

USER MANUAL FOR NETVIEW SOFTWARE

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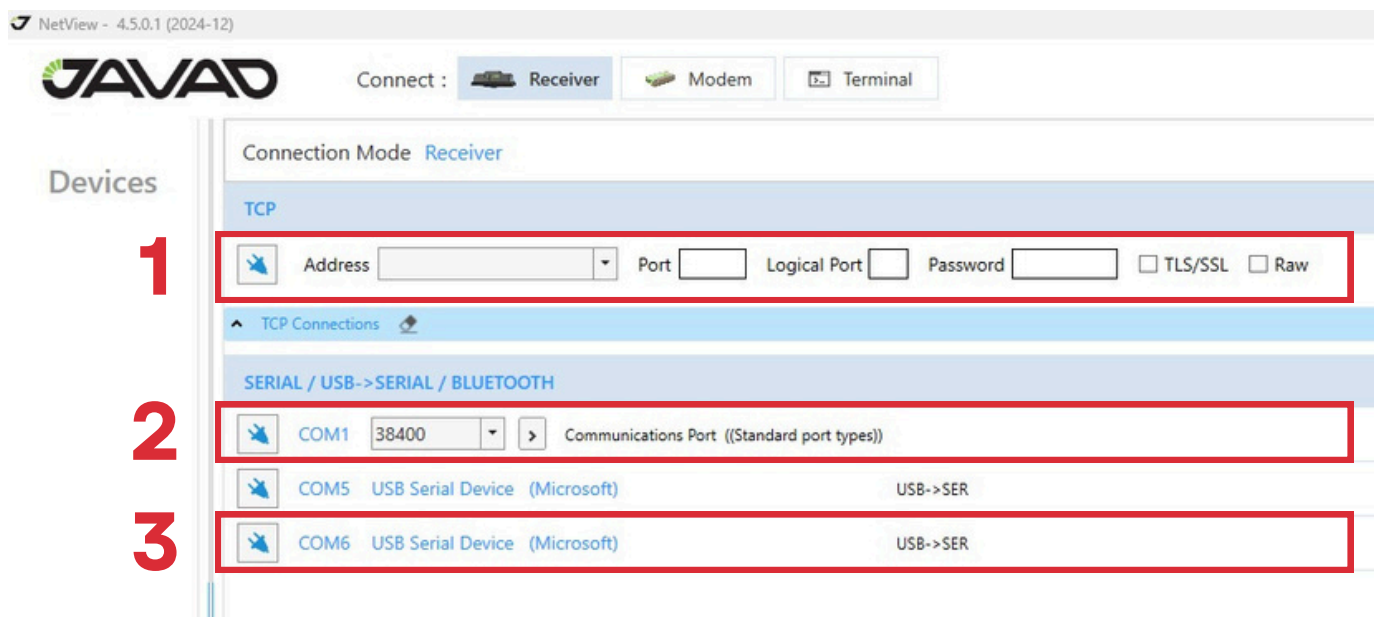
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1. Introduction

This document describes how to make an interface to the SIGMA-3S GNSS receiver using the JAVAD NetView&Modem software. www.janakgnss.com

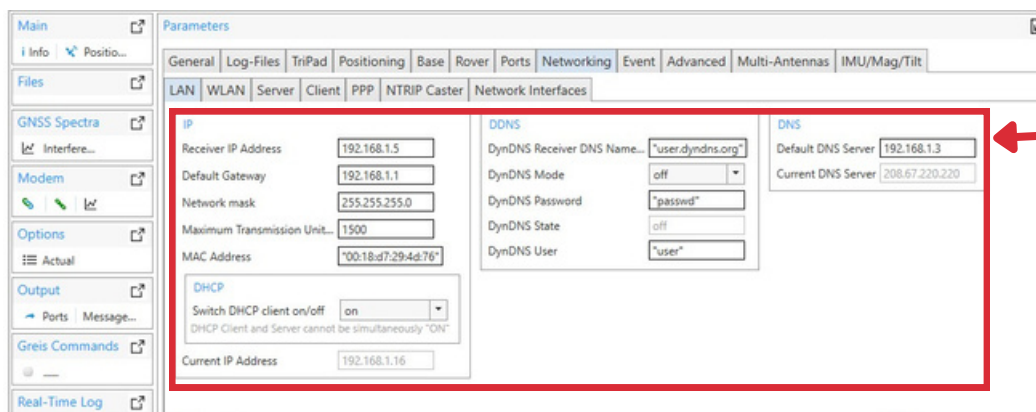
2. Connection

There are three types of different connection options to connect receiver to the software. That are defined below:

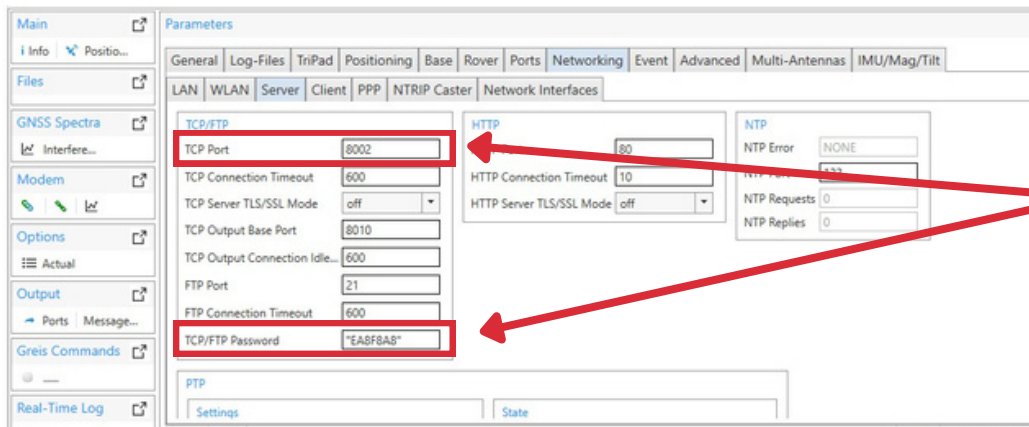


1. To connect the receiver to software via LAN Cable.
(for this you require to connect the receiver via USB or Serial first, after that you can connect the receiver via LAN)
2. To connect the receiver to software via Serial cable.
3. To connect the receiver to software via USB cable.

** For configuration of LAN connection follow the below steps



Here you can fix the Receiver IP and Default DNS Server, by that you can access the receiver from any of the Internal LAN connectivity.



Now you have to check the port and the password for connection

3. GNSS System Block Diagram

The GNSS system block diagram is a simplified view of the SIGMA-3S GNSS receiver.

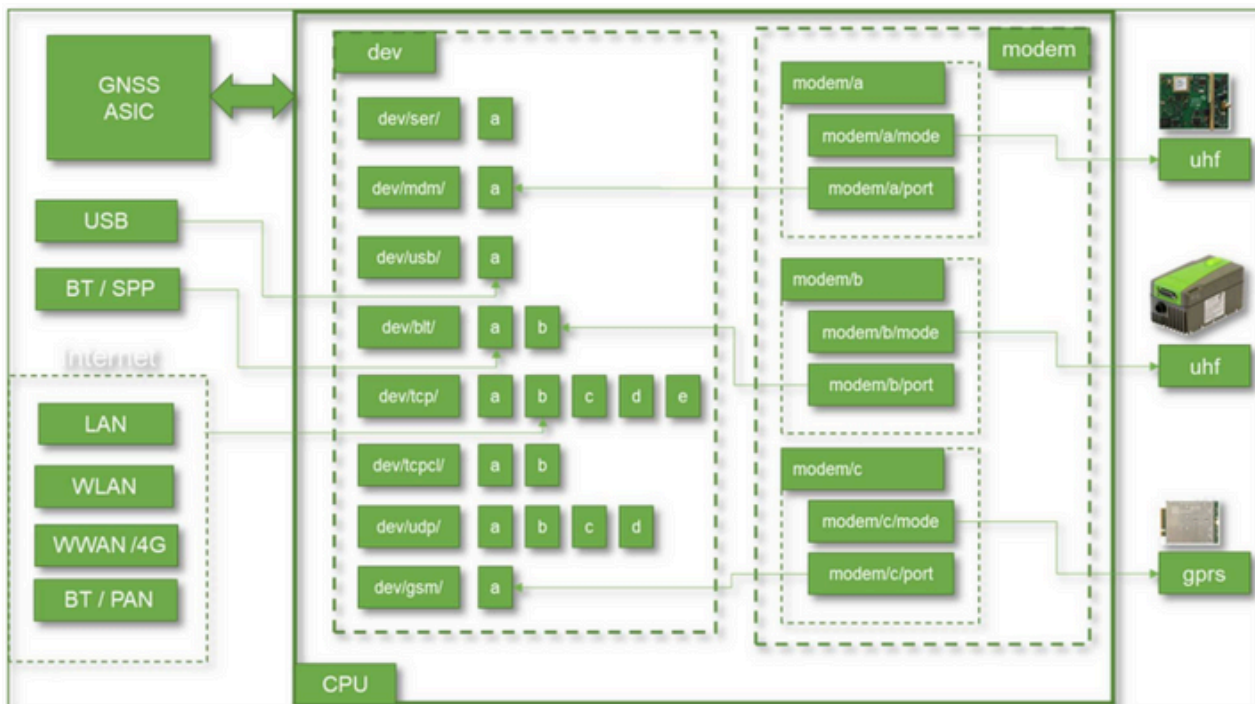
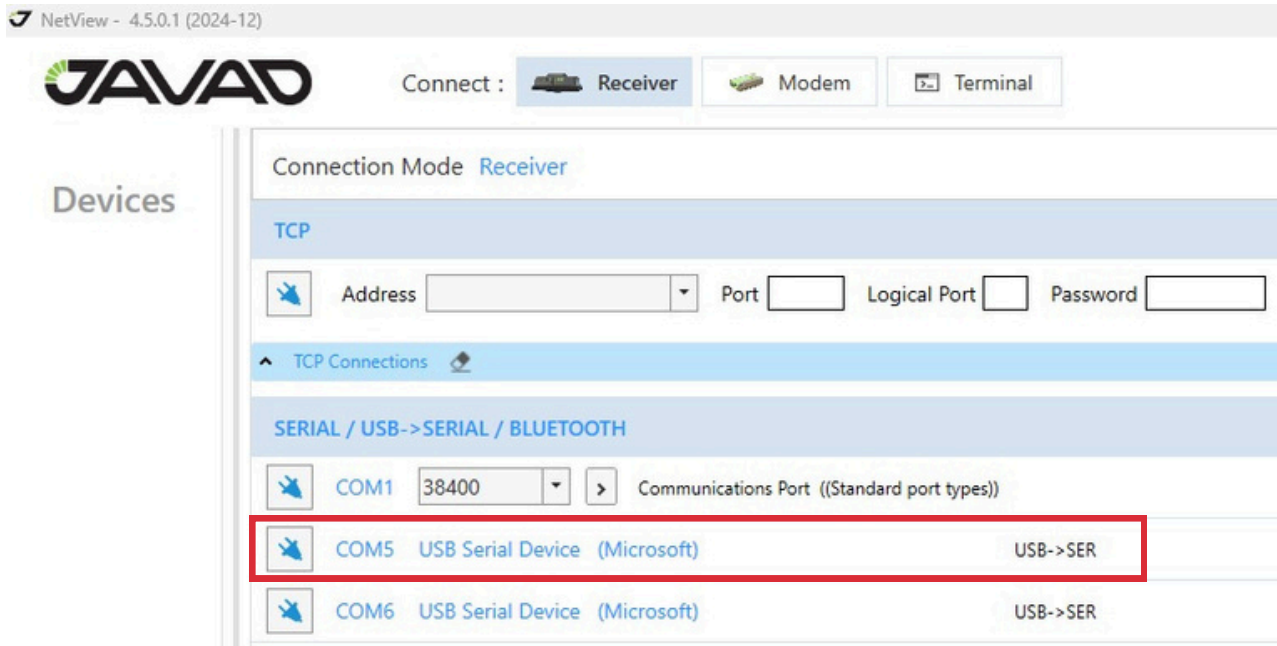


Figure : SIGMA-3S Block Diagram

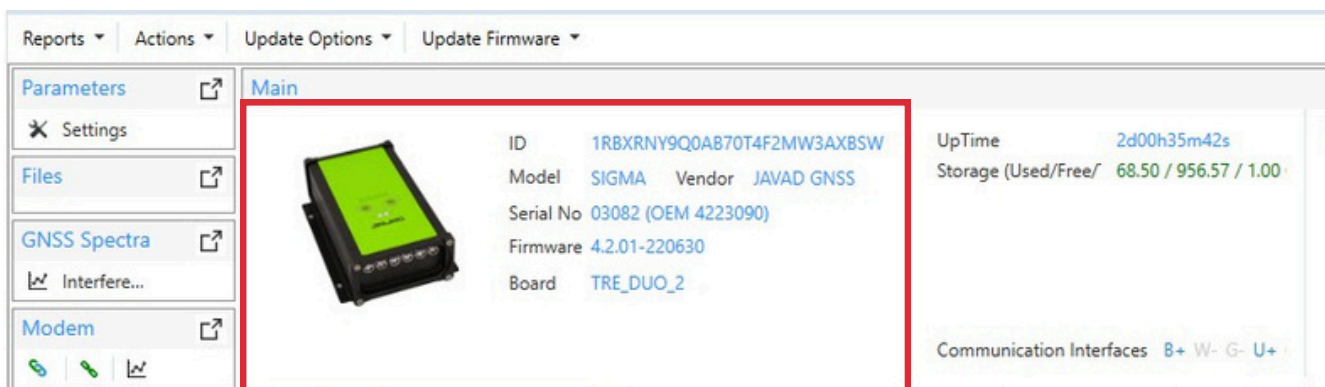
4. GNSS Receiver Information

The interface to get the basic information of the SIGMA-3S GNSS receiver such as ID, model, Serial Number, Firmware version, Kernel, and working time is shown below.

Click **COM5** to get basic Information



After clicking, the information displayed includes the ID, model, serial number, firmware version, kernel, and working time, as shown below.



Information of the Receiver

The screenshot displays the main interface of the JAVAD software. On the left, there is a sidebar with various menu items: Parameters, Settings, Files, GNSS Spectra, Interfere..., Modem, Options, Actual, Output, Ports, Message..., Greis Commands, and Real-Time Log. The main area is titled 'Main' and shows a small image of the receiver. To its right, the following information is displayed:

- ID: 1RBXRNY9Q0AB70T4F2MW3AXB5W
- Model: SIGMA Vendor: JAVAD GNSS
- Serial No: 03082 (OEM 4223090)
- Firmware: 4.2.01-220630
- Board: TRE_DUO_2
- UpTime: 2d00h35m42s
- Storage (Used/Free/): 68.50 / 956.57 / 1.00
- Communication Interfaces: B+ W- G- U+

A red box highlights the 'dev/usb/a' connection point. Below the main information, there are tabs for 'Satellites', 'Sky Plot', 'Orientation', and 'Weather Station'. The 'Satellites' tab is active, showing a table of satellite data:

s	Num	EI	Az	SNR	CA	P1	P2	L2C	L5	L1C	Track Time
GPS - 9 / 8											
a	GPS	5	45	182	45	44	44	46			00:24:46
a	GPS	6	27	42	40	37	37	42	48		00:07:59
a	GPS	11	56	20	46	39	39	51	55	48	00:01:58
a	GPS	12	74	282	48	48	48	49			00:45:02
a	GPS	19	19	90	33	12	12				00:06:57
a	GPS	20	73	114	46	38	38				00:45:39
a	GPS	24	11	218	41	37	37	43	49		00:28:25
a	GPS	25	37	312	42	43	43	47	52		00:25:23
a	GPS	29	11	300	43	37	37	41			00:23:57
GLO - 8 / 7											
a	GLO	8/6	25	80	43	43	39	40			00:18:52
a	GLO	12/-1	9	174	42	42	41	42			00:16:41

5. GNSS Receiver Initialization and Update

This screenshot shows the top navigation bar of the software. The 'Update Options' menu is highlighted with a red box. Below it, a red arrow points to the text: 'Here are four different sections related to receiver'.

