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# EVB-T5 Teseo V evaluation board

Quick Start Guide





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# Introduction to EVB-T5

- The **EVB-T5** evaluation board is a complete standalone evaluation platform for Teseo V STA8100GA GNSS receiver IC with STA5635A RF IC receiver
- The **Teseo V** is a easy-to-use multi band Global Navigation Satellite System (GNSS) positioning receiver IC working on multiple constellations (GPS, GLONASS, Beidou, Galileo, QZSS)



Top view



Front panel

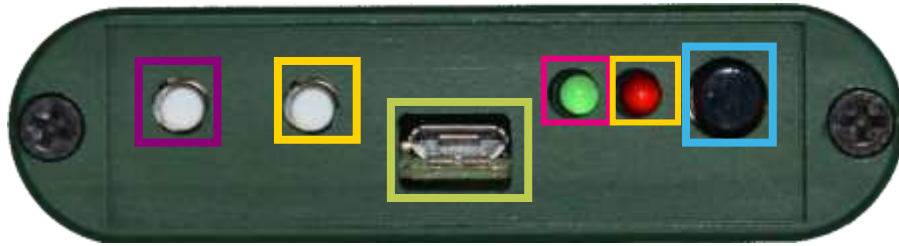


Rear panel



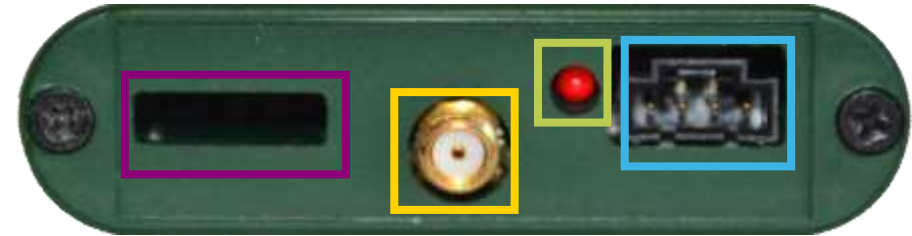
# EVB-T5 – Front and Rear panels

Front panel



-  Boot button
-  Reset button
-  USB/UART Connector
-  PPS Green LED
-  PWR Red LED
-  On/Off Switch button

Rear panel



-  SD/MMC connector
-  SMA Antenna connector
-  LED
-  CAN/ODO connector



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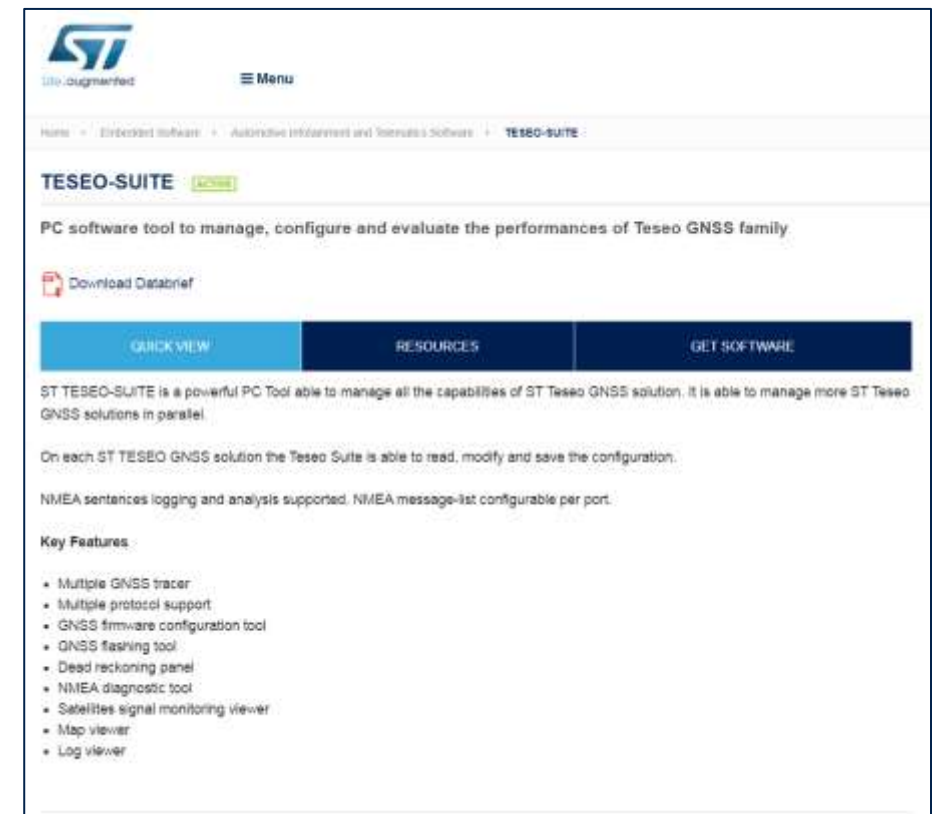
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# Install Teseo-Suite and VCP driver

