

RF Exposure Report

Report No.: SA181001E06

FCC ID: 2AHKM-XM2

Test Model: XM2

Received Date: Oct. 01, 2018

Test Date: Nov. 06, 2018

Issued Date: Nov. 16, 2018

Applicant: Hitron Technologies 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
SA181001E06	Original release.	Nov. 16, 2018

1 Certificate of Conformity

Product: WIRELESS DOCSIS 3.1 METER

Brand: Hitron

Test Model: XM2

Sample Status: ENGINEERING SAMPLE

Applicant: Hitron Technologies Inc.

Test Date: Nov. 06, 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 :

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Date:

Nov. 16, 2018

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Approved by :

May Chen

Date:

Nov. 16, 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/cm²

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 25cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	Chain No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)
1	Chain 1	Anjie	AJDF2J-B0001	3.82	2.4~2.4835GHz	PCB	i-pex(MHF)	250
				5.1	5.15~5.85GHz	PCB	i-pex(MHF)	
2	Chain 0	Anjie	AJDF2J-C0001	6.36	2.4~2.4835GHz	PCB	i-pex(MHF)	90
				6.94	5.15~5.85GHz	PCB	i-pex(MHF)	

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2437	675.461	8.19	25	0.56690	1
WLAN 5GHz	5200	277.341	9.08	25	0.28571	1

Note:

2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.19\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 9.08\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.56690 / 1 + 0.28571 / 1 = 0.85261$

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

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