

## Technical Note

(tcpgps\_android\_es\_v20\_001\_chc\_i90\_pro\_configuration)

# Configuration of CHC i90 Pro receiver

## Update Date

05/03/2021

## Requirements

### Hardware:

Android device  
CHCNav i90 Pro GNSS

### Software:

Android OS

## Objective

Configure CHC i90 Pro receiver with the different methods supported using TcpGPS Android app.

## Details

TcpGPS Android can configure the CHC i90 Pro receiver in the following modes:

- Base UHF radio.
- Rover UHF radio.
- Rover NTRIP using GPRS internal modem.
- Rover NTRIP with external device as source.
- Static recording.

## Base UHF radio

Base coordinates are needed to start the configuration of this working mode.

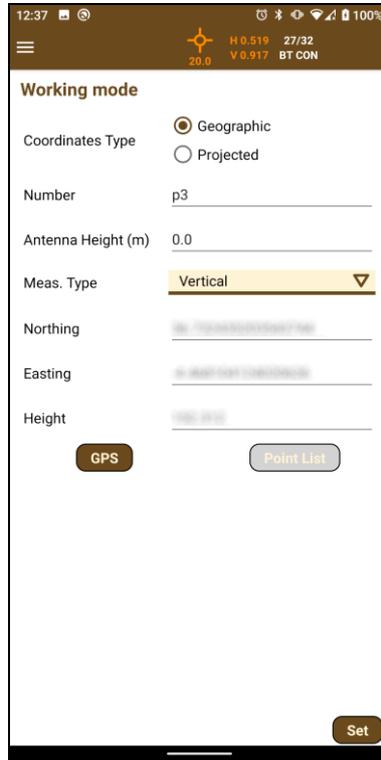


Figure 1. Base coordinates screen

This screen allows the user to introduce the coordinates both, geographic or projected (using the coordinate system of the current project), manually, taking them from the GPS or selecting a point from the current project if you are in the working area of the application.

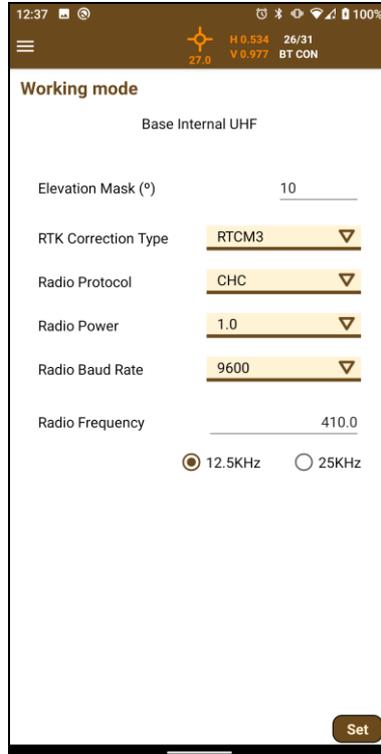
Once the position is set, the user must choose one of the three options in the list and press **Next** to access the mode configuration screen.

## 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.
RTK corrections type	RTK corrections list.
Radio protocol	List of radio protocols supported by the receiver.
Radio power	Power used in the broadcast.

<b>Radio baud rate</b>	Baud rate used in the transmission
<b>Radio frequency</b>	Working frequency of the radio and bandwidth.



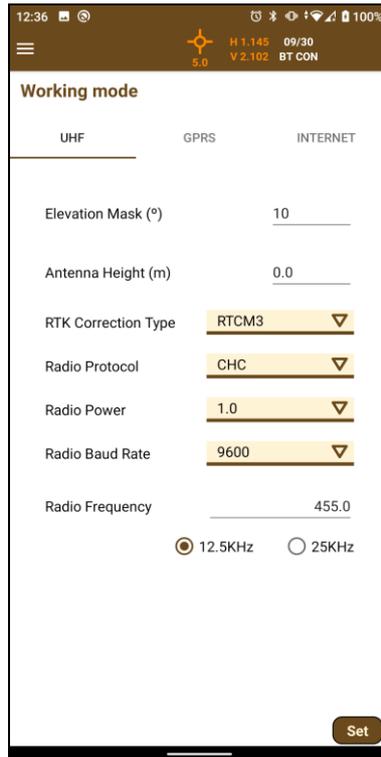
**Figure 2. UHF Base working mode**

### ***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 3. Rover UHF working mode**

In this mode, the available parameters are:

Parameter	Description
<b>Elevation Mask</b>	Value of elevation or zenith angle of the satellites below which they are not used, in sexagesimal degrees.
<b>Antenna Height</b>	Height of the pole or tripod where the receiver have been placed.
<b>RTK corrections type</b>	RTK corrections list.
<b>Radio protocol</b>	List of radio protocols supported by the receiver.
<b>Radio power</b>	Power used in the broadcast.
<b>Radio baud rate</b>	Baud rate used in the transmission
<b>Radio frequency</b>	Working frequency of the radio and bandwidth.

