

RF Exposure Statement

Product description

Test item	: Bluetooth Low Energy Wireless Module
Manufacturer	: LAPIS Semiconductor Co., Ltd.
Address	: 2-4-8 Shinyokohama, Kouhoku-ku, Yokohama 222-8575, Japan
Model	: MK71050-03
FCC ID	: 2ACIJ71050-3
Operating frequency range	: 2402 - 2480 MHz
TX output power (Cond)	: 0.15dBm @2.402GHz, 0.22dBm @2.440GHz, -0.11dBm @2.480GHz
Antenna Type	: Pattern antenna
Maximum Antenna Gain	: 2.14dBi

Analysis for portable use

Standalone SAR test exclusion considerations are defined in the KDB 447498 Chapter 4.3.1. 1-g head or body SAR exclusion threshold is defined with formula.

$[(\text{Max. power of channel, mW}) / (\text{Min. test separation distance, mm})] * [\sqrt{f} (\text{GHz})] \leq 3.0$ for 1-g SAR

The maximum Conducted Peak Output Power is 0.22dBm (2.440GHz).

The best case gain of the antenna is 2.14 dBi.

$\text{EIRP} = (0.22\text{dBm}) + (2.14 \text{ dBi}) = 2.36 \text{ dBm}$

2.36dBm logarithmic terms covert to numeric result is nearby 1.72mW

$$\text{General RF Exposure} = (1.72\text{mW} / 5\text{mm}) * \sqrt{2.440\text{GHz}} = 0.537 \leq 3.0$$

Other frequency results are

$$\text{General RF Exposure} = (1.69\text{mW} / 5\text{mm}) * \sqrt{2.402\text{GHz}} = 0.524 \leq 3.0$$

$$\text{General RF Exposure} = (1.60\text{mW} / 5\text{mm}) * \sqrt{2.480\text{GHz}} = 0.504 \leq 3.0$$

Bluetooth Low Energy Wireless Module MK71050-03 meets the SAR exclusion. So SAR evaluation is not needed.