

RelyUm[®] Industrial



20-port 1G/10G
Time-Sensitive Networking Switch

RELY-10TSN20

Overview

Time-Sensitive Networking (TSN) seamlessly integrates critical and everyday traffic in a deterministic Ethernet network, offering significant cost savings and reducing dependence on a single vendor.

Built on the company's proven TSN technology, RELY-10TSN20 is the most complete TSN switch from Relyum Industrial product range. It supports up to 4x 10GBASE-SFP TSN multimedia

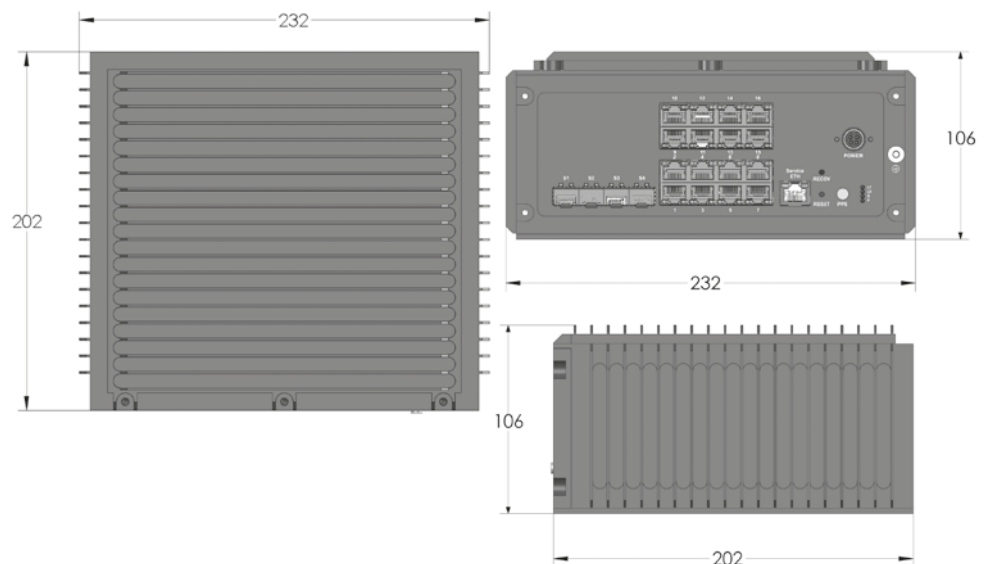
ports, 8x 10/100/1000Mbps TSN copper ports and 8x 10/100/1000Mbps Regular Ethernet copper ports in a single device, supporting a broad range of TSN standards for versatility.

With proven reliability in different critical sectors, the RELY-10TSN20 simplifies management through an integrated Web Server for configuration, monitoring, and updates.

Key Features

- **4x 10GBASE-SFP TSN** ports, **8x 10/100/1000BASE-T TSN** ports and **8x 10/100/1000BASE-T Regular Ethernet** ports, supporting a **wide range of TSN standards**.
- FPGA-based solution, powered with **SOC-E's in-house designed** technology, to be **easily upgraded** as TSN standards evolves.
- **"Zero-Packet Loss" redundancy** using TSN FRER for selected traffic combined with MSTP.
- Simplified management and monitoring via a user-friendly HTTPS web interface or SSH accessible CLI. **Compliant with Qcc for centralized configuration through YANG model configuration files**.
- Comprehensive **TSN Ecosystem** offering combined **with SOC-E's TSN Expertise**, to deploy a turnkey project.

