

# Qr gt c vkqp 'O cpwcnU 527

**The latest software download link:**

<https://www.dropbox.com/sh/7d7d6xsrdklztu0/AAAf-lXBKxn0ExzJISoD1za3a?dl=0>

**JY305 Install Video:**

[https://www.youtube.com/watch?v=2\\_3p8EkPf\\_M](https://www.youtube.com/watch?v=2_3p8EkPf_M)

**JY305 calibration training video**

<https://youtu.be/fJTbWB5g4Eg>

**JY305 related video:**

[https://drive.google.com/drive/folders/1lrh\\_wtrwZQag-zc\\_yAdyJyHxYVnvNXnu?usp=share link](https://drive.google.com/drive/folders/1lrh_wtrwZQag-zc_yAdyJyHxYVnvNXnu?usp=share_link)

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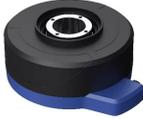
# 1、 Introduction

This manual mainly introduces the installation and operation of Smajayu JY305 equipment.

# 2、 Main Accessories

This equipment mainly includes five parts: tablet T100, drive control motor EMS2, receiver R71, angle sensor (optional), and connecting cable.

Details as the list below:

NO.	Description	Qty	Picture	Remark
1	Drive control motor	1		EMS2
2	spline	1		Optional
3	steering wheel	1		41cm
4	bracket	1		Optional
5	Bracket screw pack	1		

6	tablet	1		T100
7	RAM bracket	1		
8	T100-Fourth generation main line	1		
9	switch line	1		
10	Power supply extension line	1		
11	GNSS Receiver	1		R71
12	Mounting plate	1		
13	radio antenna	1		
14	HW-R71 Power supply line	1		
15	Waterproof camera	1		
16	Camera extension cable	1		
17	Manual switch	1		

18	Manual switch cable	1		
19	Coaxial angle sensor	1		
20	Angle sensor cable	1		
21	Autopilot screw pack	1		

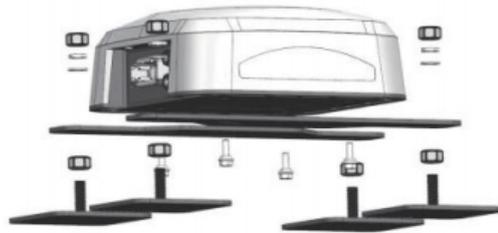
## 2.1 Assembly and Installation

### 2.1.0 R71 Inastallation

Fix R71 on the mounting plate as shown in the picture below.

First use a ruler to measure the width of the tractor's roof and find the central axis.

Fix R71 on the central axis, and the interface faces the tail of the tractor.



The radio antenna needs to be connected to the radio interface of R71.





### 2.1.1 EMS2 installation

The EMS2 Motor Wheel is an electric motor steering wheel. The most important part is the **spline sleeve**, which is based on the selection of the vehicle model refer to the table in Appendix. Please indicate your vehicle model before placing order of this system. The other components include Loge cover, steering wheel, flange, bracket and screws which are shown as below.



Figure 2.1 Assembly diagram of EMS2 motor wheel

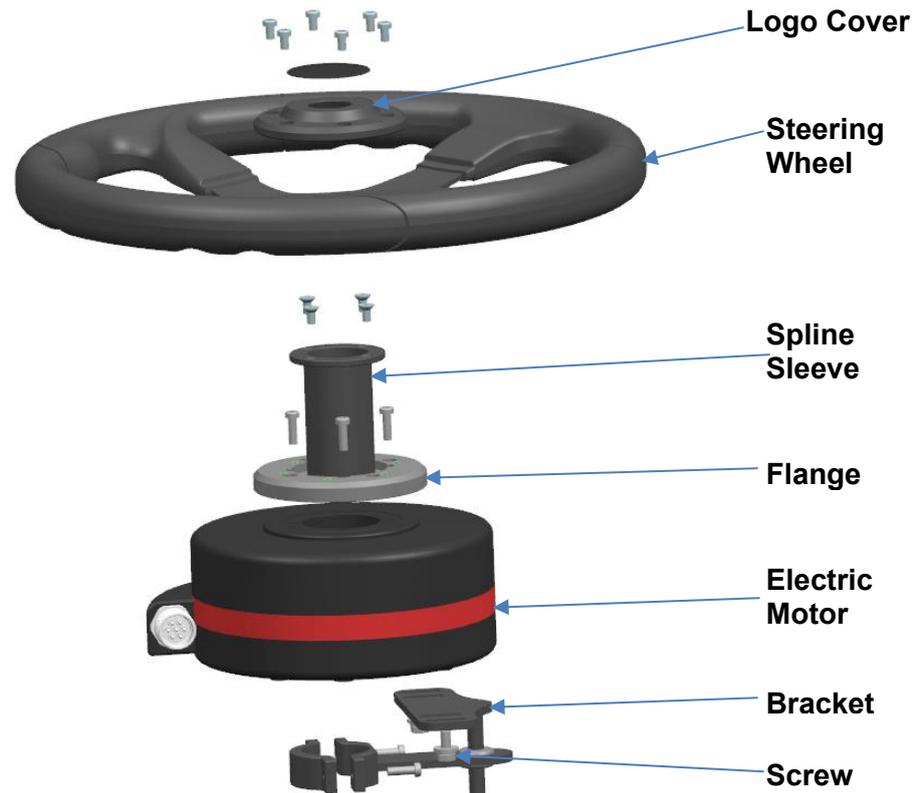


Figure 2.2 Descriptions of the EMS2 assembly components

The detailed steps of installing EMS2 Motor Wheel are shown as below.

- 1) Prepare the components needed for EMS2 Electric Motor.



Figure 2.3 Components needed for electric motor

- 2) Use the corresponding screws in the package to fixate

the bracket and motor on the vehicle to replace the original steering wheel.



Figure 2.4 Installation example of electric motor



Figure 2.5 Installation example of bracket for fixating EMS2 Motor Wheel

3) Use screws to install the steering wheel and Loge cover.



Figure 2.6 Installation example of EMS2 Motor Wheel

- 4) Now the installation of EMS2 Motor Wheel is completed. It should be connected to the main cable after all parts are assembled properly. The cables connection refers to section 2.1.3 Cables Connection.

## 2.1.2 Angle Sensor installation

The detailed steps of installing Angle Sensor are shown as below.

- 1) Prepare the components needed for installing Angle Sensor.



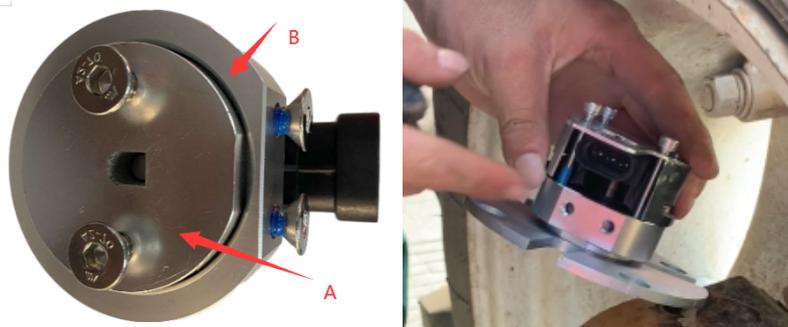
Figure 2.7 Components needed to install angle sensor

- 2) Install angle sensor on left front wheel. Take off screw on left front wheel and install angel sensor board, notes plane with screw holes on angel should face to vehicle body when installation.



Figure 2.8 Install the parts to fixate angle sensor

Mind turn angel sensor in right position before install on board. Please make sure plane A and plane B keep parallel and face to vehicle body when installation.



- 3) Adjust the position of angle sensor to be properly installed. Find the best position and make sure angle sensor could turn in normally. Then, use screw fix angle sensor bracket.



Figure 2.9 Possible position of angle sensor – 1



Figure 2.10 Fix angle sensor – 2

- 4) Extend board could be used if this part do not have a screw could use for fix angel sensor bracket.



Figure 2.11 Installation example of angle sensor

- 5) Now the installation of Angle Sensor is completed. It should be connected to the main cable after all parts are assembled properly.

The cables connection refers to section 2.1.3 Cables Connection.

### 2.1.3 Cables Connection

The cables connection should be paid much attention during assembly as there are various connectors on the main cable which is shown below.



Figure 2.16 Main Cable with multiple connectors



Figure 2.17 Power extension cable with two wires

The current hardware supports 12V and 24V power supplies

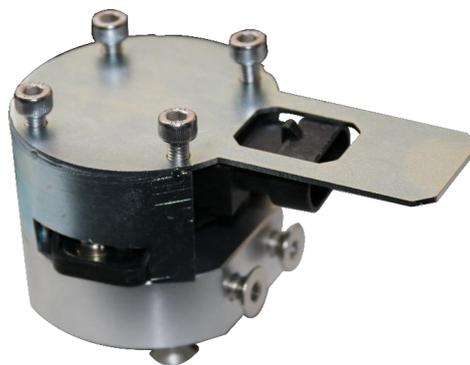


Figure 2.18 Angle Sensor

The Attitude Sensor (IMU) is optional. It is only required when the angle sensor is not able to be installed on the vehicle.



