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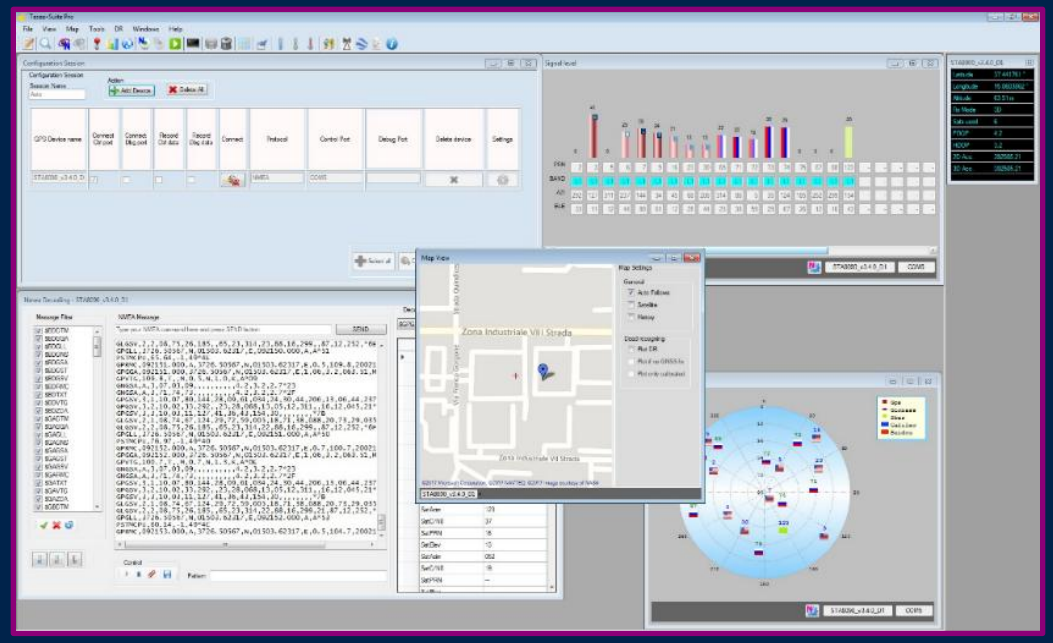
Teseo-Suite

PC tool to manage, configure and evaluate the Teseo GNSS family

Quick Training Guide

v. 3.0



Quick start guide - Contents

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Quick start guide - Contents

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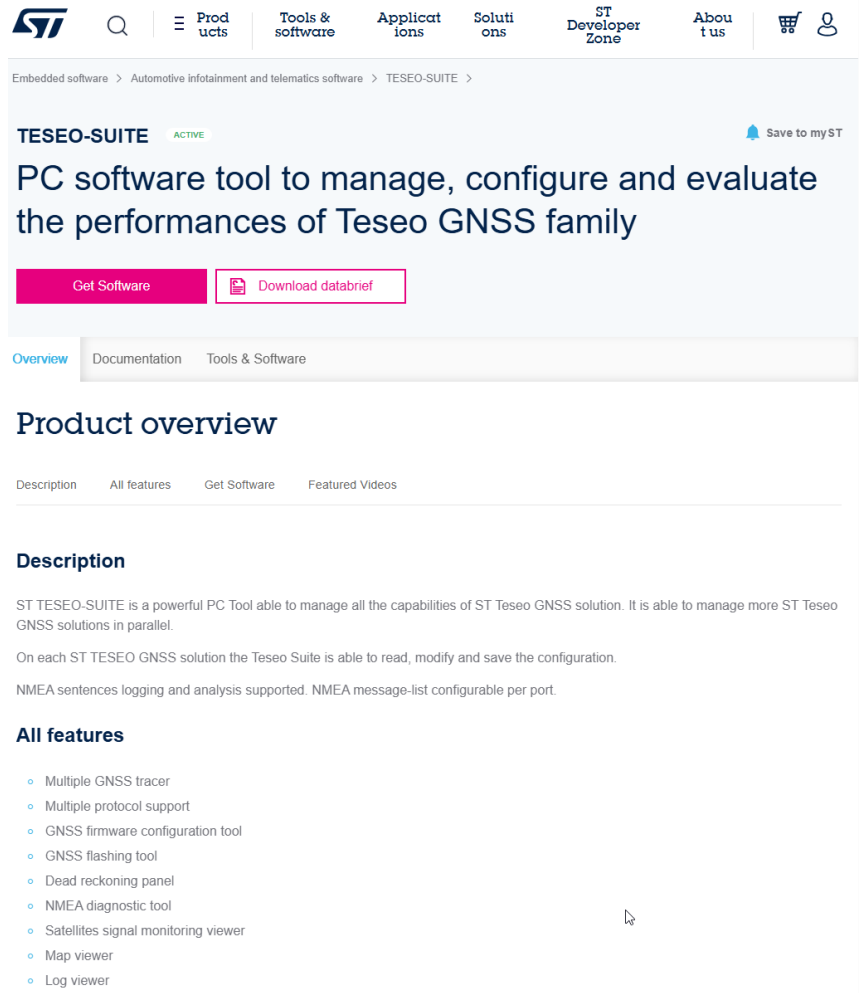
Install Teseo-Suite

Teseo-Suite is a powerful PC Tool able to manage the ST Teseo III, V and VI GNSS solutions and modules.

Download and install the Teseo Suite

Teseo-Suite is provided on www.st.com with locked-features.

Unlock-key can be requested to st-teseo-suite-support@st.com



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Install VCP driver

ST's Teseo III, Teseo V, Teseo VI and Teseo Modules GNSS solutions can be connected to a PC using the USB port through the USB-To-UART bridge

You need to install the VCP Driver. It can be downloaded here:

- SiliconLabs: https://www.silabs.com/software-and-tools/usb-to-uart-bridge-vcp-drivers?tab=downloads
  - TeseoIII EVBs and modules

or

- FTDIChip: https://ftdichip.com/drivers/vcp-drivers/
  - TeseoV EVBs
  - TeseoVI EVBs and modules

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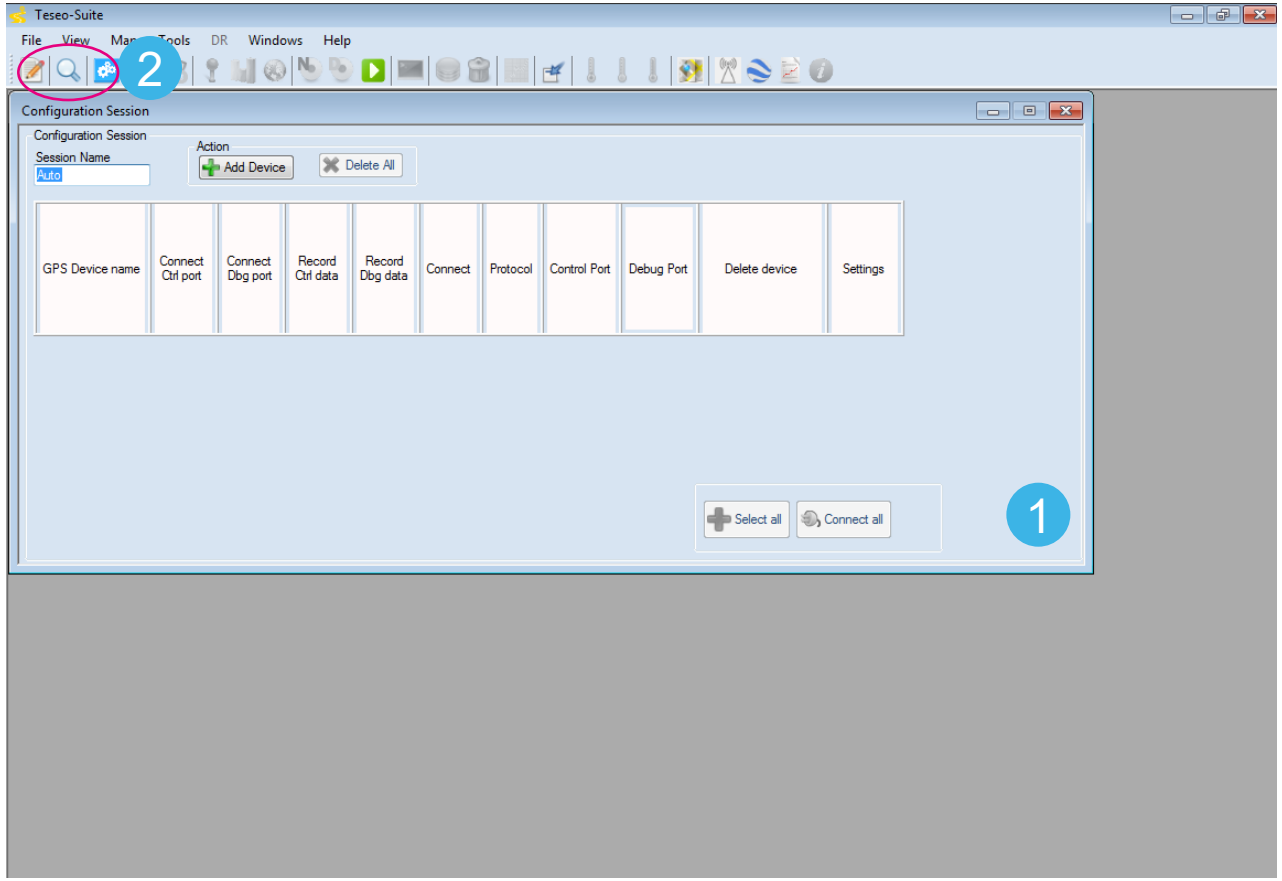
Start application – Device autodetection [1/2]

1. On application start-up the Configuration Session panel is shown

2. Detect automatically the connected Teseo Devices (according to the defined Automatic Port detection option)

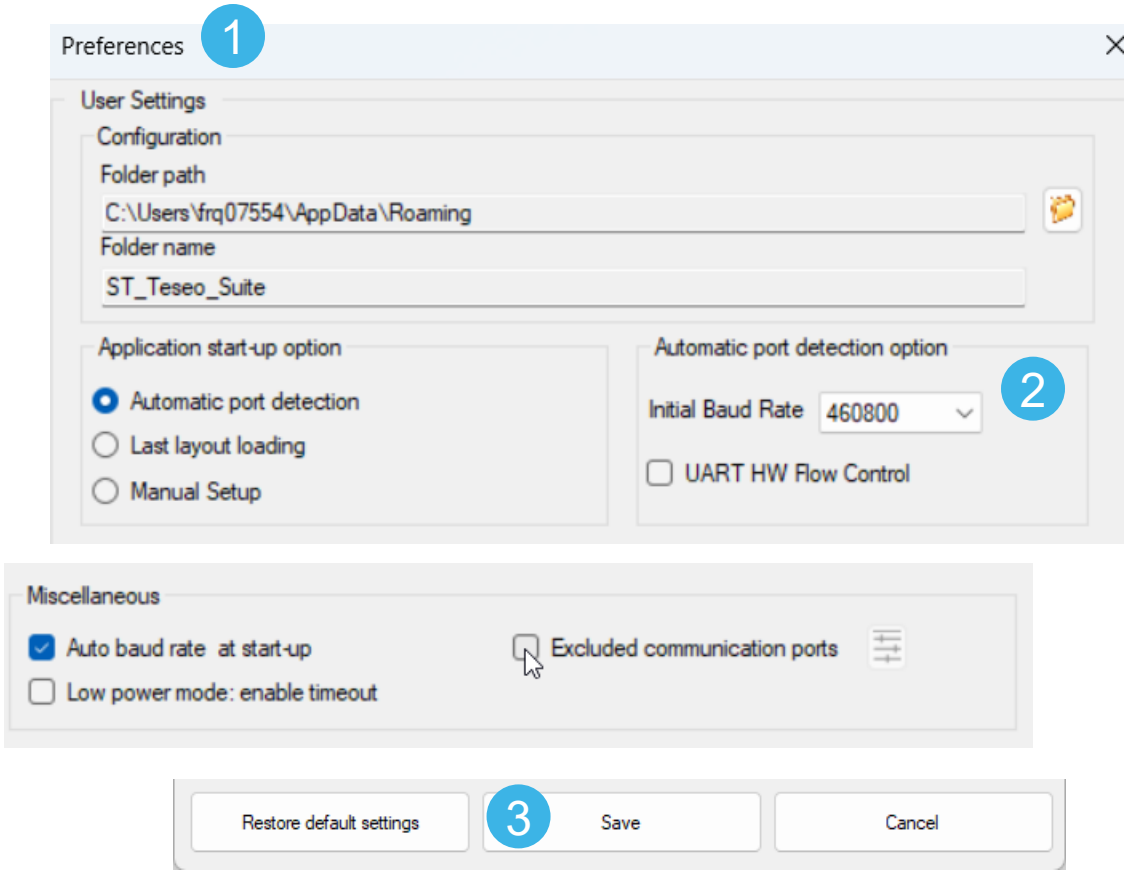


Start application – Device autodetection [2/2]

1. Open Preferences panel from File ➔ Preferences or Ctrl+P
2. Default settings for Teseo V
   - 460800
   - No UART HW Flow Control

   Default settings for Teseo VI
   - 3000000
   - UART HW Flow Control

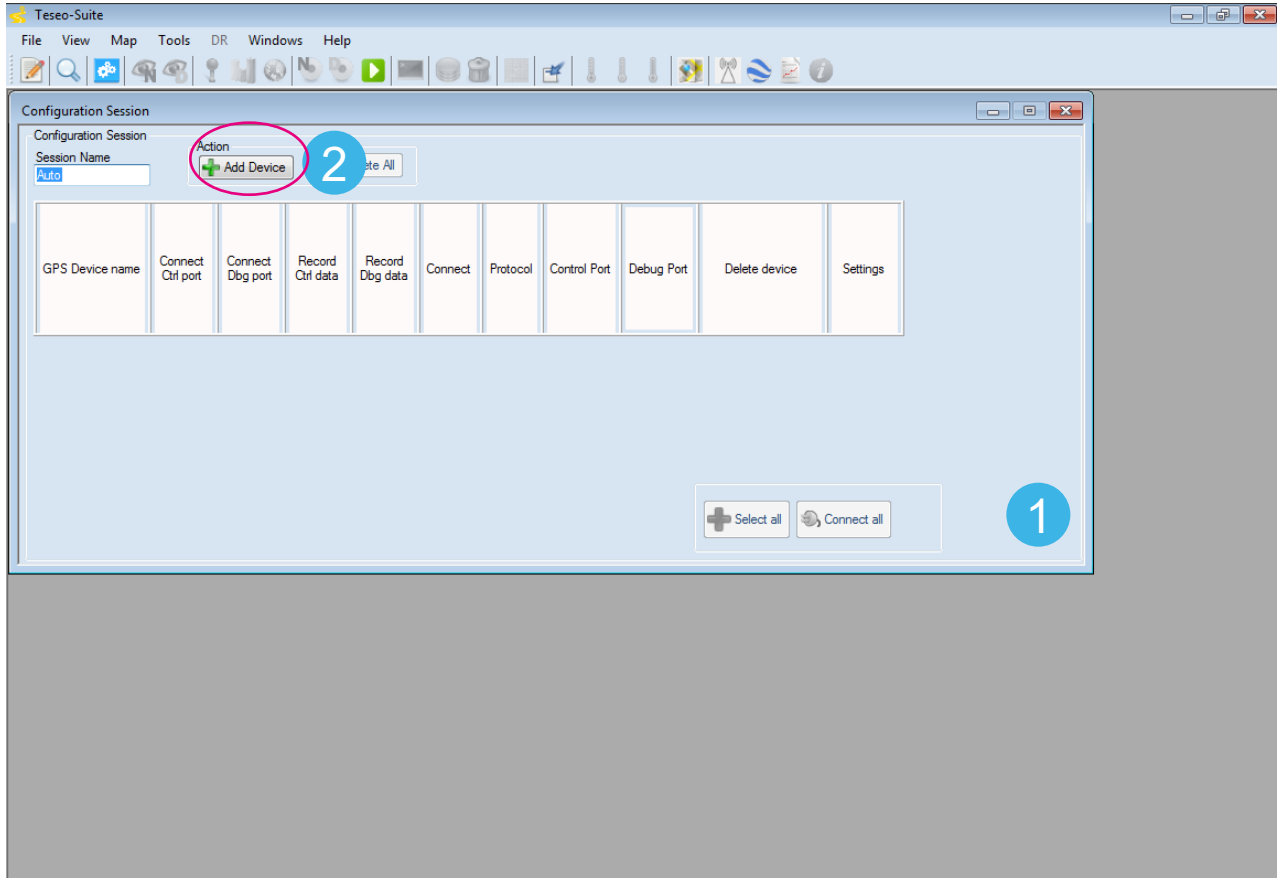
   NOTE: it's possible to exclude COM ports to speed-up autodetection in case many are listed on your PC
3. Save and restart autodetection



