



Evaluation of RF Exposure

Part Number: 174-0395-00
 Description: NIC 441-0702
 Frequency: 902 - 928 MHz FHSS, 2400-2483.5 FHSS

Date: 3/20/2014
 FCC ID: OWS-NIC441

	900 MHz	2400 MHz
Max RF Power	29.82	24.5 dBm
Source Based Time Average Correction	0	0 dB
Tx Antenna	3	4 dBi
EIRP	32.82	28.5 dBm
EIRP	1914.255925	707.9457844 mW
EIRP	1.914255925	0.707945784 W
MPE dist		20 cm

Equation 1 -
$$S = \frac{EIRP}{4\pi R^2}$$

Equation 2 -
$$R = \sqrt{\frac{EIRP}{4\pi S}}$$

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Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.

Appendix A: FCC Exposure Criteria, FCC Limits for Maximum Permissible Exposure (MPE)

Radio	F(MHz)	Actual F, MHz	Limit		Calculated			
			$S_{max, occupational}$	$S_{max, general public}$	S, mW/cm ²	S, mW/cm ²	R _{min, occupational}	R _{min, general public}
			Controlled, Ave 6 min	Uncontrolled, Ave 30 min	@ 20cm dist	@ 20 cm dist	cm	cm
			mW/cm ²	mW/cm ²	mW/cm ²	mW/cm ²	cm	cm
	0.3-1.34*	--	100	100	--	--	--	--
	1.34-30	--	900/f ²	180/f ²	--	--	--	--
	30-300	--	1	0.2	--	--	--	--
900FHSS	300-1500	902	3.006666667	0.601333333	0.380829116	0.380829116	7.117908921	15.9161282
2400FHSS	1500-100,000	2400.8	5	1	0.140841339	0.140841339	3.356680965	7.505766817

* upper frequency range is 3 MHz for occupational limit

NOTE: For mobile or fixed location transmitters, minimum separation distance for FCC compliance is 20 cm, even if calculations indicate MPE distance is less

% 900 MHz RFx	63.33%
% 2.4 GHz RFx	14.08%
Total RFx	77.41%