Technical Note

(tcpgps_android_en_v20_001_tersus_configuration)

Configuration of Tersus receivers

Update Date

03/06/2021

Requirements

Hardware:

Android device
Tersus GNSS

Software:

Android OS

Objective

Configure Tersus receivers with the different method supported using TcpGPS Android app.

Video

https://youtu.be/Fn-ETPmaEm0

Details

The following table shows the working modes supported by each Tersus receiver configurable in TcpGPS Android:

Model	Base	Rover		
	UHF	UHF	GPRS	Internet
Oscar	✓	✓	✓	✓

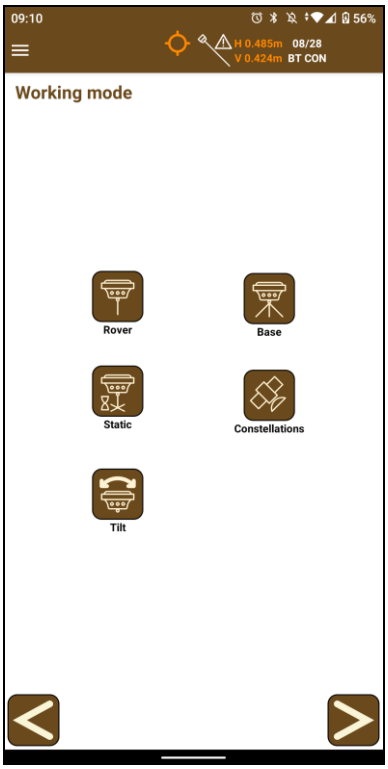

Figure 1. Configuration menu for Tersus

Base UHF working mode

Tersus Oscar GNSS is able to send correctios using its internal UHF radio. This radio uses frequencies in the range of 410MHz-470MHz.

Firstly, it is needed to set the base position.

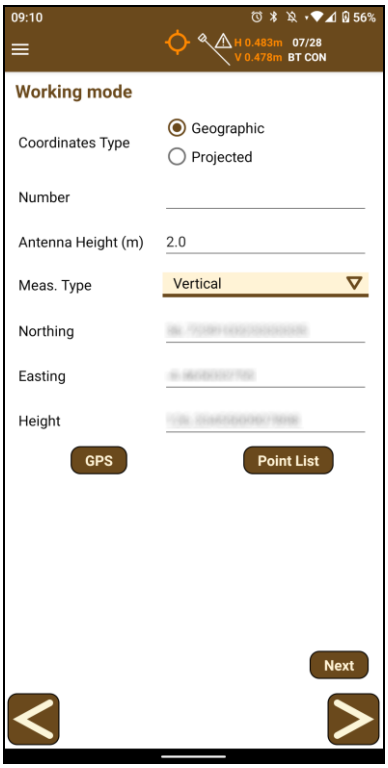

Figure 2. Base coordinates screen

This screen allows the user to introduce the coordinates both, geographic or projected (using the coordinate system of the current project), manually, by taking the coordinates from the GPS or selecting a point from the current loaded project if available.

The antenna height and the type of measures (vertical or slant) can also be set.

Once the position is set, the user must choose one of the three options in the list and press **Next** to access the mode configuration screen.

In this mode, the available parameters are:

Parameter	Description
Transmission rate	Number of bits transmitted per second.
RTK format	Format of the corrections (RTCM 3.2, RTCM 3.0, RTCM 2.0, CMR, CMR+, RTD)
Radio protocol	Protocol used in the transmission (Transparent, TrimTalk 450, South, Satelline, TrimMark 3)
Radio power	Power of transmission (Low 0.5W, Medium 1W, High 2W)
Radio channel	The radio channel set the frequency of the transmission carrier. It is possible to set a particular frequency by selecting ***Custom***.

