



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



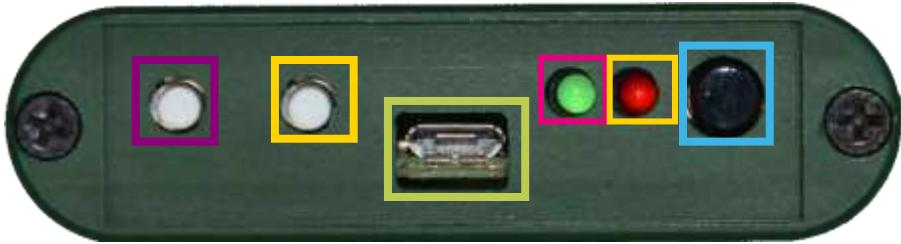
Front panel



Rear panel

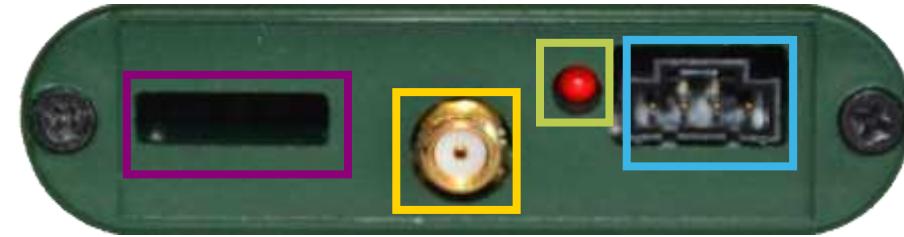
EVB-T5 – Front and Rear panels

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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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
- Download and install the Silab VCP Driver from www.silabs.com

A screenshot of a web browser displaying the 'TESEO-SUITE' product page on the STMicroelectronics website. The page has a light blue header with the ST logo and a navigation menu. Below the header, there's a breadcrumb trail: Home > Embedded software > Automotive, infotainment and Internet software > TESEO-SUITE. The main content area features a large heading 'TESEO-SUITE' with a green 'ACTIVE' badge. Below it is a brief description: 'PC software tool to manage, configure and evaluate the performances of Teseo GNSS family'. There are three buttons at the top of this section: 'QUICK VIEW' (highlighted in blue), 'RESOURCES', and 'GET SOFTWARE'. A detailed description follows, mentioning the tool's ability to manage multiple Teseo GNSS solutions and its support for NMEA sentence logging and analysis. A 'Key Features' section lists various tools and utilities available in the suite, such as a GNSS tracer, protocol support, firmware configuration, and diagnostic tools.



Connect and start EVB-T5

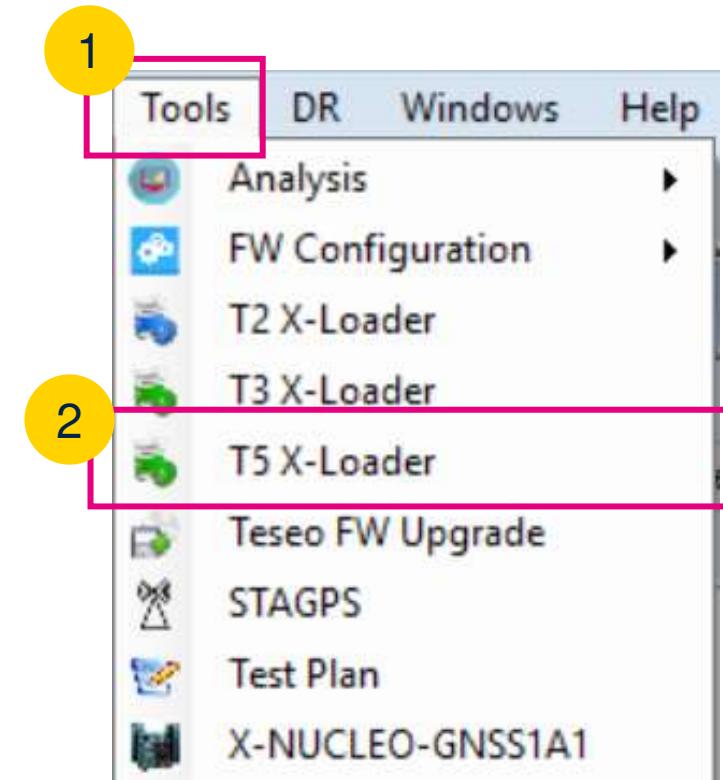
- 1 Connect the USB cable between PC USB and the EVB-T5 UART port
- 2 Connect the GNSS Antenna to the SMA input connector
- 3 Press the Power-on button
- 4 Verify that the RED Power LED is ON





