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EVB-T3DRAW2

Teseo-DRAW Evaluation Board

Quick Start Guide

V. 1.0





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Introduction to EVB-T3DRAW2

- The **EVB-T3DRAW2** evaluation board is a complete standalone evaluation platform for our Teseo-DRAW sensor fusion firmware solution
- The **Teseo-DRAW** is ST Teseo Dead Reckoning Automotive Way solution which integrates Teseo 3 GNSS receivers with ST sensors to provide more accurate positioning data



Top view



Front panel

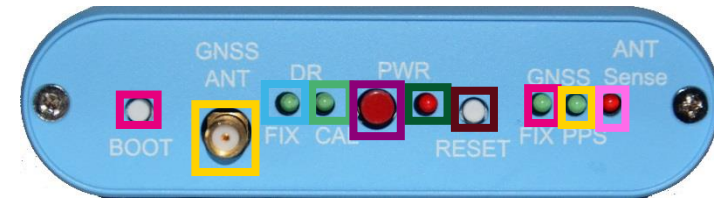


Rear panel



EVB-T3DRAW2 – front and rear panel

- BOOT button
- SMA antenna connector
- Green DR-Fix LED
- Green DR-Cal LED
- Power-on button
- Power-on LED
- Reset button
- GNSS Fix LED
- Green PPS LED
- Antenna Sense LED



Front panel

Rear panel



- MicroSD card slot
- UART/USB connector
- OBD connector



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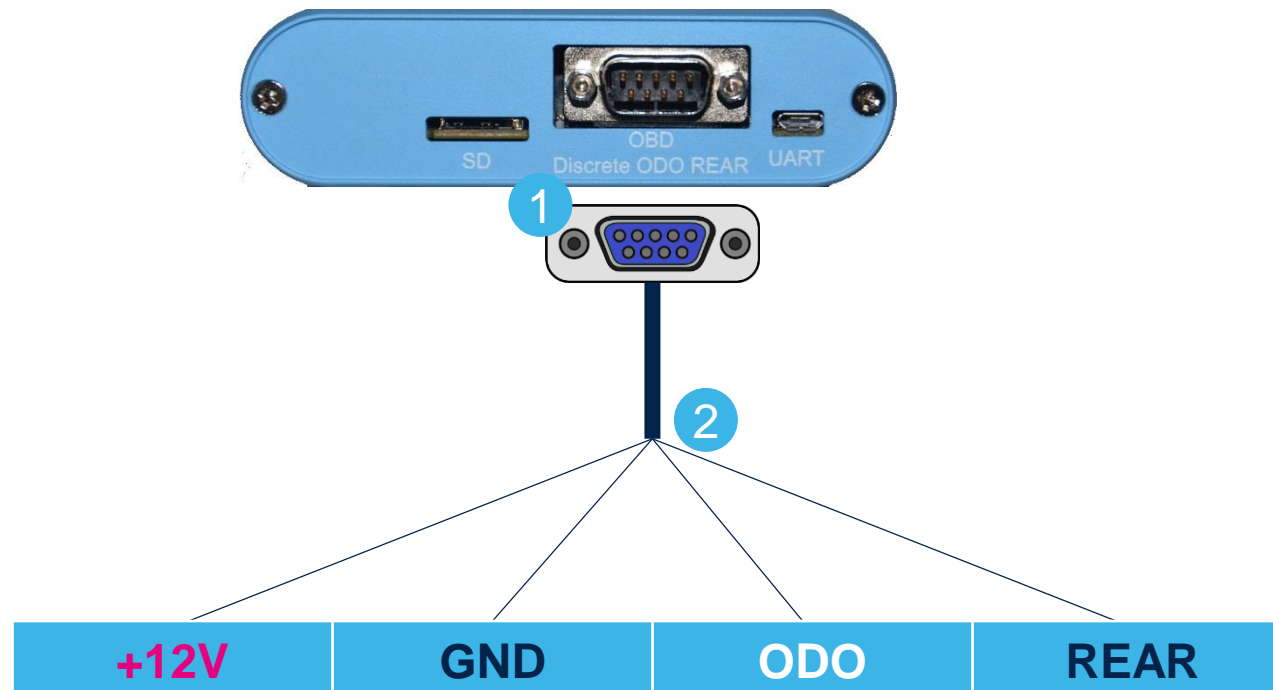
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Connect the ODB port

