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EVB-T5MCM Teseo V evaluation board

Quick Start Guide





Quick Start Guide - Contents

1

Introduction to EVB-T5MCM

2

Connect and program EVB-T5MCM

3

Teseo-Suite configuration and startup

4

Documents & related resources



Quick Start Guide - Contents

1

Introduction to EVB-T5MCM

2

Connect and program EVB-T5MCM

3

Teseo-Suite configuration and startup

4

Documents & related resources



Introduction to EVB-T5MCM

- The **EVB-T5MCM** evaluation board is a complete standalone evaluation platform for Teseo V **STA8135GA triple-bands** GNSS receiver IC.
- The **Teseo V STA8135GA** is a easy-to-use triple bands (L1, L2 and L5) Global Navigation Satellite System (GNSS) positioning receiver IC working on multiple constellations (GPS, GLONASS, Beidou, Galileo, QZSS)



Top view



Front panel









Rear panel

EVB-T5MCM – Front and Rear panels




Front panel



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

Rear panel



-  SD/MMC connector
-  SMA Antenna connector
-  IO/ODO connector



I/O-ODO Connector signals

I/O ODO Connect is a 14 pins connector providing the signal reported in table

1	3	5	7	9	11	13
12V_CAR_BAT	FWD	INT-1	I2C_SCD	VBAT	3.3V_GNSS	GND
12V_CAR_BAT	WHELLTICK	INT-2	I2C_SDA	VBAT_VIC3	3.3V_VIC	GND
2	4	6	8	10	12	14



Quick Start Guide - Contents

1

Introduction to EVB-T5MCM

2

Connect and program EVB-T5MCM

3

Teseo-Suite configuration and startup

4

Documents & related resources



Install Teseo-Suite and VCP driver

The **Teseo-Suite** (version 6.3.x needed) is a powerful PC Tool able to manage the EVB-T5MCM 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 the ST Teseo-Suite product page. The page features the ST logo and the tagline "life.augmented" at the top left. A navigation menu is visible at the top right. The main content area includes the product name "TESEO-SUITE" with an "ACTIVE" badge, a description of the software as a PC tool for managing Teseo GNSS family, and a "Download Databrief" button. Below this are three buttons: "QUICK VIEW", "RESOURCES", and "GET SOFTWARE". The page also contains descriptive text about the software's capabilities and a list of key features such as multiple GNSS tracers, protocol support, and various diagnostic and monitoring tools.



Connect and start EVB-T5MCM

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

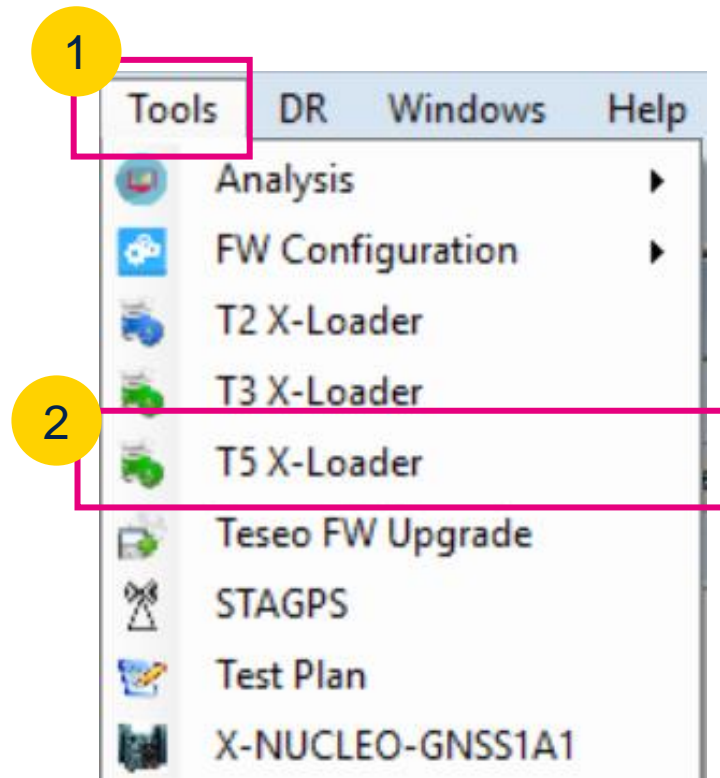




Program the EVB-T5MCM [1/2]