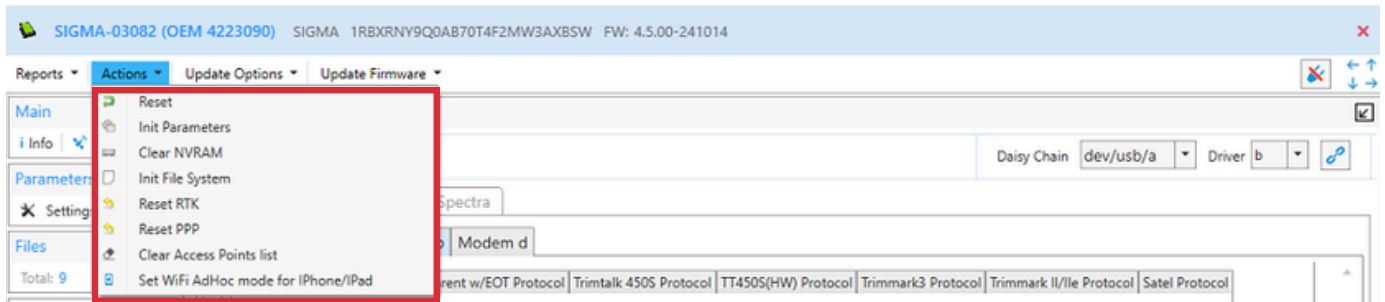
Here are four different sections related to receiver

5.1. Report Section

This screenshot shows the 'Report' section of the software. The 'Report' menu is highlighted with a red box. Below it, a red arrow points to the text: '1. Parameters is to download the receiver's information and configurations. 2. Option is to download the receiver's all the options (means the loaded license for the receiver). 3. File system is to download the list of logged files in the receiver memory.'

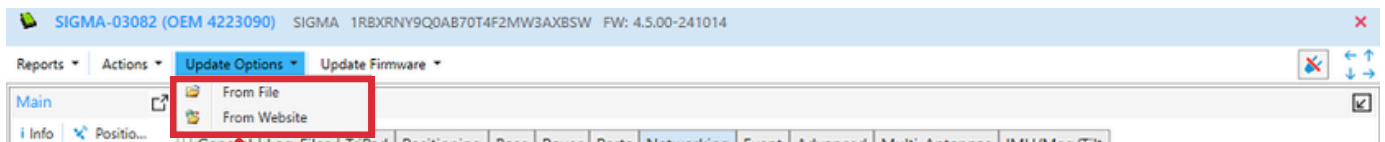
1. Parameters is to download the receiver's information and configurations.
2. Option is to download the receiver's all the options (means the loaded license for the receiver).
3. File system is to download the list of logged files in the receiver memory.

5.2. Action Section



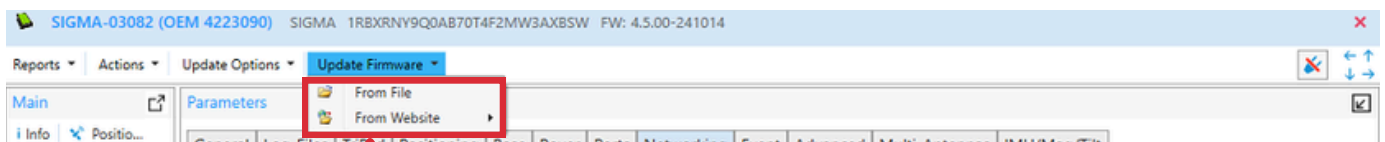
1. Reset is to restart or reboot the receiver.
2. Init. Parameters is to initialize the receivers all defined parameters.
3. Clear NVRAM is to reset the receiver to the factory default settings.
4. Init File System is to delete all the logged files from the receiver memory.
5. Reset RTK is to restart the RTK data transmission.
6. Reset PPP is to restart the J-Star data corrections.
7. Clear Access points list is to delete the connections made through Bluetooth/Wi-Fi.
8. Set WiFi AHoc mode for Iphone/Ipad is to configure the receiver for connecting via the iOS app of Javad GNSS.

5.3. Update Options Section



1. From File is to load the license from a “jpo” file.
2. From Website is to load the license directly from the internet.

5.4. Update Firmware Section

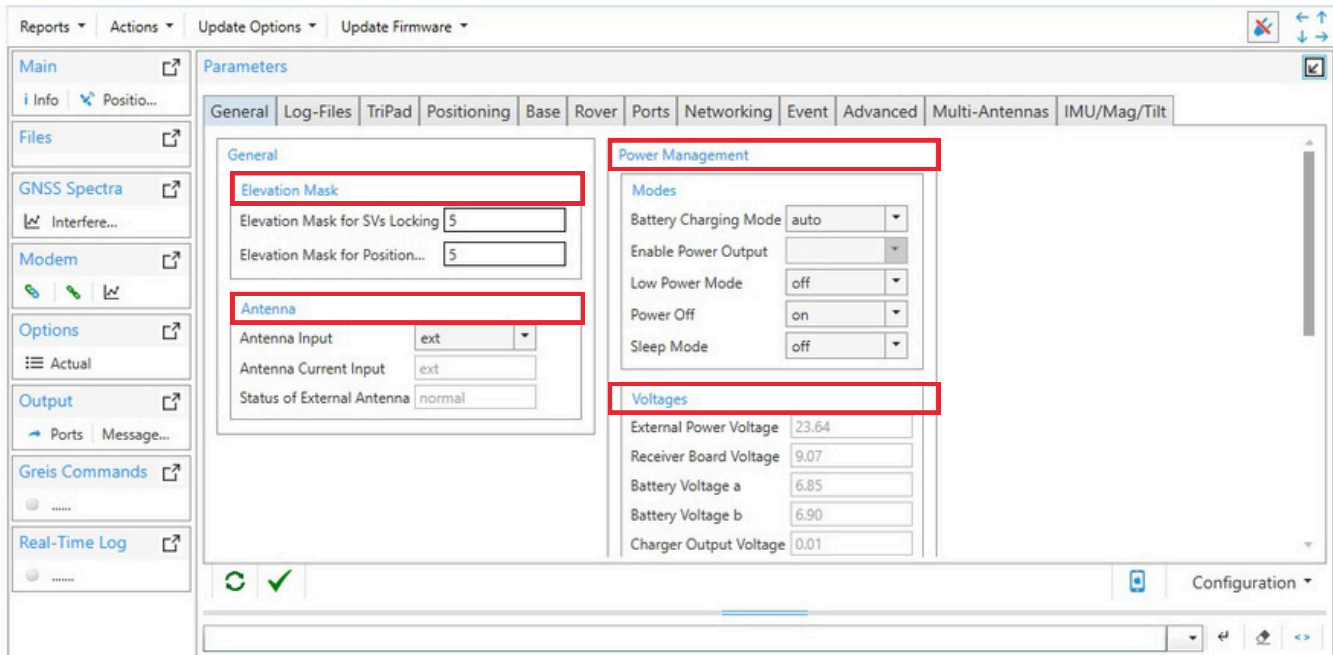


1. From File is to load the firmware from a “zip” file, that can be download from the website (<https://www.javad.com/support/firmware/>).
2. From Website is to load the latest firmware that is available on website.

6.1 GNSS Parameters

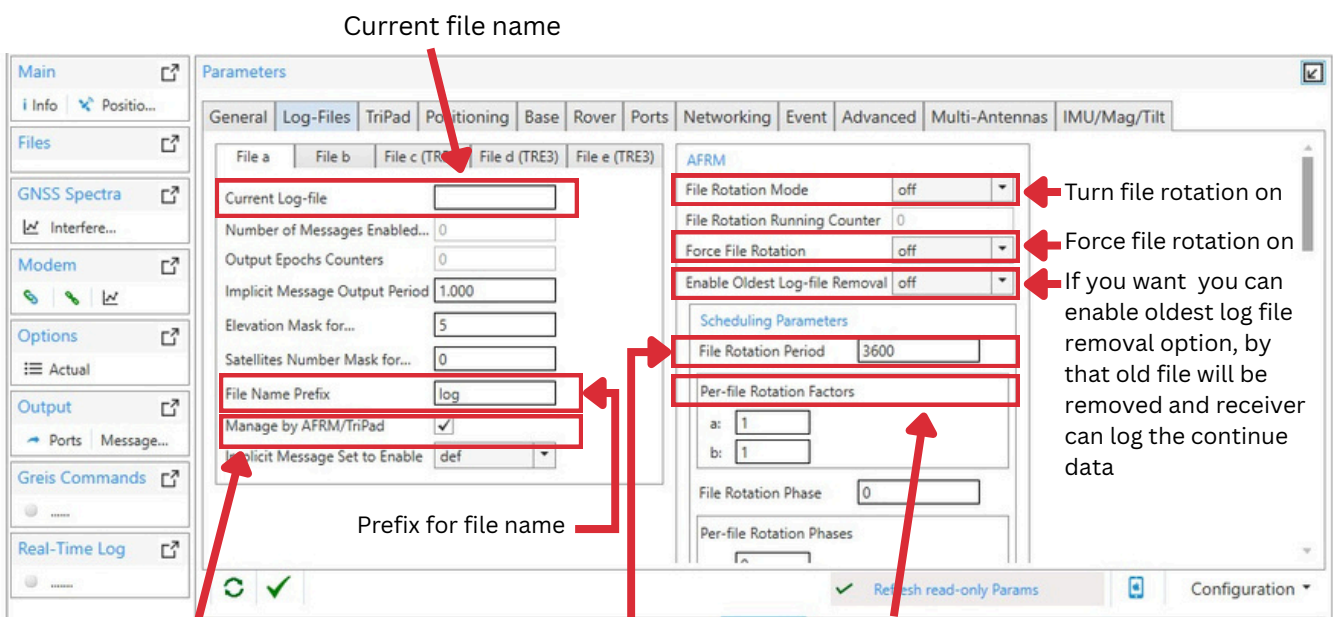
6.1.1. GNSS Receiver General Parameters

In this section you can change and see the general parameters of receiver like Elevation Mask, Antenna, Power Management etc.



6.1.2. GNSS Receiver Log Files Section

In this section you can log multiple files at different intervals for the different sessions.

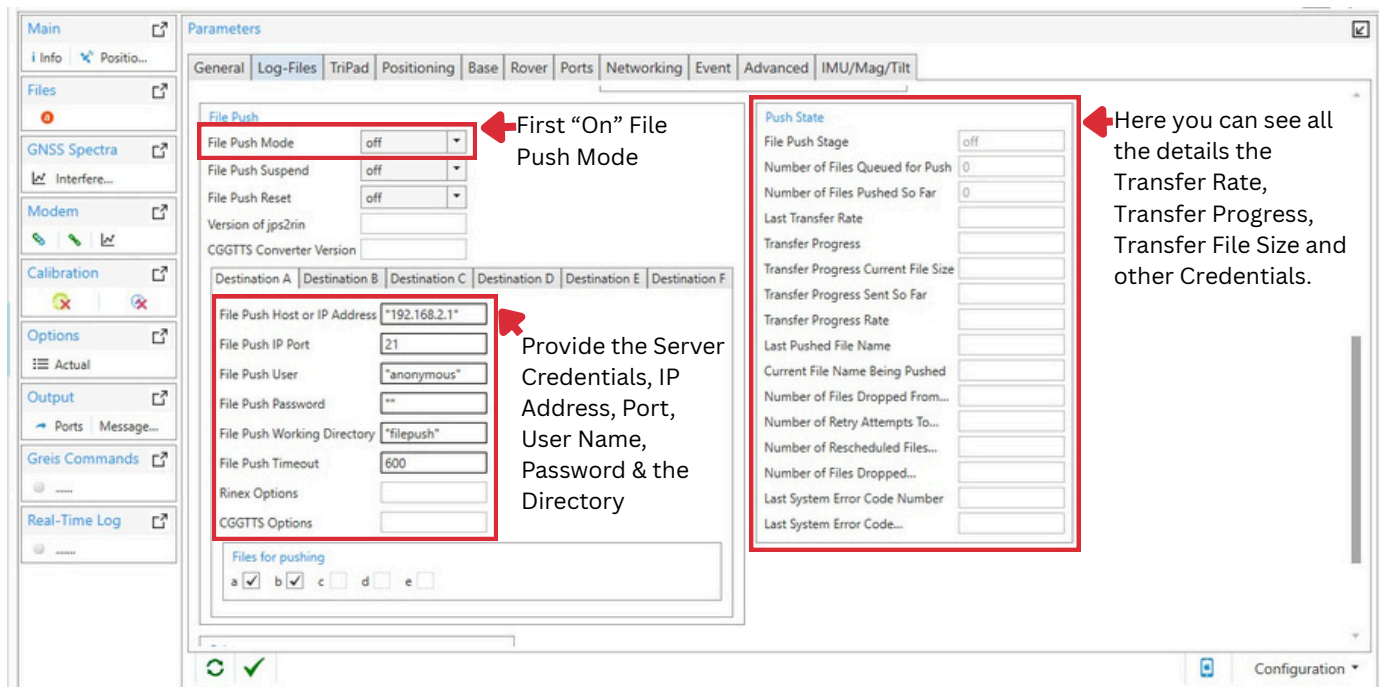


When you are enabling multiple files the AFRM checkbox must be ON

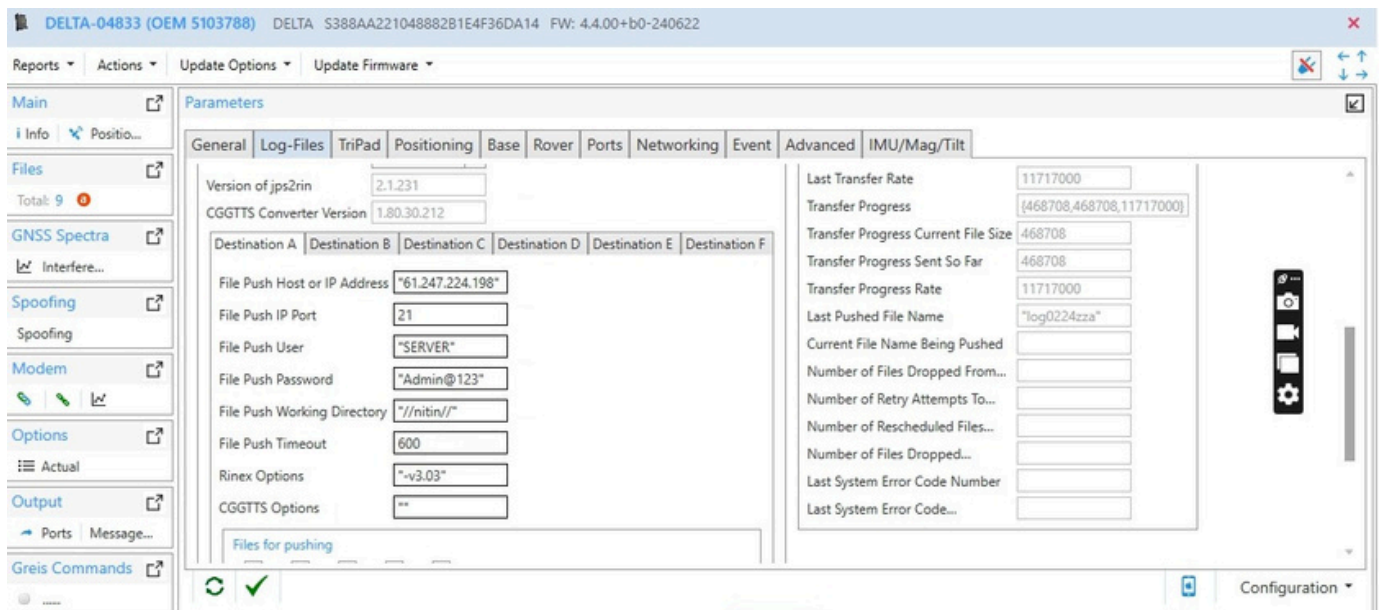
Here we can provide scheduling parameter in seconds

Here we can define the rotation factors as per the rotation periods like File A is for 3600 and we want to log File B at 86400, then we have to provide rotation period for File B is 240.

