

OmniSTAR 8305HP™ System



The OmniSTAR 8305HP receiver

The OmniSTAR 8305HP receiver is a rugged, low maintenance, cost efficient L-band receiver for precise positioning.

The receiver incorporates many features for flexible operation.

The standard 5 Hz position output enables accurate positioning. For high dynamic and high speed circumstances a 20 Hz option is available. Its rugged, waterproof enclosure protects the receiver against rain and dust and keeps the receiver working even in severe conditions.

The field-upgradeable software eliminates the need to return the receiver to the factory for firmware updates.

Connections on the back panel

The receiver is equipped with 3 serial RS-232 ports and an I/O port for strobe signals like PPS and event marker in. Built in USB functionality provides an alternative way to communicate if your device is not equipped with a serial RS-232 port. Port connectors are industry standard DB-9 sub-D connectors.

Power is fed through a separate cable. LED's on the back panel indicate power-on and GPS satellite lock-on.

The VBS and HP+ service

OmniSTAR delivers commercial DGNS services worldwide by satellite and is leading in the design and development of Differential GPS positioning technology. With the VBS service OmniSTAR delivers real-time submetre accuracy correction data and with the HP+ service even real-time decimetre accuracy correction data. The latter service is based on data from OmniSTAR's terrestrial reference station network combined with precise orbit and clock corrections.

OmniSTAR offers decimetre accuracy worldwide, even in remote areas, such as Kazakhstan, Siberia and the Sahara.

Why choose the 8305HP receiver?

With its waterproof, shock-resistant and dustproof casing, the user-friendly 8305HP receiver is very suitable for a wide range of applications, from agriculture to surveying, from construction to aviation:

- For agriculture: auto-steering/Precision Farming

The 8305HP receiver provides Land Managers with sub-meter or decimetre level accuracy suitable for a broad range of precision farming and automated vehicle guidance applications, in particular when used in conjunction with compatible auto-steer and variable rate spray and fertilizer systems. Farmers improve efficiency using HP through the creation of data sets, applying site specific dose regulation, reducing skips and overlaps, increasing working widths and available man hours, whilst minimizing operator fatigue.

- For aviation: Real-time and large area coverage

Because the OmniSTAR 8305HP does not require a local base station, it allows the user to perform aerial surveys over large areas while obtaining real-time accurate positioning data that can be used there and then, i.e. post-processing is not required.

This makes the OmniSTAR 8305HP an ideal tool for a number of aerial applications such as aircraft testing and certification, flight inspection, photogrammetry, laser altimetry and positioning of unmanned aerial vehicles (UAVs).

- GIS/Surveying: Low weight and high mobility

The fact that the OmniSTAR 8305HP delivers precise positioning data over wide areas, without having to setup local base stations makes it a very good tool for applications that require high mobility such as ground radar, cathodic protection and magnetometre survey for power line, pipeline and UXO detection, planning trajectories for roads, pipelines and power lines. Because of its stand-alone character and its low weight, the OmniSTAR 8305HP can also easily be used in a backpack for cadastral surveys or for establishing control points in remote areas.



8305HP Technical specifications

Signals

GPS:	L1, L2 or L2C, L5 prepared
OmniSTAR L-Band:	1525 MHz to 1559 MHz
Glonass:	Ready

Environmental

Operating Temp.:	-40° to +75°C
Storage Temp.:	-45° to +95°C
Waterproof:	IEC 60529 IPX7
Humidity:	95% non-condensing

Data inputs & outputs

Serial Ports:	3 RS-232 ports 300 – 230400 bps* COM1 up to 921,600 bps*
USB:	1 USB 1.1 port capable of 5 MBps using USB to serial driver
Position:	5Hz (20Hz option)
1 Pulse per second:	Special cable required
L1/L2 raw measurements:	Option
Outputs Message:	NMEA 3.01 format (ALM, GGA, GGARTK, GLL, GRS, GSA, GST, GSV, RMB, RMC, VTG, ZDA) RTCM SC-104 version 3.0 RTCA DO-217

* Special computer hardware required if >115200.

Connectors

Power:	4 pin Lemo connector
Antenna:	TNC female, 50Ω 5V
External Oscillator:	BNC Female
Com1, 2, Aux.:	DB 9 (male)
I/O strobe connector:	DB9 (female)

Power

Power Supply:	+6 to +18 VDC
Power Consumption:	2.8 W typical

Physical Characteristics

Weight:	1.0 kg
Display:	None
Size (L x W x H): <i>Without mounting bracket</i>	180 x 154 x 71 mm
<i>Including mounting bracket</i>	180 x 186 x 75 mm

8305HP Technical specifications

Position Accuracy

VBS:	30 cm CEP ¹ (50%)
HP:	10 cm horizontal, 15 cm vertical
Initialisation time:	
- Static:	10 min. (average)
- Dynamic:	30 min. (average)

Signal Reacquisition

VBS:	10 sec.
HP/XP:	40 sec. (typical)
L1:	0.5 sec. (typical)
L2:	1.0 sec. (typical)

Dynamics

Velocity Accuracy:	3 cm/s RMS
Velocity:	180 km/h max 1800 km/h with AirSTAR license
Height:	18 km max
Vibration:	4 G (sustained tracking)

Standard Accessories

- Automotive 12 VDC power adapter with 3A fuse
- Mounting bracket
- Straight serial cable
- Null-modem serial cable
- I/O port interface cable
- USB cable

Notes

Within OmniSTAR network at mid latitudes.

1. Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry and atmospheric conditions. Always follow recommended practices.

Regulations

FCC Part15:	Class B
EN55022:	Class B

RoHS & WEEE Compliant.



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