Start application – Manual device configuration

1. Configuration Session panel for manual device management

2. Push ‘Add Device’ button to add a new entry

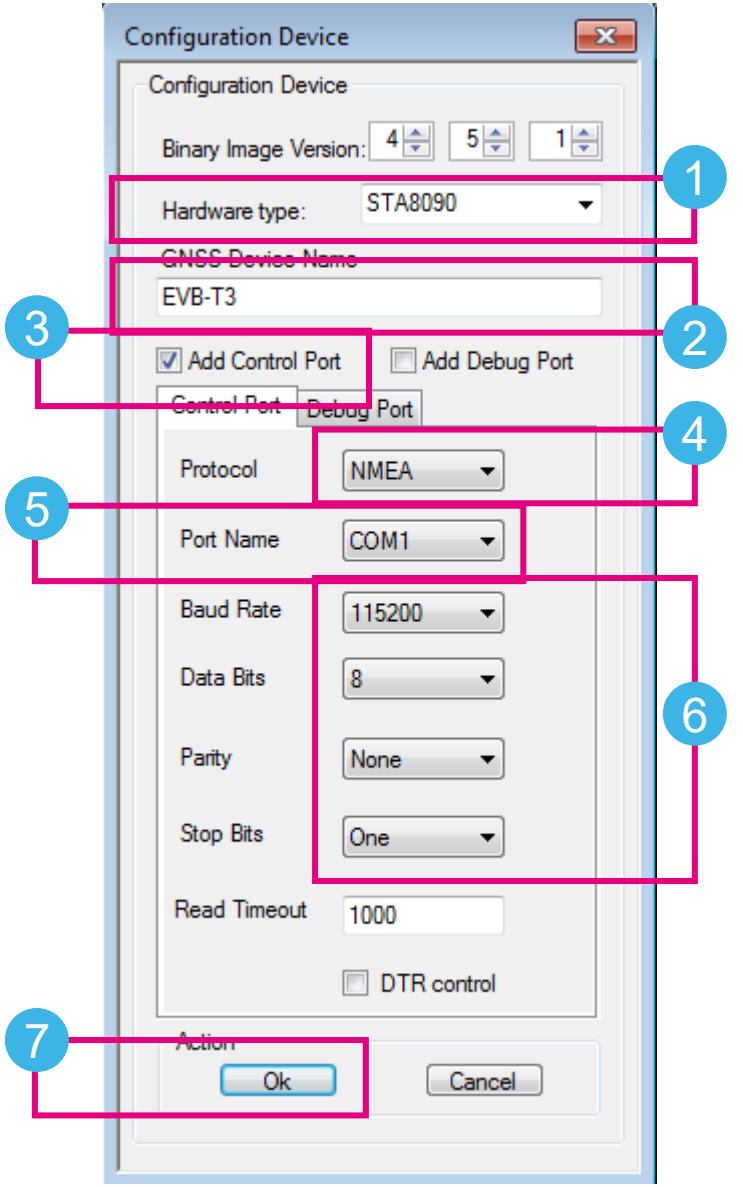


Configuration device – Teseo III example

1. Set the Hardware type: **TESEO3_STA8090**
2. Set the GNSS Device Name: **EVB-T3**
3. Enable Add Control Port
4. Set the Protocol: **NMEA**
5. Set the Port Name: according to the discovered on the PC
6. Configure the port as following table:

Baud rate	Data Bits	Stop Bits	Parity	Options
115200 bps	8 Bits	1 Bit	none	none

7. Click-on the Ok button

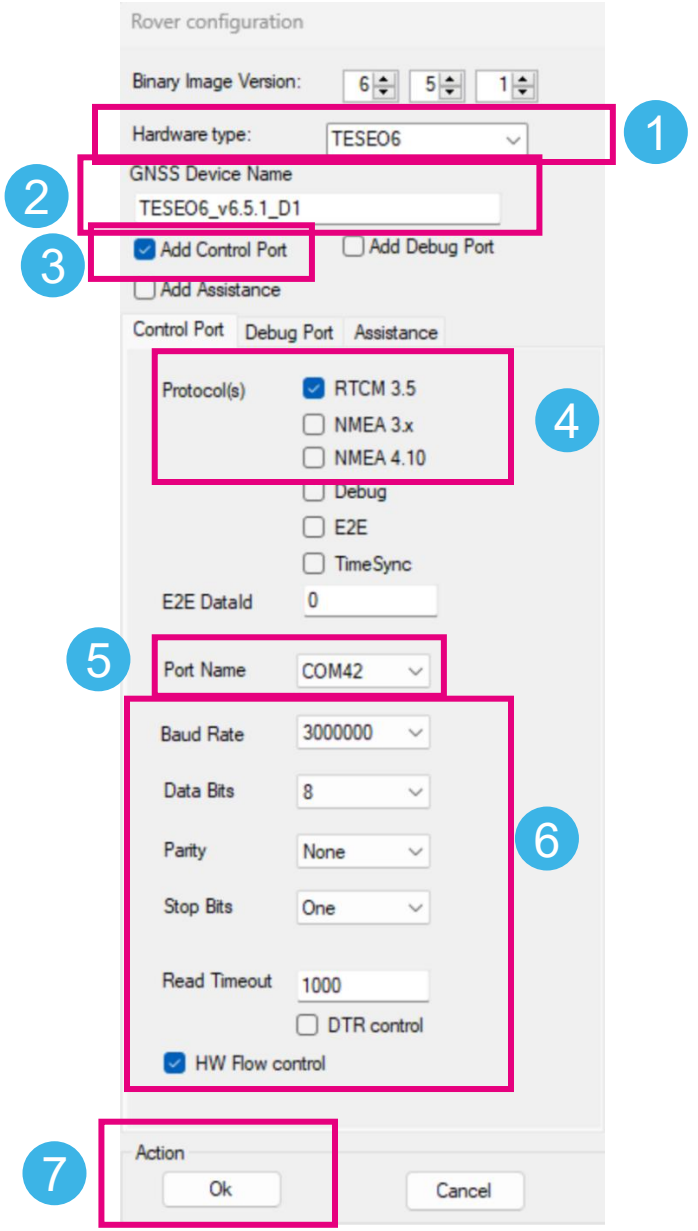


Configuration device – Teseo VI example

1. Set the Hardware type: **TESEO6**
2. Set the GNSS Device Name of your choice
3. Enable Add Control Port
4. Set the Protocol: **RTCM 3.5**
5. Set the Port Name: according to the discovered on the PC
6. Configure the port as following table:

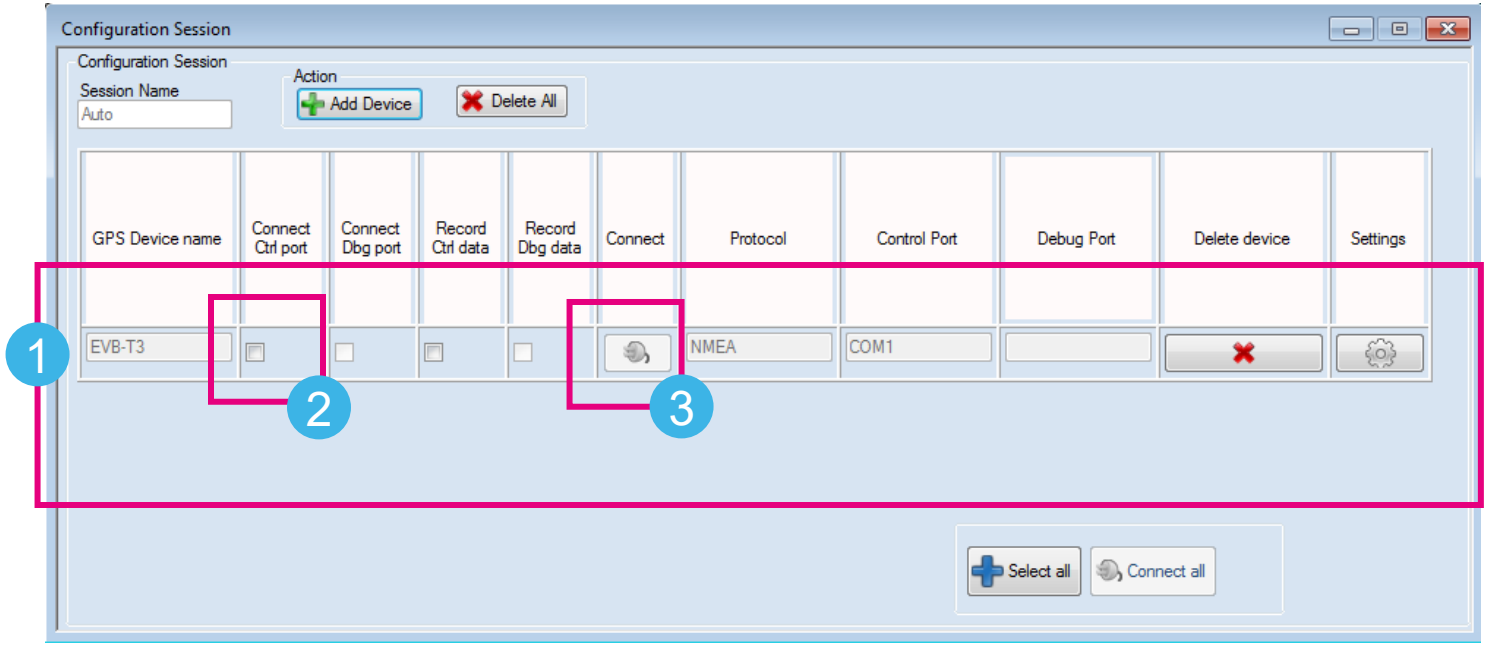
Baud rate	Data Bits	Stop Bits	Parity	Options
3000000 bps	8 Bits	1 Bit	none	HW Flow control

7. Click-on the Ok button



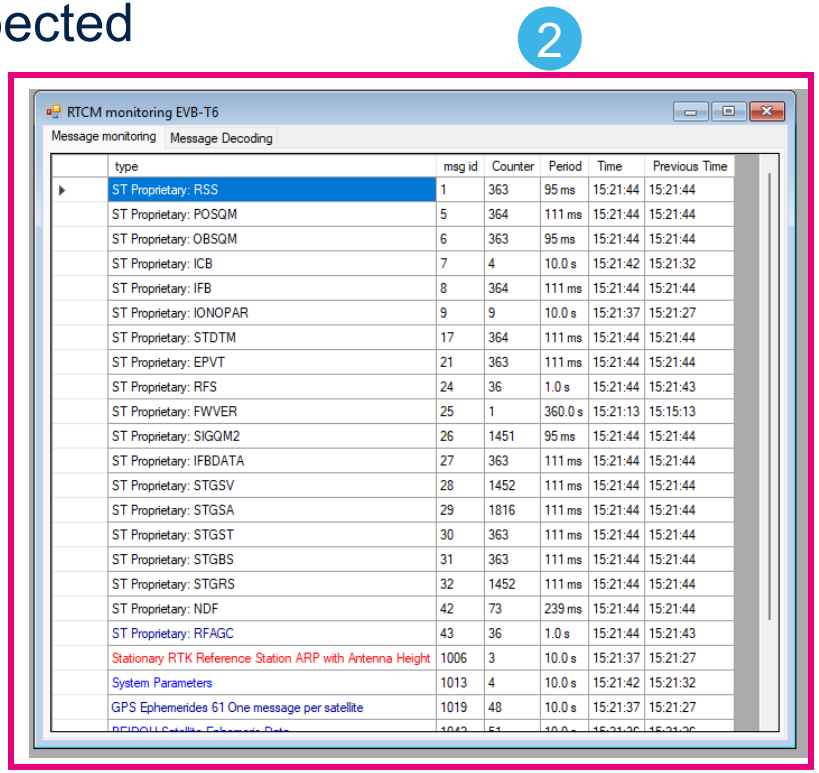
Connect the device

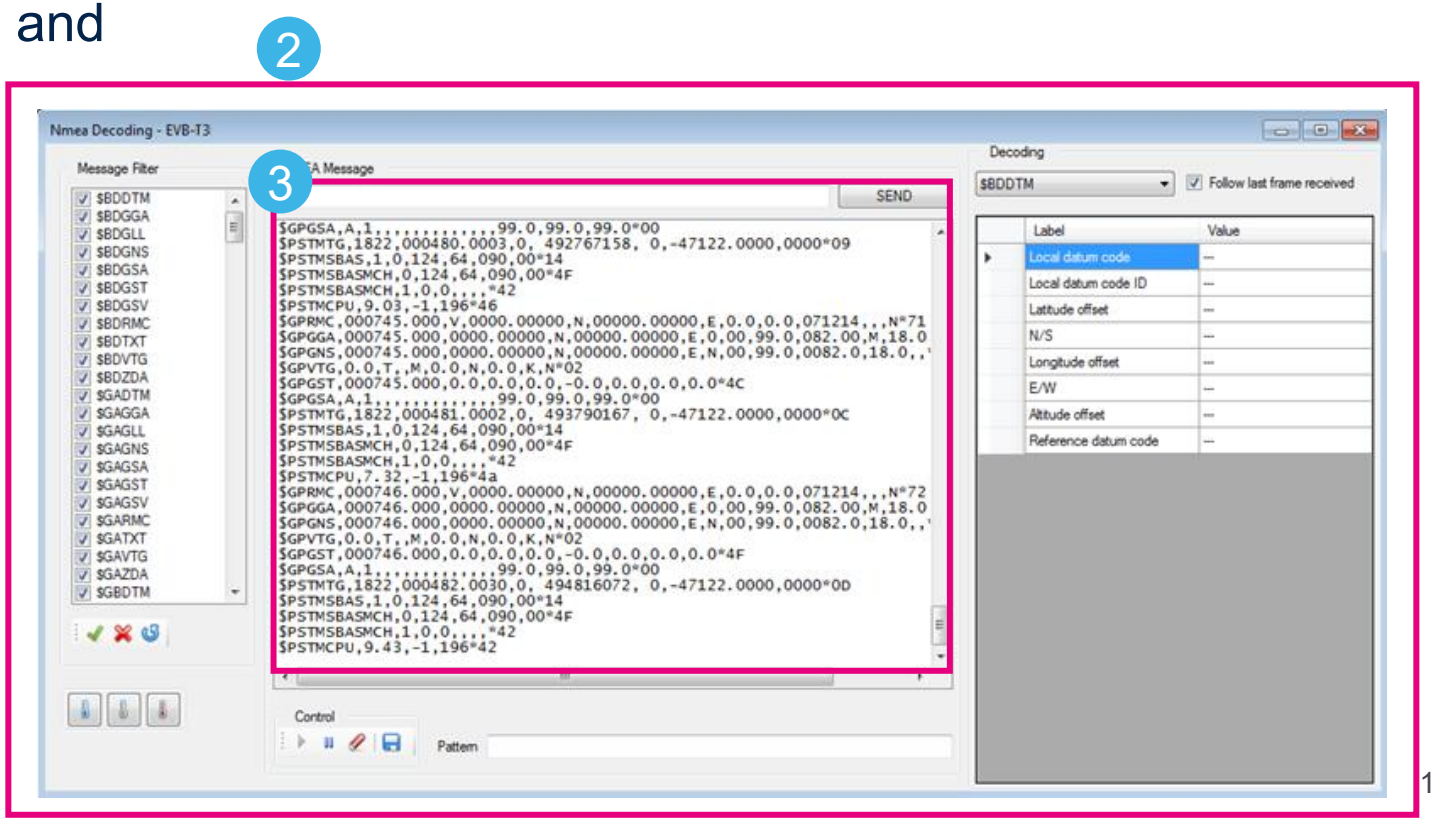
1. In the Configuration Session panel a new entry (row) is shown
2. Enable Connect Ctrl port
3. Click-on the Connect all button