In the below image you can do the FTP Push settings.

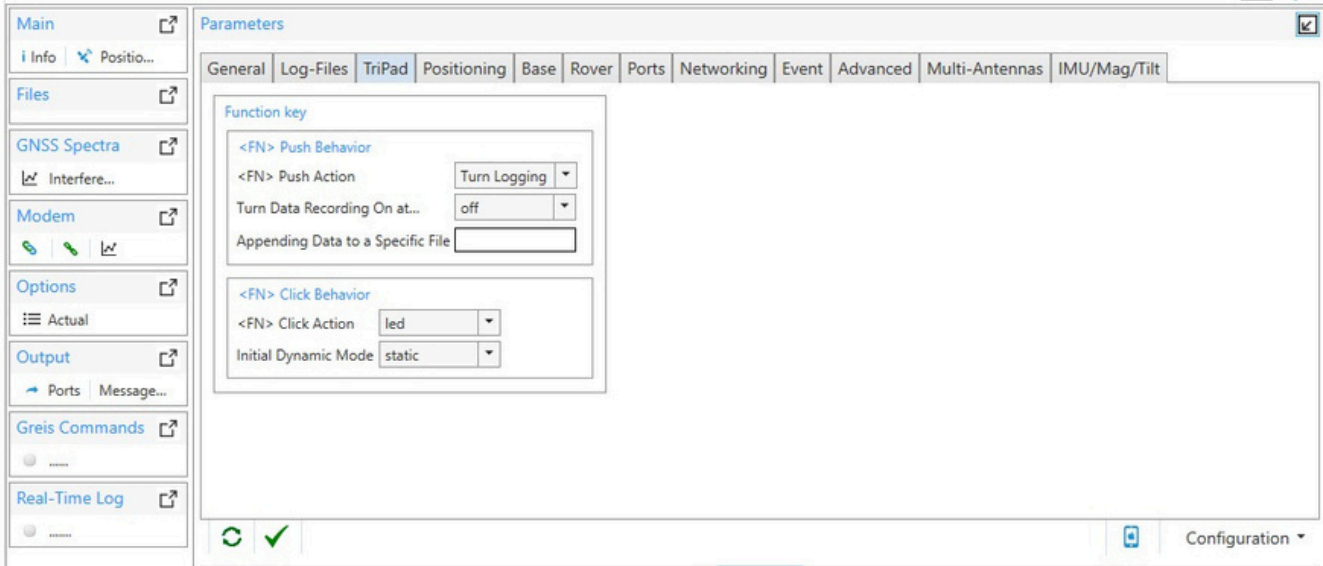


For an example you can check the below image:



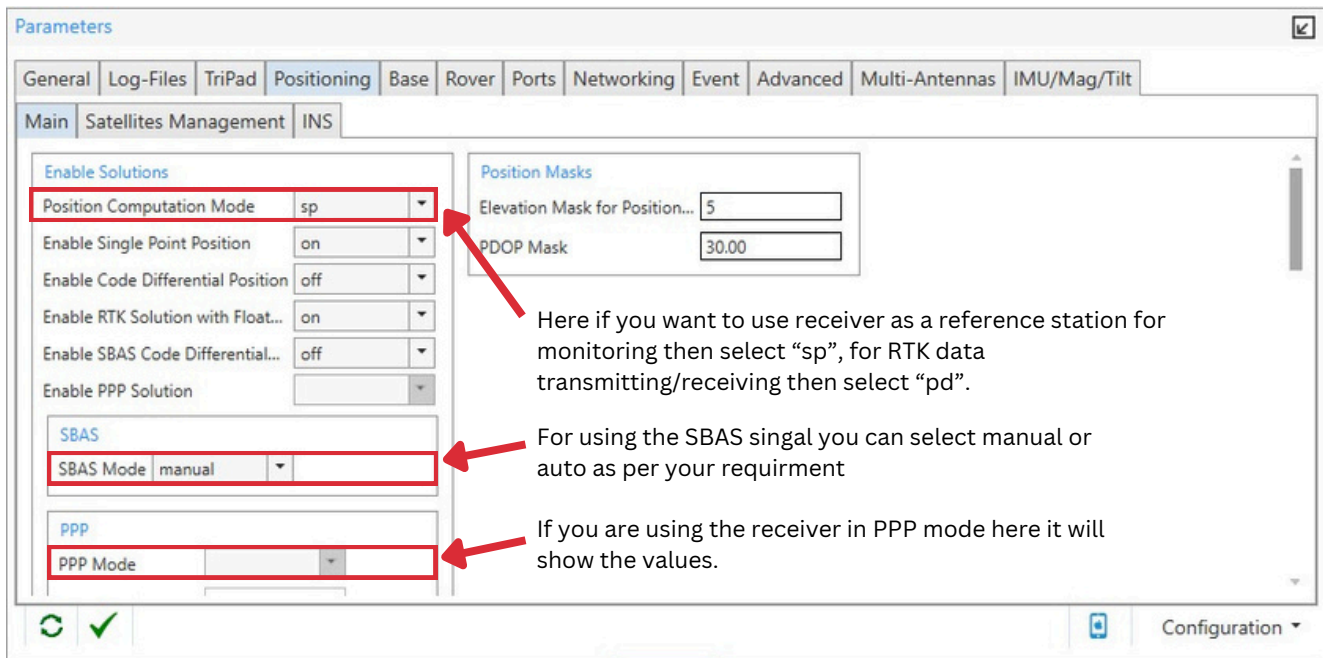
6.1.3. GNSS Receiver Log Files Section

In this section you can change the Function Key button options.



6.1.4. GNSS Receiver Positioning Section

In this section you can define the positioning of GNSS Receiver.



When you use receiver in RTK rover mode, here it will show the timing.

Select here the signals for that you want to lock the data.

Select here the signals for that you want to use the data.

Here you can enable/disable the correction and change the datum that you want to use for the receiver.

Enable Corrections

Enable Tropo. Corrections: on

Tropospheric Model: waasdef

Datum

Current Datum for Position...: W84

Use Datum Rotations for...: off

RAIM

RAIM Mode: on

Alarm Limit Mode: manual

Alarm Limit for Manual Mode: 555.6

In the satellite management section, you can enable/disable the satellite signals by the PRN number.

Parameters

General | Log-Files | TriPad | Positioning | Base | Rover | Ports | Networking | Event | Advanced | Multi-Antennas | IMU/Mag/Tilt

Main | Satellites Management | **INS**

GPS | GLONASS | GLCDMA | GALILEO | SBAS(WAAS/EGNOS) | QZSS | BEIDOU | NavIC

Trk	Use	Hz	Ura	Alm
1	<input type="checkbox"/>	<input type="checkbox"/>	16	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	17	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	18	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	19	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	20	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	21	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	22	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	23	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	24	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	25	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	26	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	27	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	28	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	29	<input type="checkbox"/>

We can configure the IMU based INS data, that is available with TRE Duo IMU Board

6.1.5. GNSS Receiver Base Section

In this section we can define the Base Station parameters for RTK.

Parameters

General | Log-Files | TriPad | Positioning | **Base** | Rover | Ports | Networking | Event | Advanced | Multi-Antennas | IMU/Mag/Tilt

Reference Position

Coordinate system: **Geodetic**

Antenna Phase Center Position (APC)

Lat. 28 ° 34 ' 58.710821 " N W84

Lon. 077 ° 19 ' 26.439763 " E

Alt. +164.1375

Antenna Reference Point Position (ARP)

Lat. 28 ° 34 ' 58.711073 " N W84

Lon. 077 ° 19 ' 26.440126 " E

Alt. +164.0621

L1 to ARP Offsets

Height, m: 0

Easting, m: 0 Northing, m: 0

Here you can coordinate system

Here you can provide the reference position value.

Here you can input the extension height of the Antenna

Reference Position Averaging
 Reference Position Averaging... off
 Reference Position Averaging... 180

Reference Antenna Parameters
 Antenna type (for RTCM 2.x and...
 Antenna Serial Number
 Antenna Setup ID 0

If you want to do the averaging of reference position, you can On/Off it.

You can select the antenna type here, if you want to add.

Reference Antenna Offsets
 L1 APC to L2 APC Offset, meters
 East Offset of L2 APC 0.0000

RTCM 2.x Settings
 RTCM 2.x Base Station Identifier 82
 Enable CA/L1 in RTCM 2.x... on

RTCM 3.x Settings
 RTCM 3.x Reference Station... 82
 /par/rtcm3/base/l2c n

In this section we can see the parameters of RTCM and CMR messages.

Reference Antenna Offsets
 L1 APC to L2 APC Offset, meters
 East Offset of L2 APC 0.0000
 Height Offset of L2 APC 0.0000
 North Offset of L2 APC 0.0000

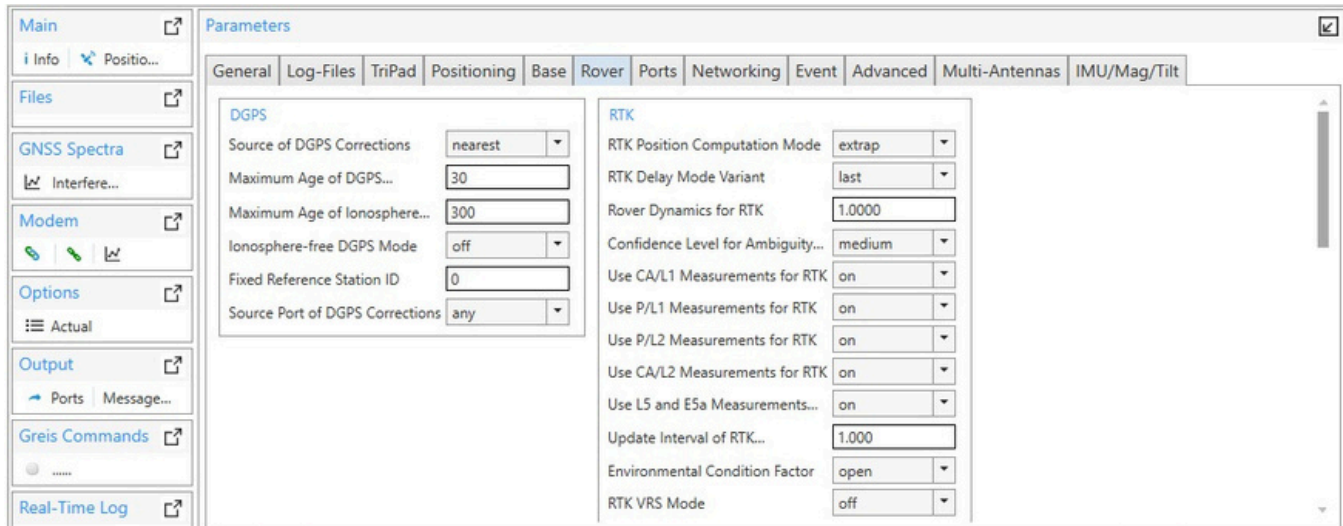
RTCM 2.x Settings
 RTCM 2.x Base Station Identifier 82
 Enable CA/L1 in RTCM 2.x... on
 Enable P/L1 in RTCM 2.x... off
 Enable P/L2 in RTCM 2.x... on
 Maximum Number of Satellites... 0
 RTCM 2.x Base Station Health good
 Use Smoothed Pseudoranges in... off

RTCM 3.x Settings
 RTCM 3.x Reference Station... 82
 /par/rtcm3/base/l2c n

CMR Settings
 CMR Antenna Type 0
 CMR Reference Station Identifier 2
 Receiver Motion State for CMR unknown

6.1.6. GNSS Receiver Rover Section

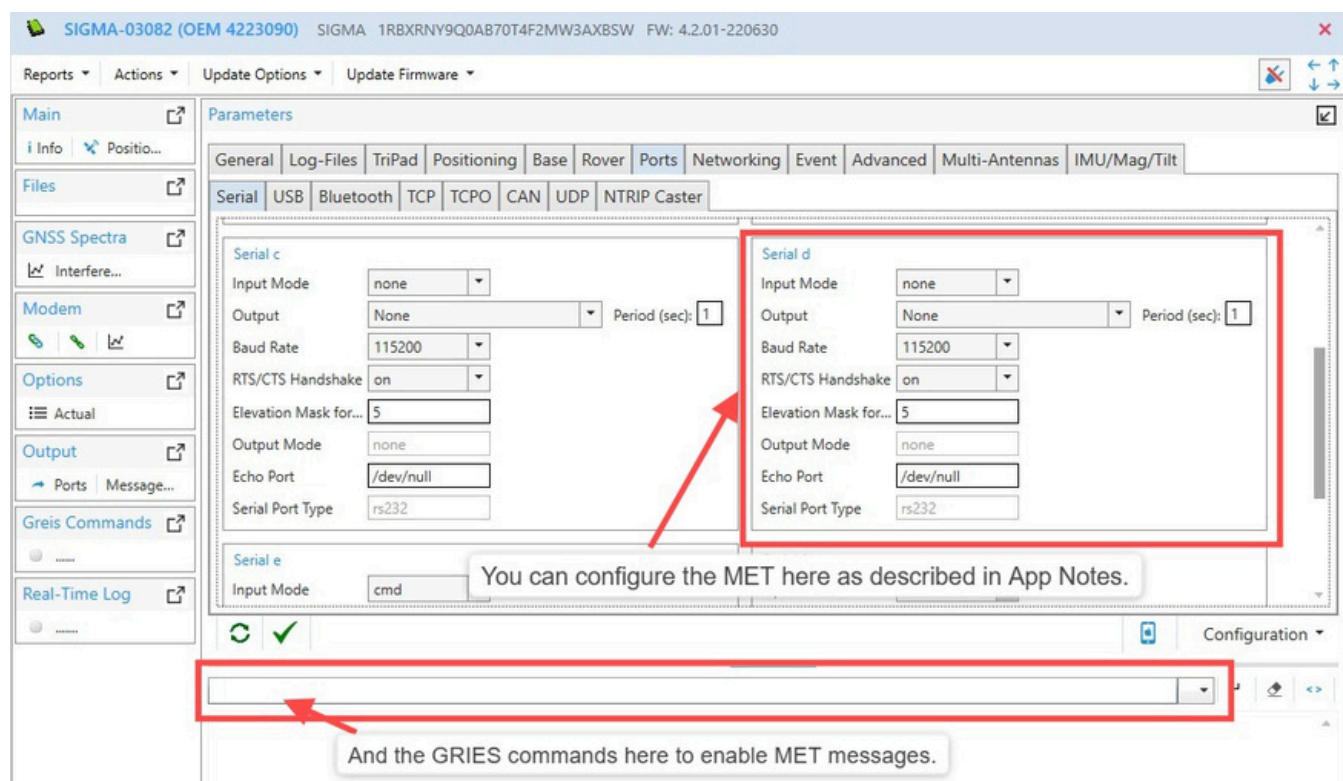
In this section we can define the Rover Station parameters for RTK, not required for the so much configurations.



6.2. GNSS Receiver Port Section

In this section we can define the input output of different Ports.

