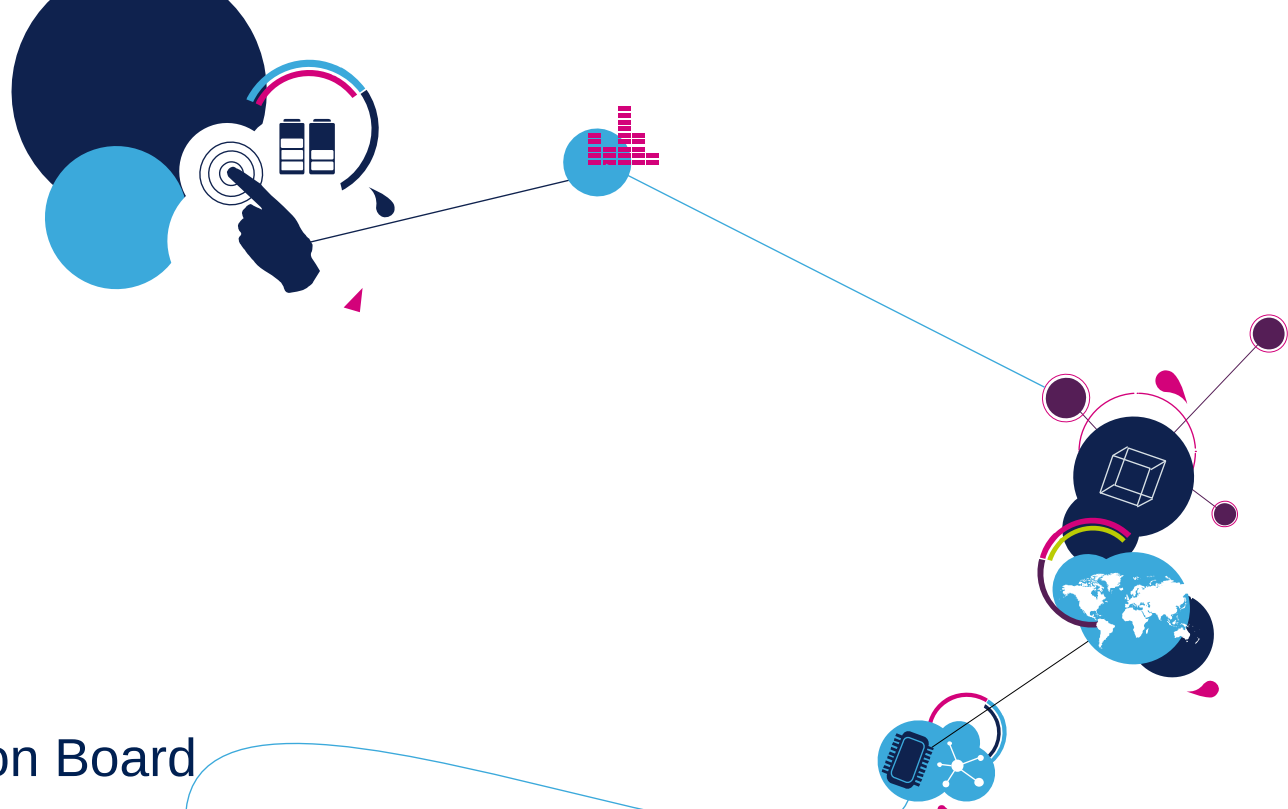




EVB-T3

Teseo III Evaluation Board Quick Start Guide



Quick Start Guide - Contents

2

1

Introduction to EVB-T3

2

Connect and start EVB-T3

3

Teseo-Suite Light configuration and startup

4

Documents & related resources

Quick Start Guide - Contents

3

1

Introduction to EVB-T3

2

Connect and start EVB-T3

3

Teseo-Suite Light configuration and startup

4

Documents & related resources



Introduction EVB-T3

4

- The **EVB-T3** evaluation board is a complete standalone evaluation platform for Teseo III GNSS IC receivers
- The **Teseo III** is a single die stand-alone positioning receiver IC Global Navigation Satellite System (GNSS) working on multiple constellations (GPS, GLONASS, Beidou, Galileo, QZSS)



