Quick Start Guide

Oscar Trek GNSS Receiver

➢ **Visual Positioning**

Version 1.0

!	**Note: Please check each item according to the item list first to confirm that all the accessories are correct for the purchased kit.**
⚠	**Install the radio antenna before switching the radio transceiver to transmit mode, or the radio transceiver may be damaged due to overheating. The energy to be transmitted cannot be emitted out without the antenna, which may cause the temperature rise and overheat of the radio module.**

This Quick Start Guide introduces how to start using visual positioning quickly, the detailed introduction and operations of Oscar Trek refer to User Manual for Oscar Trek GNSS Receiver.

Figure 0.1 Oscar Trek GNSS Receiver

The four steps of visual positioning are outlined below:

1.Prepare; 2.Initialization; 3.Measuring; 4.Storage.

1. Prepare

The detailed steps for preparation are as follows:

1).Long press the power button to power on Oscar Trek.
2).Use NFC or Bluetooth to establish communication between the Android controller and Oscar Trek.
3).Configure Oscar Trek to work in rover mode using the NUWA app.

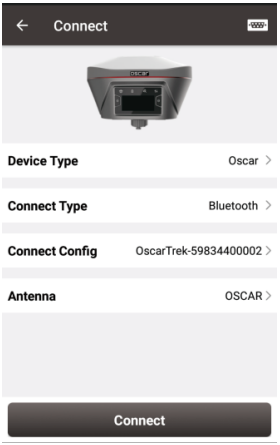

Figure 1.1 Connect Trek via Bluetooth

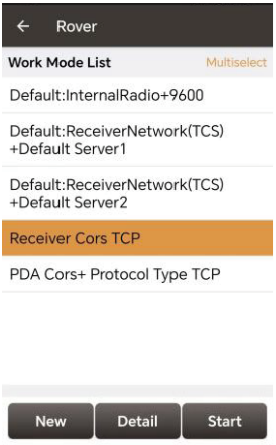

Figure 1.2 Rover setting interface

4).Click [Visual Positioning], follow the text prompt and choose the Wi-Fi of Oscar-Trek.

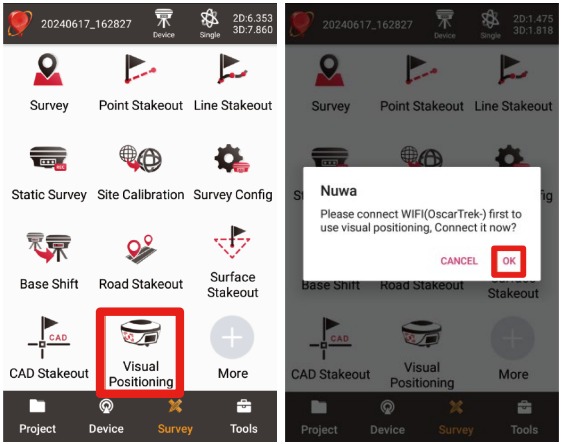

Figure 1.3 Visual Positioning interface

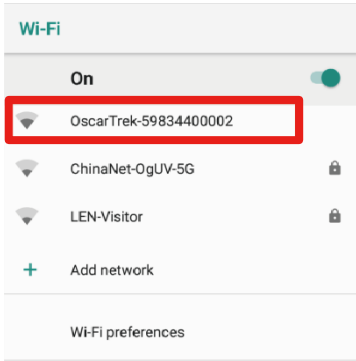

Figure 1.4 Connect Wi-Fi

Note:

- ◇ **Rover configuration has different data link selections, including Internal Radio, Receiver Network, and PDA Network.**
- ◇ **The Receiver Network and PDA Network have three protocol options respectively: Ntrip, TCP and Tersus Caster Service (TCS).**
- ◇ **Select PDA Network when using a cellular network of a PDA such as TC80 Controller.**
- ◇ **Select Receiver Network, you need to insert a nano SIM card into Oscar Trek GNSS receiver.**
- ◇ **Select Internal Radio, you need to install a 410-470MHz radio whip antenna.**
- ◇ **Ensure that fixed solutions are available after configuring the rover mode.**

2. Initialization

Click [Back]-[Visual Positioning], and follow the animated prompts to complete IMU initialization.

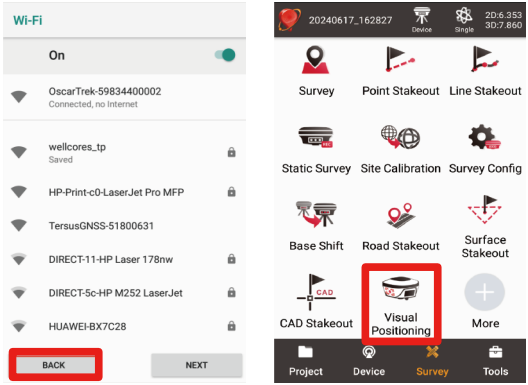

Figure 2.1 Start initialization

The initialization is a two-stage process, shaking and moving.

Figure 2.2 Initialization-shaking

Figure 2.3 Initialization-moving

After the camera indicator in the upper right corner turns to green , users can still continue the moving initialization process to achieve bettor performance.

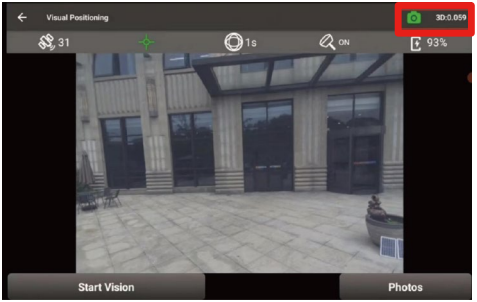

Figure 2.4 Lower 3D value

Above all, the initialization is completed.

