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Certificate No.: CB10304058

Maximum Permissible Exposure

Applicant's company	PEGATRON CORPORATION
Applicant Address	5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 112 Taiwan
FCC ID	VUIDPC3829A
Manufacturer's company	MAINTEK COMPUTER
Manufacturer Address	233 Jingfeng Rd., Suzhou, Jiangsu, PRC

Product Name	Wireless cable modem
Brand Name	Cisco
Model Name	DPC3829XXXX (X = 0-9 and A~Z or blank)
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
EUT Freq. Range	2400 ~ 2483.5MHz / 5150 ~ 5250MHz
Received Date	Mar. 12, 2014
Final Test Date	Apr. 12, 2014
Submission Type	Original Equipment

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History of This Assessment Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA441114	Rev. 01	Initial issue of report	Apr. 22, 2014

1. MAXIMUM PERMISSIBLE EXPOSURE

1.1. Applicable Standard

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 levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

1.3. Calculated Result and Limit

For 5GHz UNII Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11ac 80MHz (3TX) : 16.97 dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.57	1.8072	16.9684	49.7550	0.017897	1	Complies

For 5GHz ISM Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11ac 40MHz (3TX) : 28.17 dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.57	1.8072	28.1733	656.6480	0.236202	1	Complies

For 2.4GHz Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11n 20MHz (3TX) : 27.78 dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Average Output Power (dBm)	Average Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
4.94	3.1189	27.7759	599.2191	0.371994	1	Complies

CONCLUSION:

Both of the WLAN 2.4GHz Band and WLAN 5GHz Band can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.371994 / 1 + 0.236202 / 1 = 0.608196$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.