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Report No.:2307RSU045-U6 Report Version: Issue Date: 2023-09-27

RF Exposure Evaluation Declaration

FCC ID: Q9DAPIN0654

Applicant: Hewlett Packard Enterprise

Product: ACCESS POINT

Model No.: **APIN0654**

FCC Rule Part(s): FCC Part 2.1091

Result: Complies

Evaluation Date: 2023-09-28

Reviewed By:

Trademark:

Jame Yuan

Approved By:

Robin Wu

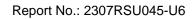


The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2307RSU045-U6	V01	Initial Report	2023-09-27	Valid



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1. General Information

1.1. Applicant

Hewlett Packard Enterprise 6280 America Center Drive, San Jose CA 95002, United States

1.2. Manufacturer

Hewlett Packard Enterprise 6280 America Center Drive, San Jose CA 95002, United States

1.3. Testing Facility

\boxtimes	Test Site – MRT Suzhou Laboratory							
	Laboratory Location (Suzhou - Wuzhong)							
	D8 Building, No.2	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China						
	Laboratory Loca	tion (Suzhou - SIF	')					
	4b Building, Liand	lo U Valley, No.200	Xingpu Rd., Shengp	u Town, Suzhou Indu	ıstrial Park, China			
	Laboratory Accre	editations						
	A2LA: 3628.01		CNAS	S: L10551				
	FCC: CN1166		ISED:	CN0001				
	VOCE	□R-20025	□G-20034	□C-20020	□T-20020			
	VCCI:	□R-20141	□G-20134	□C-20103	□T-20104			
	Test Site – MRT Shenzhen Laboratory							
	Laboratory Loca	tion (Shenzhen)						
	1G, Building A, Ju	ınxiangda Building,	Zhongshanyuan Roa	ad West, Nanshan Di	istrict, Shenzhen, China			
	A2LA: 3628.02		CNAS	S: L10551				
	FCC: CN1284	ISED: CN0105						
	Test Site – MRT Taiwan Laboratory							
	Laboratory Loca							
No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.O								
	Laboratory Accre	editations						
	TAF: L3261-19072							
	FCC: 291082, TW	/3261	ISED:	TW3261				



1.4. Equipment Description

Product Name	ACCESS POINT			
Model No.	APIN0654			
Wi-Fi Specification	802.11a/b/g/n/ac/ax			
Bluetooth Specification	v5.0 single mode, BLE only			
Zigbee Specification	802.15.4			
Working Voltage	AC/DC Adapter or PoE Injector input			
Operating Temperature	0 ~ 50 °C			
Operating Environment	Indoor Use			

Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.



1.5. Description of Available Antennas

Polarization	Antenna Name	Frequency Band (GHz)	Max Peak Gain (dBi)	CDD Di (dB For Power		BF Dir Gain (dBi)	
Wi-Fi Externa	Wi-Fi External Antenna List (4*4 MIMO)						
		2.4 ~ 2.5	3.0	3.0	6.01	6.01	
Omni	AP-ANT-311	5.15 ~ 5.9	6.0	6.0	9.01	9.01	
		5.9 ~ 7.2	6.0	6.0	9.01	9.01	
		2.4 ~ 2.5	3.3	3.3	6.31	6.31	
Omni	AP-ANT-312	5.15 ~ 5.9	3.3	3.3	6.31	6.31	
		5.9 ~ 7.2	4.1	4.1	7.11	7.11	
	AP-ANT-313	2.4 ~ 2.5	3.0	3.0	6.01	6.01	
Omni		5.15 ~ 5.9	6.0	6.0	9.01	9.01	
		5.9 ~ 7.2	6.0	6.0	9.01	9.01	
	AD ANT OOO	2.4 ~ 2.5	4.0	4.0	7.01	7.01	
Omni	AP-ANT-320 AP-ANT-340	5.15 ~ 5.9	5.0	5.0	8.01	8.01	
		5.9 ~ 7.2	5.0	5.0	8.01	8.01	
Directional	AD ANT OOF	2.4 ~ 2.5	6.1	6.1	6.1	6.1	
Directional	AP-ANT-325	5.15 ~ 5.9	6.1	6.1	6.1	6.1	
(Note 4)	AP-ANT-345	5.9 ~ 7.2	5.4	5.4	5.4	5.4	
Direction of	AD ANT COO	2.4 ~ 2.5	7.5	7.5	7.5	7.5	
Directional	AP-ANT-328	5.15 ~ 5.9	8.0	8.0	8.0	8.0	
(Note 4)	AP-ANT-348	5.9 ~ 7.2	8.0	8.0	8.0	8.0	

Note:

- 1, The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.
- 2, The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g.
- 3, The antenna specification is provided by the applicant.
- 4, These antennas are cross polarized design and the detail refers to antenna specification.
- 5, AP-ANT-325 is a tri-band and 2-element antenna and AP-ANT-345 is a tri-band and 4-element antenna.

