

USER GUIDE



SMC10

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DOZER CONTROL SYSTEM USER GUIDE



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Contents

- 1. Foreword 01
- 2. Software Interface 01
- 3. Basic Settings 02
 - 3.1 Base Setup 02
 - 3.2 System Benefits 02
 - 3.3 Blade and Antenna Model Parameters Settings 05
 - 3.4 RTK Status and Blade Coordinates 07
 - 3.5 Mode Settings 10

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

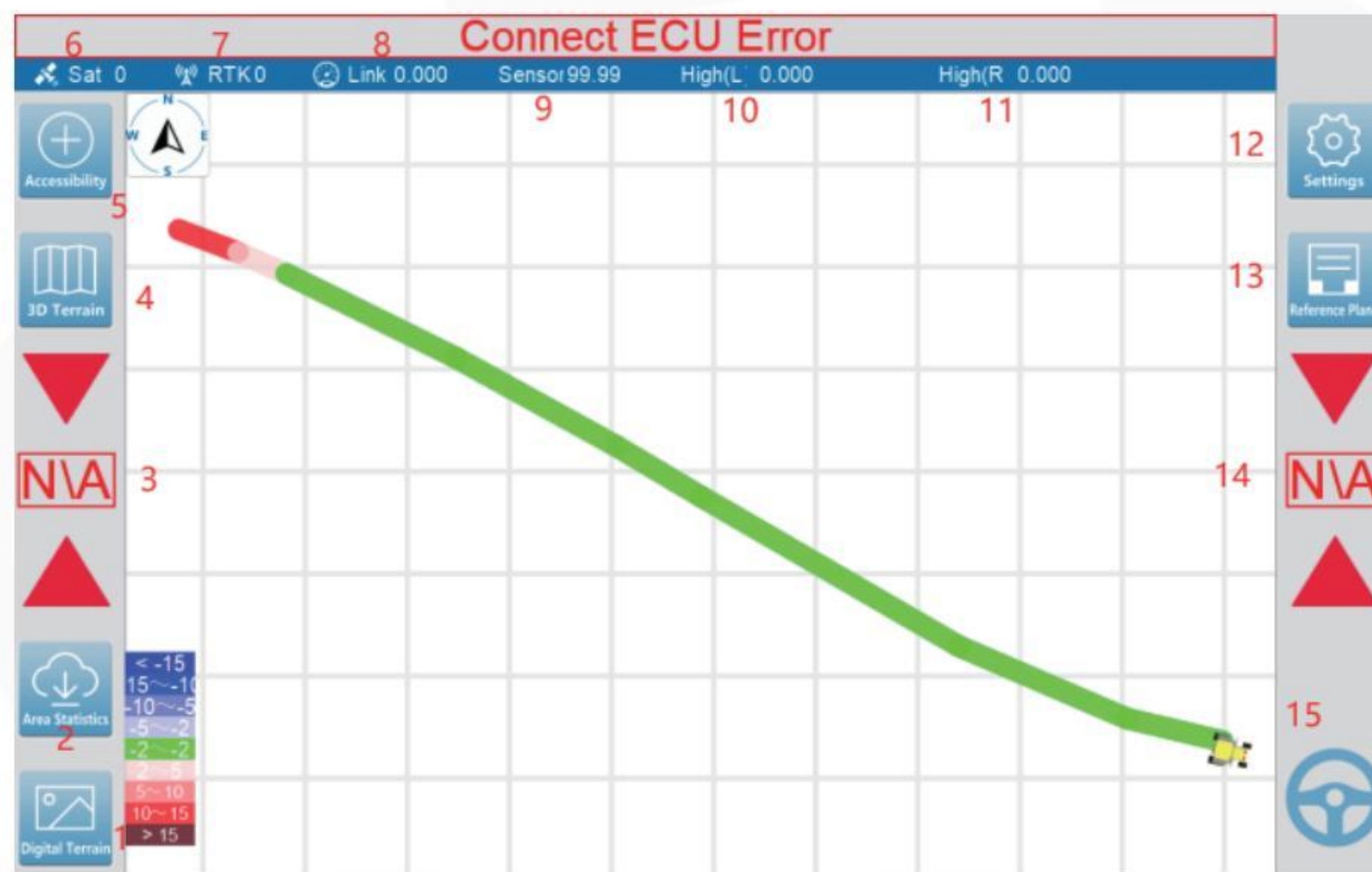


Figure 1 Software Interface

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

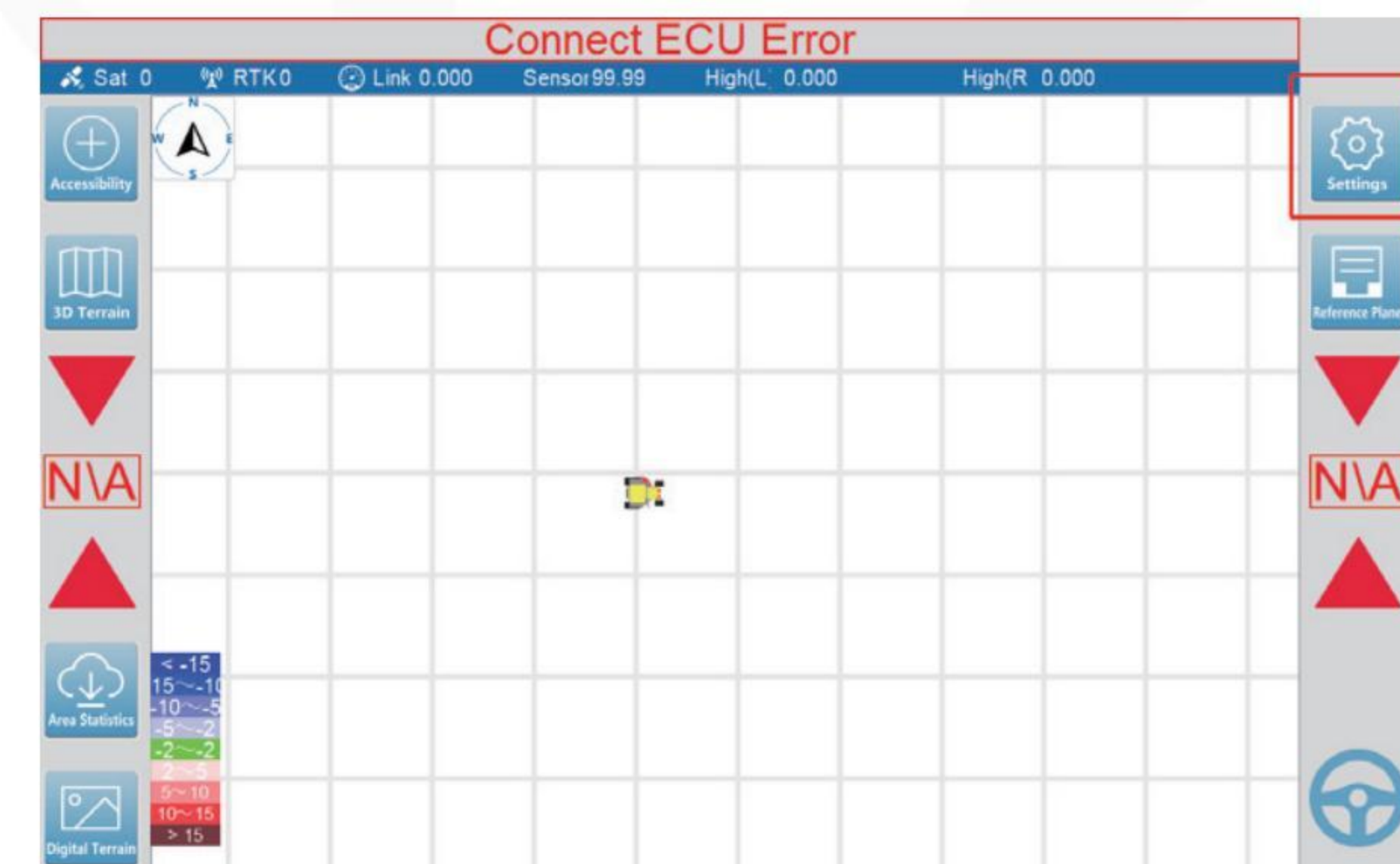


Figure 2 Settings

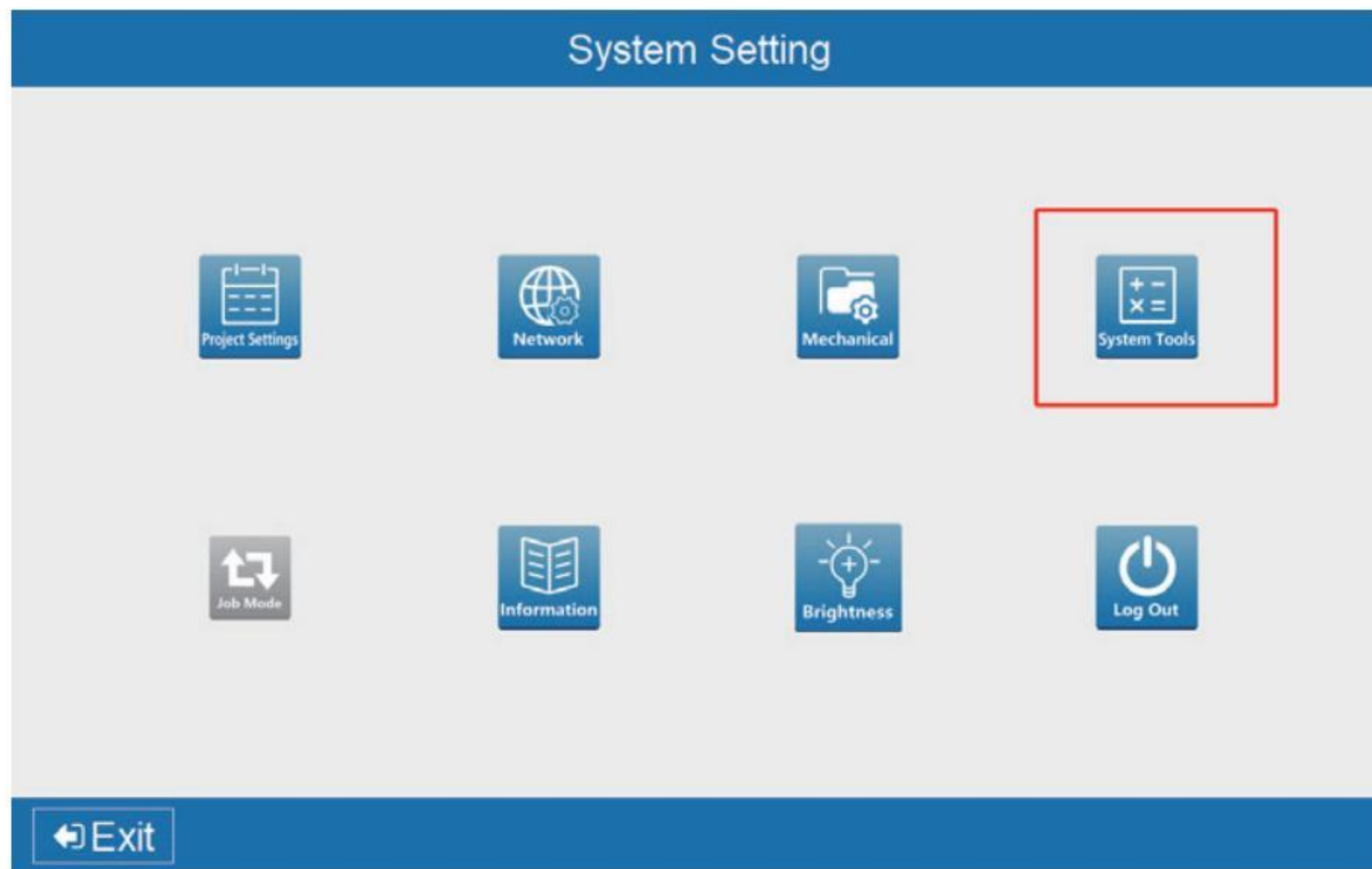


Figure 3 System Setting

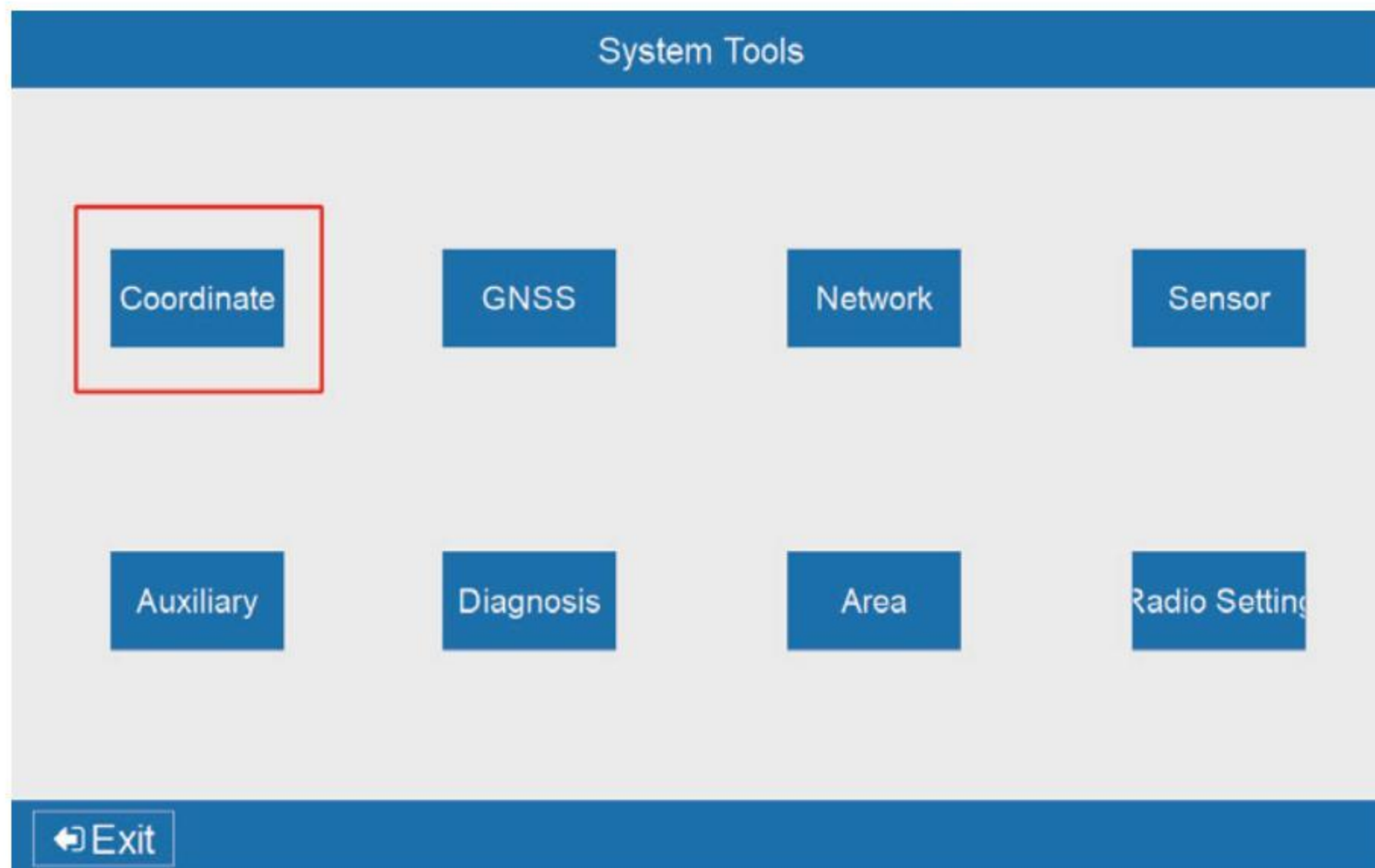


