

DISRUPTIVE
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RF Exposure and Transmitter Power Considerations for the Sensor US with Range Extender

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Standalone SAR test exclusion considerations are defined in KDB 447498D01 (v06) Chapter 4.3.1 where the 1-g head or body and 10-g extremity SAR exclusion threshold is defined by the following formula:

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

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

For the Sensor US with Range Extender, the maximum conducted output power is 9.0 dBm (8 mW).

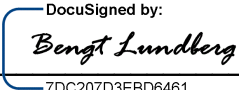
Applying the above data using the given KDB 447498 D01 formula, and minimum separation distance of 5mm, the following results:

$(8 \text{ mW} / 5 \text{ mm}) \times \sqrt{0.928 \text{ GHz}} = 1.5$ (i.e.: ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR)

This demonstrates the Sensor US meets the criteria for 1-g head/ body and 10-g extremity SAR test exemption.

Conclusion

The Sensor US is exempt from SAR testing and can be used for Portable applications.

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