

RF EXPOSURE ANALYSIS

EQUIPMENT

Type of equipment: WIFI Module
Brand name: BlueGiga
Type / Model: WF111-E
Manufacturer: BlueGiga Technologies Oy
By request of: Silicon Laboratories Finland Oy

FCC ID: QQQWF111

IC Number: 5123A-BGTWF111

Operating range: 2412 – 2462 MHz

REQUIREMENT

CFR 47 §1.1310
RSS-102 issue 5 (2014)

CALCULATIONS

Highest output power to antenna is +19.15 dBm
With +2.2 dBi antenna gain EIRP is +21.35 dBm or 136.5 mW

The manual recommends that the operator is not closer than (r) 20 cm to the transmitter's antenna.

A worst case calculation is as follows:

$$S = \frac{EIRP}{4 \times \pi \times r^2}$$

Maximum power density is

$$S = 0.1365 / (4 \times \pi \times 0,2^2) = 0.2716 \text{ W/m}^2 = 0.0272 \text{ mW/cm}^2$$

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Limit:

CFR 47 §1.1310 (e) table 1 Limits for General Population/Uncontrolled Exposure: 1 mW/cm²

RSS-102 section 2.5.2: states that at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
Maximum EIRP 136.46 mW < 2,68 W at 2412 MHz.

The requirements are fulfilled.

Intertek Semko AB, Radio& EMC

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