

Date 06/06/2014

The purpose of this document is to show that ZIGBEE MODULE, CEL A29101-0001 is excluded from SARS testing and will maintain compliance with FCC rule part 15 when the antenna of this transmitter is installed to provide a minimum separation distance of at least 5.0mm from all persons at all times

FCC KDB447498 section 4.3 states the following:

SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding *SAR Test Exclusion Threshold* condition, listed below, is satisfied.

$$\left[\frac{(\text{max.power of channel,including tolerance,mW})}{(\text{min.test separation distance,mm})} \right] \cdot [\sqrt{f_{\text{(GHZ)}}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

Industry Canada RSS-102 section 2.5.1 states the following:

SAR evaluation is required if the separation distance between the user and the radiating element of the device is less than or equal to 20 cm, except when the device operates as follows:

- above 2.2 GHz and up to 3 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 20mW for general public use and 100mW for controlled use;

The maximum conducted power of ZIGBEE MODULE, CEL A29101-0001 is 7.0 mW and the maximum operating frequency is 2.480GHz.

The Duty Cycle of the Transmitter A29101-0001 determined during original equipment testing = 66.09 percent.

The time-average maximum conducted power of A29101-0001 is:

$$(\text{Duty Cycle}) \times (\text{Maximum Conducted Power}) = (0.6609) \times (7.0\text{mW}) = 4.6263\text{mW}$$

$$\left[\frac{(4.6263)}{(5)} \right] \cdot [\sqrt{2.480}] = 1.457 \leq 3 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR for FCC KDB447498.}$$

$$4.6263\text{mW} \leq 20\text{mW} \text{ for industry Canada RSS-102.}$$

Thank you for your time and effort.

Respectfully,



Name: Joseph Hessel
Title: Electrical Engineer
On behalf of SPX Genfare

Phone: (847) 593-8855 Ext. 412