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

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





Program the EVB-T5MCM [2/2]

1 Configure the COM port and the baud rate

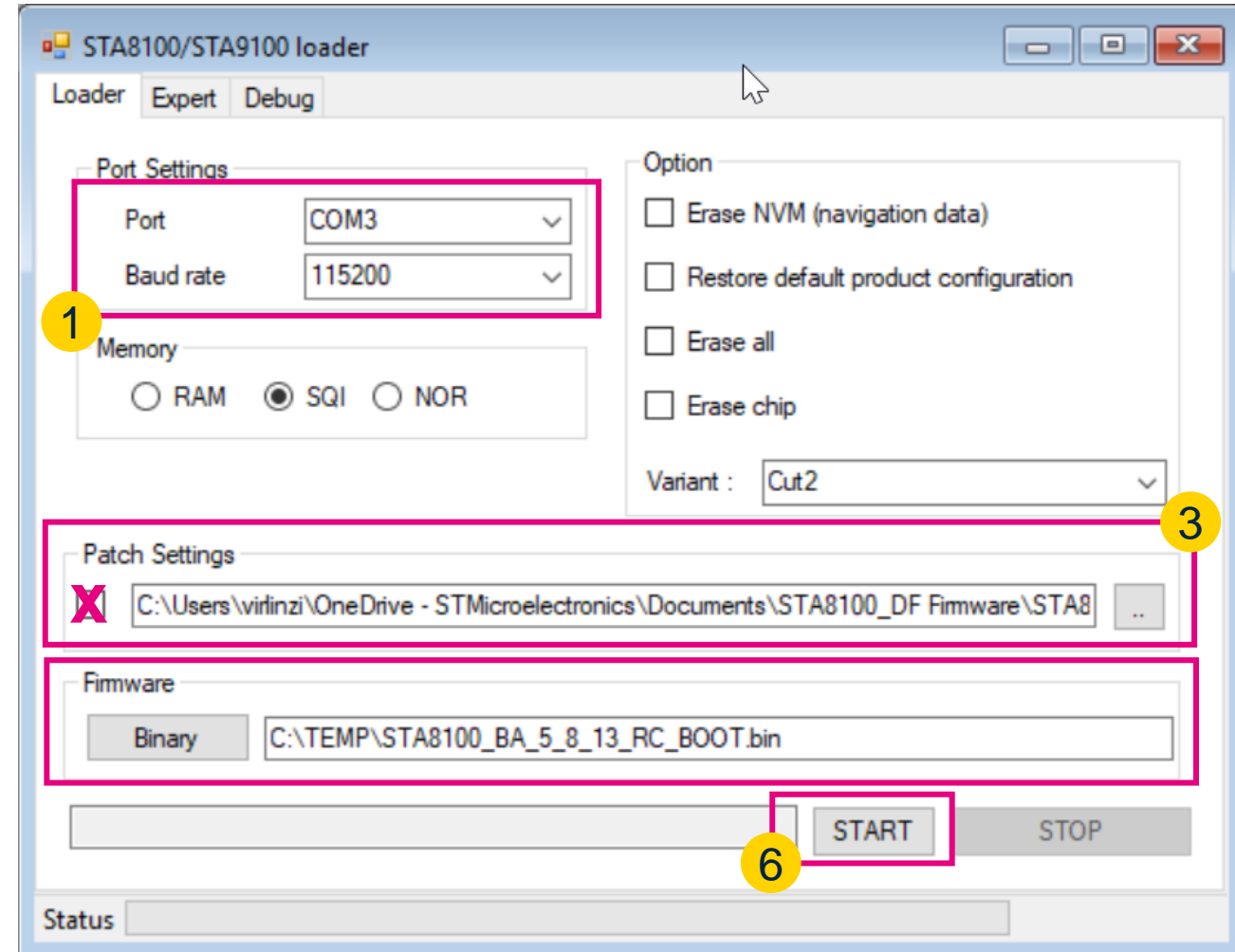
2 Select the T5 binary file (see next slide)

