*Ag*GPS 132

Combination DGPS receiver with The Choice technology

Sub-meter differential GPS accuracy for precision farming

The data collected in precision farming such as soil types, fertility, insect infestations, and crop yields are dependent upon accurate position information. The differential GPS receiver is the heart of your precision farming system, providing a way to measure and compare performance from year to year.

The Trimble AgGPS™ 132 differential GPS receiver utilizes The Choice™ technology. This technology combines a GPS receiver, a beacon differential receiver and a satellite differential receiver in the same housing. These receivers use a combined antenna with a single antenna cable. This configuration greatly improves the accuracy, reliability and availability of differential GPS corrections.

The medium frequency (MF) beacon receiver uses the broadcasts from government-established navigation beacon reference stations around the world. The L-band satellite differential correction receiver requires a subscription to a differential correction service and provides multiple vendor support. A built-in virtual reference station (VRS) permits the satellite corrections to be uniformly accurate over the entire satellite coverage area, without the degradation in accuracy associated with increasing distance from fixed reference stations.

The AgGPS 132 is designed for easy set up and installation with a built-in display and keyboard. The source and status of DGPS corrections can easily be determined for either of the two built-in differential correction receivers or from an external differential correction source.

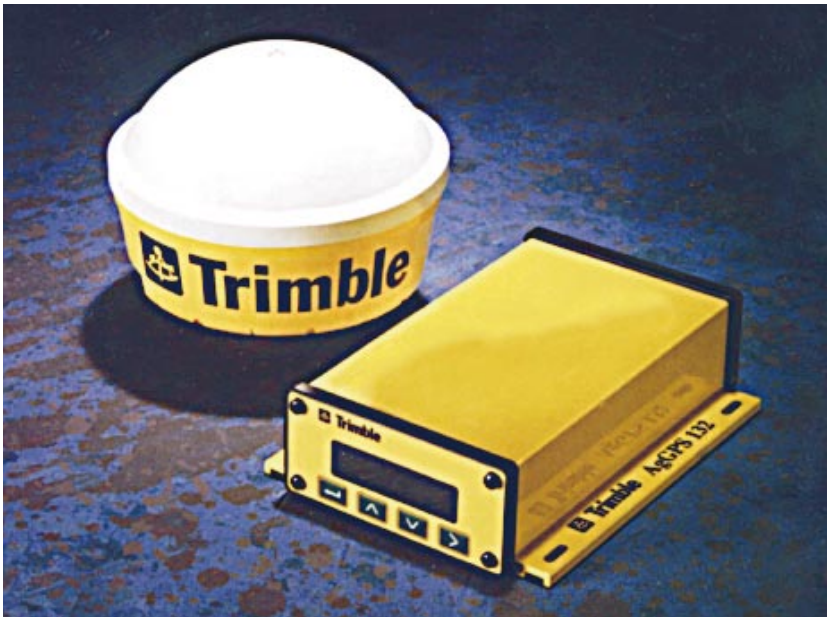
To ensure that the AgGPS 132 can be powered from the machine's power system, it operates over an input voltage range of 10 to 32 volts. The AgGPS 132 is easy to install and connects to a wide range of precision agriculture equipment, including yield monitors, variable rate planters, application controllers and portable field computers. It can be easily transported with an optional AgField Pack.

The receiver can output industry-standard NMEA 0183 messages. The user-selectable outputs include position, velocity, navigation, and status information. The standard configuration outputs positions once per second with very low latency. For applications on faster moving vehicles, the AgGPS 132 can optionally output 10 positions per second, with latency of less than 100 ms.

The L-band satellite receiver uses a Trimble developed, sensitive design to provide coverage across the entire satellite footprint.

The MF beacon differential correction receiver built into the AgGPS 132 is a dual-channel, all-digital, low noise design allowing it to receive corrections at distances of hundreds of miles from the reference stations.

The AgGPS 132 includes a high accuracy 12-channel GPS engine with improved ionosphere and troposphere models. It provides sub-meter differential position accuracy and offers differential speed accuracy of better than 0.1 mile per hour (0.16 kph), thus eliminating the need for an external speed sensor. The positions are computed using robust differential processing techniques, allowing you to begin operation a few seconds after you switch on your machine.



