



# **TRIUMPH-1 Base and Rover with Tracy**

## **Configuration Example**

**Version 1.1**

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# UHF BASE & ROVER CONFIGURATION EXAMPLE

Please do not forget to attach the UHF/GSM antenna to TRIUMPH-1.

## Attaching UHF/GSM Antenna

A broadband, rugged, in-building or outdoor antenna designed to service the whole 406-470 MHz UHF band and GSM quad band. With modest dimensions of 25 mm (OD) x 182 mm (height), this antenna radiates with a typical peak omnidirectional gain of +1 dBi. Internally, the radiating element is DC shunted to help protect the transceiver from nearby, but not direct ElectroStatic Discharge (ESD).

The TRIUMPH-1 modem antenna can be mounted on standard poles (5/8-11 inches thread). Attached to the TRIUMPH-1 receiver this antenna gets a part of survey pole, making handling with receiver easy and simple.



**Figure 2-1. TRIUMPH-1 External UHF/GSM Antenna**

# Base Station Configuration

1. Start Tracy in the *Lite* view. How to switch between *Lite* and *Extended* view see on page 6.
2. Connect you TRIUMPH-1 and controller using Bluetooth.
  - If you have once connected the receiver with Victor, Tracy will find it automatically;
  - Otherwise click to the connection button to search bluetooth receiver.



Figure 2-2. Connection to the receiver

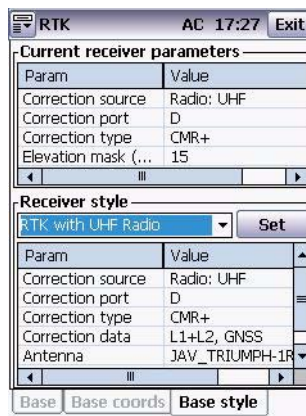
3. Click the middle button and select *RTK Base* and a receiver style from the list. If you didn't create the receiver style early, see “How to create new/edit receiver style” on page 6:



Figure 2-3. RTK Base

4. Click the *Base coordinates* tab to set the base coordinates.
5. Enter the base coordinates selecting the source from list or from map, or inserting the coordinates manually to the corresponding fields in WGS84 format, or click the *AutoPos* button, wait, and click Stop; reference geodetic coordinates appear.

6. Click *Set Coordinates* button to save base coordinates.
7. Click the *Base Style* tab to check the current receiver parameters, to be sure receiver is configured correct. Check the following:
  - Correction sources
  - Correction port
  - Correction type
  - Elevation mask



**Figure 2-4. Base style**

## Rover Configuration

1. Start Tracy in the Lite view.
2. Connect you TRIUMPH-1 and controller using Bluetooth wireless technology.
  - If you have once connected the receiver with Victor, Tracy will find it automatically;

## UHF Base & Rover Configuration Example

Rover Configuration  
Attaching UHF/GSM Antenna

- Otherwise click to the connection button to search bluetooth receiver.



**Figure 2-5. Connection to the receiver**

3. Click the middle button and select *RTK Rover* and a receiver style from the list. If you didn't create the receiver style early, see "To edit the existing style follow the instructions above to edit parameters of the selected style." on page 10:



**Figure 2-6. RTK Rover**

4. Click the *Rover Style* tab to check the current receiver parameters, to be sure receiver is configured correct. Check the following:
  - Correction sources
  - Correction port
  - Correction type

- Elevation mask

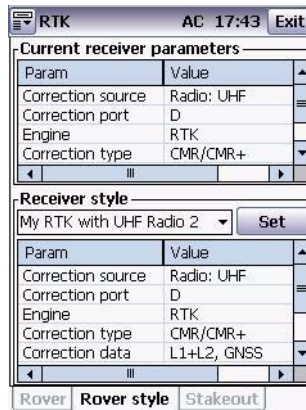


Figure 2-7. Rover style

## How to create new/edit receiver style

Tracy allows to user create the receiver type for both base and rover at once, eliminating mistakes in configuration.

To create new or edit the saved receiver style, perform the following steps:

1. Switch to the extended mode using the top left corner menu button or *View* button:

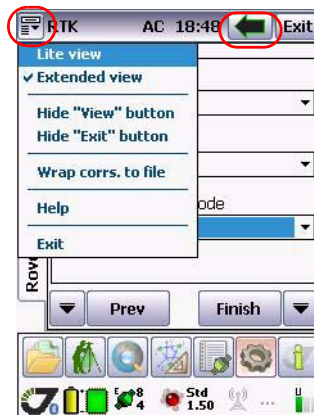





Figure 2-8. Mode switch

2. Click the *Configuration*  button.
3. Click the  button to add new receiver style or  button to edit the existing receiver style.

