WHITE RABBIT Z16

It is the Seven Solutions reliable precise time fan-out for White Rabbit distribution on 1G Ethernet-based networks.

The WR-Z16 is a standalone device with 16 SFP connectors which provides sub-nanosecond accuracy time over plug-and-play fiber links.

The WR-Z16 provides very precise IEEE 1588 (PTP) in all its optical interfaces and supports NTP interoperability. Picosecond-level frequency distribution is available through digital clock.

The WR-Z16 incorporates failover mechanisms which combine multi-source redundancy and holdover capabilities to ensure continued operation.

Technical Specifications / WR-Z16

System On-Chip

SoC	Xilinx Zynq series
CPU	Dual ARM® Cortex™-A9 MP@ 1 GHz
Memory	• 512 MB DDR3 (32-bit bus) • 16GB SD Card

Timing

Multi-sources	Failover mechanism to ensure continuous operation by switching over several timing sources in case of failure: • White Rabbit (accuracy <1ns) • External references (GNSS, AC)
PTP IEEE 1588-2008	• Supported Profiles: • Default • G.8265.1[1] • G.8275.1[1] • IEEE C37.238-2011[1] *up to 16 clients*
NTP	NTP v2, v3 & v4
Holdover (optional)	Accuracy *(learning 3 days from GNSS)* • < 100ns @ 4h • < 500ns @ 8h • < 1.5us @ 24h

Management

OS	Linux (Kernel v4.9 & buildroot)
Control	CLI & Web-GUI: HTTP(s)
Authentication	• RADIUS • TACACS+
Monitoring	• SNMPv3 (SNMPv2) + Traps • Smart-Alerts
Network	• SSHv2 (OpenSSH 7.8) + SFTP/SCP • DHCP • LLDP • Rsyslog

Physical Specification

Dimension	431 mm x 44 mm x 330 mm
Color	White (Metallic)
Certifications	ROHS, FCC, CE

Environmental Conditions

Temperature	-10ºC ~ +50ºC
Humidity	0% ~ 90% RH

HIGHLIGHTS

Sub-nanosecond time accuracy
16 optical timing ports for WR and PTPv2
Remote configuration and monitoring
Distance range over 80 km using fiber
Xilinx Zynq Family (ARM Dual Core)
Linux OS
Datacenter Optimized design
Robustness & Redundancy
Failover mechanisms
Holdover capability
Pluggable fans
Health monitoring
Graphical user interface

Physical Specification

UART	RS232 Serial (RJ45 connector)
Ethernet	2x 100/1000 Base-T RJ45
SFP Ports	16x 1GbE for timing distribution (WR/PTPv2 selectable)
Clocks I/O	4x SMA connectors *(3V @5OΩ, TTL compatible):* • 10MHz OUT (LVTTL) • PPS OUT (LVTTL) • PPS IN (LVTTL) • 10MHz IN *(TTL/CMOS/ECL/clipped sine)*

Back Panel Modules

Power Supply	2x Redundant & Hot-swappable • 100-240VAC, 50-60 Hz • 50W (max. 80W)
Fan	2 x Swappable fan modules Airflow: blowing out

[1]: License not included in default package

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