RF Exposure Report

Report No.:	MFBEDV-WTW-P23010251
FCC ID:	2AWD3ESRMKV2C
Test Model:	ESRM10V2
Received Date:	2023/1/11
Test Date:	2023/2/23 ~ 2023/3/8
Issued Date:	2023/5/9
Applicant:	Aetheros Inc
Address:	80 Liberty Ship Way, Suite 26, Sausalito, CA 94965 USA
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

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
MFBEDV-WTW-P23010251	Original release.	2023/5/9

1 Certificate of Conformity

Product:	ESR-M
Brand:	Aetheros (AOS)
Test Model:	ESRM10V2
Sample Status:	Engineering sample
Applicant:	Aetheros Inc
Test Date:	2023/2/23 ~ 2023/3/8
FCC Rule Part:	FCC Part 2 (Section 2.1091)
Standards:	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 : Pettie Chen , **Date:** 2023/5/9

Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** 2023/5/9

Jeremy Lin / 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 20cm away from the body of the user. So, this device is classified as Mobile Device.

3 Calculation Result of Maximum Conducted Power

Mode	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN 2.4GHz	22.74	3.47	20	0.083	1.00
WiSun	27.69	3.76	20	0.278	0.601

Conclusion:

Both of the WLAN 2.4G & WiSun 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 + WiSun = 0.083 / 1 + 0.278 / 0.601 = 0.546

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

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