



Meinberg Radio Clocks

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GPS161: GPS Satellite Receiver OEM Board

Low cost OEM module for synchronisation of telecom networks, transmitters/base stations (GSM/CDMA/UMTS/DAB/DVB/TETRA/WIMAX) or laboratory equipment

Important Note

This product is no longer available and may have been replaced by a newer product. We will, of course, continue to provide support for units that have already been purchased and are still in use. Please contact our [1][Sales Department](#) for further details.

Key Features

- Various oscillator options
- Pulses per second
- 2 RS-232 interfaces
- Status outputs
- Included GPSANTv2 antenna uses downconverter technology to enable long transmission routes of up to 1100 m (1200 yards)
- DC-insulated antenna circuit
- Remote control and monitoring with included PC-software (COM0)
- Standard frequency outputs sinewave and TTL
- Flash-EPROM with bootstrap loader

Description

The module GPS161 generates GPS disciplined standard frequencies and pulses per second and is the ideal solution for synchronization tasks therefore. To realize various requirements concerning the accuracy of the frequency outputs, the module GPS161 may be equipped with different master oscillators (see table oscillator list, except Rubidium). The board provides two RS232 interfaces and status outputs. The compact size of the board GPS161 allows easy integration into the user's application.

Characteristics

Receiver Type	6 channel GPS C/A-code receiver
Status Indicators	Two TTL-outputs (Lock and Fail) for handing-over the status of the receiver
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
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: TTL into 50 ohm and sinewave 0.6 Vrms into 50 ohm Phase-locked to pulse per second (PPS) with option OCXO MQ or OCXO HQ
Pulse Outputs	High and low active pulses per second (PPS), TTL into 50 ohm, pulse duration 1 msec
Accuracy of Pulse Outputs	$< \pm 250\text{nsec}$ (TCXO / OCXO LQ), $< \pm 100\text{nsec}$ (OCXO MQ / OCXO HQ)
Interface	Two independent serial RS232 interfaces
Serial Time String Output	Baudrate: 300 to 19200 baud Framing: 7N2, 7E1, 7E2, 8E1, 8N1, 8N2 Time String: Meinberg Standard, Meinberg GPS, SAT, Uni Erlangen (NTP), SPA, NMEA0183 (RMC), Computime
Electrical Connectors	Two row 26-pole (2 x 13) contact strip
Antenna Connector	BNC connector
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
Operating Voltage	VCC (main power supply): +5 V VDD (oscillator power supply): +5 V
Firmware	Flash-EPROM, bootstrap loader

Current Draw	VCC: 560 mA VDD: depending on oscillator option
Physical Dimensions	80mm x 120mm x 17,5mm
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
Options	Different oscillators available, look at [3] oscillator options Other frequency outputs than 10 MHz
RoHS Status of Product	This product is fully RoHS-compliant.
WEEE Status of Product	This product is handled as a B2B (Business to Business) category product. To ensure that the product is disposed of in a WEEE-compliant fashion, it can be returned to the manufacturer. Any transportation expenses for returning this product (at end-of-life) must be covered by the end user, while Meinberg will bear the costs for the waste disposal itself.

Manual

The English manual is available as a PDF file: [4][Download \(PDF\)](#)

Links:

[1] <mailto:sales@meinberg.de>

[2] <https://www.meinbergglobal.com/english/products/gps-antenna-converter.htm>

[3] <https://www.meinbergglobal.com/english/products/specs/gpsopt.htm>

[4] <https://www.meinbergglobal.com/download/docs/manuals/english/gps161.pdf>