Program the EVB-T5 [1/2]

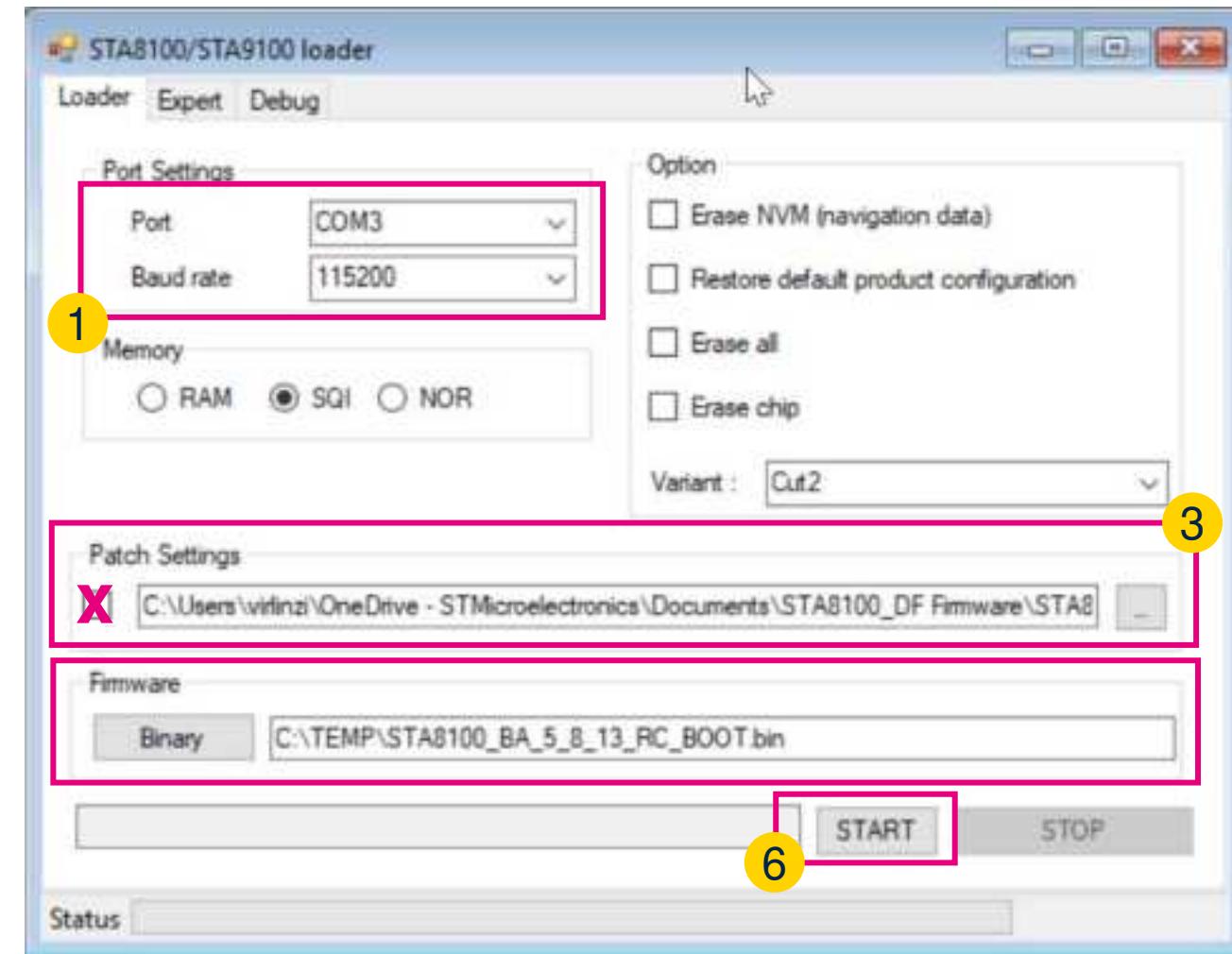
- 1 In the Teseo-Suite menu, select the **Tools** items



- 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.