Figure 2.19 Cable for AttitudeSensor (IMU)



Figure 2.20 Attitude Sensor (IMU)



Figure 2.21 Power Switch with cable

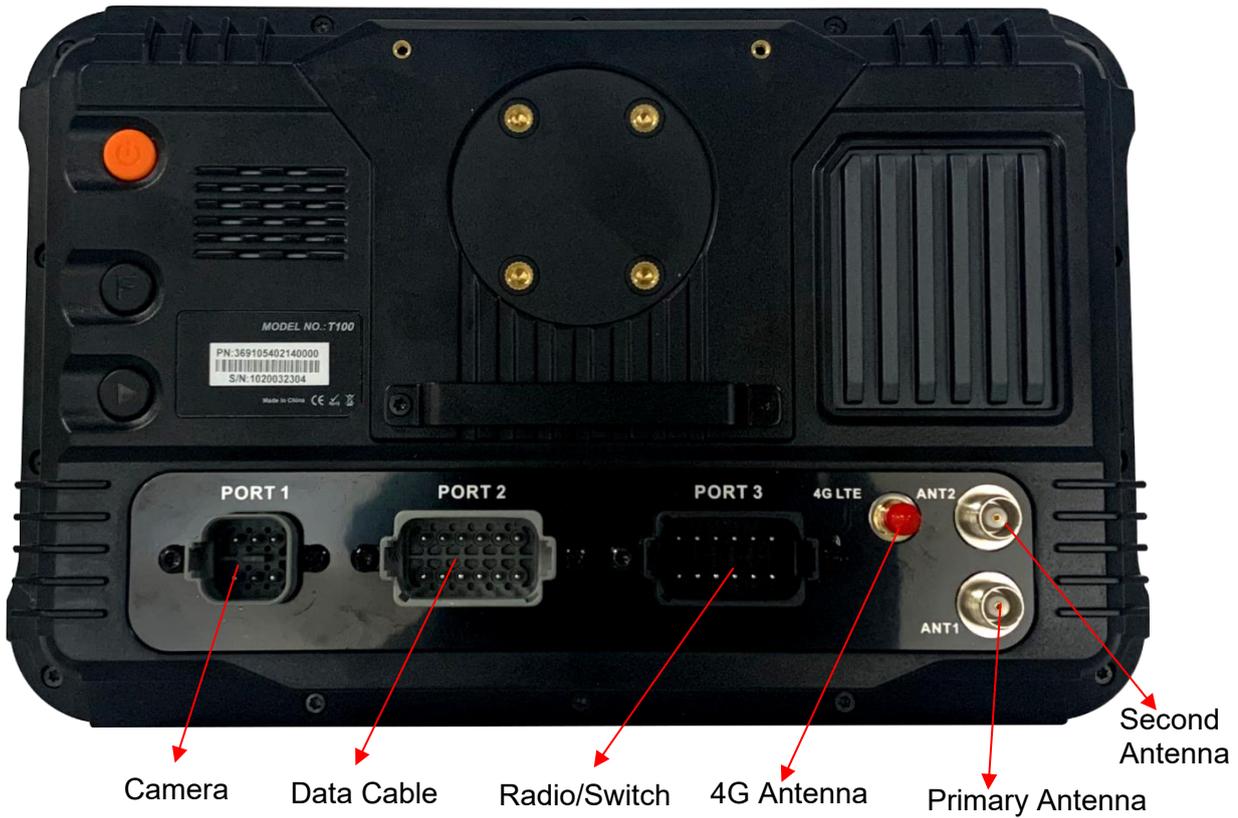


Figure 2.23 T100 Control Tablet connects to main cable and two antennas

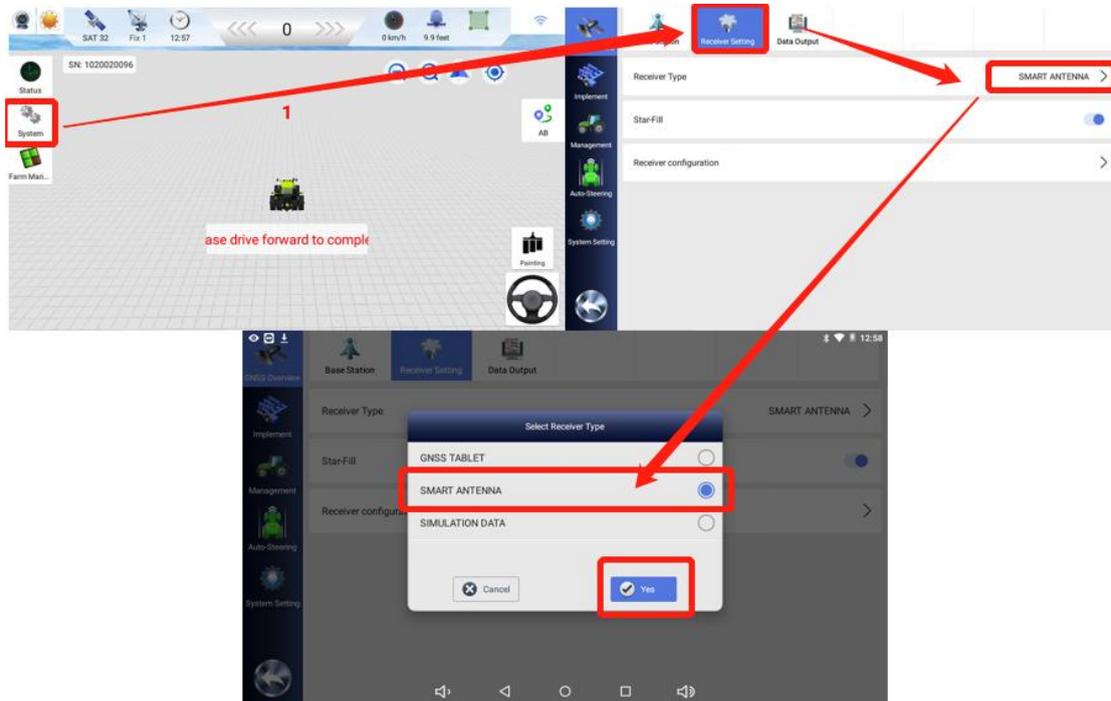
Normally the T100 Control Tablet is installed in the control room of the vehicle using the bracket which is shown as below.



Figure 2.24 Bracket for T100 Control Tablet

### 3、 Device Switching

After opening the software for the first time, we need to switch it to single antenna mode, as shown in the figure below:

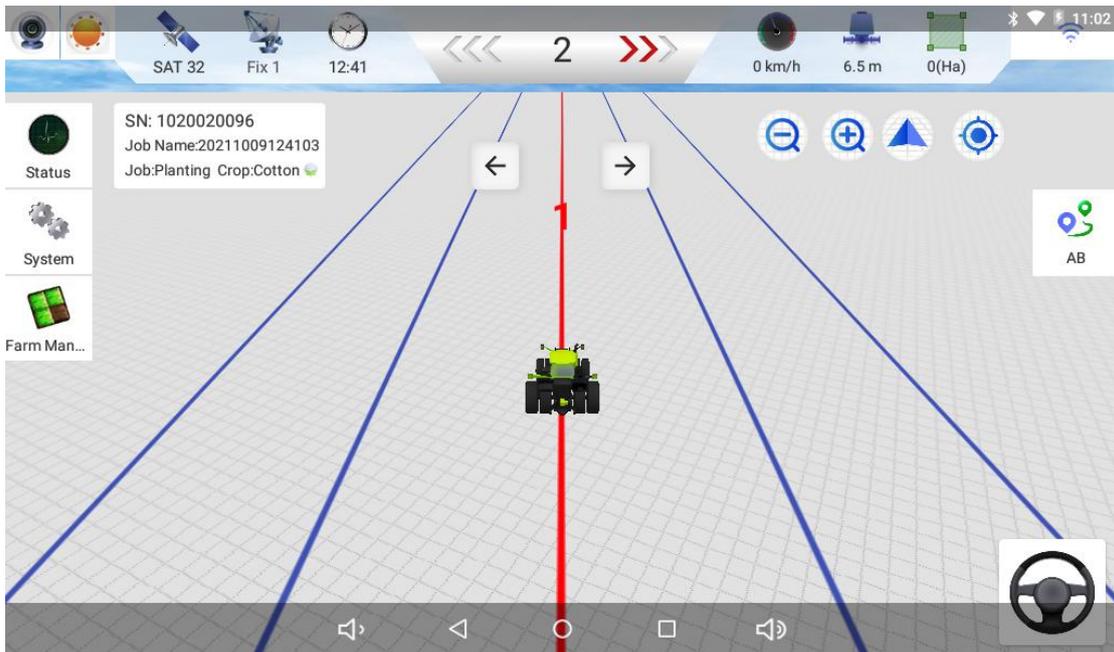


**Note:** The software is registered at the factory. When the autosteering system is used for the first time, the tablet needs to be connected to the Internet to obtain registration information (SIM, WIFI or hotspot). Otherwise, it may be required to enter the registration code

# 4、 Equipment Debugging

This chapter mainly introduces the use of software debugging.

## 4.1、 Main interface introduction



**Pic.4.1**

Main interface icon introduction:

NO.	Description	Icon
1	Camera switch button	
2	Main interface mode switch	
3	Satellite status display	
4	Signal status display	

5	time display	
6	Error display	
7	Device real-time speed	
8	Job width display	
9	Work area display	
10	Signal status display	
11	Zoom in / out button on the main interface	
12	Main interface 2D and 3D view switching button	
13	Return to current position button	
14	AB line setting and editing button	
15	start and end button	
16	Equipment status and self-test button	
17	System settings	
18	Farm management	

Remark:

- (1) Switching between day and night modes on the main interface.
- (2) Signal status

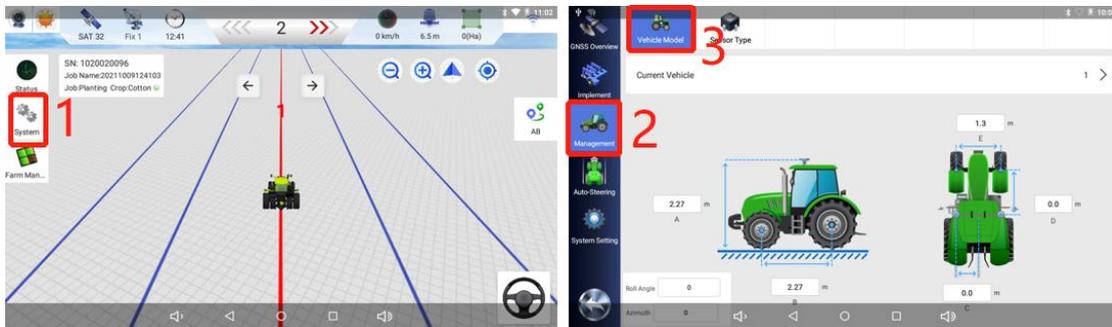
Fixed: Connect to the base station, the signal is normal.

Single point: The base station is not connected.

Floating: Connect to the base station, the signal is abnormal.

