The Seven Solutions reliable node that provides multiple legacy 10MHz/xPPS timing outputs for all equipment in your rack cabinet through White Rabbit time transfer and its redundant connections.

The WR-ZEN TP-32BNC easily distributes time and frequency to other equipment by implementing standard timing protocols such as PTP, NTP, IRIG-B, 10MHz/xPPS, etc.

The WR-ZEN TP-32BNC combines ultra-stable clocks with low jitter and temperature compensated clock resources to enhance its synchronization accuracy.
Technical Specifications / WR-ZEN TP-32BNC

System On-Chip

- **SoC**: Xilinx Zynq series
- **CPU**: Dual ARM® Cortex™-A9 MP@ 866MHz
- **Memories**:
  - 512 MB DDR3 (32-bit bus)
  - 256 Mbits Quad-SPI Flash
  - 16GB SD Card

Software

- **OS**: Linux (Kernel v4.6)
- **Time Sync.**:
  - White Rabbit PTPv2 (default and G.8265.1 profiles, up to 16 unicast clients)
  - NTP (client & server)
- **Protocols**:
  - TCP/IP, SSH, SNMPv3, TFTP, DHCP, ARP, DNS, HTTP (web interface)

Front Panel

- **Ethernet**: 2x 10/100/1000 Base-T RJ45 (Management, PTP, NTP)
- **SFP Ports**: 2x 1GbE
- **Clocks I/O**:
  - 5x SMA coaxial connectors (3V/50Ω):
    - 10 MHz SINOUT ref. clock (PLL)
    - CLK OUT (LVTTL)
    - PPS OUT/IRIG-B (LVTTL)
    - PPS IN (LVTTL)
    - 10MHz IN (TTL/CMOS/ECL/clipped sine)
- **Fanout**: 32 BNC configurable outputs divided in 2 groups (1.7V/50Ω):
  - A&B: 10MHz (xPPS under license) with 50Ω termination
  - C&D: xPPS, IRIG-B with selectable 50Ω termination
- **LCD**: Information panel for alert & network
- **Debug**: USB Mini-B (ARM-UART)

HIGHLIGHTS

- Sub-nanosecond time accuracy
- Remote configuration and monitoring
- Distance range over 80 km using fiber
- Xilinx Zynq Family (ARM Dual Core)
- Linux OS
- WR and PTPv2
- Robustness & Redundancy
- 32 configurable timing outputs

Clock Performance

- **Phase noise (dBc/Hz)**
  - Master
  - GM
  - Slave
  - 1Hz: -78.7
  - 10Hz: -107.5
  - 100Hz: -132.6
  - 1kHz: -143.5
  - 10kHz: -147.5
  - 100kHz: -145.6
- **TDev**
  - @1 sec: 1.92E-11
  - @10 sec: 1.93E-12
  - @100 sec: 1.94E-13
  - @1000 sec: 1.98E-14

Physical Specification

- **Dimension**: 428 mm x 88 mm x 220 mm
- **Color**: White (Metallic)

Certification

- **Soldering**: IPC-A-610 Rev E Class 2
- **Others**: CE, FCC, ROHS, SE, ISO-9001, ISO-14001

Power Supply

- **Input**: Redundant 2x 100-240VAC, 50-60 Hz
- **Output**: 12V DC, 6.66A – 80W max

Environmental Conditions

- **Temperature**: -10°C ~ +50°C
- **Humidity**: 0% ~ 90% RH

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