



SPORTON International Inc.

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Project No: CB10504126

Maximum Permissible Exposure Report

Applicant's company	PEGATRON CORPORATION
Applicant Address	5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259, Taiwan
FCC ID	VUIDPC3829A
Manufacturer's company	Maintek Computer (Suzhou) Co., Ltd
Manufacturer Address	Bldg. 6 NB, 233 Jin Feng Rd, Suzhou District Jiangsu China

Product Name	Wireless cable modem
Brand Name	technicolor
Model Name	DPC3829XXXX (X = 0-9 and A~Z or blank)
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
Received Date	Mar. 12, 2014
Final Test Date	Apr. 13, 2016
Submission Type	Class II Change

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SPORTON INTERNATIONAL INC.



Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA441114-01	Rev. 01	Initial issue of report	Apr. 22, 2016

1. GENERAL DESCRIPTION

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)

1.2. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA441114

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Changing 5GHz Band 1/ Band 4 to "New Rules" from "Old Rules".	Maximum Permissible Exposure.
Changing brand name: technicolor. Changing Applicant Address, Manufacturer's company and address. Applicant Address: 5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259, Taiwan. Manufacturer Company: Maintek Computer (Suzhou) Co., Ltd. Manufacturer address: Bldg. 6 NB, 233 Jin Feng Rd, Suzhou District Jiangsu China.	After evaluating, it is not necessary to re-test all test items.

Note: Maximum Permissible Exposure of 2.4GHz is based on original report.

1.3. Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit of Maximum Permissible Exposure

(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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

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

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

2.3. Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

For 5GHz Band:

Antenna Type : PCB Antenna

Conducted Power for IEEE 802.11ac MCS0/Nss1 (VHT40): 26.25dBm

Distance (cm)	Test Freq. (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	The maximum combined Average Output Power		Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
				(dBm)	(mW)			
20	5795	2.57	1.8072	26.2532	422.0069	0.151799	1	Complies

For 2.4GHz Band:

Antenna Type : PCB Antenna

Conducted Power for IEEE 802.11n MCS0 (HT20) : 27.78 dBm

Distance (cm)	Test Freq. (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	The maximum combined Average Output Power		Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
				(dBm)	(mW)			
20	2437	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:

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

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.3719/1 + 0.1517/1 = 0.5236$, which is less than "1". This confirmed that the device complies.