

## RF Exposure Report

**Report No.:** SA181102E08

**FCC ID:** 2AHKM-CHITA

**Test Model:** CHITA

**Received Date:** Nov. 06, 2018

**Test Date:** Nov. 20, 2018

**Issued Date:** June 05, 2019

**Applicant:** Hitron Technologies Inc.

**Address:** No. 1-8, Li-Hsin 1st Rd., Hsinchu Science Park, HSINCHU, 30078, Taiwan

**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
SA181102E08	Original release.	June 05, 2019

## 1 Certificate of Conformity

**Product:** Cable modem

**Brand:** Hitron

**Test Model:** CHITA

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Hitron Technologies Inc.


**Test Date:** Nov. 20, 2018

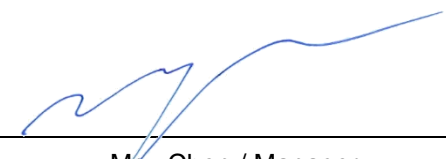
**Standards:** FCC Part 2 (Section 2.1091)

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:** June 05, 2019  
Claire Kuan / Specialist

**Approved by :**  , **Date:** June 05, 2019  
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

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 36cm away from the body of the user.  
So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

Antenna No.	Chain No.	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)
1	5G Chain 0	393000022328	3.32	5.15~5.85GHz	PCB	i-pex(MHF)	190
2	2G Chain 0	393000022428	2.61	2.4~2.4835GHz	PCB	i-pex(MHF)	71
	5G Chain 1		4.25	5.15~5.85GHz			
3	2G Chain 1	393000022528	3.25	2.4~2.4835GHz	PCB	i-pex(MHF)	61
	5G Chain 2		3.71	5.15~5.85GHz			
4	2G Chain 2	393000022628	3.54	2.4~2.4835GHz	PCB	i-pex(MHF)	75
	5G Chain 3		4.79	5.15~5.85GHz			

## 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	2462	783.792	7.91	36	0.29743	1
WLAN 5GHz	5745	948.464	10.06	36	0.59048	1

Note:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2 / 3] = 7.91\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.06\text{dBi}$

### 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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.29743 / 1 + 0.59048 / 1 = 0.88791$

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

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