SMAJAYU
PRECISION AGRICULTURE

JY305
Operation Manual

SMAJAYU(SHENZHEN)CO.LTD

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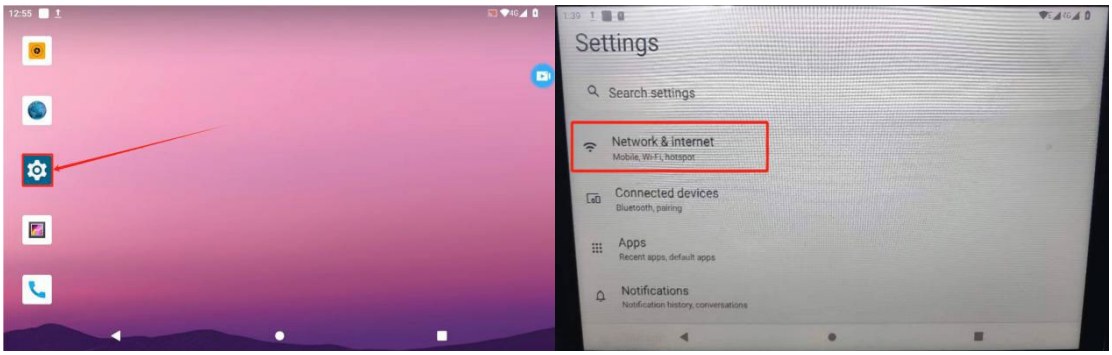
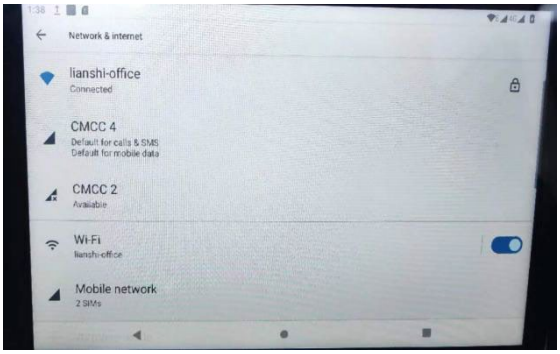
1. How to register

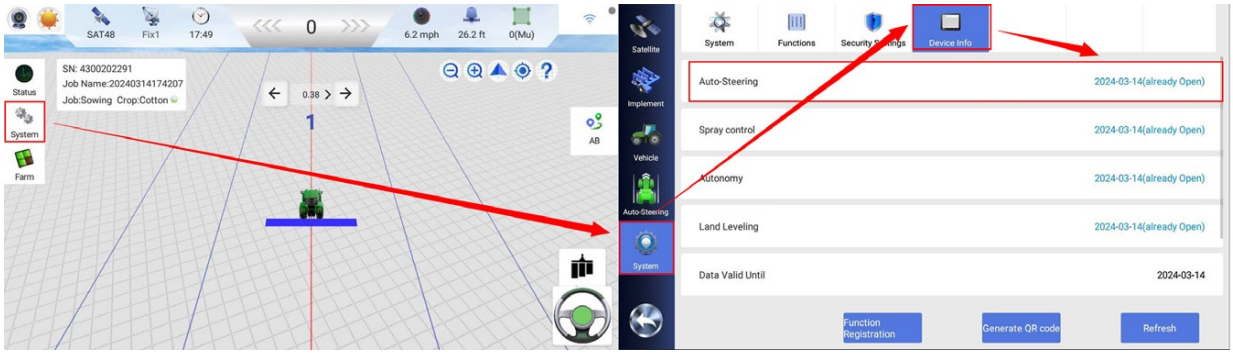
（1）First, please provide the tablet SN and motor SN to the technician.
The equipment has been registered before shipment, you can skip this step.

（2）After the technician registration is completed, please connect the tablet to the network.



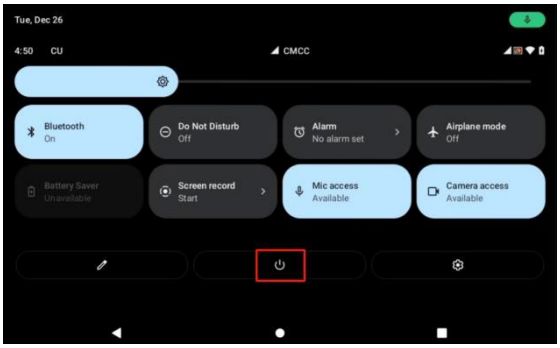


（3）Then restart the software and check whether the registration is successful.



2. How to turn on and off the tablet

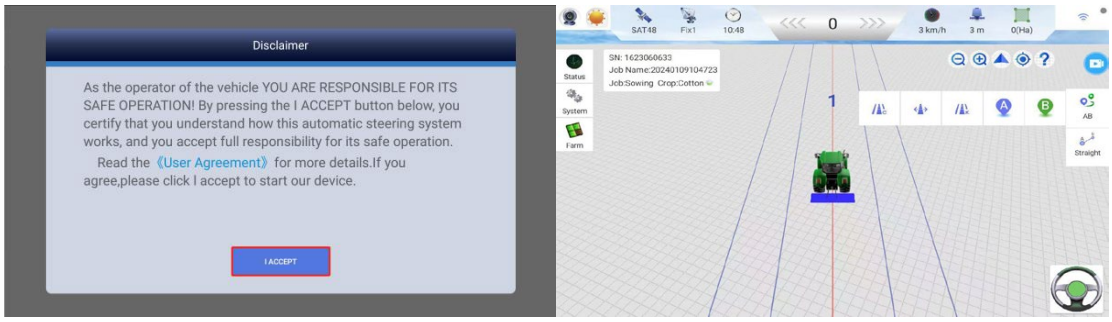
（1）Pull down the floating window at the top of the tablet interface twice and click the power button in the middle.



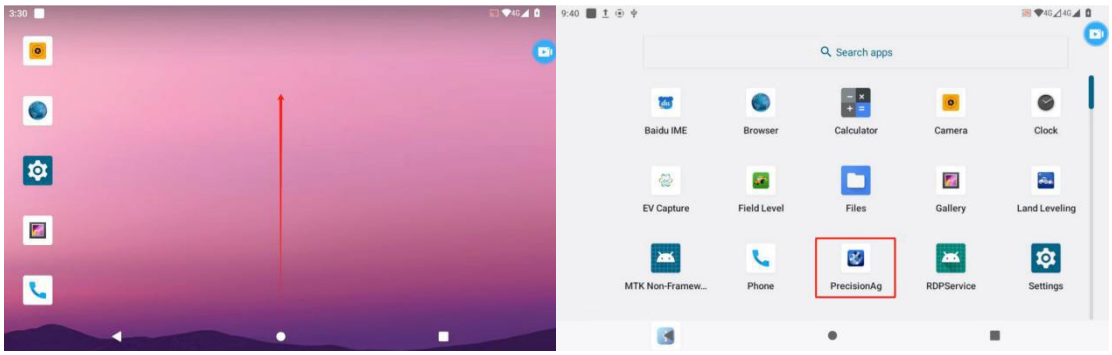
（2）Flip the power switch.

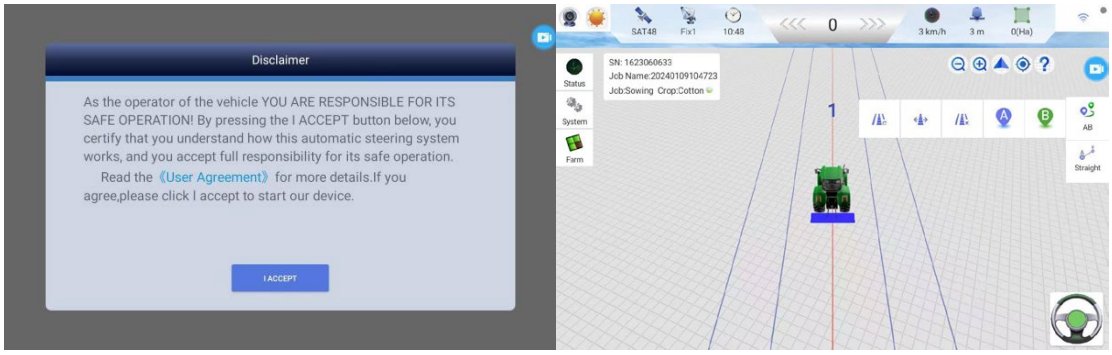
3. How to enter the main interface after booting

（1）PrecisonAg will start automatically after booting. First, a disclaimer appears. Click I ACCEPT to enter the main interface of the software.

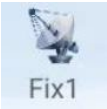
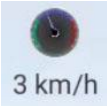


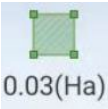
（2）If you want to enter the software again after exiting the software, tap anywhere on the screen and slide upward to find the software menu, and tap PrecisionAg to enter the main interface of the software.





