

GTR55 - Time and frequency transfer GNSS receiver



Type designation: **GTR55**

PN (RN): **2065.100.30**

The GTR55 is a multisystem/multifrequency GNSS (Global Navigation Satellite System) receiver intended for time and frequency transfer. The receiver supports both code and carrier phase measurements. Thanks to large receiver bandwidth and advanced signal processing, even the code measurements provide sub-nanosecond accuracy. The built-in calibrator measures continuously the internal delays of all supported signals ensuring high long-term stability. The receiver can be directly connected to a local net or internet which allows remote control and output data download and upload.

Description

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 can be referenced to the input 1PPS and/or to the output 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 V-2.5 V adjustable
Max level	5.5 V/50 Ω
Min level	-0.1 V/50 Ω

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

TIME REFERENCE OUTPUT

Output signal	1PPS (leading edge)
Low level	<0.05 V/50 Ω
High level	>1.8 V/50 Ω

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	< 0.3 ns RMS (CGGTTS data, short-baseline common view)
Phase measurement	< 15 ps RMS (short-baseline common view)

OUTPUT DATA FORMATS

CGGTTS	all tracks/all satellites in view, MSIO iono-delay, versions 01, 02, 2E
RINEX	observation/navigation files, versions 2.10 (GPS only), 2.11, 3.01 and 3.03
RAW	proprietary format, all signals, both code and carrier phase data, GPS, GLONASS, GALILEO, BeiDou, NAVIC, SBAS
L3P_30s	standard P3 data, 30 s sampling period, version 02, 2E
L3P_1s	P3 data, 1 s sampling period, version 02, 2E
ESA	P3 data, 5 min
1PPS_DIF	proprietary format, REF_IN - REF_OUT difference
EL_MASK	CNR analysis and search for obstacles
STAT	statistics of collected measurement data

The output measurement data can be referenced to the input 1PPS and/or to the output 1PPS time reference.

GNSS RECEIVER

Supported signals

GPS: L1C/A, L1C, L1P, L2C, L2P, L5

GLONASS: L10F, L1SF, L20F, L2SF, L30C

GALILEO: E1, E5a, E5b, E5 AltBOC, E6

BeiDou: B1, B2, B3, BeiDou-3 ready

NAVIC: L5

SBAS: L1, L5

Type of measurement code/carrier phase
referenced to input/
output time reference

Receiver bandwidth up to 60 MHz

Number of satellites all in view

**Built-in calibrator measures
continuously the internal delays of
all supported signals including
GLONASS inter-channel biases
ensuring low temperature
dependence and high long-term
stability.**

Dimensions 19"/2U standard chassis

Power supply 100 V-240 V AC/50
Hz-60 Hz

Operating temperature 0 °C to +50 °C

ANTENNA

Antenna supply 5 V/up to 90 mA (plus
on inner contact)

Recommended antenna Novatel GNSS-850

Documentation

GTR55 operating instructions 2065.010.32

Set

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GTR55	2065.000.30	Time and frequency transfer GNSS receiver set