

RF Exposure Evaluation Declaration

FCC ID: Q9DAPINP303

APPLICANT: Hewlett Packard Enterprise Company

- Application Type: Certification
- Product: ACCESS POINT
- Model No.: APINP303

Trademark:

a Hewlett Packard Enterprise company

FCC Classification: Digital Transmission System (DTS) Unlicensed National Information Infrastructure (NII)

Reviewed By:

Approved By:

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(Chenz Ker)





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
1810TW0101-U7	Rev. 01	Initial Report	10-15-2018	Valid



1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	ACCESS POINT			
Model No.	APINP303			
Brand Name:	A Hewlett Packard Enterprise company,			
Wi-Fi Specification:	802.11a/b/g/n/ac			
Bluetooth Specification:	v4.2 single mode			
Software Version:	v1.02			
Operating Temperature:	0 ~ 40 °C			
Power Type:	POE input or AC adapter input			
Operating Environment:	Indoor Use			
Components				
Adapter	Part No.: SDI40-48-U-P7R-C2			
	Model No.: ATS048T-A480			
	Input Power: 100 - 240V ~ 50/60Hz, 1.2A			
	Output Power: 48VDC/1A			

Note: The applicant provide one POE adapter (Manufacturer: MICROSEMI) for approval testing, it is not for sale.



1.2. Antenna Description

Antenna Type	Frequency Band	TX Paths	Max Peak Gain	Beam-Forming Directional	CDD Direct (dE	ional Gain Bi)
	(GHz)		(dBi)	Gain (dBi)	For Power	For PSD
Wi-Fi Internal Antenna						
PCB	2.4	2	2.1	3.01	2.1	5.11
	5	2	5.9	3.01	5.9	8.91
Bluetooth Internal Antenna						
PCB	2.4	1	4.5			

Note:

1. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$. If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

• For power spectral density (PSD) measurements on all devices,

Array Gain = 10 log (N_{ANT}/ N_{SS}) dB = 3.01;

• For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB for $N_{ANT} \le 4$;

2. The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac, not include 802.11a/b/g.



2. RF Exposure Evaluation

2.1. Limits

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)

Frequency Range	Electric Field	Magnetic Field	Power Density	Average Time		
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(Minutes)		
(A) Limits for Occupational/ Control Exposures						
300-1500			f/300	6		
1500-100,000			5	6		
(B) Limits for General Population/ Uncontrolled Exposures						
300-1500			f/1500	6		
1500-100,000			1	30		

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

f= Frequency in MHz

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

Pd is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



2.2. Test Result of RF Exposure Evaluation

Product	ACCESS POINT
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

Test Mode	Frequency Band	Max Conducted	Antenna Gain	Maximum EIRP
	(MHz)	Power	(dBi)	(dBm)
		(dBm)		
BLE	2402 ~ 2480	8	4.50	12.50
ZigBee	2405 ~ 2480	8	4.50	12.50
802.11b/g/n	2412 ~ 2462	22	5.11	27.11
	5180 ~ 5350			
802.11a/n/ac	5500 ~ 5720	22	8.91	30.91
	5745 ~ 5825			

Note: Max conducted power specified in the theory of operation description.

Test Mode	Frequency Band	Maximum EIRP	Power Density at	Limit
	(MHz)	(dBm)	R = 20 cm	(mW/cm ²)
			(mW/cm ²)	
BLE	2402 ~ 2480	12.50	0.0035	1
ZigBee	2405 ~ 2480	12.50	0.0035	
802.11b/g/n	2412 ~ 2462	27.11	0.1023	1
	5180 ~ 5350			
802.11a/n/ac	5470 ~ 5725	30.91	0.2453	1
	5745 ~ 5825			

CONCULISON:

Bluetooth and ZigBee can't transmit simultaneously.

Both of the WLAN 2.4GHz Band, WLAN 5GHz Band and BLE or ZigBee Band can transmit simultaneously.

The max Power Density at R (20 cm) = 0.0035mW/cm² + 0.1023mW/cm² + 0.2453mW/cm² = 0.3511mW/cm² < 1mW/cm².

Therefore, the Min Safety Distance is 20cm.

The End



Appendix A – Test Setup Photograph

Refer to 1810TW0101-UT file.





Appendix B – EUT Photograph

Refer to 1810TW0101-UE file.