

GP-Probe TGE2

Product information and specifications
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GP-Probe TGE2 Time Guard Edition 2

Three-channel probe for GNSS signal quality measurements and GNSS threat detection

The GP-Probe TGE2 is designed to protect time servers (PNT) against a GNSS threat such as cutting-edge intentional spoofing, jamming, ionospheric scintillation, system errors, for example. An embedded PPS phase error measurement function enables the reliable monitoring of the time server's health. The GP-Probe, in conjunction with the GP-Cloud, allows developing a robust and resilient clock synchronization system for critical infrastructure.

The GP-Probe measures GNSS satellite signals on 3 channels and transmits raw data to the GP-Cloud for real-time processing.

- Three GNSS Channels
- PPS Offset Measurement
- Dual power module: 110/220 AC; 18 – 75 DC
- Optional GP-Blocker
- Real-time RF signal analyzer
- 19-inch rack half-size form factor
- Real-time operating system
- GPS, GLONASS, BeiDou, Galileo



Key Features

- Three RF channels for intentional, synchronous, multiple-TX GNSS spoofing detection.
- 60 MHz real-time RF signal analyzer for spectrum monitoring, interference classification and localization with TDOA.
- GNSS signal quality measurements: pseudorange errors, carrier phase, SNR, etc.
- Support GNSS: GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1I, Galileo E1B/C, SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN.
- The embedded real-time operating system FreeRTOS guarantees high availability and cybersecurity.
- PPS input for the external time server health checking. The GP-Probe measures the time offset between internal and external PPS. PPS input supports low-voltage signals.
- Optional GP-Blocker with an embedded GNSS jammer suppresses the most powerful counterfeit RF signals.

- Secure firmware auto-update engine.
- Embedded self-diagnostic and dispatching all error messages to the cloud.
- PPS output for synchronization of external equipment.
- Optional RF power divider - GP-Divider enables to utilize one GNSS antenna for two receivers. The GP-Divider supports the GNSS antenna preamplifier current simulation.
- Form factor: 19-inch rack, half-size.
- Dual power module: 110 – 220 AC, 18 – 75 DC.
- Active/passive GNSS antenna support.
- 4G modem and 100BASE-TX Ethernet for data transferring to the GP-Cloud.
- Web interface for configuration.
- External devices can be controlled via remote interfaces: RS-232/RS-485/RS-422 with embedded Lua scripting language. GP-Probe can send commands to the connected time server for switching to holdover, etc. This facilitates integration with existing client infrastructure.

