MPE TEST REPORT

Applicant	ID TECH
FCC ID	WQJ-AP6800L
Product	AP6800
Brand	ID TECH
Model	AP6800-0318; AP6800-0318D
Report No.	R2405A0524-M1V1
Issue Date	September 2, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	August 21, 2024
Rev.1	Update description.	September 2, 2024
Note: This revised report (Report No.: R2405A0524-M1V1) supersedes and replaces the previously issued report (Report No.: R2405A0524-M1). Please discard or destroy the previously issued report and dispose of it accordingly.		

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25°C
Relative humidity	Min. = 20%, Max. = 80%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	ID TECH
Applicant address	10721 Walker Street, Cypress, California 90630, United States
Manufacturer	ID TECH TAIWAN
Manufacturer address	No. 16, Lane 22, GaoQing Rd., YanMei Dist., TaoYuan City 326, Taiwan

General Technologies

EUT Description			
Model	AP6800-0318; AP6800-0318D		
SN	416T278398		
Hardware Version	Rev.A		
Software Version	v1.00		
Frequency	Band	TX (MHz)	RX (MHz)
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 12	699 ~ 716	729 ~ 746
	Bluetooth LE	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 2.4G	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 5G (U-NII-1)	5150 ~ 5250	5150 ~ 5250
	Wi-Fi 5G (U-NII-2A)	5250 ~ 5350	5250 ~ 5350
	Wi-Fi 5G (U-NII-2C)	5470 ~ 5725	5470 ~ 5725
	Wi-Fi 5G (U-NII-3)	5725 ~ 5850	5725 ~ 5850
	NFC	13.56	13.56
Date of Sample Received	May 17, 2024		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant. 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

3 Maximum Output Power (Measured) /Tune up and Antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by
Numeric gain (G)=10^(antenna gain/10)

Band	Maximum Tune up Power		Antenna Gain (dBi)	Numeric Gain
	(dBm)	(mW)		
LTE Band 2	25.000	316.228	0.900	1.230
LTE Band 4	25.000	316.228	0.900	1.230
LTE Band 12	25.000	316.228	1.700	1.479
Band	Maximum Output Power		Antenna Gain (dBi)	Numeric Gain
	(dBm)	(mW)		
Wi-Fi 2.4G	20.730	118.304	3.000	1.995
Wi-Fi 5G	19.980	99.541	4.200	2.630
Bluetooth LE	5.800	3.802	3.000	1.995
Note: The Maximum Output Power value refer to the Module report (Report No.: ER/2020/80121; ER/2020/80121; ER/2020/80122; FCC ID: VPYLB1YM, Grant date: 01/19/2021)				

4 MPE Limit

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following.

TABLE 1 – LIMITS FOR MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	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

Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The maximum permissible exposure for 300~1500 MHz is f/1500, for 1500~100,000MHz is 1.0. So

Band	The Maximum Permissible Exposure (mW/cm^2)
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 12	0.466
Wi-Fi 2.4GHz	1.000
Wi-Fi 5GHz	1.000
Bluetooth LE	1.000

The Electric Field Strength for 1.34 ~ 300 MHz is 824/f. So

Band	E-field Strength Limit (V/m)
NFC	60.767

5 RF Exposure Evaluation Result

RF exposure evaluation method is based on KDB 447498 D01，this calculation is based on the conducted power, maximum power and antenna gain with provides the minimum separation distance. The formula shown below is from OET Bulletin 65 Edition 97-01 Per KDB 447498 D01:

$$S= PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm^2)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

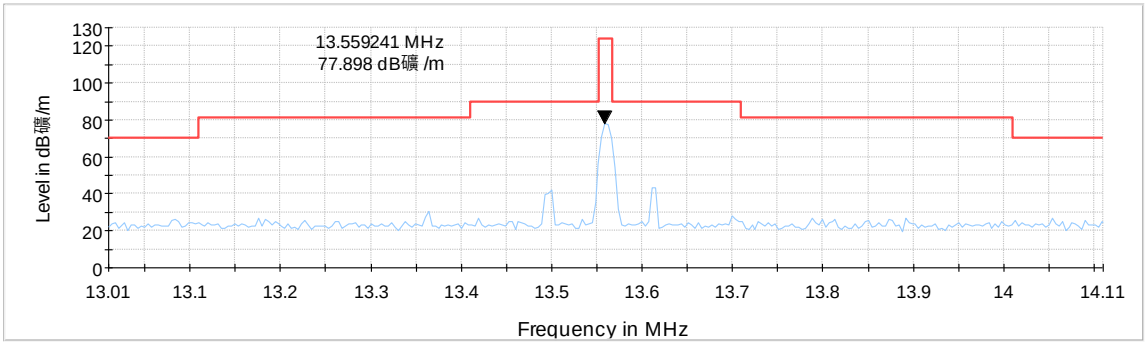
Band	Maximum Output Power / Tune up (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	PG (mW)	Result (mW/cm^2)	Limit Value (mW/cm^2)	The MPE Ratio
LTE Band 2	25.000	0.900	25.900	389.045	0.077	1.000	0.077
LTE Band 4	25.000	0.900	25.900	389.045	0.077	1.000	0.077
LTE Band 12	25.000	1.700	26.700	467.735	0.093	0.466	**0.200**
Wi-Fi 2.4G	20.730	3.000	23.730	236.048	0.047	1.000	0.047
Wi-Fi 5G	19.980	4.200	24.180	261.818	0.052	1.000	**0.052**
Bluetooth LE	5.800	3.000	8.800	7.586	0.002	1.000	**0.002**

Note: **R** = 20cm

π= 3.1416

The MPE Ratio = Mac Result÷Limit Value

A symbol (dB礦/m) in the test plot below means (dBμV/m)



Note: Test data comes from RF report and please refer to the RF report for testing related information.

Test Frequency (MHz)	Max. E-field Strength @ 3m (dBμV/m)	Max. E-field Strength @ 20cm (dBμV/m)	Max. E-field Strength @ 20cm (V/m)	E-field Strength Limit (V/m)	Conclusion
13.56	77.898	101.420	0.118	60.767	Pass
Note: Max. E-field Strength @ 20cm = Max. E-field Strength @ 3m + 20log (3m/0.2m) V/m=$10^{(((dBuV/m)-120)/20)}$					

So the simultaneous transmitting antenna pairs as below:
∑of MPE ratios = Main Antenna + Wi-Fi Antenna + Bluetooth LE Antenna = 0.200 + 0.052 + 0.002 = 0.254 < 1
NFC Antenna and Main Antenna / Bluetooth / Wi-Fi Antenna can't transmit simultaneously.

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

********END OF REPORT ********