Figure 4 Coordinate

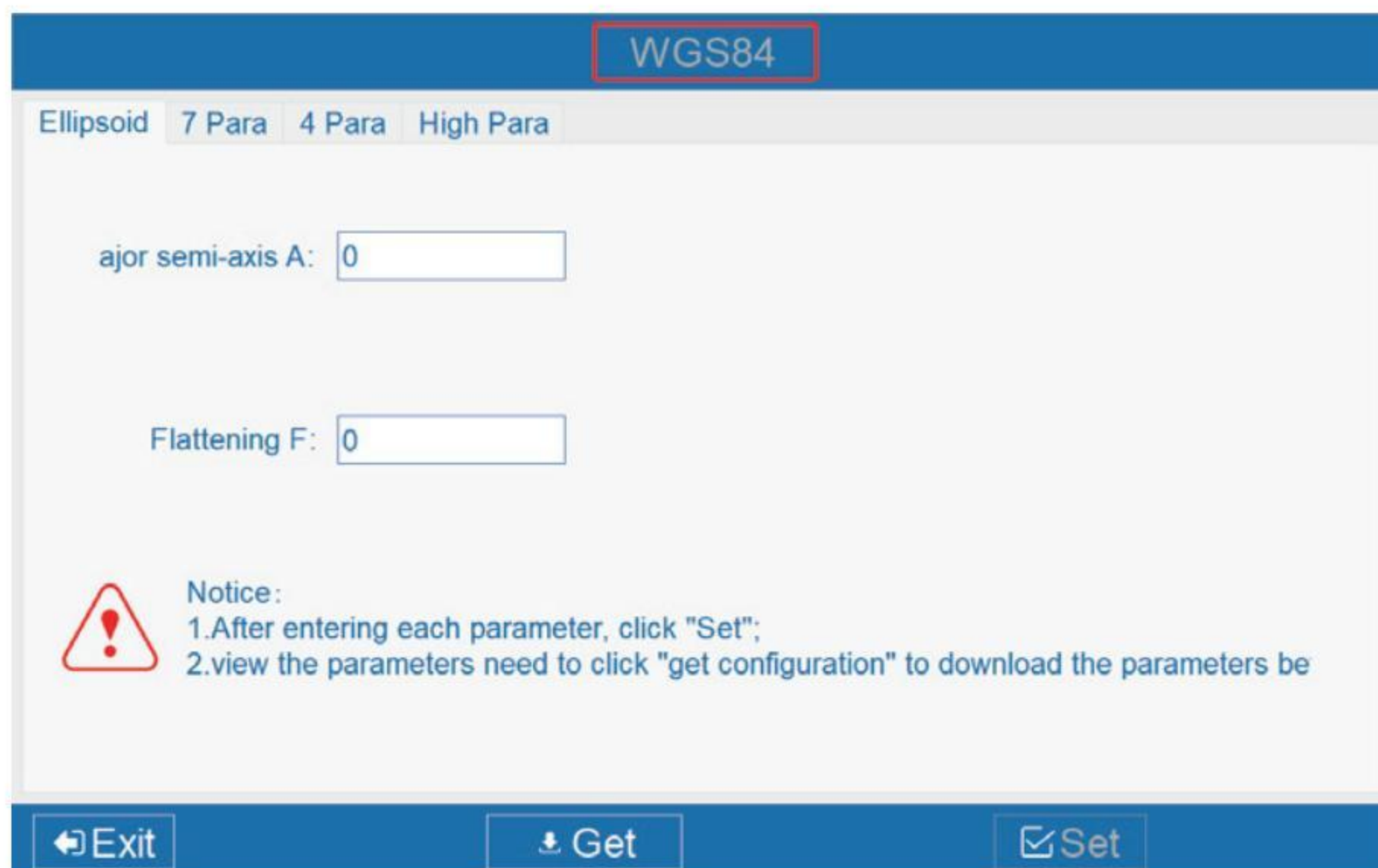


Figure 5 Coordinate System Parameters

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



Figure 6 7-Parameter and Central Meridian & Zone Settings



Figure 7 4-Parameter Settings

Figure 8 Height Settings

3.3. Blade and Antenna Model Parameters Settings

Figure 9 Mechanical

Figure 10 User