6.2.1. Serial Port Section

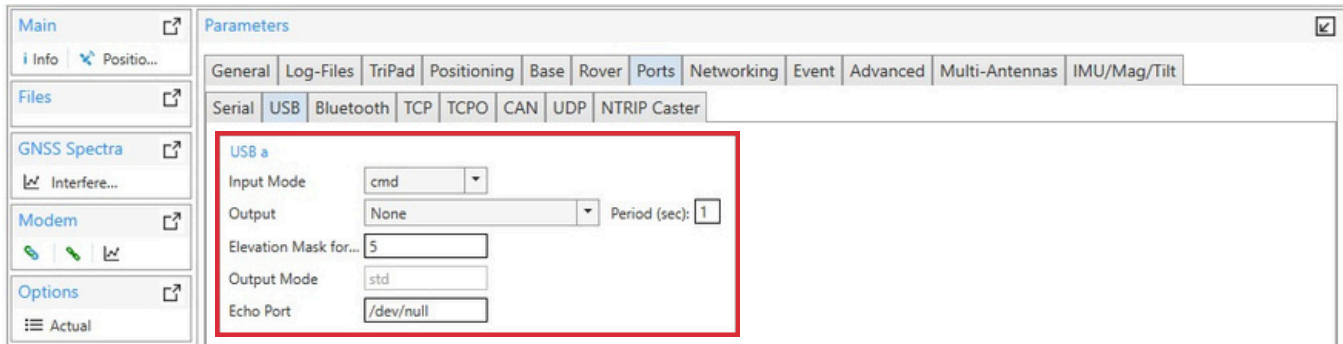


Here we can configure the MET sensor through RS232 port and enable the messages.

```
%%set,/par/dev/ser/d/ewrap,on
%%set,/par/dev/ser/d/echo,/cur/file/a
%%em,/dev/ser/d,/msg/misc/MET3:60
```

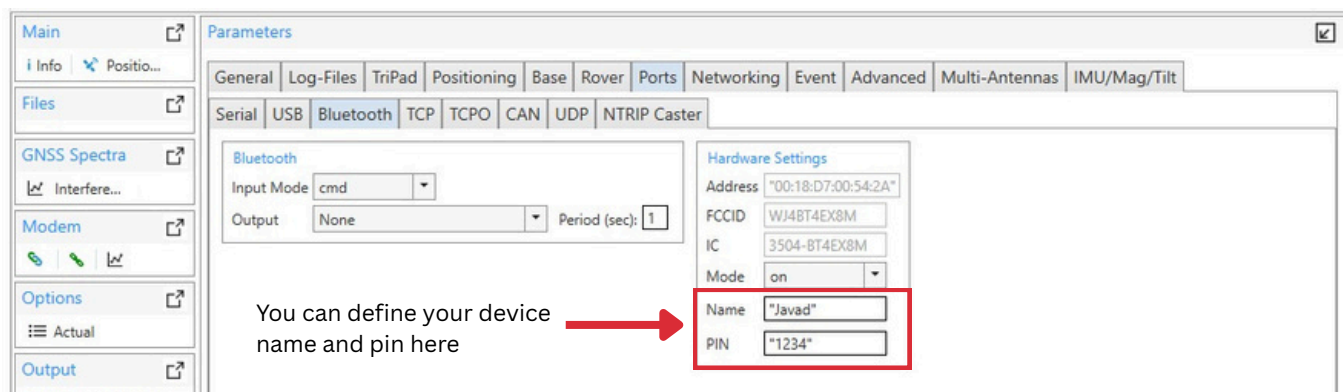
6.2.2. USB Port Section

As the USB Port is only available to communicate the receiver to software, so it should be only in command board



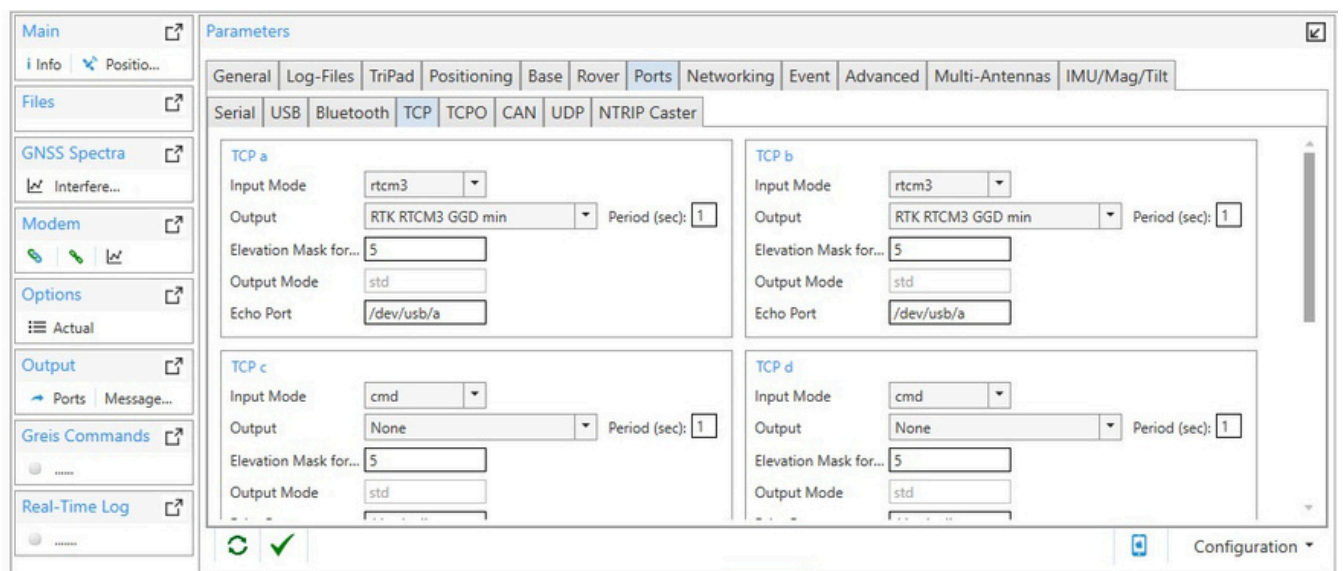
6.2.3. Bluetooth Port Section

As the USB Port is only available to communicate the receiver to software, so it should be only in command board



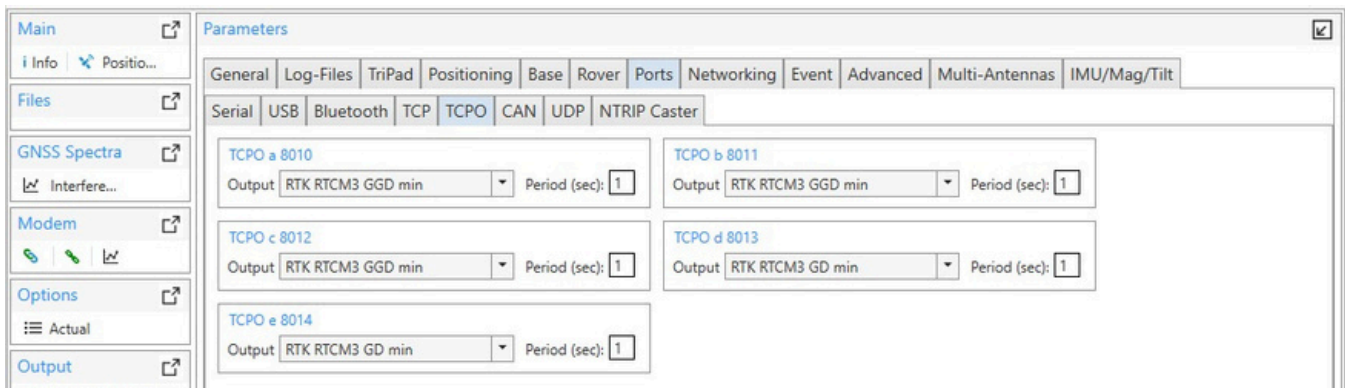
6.2.4. TCP Port Section

In this section we define the input and output messages for TCP server and TCP client.



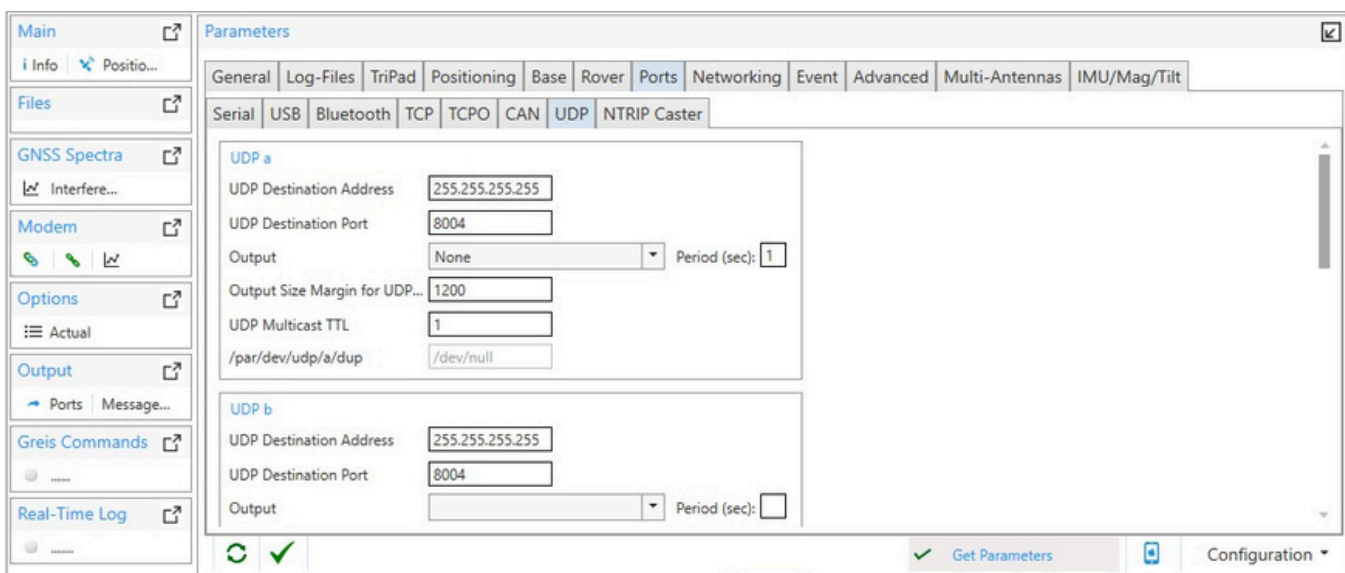
6.2.5. TCPO Port Section

In this section we define the output messages for TCPO Port.



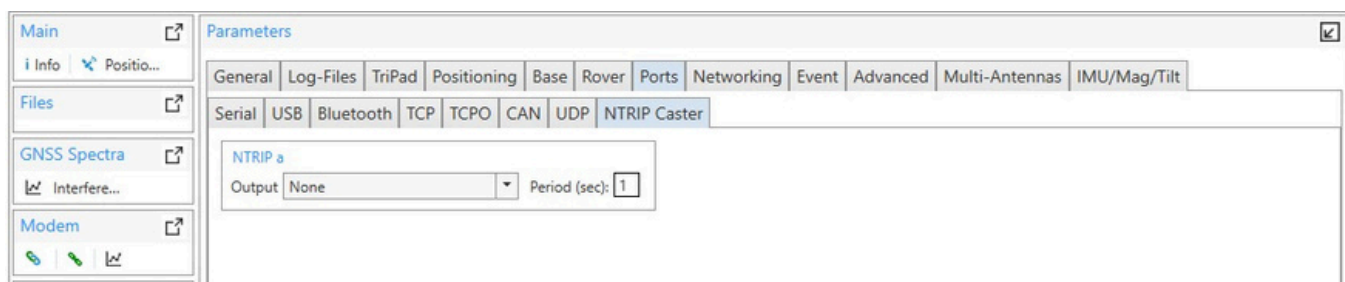
6.2.6. UDP Port Section

In this section we define the output messages for UDP Port.



6.2.7. NTRIP Caster Port Section

In this section we define the output messages for NTRIP Caster Port.



7. GNSS Networking Parameters

7.1. LAN Parameters

In this section we can modify and check the LAN parameters.

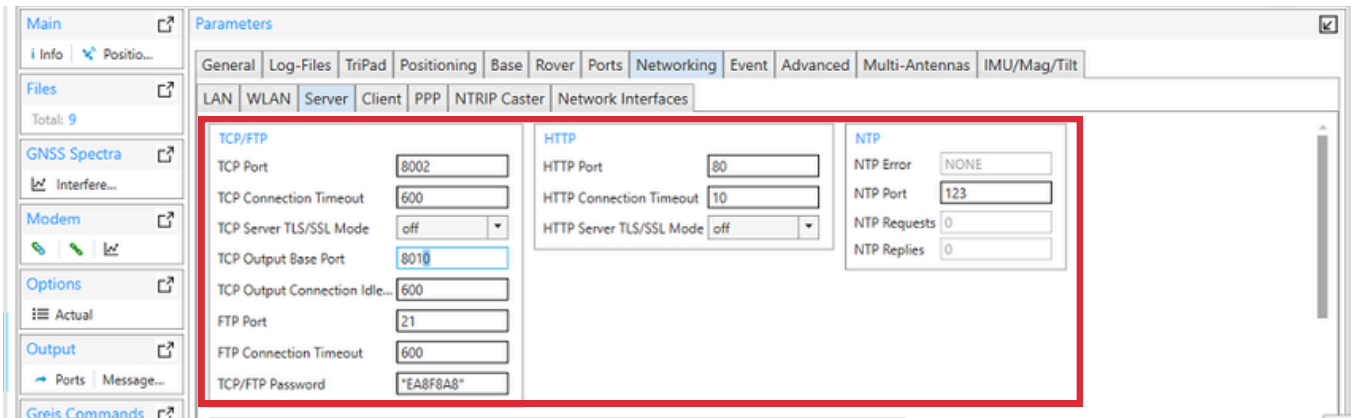
Here you can fix the Receiver IP and Default DNS Server, by that you can access the receiver from any of the Internal LAN connectivity.

7.2. WLAN Parameters

In this section we can modify and check the WLAN parameters.

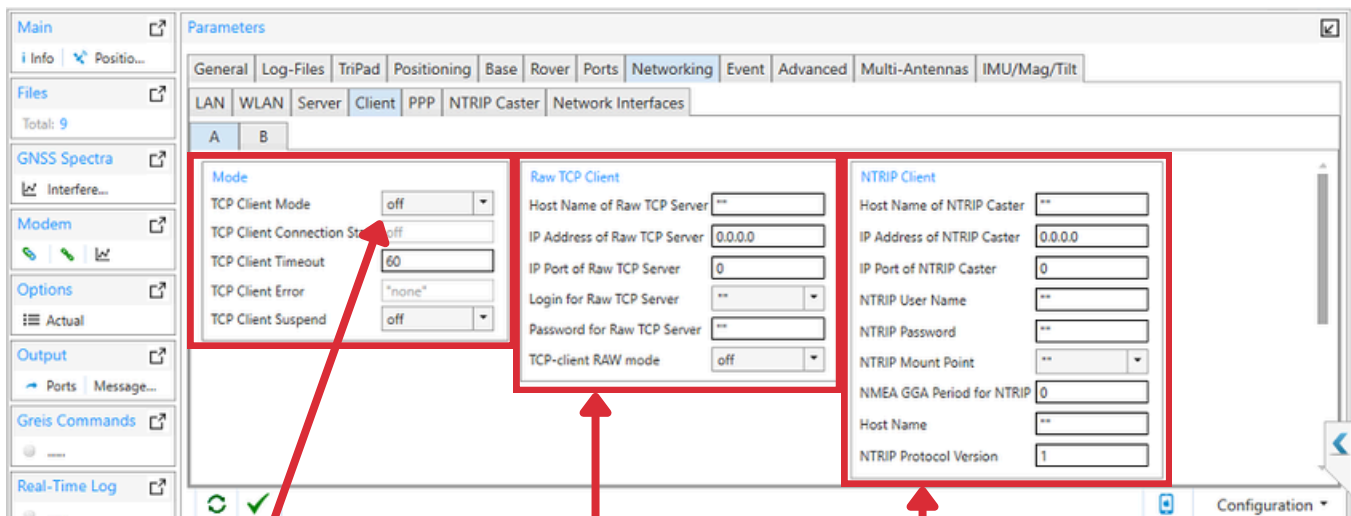
7.3. SERVER Parameters

In this section we can modify the TCP, HTTP, NTP parameters.