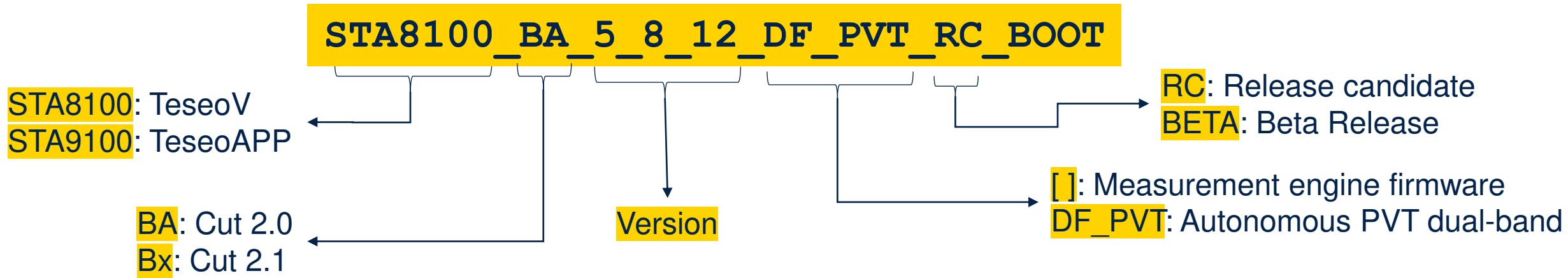
On TeseoAPP (STA9100) only ME firmware is available

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

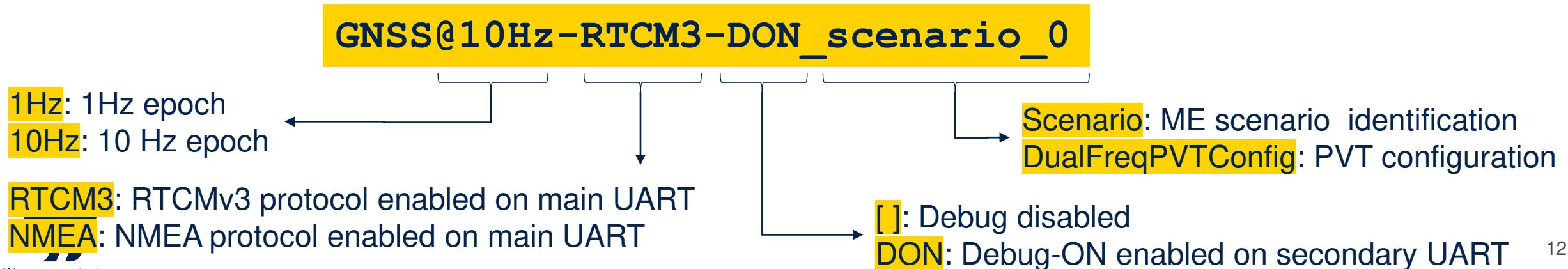


Firmware and patch naming convention

Firmware name convention:



Patch name convention:





