

## AgGPS® RECEIVER COMPARISON

PRODUCT FEATURE	AgGPS 332 RECEIVER WITH ANTENNA OPTIONS	AgGPS 252 SMART ANTENNA	AgGPS 106 SMART ANTENNA
			
Signal tracked	L1 and L2, C/A- code and carrier phase filtered measurement, L-Band DGPS	L1 and L2, C/A- code and carrier phase filtered measurement, L-Band DGPS	L1 only, SBAS (WAAS/EGNOS)
Maximum number of satellites tracked	12 + 1 L-Band	12 + 1 L-Band	8
DGPS accuracy	 <1 cm (RTK), <10 cm (OmniSTAR HP), <20 cm (OmniSTAR XP), <1 m (OmniSTAR VBS)  <1 m DGPS (SBAS, OmniSTAR VBS, or Beacon)	<1 m DGPS (SBAS, OmniSTAR VBS, or Beacon), <10 cm (OmniSTAR HP), <1 cm (RTK), OmniSTAR XP	<2–3 m DGPS (SBAS)
Position fix update rate (sec)	1,2,5,10 Hz	1,2,5,10 Hz	1,2,5,10 Hz
Cold start	<2.5 min	<2.5 min	<2.5 min
Warm start	<30 s	<30 s	90 s typ.
Re-acquisition	<5 s	<5 s	<5 s
NMEA messages	GGA,GGL,GRS, GST, GST, GSA, GSV, MSS, RMC, VTG, ZDA, XTE	GGA,GGL,GRS, GST, GST, GSA, GSV, MSS, RMC, VTG, ZDA, XTE	ALM, GGA, GLL, GSA, GSV, PTNLID, RMC, VTG, ZDA, GRS, GST, GGK, PTNLISM
Antenna type	 Combo L1/L2  L-Band DGPS	Combo L1/L2 GPS, L-Band DGPS	L1 GPS
Baud rate	4,800–115,200	4,800–115,200	2400–38,400
Size (W x H x D)	5.7 x 2.2 x 8.6 in	11.7 x 2.73 x 12.05 in	6.1 x 3.7 in
Weight	2.125 lb (0.96 kg)	4.63 lb (2.1 kg)	1.31 lb (0.35kg)
Power consumption	3.5 W (max), 12 V DC	4.2 W, 350mA to 12 V DC	<2 Watts, 10 to 32 V DC
Operating temperature	-22 to +140 °F (-30 to +65 °C)	-22 to +158 °F (-30 to +70 °C)	-22 to +149 °F (-30 to +65 °C)
Storage temperature	-29 to +185 °F (-34 to +85 °C)	-40 to +185 °F (-40 to +85 °C)	-40 to +185 °F (-40 to +85 °C)
Casing	Waterproof, shock-resistant, and dustproof	Low profile UV-resistant plastic, dust-proof, shock-resistant, waterproof with recessed protected connectors	Waterproof, shock-resistant, and dustproof
Connectors	2 x Trimble 12-pin	2 x Deutsch 12-pin	Trimble 12-pin
Number of ports	5	5	3
Port type	3 -RS-232, 2-ISO, 11783/J1939 (CAN 2.0B)	3 -RS-232, 2-ISO, 11783/J1939 (CAN 2.0B)	2 -RS-232, 1 ISO, 11783/J1939 (CAN 2.0B)
Mounting	1-5/8" Mag Mount	3 holes for 0.39 in (10 mm bolts)	1-5/8" Mag Mount
Compliance	FCC Part 15 Class B, C-Tick, E-mark	FCC Part 15 Class B, C-Tick, E-mark	FCC Class B, CE

## DIFFERENTIAL GPS (DGPS) OPTIONS

This table will help you decide which DGPS service is best for your application. Each service has different signal coverage, some are free and others require a service fee. They all have a similar accuracy level of 6–12 inches (10–30 cm) pass-to-pass; +/- 36 inch (sub meter) year-to-year repeatability.

DGPS OPTIONS	COVERAGE	DEFINITION
<b>SBAS:</b> <ul style="list-style-type: none"> <li>• WAAS</li> <li>• EGNOS</li> </ul>	US Europe	The Satellite Based Augmentation Systems or SBAS are free DGPS services. The Wide Area Augmentation System or WAAS, was developed by the Federal Aviation Association (FAA) and is based in the U.S. The European Space Agency's system known as EGNOS is based in Europe. These systems have a network of base stations that receive and correct GPS data, which is then sent to geostationary satellites. The geostationary satellites then transmit the corrected data to roving receivers that are WAAS or EGNOS enabled.
BEACON	Various worldwide locations	The beacon service is a DGPS system that is made available worldwide. Beacon stations are GPS receivers in fixed locations (base stations) which, free of charge broadcast corrected GPS positions that are received by Beacon-enabled GPS rover receivers. Beacons generally have a range of 150–300 miles depending on topography.
OMNISTAR VBS	Worldwide	OmniSTAR VBS is a subscription based DGPS service. OmniSTAR has GPS base stations worldwide that send corrected GPS positions to a stationary satellite called OmniSTAR. The OmniSTAR satellite then sends those signals to roving GPS receivers that have the OmniSTAR service enabled.