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

Figure 12 Admin

Figure 13 Machine Setting

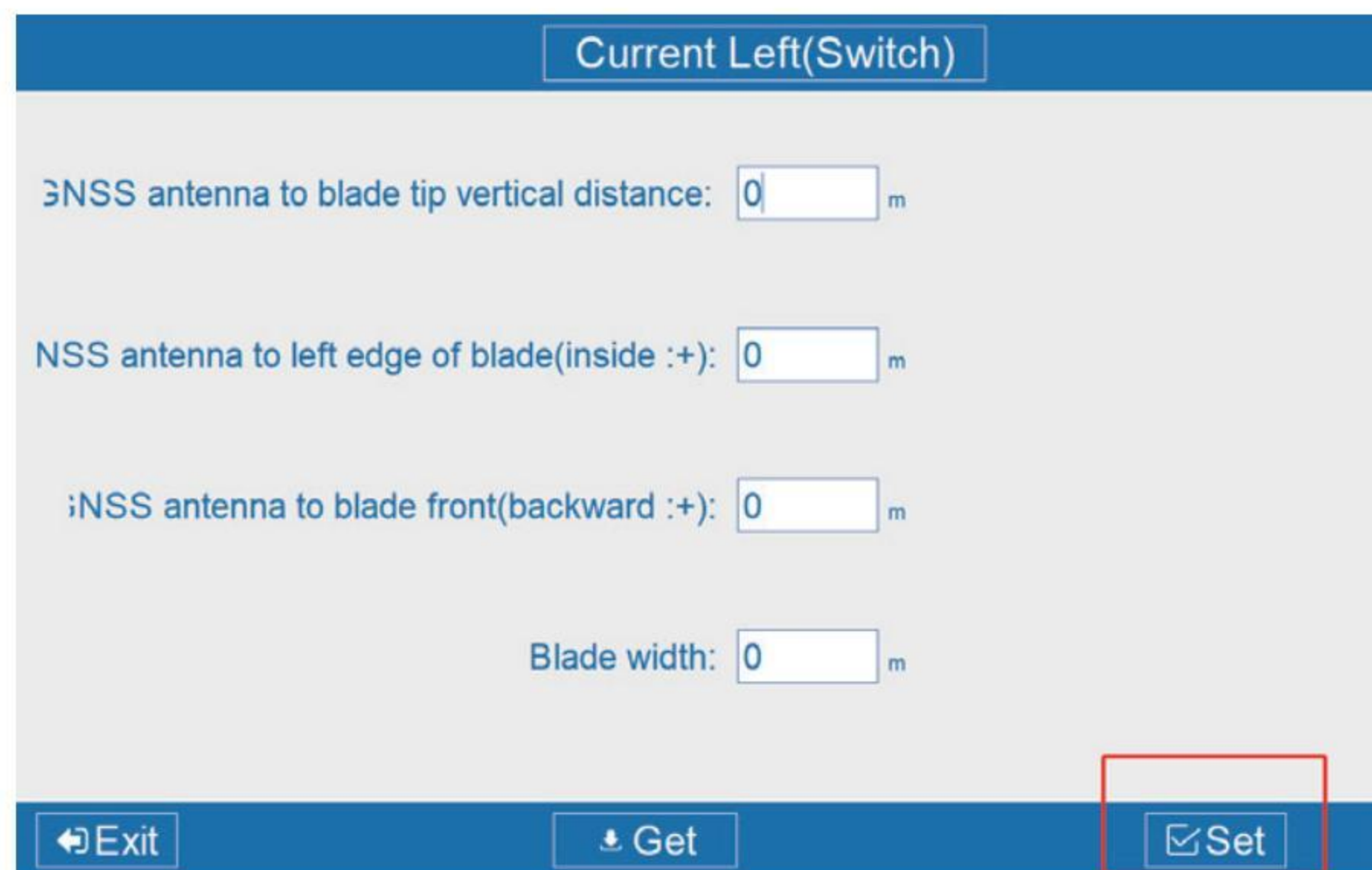


Figure 14 Left Blade Parameters Setting

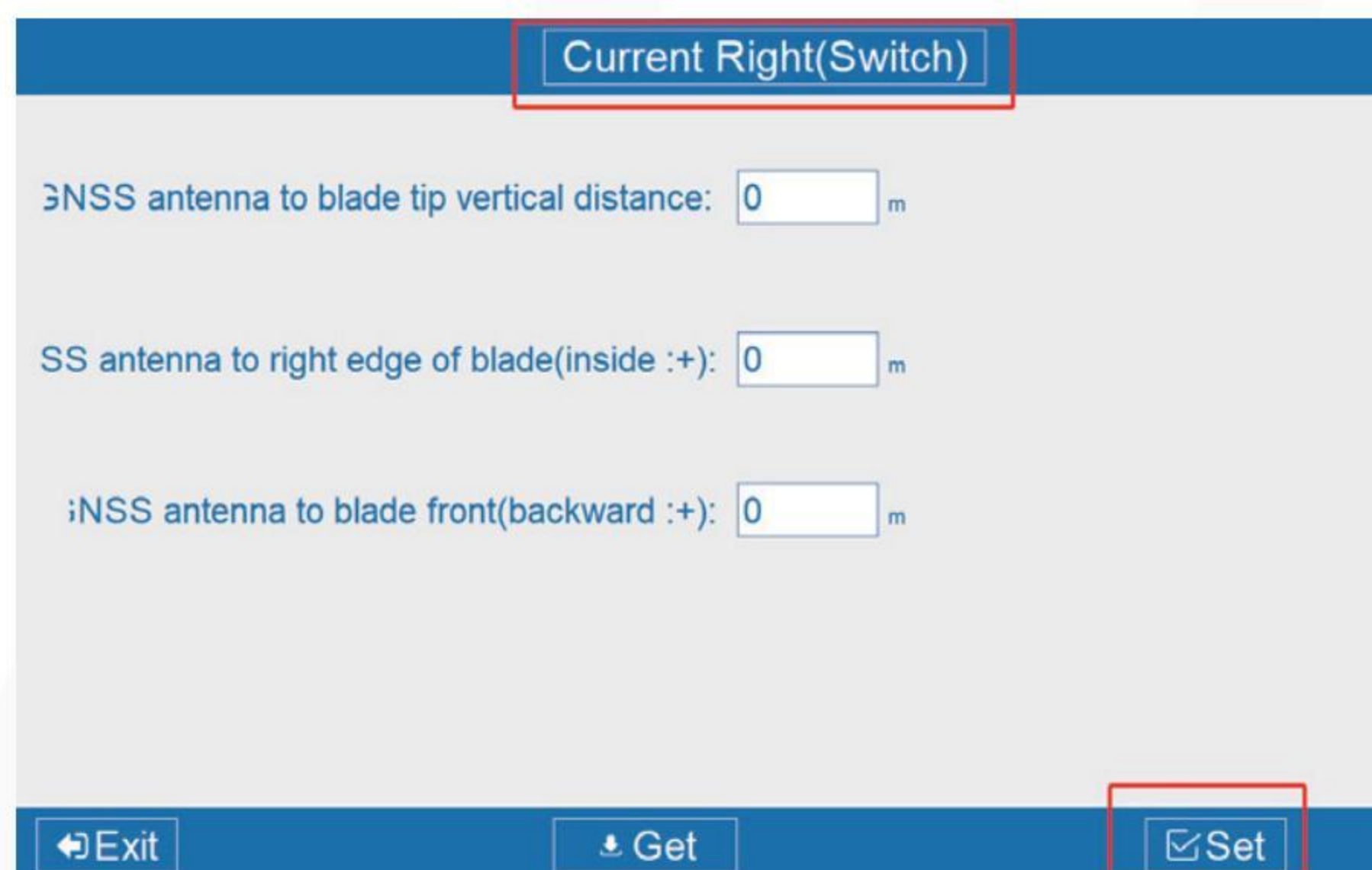


Figure 15 Click "Switch" and Set the Right Blade Parameters

3.4. RTK Status and Blade Coordinates

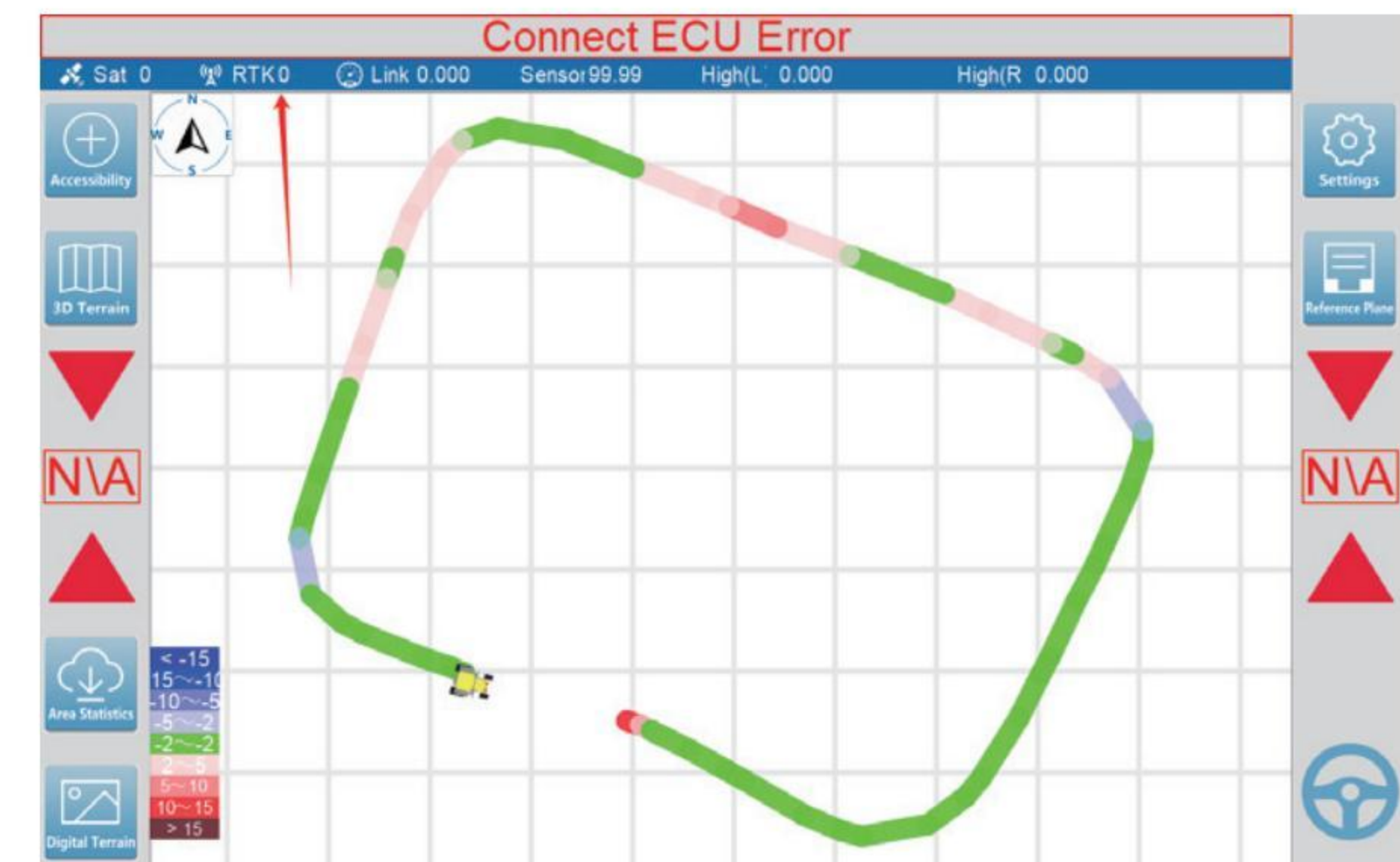


Figure 16: RTK Fixed Solution (Number = 4)