Top view



Front panel



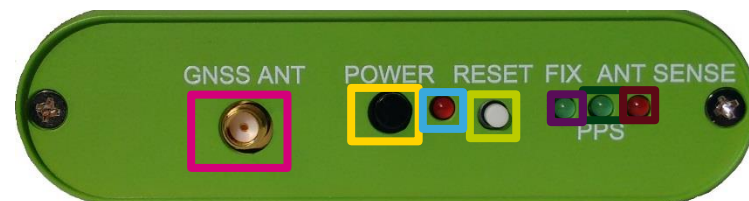
Rear panel



EVB-T3 – Front and Rear panels

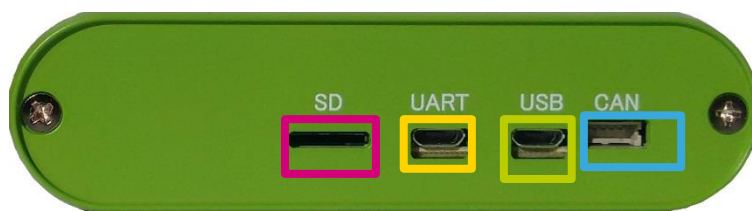
5

- ☐ SMA Antenna Connector
- ☐ On/Off Switch button
- ☐ PWR Red LED
- ☐ Reset button
- ☐ Fix Green LED
- ☐ PPS Green LED
- ☐ Antenna Sense LED



Front panel

Rear panel



- ☐ uSD slot
- ☐ UART connector
- ☐ USB connector
- ☐ CAN connector

Quick Start Guide - Contents

6

1

Introduction to EVB-T3

2

Connect and start EVB-T3

3

Teseo-Suite Light configuration and startup

4

Documents & related resources



Connect and start EVB-T3

7

- 1 Connect the USB cable between the PC USB and the EVB-T3 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



Quick Start Guide - Contents

8

1

Introduction to EVB-T3

2

Connect and start EVB-T3

3

Teseo-Suite Light configuration and startup

4

Documents & related resources



Install Teseo Suite Light and VCP Driver

9

The **Teseo-Suite Light** is a powerful PC Tool able to manage the EVB-T3 evaluation board

- Download and install the **Teseo Suite Light** from www.st.com
