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Jupiter SL869 EVK User Guide

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APPLICABILITY TABLE

PRODUCT
SL869



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1. Introduction

1.1. Scope

Scope of this document is to give an overview of the Evaluation kit of the GPS/GLONASS standalone module SL869

1.2. Audience

This document is intended for customers who are evaluating one or more products in the applicability table.

1.3. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit Technical Support Center (TTSC) at:

TS-EMEA@telit.com
TS-NORTHAMERICA@telit.com

Alternatively, use:

<http://www.telit.com/en/products/technical-support-center/contact.php>

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

<http://www.telit.com>

To register for product news and announcements or for product questions contact Telit Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.



2. Preparing for the SL869 EVK

2.1. What is Necessary

To use the SL869 EVK, you will need:

1. FTDI USB Drivers
2. TelitView v3.0 Build 1008
3. A PC with a USB port that fulfills the minimum software requirements
 - Windows XP or above
 - .NET Framework 2.0
4. A programmed/flashed SL869 EVK
 - V3.1.3.1

2.1.1. Installing the USB Drivers

Before connecting the SL869 EVK, install the necessary USB drivers

1. Double-click the USB driver executable and follow the onscreen directions for installation.



3. SL869 Evaluation Kit

3.1. What's in the Box

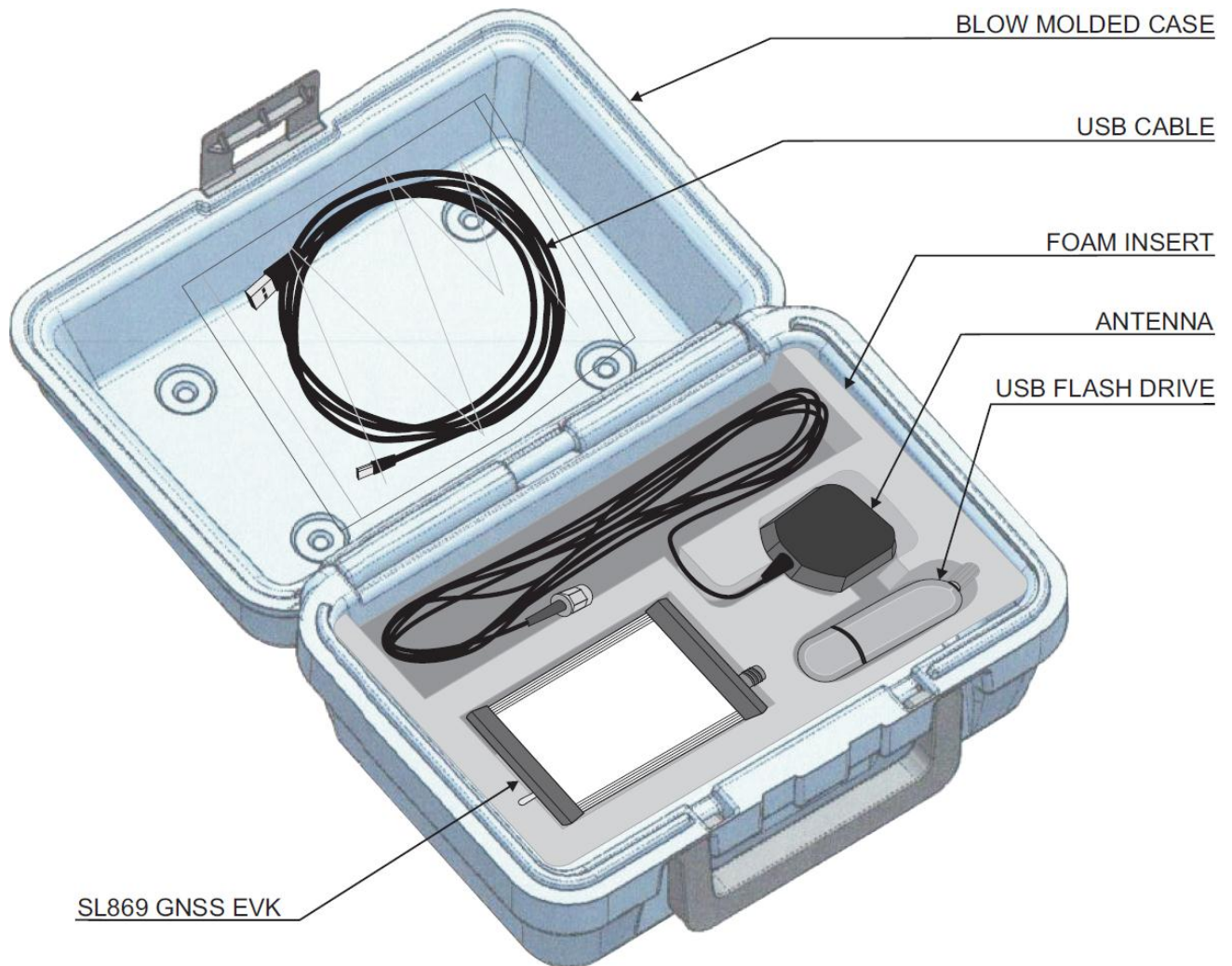


Figure 1 Box Contents



3.2. Jupiter Evaluation Board

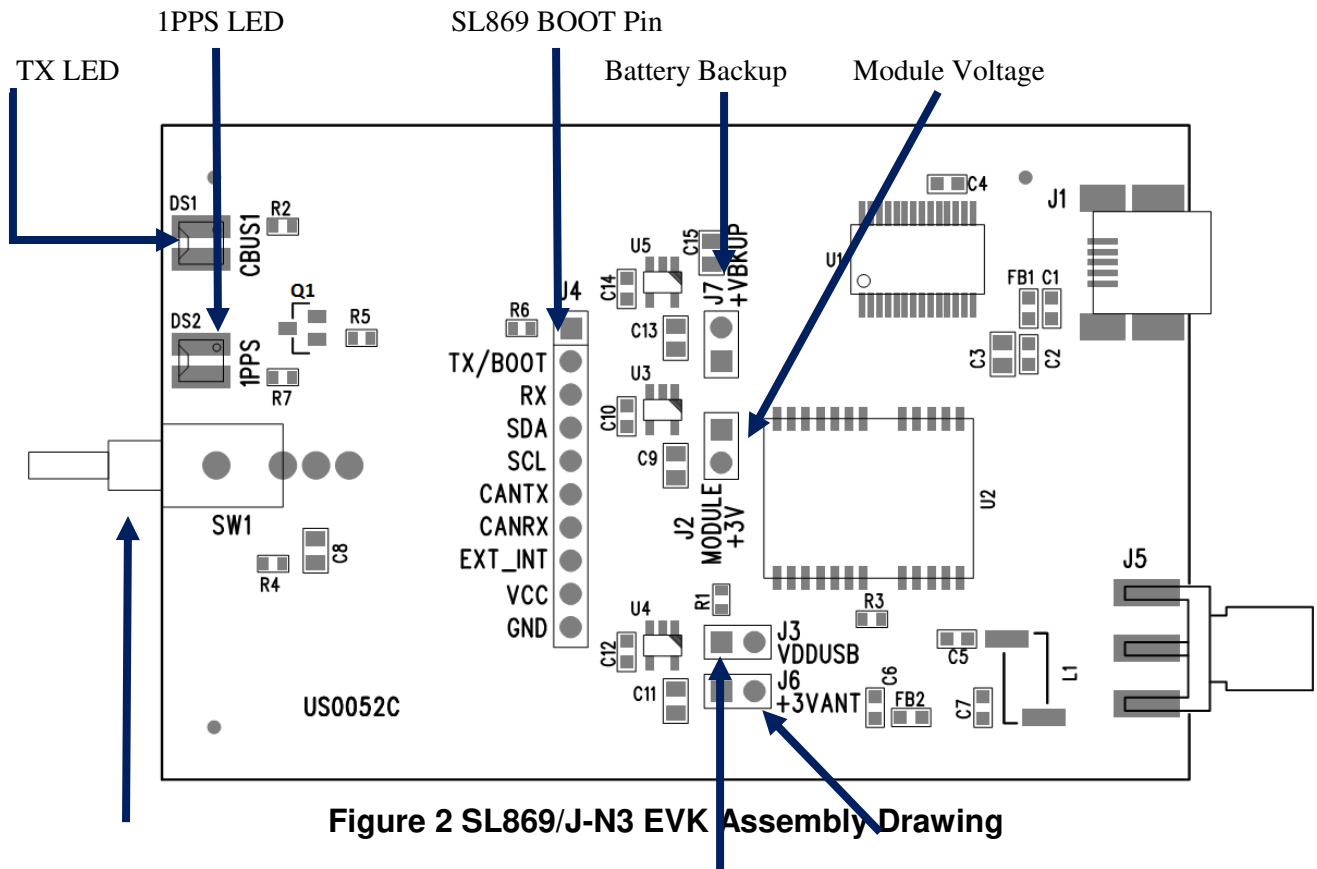


Figure 2 SL869/J-N3 EVK Assembly Drawing

ON Switch

3.3V Antenna Supply

J-N3 BOOT PIN

ITEM	FUNCTION
TX LED	LED that is tied to the USB to UART bridge RX line. The LED blinks whenever it receives data from the module.
1PPS LED	LED that displays the 1PPS output of the module
ON SWITCH	Applies power to the EVK
SL869 BOOT PIN	Place a shunt jumper on PIN 1 and the TX/BOOT of the strip before power application to place the SL869 module into BOOT mode.
BATTERY BACKUP	Place a shunt jumper to enable application of Battery Backup 3.3V
MODULE VOLTAGE	Place a shunt jumper to enable application of 3.3V to the module. Do not remove.
VDDUSB	Place a shunt jumper before power application to put J-N3 to BOOT mode.
+3VANT	Place a shunt jumper to apply 3.3V to an external active antenna.



4. Step-by-Step: First Time Running the SL869 Evaluation Board

4.1. Step-by-Step: First Time Connection