7.4. Client Parameters

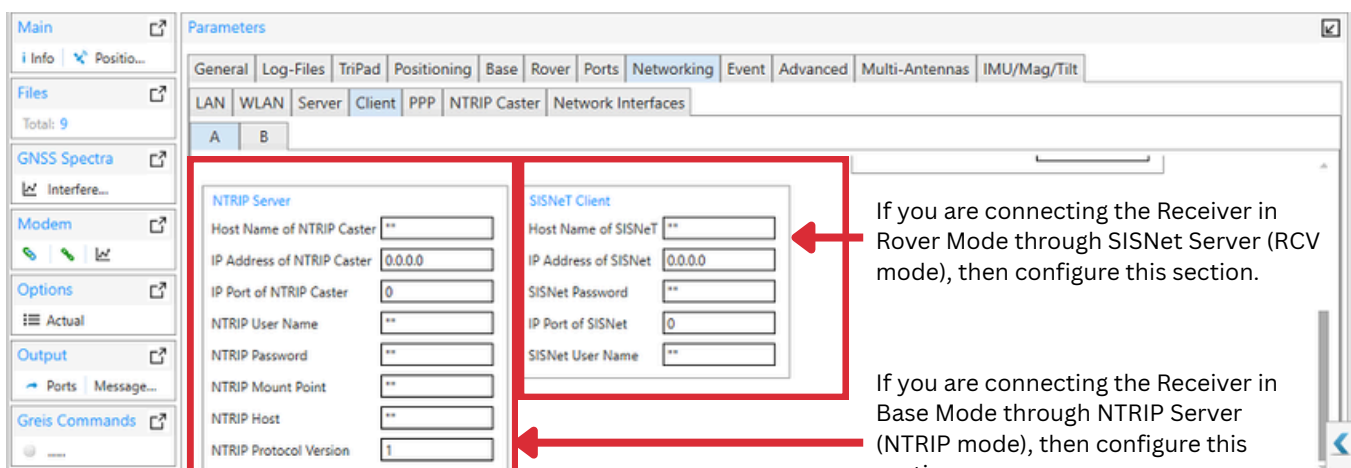
In this section we can do the set-up of Data transmission in RTK mode as a base or as a Rover



First you have to select the mode between RCV or NTRIP

If you are connecting the Receiver in Rover Mode through TCP Server (RCV mode), then configure this section.

If you are connecting the Receiver in Rover Mode through NTRIP Server (NTRIP mode), then configure this section.

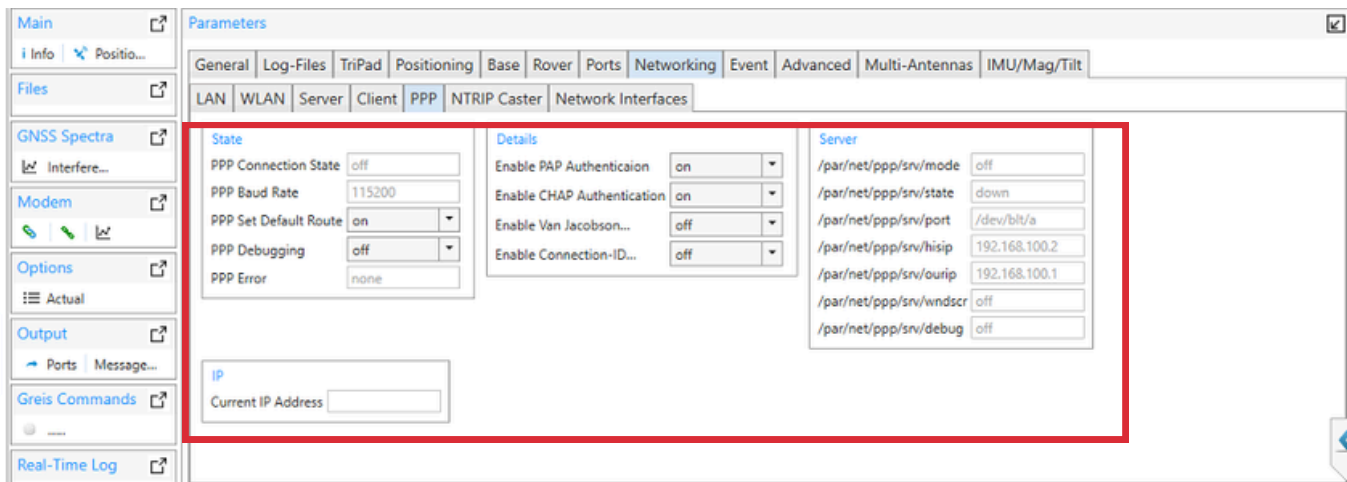


If you are connecting the Receiver in Rover Mode through SISNet Server (RCV mode), then configure this section.

If you are connecting the Receiver in Base Mode through NTRIP Server (NTRIP mode), then configure this section.

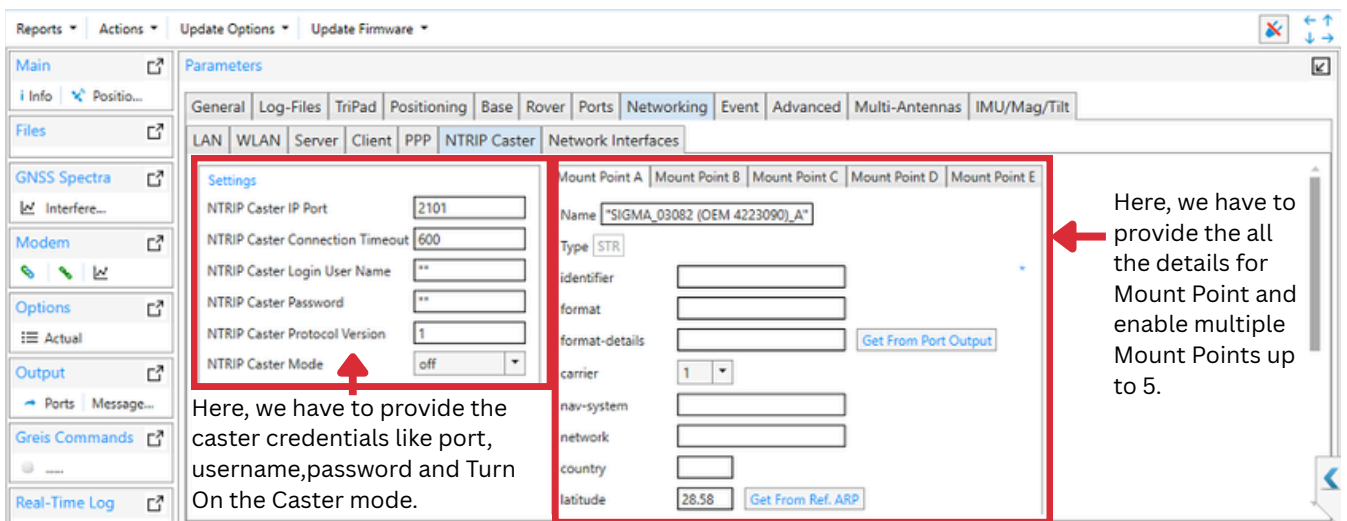
7.5. PPP Parameters

In this section we can check and modify the PPP parameters of the receivers.



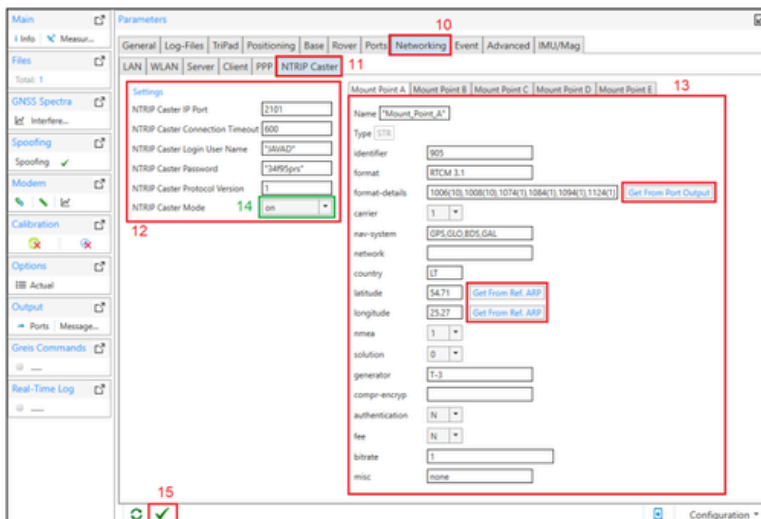
7.6. NTRIP Caster Parameters

In this section we can set the receiver as a CORS Station for RTK Survey and transmit the RTK messages in 5 different Mount Points.



Here, we have to provide the caster credentials like port, username, password and Turn On the Caster mode.

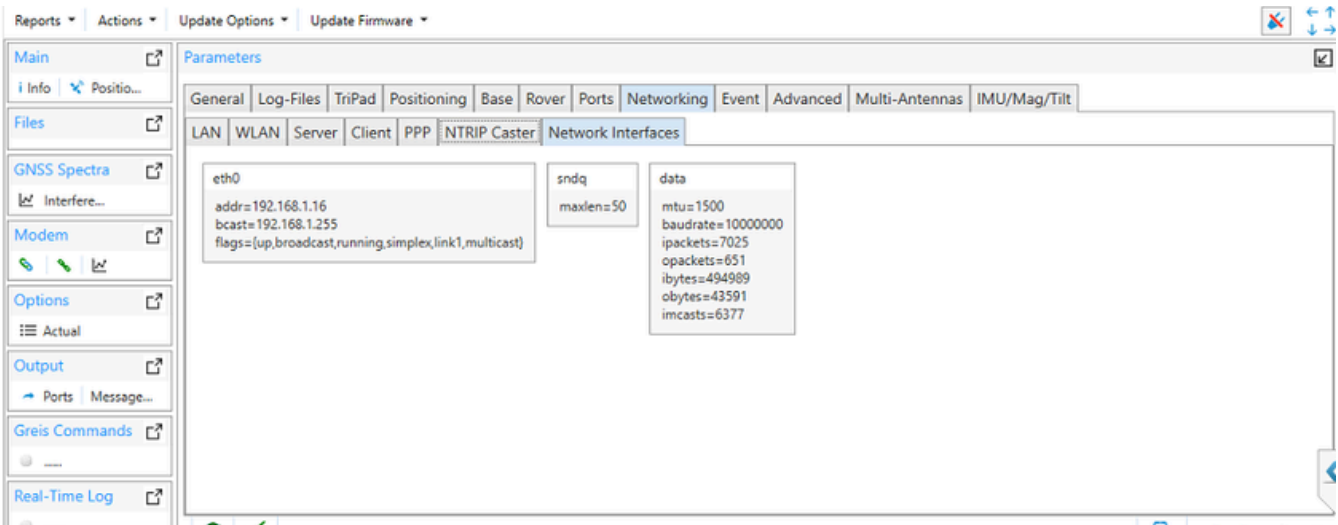
Here, we have to provide the all the details for Mount Point and enable multiple Mount Points up to 5.



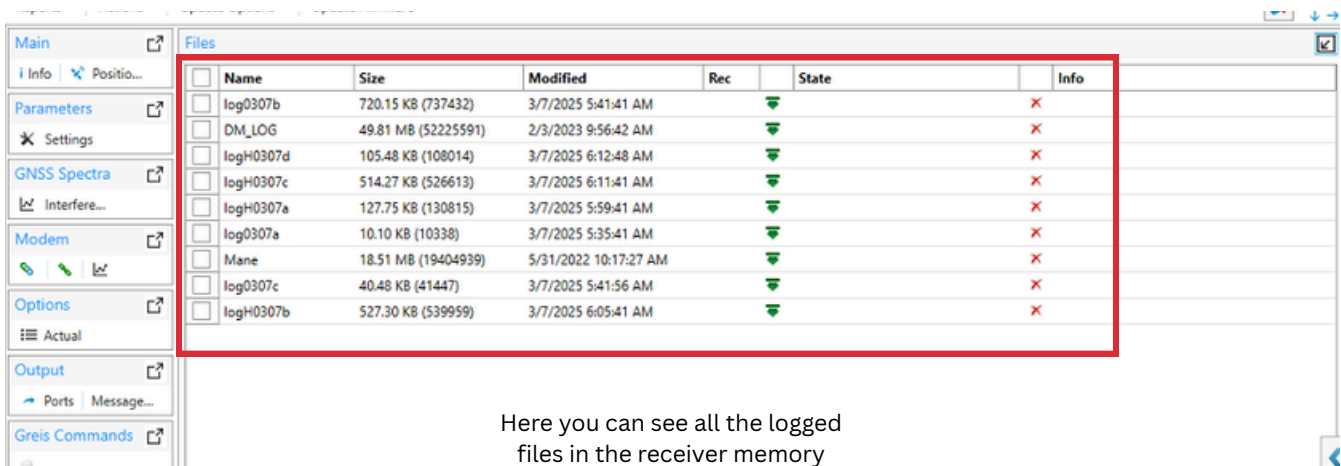
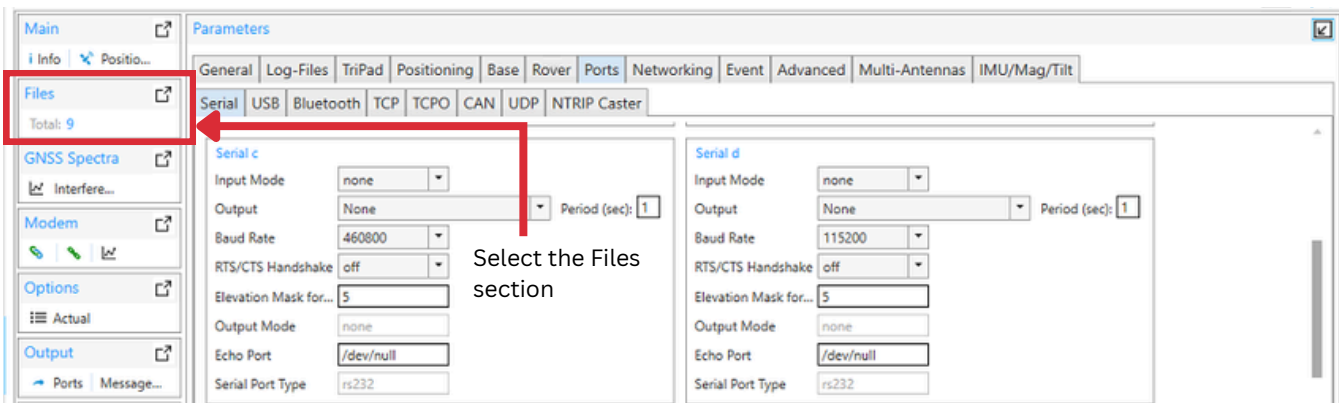
An example for for set-up of NTRIP Caster.

