



RF Exposure Evaluation Declaration

FCC ID: Q9DAPINP303

APPLICANT: Hewlett Packard Enterprise Company

Application Type: Certification

Product: ACCESS POINT

Model No.: APINP303

Trademark:  

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

Reviewed By:

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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:	 
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 (GHz)	TX Paths	Max Peak Gain (dBi)	Beam-Forming Directional Gain (dBi)	CDD Directional 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:

- 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 = $G_{ANT} + \text{Array Gain}$, 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 $N_{ANT} \leq 4$;
- 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)

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)
(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

f= Frequency in MHz

Calculation Formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d 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 (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Maximum EIRP (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
802.11a/n/ac	5180 ~ 5350	22	8.91	30.91
	5500 ~ 5720			
	5745 ~ 5825			

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

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (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
802.11a/n/ac	5180 ~ 5350	30.91	0.2453	1
	5470 ~ 5725			
	5745 ~ 5825			

CONCLUSION:

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) = $0.0035\text{mW/cm}^2 + 0.1023\text{mW/cm}^2 + 0.2453\text{mW/cm}^2 = 0.3511\text{mW/cm}^2 < 1\text{mW/cm}^2$.

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.