The **Teseo-Suite** (version 6.3.x needed) is a powerful PC Tool able to manage the EVB-T5 evaluation board

- Download and install the Teseo-Suite from [www.st.com](http://www.st.com)
- Download and install the Silab VCP Driver from [www.silabs.com](http://www.silabs.com)





# Connect and start EVB-T5

1 Connect the USB cable between PC USB and the EVB-T5 UART port

2 Connect the GNSS Antenna to the SMA input connector

3 Press the Power-on button

4 Verify that the RED Power LED is ON

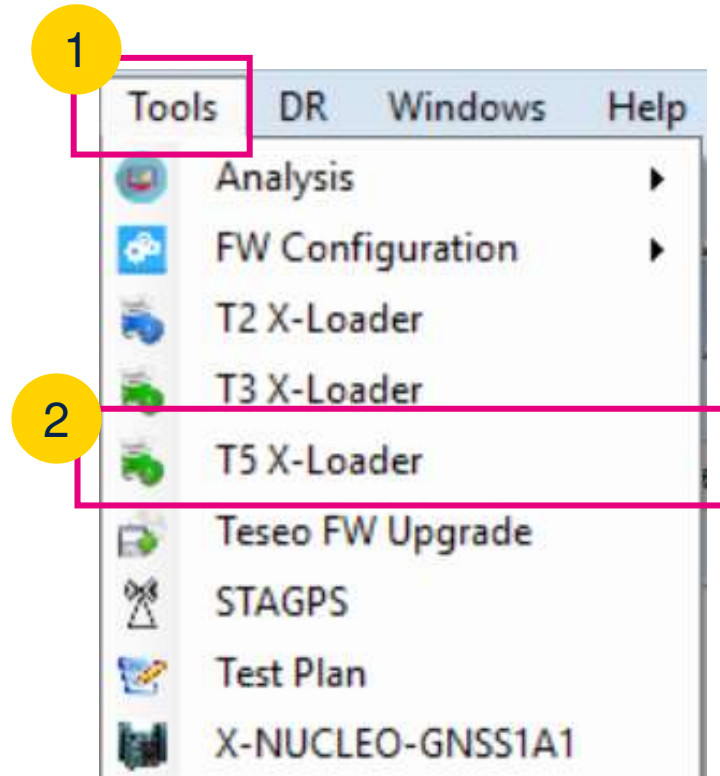




# Program the EVB-T5 [1/2]

1 In the Teseo-Suite menu, select the **Tools** items

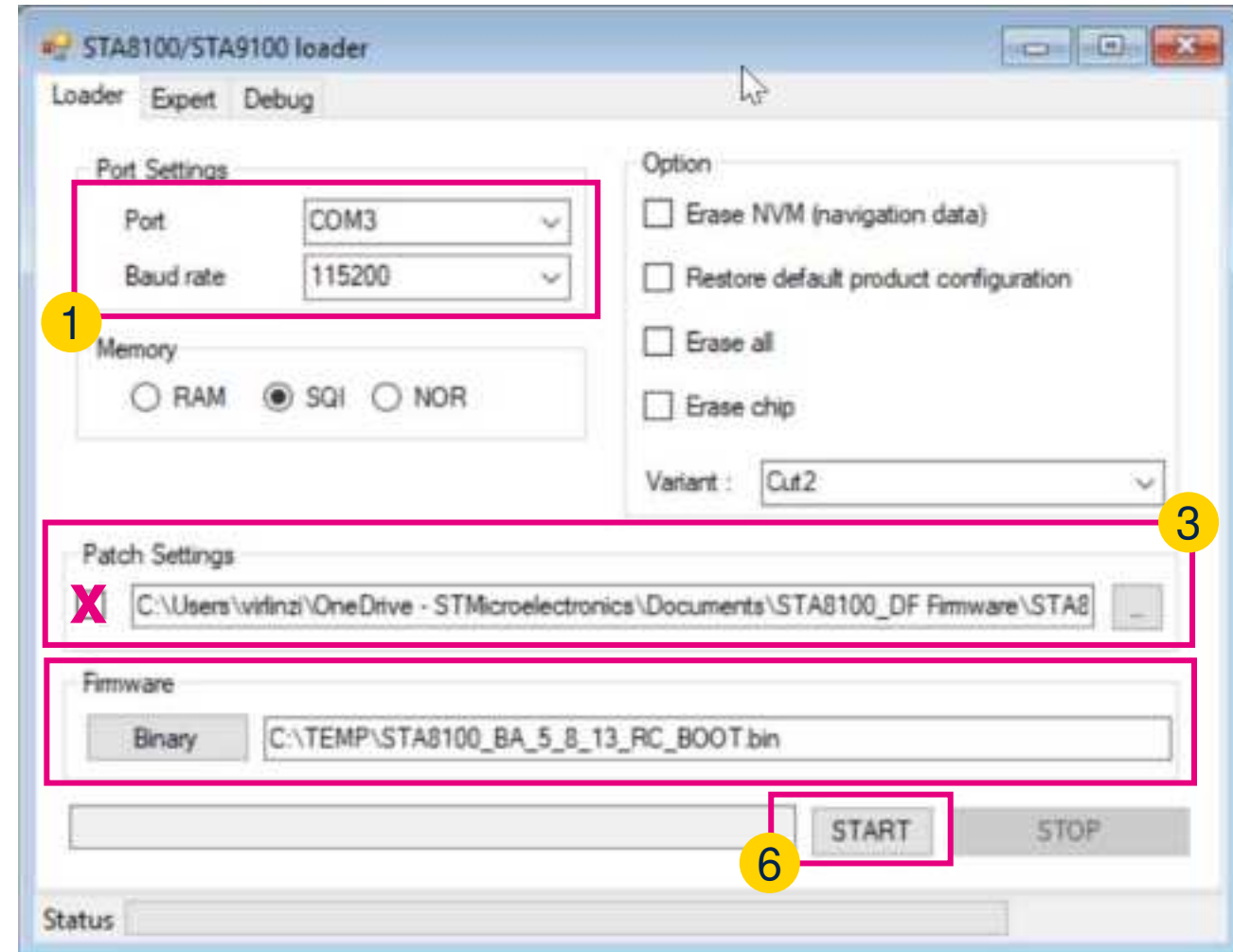
2 Select '**T5 X-Loader**'





# Program the EVB-T5 [2/2]

- 1 Configure the COM port and the baud rate
- 2 Select the T5 binary file (see next slide)
