RF Exposure Report

Report No.:	SABHJS-WTW-P21030983
FCC ID:	PD5-LM-WESA04FR
Test Model:	LM-WESA0440A
Received Date:	Mar. 26, 2021
Date of Evaluation:	May 18, 2021
Issued Date:	May 20, 2021
Applicant:	Delta Electronics, Inc.
Address:	31-1 Shien Pan Rd., Kuei San Industrial Zone, Taoyuan City, 333 Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SABHJS-WTW-P21030983	Original Release	May 20, 2021

1 Certificate of Conformity

Product:	802.11 b/g/n/ac WIFI AP
Test Model:	LM-WESA0440A
Sample Status:	Engineering Sample
Applicant:	Delta Electronics, Inc.
Date of Evaluation:	May 18, 2021
Standards:	FCC Part 2 (Section 2.1091)
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 RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** May 20, 2021

Gina Liu / Specialist

Approved by :  , **Date:** May 20, 2021

Dylan Chiou / Senior Project Engineer

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/cm^2

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 36cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
CDD Mode						
WLAN	2412-2462	29.35	9.45	36	0.466	1.00
	5180-5240	29.62	9.02	36	0.449	1.00
	5260-5320	23.80	9.15	36	0.121	1.00
	5500-5700	23.56	9.50	36	0.124	1.00
	5745-5825	29.47	9.74	36	0.512	1.00
Beamforming Mode						
WLAN	2412-2462	26.32	9.45	36	0.232	1.00
	5180-5240	26.96	9.02	36	0.243	1.00
	5260-5320	20.80	9.15	36	0.061	1.00
	5500-5700	23.52	9.50	36	0.123	1.00
	5745-5825	25.90	9.74	36	0.225	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 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
3. 2.4GHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 9.45dBi
   5.0GHz: For U-NII-1: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 9.02dBi
   For U-NII-2A: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 9.15dBi
   For U-NII-2C: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 9.50dBi
   For U-NII-3: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 9.74dBi

Conclusion:

Both of the 2.4GHz and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.466 + 0.512 = 0.978

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

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