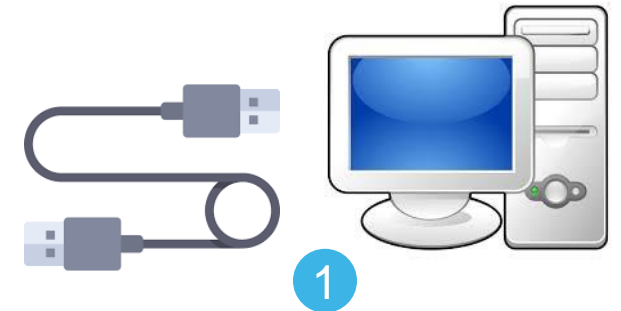
- 1 Connect the OBD cable to the OBD connector on the rear panel
- 2 Connect the four car signals to the ODB cable





Connect and start EVB-T3DRAW2

- 1 Connect the USB cable between the PC and the EVB-T3DRAW2 UART port
- 2 Connect the GNSS Antenna to the SMA input connector
- 3 Press the Power-on button
- 4 Verify that the green PPS LED blinks





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Install Teseo-Suite and VCP driver

The **Teseo-Suite** is a powerful PC Tool used to manage the EVB-T3DRAW2 evaluation board

- Download and install the Teseo Suite from www.st.com
- Download and install the FTDIchip VCP Driver from www.ftdichip.com

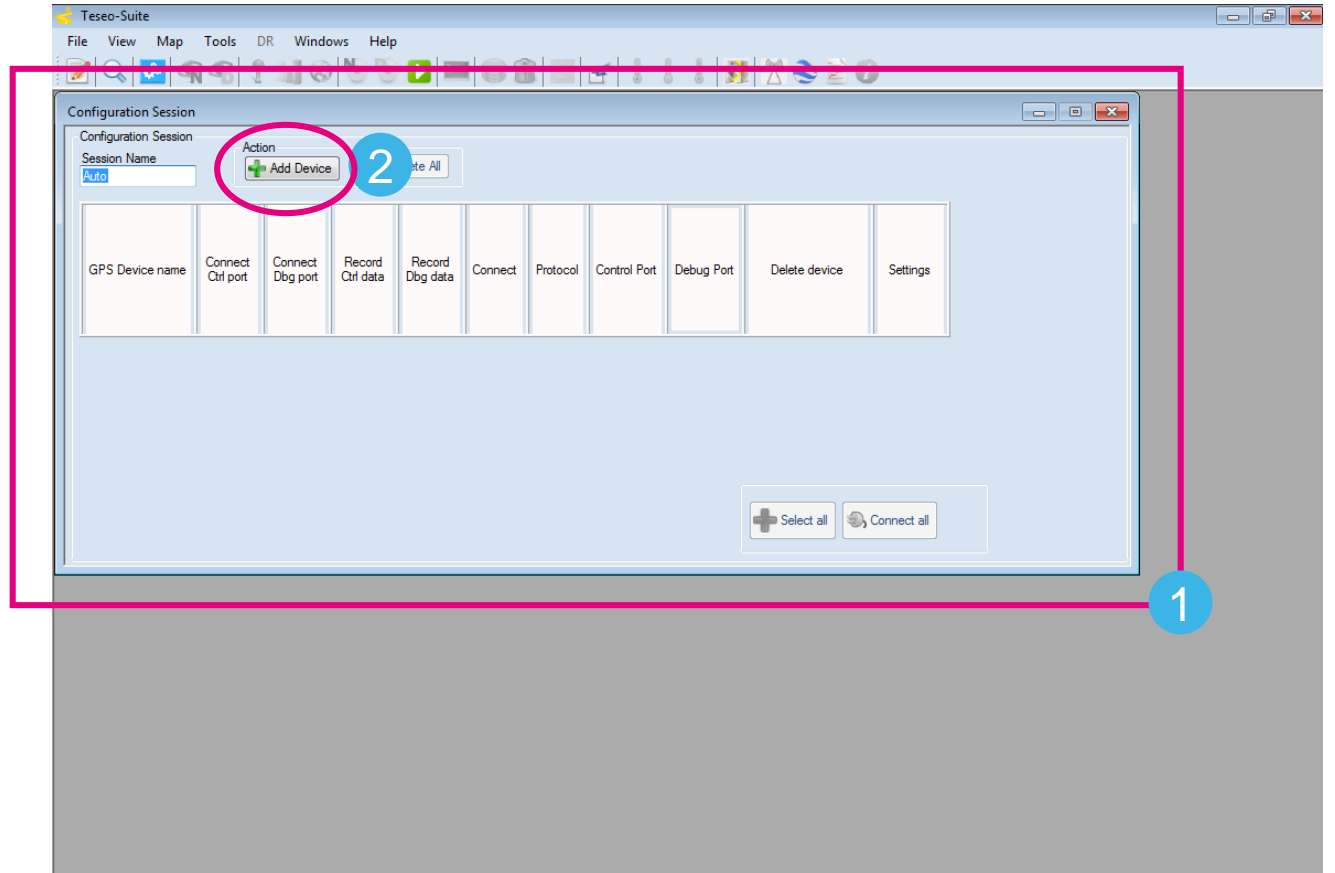
The screenshot shows the ST Teseo-Suite product page. At the top left is the ST logo with the tagline "life.augmented". To the right is a "Menu" icon. Below the logo is a breadcrumb trail: "Home > Embedded Software > Automotive Infotainment and Telematics Software > TESEO-SUITE". The main heading is "TESEO-SUITE" with a green "ACTIVE" badge. Below this is a description: "PC software tool to manage, configure and evaluate the performances of Teseo GNSS family". There is a "Download Databrief" link with a document icon. Below the description are three buttons: "QUICK VIEW" (highlighted in blue), "RESOURCES", and "GET SOFTWARE". The page contains several paragraphs of text describing the tool's capabilities, such as managing multiple ST Teseo GNSS solutions in parallel and supporting NMEA sentences logging and analysis. A "Key Features" section lists the following:

