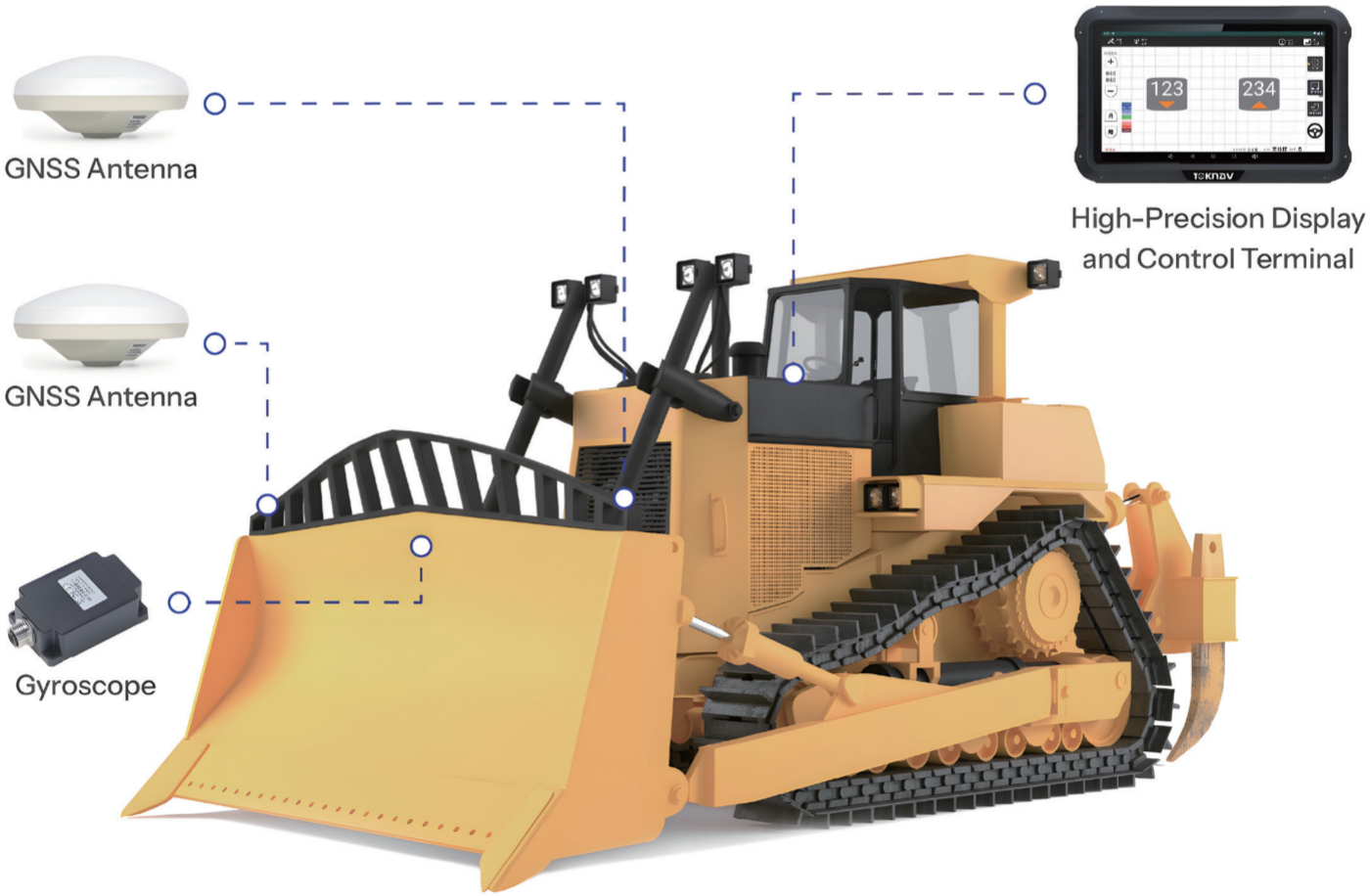
TMC10
Dozer Control System
User Guide

Dozer 3D Guidance System

Content

1. System Operating Principle

The dozer system utilizes sensors mounted at the blade's midpoint to measure its attitude, complemented by dual satellite antennas (GPS300) installed on both sides to receive positioning signals for precise blade location and elevation calculation. Data from sensors and antennas transmit via main cables to the controller, where GNSS modules and ECU process the information. Real-time blade positioning and orientation data are then relayed to the in-vehicle tablet. Operators can set reference planes or import design files via the tablet interface, enabling manual blade height adjustments through visual feedback.



2. Software Interface

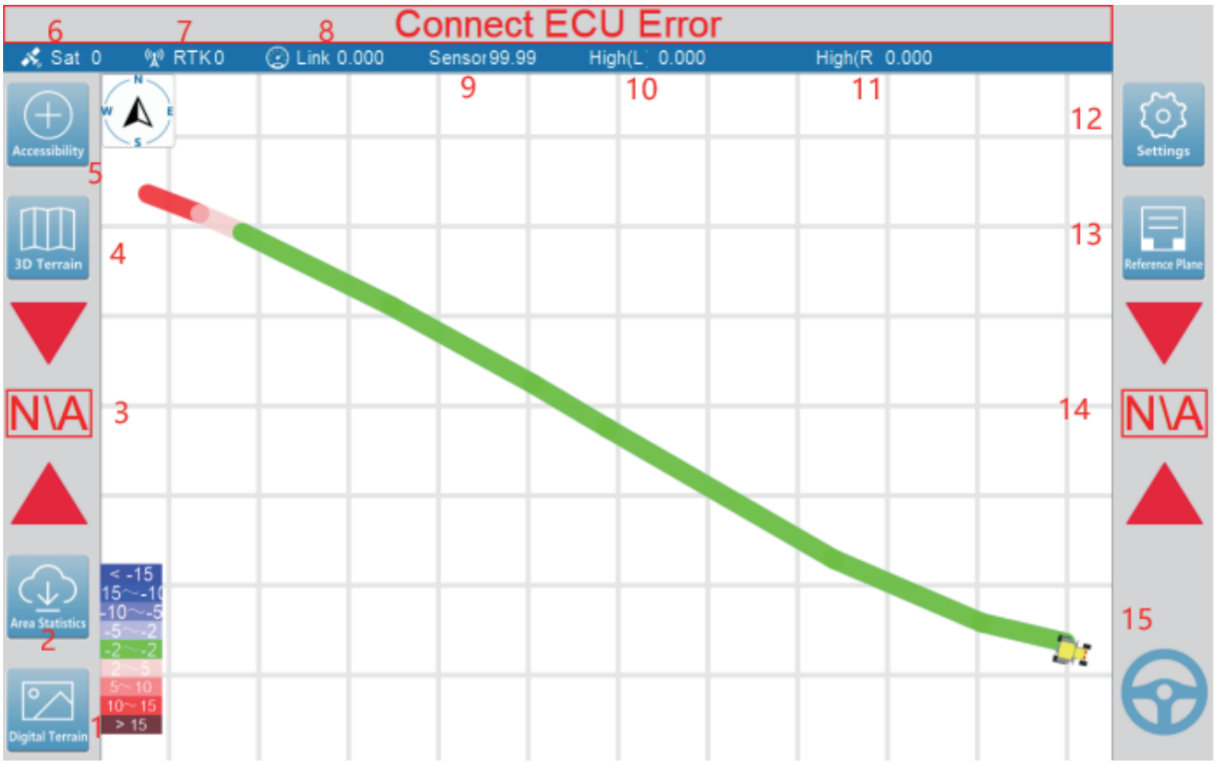


Figure 1 Software Interface

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

(1)Deploy a GNSS receiver as a base station configured with built-in radio modem data link.

