RF Exposure Report

Report No.: SA130313C09C

FCC ID: A8JESR600

Test Model: ESR600

Series Model: ESR600S

Received Date: Mar. 19, 2015

Test Date: Mar. 19 ~ Apr. 30, 2015

Issued Date: May 04, 2015

Applicant: EnGenius Technologies

Address: 1580 Scenic Avenue, Costa Mesa, CA92626

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
SA130313C09C	Original release.	May 04, 2015

1 Certificate of Conformity

Product:	Wireless Device
Brand:	EnGenius
Test Model:	ESR600
Series Model:	ESR600S
Sample Status:	Engineering sample
Applicant:	EnGenius Technologies
Test Date:	Mar. 19 ~ Apr. 30, 2015
Standard:	FCC Part 2 (Section 2.1091) KDB 447498 D03 IEEE C95.1

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.

Prepared by : _____, **Date:** May 04, 2015

Ivy Lin / Specialist

Approved by : _____, **Date:** May 04, 2015

Ken Liu / Senior 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				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Modulation Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	802.11b	19.58	2.0	20	0.029	1
	802.11g	25.47	2.0	20	0.111	1
	802.11n (20MHz)	27.73	5.01	20	0.374	1
	802.11n (40MHz)	26.96	5.01	20	0.313	1
5180-5240	802.11a	19.33	2.0	20	0.027	1
	802.11n (20MHz)	20.26	5.01	20	0.067	1
	802.11n (40MHz)	20.06	5.01	20	0.064	1
5745-5825	802.11a	18.23	2.0	20	0.021	1
	802.11n (20MHz)	17.48	5.01	20	0.035	1
	802.11n (40MHz)	16.89	5.01	20	0.031	1

NOTE:
802.11n: Directional gain = 2dBi + 10log(2) = 5.01dBi

CONCULSION:
Both of the WLAN 2.4G & 5.0G 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
1. WLAN 2.4G + WLAN 5.0G = 0.374 + 0.067 = 0.441

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

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