



MPE REPORT

Report No.: SET2022-08340

Product Name: Sleeptracker-AI® Sleep Monitoring System

Model No. : STS-60

FCC ID: 2AF20-STS60

IC: 20700-STS60

Applicant: Fullpower Technologies, Inc

Address: 1200 Pacific Ave, Suite 300, Santa Cruz, CA 95060, USA

Dates of Testing: 2022.05.23-2022.07.01

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Tel: 86 755 26627338 **Fax:** 86 755 26627238

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Test Report

Product.....: Sleeptracker-AI® Sleep Monitoring System

Brand Name.....: N/A

Trade Name.....: N/A

Applicant.....: Fullpower Technologies, Inc

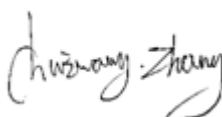
Applicant Address.....: 1200 Pacific Ave, Suite 300, Santa Cruz, CA 95060, USA

Manufacturer.....: Trivo (Taicang) Technologies Co., Ltd

Manufacturer Address.....: Building 9, Yusheng Industry Park, No.33 North Changsheng Road, Taicang, Jiangsu, China

Test Standards.....: FCC Part 2.1091
RSS-102 Issue 5: 2015
KDB447498 D01 v06

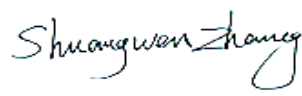
Test Result.....: PASS

Tested by.....:  2022.07.12

Chuiwang Zhang, Test Engineer

Reviewed by.....:  2022.07.12

Chris You, Senior Engineer

Approved by.....:  2022.07.12

Shuangwen Zhang, Manager



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Change History		
Issue	Date	Reason for change
1.0	2022.07.12	First edition



1. GENERAL INFORMATION

1.1 EUT Description

Product Name	Sleeptracker-AI [®] Sleep Monitoring System	
EUT supports Radios application	WLAN2.4G WLAN5G	
Antenna Type	PCB antenna	
Supply voltage	DC 5V from Adapter	
Antenna Gain	WLAN2.4G	-3.3dBi
	BT/BLE	-3.3dBi
	WLAN5G	-2.2dBi



1.2 Test Standards and Results

The EUT has been tested according to the following specifications

Standard	Test Type	Result
FCC Part 2.1091 RSS-102 Issue 5: 2015	Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)	PASS
KDB447498 D01 v06	General RF Exposure Guidance	PASS

1.3 Identification of the Responsible Testing Laboratory

Company Name:	CCIC Southern Testing Co., Ltd.
Address:	Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China



2. RF exposure evaluation

2.1 MPE Limited

FCC Limited:

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic 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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

IC Limited:

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	3.142 f ^{0.3417}	0.008335 f ^{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	0.158 f ^{0.5}	4.21 x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616000/ f ^{1.2}

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



2.2 Predication of MPE limit at a given distance

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

Where

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)



2.3 Evaluation Results

Worst-Case mode Conducted Output Power Results for 2.4G WIFI

Mode	Channel	Frequency (MHz)	Output Power (dBm)	Tune Up tolerance(dBm)	EIRP (dBm)	Tune Up tolerance(dBm)
802.11b	1	2412	15.27	15 ± 1	11.97	11 ± 1
	6	2437	13.72	13 ± 1	10.42	10 ± 1
	11	2462	12.41	12 ± 1	9.11	9 ± 1

Worst-Case mode Conducted Output Power Results for BT /BLE

Band	Mode	Test Frequency	Output Power (dBm)	Tune Up tolerance(dBm)	EIRP (dBm)	Tune Up tolerance(dBm)
BT EDR	GFSK	2402	8.73	8 ± 1	5.43	5 ± 1
	GFSK	2441	6.40	6 ± 1	3.10	3 ± 1
	GFSK	2480	4.63	4 ± 1	1.33	1 ± 1
BLE	GFSK	2402	3.13	3 ± 1	-0.17	-1 ± 1
	GFSK	2440	3.15	3 ± 1	-0.16	-1 ± 1
	GFSK	2480	3.01	3 ± 1	-0.29	-1 ± 1

**Worst-Case mode Conducted Output Power Results for 5G WIFI**

Band	Mode	Frequency (MHz)	Output Power (dBm)	Tune Up tolerance(dBm)	EIRP (dBm)	Tune Up tolerance(dBm)
U-NII-1	802.11ac (20MHz)	5180	12.07	12 ± 1	9.87	9 ± 1
	802.11ac (20MHz)	5220	12.42	12 ± 1	10.22	10 ± 1
	802.11ac (20MHz)	5240	12.39	12 ± 1	10.19	10 ± 1
U-NII-2A	802.11n (20MHz)	5260	10.05	10 ± 1	7.85	7 ± 1
	802.11n (20MHz)	5300	10.54	10 ± 1	8.34	8 ± 1
	802.11n (20MHz)	5320	10.41	10 ± 1	8.21	8 ± 1
U-NII-2C	802.11n (20MHz)	5500	13.79	13 ± 1	11.59	11 ± 1
	802.11n (20MHz)	5600	14.19	14 ± 1	11.99	11 ± 1
	802.11n (20MHz)	5700	13.20	13 ± 1	11.00	11 ± 1
U-NII-3	802.11ac (40MHz)	5755	10.43	10 ± 1	8.23	8 ± 1
	802.11ac (40MHz)	5795	9.49	9 ± 1	7.29	7 ± 1



