

Technical Note

(tcpgps_android_es_v13_002_satlab_configuration)

Configuration of SatLab receivers

Update Date

24/05/2019

Requirements

Hardware:

Android device

Software:

Android OS

Objective

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

Detalles

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

Model	Base			Rover		
	UHF	GPRS	Internet	UHF	GPRS	Internet
SL700	✓	✓	✓	✓	✓	✓
SL800						✓
SL900	✓	✓	✓	✓	✓	✓

Base working modes

Both, SL700 and SL900, can be used as bases to provide corrections to other receivers used as rover.

Base coordinates are needed to start the configuration of these working modes.

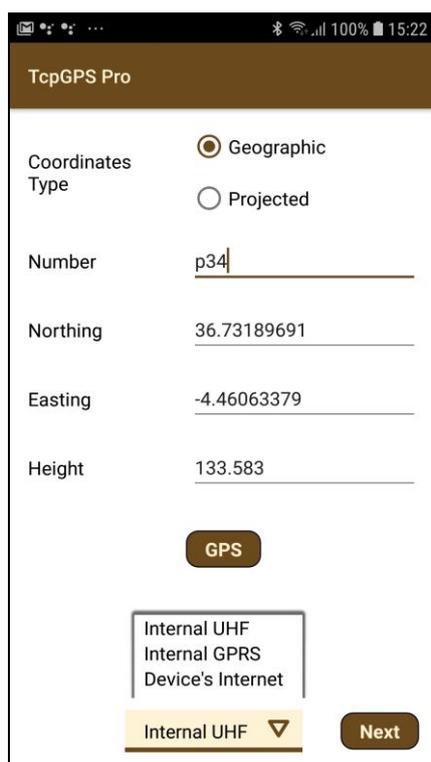


Figure 1. Base coordinates screen

This screen allows the user to introduce the coordinates both, geographic or projected (using the coordinate system of the current project), manually or taking the coordinates from the GPS.

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.

UHF

In this mode the base emits corrections from its reference location to the devices working as UHF rover mode.

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.
Antenna Height	Height of the pole or tripod where the receiver have been placed.
Type of measures	Establishes how the antenna height has been made, vertically or inclined from the base of it to one of the ends.
RTK corrections type	RTK corrections list.
Radio protocol	List of radio protocols supported by the receiver.

Radio channel	Channel number to use in the broadcast.
Radio power	Power used in the broadcast.

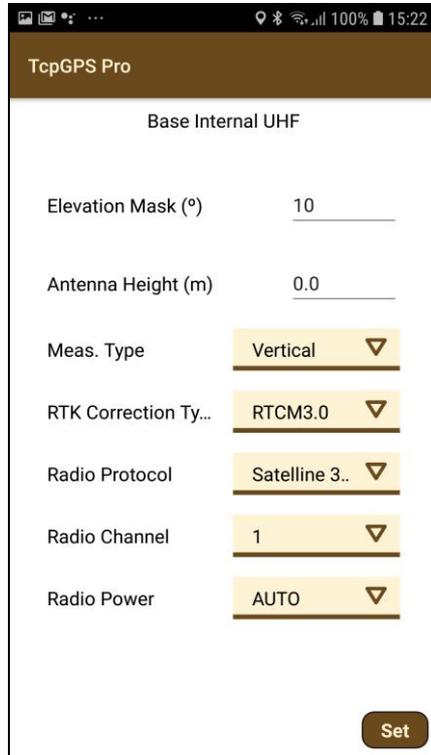


Figure 2. UHF Base working mode

GPRS

This mode uses the internal mode of the receiver to connect with an iRTK server to send the corrections. Devices working as rover can connect to the iRTK server and choose the base they want to use.

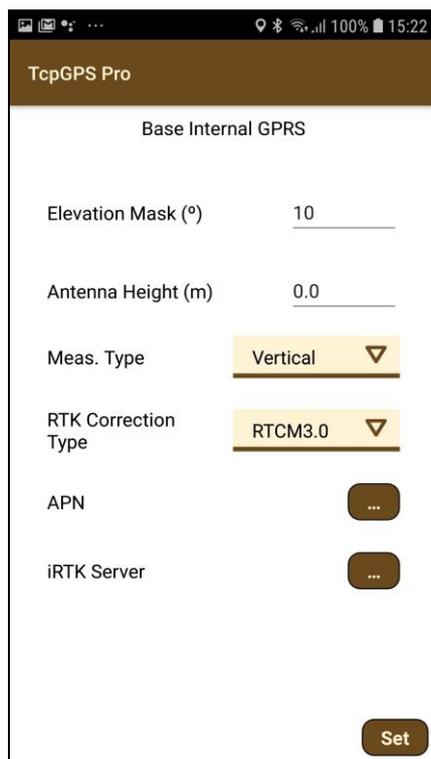


Figure 3. Base GPRS working mode

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.
Antenna Height	Height of the pole or tripod where the receiver have been placed.
Type of measures	Establishes how the antenna height has been made, vertically or inclined from the base of it to one of the ends.
RTK corrections type	RTK corrections list.
APN	Point Access Name of the GSM network to establish a data link.
Server	iRTK server to provide corrections.

