GTR52

TIME AND FREQUENCY TRANSFER GNSS RECEIVER

The GTR52 is a multisystem/multifrequency GNSS (Global Navigation Satellite System) receiver intended for time & frequency transfer. The receiver supports both code and phase measurements. Thanks to large receiver bandwidth and advanced signal processing, even the code measurements provide sub-nanosecond accuracy. Critical elements are placed in a thermostat box. The receiver can be directly connected to a local net/internet which allows remote control and output data download and upload.

Operation

The operation is fully automatic. After the very first configuration, the receiver continuously collects the measurement data. Output files in several standard/proprietary formats can be generated from the collected data. The data processing can be started manually or by a scheduler which enables routine processing at given times (daily, weekly, ...). The resulting data files can be downloaded from the receiver, automatically uploaded to a server or automatically saved to an external disk. A brief message is sent to an e-mail address after the processing is finished.
The output measurement data are referenced to the input 1PPS time mark.

Remote control

The receiver can be controlled from any computer on the net. The User Interface has the form of a web page which can be accessed using a web browser. It enables control of the receiver, monitoring of the receiver operation, and download of the measurement data. Authorization is required to access the receiver.

Diagnostic system

The diagnostic system indicates several dozens of operational events and states. The diagnostic messages can be recorded in the log, displayed in the User Interface, and sent to an e-mail address.

Monitoring with graphical representation

History of operational parameters (time difference, temperature, satellite elevation/azimuth, …) is displayed in graphs in the User Interface.

Technical parameters

Time Reference Input:

Input signal: ..... 1PPS (leading edge)
Input impedance: ..... 50 Ω
Trigger level: ..... 0 - 2 V adjustable
Max level: ..... 5.5 V / 50 Ω
Min level: ..... -0.1 V / 50 Ω

The 1PPS mark must be coherent with the frequency reference at the 10 MHz input.

Frequency Reference Input:

Input signal: ..... 10 MHz
Input impedance: ..... 50 Ω
Max level: ..... 3 Vpp / 50 Ω
Min level: ..... 0.5 Vpp / 50 Ω

Precision:

Code measurement: ..... < 0.5 ns rms (CGGTTS data, short-baseline common view, GPS, GALILEO)
Phase measurement: ..... < 30 ps rms (short-baseline common view)

Output Data Formats:

- CGGTTS (all tracks / all satellites in view, MSIO iono-delay) versions 01 and 02
- RINEX (observation / navigation files) versions 2.10 (GPS only), 2.11 and 3.01
- RAW (proprietary format, all signals, both code and carrier phase data)
- EL_MASK (CNR analysis and search for obstacles)
- STAT (statistics of collected measurement data)
- L3P_30s (standard P3 data, 30 s sampling period)
- L3P_1s (P3 data, 1 s sampling period)
- BETA (proprietary format similar to planned CGGTTS V03, GPS, GALILEO)
- 1PPS_DIF (proprietary format, 1PPS_IN - 1PPS_INT difference)

GNSS Receiver:

Supported signals:

- GPS: L1C/A , L1P, L2C, L2P, L5
- GALILEO: E1, E5a
- SBAS: L1, L5

Type of measurement: ..... code / carrier phase referenced to input 1PPS
Receiver bandwidth: ..... 24 MHz
Number of satellites: ..... all in view

Time Interval Counter:

Precision: ..... < 15 ps rms

Thermostat: ..... based on thermoelectric modules

Dimensions: ..... 19"/2U standard chassis

Power Supply: ..... 100 - 240 V AC / 50 - 60 Hz

Operating Temperature: ..... 0 to 50ºC

Antenna:

Antenna supply: ..... 5 V / up to 90 mA (plus on inner contact)
Recommended antenna: ..... Novatel GPS-702-GG

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