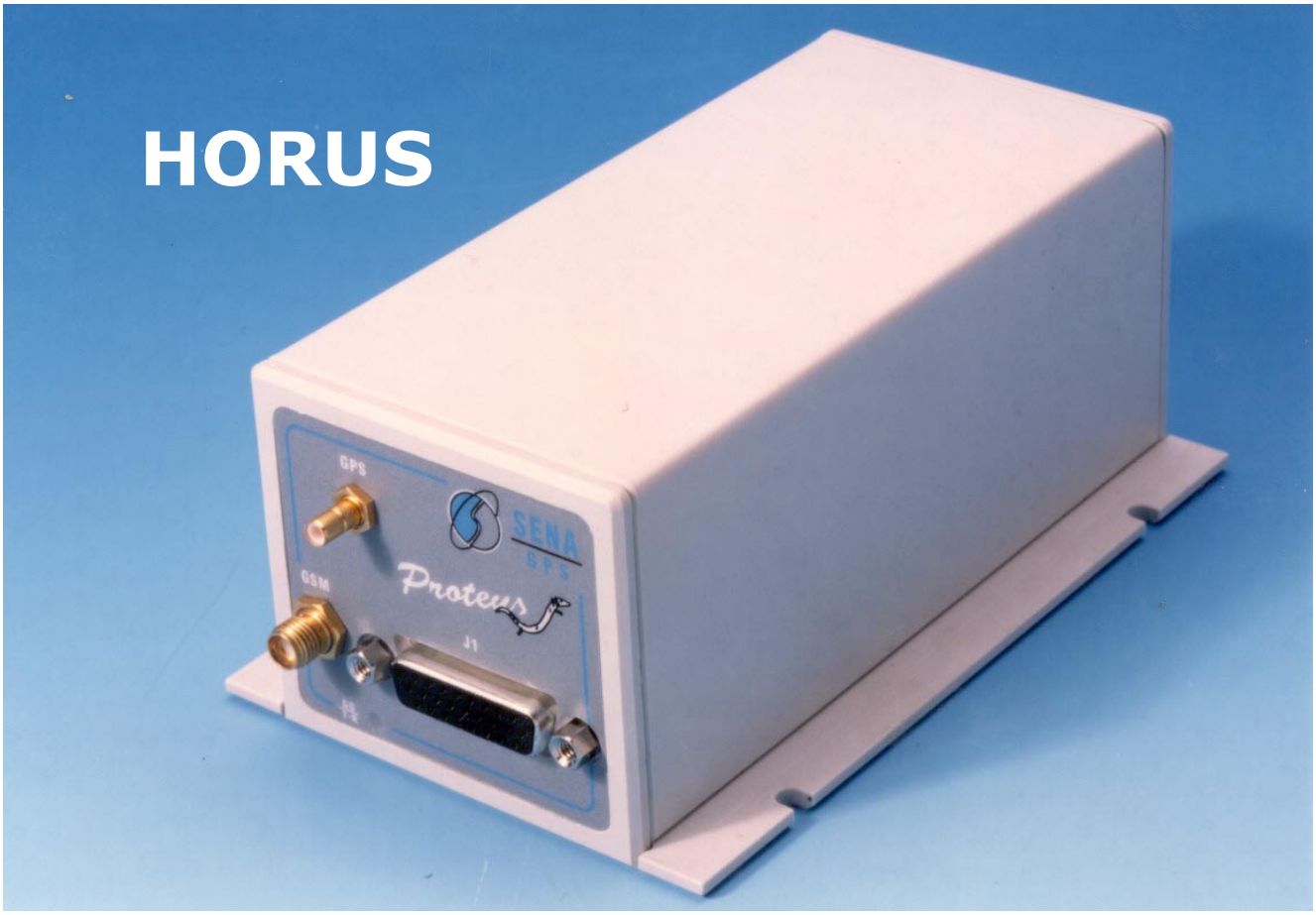
GPS POSITIONING DEVICE



The GPS Positioning Device is a product for the location and follow-up of mobile units from a remote control centre, allowing for the exact location of mobile units, which enables their times, tasks and services to be optimised.

The equipment is based on the GPS receiver by SENA GPS that combines the 12-channel GPS receiver navigation software, the communications software and the user software in a single processor.