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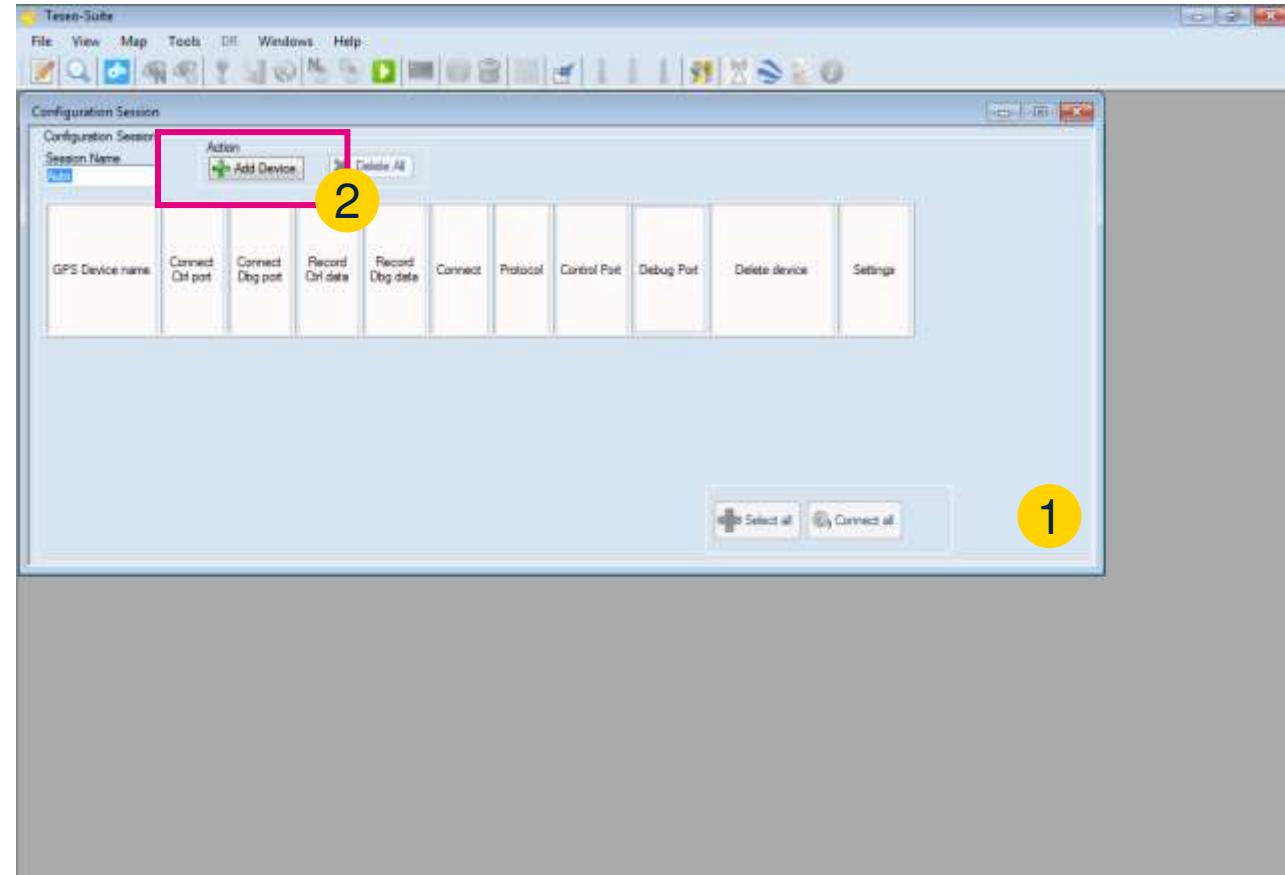
4

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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



