFP+ cages):
 - » 10GBase-R*
 - » 10/100/1000Base-T
 - » 1000Base-X
 - » 100Base-FX
- 8x 10/100/1000BaseTX TSN Ethernet ports
- 1 x 10/100/1000BaseTX Ethernet Service port
- Spanning Tree Protocols
 - » IEEE802.1D (STP)
 - » IEEE802.1w (RSTP)
 - » IEEE802.1s (MSTP)
- LLDP support – IEEE 802.1AB
- VLAN support
- IEEE 802.1P Traffic prioritization (QoS):
 - » PCP Based Priorities
 - » DSCP Based Priorities
- Multicast Filtering / IGMP Snooping
- Port Mirroring
- IEEE802.1X support
- 1 x PPS output (SMA connector)

TSN features

- IEEE 802.1AS-2020 - Timing and Synchronization (up-to 2 Domains)
- IEEE 802.1Qbv – Time Aware Shaper
- IEEE 802.1Qav – Credit Based Shaper

- IEEE 802.1Qcc – Enhancements for Stream Reservation Protocol
- IEEE 802.1CB – Frame Replication and Elimination for Reliability)
- IEEE 802.1Qci – Per-Stream Filtering and Policing
- Stream Identification:
 - » Destination MAC and VLAN Stream
 - » Mask & Match

Processing performance

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

Rugged devices

- Fanless design and full metal enclosure
- 5V@10A power supply
- Includes EU power supply adapter
- Operating temperature: -40°C to +50°C
- Storage temperature: -40°C to +85°C

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
- Compatible with Centralized Configuration Tools (CNC)

*10Gbps throughput not available in TSN-12 model.