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GPS-RDMP: Redundant GPS-synchronized Time and Frequency Reference

The Meinberg GPS-RDMP 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 VAC, 50 - 60Hz)
- 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 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 SCU 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

Type of receiver	6 channel GPS C/A-code receiver
Type of antenna	Remote powered [1]GPS antenna/converter unit, up to 300m distance to antenna with RG58 and up to 700m distance with RG213 cable
Control elements	The configuration of the device is done by using the monitoring software and the network interface in the front panel.
Status info	* 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
Synchronization time	Max. 1 minute in normal operation mode, approx. 12 minutes after a cold start (discharged buffer battery)
Frequency outputs	10 MHz sine 1 Vpp into 50 Ohm

Accuracy of frequency outputs	[2]see oscillator specification
Pulse outputs	Change of second (P_SEC, TTL level)
Accuracy of pulse outputs	* Better than +-100 nsec after synchronization and 20 minutes of operation * Better than +-2usec in the first 20 minutes after synchronization
Interface	Two independent serial RS232-interfaces, configurable via GPS Monitor Software
Data format of interfaces	Baud rate: 300, 600, 1200, 2400, 4800, 9600, 19200 Baud Data format: 7N2, 7E1, 7E2, 8E1, 8N1, 8N2 Time telegram: [3]Meinberg Standard-Telegram , SAT, Uni Erlangen (NTP), SPA, Sysplex, RACAL, NMEA0183 (RMC,GGA,ZDA), Meinberg GPS, COMPUTIME, ION oder [4]Capture-Telegramm
Physical dimensions	485mm x 45mm x 305mm
Antenna connector	Female BNC antenna input connectors
Backup battery type	When main power supply fails, hardware clock runs free on quartz basis, almanac data is stored in RAM Life time of lithium battery min. 10 years
Firmware	Flash-EPROM, bootstrap loader
Form Factor	19'' aluminium case (1U) Schroff Multipac
Protection	IP20
Ambient temperature	0 ... 50°C / 32 ... 122°F
Humidity	Max. 85%
Scope of supply	The package includes two Meinberg GPS Antenna/Converter Units in waterproof housing with coax cable, mounting kit, two cables for mains power line and software and documentation on USB memory stick.
Warranty	Two-Year Warranty

Manual

The english manual is available as a PDF file: [5]Download (PDF)

Links:

[1] http://www.meinbergglobal.com/english/products/gps-antenna-converter.htm
[2] http://www.meinberg.de/english/specs/gpsopt.htm
[3] http://www.meinberg.de/english/specs/timestr.htm
[4] http://www.meinberg.de/english/specs/capstr.htm
[5] http://www.meinberg.de/download/docs/manuals/english/gps-rdmp.pdf