(2)Set the radio protocol to Transparent Transmission Protocol (e.g., PCC-GMSK) and frequency to 450.0125 MHz – matching the dozer system's default settings.

(3)Ensure the dozer (rover) uses identical protocol and frequency to maintain seamless communication with the base station.

3.2 Coordinate System Settings

Click Setting - System Tool - Coordinate

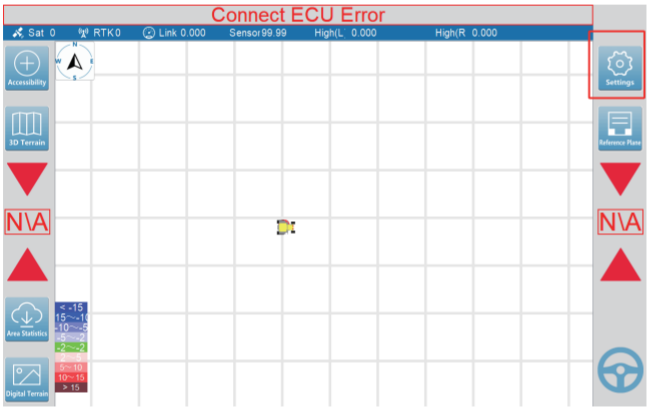


Figure 2 Settings

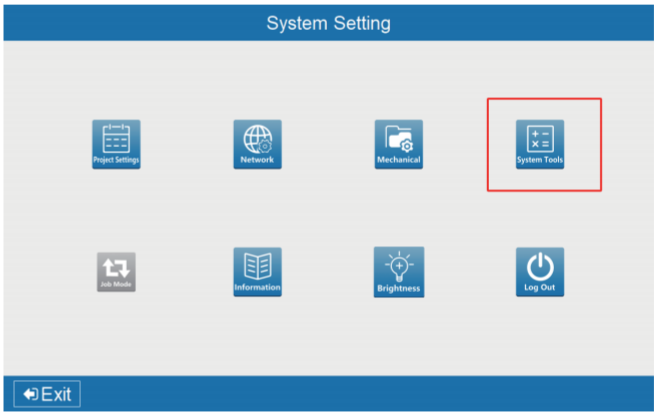


Figure 3 System Setting

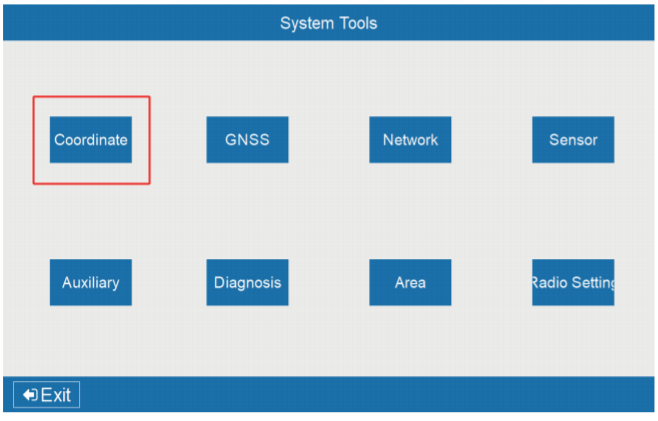


Figure 4 Coordinate

3. Basic Settings

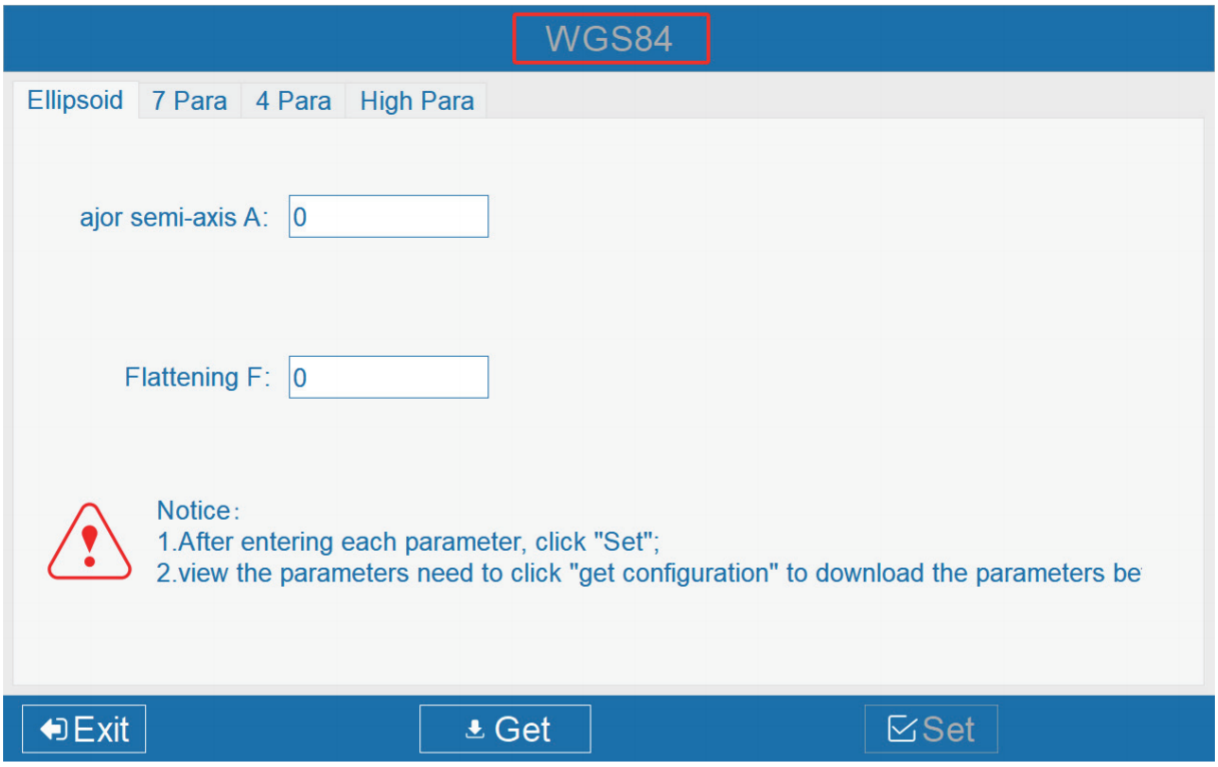


