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Certificate No.: CB10212064

Maximum Permissible Exposure

Applicant's company	PEGATRON CORPORATION
Applicant Address	5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 112 Taiwan
FCC ID	VUIDPC3929CM
Manufacturer's company	MAINTEK COMPUTER
Manufacturer Address	233 Jinfeng Rd., Suzhou, Jiangsu, PRC

Product Name	Wireless cable modem
Brand Name	Cisco
Model No.	DPC3929CMXXXX(X=0~9 and A~Z or blank), DPC3940CMXXXX(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 / 5725 ~ 5850MHz
Received Date	Oct. 25, 2013

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History of This Assessment Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA3O2602	Rev. 01	Initial issue of report	Dec. 24, 2013

1. TABLE FOR MULTIPLE LIST

The model numbers in the following table are all refer to the identical product.

Model No.	Main Chip's Model No.	Description
DPC3929CMXXXX (X=0~9 and A~Z or blank)	BCM3383ZKFEBG	8 Downstream channels & 4 Upstream channels
DPC3940CMXXXX (X=0~9 and A~Z or blank)	BCM33843ZKFSBG	16 Downstream channels & 4 Upstream channels

From the above models, Model No. DPC3929CMAD was selected as representative model for the test and its data was recorded in this report.

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. 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 0.20 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

2.2. 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 = Average 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=0.20m, as well as the gain of the used antenna, the RF power density can be obtained.

2.3. Calculated Result and Limit

For 5GHz UNII Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11ac MCS0, Nss1 40MHz: 16.90 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
2.98	1.9861	16.8953	48.9254	0.019341	1	Complies

For 5GHz ISM Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11ac MCS0, Nss1 40MHz: 29.96 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
2.98	1.9861	29.9604	990.9192	0.391732	1	Complies

For 2.4GHz Band:

Antenna Type : PCB Antenna

Max Conducted Power for IEEE 802.11n MCS0 20MHz: 29.81 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
3.99	2.5061	29.8123	957.6923	0.477723	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 $0.477723 / 1 + 0.391732 / 1 = 0.869455$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.