## **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.
APN	Access Point Name.
Server	NTRIP server to provide corrections.

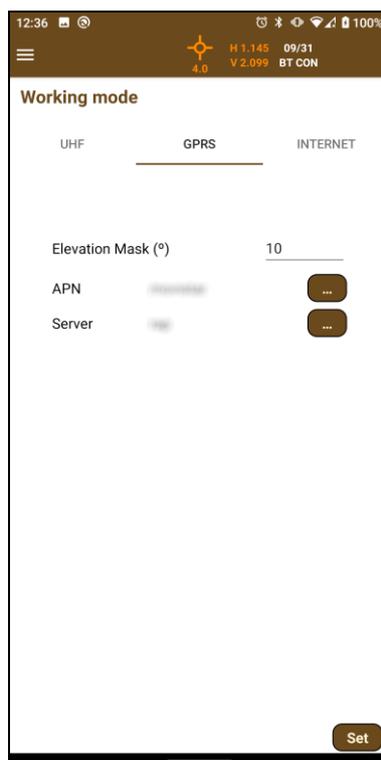


Figure 4. Rover GPRS working mode

## 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 server as source of corrections.

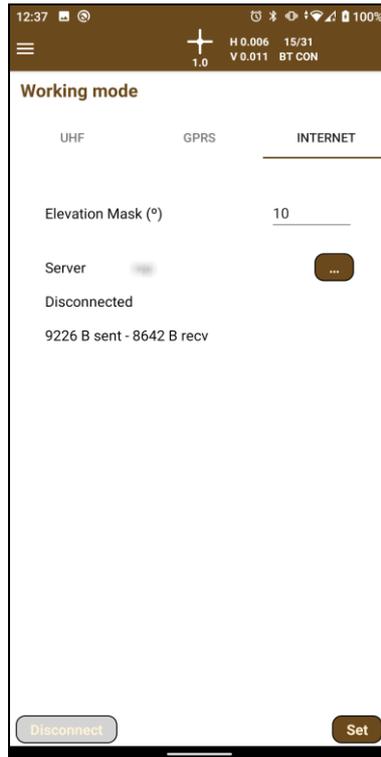


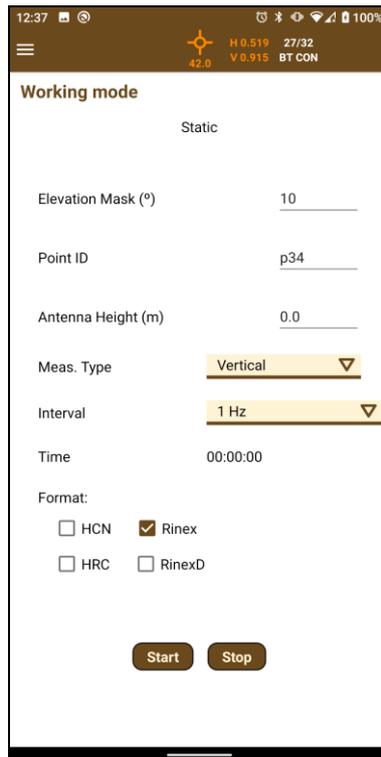
Figure 5. Rover Data Collector working mode

### ***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 6. Static recording configuration**

In this receiver, the format of the data recorded can be selected. It allows four formats: HCN, HRC, Rinex and RinexD. You can select one or more formats.

## ***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*.

The tilt cannot be activated until having fixed solution from the GNSS. Then, it can be activated by pressing the switch or will be started automatically if the checkbox *Activate tilt at start* is selected.

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 (30°.)

 Calibrated.

