GPS/SV: GPS Satellite Receiver (Eurocard)

The variety of inputs/outputs allows the use for various synchronisation tasks and the measurement of asynchronous time events

Key Features

- Pulses per second and per minute
- 2 time trigger inputs
- Alarm output
- Optional DDS frequency synthesizer
- DCF77-simulation
- Included GPSANTv2 antenna uses downconverter technology to enable long transmission routes of up to 1100 m (1200 yards)
- DC-insulated antenna circuit
- Standard frequency outputs
- Flash-EPROM with bootstrap loader
- Optional up to 4 serial ports up to 4 programmable switching outputs timecode generator (IRIG-B, AFNOR)
- Including GPS antenna, 20m standard cable and manual on USB key

Description

The frequency locking of the master oscillator to the GPS-system enables the module GPS/SV to generate fixed and optionally programmable standard frequencies with high accuracy and stability. Various oscillator options allow the cost efficient implementation of different requirements concerning the accurracy of the outputs.

The pulse generator of GPS/SV generates pulses per second and per minute. As an option four programmable outputs are available. The pulses are synchronised to UTC-second.

Up to four serial interfaces are available for sending timestrings. These ASCII-telegrams include information regarding time, date and status of the GPS-receiver.

The module provides two inputs for measurement of asynchronous time events. These capture events can be read via a serial interface.

The parameter setting of the module is done by a monitor software.

Characteristics

Receiver Type	12 channel GPS C/A-code receiver
Type of Antenna	Included [1]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
Status Info	Four LED indicators for initialisiation phase, successful positioning, antenna faulty and time error
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, 1 MHz, 100 kHz (TTL level) Accuracy: ±5·10E-9 (timebase TCXO), GPS-synchronous for more than 20 minutes Different oscillators available, look at [2]oscillator options
Pulse Outputs	Pulse per second (PPS) and pulse per minute (PPM). TTL level, pulse width: 200 msec
Accuracy of Pulse Outputs	Depends on oscillator option: < ±50ns (OCXO SQ, OCXO MQ, OCXO HQ, OCXO DHQ, Rubidium)
Interface	Two independent serial RS-232-interfaces, menu configurable
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: [3]Meinberg Standard Time String , SAT, Uni Erlangen (NTP), SPA, Sysplex, RACAL, NMEA0183 (RMC,GGA,ZDA), Meinberg GPS, COMPUTIME, ION, [4]Capture String

DCF77 emulation	DCF77-emulation, TTL-level
Switch outputs	**Optional:** Four TTL outputs can configured independently for the following modes: - free programmable cyclic or fixed impulses - timecode - timer mode; three 'ON'- and three 'OFF'-states can be setup per day The switch states can be inverted for all three outputs, the impulse lengths are configurable in 10msec steps in a range from 10msec to 10sec. The impulse output can be configured for all channels together to 'always' or 'ifsync'.
Supported Timecode Formats	**IRIG B002:** 100pps, DCLS signal, no carrier, BCD time-of-year **IRIG B122:** 100pps, AM sine wave signal, 1 kHz carrier, BCD time-of-year **IRIG B003:** 100pps, DCLS signal, no carrier, BCD time-of-year, SBS time-of-day **IRIG B123:** 100pps, AM sine wave signal, 1kHz carrier, BCD time-of-year, SBS time-of-day **IRIG B006:** 100 pps, DCLS Signal, no carrier, BCD time-of-year, year **IRIG B126:** 100 pps, AM sine wave signal, 1 kHz carrier frequency, BCD time-of-year, Year **IRIG B007:** 100 pps, DCLS Signal, no carrier, BCD time-of-year, year, SBS time-of-day **IRIG B127:** 100 pps, AM sine wave signal, 1 kHz carrier frequency, BCD time-of-year, year, SBS time-of-day **IEEE1344:** Code according to IEEE1344-1995, 100pps, AM sine-wave signal, 1kHz carrier, BCD time-of-year, SBS time-of-day, IEEE1344 expansion for date, time zone, daylight saving and leap second in Control Functions segment **C37.118:** Like IEEE1344 - with inverted sign bit for UTC offset **AFNOR:** Code according to NFS-87500, 100pps, AM sine-wave signal, 1kHz carrier, BCD time-of-year, complete date, SBS time-of-day
Time-Trigger inputs	Resolution: 100 nsec, triggered by falling TTL slope Time of trigger event readable via RS232-interface
Alarm output	Synchronous state of the module, TTL high level if synchronous
Dimensions of the front panel	8HP/3U (40mm x 128mm) Option: 4HP/3U (20mm x 128mm)
Electrical Connectors	96-pin DIN 41612 connector
Antenna Connector	SMB-Subminiature-coaxial-connector Option: BNC-coaxial-connector
Backup Battery Type	**CR2032 (lithium button cell)** In the event of loss of power to the main system, this battery powers the real-time clock and also ensures that GNSS almanac data is properly buffered in RAM. Lifetime of lithium battery: Min. 10 years
Cable Type	Coaxial cable RG58 indoor or outdoor usage (SMB-, N-Norm-connector)
Operating Voltage	+5 V DC

Firmware	Flash-EPROM, bootstrap loader
Current Draw	+5V 1.1 A to 1.4 A (depending on oscillator type)
Board type	Eurocard
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
Warranty	Three-year warranty
Options	Synthesizer 1/8 Hz up to 10 MHz (TTL level, sine wave 1.5Veff, open drain) Optional up to 4 serial interfaces, 3 programmable TTL outputs and timecode generator (IRIG-B, AFNOR)
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: [5]Download (PDF)

Links:

[1] https://www.meinbergglobal.com/english/products/gps-antenna-converter.htm
[2] https://www.meinbergglobal.com/english/products/specs/gpsopt.htm
[3] https://www.meinbergglobal.com/english/specs/timestr.htm
[4] https://www.meinbergglobal.com/english/specs/capstr.htm
[5] https://www.meinbergglobal.com/download/docs/manuals/english/gps180sv.pdf