- Download and install the **SiliconLabs VCP Driver** from www.silabs.com

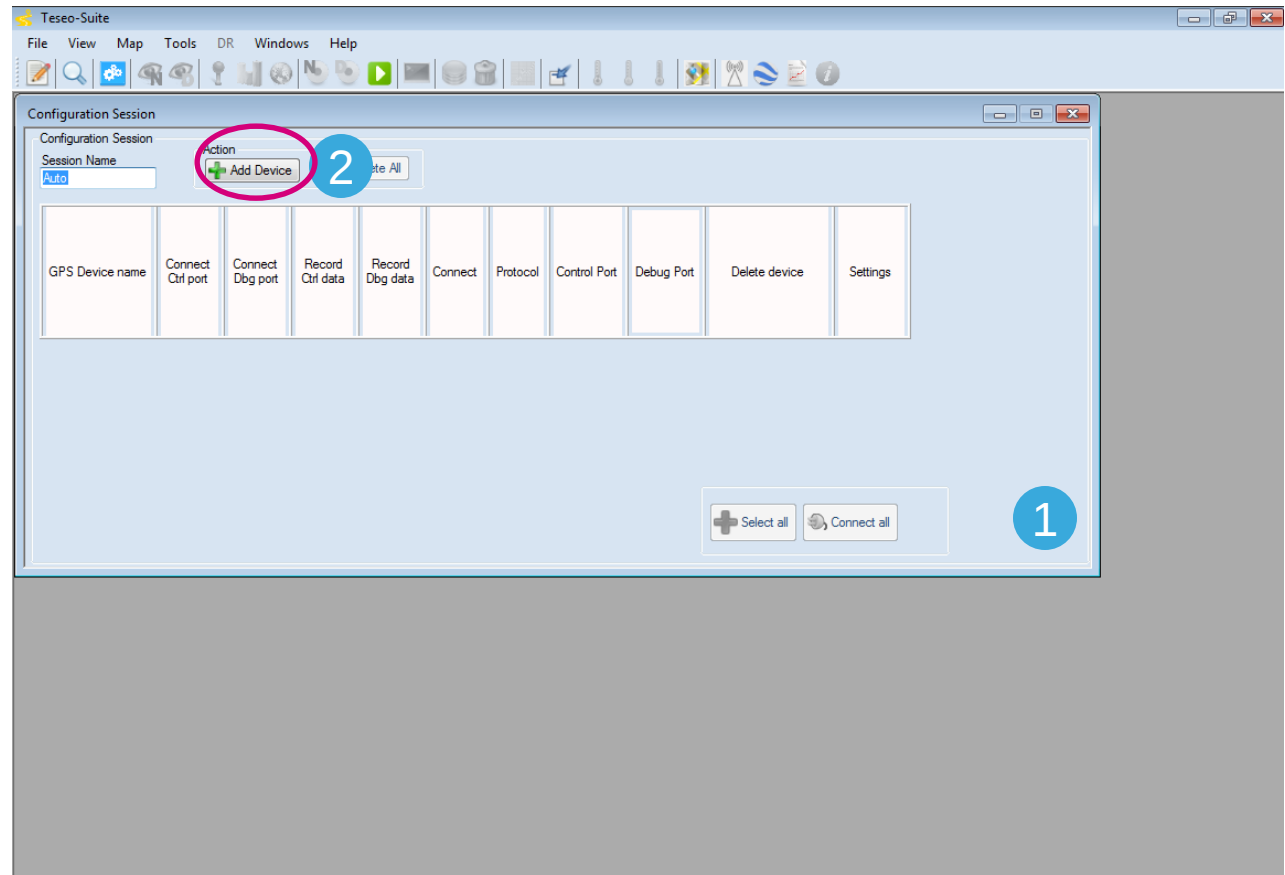
A screenshot of the ST Teseo-Suite website. The page features the ST logo and "life.augmented" tagline at the top left, and a "Menu" icon at the top right. Below the navigation bar, the breadcrumb trail reads: Home > Embedded Software > Automotive Infotainment and Telematics Software > TESEO-SUITE. The main heading is "TESEO-SUITE" with a green "ACTIVE" badge. The description states: "PC software tool to manage, configure and evaluate the performances of Teseo GNSS family". There is a "Download Databrief" link with a PDF icon. Below this are three tabs: "QUICK VIEW" (active), "RESOURCES", and "GET SOFTWARE". The content area describes the tool's capabilities, mentioning it can manage multiple ST Teseo GNSS solutions in parallel, read, modify, and save configurations, and supports NMEA sentences logging and analysis. A "Key Features" section lists: 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, and Log viewer.



