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SPORTON LAB.

Certificate No.: CB10306009

Maximum Permissible Exposure

Applicant's company	PEGATRON CORPORATION
Applicant Address	5F No. 76, Ligong St.,Beitou District, Taipei City 112, Taiwan
FCC ID	VUIDPC3929CA
Manufacturer's company	MAINTEK COMPUTER
Manufacturer Address	233 Jinfeng Rd., Suzhou, Jiangsu, PRC

Product Name	Wireless cable modem
Brand Name	CISCO
Model No.	DPC3929XXXX (X=0~1 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 / 5725 ~ 5850MHz
Received Date	May 07, 2014
Final Test Date	Jun. 03, 2014
Submission Type	Original Equipment

Sam Chen

SPORTON INTERNATIONAL INC.

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History of This Assessment Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA453003	Rev. 01	Initial issue of report	Jun. 16, 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/ cm²)	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/ cm²)	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

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

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. Table for Explanation

The difference for each model is shown as below:

Model Name	Description
DPC3929XXXX	X=0~1 and A~Z or blank

DPC3929CAD was selected as representative model for the test and its data was recorded in this report.

1.4. Calculated Result and Limit

For 5GHz UNII Band:

Antenna Type : PCB Antenna

Conducted Power for IEEE 802.11ac VHT40 : 25.63dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Average Output Power		Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
		(dBm)	(mW)			
2.55	1.7989	25.6330	365.8454	0.130993	1	Complies

For 2.4GHz Band:

Antenna Type : PCB Antenna

Conducted Power for IEEE 802.11n HT20: 29.17 dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Average Output Power		Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
		(dBm)	(mW)			
4.21	2.6363	29.1710	826.2337	0.433564	1	Complies

CONCULSION:

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

CPD1 / LPD1 + CPD2 / LPD2 + ...etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.433564 / 1 + 0.130993 / 1 = 0.564557, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.