Figure 5 Coordinate System Parameters

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

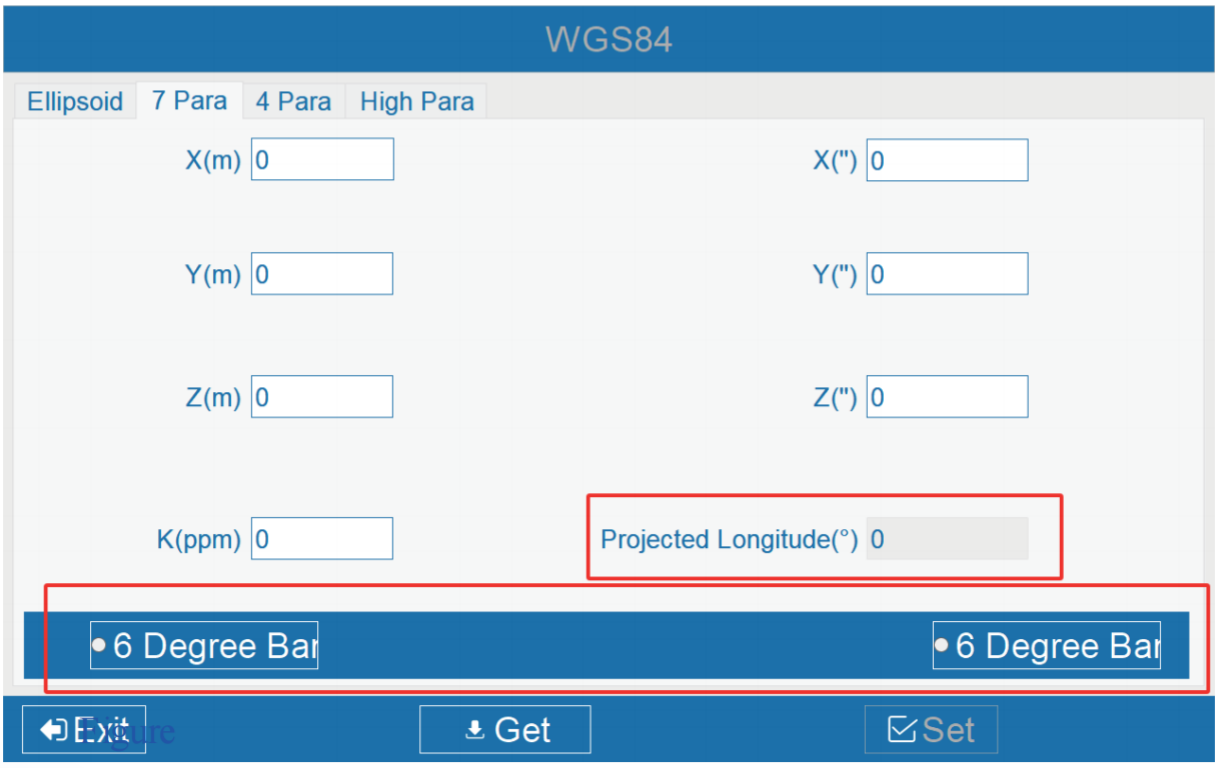


Figure 6: 7-Parameter and Central Meridian & Zone Settings

3. Basic Settings

Figure 7 4-Parameter Settings

Figure 8 Height Settings

3. Basic Settings

3.3 Blade and Antenna Model Parameters Settings

Click Mechanical - User

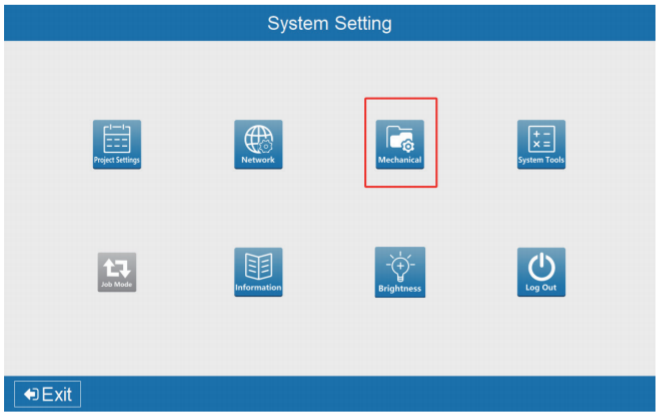


Figure 9 Mechanical

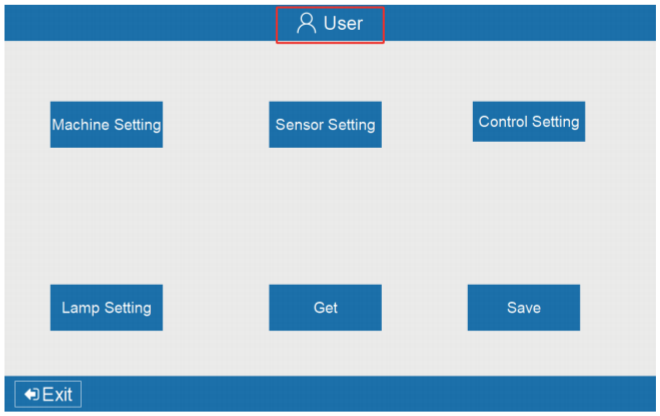


Figure 10 User

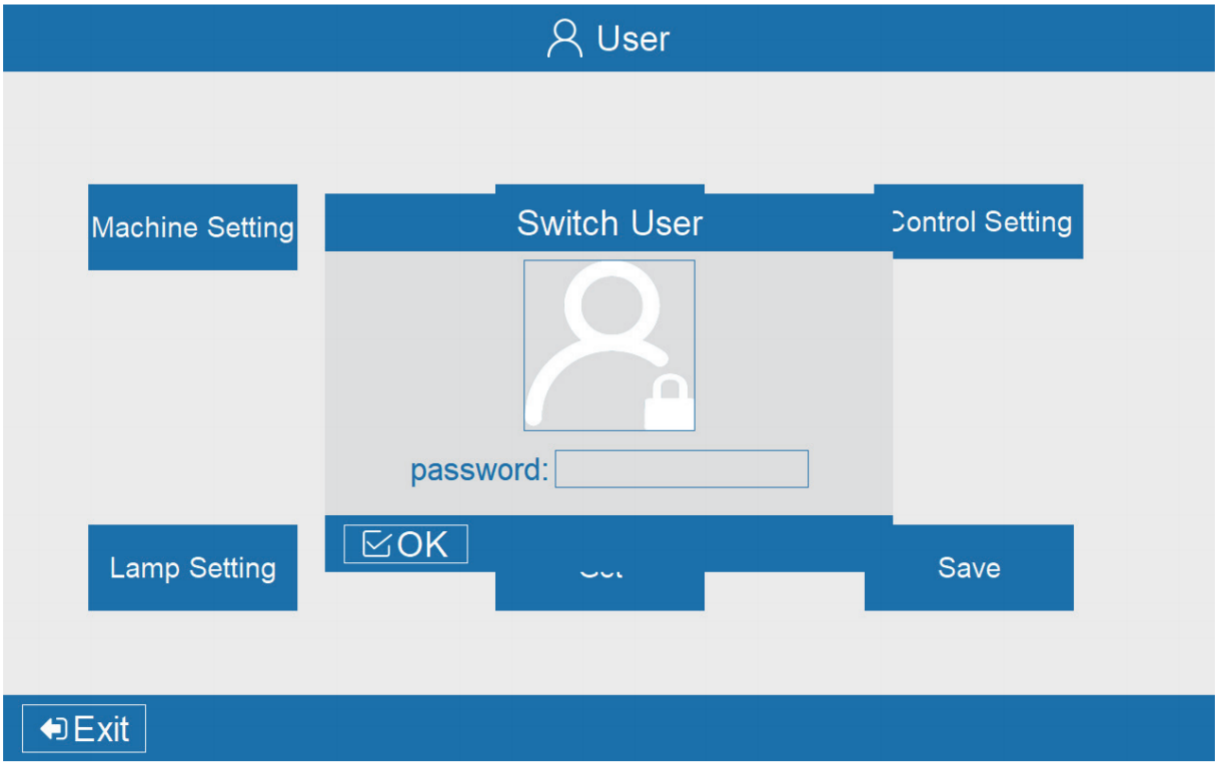


Figure 11 Enter the password to switch to administrator mode (password: 123456).