Teseo Suite Light - Start

10

- 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 Light – Configuration Device

11

- 1 Set the *Hardware type*: **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	Handshake
11520bps	8 Bits	1 Bit	None	None

- 7 Click the *Ok* button

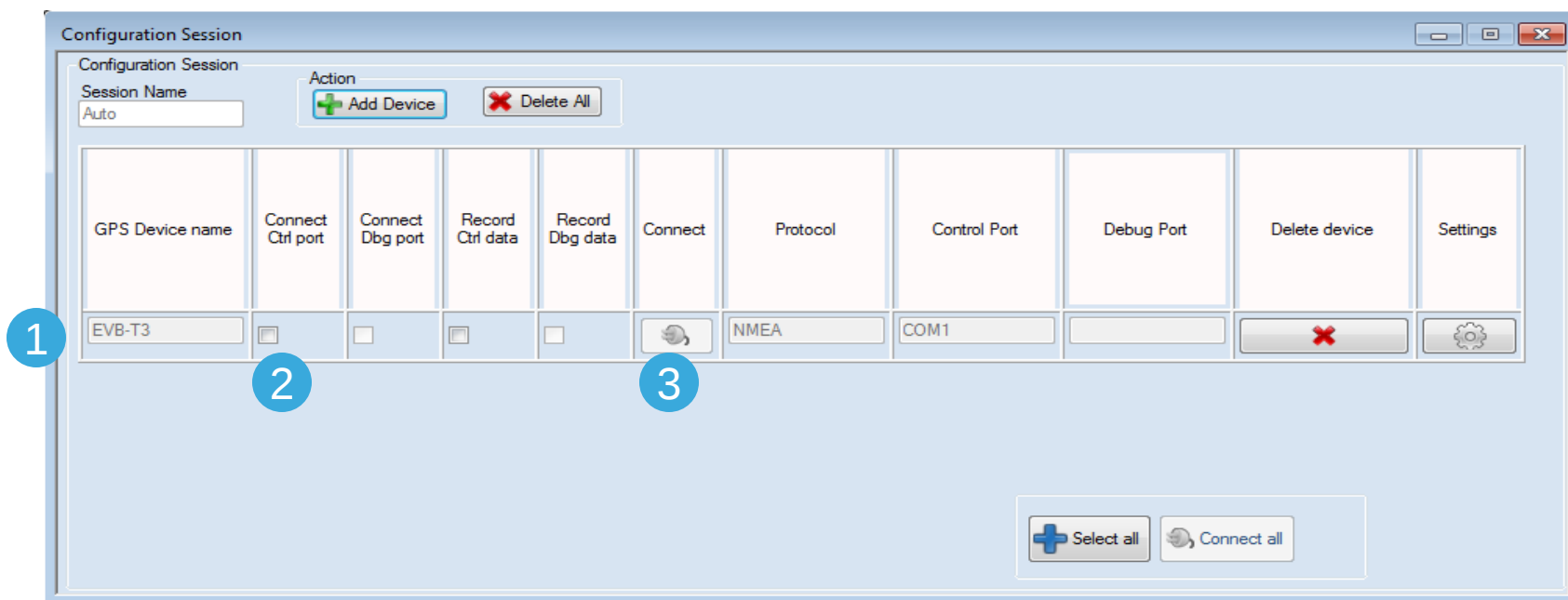
The screenshot shows the 'Configuration Device' dialog box. The 'Configuration Device' section has 'Binary Image Version' set to 4, 5, and 1. 'Hardware type' is set to STA8090. 'GNSS Device Name' is set to EVB-T3. The 'Add Control Port' checkbox is checked, and 'Add Debug Port' is unchecked. The 'Control Port' tab is selected, showing 'Protocol' as NMEA, 'Port Name' as COM1, 'Baud Rate' as 115200, 'Data Bits' as 8, 'Parity' as None, 'Stop Bits' as One, and 'Read Timeout' as 1000. The 'DTR control' checkbox is unchecked. The 'Action' section at the bottom has 'Ok' and 'Cancel' buttons. Numbered callouts 1 through 7 point to the following elements: 1. Hardware type dropdown, 2. GNSS Device Name text box, 3. Add Control Port checkbox, 4. Protocol dropdown, 5. Port Name dropdown, 6. Baud Rate dropdown, and 7. Ok button.



