



RF Exposure Evaluation

FCC ID : 2A348SPARKLINK
APPLICANT : Positive LLC
Product : Wireless System
Model No. : Spark Link
Brand Name : Positive Grid
FCC Rule Part(s): : Part 2.1093 (Portable)
Received Date : December 25, 2023

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2312TWQ803-U3	1.0	Original Report	2024-01-15	

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Wireless System
Model No.	Positive Grid
Brand Name	Spark Link
Supports Radios Spec.	WPAN: SRD 2.4G

1.2. Antenna Description

No.	Brand	Part No.	Antenna Type	Peak Gain
1	WISVATION	WS105A	IFA	1.6dBi

2. RF Exposure Evaluation

2.1. FCC Limits

According to FCC KDB 447498 D04V01 - SAR-Based Exemption

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula .

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula.

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

The example values shown as below are for illustration only.

Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

Note: when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

2.2. Test Result of RF Exposure Evaluation

Mode	Frequency Band (MHz)	Average Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	ERP (mW)	FCC SAR Test Exclusion Threshold (mW) @10mm
SRD 2.4G	2404.5~2479.5	4.74	2.98	1.6	2.62	7

So, this device can complies the SAR test exclusion.

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