3. Basic Settings

Click Machine Setting

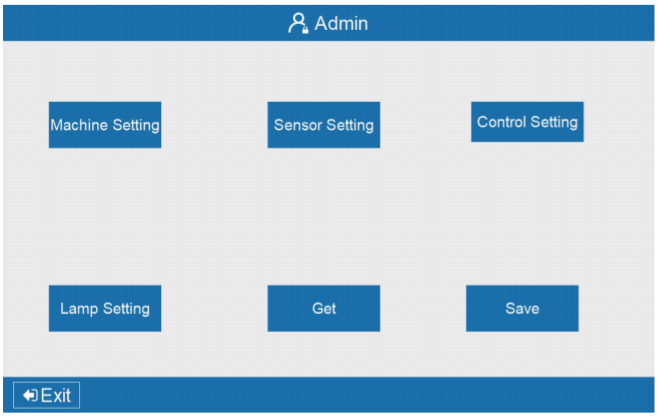


Figure 12 Admin

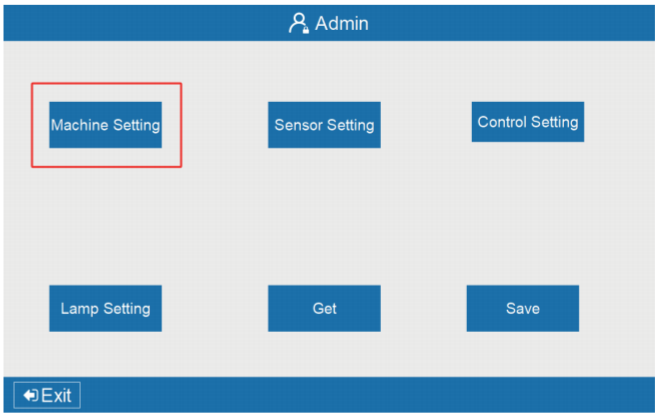


Figure 13 Machine Setting

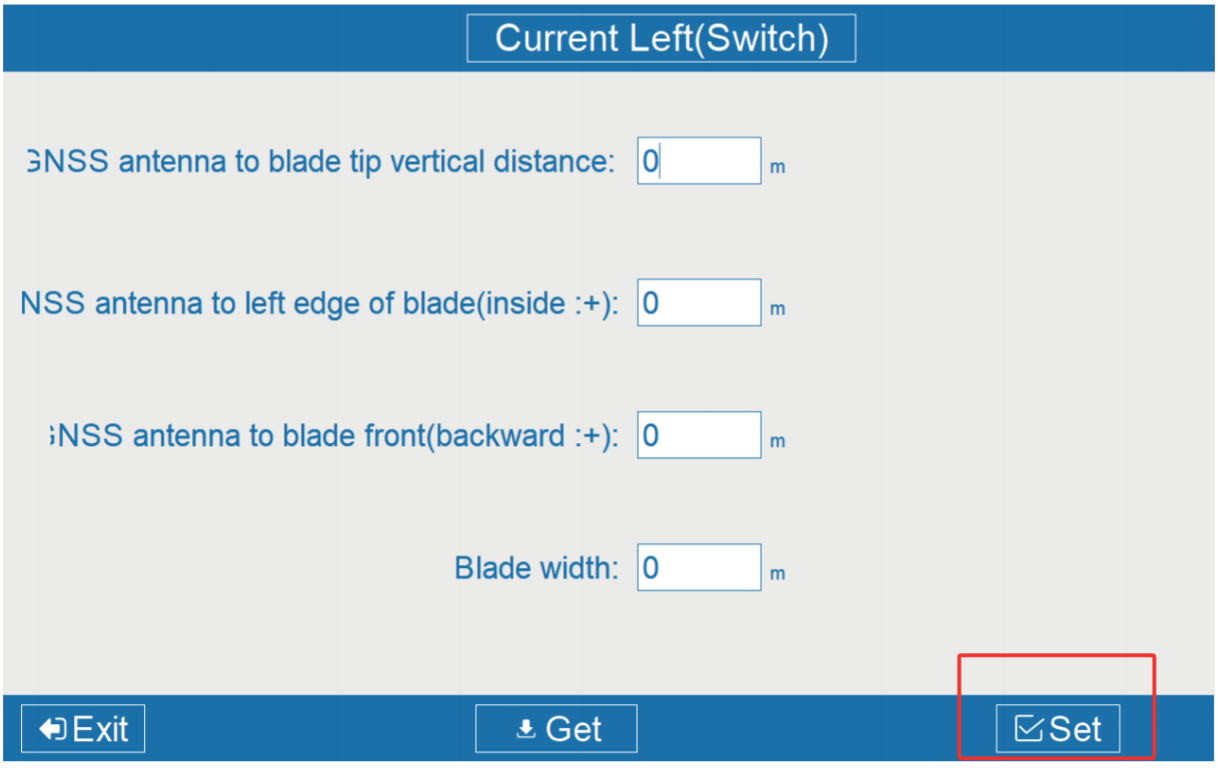


Figure 14 Left Blade Parameters Setting

3. Basic Settings

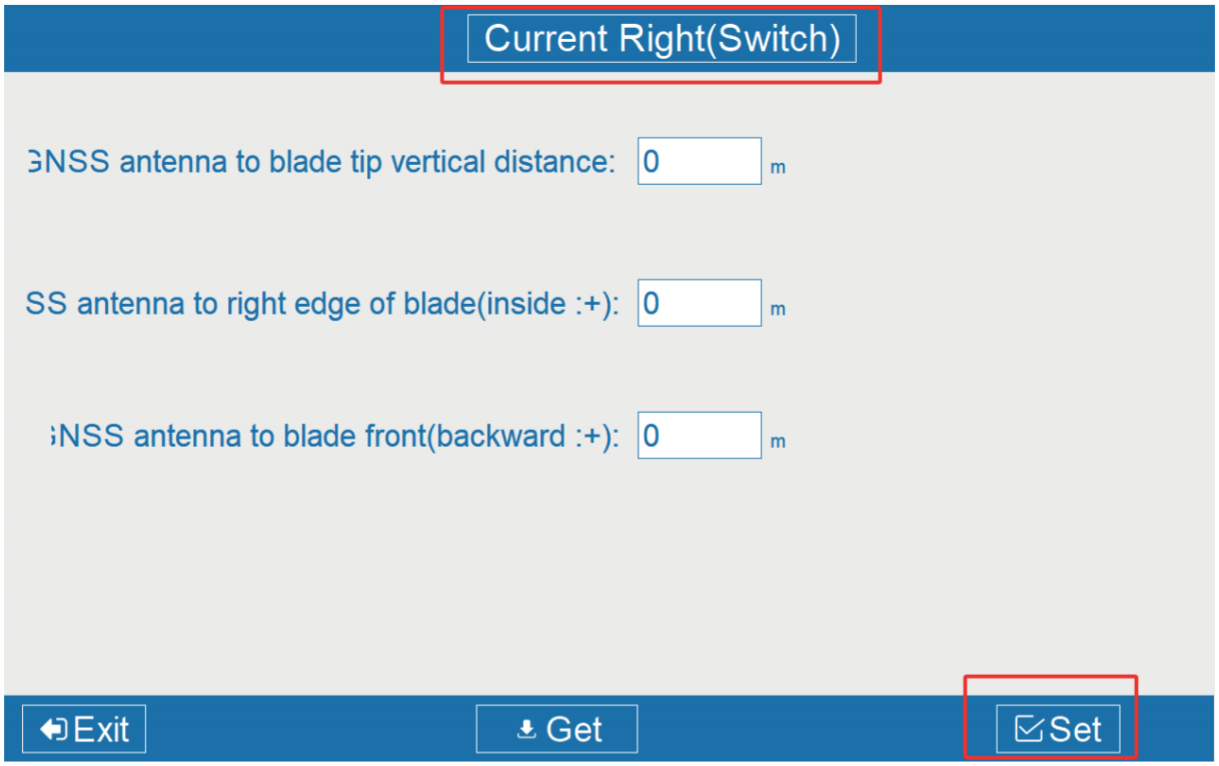


Figure 15 Click “Switch” and Set the Right Blade Parameters

3.4 RTK Status and Blade Coordinates

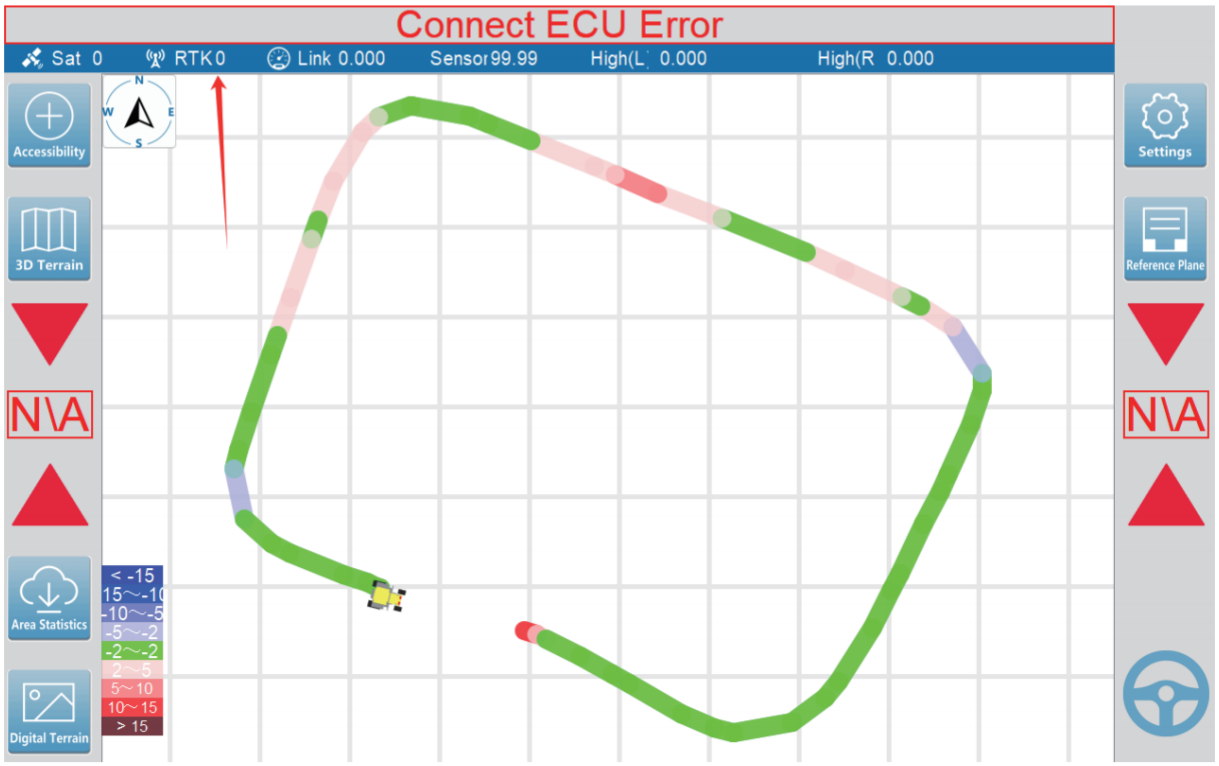


Figure 16: RTK Fixed Solution (Number = 4)