7.7. Network Interface Parameters

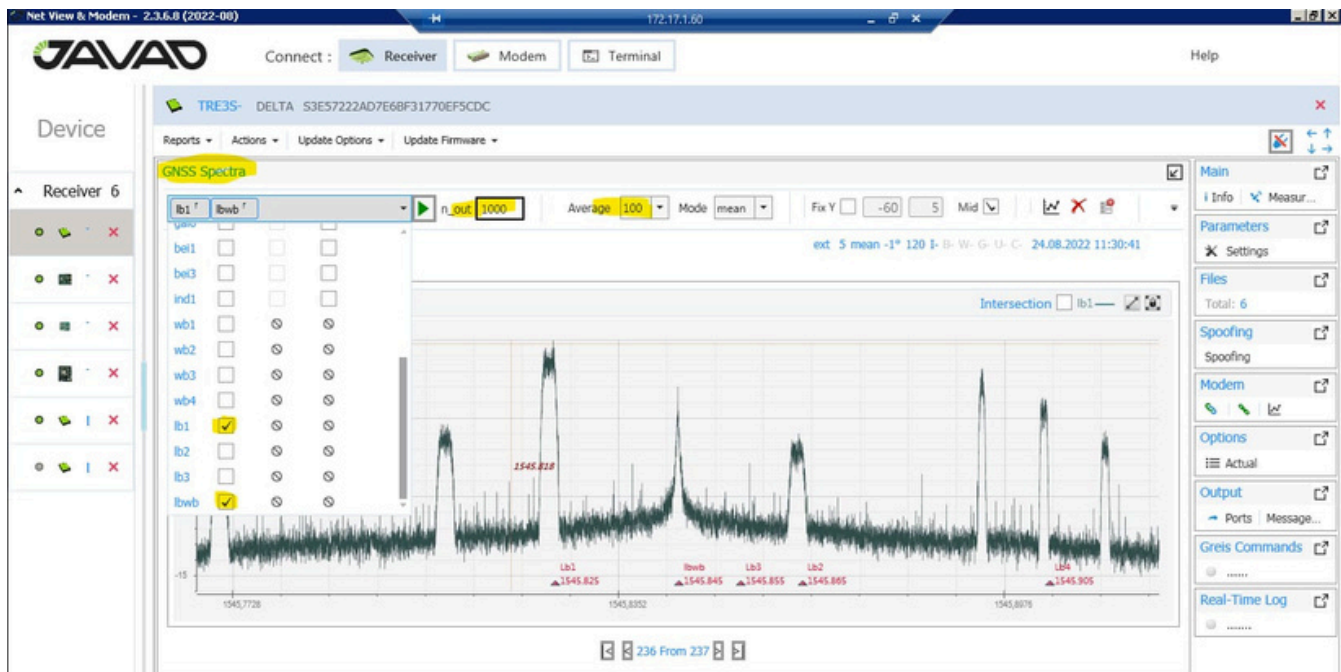
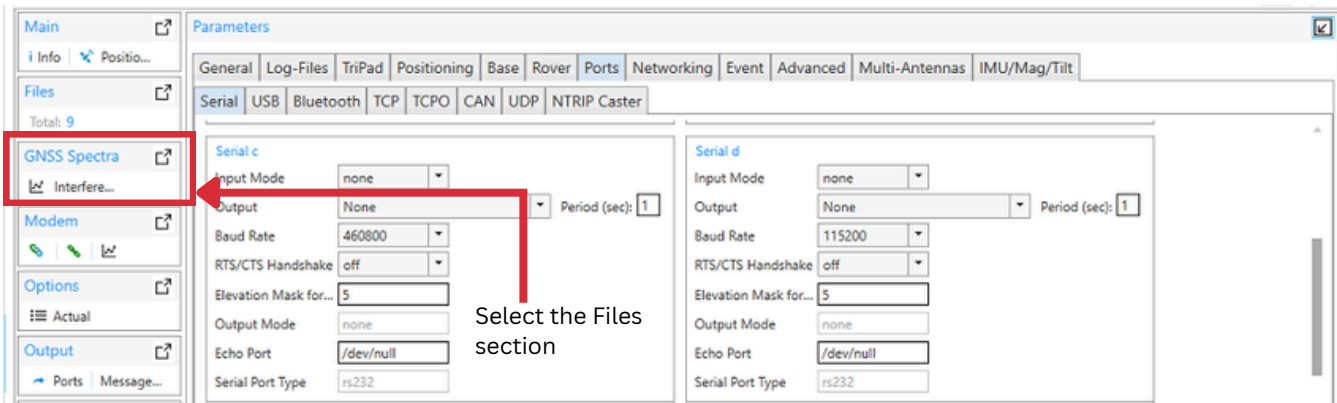
In this section we can connection estates of Network.



8. GNSS Files Parameters

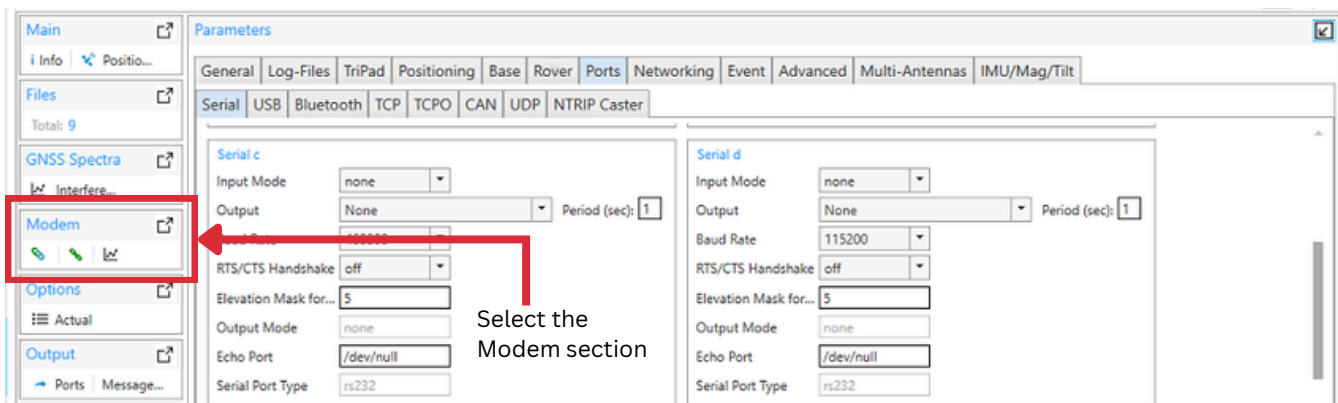


9. GNSS Spectra Parameters



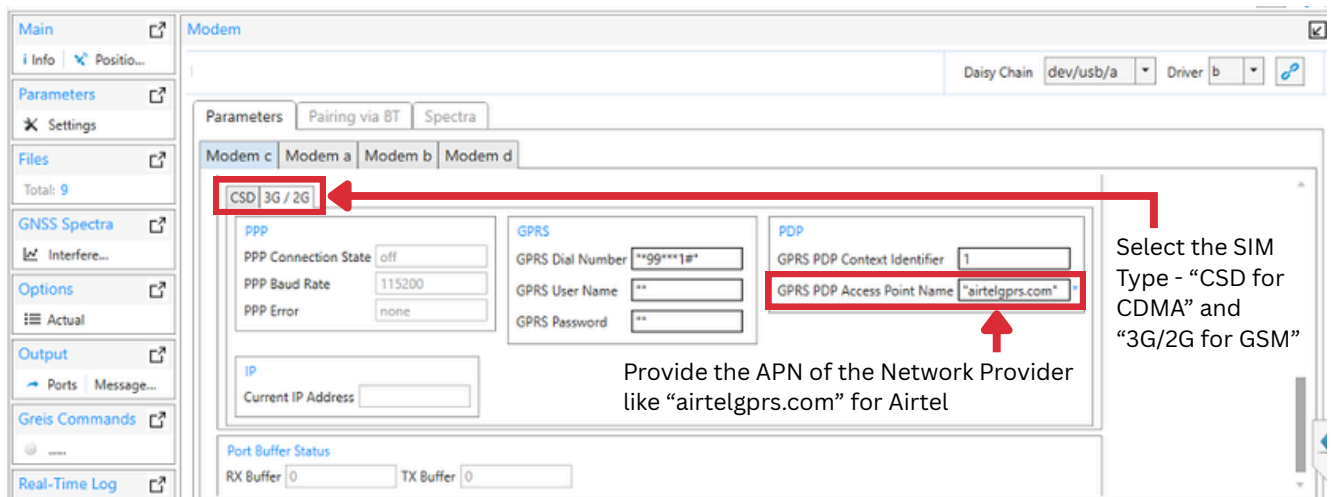
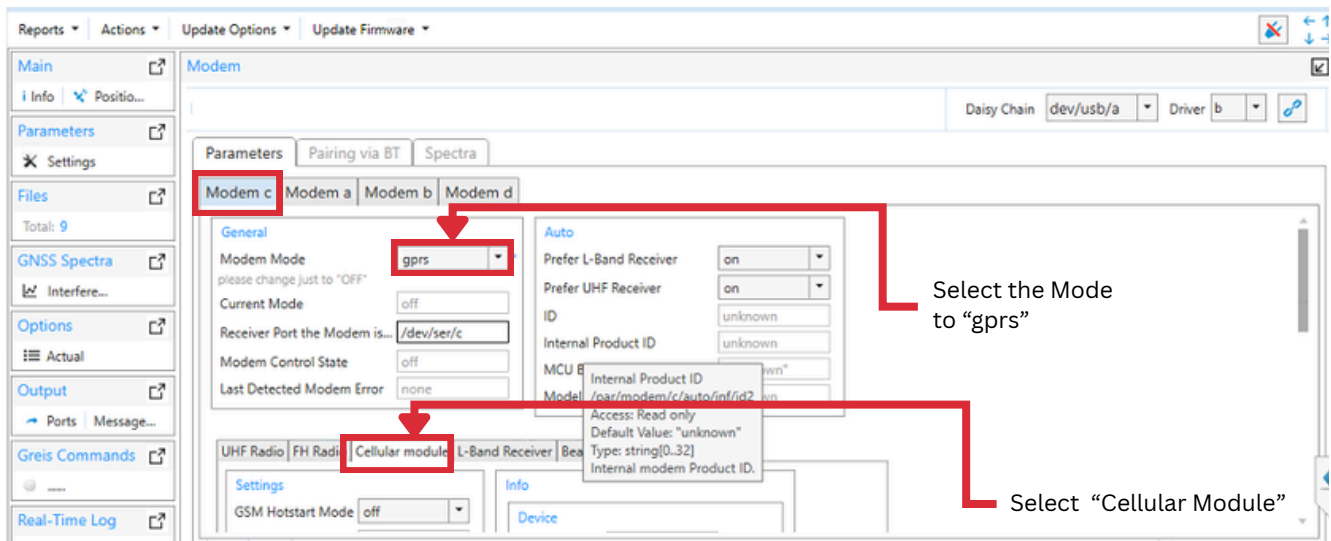
In this section, you can check the spectra of different signals from different constellations.

10. GNSS Modem Parameters



10.1 Cellular Modem Parameters

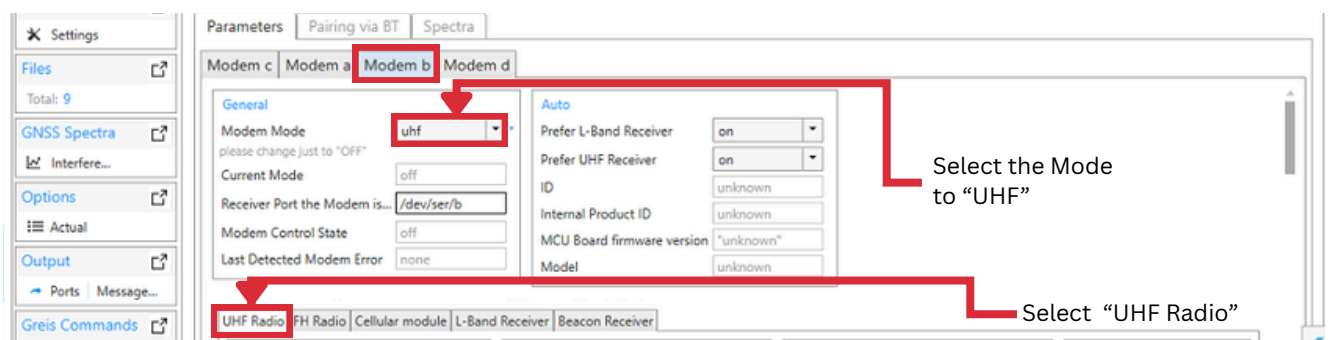
For set-up of internal cellular modem, we have to configure modem “C.”

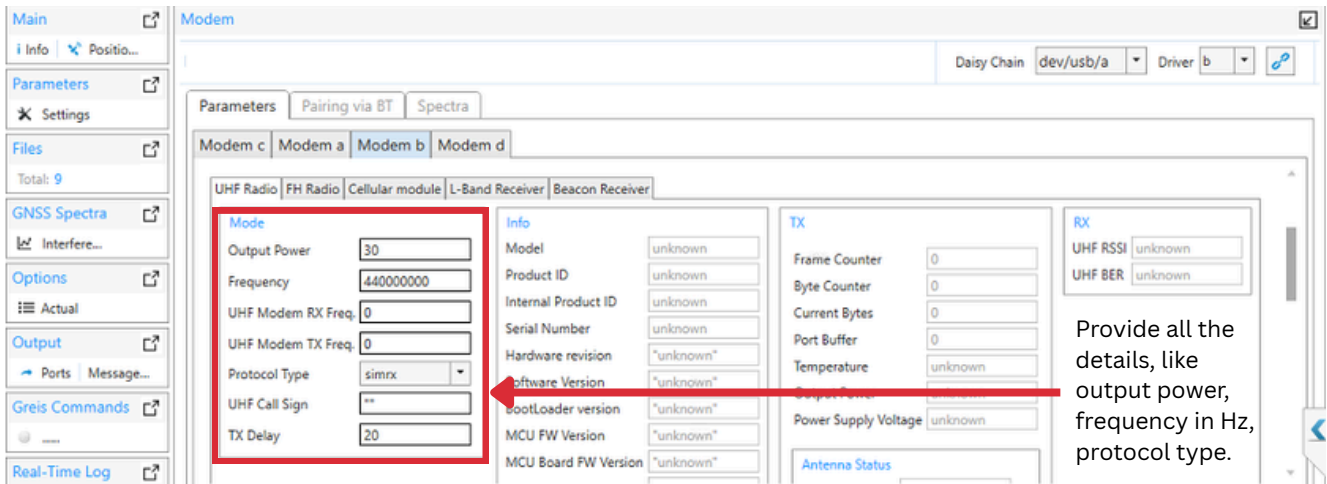


For the submission of command just click on check symbol.

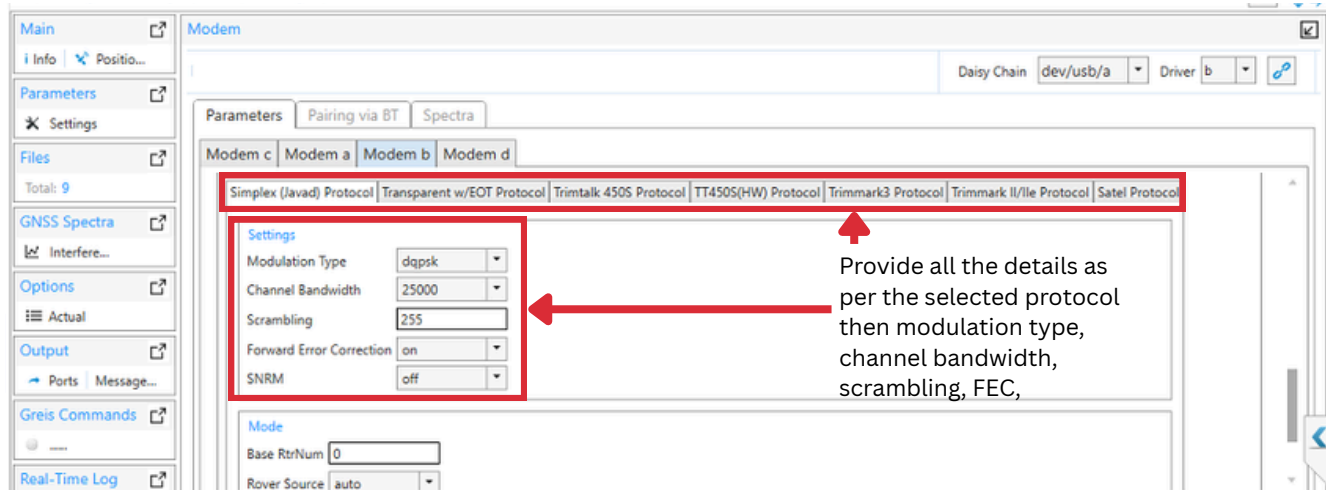
10.2 UHF Modem Parameters

For set-up of internal UHF modem, we have to configure modem “C.”





