

Standalone SAR test exclusion considerations

September 7, 2016

- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☐ Single Transmitting ☒ Simultaneous Transmitting
- Max. transmitting frequency = 5240 MHz
- Min. test separation distance = 200 mm
- Max. Antenna Gain = 1.13 dBi
- Max. power with turn-up tolerance = 19.00 dBm = 79.5 mW (Typical Power = Max. 19.00 dBm)

Note. ANT1 : 1.340 dBi , ANT2 : 0.910 dBi , Directional Gain : 1.130 dBi (Using uncorrelated signal)
5150 ~ 5250 MHz

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

$$= [0.91 + (200\text{mm} - 50\text{mm} \times 10)] = 1500.9$$

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

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

S = Maximum power density
 P = Maximum power with turn-up tolerance
 G = Numeric power gain of the antenna
 R = Distance from transmitting antenna

$$= 0.020516 \text{ mW/cm}^2$$

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

The limit for maximum permissible exposure = 1.000000 mW/cm²

Standalone SAR test exclusion considerations

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- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☐ Single Transmitting ☒ Simultaneous Transmitting
- Max. transmitting frequency = **5320** MHz
- Min. test separation distance = **200** mm
- Max. Antenna Gain = **1.19** dBi
- Max. power with turn-up tolerance = **19.00** dBm = **79.5** mW (Typical Power = **Max. 19.00** dBm)

Note. ANT1 : 1.400 dBi , ANT2 : .0.970 dBi , Directional Gain : 1.190 dBi (Using uncorrelated singal)
5250 ~ 5350 MHz

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

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

= [**0.92 + (200mm - 50mm X 10)] = 1500.9**

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

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

S = Maximum power density
P = Maximum power with turn-up tolerance
G = Numeric power gain of the antenna
R = Distance from transmitting antenna

$$= 0.020802 \text{ mW/cm}^2$$

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

The limit for maximum permissible exposure = **1.000000** mW/cm²

Standalone SAR test exclusion considerations

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- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☐ Single Transmitting ☒ Simultaneous Transmitting
- Max. transmitting frequency = 5720 MHz
- Min. test separation distance = 200 mm
- Max. Antenna Gain = 1.395 dBi
- Max. power with turn-up tolerance = 18.50 dBm = 70.8 mW (Typical Power = Max. 18.50 dBm)

Note. ANT1 : 1.420 dBi , ANT2 : 1.370 dBi , Directional Gain : 1.395 dBi (Using uncorrelated signal)
5470 ~ 5725 MHz

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

$$= [0.85 + (200\text{mm} - 50\text{mm} \times 10)] = 1500.8$$

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

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

S = Maximum power density G = Numeric power gain of the antenna
P = Maximum power with turn-up tolerance R = Distance from transmitting antenna

$$= 0.019421 \text{ mW/cm}^2$$

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

The limit for maximum permissible exposure = 1.000000 mW/cm²

Standalone SAR test exclusion considerations

September 7, 2016

- Device category = ☐ Portable device ☒ Mobile device
- Transmitting mode = ☐ Single Transmitting ☒ Simultaneous Transmitting
- Max. transmitting frequency = 5825 MHz
- Min. test separation distance = 200 mm
- Max. Antenna Gain = 1.063 dBi
- Max. power with turn-up tolerance = 18.50 dBm = 70.8 mW (Typical Power = Max. 18.50 dBm)

Note. ANT1 : 1.380 dBi , ANT2 : 0.720 dBi , Directional Gain : 1.063 dBi (Using uncorrelated signal)
5725 ~ 5850 MHz

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

$$= [0.85 + (200\text{mm} - 50\text{mm} \times 10)] = 1500.9$$

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

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

S = Maximum power density
P = Maximum power with turn-up tolerance
G = Numeric power gain of the antenna
R = Distance from transmitting antenna

$$= 0.017991 \text{ mW/cm}^2$$

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

The limit for maximum permissible exposure = 1.000000 mW/cm²