## 4.2、 Vehicle parameters

After the hardware equipment is installed, we need to set the vehicle model for the software. The path is as shown below:



Pic.4-2-1

The vehicle parameters contain five options:

A: The height of the antenna from the ground

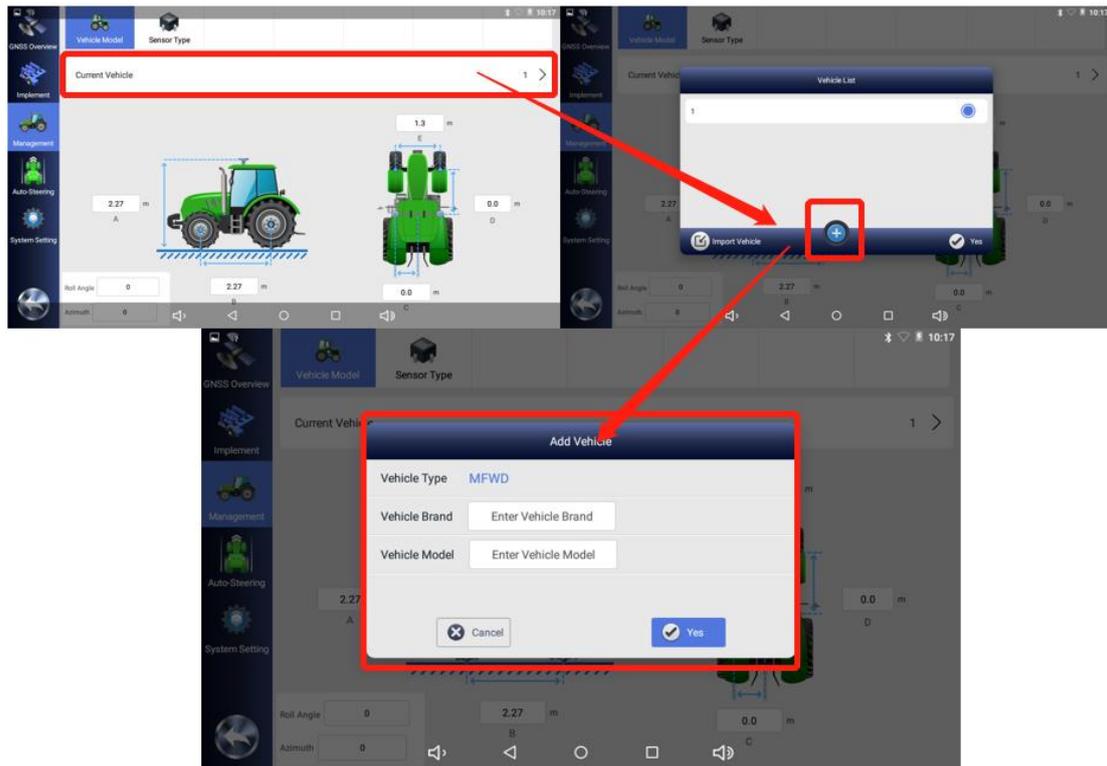
B: Wheelbase between front and rear wheels

C: The distance of the antenna from the center axis of the vehicle  
(for , the distance defaults to 0)

D: The horizontal distance of the antenna from the center of the front wheel.

E: The center distance between the two tires of the front wheel. Note:

Multiple devices can be added to the software

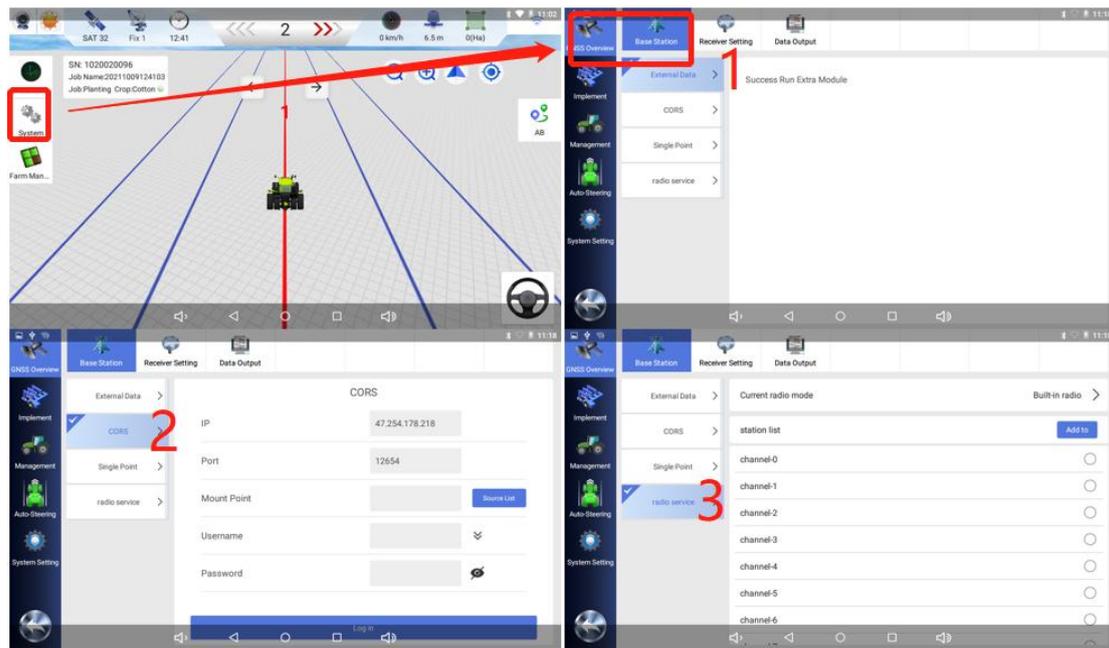


Pic.4-2-2

We enter the vehicle parameters, and after returning to the main interface, the current parameters will be saved under the current vehicle. Therefore, the current vehicle type, brand, and model can be added to the current vehicle before entering the parameters.

### 4.3、 Base station connection

The device needs to be connected to the base station to work. There are four ways to connect to the base station: external data, CORS, single point, and radio service (). The single point is for setting auxiliary navigation(in-development).



Pic.4-3-1

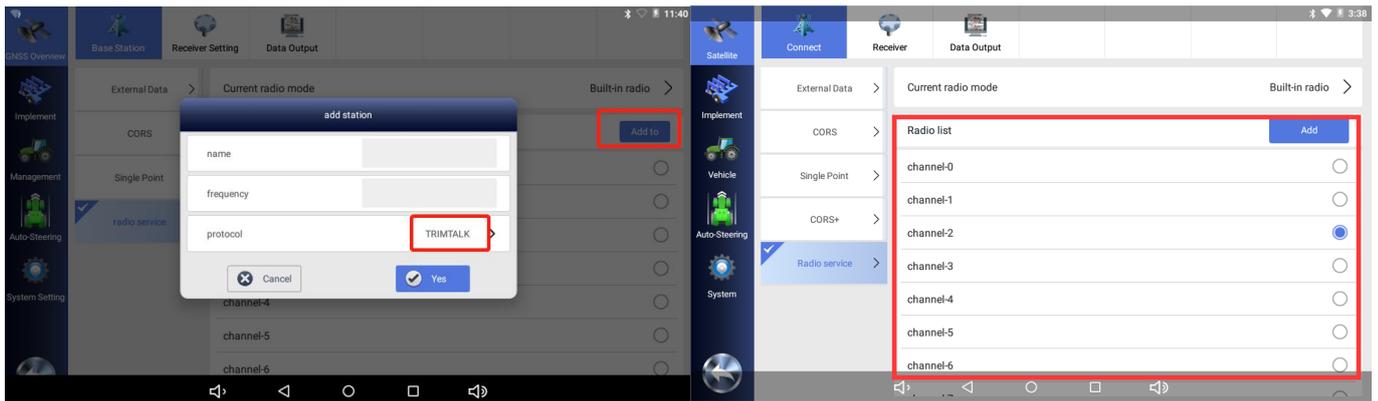
- (1) External data: the way to obtain base station data by connecting D10 radio module and D20 network module (JY305 series basically does not use this mode).
- (2) CORS: The way to connect to the network base station through an account.
- (3) Radio service: R71 has a built-in radio. In places with poor network, you can choose to use the radio base station, and then use the radio service to connect.

Remarks: Radio Service

There are 64 channels preset in the radio service, which correspond one-to-one with the company's mobile base stations.

You can also manually add and modify base station connection information in the radio service, as shown in the following figure:

- (1) The name can be named arbitrarily.
- (2) Frequency 410-470, the interval is 12.5, such as 432.0125, 432.0250.
- (3) The commonly used protocol of our company is TRIMTALK, and there are three protocols to choose from: TRIMMK3, TT450S and TRANSEOT.



Pic.4-3-2

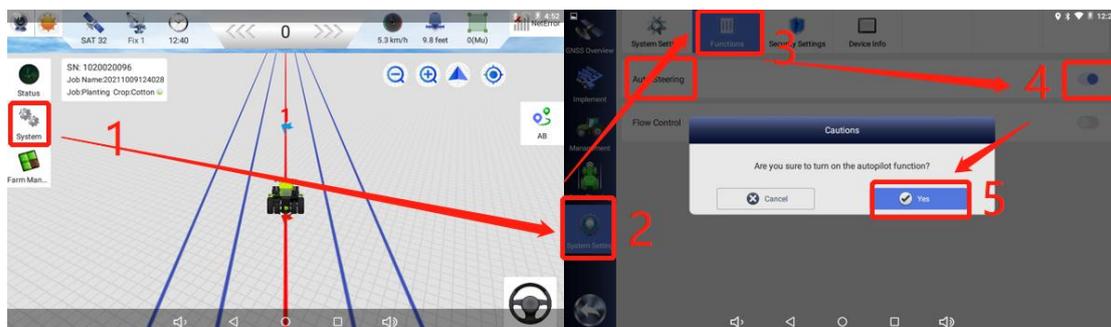
### 4.4、 Device registration

After the device is installed, you need to provide the corresponding information to complete the device registration and function activation. The required information is as follows:

1. The SN number of the T100 tablet.
2. The SN number of the receiver
3. The brand and model of the tractor
4. The type of spline used.

5. The customer's mobile phone number and name (any number and name can be used, but different customers cannot use it repeatedly). When the information is provided to the company, the company's technicians enable the autopilot function for the customer, and then the customer only needs to connect the tablet to the network, and then restart the tablet to turn on the autopilot function.

Note: When the device is registered, the software must be able to search for-satellites.



