

RF Exposure Report

Report No.: SA170613E01

FCC ID: 2AHKM-HTEMN3

Test Model: HT-EMN3

Received Date: June 13, 2017

Test Date: July 13 to 21, 2017

Issued Date: Aug. 11, 2017

Applicant: Hitron Technologies Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
SA170613E01	Original release.	Aug. 11, 2017

1 Certificate of Conformity

Product: 4x4 5G Wireless MoCA 2.0 Network Extender

Brand: hitron

Test Model: HT-EMN3

Sample Status: ENGINEERING SAMPLE

Applicant: Hitron Technologies Inc.

Test Date: July 13 to 21, 2017

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:

Aug. 11, 2017

Wendy Wu / Specialist

Approved by :



Date:

Aug. 11, 2017

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

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

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 35cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Chain No.	Brand	Model	Antenna Gain (dBi)	Frequency range (MHz)	Antenna Type	Connector Type	Cable Length
2G1	Walsin	393000015827	3.56	2400-2500	PCB	IPEX	185mm
2G2		393000015927	4.15	2400-2500	PCB	IPEX	100mm
5G1		393000016027	5.27	5150~5850	PCB	IPEX	135mm
5G2		393000016127	6.17	5150~5850	PCB	IPEX	185mm
5G3		393000016227	5.05	5150~5850	PCB	IPEX	110mm
5G4		393000016327	5.64	5150~5850	PCB	IPEX	60mm

2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	684.125	6.87	35	0.21617	1
5180-5240	463.333	11.56	35	0.43107	1
5745-5825	793.302	11.56	35	0.73806	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{C0/20} + 10^{C1/20})^2 / 2] = 6.87\text{dBi}$

5.0GHz: Directional gain = $10 \log[(10^{C0/20} + 10^{C1/20} + 10^{C2/20} + 10^{C3/20})^2 / 4] = 11.56\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.21617 / 1 + 0.73806 / 1 = 0.95423$

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

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