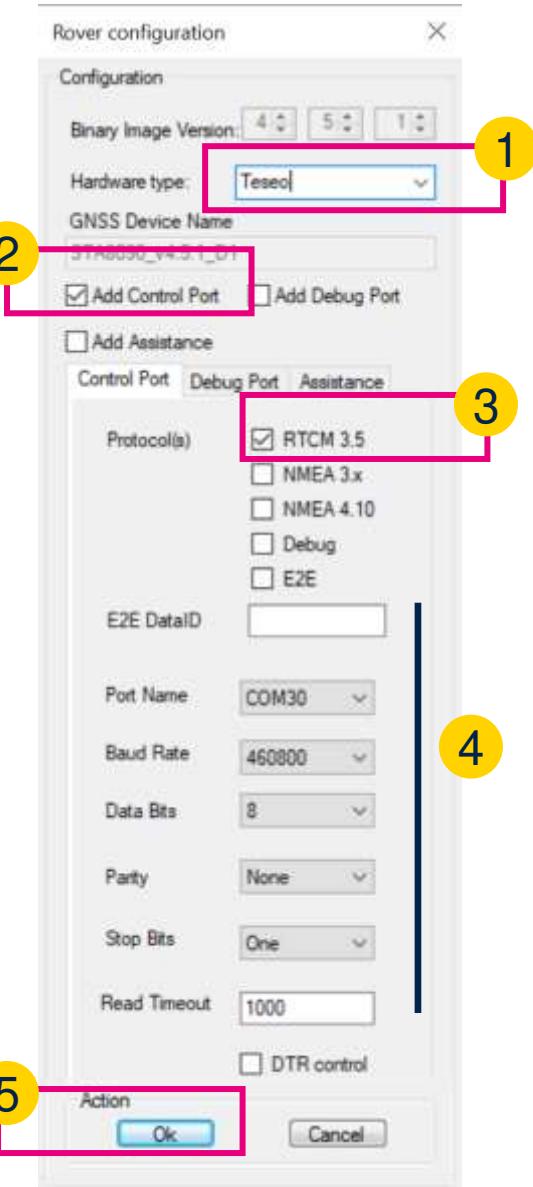


Teseo Suite – Configuration device

- 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 |

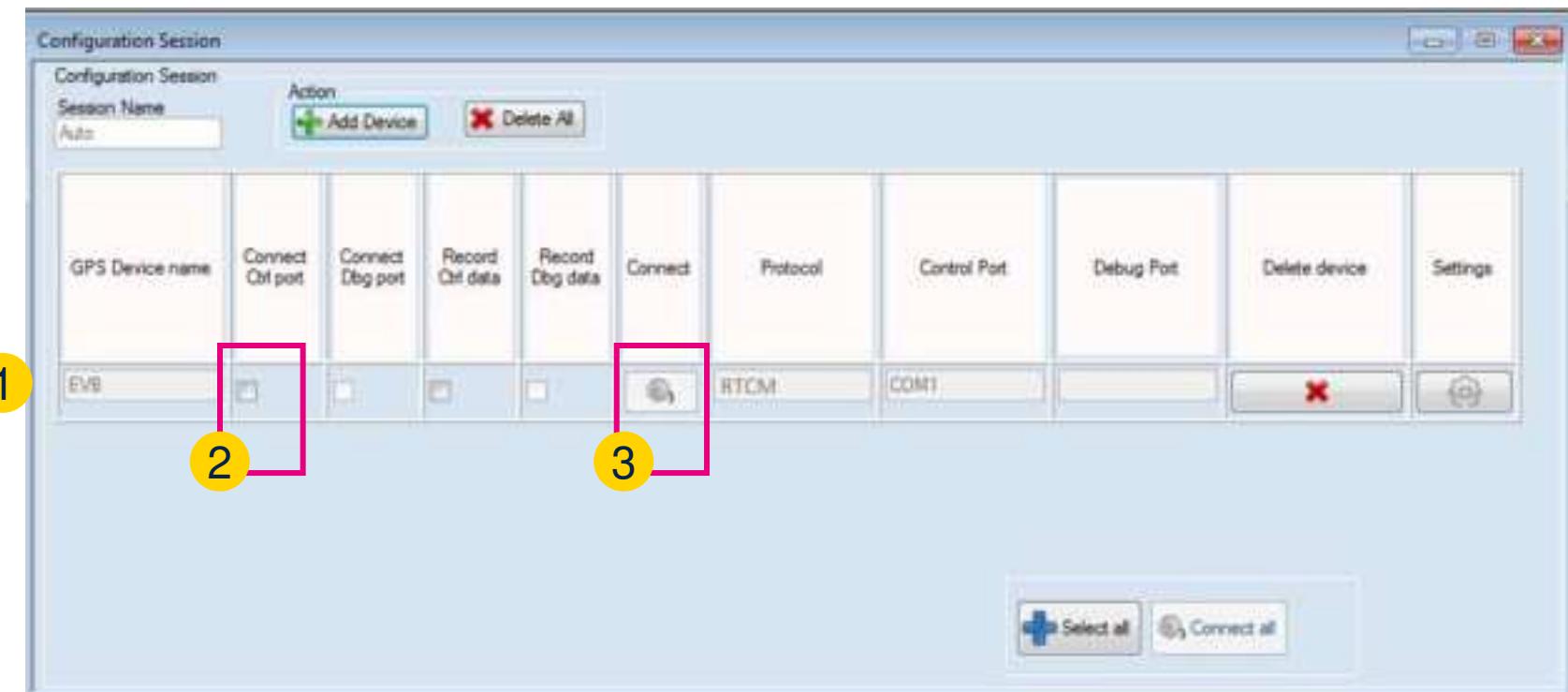
- 5 Click the Ok button





