Oscar GNSS Receiver

➢ **Oscar as a Base**

➢ **Oscar as a Rover**

Version 1.1

!	**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.** **The installation of the 410-470MHz radio whip antenna refers to Figure 1.2 Oscar as a Base – Internal Radio and Figure 1.5 Oscar as a Rover – Internal RVvadio. The installation of the high gain radio antenna refers to Figure 1.3 Oscar as a Base – External Radio RS400H2.**

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

The five simple steps to get started are as follows:

1. Check battery power level, charge the battery if necessary;
2. Load one battery into Oscar, and insert one SIM card if Receiver Network (4G/3G/2G) is needed;
3. Set up Oscar as a Base or Rover;
4. Power on the receiver and make configurations;
5. Start survey and collect GNSS data in the field.

Note: the battery loading method is as below.

a) Open the battery cover, notice the metal contact on the bottom, put one battery align the metal contact position, and make sure the button end is close to the battery compartment.

b) Push the battery in the direction of the arrow on the top, the battery is property installed after a 'click', then close the cover and lock it.

1.System Setup

Oscar GNSS Receiver can work as a Base or a Rover.

● Oscar as a Base
● Oscar as a Rover

According to the customer requirements, set up the system as per the following pictures.

1.1 Base Setup

Figure 1.1 Oscar as a Base – Network Mode

Table 1.1 Devices in Figure 1.1

NO.	Device Name
1	Oscar GNSS Receiver
2	Height measure accessory
3	GNSS antenna connector
4	Tribrach
5	Tripod
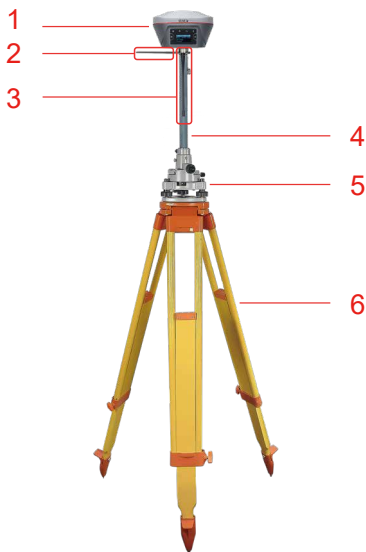
Figure 1.2 Oscar as a Base – Internal Radio

Table 1.2 Devices in Figure 1.2

NO.	Device Name
1	Oscar GNSS Receiver
2	Height measure accessory
3	410-470MHz radio whip antenna
4	Extension pole 30cm
5	Tribrach
6	Tripod
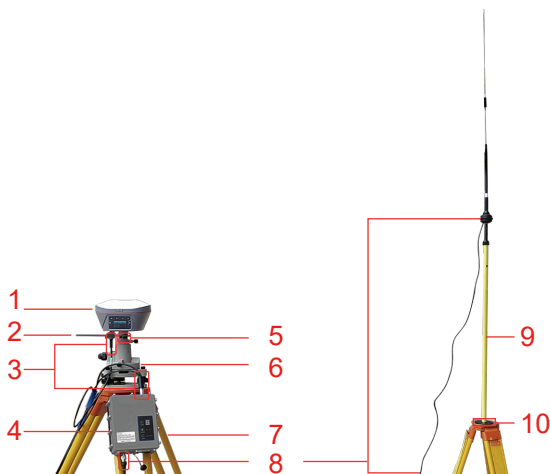
Figure 1.3 Oscar as a Base – External Radio RS400H2

Table 1.3 Devices in Figure 1.3

NO.	Device Name
1	Oscar GNSS Receiver
2	Height measure accessory
3	Serial-5pin to Ext-Radio-DC-5pin & Bullet-DC
4	External Radio RS400H2
5	GNSS antenna connector
6	Tribrach
7	Tripod
8	High Gain Radio Antenna
9	Telescopic pole for radio antenna
10	Metal plate for radio antenna

1.1 Rover Setup

Figure 1.4 Oscar as a Rover – Network Mode

Table 1.4 Devices in Figure 1.4

NO.	Device Name
1	Oscar GNSS Receiver
2	Ranging pole
3	Bracket for TC20
4	TC20 Controller

Figure 1.5 Oscar as a Rover – Internal Radio

Table 1.5 Devices in Figure 1.5

NO.	Device Name
1	Oscar GNSS Receiver
2	410-470MHz radio whip antenna
3	Bracket for TC20
4	Ranging pole
5	TC20 Controller

2.Configure via Buttons

2.1 Configure Oscar as a Base

Steps of button configuration:

1. Long press the power button to power on Oscar;
2. Press FN button to select [Mode Config], press the power button to enter the work mode options;
3. Select [Base Mode] and press the power button;
4. If using Tersus Caster Service, select [TCS] and press the power button to enter TCS network settings; Set the format, server and press the power button to confirm.
5. If using internal radio, select [Internal Radio] and press the power button to enter radio setting; Set protocol, format, power, channel, frequency and press the power button to confirm.
6. If using external radio, select [External Radio] and press the power button to configure; Set Baud rate as 115200, format and press the power button to confirm.
7. Above all, setting Oscar as a base is completed.