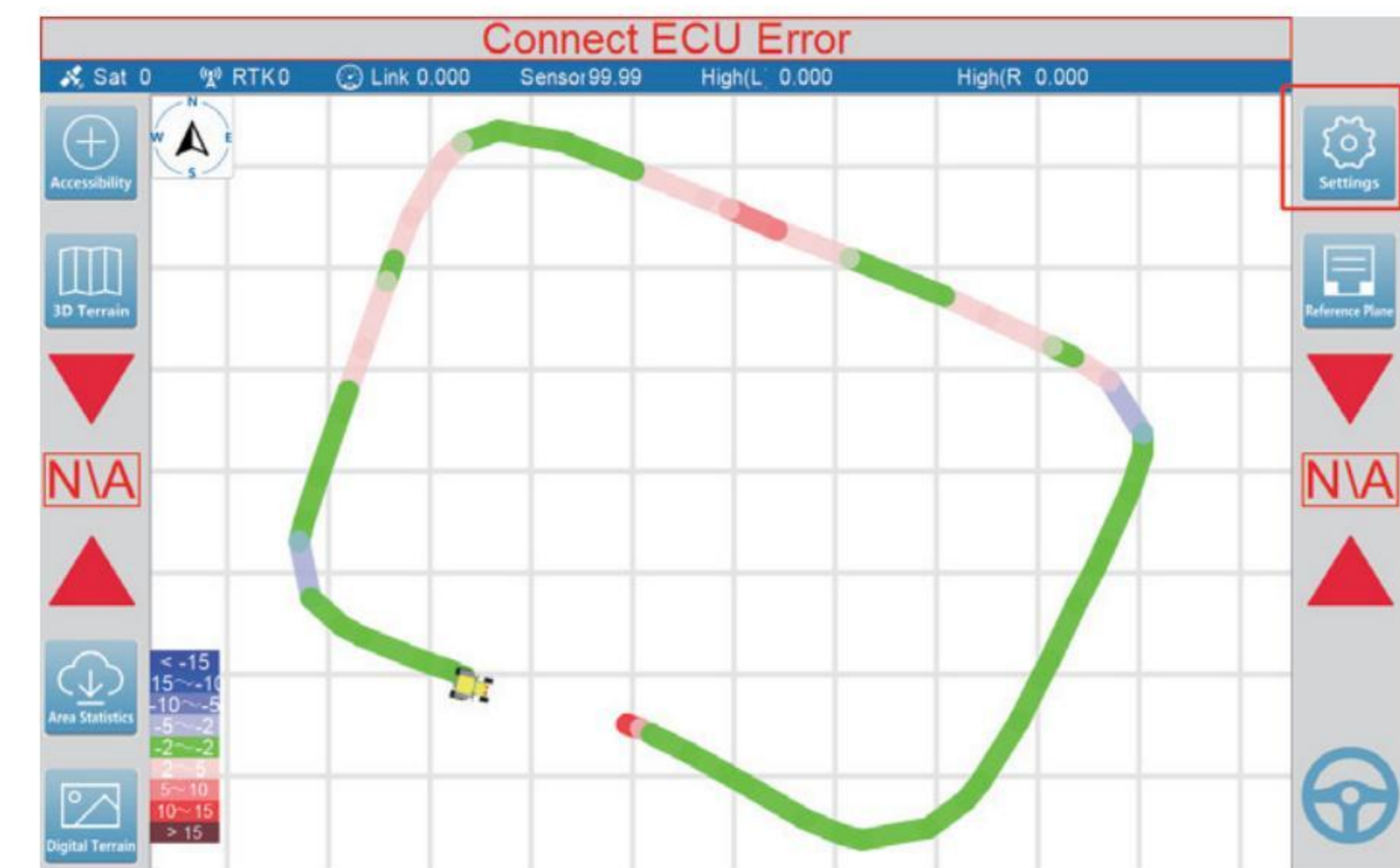


Figure 17 Settings

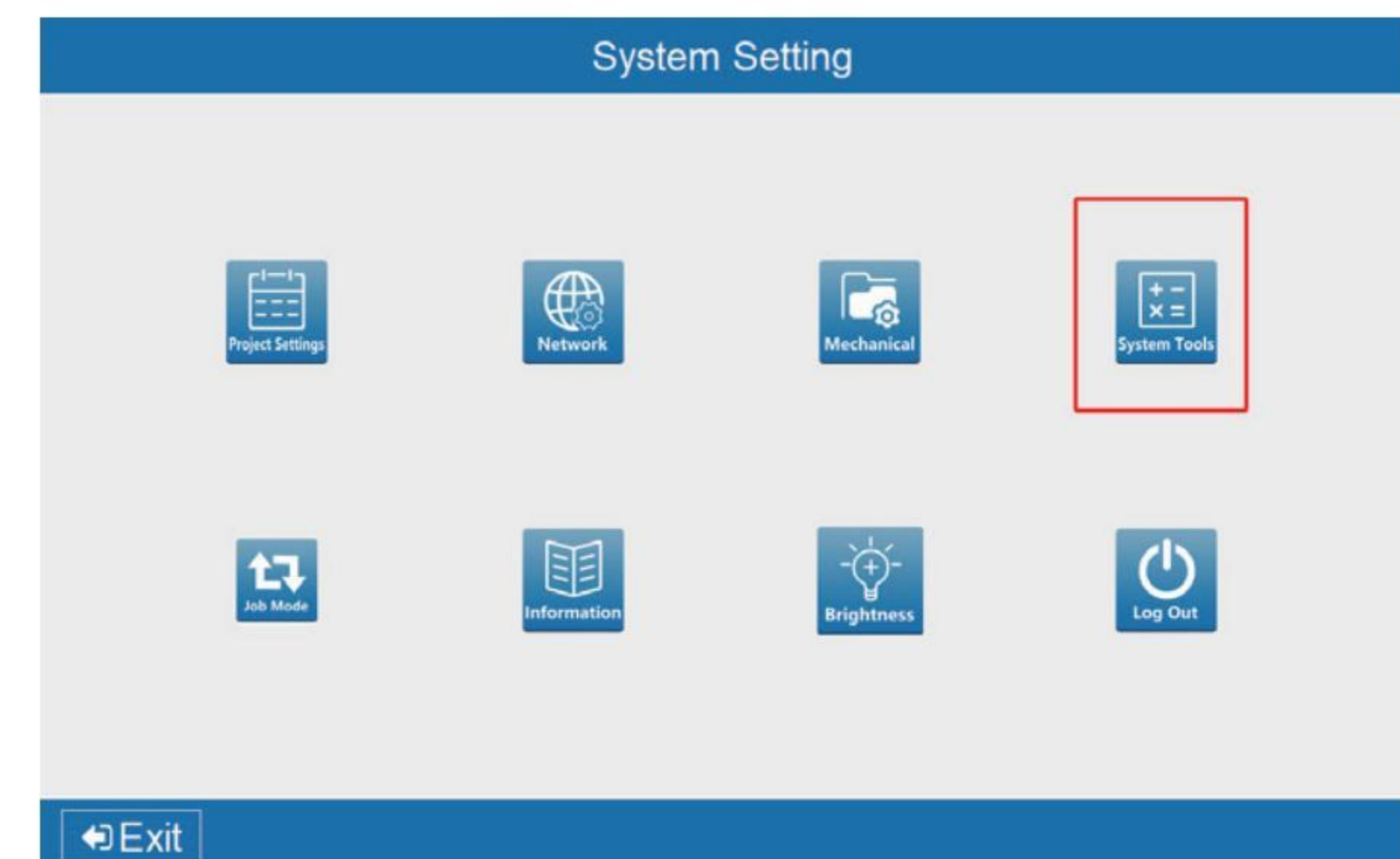


Figure 18 System Tools