Pic.4-4

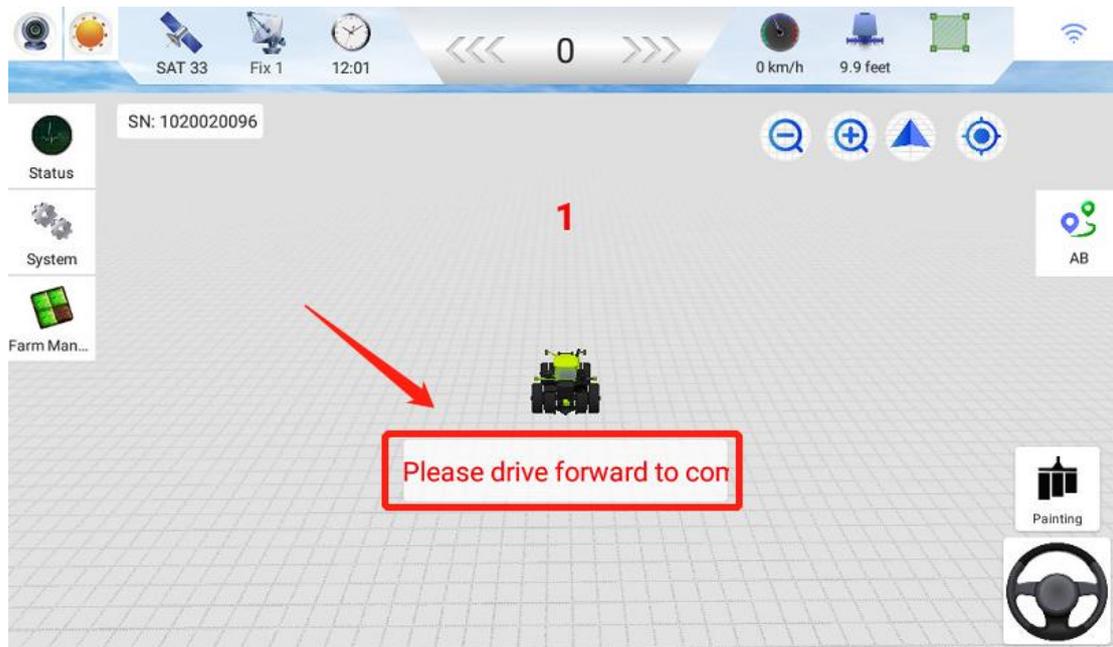
## 4.5、 Equipment debugging

Device debugging is divided into two modes: angle sensor mode, gyroscope mode.

Before debugging, we need to manually drive forward at a speed of about 3km/h, Wait until the prompt on the main interface disappears to complete the initialization.

### Tip:

The latest R71 has a built-in inertial navigation combination module, which is the same as the single gyro sensor. When your tractor cannot be installed properly using the angle sensor, you can switch to the single gyro sensor mode to work.(Please refer to 4.5.1)



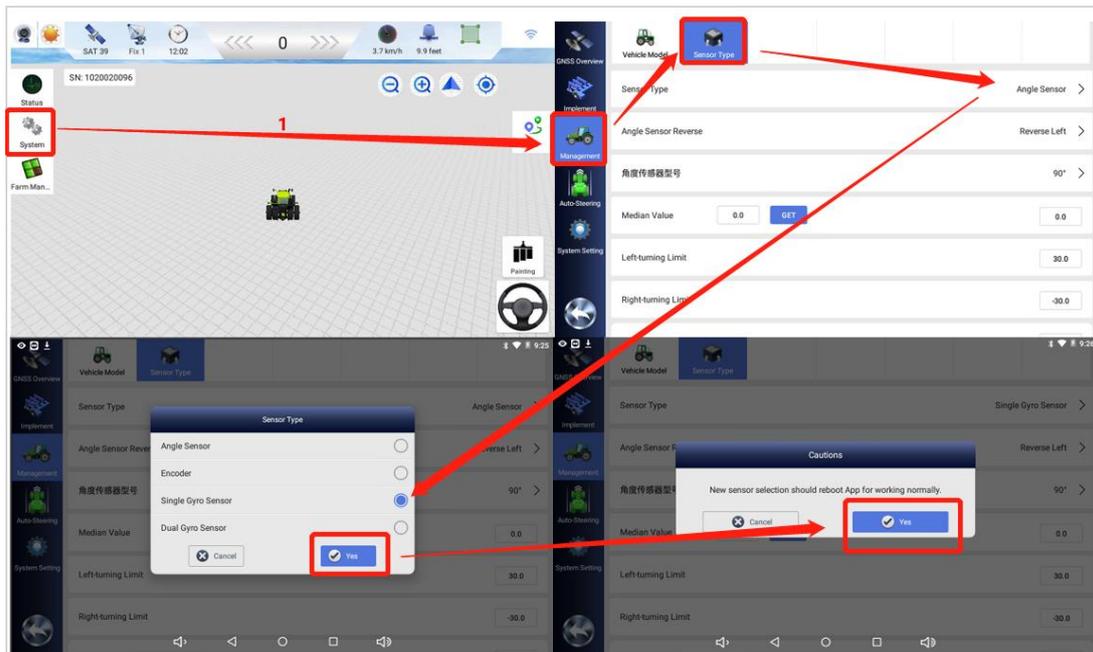
Pic.4-5-1

Note: after each power supply is re-supplied, it is necessary to drive forward manually and start the operation after initialization.

### 4.5.1、 Mode Selection

(1) Select the gyroscope mode

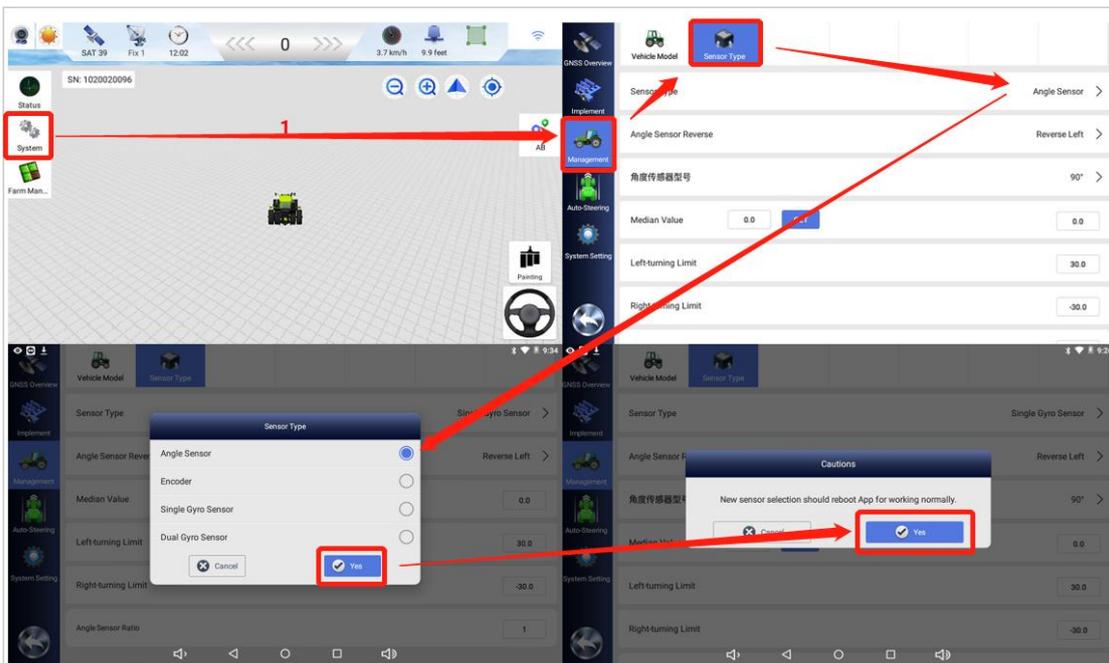
Switch the system to gyroscope mode according to the pattern below.



Pic.4-5-2

(2) Select angle sensor mode

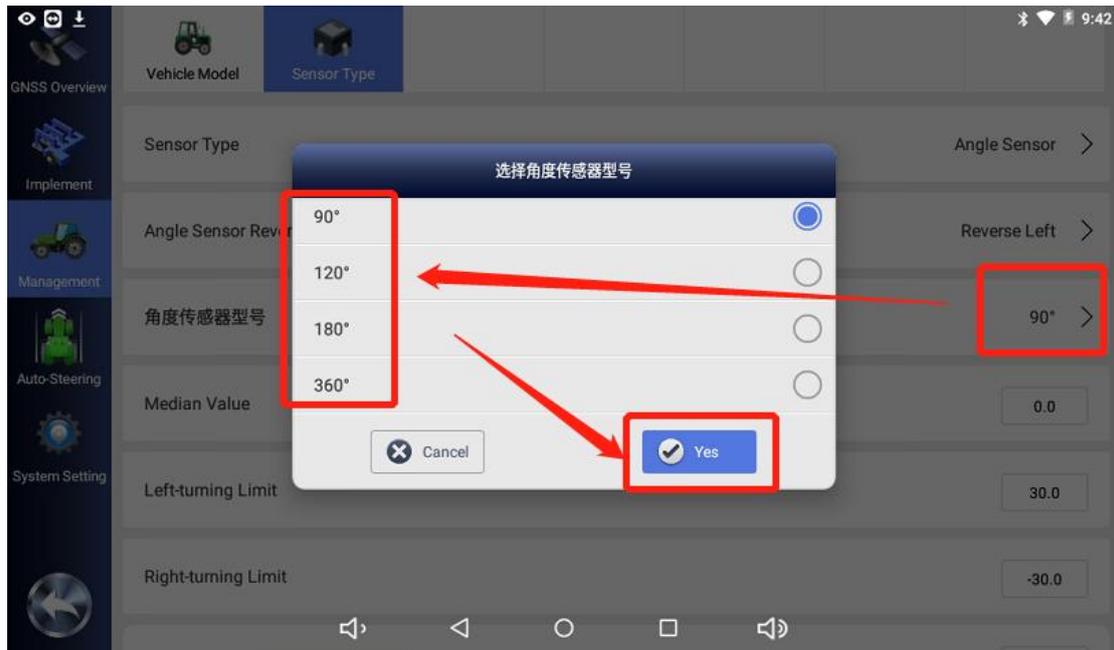
Switch the system to gyroscope mode according to the pattern below.



Pic.4-5-3

After the angle sensor selection is completed, we also need to select the installation model of the angle sensor, etc.

First select the angle sensor model, the common model is 90°. But 120° and 360° angle sensors are also used.