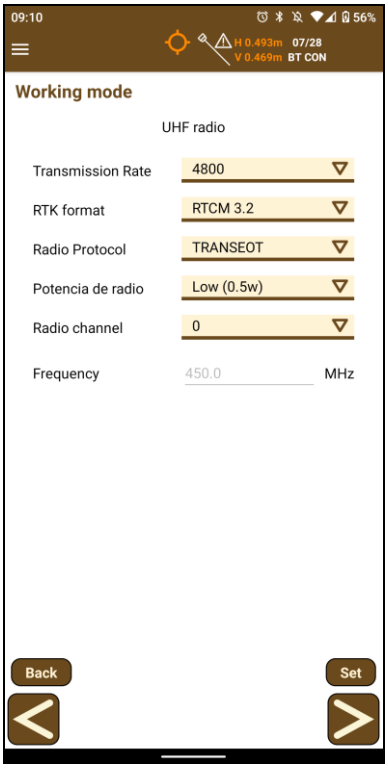

Figure 3. UHF Base working mode

Rover working modes

Tersus GNSS receivers can work in multiple working modes. Here are described the modes to be configurable in TcpGPS.

UHF

In this mode, the rover will be listening for corrections of any base configured in UHF mode.

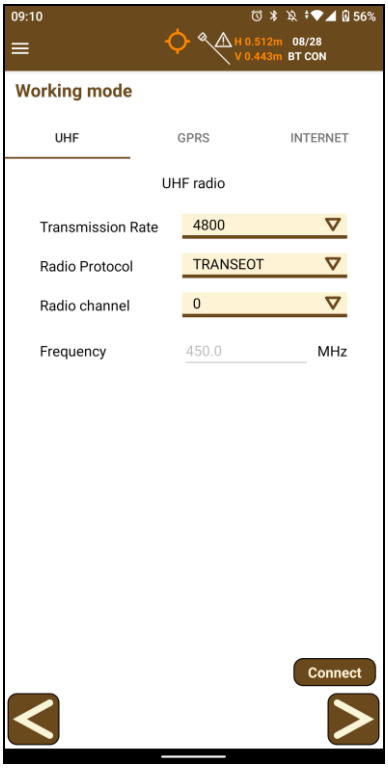

Figure 4. Rover UHF working mode

In this mode, the available parameters are:

Parameter	Description
Transmission rate	Number of bits transmitted per second.
Radio protocol	Protocol used in the transmission (Transparent, TrimTalk 450, South, Satelline, TrimMark 3)
Radio channel	The radio channel set the frequency of the transmission carrier. It is possible to set a particular frequency by selecting ***Custom***.

GPRS

In this mode, the receiver will use its own internal modem to connect a server for receiving corrections.

In this mode, the available parameters are:

Parameter	Description
APN	Select the ISP for connecting to the data network.
Server	NTRIP server to provide corrections.

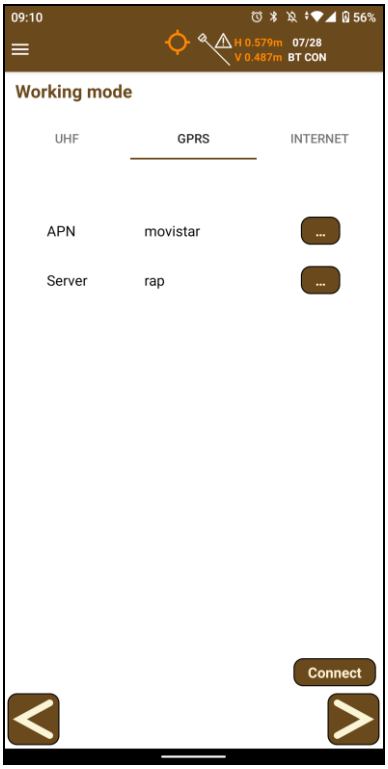

Figure 5. Rover GPRS working mode

Internet

In this case, TcpGPS will connect to an NTRIP server and send the corrections received to the GNSS device.

In this mode, the available parameters are:

Parameter	Description
Server	NTRIP server as source of corrections.

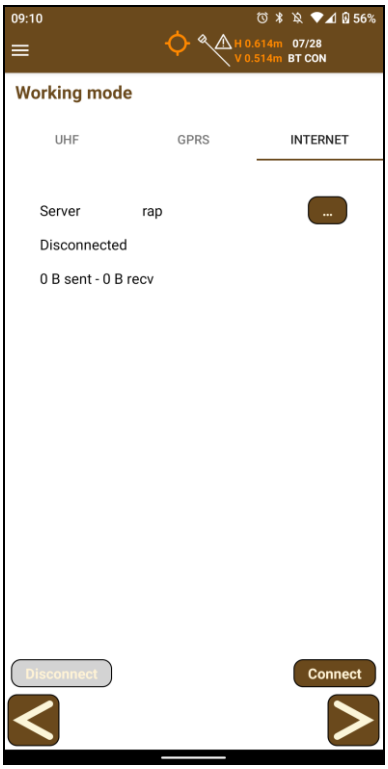

Figure 6. Rover Data Collector working mode

Static recording

This option allows to record status data for postprocessing in the GNSS receiver.

