

RF Exposure Evaluation

E.U.T. : Transceiver

Model Number : TRX17LORA

Applicant : Nutek Corporation

Address : No.167, Lane 235, Bauchiau Rd., Xindian District,
New Taipei City 23145, Taiwan

Issued By : Interocean EMC Technology Corp.

LAB Location : No. 5-2, Lin 1, Tin-Fu, Lin-Kou Dist., New Taipei City,
Taiwan 244, R.O.C.

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Project Engineer : 

Elli Chang

Approved: 

Jerry Liu

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	14.80	-7.15	7.65	(±)2	9.65	9.226
915.6	14.40	-7.15	7.25	(±)2	9.25	8.414

$$(9.226/5)*(\sqrt{0.9096})=1.76 \leq 7.5$$

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 = 299.5ms

The transmission time of one cycle = 131.5ms

Duty Cycle = $131.5 \text{ ms} / 299.5\text{ms} = 0.43907$

Therefore, the duty cycle factor is found by $20 \log 0.43907 = -7.15 \text{ dB}$

