

Radio Frequency Exposure Test Report

47 CFR Part 1, Subpart I, Section 1.1310

Model: Flower Crown

MET Report: EMC105721-FCC MPE

Company	Bluum.life
Address	789 Ocean Avenue
	New London, Connecticut 06320
Report date	October 30, 2019



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Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	October 30, 2019	Initial Issue.

1.0 Scope

The Federal Communications Commission (FCC) publishes standards regarding the evaluation of RF exposure hazard of wireless communications devices. An evaluation was performed to bluum.life, Flower Crown, pursuant to the relevant requirements of the 47 CFR Part 1, Subpart I, Section 1.1310.

1.1 Objective

The objective of the manufacturer is to comply with the Federal Communications Commission (FCC) publishes standards referenced above.

1.2 Statement of Compliance

The evaluation of bluum.life Flower Crown in the configuration detailed in this test report, complied with the relevant requirements of 47 CFR Part 1, Subpart I, Section 1.1310. Maintenance of compliance is the responsibility of the manufacturer.

2.0 Equipment Configuration

2.1 Overview

MET Laboratories, Inc. was contracted by bluum.life to perform testing on the Flower Crown, under bluum.life purchase order number %%PONUMBER%%.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the bluum.life, Flower Crown.

In accordance with §2.955(a) (3), the following data is presented in support of the verification of the bluum.life, Flower Crown. bluum.life should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Flower Crown has been **permanently** discontinued, as per §2.955(b).

The results obtained relate only to the item(s) tested.

Model(s) Tested:	Flower Crown
Model(s) Covered:	Flower Crown
FCC ID:	2AT2R-FLOWERMCU
Primary Power as Tested:	5V DC
Equipment Emissions Class:	B
Evaluated by:	Donald Salguero
Report Date:	October 30, 2019

Table 1. EUT Overview

2.2 Test Site

All testing was performed at Eurofins MET Labs, Inc., 914 W. Patapsco Avenue, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

MET Laboratories is a ISO/IEC 17025 accredited site by A2LA, #0591.01.

Radiated Emissions measurements were performed in a semi-anechoic chamber. In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

2.3 Equipment Configuration

The EUT was set up as outlined in the customer provided block diagram. All equipment incorporated as part of the EUT is included in the following list.

Ref. ID	Slot #	Name / Description	Model Number	Part Number	Serial Number	Rev. #
A	NA	Flower Crown	Flower Cronw Standard	NA	NA	5.0

Table 2. Equipment Configuration

2.4 Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Ref. ID	Name / Description	Manufacturer	Model Number	*Customer Supplied Calibration Data
B	AC to DC 5V USB Power Adaptor (9W)	Amazon	LY87DR	NA

Table 3. Support Equipment

2.5 Ports and Cabling Information

Ref. ID	Port name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded ? (Y/N)	Termination Box ID & Port Name
1	Charging Port	Micro USB Cable	2	1	1	Yes	B. USB

Table 4. Ports and Cabling Information

2.6 Modifications

2.6.1 Modifications to the EUT

No modifications were made to the EUT.

2.6.2 Modifications to the Test Standard

No modifications were made to the test standard.

3.0 Limits

The EUT shall comply with the relevant limits for general public exposure specified as basic restrictions or reference levels in the 47 CFR Part 1, Subpart I, Section 1.1310 as below table.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) 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 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				

4.0 Results

Frequency of Operation	Mode of Operation	Output Power	Antenna Gain	EIRP + Tune up
2402	BT	4.58 dBm	3.7 dBi	9.28 dBm ~ 8mW

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR

$$= (8\text{mW} / 5\text{mm}) * \sqrt{(2.402 \text{ GHz})} = 2.47 \sim 2.5 \leq 3.0$$

Frequency of Operation	Mode of Operation	Output Power	Antenna Gain	EIRP + Tune up
2440	BLE	-0.05 dBm	3.7 dBi	4.65 dBm ~ 3mW

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR

$$= (3\text{mW} / 5\text{mm}) * \sqrt{(2.440 \text{ GHz})} = .94 \sim 1 \leq 3.0$$

5.0 Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

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