Rover working modes

All SatLab receivers shown in the table can work as rover. However, SL800 only the mode for receiving corrections from the smartphone is available.

UHF

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

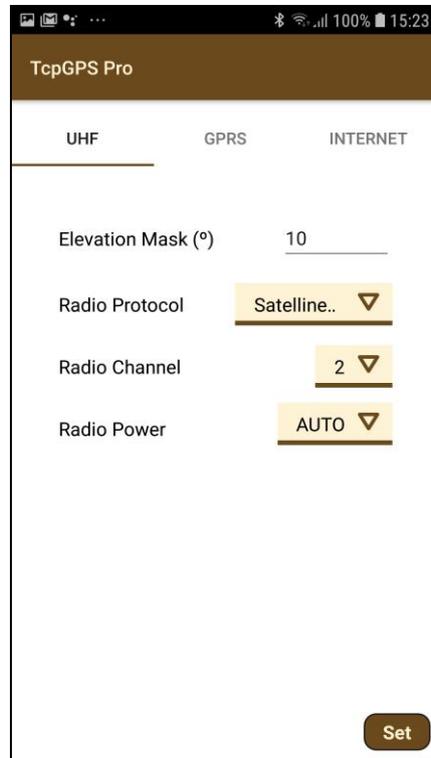


Figure 4. Rover UHF working mode

In this mode, the available parameters are:

Parameter	Description
Elevation Mask	Value of elevation or zenith angle of the satellites below which they are not used, in sexagesimal degrees.
Radio protocol	List of radio protocols supported by the receiver.
Radio channel	Channel number to use in the broadcast.
Radio power	Power used in the broadcast.

GPRS

In this mode, the receiver will use its own internal model to connect a NTRIP or iRTK server for receiving corrections.

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.
Antenna Height	Height of the pole or tripod where the receiver have been placed.
Server	NTRIP or iRTK server to provide corrections.

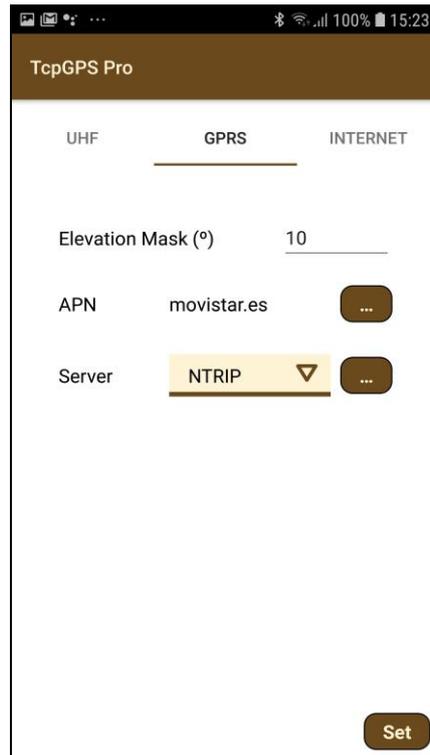


Figure 5. Rover GPRS working mode

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
Elevation Mask	Value of elevation or zenith angle of the satellites below which they are not used, in sexagesimal degrees.
Server	NTRIP or iRTK server as source of corrections.

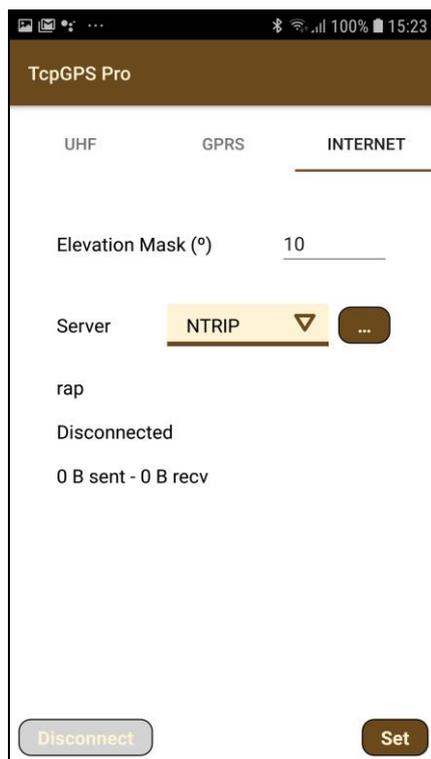


Figure 6. Rover Data Collector working mode

Static recording

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

In this mode, the available parameters are:

Parámetro	Descripción
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.
Antenna Height	Height of the pole or tripod where the receiver has been placed.
Interval	Time interval for point measures.

