

RF Exposure Report

Report No.: SA170809E07A

FCC ID: VZ9170001

Test Model: EAP738

Series Model: HSG328

Received Date: Aug. 09, 2017

Test Date: Sep. 06, 2017

Issued Date: Mar. 29, 2018

Applicant: 4IPNET, INC.

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE)	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
2.4 Antenna Gain	5
2.5 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SA170809E07A	Original release.	Mar. 29, 2018

1 Certificate of Conformity

Product: Enterprise Access Point
Brand: 4ipnet
Test Model: EAP738
Series Model: HSG328
Sample Status: ENGINEERING SAMPLE
Applicant: 4IPNET, INC.
Test Date: Sep. 06, 2017
Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

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Mary Ko / Specialist

Approved by : May Chen , **Date:** Mar. 29, 2018
May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 28cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN antenna Spec.							
Antenna No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
Antenna 1	Accton	120G00000153A	4.17	2.4~2.4835	Monopole	i-pex	180
			5.83	5.15~5.85			
Antenna 2	Accton	120G00000153A	4.27	2.4~2.4835	Monopole	i-pex	160
			8.18	5.15~5.85			
Bluetooth antenna Spec.							
Brand		Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
Accton		120G00000153A	4.09	2.4~2.4835	PIFA	i-pex	80

2.5 Calculation Result of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	864.046	7.23	28	0.46346	1
5180-5240	349.188	10.09	28	0.36185	1
5745-5825	417.679	10.09	28	0.43283	1

NOTE:

2.4 GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.23\text{dBi}$

5 GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 10.09\text{dBi}$

For Bluetooth:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	1.225	4.09	28	0.00032	1

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz + Bluetooth = $0.46346 / 1 + 0.43283 / 1 + 0.00032 / 1 = 0.89661$

Therefore the maximum calculations of above situations are less than the "1" limit.

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