4. Introduction to main interface icons

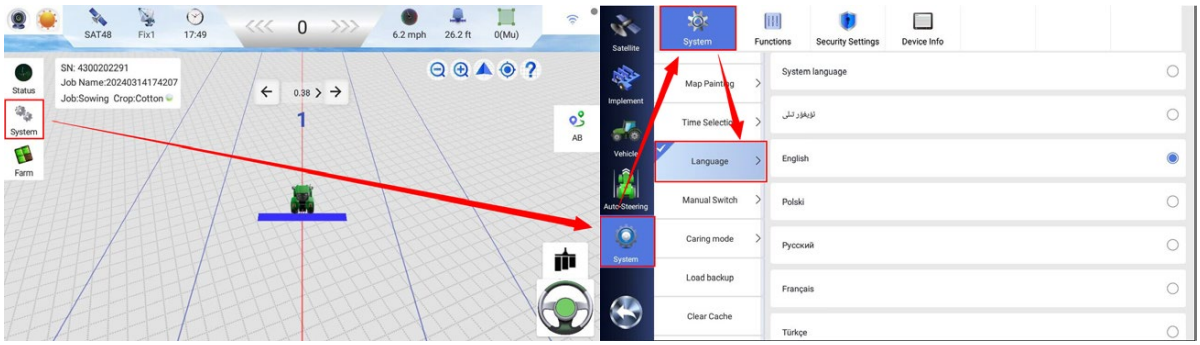
NO.	Description	Icon
1	Camera switch button	
2	Main interface mode switch	
3	Satellite status display	
4	Signal status display	
5	Time display	
6	Error display	
7	Device real-time speed	

8	Farm implement width display	
9	Work area display	
10	Signal status display(4G/Wi-Fi)	
11	Zoom out button on the main interface	
12	Zoom in button on the main interface	
13	2D/3D view switching button	
14	Return to current position button	
15	Help button	
16	Start and end button	
17	Equipment status and self-test button	
18	System settings	
19	Farm management	
20	AB line setting and editing button	
21	Point A	

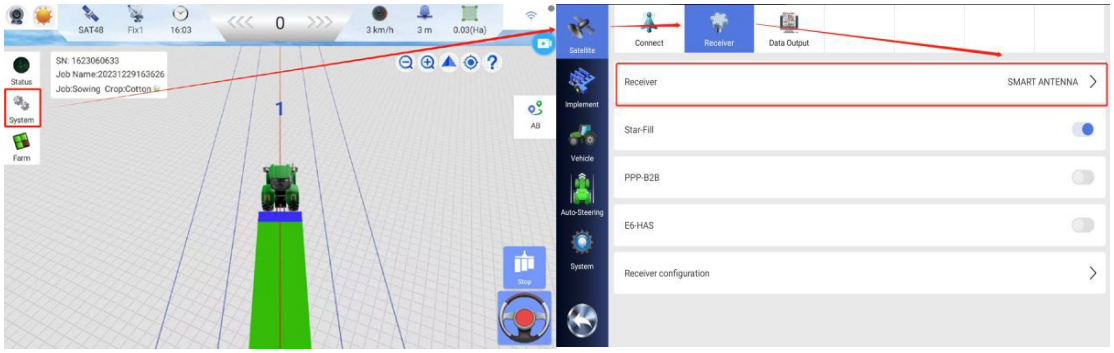
22	Point B	
23	Import an AB line	
24	Move the AB line	
25	Reset the AB line	
Introduction of Navigation Lines		
26	Straight AB line	Straight
27	Curve AB line	Curve
28	Path	Path
29	Turn Around	TurnAround
30	Harrow	Harrow
31	U	U
32	Shape	Shape
33	Square ring	Square ring
34	Span	Span

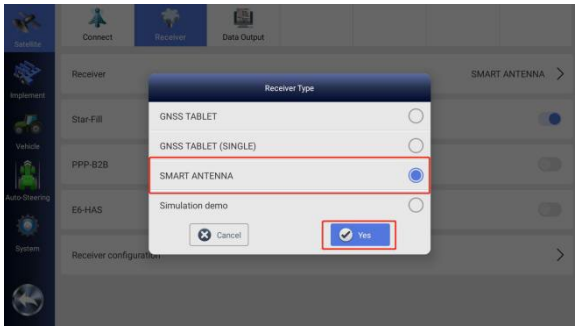
35	Pivot	Pivot
36	Single line	Single line
37	A+	A+
38	Sealing ring	Sealing ring
39	Sowing	sowing
40	Combine Harvesting	Combine Harvesting
Title 12 has details		

5. How to change the language: System-> System->System->Language



6. How to change the receiver mode:
System->Settings->Receiver->Receiver->SMART ANTENNA





7. How to connect to a base station

Just choose one of the following 4 methods. If you purchased the R26 radio base station, please refer directly to 7.4 Radio service

7.1 External Data：

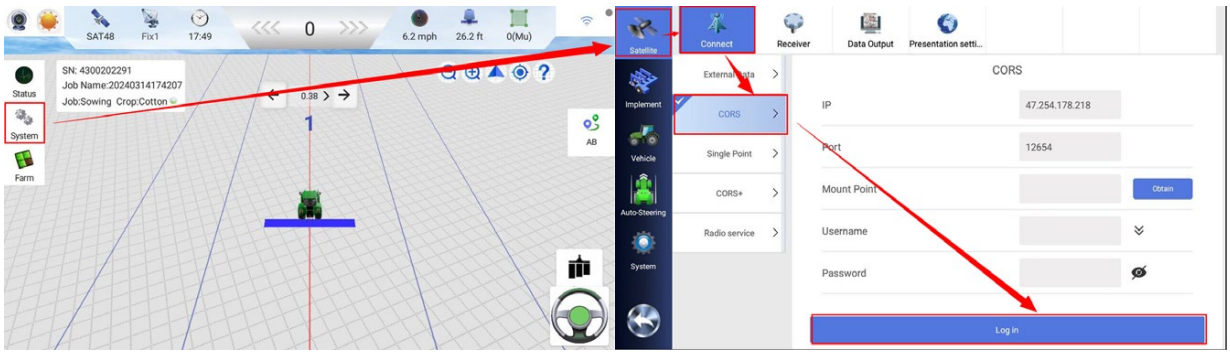
System->Satellite->Connect->External Data

Select **External Data** when Port3 of T100/T101 is connected to D10. E6-HAS also selects **External Data**.

7.2 CORS：

System->Satellite->Connect->CORS

CORS is used to connect to network base stations. The base station mode is NTRIP mode and the data is RTCM3x.



7.3 Single Point：

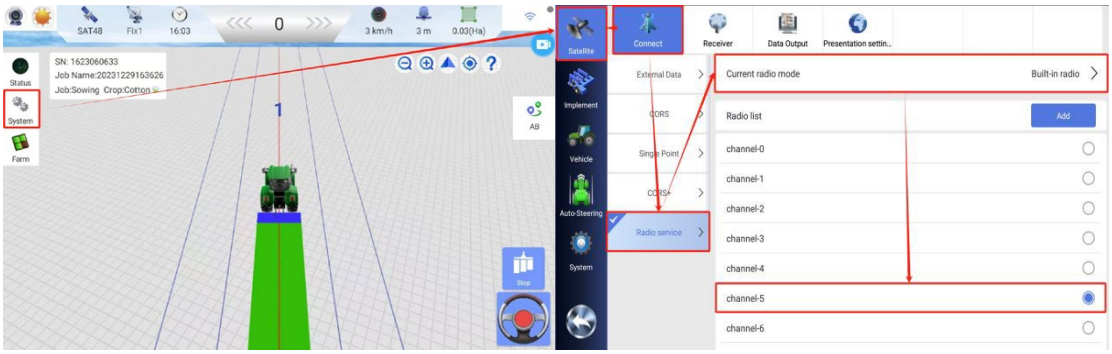
System->Satellite->Connect->Single Point

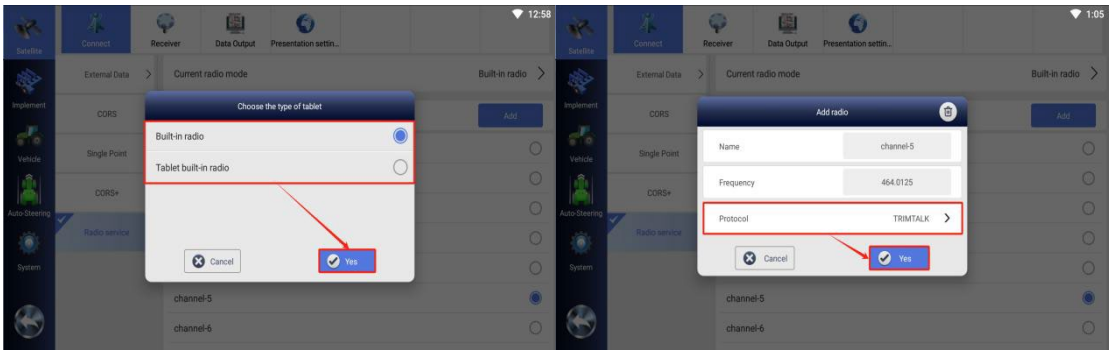
Selecting Single Point will not connect to any base station. SBAS also chooses Single Point.

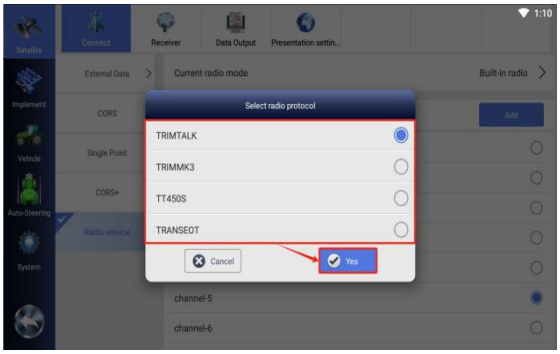
7.4 Radio service：

System->Satellite->Connect->Radio Service

Select **Radio service** when the tablet or receiver has a built-in radio station. And the channel, frequency, and protocol need to be consistent with the radio base station. Select Tablet built-in radio. Select Built-in radio for the built-in radio station of the receiver.





