RF Exposure Report

Report No.:	SA181105C12
FCC ID:	Q9DAPEX0387
Test Model:	APEX0387
Received Date:	Nov. 05, 2018
Test Date:	Nov. 12 to 19, 2018
Issued Date:	Jan. 09, 2019
Applicant:	Hewlett Packard Enterprise Company
Address:	6280 America Center Drive, San Jose, CA 95002, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA181105C12	Original release.	Jan. 09, 2019

1 Certificate of Conformity

Product:	AP-387
Brand:	HPE / Aruba
Test Model:	APEX0387
Sample Status:	ENGINEERING SAMPLE
Applicant:	Hewlett Packard Enterprise Company
Test Date:	Nov. 12 to 19, 2018
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Jan. 09, 2019

Claire Kuan / Specialist

Approved by : _____ , **Date:** Jan. 09, 2019

May Chen / Manager

2 RF Exposure

2.1 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)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE 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

2.3 Classification

The antenna of this product, under normal use condition, is at least 33cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WLAN antenna spec.				
Transmitter Circuit	Frequency range (GHz)	Antenna Net Gain (dBi)	Antenna Type	Antenna Connector
Chain (0)	5.15 ~ 5.85	9.6	Directional	I-PEX
Chain (1)	5.15 ~ 5.85	9.6	Directional	I-PEX

WiGig antenna spec.			
Frequency range (GHz)	Antenna Net Gain (dBi)	Antenna Type	Antenna Connector
57.44GHZ ~ 63.5GHz	24.49	Printed phased array	None / Integral

Bluetooth antenna spec.			
Frequency range (GHz)	Antenna Net Gain (dBi)	Antenna Type	Antenna Connector
2.4 ~ 2.4835	4.3	Omnidirectional	I-PEX

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Theoretical Max EIRP Power (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN 5GHz (UNII-3)	34	33	0.18355	1

Note: The Theoretical Max EIRP Power values refer to Theory of Operation document.

Operation Mode	Frequency (MHz)	Theoretical Max EIRP Power (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WiGig 60GHz	60480	40	33	0.73074	1
WiGig 60GHz (Unwanted emissions)	125280	-13.7	33	0.000003	1
WiGig 60GHz (Unwanted emissions)	200000	-14.2	33	0.000003	1

Note: The Theoretical Max EIRP Power values refer to Theory of Operation document.

Operation Mode	Theoretical Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
BT-LE	4	4.3	33	0.00049	1

Note: The Theoretical Max Power values refer to Theory of Operation document.

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 5GHz (UNII-3) + Bluetooth + WiGig 60GHz = 0.18355 / 1 + 0.00049 / 1 + 0.73074 / 1 + 0.000003 / 1 + 0.000003 / 1 = 0.91479

Therefore the maximum calculations of above situations are less than the "1" limit.

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