NTS-3000

NTP/PTP IEEE1588 Network Time Server

- PTP IEEE1588 Grandmaster
- NTP Time Server STRATUM1
- TIMESTAMPING Software

- REDUNDANCY HA* CARP*
- HOLDOVER TCXO* OCXO*
- GNSS Jamming* Detection
- GNSS Spoofing* Detection
- ATTACK Holdover Auto-ON
- NTP RFC 5905 - 5909
- SNTP RFC 4330, 2030
- DAYTIME* RFC867 RFC868
- PTP IEEE1588:2008
- LAN 2x 100Mbps SW-stamp
- REMOTE HTTP(S) TELNET, SSH
- SNMPv3 MIB2 RADIUS
- CRYPTO MD5 RSA DSA SSL
- REDUNDANT 2x ANT* GNSS

ADVANCED CYBER-SECURITY SYNC

safetime

* extra feature requiring additional hardware and firmware upgrade

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NTS-3000 delivers time directly to network using NTP, SNTP, PTP IEEE1588 protocols. The device is equipped with 2x LAN (LAN1, LAN2) supporting 100/10Mbps speed.

The NTS-3000 server is equipped with 2x redundant GNSS receiver inputs ANT1 & 2. Server can be synchronized to external cesium clocks using 1PPS input BNC 50 Ohm.

Device supports redundancy protocols: HA CARP

Redundant Synchronization Inputs

- max. 2x NTS-antenna ANT1/ANT2 with built-in GNSS recceiver and supporting: (Please ref. to NTS-antenna PDF)
  - GPS L1 (1575,42MHz)
  - GLONASS L1 (1598,06-1605,38MHz)
  - GALILEO* E1 (1575,42MHz)
  - BEIDOU* L1 (1561,09-1575,42MHz)
  - Dual Band* L1+L2 | L1+L5 multipath mitigation
- Remote NTP/PTP time servers
- PPS BNC (50 Ohm)

Note: All PPS & GNSS pulse accuracy < 5ns

I/O

- All LAN interfaces are IEEE 802.3 compatible
- 2x LAN Ethernet 100Base-T(RJ45) LAN1-2
- 2x USB 2.0 (for firmware upload)
- 2x Antenna (selectable IN/OUT, RJ45)
- 1x RS232C (D-SUB9)

Remote configuration

- SNMP (v1,2,3)
- MIB2
- RADIUS
- HTTP
- HTTPS
- SSH
- TELNET
- NTPQ/NTPDC

Holdover

- TCXO* low-noise clocking
- OCXO* backup clock OSC

Performance

- GNSS 1PPS-in @ 2-sigma/ < 5ns
- PTP master2slave sync (LAN3-4) < 25ns
- Network performance 9000 req/s
- Max. councurrent NTP clients 9.2 mln
- PTP max #SLAVE LAN3-4 32 (default)
- PTP max #SLAVE option: 128/256/450*

Time Accuracy & Time-Stamping

- GNSS receiver NTS-antenna pulse PPSinput: better than 5ns at 2-sigma
- GNSS receiver NTS-antenna pulse PPSinput: better than 15ns at 1-sigma
- Internal PPS pulse: better than 5ns
- LAN3-LAN4 harware time-stamping PTP/NTP better than 25ns
- LAN1-LAN2 software timestamping PTP/NTP better than 100us (IEC61850 NTP/PTP)

Mechanical/environmental

- Size: 484x 300x 44,4 mm (rack'19 1U)
- Operating temp: -55°C to +80°C (receiver)
- Operating temp: 0°C to +60°C (server)
- Storage temp: -55°C to +80°C

Power supply

Power: 110-230 VAC (1A), 50-60Hz
120-370 VDC (1A)
Telecom: 48VDC option* 20-70 VDC (2A)
Option: 2nd redundant* PWR-supply

Network Time Protocol NTP v2, v3, v4 LAN1-2:

- RFC1305
- RFC1119
- RFC5905
- RFC5906
- RFC5907
- RFC4330
- RFC2030

Simple Network Time Protocol SNTP v2, v3, v4 LAN1-2:

- RFC4330
- RFC2030

DAYTIME* Protocol

- RFC867
- RFC868

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* extra feature requiring additional hardware

** calibrated to metrology standard of Polish Office of Measures