Calculation results:
FCC Worst-case mode:

Band	Mode	Frequency (MHz)	Maximum tune up power(dBm)	RF distance (cm)	Calculation results (mW/cm ²)	Limit (mW/cm ²)	Ratio
2.4G WIFI	802.11b	2412	16.0	20	0.0037	1.0	0.0037
	802.11b	2437	14.0	20	0.0023	1.0	0.0023
	802.11b	2462	13.0	20	0.0019	1.0	0.0019
BT EDR	GFSK	2402	9.0	20	0.0007	1.0	0.0007
	GFSK	2441	7.0	20	0.0005	1.0	0.0005
	GFSK	2480	5.0	20	0.0003	1.0	0.0003
BLE	GFSK	2402	4.0	20	0.0002	1.0	0.0002
	GFSK	2440	4.0	20	0.0002	1.0	0.0002
	GFSK	2480	4.0	20	0.0002	1.0	0.0002
5G WIFI U-NII-1	802.11ac (20MHz)	5180	13.0	20	0.0024	1.0	0.0024
	802.11ac (20MHz)	5220	13.0	20	0.0024	1.0	0.0024
	802.11ac (20MHz)	5240	13.0	20	0.0024	1.0	0.0024
5G WIFI U-NII-2A	802.11n (20MHz)	5260	11.0	20	0.0015	1.0	0.0015
	802.11n (20MHz)	5300	11.0	20	0.0015	1.0	0.0015
	802.11n (20MHz)	5320	11.0	20	0.0015	1.0	0.0015
5G WIFI U-NII-2C	802.11n (20MHz)	5500	14.0	20	0.0030	1.0	0.0030
	802.11n (20MHz)	5600	15.0	20	0.0038	1.0	0.0038
	802.11n (20MHz)	5700	14.0	20	0.0030	1.0	0.0030
5G WIFI U-NII-3	802.11ac (40MHz)	5755	11.0	20	0.0015	1.0	0.0015
	802.11ac (40MHz)	5795	10.0	20	0.0012	1.0	0.0012



IC Worst-case mode:

Band	Mode	Frequency (MHz)	EIRP Maximum tune up power(dBm)	RF distance (m)	Calculation results (W/m ²)	Limit (W/m ²)	Ratio
2.4G WIFI	802.11b	2412	12.0	0.2	0.032	5.37	0.0060
	802.11b	2437	11.0	0.2	0.025	5.40	0.0046
	802.11b	2462	10.0	0.2	0.020	5.44	0.0037
BT EDR	GFSK	2402	6.0	0.2	0.008	5.35	0.0015
	GFSK	2441	4.0	0.2	0.005	5.41	0.0009
	GFSK	2480	2.0	0.2	0.003	5.47	0.0005
BLE	GFSK	2402	0	0.2	0.002	5.35	0.0004
	GFSK	2440	0	0.2	0.002	5.41	0.0004
	GFSK	2480	0	0.2	0.002	5.47	0.0004
5G WIFI U-NII-1	802.11ac (20MHz)	5180	10.0	0.2	0.020	9.05	0.0022
	802.11ac (20MHz)	5220	11.0	0.2	0.025	9.09	0.0028
	802.11ac (20MHz)	5240	11.0	0.2	0.025	9.12	0.0027
5G WIFI U-NII-2A	802.11n (20MHz)	5260	8.0	0.2	0.013	9.14	0.0014
	802.11n (20MHz)	5300	9.0	0.2	0.016	9.19	0.0017
	802.11n (20MHz)	5320	9.0	0.2	0.016	9.21	0.0017
5G WIFI U-NII-2C	802.11n (20MHz)	5500	12.0	0.2	0.032	9.43	0.0034
	802.11n (20MHz)	5600	12.0	0.2	0.032	9.54	0.0034
	802.11n (20MHz)	5700	12.0	0.2	0.032	9.66	0.0033
5G WIFI U-NII-3	802.11ac (40MHz)	5755	9.0	0.2	0.016	9.72	0.0016
	802.11ac (40MHz)	5795	8.0	0.2	0.013	9.77	0.0013

**** END OF REPORT ****