- 3 Enable and select the T5 patch file (see next slide)
- 4 Push and **maintain** the 'BOOT' button on the EVB-T5
- 5 Push the 'RESET' button on the EVB-T5
- 6 Push Start





# Firmware based on usage case

On Teseo V (STA8100GA) are available two different firmware:

**Measurement Engine Firmware** (aka: ME firmware): Teseo V will provide raw measurement data to support an RTL-PPP algorithm running an external MCU

**Autonomous PVT** (aka: DF\_PVT): Teseo V will provide a complete dual-band L1&L5 autonomous PVT.

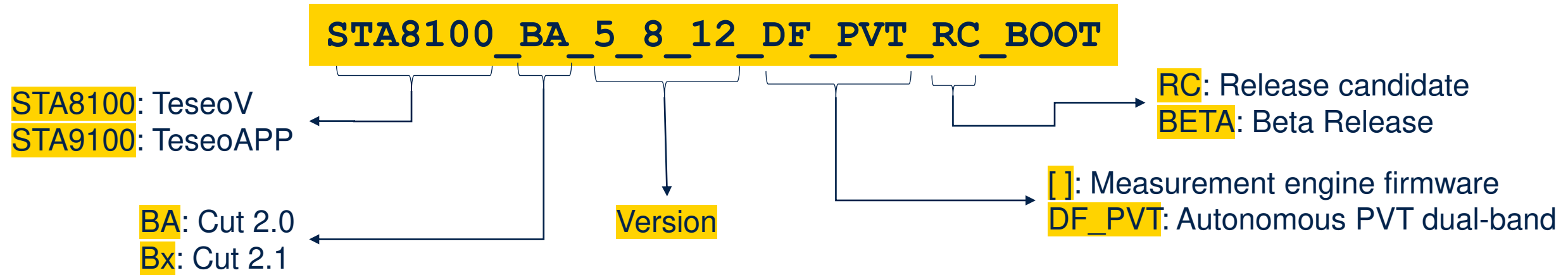
On TeseoAPP (STA9100) only ME firmware is available

TeseoV and TeseoAPP firmwares are widely configurable and to support the customer in the firmware configuration several patches are provided to select predefined scenarios.

