# RF Exposure Evaluation Declaration

| | | |
|---|---|---|
| Product Name | : | Access Point |
| Model No. | : | APEX0365 ,APEX0367 |
| FCC ID | : | Q9DAPEX0365367 |

| | | |
|---|---|---|
| Applicant | : | Hewlett Packard Enterprise Company |
| Address | : | 3000 Hanover St. Palo Alto,CA 94304,USA |

| | | |
|---|---|---|
| Date of Receipt | : | Nov. 29, 2016 |
| Test Date | | Nov. 29, 2016~ Dec. 26, 2016 |
| Issued Date | : | Jan. 18, 2017 |
| Report No. | : | 16B2199R-RF-US-P20V01 |
| Report Version | : | V1.1 |

# Test Report Certification

Issued Date : Jan. 18, 2017
Report No. : 16B2199R-RF-US-P20V01

| | | |
|---|---|---|
| Product Name | : | Access Point |
| Applicant | : | Hewlett Packard Enterprise Company |
| Address | : | 3000 Hanover St. Palo Alto,CA 94304,USA |
| Manufacturer | : | Hewlett Packard Enterprise Company |
| Address | : | 3000 Hanover St. Palo Alto,CA 94304,USA |
| Model No. | : | APEX0365 ,APEX0367 |
| FCC ID | : | Q9DAPEX0365367 |
| Brand Name | : | aruba |
| EUT Voltage | : | PoE 57V |
| Applicable Standard | : | KDB 447498D01V06<br>FCC Part1.1310 |
| Test Result | : | Complied |
| Performed Location | : | DEKRA Testing and Certification (Suzhou) Co., Ltd. Corporation - Suzhou EMC Laboratory<br>No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China<br>TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098<br>FCC Registration Number: 800392 |

Documented By : Kitty Li

(Adm. Specialist: Kitty Li )

Reviewed By : Frank he

(Senior Engineer: Frank He )

Approved By : Harry Zhao

(Engineering Manager : Harry Zhao )

## History of This Test Report

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| 16B2199R-RF-US-P20V01 | V1.0 | Initial Issued Report | Jan. 11, 2017 |
| 16B2199R-RF-US-P20V01 | V1.1 | We had added BT for simultaneously transmission evaluate. | Jan. 18, 2017 |
| | | | |
| | | | |

# 1. RF Exposure Evaluation

## 1.1. 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/cm2) | 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

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

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, 1 mW/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.

## 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18℃and 78％ RH.

## 1.3. Test Result of RF Exposure Evaluation

| | | |
|---|---|---|
| Product | : | Access Point |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6 |

Antenna Information:

**APEX0365:**

| | | | | |
|---|---|---|---|---|
| Antenna Model No. | N/A | | | |
| Antenna manufacturer | N/A | | | |
| Antenna Delivery | ☐ | 1*TX+1*RX | ☒ 2*TX+2*RX | ☐ 3*TX+3*RX |
| Antenna technology | ☐ | SISO | | |
| | ☒ | MIMO | ☐ | Basic |
| | | | ☐ | Sectorized antenna systems |
| | | | ☒ | Cross-polarized antennas |
| | | | ☐ | Unequal antenna gains, with equal transmit powers |
| | | | ☐ | Spatial Multiplexing |
| | | | ☐ | CDD |
| | | | ☒ | Beam-forming |
| Antenna Type | ☐ | External | ☐ | Dipole |
| | ☒ | Internal | ☐ | PIFA |
| | | | ☐ | PCB |
| | | | ☐ | Ceramic Chip Antenna |
| | | | ☐ | Metal plate type F antenna |
| | | | ☒ | Cross-polarize Antenna |
| Antenna Gain #0 | 4.3dBi | | | |
| Antenna Gain #1 | 4.3dBi | | | |
| Beamforming Gain | 0dBi | | | |
| Antenna Gain #0*(Note1) | -0.9dBi | | | |
| Antenna Gain #1*(Note1) | -0.9dBi | | | |
| Note1: The antenna gain show above is the highest gain which has highest radiation pattern between 30° and 90° according to KDB 789033D02v01r03. | | | | |

