



# Radio Exposure Evaluation Report

**FCC ID** : Q9DAPEX0565567  
**Equipment** : Wireless Access Point  
**Brand Name** : aruba 、 Hewlett Packard Enterprise  
**Model Name** : APEX0565,APEX0567  
**Applicant** : Hewlett Packard Enterprise Company  
3333 Scott Blvd Santa Clara, CA. 95054  
**Manufacturer** : Hewlett Packard Enterprise Company  
3333 Scott Blvd Santa Clara, CA. 95054  
**Standard** : 47 CFR Part 2.1091

The product was received on Apr. 30, 2020, and testing was started from May 15, 2020 and completed on Jun. 30, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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**Photographs of EUT V01**



### History of this test report

| Report No.  | Version | Description  | Issued Date   |
|-------------|---------|--|---------------|
| FA042903-01 | 01      | Initial issue of report  | Aug. 14, 2020 |
| FA042903-01 | 02      | The section 1.3 and 2.3 was updated<br>This report is the latest version replacing<br>for the report issued on Aug. 14, 2020 | Aug. 25, 2020 |
| FA042903-01 | 03      | The section 1.1 was updated<br>This report is the latest version replacing<br>for the report issued on Aug. 25, 2020         | Sep. 10, 2020 |
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### Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items          | Result (PASS/FAIL) | Remark |
|---------------|-----------------|---------------------|--------------------|--------|
| 2             | -               | Exposure evaluation | PASS               | -      |

|  |
|--|
| <b>Declaration of Conformity:</b>  |
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| <b>Comments and Explanations:</b>  |
| None.  |

Reviewed by: Sam Tsai

Report Producer: Jenny Yang

# 1 General Description

## 1.1 EUT General Information

| RF General Information |  |  |  |
|------------------------|--|--|--|
| Evaluation Mode        | Frequency Range (MHz)                            | Operating Frequency (MHz)                        | Modulation Type  |
| 2.4GHz WLAN            | 2400-2483.5                                      | 2412-2462  | 802.11b: DSSS (DBPSK, DQPSK, CCK)<br>802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA(BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM) |
| 5GHz WLAN              | 5150-5250<br>5250-5350<br>5470-5725<br>5725-5850 | 5180-5240<br>5260-5320<br>5500-5720<br>5745-5825 | 802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)<br>802.11ax: OFDMA(BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)                                      |
| Bluetooth              | 2400-2483.5                                      | 2402-2480  | LE: DSSS (GFSK)  |
| ZigBee                 | 2400-2483.5                                      | 2405-2480  | DSSS (O-QPSK)  |

## 1.2 Table for Multiple Listing

| Sample Number | Model Name | Description  |
|---------------|------------|--|
| 1             | APEX0565   | There are two Samples for EUT. The only difference between Sample 1 and Sample 2 is the Antenna. |
| 2             | APEX0567   |  |

## 1.3 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA042903

Below is the table for the change of the product with respect to the original one.

| Modifications                    | Performance Checking |
|----------------------------------|----------------------|
| U-NII-2A and UNII-2C were added. | All                  |



### 1.4 Testing Location

| Testing Location                           |        |  |                      |
|--|--------|--|----------------------|
| <input checked="" type="checkbox"/>        | HWA YA | ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)    |                      |
|  |        | TEL : 886-3-327-3456   | FAX : 886-3-327-0973 |
| Test site Designation No. TW1190 with FCC. |        |  |                      |
| <input type="checkbox"/>                   | JHUBEI | ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.) |                      |
|  |        | TEL : 886-3-656-9065   | FAX : 886-3-656-9085 |
| Test site Designation No. TW0006 with FCC. |        |  |                      |

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-3.0               | 614                               | 1.63                              | (100)*                                   | 6  |
| 3.0-30                | 1842 / f                          | 4.89 / f                          | (900 / f <sup>2</sup> )*                 | 6  |
| 30-300                | 61.4                              | 0.163                             | 1.0                                      | 6  |
| 300-1500              | -                                 | -                                 | F/300                                    | 6  |
| 1500-100,000          | -                                 | -                                 | 5  | 6  |

(B) Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-1.34              | 614                               | 1.63                              | (100)*                                   | 30   |
| 1.34-30               | 824/f                             | 2.19/f                            | (180/f <sup>2</sup> )*                   | 30   |
| 30-300                | 27.5                              | 0.073                             | 0.2                                      | 30   |
| 300-1500              | -                                 | -                                 | F/1500                                   | 30   |
| 1500-100,000          | -                                 | -                                 | 1.0                                      | 30   |

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

**Exposure Environment: General Population / Uncontrolled Exposure**

**WLAN 2.4GHz + WLAN 5GHz + Bluetooth**

| Mode       | DG (dBi) | Power (dBm) | EIRP (dBm) | Tolerance (dB) | Tune-up EIRP (dBm) | Tune-up EIRP (W) | Distance (cm) | S (mW/cm <sup>2</sup> ) | S Limit (mW/cm <sup>2</sup> ) | Ratio (S/Limit) |
|------------|----------|-------------|------------|----------------|--------------------|------------------|---------------|-------------------------|-------------------------------|-----------------|
| 2.4G;G1D   | 6.80     | 21.98       | 28.78      | 1.00           | 29.78              | 0.95060          | 20            | 0.18912                 | 1.00000                       | 0.18912         |
| 5.8G;D1D   | 7.10     | 21.98       | 29.08      | 1.00           | 30.08              | 1.01859          | 20            | 0.20264                 | 1.00000                       | 0.20264         |
| 2.4G;BT-LE | 3.30     | 7.54        | 10.84      | 1.00           | 11.84              | 0.01528          | 20            | 0.00304                 | 1.00000                       | 0.00304         |
|            |          |             |            |                |                    |                  |               |                         | Sum Ratio                     | 0.39527         |
|            |          |             |            |                |                    |                  |               |                         | Ratio Limit                   | 1               |

Note: Tune-up EIRP = Power + Tolerance +DG

#### ZigBee

| Mode     | DG (dBi) | Power (dBm) | EIRP (dBm) | Tolerance (dB) | Tune-up EIRP (dBm) | Tune-up EIRP (W) | Distance (cm) | S (mW/cm <sup>2</sup> ) | S Limit (mW/cm <sup>2</sup> ) |
|----------|----------|-------------|------------|----------------|--------------------|------------------|---------------|-------------------------|-------------------------------|
| 2.4G;G1D | 3.01     | 7.54        | 10.55      | 1.00           | 11.55              | 0.01429          | 20            | 0.00284                 | 1.00000                       |

Note: Tune-up EIRP = Power + Tolerance +DG

—————THE END—————