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Report No.: 1806TW0108-U3 Report Version: Issue Date: 06-25-2018

RF Exposure Evaluation Declaration

FCC ID: Q9DAPEX037457

APPLICANT: Hewlett Packard Enterprise Company

Application Type: Class III Permissive Change

Product: ACCESS POINT

Model No.: APEX0375

Trademark: aruba Hewlett Packard

FCC Classification: Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (UNII)

Reviewed By

Approved By

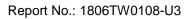




The test results relate only to the samples tested.

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
1806TW0108-U3	Rev. 01	Initial report	06-25-2018	Valid

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1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	ACCESS POINT	
Model No.:	APEX0375	
Brand Name:	a Hewlett Packard Enterprise company ,	
Wi-Fi Specification:	802.11a/b/g/n/ac	
Bluetooth Specification:	v4.0 single mode	
Software Version:	R660.1.1.0.3.016	
Operating Temperature:	-40 ~ 65 °C	
Power Type:	POE input or AC adapter input	
Operating Environment:	Outdoor Use	

Note 1: The applicant provide one POE adapter (Manufacturer: MICROSEMI & Model: PD-9001GR/AT/AC) for approval testing, it is not for sale.

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1.2. Antenna Description

Polarization	Frequency Band (GHz)	Max Peak Gain (dBi)	30 Degree Antenna Gain	BF Gain (dBi)	CDD Dire Gai (dB	in
			(dBi)		For	For
					Power	Power
Wi-	Wi-Fi Internal Antenna List (2.4GHz 2*2 MIMO, 5GHz 4*4 MIMO)					
Directional (Note 3)	2.4	4.0	N/A	0.0	4.0	4.0
Directional (Note 3)	5	4.6	-4.0	3.0	4.6	7.6
Bluetooth Internal Antenna						
PCB	2.4	4.5		N/A		

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} ≤ 4;
- 2. The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac, not include 802.11a/b/g.
 - Directional gain = G_{ANT} + BF Gain, BF Gain was declared by the applicant.
- 3. These antennas have Cross-Polarized design, the detail see the antenna specification.

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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	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	0,000		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: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm²

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.

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2.2. Test Result of RF Exposure Evaluation

Product	ACCESS POINT
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

Maximum EIRP

Test Mode	Frequency Band (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Max EIRP (dBm)
BLE	2402 ~ 2480	4.71	4.5	9.21
802.11b/g/n	2412 ~ 2462	29.02	4.0	33.02
802.11a/n/ac	5180 ~ 5320 5500 ~ 5720	28.37	7.6	35.97
	5745 ~ 5825			

Test Mode	Frequency Band	Maximum EIRP	Power Density at	Limit	Power Density at
	(MHz)	(dBm)	R = 20 cm	(mW/cm ²)	R = 23 cm
			(mW/cm ²)		(mW/cm ²)
BLE	2402 ~ 2480	9.21	0.0017	1	0.0013
802.11b/g/n	2412 ~ 2462	33.50 (Note1)	0.4454	1	0.3368
	5180 ~ 5320				
802.11a/n/ac	5500 ~ 5720	36.10 (Note1)	0.8105	1	0.6128
	5745 ~ 5825				

Note1: Refer to operation description, Conducted power tolerance: +/- 0.5dBm.

CONCULISON:

Both of the WLAN 2.4GHz Band, WLAN 5GHz Band and BLE Band can transmit simultaneously. The max Power Density at R (20 cm) = 0.0017mW/cm² + 0.4454mW/cm² + 0.8105mW/cm² = 1.2576mW/cm² > 1mW/cm².

The max Power Density at R (23 cm) = 0.0013mW/cm² + 0.3368mW/cm² + 0.6128mW/cm² = 0.9509mW/cm² < 1mW/cm².

Therefore, the Min Safety Distance is 23cm.

 The End	

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