

# NTS-pico3

## NTP/IEEE 1588 Miniature Time Server



- HARDWARE PTP STAMPING
- TIME SERVER NTP STRATUM-1
- GRANDMASTER PTP IEEE1588
- GNSS reference UTC time
- ULTRA HIGH accuracy of SYNC
- 1s GNSS Hot Start (TTFF)
- 25s GNSS Warm Start (TTFF)
- 30s GNSS Cold Start (TTFF)
- TCXO holdover for GNSS-less
- Holdover 1 hour < 4ms
- Holdover 24 hour < 100ms
- Linux & TCP/IP (IPv4/IPv6)
- 100/10Mbps Ethernet LAN
- 1PPS precision time support
- NTP authentication
- MD5, RSA, DSA, SSL security
- HTTP, HTTPS, TELNET, SSH
- SYSLOG, SNMP
- 100 Mbps Ethernet interface
- RS232/485/USB interface
- 30m (38dB) antenna included
- Works w/ any CLIENT software NTP, SNTP, PTP, CHRONY

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



**Time Server NTS-pico** delivers time directly to network using NTP and PTP protocols. It is equipped with single 100/10Mbps Ethernet port working with IPv4/IPv6. Server basis on Linux. Unit is very small and natural air cooling. It has been designed for small industrial networks and it can operate 24/7. It is powered in range 9-30VDC.

The NTS-pico is ready to use server. It is equipped with GNSS antenna and 30 meter coax cable (SMA ended). Marine antenna has built-in GPS signal amplifier and TCXO holdover oscillator for GNSS less operations. Server has multi-satellites receiver simultaneously supporting: GPS, GLONASS. It is GALILEO\*, BEIDOU\* ready. Server has very fast (less than 0.5ms +/- 1ppm) Time To First Fix TTFF synchronization startup. The receiver accuracy is better than 15ns (at 2 sigma).

Optionally NTS-pico is equipped with GSM modem for synchronization monitoring, remote configuration, firmware upgrade/downgrade support and alarm/event LOG transfer. Server supports cryptographic authentication.

Holdover mode ensure synchronization accuracy to be better than 4ms in first hour. After 24h the max. holdover error is not bigger than 100ms on server output.

### Synchronization

- GPS L1 (1575,42MHz) w/ AGPS & SBAS support
  - GLONASS L1 (1598,06-1605,38MHz)
  - GALILEO\* L1 (1575,42MHz)
  - BEIDOU\* L1 (1561,09-1575,42MHz)
- (all above with 0.5ms Time To First Fix startup +/- 1 ppm)

### Supported Time Protocols

- NTP v2, v3, v4 (RFC1305, RFC1119, RFC5905, RFC5906, RFC5907, RFC1769)
  - PTP v1, v2 IEEE1588-2008 (PTPv2), SNTP (RFC2030)
  - TSA\* RFC3161 (Time Stamping), Daytime RFC867\*, Time Protocol (RFC868\*)
- Note! Unit supports all NTP/PTP modes incl. Unicast, Broadcast and Multicast

### I/O

- 1x LAN Ethernet 10/100 Base-T (RJ45)
- 1x SMA GNSS for antenna
- 1x SMA GSM\* for antenna
- 1x RS232C (RJ45)
- 1x 1PPS IN (RJ45)\*
- 1x USB 2.0 (micro-USB)

**Hardware** • Heavy Duty Industrial Solution (metal housing) • MTBF 50000hrs

### Remote configuration

- SNMP MIB 2 • GSM • RADIUS • HTTP • HTTPS • SSH • TELNET • NTPQ/NTPDC IEC\*61850 (networking)

### 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

- GNSS MultiSAT receiver to UTC better than: 15 [ns] (nanosecond)
- NTP client via Public Internet better than: 100 [ms] (millisecond)
- NTP client at local LAN typically better than: 500 [µs] (microsecond)
- PTP (software stamping) better than: 800 [µs] (microsecond)
- OSC holdover ( 1 hour ) better than: 4 [ms] (milliseconds)
- OSC holdover (24 hours) better than: 100 [ms] (milliseconds)

### Mechanical/environmental

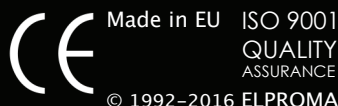
- Size: 80 x 60 x 34 mm Weight netto: 0.3kg Weight brutto: 0.5kg
- Power: 9-30VDC . Backup lithium battery: 3V 620mAh (incl.)
- Operating temperature: -20°C to +55°C
- Storage temperature: -40°C to +80°C
- Humidity: up to 95%

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38dB Gain Antenna w/ 30m coax incl.



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