Inspect device

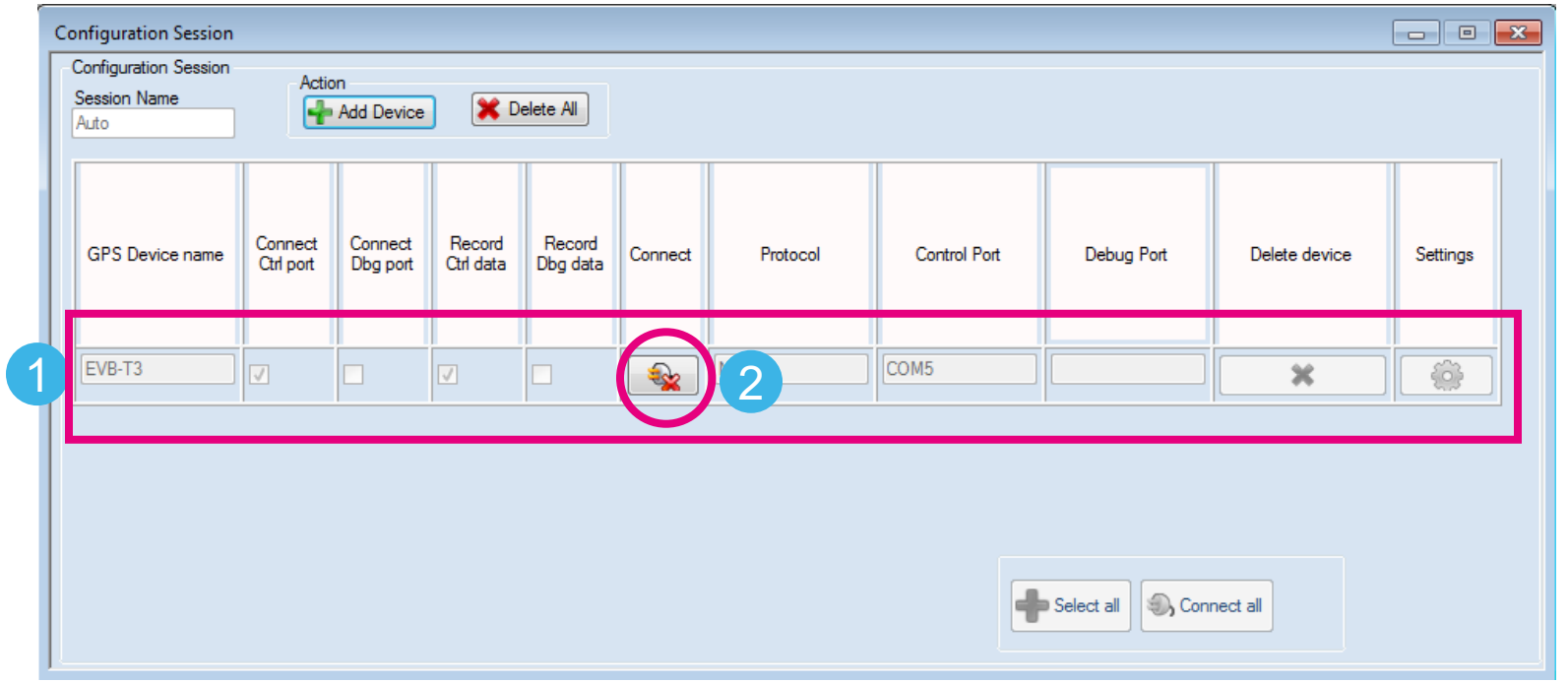
1. Click-on **View Monitor** button in the menu-bar
2. NMEA or RTCM Decoding panel is shown
3. NMEA or RTCM Stream can be viewed and inspected





Disconnect the device

1. In the Configuration Session panel entry (row)
2. Click-on the Disconnect button

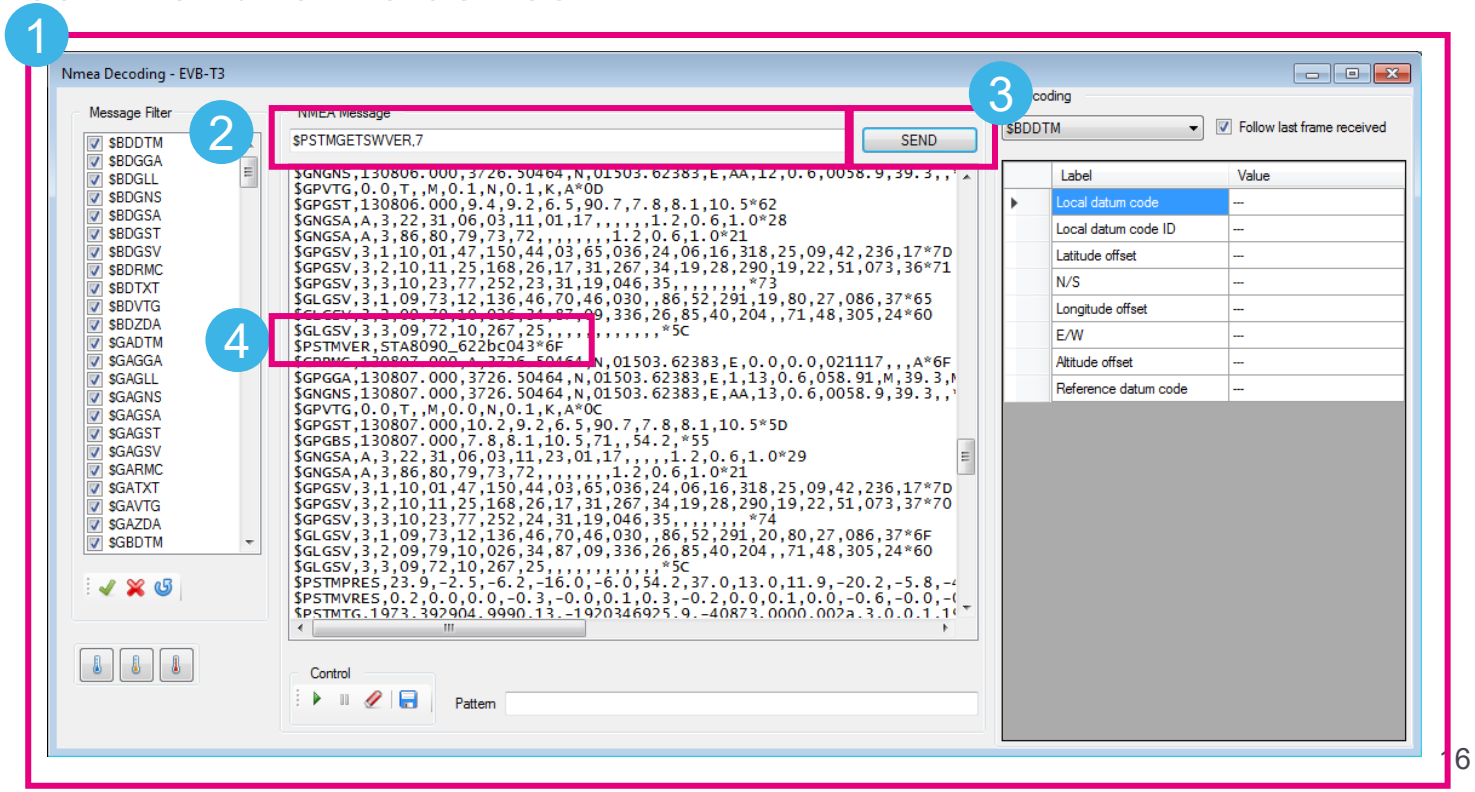


Quick start guide - Contents

Basic commands - Contents

Send commands [1/3]

1. In the ‘Nmea Decoding’ panel
2. Write the ‘**command**’ in the text-edit entry
3. Click-on the ‘**Send**’ button to raise the command to the device
4. Inspect the reply message in the NMEA Stream



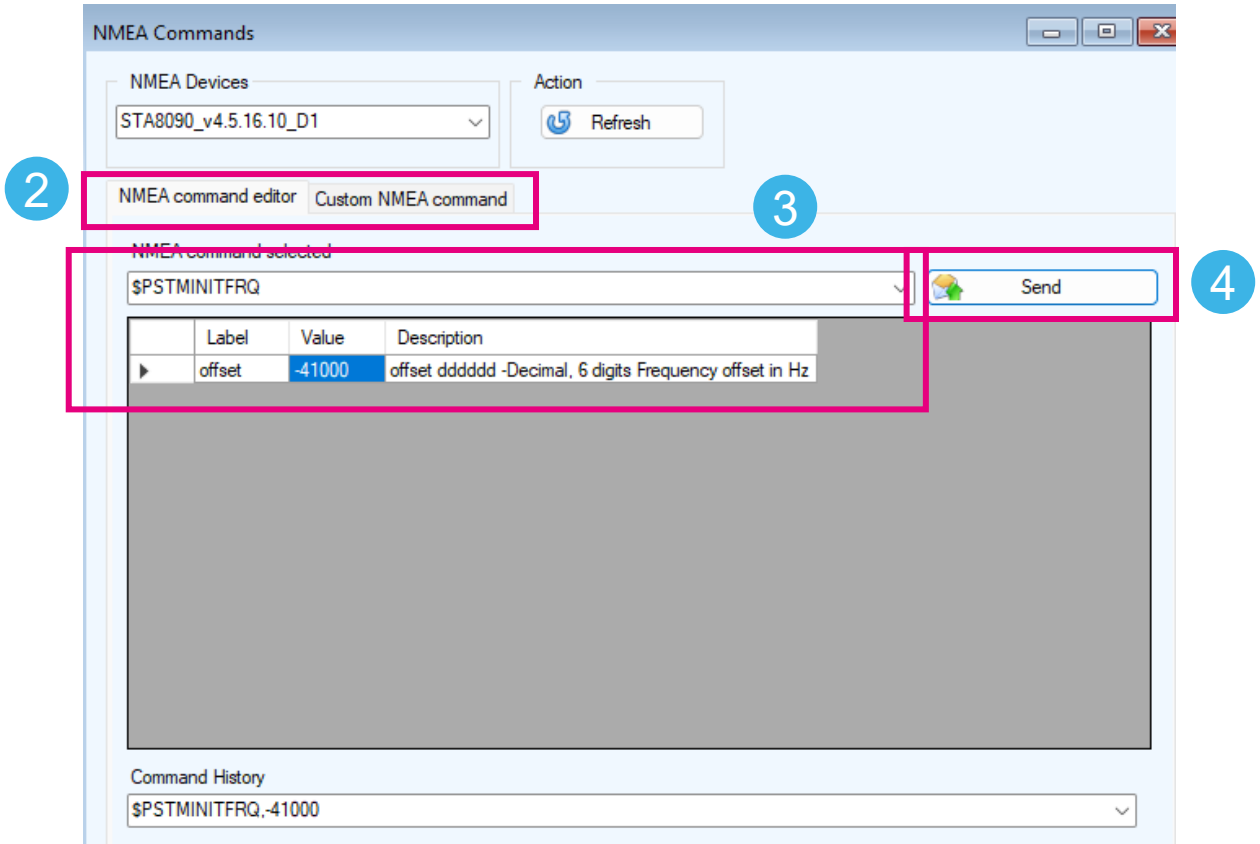
Send commands [2/3]

1. From main menu, click the ‘Send Commands’ icon

2. From ‘NMEA Commands’ panel, it is possible to edit predefined NMEA command or use the Custom NMEA command panel for full manual control

3. Example shown here:
   - Select a predefined command from the list
   - Command fields value are editable

4. Use the ‘**Send**’ button to raise the command to the device



NOTE: in the custom command editor, it is possible to save commands for latter instances

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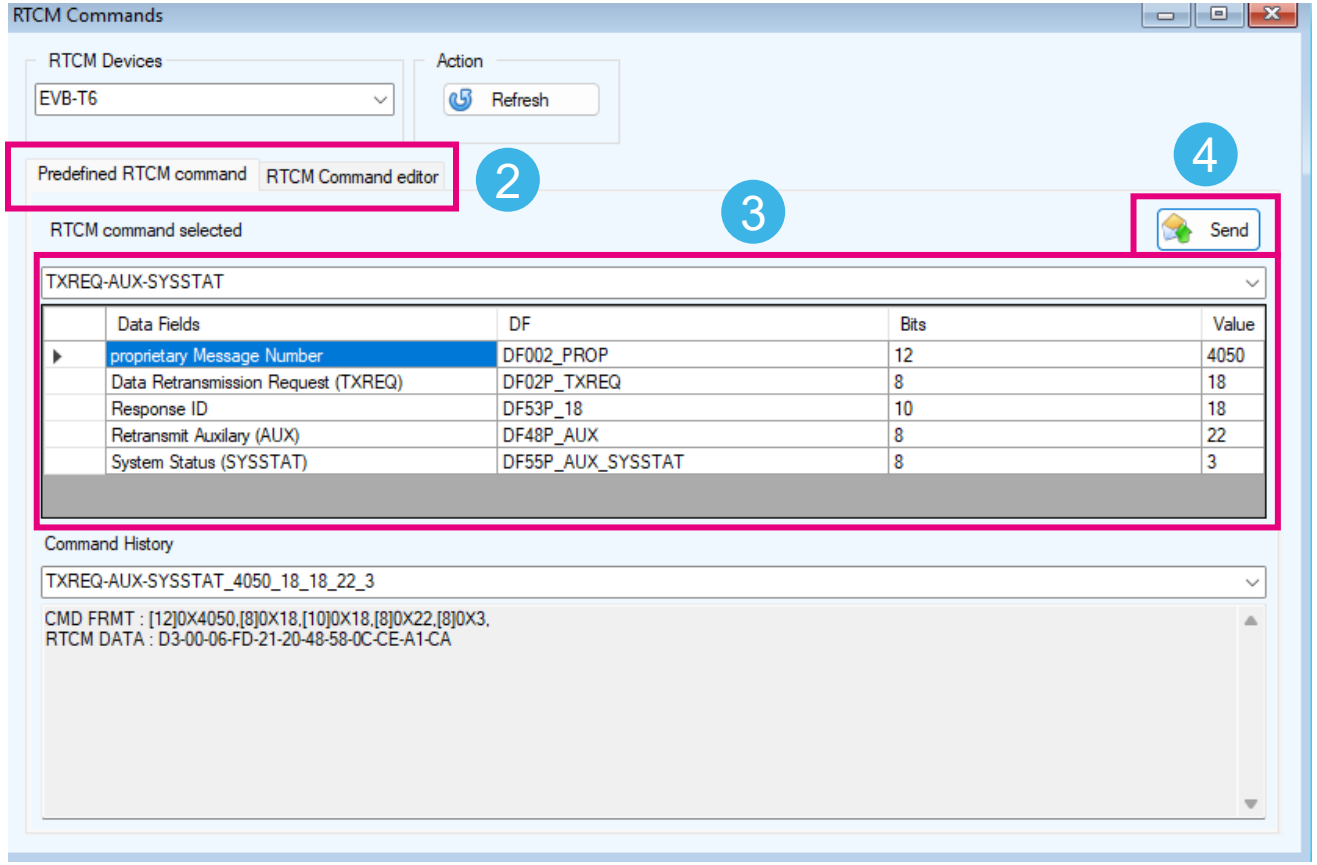
Send commands [3/3]

1. From main menu, click the ‘Send Commands’ icon

2. From ‘RTCM Commands’ panel, it is possible to send Predefined RTCM command or use the RTCM Command editor for full manual control