3 Enable and select the T5 patch file (see next slide)

4 Push and **maintain** the 'BOOT' button on the EVB-T5MCM

5 Push the 'RESET' button on the EVB-T5MCM

6 Push S





Firmware based on usage case

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

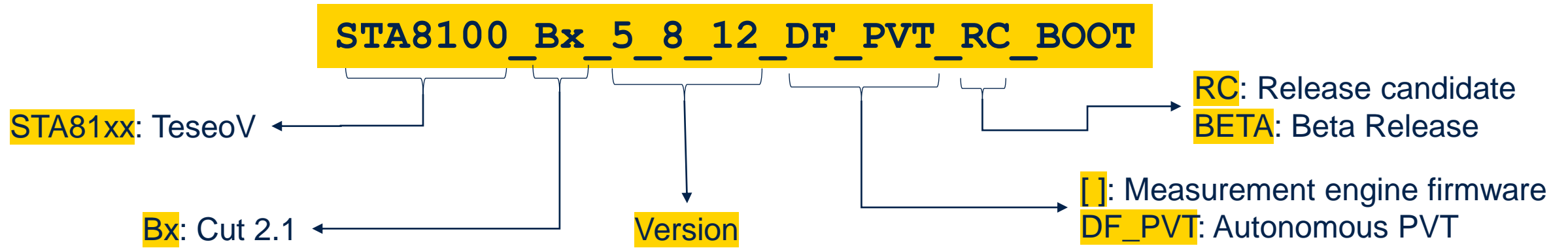
- **Measurement Engine Firmware** (aka: ME firmware): Teseo V will provide raw measurement data to support an RTK-PPP algorithm running an external MCU
- **Autonomous PVT** (aka: DF_PVT): Teseo V will provide a complete dual-band L1&L5 autonomous PVT.

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

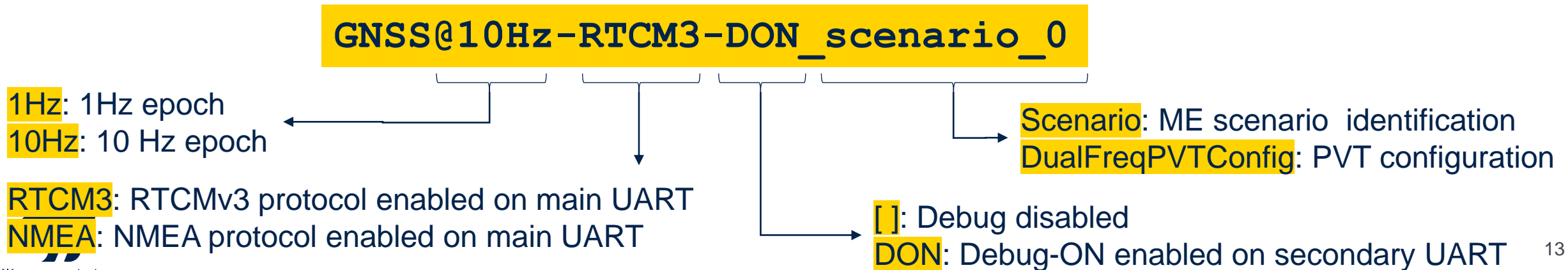


Firmware and patch naming convention

Firmware name convention:



Patch name convention:





