Client:	Aruba, a Hewlett Packard Enterprise company	Job Number:	PR075848
Model:	APIN0555	T-Log Number:	TL075848-RA-FCC
		Project Manager:	Christine Krebill
Contact:	Mark Hill	Project Coordinator:	David Bare
Standard:	FCC §15.247 & §15.407	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: 6/20/2020

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 dBm	EUT Power mW*	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
5250	20.2	103.8	0	5.8	20.2	394.5	0.078	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
5570	22.7	185.2	0	5.4	22.7	642.2	0.128	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
5250	0.078	1.000	5.6cm
5290	0.073	1.000	5.4cm
5310	0.057	1.000	4.8cm
5530	0.109	1.000	6.6cm
5570	0.128	1.000	7.1cm
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 dBm	EUT Power mW*	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
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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Model:	APIN0555	T-Log Number:	TL075848-RA-FCC
		Project Manager:	Christine Krebill
Contact:	Mark Hill	Project Coordinator:	David Bare
Standard:	FCC §15.247 & §15.407	Class:	N/A

FCC MPE Calculation (BLE/ZigBee)
Use: General
Antenna: 4.5 dBi

Freq. MHz	EUT Power dBm	EUT Power mW*	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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Model:	APIN0555	T-Log Number:	TL075848-RA-FCC
		Project Manager:	Christine Krebill
Contact:	Mark Hill	Project Coordinator:	David Bare
Standard:	FCC §15.247 & §15.407	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.	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S) at 20 cm	MPE Limit at 20 cm
MHz	dBm	mW*	Loss dB	dBi	dBm	mW	mW/cm^2	mW/cm^2
5250	20.2	103.8	0	5.8	20.2	394.5	0.078	0.913
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
5250	0.078	0.913	5.9
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.	EUT Power		Cable Loss	Ant Gain	Power at Ant	EIRP	Power Density (S) at 20 cm	MPE Limit at 20 cm
MHz	dBm	mW*	Loss dB	dBi	dBm	mW	mW/cm^2	mW/cm^2
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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Contact:	Mark Hill	Project Coordinator:	David Bare
Standard:	FCC §15.247 & §15.407	Class:	N/A

Innovation Science and Economic Development Canada MPE Calculation (BLE/ZigBee)
Use: General
Antenna: 4.5 dBi

Freq. MHz	EUT Power dBm	EUT Power mW*	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	12.8%	
2.4 GHz	22.3%	
BLE/ZigBee	0.3%	
Total	35.4%	Complies

ISEDC

5 GHz	12.2%		Total RF Value
2.4 GHz	41.0%		3.44 W/m²
BLE/ZigBee	0.6%		
Total	53.8%	Complies	