3. Basic Settings

Click Setting - System Tools - GNSS

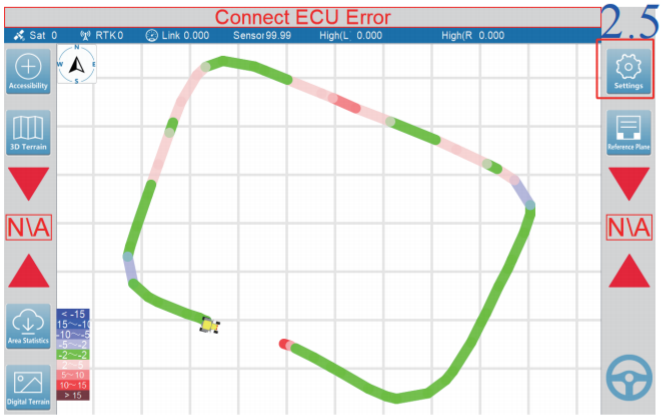


Figure 17 Settings

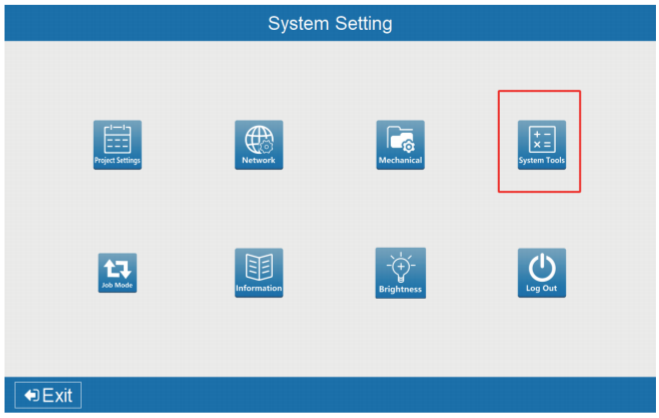


Figure 18 System Tools

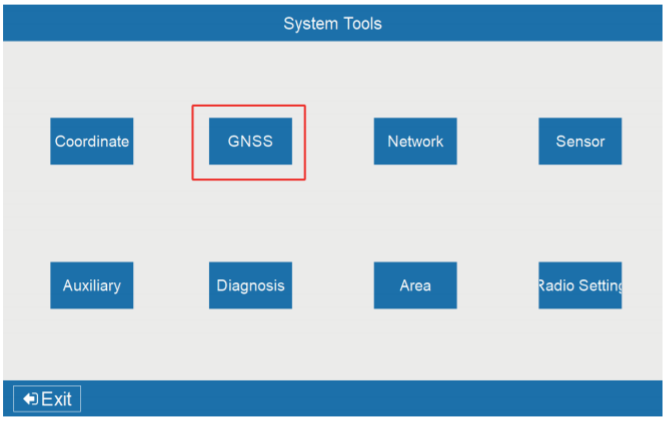


Figure 19 GNSS

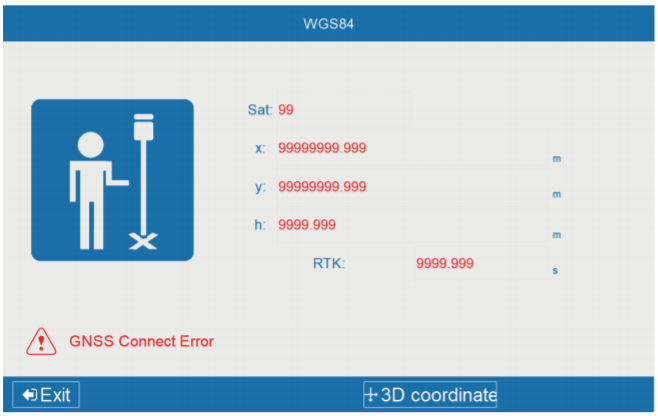


Figure 20 3D Coordinate

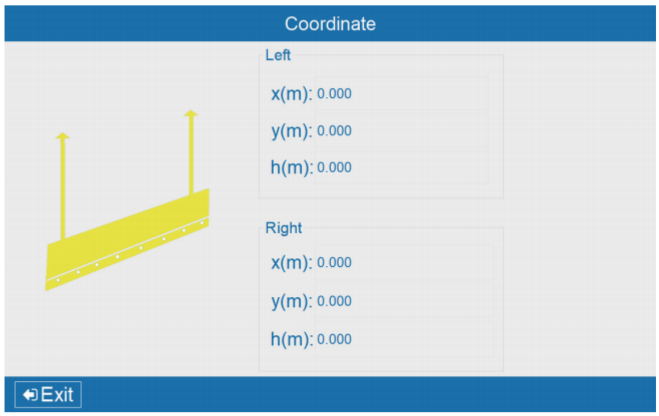


Figure 21 3D Coordinate

3. Basic Settings

3.5 Three modes: Plane/Slope/Design Mode