Quick Start Guide - Contents

1

Introduction to EVB-T5MCM

2

Connect and program EVB-T5MCM

3

Teseo-Suite configuration and startup

4

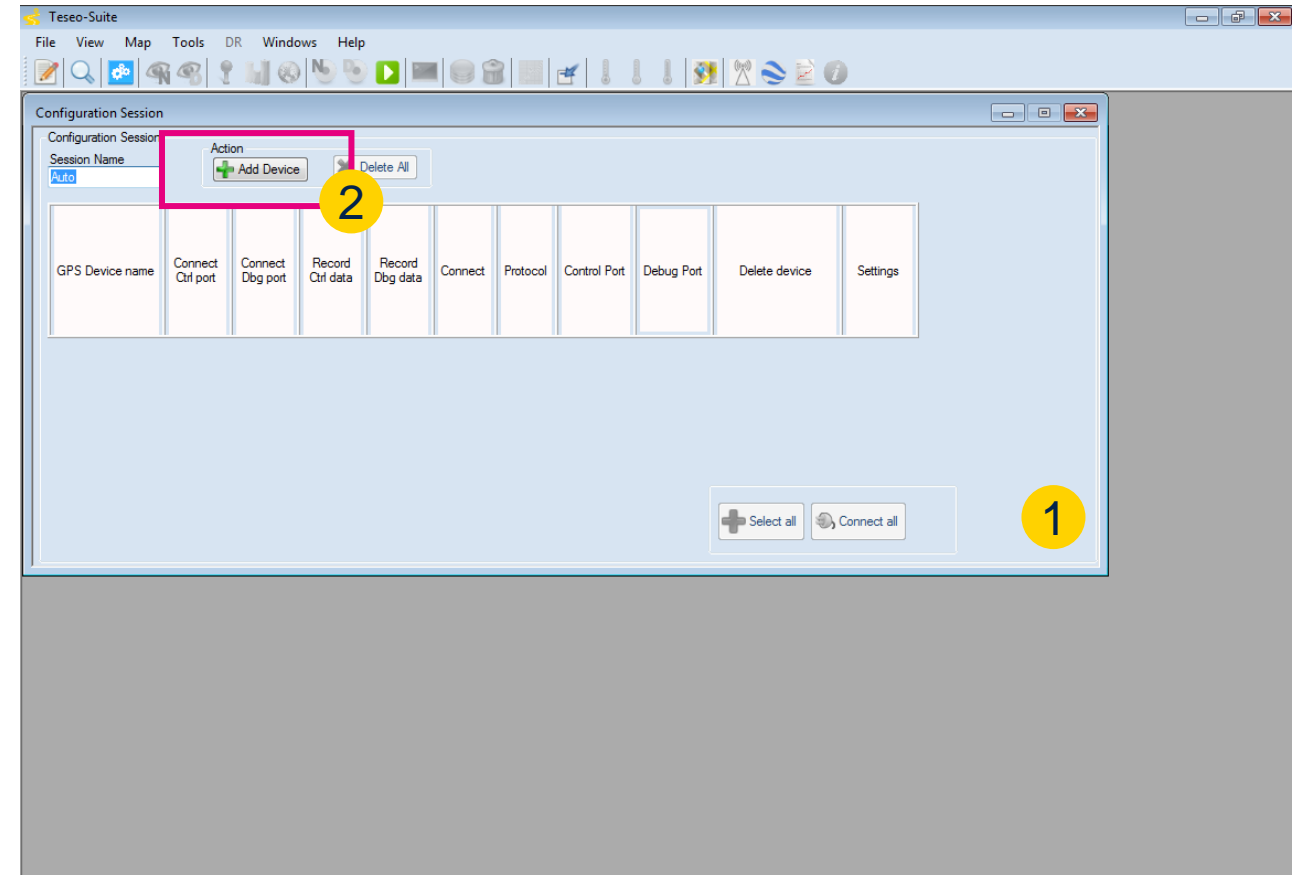
Documents & related resources