- Multiple GNSS tracer
- Multiple protocol support
- GNSS firmware configuration tool
- GNSS flashing tool
- Dead reckoning panel
- NMEA diagnostic tool
- Satellites signal monitoring viewer
- Map viewer
- Log viewer



Teseo-Suite - Start

- 1 During the application start-up, the Configuration Session panel is displayed
- 2 Click the **'Add Device'** button to add a new device



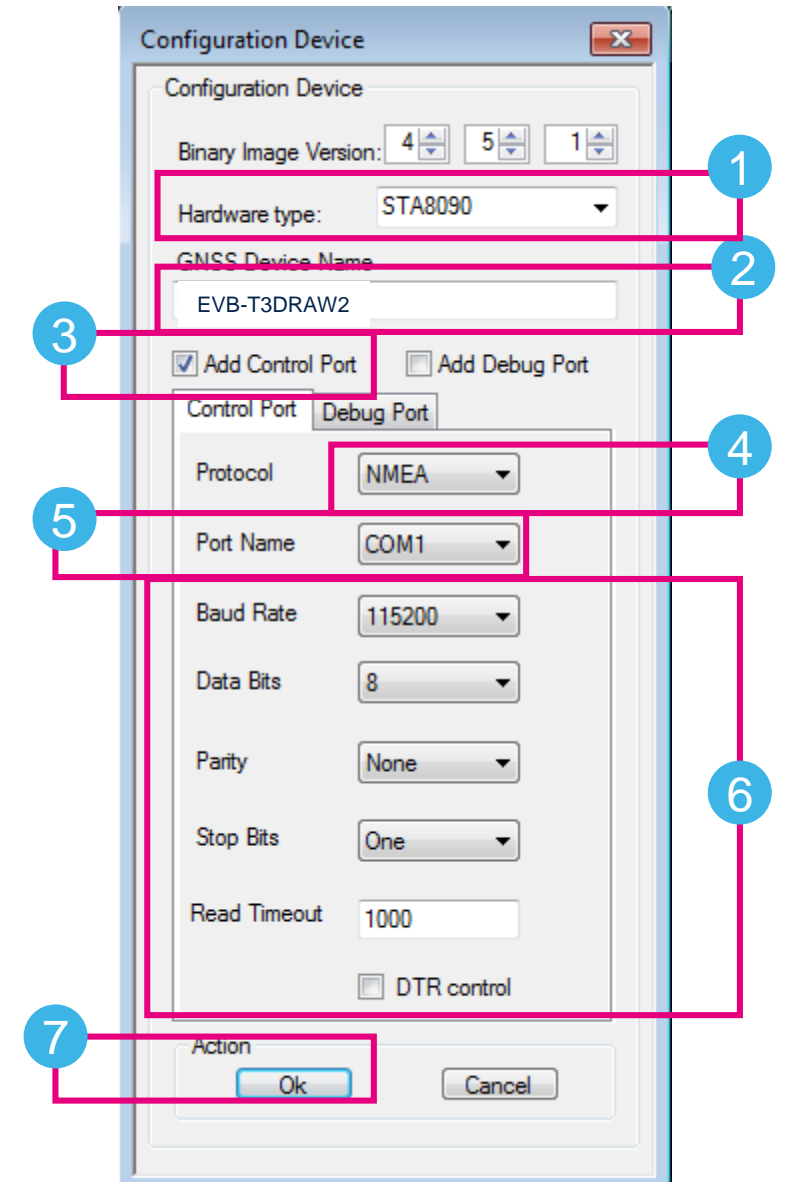


Teseo-Suite – Configuration device

- 1 Set the Hardware type: STA8090
- 2 Set the GNSS Device Name: **EVB-T3DRAW2**
- 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 shown:

Baud rate	Data bits	Stop Bits	Parity	Handshake
115200bps	8 Bits	1 Bit	None	None

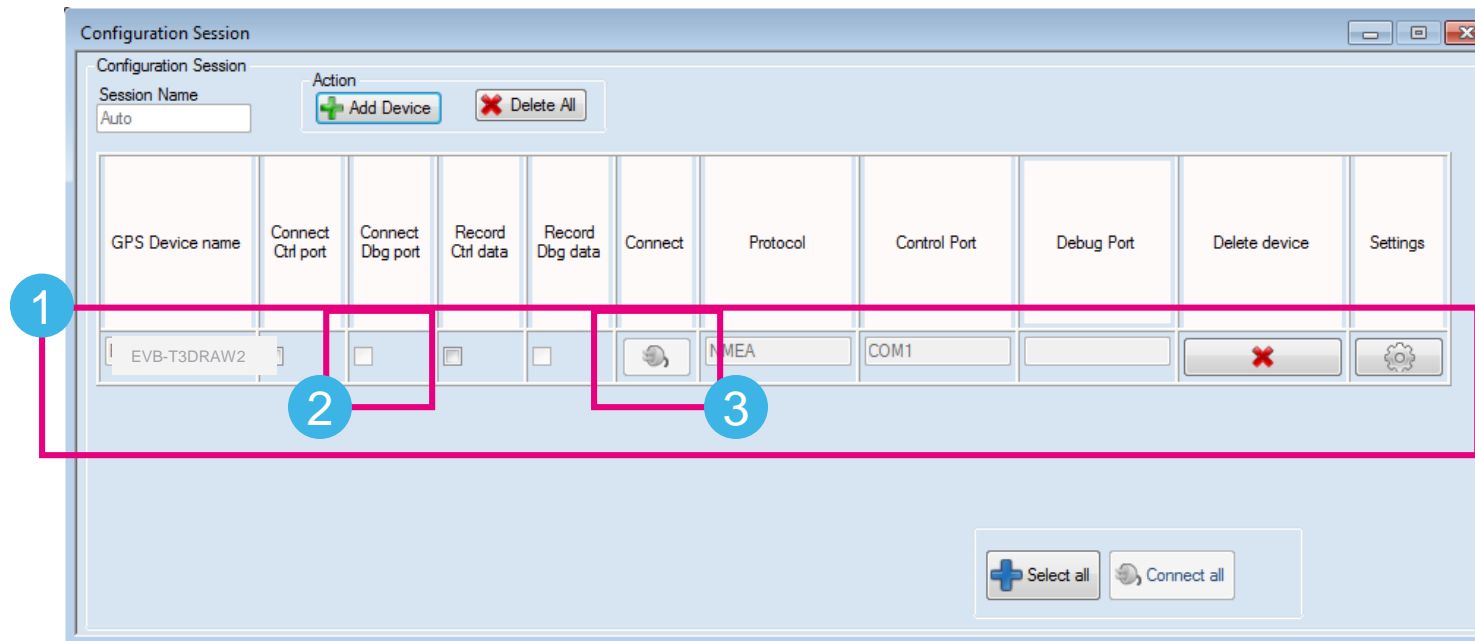
- 7 Click the Ok button





Teseo-Suite – Connect the device