3. Example shown here:
   - Select a predefined command from the list
   - Command fields value are editable

4. Use the ‘**Send**’ button to raise the command to the device

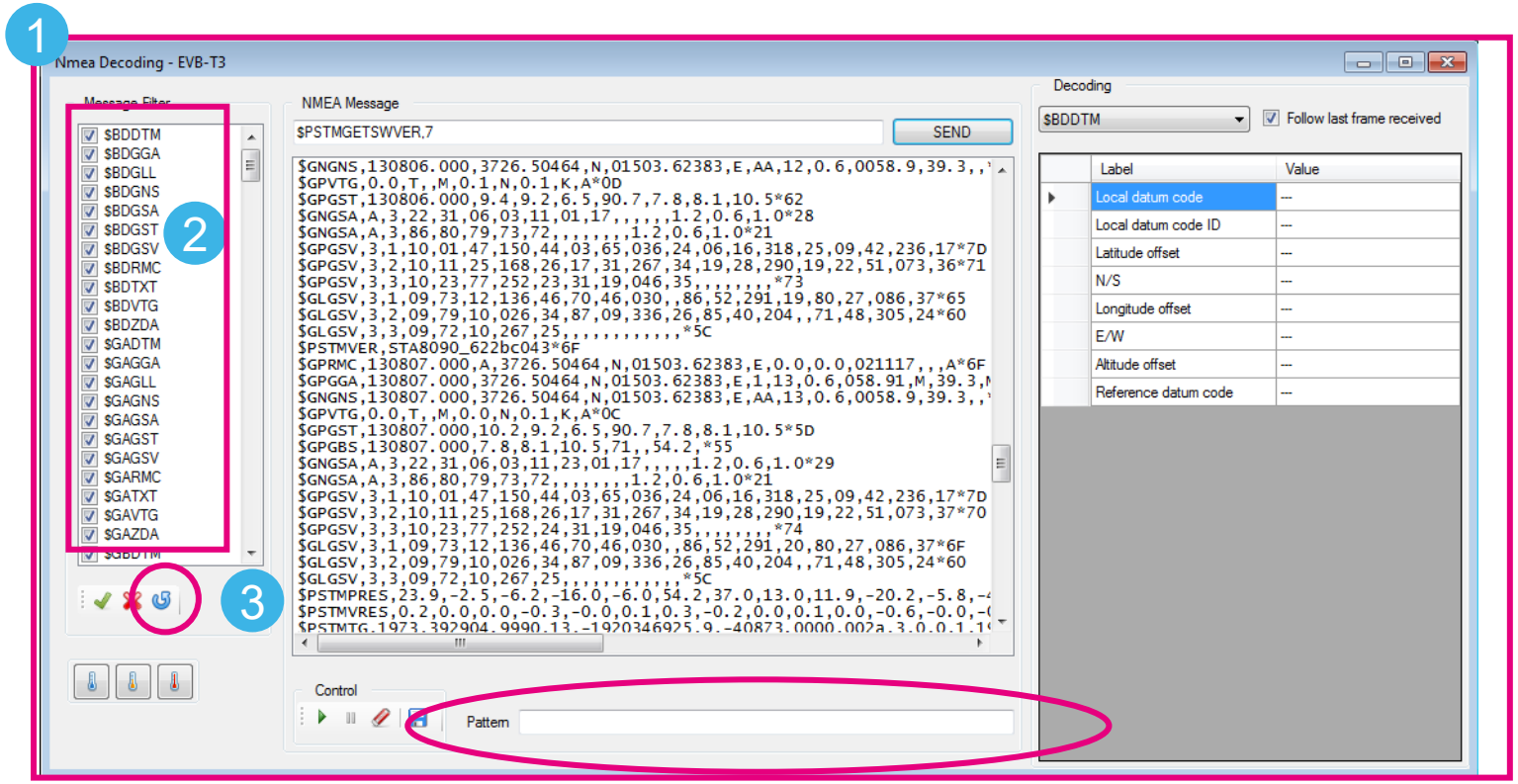


NOTE: in the custom command editor, it is possible to save commands for latter instances

Filter NMEA messages

1. In the ‘Nmea Decoding’ panel
2. Select the messages you want
3. Refresh the new message list into the device

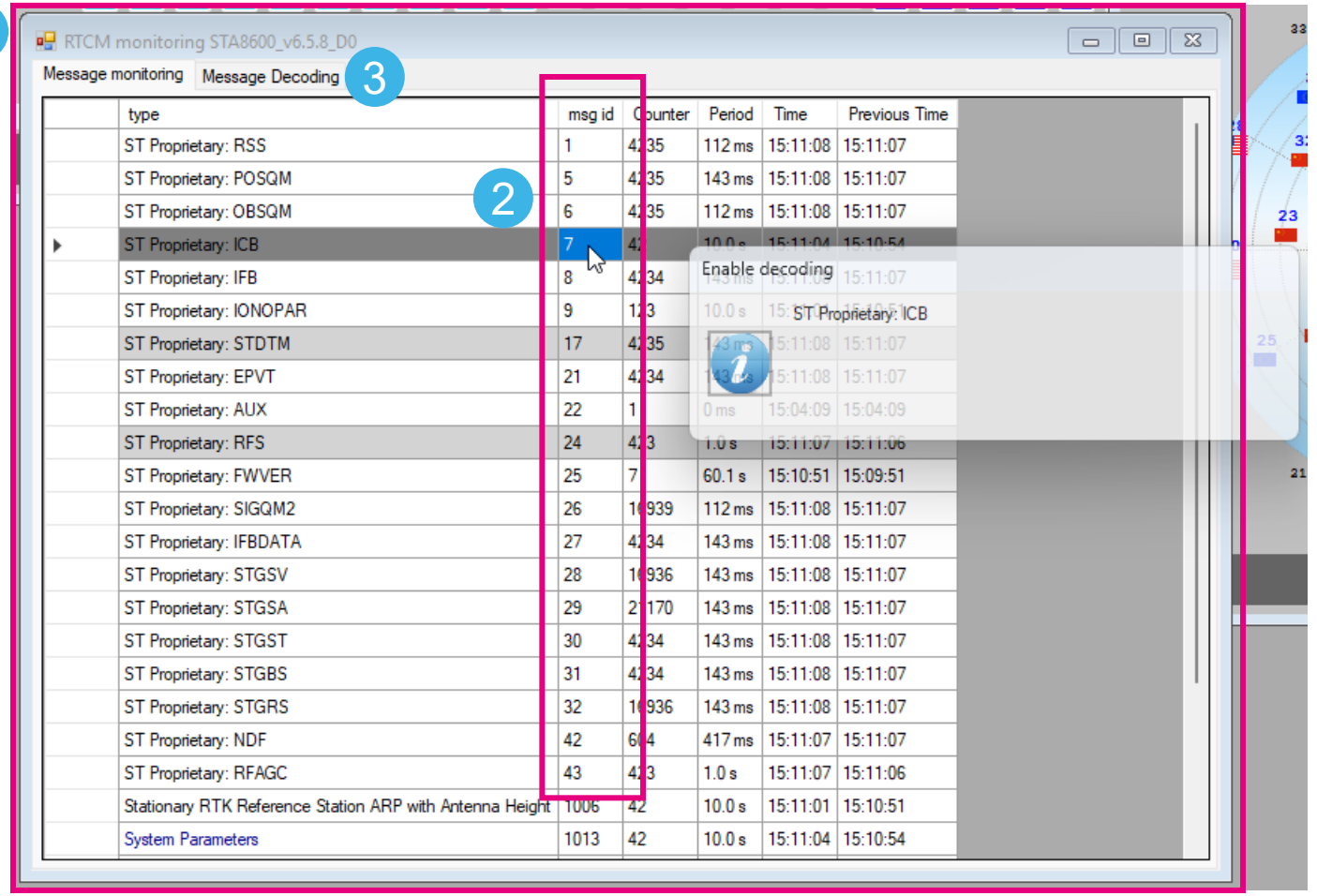
NOTE: you can use Pattern field for advanced filtering with regular expressions. For instance, REGEXP=^/$..GGA,…..[0|5] will only show GGA sentences every 5 seconds (ending by 0 or 5)



RTCM Messages decoding [1/2]

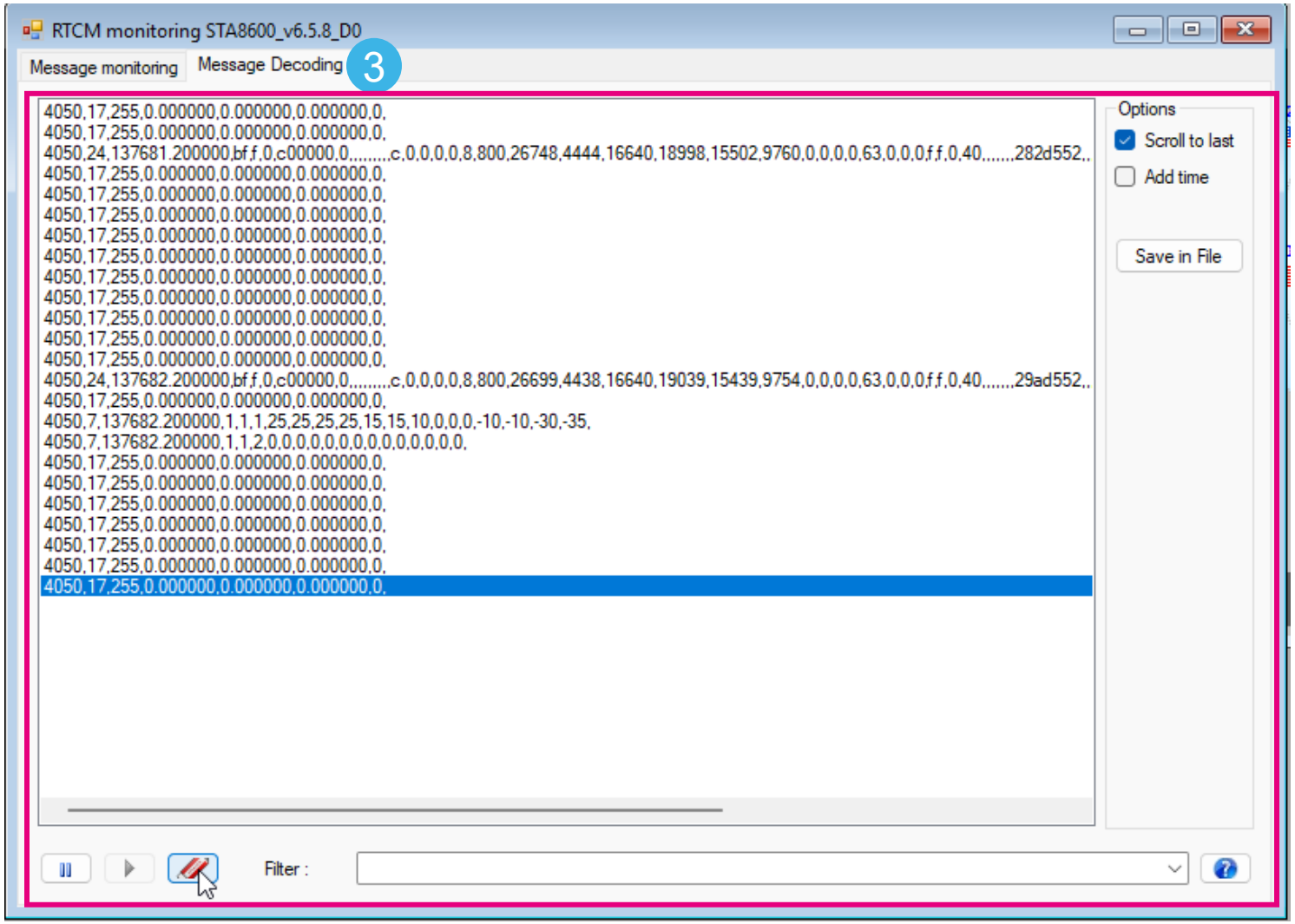
1. In the ‘RTCM monitoring’ panel

2. Select which ST Proprietary messages to decode by clicking on their ‘msg id’



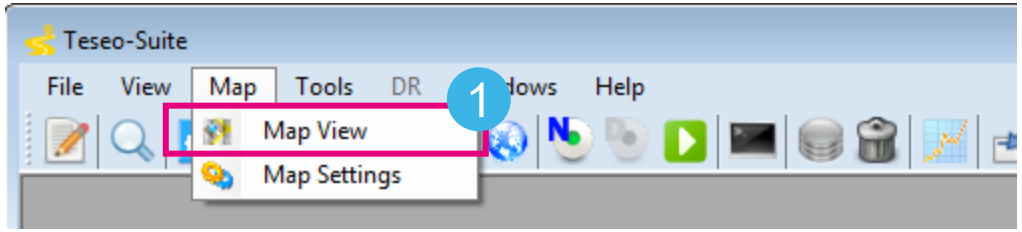
RTCM Messages decoding [2/2]

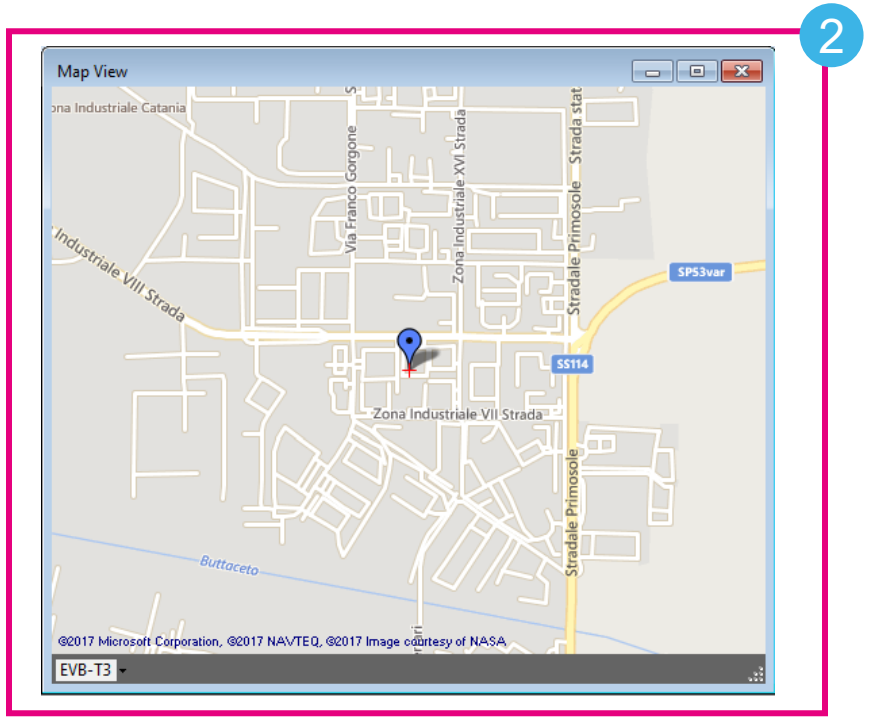
3 Decoded messages are displayed in the ‘Message Decoding’ tab

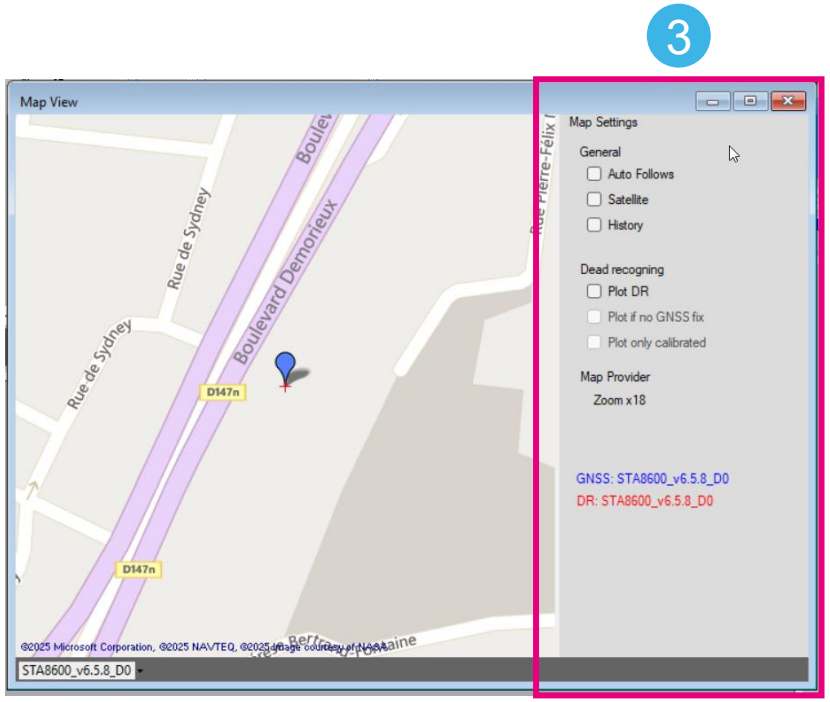


Map view

1. Click-on '**Map View**' button in the menu
2. Inspect the position in the '**Map View**' panel
3. Settings panel is available by right-clicking on the map

