TSN Time Sensitive Networking Time Server for Industry4.0

NTS-pico3

NTP/IEEE 1588 Miniature Time Server

- HARDWARE* TIME-STAMPING
- PTP IEEE1588
- gPTP TSN IEEE 802.1 AS
- NTP/SNTP
- GRANDMASTER & SLAVE
- Reference UTC from GNSS
- GNSS Reacquisition < 1s
- GNSS Hot Start (TTFF) < 3s
- GNSS Warm Start (TTFF) <25s
- GNSS Cold Start (TTFF) <25s
- TCXO holdover
- Holdover 1 hour* < 4ms
- Holdover 24 hour* < 100ms
- Linux & TCP/IP (IPv4/IPv6*)
- 100/10Mbps Ethernet LAN
- 1PPS precission time support
- NTP authentication
- MD5, RSA, DSA, SSL security
- HTTP, HTTPS, TELNET, SSH
- SYSLOG, SNMP (MIB-2)
- RS232/485/USB interface
- 30m (38dB) antenna included

ELPROMA
www.elpromatime.com

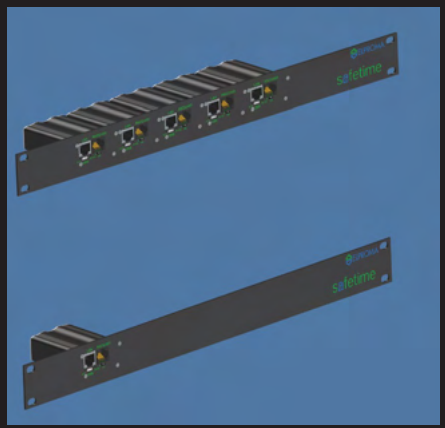
* extra feature requiring additional hardware and/or software firmware upgrade

1) NTS-pico3 (DIN-rail mount)

2) Accessories - Antenna 38db (30m)

3) Accessories - GPS Signal Splitter 1 to 6

4) Accessories - GPS Surge Arester



5) Accessories - Rack 19" pannel
Available for 1-6 NTS-pico3

Standard Produc includes:
1) NTS-pico3 NTP/PTP Time-Server w/ 100-250VAC Power Adapter
2) Accessories - Antena 38db gain w/ 30m coax cable

Extra Accessory Options:
3) Signal Splitter GPS 1 to 6
4) Surge/Overvoltage arestor for ANT
5) Rack"19 panel (1U) for mulitple NTS-pico

NTS-pico3 is 3rd generation PICO miniature time server from Elprom. It delivers UTC ref. time directly to network using NTP, PTP IEEE1588, gPTP (802.1AS) protocols. Standard version of product includes software time stamping, but a hardware (HW) stamping is available optionally too. The HW-stamping seriously improves accuracy of synchronization. The NTS-pico3 is equipped with single 100/10 Mbps. It supports both IPv4 and IPv6*. The time server has been designed for small industrial LAN. It has natural air cooling and it can operate 24/7 in taught environmental conditions. It is powered 9-30 VDC. The NTSpico3 time server supports crypto-authentication for NTP operations. Product at arrival is equipped with 38dB GNSS antenna and 30 meter coax cable SMA ended. Surge arrestor shall be purchased separately. A built-in GNSS satellite receiver includes TCXO oscillator for a short-time holdover. Server supports simultaneously GPS/ GLONASS / GALIELO*/ BEIDOU*. The NTS-pico3 has ultra fast Time To First Fix (TTFF) start-up supported by SBAS systems. Multiple PICO 3 can be mou ted together in a single rack"19 panel(1U).

GNSS Synchronization and SBAS support

- GPS L1 w/ AGPS (1575,42MHz)
- GLONASS L1 (1598,06-1605,38MHz)
- GALILEO* E1 (1575,42MHz)
- BEIDOU* L1 (1561,09-1575,42MHz)

- EGNOS
- WAAS
- GAGAN

Supported Time Protocols

- NTP v2, v3, v4 (RFC1305, RFC1119, RFC5905, RFC5906, RFC5907, RFC1769)
- PTP v2 IEEE1588-2008 (PTPv2), SNTP (RFC2030)
- gPTP 802.1AS TSN (Time Sensitive Networking)

I/O

- 1x LAN Ethernet 10/100 Base-T (RJ45)
- 1x SMA GNSS antenna
- 1x SMA 1PPS* output
- 1x RJ45 rs232C
- 1x RJ45 1PPS* input
- 1x Micro-USB 2.0

Hardware

- Heavy Duty Industrial Solution (metal housing)
- MTBF 50000hrs

Remote configuration

- SNMP
- MIB 2
- RADIUS
- HTTP
- HTTPS
- SSH
- TELNET*
- NTPQ/NTPDC

MultiSAT GNSS receiver & antenna:

- 32-channel (acquisition: -143dBm; reacquisition: -160dBm; tracking: -160dBm)
- GNSS active marine antenna, w/ 38dB amplifier and 30m H155 coax cable (SMA ended)
- Receiver accuracy RMS is better than 15 ns (nanoseconds)

Accuracy (better than)

GNSS Multi-SAT receiver to UTC (RMS)	15 [ns] (nanoseconds)
NTP client via public Internet	100 [ms] (miliseconds)
NTP client at LAN	500 [µs] (microseconds)
PTP software timestamping at LAN	800 [µs] (microseconds)
PTP hardware* timestamping at LAN	200 [ns] (nanoseconds)
OSC holdover* (1 hour)	4 [ms] (miliseconds)
OSC holdover* (24 hours)	100 [ms] (miliseconds)

Mechanical/environmental

- Size: 83 x 54 x 26mm
- Weight netto NTS-pico3 (only): 0.3kg
- Weight netto GNSS Antenna w/ 30m cable: 2.3kg
- Weight brutto BOX (NTS-pico3 & Antenna): 3.0kg
- Power: 9-30VDC (backup lithium* battery: 3V 620mAh)
- Operating temperature: -20ºC to +70ºC
- Storage temperature: -40ºC to +85ºC
- Humidity: up to 95%
- MTBF 50000hrs

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