Teseo Suite – Connect the device

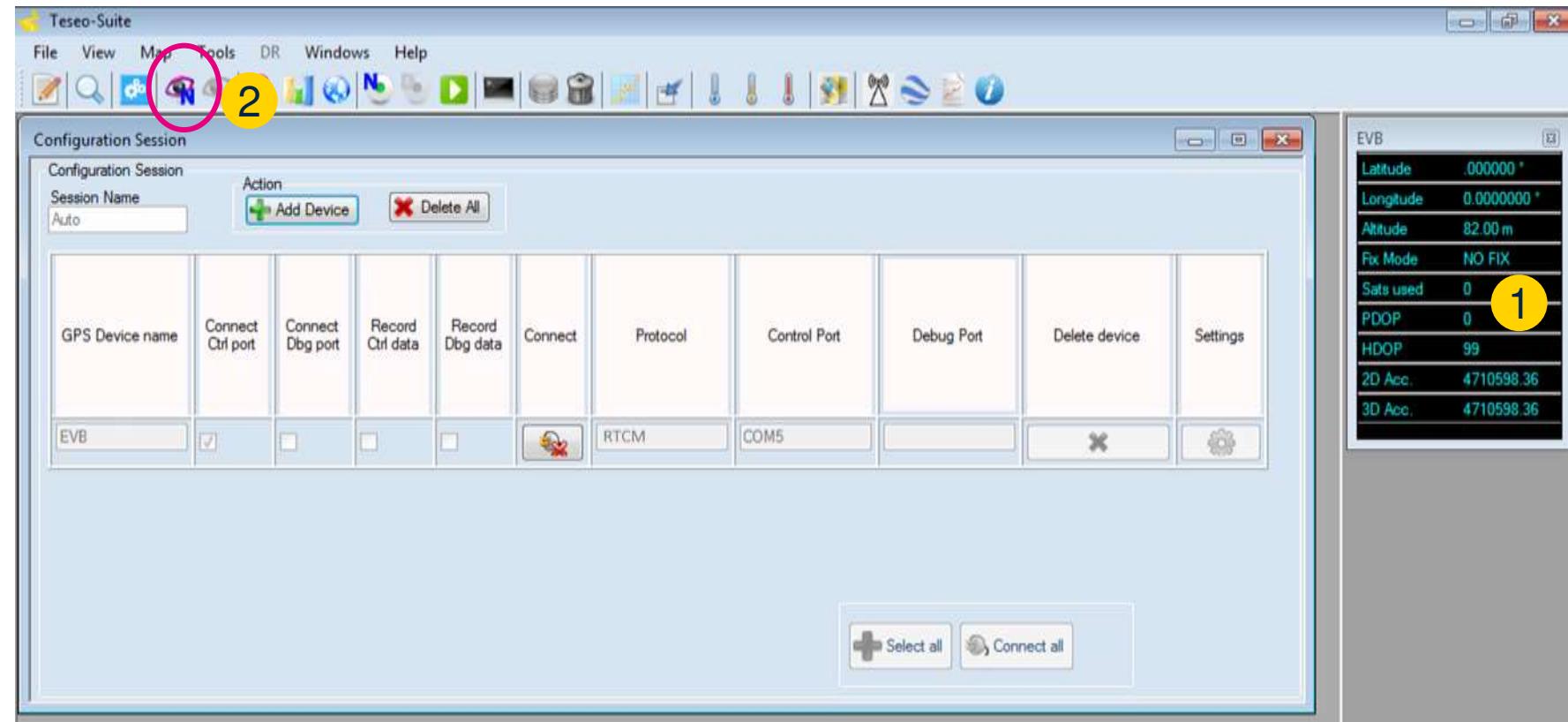
- 1 In the **Configuration Session** panel a new entry (row) is shown
- 2 Enable **Connect Ctrl port**
- 3 Click the **Connect** button





