

RF Exposure Report

Report No.: SA171206E03

FCC ID: 2A0IDGRYPHON01

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.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022

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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

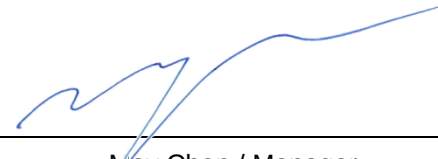
Standards: FCC Part 2 (Section 2.1091)

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

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

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 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	Connector 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	Connector 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 = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.86\text{dBi}$

5GHz:

UNII-1: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.36\text{dBi}$

UNII-3: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.73\text{dBi}$

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:

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

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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