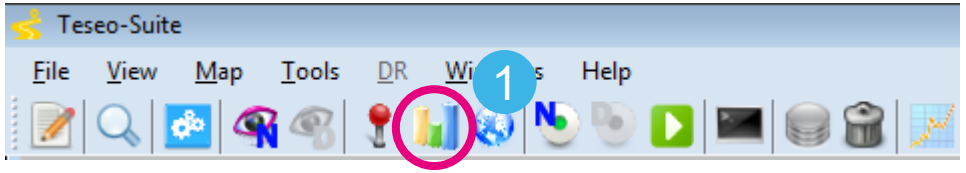


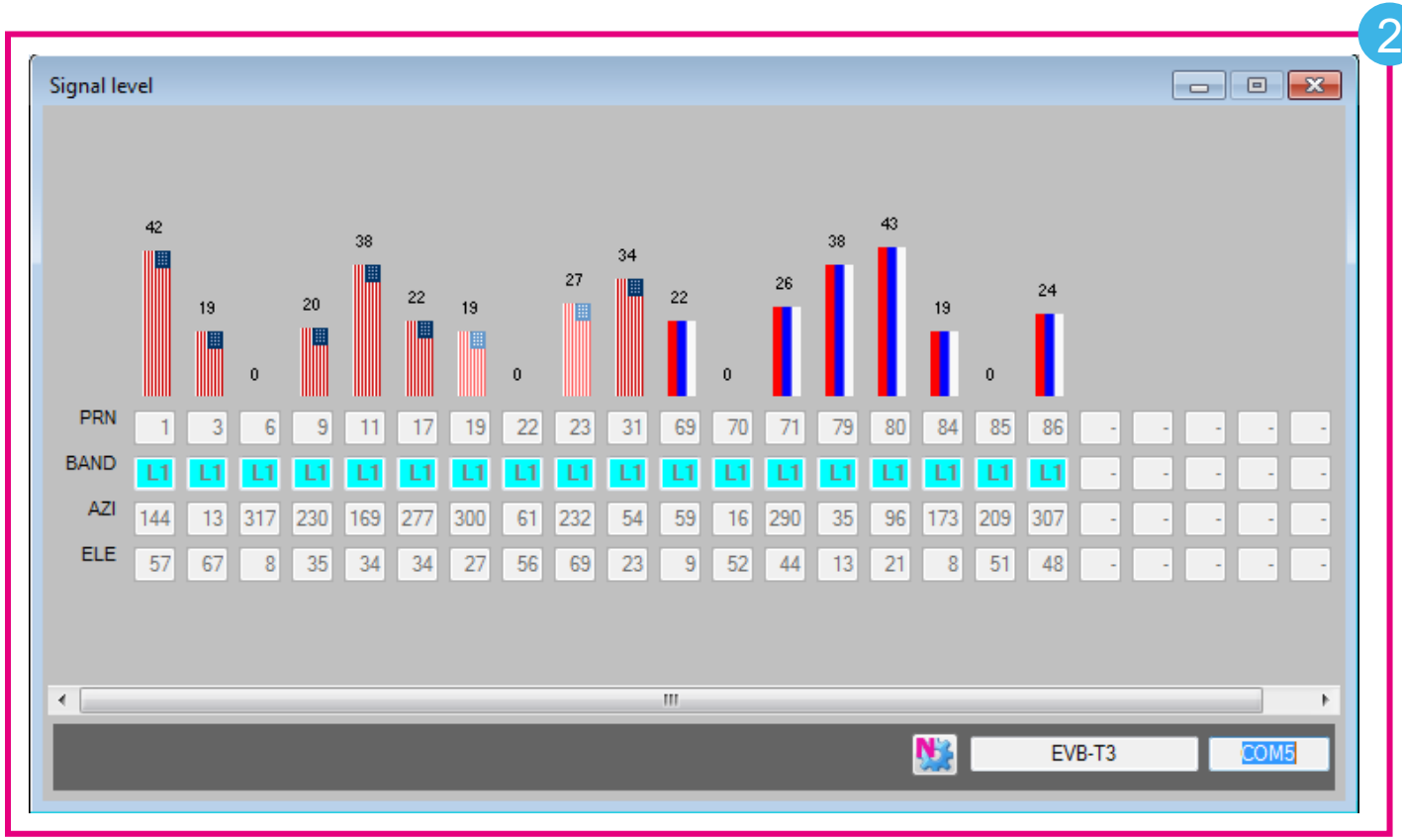




Signal levels

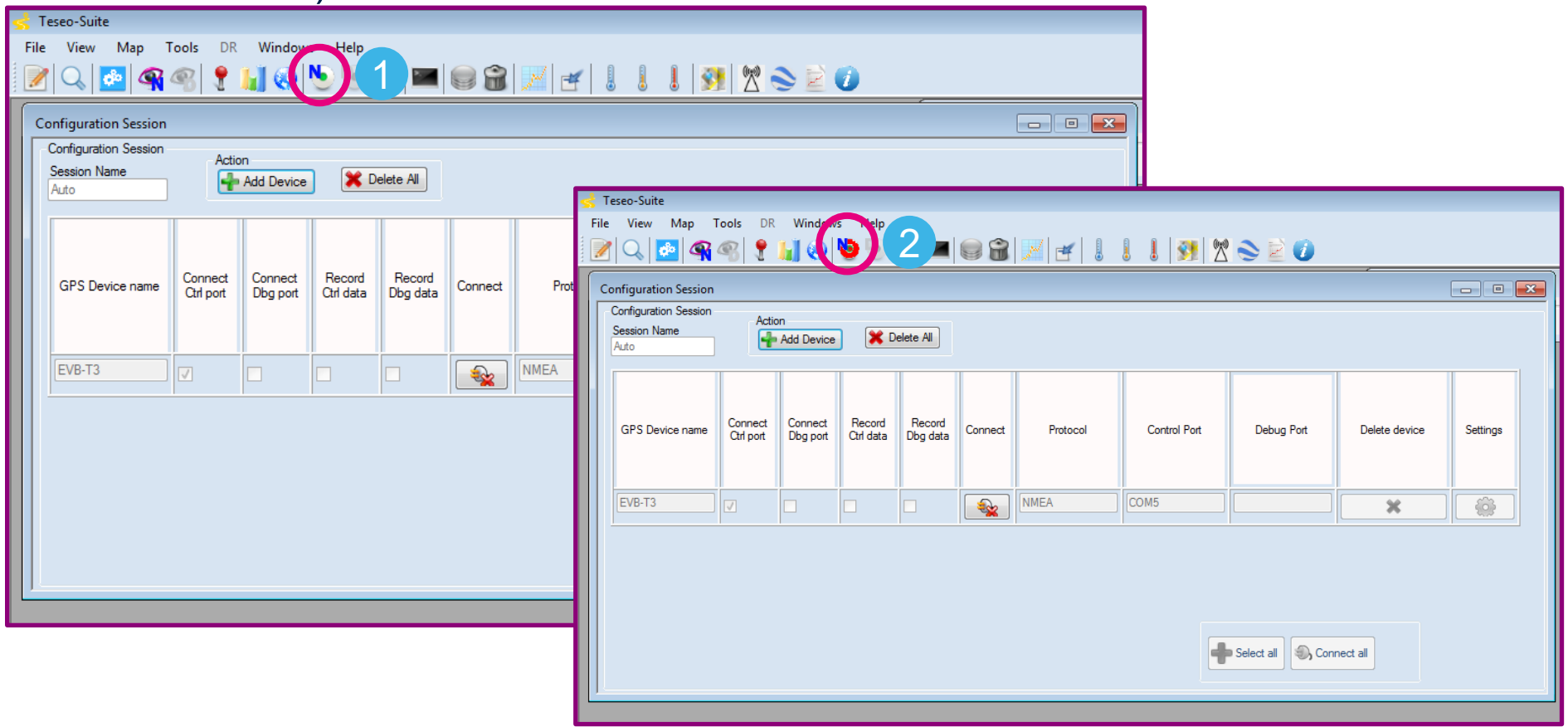
1. Click-on '**Signal Level View**' button in the menu
2. The '**Signal level**' panel reports all the details for all the seen satellites





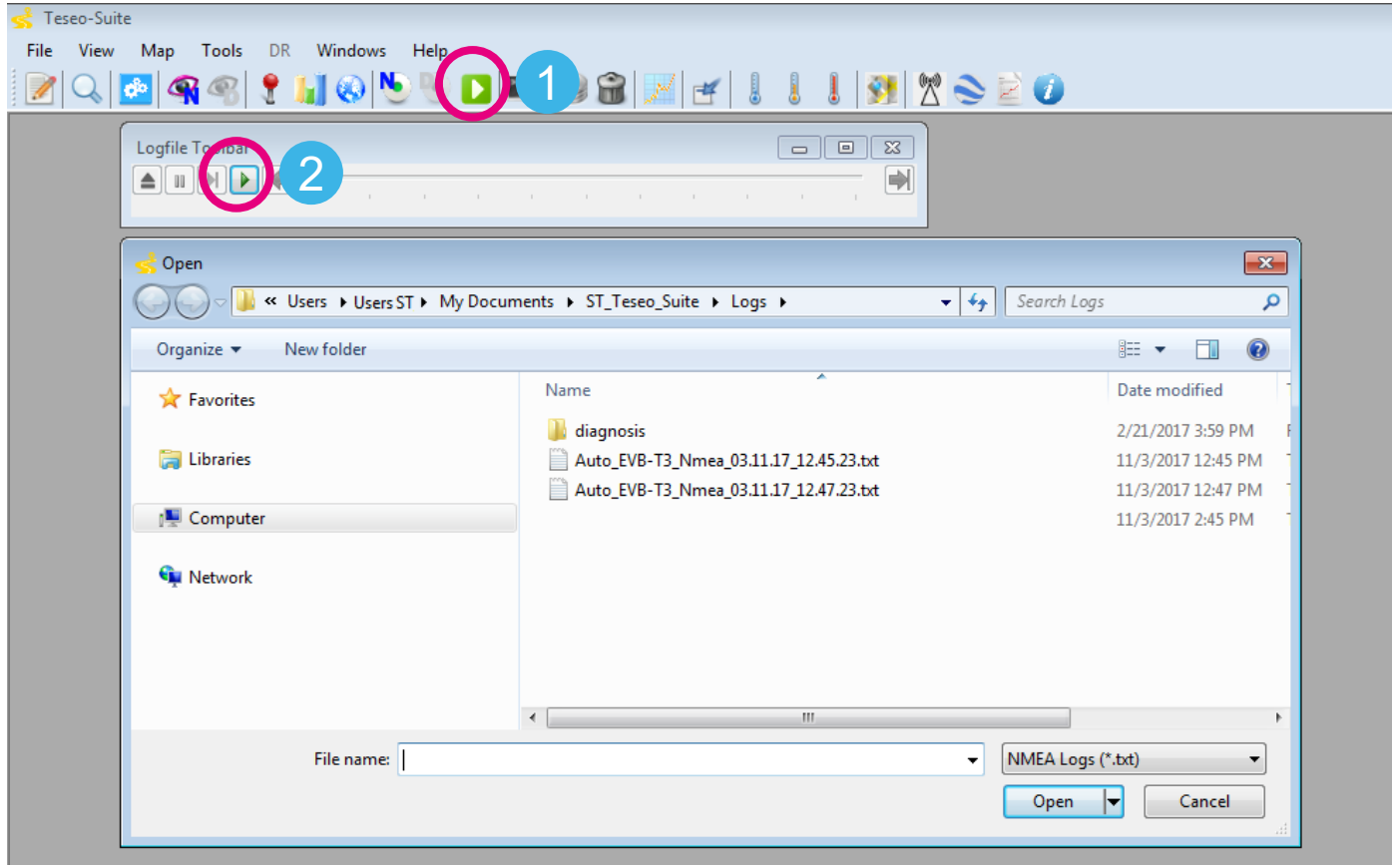
Record a NMEA/RTCM log session

1. To start log session, click-on '**Start/Stop Record Control Port**' button in the menu (button turns red)
2. To stop a log session, click-on '**Start/Stop Record Control Port**' button in the menu (button turns white)



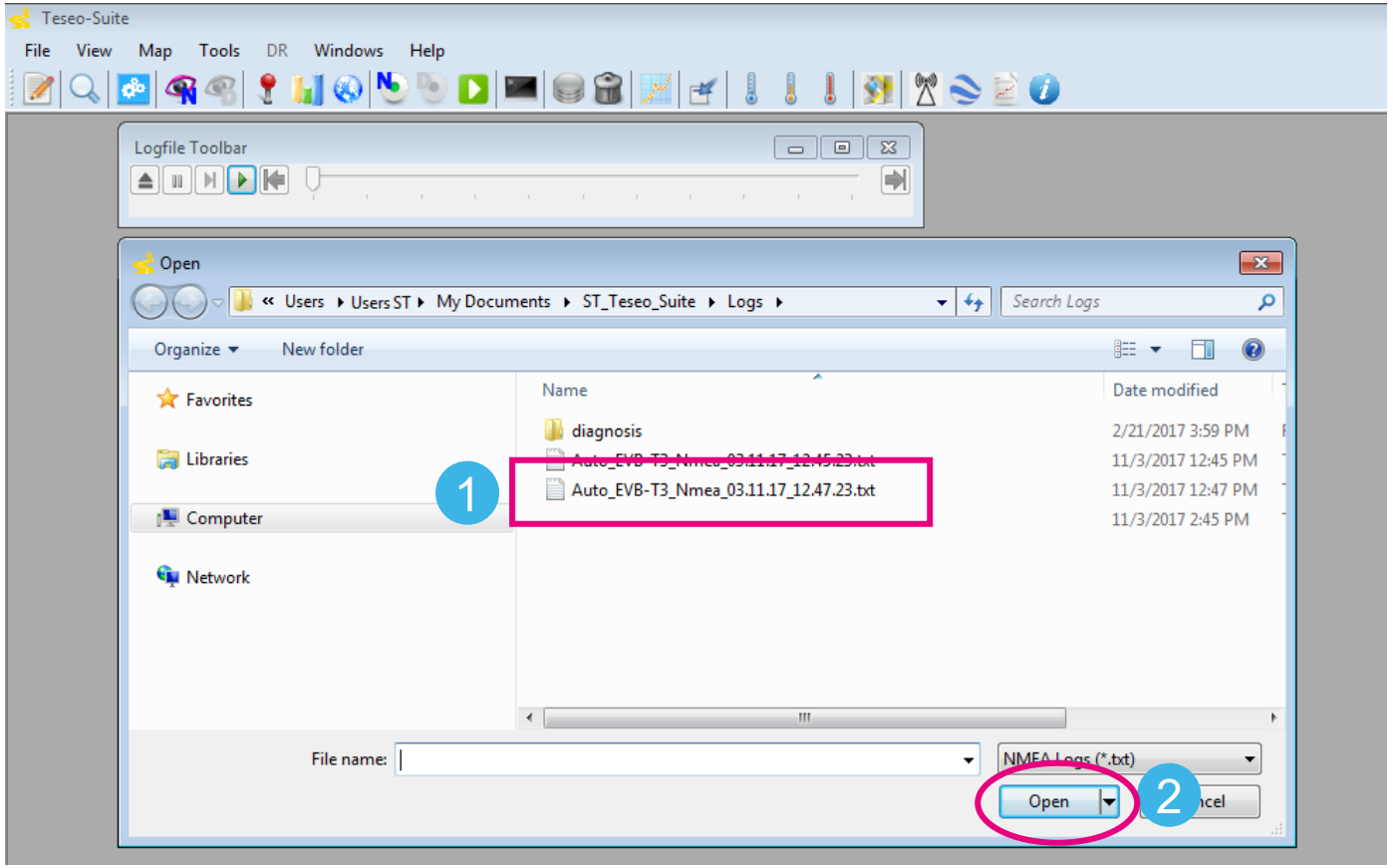
Play a NMEA/RTCM log session [1/4]