Pic.4-5-4

Remark:

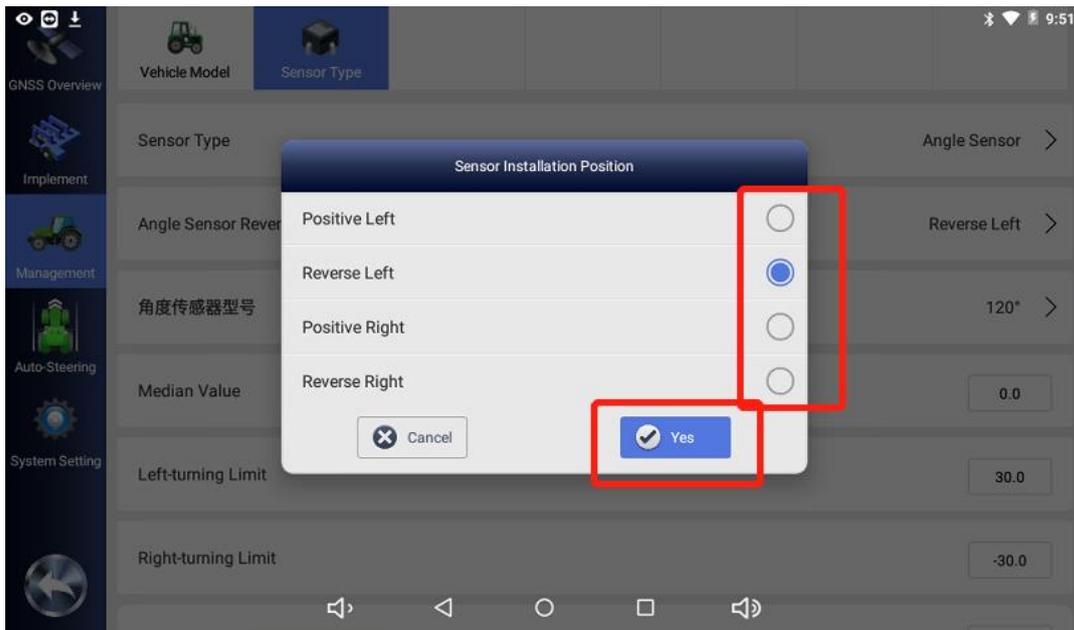
Before installing the angle sensor, pay attention to checking the model of the angle sensor.

As shown in the following figure: 36 is 360°, 09 is 90°, 12 is 120°.



Pic.4-5-5

Then select the installation of the angle sensor.

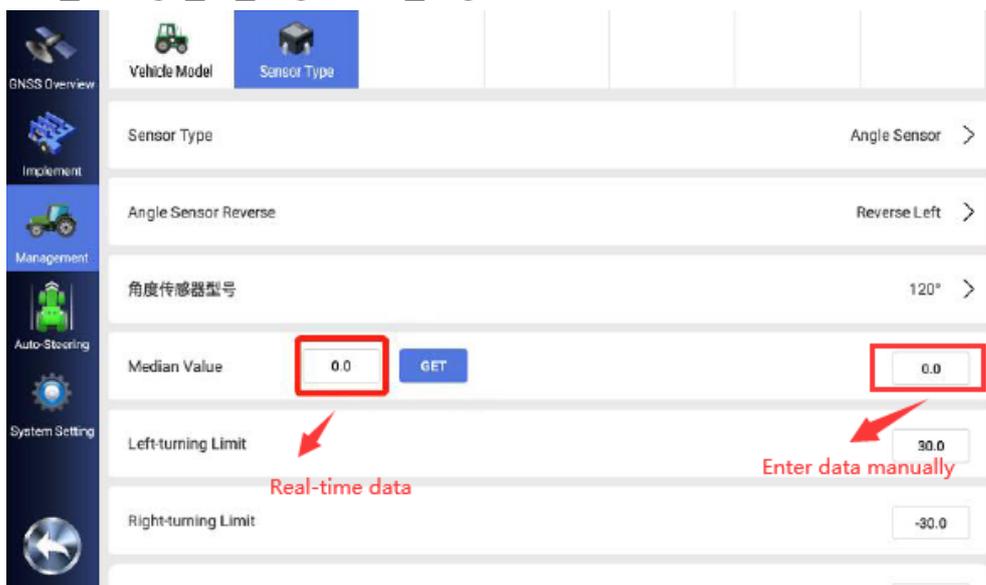


Pic.4-5-6

**Remark:**

After selecting the installation location, make sure to turn the steering wheel to the left to decrease the alignment value. Then turn the steering wheel to the right to increase the alignment value.

Installation position: if it is installed on the right wheel, select the right wheel; if it is installed on the left wheel, select the left wheel; if it is a hinged tractor, install it at the middle hinge position. Finally, confirm the value\_change\_of\_alignment\_angle.



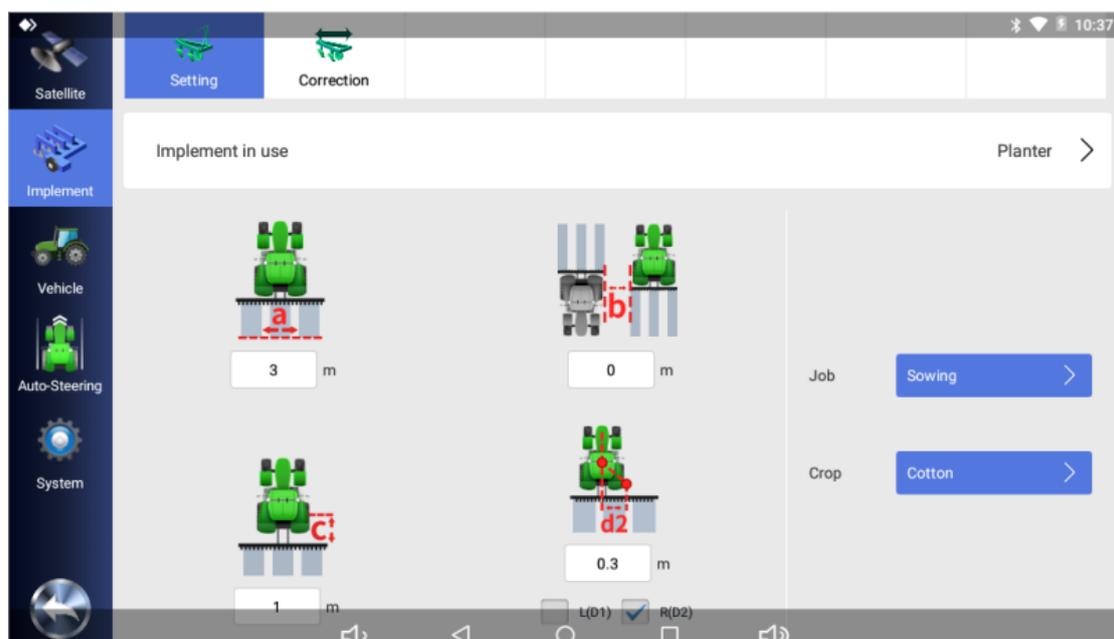
The centering angle of the 90° model is about 60°, the 360° model is about 240°, and the 120° model is about 90°.

Click get to get the the centering angle, and change the manually enter value to the real-time value.

The above content is a reference value, as long as the steering wheel is turned left or right, the centering value will continue to change before the front wheel stops turning.

#### 4.5.2 Implement

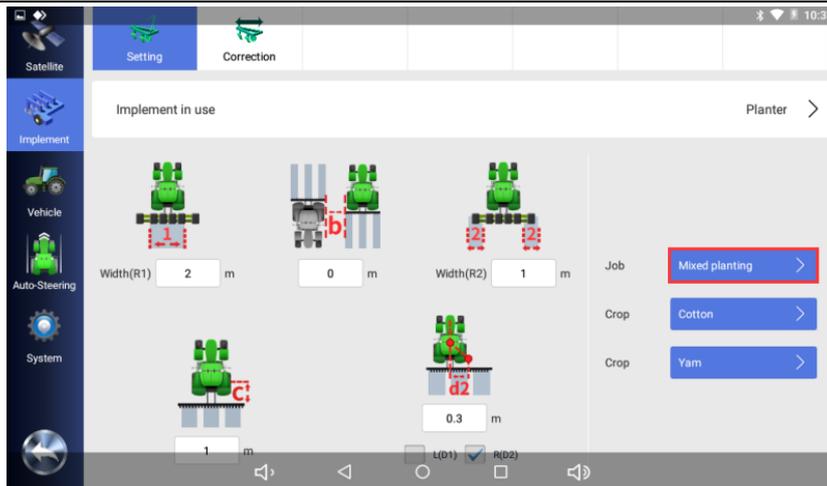
Select the type of farm implement, operation type and crop type here, and the width and joint of the farm implement here should be filled in according to the actual measurement



- a:** Implement width (the distance between the two most seed rows)
- b:** Joint width (distance between two adjacent seed rows)
- c:** Distance from implement to rear wheel
- d2:** Implement offset distance (left or right)

In general, d2 is set to 0.

Mixed planting:

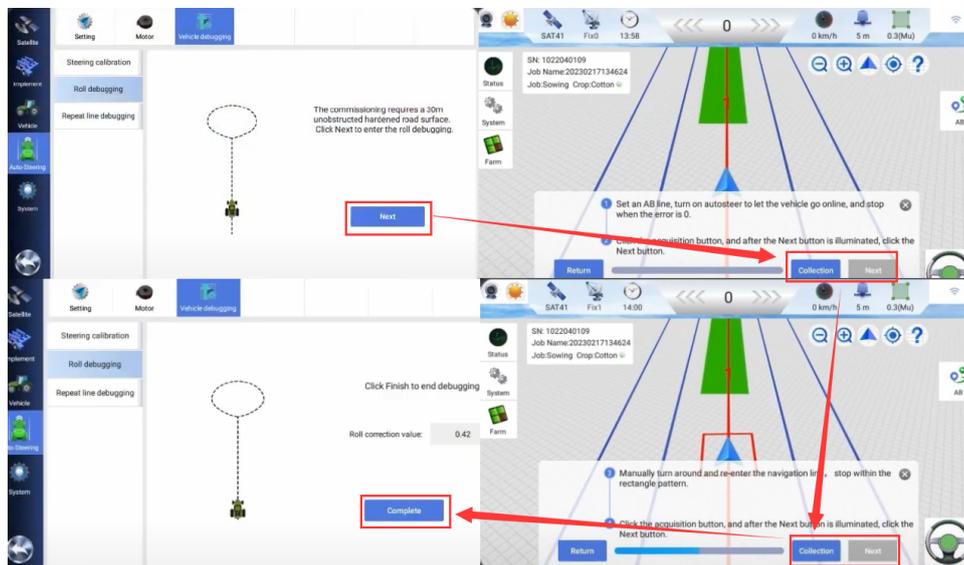


- 1:** Width of crop class 1
- b:** Joint width (distance between two adjacent seed rows)
- 2:** Width of crop class 2
- c:** Distance from implement to rear wheel
- d2:** Implement offset distance (left or right)

In general, d2 is set to 0.

### 4.5.3、 Roll Debugging

Rolling debugging is mainly to calibrate the up and down errors of antenna installation.



