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1. INTRODUCTION

Scope

This document provides a description of the LTE310SMT Evaluation Board features, connections and operation.

Audience

This document is intended for Janus customers intending to implement their applications using LTE310SMT modems.

Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Janus Remote Communications at:

info@janus-rc.com

Alternatively use: www.janus-rc.com/support.html for technical details and recommendations on accessories.

Text Conventions



Danger- This information MUST be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to follow the points mentioned, if the points are not followed the product may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when using this product.

Related Documents

CellBridge LTE310SMT v1.00 World Wide CAT-M1/NB-IoT User Manual

Telit ME310G1/ME910G1/ML865G1 AT Commands Reference Guide

Telit ME310G1 Hardware Design Guide

Telit ME310G1/ME910G1/ML865G1 PSM Application Note

Telit MEx10G1 GNSS Application Note

Telit IP Easy User Guide

Telit Single SKU AT Command Application Note

Telit ME910C1/MEx10G1 Quick Start Guide [a.k.a. Telit Cat M/NB-IoT Quick Start Guide]

Document History

Rev 00 – 10/31/20

2. Overview

This document describes the basic features and functions of the LTE310SMT Evaluation Board. The information shall be considered as a starting point to evaluate and design products using LTE310SMT Modems. As most of the signals exposed by the Evaluation Board are direct connections to the Telit cellular module, please refer to the Telit ME310G1 Hardware Design Guide for more information on the characteristics of the modem.



The LTE310SMT Evaluation Board directly exposes many of the cellular module's signal pads. Be sure to follow ESD safety precautions at all times when handling the Evaluation Board.

Mechanical Dimension / Weight

The LTE310SMT Evaluation Board overall dimensions are:

Length: 2.65"

Width: 2.65"

Height: 0.75"

Weight: 27g

Temperature Range

Operating Temperature Range: : -40°C to +85°C

Storage and non- operating Temperature Range: -40°C to +85°C

RoHS Compliance

As a part of Janus Remote Communication's policy of environmental protection, the LTE310SMT Evaluation Board complies with the RoHS directive.