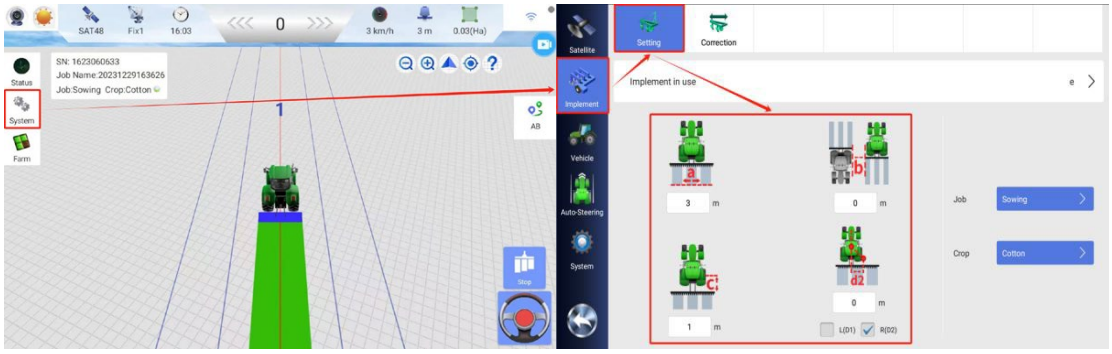


8. How to enter vehicle parameters:

System->Vehicle Management->Vehicle Model

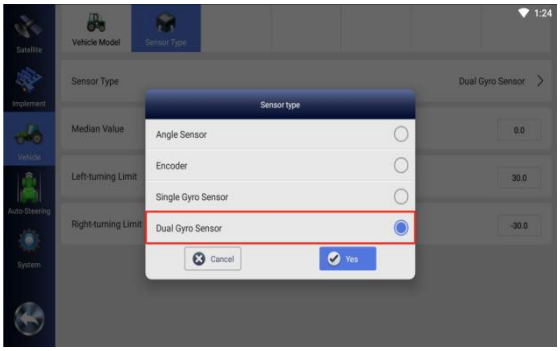
A：The height of the antenna from the ground
B：Wheelbase between front and rear wheels
C：The distance of the antenna from the center axis of the vehicle
D：The horizontal distance of the antenna from the center of the front wheel.
E：The center distance between the two tires of the front wheel.

9. How to enter farm tool parameters:
System->Agricultural tools->Settings->Width of farm tools, handover row, distance between farm tools and rear wheel axle, farm tool offset distance from tractor center axis



a(width): Width of agricultural machinery such as seeders, rice transplanters, rotary cultivators, and harvesters.
b(combination width): The distance between each row of working areas. This part can be used alone or added to the width of the agricultural implement.
c(distance from machine to rear axis): The distance between the farm implement and the tractor's rear wheel axle is currently under development.
d2(distance of implement offset): Offset of the center axis of the farm implement relative to the center axis of the tractor.

10. How to change sensor mode:
System->Vehicle->Sensor Type->Sensor Type->Dual Gyro Sensor

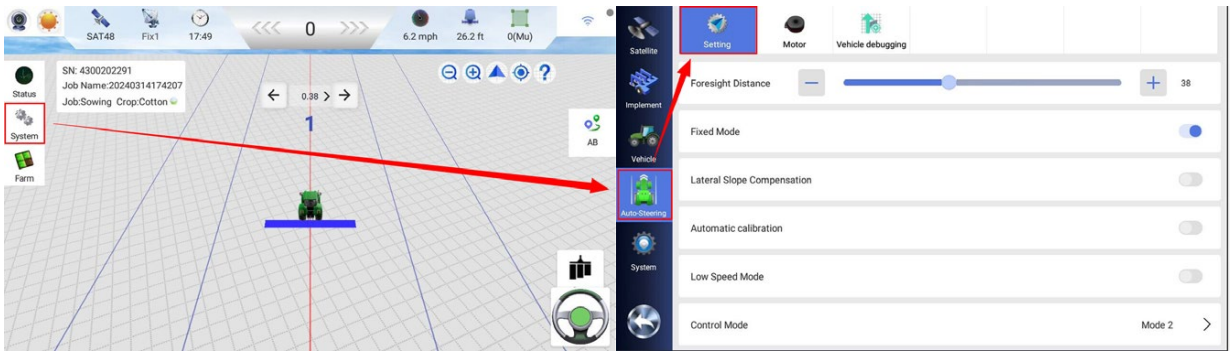


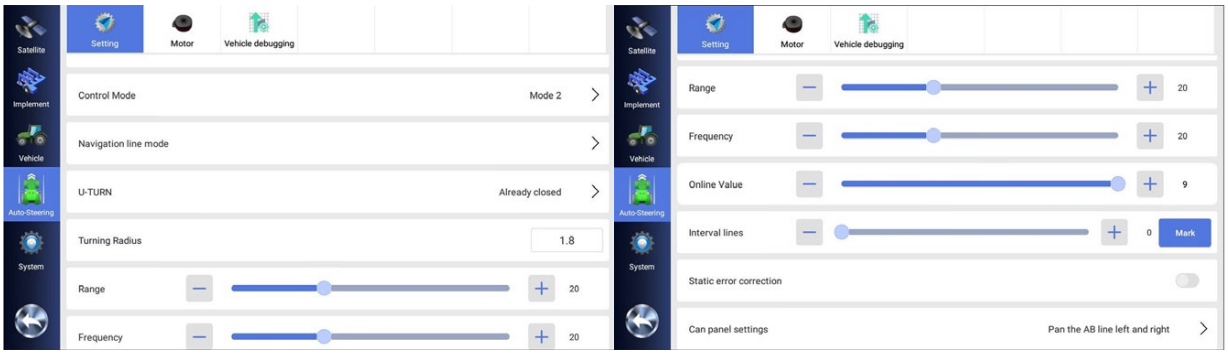
Click sensor type, there are 4 sensor types to choose from, namely angle sensor, encoder, single gyro sensor, and dual gyro sensor. JY305 chooses dual gyro sensors.

11. How to calibrate (mode 2)

11.1 Navigation settings:

System->Auto Navigation->Navigation Settings





Sensitivity： Parameter of snap line speed. The larger the parameter, the faster the

snap line.

Foresight Distance: Related to tractor speed. Choose 30-40 when the speed is lower than 10km/h, choose 55-60 when the speed is between 10km/h-15km/h, and choose 60-70 when the speed exceeds 15km/h.

Fixed Mode: Turn it on to turn on the forward viewing distance, turn it off to turn on the sensitivity.

Lateral Slope Compensation : It turns on when there is a slope in the working area and turns off when there is no slope in the working area.

Automatic Calibration: When turned on, the azimuth angle will be automatically modified in real time. This function is turned off by default.

Low Speed Mode: This mode is turned on when the speed is lower than 1km/h, and turned off at normal speed and high speed.

Control Mode: Used to select Mode 1, Mode 2, Mode 3, and Mode 4.

Operation mode: Function module for turning on or off automatic driving and driver less driving.

U-TURN: After opening, you can click on the main interface of the software to choose to make a U-turn to the left or right with one click.

Turning radius: The radius of the circle formed when using the one-click U-turn function to turn to the next AB line.

Range: The motor controls the steering wheel's swing amplitude.

Frequency: Motor controls steering wheel swing frequency.

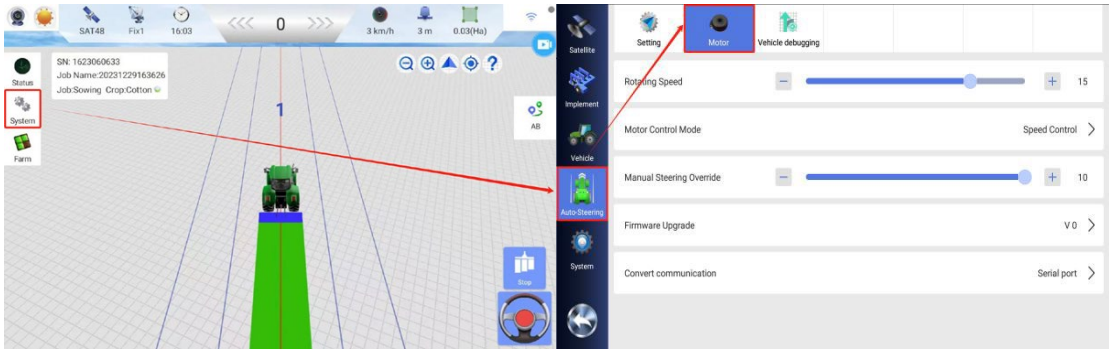
Online Value: The distance between a point on the central axis of the vehicle and line AB. 0 represents the front of the vehicle and 9 represents the rear. The default value of the online center is 9.

Interval lines: Track line setting is used to mark the navigation line to remind customers that the trip needs to set aside a driving track for subsequent use.

Static error correction: When there is a fixed deviation, turning on the static error correction will eliminate the error and is turned off by default.

Can panel settings: Used to set the control mode selection of the can panel of the connected device.

11.2 Motor Settings: System->Auto Navigation->Motor



Rotating Speed: The default motor speed is 10, and the recommended value is 15. The larger the value, the smaller the rotation range of the motor and the faster the

speed.

Motor Control Mode：Speed control selected by default.

Manual Sterring Override： 0-10, 0 is the easiest, 10 is the hardest, adjust as needed.

Firmware upgrade： The default firmware is V4327/V4328/V4329. It is not recommended to click the firmware upgrade button.