The GPS Positioning Device is optimised for use with fleet management applications and includes the necessary interfaces for communication with the external world: Terminals, printers, sensors, Radio communication terminals and Radio Trunking. The **HORUS** version includes an internal GSM communication modem.

It is prepared for working in direct differential GPS mode, receiving corrections in RTCM format and in reverse differential mode; to do so it transmits the raw data for the satellites to the base, for the position to be corrected at the base.

Positions may be sent either when requested, cyclically, or when programmed events and alarm situations arise.

The analysis and cartographical display of the information at the Control Centre is carried out by the **SLAVplus** program, that allows for the viewing, management and analysis of the data received from all the mobiles, in real time, together with the data that has been recorded on the mobiles and which can be downloaded for processing.

This information provides important advantages for fleet management, improving the times assigned to a specific service, shortening the response and decision time, control of the assigned resources or the analysis of alternative routes.

INTERFACE

Discreet Inputs:	maximum 10.
Analog Inputs:	maximum 2.
Discreet outputs:	maximum 5.
Serial Ports	maximum 3.

FUNCTIONS

Position Report

Formats: LLA, UTM, RAW.

Reasons for transmission:

On request.
Auto-response Cycles.
Mobile radius.
On entering or exiting an area.
Limit time.
On equipment start-up.
Whenever there is no movement.
When movement is restarted.
On equipment shutdown.

Alarm Report

Discreet Inputs.
Arrival of an unauthorised frame.
Remote de-activation of cyclical submission.
Geographical (Routes Control).

Data Recording

Configurable.

Downloading Recorded Data

Total or partial, via SMS or traffic data format.

Messaging

Sending and receiving pre-recorded and free messages.

Data Uploading

Management Centres.
Auto-response Cycles.
Sleep / Wake up Cycle.
Time Stop.
Agenda.

Remote control

Enables actuators.

Shutdown Functions

Sleep / Wake up.
Off for stopped time. (Time Stop).

Voice Transmission

Distance metering

Either by odometer or estimation:
Total and Partial.

Traffic Data

Transparent Channel

ELECTRIC CHARACTERISTICS

Power consumption:	270 mA.
While transmitting:	360 mA.
On Standby:	6 mA.
Sleep mode:	0.23 mA.
Power Supply:	From 9 to 30 Vdc.
Voltage Ripple:	10 mV_{p-p} máx.
Antenna Supply Voltage:	5 Vdc supplied by the GPS receiver.
Data Retention Time:	Min. 20 days.

ENVIRONMENTAL CHARACTERISTICS

Operating temperature:	-10°C to +55°C
Storage temperature:	-20°C to +70°C
Humidity:	5% to 95% R.H, non-cond.
Shock:	20g
Vibration:	10 - 12 Hz 0.96 m^2/s^3 12 - 150 Hz -3dB/Oct.

PHYSICAL CHARACTERISTICS

Dimensions:	60 W x 126 L x 54 H mm (excluding connectors).
External Dimensions:	80 W x 135 L x 54 H mm.
Weight:	325 grams.
Volume:	408.24 $cm^{3.}$
Housing:	Aluminium box.

Proteus GPS Receiver

C/A code, L1, 12 channels, 1 position per second.

Satellite Reacquisition Time:	300mS.
Snap Start:	< 2 sec. (90%)
Hot Start:	< 11 - 15 sec.
Warm Start:	< 60 sec.
Cold Start:	< 105 – 165 sec.
Maximum altitude:	40,000 feet.
Maximum velocity:	500 m/sec.
Acceleration:	4 g.
Position Accuracy:	25 m (SEP) 100 m (2D RMS) with S/A on. 5 m SEP with DGPS and S/A on
Velocity Accuracy:	0.1 m/sg.
Time Accuracy:	1 microsecond.

Communication protocols: NMEA 0183 v2.1, RTCM 104 V2.1 Messages type 1, 2 and 9, ICD-GPS-004-SN (SENA GPS Proprietary).

INFORMATION ON PRODUCTS

SN-GPS-GSM	Includes a GSM modem (SMS and traffic data)
SN-GPS-TRK	Communicates via radio Trunking
SN-GPS-PMR	Includes a 1200 Bd modem for PMR radio.
THERMES-GSMTRK	Communicates via GSM and Trunking

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