e-survey

EAS100

AUTO-STEERING SYSTEM FOR PRECISION AGRICULTURE

The EAS100 is an eSurvey new generation electric wheel-based auto-steering system.
The eSurvey EAS100 helps to transfer farm work from fully manual driving to semi-automatic operation. It means high time efficiency and less operator fatigue. Based on the route planning algorithm, the vehicle could go through the same paths every time to seed, spray and harvest with ±2.5 cm accuracy, which increases crop yield and reduces chemical usage.

Agriculture

Split Type Design: No Worry for Vehicle Shaking and Signal Interference

IMU modem and GNSS receiver integrated into one box, and rigid connection with the vehicle makes the system shaking-free and less electromagnetic interference to GNSS signal receiving via professional surveying antenna.

Easy Installation: No Need to Change Hydraulic Circuit

Install or remove it from your agricultural machinery as fast as 15 minutes.

All-purpose System: Suitable for Various Types of Agricultural Machinery

Apply it to multiple types of agricultural machinery, including tractors, transplanters, sprayers, harvesters, etc., to make your farm work more effectively.

High Control Accuracy with Ultra-low Speed

Enable ±2.5 cm control accuracy even when the vehicle speed is as low as 0.2km/h, and no longer need to worry about fine planting vegetables and fruit crops.

New Electronic Motor: Less Cable and Easier to Use

EW2 motor integrated with simplified harness and switch will make operation more convenient and fast.

24-hour Uninterrupted Work

Continuously work even in the day with heavy UV lights or at night. Free RTK aid function could maintain centimeter accuracy for 600 seconds when the EAS100 lost correction data.

Website

Social media

EAS100 System

Accuracy	Dry land: 2.5 cm(≤ 9 km/h); Paddy land: 5 cm(≤ 9 km/h)
Line acquisition distance	<7 m
Vehicle velocity range	0.2 - 18 km/h
Correction data source	GSM, Radio, SBAS
Data formats	RTCM3.X
Optional sensor	Angle sensor, rear camera

Specification

ST6 Display

System	
Processor	AllWINNER T507 8-core @1.5GHz
OS	Android 10.0
RAM	2 GB LPDDR4X
ROM	16 GB eMMC

Screen	
Size	10.1" LCD
Resolution	1280 x 800
Brightness	750 nits
Touch panel	Capacitive touch screen, multi-point anti-glare

Communication	
Bluetooth	BT4.0 @BLE
Wi-Fi	802.11 a/b/g/n 2.4 GHz
GSM	■ CAT1 LTE ■ LTE-FDD: B1/B3/B5/B7/B8/B20 ■ LTE-TDD: B38/B40/B41 ■ GSM:B2/B3/B5/B8
Port	■ Serial port (6-pin) x 1 ■ Serial port (12-pin) x 2 ■ USB type-A (USB host) x 1 ■ USB (Micro-USB, USB device) x 1 ■ SIM card (SDHC) x 1 ■ Micro SD card (128G max) x 1 ■ GSM (Fakra D) x 1

Power Supply	
Input voltage	6 - 36 V dc

Physical Specification	
Dimension	269 mm × 190 mm × 41 mm
Weight	1300 g
Button	Power button x 1
Battery	None
Humidity	0-90% RH, non-condensing
Operating temperature	-20°C - +70°C
Storage temperature	-40°C - +85°C
Water/dust proof	IP65
Vibration	ISO 16750/MIL-STD-810G

MC3 ECU

GNSS Performance	
Channels	1408
Satellites tracking	■ GPS: L1C/A, L2P(Y)/L2C, L5 ■ BDS: B1I, B2I, B3I ■ GLONASS: G1, G2 ■ GALILEO: E1, E5a, E5b ■ QZSS: L1, L2, L5
Update rate	■ Full range: 10 Hz ■ Straight walking: 20 Hz
Horizontal positioning accuracy	■ Single: < 1.5 m (RMS) ■ DGNSS: < 0.4 m (RMS) ■ RTK: 0.8 cm+1 ppm (RMS)
Heading accuracy	< 0.2° rms with 1.0 m baseline
Re-acquisition	< 1 second

Communication	
Port	■ 1 x serial port, 35-pin (TE TE-1-776163-4) ■ 2 x GNSS heading, TNC ■ 1 x UHF, TNC

Internal Radio	
Frequency range	410 - 470 MHz
Channel spacing	12.5 KHz / 25 KHz
Protocol	HZSZ, TrimTalk 450S, PCC-GMSK, South

Environment	
Operating temperature	-30°C - +70°C
Storage temperature	-40°C - +85°C
Humidity	95%
Shock	EP 455 Section 5.14.1
Vibration	EP 455 Section 5.15.1 (Random)
Water/dust proof	IP67

Power	
Input voltage	9 – 36 V dc

Physical Specification	
Dimension	200 mm × 172 mm × 57 mm
Material	Magnesium alloy
Weight	1100±20 g

Specification

EW2 Electric Steering Wheel

Motor	
Working voltage	9 - 32 V dc
Nominal voltage	12 V dc
Output torque	≥6.5N•m
Maximum powe	＜200 W
Maximum rotation speed	100 RPM
Load steering error	< ±5°
Response delay	20Hz

Working Environment	
Operating temperature	-20°C - +70°C (-68°F - +158°F)
Storage temperature	-40°C - +85°C (-104°F - +185°F)
Mechanical shock	EP455 5.14.1
Vibration characteristics	EP455 5.15.1& 5.15.2

Communication	
Interface	ALTW/IDC-06PMMS-LC7001
Communication protocol	ISO11783 CAN BUS

EMC / Safety / Environmental Protection	
Radiated interference	■ Broadband: IAW ISO14982-2009 /6.4 ■ Narrowband: IAW ISO14982-2009/ 6.5
Radiation immunity	IAW ISO14982-2009/6.6
Electrostatic discharge (ESD)	IAW ISO14982-2009/6.7
Environmental protection standard	2011/65/EU RoHS 2.0

Physical Specification	
Dimensions	212L x 182W x 85H mm(Not including wheel)
Weight	≤6500g (Including wheel)

Rear Camera (Optional)

Water/dust proof	IP67
Input voltage	12 V dc
Port	Female, 4-pin aviation
LED	8 LED light
Resolution	720P, 1024 x 600

P300 GNSS Antenna

Antenna Performance	
Satellites tracking	■ BDS B1/B2/B3 ■ GPS L1/L2/L5 ■ GLONASS L1/L2/L3 ■ GALILEO E1/E5a/E5b/E6 ■ L-Band
Polarization	Right-handed circular
Axis ratio	≤3 dB
Highest gain	5.5 dBi
Phase center offset	±2 mm

Physical Specification	
Dimensions	Φ150 mm*61 mm
Weight	≤300 g
Antenna interface	TNC-K
Water/dust proof	IP67
Operating temperature	-40°C～+85°C
Storage temperature	-55°C～+85°C
Storage humidity	95% non-condensing

iMM1 Angle Sensor (Optional)

Performance	
Supply voltage	5.5 – 36 V
Supply current	30 mA/12 V
Power consumption	≤ 0.7 W
Water/dust proof	IP67
Measurement range	±90°
Measurement axis	X-Y
Resolution	0.002°
Accuracy	0.1°
Update rate	50 Hz
Initialization time	≤ 30 seconds

Working Environment	
Working temperature	-40°C - +70°C
Storage temperature	-40°C - +85°C
Shock	20000 g, 0.5 ms, 3 times/axis
Interface	CAN

Physical Specification	
Material	Aluminum alloy

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