2.2 Configure Oscar as a Rover

Same steps with step 1 & 2 above, then:

3. Select [Rover Mode] and press the power button;
4. If using Tersus Caster Service, select [TCS] and press the power button to enter TCS network settings; Set the Base ID, server and press the power button to confirm.
5. If using internal radio, select [Internal Radio] and press the power button to enter radio setting; Set protocol, channel and frequency same as Base, press the power button to confirm.
6. If using NTRIP Client, select [NTRIP Client] and press the power button to enter NTRIP setting; Set IP address with correct port and press the power button to confirm.
7. Above all, setting Oscar as a rover is completed.

3.Configure via Nuwa App
3.1 NFC Function

While Oscar is powered on and the screen of TC20 Controller is unlocked, put TC20 Controller close to the Oscar NFC logo. The Bluetooth pairs automatically after a beep and Nuwa is launched requesting to open the latest project. Click [OK] and start configuring Oscar as stated in section 3.4. Also you can click [Cancel] to create a new project or open an existing project, and then start configuring Oscar.

3.2 Create project / open existing project

If using an android device without NFC function, ensure Oscar is powered on, and launch Nuwa application on the android device. Click [Project] in the main interface to create a new project or open an existing project as shown in Figure 3.1 and connect Oscar manually which is stated in section 3.3 below.

3.3 Connect Oscar

Back to the main interface of Nuwa, click [Device] -> [Connect], select device Oscar and target Bluetooth address to pair, the antenna is selected by default. Then click [Connect] to complete the device connection, refer to Figure 3.2 below.
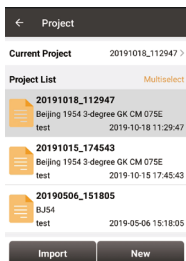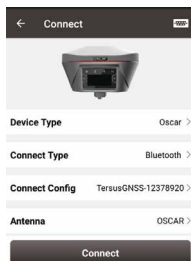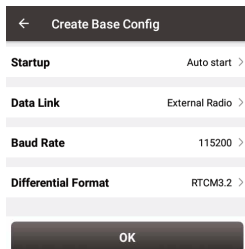
Figure 3.1 Project

Figure 3.2 Connect Oscar

3.4 Configure Base or Rover

Back to the Device interface, click [Base] to enter the Work Mode List, create a new Base or edit an existing base as shown in Figure 3.3; Select [Rover] to enter the Work Mode list, create a new Rover or edit an existing rover as shown in Figure 3.4;
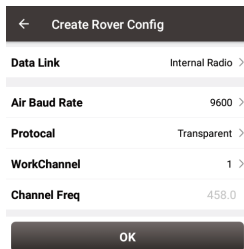
← Create Base Config	
Startup	Auto start >
Data Link	External Radio >
Baud Rate	115200 >
Differential Format	RTCM3.2 >
OK	

Figure 3.3 Base Config
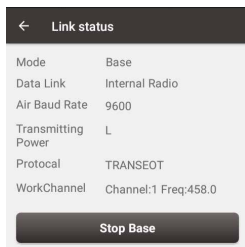
← Create Rover Config	
Data Link	Internal Radio >
Air Baud Rate	9600 >
Protocal	Transparent >
WorkChannel	1 >
Channel Freq	458.0
OK	

Figure 3.4 Rover Config

Choose [External Radio] (Base only) or [Internal Radio] or [Receiver Network] or [PDA Network] for Data Link, after the detailed configuration of a base or rover is filled in, then click [OK] and back to the work mode list, select this configuration to start data transmission for base or rover which are shown in Figure 3.5 and Figure 3.6 below.
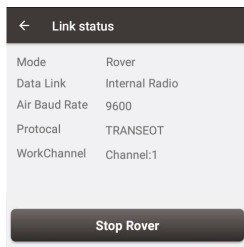
← Link status	
Mode	Base
Data Link	Internal Radio
Air Baud Rate	9600
Transmitting Power	L
Protocal	TRANSEOT
WorkChannel	Channel:1 Freq:458.0
Stop Base	

Figure 3.5 Link status of Base

← Link status	
Mode	Rover
Data Link	Internal Radio
Air Baud Rate	9600
Protocal	TRANSEOT
WorkChannel	Channel:1
Stop Rover	

Figure 3.6 Link status of Rover

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Get More

This Quick Start Guide briefly introduces the setup and operation for Oscar GNSS Receiver and the operation of Nuwa app. More details please refer to User Manual of Oscar and User Manual of Nuwa app which can be downloaded from Tersus official website:
https://www.tersus-gnss.com/product/oscar-gnss-receiver.

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