



LUKA GNSS Receiver

- LUKA as a Base
- LUKA as a Rover



Version 2.0

	<p>Note: Please check each item according to the item list first to confirm that all the accessories are correct for the purchased kit.</p>
	<p>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.</p> <p>The installation of the 410-470MHz radio whip antenna refers to Figure 1.2 LUKA as a Base – Internal Radio and Figure 1.5 LUKA as a Rover – Internal Radio. The installation of the high gain radio antenna refers to Figure 1.3 LUKA as a Base – External Radio RS400H3.</p>

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

The five simple steps to get started are as follows:

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



1. System Setup

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

- LUKA as a Base
- LUKA as a Rover

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

1.1 Base Setup



Figure 1.1 LUKA as a Base – Network Mode

Table 1.1 Devices in Figure 1.1

NO.	Device Name
1	LUKA GNSS Receiver
2	Height measure accessory
3	GNSS antenna connector
4	Tribrach
5	Tripod

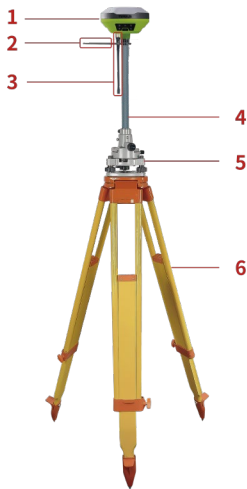


Figure 1.2 LUKA as a Base – Internal Radio

Table 1.2 Devices in Figure 1.2

NO.	Device Name
1	LUKA GNSS Receiver
2	Height measure accessory
3	410-470MHz radio whip antenna
4	Extension pole 30cm
5	Tribrach
6	Tripod

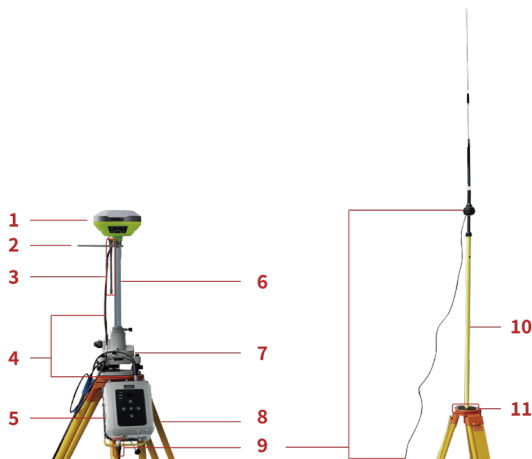


Figure 1.3 LUKA as a Base – External Radio RS400H3

Table 1.3 Devices in Figure 1.3

NO.	Device Name
1	LUKA GNSS Receiver
2	Height measure accessory
3	410-470MHz radio whip antenna
4	Type-C to Ext-Radio-DC-5pin & Bullet-DC
5	External Radio RS400H3
6	Extension pole 30cm
7	Tribrach
8	Tripod
9	High Gain Radio Antenna
10	Telescopic pole for radio antenna
11	Metal plate for radio antenna

1.2 Rover Setup



Figure 1.4 LUKA as a Rover – Network Mode

Table 1.4 Devices in Figure 1.4

NO.	Device Name
1	LUKA GNSS Receiver
2	Bracket for TC80
3	Ranging pole
4	TC80 Controller



Figure 1.5 LUKA as a Rover – Internal Radio

Table 1.5 Devices in Figure 1.5

NO.	Device Name
1	LUKA GNSS Receiver
2	410-470MHz radio whip antenna
3	Bracket for TC80
4	Ranging pole
5	TC80 Controller

2. Configure via Nuwa App

2.1 NFC Function

While LUKA is powered on and the screen of TC80 Controller is unlocked, put TC80 Controller close to the LUKA NFC logo. The Bluetooth pairs automatically after a beep and Nuwa is launched requesting to open the latest project. Click [OK] and start configuring LUKA as stated in section 2.4. Also you can click [Cancel] to create a new project or open an existing project, and then start configuring LUKA.

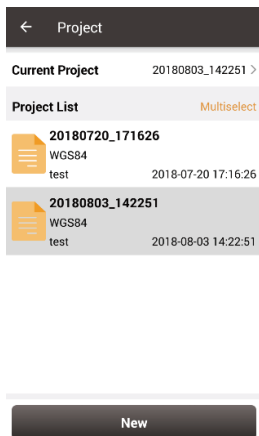


Figure 2.1 Project

2.2 Create project / open existing project

If using an android device without NFC function, ensure LUKA 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 2.1 and connect LUKA manually which is stated in section 2.3 below.

2.3 Connect LUKA

Back to the main interface of Nuwa, click [Device] -> [Connect], select device LUKA and target Bluetooth address to pair, the antenna is selected by default. Then click [Connect] to complete the device connection, refer to Figure 2.2 below.

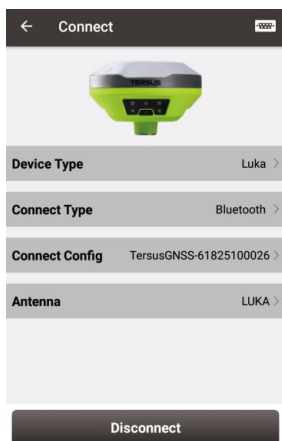
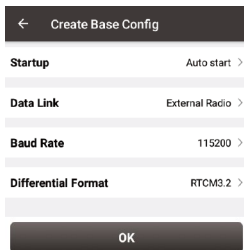


Figure 2.2 Connect LUKA

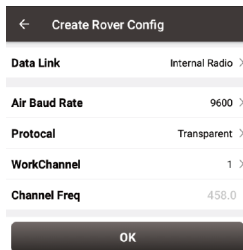
2.4 Configure Base or Rover

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 2.3; Select [Rover] to enter the Work Mode list, create a new Rover or edit an existing rover as shown in Figure 2.4;



← Create Base Config	
Startup	Auto start >
Data Link	External Radio >
Baud Rate	115200 >
Differential Format	RTCM3.2 >
OK	

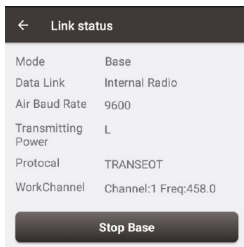
Figure 2.3 Base Config



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

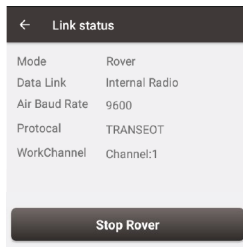
Figure 2.4 Rover Config

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 2.5 and Figure 2.6 below.



← Link status	
Mode	Base
Data Link	Internal Radio
Air Baud Rate	9600
Transmitting Power	L
Protocol	TRANSEOT
WorkChannel	Channel:1 Freq:458.0
Stop Base	

Figure 2.5 Link status of Base



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

Figure 2.6 Link status of Rover



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Right to the Point

Get More

This Quick Start Guide briefly introduces the setup and operation for LUKA GNSS Receiver and the operation of Nuwa app. More details please refer to User Manual of LUKA and User Manual of Nuwa app which can be downloaded from Tersus official website:

<https://www.tersus-gnss.com/product/LUKA-gnss-receiver>.

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