3. Hardware Guide

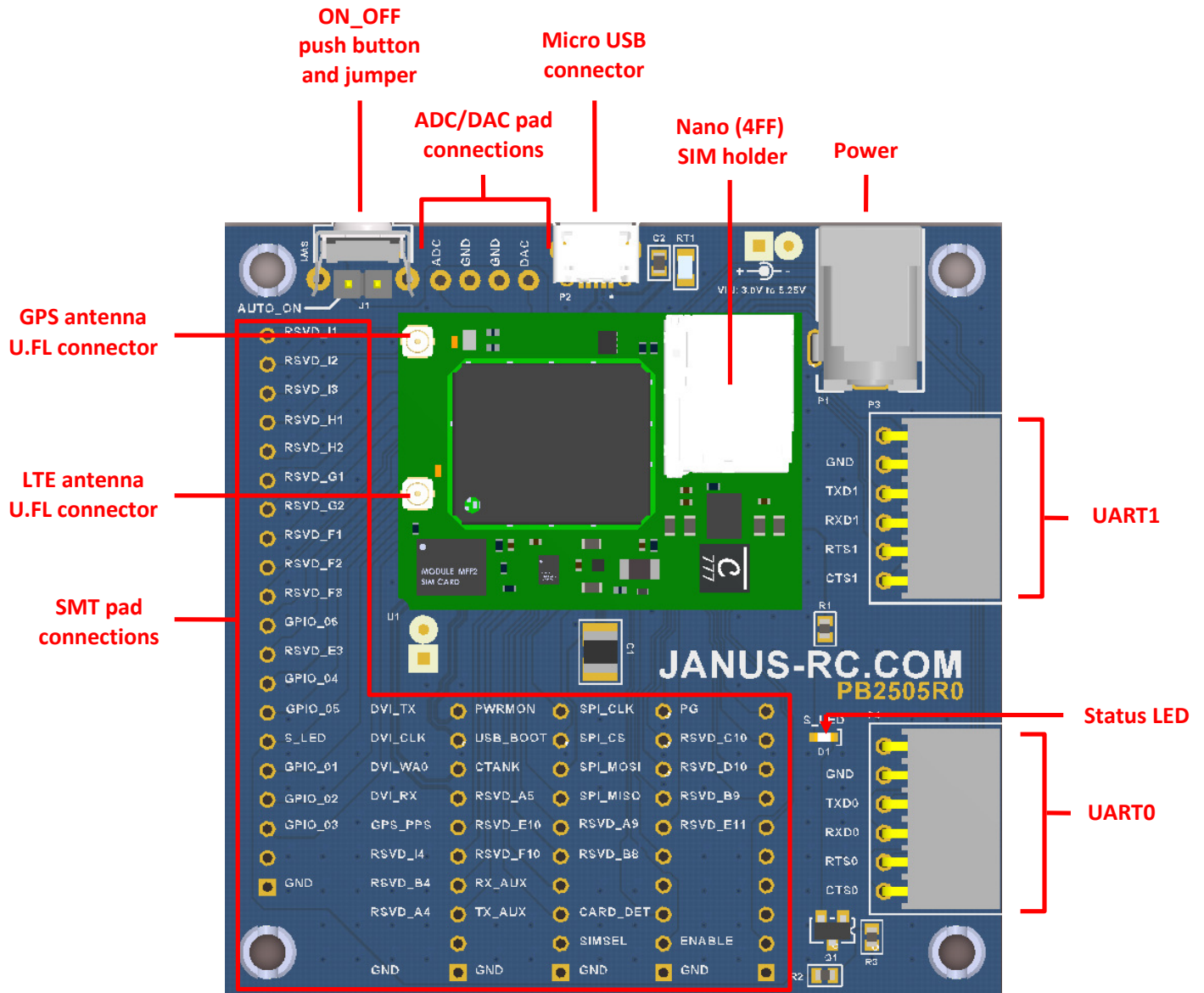


Figure 1: LTE310SMT Connections

3. Hardware Guide continued

3.1 Evaluation Board Connections

Power [P1]

The power connection is implemented with a d.c. power jack, 2mm center pin and 6mm outer diameter. The center pin is connected directly to VIN (pads C11 and C12) of LTE310SMT. The LTE310SMT has a 2.5V to 5.0V input voltage range.

ON_OFF push-button [SW1]

A pushbutton connected to ON_OFF (pad I5) of LTE310SMT.

This pushbutton pulls signal line to ground when depressed. (ON_OFF has internal pull-up to 1.8V).

Activate for at least 5 seconds to enable the modem.

Activate for at least 3 seconds to turn off the modem. The #SHDN AT command can also be used to turn off the modem.

Activate the ON_OFF pushbutton for at least 12 seconds to perform an unconditional shutdown (RESET).

Jumper J1 will cause the ON_OFF line to be activated (held low). In this state, the module will be enabled when power is applied.

Note: Using the J1 jumper precludes the ability to shut down the modem using the ON_OFF pushbutton, requiring that the modem be shut down using a software command. Turning off a cellular modem without first unregistering from the cellular network is not a recommended operating procedure.

UART0 [P4]

A six position header supports connections to primary UART AT command port (USIF0) signal pads.

These signals operate at a 1.8V logic level.

Note: The signal arrangement is compatible with a DSD TECH SH-U09C5 USB to TTL UART Converter.

UART1 [P3]

A six position header supports connections to secondary UART AT command port (USIF1) signal pads.

(Note - not supported in some firmware)

Micro USB connector [P2]

A micro USB connector supports connection to USB data signals (D+/D-) and USB_VBUS signal pads.

The USB connection typically instantiates multiple ports including modem, diagnostic and network adaptors.

Status LED [D1]

A status LED driven by the SLED signal through a bipolar transistor.

Its behavior can be controlled with AT commands to the module.

ADC/DAC pad connections

ADC and DAC signal pad connections.

SMT pad connections

Direct connection to all signal pads of the LTE310SMT not listed above.

All signals operate at a 1.8V logic level.

Please refer to the Telit ME310G1 Hardware Design Guide for more information on specific signal implementations.

Nano SIM holder

A push-push type SIM card holder for Nano (4FF) SIM cards.

LTE antenna connector

U.FL antenna connector.

GPS antenna connector

U.FL antenna connector. Note that not all implementations will support GPS

3. Hardware Guide continued

3.2 Evaluation Board Set-up

SIMSEL - SIM selection. The SIMSEL signal is internally pulled high on the LTE310SMT to select the SIM IC (if populated). To select the SIM holder, pull this signal low. Connecting the CARD_DET signal to the SIMSEL signal allows the SIM holder to be selected whenever a SIM card is present in the SIM holder.