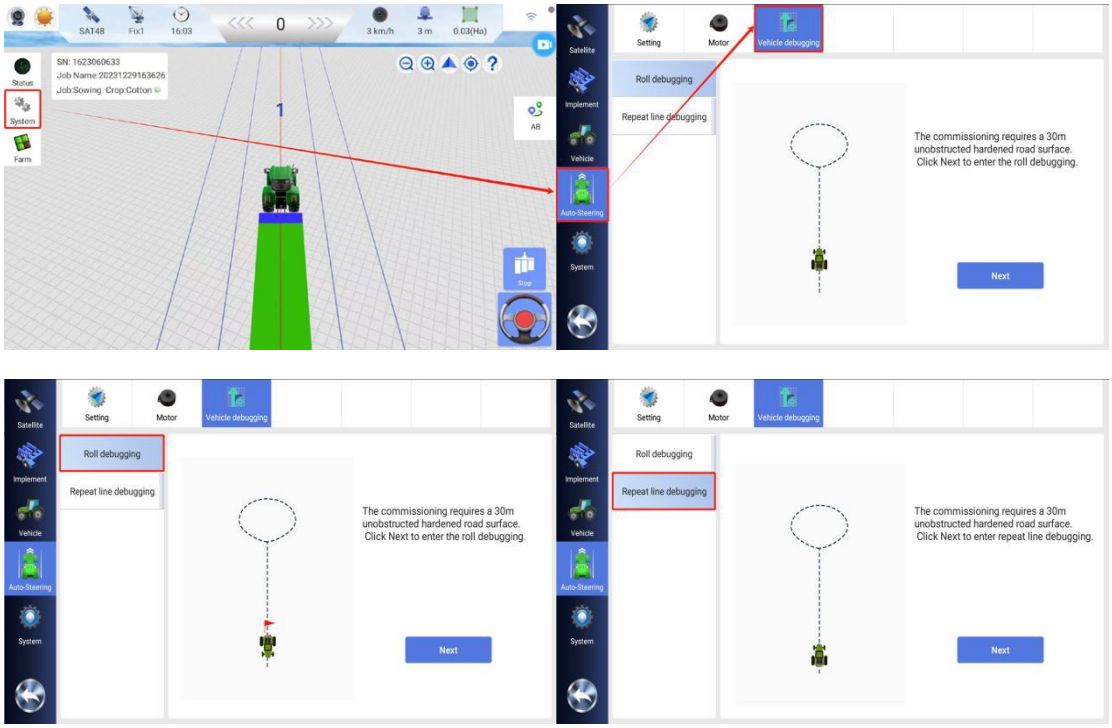
Switch motor communication：The default is Serial port, Can not be switched.

11.2 Vehicle debugging:

System->Automatic navigation->Vehicle debugging->Roll debugging, repeat line debugging

Roll debugging: used to debug the roll angle of the antenna installed on the roof of the car.

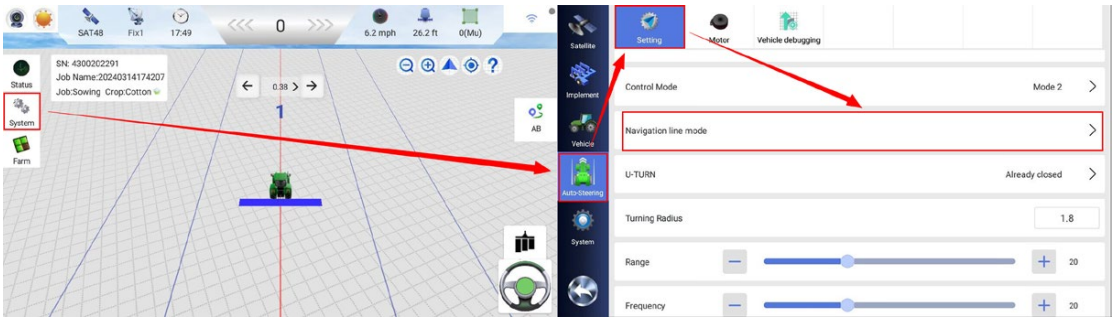
Repeated line debugging: used to correct the error between the antenna installation position and the tractor's central axis.

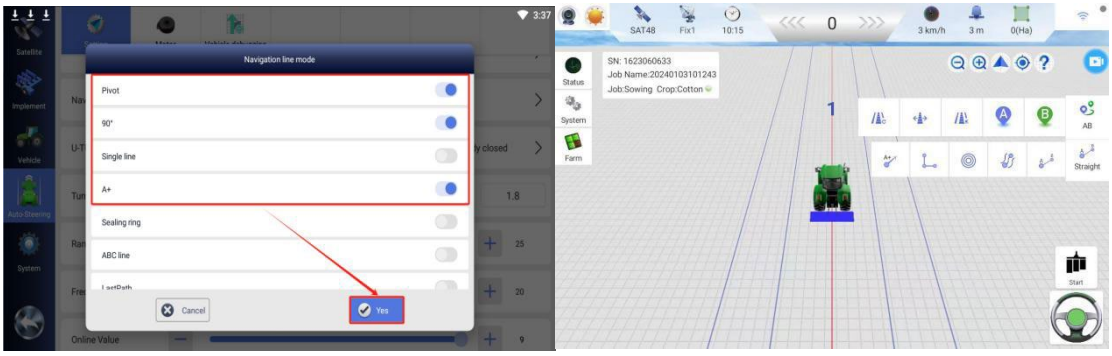


12. How to set AB straight line, AB curve, A+, Pivot, 90°

12.1 Operation mode settings

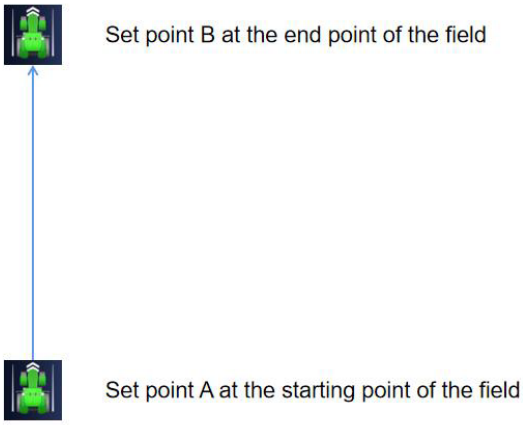
System->Auto Navigation->Navigation Settings->Operation mode->A+，Pivot，90°





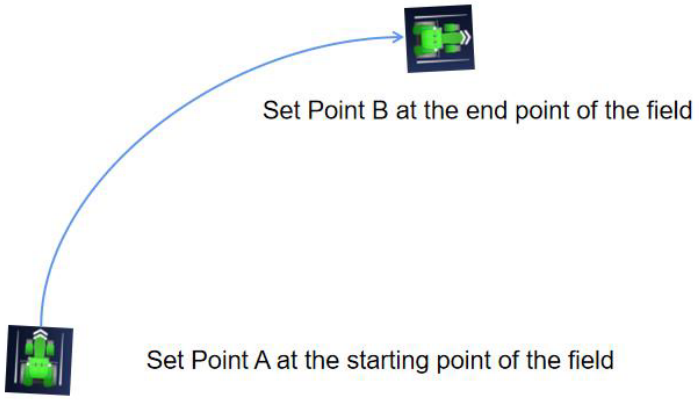
12.2 AB straight line

Select AB straight line in navigation line mode. After clicking point A at the end of the field, drive the tractor to the end of the field. After reaching the end of the ground, click point B to generate a straight line AB. Click the steering wheel button in the lower right corner of the interface to turn on automatic navigation.



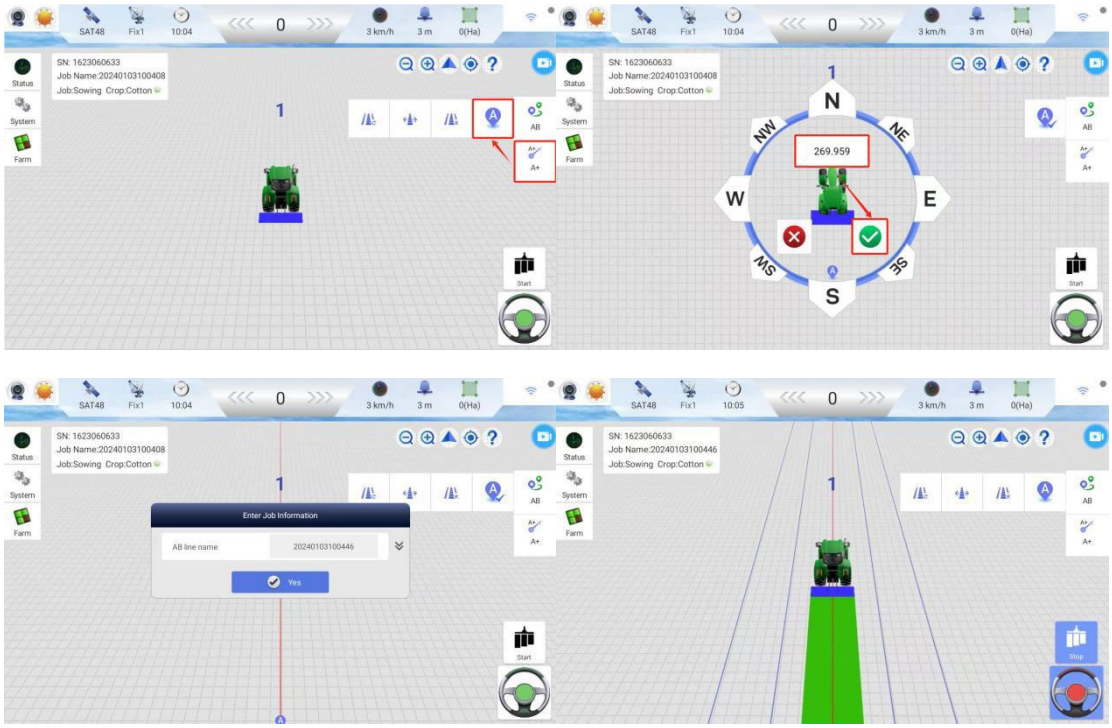
12.3 AB curve

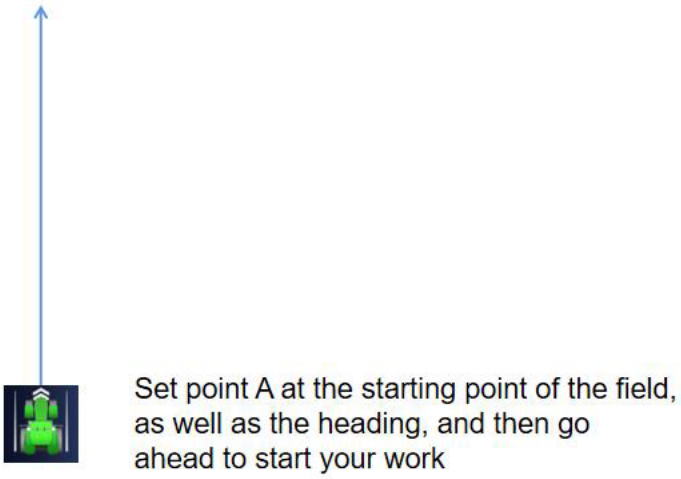
Select AB curve for navigation line mode. After clicking point A at the end of the field, drive the tractor to the end of the field. After reaching the end of the ground, click point B to generate an AB curve. Click the steering wheel button in the lower right corner of the interface to turn on automatic navigation.



