



Date: 2017-09-09
Report Number: 60.790.17.023.03
Model No.: SF-BTHFRD

Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies between 100 MHz to 6GHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as:

Step a)

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

>> The fundamental frequency of the EUT are 15.56MHz, 2402-2480MHz,
the test separation distance is ≤ 50 mm.
(Manufacturer specified the separation distance is: 20mm)

Step a)

>> Numeric threshold (2402MHz), $\text{mW} / 20\text{mm} \cdot \sqrt{2.402\text{GHz}} \leq 3.0$
Numeric threshold (2402MHz) $\leq 38.713\text{mW}$

>> Numeric threshold (2440MHz), $\text{mW} / 20\text{mm} \cdot \sqrt{2.440\text{GHz}} \leq 3.0$
Numeric threshold (2440MHz) $\leq 38.411\text{mW}$

>> Numeric threshold (2480MHz), $\text{mW} / 20\text{mm} \cdot \sqrt{2.480\text{GHz}} \leq 3.0$
Numeric threshold (2480MHz) $\leq 38.100\text{mW}$

>> The power of EUT measured (2402MHz) is: $-3.13\text{dBm} = 0.486\text{mW}$
The power of EUT measured (2440MHz) is: $-4.62\text{dBm} = 0.345\text{mW}$
The power of EUT measured (2480MHz) is: $-5.77\text{dBm} = 0.265\text{mW}$

Which is smaller than the Numeric threshold.
Therefore, the device is exempt from stand-alone SAR test requirements.



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Radiofrequency radiation exposure evaluation

According to KDB 447498 D01v06 section 4.3.1, For frequencies below 100 MHz and test separation distances ≤ 50 mm, the Numeric threshold is determined as:

Step a)

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

Step b)

$\{[\text{Power allowed at numeric threshold for 50mm in step a)}] + [(\text{test separation distance} - 50\text{mm}) \cdot (f(\text{MHz})/150)]\}$ mW

Step c) 1)

For test separation distances $> 50\text{mm}$ and $< 200\text{mm}$, the power threshold at the corresponding test separation distance at 100MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$

Step c) 2)

For test separation distances $\leq 50\text{mm}$, the power threshold determined by the equation in c) 1) for 50mm and 100MHz is multiplied by $\frac{1}{2}$.

>> The fundamental frequency of the EUT is 13.56MHz, the test separation distance is $\leq 50\text{mm}$.
(Manufacturer specified the separation distance is: 20mm)

Step a)

>> Numeric threshold, mW / 50mm $\cdot \sqrt{0.1\text{GHz}} \leq 3.0$ *
Numeric threshold $\leq 474.3\text{mW}$

Step b)

>> Numeric threshold $\leq 474.3\text{mW} + (50\text{mm} - 50\text{mm} \cdot 100\text{MHz}/150)$
Numeric threshold $\leq 474.3\text{mW}$

Step c) 1) & c) 2)

>> Numeric threshold $\leq 474.3\text{mW} \cdot [1 + \log 100/100\text{MHz}] \cdot \frac{1}{2}$
Numeric threshold $\leq 237.15\text{mW}$

>> The power of EUT measured is: $-42.77\text{dBm} = 0.000053\text{mW}$

Which is smaller than the Numeric threshold.

Therefore, the device is exempt from stand-alone SAR test requirements.