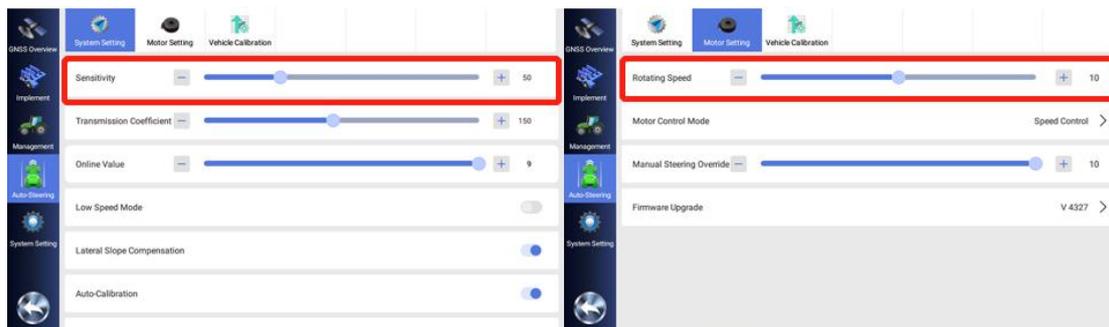
Pic.4-5-8

First drive to a flat road, stop the tractor and click the first acquisition. After the acquisition is completed, the tractor turns 180° and stops at the original position and clicks the second acquisition. After the acquisition is completed, click Calculate. After the calculation is completed, roll debugging is finished. After the calculation is completed, roll debugging is finished.

Note: it is best to debug twice continuously to ensure that the difference between the two results is no more than 0.3, and the result range is - 1 ~ 1.

#### 4.5.4、 Error Debugging

According to the AB line setting in chapter 4.6, then set the AB line, and observe the screen error change after turning on the navigation.



Pic.4-5-10

(1) Sensitivity: parameter of snap line speed. The larger the parameter, the faster the snap line.

(2) Motor speed: the running speed of the driving motor. The higher the value, the faster the motor runs.

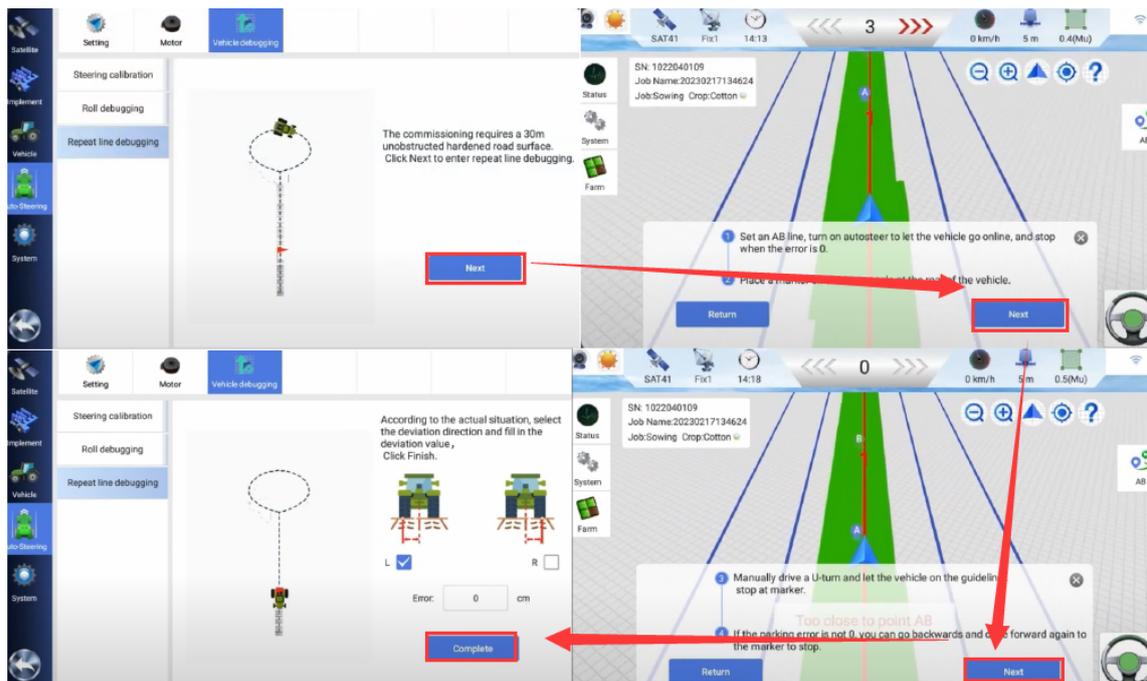
Remark:

(1) At a speed of 10km/h, the parameters are about 50 for the sensitivity and about 12 for the motor speed.

(2) Other parameters can be set by default.

#### 4.5.5、 Repeat debugging first

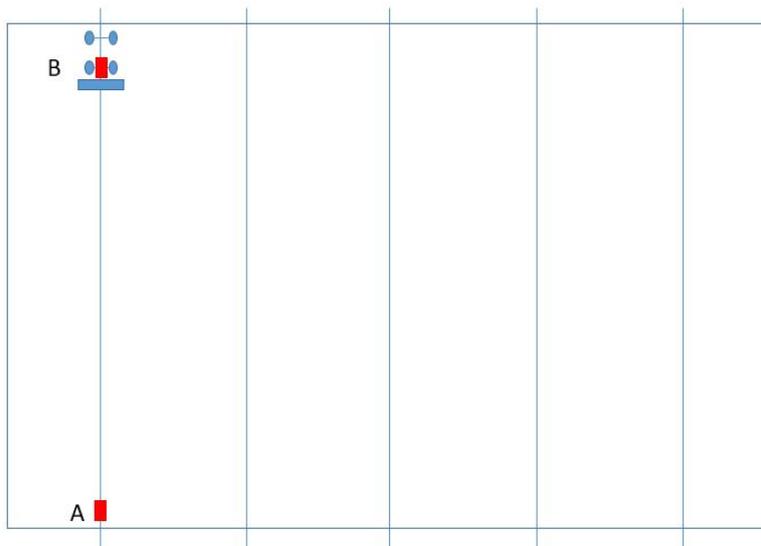
First set an AB line, then stop when the navigation error is zero, place a marker on the ground of the tractor's rear output shaft, then turn around and drive on the same AB line, then navigate to the marker position and stop. If the parking error is not 0, you can go backwards and drive forward again to the marker to stop.



Pic.4-5-11

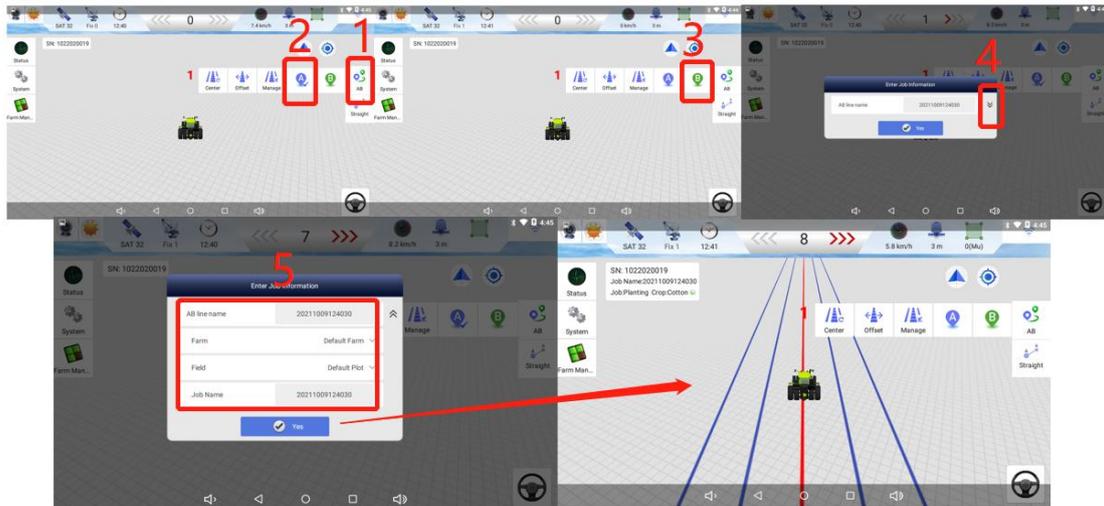
### 4.6、 AB line setting

In the new plot operation, we need to set the AB line first, set the A point at the head of the plot, and set the B point at the end of the plot, as shown in the following figure:



Pic.4-6-1

The software operation is shown in the figure below:



Pic.4-6-2

When you reach the headland, click point A, and when you reach the end of the land, click point B, and then a naming window will pop up. The drop-down window can improve the information inside.

First, you can set the name of the AB line. If you do not set it, the system will set the name according to the time, and then you can select the farm and plot set in advance. If the farm and plot information are not set in advance, the system will select the default plot and farm, and finally It is to fill in the name of this task. If not filled, its name will be the same as the name of the AB line.

After filling in the information, click the OK button. At this time, the setting of the AB line is completed, and the navigation operation can be performed.

Note: Please refer to Chapter 6 for the function of adding farm and plot information.

#### 4.7、 Error Debugging

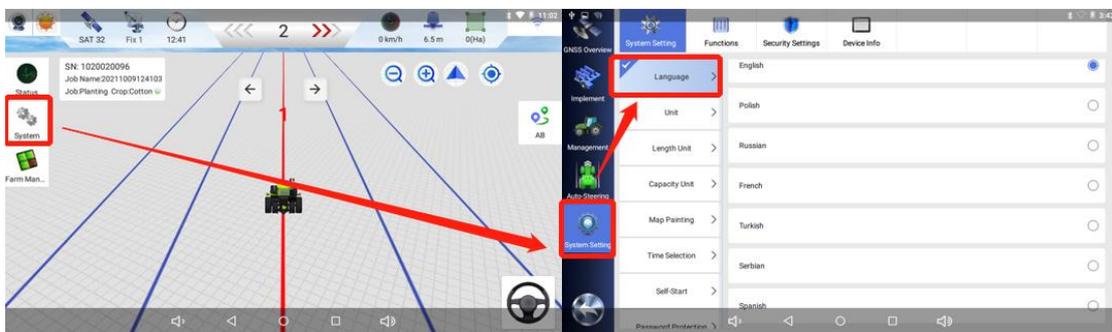
After the underground operation, the speed is different according to the different ground conditions, which can be set according to the debugging method in chapter 4.5.3.

