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**FCC ID:** 2AHKM-ARIA2210

**Test Model:** ARIA2210

**Series Model:** OS2210

**Received Date:** Sep. 04, 2020

**Test Date:** Sep. 30, 2020

**Issued Date:** July 20, 2021

**Applicant:** Hitron Technologies Inc.

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R.O.C.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

Issue No.	Description	Date Issued
SABAOZ-WTW-P20090121A	Original release.	July 20, 2021

## 1 Certificate of Conformity

**Product:** WiFi Extender

**Brand:** hitron

**Test Model:** ARIA2210

**Series Model:** OS2210

**Applicant:** Hitron Technologies Inc.

**Test Date:** Sep. 30, 2020

**Standards:** FCC Part 2 (Section 2.1091)  
IEEE C95.3 -2002

**References Test Guidance:** KDB 447498 D01 General RF Exposure Guidance v06

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 :** Vivian Huang , **Date:** July 20, 2021  
Vivian Huang / Specialist

**Approved by :** Clark Lin , **Date:** July 20, 2021  
Clark Lin / Technical 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 26 cm 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)
WiFi 2.4G	1	ALPHA	RFPCA252007IMAB301	3.5	2.4~2.4835GHz	PIFA	i-pex(MHF)	7
	2		RFPCA252023IMAB301	2.7	2.4~2.4835GHz			23.5
WiFi 5G	1		RFPCA251812IM5B302	4	5.15~5.85GHz			12
	2		RFPCA251817IM5B301	3.5	5.15~5.85GHz			18
BT	-		RFPCA252019IMAB302	2.8	2.4~2.4835GHz			19

\*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

## 2.5 Calculation Result

For WLAN (U-NII-1), WLAN (U-NII-3) and Bluetooth data was copied from the original test report (Report No.: SABAOZ-WTW-P20090121)

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN (2.4GHz)	2412~2462	912.141	6.12	26	0.43945	1
WLAN (U-NII-1)	5180-5240	735.268	6.76	26	0.41048	1
WLAN (U-NII-2A)	5260-5320	247.699	6.76	26	0.13828	1
WLAN (U-NII-2C)	5500-5700	245.948	6.76	26	0.13731	1
WLAN (U-NII-3)	5745-5825	664.858	6.76	26	0.37117	1
Bluetooth	2402~2480	5.636	2.80	26	0.00126	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 2.4GHz: The directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.12 \text{ dBi}$
3. 5GHz: The directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.76 \text{ dBi}$

### 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

$WLAN \ 2.4GHz + WLAN \ 5GHz + Bluetooth = 0.43945 / 1 + 0.41048 / 1 + 0.00126 / 1 = 0.85119$

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

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