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Standard Features

- 12-channel GPS receiver
- L-band satellite differential correction receiver
- Dual-channel digital medium frequency beacon receiver
- Sub-meter differential accuracy
- 2 line, 16 character liquid crystal display
- 4 button keyboard
- Combined L1 GPS, Satellite differential and beacon antenna
- Two programmable RS-232 serial ports:
  - NMEA-0183 output/RTCM SC-104 input
  - TSIP I/O
- Operation manual
- 5 meter ruggedized antenna cable
- GPS receiver to PC cable
- Magnetic mount for antenna

Physical Characteristics

• AgGPS 132 Housing

Size:	14.5cm W x 5.1cm H x 19.5cm D (5.7”W x 2.0”H x 7.7” D)
Weight:	0.76kg (1.68 lb.)
Power:	7W (max.), 10 to 32 VDC
Operating temp:	-20°C to +65°C
Storage temp:	-30°C to +85°C
Humidity:	100% condensing, unit fully sealed
Casing:	Dust proof, waterproof, shock resistant

• Combined Antenna

Size:	15.5cm D x 14cm H (6.1” D X 5.5” H)
Weight:	.55kg (1.2 lb)
Operating temp:	-30°C to +65°C
Storage temp:	-40°C to +85°C
Humidity:	100% condensing, unit fully sealed
Casing:	Dust proof, waterproof, shock resistant

Ordering Information

AgGPS 132	Part Number 33300-00
Add 10 Hz capability[1]	Part Number 33176-10
Add Scorpio capability[2]	Part Number 33176-20
Add DGPS Base Station	Part Number 33176-30
Add Everest™ Multi-Path Reduction	Part Number 33176-40
AgField Pack 120 Volt	Part Number 32294-00
AgField Pack 240 Volt	Part Number 32294-10
Ag Leader yield monitor cable	Part Number 30660

[1] Available with beacon differential and some satellite differential vendors

[2] Scorpio Marine Electronics, Ltd. provides the Differential GPS Service which is transmitted from marine radiobeacons throughout the United Kingdom and the Republic of Ireland.

Performance Characteristics

• GPS Receiver

General:	12-channel, parallel tracking, L1 C/A code with carrier phase filtered measurements and multi-bit digitizer
Update rate:	1 Hz standard; 10 Hz optional[1]
Differential speed accuracy:	0.1 MPH (0.16 KPH)[3]
Differential position accuracy:	Less than 1 meter horizontal RMS[3] At least 5 satellites, PDOP <4 and RTCM SC-104 standard format broad cast from a Trimble 4000RSi or equivalent reference station.
Time to first fix:	<30 seconds, typical
NMEA messages:	ALM, GGA*, GLL, GSA*, GSV, VTG*, MSS, RMC*, ZDA *Default messages

• Differential Correction Dual-channel MF Receiver

Frequency range:	283.5 KHz to 325.0 KHz
Channel spacing:	500 Hz
MSK modulation:	50, 100 & 200 bits/second
Signal strength:	10 µV/meter minimum @ 100BPS
Dynamic range:	100 dB
Channel selectivity:	70 dB >500 Hz offset
Frequency offset:	17 ppm maximum
3rd order intercept:	+15 dBm @ RF input (min. AGC setting)
Beacon acquisition time:	<5 seconds, typical
Operating Modes:	Auto power, Auto distance, and Manual modes

• L-band Satellite Differential Correction Receiver with Multiple Vendor Support

Bit Error Rate:	10^{-5} for Eb/N of >5.5 dB
Acquisition and re-acquisition Time:	<2 seconds, typical
Frequency band:	1525-1560 Mhz
Channel spacing:	5 kHz

[3]All non-differential GPS receivers are subject to degradation of position and velocity accuracy under U.S. Department of Defense-imposed Selective Availability (S/A). Positions may be degraded up to 100 meters 2D 2σRMS.

Trimble follows a policy of continuous product improvement.
Specifications are thus subject to change without notice.

Trimble

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