## 5、 Function Introduction

This section mainly introduces the use of some additional functions of the software.

### 5.1、 Language Selection

Select the language in the system settings. Customers only need to select the appropriate language to use. Now the software includes English, Russian, Polish, French, Turkish, Serbian and Spanish.

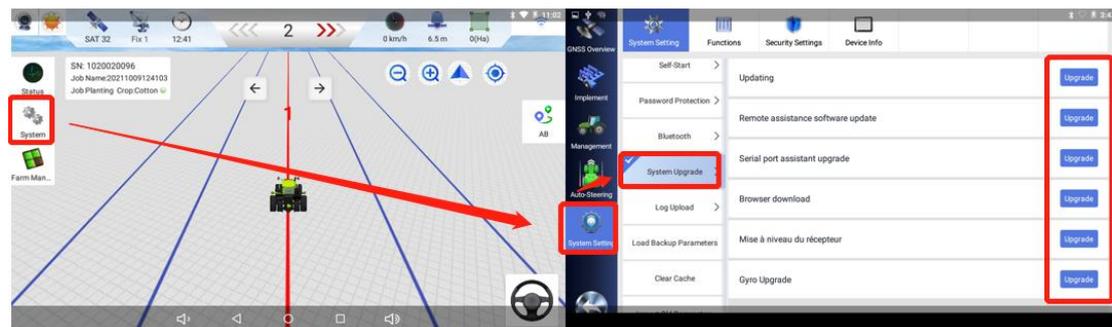


Pic.5-1

Remarks: If other languages are required, the company can provide Chinese and English language packages for customers to choose, and then translate the required language according to the language package.

### 5.2、 Software Upgrade

The software upgrade button in the system settings, including software update, remote assistance such as update, serial port assistant software update, browser download, receiver upgrade, gyroscope upgrade.

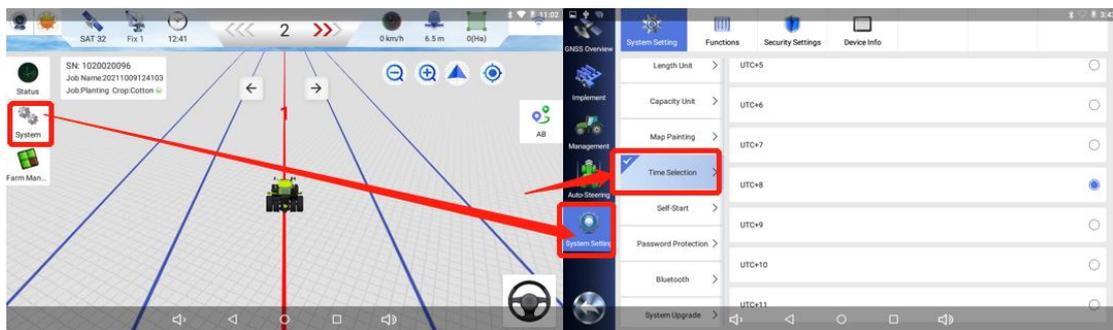


Pic.5-2

Remarks: When purchasing equipment, the software can be continuously upgraded for free, but before upgrading, be sure to ask the company's technicians if they can upgrade to avoid unnecessary errors.

### 5.3、 Time Selection

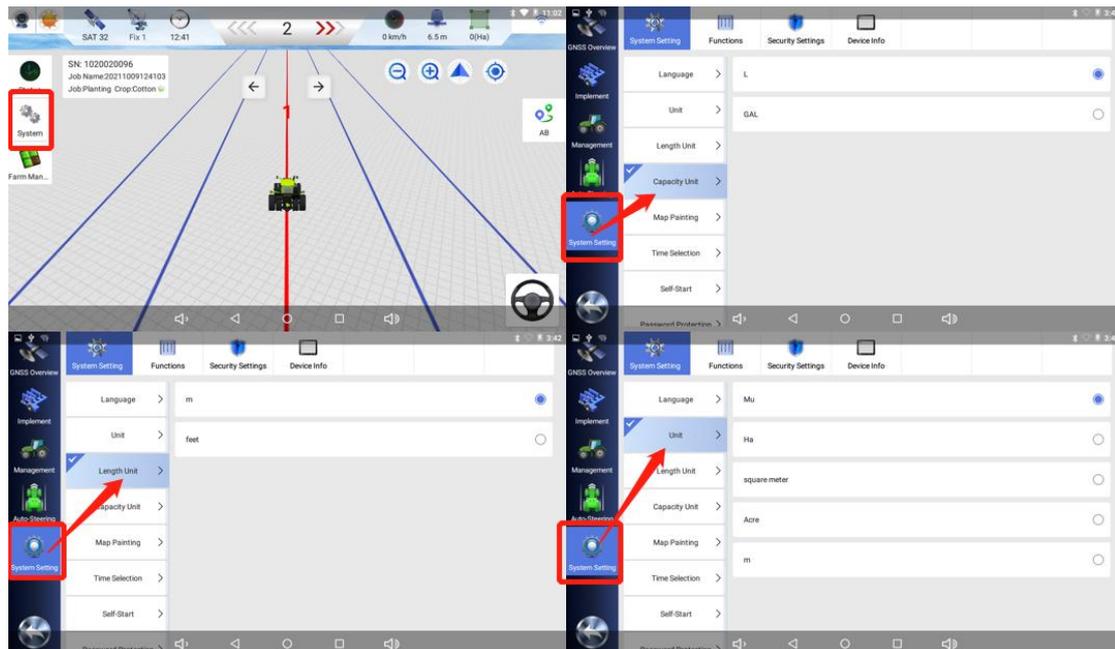
The software defaults to UTC+8, and customers can select the corresponding time display according to the specific time zone of the location.



Pic.5-3

### 5.4、 Unit Selection

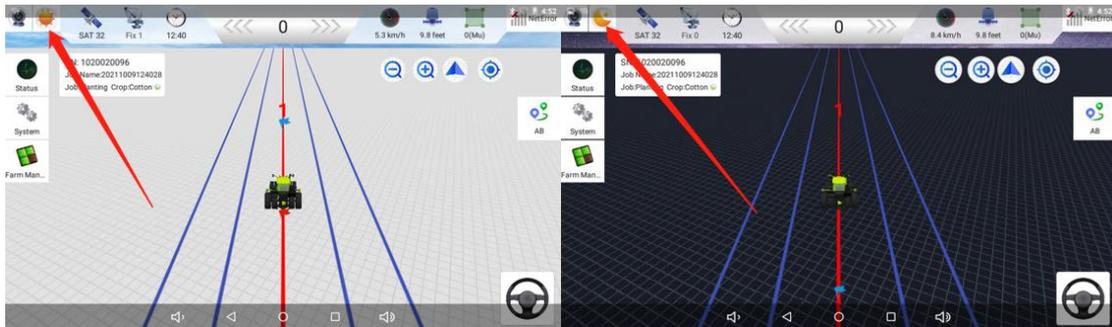
System settings include job record unit, length unit display, capacity unit, etc. Customers can choose the appropriate unit to operate and work according to their needs.



Pic.5-4

## 5.5、 Day and Night Mode Switching

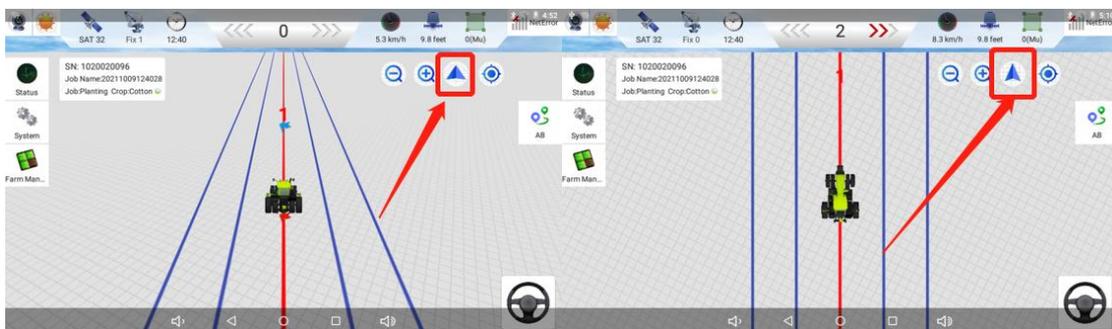
The mode switch button on the main interface can switch the display mode of the main interface, and you can select the appropriate interface according to different time operations.



Pic.5-5

## 5.6、 Dimension Switching

The software can switch the dimension display (3D and 2D) of the main interface according to the customer's preference, and the software defaults to the 3D model display.

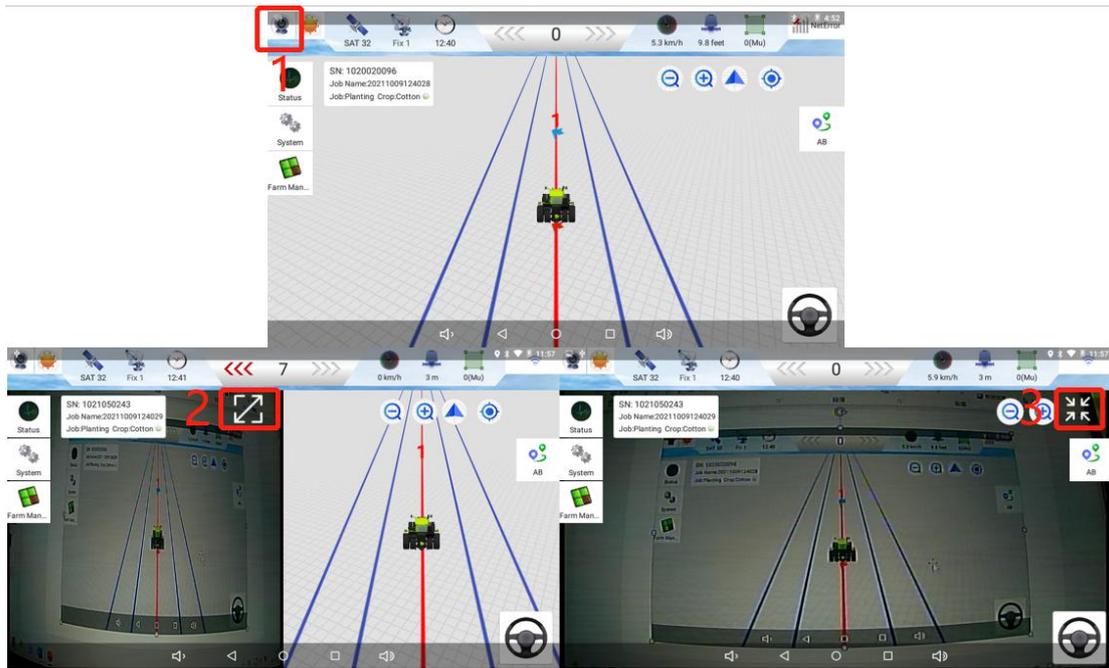


Pic.5-6

## 5.7、 Camera

- 1: The camera can be turned on or off.
- 2: Zoom in button on camera interface.
- 3: Zoom out button for the camera.

