

# Smart Antenna TS112

## INNOVATIVE MULTI-CONSTELLATION SMART ANTENNA FOR PRECISION AGRICULTURE



### ROBUST GNSS POSITIONING PERFORMANCE

The Harxon Smart Antenna TS112 integrates a high precision GNSS module with multi-band GNSS receiver for fast convergence times and trustworthy performance, and a HARXON X-SURVEY™ Technology GNSS Antenna (an innovative 4in1 multifunctional antenna with GNSS antenna, 4G antenna, Bluetooth antenna, and WIFI antenna embedded) in a single rugged housing. The embedded 4in1 GNSS antenna supports GPS, GLONASS, BeiDou, Galileo for consistent and robust satellite signals tracking and offers RTK level positioning accuracy for agriculture and machine control.

### SLIDE™ TECHNOLOGY

The smart antenna TS112 features the Harxon patented SLIDE™ technology to provide smooth positioning and exceptional linear accuracy, ensuring steady and consistent positioning output even through poor satellite availability or short periods of satellite signal reception interruption. By offering satisfied positioning accuracy, TS112 smart antenna creates a reliable solution for automation.

### TERRAIN COMPENSATION FOR MAXIMUM ACCURACY

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

### RICH INTERFACES FOR FLEXIBLE CONNECTIVITY

The TS112 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 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 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 fixed M4 screw mounting.

### KEY FEATURES

- **Integrated Solution with High Precision GNSS Module and 4in1 Multifunctional GNSS Antenna**
- **Patented SLIDE™ Technology Delivers Smooth Linear Positioning**
- **Terrain Compensation Algorithm Maximums Positioning Accuracy**
- **4G, Radio Modem and Bluetooth Embedded for Superior User Experience**
- **Rugged Housing, Flexible Installation Options, IP67 Rating Waterproof**

# Smart Antenna TS112

## PERFORMANCE

### Signal Received

GPS	L1/L2
GLONASS	L1/L2
BDS	B1/B2
GALILEO	E1/E5b
SBAS	L1
QZSS	L1C/A/L1S/L2C

### Horizontal Position Accuracy (CEP)

Single point	1.5m CEP
DGPS	0.4m CEP
SBAS	0.6m CEP
RTK	1cm + 1ppm CEP

**Data Rate** 10Hz (Max.)

### Time to First Fix

Cold Start	<50s
Warm Start	<35s
Hot Start	<10s
Reacquisition	<1s

**Velocity Accuracy** 0.05m/s RMS

**Roll/Pitch Accuracy** <1° RMS

**Time Accuracy** 30ns RMS

## PHYSICAL AND ELECTRICAL

**Dimensions** 210x155 x80 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

- 10Hz Data Rates
- Field Upgradable Software
- Differential Correction Support for RTCM 3.3
- Navigation Output Support NMEA0183/NMEA2000
- SLIDE™ Smoothing Algorithm
- 1 PPS Output
- Ground Speed Output

## RADIO SPECIFICATION

Frequency Range	410-470MHz
Operating Mode	Receive
Sensitivity	-115dBm@BER10 <sup>-5</sup> ,9600bps
Data link Rate	9600bps, 19200bps
Channel Spacing	12.5kHz

### en.harxon.com

sales@harxon.com

9/F, Block B, Building D3, TCL International  
E City, NO.1001 Zhongshanyuan Road,  
Nanshan District, Shenzhen, China

Tel: +86-755-26989948

Fax: +86-755-26989994

**Version 1** Specifications subject to change without notice.  
©2020 Harxon Corporation, All rights reserved.  
Printed in China  
November 2020