Teseo Suite Light – Connect the device

12

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





Teseo Suite Light – Device working

13

- 1 In the summary panel, the GNSS EVB-T3 state is reported
- 2 Click on the NMEA output window to inspect NMEA stream

The screenshot shows the Teseo-Suite software interface. The main window is titled "Configuration Session" and contains a table of device configurations. A red circle highlights the "NMEA" output window in the table. A blue circle with the number "2" is placed over the "NMEA" output window. The right sidebar shows the "EVB-T3" summary panel, which lists various parameters: Latitude, Longitude, Altitude, Fix Mode, Sats used, PDOP, HDOP, 2D Acc., and 3D Acc. A blue circle with the number "1" is placed over the "3D Acc." parameter.

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-T3	☒	☐	☐	☐		NMEA	COM1			

Buttons: + Select all, Connect all

Summary Panel (EVB-T3):

- Latitude
- Longitude
- Altitude
- Fix Mode
- Sats used
- PDOP
- HDOP
- 2D Acc.
- 3D Acc.



Teseo Suite Light – Inspect Device

14

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

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

SEND

```
$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,-0.0,0.0,0.0,0.0*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,-0.0,0.0,0.0,0.0*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 Light – Extra features

15

- 1 Click *Help menu* to access User-Manual
- 2 The User-Manual provides detailed information

The screenshot displays the Teseo Suite Pro software interface. The 'Help' menu is highlighted with a red circle and the number '1'. The 'User Manual' option is also highlighted with a red circle and the number '2'. The User Manual document is shown in the foreground, titled 'Automotive Product Group Automotive Infotainment Division Navigation & Multimedia System & Architecture Teseo-Suite User Manual'. The document includes the Teseo Suite logo and a diagram of the system architecture. The document content is as follows:

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.

16 October 2017 Rev 1.16 For Confidential Use Only

The screenshot also shows the 'Configuration Session' window with a table of device settings:

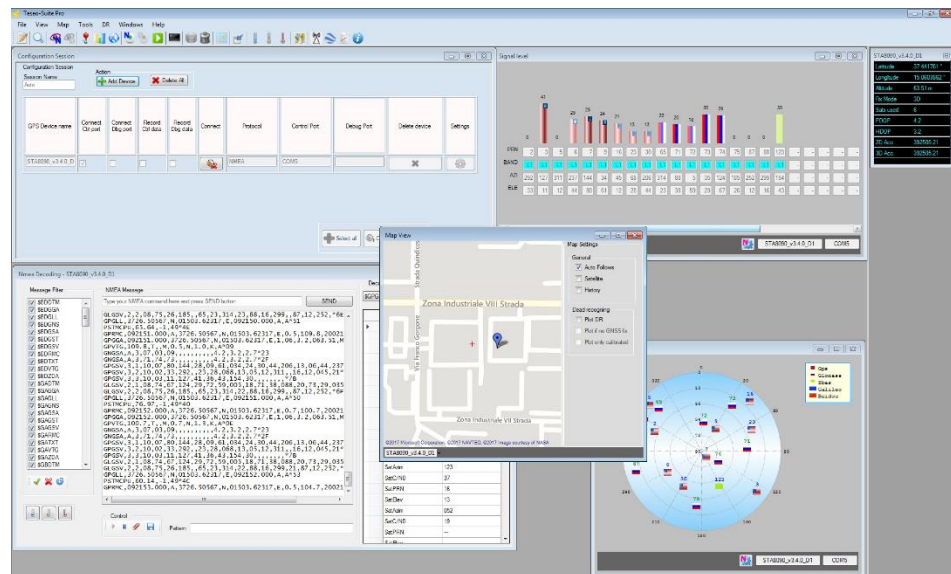
GPS Device name	Connect	Connect	Record	Record	Connect	Protocol	Control Port	Debug Port	Delete device	Settings
GPS Device name	Connect	Connect	Record	Record	Connect	Protocol	Control Port	Debug Port	Delete device	Settings



Enjoy with EVB-T3

16

Now you can enjoy the **EVB-T3** and explore all its features with the **Teseo-Suite Light**.



Quick Start Guide - Contents

17

1

Introduction to EVB-T3

2

Connect and start EVB-T3

3

Teseo-Suite Light configuration and startup

4

Documents & related resources



Documents & related resources

18

All documents are available on:
www.st.com

- **Teseo III:** [Webpage](#)
 - Data-sheet of all PNs;
- **EVB-T3:** [Webpage](#)
 - Datasheet
- **Teseo Suite Light:** [Webpage](#)
 - Datasheet
 - Install program

GNSS ICs

ST's Teseo family of Global Navigation Satellite System ICs combines high positioning accuracy and indoor sensitivity with powerful processing capabilities, to simultaneously support multiple global navigation systems (BeiDou, Galileo, GLONASS, GPS, and QZSS).

Teseo III is the latest generation of GNSS ICs, and compared to Teseo II offers reduced power consumption, carrier-phase tracking for higher accuracy, and support for Ready-only Memory (ROM).

Our product offering includes standalone positioning chips (SAL) and configurable system-on-chips (SOCs). The standalone devices are offered with GNSS firmware embedded, to perform all positioning operations including tracking, acquisition, navigation and data output. The SoCs offer power processing and spare memory to enable customers and partners to easily and efficiently merge their code or specific IPs with ST's GNSS library to create a highly optimized platform.

Both solutions come with different package options and memory size, and are compatible with the Teseo-DRAW sensor fusion firmware for dead-reckoning and assisted navigation.

Teseo devices address e-call and telematics systems, personal navigation in PNDs and handheld devices, as well as marine and in-car navigation systems.

TESEO-SUITE

PC software tool to manage, configure and evaluate the performance of ST Teseo GNSS solutions in parallel.

On each ST Teseo GNSS solution the Teseo Suite is able to read, modify and analyze NMEA sentences logging and analysis supported. NMEA message-list configuration.

Key Features

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

RESOURCES

Quick Links

Technical Documentation

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

Legal

Description	Version
SLA0066 Software license agreement	1.0

EVB-T3

TESEO III evaluation board

Download Databrief

Package	STANDARD
WLCSP77 4x4 mm	STANDARD
QFN66 7x7 mm	STANDARD
QFN66 6x6 mm	STANDARD
BGA99 6x6 mm	STANDARD
BGA109 9x9 mm	STANDARD

Key Features

- ST Teseo III GNSS platform;
- Multiconstellation GNSS: GPS, Galileo, Glonass, BeiDou, QZSS are supported;
- USB Power Supply and battery charge;
- Internal battery for standalone usage;
- ON/OFF and Reset buttons available;
- NMEA over.

RESOURCES

Technical Documentation

Description	Version	Size
DB3223 Teseo III GNSS evaluation board	1.0	137 KB