Application Report
SNOA503A–September 2007–Revised May 2013

AN-1709 LMX9838 Bluetooth® (PRD 2.0) Qualification Guideline

ABSTRACT

This application note provides qualification guideline information for the Texas Instruments LMX9838 Bluetooth Serial Port module.

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1 Introduction

The Texas Instruments LMX9838 Bluetooth® Serial Port module is a highly integrated module including radio, baseband controller, memory device, crystal, antenna and loop filter and internal EEPROM. All hardware and the on-chip ROM firmware is included to provide a complete solution from antenna through the complete lower and upper layers of the Bluetooth stack, up to the application including the Generic Access Profile (GAP), the Service Discovery Application Profile (SDAP), and the Serial Port Profile (SPP).

This document describes some qualification guidelines of the LMX9838 module, based on the PRD 2.0 specification. For more detailed information consult the www.ti.com website.

All numbers, screenshots and links are based on the Bluetooth SIG website as of September 2007 and are subject to change.

2 Using the LMX9838 as SPP module

If the end product requires the SPP profile only (e.g: Typical cable replacement application) the LMX9838 module can be integrated as is into the end product.

2.1 To be Done

List of the qualification requirements for using the LMX9838 as SPP module:

- The End Product Manufacturer must be signed up as a Bluetooth SIG Adopter. This is free of charge. See Section 4.1.
- Perform End Product Listing (EPL). This is a free listing. See Section 4.4 on page 4 for details.

2.2 Not Required

The following point is not required for this specific system.

- Qualified Design Listing (QDL) not required: The LMX9838 is already QDL listed as an SPP module. By relabeling, the End Product can refer to the LMX9838 QD ID.

2.3 Product Information

The product can be characterized by the following entries:

Table 1. End Product Information

Design Information	
Product Name	End Product Name
Bluetooth Qualified Design ID (QD ID)	B012394
Bluetooth Product Type	End Product
Product Name	LMX9838

3 Implementing Additional Profiles on the LMX9838

If the end product requires additional profile(s) implemented on the host device (e.g: Headset, OBEX..) a few more qualification requirements will be required for the end product.

3.1 To be Done

List of the qualification requirements:

- The End Product Manufacturer must be signed up as a Bluetooth SIG Adopter. This is free of charge. See Section 4.1.
- Perform additional profile(s) Qualification and Tests. Price will depend on the Bluetooth Qualification Tests Facility. The qualification and tests needed should be lowered to a minimum as the LMX9838 is already SPP module qualified.
- Use the Bluetooth test plan generator as described Section 4.2 to define the required tests.

- QDL listing ($10000 for Adopter). See Section 4.3 for how to obtain a new QD ID and details on the Qualification Listing Interface (QLI).

4 References

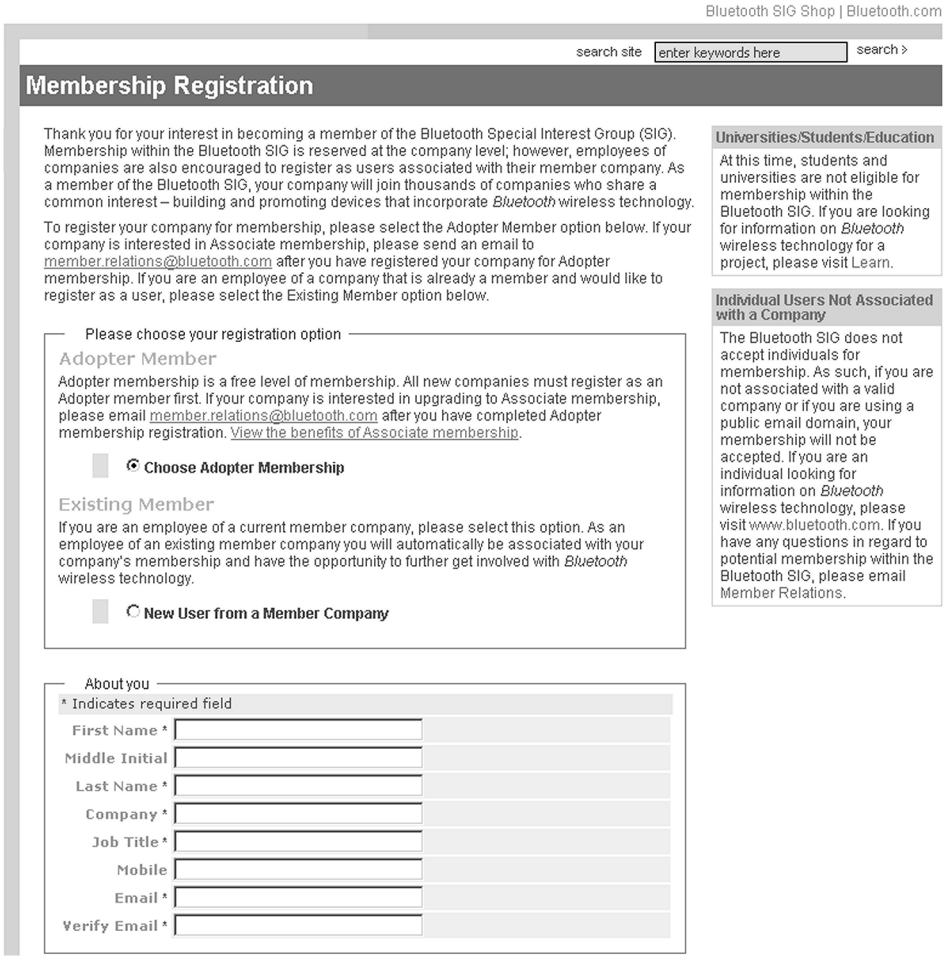
All references are based on the Bluetooth SIG website as of September 2007 and are subject to change. Refer to qualweb.bluetooth.org as a general link to the Bluetooth Qualification Program.