In this mode, the available parameters are:

Parameter	Description
Elevation Mask	Value of elevation or zenith angle of the satellites below which they are not used, in sexagesimal degrees.
ID	Identifier of the point to record.
Atenna Height	Height of the pole or tripod where the receiver has been placed.
Measure Type	Type of measure (Slant, Vertical, Pole)
Interval	Time interval for point measures.
Tersus Format	Enable Tersus Format output
RINEX Format	Enable RINEX Format (2.10, 3.02)

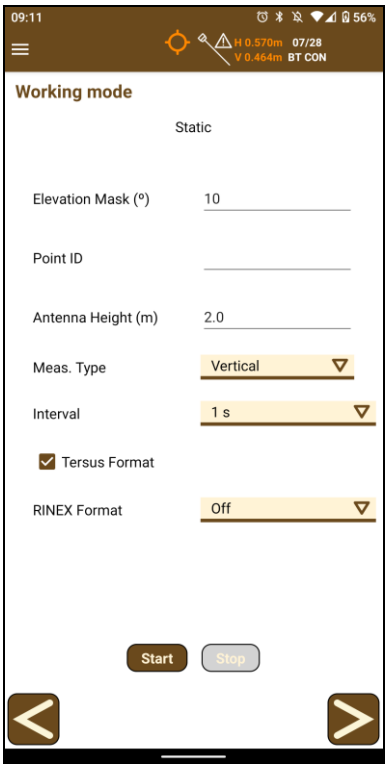

Figure 7. Static recording configuration

Satellite constellations

Tersus can use the following constellations:

- GPS
- GLONASS
- BEIDOU
- GALILEO
- QZSS

It is possible to configure which constellations will be used for getting the location.

Tilt

This option allows you to start or stop the tilt for taking inclined measurements. You also can set the automatic activation of the tilt by pressing the checkbox *Activate tilt at start*.

When the tilt is activated, visual and text indications are showed for its calibration. The visual indications are a set of icons as they are described below:

Tilt is not connected or there is an error.

Follow the instructions under the icon for calibrating.

Keep the receiver vertically.

Tilt limit exceeded (30º.)

Ready to use.

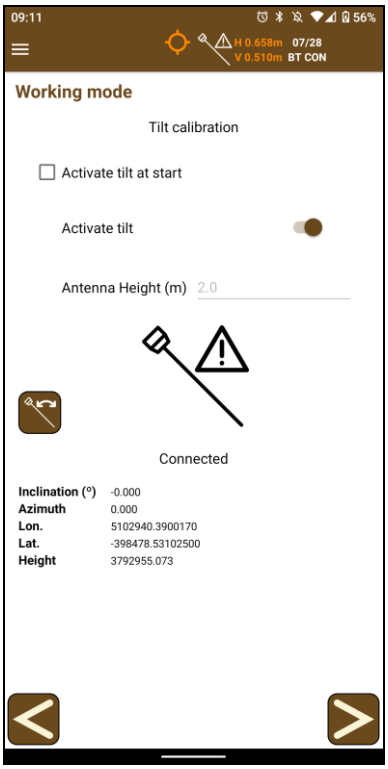

Figure 8. Tilt start/stop screen

In the table at the bottom of the screen, the current measures received from the GNSS (at the phase center and the ground) and the current inclination and azimuth can be checked.

Tilt calibration

Although the Tersus tilt is calibrated when it is acquired and it will be calibrated for a long time, the user can calibrate it if detects it does not measure correctly. Follow the instructions described in the dialog displayed when pressing  for get the GNSS tilt calibrated.