Customers can control the status of the rear view camera as needed.



Pic.5-7

## 6、 Equipment Specifications

This section mainly introduces the parameters of the main hardware motors, tablet, and R71 receiver.

### 6.1、 T100 Tablet

T100 tablet is an industrial-grade vehicle Android display control panel developed and produced by Smajayu. It can ensure the operation in harsh environment. It is widely used in the automatic driving of agricultural machinery in precision agriculture, satellite leveling, construction machinery, intelligent transportation and other harsh environment.

### **6.1.1、 Technical Features**

(1) Powerful, stable and reliable automotive-grade processor, CPU: ARM Cortex-A7, 1.5GHz;

(2) Product design in strict accordance with industrial rules, in line with IP66 technical specifications, and adapt to harsh operating environments in the wild;

(3) Built-in super powerful 4-core processor, main frequency 1.5GHz, onboard 2GB memory, 16GB storage;

(4) Rich communication interfaces can meet any application requirements, including CANBus, Serial, LTE, etc.;

(5) Waterproof U disk data interface, U disk can be directly plugged and unplugged;

(6) The system supports wide voltage input, 9~36V DC, does not restart when the vehicle is ignited, and has functions such as overcurrent and overvoltage protection;

(7) Compact fanless design, reasonable internal structure design, good heat dissipation;

(8) Built-in 4G full Netcom module;

(9) It is easy to install and fix, and can be fixed by vehicle brackets such as RAM;

(10) Adopt 10.1-inch capacitive touch screen, support 10-finger touch, resolution 1024×600P, brightness 750nits, high screen brightness, visible under strong light;

(11) The system adopts Android 6.0.

### **6.1.2、 Technical Parameter**

#### **Electrical parameters**

Power consumption:  $\leq 12.0W$

Power supply voltage: 9~36V DC, with positive and negative polarity reverse polarity protection, support power failure detection.

**Physical properties**

Working temperature: -40°C~+70°C

Storage temperature: -55°C~+85°C

Physical size: 281mm×181mm×42mm

Resolution: 1024×600P

Screen size: 10.1 inches

Weight: 1.56kg

Protection class: IP66

Shock and Vibration: MIL-STD-810G

**Data interface**

RS232×2

RS485×1

CAN×1

USB2.0×1

DC IN×1

Audio output×1

DI×2, DO×2

12V DC OUT×1

Analog camera input×2

RJ45×1

**Performance index**

Screen size: large screen 10.1 inches

Screen brightness: high brightness 750nits

CPU: 4-core 1.5Hz

Wireless communication: 4G / WiFi / BT

Communication interface: RS232 / RS485 / can

Network system: 4G all Netcom, 4G / 3G / 2G

**6.1.3、 Interface Definition**

PORT1	
1	CVBS12V
2	GND
3	NC
4	CVBSIN2
5	CVBSIN1
6	CVBS12V

PORT2	
1	RS232A-TX
2	RS232A-RX
3	B+
4	ACC
5	B-
6	GND
7	RS232B-RX
8	CAN-L
9	CAN-H
10	INPUT-GPIO1
11	RS232B-TX
12	GND

PORT3	
1	RS485A
2	RS485B
3	AUDIO-LINEOUT
4	DC12V-OUT1
5	RJ45-TX+
6	RJ45-TX-
7	RJ45-RX-
8	RJ45-RX+
9	DC12V-OUT2
10	NC
11	INPUT-GPIO2
12	GND

Remark:

1. SMA connector 4G to connect 4G antenna.
2. GNSS connector to connect UBLOX antenna (not required for JY305 device)
3. ttyS4--external PORT2 port RS232B (connected to the motor)
4. ttyS6--external PORT2 port RS232A (connected to R71)
5. ttyS7--external PORT3 port RS485

## 6.2、EMS2 Motor

### 6.2.1、Introduction

EMS2 steering drive unit is the fourth-generation automatic driving steering control motor. It adopts drive-control integrated design, small and beautiful appearance, large torque, small size, light weight and high precision. The communication mode supports CAN, RS232, and supports two working modes: position control and speed control. It has been widely used in the Smajayu autonomous driving system.

### 6.2.2、Technical Features

### **6.2.2、 Technical Features**

\*1+Low noise and low calorific value during operation.

(2) The motor does not need maintenance.

(3) IP67 dustproof and waterproof, suitable for harsh agricultural working environment.

(4) Integrated drive and control design, beautiful appearance, reduce cable connection.

### **6.2.3、 Technical Parameter**

#### **Electrical parameters**

(1) Extreme short-time working voltage: DC6-35V

(2) Rated current: 12.5A

(3) Stall current: 25A

(4) Rated voltage: 12V

(5) Logic power supply range: none

(6) Communication protocol: ModBUS, CAN

(7) Encoder resolution: 53248 lines

(8) Encoder interface (protocol): parallel, no protocol

(9) Maximum output frequency of encoder: 200KHZ

#### **Physical properties**

(1) Size: Diameter: 182mm Height: 85mm

(2) Weight: about 3KG

(3) Storage temperature: -45-150 degrees Celsius

(4) Operating temperature: -40-105 degrees Celsius

(5) Appearance material: aluminum alloy

(6) Rated speed: 100rpm;

- (7) Maximum torque: 9N\*m; (20N\*m optional)
- (8) Guaranteed speed of continuous operation: 100rpm
- (9) Maximum free-running error: no reducer, no free-running error

### Data interface

- (1) RS232
- (2) CAN
- (3) AD convert

#### 6.2.4、 Interface definition



NO.	Function	Note
+	+12V	
-	0V	
1	232-RXD	
2	232-TXD	
3	232-GND	
4	PRO	Burn mode
5	SENSOR OUT	AD sampling
6	SENSOR 0V	land
7	SENSOR +5V	5v output
8	PRO-GND	Burn mode ground
9	CAN-L	
10	CAN-H	

### **6.3、 R71 Receiver**

The R71 GNSS receiver is a new multi-function high-precision GNSS receiver, with built-in dual-antenna Beidou/GNSS high-precision board, radio communication module, inertial navigation combination module, 4G module, Bluetooth module, etc.

#### **6.3.1、 Technical Features**

- (1) High precision and low power consumption, using Beidou, GPS, GLONASS, Galileo and other four-system multi-frequency systems.
- (2) Built-in wireless communication module, a variety of communication protocols, such as transparent transmission, TRIMTALK protocol and so on.
- (3) Wide voltage power supply, voltage range 9~36V DC, with positive and negative polarity reverse polarity protection;
- (4) Support remote diagnosis and remote setting, which is convenient for users to maintain and operate the system remotely and reduces user maintenance costs.
- (5) Integrated design, easy installation, standard IP67 waterproof and dustproof design.
- (6) Built-in high-precision six-axis gyroscope to achieve high-precision attitude measurement
- (7) Built-in Bluetooth module, compatible with 2.0 and 4.0 (optional).
- (8) Adopt professional DEUTSCH communication interface.

### 6.3.2、 Technical Parameter

#### Signal tracking

BDS: B1、 B2、 B1I、 B2I

GPS: L1、 L2

GLONASS: L1、 L2

Galileo: E1、 E5b

QZSS: L1、 L2

Cold start time: <25s

Initialization time: <5s (typ.)

RTK initialization reliability:

>99.9%Recapture: <1s

#### Accuracy Index

(1) Single-point positioning: Plane: 1.5m

Elevation: 2.5m

(2) RTK accuracy:

Plane:  $\pm(10+1.0\times 10^{-6}\times D)$ mm Note 1

Elevation:  $\pm(15+1.0\times 10^{-6}\times D)$ mm

Speed accuracy: 0.03m/s

GNSS heading accuracy:  $(0.2/R)^\circ$ , R is the baseline distance, in meters

GNSS roll or pitch accuracy:  $(0.4/R)^\circ$ , R is the baseline distance, in meters

Gyro GNSS fusion heading accuracy:  $0.5^\circ$

Angular velocity measurement range:  $\pm 400^\circ/\text{s}$

Acceleration range:  $\pm 8g$

Data update rate: 1 ~ 100Hz

**Electrical parameters**

Power consumption:  $\leq 4.0W$

Supply voltage: 9~36V DC

**Physical properties**

Working temperature:  $-45^{\circ}C \sim +75^{\circ}C$

Storage temperature:  $-55^{\circ}C \sim +85^{\circ}C$

Size: 181.4mm×181.1mm×70mm

Indicator light: 1 power light, 1 differential signal light, 1 satellite light

Protection class: IP67

Shock and Vibration: 2m drop resistance Weight: 1.05Kg

**Data interface**

Data output: NMEA-0183, binary code

Data refresh rate: 1~20Hz optional

Baud rate: 9600~921600

DEUTSCH connector: including one power supply, one RS232, two CAN

Differential format: RTCM3.0/3.2

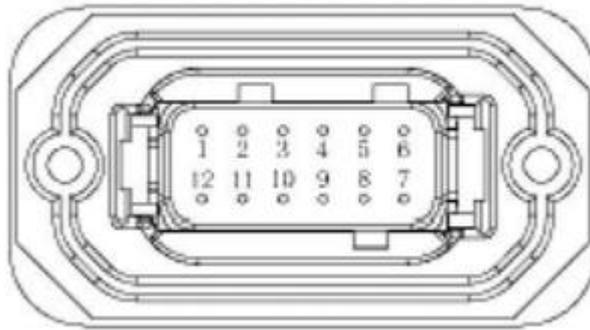
Communication: Full Netcom 4G module, radio communication module

Bluetooth: BT4.0, backward compatible with BT2.x, the protocol supports Windows/Android/IOS system

Data link antenna: 1

GNSS antenna interface: 1

### 6.3.3、Interface Definition



pin	definition	port
1	TX	COM
2	RX	
3	CHT	IMU
4	CLR	
5	POW	9-36V DC
6	POW	
7	GND	
8	GND	
9	CL	CAN
10	CH	
11	RX	CONFIG
12	TX	