12.4 A+

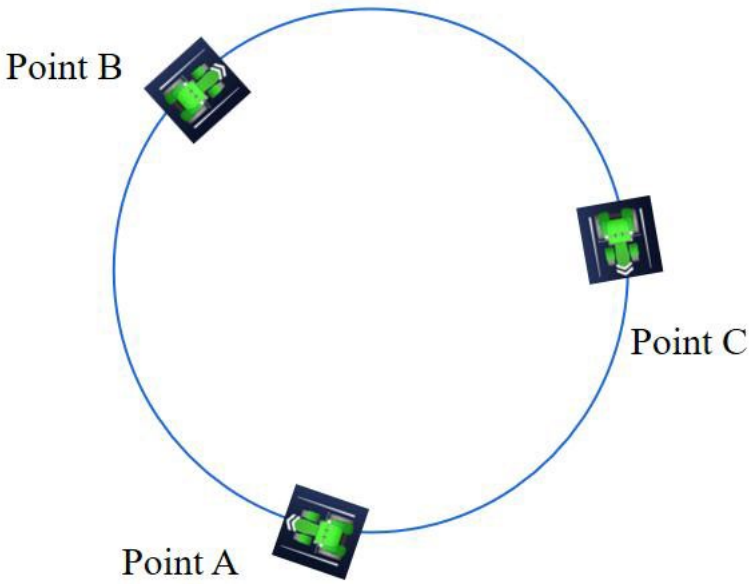
Select A+ for navigation line mode. After clicking point A at the head of the field, enter the heading angle above the tractor icon. Complete the creation of the A+ navigation line. Click the steering wheel button in the lower right corner of the interface to turn on automatic navigation.





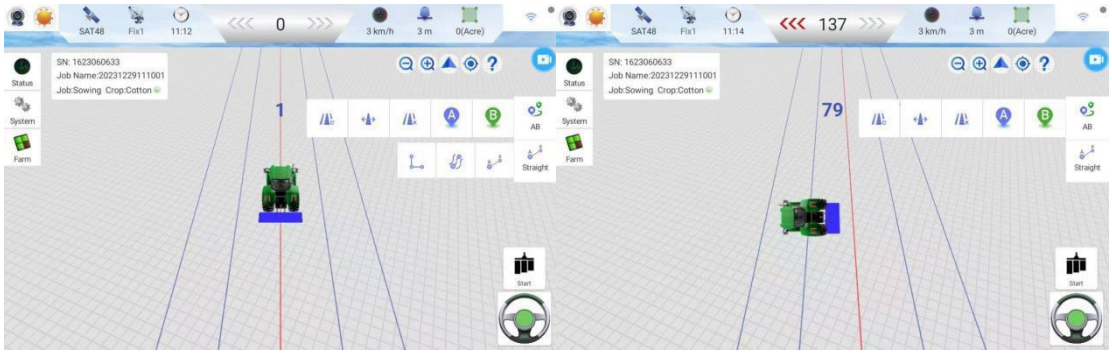
12.5 Pivot

Select Pivot for navigation line mode. Click point A in sequence around the boundary of the circular plot, and point B and point C form a circular curve. Click the steering wheel button in the lower right corner to open Pivot navigation.



12.6 90°

Select 90° for navigation line mode. After creating the AB line click 90°. Generate a new AB line with a 90-degree vertical angle to the original AB line.



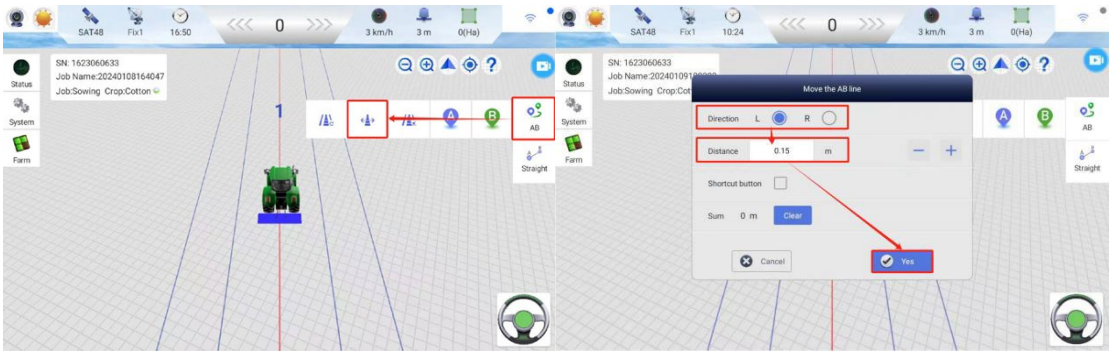
13. How to debug handover lines

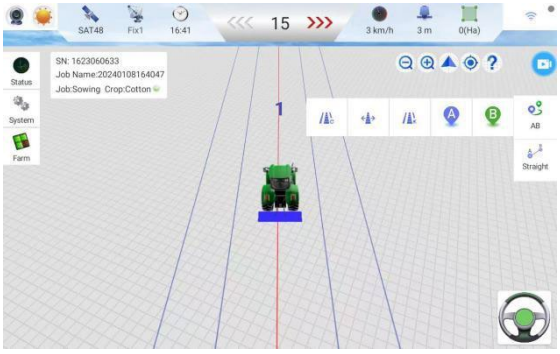
13.1 One-click calibration:

System->Agricultural Tool Management->Agricultural Tool Calibration->Manually

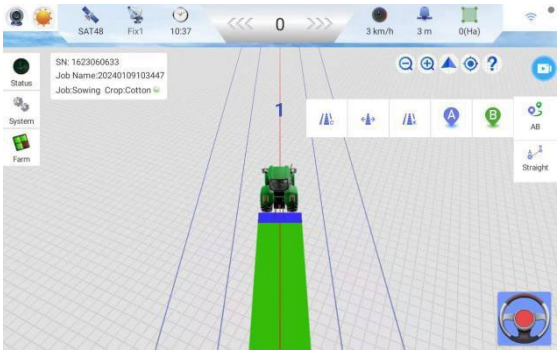
（1）When the tractor reaches the second row, get off the vehicle and measure the gap between the joints.

（2）Return to the main interface, click Translate AB line, and translate the value obtained in the first step left or right.

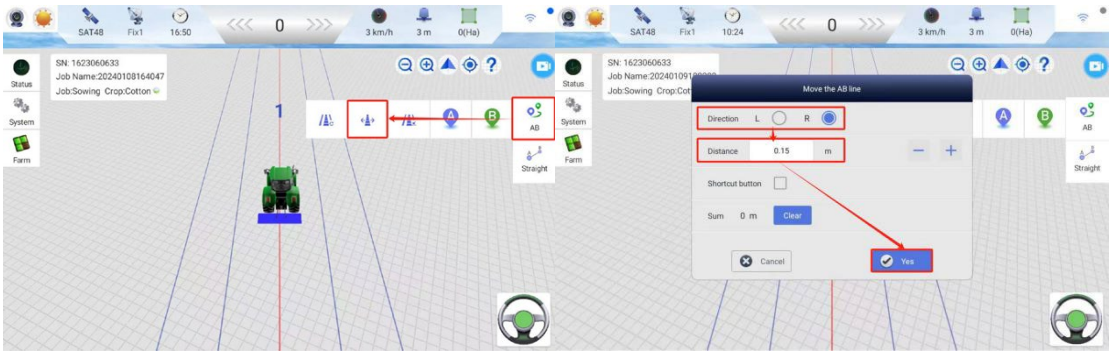




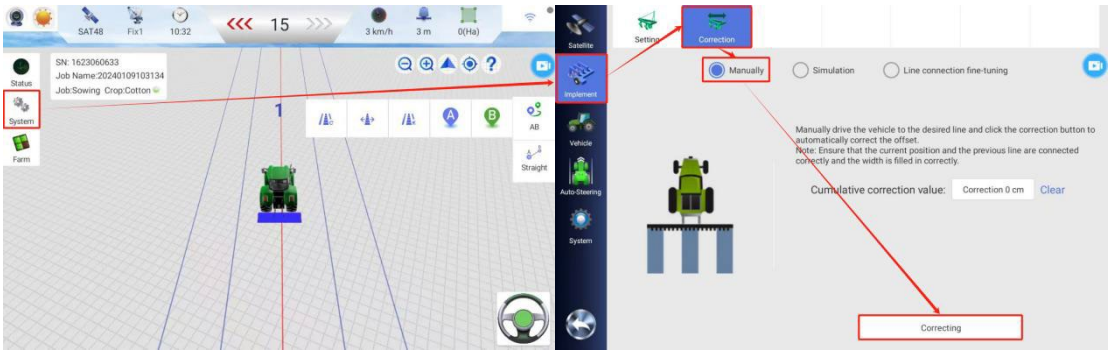
（3）Turn on automatic navigation and let the error become 0.