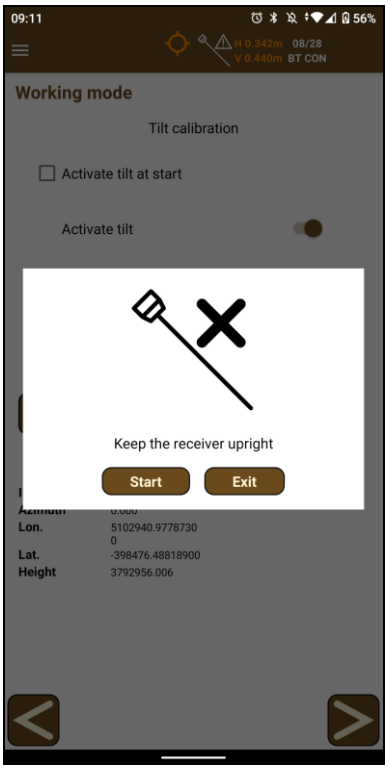

Figure 9. Tilt calibration dialog

APN configuration

An **Access Point Name** (**APN**) is the name of a gateway between a GSM, GPRS, 3G or 4G mobile network and another computer network, frequently the public Internet.

A mobile device making a data connection must be configured with an APN to present to the carrier. The carrier will then examine this identifier to determine what type of network connection should be created, for example: which IP addresses should be assigned to the wireless device, which security methods should be used, and how or if, it should be connected to some private customer network.

A dialogue allows the user to configure these APNs, creating a new one by choosing in the spinner the option **New** or selecting one of the previously configured from the same list.

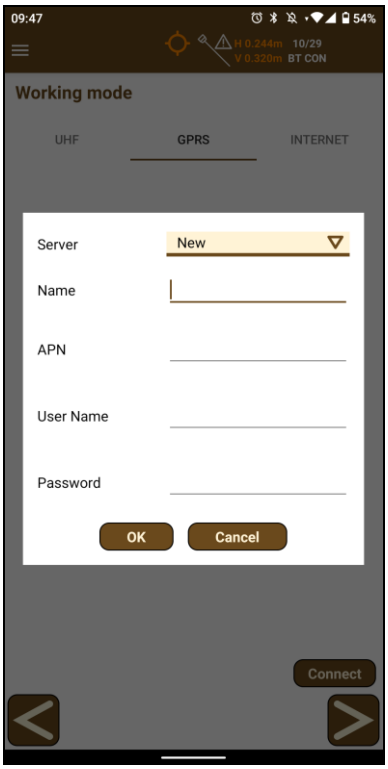

Figure 10. APN configuration

A new APN can be created introducing the **Name**, the **APN**, an URL or IP, and the **user** and **password** for getting Access to that APN.

NTRIP configuration

The **Networked Transport of RTCM via Internet Protocol** (**NTRIP**) is a protocol for streaming differential GPS (DGPS) data over the Internet in accordance with specification published by RTCM. NTRIP is a generic, stateless protocol based on the Hypertext Transfer Protocol HTTP/1.1 and is enhanced for GNSS data streams.

A dialogue allows the user to configure a NTRIP server, by adding a new one selecting the option **New** in the list or choosing a previously configured server in the same list.

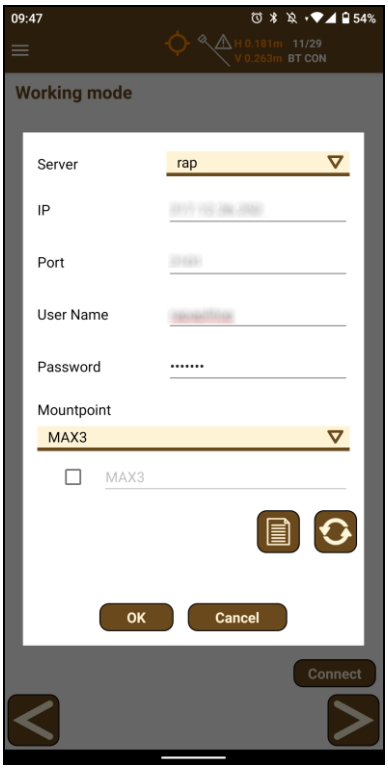

Figure 11. NTRIP configuration

For adding a new NTRIP server the user must introduce a **name** for the server configuration, the **IP** and **port** of the server, and the **user** and **password** for making the identification. Once these parameters are filled, pressing the button  will request the list of **mountpoints** which provide different types of corrections.