Provide all the details, like output power, frequency in Hz, protocol type.

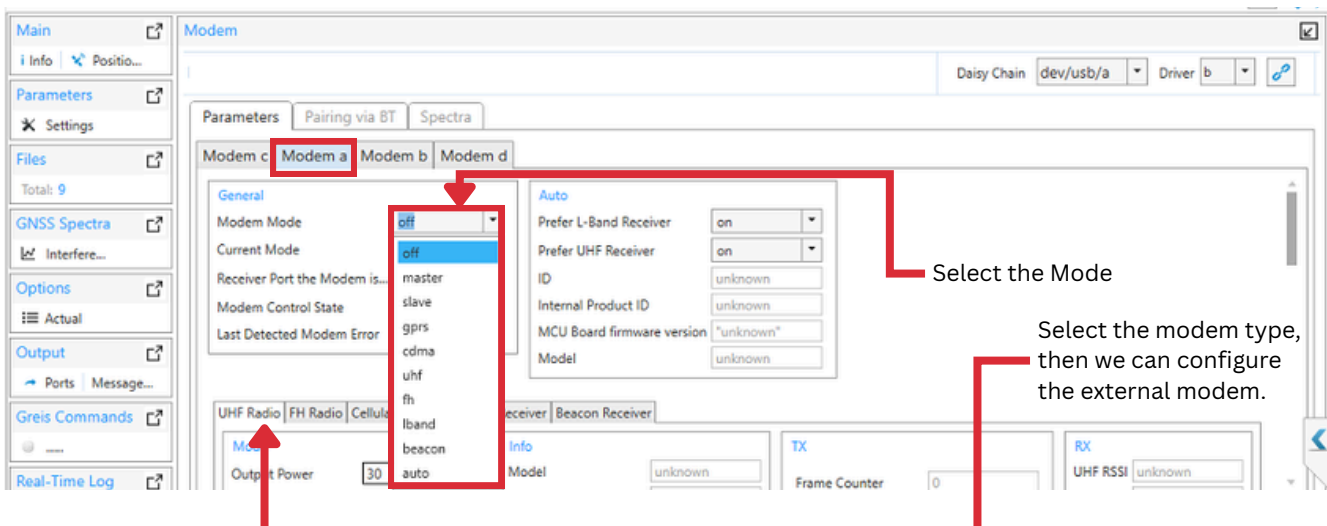


Provide all the details as per the selected protocol then modulation type, channel bandwidth, scrambling, FEC,

For the submission of command just click on check symbol.

10.3 External Modem Parameters

For set-up of external modem, we have to configure modem “a” & “d.”

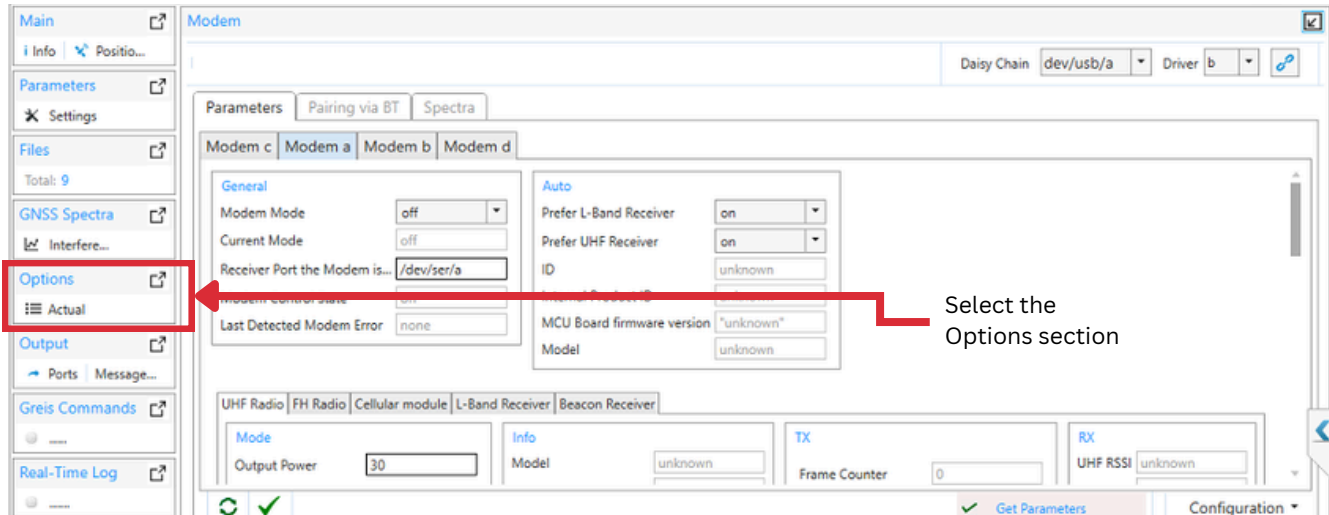


Select the Mode

Select the modem type, then we can configure the external modem.

11. GNSS Options Parameters

In this section, we can check all the available license of the receiver.



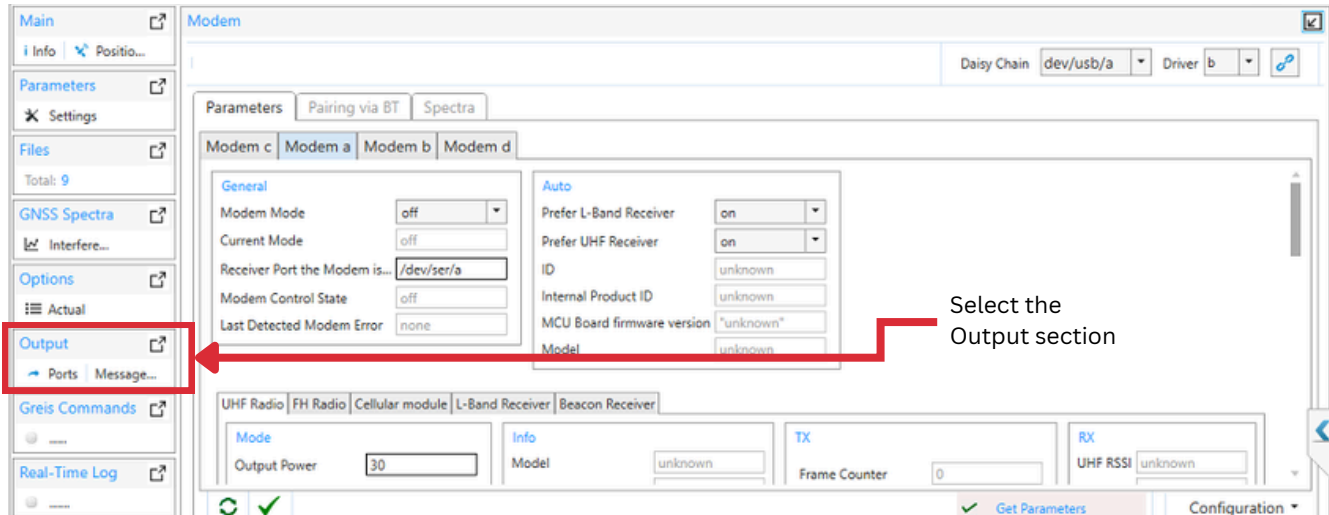
Select the Options section

After clicking on “Options”, you can check the licenses of different options.

Option	Current	Purchased	Leased	Date
GPS (_GPS)	1	0	1	30-04-2025
GLONASS (_GLO)	1	0	1	30-04-2025
L1 (_L1_)	1	0	1	30-04-2025
L2 (_L2_)	1	0	1	30-04-2025
Position update rate(Hz) (_L1)	1	0	1	30-04-2025
Raw data update rate(Hz) (_L1)	1	0	1	30-04-2025
Memory (Mb) (_MEM)	1024	0	1024	30-04-2025
Common Tracking (COOP)	-1	0	0	---
1-PPS Timing Signal (_PPS)	0	0	0	---
Event Markers (EVNT)	0	0	0	---
In-Band Int. Rejection (_AJI)	-1	0	0	---
Multipath Reduction (_MPF)	0	0	0	---
Frequency Input (_FRI)	-1	0	0	---
Freq. Lock and Output (_FR)	-1	0	0	---
Serial Port A (Kbps) (RS_A)	460	0	460	30-04-2025
Serial Port B (Kbps) (RS_B)	460	0	460	30-04-2025
Serial Port C (Kbps) (RS_C)	0	0	0	---
Serial Port D (Kbps) (RS_D)	0	0	0	---
Infrared Port (INFR)	-1	0	0	---
Parallel Port (_PAR)	-1	0	0	---
GSM (_GSM)	2	0	2	30-04-2025
UHF (_UHF)	3	0	3	30-04-2025
RAIM (RAIM)	1	0	1	30-04-2025
Datums support (_DTM)	1	0	1	30-04-2025
Magnetic azimuth (MAGN)	1	0	1	30-04-2025

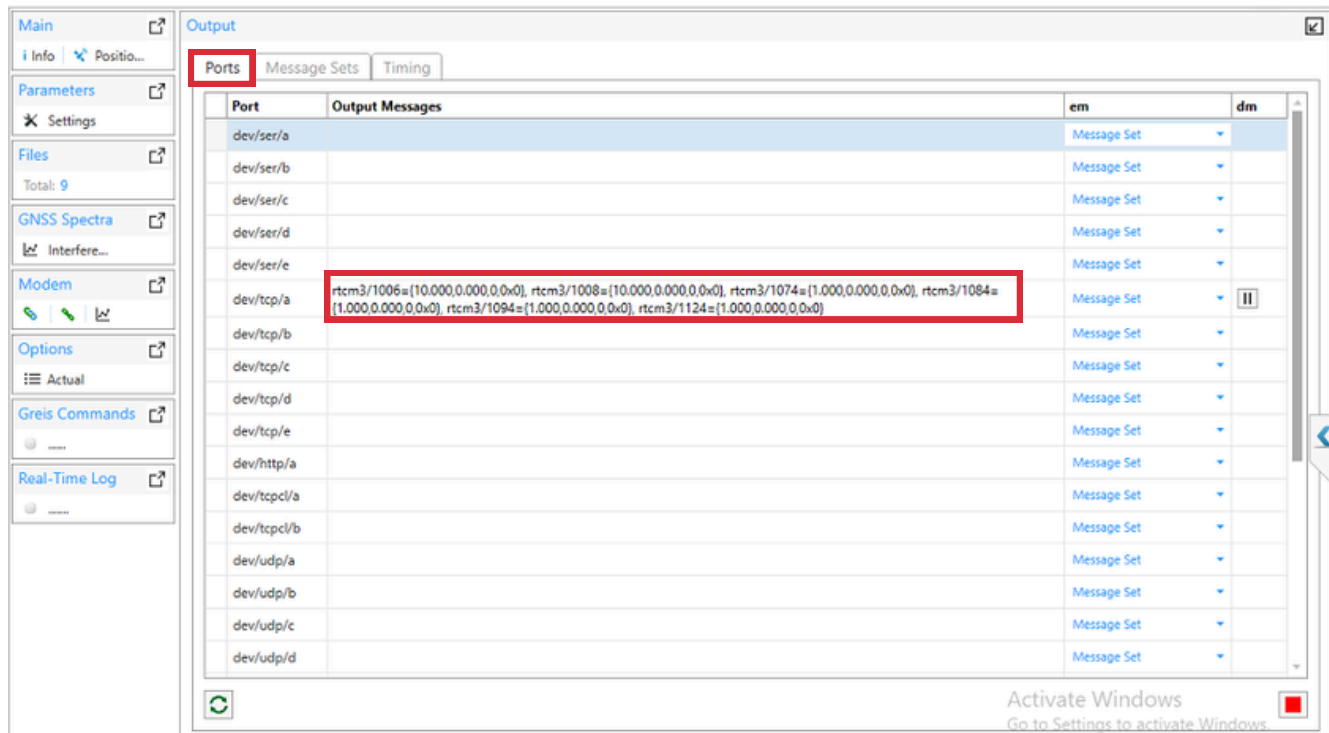
12. GNSS Output Parameters

In this section, we can see the parameters of the outputs of the receiver.



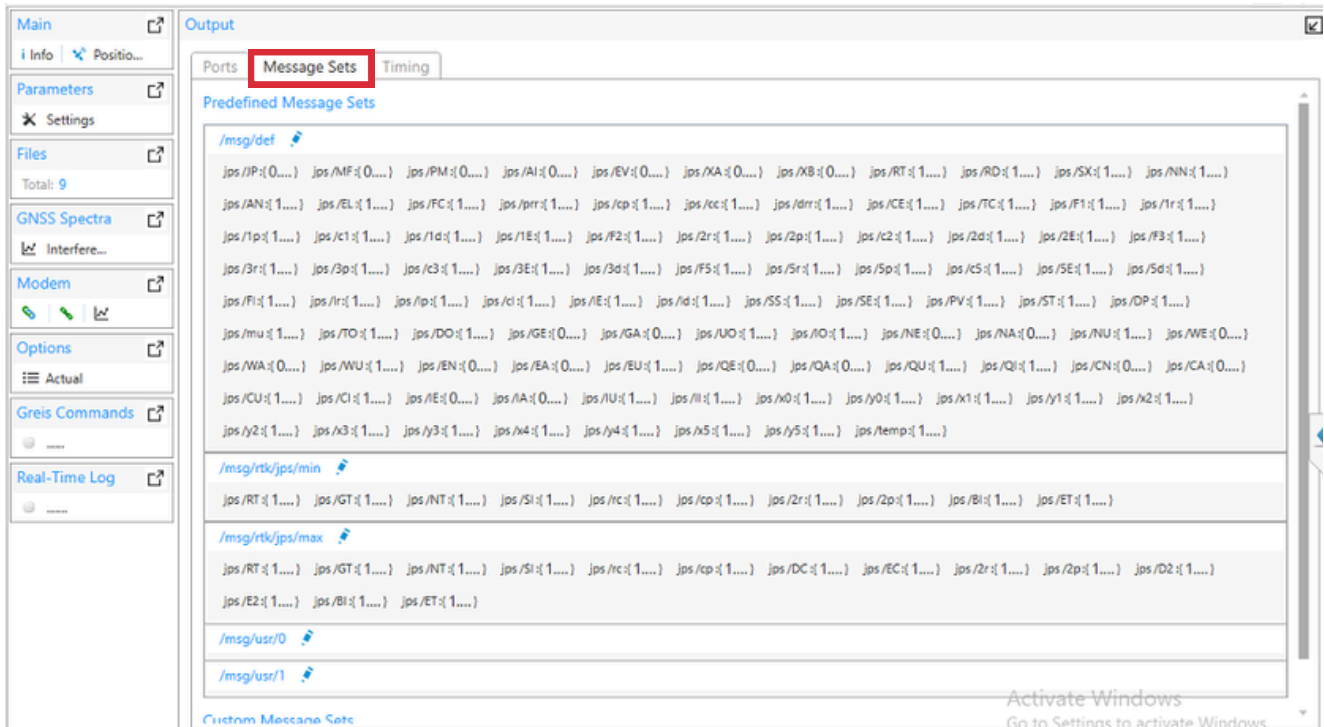
12.1 Ports Section

In this section, you can check the enabled messages at different terminal and also can enable.