Click Project Settings

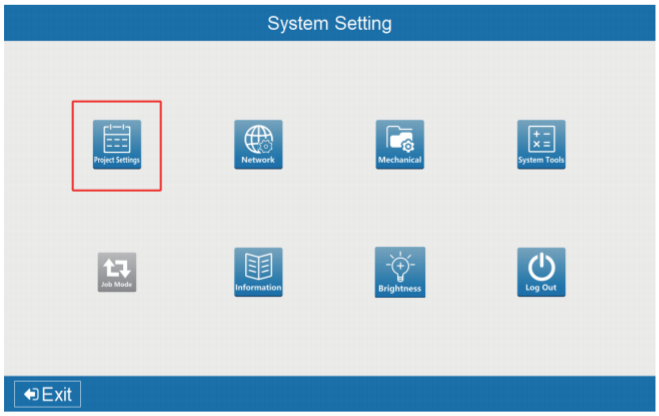


Figure 22 Project Settings

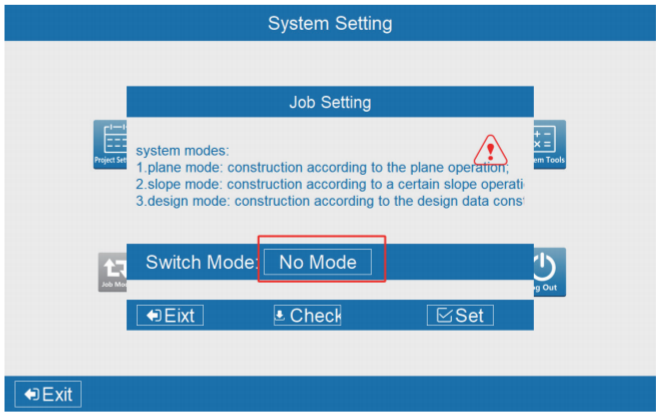


Figure 23 Click the Icon to Switch the Mode

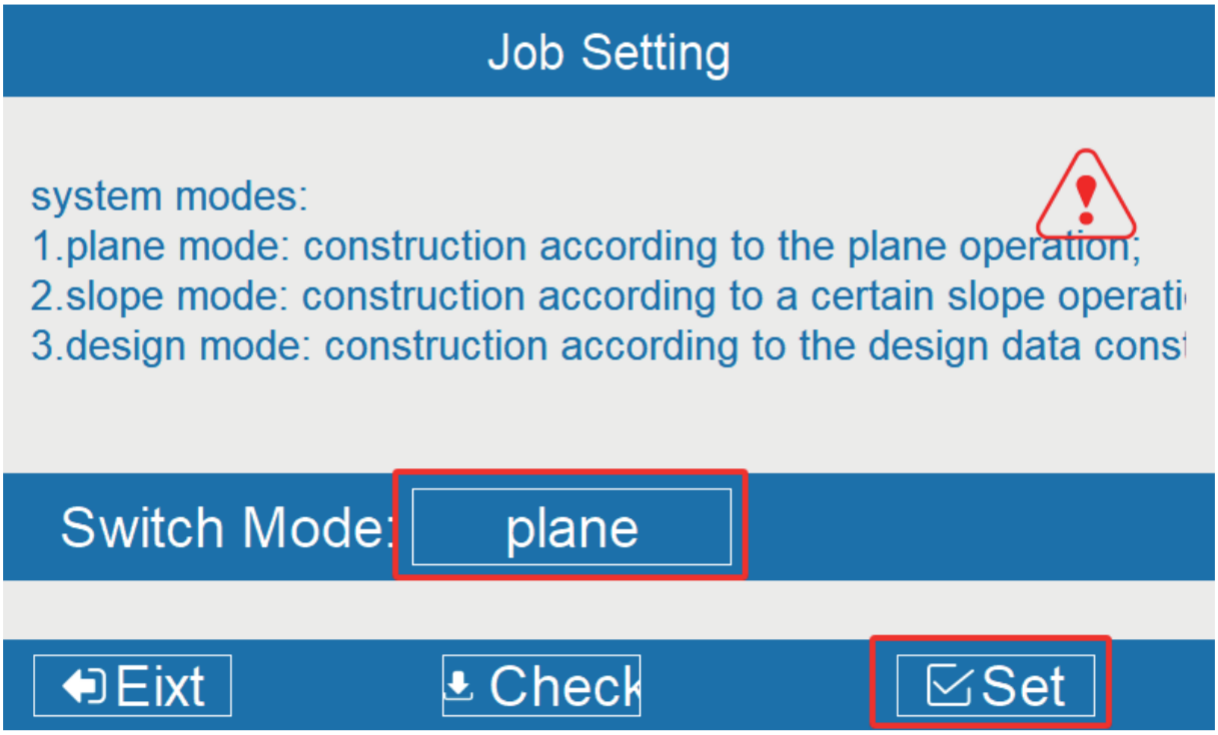


Figure 24 Plane Mode

3. Basic Settings

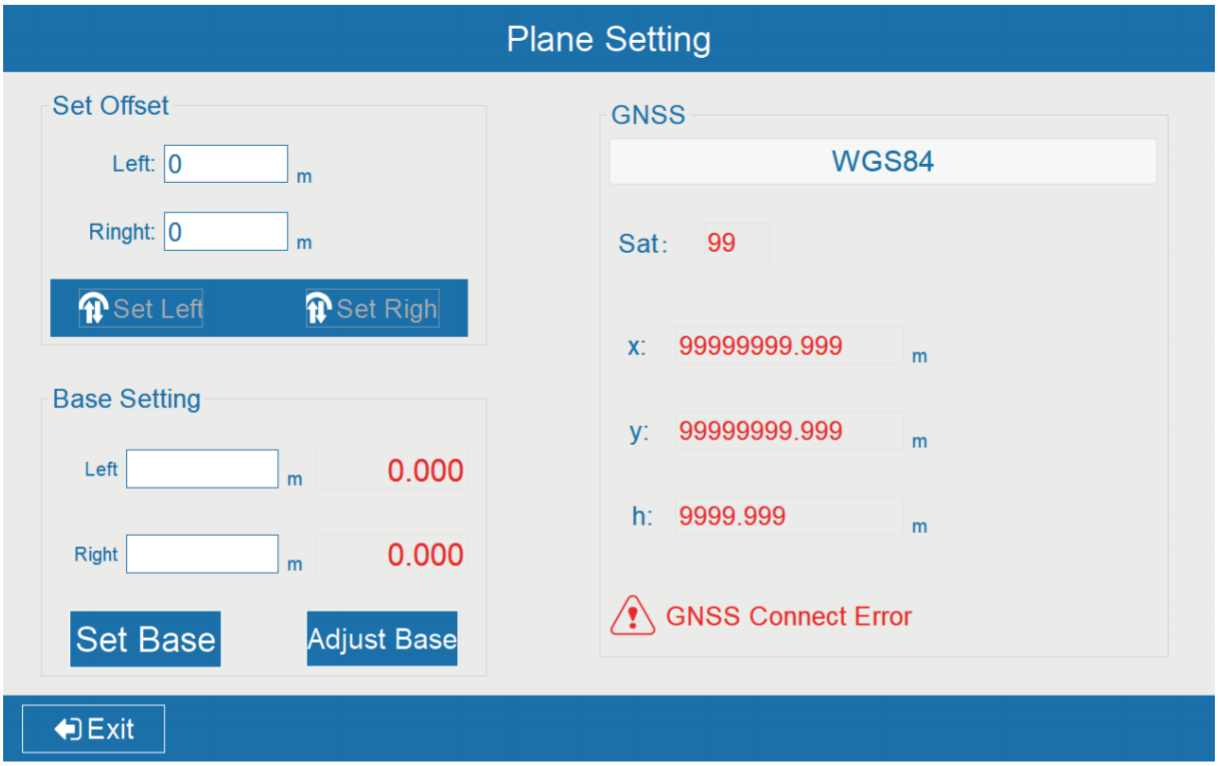


Figure 25 Plane Setting

Set Base: Reference plane: Current Height

Adjust Base: Manually Enter the Parameters.