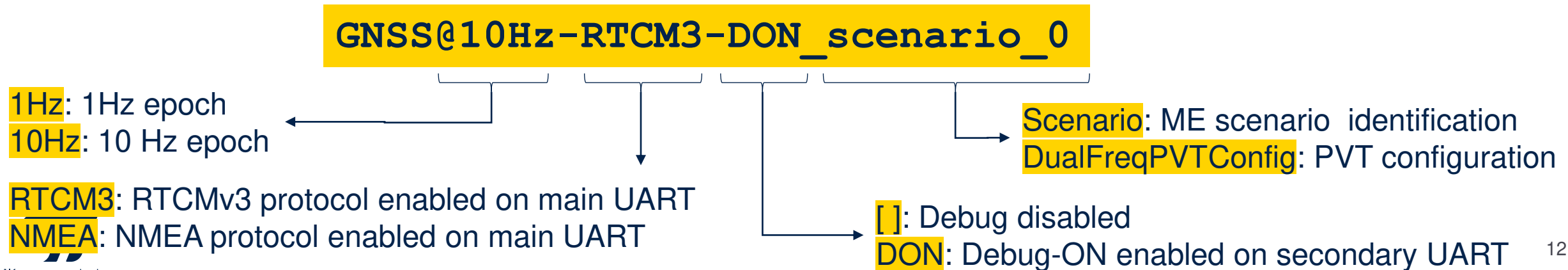


# Firmware and patch naming convention

## Firmware name convention:



## Patch name convention:





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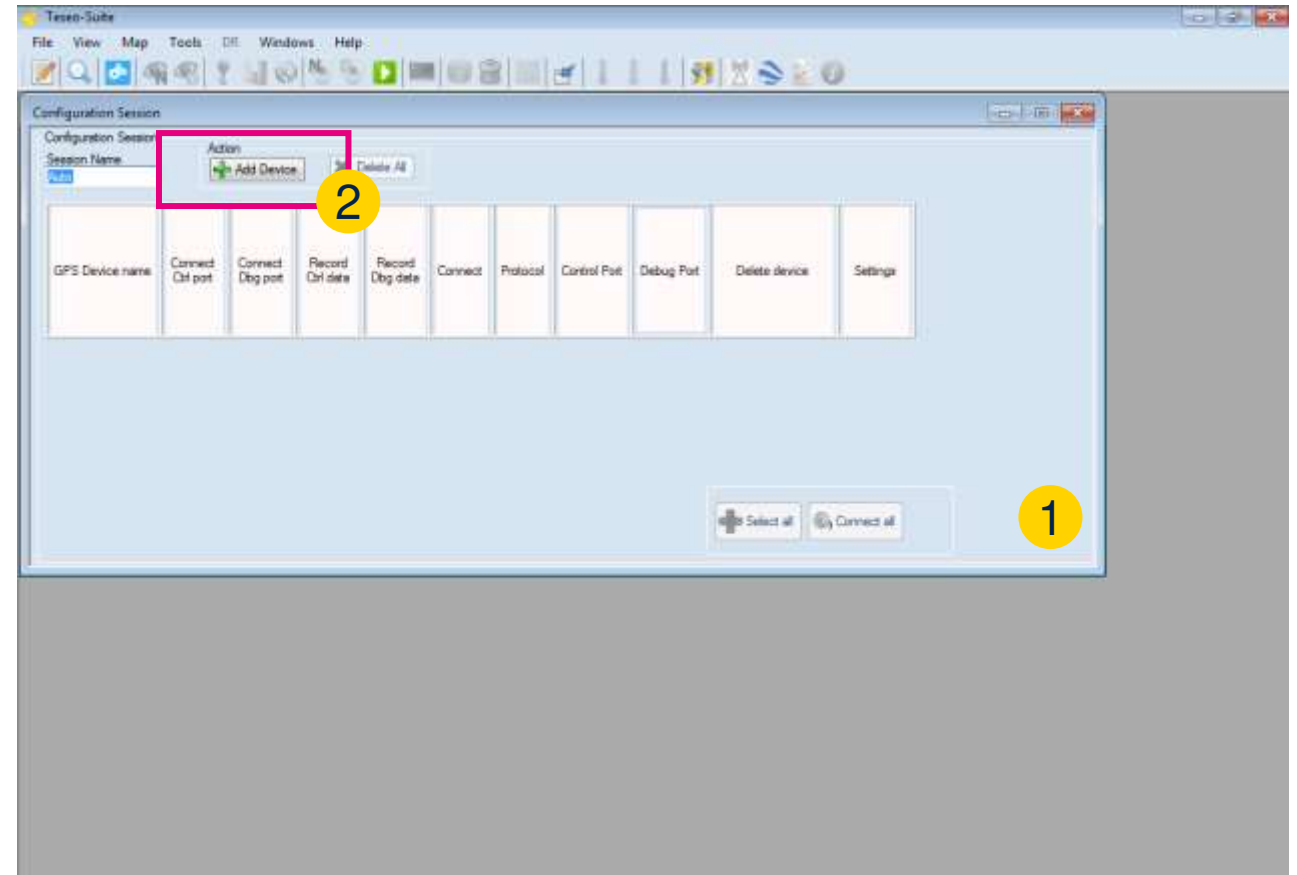
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# Teseo Suite - Start

