DOWR
White Rabbit GNSS Receiver

High performance GPS grandmaster clock and network time server capable of distributing GPS Time or UTC using White Rabbit networks with sub-nanosecond accuracy over long-distance fiber links (typically hundreds of km).

Built as a white box solution, including timing integrity monitoring of the GPS navigation data.

Provides raw GPS data for the calculation of a precise antenna position and for legal traceability to UTC(k) laboratories.

GPS and White Rabbit come fully calibrated from factory for the provided antenna cable.

Additionally, the DOWR distributes time to other equipment via standard protocols such as PTP, NTP and IRIG-B.
Technical Specifications / DOWR

**GNSS Receiver**

**Type of receiver**
- All-in-view GPS receiver
- GPS L1 C/A

**Processor**

**SoC**
- Xilinx Zynq XC7Z015 with Dual ARM® Cortex™-A9 MP@ 866MHz

**Front Panel**

**Ethernet Ports**
- 10/100/1000 Base-T RJ45
- 2x SFP cages (double stack)

**IN/OUT**
- 10 MHz
- PPS

**Back Panel**

**Ethernet**
- 10/100/1000 Base-T RJ45
**RF IN**
- GNSS antenna for L1 signals
**USB**
- USB-UART configuration

**Physical Specification**

**Dimension**
- 55 x 115 x 145 mm
**Color**
- Black (Metallic)

**Certification**

**Soldering**
- IPC-A-610 Rev E Class 2
**Others**
- ISO-9001, ISO-14001, RoHS

**Power Supply**

**Input**
- 12Vdc 1.5A

**Environmental Conditions**

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

**Software**

**OS**
- Linux (Kernel v3.19)

**Timing Protocols**
- WR-PTP (next IEEE-1588v2.1 High Accuracy profile)
- IEEE 1588 PTPv2, NTP, IRIG-B

**Other Protocols**
- SSH, SNMPv3

**User-Friendly Web Interface**

- White-box GPS receiver
- GPS working modes: Free Position, Fixed Position and Survey-in
- GPS timing integrity monitoring
- GPS raw data for the calculation of a precise antenna position for traceability to UTC(k) labs
- Full GPS and White Rabbit calibration for the provided antenna cable
- GPS timing error < 15 ns under normal ionospheric conditions (± 2 ns time-pulse jitter)
- Sub-nanosecond accurate time distribution for long distance networks
- White Rabbit, IEEE 1588v2 & NTP
- User-friendly web management interface

HIGHLIGHTS

- White-box GPS receiver
- GPS working modes: Free Position, Fixed Position and Survey-in
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