

OmniSTAR 5220HP™ System



The OmniSTAR 5220HP receiver

The OmniSTAR 5220HP receiver is a low maintenance and cost efficient receiver for precise positioning with OmniSTAR's HP and XP services.

The integrated display and function buttons offer a convenient interface for configuring and reading out the receiver, without the need for an external computer or PDA. LED's on the top panel indicate power-on, GPS and DGPS satellite lock-on. This makes the receiver very user-friendly.

An output frequency of up to 10 Hz (20 Hz Optional), makes it a perfect device for automotive applications. Its rugged housing protects the receiver from rain and dust and keeps the receiver working even under the most demanding circumstances.

Connections on the back panel

The receiver is equipped with 2 serial RS-232 ports and two USB ports. The USB functionality provides an alternative communication tool for those laptops that are no longer equipped with a serial port.

External memory

The 2nd USB is for Memory sticks allowing unlimited data storage of NMEA, Binary or Google Earth or Comma Separated files (.CSV). CSV files allow easy further processing in Excel or other GIS packages.

Why choose the 5220HP receiver?

With its light, weatherproof, shock-resistant and dustproof casing, the user-friendly 5220HP receiver is very suitable for a wide range of applications:

- Automotive: road mapping/surveying

The integrated HP technology and advanced filtering feature are excellent tools for many automotive applications. Also its superb dynamic behavior makes the 5220HP receiver a cornerstone for your precise mobile applications.

- For agriculture: guidance/precision farming

The 5220HP receiver offers Land Managers & Farmers sub-meter level accuracy for a broad range of precision farming and automated vehicle guidance applications. Particularly in combination with compatible auto-steer, variable rate spray and fertilizer systems. With this tool farmers will be able to improve their efficiency through increasing their working widths and available man hours, whilst minimizing operator fatigue.

- For aviation: Real-time and wide area coverage

Because the OmniSTAR 5220HP does not require a local base station to operate, it allows the user to perform aerial surveys over wide areas while obtaining real-time accurate positioning data that can be used there and then (i.e. post-processing is not required). Therefore it is an ideal tool for applications such as aircraft testing, flight inspection, photogrammetry, laser altimetry and the positioning of unmanned aerial vehicles (UAV's).

- GIS/Surveying: Low weight and high mobility

Other examples include cathodic protection and the magnetometer survey of power lines, pipeline inspections and UXO detection, the planning of trajectories for roads, pipelines and power lines. Its stand-alone character and light weight, makes the OmniSTAR 5220HP receiver very suitable for backpack use while performing cadastral surveys or establishing control points in remote areas.



5220HP Technical specifications

Signals

GPS: 12 channels L1 and L2
OmniSTAR L-Band: 1530 MHz to 1559 MHz

Environmental

Operating Temp.: -30° to +65°C
Storage Temp.: -40° to +85°C
Waterproof: IEC 60529 IPX7
Humidity: 95% non-condensing
Shock and Vibration: EP 455
EMC: FCC Part 15, Subpart B, Class B, CISPR 22

Data inputs & outputs

Serial Ports: 2 RS-232 ports
4800 – 115200 bps
USB: 2 USB 1.1 port capable of 115,200 BPS using USB to serial driver
Position: up to 10 Hz (20 Hz Optional)
1 Pulse per second: on DB9 connector B pin 9
Event marker input: on DB9 connector B pin 6
L1/L2 raw measurements: Proprietary Binary (Option)
Outputs Message: NMEA 3.01 format (ALM, GGA, GLL, GRS, GSA, GST, GSV, RMC, VTG, ZDA)
RTCM SC-104 version 3.0

Connectors

Power: 2 pin conxall micro
Antenna: TNC female, 50Ω 5V
Com A,B: DB 9 (Female)
USB connector: Type B
USB Memory stick: Type A
Storage of files in: Nmea, Binary or Google Earth KML or CSV

Power

Power Supply: +8 to +36 VDC
Reverse Polarity Protection
Power Consumption: 5.8 W typical@12VDC
Current Consumption: 0.48 A typical@12VDC
LNA output: +5 VDC

Physical Characteristics

Weight:	540 gram
Display:	3 Lines 16 Characters
Size (L x W x H): Including mounting bracket	160 x 114 x 45 mm

LED Indicators Power, GPS lock, DGPS position

Position Accuracy

HP at start-up 30 cm CEP (50%)
HP converged 5 cm CEP¹ (50%)
XP converged 7 cm CEP (50%)

Initialisation times:

Cold start <20 Minutes
Warm start <30 Seconds
Hot start <15 Seconds

Signal Reacquisition

HP: 10 sec.
GPS L1, L2: < 1 sec. (typical)

Dynamics

Velocity Accuracy: 3 cm/s RMS
Velocity: 180 km/h max
1800 km/h with AirSTAR License
Height: 18 km max
Shock and vibration: EP 455

Data Pin-out

Port A
Pin 2 Transmit Data A (Tx)
Pin 3 Receive Data A (Rx)
Pin 5 Signal Ground
Pin 9 5 Volt Output, 350 mA Max

Port B
Pin 2 Transmit Data A (Tx)
Pin 3 Receive Data B (Rx)
Pin 5 Signal Ground
Pin 6 Event Marker²
Pin 9 1 PPS Output³

The receiver menu is available in various languages.

Standard Accessories

- Mounting bracket
- Straight serial cable
- USB cable
- Power cable

Notes

1. Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry and atmospheric conditions. Always follow recommended practices.
2. Event marker input: HCMOS, active low, falling edge sync, 10 K-ohm, 10 pF load
3. Pulse output: 1 PPS, HCMOS, active high, rising edge sync

Regulations

FCC Part15: Class B
EN55022: Class B
CISPR 22
RoHS & WEEE Compliant.

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