



SPORTON International Inc.

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Project No: CB10504114

Maximum Permissible Exposure Report

Applicant's company	CyberTAN Technology, Inc.
Applicant Address	No. 99, Park Avenue III, Science-based Industrial Park Hsinchu, 308 Taiwan
FCC ID	N89-VEN501
Manufacturer's company	CyberTAN Technology, Inc.
Manufacturer Address	No. 99, Park Avenue III, Science-based Industrial Park Hsinchu, 308 Taiwan

Product Name	Wireless Access Point
Brand Name	technicolor
Model Name	VEN501, VEN501-XX (Where X = A ~ Z, or blank for marketing purpose)
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
Received Date	Jan. 12, 2012
Final Test Date	Apr. 07, 2016
Submission Type	Class II Change

Sam Chen

SPORTON INTERNATIONAL INC.



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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA211241-09	Rev. 01	Initial issue of report	May 12, 2016

1. GENERAL DESCRIPTION

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5700 5745-5825	802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2. Table for Class II Change

This product is an extension of original one reported under Sporton project number: 211241 and 211241-01

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

Modifications	Performance Checking
1. Changing 5GHz Band 1 to "New Rules" from "Old Rules".	After evaluating, It is not necessary to re-test all test items.
2. Changing 5GHz Band 2 and Band 3 to "New Rules" from "Old Rules".	
3. Changing Brand name: technicolor.	
4. Adding a Model Name: VEN501-XX (Where X = A ~ Z, or blank for marketing purpose).	
5. Changing 5GHz Band 4 to "New Rules" from "Old Rules".	Maximum Permissible Exposure.

Note: Maximum Permissible Exposure of 5GHz Band1 ~Band 3 is based on original report.

1.3. Table for Multiple Listing

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

Model Name	Description
VEN501	All the models are identical, the difference model name for difference brand served as marketing strategy.
VEN501-XX (Where X = A ~ Z, or blank for marketing purpose).	

1.4. 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
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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 (Band 1 ~ Band 3):

Antenna Type : Embedded Antenna

Conducted Power for IEEE 802.11n MCS0/Nss1 HT20: 23.99dBm

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	5260	2.00	1.5849	23.9876	250.4730	0.079015	1	Complies

For 5GHz Band (Band 4):

Antenna Type : Embedded Antenna

Conducted Power for IEEE 802.11n MCS0 HT20: 26.29dBm

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	5785	2.00	1.5849	26.2941	425.9957	0.134386	1	Complies