MPE CALCULATION

FCC ID: LDKC11011757

Host Model: C1121X-8PLTEPWB

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band:	2412-2462 MHz, 5150-5250 MHz, 5470-5725 MHz, 5725-5850 MHz
Limits for General Population/Uncontrolled Exposure in the band of:	1500-100,000 MHz
Power Density Limit:	1 mW / cm^2

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

EUT: Cisco Wireless Router, Model No.: C1121X-8PLTEPWB

Internal PIFA Antenna

Prediction distance 20cm
(WLan 2.4GHz): Power = 20 dBm, Antenna Gain = 2.14 dBi, Directional Gain = 5.14 dBi, Power density = 0.0818 mW/cm2
(WLan 5GHz): Power = 20.7 dBm, Antenna Gain = 4 dBi, Directional Gain = 7 dBi, Power density = 0.148 mW/cm2

Type	CH Freq (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Directional Gain (dBi)	Tune-Up Tolerance	Tolerance Max Power (dBm)	Measurement Distance (cm)	Calculated MPE (mW/cm^2)	MPE Limit (mW/cm^2)	Pass/ Fail
WLAN 2.4GHz	2462	20	2.14	5.14*	±1dB	21	20	0.0818	1	Pass
WLAN 5GHz	5795	20.7	4	7*	±1dB	21.7	20	0.148	1	Pass

*Correlated Gain.

Co-location worse case:

2.4GHz WLAN = (0.0818/1) x 100% = 8.18%
5 GHz WLAN = (0.148/1) x 100% = 14.8%

Total MPE Percentage = (8.18+14.8) % = 22.98%< 100%

The Above Result had shown that the device complied with MPE requirement at a prediction distance of 20cm.

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