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GP111- Smart GNSS Protector Data Sheet

The GP111- Smart GPS Protector (Fig.1.) is an interface box which allows the user to collect GNSS alongside wireless seismic data by using systems such as the SmartGPS-3TP and a Geode seismograph, via remote triggering.

This digital interface box enables the user to aquire, monitor and retrieve GNSS and seismic data at a 1pps pulse rate using the RS422 serial port. The seismic data acquisition can be triggered using the interface box which uses a master clock signal from the GPS receiver and the RS-232 serial port output; all data can be exported in ASCII format.

The SmartGPS-3TP GNSS receiver is connected to the GP111 interface box via the RS422 serial port and 200m cable. This is an industrial standard stationary receiver which collects NMEA string, position and timing data, along with UBX binary packets with raw satellite data. The receiver has two differential ports which are configured for polarity, length and repetition rate, which allows accurate timing.

When working in remote, temperate locations where the weather is unstable, lightning strikes may occur. these strikes disrupt the normal clocks of most GPS systems, however the SmartGPS3-TP contains ports which are lightning protected [IEC 61000-6-2; IEC 6000-4-5 Standards]. Once the GP111 is connected to the GNSS receiver and the box is connected to the earth “grounded”, the lightning protection can be enabled, a vital attribute for most field applications.

The seismic and GPS data can be read and viewed using a laptop which is connected via serial and ethernet cable. The GNSS data can be further evaluated and visualised using the Ucenter visualisation tool which has the following features:

- Can support and communicate with receivers using UXB or NMEA standard protocol
- Presents and monitors all GNSS data aspects (position, velocity, time etc) , which can also be used to analyse performance issues.
- All processed data can be exported in ASCII format
- Photographic data can be stored, datafiles can be exported to google earth/maps
- NTRIP support

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Fig.1. Image of the SmartGPS-3TP and the Geomatrix GP111 Smart GPS protecto, connected via the 200m cable.

Technical Specifications

SmartGPS-3TP Supply Voltage:	50 VDC
Storage Temperature/Operating Temperature:	-40 to 105 degrees Celsius / -40 to 85 degrees celcius
Maximum voltages at RS-422:	-7.5 to 12.5 VDC
Lightning Protection:	IEC 61000-6-2(2.3)/ IEC 61000-4-5

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Reciever Type:	u-box LEA-6H (optional LEA-6T) 50-channel L1 frequency (1575 MHz) and SBAS (WAAS,EGNOS)
Current Consumption and maximum fixed rate position:	40mA/12V ; 2 Hz
Protocols:	NMEA, UBX binary and RTCM
Time accuracy:	30ns RMS
SmartGPS Dimensions:	55mm x 180mm 3.8kg
GP111 Power Source:	12 VDC

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