

## **Technical Note**

(tcpgps\_android\_en\_v21\_001\_emlid\_configuration)

# Configuration of EMLID receivers with collector data

## Update Date

22/06/2021

#### **Requirements**

Hardware:

Android device EMLID GNSS Reach RS, RS+ or RS2 with firmware v2.26

Software:

Android OS ReachView 2 TcpGPS for Android 2.0+

#### **Objective**

Configure EMLID receivers using *Reach View* and start working with *TcpGPS* Android.

## <u>Video</u>

https://youtu.be/KedSCa45CpA

#### **Details**

In TcpGPS Android are supported the models REACH RS, REACH RS+ and REACH RS2. These models can be used as they are configured by EMLID software activating NMEA.

#### EMLID Reach View configuration

In this section are described the steps for configuring EMLID devices using *Reach View* application.

1. Open **ReachView** app and select the **EMLID** receiver.



2. Open ReachView menu and select Correction Input

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RS2	No SIM 🔋 🗮	RS2	No SIM 📋 🗮
Status		reach 192.168.42.1	V @
Signal-to-noise ratio	ROVER: 14 BASE: 0	J <sub>№</sub> Status	
50		Survey	
40		₩ RTK settings	
30		Correction input	
		← Position output	
20		୍ଲୁଆ Base mode	
10		Logging	
C30	C36 G12 G18 G25 G26 G31 G32 R12 R14 R23 R24 R4 R5	•III Mobile data	
RTK parameters		⇔ wi-Fi	
0.0 sec o age of differential	0.00 m o baseline	≵ Bluetooth	
Positioning mode	Solution status		
Kinematic	Single	Correction input	
Position	LLH ~	Base correction	OFF 💽 ON
36.72	23801728°	Serial NTRIP TCP	LoRa BT
#1	1.9000 m ratitude	Make sure that your device is paired and connected in bluetooth so	ttings
-4.46	5566969°	Correction input format is RTCM3	
± t lo	sauuu m mgitude	Stream is off	
188 ± 0	4534 m 6.4000 m		
	height		

3. Select **BT** option, set the corrections **Format** of the mountpoint you are going to connect with and check **Send NMEA...**, if the mountpoint need it

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S2				No SIM
prrection input				
Base correction				OFF CON
Serial	NTRIP	тср	LoBa	BT
0				
Correction input form	mat is RTCM3	icted in bidetootil settings		
<ul> <li>Stream is off</li> </ul>				
· oureann is off				

- 4. Open ReachView menu and select Position Output
- 5. Select **BT**, switch on **Output 1** and set **NMEA** as **Format** output

☑ reach   Reach Panel × +		*	¥ ¶,	í 77% <b>û</b> '	10:5
☆ ← → C ▲ 192.168.42.1/#position-output			☆	Ŧ	:
Position output					
0 Output 1			OFF	C ON	
Serial TCP		ВТ			
Make sure that your device is paired and connected in bluetooth settings					
Format				~	
NMEA settings					
Talker ID					
GN				~	
Message type	Output rate				
GGA	1 Hz 🗸	~			
GSA	1 Hz 🗸	$\checkmark$			
GST	1 Hz 🗸	$\checkmark$			
GSV	0.5 Hz 🗸	$\checkmark$			
RMC	1 Hz 🗸				
VTG	1 Hz 🗸				
ZDA	1 Hz 🗸				
The output rate for NMEA messages must be lower than the update rate for	RTK settings.				
Write error					

- 6. To get **TcpGPS** working with any receiver it needs the following NMEA messages:
  - a. GSA (1Hz)
  - b. GGA (1Hz)
  - c. GST (1Hz)

d. GSV (0.5Hz)

The remaining messages are not processed by TcpGPS, so it is better to disable them to avoid saturation and improve the performance of both the GNSS and the application.

The frequencies described here are those recommended for normal field work. A higher frequency in the GGA may be necessary if, for example, you are taking points in a vehicle at a high speed.

7. Close ReachView app and open TcpGPS

#### Connection to EMLID GNSS receiver in TcpGPS

From the *receiver assistant* at the start of the application clicking on the button

or the option *Menu* > *Receiver* > *Connection* at the main screen, the user accesses the section for connecting to the receiver via Bluetooth.

