RF EXPOSURE EVALUATION REPORT

FCC ID	:	2AG7G-B3A
Equipment	:	SuperPod
Brand Name	:	Plume Design, Inc.
Model Name	:	B3A
Applicant	:	Plume Design, Inc. 325 Lytton Ave, Palo Alto , CA 94301, USA
Manufacturer	:	Plume Design, Inc. 325 Lytton Ave, Palo Alto , CA 94301, USA
Standard	:	47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA232212A	Rev. 01	Initial issue of report	Apr. 27, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	SuperPod
Brand Name	Plume Design, Inc.
Model Name	B3A
FCC ID	2AG7G-B3A
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5855 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	DVT
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Antenna	Support Band
1	2.4GHz / 5.8GHz WLAN
2	2.4GHz / 5.8GHz WLAN
3	5.8GHz WLAN
4	Bluetooth LE / 5.8GHz WLAN
5	5.2GHz WLAN
6	5.2GHz WLAN

<Antenna Gain for Non-Beamforming Mode>

Antenna Gain(dBi)								
Bluetooth LE	2.4GHz WLAN		5.2GHz WLAN		5.8GHz WLAN			
Ant 4	SISO Mode Ant 1	MIMO Mode Ant 1+2	SISO Mode Ant 5	MIMO Mode Ant 5+6	SISO Mode Ant 3	MIMO Mode Ant 3+4	MIMO Mode Ant 2+3+4	MIMO Mode Ant 1+2+3+4
0.5	1.7	1.9	4	4.5	3.9	3.9	5.7	6

<Antenna Gain for Beamforming Mode>

Antenna Gain(dBi)				
2.4GHz WLAN	5.2GHz WLAN	5.8GHz WLAN		
MIMO Mode Ant 1+2	MIMO Mode Ant 5+6	MIMO Mode Ant 3+4	MIMO Mode Ant 2+3+4	MIMO Mode Ant 1+2+3+4
4.81	7.26	6.91	9.31	10.95

Reviewed by: Jason Wang

Report Producer: Carlie Tsai

2. Maximum RF average output power among production units

<Non-Beamforming Mode>

Maximum Average Power (dBm)								
Bluetooth LE	2.4GHz WLAN		5.2GHz WLAN		5.8GHz WLAN			
Ant 4	SISO Mode Ant 1	MIMO Mode Ant 1+2	SISO Mode Ant 5	MIMO Mode Ant 5+6	SISO Mode Ant 3	MIMO Mode Ant 3+4	MIMO Mode Ant 2+3+4	MIMO Mode Ant 1+2+3+4
-0.69	22	25	20	20	26.5	28	30	28.5

<Beamforming Mode>

Maximum Average Power (dBm)				
2.4GHz WLAN	5.2GHz WLAN	5.8GHz WLAN		
MIMO Mode Ant 1+2	MIMO Mode Ant 5+6	MIMO Mode Ant 3+4	MIMO Mode Ant 2+3+4	MIMO Mode Ant 1+2+3+4
21.5	23	27	27	25

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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/f2)	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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

<Non-Beamforming Mode>

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
Bluetooth LE	0.50	-0.69	-0.2	0.00	0.96	0.000	1.000	0.00019
2.4GHz WLAN SISO Mode ANT 1	1.70	22.00	23.7	0.23	234.42	0.047	1.000	0.04666
2.4GHz WLAN MIMO Mode ANT 1+2	1.90	25.00	26.9	0.49	489.78	0.097	1.000	0.09749
5.2GHz WLAN SISO Mode ANT 5	4.00	20.00	24.0	0.25	251.19	0.050	1.000	0.05000
5.2GHz WLAN MIMO Mode ANT 5+6	4.50	20.00	24.5	0.28	281.84	0.056	1.000	0.05610
5.8GHz WLAN SISO Mode ANT 3	3.90	26.50	30.4	1.10	1096.48	0.218	1.000	0.21825
5.8GHz WLAN MIMO Mode ANT 3+4	3.90	28.00	31.9	1.55	1548.82	0.308	1.000	0.30828
5.8GHz WLAN MIMO Mode ANT 2+3+4	5.70	30.00	35.7	3.72	3715.35	0.740	1.000	0.73952
5.8GHz WLAN MIMO Mode ANT 1+2+3+4	6.00	28.50	34.5	2.82	2818.38	0.561	1.000	0.56098

Note:

1. In the above table have assessed Bluetooth, WLAN 2.4GHz and WLAN 5GHz by referring to their maximum power.

<Beamforming Mode>

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
2.4GHz WLAN MIMO Mode ANT 1+2	4.81	21.50	26.3	0.43	427.56	0.085	1.000	0.08510
5.2GHz WLAN MIMO Mode ANT 5+6	7.26	23.00	30.3	1.06	1061.70	0.211	1.000	0.21132
5.8GHz WLAN MIMO Mode ANT 3+4	6.91	27.00	33.9	2.46	2460.37	0.490	1.000	0.48972
5.8GHz WLAN MIMO Mode ANT 2+3+4	9.31	27.00	36.3	4.28	4275.63	0.851	1.000	0.85104
5.8GHz WLAN MIMO Mode ANT 1+2+3+4	10.95	25.00	36.0	3.94	3935.50	0.783	1.000	0.78334

Note:

1. In the above table have assessed Bluetooth, WLAN 2.4GHz and WLAN 5GHz by referring to their maximum power.

4.2. Collocated Power Density Calculation

2.4GHz WLAN Power Density / Limit	5GHz WLAN Power Density / Limit	Bluetooth Power Density / Limit	Σ(Power Density / Limit) of WLAN + Bluetooth
0.09749	0.85104	0.00019	0.94872

Note:

1. Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for all transmitter.
2. Considering all antenna collocation of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of all collocated transmitters is compliant.

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.