



EMC Test Data

Client:	Eight Sleep, Inc.	PR Number:	PR167335
Model:	Pod Hub	T-Log Number:	TL167335 Hub 182A5
Contact:	Alex Lednev, Patrick McCabe	Project Manager:	Christine Krebill
Standard:	FCC part 15.407, RSS-247	Project Engineer:	David Bare
		Class:	N/A

Maximum Permissible Exposure / SAR Exclusion

Specific Details

Objective: Evaluate the RF Exposure requirements per FCC §1.1310, §2.1091 and RSS-102.

Date of Test: 1/25/2023

Test Engineer: David W. 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):	-

Deviations From The Standard

No deviations were made from the requirements of the standard.

Notes

The BLE and Wi-Fi radios do not transmit simultaneously. 2.4 GHz and 5 GHz Wi-Fi operating modes are mutually exclusive. Only one band can operate at a time. All calculations use power values at 100% duty cycle.



EMC Test Data

Client:	Eight Sleep, Inc.	PR Number:	PR167335
Model:	Pod Hub	T-Log Number:	TL167335 Hub 182A5
Contact:	Alex Lednev, Patrick McCabe	Project Manager:	Christine Krebill
Standard:	FCC part 15.407, RSS-247	Project Engineer:	David Bare
		Class:	N/A

FCC MPE Calculation

Use: General

Antenna: Maximum 2.5 dBi

Wi-Fi

Freq. MHz	EUT Power (in. Tolerance) dBm 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
2402	6.2	4.2	0	-3.7	6.2	1.78	0.0004	1.000
2440	6.7	4.7	0	-4.7	6.7	1.58	0.0003	1.000
2480	6.3	4.3	0	-2.7	6.3	2.29	0.0005	1.000
2412	23.4	218.8	0	2.5	23.4	389.05	0.077	1.000
2437	23.4	218.8	0	2.5	23.4	389.05	0.077	1.000
2462	23.4	218.8	0	2.5	23.4	389.05	0.077	1.000
5180	14.3	26.9	0	7	14.3	134.90	0.027	1.000
5200	14.3	26.9	0	7	14.3	134.90	0.027	1.000
5240	14.3	26.9	0	7	14.3	134.90	0.027	1.000
5745	23.8	239.9	0	7	23.8	1202.26	0.239	1.000
5785	23.8	239.9	0	7	23.8	1202.26	0.239	1.000
5825	23.8	239.9	0	7	23.8	1202.26	0.239	1.000

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 95 cm mW/cm^2	MPE Limit at 95 cm mW/cm^2	Distance where S <= MPE Limit cm
2402	0.000	1.000	0.4
2440	0.000	1.000	0.4
2480	0.000	1.000	0.4
2412	0.077	1.000	5.6
2437	0.077	1.000	5.6
2462	0.077	1.000	5.6
5180	0.027	1.000	3.3
5200	0.027	1.000	3.3
5240	0.027	1.000	3.3
5745	0.239	1.000	9.8
5785	0.239	1.000	9.8
5825	0.239	1.000	9.8

BLE
BLE
BLE
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi



EMC Test Data

Client:	Eight Sleep, Inc.	PR Number:	PR167335
Model:	Pod Hub	T-Log Number:	TL167335 Hub 182A5
Contact:	Alex Lednev, Patrick McCabe	Project Manager:	Christine Krebill
Standard:	FCC part 15.407, RSS-247	Project Engineer:	David Bare
		Class:	N/A

ISED Canada RF Field Strength Power Density Calculation

Use: General

Antenna: Maximum 2.5 dBi

For 300 - 6000 MHz single transmitters (General use)

Freq. MHz	EUT Power		Cable Loss Loss dB	Ant Gain dBi	Power at Ant dBm	EIRP mW	Power Density (S) at 20 cm W/m^2	MPE Limit at 20 cm W/m^2
2402	6.2	4.2	0	-3.7	6.2	1.78	0.004	5.351
2440	6.7	4.7	0	-4.7	6.7	1.58	0.003	5.409
2480	6.3	4.3	0	-2.7	6.3	2.29	0.005	5.469
2412	23.4	218.8	0	2.5	23.4	389.05	0.774	5.366
2437	23.4	218.8	0	2.5	23.4	389.05	0.774	5.404
2462	23.4	218.8	0	2.5	23.4	389.05	0.774	5.442
5180	14.3	26.9	0	7	14.3	134.90	0.268	9.047
5200	14.3	26.9	0	7	14.3	134.90	0.268	9.071
5240	14.3	26.9	0	7	14.3	134.90	0.268	9.119
5745	23.8	239.9	0	7	23.8	1202.26	2.392	9.710
5785	23.8	239.9	0	7	23.8	1202.26	2.392	9.756
5825	23.8	239.9	0	7	23.8	1202.26	2.392	9.803

For the cases where S > the MPE Limit

Freq. MHz	Power Density (S) at 20 cm W/m^2	MPE Limit at 20 cm W/m^2	Distance where S <= MPE Limit cm
2402	0.004	5.351	0.5
2440	0.003	5.409	0.5
2480	0.005	5.469	0.6
2412	0.774	5.366	7.6
2437	0.774	5.404	7.6
2462	0.774	5.442	7.5
5180	0.268	9.047	3.4
5200	0.268	9.071	3.4
5240	0.268	9.119	3.4
5745	2.392	9.710	9.9
5785	2.392	9.756	9.9
5825	2.392	9.803	9.9

BLE
BLE
BLE
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi
Wi-Fi