Flexibilis Redundant Switch

3 to 8 Port Ethernet IP with HSR/PRP

- ✓ Provides seamless redundant communication for critical traffic
- ✓ Open, interoperable solution supporting HSR, PRP and IEEE 1588 PTP standards
- ✓ Scalable IP core suitable for use in both low- and high-end devices
- ✓ Fast and easy integration for planned and existing FPGA-based devices

Flexibilis Redundant Switch (FRS) is an IP core providing HSR/PRP functionality. Thanks to its scalability, the same IP core can be used in both low- and high-end FPGA-based devices. FRS has been validated using methods such as hardware accelerated simulation to guarantee the quality of the IP. FRS is also proven in use for applications in energy management (smart grid), industrial automation and transportation.
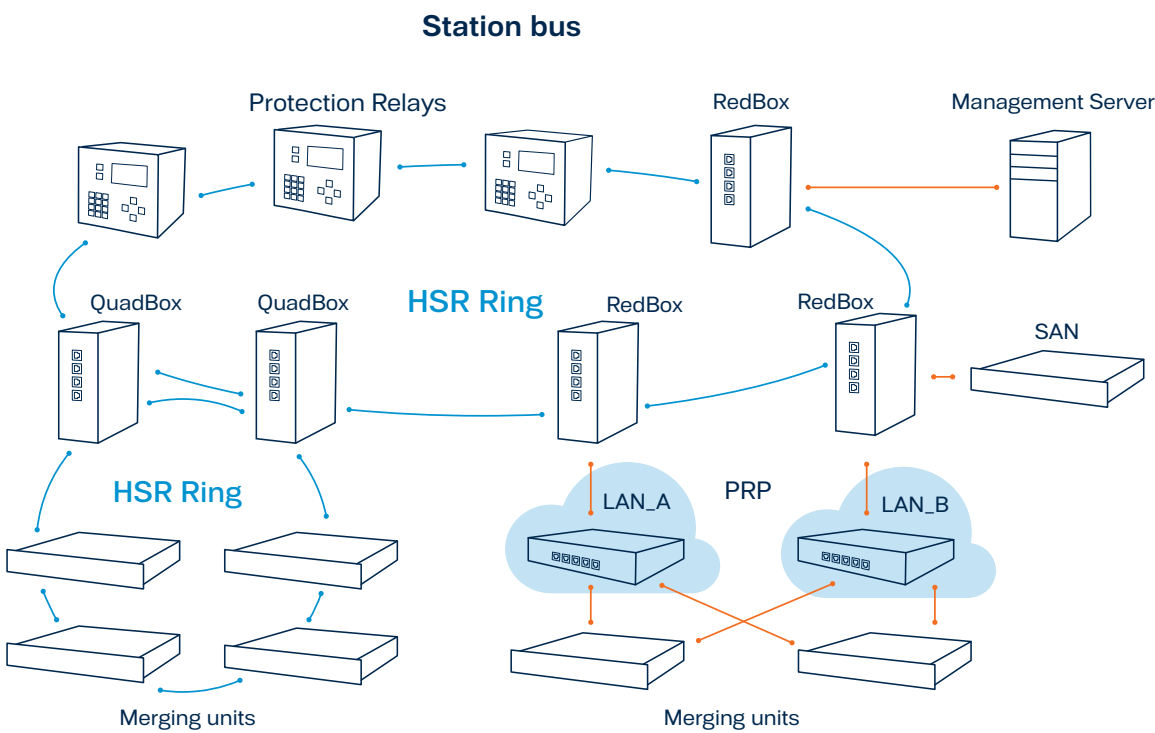
High-availability Seamless Redundancy (HSR)

HSR is a standard (IEC 62439-3 Clause 5) that provides redundant Ethernet. It is suitable for applications that require short reaction times and high availability. HSR can be used to build very robust networks with zero reaction time in case of a single failure, and predictable latency, at lower cost than other Ethernet redundancy solutions.

Many critical applications require a network with zero downtime. HSR allows a network to remain fully operational even during maintenance, as any device can be disconnected and replaced without breaking the network connectivity.

Parallel Redundancy Protocol (PRP)

PRP is an IEC standard (IEC 62439-3 Clause 4) that provides redundant Ethernet. Under PRP, each node is connected to two separated, parallel Local Area etworks (LANs). Source nodes send two copies of each packet, one over each network. When a destination node receives a packet, it accepts the first copy and discards the second copy, eliminating the duplicate.

Contact us at
dnw-sales@tttech.com

www.tttech.com

Supported Topologies

Station bus

Product Features

Ports	3 to 8 ports; 10/100/1000 Mbit/s
Physical Interfaces	MII, GMII RGMII, SGMII, RMII, 100BASE-FX, 1000BASE-X AXI4 and Avalon slave interface for management register access and DMA to host port
HSR	HSR RedBox, HSR End Node, HSR-PRP RedBox and QuadBox support
PRP	PRP RedBox and DANP support
IEEE 802.1Q	Port-based VLANs and VLAN tagging Prioritization of packets on egress ports Untagging of VLAN frames on egress ports
Clock Synchronization	IEEE 1588-2008 layer 2 one-step end-to-end and peer-to-peer transparent clock support
Switching Engine	Cut-through and store and forward operation 4095 VLANs 16 MAC address filters per port 4096 entries for MAC address learning Up to 4096 policer per port 8 traffic shapers per port Up to 16k static configuration of MAC addresses
Statistics	Detailed packet statistics counter

Contact us at
dnw-sales@tttech.com

www.tttech.com