



WHITE RABBIT ZEN TIME PROVIDER

WR-ZEN TP-FL

冗長接続を利用する幅広いアプリケーションにWhite_Rabbit機能を提供する基本的なスタンドアロンノード。

WR-ZEN_TP-FLは、広く利用可能なタイミングプロトコル (PTP、NTP、10MHz / PPS) を実装することにより、時刻と周波数を他の機器に簡単に分配します。

WR-ZEN_TP-FLは、低ジッターの超安定クロックと温度補償されたクロックリソースを組み合わせ、費用対効果の高い1Uフォームファクターで同期精度を高めます。



Technical Specifications / WR-ZEN TP-FL

System On-Chip

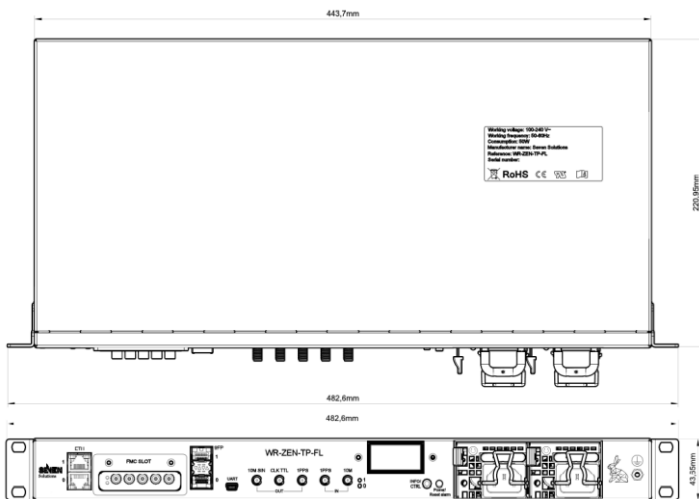
| | |
|---------------|--|
| SoC | Xilinx Zynq series |
| CPU | Dual ARM® Cortex™-A9 MP@ 866MHz |
| Memory | <ul style="list-style-type: none"> 512 MB DDR3 (32-bit bus) 256 Mbits Quad-SPI Flash 16GB SD Card |

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 |
| Expansion | 4x SMA coaxial connectors(3.3V/50Ω): <ul style="list-style-type: none"> PPS out(LVTTL) |



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

Clock Performance

| Phase noise (dBc/Hz) | Master | GM | Slave |
|----------------------|--|--------|--------|
| 1Hz | -78.7 | -86.2 | -76.5 |
| 10Hz | -107.5 | -87.6 | -79.7 |
| 100Hz | -132.6 | -107.2 | -112.4 |
| 1kHz | -143.5 | -140.8 | -143.6 |
| 10kHz | -147.5 | -143.0 | -145.3 |
| 100kHz | -145.6 | -146.0 | -149.1 |
| TDev | <ul style="list-style-type: none"> @ 1 sec 1.92E-11 @ 10 sec 1.93E-12 @ 100 sec 1.94E-13 @ 1000 sec 1.98E-14 | | |

Physical Specification

| | |
|------------------|-------------------------|
| Dimension | 444 mm x 43 mm x 221 mm |
| Color | White (Metallic) |

Certification

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

Power Supply

| | |
|--------------|-----------------------------------|
| Input | Redundant 2x 100-240VAC, 50-60 Hz |
|--------------|-----------------------------------|

Environmental Conditions

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