## UHF Base & Rover Configuration Example

Rover Configuration

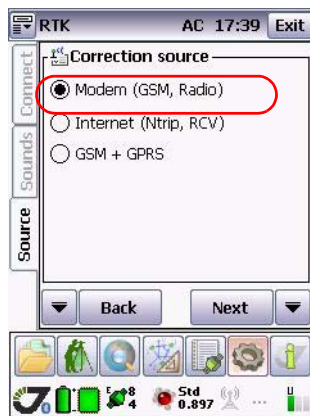
How to create new/edit receiver style

- Specify the new style name, add the description and click *Next*:



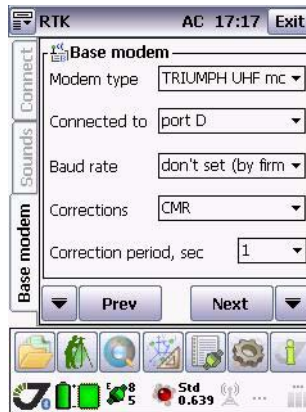
**Figure 2-9. Style**

- Select the correction source and click *Next*:



**Figure 2-10. Correction source**

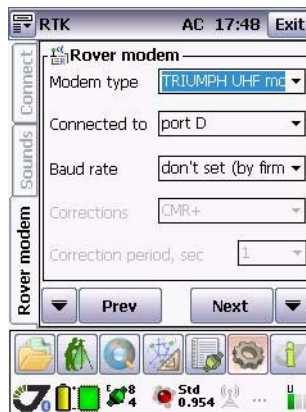
6. In the *Base modem* window set the following base parameters and then click *Next*:



**Figure 2-11. Base modem parameters**

- The base modem type: TRIUMPH UHF modem
- Connected to: port D
- Baud rate keep as is
- Corrections: select the correction type from the list
- Correction period: set the desired correction period.

7. In the *Rover modem* screen set the following rover parameters and then click *Next*:



**Figure 2-12. Rover modem parameters**

- The base modem type: TRIUMPH UHF modem
  - Connected to: port D
8. Baud rate: 19200 or keep as is

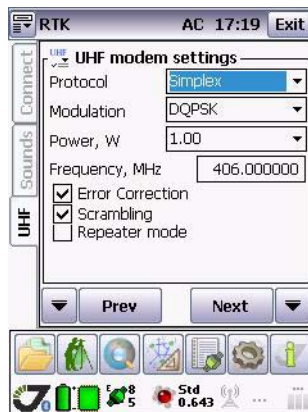


## UHF Base & Rover Configuration Example

Rover Configuration

How to create new/edit receiver style

9. Set the following base UHF modem parameters and then click *Next*:



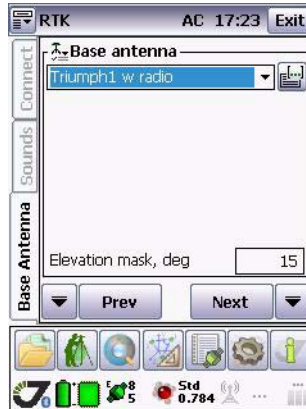
**Figure 2-13. UHF modem settings**

- Protocol: Simplex
- Modulation Type: DQPSK
- Output power (dBm/W): 30/1.00
- Frequency (MHz): 406 to 470
- Forward Error Correction<sup>1</sup>: ON
- Scrambling<sup>2</sup>: ON

1. Allows the receiving modem to correct burst and single bit errors in the incoming data stream. When enabled, an additional 4 bits per byte of data is transferred over the RF link. This effectively reduces the data throughput in proportion to the overhead bytes. Leave FEC enabled unless the data throughput requirements make the overhead unacceptable.

2. Enable or disable data scrambling. Select the Scrambling check box if you want data to be scrambled. Otherwise, keep it clear. For optimal operation of the GMSK modulation, data should be scrambled. When enabled, the radio modem scrambles and unscrambles the data on transmission or reception via an exclusive-OR operation with a pseudo-random bit stream. Do not disable scrambling unless the DTD performs data scrambling and produces a data stream with approximately the same number of 1's and 0's.

10. Select the base receiver antenna and specify the elevation mask, then click *Next*:



**Figure 2-14. Base antenna**

11. Select the rover receiver antenna and specify the elevation mask, then click *Next*:



**Figure 2-15. Rover antenna**

12. Set the rover settings and click *Finish*.

- Engine: RTK
- Data to use: select from the list
- RTK computation mode: extrapolation or time tagged.

13. Click *Finish*. The new receiver style has been successfully created.

To edit the existing style follow the instructions above to edit parameters of the selected style.



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