AP-ANT-328 is a tri-band and 2-element antenna and AP-ANT-348 is a tri-band and 4-element antenna.

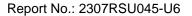
Antenna Type	ntenna Type Frequency Band (GHz) Antenr	
ZigBee / BLE		
PIFA Antenna	2.4 ~ 2.5	3.8



1.6. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

• FCC Part 2.1091 & KDB 447498 D04 Interim General RF Exposure Guidance v01





2. RF Exposure Evaluation

2.1. Test Limit

According to FCC §1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b)

Limits For Maximum Permissible Exposure (MPE)

Frequency Range	Electric Field	Magnetic Field	Power Density	Average Time
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(Minutes)
	(A) Limits fo	r Occupational/ Contro	l Exposures	
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
	(B) Limits for Gen	eral Population/ Uncor	ntrolled Exposures	
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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f= frequency in MHz

^{* =} Plane-wave equivalent power density.



2.2. MPE Exemptions

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph §1.1307(b)(2) of this section): A single RF source is exempt if:

(Option A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph §1.1307(b)(3)(ii)(A) of this section.

Medical implant devices may only use this exemption and that in paragraph §1.1307(b)(3)(ii)(A);

(Option B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \ cm} (d/20 \ \text{cm})^x & d \leq 20 \ \text{cm} \\ ERP_{20 \ cm} & 20 \ \text{cm} < d \leq 40 \ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right)$$
 and f is in GHz;

and

$$ERP_{20\;cm}\;(\text{mW}) = \begin{cases} 2040f & 0.3\;\text{GHz} \le f < 1.5\;\text{GHz} \\ \\ 3060 & 1.5\;\text{GHz} \le f \le 6\;\text{GHz} \end{cases}$$

d = the separation distance (cm);

(Option C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily



obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to §1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1920R ²
1.34-30	3450R ² /f ²
30-300	3.83R ²
300-1,500	0.0128R ² /f
1,500-100,000	19.2R ²

For multiple RF sources: Multiple RF sources are exempt if:

- (A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph §1.1307(b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph §1.1307(b)(3)(i)(A).
- (B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \le 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph §1.1307(b)(3)(i)(B) of this section for P_{th} , including existing exempt transmitters and those being added.



b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph §1.1307(b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specifiedminimum distance including existing evaluated transmitters.

 P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

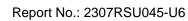
 $P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph §1.1307(b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

 ERP_j = the ERP of fixed, mobile, or portable RF source j.

ERP_{th,j} = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph §1.1307(b)(3)(i)(C) of this section.

Evaluated_k = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limit_k = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from §1.1310 of this chapter.





2.3. Calculated Result

Product	ACCESS POINT
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Turn-up Conducted Power (dBm)	Antenna Gain (dBi)	Max EIRP (dBm)
Bluetooth-LE	2402 ~ 2480	7.00	3.80	10.8
ZigBee	2405 ~ 2480	7.00	3.80	10.8
802.11b/g/n/ax	2412 ~ 2462	26.0	3.00	29.0
	5180 ~ 5320,			
802.11a/n/ac/ax	5500 ~ 5720,	26.0	3.30	29.3
	5745 ~ 5825			

Note: Tune-up power is from operation description.

For single RF source, Option B

Test Mode	Frequency Band	R	Max ERP	Threshold ERP
	(MHz)	(m)	(mW)	(mW)
BLE (DTS)	2402 ~ 2480	0.20	7.33	3060.0
ZigBee (DTS)	2405 ~ 2480	0.20	7.33	3060.0
Wi-Fi (DTS)	2412 ~ 2462	0.20	484.17	3060.0
Wi-Fi (NII)	5180 ~ 5825	0.20	518.80	3060.0

Note: R is from user manual.

For multiple RF sources

The EUT supports Wi-Fi 2.4GHz + Wi-Fi 5GHz + IOT simultaneous transmissions.

So the Max Simultaneous Transmission = 7.33/3060 (IOT) + 484.17/3060 (DTS) + 518.80/3060 (NII) = 0.3302 < 1

Therefore, the device qualifies for RF exposure test exemption.

 The End	