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



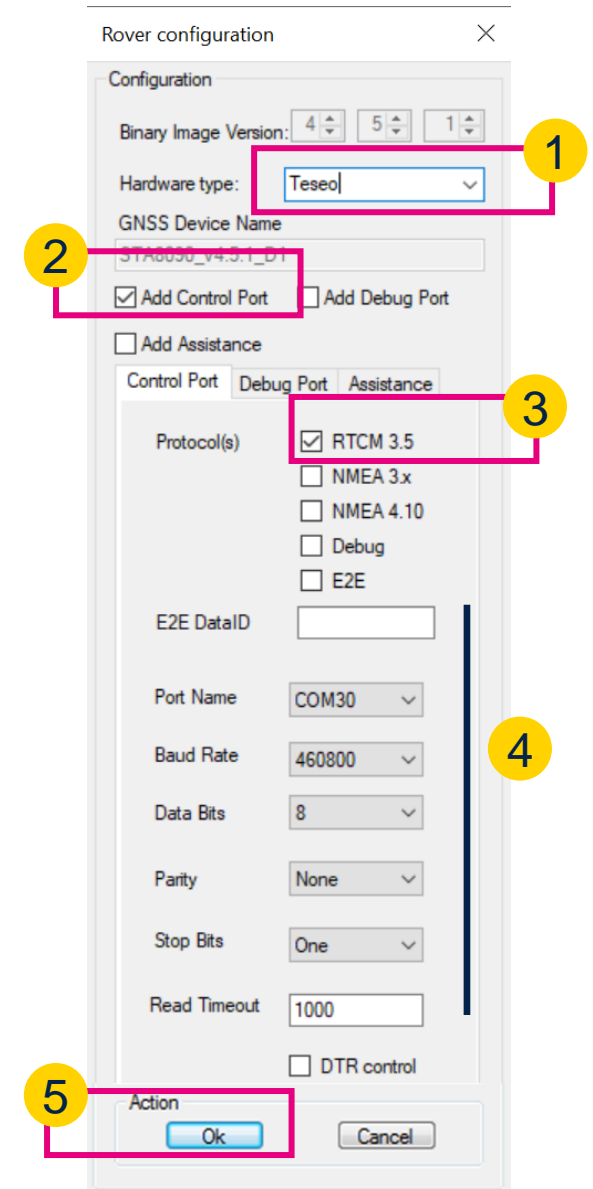


Teseo Suite – Configuration device

- 1 Set the Hardware type: **STA8135GA**
- 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

