



e-con Systems India Pvt Ltd.

eSOMWB1 User guide

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1 Introduction

e-con Systems has re-certified TI's WL1835MOD module with the FCC ID: 2ALXI-SOMWB1, for re-use into e-con Systems' SOM. e-con Systems' customers can re-use this certification to save cost and time in the product design by following this integration guide.

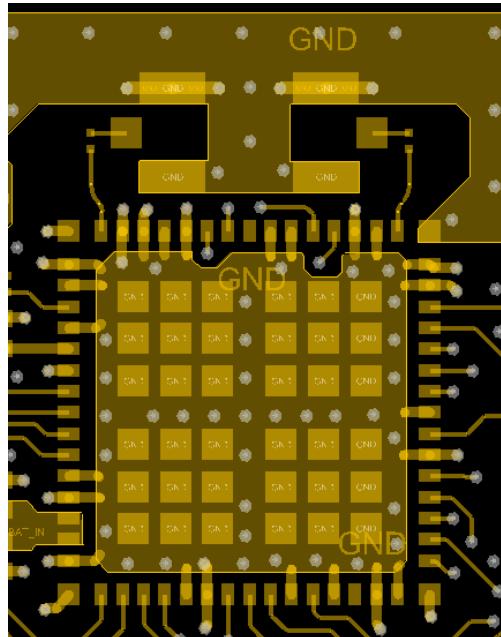
2 List of Products using eSOMWB1

The following list of System on Modules from e-con Systems uses the modular transmitter eSOMWB1 (FCC ID: 2ALXI-SOMWB1)

- eSOMTK1
- eSOMIMX6-micro

3 Layout

Follow these layout recommendations for ensuring compliance to FCC standards and re-using the FCC certification for this module.



RF LAYOUT

4 FCC Certification

The FCC Certification for eSOMWB1 grants single modular transmitter certification. The radio module as "Intentional radiator" as per FCC part 15c requirements. This modular certification allows the System on Module to be integrated into multiple hosts' end products by FCC.

4.1 Host End products requirements for re-using the FCC ID

The Host using the SOM with eSOMWB1 module do not require any additional testing as a wireless transmitter for Wi-Fi, Bluetooth modes as long as

- The following antennas or antennas of similar type and equal or lesser gain is used in the final product

Manufacturer	Part Number	Type	Gain
LSR	001-0012	Dipole	2dBi
Laird	CAF94505	PCB	2dBi

- Any restrictions found in the grants are followed in the usage of the module
 - This device is to be used only for mobile and fixed applications
 - The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.
 - The antenna / transmitter must not transmit simultaneously with any other antenna or transmitter.
 - The antenna(s) used for this transmitter must not exceed a maximum gain of 2dBi
- The host end product can use the FCC ID of the certified Wireless transmitter module as its FCC ID (since every wireless product should have an FCC ID)
- A label displaying the FCC ID of the certified Wireless Transmitter module should be placed on a visible location in the end product with the following text “Contains FCC ID: 2ALXI-SOMWB1”

4.2 End Product Certification

If the requirements in 4.1 are followed, no additional testing is required for the wireless transmitter however, the host end product still needs to be tested for compliance FCC part 15B Class A or Class B limits

The product must be subjected to regionally driven end product certification including but not limited to EU directives.

5 Cases where Wireless Certification cannot be re-used

This section lists a few cases where the certification done by e-con Systems is not valid and some or all tests have to be repeated to get FCC approval

5.1 Different Antenna / Untested antenna

When the antenna used is of different type or has a higher gain than 2dBi, the entire certification tests has to be repeated to ensure conformance to FCC standards

5.2 Using standard Antenna connector

If any other antenna is used which meets the criteria of 5.1 but the connector to Antenna is standard say BNC, SMA, the certification is not valid, only non-standard antenna connectors should be used on the board.

5.3 Co-location to another antenna / transmitter

When another transmitter / antenna, say Zigbee is located near to the SOM's then the certification is not valid and the product has to be evaluated as per FCC multi transmitter product procedures.

5.4 Operation less than 20cm to human (portable devices)

If the device is to be operated less than 20cm to human, the SAR tests must be done for these devices.

6 Regulatory Compliance Statement

6.1 United States (FCC Declaration of Conformity)

The product contains the following FCC ID : 2ALXI-SOMWB1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i.) this device may not cause harmful interference and (ii.) this device must accept any interference received, including interference that may cause undesired operation (FCC 15.19)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

6.2 Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for uncontrolled environment. The device should always be installed and used with a minimum distance of 20cm away from the human body. Use in portable exposure conditions (FCC 2.1093) requires separate equipment authorization

7 Version Control

Version	Date	Comments	Author
1	11 th July 2017	Modified FCC section	e-con