1. Click-on '**Player**' button in the menu (the Logfile Toolbar panel will appear)
2. Click-on '**Play**' button in the Logfile Toolbar (the 'Open' dialog will appear)



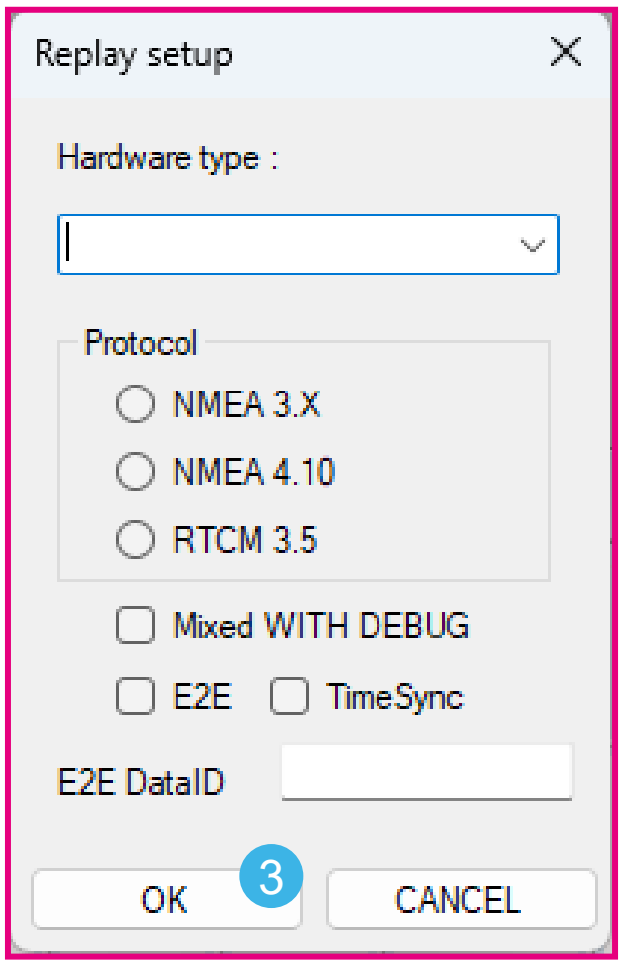
Play a NMEA/RTCM log session [2/4]

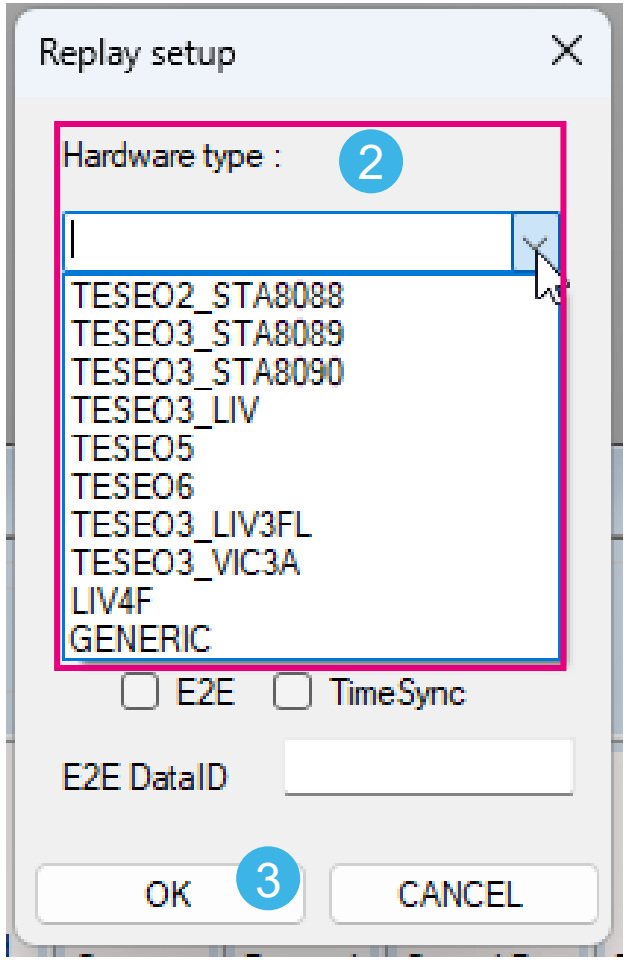
1. In the ‘Open’ dialog select the log to play
2. Click-on ‘**Open**’



Play a NMEA/RTCM log session [3/4]

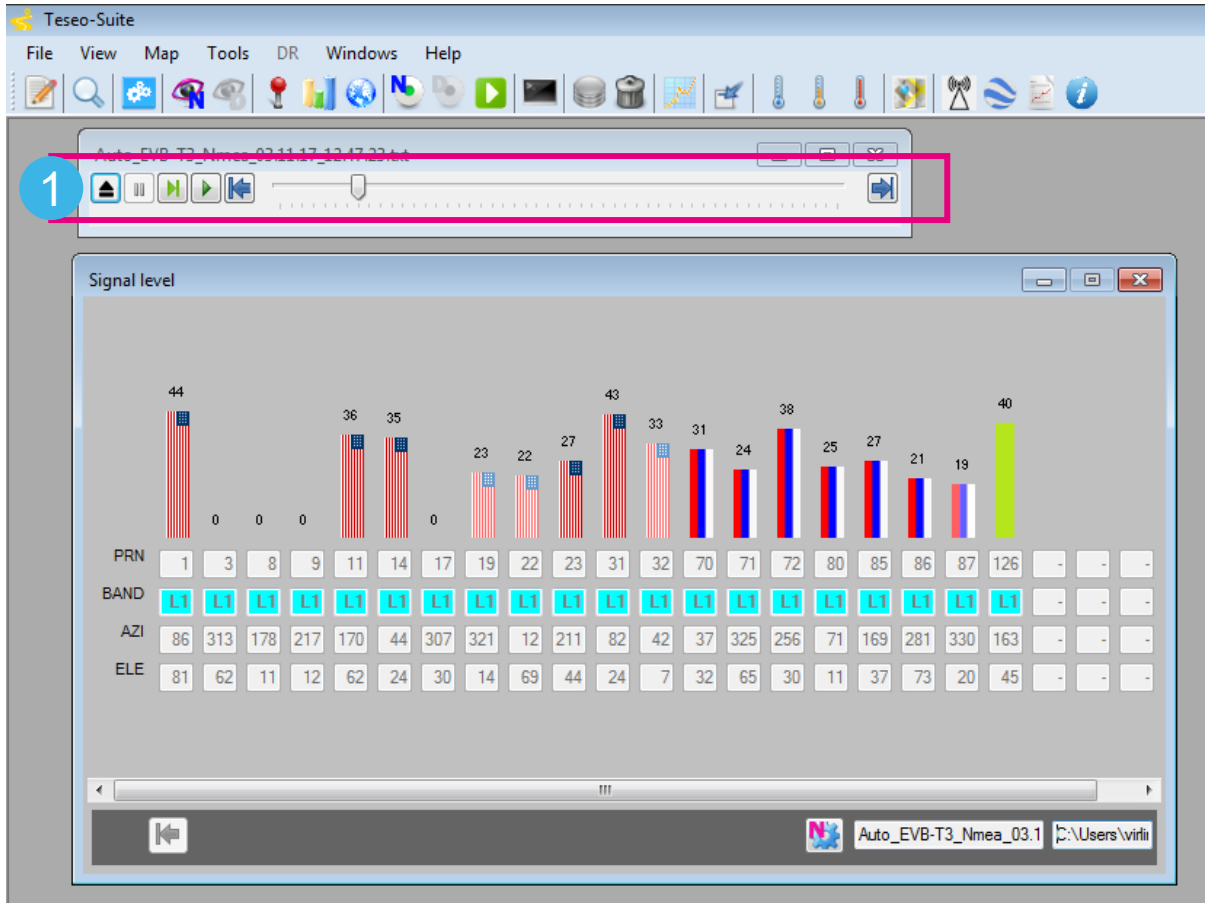
1. In the ‘Replay setup’ window, select the Hardware type, Protocol and options according to the selected log
2. Hardware type Drop-Down List box
3. Click ‘OK’





Play a NMEA/RTCM log session [4/4]

1. In the Logfile Toolbar panel all the buttons are enabled and you can start, stop, rewind the log as a standard tape



Quick start guide - Contents

Advanced features - Contents

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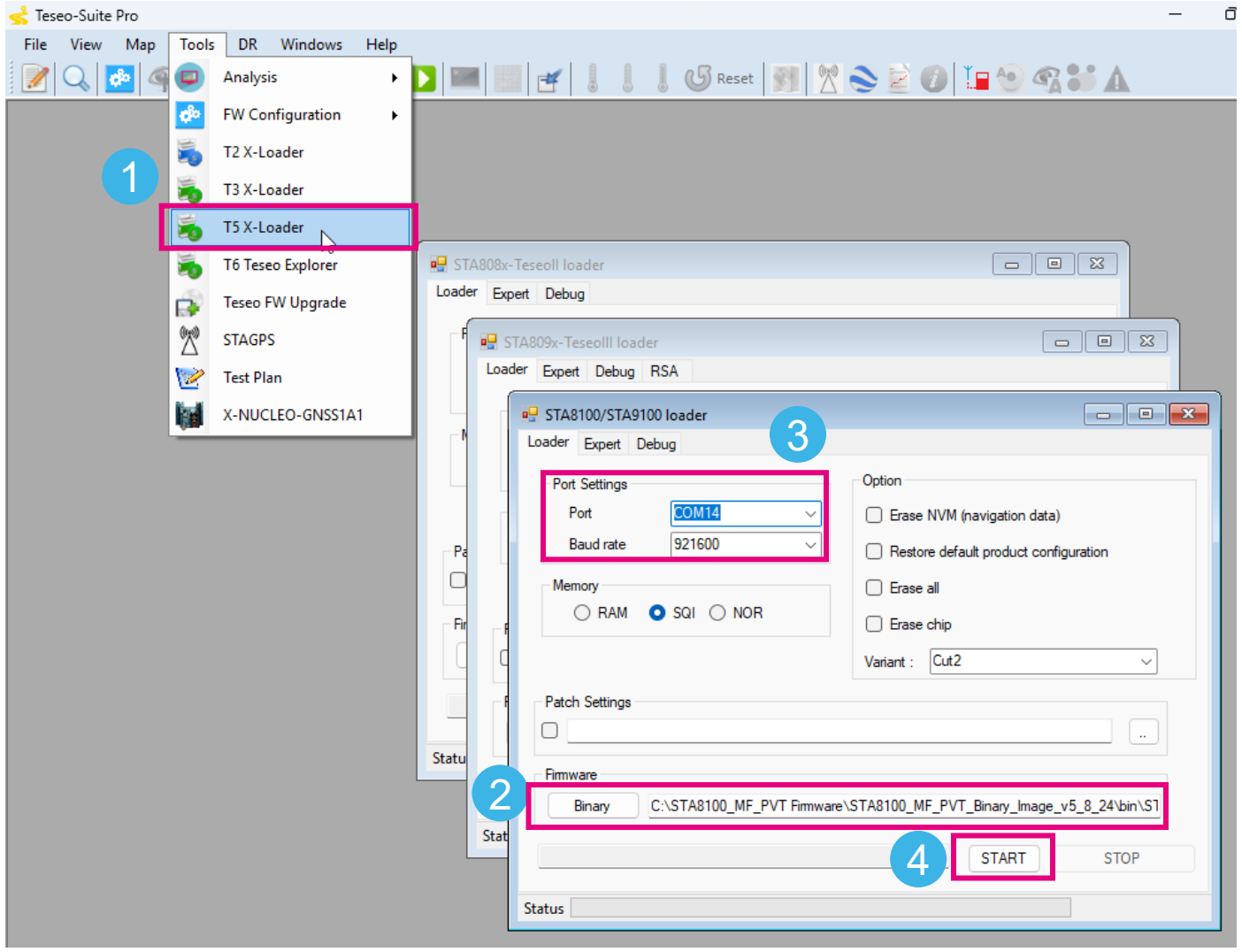
Update Bootloader and GNSSLib [1/2]

1. Open Teseo III (T3) or Teseo V (T5) **X-Loader** from menu
2. Select the binary file from file system
3. Select COM Port and the baud-rate
4. Click on Start to update

NOTE: to ensure to start in a fresh memory state, it is highly recommended to use the ‘Erase chip’ option



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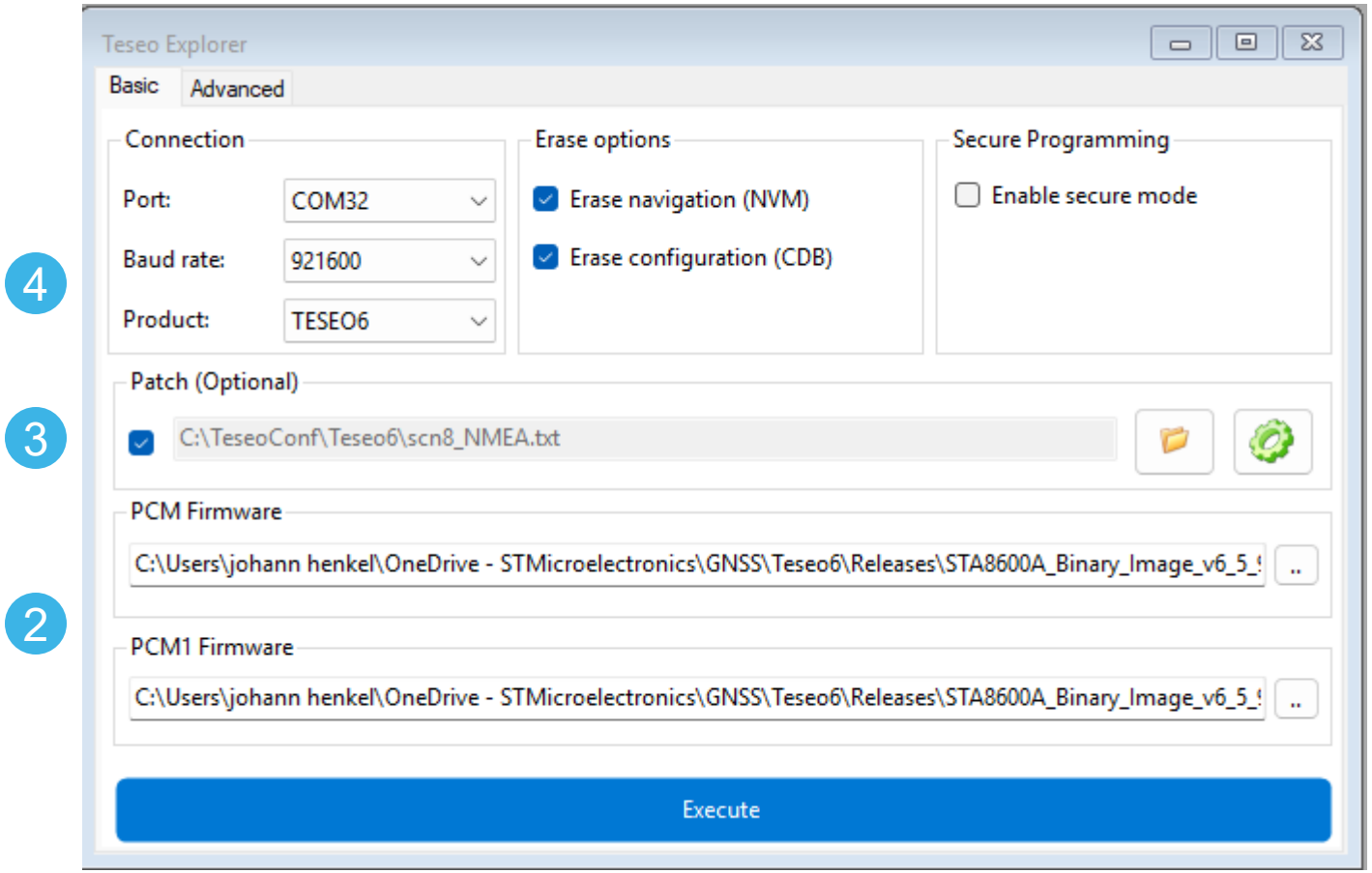
Update Bootloader and GNSSLib [2/2]