1 During the application start-up, the **Configuration Session** panel is shown

2 Click the '**Add Device**' button to add a new entry





# Teseo Suite – Configuration device

- 1 Set the Hardware type: **STA81xx**
- 2 Enable Add Control Port
- 3 Set the Protocol: **RTCM 3.x or NMEA**
- 4 Set the Port Name: according to the discovered on the PC and Configure the port as following table:

| Baud rate  | Data bits | Stop Bits | Parity | Handshake |
|------------|-----------|-----------|--------|-----------|
| 460800 bps | 8 Bits    | 1 Bit     | None   | None      |

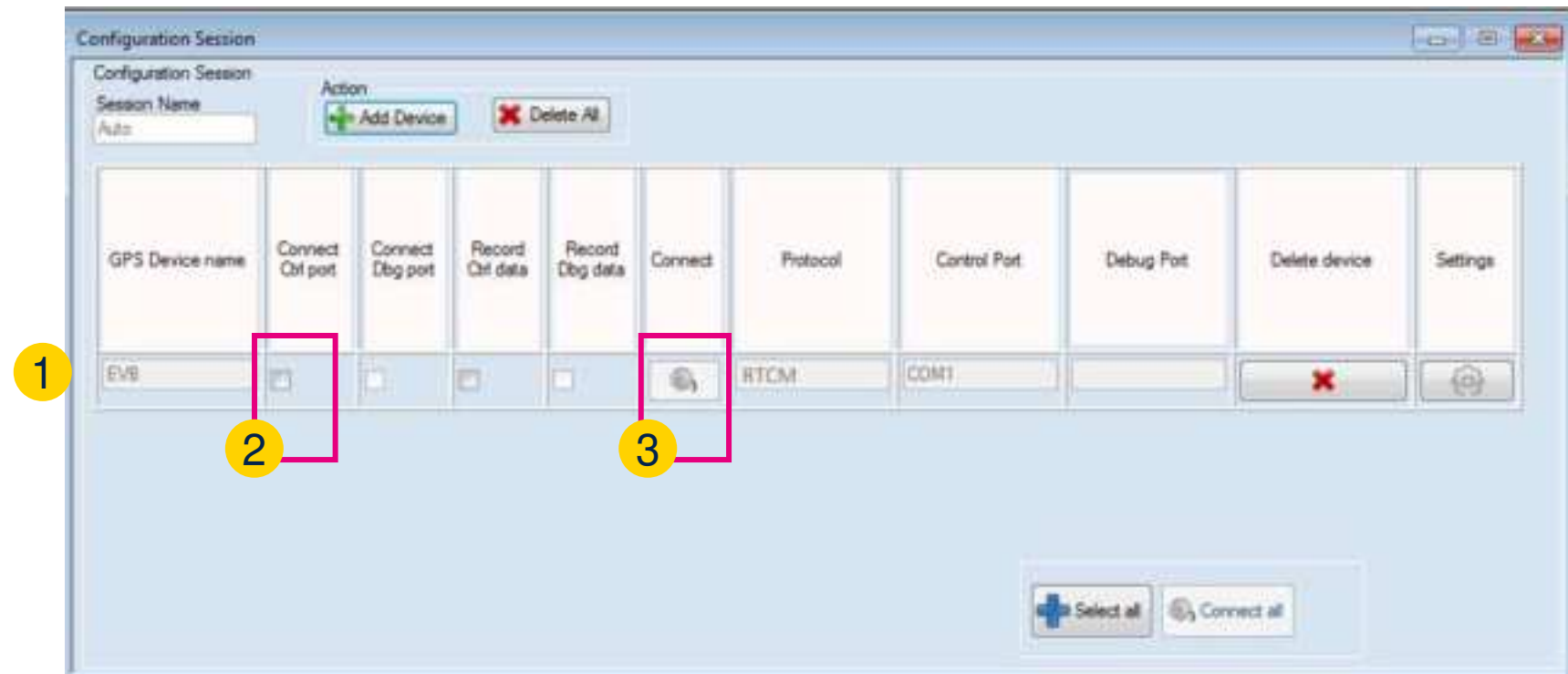
- 5 Click the Ok button

The screenshot shows the 'Rover configuration' dialog box. The 'Configuration' tab is active. The 'Binary Image Version' is set to 4. The 'Hardware type' is