

RF EXPOSURE

WHEN YOU NEED TO BE SURE



447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance

	Input	Select Units
Max Power:	18.96	dBm
Min separation distance:	5	mm
Frequency, f:	2450	MHz

Duty Cycle:	0.5%
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Value reference Number	Values used for Calculation		Reference number definition
v1	0.39	mW	<i>max. power of channel , less the duty cycle</i>
v2	5	mm	<i>[min. test separation distance, mm] 'Rounded to nearest mm</i>
v3	1.565		<i>[√f(GHz)]</i>

- a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
 $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,

1g Exclusion Threshold:	9.6	mW	$\leq 3 \cdot v2 / v3$
10g Exclusion Threshold:	24.0	mW	$\leq 7.5 \cdot v2 / v3$

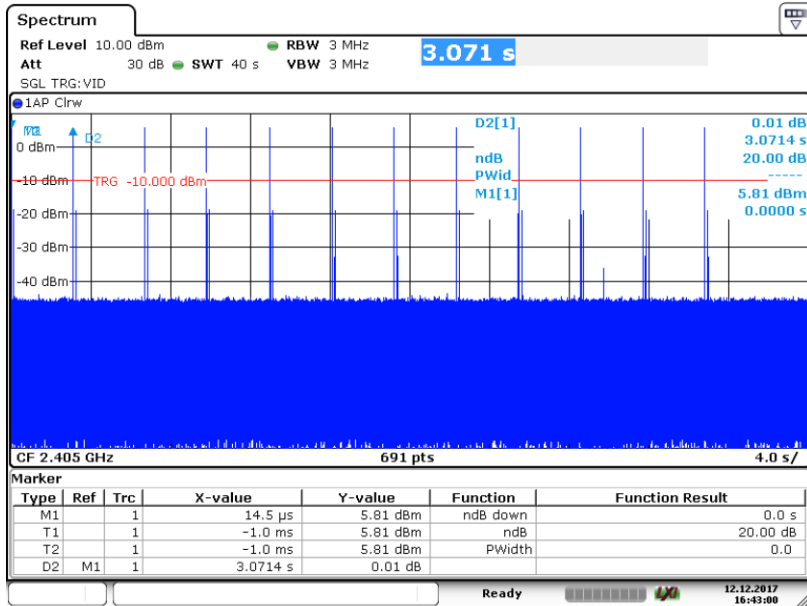
Conclusions:	SAR Testing is NOT required for Body applications
	SAR Testing is NOT required for Extremity applications

The maximum peak conducted power was reduced by the Duty Cycle Correction Factor (calculations on the following pages) for comparison to the applicable average exposure limits.



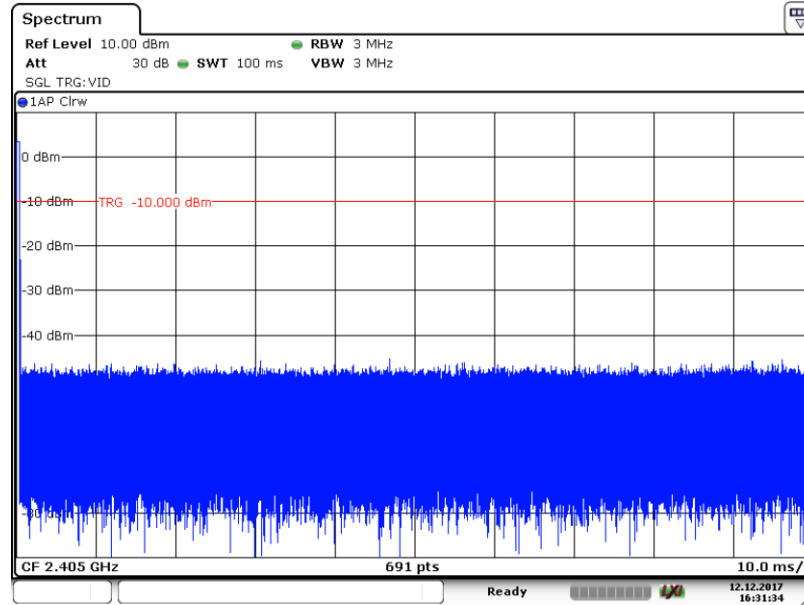
DUTY CYCLE CALCULATIONS

40 seconds – Continuously depressed button
After 12 transmissions, the device ceases transmitting



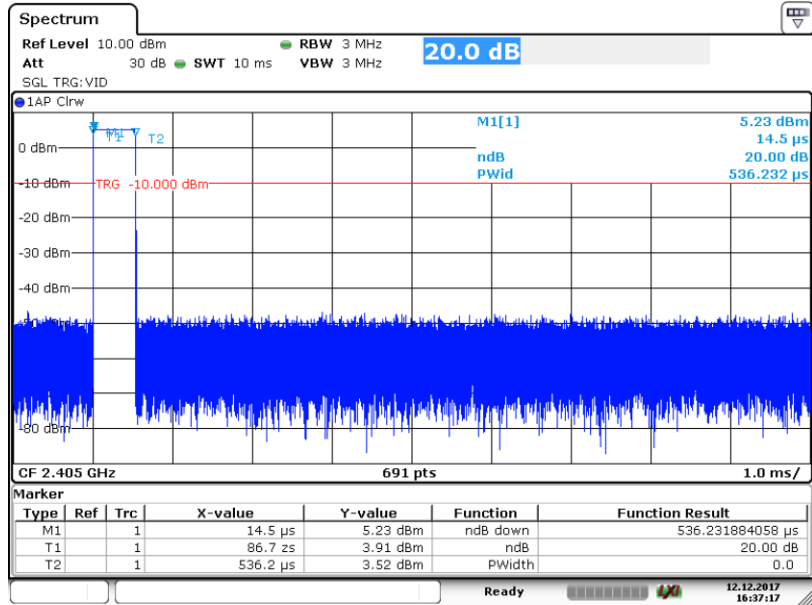
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100ms Plot – Single pulse only



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Pulse width plot – 536µs



$$\text{Duty Cycle} = 0.536/100 = 0.5\%$$

$$\text{Duty Cycle Correction (DCCF)}$$

$$10 * \log (1/DC)$$

$$10 * \text{LOG}(1/0.005) = 23\text{dB}$$

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