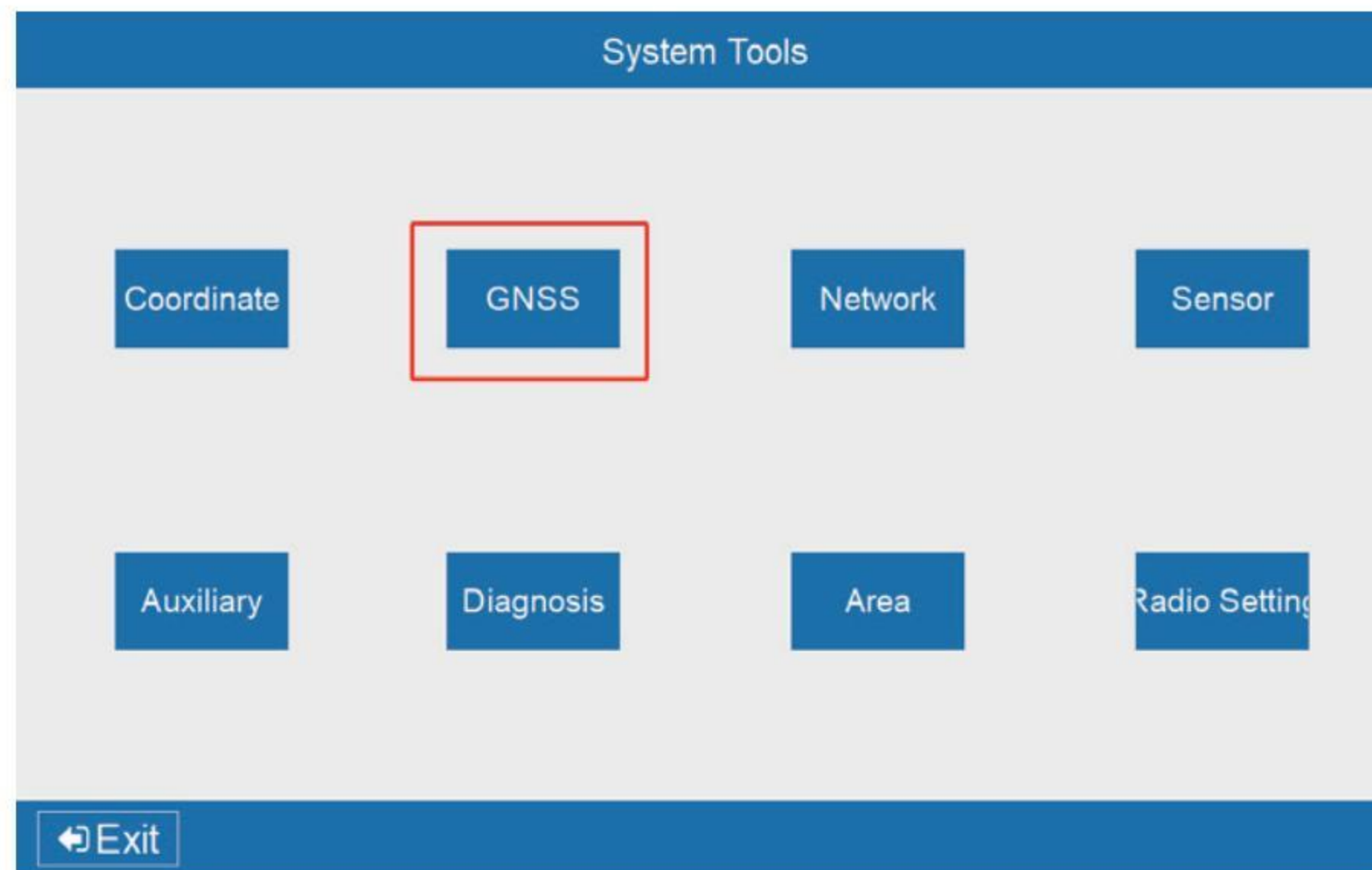


Figure 19 GNSS

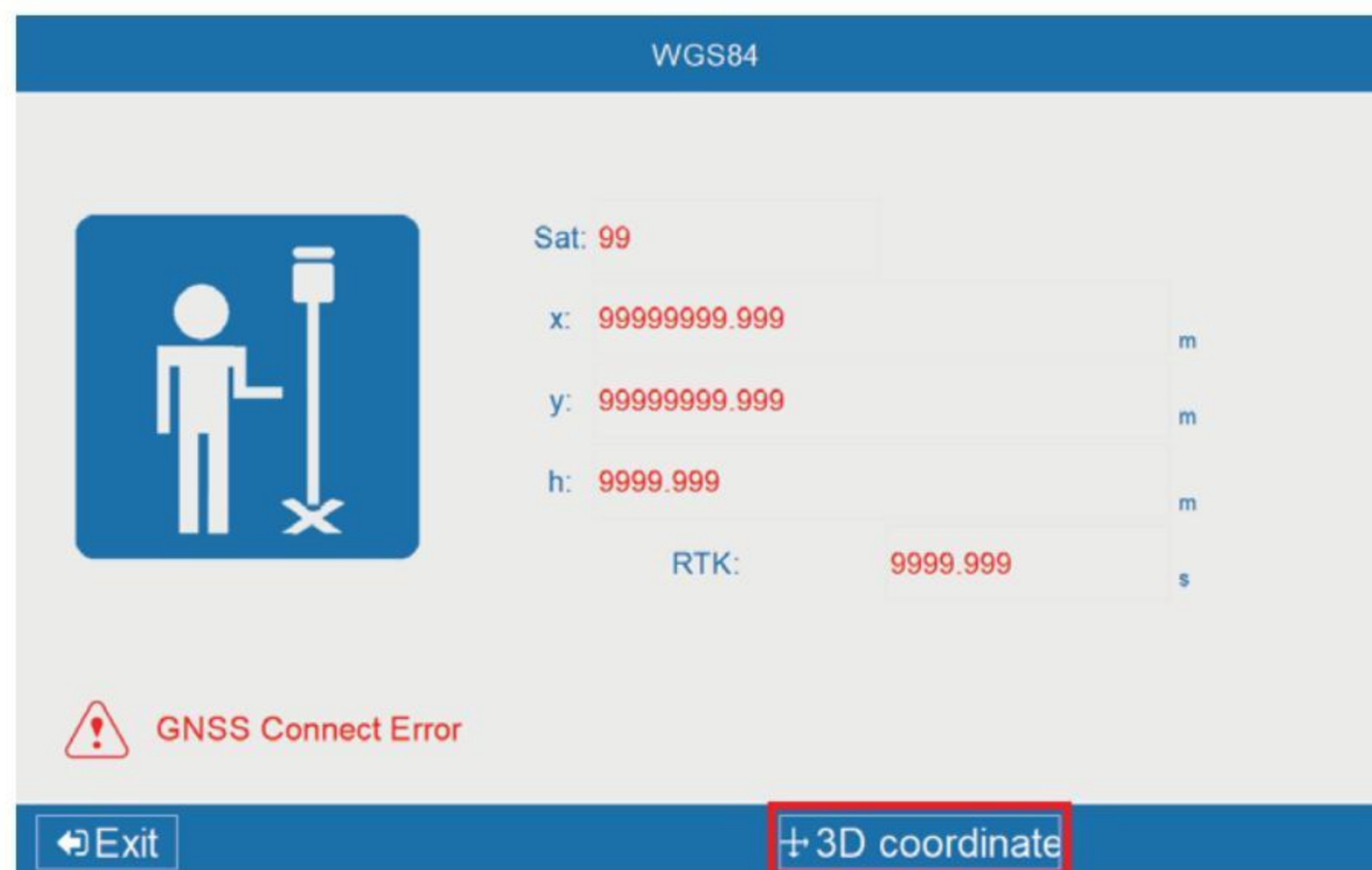


Figure 20 Click "3D Coordinate"