Note:

- ◇ **Ensure that the Oscar Trek is located in an open sky environment, without any obstruction to the GNSS antenna, throughout the initialization process.**
- ◇ **Remember not to rotate the receiver violently during the initialization process. To improve visual measurement performance, focus on ensuring sufficient moving, as rotation does not enhance it.**
- ◇ **During the initialization phase, the camera should be turned back toward the surveyor to avoid obstruction of the view by their body.**
- ◇ **In the moving stage, the camera should not be pointed at non-textured objects, such as the sky and white walls.**
- ◇ **3D values in the upper right corner indicates the predicted 3D measuring error at 6 meter distance.**

3. Measuring

The detailed steps of measuring are as follows:

1).Click [Start Vision] to start capturing images. Make sure the target can be observed by multiple views.

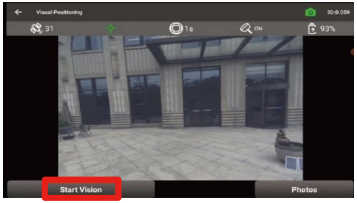

Figure 3.1 Start Vision

2).Click [Stop] to end capturing

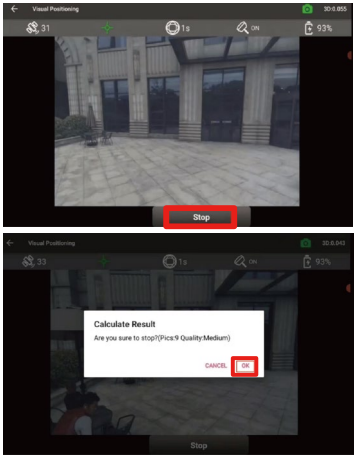

Figure 3.2 Stop vision

3).Click [Photos] to start measuring points from captured images.

4).Choose a image and then select feature points to measure.

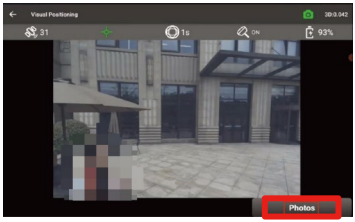

Figure 3.3 Photos

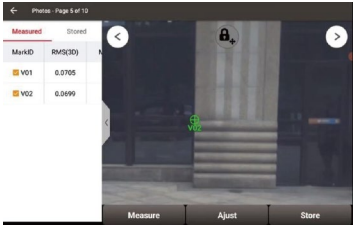

Figure 3.4 Measure

Note:

- ◇ **Hold the receiver steady and keep a normal walking speed while capturing images.**
- ◇ **For optimal accuracy and performance, capture the object of interest from a distance between 2m and 10m.**
- ◇ **Avoid using it in dark conditions or when directly facing the sun, as it may lead to difficulty in recognizing enough features in the captured images to make a match.**
- ◇ **Try to select feature points on an image directly in front of the target object. For example, choose an image in the middle of the captured images.**
- ◇ **Multiple feature points can be selected at a time.**

4.Storage

Click [Store], save the points and modify point name.

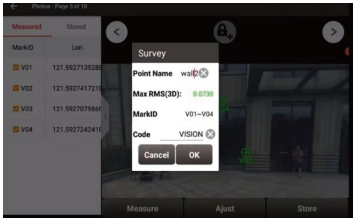

Figure 4.1 Store and modify point name

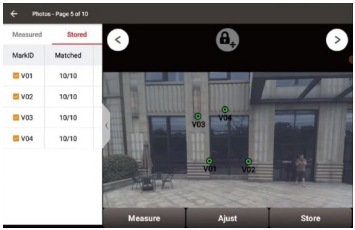

Figure 4.2 Stored

Click [Point], access the point store and check the detail.

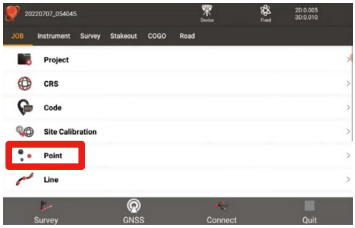

Figure 4.3 Point

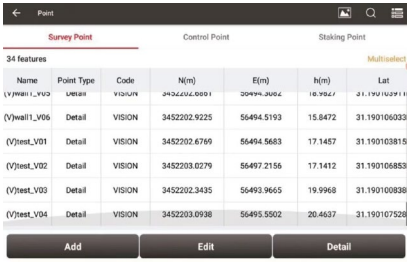

Figure 4.4 Survey Point

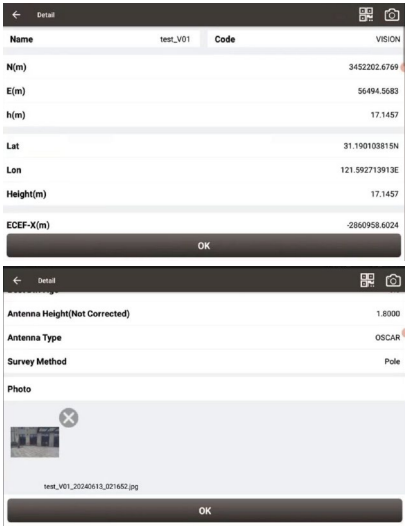

Figure 4.5 Detail

Above all, the storage is completed.

Tersus GNSS Inc.
Right to the Point

Get More

This Quick Start Guide briefly introduces the visual positioning for Oscar Trek GNSS Receiver. More details please refer to User Manual of Oscar Trek GNSS Receiver which can be downloaded from Tersus official website:
https://www.tersus-gnss.com/product/oscar_trek_gnss_receiver

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