

# Standalone SAR test exclusion considerations(Bluetooth)

June 22, 2018

- Device category = ☒ Portable device ☐ Mobile device
- Transmitting mode = ☒ Single Transmitting ☐ Simultaneous Transmitting
- Max. transmitting frequency = 2480 MHz
- Min. test separation distance = 30 mm
- Max. Antenna Gain = 0.56 dBi
- Max. power with turn-up tolerance = 12.50 dBm = 17.8 mW ( Typical Power = Max. 12.50 dBm )

Note. The minimum separation distance between antenna and user is 35.5mm. But we applied a closer distance to calculate the worst results.  
 Please refer to the "Attestation letter" in the FCC filing.  
 For Max.tune-up power, please refer to the operation description in the FCC original filing.

## KDB 447498 D01 clause 4.3.1 Step 1) SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm

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

$$= \left[ \left( 17.8\text{mW} / 30\text{mm} \right) \right] \times \left[ \sqrt{2.48\text{GHz}} \right] = 0.93$$

Note. The calculation result was rounded to one decimal place for comparison.

**→ SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.**

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- Transmitting mode = ☒ Single Transmitting ☐ Simultaneous Transmitting
- Max. transmitting frequency = 2480 MHz
- Min. test separation distance = 30 mm
- Max. Antenna Gain = 0.56 dBi
- Max. power with turn-up tolerance = 7.00 dBm = 5.1 mW ( Typical Power = Max. 7.00 dBm )

Note. The minimum separation distance between antenna and user is 35.5mm. But we applied a closer distance to calculate the worst results.  
Please refer to the "Attestation letter" in the FCC filing.  
For Max.tune-up power, please refer to the operation description in the FCC original filing.

## KDB 447498 D01 clause 4.3.1 Step 1) SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm

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

$$= \left[ \left( 5.1\text{mW} / 30\text{mm} \right) \right] \times \left[ \sqrt{2.48\text{GHz}} \right] = 0.3$$

Note. The calculation result was rounded to one decimal place for comparison.

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