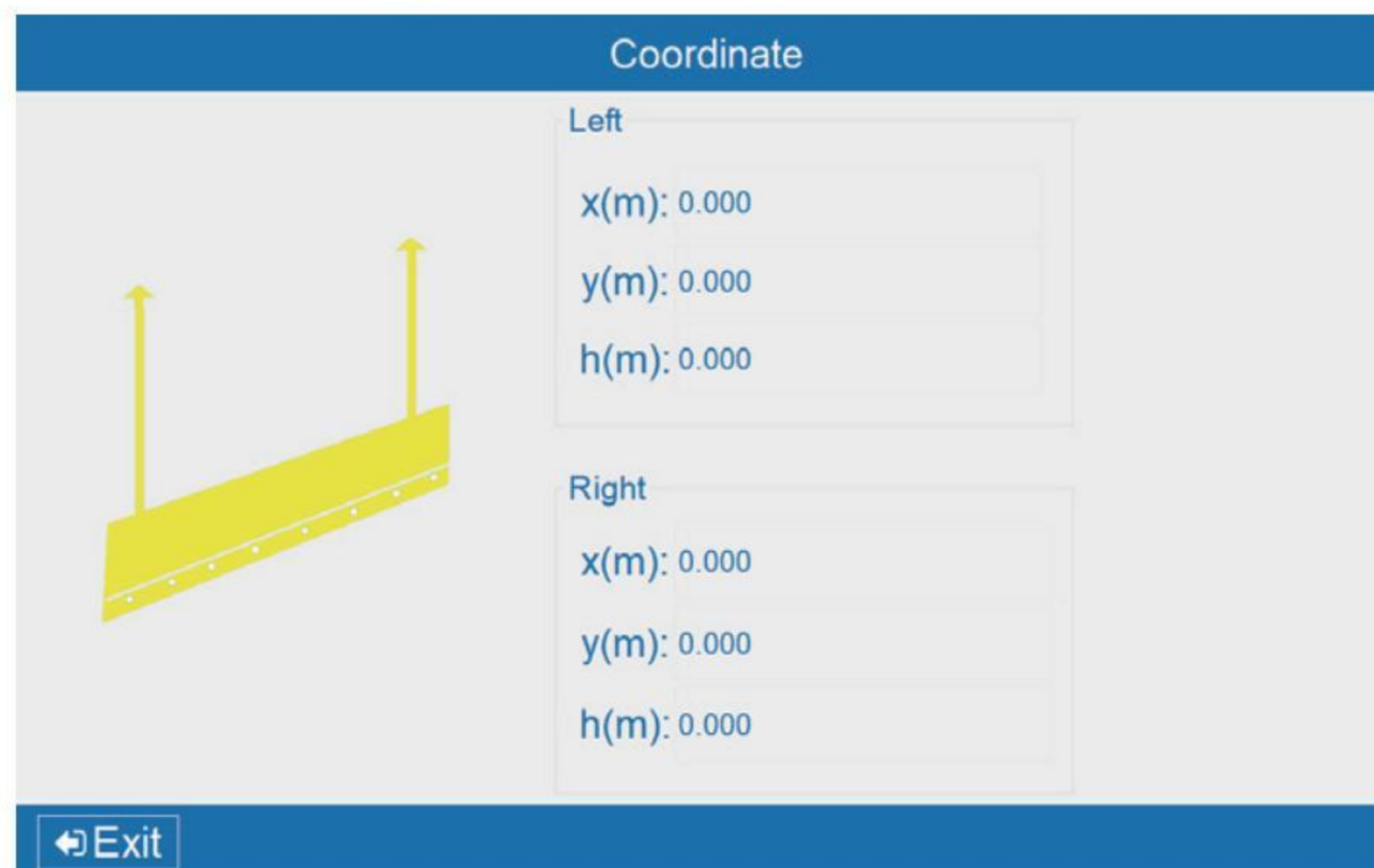


Figure 21 3D Coordinate

3.5. Mode Settings

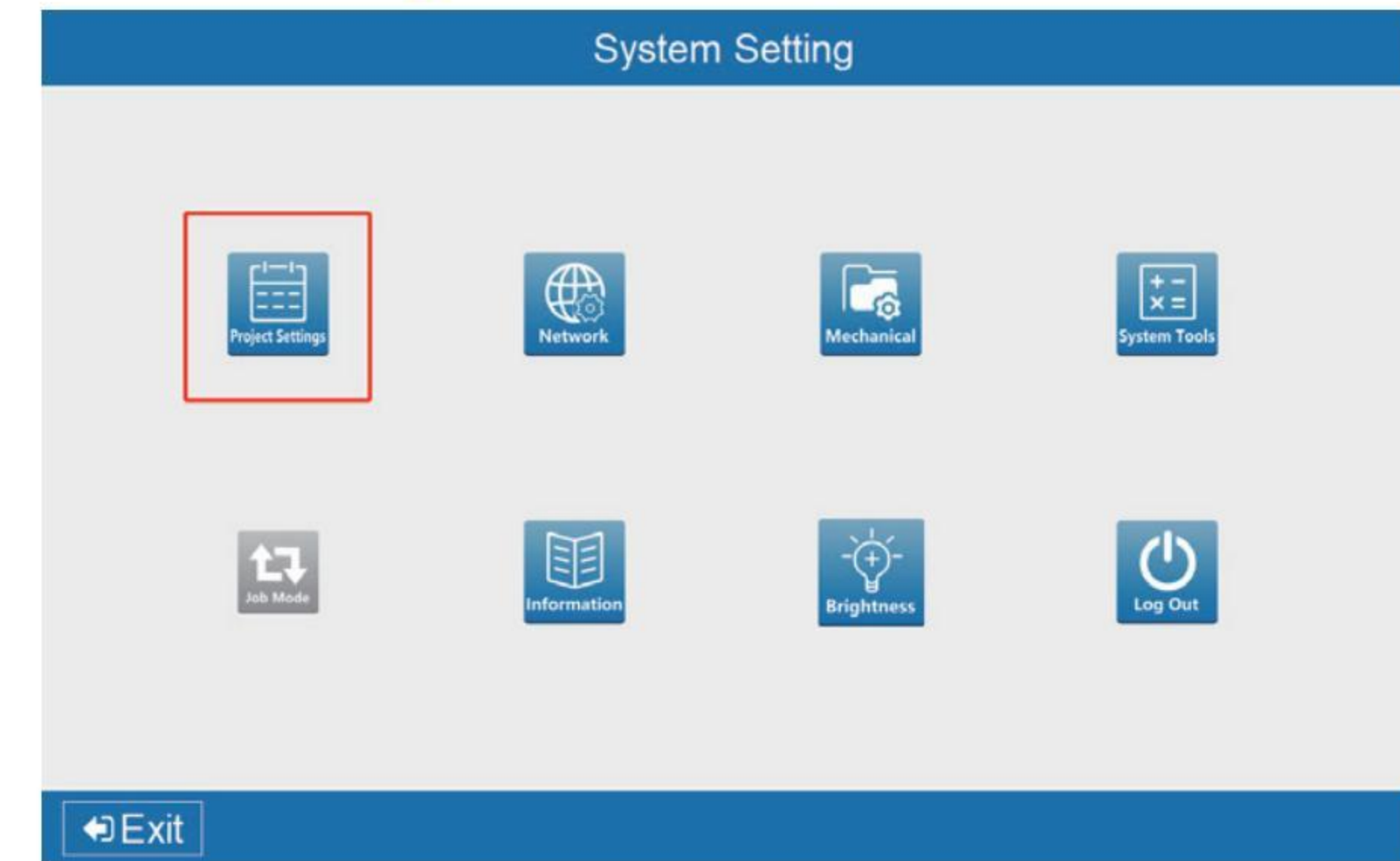


Figure 22 Project Settings

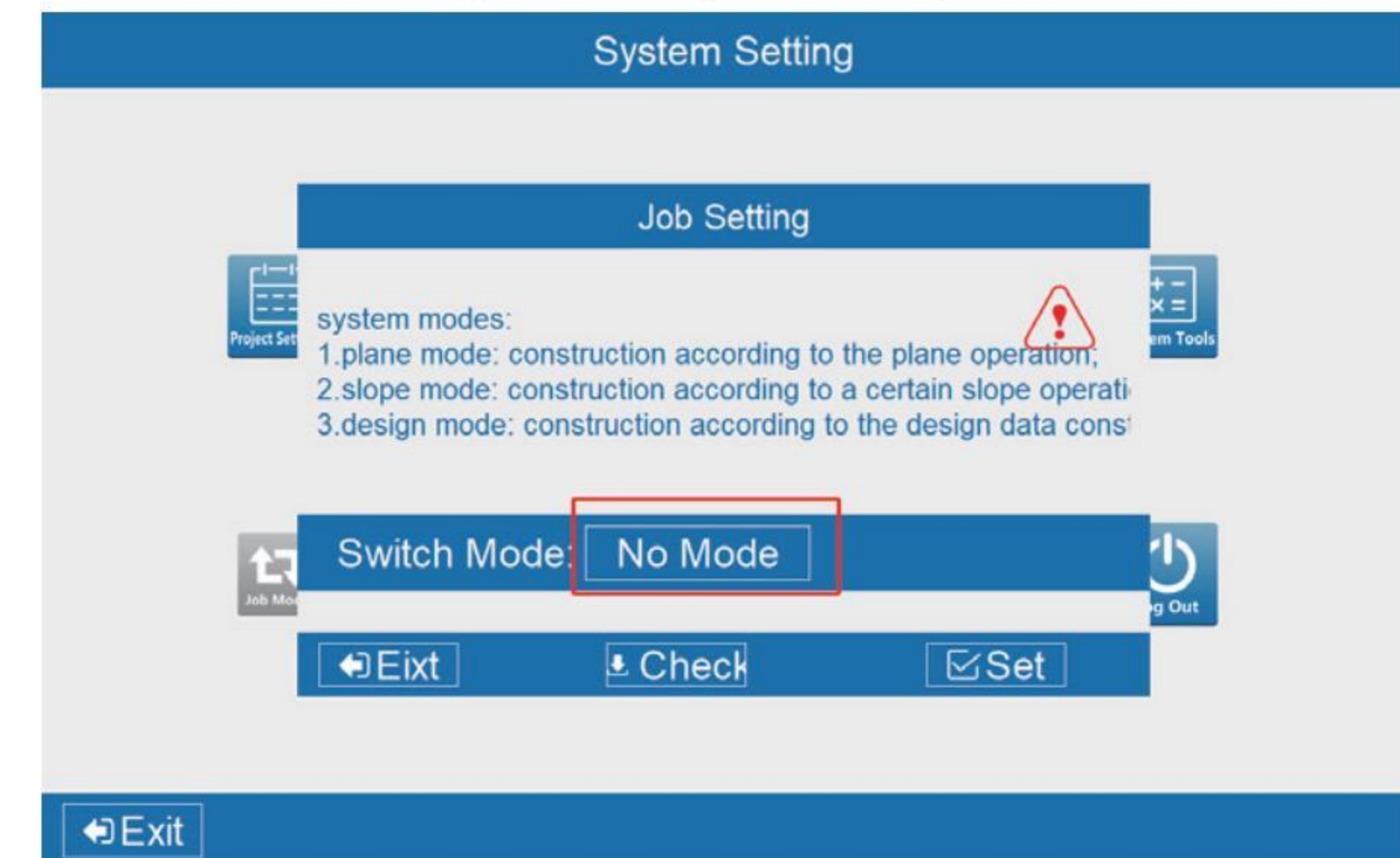


Figure 23 Click the Icon to Switch the Mode

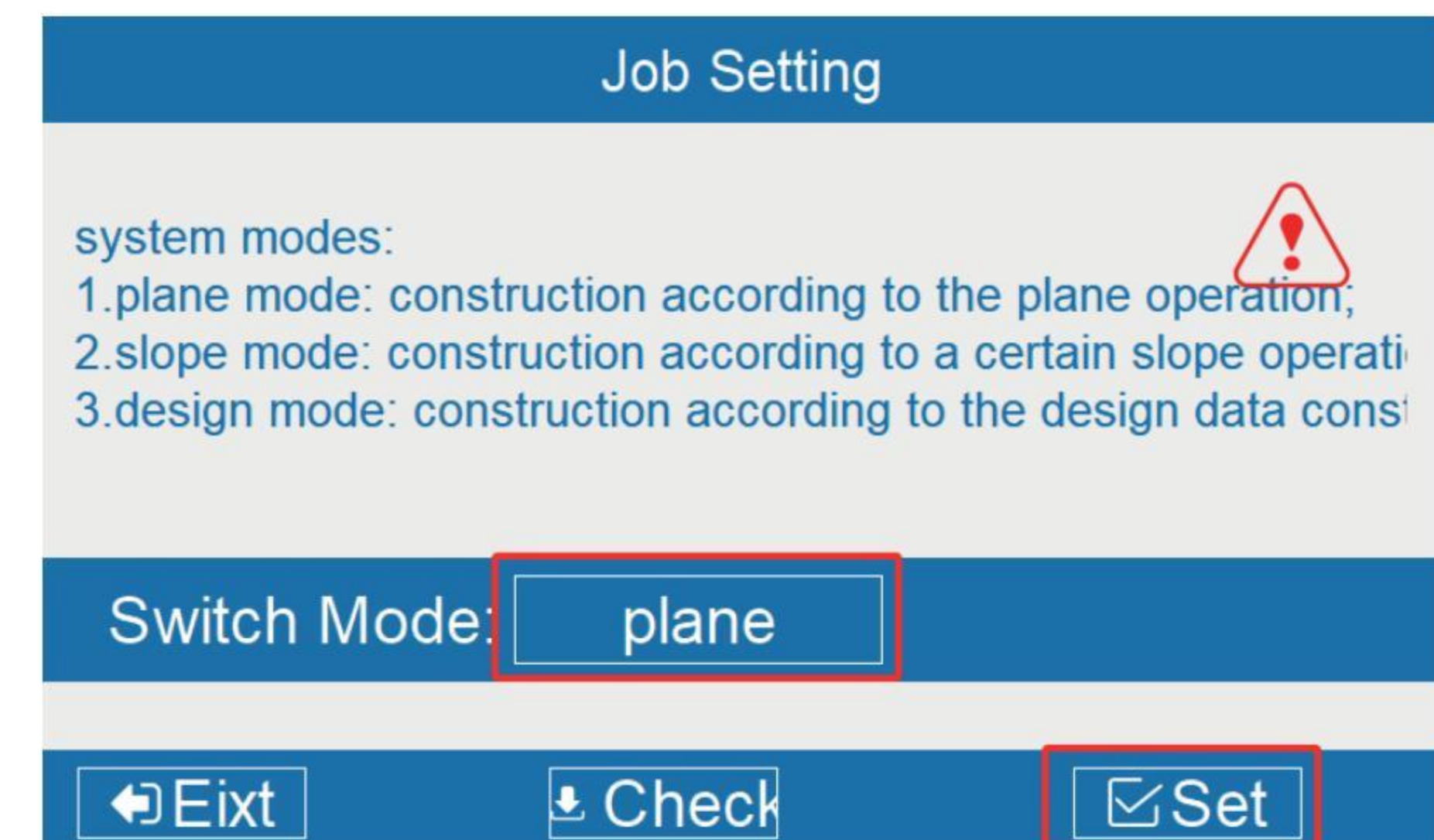


Figure 24 Plane Mode

Figure 25 Plane Setting

Set Base: Reference plane: Current Height
Adjust Base: Manually Enter the Parameters.

Figure 26 Slope Mode

Figure 27 Slope Setting

Figure 28 Design Mode

Figure 29 Input Design (Import USB data to tablet.
Supported formats: .tdt; .tdr; .tdp; .tds; .dxf.)