set to 'Teseo' (annotated with 1). The 'GNSS Device Name' is 'STA81xx\_v4.3.1\_01' (annotated with 2). The 'Add Control Port' checkbox is checked (annotated with 2). The 'Add Assistance' checkbox is unchecked. The 'Control Port' tab is selected. The 'Protocol(s)' list has 'RTCM 3.5' checked (annotated with 3). The 'Port Name' is 'COM30' (annotated with 4). The 'Baud Rate' is '460800'. The 'Data Bits' is '8'. The 'Parity' is 'None'. The 'Stop Bits' is 'One'. The 'Read Timeout' is '1000'. The 'DTR control' checkbox is unchecked. The 'Action' button is 'Ok' (annotated with 5).



# Teseo Suite – Connect the device

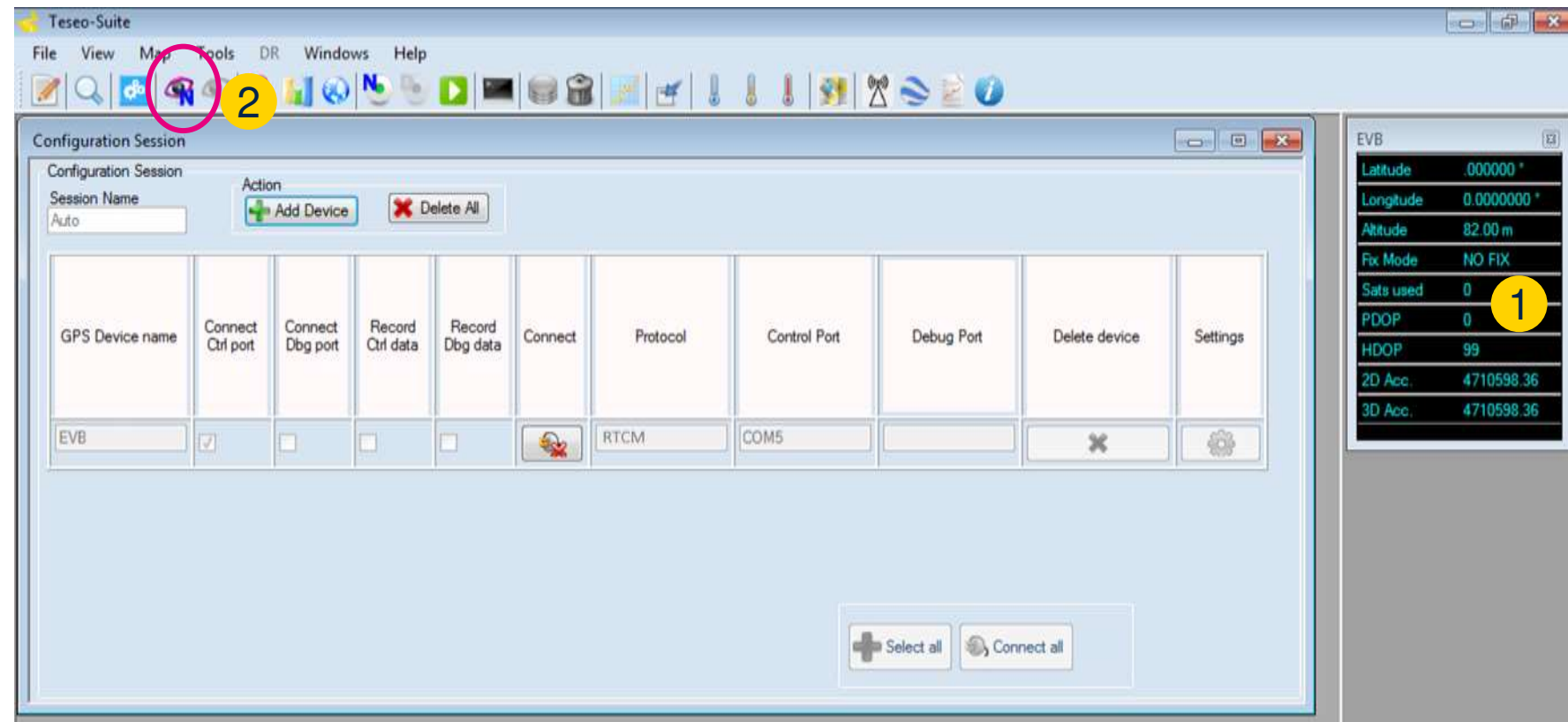
- 1 In the **Configuration Session** panel a new entry (row) is shown
- 2 Enable **Connect Ctrl port**
- 3 Click the **Connect** button