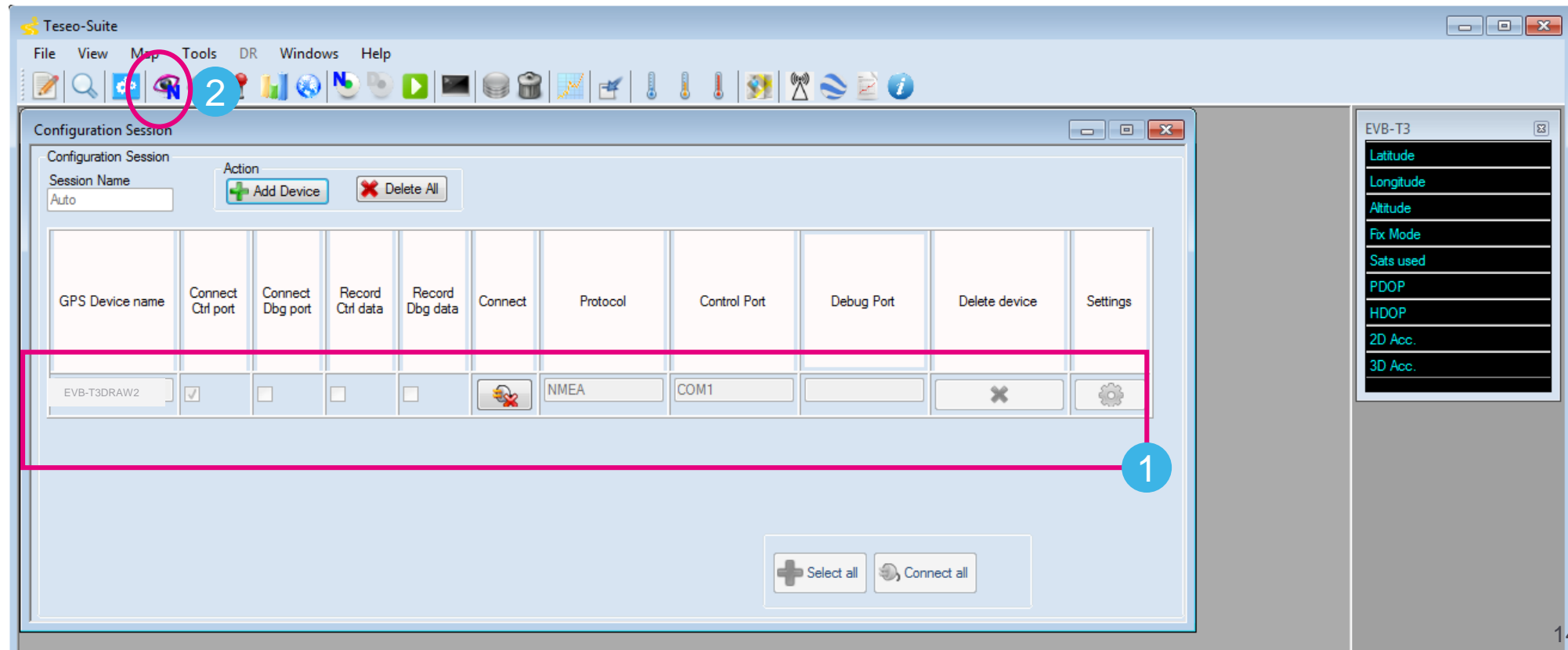
- 1 In the Configuration Session panel, a new entry (row) is shown
- 2 Enable **Connect Ctrl port**
- 3 Click the **Connect** button