1. Open Teseo VI (T6) **Teseo Explorer** from menu and select Basic
2. Select Part0 and Part1 files from file system in the Operations panel
3. Select Configuration file (optional)
4. Select COM Port and the baud-rate
   (baud rate refers to programming speed, not to final communication)
5. Click on Execute to update



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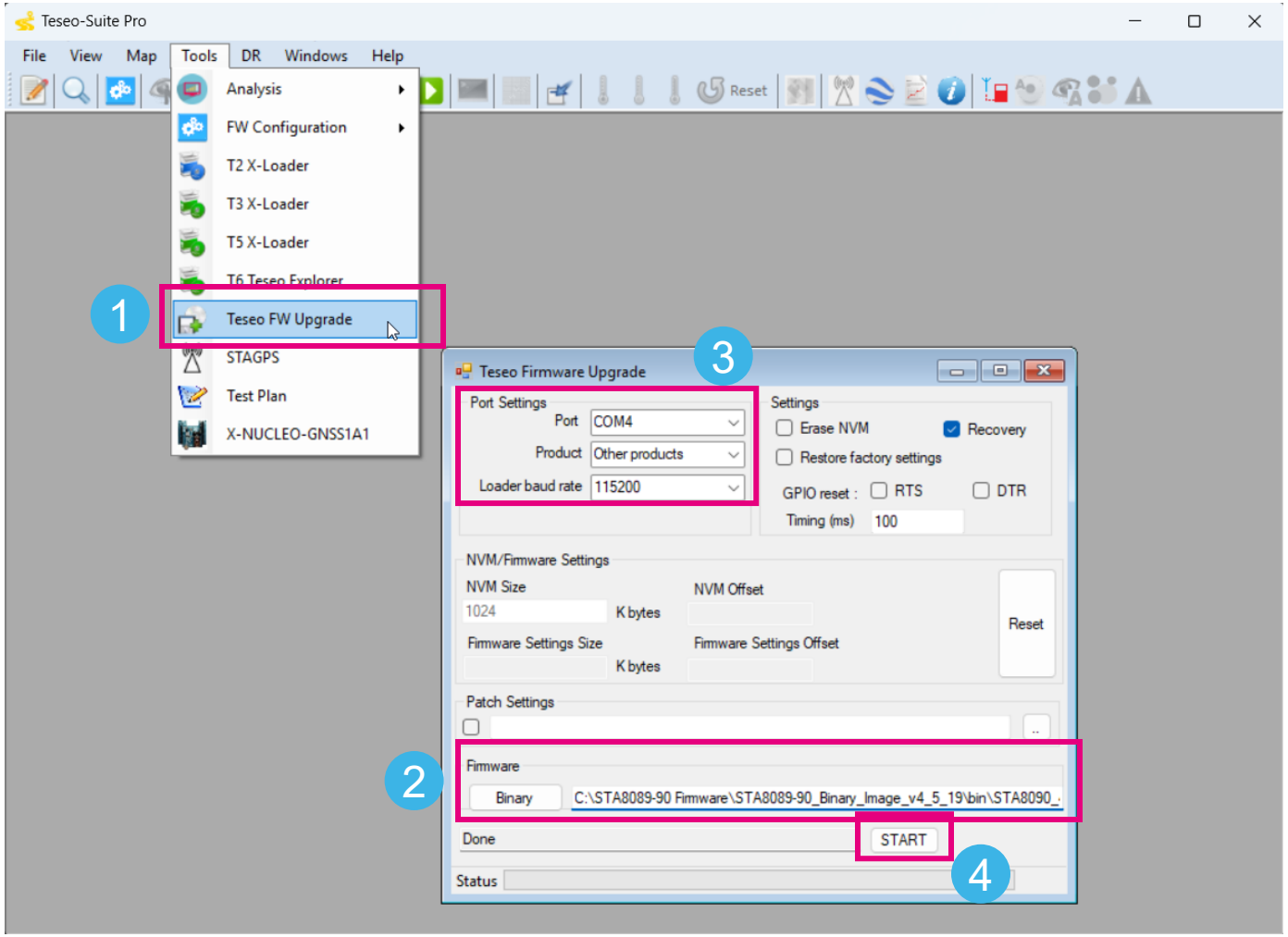
Update GNSSLib

1. Open **Firmware Upgrade** tool
2. Select the binary file from file-system
3. Select COM Port and the baud-rates
4. Click on Start to update the GNSSLib

NOTE: Except for LIV4FL, choose ‘Other Products’ and make sure to have Recovery ticked. After Start, when ‘Sync In Progress’ is displayed in Status, apply a HW reset.



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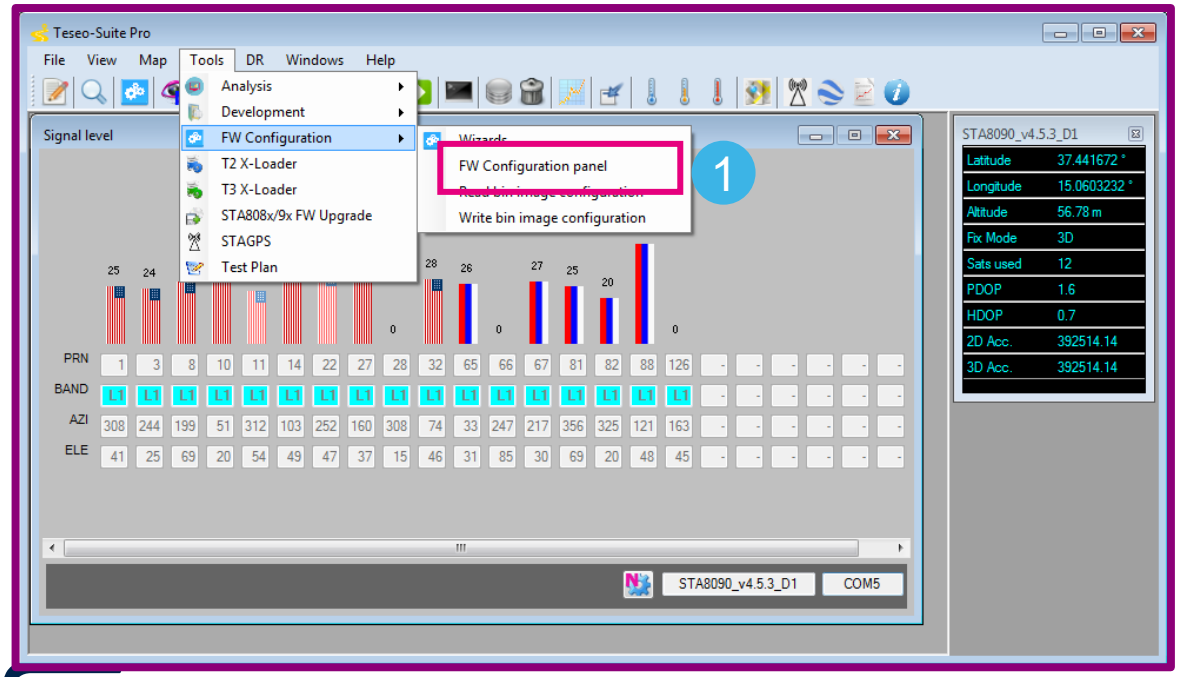
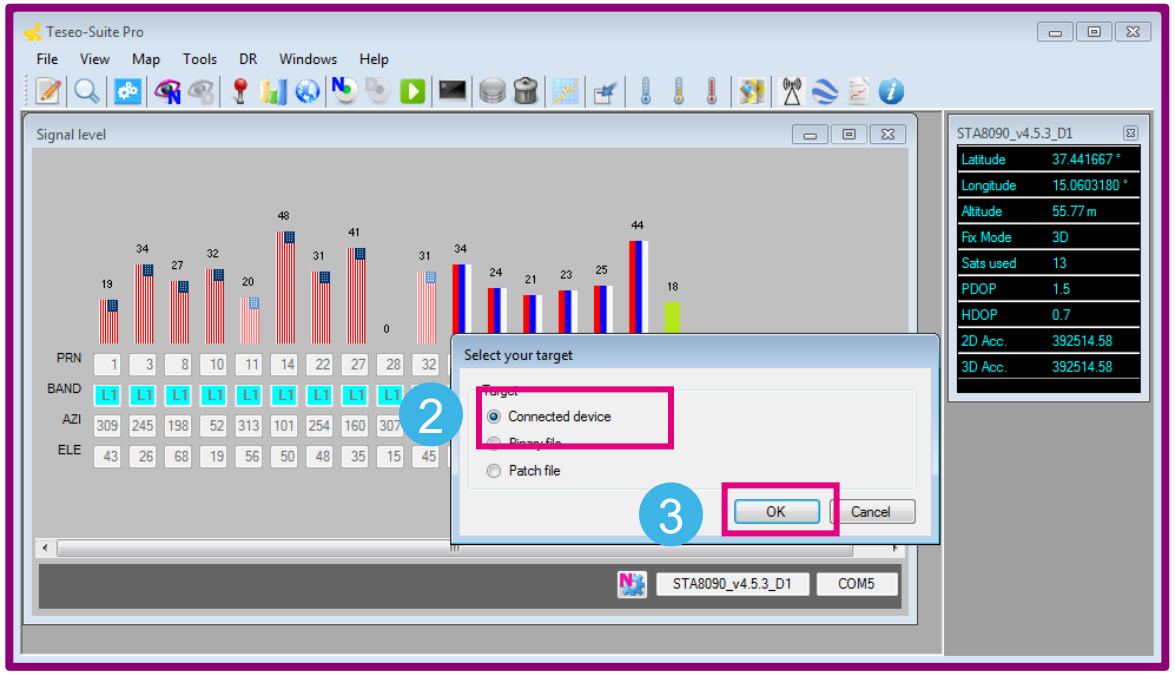
Firmware configuration [1/2]

1. Select ‘FW Configuration panel’ in the menu
2. Select the target to be configured (Connected device in the example)
3. Click-on Ok





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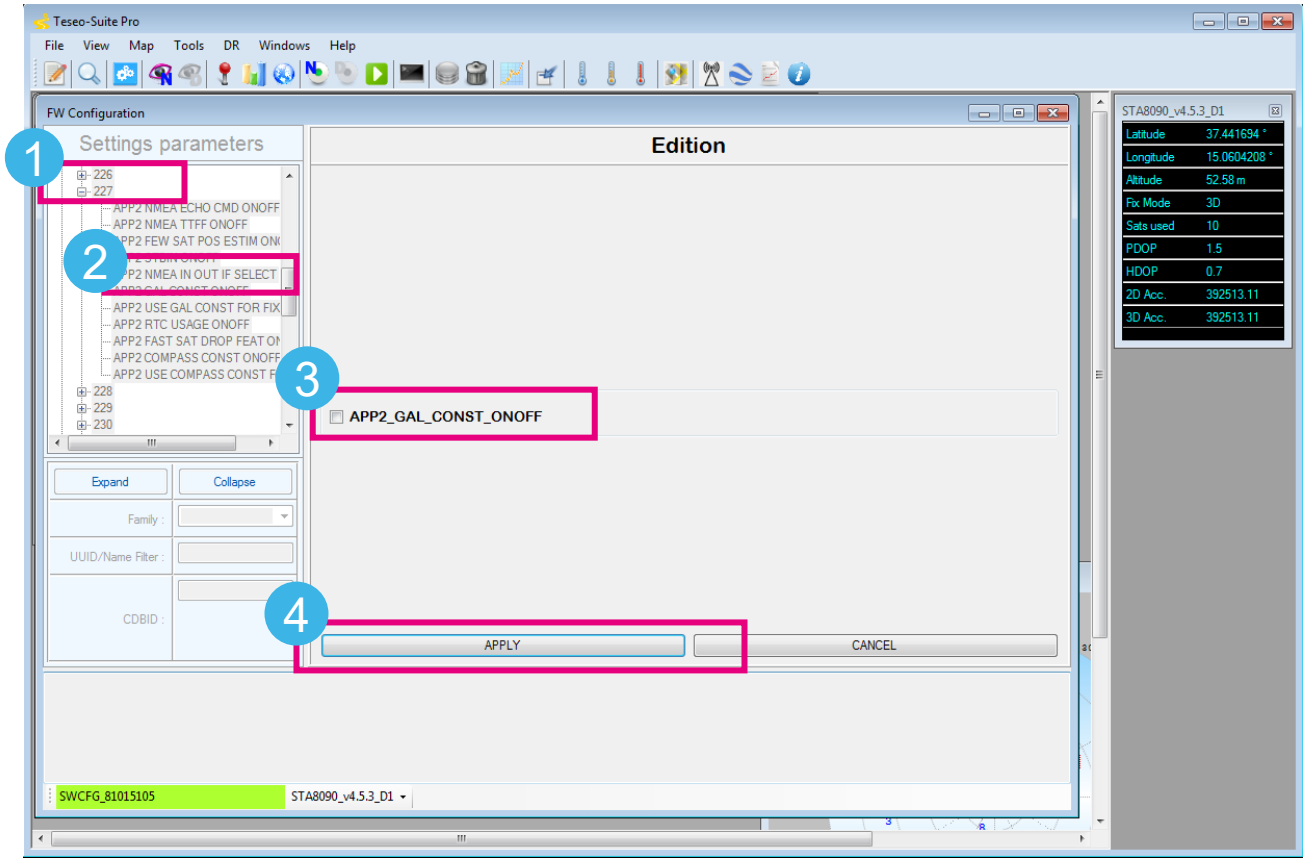
Firmware configuration [2/2]

1. Expand the CDB-ID number under configuration
2. Select the specified field under configuration
3. Enable the field and/or set the right value (Galileo constellation is enabled in the example)
4. Apply the change to the device

NOTE: For Teseo V and Teseo VI generations, same applies except that configurations are split in Pages and Lines.