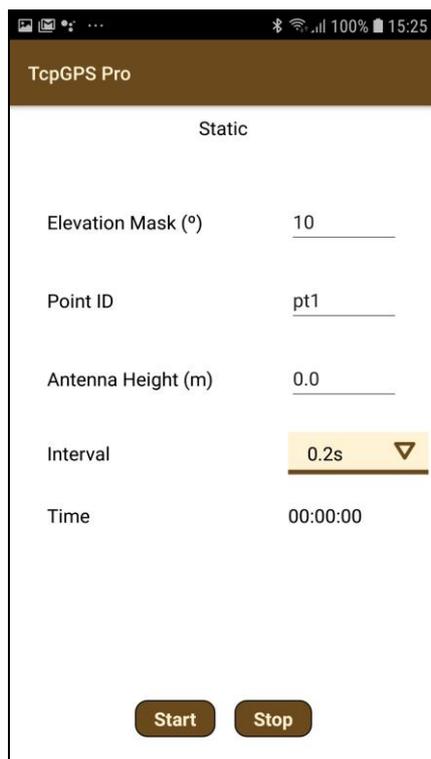


Figure 7. Static recording configuration

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 allow 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.

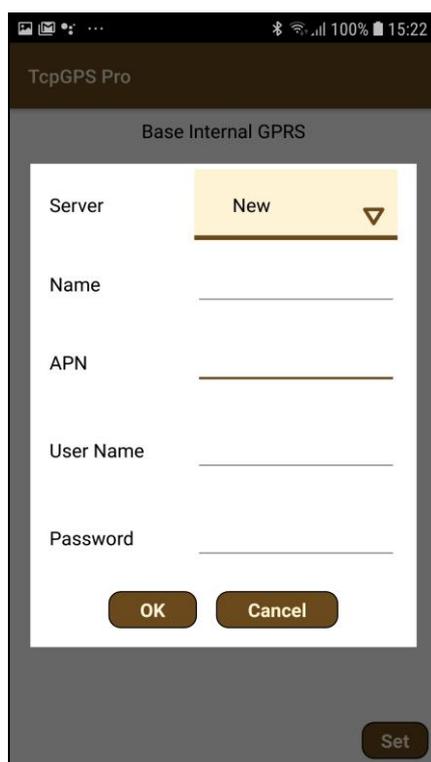


Figure 8. APN configuration

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 allow 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 9. 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.

iRTK configuration

In the configuration dialogue of iRTK server the user must introduce the **name**, the **IP** and **port** to access the service and the **serial number** of the receiver. The serial number could be different depending on the working mode of the receiver:

- **Rover:** the serial number will be the one of the GNSS receiver to which data collector is going to connect to receive the corrections
- **Base:** the serial number is the one of the receiver that is going to send corrections.

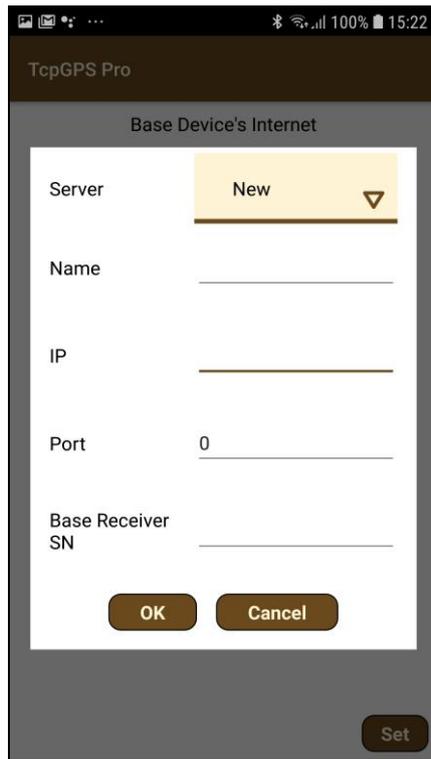


Figure 10. iRTK configuration