



EMC Test Data

Client:	Aruba, a Hewlett Packard Enterprise company	Job Number:	PR075848
Model:	APIN0555	T-Log Number:	TL075848-RA-FCC
Contact:	Mark Hill	Project Manager:	Christine Krebill
Standard:	FCC §15.247 & §15.407	Project Coordinator:	David Bare
		Class:	N/A

Maximum Permissible Exposure / SAR Exclusion

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 3/5/2019

Test Engineer: David Bare

General Test Configuration

Calculation uses the free space transmission formula:

$$S = (PG)/(4 \pi d^2)$$

Where: S is power density (W/m^2), P is output power (W), G is antenna gain relative to isotropic, d is separation distance from the transmitting antenna (m).

Summary of Results

Device complies with Power Density requirements at 20cm separation:	Yes
If not, required separation distance (in cm):	-

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.



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FCC MPE Calculation (5 GHz Wi-Fi)

Use: General

Antenna: 5.8 dBi or 5.4 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
5270	18.7	73.7	0	5.8	18.7	280.2	0.056	1.000
5290	19.9	97.1	0	5.8	19.9	369.2	0.073	1.000
5310	18.8	75.5	0	5.8	18.8	287.0	0.057	1.000
5530	22.0	158.2	0	5.4	22.0	548.5	0.109	1.000
5610	22.0	158.0	0	5.4	22.0	547.8	0.109	1.000
5690	22.3	170.6	0	5.4	22.3	591.5	0.118	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm ²	MPE Limit mW/cm ²	Distance where S ≤ MPE Limit
5270	0.056	1.000	4.7cm
5290	0.073	1.000	5.4cm
5310	0.057	1.000	4.8cm
5530	0.109	1.000	6.6cm
5610	0.109	1.000	6.6cm
5690	0.118	1.000	6.9cm

FCC MPE Calculation (2.4 GHz Wi-Fi)

Use: General

Antenna: 3.9 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
2412	26.5	442.4	0	3.9	26.5	1086.0	0.216	1.000
2437	26.5	445.2	0	3.9	26.5	1092.8	0.217	1.000
2462	26.6	456.7	0	3.9	26.6	1121.1	0.223	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm ²	MPE Limit mW/cm ²	Distance where S ≤ MPE Limit
2412	0.216	1.000	9.3cm
2437	0.217	1.000	9.3cm
2462	0.223	1.000	9.4cm



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		Class:	N/A

FCC MPE Calculation (BLE/ZigBee)

Use: General

Antenna: 4.5 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
2405	7.4	5.5	0	4.5	7.4	15.5	0.003	1.000
2440	7.6	5.8	0	4.5	7.6	16.2	0.003	1.000
2480	7.6	5.8	0	4.5	7.6	16.2	0.003	1.000

For the cases where S > the MPE Limit

Freq. MHz	S @ 20 cm mW/cm ²	MPE Limit mW/cm ²	Distance where S ≤ MPE Limit
2405	0.003	1.000	1.1cm
2440	0.003	1.000	1.1cm
2480	0.003	1.000	1.1cm



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		Class:	N/A

Innovation Science and Economic Development Canada MPE Calculation (5 GHz Wi-Fi)

Use: General

Antenna: 5.8 dBi or 5.4 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
5270	18.7	73.7	0	5.8	18.7	280.2	0.056	0.915
5290	19.9	97.1	0	5.8	19.9	369.2	0.073	0.918
5310	18.8	75.5	0	5.8	18.8	287.0	0.057	0.920
5530	22.0	158.2	0	5.4	22.0	548.5	0.109	0.946
5670	19.5	89.1	0	5.4	19.5	308.9	0.061	0.962
5690	22.3	170.6	0	5.4	22.3	591.5	0.118	0.965

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S ≤ MPE Limit cm
5270	0.056	0.915	4.9
5290	0.073	0.918	5.7
5310	0.057	0.920	5.0
5530	0.109	0.946	6.8
5670	0.061	0.962	5.1
5690	0.118	0.965	7.0

Innovation Science and Economic Development Canada MPE Calculation (2.4 GHz Wi-Fi)

Use: General

Antenna: 3.9 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
	dBm	mW*						
2412	26.5	442.4	0	3.9	26.5	1085.96	0.216	0.537
2437	26.5	445.2	0	3.9	26.5	1092.84	0.217	0.540
2462	26.6	456.7	0	3.9	26.6	1121.07	0.223	0.544

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S ≤ MPE Limit cm
2412	0.216	0.537	12.7
2437	0.217	0.540	12.7
2462	0.223	0.544	12.8



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		Class:	N/A

Innovation Science and Economic Development Canada MPE Calculation (BLE/ZigBee)

Use: General

Antenna: 4.5 dBi

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²
2405	7.4	5.5	0	4.5	7.4	15.49	0.003	0.536
2440	7.6	5.8	0	4.5	7.6	16.22	0.003	0.541
2480	7.6	5.8	0	4.5	7.6	16.22	0.003	0.547

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm mW/cm ²	MPE Limit at 20 cm mW/cm ²	Distance where S ≤ MPE Limit cm
2405	0.003	0.536	1.5
2440	0.003	0.541	1.5
2480	0.003	0.547	1.5

Combined exposure from all 3 radios (highest contribution from each radio) as a percentage of the corresponding limit

FCC

5 GHz	11.8%	
2.4 GHz	22.3%	
BLE/ZigBee	0.3%	
Total	34.4%	Complies

ISED

5 GHz	12.2%		
2.4 GHz	41.0%		
BLE/ZigBee	0.6%		
Total	53.8%	Complies	

Total RF Value
3.44 W/m²