The Evaluation Boards are provided with a jumper installed between the CARD_DET and SIMSEL signal connections.

4. Operation - Getting Started

4.1 Required Hardware

The standard LTE310SMT Evaluation Kit is supplied with the following:

- LTE310SMT Evaluation Board
- 5V Power supply
- USB micro cable
- U.FL to SMA cable(s)
- LTE antenna
- GPS antenna (optional)

4.2 Setup

- Connect the LTE antenna to the LTE310SMT modem with the supplied U.FL to SMA cable.
- Optionally connect the GPS antenna the LTE310SMT modem with the supplied U.FL to SMA cable.
- Connect a host computer to the USB port using the USB micro cable.
 - USB drivers should be installed on the host computer. Drivers are available from the Telit website at www.telit.com/evkevb-drivers/
- Insert a nano SIM card into the SIM holder.
 - A SIM card will be required for connecting to a cellular network with most cellular modems. Without a SIM card, cellular connectivity and some command responses will not be available from the cellular modem.
- Connect the 5v power supply to the Evaluation Board.

4.3 Turning ON the LTE310SMT Evaluation Board

- Press and Hold the ON/OFF Switch (SW1) push-button for 5 at least seconds to enable the modem.
- The modem may take several seconds to initialize before it is able to accept AT commands. The yellow LED turn on during this stage if the default #SLED AT command settings are in effect.

4.4 Communications

USB Communications

If you are using a Windows Operating System, you can go to Device Manger and check the MODEM and COM ports that are instantiated. Depending on the specific modem, at least one COM port will support AT commands. MODEM ports also support AT commands; look at the port properties to determine the proper COM port number to use.

Using a terminal emulator application you should now be able to send 'AT' commands to the modem. To confirm a proper connection, send the command "AT" followed by a line terminator (Enter key) on the terminal and you should see "OK" as the response.

UART Communications

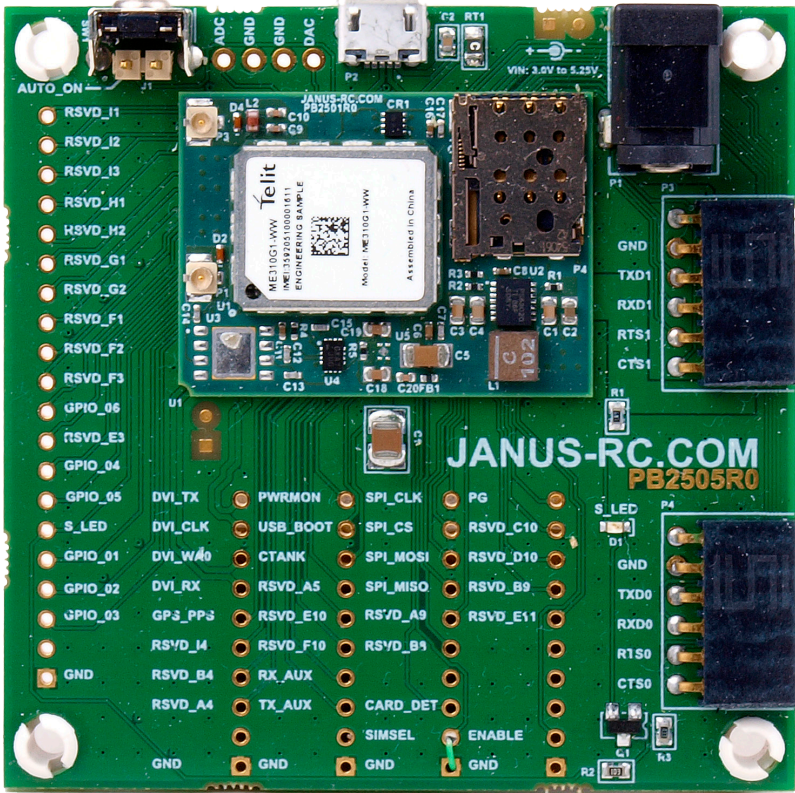
Additional AT command ports are available at the UART connections. The default communications parameters are 115200 baud, 8N1.

4.5 Operation References

See the Related Documents in section 1.0 for further information on various operational features of the cellular modem.

LTE310SMT v1.00

Evaluation Board User Guide



Revision History

Revision	Revision Date	Note
00	11/03/20	Initial release of



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