USER GUIDE

PHEREFIX

@m 💵 🖦

ଚ



www.spherefixgnss.com

SMC10

DOZER CONTROL SYSTEM USER GUIDE

Guangzhou Spherefix Navigation Technology Co., Ltd.

SPHEREFIX

contact@spherefixgnss.com

Contents

1. Foreword
2. Software Interface01
3. Basic Settings
3.1 Base Setup02
3.2 System Benefits02
3.3 Blade and Antenna Model Parameters Settings05
3.4 RTK Status and Blade Coordinates
3.5 Mode Settings10

1. Foreword

The system measures the blade's posture by installing a sensor in the middle of the blade. It also has two satellite antennas on both sides of the blade to receive satellite signals. These are used to calculate the blade's exact position and height. The data from the sensors and antennas is sent to the controller through a main cable. The GNSS card and ECU inside the controller process this data and send the blade's real-time status to the tablet in the vehicle. Users can set a reference plane or import design data. They can then check the data on the tablet and manually control the blade's up and down movement.

2. Software Interface



- 1. Digital Terrain
- 2. Area Statistics
- 3. Reference Plane Height Difference
- 4. 3D Terrain
- 5. Accessibility (Not Yet Available)
- 6. Number of Satellites
- 7. RTK Status

- 8. Differential Delay
- 9. Sensor Parameters
- 10. Blade Left Side Height
- 11. Blade Right Side Height
- 12. Settings
- 13. Reference Plane Settings
- 14. Reference Plane Height Difference
- 15. Manual/Automatic Mode Switch
- 3. Basic Settings

3.1. Base Setup

Initially, procure a GNSS receiver and configure it as a base station utilizing the Internal Radio as the data link. Radio protocol:Transparent Transmission Protocol (e.g., PCC-GMSK protocol). Frequency: 450.0125 MHz.

(The integrated radio module of the system defaults to this specific protocol and channel frequency. To ensure seamless communication, the system, functioning as a rover station, must be aligned with the base station's radio protocol and channel.)

3.2. Coordinate System Settings



Figure 2 Settings

System Setting					
E C		in the second	yummu uqur		
Exit Figure 3 System Setting					
	Syster	n Tools			
Coordinate	GNSS	Network	Sensor		
Auxiliary	Diagnosis	Area	Radio Setting		
€IExit					
Eigure 4 Coordinate					
Ellipsoid 7 Para 4 Para High Para					
ajor semi-axis A: 0					
Flattening F: 0					

Clicking on WGS84 multiple times allows you to switch between the Xi'an 1980, Beijing 1954, WGS84, and custom coordinate systems.

Ellipsoid 7 Para 4 Para High Para	
X(m) 0	X(") 0
Y(m) 0	Y(") 0
Z(m) 0	Z(") 0
K(ppm)	Projected Longitude(*) 0
• 6 Degree Bar	• 6 Degree Bar
€ Exit	Get ⊠Set

Figure 6 7-Parameter and Central Meridian & Zone Settings



Figure 7 4-Parameter Settings

Figure 5 Coordinate System Parameters

1.After entering each parameter, click "Set"; 2.view the parameters need to click "get configuration" to download the parameters be

Notice:

	WGS84					
Ellipsoid 7 I	Para 4 Para High Pa	ra				
	Aqo mit	承对不上	A30			
	A (0		Ad			
	A20		AĘO			
	xqo		Ydo			
Open	(Formula: A0+A1*x+A2	*y+A3*x*x+A4*y*y+A5*	x*y+h=0)			
€Exit		≛ Get				
Figure 8 Height Settings						

3.3. Blade and Antenna Model Parameters Settings





Figure 11 Enter the password to switch to administrator mode (password: 123456).



Figure 13 Machine Setting





Figure 15 Click "Switch" and Set the Right Blade Parameters

3.4. RTK Status and Blade Coordinates



Figure 16: RTK Fixed Solution (Number = 4)



Figure 17 Settings



Figure 18 System Tools



Figure 21 3D Coordinate

3.5. Mode Settings



Figure 24 Plane Mode



Figure 25 Plane Setting Set Base: Reference plane: Current Height Adjust Base: Manually Enter the Parameters.







Figure 27 Slope Setting