

Standalone SAR test exclusion considerations

May 12, 2016

- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☒ Single Transmitting ☐ Simultaneous Transmitting
- Max. transmitting frequency = 2480 MHz
- Min. test separation distance = 200 mm
- Max. Antenna Gain = 3.5 dBi
- Max. power with turn-up tolerance = 2.00 dBm = 1.6 mW (Typical Power = Max. 2.00 dBm)

Note. Bluetooth(1Mbps)

KDB 447498 D01 clause 4.3.1 Step 2-2) SAR test exclusion thresholds for 1500MHz to 6GHz at test separation distances > 50 mm

[Threshold at 50 mm + (test separation distance - 50 mm) X 10] mW

= [0.01 + (200mm - 50mm X 10)] = 1500

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.*

Maximum Permissible Exposure(MPE) evaluation for mobile device

$$S = P G / (4 R^2 \pi) , \text{ mW/cm}^2$$

$$= 0.000713 \text{ mW/cm}^2$$

S = Maximum power density

P = Maximum power with turn-up tolerance

G = Numeric power gain of the antenna

R = Distance from transmitting antenna

Conclusion: The exposure condition of this device is compliant with FCC rules.

The limit for maximum permissible exposure = 1.000000 mW/cm²

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- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☒ Single Transmitting ☐ Simultaneous Transmitting
- Max. transmitting frequency = 2480 MHz
- Min. test separation distance = 200 mm
- Max. Antenna Gain = 3.5 dBi
- Max. power with turn-up tolerance = 0.50 dBm = 1.2 mW (Typical Power = Max. 0.50 dBm)

Note. Bluetooth(2Mbps/3Mbps)

KDB 447498 D01 clause 4.3.1 Step 2-2) SAR test exclusion thresholds for 1500MHz to 6GHz at test separation distances > 50 mm

[Threshold at 50 mm + (test separation distance - 50 mm) X 10] mW

= [0.01 + (200mm - 50mm X 10)] = 1500

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.

Maximum Permissible Exposure(MPE) evaluation for mobile device

$$S = P G / (4 R^2 \pi) , \text{ mW/cm}^2$$

$$= 0.000534 \text{ mW/cm}^2$$

S = Maximum power density

P = Maximum power with turn-up tolerance

G = Numeric power gain of the antenna

R = Distance from transmitting antenna

Conclusion: The exposure condition of this device is compliant with FCC rules.

The limit for maximum permissible exposure = 1.000000 mW/cm²