RF Exposure Evaluation Declaration

FCC ID:	Q9DAPIN0303
APPLICANT:	Hewlett Packard Enterprise Company
Application Type:	Certification
Product:	ACCESS POINT
Model No.:	APIN0303
Trademark:	aruba a Hewlett Packard Enterprise company , Hewlett Packard Enterprise
FCC Classification:	Digital Transmission System (DTS)
	Unlicensed National Information Infrastructure (UNII)

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Testing Laboratory
3261

Revision History

Report No.	Version	Description	Issue Date	Note
1711TW0103-U9	Rev. 01	Initial report	11-18-2017	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	ACCESS POINT
Model No.	APIN0303
Brand Name:	aruba a Hewlett Packard Enterprise company , Hewlett Packard Enterprise
Wi-Fi Specification:	802.11a/b/g/n/ac
Bluetooth Specification:	v4.0 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.: SDI30-12-U-P209-C1 Model No.: SDI30-12-U Input Power: 100 - 240V ~ 50/60Hz, 1.0A Output Power: 12VDC/2.5A

Note: The applicant provide one POE adapter (Manufacturer: MICROSEMI & Model: PD-9001GR/AT/AC) 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	5.7	3.01	5.7	8.71
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 $N_{ANT} \leq 4$;
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)

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

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, $1mW/cm^2$. 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)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
BLE	2402 ~ 2480	9.53	0.0018	1
802.11b/g/n	2412 ~ 2462	27.08	0.1013	1
802.11a/n/ac	5180 ~ 5240 5260 ~ 5320 5500 ~ 5720 5745 ~ 5825	30.41	0.2186	1

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) = $0.0018mW/cm^2 + 0.1013mW/cm^2 + 0.2186mW/cm^2 = 0.3217mW/cm^2 < 1mW/cm^2$

Therefore, the Min Safety Distance is 20cm.

The End