

## 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  
Hsin Chu Laboratory

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location :** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**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 :** Mary Ko , **Date:** Nov. 16, 2018  
Mary Ko / Specialist

**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 <sup>2</sup> )	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 <sup>2</sup> )*	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<sup>2</sup>

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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
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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