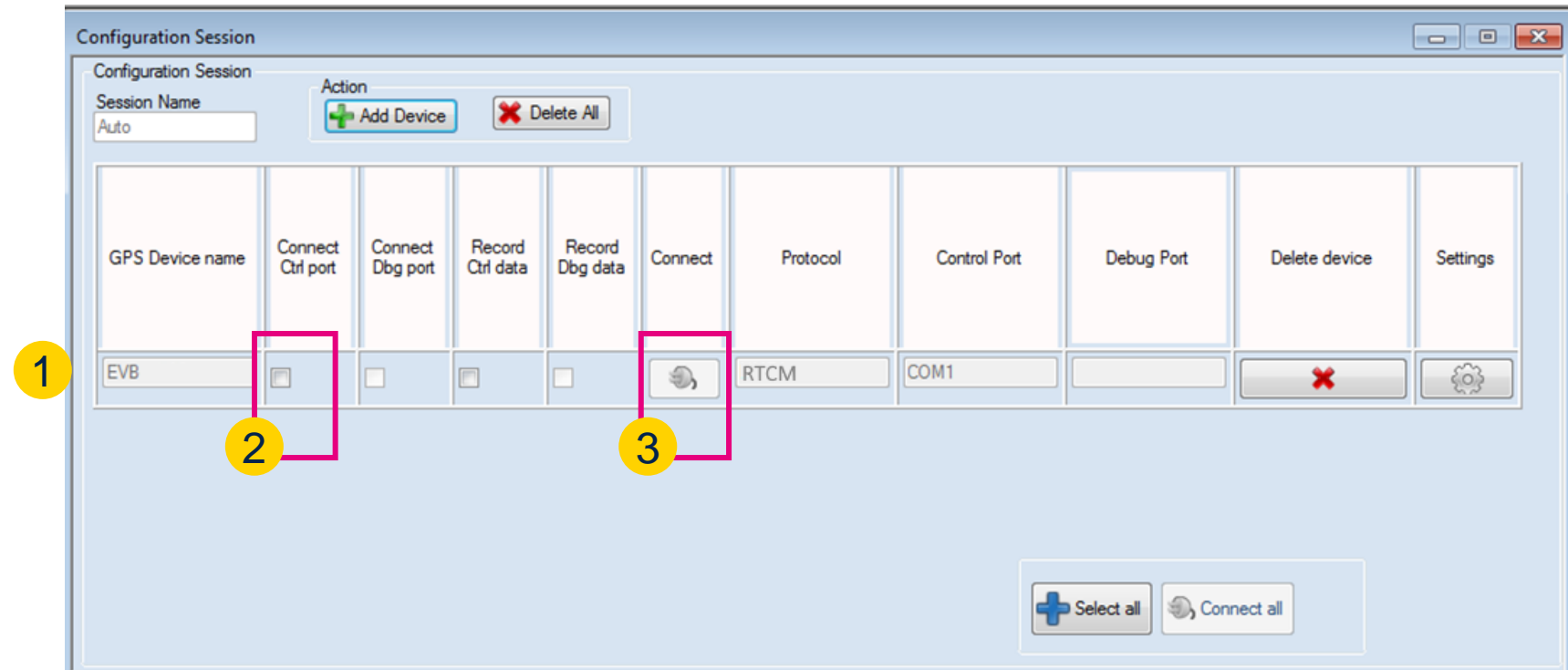
- 5 Click the Ok button





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-T5MCM state is reported
- 2 Click on the RTCM output window to inspect the RTCM stream

The screenshot displays the Teseo Suite software interface. The main window is titled "Configuration Session" and contains a table of device configurations. A yellow circle with the number "2" highlights the "Tools" menu item in the top toolbar. Another yellow circle with the number "1" highlights the "Sats used" field in the right-hand summary panel.

GPS Device name	Connect Ctrl port	Connect Dbg port	Record Ctrl data	Record Dbg data	Connect	Protocol	Control Port	Debug Port	Delete device	Settings
EVB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		RTCM	COM5			

Summary Panel (EVB):

- Latitude: .000000 °
- Longitude: 0.0000000 °
- Altitude: 82.00 m
- Fix Mode: NO FIX
- Sats used: 0
- PDOP: 0
- HDOP: 99
- 2D Acc.: 4710598.36
- 3D Acc.: 4710598.36



Teseo Suite – Inspect device

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

The screenshot shows a window titled "RTCM monitoring" with a table of RTCM messages. The table has columns for type, msg id, Counter, Period, Time, and Previous Time. A yellow circle with the number "2" is placed over the "ST Proprietary: PVT" row. A yellow circle with the number "1" is placed in the bottom right corner of the window.

	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 main screenshot shows the Teseo Suite Pro interface. The Help menu is highlighted with a yellow circle containing the number '1'. The Help menu options are: User Manual, FW Config, User Manual, and About Teseo Suite. Below the main screenshot is a smaller screenshot of the same interface, with a yellow circle '2' highlighting the 'User Manual' option in the Help menu.

Automotive Product Group
Automotive Infotainment Division
Navigation & Multimedia System & Architecture
Teseo Suite User Manual