## HIGH ACCURACY GPS OPTIONS

Higher level accuracy GPS receivers obtain extra information from the GPS satellites, this extra information enables the receiver to correct even more precisely than the DGPS receivers. These higher accuracy solutions are available worldwide, so use this table to help you decide which high accuracy method is best for your application.

HIGH ACCURACY METHODS	DEFINITION
OMNISTAR HP & XP	OmniSTAR HP & XP is a subscription based high accuracy differential GPS service. OmniSTAR have high accuracy GPS base stations located worldwide that send highly corrected GPS positions to a stationary satellite, which then in turn sends the corrected positions to roving GPS receivers that have the OmniSTAR HP & XP service enabled.
RTK	Real Time Kinematic is a highly precise technique that requires two specialized GPS receivers and two radios. One GPS receiver is set up close by as a base station and in real-time sends the corrected positions to the roving receiver. Both receivers collect extra data from the GPS satellite know as L2 Band that enables better precision.

## ACCURACY DEFINITIONS

### PASS-TO-PASS

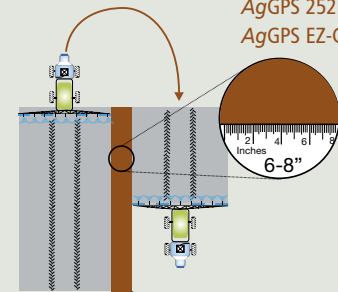
**Pass-to-Pass** accuracy measures the relative accuracy over a 15 minute interval usually thought of as guess row error when driving rows, or skip/overlap from one pass to the next when driving swaths. A Trimble GPS receiver with pass-to-pass accuracy of +/- 4 inches means you get less than 4 inches skip or overlap, 95% of the time.

### YEAR-TO-YEAR

**Year-to-Year** accuracy is the measure of repeatable accuracy that you can drive the same rows a day, week, month, or year later. So, a +/- 1 inch year-to-year accuracy means you can drive the same rows next year within 1 inch of this year's rows, 95% of the time.

### OMNISTAR VBS, BEACON, WAAS, EGNOS

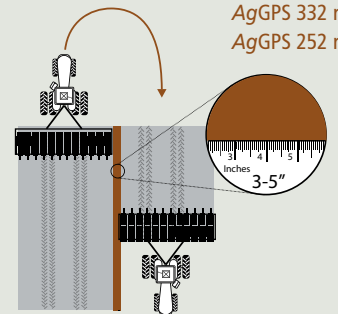
AgGPS 332 receiver  
 AgGPS 252 receiver  
 AgGPS EZ-Guide Plus



+/- 6–8 inch pass-to-pass  
 +/- 3 feet year-to-year repeatable

### OMNISTAR XP

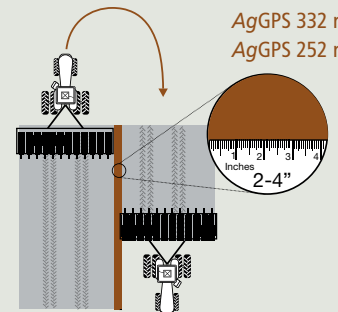
AgGPS 332 receiver  
 AgGPS 252 receiver



+/- 3–5 inch pass-to-pass  
 +/- 8 inch year-to-year repeatable

### OMNISTAR HP

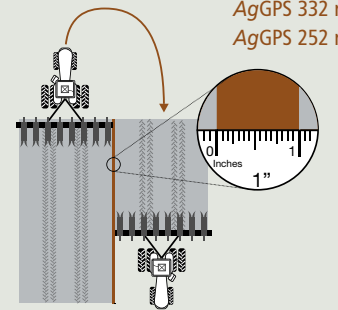
AgGPS 332 receiver  
 AgGPS 252 receiver



+/- 2–4 inch pass-to-pass  
 +/- 4 inch year-to-year repeatable

### RTK

AgGPS 332 receiver  
 AgGPS 252 receiver



+/- 1 inch pass-to-pass  
 +/- 1 inch year-to-year repeatable