Dimensions



Technical Specifications

Communication Interfaces

- 4x 10GBASE-SFP TSN Ethernet ports
 - 8x 10/100/1000BASE-T(X) TSN Ethernet ports
 - 8x 10/100/1000BASE-T(X) Regular Ethernet ports
 - 1x 10/100/1000BASE-T(X) Ethernet Service port
 - 1 x PPS output (SMA connector)
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Layer 2 Features

- IEEE 802.3-2008 (Ethernet)
 - Automatic MAC address learning and aging
 - Static MAC Table
 - Port-Based Virtual LANs (VLANs):
 - Logical segmentation of network for optimal use of bandwidth
 - IEEE 802.1Q for VLAN tagging (up to 4K VLAN groups)
 - IEEE 802.1p for Class of Service (CoS) / Quality of Service (QoS)
 - IEEE 802.1AB for Link Layer Discovery Protocol (LLDP)
 - Port rate limiting
 - Storm control for flooded broadcast, multicast and unicast
 - Layer 2 multicast filtering
 - IGMP Snooping (up to 1024 multicast filters)
 - Spanning Tree Protocol:
 - IEEE 802.1D (STP)
 - IEEE 802.1w (RSTP)
 - IEEE 802.1s (MSTP)
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TSN Features

- IEEE 802.1AS - Timing and Synchronization
 - IEEE 802.1Qav - Credit Based Shaper (CBS)
 - IEEE 802.1Qbv - Time Aware Shaper (TAS)
 - IEEE 802.1Qci - Per-Stream Filtering and Policing
 - IEEE 802.1CB - Frame Replication and Elimination for Reliability (FRER)
 - IEEE 802.1Qcc - Stream Reservation Protocol (SRP) Enhancements and Performance Improvements
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Security

- IEEE 802.1X for port-based network access control
 - MAC port binding & authentication for login security
 - RADIUS authentication
 - RBAC (Role Based Access Control)
 - Selective ports disabling capability
 - Unsecure protocols disabling capability
 - Per port ingress and egress port mirroring including 10G mirroring
 - HTTPS for web interface
 - Secure Shell (SSH) Protocol v2 for command line interface
 - Encryption/authentication & signature for firmware and bitstream
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Configuration & Management

- HTTPS web interface
- SSHv2 command line interface (CLI)
- Netconf protocol (YANG model-based configuration) support
- Encrypted and digitally signed firmware/bitstream upgrades
- Saving and restoring configuration
- Internal status monitoring and logging
- Event notification through Syslog
- Statistics independent per port
- In-band management via any Ethernet switch port or out-of-band via Ethernet service port

Processing

- Xilinx UltraScale+ MPSoC device:
 - 4x 64bit CPU ARM-Cortex-A53
 - 2x 32bit CPU ARM-Cortex-R5F
 - 1x GPU ARM-Mali 400MHz
 - 1x 16nm UltraScale+ FPGA
- 4GB DDR4 RAM memory
- 32GB eMMC Flash memory
- 512Mb QSPI Flash memory

Physical & Electrical Characteristics

- Fanless design and full metal enclosure
- Dimensions (mm): 232(W) | 202(D) | 106(H)
- Weight: 2.62kg
- Power Input: 5VDC @ 10A
- Included power supply voltage range 100-240VAC
- Power consumption: 15-25W
- Operating temperature:
 - Power adapter: 0°C to +40°C
 - Equipment: -40°C to +55°C
- Storage temperature:
 - Power adapter: -20°C to +80°C
 - Equipment: -40°C to +85°C
- Optional mounting over coldplate

MTBF (only equipment)