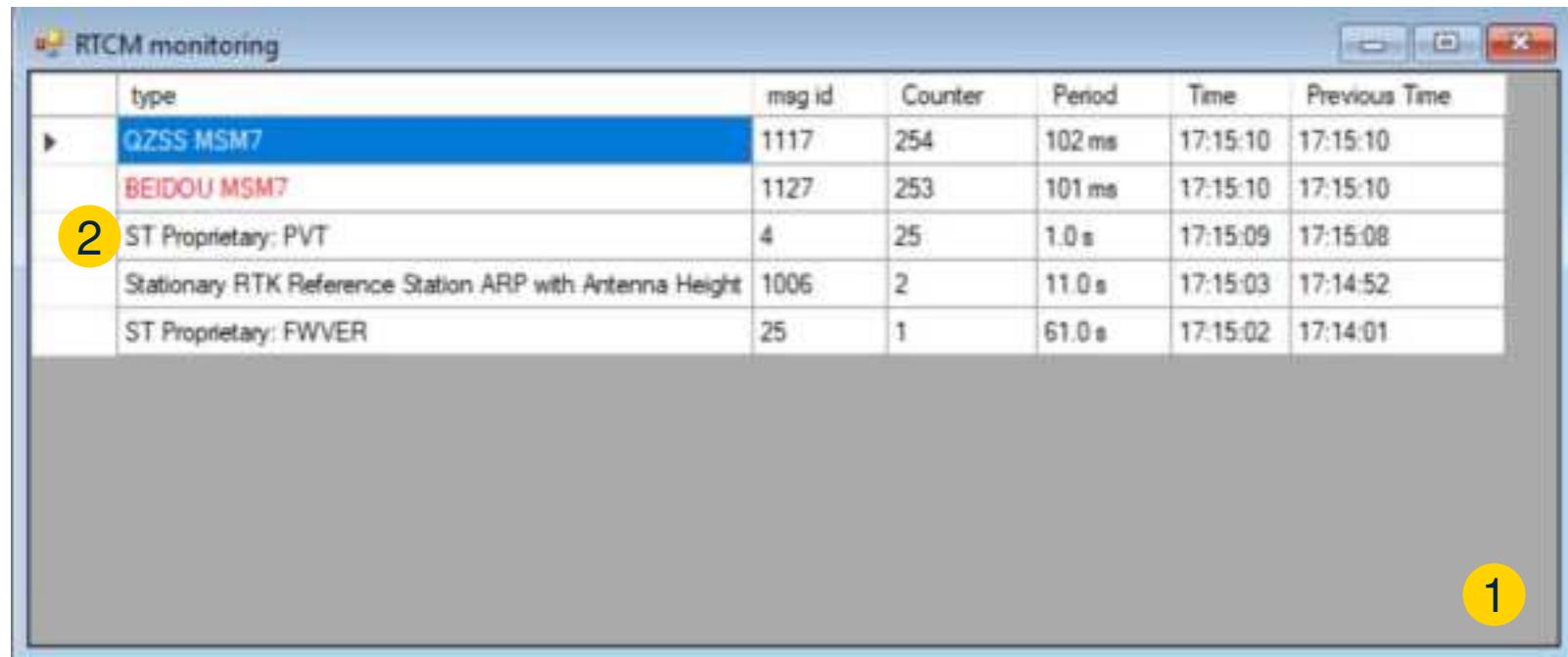
Teseo Suite – Device working

- 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 |
| 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

