



MPE/RF EXPOSURE TEST REPORT

FCC CFR 47 Part 1.1310

REPORT No: HPEN149-U2a_MPE Rev A

Company: Hewlett Packard Enterprise

Model: ASIN0302

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To: FCC CFR 47 Part 1.1310

Test Report Serial No.: HPEN141-U2a_MPE Rev A

This report supersedes: NONE

Applicant: Hewlett Packard Enterprise
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1. MAXIMUM PERMISSIBLE EXPOSURE

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4*\pi*d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10 ^ (G \text{ (dBi)}/10)$$

The calculations in the table below use the highest conducted power values together with the lowest antenna gain specified for the EUT. These calculations represent worst case in terms of the exposure levels.

Unlicensed Frequency Bands

Freq. Band (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Power Density (mW/cm ²) @ 20cm	Power Density Limit (mW/cm ²)	Min Calculated safe distance for Limit (cm)	Calculated Power Density (mW/cm ²) @ Safe Distance
5150.0 - 5250.0	5.00	3.16	20.55	134.00	0.084	1.00	5.8	1.00
5470.0 - 5725.0	5.00	3.16	21.19	131.77	0.083	1.00	5.9	1.00
5725.0 - 5850.0	5.00	3.16	21.18	131.26	0.083	1.00	5.7	1.00
5250.0 - 5350.0	5.00	3.16	20.72	118.03	0.074	1.00	5.5	1.00
2400.0 - 2483.5 (Wi-Fi)	1.00	1.26	21.41	138.21	0.034	1.00	3.7	1.00
2400.0 - 2483.5 (BLE)	2.00	1.58	3.06	2.00	0.001	1.00	0.7	1.00

Licensed Frequency Bands

MPE measurement results for licensed bands was provided through 3rd Party

Test Report: SGS-CSTC HR/2019/1001602 Date: 28th February 2019

Simultaneous Operation Assessment

The Aruba User Experience Insight ASIN0302 can operate simultaneously in two different configurations;

- 1).. BLE + Wi-Fi
- 2).. BLE + Licensed Bands

The three technologies BLE + Wi-Fi + Licensed Bands can never operate simultaneously.

Option 1: Simultaneous Operation BLE + Wi-Fi Assessment

Only the BLE and highest Wi-Fi Power Density was used for simultaneous operation.

Freq. Band (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density Limit (mW/cm ²) E _{ref}	Power Density (mW/cm ²)	E _i /E _{ref}
2400.0 - 2483.5 (BLE)	2.00	1.58	3.09	2.00	1.00	0.001	0.001
5470.0 - 5725.0	5.00	3.16	21.19	131.50	1.00	0.083	0.083
Summation of Ratio:							0.084

The Total Evaluation was calculated using the formula:

$$\sum_{i=1}^n E_i / E_{ref} \leq 1$$

Where

E_i: calculated E-field Strength for transmitter

E_{ref}: E-field strength related limit

The summation is <1 therefore the ASIN0302 complies

NOTE 1: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

NOTE 2: BLE has a negligible effect on the result

Option 2: BLE + Licensed Frequency Band Assessment for Simultaneous Operation:

In reviewing the licensed band EIRP transmit power the BLE transmitter will have negligible effect on the result therefore no further calculation was required.

Specification - Maximum Permissible Exposure Limits

The Limit(s) for Occupational / Controlled Exposure are provided in FCC §1.1310 Table 1(A)

The Limit(s) for General Population / Uncontrolled Exposure are provided in FCC §1.1310 Table 1(B)



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