RELY-RB Time-aware Redbox Switch

RELY-RB is a new concept of intelligent device that integrates advanced field-proven technology for non-packet-loss redundant Ethernet, sub-microsecond synchronization and cybersecurity.

This device is able to merge the whole LAN with redundant networks, to interconnect PRP and HSR networks and to extend HSR rings via QuadBox operation

RELY-RB models

RELY-RB	RELY-RB+	RELY-RB+2
1x 10/100/1000Base-TX Ethernet copper port (Console/Service/Security)	1x 10/100/1000Base-TX Ethernet copper port (Console/Service/Security)	1x 10/100/1000Base-TX Ethernet copper port (Console/Service/Security)
4x SFP Cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fiber	6x 10/100/1000Base-TX Ethernet copper port	6x 10/100/1000Base-TX Ethernet copper port
		2x SFP Cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fiber

RELY-RB   **RELY-RB+**   **RELY-RB+2**

Communication interfaces

- Multiple PTP Tri-speed Ethernet ports

- Zero-Packet-Loss redundancy modes:

  » IEC 62439-3 v3 Clause 5 "High-availability Seamless Redundancy (HSR)"

     Modes: H, N, T, U, HSR-SAN, PRP-HSR, HSR-HSR

  » EC 62439-3 v3 Clause 4 "Parallel Redundancy Protocol (PRP)"

     Modes: Duplicate discard, duplicate accept, transparent reception, PRP-HSR

- Optional modes:

  » IEC 62439-2 Clause 5 "Media Redundancy Protocol (MRP)"

  » "Device Level Ring (DLR)" for Ethernet IP

  » RSTP IEEE802.1w

- VLAN support and Ethernet type based or IEEE 802.1P Traffic prioritization

- Cut-through and Store&Forward switching capability

Synchronization

- IEEE 1588-2008 PTPv2. Optional IRIGb Master/Slave bridge

- Modes: Transparent Clock, Ordinary Clock, Boundary Clock

- Profiles: Default, Power, IEC 61850-9-3,AS

- IEEE 1588 Stateless Transparent Clock P2P mode to support

- IEEE 1588 PRP/HSR redundant networks merging

Other interfaces (not available in all models)

- 1x RS485 port

- 2 x USB type A ports

- 1x HDMI output

- 1x Alarm output (potential-free relay 250VACmax.)

- 1x Pulse-Per-Second (PPS) SMA output

Processing performance

- Xilinx Zynq FPGA with embedded dual-core ARM9 processor

- 1GB DDR3 RAM Memory

- Linux Operating System

Security

- Optional support for IEC 62351-6 wire-speed cryptography

- Security infrastructure for IEC 62351-9 Key Exchange facilities

- AES 256, HMAC and RSA hardware engines for software and firmware encryption, authentication and signature

- Secure boot

- System Level audited security (OS & Applications)

- Integrated anti-tampering, accelerometers and power consumption measurement sensors to mitigate advanced security attacks

- Ethernet port isolated from switching infrastructure to implement security oriented services (NAT, Firewall, VPN, etc.)

- EEE 802.1X access control for port based and MAC based authentication, MAC-Port binding and authentication for login security

- Optional internal mirroring port with deep packet inspection capability

- Optional integrated SIEM agent for IDS and Syslogv5 TLS support for distributed SIEMs approach

Rugged devices

- IEC 61850-3 / IEEE 1613

- Fanless design and full metal enclosure

- Redundant Power Supply: 6VDC to 36 VDC

- Optional PS: 48VDC / 125VDC

- Operating. temperature.: -40°C to +70°C

- Storage temperature.: -40°C to +85°C

- Optional mounting: DIN rail

Configuration and management

- SNMPv3, SSH

- Web-based HTML5-GUI access/configuration

- Accessible through HTTP(S)

- Configuration profiles and Firmware updates

- Real-time network monitoring