

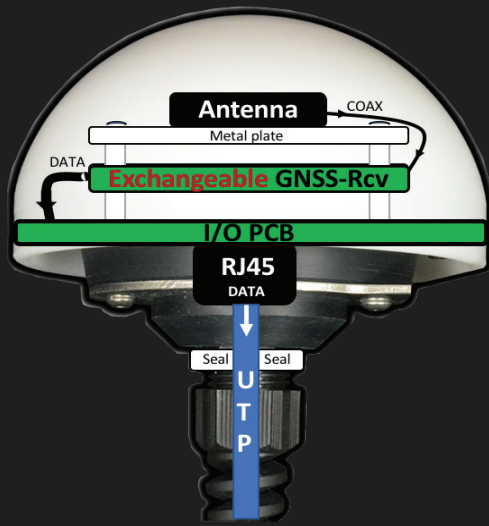
# NTS-antenna

## Smart Robust GNSS Synchronization

- REPLACEABLE GNSS MODULES
- STD. RS485 or White Rabbit\*
- CHANNELS 32-170
- SUPPORTED GNSS SYSTEMS
  - GPS
  - GLONASS
  - BEIDOU\*
  - GALILEO\*
  - IRNSS\*
  - IRIDIUM\*
- ACCURACY better 5ns @1 $\sigma$
- ACCURACY better 15ns @2 $\sigma$
- COLD START < 30 seconds
- WARM START < 30 seconds
- HOT START < 3 seconds
- GAIN automatic (26-40dB)
- CABLE UTP/STPAT cat 5+
- MAX. CABLE 700m (2300ft)
- TEMPERATURE -55C to +80C
- STD GNSS L1 1575,42MHz
- DUAL BAND L1+L2\* or L1+L5\*
- GNSS ANTI-JAMMING\*
- GNSS ANTI-SPOOFING\*
- FIBER OPTIC OPTION (FO-01)
- SURGE ARRESTOR OPTION\*
- IP65 (IP67\*) EN60529:2003

 **ELPROMA**  
**TIME SYSTEMS**

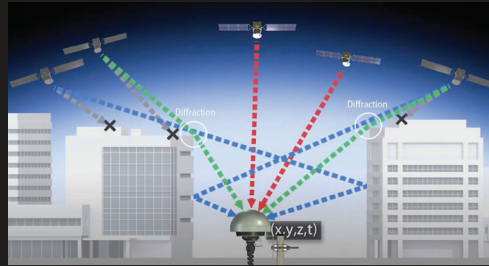
[www.elpromatime.com](http://www.elpromatime.com)



Single smart **NTS-antenna** is included to NTS-3000/4000/5000/LITE time server at arrival. Redundant **2nd antenna\*** is optional. It improves security and robustness of synchronization. Comparing to other products, the smart NTS-antenna has built-in modular GNSS receivers. Replaceable GNSS receiver can be supported by different CHIPS, from different vendors:



Replaceable GNSS receiver modules inside ensure state of the art technology on board. Moving GNSS receiver out of time server makes NTS-antenna solution flexible and independent on GrandMaster architecture. Each time, there is requirement for updating the GNSS receiver board can be replaced.



Simple replacement of GNSS receivers has serious security implications. It makes product maintenance and support extremely easy. You can start with a standard L1 GPS receiver, evolving in time to complex dual frequency L1+L2 (L1+L5) GNSS receivers, supporting 1, 2 .. any subset of GNSS constellation: GPS, GALILEO, GLONASS, BEIDOU, IRNSS etc.

Some of GNSS receivers offers extra ordinary facility of **anti-jamming/spoofing** for GPS L1. There is also special urban GNSS receiver with **multi-path mitigation system\*** available too. It is new FURUNO chip and it prevents using false (reflected) satellite signals inside urban.

Finally, the replaceable GNSS receivers are best solution quickly solving unexpected problems like GPS week number roll over or UTC leap second and many others too.

Replaceable GNSS receivers, perhaps are the most effective solution when geopolitics is a risk for keeping synchronization stability. The NTS-antenna automatically sense and adapt itself to GNSS signal strength, acting equivalent to 26-40dB gain std. antennas. It makes smart NTS-antenna possible to survive in most difficult weather conditions. Where competitor product stops working, the ELPROMA smart NTS-antenna is operating brithly normally.

**Extra long cable connection up to 700m.** Single NTS-antenna can be located max. 700m (2300ft) from NTS time server using std. UTP cat.5+ cable. Distance extends up to 1.4km (4600ft) using STP cat5. Connectivity is done without additional expensive signal amplifiers. **Simple, easy and safe installation.** In comparison to a rigid coaxial cable the UTP/STP cable can be curved and easily passed through holes in the wall. In the event of a break, cables can be reconnected and soldered together too. Such solution is not allowed for coax cables.

### Supported GNSS systems:

(TTFF Time To First Fix)

- |                  |                              |                 |       |
|------------------|------------------------------|-----------------|-------|
| • GPS (std.)     | L1 (1575,42MHz) C/A code     | • reacquisition | < 1s  |
| • GLONASS (std.) | L1 (1598,06-1605,38MHz) CT   | • hot start     | < 3s  |
| • GALILEO*       | L1 (1575,42MHz)              | • warm start    | < 30s |
| • BEIDOU*        | L1 (1561,09-1575,42MHz)      | • cold start    | < 30s |
|                  | ... all with SBAS L1 support |                 |       |

Interesting in other systems ?  
Please contact our sales.

- Built-in internal TCXO Clock 26MHz
- RAIM Support (Timing modules in use only)
- 32-170\* multi-channel (depends on used internal GNSS chip/module on board)
- 700m [2300ft] UTP cat. 5 max. to 1.4km [4500ft] STP cat 5 (no need to use amplifiers)
- RS485 (std) or Fiber Optic\* communication using FO-01\*

### Time Accuracy (PPS Stability)

### Protocols

- Better than 5 nanoseconds (at 1 Sigma)
- Better than 15 nanoseconds (at 2 Sigma)

- NMEA 0183 (IEC 1162)
- BINR RTCM SC 104

### Sensitivity

### Mechanical/Environmental

- Tracking -160 dBm
- Cold Start -143 dBm

- Dome size: 109mm x 61 mm
- Power: 24VDC (max 0.5A)
- Operating temp: -55°C + 80°C
- Humidity: up to 99%
- IP65 EN 60529:2003 (option IP67\*)
- MTBF: 391000 hours

### Contact

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