4.1 Bluetooth Membership Registration

To become member of the Bluetooth SIG, go on the following link:

https://www.bluetooth.org/login/register/

Fill in the required information of the following form and send.

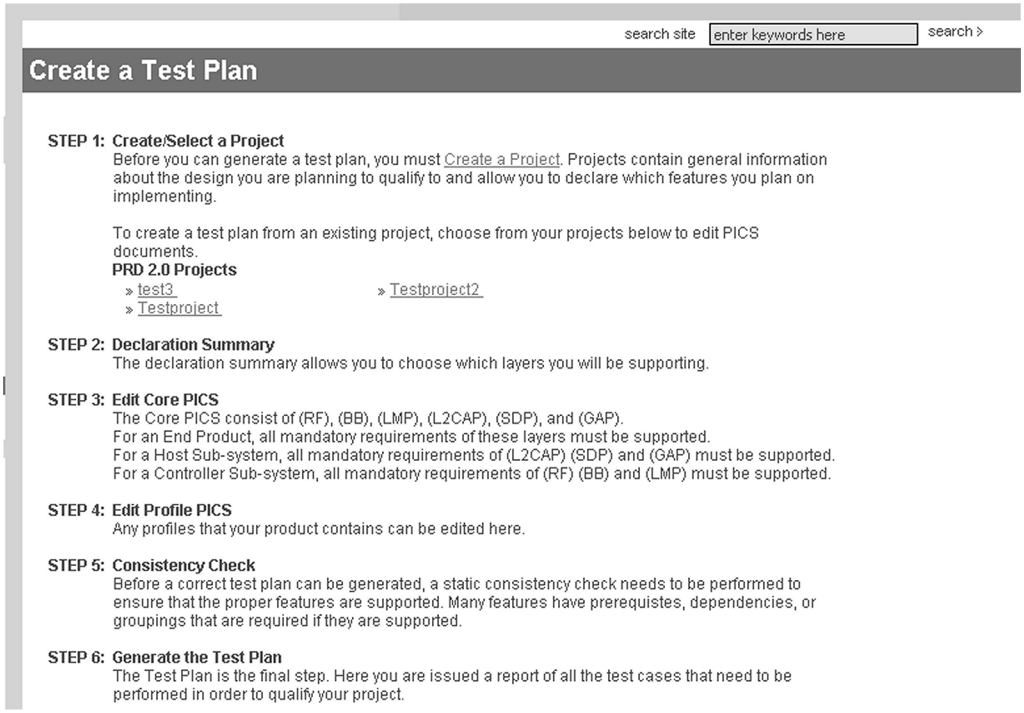


4.2 Bluetooth Test Plan Generator

To start a new test plan generator, go on the link:

https://www.bluetooth.org/tpg/testplan.cfm

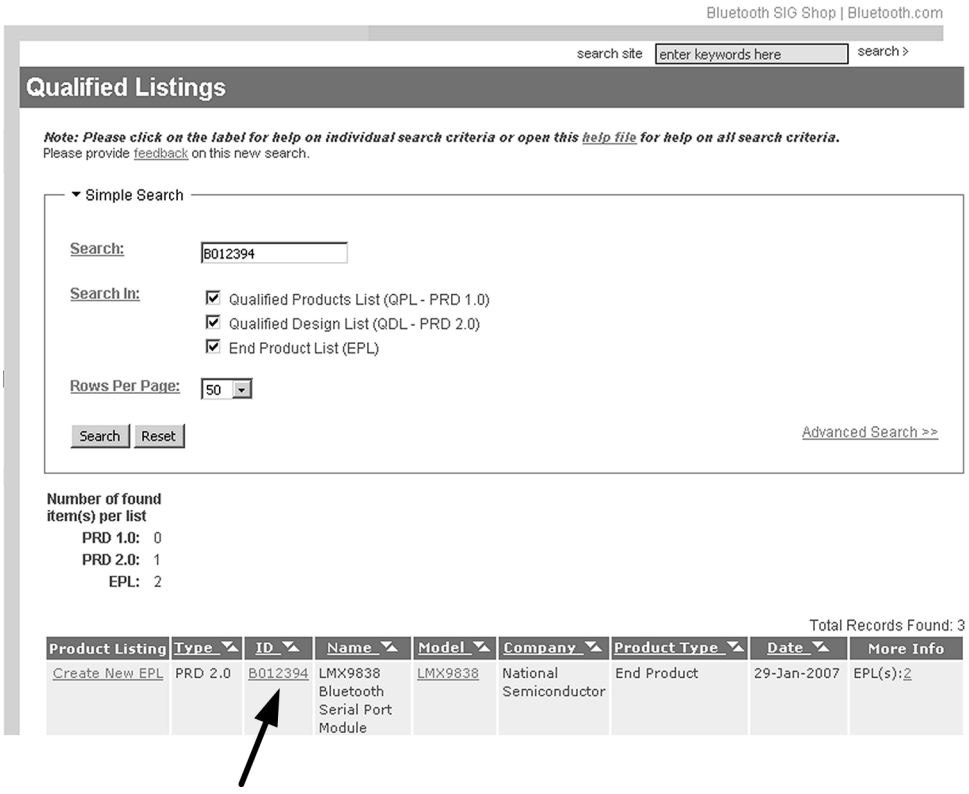
And follow the steps of the test plan.



To create a new project, the LMX9838 PICS information might be necessary. To get those information go on the link.

https://www.bluetooth.org/tpg/listings.cfm

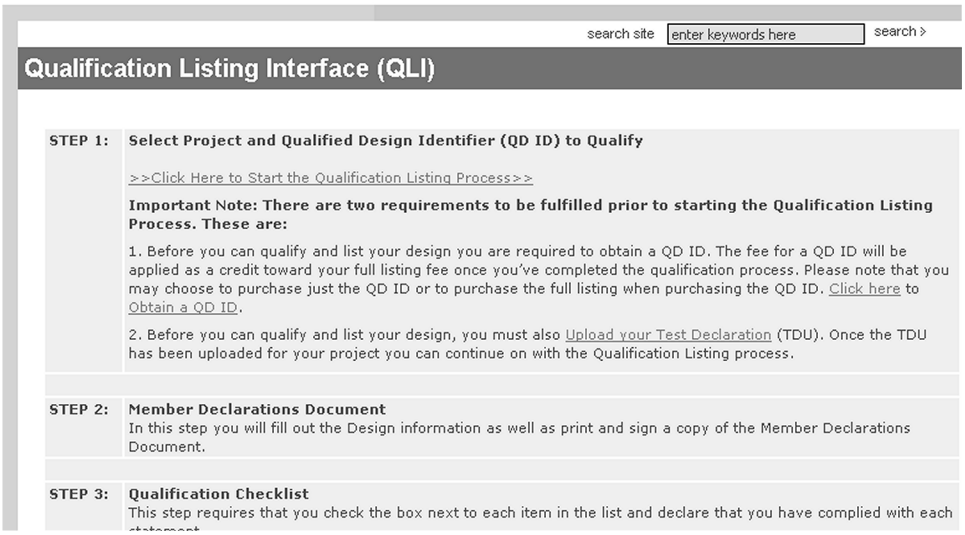
Enter the QD ID number B012394 in the search field. The LMX9838 module appears in the result field. Click on “profiles” then “display PICS details” to get the PICS information needed.