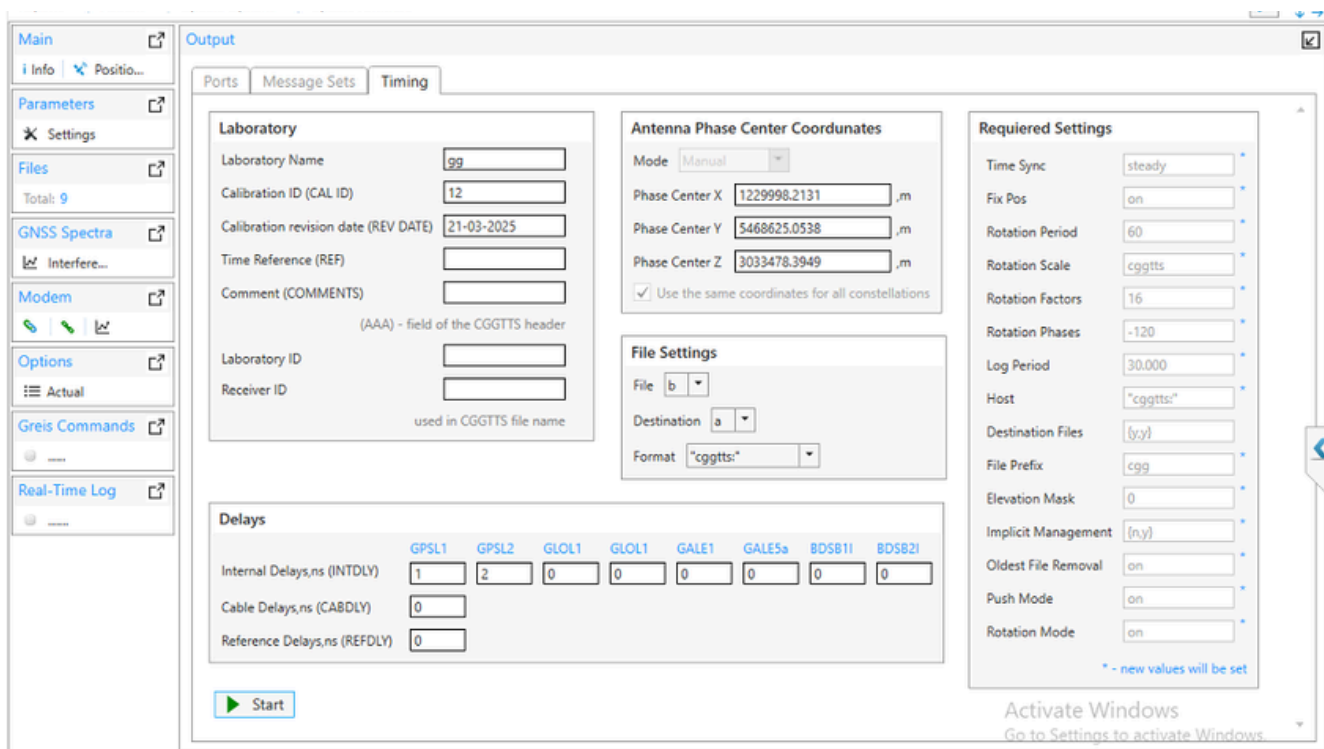
12.2 Messages Sets Section

In this section, you can check the enabled default and custom messages at different terminal.



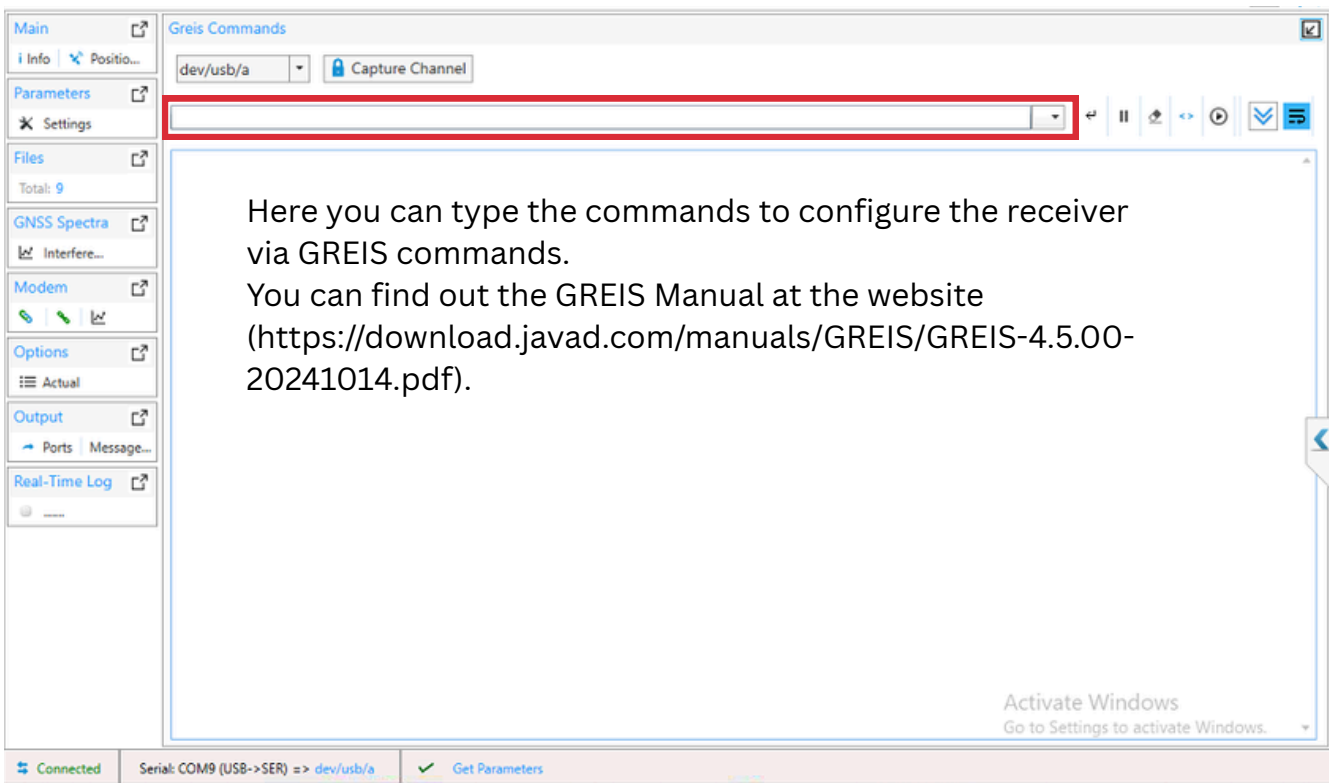
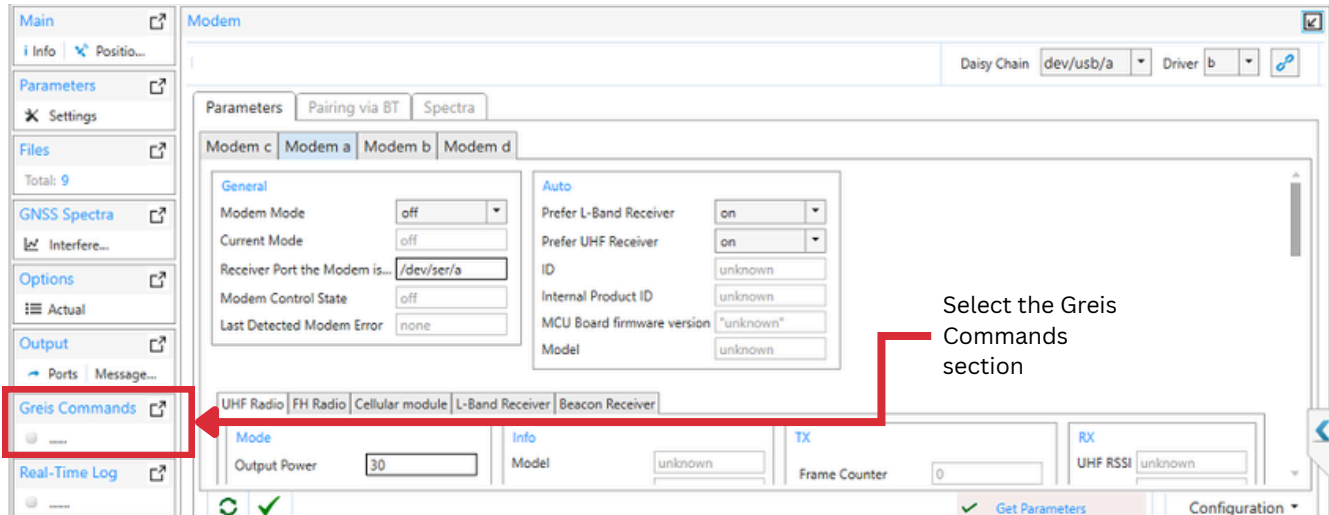
12.3 Timing Section

In this section, you can enabled the timing offsets, if you want to use the receiver for timing offsets calculations.



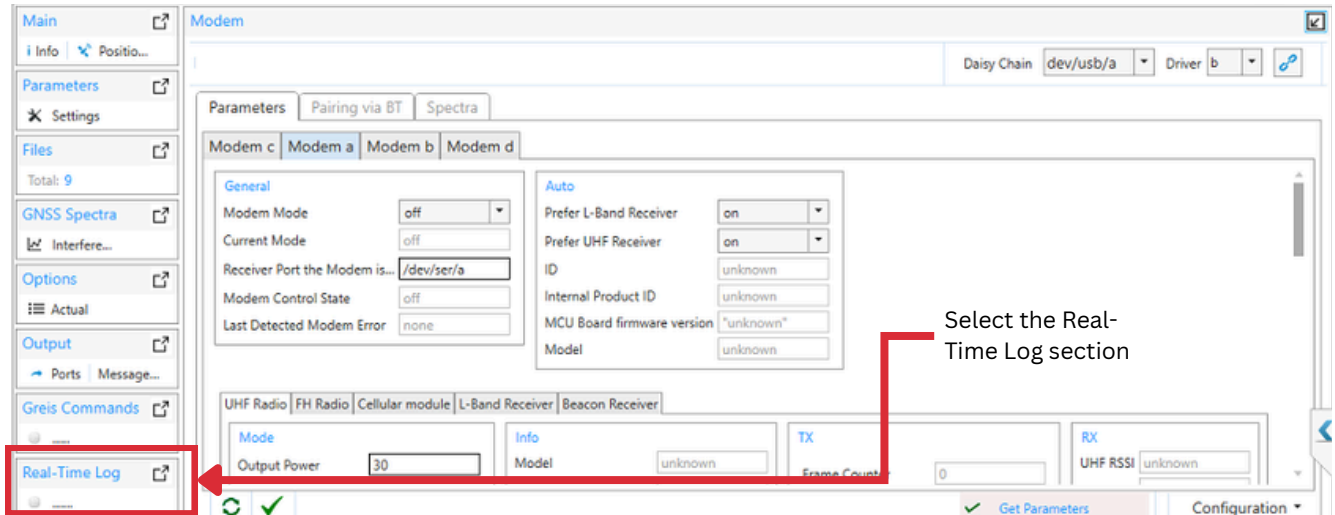
13. GNSS GREIS Commands Parameters

In this section, we can send the GREIS commands to the receiver through terminal.



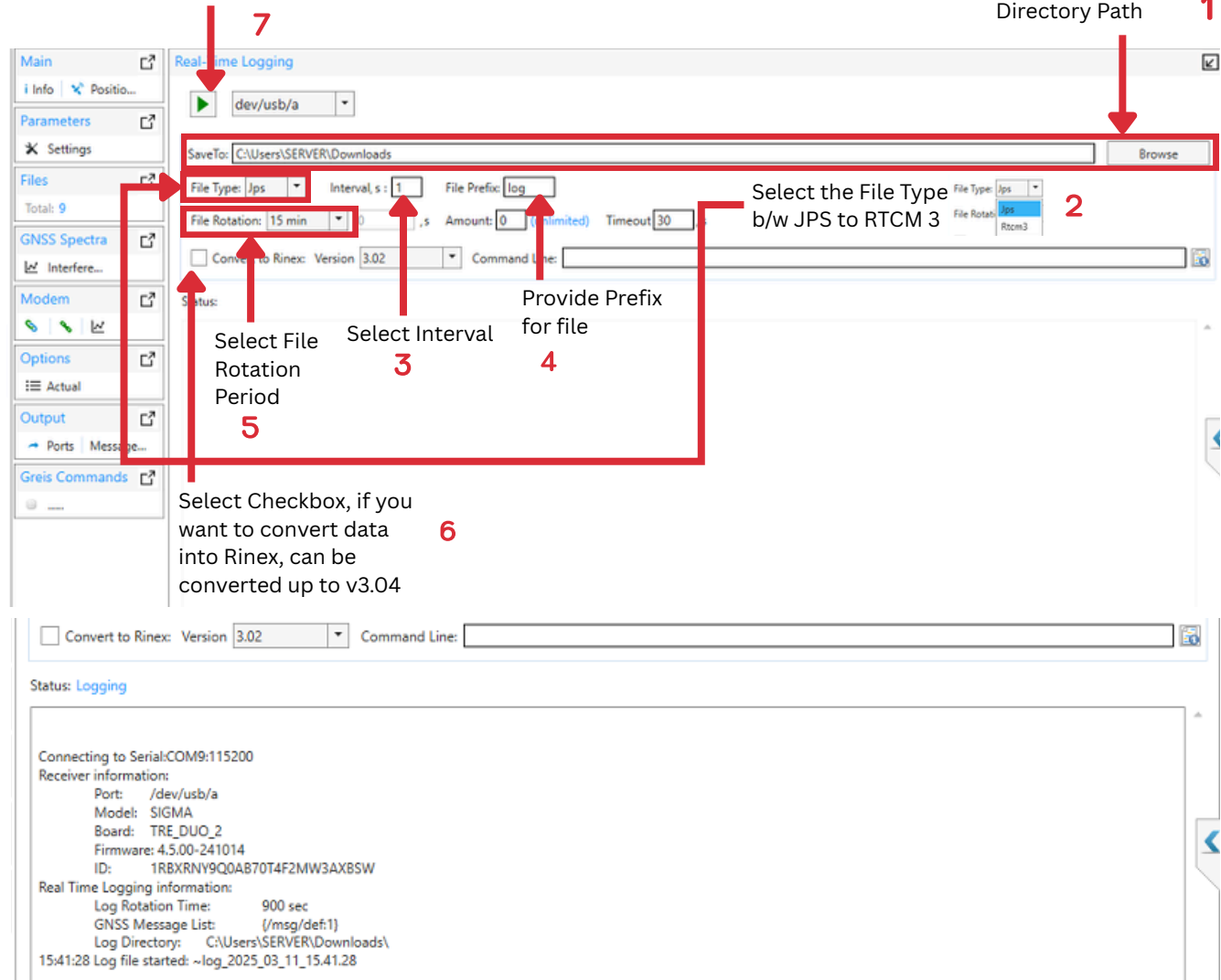
14. GNSS Real Time Log Parameters

In this section, we can log the data directly to External Storage via connected to PC.



At last click Play Button for enabling recording

Firstly, browse the Directory Path



After enable the log button, the receiver will start the log and send the above messages to the terminal.