

## RF Exposure Compliance Requirement

### Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

#### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### Limits

KDB447498D01 clause 4.3.1.a:

a) For 100 MHz to 6 GHz and *test separation distances*  $\leq$  50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>31</sup>
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq$  50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is  $<$  5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

KDB447498D01 clause 4.3.1.b:

b) For 100 MHz to 6 GHz and *test separation distances*  $>$  50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following (also illustrated in Appendix B):<sup>32</sup>

- 1)  $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f_{(\text{MHz})}/150)]\}$  mW, for 100 MHz to 1500 MHz
- 2)  $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$  mW, for  $>$  1500 MHz and  $\leq$  6 GHz

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## EUT RF Exposure

The Max Conducted Peak Output Power is **22.12dBm** in lowest channel(**2.412GHz**);

**22.12dBm** logarithmic terms convert to numeric result is nearly **162.93mW**.

(1): The Power allowed at numeric threshold for 50 mm in step a:

Based on below formula:

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

When:  $f(\text{GHz})=2.412\text{GHz}$ . test separation distance=50cm.

max. power of channel, including tune-up tolerance should be: **≤96.59 mW**

(2): For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

Here:

Power allowed at numeric threshold for 50 mm in step a: **96.59 mW**

Test separation distance: **6cm**

$f(\text{MHz})/150: 2412\text{MHz}/150=16.08$

the test exclusion thresholds is: **96.59 mW + (60mm - 50mm) \* 16.08=257.39mw**.

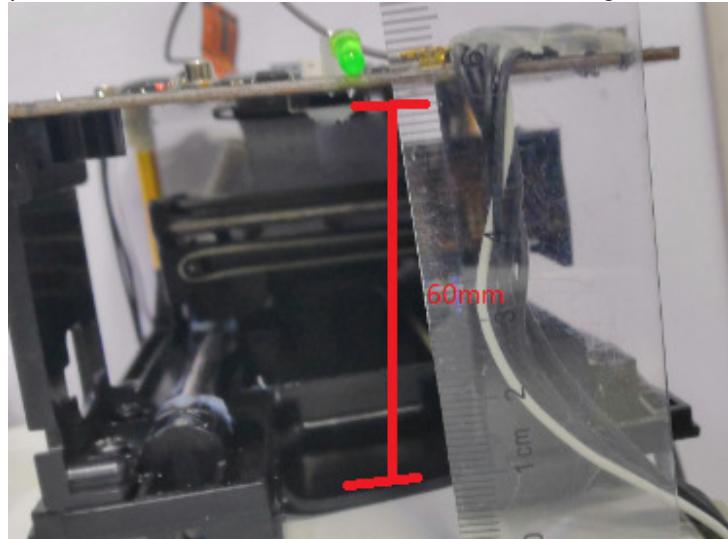
the max output power of EUT is **22.12dBm =162.93 mW < test exclusion thresholds 257.39mw**.  
the SAR test report is not required.

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Test separation distance: The product belongs to portable device

The worst-case test separation distance between antenna and human finger is **60mm**.



Conclusion:

The device meet the General SAR test exclusion limit and not need SAR test.

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