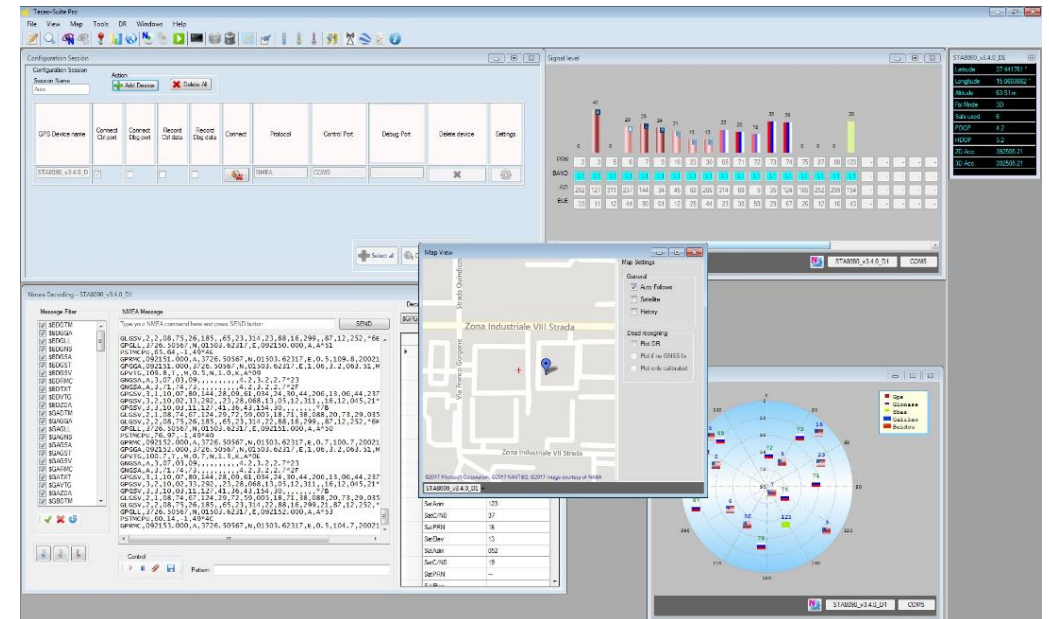
1 Introduction
This document contains the information necessary for correct use of the Teseo Suite tool and describes all its functionality.
The functions offered by the tool can be divided into two main areas:
1. Viewer: NMEA or binary protocol decoding and display of some views;
2. Test plan: module for writing and running scripts on ST GNSS receivers.

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Have fun with EVB-T5MCM

Now you can have fun **EVB-T5MCM** and explore all its features with **Teseo-Suite**





Quick Start Guide - Contents

1

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2

Connect and program EVB-T5MCM

3

Teseo-Suite configuration and startup

4

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Join us in the ST GNSS community

Get involved in the

ST GNSS community

Share ideas

Ask questions





Documents & related resources

All documents are available on:
www.st.com

- **STA8135GA:** [Webpage](#)
 - Datasheet
- **EVB-T5MCM:** [Webpage](#)
 - Datasheet
 - User Manual
 - Quick Start Guide
- **Teseo Suite:** [Webpage](#)
 - Datasheet
 - Install program

The screenshot shows the 'TESEO-SUITE' webpage. It features a navigation bar with 'QUICK VIEW', 'RESOURCES', and 'GET SOFTWARE'. The main content area includes a 'Download Databrief' button, a description of the software tool, and a list of 'Key Features' such as 'Multiple GNSS tracer' and 'GNSS flashing tool'. Below this is a 'RESOURCES' section with a 'Quick Links' dropdown menu. The 'Technical Documentation' section contains a table for 'Product Specifications' with one entry: 'DB3224: PC GUI software to control, configure and performance analyze of Teseo GNSS family' (Version 1.0, Size 164 KB). A 'Legal' section follows with a 'License Agreement' table containing one entry: 'SLA0066: Software license agreement' (Version 1.0, Size 59 KB).

The screenshot shows the 'Teseo-LIV3F' webpage. It features a navigation bar with 'Home', 'Positioning', 'GNSS Modules', and 'Teseo-LIV3F'. The main content area includes a 'Download Datasheet' button, a 'Technical Documentation' section, and two tables. The first table, 'Product Specifications', has one entry: 'DS12152: Tiny GNSS module' (Version 2.0, Size 630 KB). The second table, 'User Manuals', has two entries: 'UM2231: Teseo-LIV3F GNSS Module - Hardware Manual' (Version 1.0, Size 497 KB) and 'UM2229: Teseo-LIV3F GNSS Module - Software Manual' (Version 2.0, Size 2 MB). Below these is a 'Publications and Collaterals' section with a 'Flyers' table containing one entry: 'Teseo-LIV3F - Tiny GNSS Module' (Version 1.0, Size 701 KB).