Teseo-Suite – Device working

- 1 In the summary panel, the GNSS EVB-T3DRAW2 status is indicated
- 2 Click on the NMEA output window to inspect the NMEA stream





Teseo-Suite – Inspect device

- 1 The NMEA Decoding panel is shown
- 2 The NMEA Stream can be seen and inspected

Nmea Decoding - EVB-T3

Message Filter

- \$BDDTM
- \$BDGGA
- \$BDGLL
- \$BDGNS
- \$BDGSA
- \$BDGST
- \$BDGSV
- \$BDRMC
- \$BDTXT
- \$BDVTG
- \$BDZDA
- \$GADTM
- \$GAGGA
- \$GAGLL
- \$GAGNS
- \$GAGSA
- \$GAGST
- \$GAGSV
- \$GARMC
- \$GATXT
- \$GAVTG
- \$GAZDA
- \$GBDTM

NMEA Message

```
$GPGSA,A,1,,,,,,,,,99.0,99.0,99.0*00
$PSTMTG,1822,000480.0003,0, 492767158, 0,-47122.0000,0000*09
$PSTMSBAS,1,0,124,64,090,00*14
$PSTMSBASMCH,0,124,64,090,00*4F
$PSTMSBASMCH,1,0,0,,,*42
$PSTMCP,9.03,-1,196*46
$GPRMC,000745.000,V,0000.00000,N,00000.00000,E,0.0,0.0,0.071214,,,N*71
$GPGGA,000745.000,0000.00000,N,00000.00000,E,0,00,99.0,082.00,M,18.0
$GPGNS,000745.000,0000.00000,N,00000.00000,E,N,00,99.0,0082.0,18.0,,
$GPVTG,0.0,T,,M,0.0,N,0.0,K,N*02
$GPGST,000745.000,0.0,0.0,0.0,-0.0,0.0,0.0,0.0*4C
$GPGSA,A,1,,,,,,,,,99.0,99.0,99.0*00
$PSTMTG,1822,000481.0002,0, 493790167, 0,-47122.0000,0000*0C
$PSTMSBAS,1,0,124,64,090,00*14
$PSTMSBASMCH,0,124,64,090,00*4F
$PSTMSBASMCH,1,0,0,,,*42
$PSTMCP,7.32,-1,196*4a
$GPRMC,000746.000,V,0000.00000,N,00000.00000,E,0.0,0.0,0.071214,,,N*72
$GPGGA,000746.000,0000.00000,N,00000.00000,E,0,00,99.0,082.00,M,18.0
$GPGNS,000746.000,0000.00000,N,00000.00000,E,N,00,99.0,0082.0,18.0,,
$GPVTG,0.0,T,,M,0.0,N,0.0,K,N*02
$GPGST,000746.000,0.0,0.0,0.0,-0.0,0.0,0.0,0.0*4F
$GPGSA,A,1,,,,,,,,,99.0,99.0,99.0*00
$PSTMTG,1822,000482.0030,0, 494816072, 0,-47122.0000,0000*0D
$PSTMSBAS,1,0,124,64,090,00*14
$PSTMSBASMCH,0,124,64,090,00*4F
$PSTMSBASMCH,1,0,0,,,*42
$PSTMCP,9.43,-1,196*42
```

Decoding

\$BDDTM Follow last frame received

Label	Value
Local datum code	---
Local datum code ID	---
Latitude offset	---
N/S	---
Longitude offset	---
E/W	---
Altitude offset	---
Reference datum code	---

Control

Pattern



Teseo-Suite – Extra features

- 1 Click Help menu to access the user manual
- 2 The user manual provides detailed information

