RF Exposure Report

Report No.:	SA171206E03
FCC ID:	2AOIDGRYPHON01
Test Model:	Gryphon
Received Date:	Dec. 06, 2017
Test Date:	Jan. 12 to 15, 2018
Issued Date:	Jan. 30, 2018
Applicant:	Gryphon Online Safety, Inc.
Address:	10265 Prairie Springs Road,San Diego,California 92127,United States
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA171206E03	Original release.	Jan. 30, 2018

1 Certificate of Conformity

Product:	Wireless Router
Brand:	Gryphon
Test Model:	Gryphon
Sample Status:	ENGINEERING SAMPLE
Applicant:	Gryphon Online Safety, Inc.
Test Date:	Jan. 12 to 15, 2018
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.

Prepared by : _____ , **Date:** Jan. 30, 2018

Claire Kuan / Specialist

Approved by : _____ , **Date:** Jan. 30, 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

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

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 38cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN Antenna Spec.					
Antenna No.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connecter Type	*Cable Length (mm)
1	3.9	5.47~5.85GHz	PCB	i-pex(MHF)	235
2	4.17	5.47~5.85GHz	PCB	i-pex(MHF)	195
3	5.04	5.47~5.85GHz	PCB	i-pex(MHF)	160
4	5.62	5.47~5.85GHz	PCB	i-pex(MHF)	175
5	2.55	2.4~2.4835GHz	PCB	i-pex(MHF)	75
	5.49	5.15~5.35GHz			
6	3.14	2.4~2.4835GHz	PCB	i-pex(MHF)	60
	5.2	5.15~5.35GHz			
Buletooth Antenna Spec.					
Antenna No.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connecter Type	*Cable Length (mm)
7	1.96	2.4~2.4835GHz	-	-	-

2.5 Calculation Result Of Maximum Conducted Power

WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	565.458	5.86	38	0.12012	1
5180-5240	457.937	8.36	38	0.17299	1
5745-5825	875.673	10.73	38	0.57091	1

NOTE:
2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.86$dBi
5GHz:
UNII-1: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.36$dBi
UNII-3: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.73$dBi

BT-EDR

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	10.691	1.96	38	0.00093	1

BT-LE

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	10.447	1.96	38	0.00090	1

Conclusion:
The formula of calculated the MPE is:
CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz (UNII-1) + WLAN 5GHz (UNII-3) = 0.12012 / 1 + 0.17299 / 1 + 0.57091 / 1 = 0.86402

WLAN 5GHz (UNII-1) + WLAN 5GHz (UNII-3) + Bluetooth = 0.17299 / 1 + 0.57091 / 1 + 0.00093 / 1 = 0.77348

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

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