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RF Exposure Report
FCC Part 2.1091

EUT Name: eero
Model No.: J010001

Prepared for:

eero LLC
660 3rd Street
San Francisco, CA 94107

Prepared by:

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Statement of Compliance

Manufacturer:	eero LLC 660 3rd Street San Francisco, CA 94107
Name of Equipment:	eero
Model No.	J010001
Application of Regulations:	FCC Part 2.1091

Guidance Documents:

FCC Part 2.1091

Test Methods:

FCC Part 1.1310, KDB 447498 D01

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that the equipment described above has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in this report.

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Osvaldo Casorla	July 3, 2019	Richard Decker	July 3, 2019
Test Engineer	Date	Laboratory Signatory	Date

Test Cert. # 3331.02

1 Product Specifications

1.1 *Product Description*

1.2 *Product Specifications*

EUT Specifications	
Exposure Type	☒ General Population / Uncontrolled ☐ Occupational / Controlled
Multiple Antenna Feeds:	☒ Yes and how many 3 : 2 for the wi-fi and 1 separate Bluetooth antenna. ☐ No
Hardware Version	A01
Software Version	eeroOS
Note:	

1.3 *Air Interfaces*

Air Interface	Supported Capabilities	Modulation	Maximum Duty Cycle	Band	Frequency Range (MHz)	Maximum Output Power Including Tolerance (dBm)
WLAN: 802.11 b/g/n	• b/g mode • n mode, HT20 • n mode, HT40	• QPSK	100%	N/A	2400 – 2483.5	28.13
WLAN: 802.11 a/n/ac	• a mode • n mode, HT20 • n mode, HT40 • ac mode, VHT20 • ac mode, VHT40 • ac mode, VHT80	• QPSK	100%	UNII-1	5150 – 5250	25.89
				UNII-3	5725 – 5825	27.06
Bluetooth	• Low Energy	• GFSK	100%	N/A	2400 – 2483.5	7.16

2 RF Exposure Evaluation

2.1 *Purpose*

This report will demonstrate the compliance of RF exposure to the human body of the J010001 according to FCC rule part 2.1091. All transmitters, regardless if it is categorically excluded, are assessed to ensure the product can operate in manners that meet or exceed the minimum test separation distance as required by KDB 447498.

2.2 *Categorical Exclusion Assessment*

Air Interface	Band	Frequency Range (MHz)	FCC Rule Part	Categorically Excluded according to FCC 1.1307 (b)(1)
WLAN: 802.11 b/g/n	N/A	2400 – 2483.5	15.247	Yes
WLAN: 802.11 a/n/ac	UNII-1	5150 – 5250	15.407	Yes
	UNII-3	5725 – 5825	15.407	Yes
Bluetooth	N/A	2400 – 2483.5	15.247	Yes

2.3 *Maximum Permissible Exposure Limit*

The Maximum Permissible Exposure (MPE) limits according to FCC rule part 1.1310 for general population/uncontrolled exposure is as follows:

Frequency Range (MHz)	E-field strength (V/m)	H-field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
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
300-1,500	-	-	f/1500	30
1,500-100,000	-	-	1.0	30

* = Plane-wave equivalent power density

2.4 *Assessment Methods*

The power density is calculated according to the following equation

$$S = \frac{EIRP}{4\pi R^2}$$

Where

S = Power Density (mW/cm^2)
EIRP = Effective Isotropic Radiated Power (mW)
R = Minimum distance between the human body and antenna (cm)

When the calculated power density exceeds the MPE limits, the power density is measured.

2.5 *Assessment Calculation*

The maximum output power and antenna gain is declared by the manufacturer and used in this assessment. The minimum RF exposure distance during normal operation is 20 cm.

Stand Alone Analysis

Frequency Band	Operating Mode	Max. Conducted Power (mW)	Numeric Antenna Gain	EIRP (mW)	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)	Percentage of Limit
U-NII-1 (5150-5250 MHz)	802.11n HT20 6.5mbps	388.15	2.05	390.20	0.158	1	15.803
U-NII-3 (5725-5850 MHz)	802.11n HT20 6.5mbps	508.16	2.49	510.65	0.252	1	25.219
2.4 GHz (CCK)	802.11b	650.13	2.19	652.32	0.283	1	28.296
2.4 GHz BLE	BT5.0	5.20	2.60	7.80	0.003	1	0.269

Simultaneous Transmission Analysis

For each simultaneous transmission configuration, the sum of the percentages to the limit of each radio should not exceed 100%.

Simultaneous Transmission Configuration	Percentage of Limit	Sum of Percentages
802.11n HT20 – UNII-1 2.4 GHz (CCK)	15.80% 28.30%	44.1%
802.11n HT20 – UNII-3 2.4 GHz (CCK)	25.22% 28.30%	53.52%
802.11n HT20 – UNII-1 2.4 GHz (CCK) 2.4 GHz (BLE)	15.80% 28.30% 0.27%	44.37%
802.11n HT20 – UNII-3 2.4 GHz (CCK) 2.4 GHz (BLE)	25.22% 28.30% 0.27%	53.79%

2.6 *Conclusion*

The EUT was found to be compliant to the requirements of FCC part 1.1310 and part 2.1091 with a minimum distance of 20 cm.