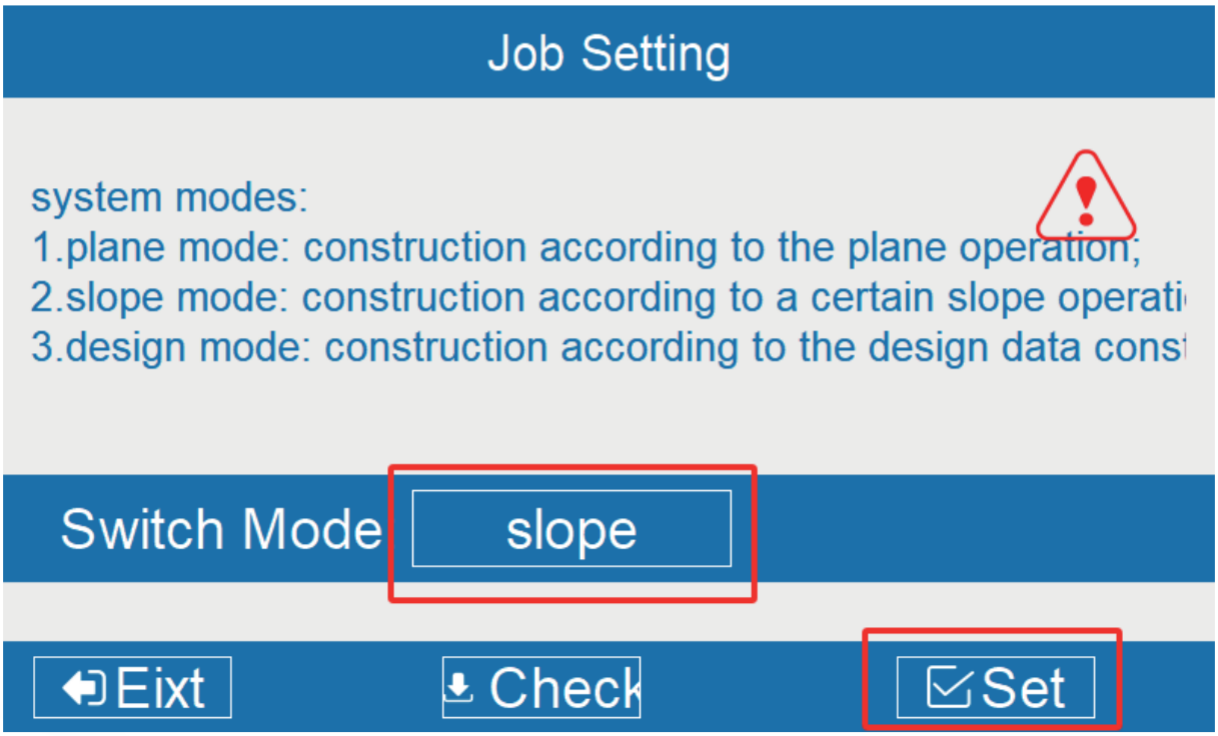


Figure 26 Slope Mode

3. Basic Settings

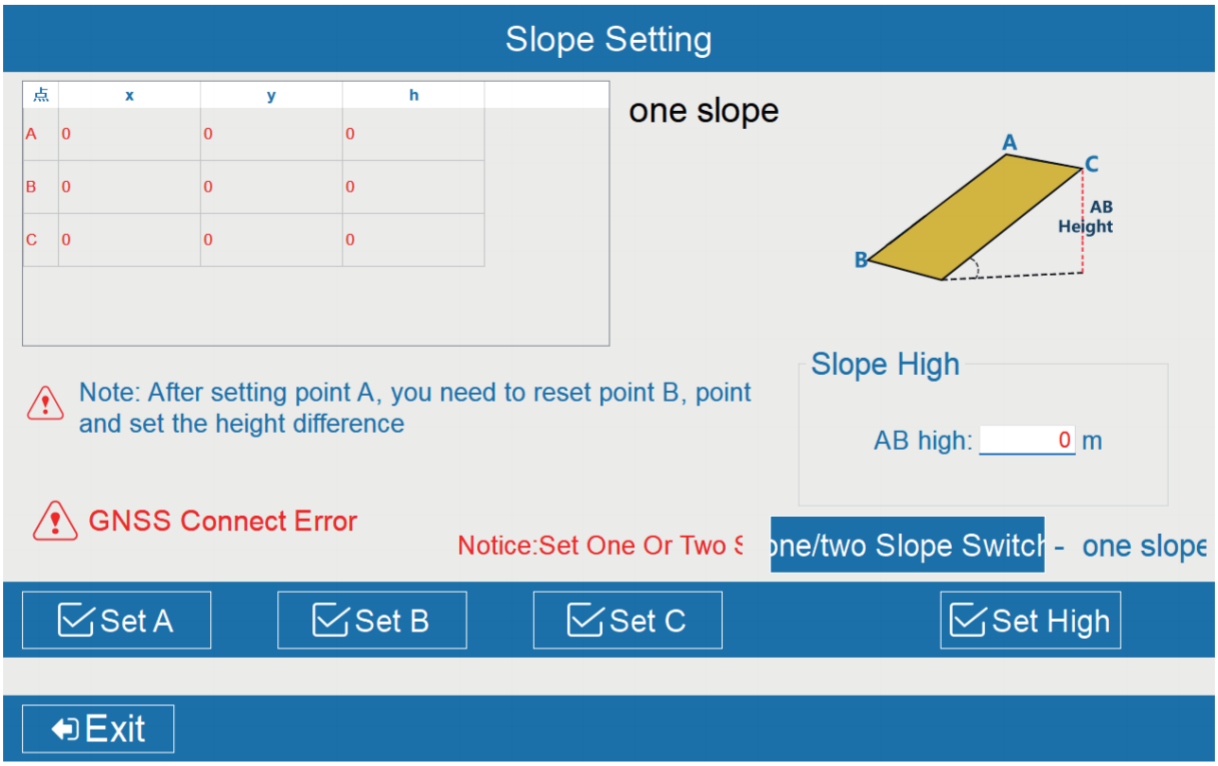


Figure 27 Slope Setting

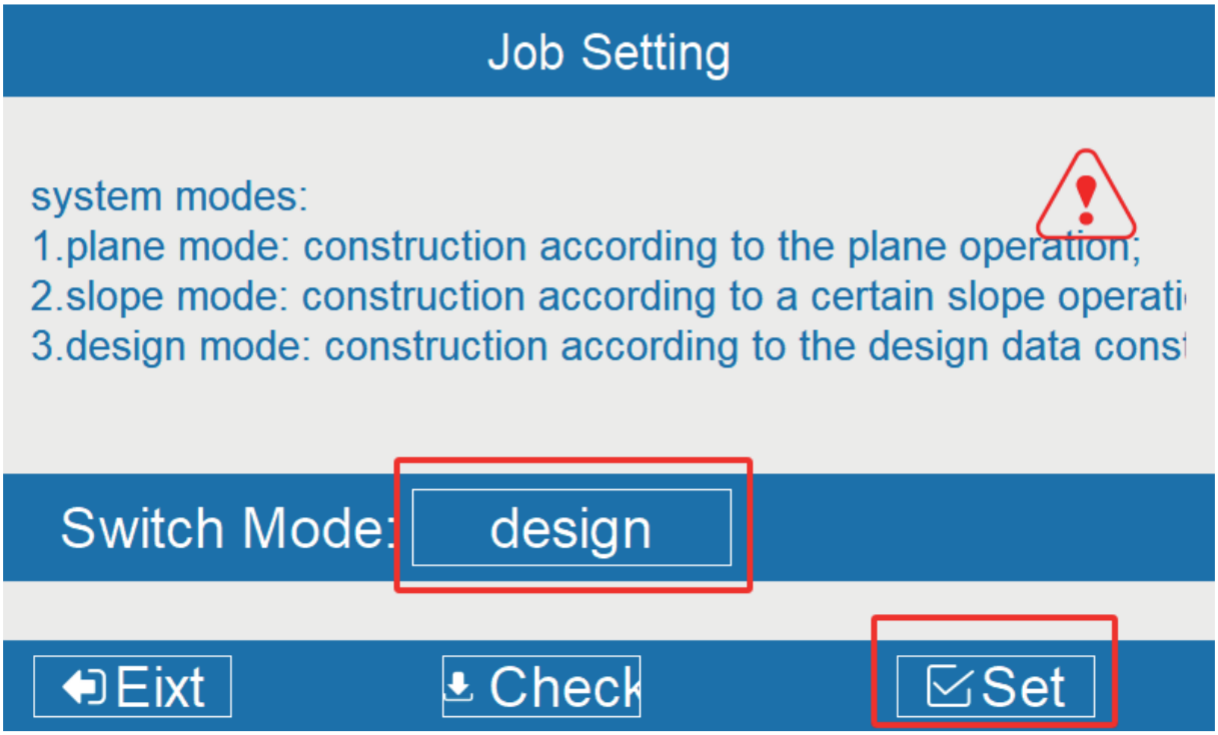