1. Before connecting the evaluation board, ensure that the USB drivers are installed.
2. Ensure that jumpers are installed on **J2**, **J6**, and **J7**.
3. Ensure that there are no jumpers installed on **J3** and **J4**.
4. Connect the provided Active Antenna to the SMA connector.
5. As soon as the evaluation board is connected to the PC, it will be detected and installed.



Figure 3 USB installation, select "Continue Anyway" to proceed

6. After the evaluation board has been installed, check the “Device Manager” window for the evaluation board COM port number. This information is needed for use with the GPS tools.
7. Turn the switch vertically UP to turn On the EVK.
8. Refer to Chapter 5 for using the EVK with software.



NOTE:

On some occasions, Windows will install a “Microsoft Serial BallPoint mouse after connecting the USB. Uninstall the Microsoft Serial BallPoint mouse if Windows mistakenly installs it.



5.2.3. 'Connect to GPS' Window

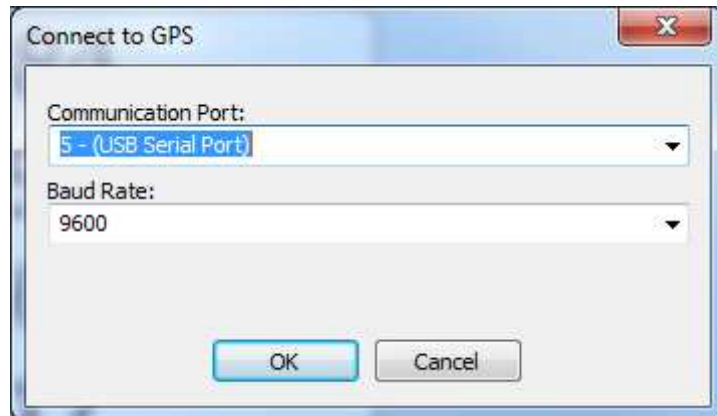


Figure 6 Connect to GPS Window

1. Select the correct Communication Port
2. Select the correct baud rate (default – 9600 SL869)

5.3. TelitView Tabular View

TelitView implements a tabular view. Switching between tabs displays different information parsed from the receiver.