In this screen the user must select the brand (EMLID) and the model he wants to connect. Then, by clicking on *Device* button, the Bluetooth searching section will be displayed. In this screen, a list with the devices available via Bluetooth will be shown and it can be updated by clicking in *Search* button if the identifier of the receiver is not listed.

		≉ ¥€ % "al 100% @ 11:01
=	Receiver	<b>?</b>
GNSS External Receiver (E	Bluetooth)	▽
Brand	EMLID	$\nabla$
Model Receiver not selected	Reach RS2         Reach RS         Reach RS/adapter         Reach RS+         Reach RS+/adapter         Reach RS2         Reach M+         Reach M2         Reach M2/hc871	<u>v</u>
Disconne	ect	Connect

#### Rover NTRIP with data collector

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

In this mode, the available parameters are:

Parameter	Description
Send by	Select the connection to send the corrections: Bluetooth or WiFi.
IP/URL (WiFi)	IP or URL to connect to the GNSS using WiFi

Port (WiFi)	Port to connect to the GNSS using WiFi
Server	NTRIP server as source of corrections

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≡	♦ •	H 4.464m 07/07 V 4.600m BT CON	
Working mode			
	INTERNET		
Send by	Bluetooth		▽
Sonior	Bluetooth		
Disconnected	WiFi		
0 B sent - 0 B recv			
Disconnect			Connect
<			>

In case WiFi will be the correction input, it is recommendable to follow these instructions:

- Configure the RS2 to connect to your device **WiFi HotSpot** that can be set in the Android device.
- Insert the SIM card into the Android device.
- Enable the **WiFi shared hotspot**.
- Reset the RS2 and it should connect to the WiFi HotSpot. In the WiFi shared hotspot section of the Android device can be checked if the receiver is connected to the WiFi network and the IP it has been assigned.

MOBILE HOTSPOT	:
ON	
(b) ВМК1	
PASSWORD	
capilita pri 100 ki	
CONNECTED DEVICES	
reachBase	+
HOW TO CONNECT FROM OTHER DEVICES	
<ol> <li>Turn on Wi-Fi on the device that will share your mobile network connect.</li> <li>Select BMK1 from the list of available Wi-Fi networks.</li> <li>Connect to BMK1 by entering aplitop1234 as the password.</li> </ol>	ection.

- Enter the Emlid configuration server from the **Web Service** option in TcpGPS **Working mode** section.
- Go to correction input and select TCP.

⊑ त्त ▲ ≡	<b>♦</b> 0.0s	H 2.486m 08/08 V 2.600m BT CON	≉ লি.⊪ 52% ⊒ 09:40 Ant.(m) 0.0
Working mode			
reachBase 🗘 🐼	Correction input		
Jγ- Status	Base correction		OFF 💽 ON
Survey	Serial NTRIP	TCP LoRa	вт
î≬≬ RTK settings	Role		
Correction input	Server		~
← Position output	Address		
((g)) Base mode	localhost		
🖺 Logging	Port		
III Mobile data	Correction input format is RTCM3		
🔶 Wi-Fi	Send NMEA GGA messages to the correct	tions provider (required for VRS)	
Connect	192168421 Refresh	WiFi Config	>

- Set **server** option and then choose a **port** to send the corrections.
- Then the NTRIP corrections can be send using WiFi in TcpGPS, setting the IP of the device and the port configured previously.

⊑ গী ▲ ≡	<b>¢</b> 0.0s	H 3.713m 07/07 V 3.900m BT CON	≰ അ⊿∥ 53% ⊑ 09:39
Working mode			
	INTERNET		
Send by	WiFi		$\nabla$
IP/URL	192.168.43.193		
Port	8090		
Server	rap		
Disconnected			
0 B sent - 0 B recv			
Disconnect			Connect

### NTRIP server 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.

<b>₩ •:</b> ···	15:25 🛢 🕯 🕸 🕸
TcpGPS Pro	
Server	New 🗸
Name	
IP	
Port	
User Name	
Password	
Mountpoint	MAX3 <b>V</b>
ОК	Cancel
Disconnect	Set

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.