

# Standalone SAR test exclusion considerations

July 22, 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 = 3.983 dBi
- Max. power with turn-up tolerance = 18.00 dBm = 63.1 mW ( Typical Power = Max. 18.00 dBm )
- 1st Transceiver = 15.00 dBm , 2nd Transceiver = 15.00 dBm

Note. ANT1 : 0.750 dBi , ANT2 : 1.190 dBi , Directional Gain : 3.983 dBi ( Using correlated signal )  
5180 ~ 5240 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

= [ 0.72 + ( 200mm - 50mm X 10 ) ] = 1500.7

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

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

$$= 0.031409 \text{ mW/cm}^2$$

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/cm<sup>2</sup>

# Standalone SAR test exclusion considerations

**July 22, 2016**

- 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 = **3.874** dBi
- Max. power with turn-up tolerance = **18.00** dBm = **63.1** mW ( Typical Power = **Max. 18.00** dBm )
- 1st Transceiver = **15.00** dBm , 2nd Transceiver = **15.00** dBm

Note. ANT1 : 0.620 dBi , ANT2 : 1.100 dBi , Directional Gain : 3.874 dBi ( Using correlated signal )  
5260 ~ 5320 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

$$= [ 0.73 + ( 200\text{mm} - 50\text{mm} \times 10 ) ] = 1500.7$$

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

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

$$= 0.030631 \text{ mW/cm}^2$$

S = Maximum power density

G = Numeric power gain of the antenna

P = Maximum power with turn-up tolerance

R = Distance from transmitting antenna

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

The limit for maximum permissible exposure = **1.000000** mW/cm<sup>2</sup>



## Standalone SAR test exclusion considerations

July 22, 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 = 3.133 dBi
- Max. power with turn-up tolerance = 17.00 dBm = 50.2 mW ( Typical Power = Max. 17.00 dBm )
- 1st Transceiver = 14.00 dBm , 2nd Transceiver = 14.00 dBm

Note. ANT1 : 0.940 dBi , ANT2 : -0.780 dBi , Directional Gain : 3.133 dBi ( Using correlated singal )  
5745 ~ 5825 MHz

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

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

= [ 0.61 + ( 200mm - 50mm X 10 ) ] = 1500.6

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

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

$$= 0.020546 \text{ mW/cm}^2$$

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/cm<sup>2</sup>