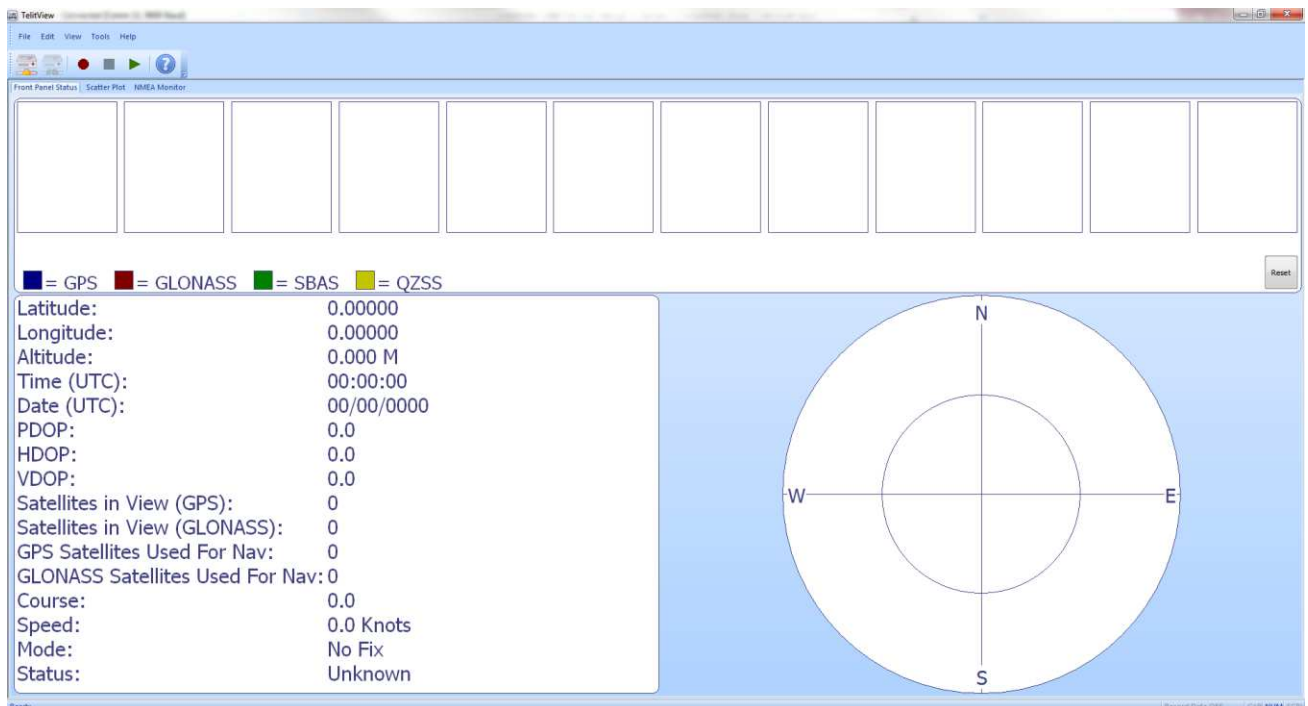


Figure 7 TelitView Application



5.3.1. Front Panel Status

The Front Panel Status Tab displays satellite information as well as position information.

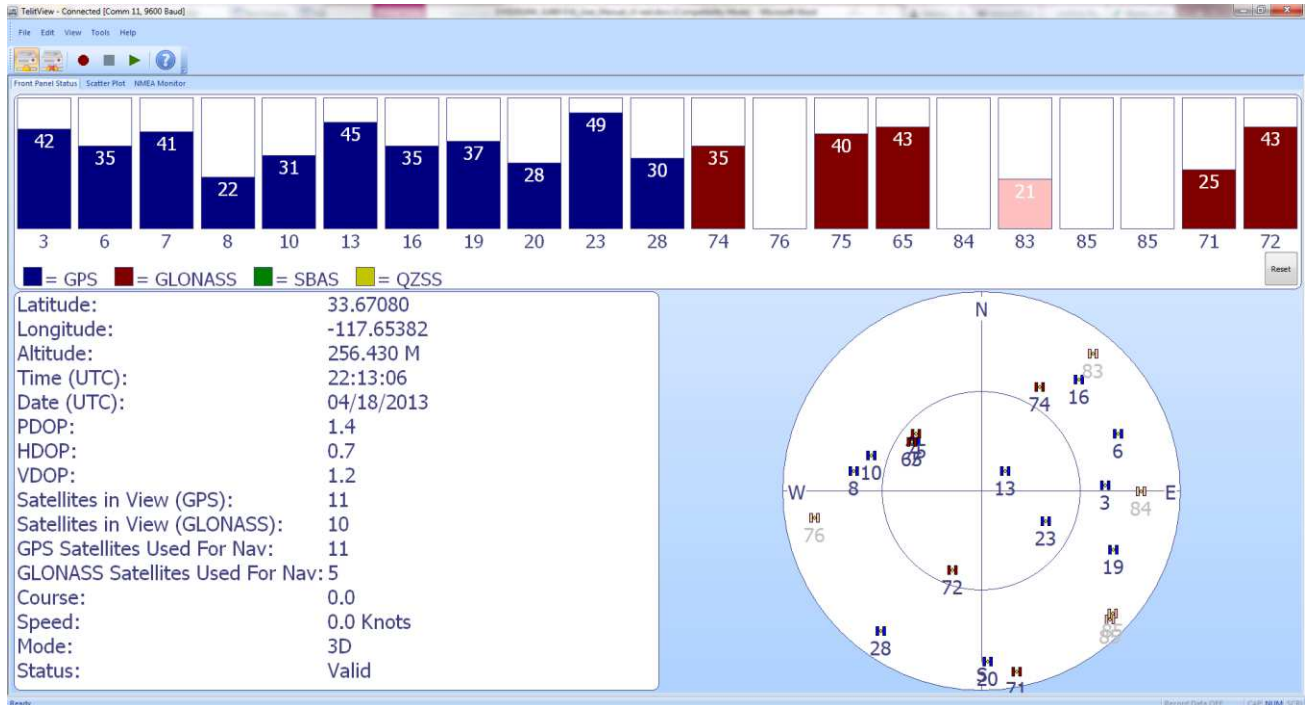


Figure 8 Front Panel Status Tab

5.3.2. Scatter Plot

The Scatter Plot displays position points that are updated every second. The position points are compared to each other in an axis in meters.