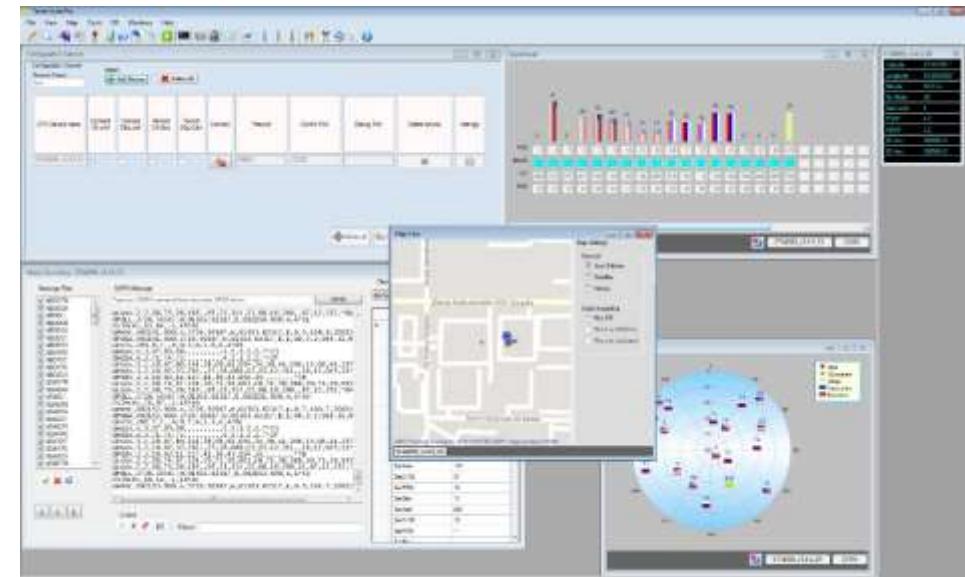
The screenshot shows the Teseo-Suite Pro software interface. At the top, the 'Help' menu is open, with the 'User Manual' option highlighted and circled in red. A yellow circle labeled '1' points to this circled item. Below the menu, there are two main windows: one titled 'Configuration Session' showing a grid of device actions like 'Connect GPS port', 'Record OBD data', etc., and another window showing a map with various locations marked.

The screenshot shows a page from the 'Teseo-Suite User Manual'. The page header includes the ST logo and the text 'Automotive Product Group - Automotive Infotainment Division Navigation & Multimedia System & Architecture Teseo-Suite User Manual'. Below the header is a yellow circular icon with the 'Teseo Suite' logo and a road graphic. A yellow circle labeled '2' points to the 'Introduction' section at the top left of the page. The introduction text reads: 'This document contains the information necessary for correct use of the Teseo Suite, describes all its functionality. The functions offered by the tool can be divided into two main areas: 1. Viewer: MMIS or binary protocol decoding and display of sensor values; 2. Test place module for setting and running scripts on ST UDS2 resources.' The page also includes the date '16 October 2017', page numbers 'Page 1 / 16', and a 'Per Confidential Use Only' note.



Enjoy with EVB-T5

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





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Documents & related resources

All documents are available on:
www.st.com

- **EVB-T5: Webpage**

- Datasheet
- User Manual
- Quick Start Guide

- **Teseo Suite: Webpage**

- Datasheet
- Install program

The screenshot shows the Teseo-SUITE software interface. At the top, it says "TESEO-SUITE" and "PC software tool to manage, configure and evaluate the performance of ST Teseo GNSS family". Below this are sections for "Download Datasheet", "QUICK START", "RESOURCES", and "GET SOFTWARE". The "RESOURCES" section contains links to "QUICK LINKS", "Technical Documentation", "Product Specifications", and "Legal". The "Product Specifications" table includes:

| Description | Version | Size |
|---------------------------------|---------|--------|
| DS12152 - Product specification | 1.0 | 194 KB |

The "Legal" section contains:

| Description | Version | Size |
|-----------------------------|---------|-------|
| ELA0000 - License agreement | 1.0 | 10 KB |

The screenshot shows the Teseo-LiVF product page. At the top, it says "Teseo-LiVF". Below this are sections for "Download Datasheet", "Technical Documentation", "Product Specifications", "User Manuals", and "Publications-and Collaterals". The "Product Specifications" table includes:

| Description | Version | Size |
|---------------------------------|---------|--------|
| DS12152 - Product specification | 2.0 | 630 KB |

The "User Manuals" table includes:

| Description | Version | Size |
|--------------------------|---------|--------|
| UM0231 - Hardware Manual | 1.0 | 407 KB |
| UM0229 - Software Manual | 2.0 | 2 MB |

The "Publications-and Collaterals" table includes:

| Description | Version | Size |
|------------------------------------|---------|--------|
| Teseo-LiVF - Product specification | 1.0 | 701 KB |