# Teseo Suite – Device working

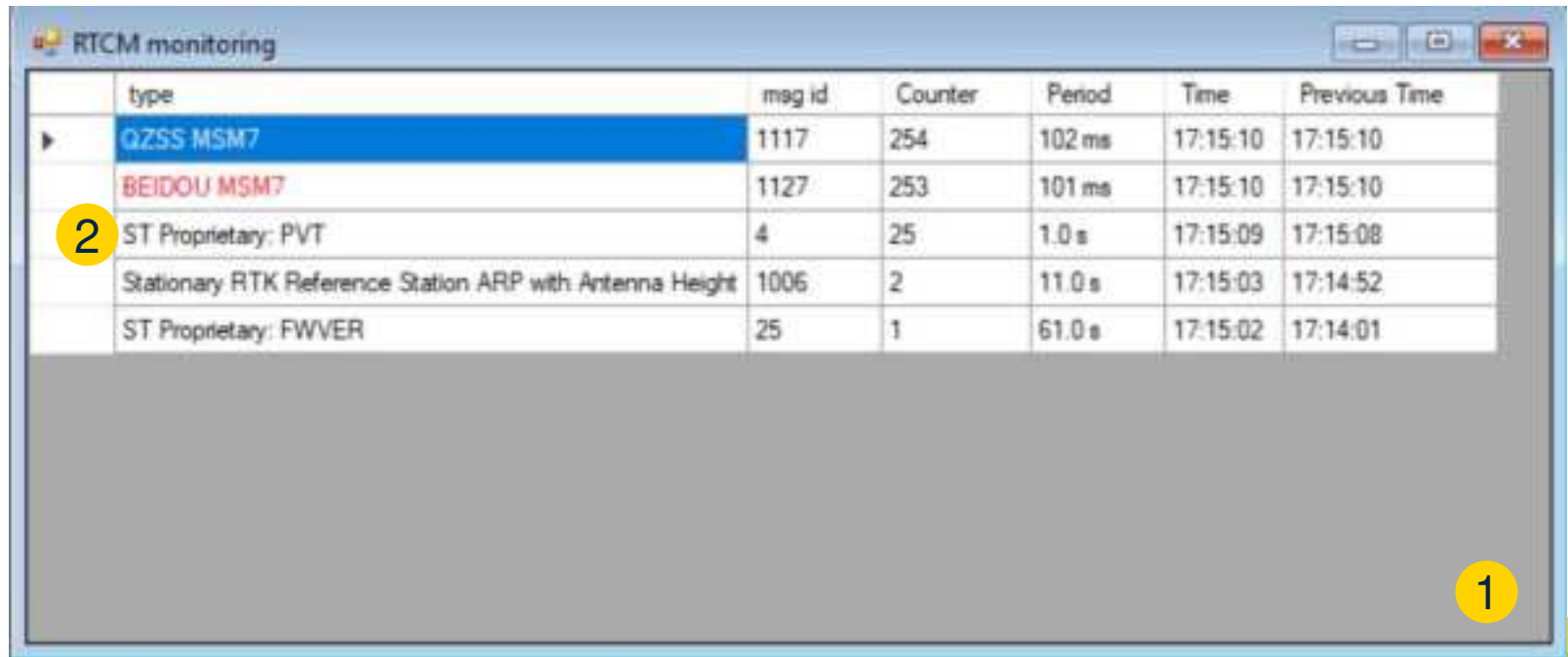
- 1 In the summary panel, the GNSS EVB-T5 state is reported
- 2 Click on the RTCM output window to inspect the RTCM stream