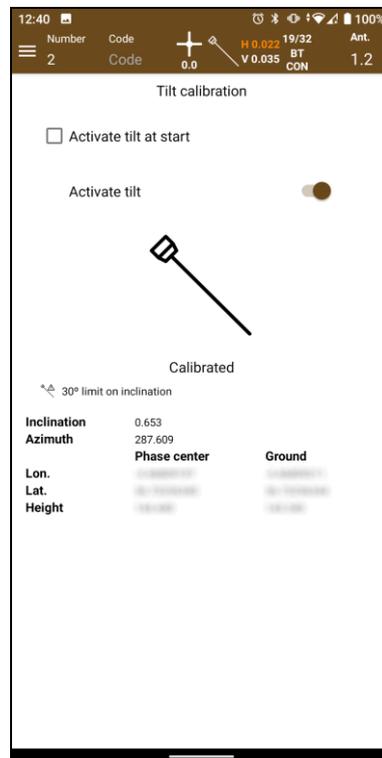


Figure 1. Tilt start/stop screen

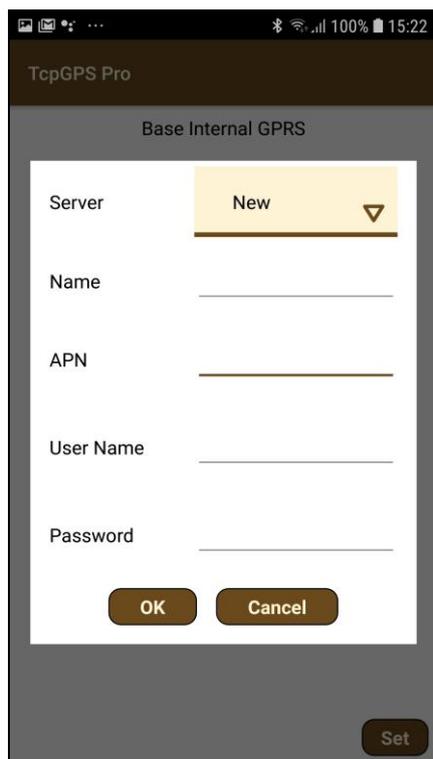
In the table at the bottom of the screen, the current measures received from the GNSS (at the phase center and the ground) and the current inclination and azimuth can be checked.

### ***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.



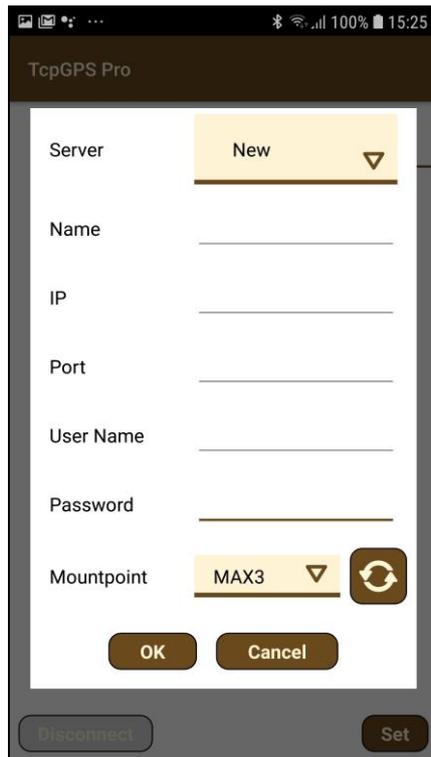
**Figure 7. APN configuration**

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***

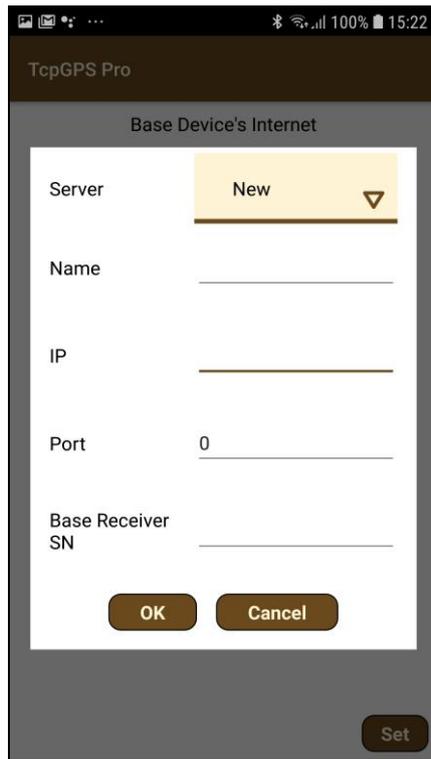
The **Networked Transport of RTCM via Internet Protocol (NTRIP)** is a protocol for streaming differential GPS (DGPS) data over the Internet in accordance with specification published by RTCM. NTRIP is a generic, stateless protocol based on the Hypertext Transfer Protocol HTTP/1.1 and is enhanced for 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 8. 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.



**Figure 9. iRTK configuration**