

MPE CALCULATION

For Datel Design & Development, Inc; Model: AS159/AS161

FCCID:WLE-XA10009

RF Exposure Requirements: 47CFR§1.1307(b)
 RF Radiation Exposure Limits: 47CFR§1.1310
 RF Radiation Exposure Guidelines: 47CFR§2.1091
 EUT Frequency Band: 2412 – 2462MHz & 5745 –5825MHz & 5180 –5240MHz
 Limits for General Population/Uncontrolled Exposure in the band of: 1500 – 100000MHz
 Power Density Limit: 1.0mW/cm²;

Equation: $S=PG/4\pi R^2$
 Where, S=Power Density
 P=Power Input to Antenna
 G=Antenna Gain
 R=distance to the center of radiated antenna

	Channel	Channel Frequency (MHz)	Conducted Power (mW)	Antenna Gain (dBi)	Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)
802.11b	Low	2412	66.07	2	0.020778	1
	Mid	2437	83.18	2	0.026159	1
	High	2462	109.65	2	0.034484	1
2412 802.11g	Low	2412	28.18	2	0.008862	1
	Mid	2437	35.48	2	0.011158	1
	High	2462	47.86	2	0.015052	1
2462 802.11n-20MHz	Low	2412	38.90	2	0.012234	1
	Mid	2437	44.67	2	0.014048	1
	High	2462	53.70	2	0.016888	1
802.11n-40MHz	Low	2422	35.48	2	0.011158	1
	Mid	2437	38.90	2	0.012234	1
	High	2452	46.77	2	0.014709	1

	Channel	Channel Frequency (MHz)	Conducted Power (mW)	Antenna Gain (dBi)	Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)		
5745 - 5825 MHz	802.11a	Low	5745	2	0.003217	1		
		Mid	5785	2	0.003447	1		
		High	5825	2	0.003371	1		
	802.11n- 20MHz	Low	5745	6.31	2	0.001984	1	
		Mid	5785	6.03	2	0.001896	1	
		High	5825	5.62	2	0.001767	1	
		802.11n- 40MHz	Low	5755	7.08	2	0.002227	1
			Mid	5785	6.46	2	0.002032	1
			High	5815	7.08	2	0.002227	1

	Channel	Channel Frequency (MHz)	Conducted Power (mW)	Antenna Gain (dBi)	Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)		
5180 - 5240 MHz	802.11a	Low	5180	2	0.002277	1		
		Mid	5200	2	0.002557	1		
		High	5240	2	0.003073	1		
	802.11n- 20MHz	Low	5180	5.25	2	0.001651	1	
		Mid	5200	5.50	2	0.001730	1	
		High	5240	6.31	2	0.001984	1	
		802.11n- 40MHz	Low	5190	4.90	2	0.001541	1
			Mid	5210	5.50	2	0.001730	1
			High	5230	5.89	2	0.001852	1

Result

The above result had shown that device complied with 1.0mW/cm² Power density requirement for distance of 20 cm.

Completed By: Peter Cai

Data: November 29, 2010