**APEX0367:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Antenna Model No. | N/A | | | | | | |
| Antenna manufacturer | N/A | | | | | | |
| Antenna Delivery | ☐ | 1*TX+1*RX | ☒ | 2*TX+2*RX | ☐ | 3*TX+3*RX | |
| Antenna technology | ☐ | SISO | | | | | |
| | ☒ | MIMO | ☐ | Basic | | | |
| | | | ☐ | Sectorized antenna systems | | | |
| | | | ☒ | Cross-polarized antennas | | | |
| | | | ☐ | Unequal antenna gains, with equal transmit powers | | | |
| | | | ☐ | Spatial Multiplexing | | | |
| | | | ☐ | CDD | | | |
| | | | ☒ | Beam-forming | | | |
| Antenna Type | ☐ | External | ☐ | Dipole | | | |
| | ☒ | Internal | ☐ | PIFA | | | |
| | | | ☐ | PCB | | | |
| | | | ☐ | Ceramic Chip Antenna | | | |
| | | | ☐ | Metal plate type F antenna | | | |
| | | | ☒ | Cross-polarize Antenna | | | |
| Antenna Gain #0 | 6.5dBi | | | | | | |
| Antenna Gain #1 | 6.5dBi | | | | | | |
| Beamforming Gain | 0dBi | | | | | | |
| Antenna Gain #0*(Note1) | 3.8dBi | | | | | | |
| Antenna Gain #1*(Note1) | 3.8dBi | | | | | | |
| Note1: The antenna gain show above is the highest gain which has highest radiation pattern between 30° and 90° according to KDB 789033D02v01r03. | | | | | | | |

- Output Power into Antenna & RF Exposure Evaluation Distance:

### Standlone modes

**APEX0365:**

| Test Mode | Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|---|
| 802.11b/g/n(20MHz) with CDD | 2412 ~ 2462 MHz | 21.26 | 2.7 | 0.0495 | 1.0 |
| 802.11n(40MHz) with CDD | 2422 ~ 2452 MHz | 21.07 | 2.7 | 0.0474 | 1.0 |
| 802.11a/n/ac (20MHz) with CDD | 5180-5240MHz 5745-5825 MHz | 25.24 | 4.3 | 0.1789 | 1.0 |
| 802.11n/ac (40MHz) with CDD | 5190-5230MHz 5755-5795 MHz | 25.23 | 4.3 | 0.1785 | 1.0 |
| 802.11ac(80MHz) with CDD | 5210MHz 5775MHz | 25.16 | 4.3 | 0.1757 | 1.0 |
| 802.11ac (20MHz) with Beamforing | 5180-5240MHz 5745-5825 MHz | 25.21 | 4.3 | 0.1777 | 1.0 |
| 802.11ac (40MHz) with Beamforing | 5190-5230MHz 5755-5795 MHz | 25.11 | 4.3 | 0.1737 | 1.0 |
| 802.11ac(80MHz) with Beamforing | 5210MHz 5775MHz | 25.18 | 4.3 | 0.1765 | 1.0 |
| BLE | 2402-2480 MHz | 2.78 | 2.7 | 0.0007 | 1.0 |

**APEX0367:**

| Test Mode | Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|---|
| 802.11b/g/n(20MHz) with CDD | 2412 ~ 2462 MHz | 20.87 | 6.3 | 0.1037 | 1.0 |
| 802.11n(40MHz) with CDD | 2422 ~ 2452 MHz | 20.56 | 6.3 | 0.0965 | 1.0 |
| 802.11a/n/ac (20MHz) with CDD | 5180-5240MHz 5745-5825 MHz | 25.24 | 6.5 | 0.2970 | 1.0 |
| 802.11n/ac (40MHz) with CDD | 5190-5230MHz 5755-5795 MHz | 25.22 | 6.5 | 0.2956 | 1.0 |
| 802.11ac(80MHz) with CDD | 5210MHz 5775MHz | 23.61 | 6.5 | 0.2040 | 1.0 |
| 802.11ac (20MHz) with Beamforing | 5180-5240MHz 5745-5825 MHz | 25.20 | 6.5 | 0.2943 | 1.0 |
| 802.11ac (40MHz) with Beamforing | 5190-5230MHz 5755-5795 MHz | 25.19 | 6.5 | 0.2936 | 1.0 |
| 802.11ac(80MHz) with Beamforing | 5210MHz 5775MHz | 23.61 | 6.5 | 0.2040 | 1.0 |
| BLE | 2402-2480 MHz | 2.87 | 4.3 | 0.0010 | 1.0 |

**Simultaneous transmission:**

**APEX0365:**

| Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|
| 2412 ~ 2462 | 21.26 | 2.7 | 0.0495 | 1.0 |
| 5180-5240<br>5745-5825 | 25.24 | 4.3 | 0.1789 | 1.0 |
| 2402-2480 | 2.78 | 2.7 | 0.0007 | 1.0 |
| Simultaneous transmission power density | | | 0.2291 | 1.0 |

**APEX0367:**

| Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|
| 2412 ~ 2462 | 20.87 | 6.3 | 0.1037 | 1.0 |
| 5180-5240<br>5745-5825 | 25.24 | 6.5 | 0.2970 | 1.0 |
| 2402-2480 | 2.87 | 4.3 | 0.0010 | 1.0 |
| Simultaneous transmission power density | | | 0.4017 | 1.0 |

Note: The simultaneous transmission power density is 0.4017 mW/cm2 for Wireless Access Point without any other radio equipment.

The End