RF Exposure Report

Report No.:	FCC_IC_RF_SL21102901-SMT-001_2.4G Rev.2
Product:	Outpost
Test Model no.:	81043
Series Model:	N/A
Product Description:	Outpost
HVIN/Model no.:	81043
FCC ID:	2A4D081043
IC ID:	28183-81043
Received Date:	11/04/221
Test Date:	11/04/2021-12/16/2021 & 3/21/22
Issued Date:	03/21/2022
Applicant:	SportsMEDIA Technology Corporation, d/b/a SMT
Address:	3511 University Drive, Durham, NC 27707, USA
Manufacturer:	BriteLab Inc
Address:	6341 San Ignacio Ave. San Jose, CA 95119
Issued By:	Bureau Veritas Consumer Products Services, Inc.
Lab Address:	775 Montague Expressway, Milpitas, CA 95035
Test Location:	775 Montague Expressway, Milpitas, CA 95035
FCC Registration / Designation Number:	540430
ISED# / CAB identifier:	4842D

TESTING CERT # 2742-01

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Release Control Record

Issue No.	Description	Date Issued
FCC_IC_RF_SL21102901-SMT-001_MPE_2.4G	Original Release	01/03/2022
FCC_IC_RF_SL21102901-SMT-001_MPE_2.4G Rev. 1	Updated product information	02/15/2022
FCC_IC_RF_SL21102901-SMT-001_MPE_2.4G Rev. 2	Updated MPE calculation.	03/21/2022

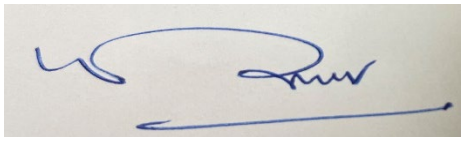
1 Certificate of Conformity

Product:	Outpost
Brand:	SMT
Test Model no.:	81043
Series Model:	N/A
Sample Status:	Production
Applicant:	SportsMEDIA Technology Corporation, d/b/a SMT
Test Date:	11/04/2021-12/16/2021 & 3/21/22
Standards:	FCC Part 2 (Section 2.1093) KDB 447498 D01 Genreal RF Exposure Guidance v06 IEEE C95.1-1992 RSS-102 Issue 5 (2015-03) IEEE C95.3-2002

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by _____ , **Date:** 03/22/2022

Yu-Chien Ho / Test Engineer



Approved by _____ , **Date:** 03/22/2022

Suresh Kondapalli / Engineer Reviewer

2 General Information

2.1 General Description of EUT

Product	Outpost
Brand	SMT
Test Model no.	81043
Identification No. of EUT	1
Series Model	N/A
Status of EUT	Production
Power Supply Rating	120V/60Hz
Modulation Type	OQPSK
Modulation Technology	DSSS
Transfer Rate	0.25
Operating Frequency	2.405 ~ 2.480GHz
Number of Channel	16 Channels
Antenna Type	Patch
Antenna Gain (dBi)	8
Antenna Connector	Internal to the device

3 RF Exposure

Following FCC KDB 447498 D01 "General SAR test exclusion guidance"

a) 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:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,where f(GHz) is the RF channel transmit frequency in GHz. Power and distance are rounded to the nearest mW and mm before calculation. The result is rounded to one decimal place for comparison. The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

b) 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 (also illustrated in Appendix B):

1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz

2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10]} mW, for > 1500 MHz and ≤ 6 GHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

1) For test separation distances > 50 mm and < 200 mm, the power threshold at the Corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/f(MHz))]

2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in

1) for 50 mm and 100 MHz is multiplied by ½

2) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any SAR test results below 100 MHz to be acceptable.

FCC Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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

ISED RSS 102 RF exposure Limits

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142f^{0.3417}$	$0.008335f^{0.3417}$	$0.02619f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158f^{0.5}$	$4.21 \times 10^{-4}f^{0.5}$	$6.67 \times 10^{-5}f$	$616000/f^{1.2}$

Note: f is frequency in MHz.
*Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

3.1 MPE Calculation Formula

Pd = (Pout*G) / (4*pi*r2)

Where
Pd = power density in mW/cm2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
R = distance between observation point and center of the radiator in cm

3.2 Classification

The antenna of this product, under normal use condition, will be installed on the ceiling of a hockey rink which is at least more than 20cm away from the body of the user. But this device was evaluated as a Mobile Device, is at least 20cm away from the body of the user.

3.3 Antenna Gain

The antenna type is Patch antenna with 8 dBi gain, typically around 2.405 - 2.485GHz

4 ISED Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Max Power (mW)	ERP (mW)	AntennaGain (dBi)	Distance(cm)	Power Density (W/m^2)	Limit (W/m^2)
2405	21.28	134.27	847.23	8	20	1.69	5.355

Note:
Max power was taken from Report No: FCC_IC_RF_SL21102901-SMT-001_ 2.4G Rev.2.
Antenna gain was obtained from antenna data sheet from client.
Determining compliance based on the results of the compliance measurement, not considering instrumentation uncertainty.
Calculate SAR test exclusion thresholds from condition “1” formulas.

ISED Calculation Conclusion

MPE Calculation**:**

Pd = (Pout*G) / (4*pi*r2)
Where
Pd = power density in mW/cm2
Pd = 847.23 mW / (4*pi*r2)
Pi = 3.1416
R = 20 cmd
MPE: WLAN 2.4G = 0.169 mW/cm^2 x 10 = 1.69 W/m^2 < 5.355 W/m2

5 FCC Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Max Power (mW)	ERP (mW)	Antenna Gain (dBi)	Distance(cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2405	21.28	134.27	847.23	8	20	0.169	1

Note:
Max power was taken from Report No: FCC_IC_RF_SL21102901-SMT-001_ 2.4G Rev.2.
Antenna gain was obtained from antenna data sheet from client.
Determining compliance based on the results of the compliance measurement, not considering instrumentation uncertainty.
Calculate SAR test exclusion thresholds from condition “1” formulas.

FCC Calculation Conclusion

MPE Calculation**:**

Pd = (Pout*G) / (4*pi*r2)
Where
Pd = power density in mW/cm2
Pd = 847.23 mW / (4*pi*r2)
Pi = 3.1416
R = 20 cmd
MPE: WLAN 2.4G = 0.169 mW/cm2

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