RF Exposure Report

Report No.:	SABDQY-WTW-P21010024
FCC ID:	2ASXXPAX1800
Test Model:	PAX1800
Received Date:	Jan. 05, 2021
Test Date:	Jan. 26 to Feb. 02, 2021
Issued Date:	Mar. 24, 2021
Applicant:	Plasma Cloud Limited
Address:	5/F, Yat Chau Building, 262 Des Voeux Road Central, Hong Kong
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
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SABDQY-WTW-P21010024	Original release.	Mar. 24, 2021

1 Certificate of Conformity

Product:	WiFi 6 AP
Brand:	Plasma Cloud Limited
Test Model:	PAX1800
Sample Status:	Mass Market
Applicant:	Plasma Cloud Limited
Test Date:	Jan. 26 to Feb. 02, 2021
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 : Phoenix Huang , **Date:** Mar. 24, 2021

Phoenix Huang / Specialist

Approved by : , **Date:** Mar. 24, 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^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 20 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	Chain No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
1	2.4GHz Chain1	3.9	2.4~2.5	PIFA	i-pex(MHF)
2	2.4GHz Chain0	3	2.4~2.5	PIFA	i-pex(MHF)
3	5GHz Chain1	4.7	5.15~5.85	PIFA	i-pex(MHF)
4	5GHz Chain0	5.6	5.15~5.85	PIFA	i-pex(MHF)

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN (2.4GHz)	2412~2462	273.688	6.47	20	0.24154	1
WLAN (U-NII-1)	5180~5240	380.504	8.17	20	0.49669	1
WLAN (U-NII-3)	5745~5825	426.857	8.17	20	0.5572	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] = 6.47 dBi
3. 5GHz: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 8.17 dBi

Conclusion:

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 = 0.24154 / 1 + 0.5572 / 1 = 0.79874

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

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