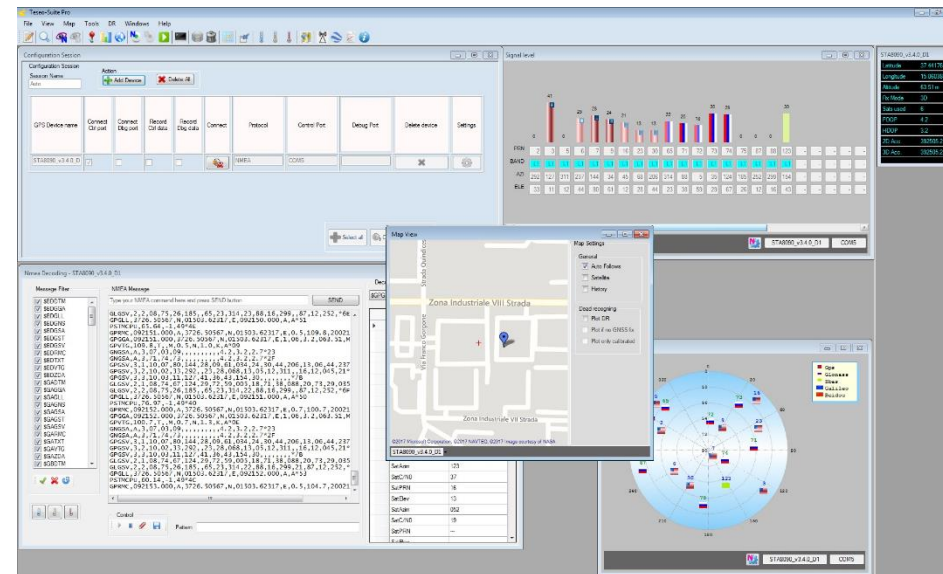
The screenshot shows the Teseo-Suite Pro software interface. The 'Help' menu is highlighted with a red circle and a '1' in a blue circle. The menu options are: User Manual, Firmware Config User Manual, and About Teseo-Suite. Below the menu, there is a table with columns for GPS Device name, Connect Ctrl port, Connect Dog port, Record Ctrl data, Record Dog data, Connect, Protocol, Control Port, Debug Port, and Delete device. A 'Select all' button is at the bottom right of the table.

The screenshot shows the cover page of the Teseo-Suite User Manual. The title is 'Automotive Product Group Automotive Infotainment Division Navigation & Multimedia System & Architecture Teseo-Suite User Manual'. The cover features the Teseo Suite logo and a diagram of a navigation system. The text '1 Introduction' is visible, along with a '2' in a blue circle. The date '16 October 2017' and version 'Rev 1.16' are also present.



Have fun with EVB-T3DRAW2

Now you can use the EVB-T3DRAW2 and explore all its features with the Teseo-Suite.





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All documents are available on:
www.st.com

- Teseo III: [Webpage](#)
 - Datasheets
- EVB-T3DRAW2: [Webpage](#)
 - Datasheet
- Teseo-Suite: [Webpage](#)
 - Datasheet
 - Install program

The screenshot displays the ST Teseo website with several key sections highlighted:

- GNSS ICs:** A table listing various GNSS IC models and their features.
- TESEO-SUITE:** A section for the PC software tool, including a download link and a list of key features.
- EV-B-T3:** A section for the Teseo III evaluation board, including a download link and a list of key features.
- Product Specifications:** A table listing product specifications.
- Legal:** A section for legal documents, including a license agreement.

Package	IC	Key Features
WLCSP77 4x4 mm	STAR03CWS	Smallest footprint and lowest cost
QFN6 7x7 mm	STAR03FG	Stacked Flash, Automotive grade option available
QFN6 6x6 mm	STAR03FG	Low cost PCB design
QFN6 6x6 mm	STAR03GA	Automotive grade
QFN6 6x6 mm	STAR03GAT	Automotive grade
QFN6 6x6 mm	STAR03GAT	Removable Flash QFN 0.5pitch, Automotive grade
BGA189 9x9 mm	STAR03CWS	Auto with ultra-precision GNSS

Description	Version	Size
DB3224 PC GUI software to control, configure and performance analyze of Teseo GNSS family	1.0	

Description	Version	Size
SLA0066 Software license agreement	1.0	59 KB