# Teseo suite – Inspect device

- 1 The RTCM Decoding panel is shown
- 2 The RTCM Stream can be seen and inspect



|   | type                                                     | msg id | Counter | Period | Time     | Previous Time |
|---|----------------------------------------------------------|--------|---------|--------|----------|---------------|
| ▶ | QZSS MSM7                                                | 1117   | 254     | 102 ms | 17:15:10 | 17:15:10      |
|   | BEIDOU MSM7                                              | 1127   | 253     | 101 ms | 17:15:10 | 17:15:10      |
| 2 | ST Proprietary: PVT                                      | 4      | 25      | 1.0 s  | 17:15:09 | 17:15:08      |
|   | Stationary RTK Reference Station ARP with Antenna Height | 1006   | 2       | 11.0 s | 17:15:03 | 17:14:52      |
|   | ST Proprietary: FWVER                                    | 25     | 1       | 61.0 s | 17:15:02 | 17:14:01      |



# Teseo Suite – Extra features

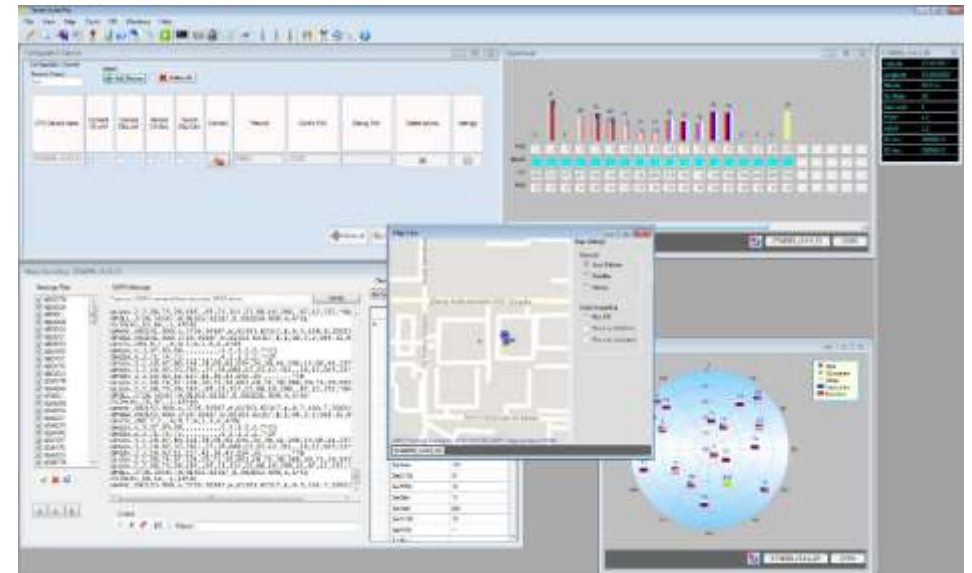
- 1 Click Help menu to access the User Manual
- 2 The User Manual gives a complete description

The image shows the Teseo Suite Pro software interface. The 'Help' menu is highlighted with a red circle, and a yellow circle with the number 1 is placed next to it. The manual cover is shown on the right, featuring the Teseo Suite logo and a diagram of a car with various icons. A yellow circle with the number 2 is placed on the cover.



# Enjoy with EVB-T5

Now you can enjoy the **EVB-T5** and explore all its features with the **Teseo-Suite**





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All documents are available on:  
[www.st.com](http://www.st.com)

- **EVB-T5: Webpage**
  - Datasheet
  - User Manual
  - Quick Start Guide
- **Teseo Suite: Webpage**
  - Datasheet
  - Install program

