

RF Exposure Evaluation

E.U.T. : Transceiver

Model Number : 1512

Applicant : Nutek Corporation

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1 RF Exposure Evaluation

Portable Device

According to §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to KDB 447498_D01_V06 4.3.1(a) SAR exclusion thresholds by:
[max. power of channel, including tune-up tolerance, mW]/(min, test separation distances, mm)]* $[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

Maximum measured transmitter power

Frequency Range (MHz)	Continuous transmit power (dBm)	Duty Cycle (dB)	Transmit power (dBm)	Tune-up power tolerance (dB)	Total Maximum power	
					(dBm)	(mW)
909.6	14.36	-6.05	8.31	(±)2	10.31	10.74
915.6	13.73	-6.05	7.68	(±)2	9.68	9.29

$$(10.74/5) * (\sqrt{0.9096}) = 2.049 \leq 7.5$$

Conclusion:

No SAR is required.

SIMULTANEOUS TRANSMISSION EVALUATION

N/A

Duty Cycle Calculation

Duty cycle factor in dB = $20 \log (\text{duty cycle}) = 20 \log (\text{Ton}/\text{Tp})$

The duration of one cycle = 301.1ms

The transmission time of one cycle = 149.9ms

Duty Cycle = $149.9 \text{ ms} / 301.1 \text{ ms} = 0.49784$

Therefore, the duty cycle factor is found by $20 \log 0.49784 = -6.05 \text{ dB}$