4.3 Qualification Listing Interface

Once a project is created, the next point should be to follow the Qualification Listing Interface (QLI) steps to obtain a QD ID and proceed the qualification checklist. All details are on the following link:

https://www.bluetooth.org/tpg/QLI_Landing.cfm

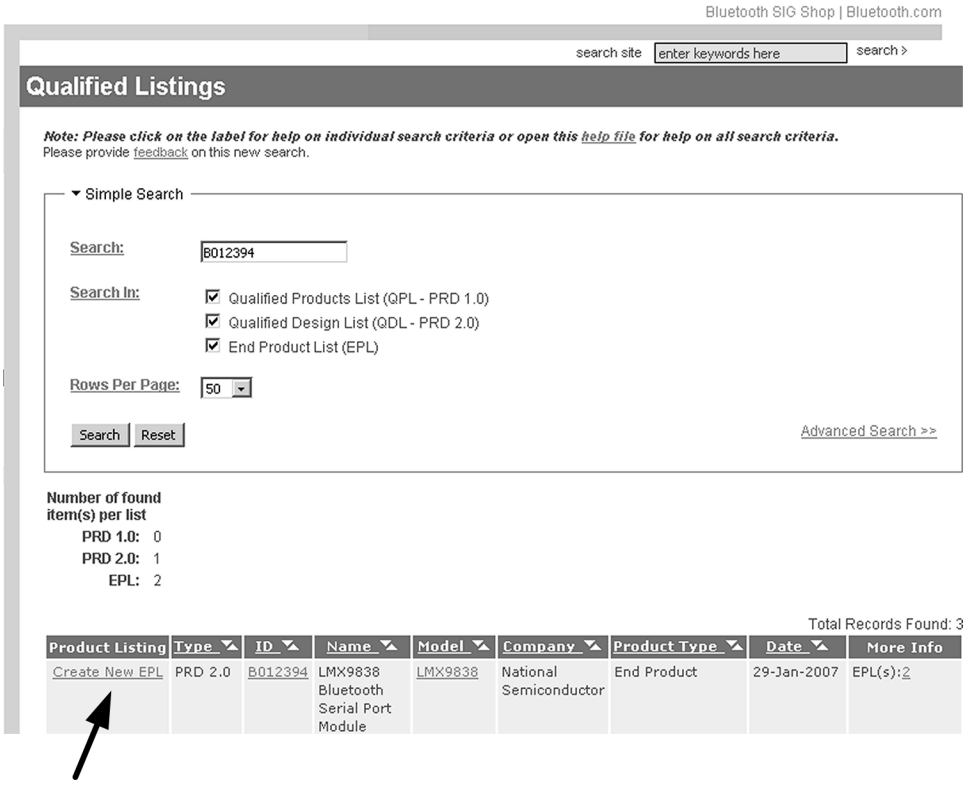


4.4 EPL Listing

To create an End Product Listing, go on the following link once registered:

https://www.bluetooth.org/tpg/listings.cfm

Find next the product to be listed as EPL. To do so, enter the QD ID number B012394 in the search field. The LMX9838 module appears in the result field. Click on Create New EPL. Fill in the information required and send.



5 Regulatory Compliance

The LMX9838 has been tested and approved to be compliant to the following regulatory standards:

CE Compliance:

- EN 300 328 v1.7.1
- EN 301 489-17 v1.2.1

IC Compliance:

- RSS-GEN Issue 1
- RSS-210 Issue 7 Annex 8 and RSS-GEN issue 2

FCC Compliance:

- FCC Part 15 Subpart C

5.1 FCC Instructions

5.1.1 Safety Information For RF Exposure

5.1.1.1 FCC Radiation Exposure Statement:

This module may only be installed by the OEM or an OEM integrator. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. OEM integrators and End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Only the antenna filed under FCC ID: ED9LMX9838 can be used with this device.

5.1.1.2 End Product Labeling

FCC ID label on the final system must be labeled with

"Contains TX FCC ID: ED9LMX9838 "or

"Contains transmitter module FCC ID: ED9LMX9838".

IC label on the final system must be labeled with

"Contains TX IC: 1520A-LMX9838" or

"Contains transmitter module IC: 1520A-LMX9838".

5.1.1.3 End Product Manual Information

In the user manual, final system integrator must ensure that there is no instruction provided in the user manual to install or remove the transmitter module.

LMX9838 must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

The following information is required to be incorporated in the user manual of final system:

a) USA-Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution: Exposure to Radio Frequency Radiation.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

b) Canada - Industry Canada (IC)

This device complies with RSS 210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device."

L ' utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire d'interference et (2) l' utilisateur du dispositif doit étre pr?t ? accepter toute interference radioélectrique reçu, m?me si celle-ci est susceptible de compromettre le fonctionnement du dispositif.

Caution: Exposure to Radio Frequency Radiation.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php.

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