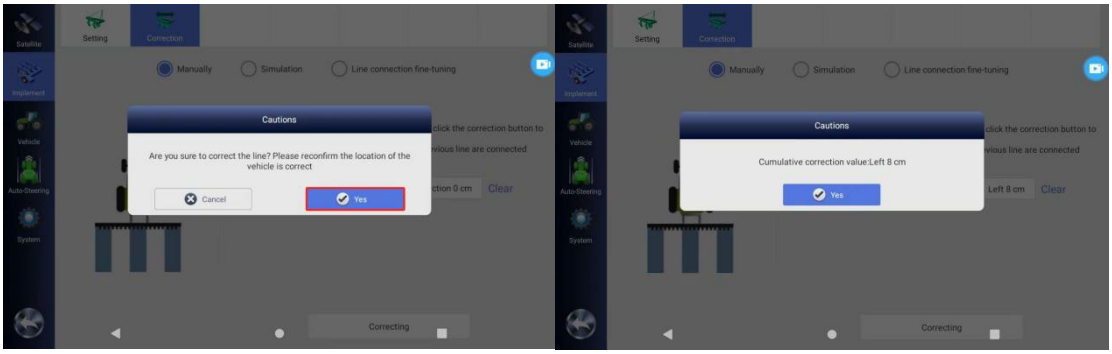


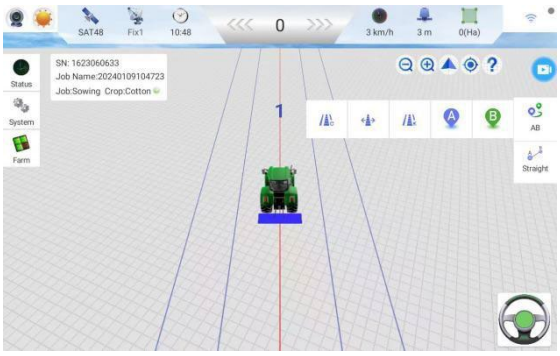
（4）Use the value obtained in the first step to translate line AB in the opposite direction.



（5）Settings->Agricultural Tool Management->Agricultural Tool Calibration->One-click Calibration->Calibration; One-click calibration completed.



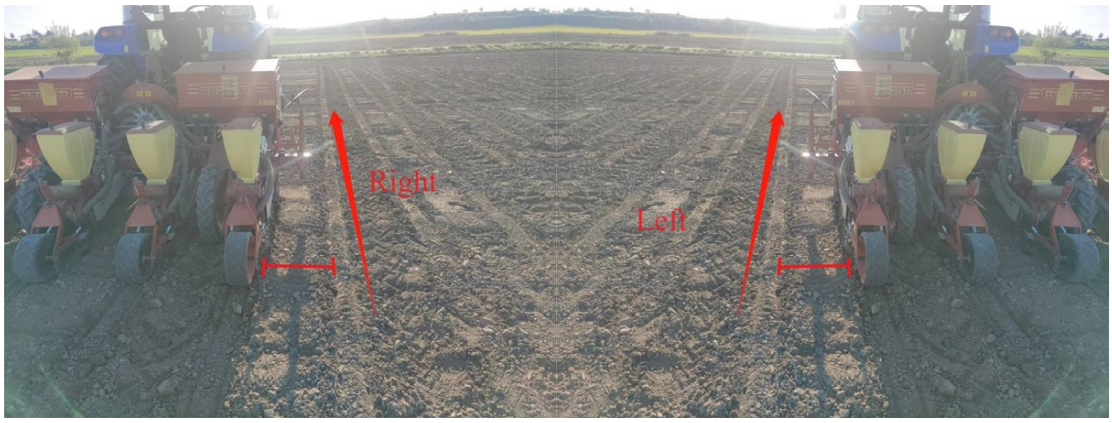




13.2 Simulate correction of farm tools:

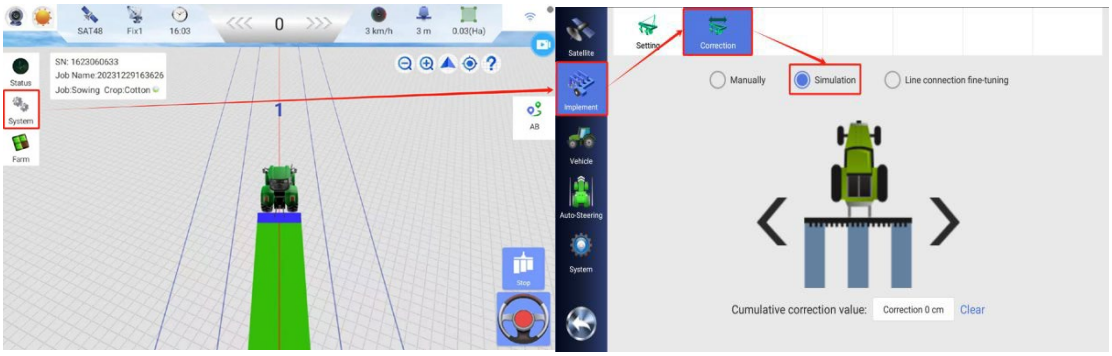
System->Farm Tool Management->Agricultural Tool Calibration->Simulation

（1）The tractor works in 3 rows continuously, forming 1 right-side connection row and 1 left-side connection row.



（2）Compare the gap between the left and right connections and the actual required connections. Subtract the small connection value from the large connection value to get a difference. This difference is then divided by 4 to get the correction value of the farm tool offset.

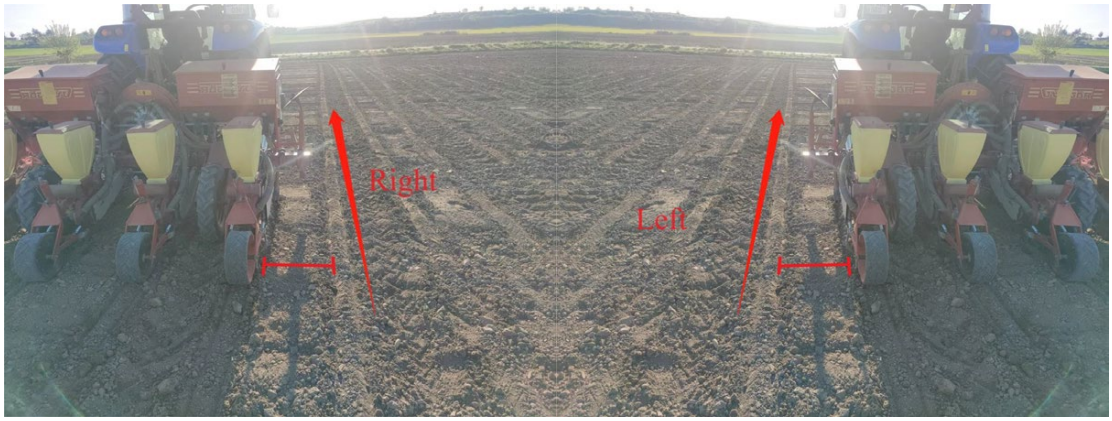
（3）Open Simulation, select the side with the larger line, and click the direction arrow of the side with the larger line. The number of times is the correction value of the farm tool offset obtained in the second step.



13.3 Fine-tuning:

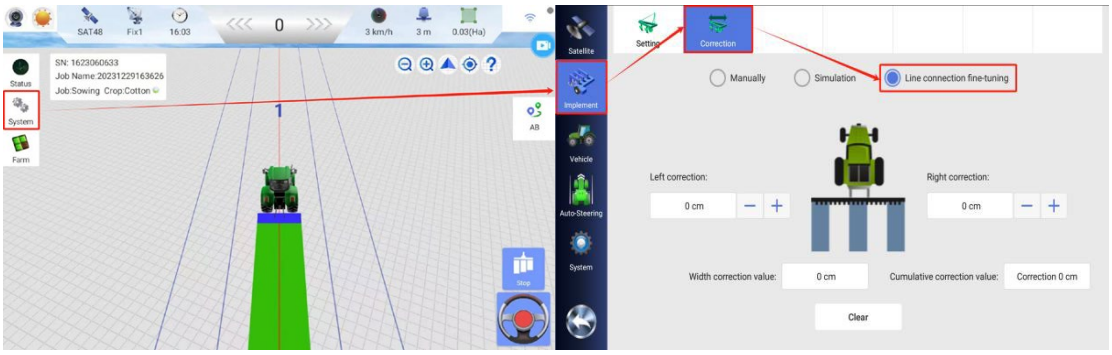
System->Agricultural Tool Management->Agricultural Tool Calibration->Line connection fine-tuning

（1）The tractor works in 3 rows continuously, forming 1 right-side connection row and 1 left-side connection row.



Measure the right connection value and the left connection value, compare them with the correct connection values, and then correct the right connection value and the left connection value respectively. Click to increase or decrease the left and right connection values. correct.

