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RD/GPS: Redundant GPS-synchronized Time and Frequency Reference in 1U Housing

The Meinberg RD/GPS is a fully redundant GPS-synchronized time and frequency reference for demanding applications like Digital Broadcasting and Telecommunication Networks. The 1U rackmount chassis integrates two Meinberg GPS Receivers (each with its own oscillator), dual power supplies and an automatic switchover logic and provides frequency and pulse outputs.

Key Features

- Integrated event log storing the last 80 alarm events
- RS-232 serial interface providing TOD strings in various formats and providing firmware update, local control and monitoring functionality
- Redundant power supplies (100 - 240 V AC, 50 - 60Hz / 100-200 V DC)
- 8x PPS PulsePerSecond outputs
- 2x Meinberg GPS Antenna System - with integrated downconverter for cable runs up to 700m without amplification and reliable robust signal reception characteristics
- 8x 10MHz TTL or low phase noise sinewave outputs
- Alarm relay output, changeover contact
- 2x independant high precision GPS clocks, each with its own ultra stable OCXO-HQ oscillator, providing excellent holdover performance and signal quality

Description

The integrated network management processor supports remote control and monitoring. Two serial ports offer local control and monitoring capabilities and can be used for generating serial time strings in various formats to feed TOD information into a wide range of devices.

The Meinberg RSC switchover logic ensures that the time and frequency synchronization signal generation from the two GPS receivers is automatically switched to the output connectors based on the synchronization state of the receivers. A manual override is possible both locally by using the front panel controls and remotely using the integrated network control and monitoring processor.

Characteristics

Receiver Type [1][Meinberg GPS C/A-Code Receiver](#)

Status Indicators

- * LED LOCK
shows that the calculation of the position has been achieved after reset
- * LED FAIL
shows that the internal timing has not been synchronized or that a system error occurred
- * LED CLOCK 1 / CLOCK 2
shows the current switching state of the board
- * LED REMOTE
indicates remote controlled operation
- * LED POWER 1 / POWER 2
shows the current status of the power supplies

Type of Antenna Included [2][GPSANTv2 antenna](#) with innovative downconverter technology that allows transmission routes of up to 300 m using RG58 cable, 700 m using RG213 cable, and 1100 m using H2010 Ultraflex cable

Control Elements The configuration of the device is done by using the monitoring software and the network interface in the front panel.

Synchronization Time Max. 1 minute in normal operating conditions
Max. 25 minutes (average 12 minutes) upon first initialization or in the absence of saved satellite data

Frequency Outputs	10 MHz sine 1 Vpp into 50 Ohm or 10 MHz TTL 2.5 Vpp into 50 Ohm
Accuracy of Frequency Outputs	[3] see oscillator specification
Pulse Outputs	Change of second (P_SEC, TTL level)
Accuracy of Pulse Outputs	<ul style="list-style-type: none"> * Better than +-50 nsec after synchronization and 20 minutes of operation * Better than +-2usec in the first 20 minutes after synchronization
Interface	Two independent serial RS-232 interfaces, configurable via GPS Monitor Software
Serial Time String Output	Baud Rates: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Framing: 7E1, 7E2, 7N2, 7O1, 7O2, 8E1, 8N1, 8N2, 8O1 Time String Formats: [4] Meinberg Standard Time String , SAT, Uni Erlangen (NTP), SPA, Sysplex, RACAL, NMEA0183 (RMC,GGA,ZDA), Meinberg GPS, COMPUTIME, ION, [5] Capture String
Antenna Connector	Female BNC antenna input connectors
Backup Battery Type	Upon loss of power supply to card, the hardware clock runs independently using the on-board quartz oscillator. Almanac data remains stored in battery-backed RAM Life time of lithium battery min. 10 years
Firmware	Flash-EPROM, bootstrap loader
Form Factor	19" aluminium case (1U) Schroff Multipac
Physical Dimensions	485mm x 45mm x 305mm
IP Rating	IP20
Supported Temperature	Operational: 0 - 50 °C (32 - 122 °F) Storage: -20 - 70 °C (-4 - 158 °F)
Supported Humidity	Max. 85 % (non-condensing) at 40 °C
Contents of Shipment	The package includes two Meinberg GPS Antenna/Converter Units in waterproof housing with coax cable, mounting kit and two cables for mains power line.
Warranty	Three-year warranty

Manual

The English manual is available as a PDF file: [6][Download \(PDF\)](#)

Links:

- [1] <https://www.meinbergglobal.com/english/products/>
- [2] <https://www.meinbergglobal.com/english/products/gps-antenna-converter.htm>
- [3] <https://www.meinbergglobal.com/english/specs/gpsopt.htm>
- [4] <https://www.meinbergglobal.com/english/specs/timestr.htm>
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