Figure 28 Design Mode

3. Basic Settings

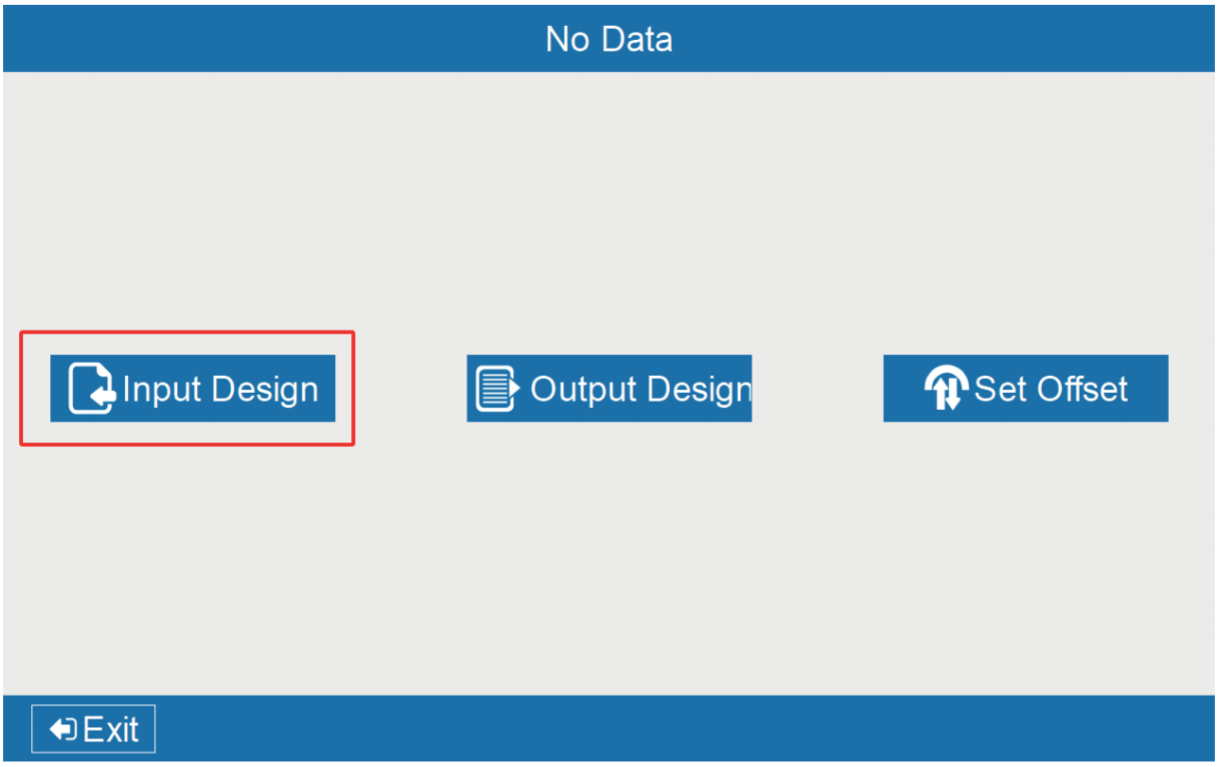


Figure 29
Input Design (Import USB data to tablet.
Supported formats: .tdt; .tdr; .tdp; .tds; .dxf.)