

# Standalone SAR test exclusion considerations

August 16, 2016

- Min. transmitting frequency = 2480 MHz
- Min. test separation distance = 40 mm
- Max. power with turn-up tolerance = 10 dBm = 10 mW

Note. 1Mbps

**Step 1) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separationn distances  $\leq$  50 mm = Used**

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$= [10.00 / 40] * [\sqrt{2.48}]$$

$$= \mathbf{0.39} \leq 7.5, \text{ for 10g extmity SAR}$$

Thus SAR for this device is not required.

**Step 2-1) SAR test exclusion thresholds for 100 MHz to 1500 MHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$

**Step 2-2) SAR test exclusion thresholds for 1500 MHz to 6 GHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$

# Standalone SAR test exclusion considerations

August 16, 2016

- Min. transmitting frequency = 2480 MHz
- Min. test separation distance = 40 mm
- Max. power with turn-up tolerance = 7 dBm = 6 mW

Note. 2&3Mbps

**Step 1) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separationn distances  $\leq$  50 mm = Used**

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$= [6.00 / 40] * [\sqrt{2.48}]$$

$$= 0.24 \leq 7.5, \text{ for 10g extmity SAR}$$

Thus SAR for this device is not required.

**Step 2-1) SAR test exclusion thresholds for 100 MHz to 1500 MHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$

**Step 2-2) SAR test exclusion thresholds for 1500 MHz to 6 GHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$

# Standalone SAR test exclusion considerations

August 16, 2016

- Min. transmitting frequency = 927.25 MHz
- Min. test separation distance = 34 mm
- Max. power with turn-up tolerance = 18 dBm = 64 mW

Note. RFID

**Step 1) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separationn distances  $\leq$  50 mm = Used**

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

$$= [64.00 / 34] * [\sqrt{0.92725}]$$

$$= 1.81 \leq 7.5, \text{ for 10g extmity SAR}$$

Thus SAR for this device is not required.

**Step 2-1) SAR test exclusion thresholds for 100 MHz to 1500 MHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$

**Step 2-2) SAR test exclusion thresholds for 1500 MHz to 6 GHz at test separationn distances  $>$  50 mm = N/A**

$[\text{Threshold at 50 mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$

# RF Exposure Compliance for simultaneous operations

- **Configurations for simultaneous operations**

- **Configuration 1:** Bluetooth + RFID

- **Result**

RF function	Bluetooth		RFID	Total Power Density (mW/cm <sup>2</sup> )
MODE	1Mbps	2&3Mbps	900MHz	
Result	<b>0.39</b>	0.24	<b>1.81</b>	
Configuration 1	<b>0.39</b>		<b>1.81</b>	<b>2.20</b>

Note 1: The maximum power density in each RF function was used for above table.

**Step 1) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separationn distances  $\leq$  50 mm = N/A**

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

**2.20  $\leq$  7.5, for 10g extrmity SAR**

[Thus SAR for this device is not required.](#)