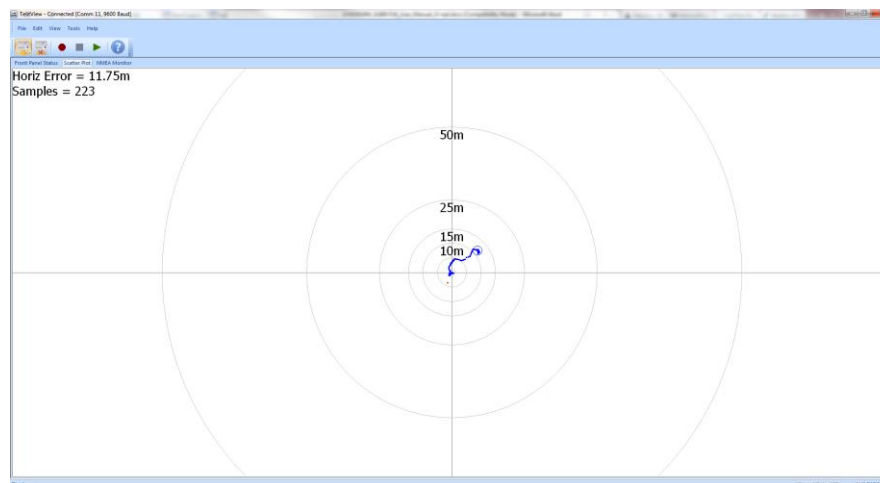


Figure 9 Scatter Plot



7. Communication Interface

The SL869 offers several ways of communication between itself and the host processor. For simplicity in this document, the interface described in the examples is in UART mode.

7.1. Commands

A command is a defined Data Packet sent from a host processor to the GPS-Baseband Controller. The regular structure of the command is

```
command-ID[, <parameters>] <cr><lf>
```

Parameters, if present, are delimited by “,” characters as per the NMEA protocol. All SL869 commands are proprietary and therefore all command-ID’s begin with the “\$PSTM” character sequence.

The user interaction with the EVK can be achieved through the use of a PC terminal emulator program that is connected to the appropriate COM port with settings of:

- 9600 Baud
- 0 Parity Bits
- 1 Stop Bit
- 8 Data Bit

7.2. Messages Description

The table below summarizes the periodic output messages of the SL869:

Message ID	Description
\$GPGGA	NMEA: Global Position System fix data
\$GNGSA	NMEA: GNSS Dilution of Precision (DOP) and active satellites
\$--GSV	NMEA: GNSS satellites in view. “GP” talker ID reports GPS, “GL” talker ID reports GLONASS satellites.
\$GPRMC	NMEA: Recommended minimum specific GNSS data

All messages are output once per second. There are multiple GSA and GSV messages output each second.



7.3. Commands Description

The table below summarizes the set of commands for the SL869:

Command ID	Description
\$PSTMINTGPS	Initialize GPS position and time
\$PSTMCLREPHS	Clear all ephemeris data
\$PSTMDUMPEPHEMS	Dump ephemeris data
\$PSTMEPH	Load ephemeris data
\$PSTMNMEAONOFF	Toggle the NMEA output ON and OFF
\$PSTMCOLD	Perform a COLD start
\$PSTMWARM	Perform a WARM start
\$PSTMHOT	Perform a HOT start
\$PSTMSRR	Perform a system reset
\$PSTMGPSRESET	Reset the GPS engine
\$PSTM2DFIXONOFF	Enable/disable 2-D acquisition fixes
\$PSTMGETSWVER	Get the GNSS Library version
\$PSTMSBASONOFF	Toggle the SBAS feature ON and OFF
\$PSTMSTAGPSONOFF	Enable/disable the STAGPS engine
\$PSTMSETCONSTMASK	Set the GNSS constellation mask

Unless otherwise noted in the SL869 SW User Guide document, commands are echoed by the SL869 after the command is executed.



