

Smart Antenna TS112 PRO

Harxon
a *BDStar* company

INNOVATIVE HIGH PERFORMANCE SMART ANTENNA FOR PRECISION AGRICULTURE



ULTIMATE POSITIONING ACCURACY

The Harxon smart antenna TS112 PRO embeds a future-ready Hexagon | NovAtel OEM GNSS module, offering precise positioning and advanced interference mitigation for space constrained applications and challenging environments. With centimeter level positioning utilizing TerraStar satellite-delivered correction services, Harxon's TS112 PRO ensures globally available, high performance positioning without the need for network infrastructure. Harxon's TS112 PRO also support NTRIP service, so in application environments where using a base station is not feasible, the NTRIP differential corrections could be transmitted to a rover using 4G networks and enable users reaching ultimate centimeter level positioning accuracy.

COMPREHENSIVE GNSS SUPPORT

Harxon's TS112 PRO smart antenna employs Harxon's latest positioning technology 4in1 multifunctional GNSS antenna and receives multi-frequency multiple constellations signals from GPS, GLONASS, GALILEO, BEIDOU, IRNSS, QZSS, SBAS as well as L-Band signals via TerraStar correction service. Comprehensive GNSS support and flexible L-band correction service ensure solid satellites tracking without signal outage even on uneven terrains or used in various environmental conditions.

GLIDE™ POSITIONING TECHNOLOGY

The TS112 PRO also features Hexagon | NovAtel GLIDE™ smooth positioning that offers superior pass-to-pass accuracy down to 20 centimeters for applications where relative positioning is critical.

STEADYLINE® SMOOTH POSITIONING

By adopting high performance Hexagon | NovAtel GNSS module, the TS112 PRO also support STEADYLINE® smooth positioning technology that provide smoother steering and straighter rows by reducing positioning jumps that can occur during RTK signal outages or when a smart antenna changes positioning modes.

TERRAIN COMPENSATION FOR MAXIMUM ACCURACY

The TS112 PRO also features terrain compensation algorithm that is capable of correcting deviations that caused by vehicle's roll and pitch while working on uneven groups or slopes. It helps users increase operation efficiency and saving cost in the field.

RICH INTERFACES FOR FLEXIBLE CONNECTIVITY

The TS112 PRO equips two NMEA0183 compatible RS-232 serial ports, one NMEA2000 compatible CAN port. It also equips Bluetooth wireless technology for easy configuration of the smart antenna via installing configuration app on tablets or other devices that commonly used for guidance and positioning applications. The Bluetooth wireless technology also provides wireless corrections transmission from tablets or other devices to the smart antenna. The TS112 PRO also has built-in 4G module and radio modem, and offers flexible ways for corrections transmission, improving user experience in the process of operation.

RUGGEDIZED AND DURABLE DESIGN, FLEXIBLE INSTALLATIONS AVAILABLE

The TS112 PRO smart antenna adopts a compact and flat structure design. Its IP67 rating housing ensures reliable performance in harsh environment even expose to dust, rain, splash or sunlight. The side-mounted slot for SIM card is user-friendly. The antenna also simplifies the installation by providing two options and suits for various off-road vehicles in agriculture and construction. One option uses built-in magnets at the bottom of the antenna. The other uses M4 screws fixed mounting.

KEY FEATURES

- Centimeter Level TerraStar-C and RTK Accuracy
- Comprehensive GNSS Support for Robust Signal Tracking
- Wireless Bluetooth Technology for Easy Connectivity
- GLIDE™ Positioning Technology for Superior 20cm Pass-to-Pass Accuracy
- STEADYLINE® Smooth Positioning Technology Reducing Position Jumps
- Terrain Compensation Algorithm Maximums Positioning Accuracy
- Rugged Housing, Flexible Installation Options, IP67 Rating Waterproof

Smart Antenna TS112 PRO

PERFORMANCE

Signal Received

GPS	L1/L2/L5
GLONASS	L1/L2
BDS	B1/B2
GALILEO	E1/E5a2/E5b/AltBOC
NavIC(IRNSS)	L5
SBAS	WAAS/EGNOS/MSAS/GAGAN
QZSS	L1/L1C/L2C/L5
L-Band	Up to 3 Channels

Horizontal Position Accuracy (RMS)

Single Point L1 1.5m

Single Point L1/L2 1.2m

NovAtel CORRECT

SBAS 60 cm

DGPS 40 cm

PPP TerraStar-L 40 cm
TerraStar-C 4 cm

RTK **1 cm + 1 ppm**
Initialization Time < 10s
Initialization Reliability > 99.9%

Maximum Data Rate

Measurements up to 20 Hz

Position up to 20 Hz

Time to First Fix

Cold Start < 50 s (typical)

Hot Start < 35 s (typical)

Signal Reacquisition

L1 < 0.5 s (typical)

L2 < 1.0 s (typical)

Time Accuracy 20 ns RMS

Velocity Accuracy <0.055 m/s RMS

Roll/Pitch Accuracy <1° RMS

PHYSICAL AND ELECTRICAL

Dimensions 210x155x80 mm

Weight <600g

Connector 14pin Tyco Ampseal

Mounting

M4 Screw 4

Integrated Magnetic Mount 3

Accessories

Antenna for Radio 1

Config. Cable 1

Screwdriver 1

Data Cable 1(HJ1148, optional)

Power

Input Voltage Range +9VDC to +36VDC

Minimum Voltage when voltage drops: 6 VDC

Power Consumption 2.5W (Typical)
<10W

Status LEDs

Power

RTK Status

Correction Data Link

ENVIRONMENTAL

Temperature

Operating -40°C to +70°C

Storage -40°C to +85°C

Humidity 95% non-condensing

Vibration GJB150.16-2009, MIL-STD-810

Compliance CE, FCC, REACH, RoHS

Waterproof Rating IP67

COMMUNICATION PORTS

RS-232 Ports 2

CAN Bus 1

1 PPS 1

Ground Speed Out 1

Event Mark Input 1

Bluetooth 1

LTE 1(optional)

Radio 1(optional)

STANDARD FEATURES

- Field Upgradeable Software
- Differential GPS Positioning
- Differential Correction Support for RTCM2.1, 2.3, 3.0, 3.1, 3.2, 3.3, CMR, CMR+, RTCA and NOVATELX
- Navigation Output Support for NMEA0183 and Detailed NovAtel ASCII and Binary Logs
- GLIDE™ and STEADYLINE® Smoothing Algorithms
- Multipath Mitigating Technology
- Pulse Per Second (PPS) Output

RADIO SPECIFICATION

Frequency Range 410-470MHz

Operating Mode Receive

Sensitivity -115dBm@BER10-5,9600bps

Data Link Rate 9600bps, 19200bps

Channel Spacing 12.5kHz

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