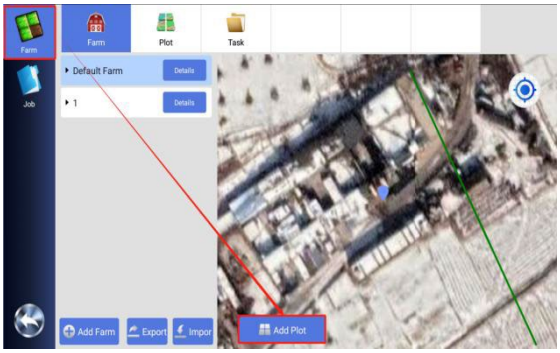
Settings->Agricultural Tool Management->Agricultural Tool Calibration->Handover Line Fine-tuning



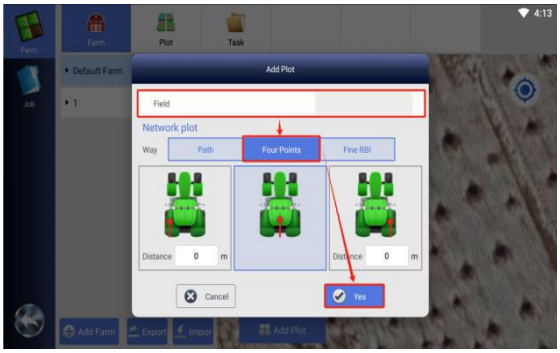
14. Farm management

14.1 plot

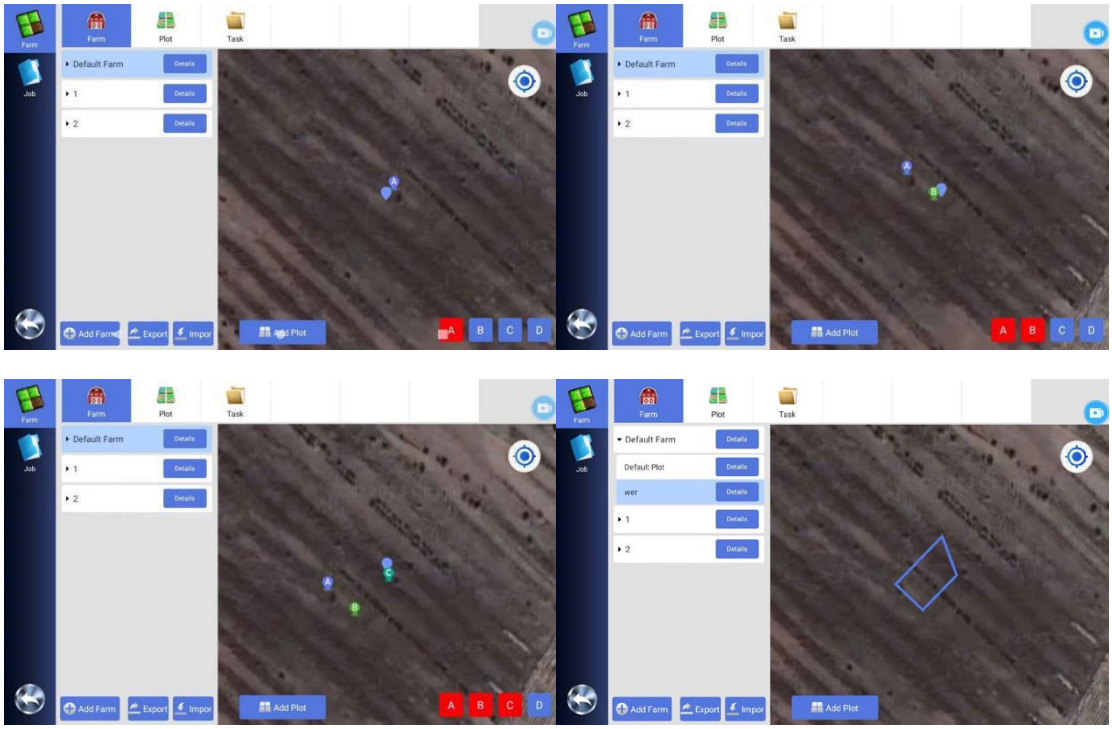
（1）Enter the farm management module, click on farm management, click on new plot.



（2）Enter the plot name, select the four-point plan, and click OK.



（3）Drive the tractor along the boundary of the plot and click on point A, point B, point C, and point D in sequence. After clicking point D, the plot is created.



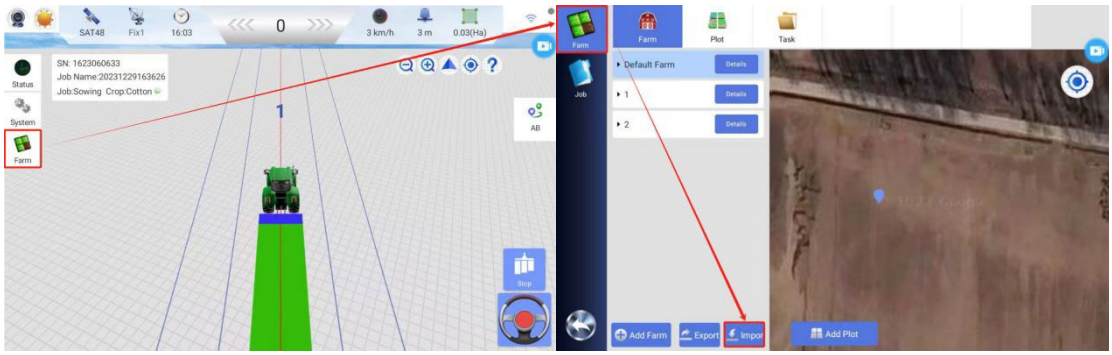
14.2 SHP file import

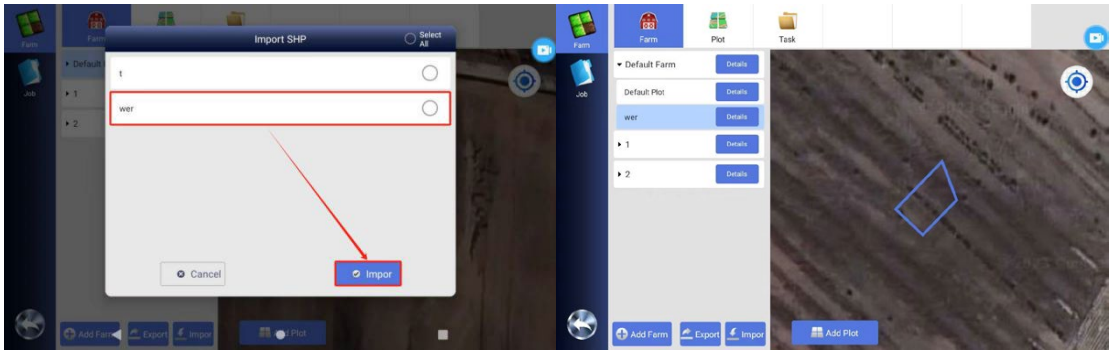
（1）Connect the USB flash drive carrying the SHP file to the tablet and click on the farm management module on the left side of the screen.

（2）Select Farm Management and click Import.

（3）Select the SHP file to be imported and click Import.

（4）SHP file imported successfully.

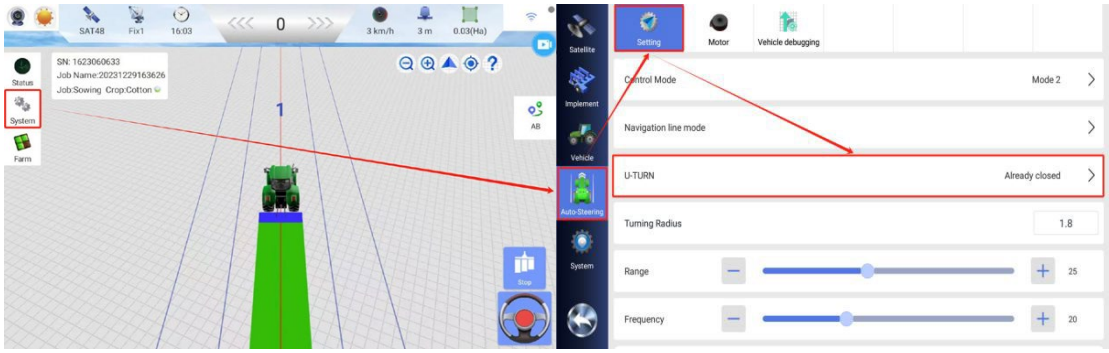




15. U-TURN

15.1 Turn on U-TURN

System->Auto Navigation->Navigation Settings->One-click U-turn



15.2 U-TURN Options

（1）**One-click U-turn** is used to turn on or off the one-click U-turn function.

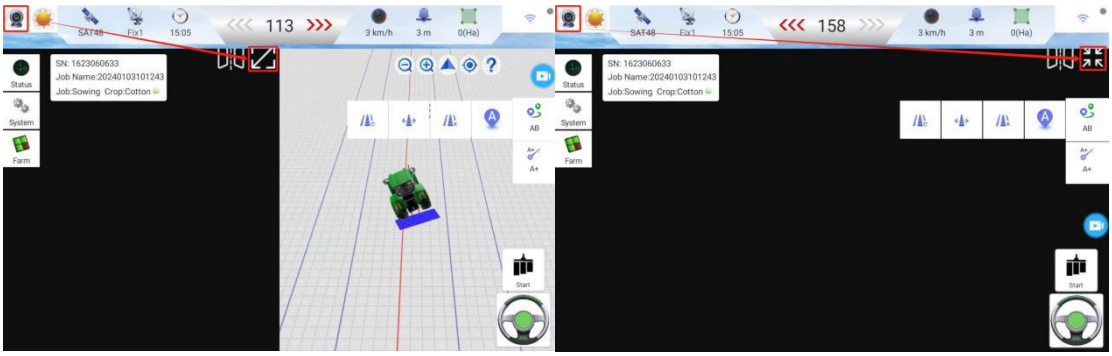
（2）**The U-turn interval** is used to adjust the number of AB lines between the next AB line entered after the U-turn and the current AB line.

（3）**The U-turn path type** is used to select the U-turn method. Currently, only the first U-turn method is supported.