- 370,000 hours GB@25
- MTTR = 0.5 hour

Warranty

- 2 years

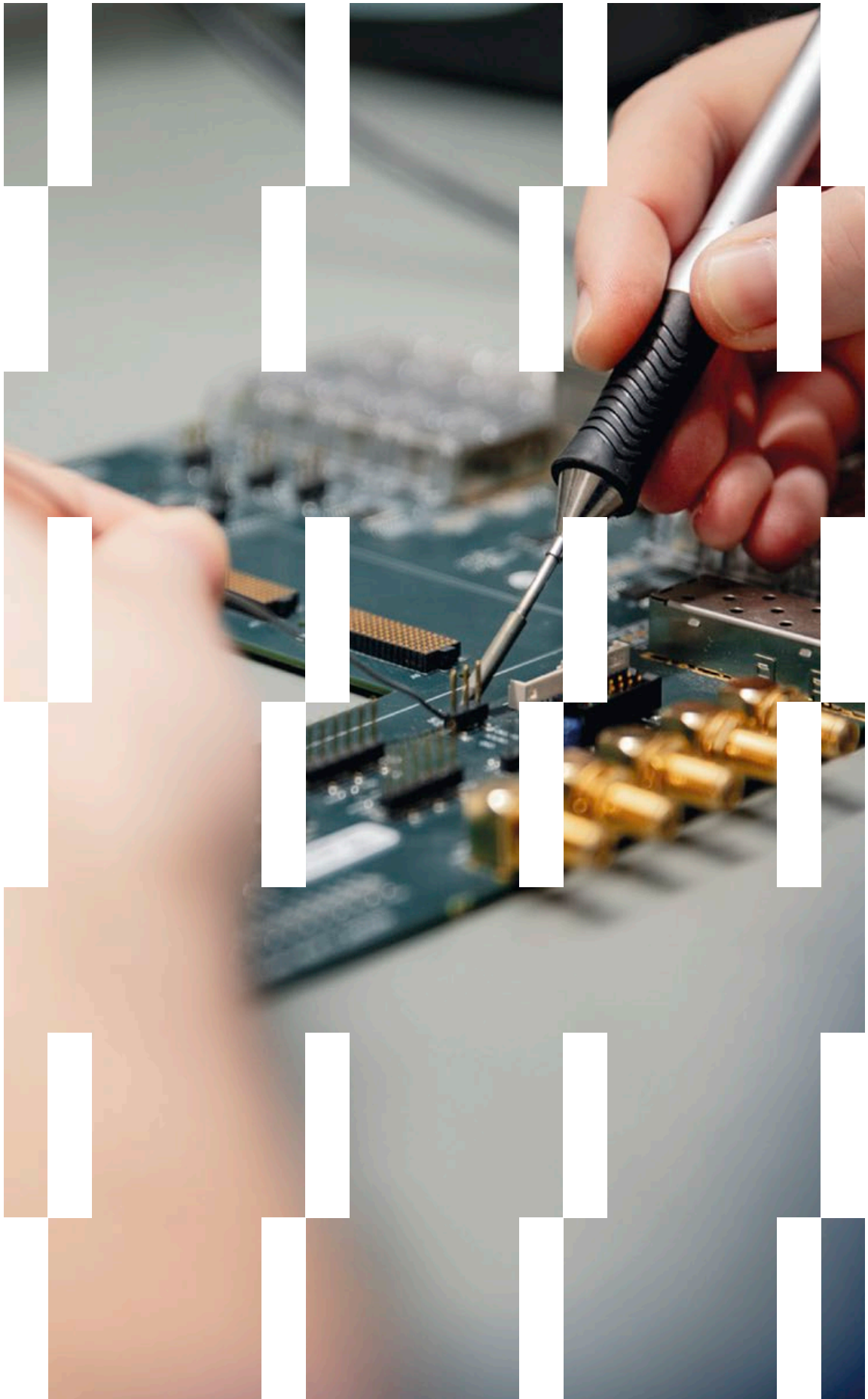
Certifications

- UNE-EN 61326-1:2013
- UNE-EN 61326-2-1:2013

Ordering Code

Ordering code	Model and description
TSN38.06	RELY-10TSN20: 20-port 1G/10G Time-Sensitive Networking Switch
Accessories	
A-SFP-CU-03.01	COPPER SFP (10G): Copper 10G RJ45 SFP Module
A-SFP-FO-MM-03.01	FIBRE SFP (10G-SR) – 850/MM/LC: Multimode Fibre Optic LC Connector 850nm 10Gbps Short Range 300m SFP Module
A-SFP-FO-SM-03.01	FIBRE SFP (10G-LR) – 1310/SM/LC: Singlemode Fibre Optic LC Connector 1310nm 10Gbps Long Range 10km SFP Module

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



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