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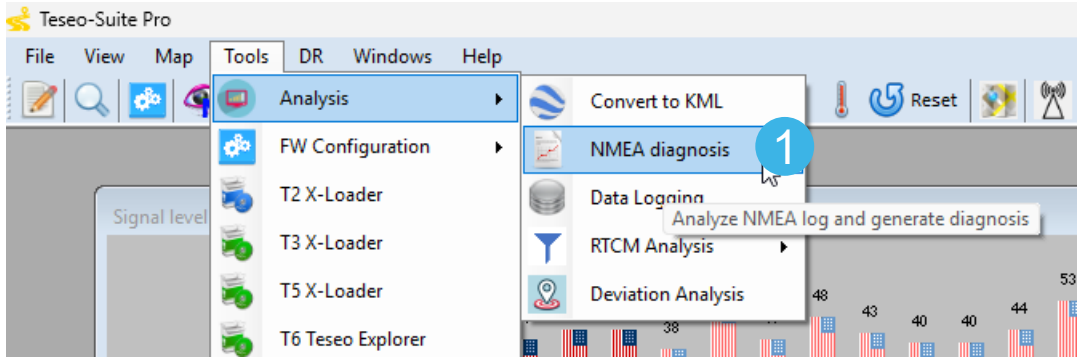
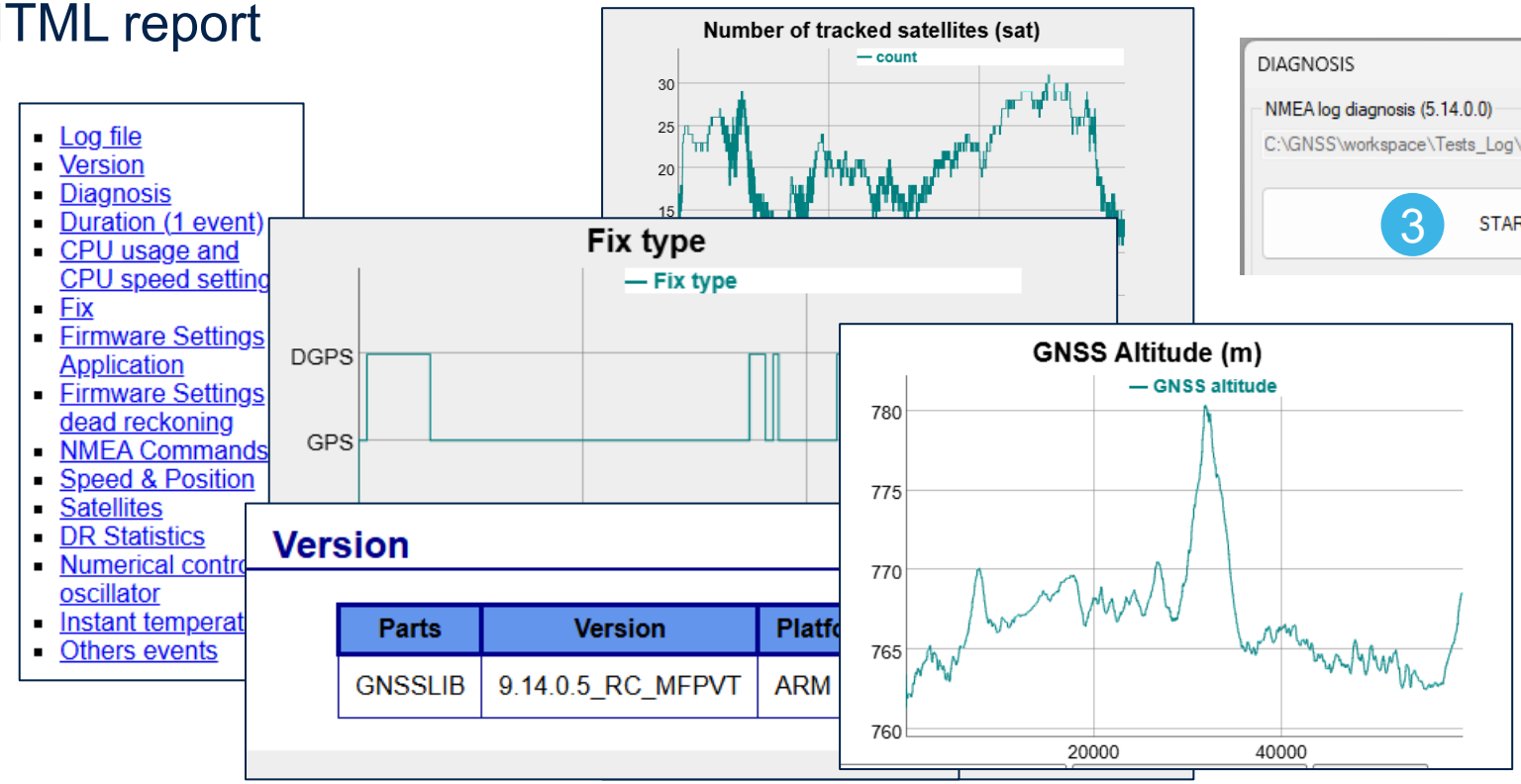
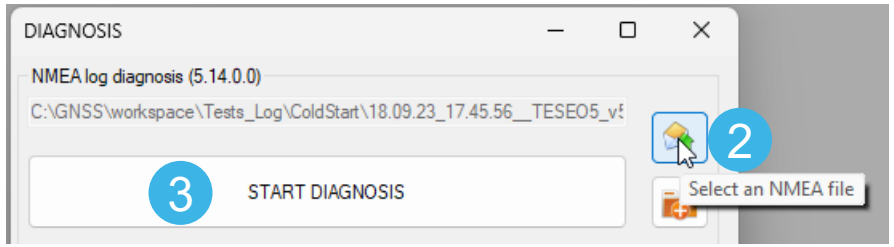
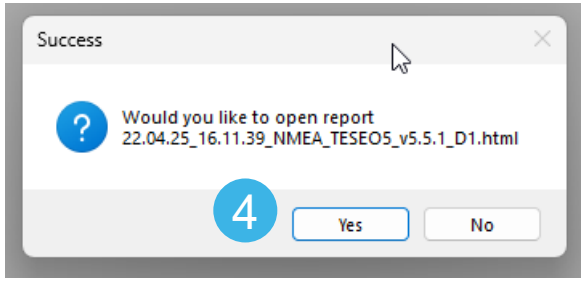
Analysis tool – NMEA diagnosis

1. Open NMEA diagnosis tool
2. Select the NMEA log
3. Start analysis
4. A pop-up will propose to open a generated HTML report









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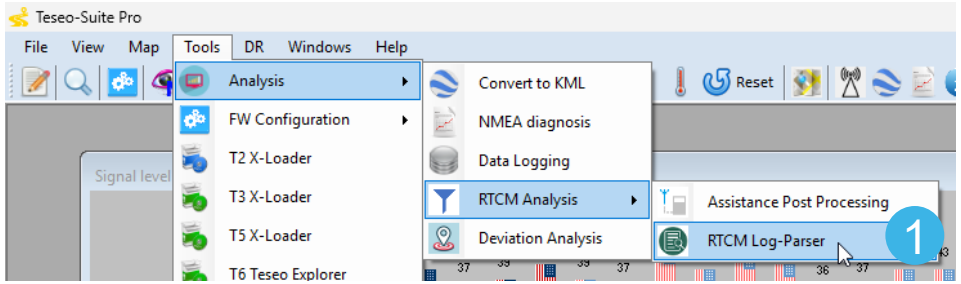
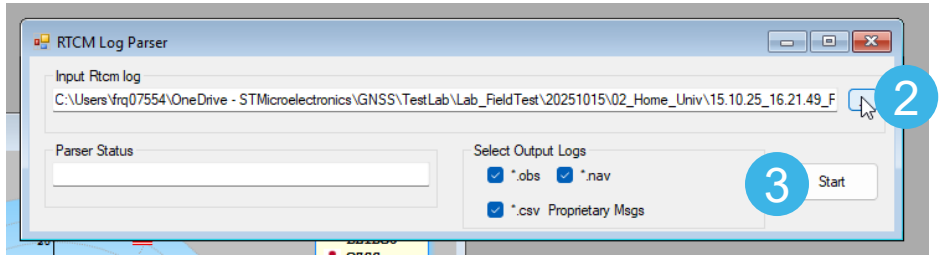
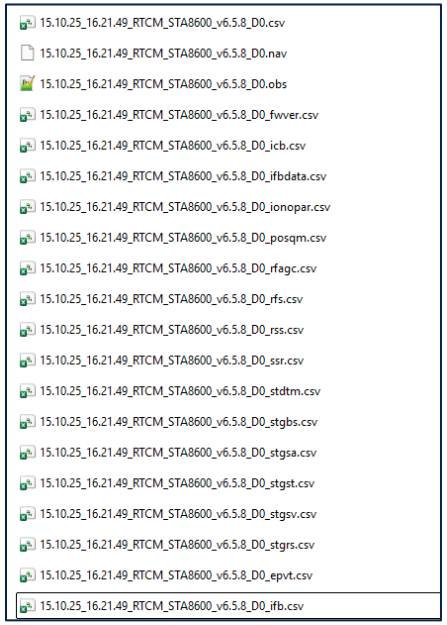
Analysis tool – RTCM log parser

1. Open RTCM Log-Parser tool
2. Select the RTCM log
3. Start parsing
4. Windows folder will open and show the output files:
   - CSV file for every ST proprietary messages
   - RINEX observation file (observables)
   - RINEX navigation file (navigation data)





4



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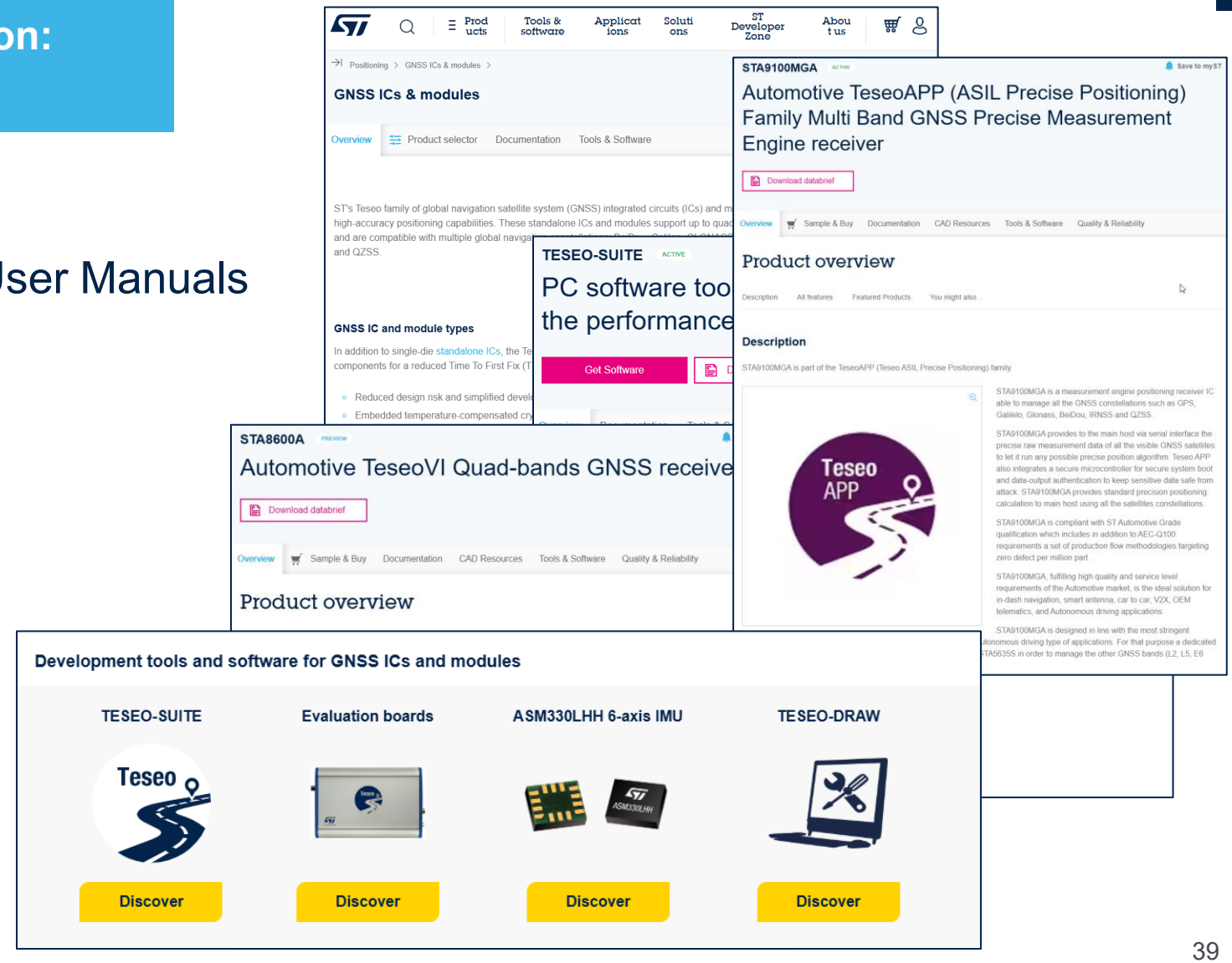
Quick start guide - Contents

Documents & related resources

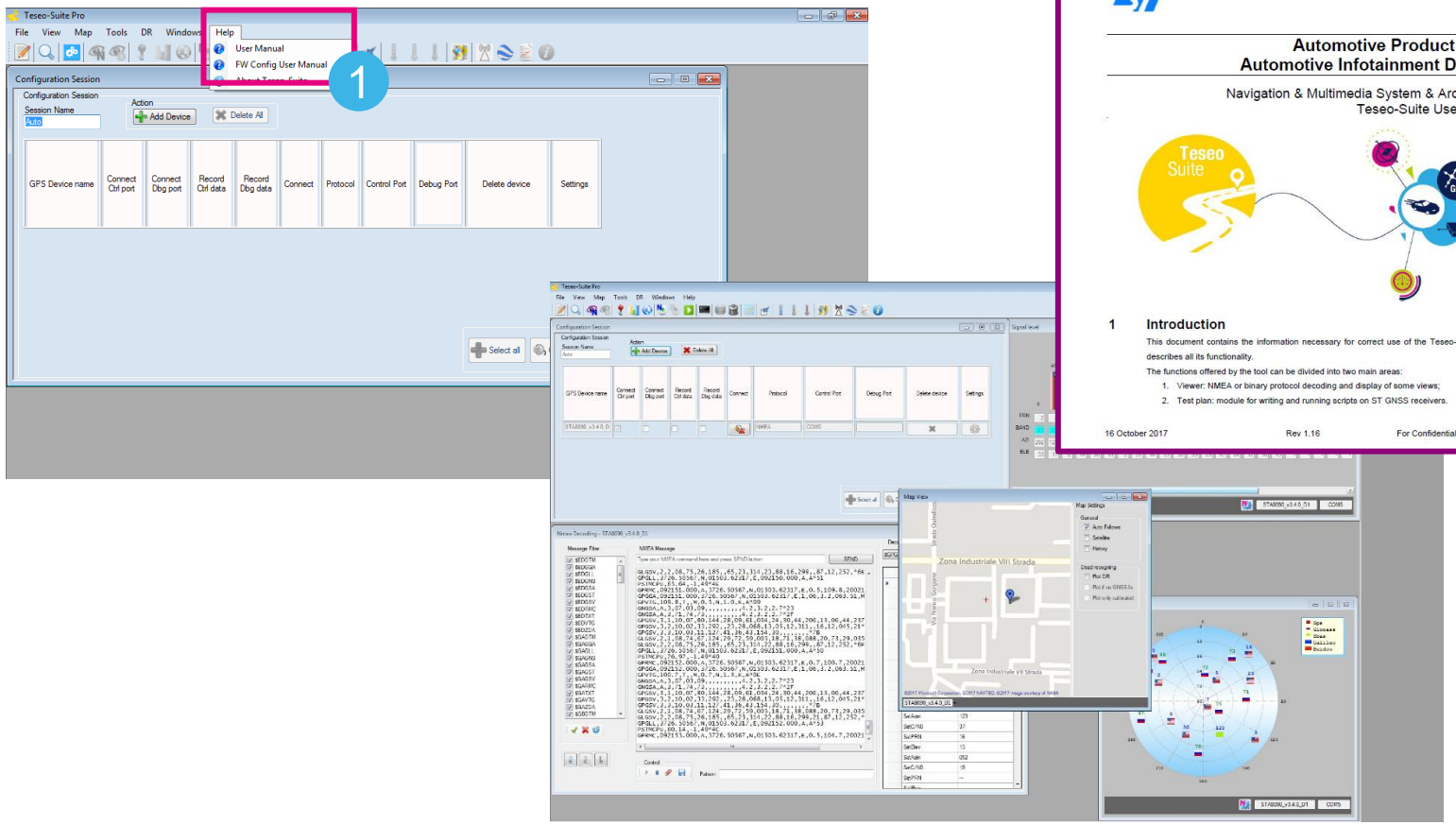
All documents are available on:
www.st.com

- Teseo Homepage
  - Datasheets, Application Notes, User Manuals
  - Teseo Modules: Webpage
  - Teseo III: Webpage
  - Teseo V: Webpage
  - Teseo VI: Webpage
- Teseo Suite: Webpage
  - Documentation
  - Installer program



Teseo Suite – Extra features

1. Push Help menu to access User Manual
2. User Manual reports all information needed



Enjoy GNSS solution development with Teseo-Suite

- Now you can develop your GNSS solution with ST Teseo III, V and VI chips and modules, using Teseo-Suite to explore all the available features.