16. Note

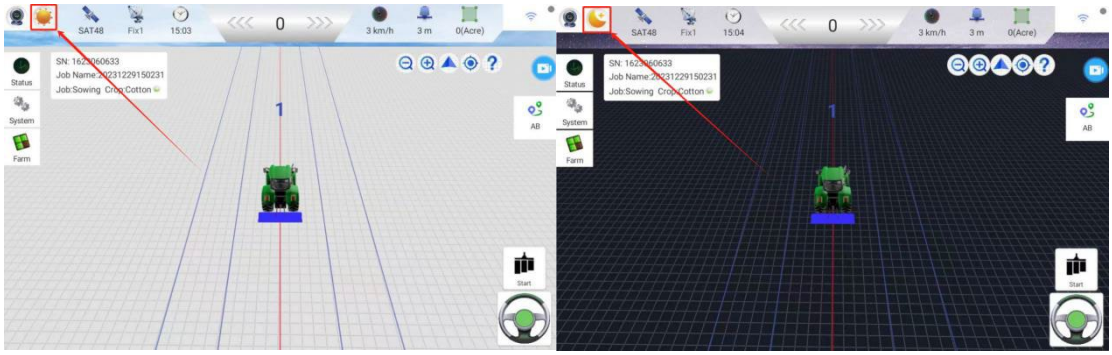
16.1 How to use the camera

Click the camera button in the upper left corner of the screen to open the camera function. Click the full-screen icon in the upper right corner of the camera image to set it to full-screen mode. Click the icon again to switch to half-screen mode.

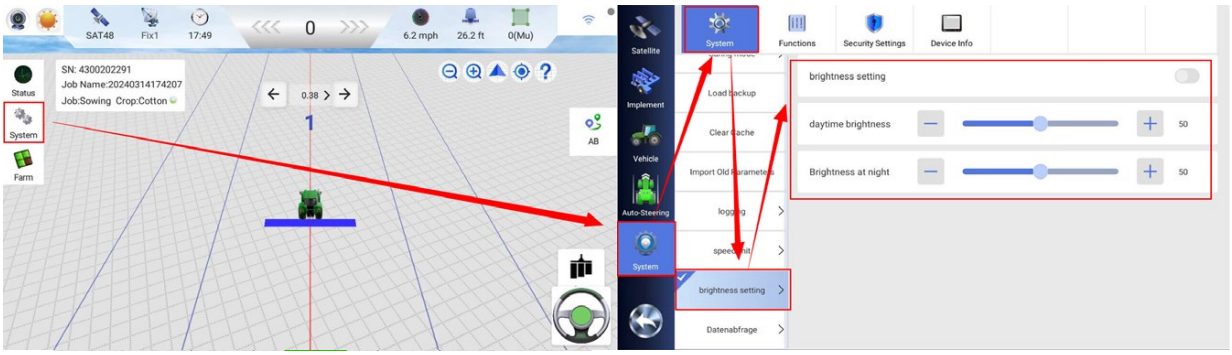


16.2 How to use day and night

16.2.1 Turn on and off day and night mode: Click the sun icon in the upper left corner of the screen to enter day mode. Click on the moon icon in the upper left corner of the screen to enter night mode.

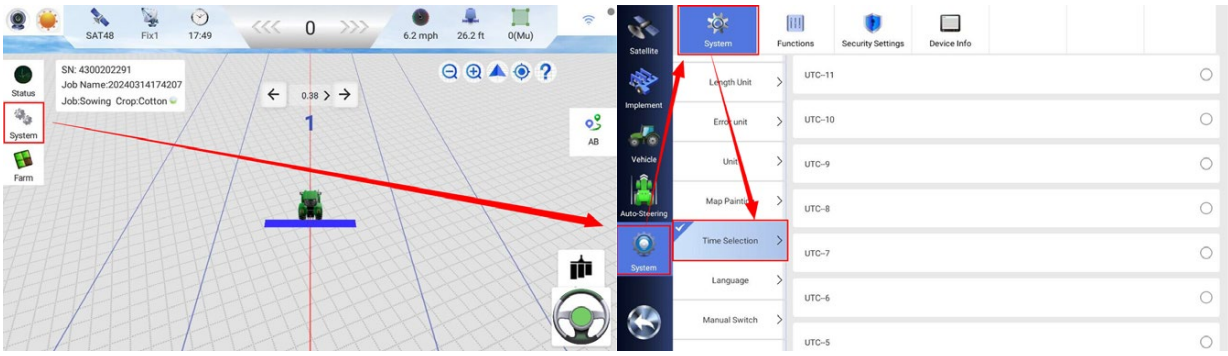


16.2.2 Day and night mode brightness adjustment: System->System Settings->System Settings->Brightness Settings



16.3 How to set time zone

Settings->System Settings->System Settings->Time Selection

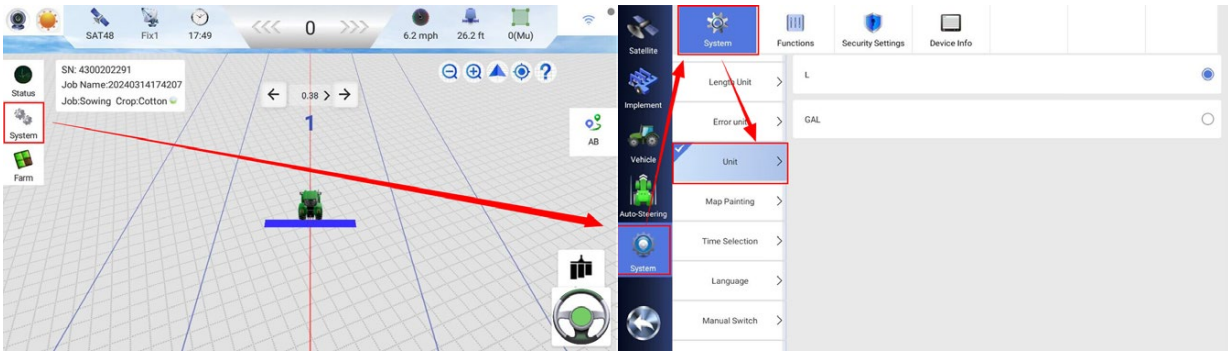


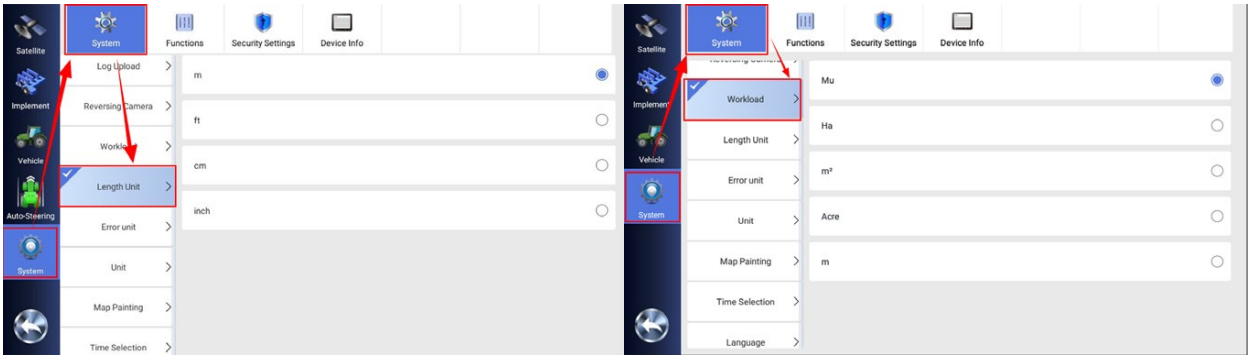
16.4 How to set up units

Capacity unit: Settings->System Settings->System Settings->Capacity Unit

Length unit: Settings->System Settings->System Settings->Length Unit

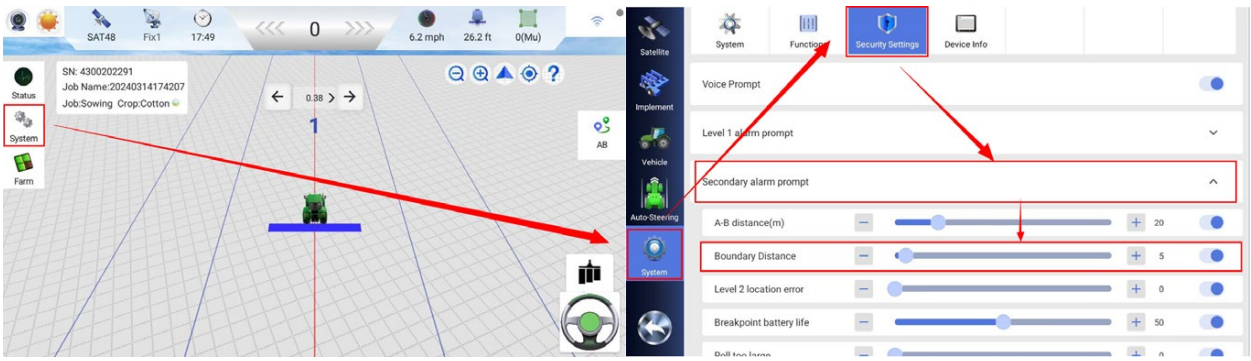
Area unit: Settings->System Settings->System Settings->Work Volume Record





16.5 Boundary alarm

Settings->System Settings->Security Settings->Level 2 Alarm Prompt->Distance Boundary Position



SMAJAYU
PRECISION AGRICULTURE

About Us

SMAJAYU was built in 2009, 10years+ experienced the technology changes from traditional devices to smart equipments. Intelligent agriculture empowered SMAJAYU new mission to support Agriculture development.

High-precision and affordable RTK GNSS system boosts the farming technology adoption across all-size farms. Integrated with GPS accuracy technology, SMAJAYU agriculture guidance and auto-steer ensure centimeters precision farming.

The main goals of SMAJAYU intelligent agriculture is optimizing farmer's work, reducing input costs and increasing farm income, promoting farm environment, increasing farm production.

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