RF Exposure Evaluation Report

Report No. :	CQASZ20191201301E-02
Applicant:	Social Bicycles LLC
Address of Applicant:	55 Prospect St. Suite 410 Brooklyn, NY 11201, United States

Equipment Under Test (EUT):

EUT Name:	Rechargeable Li-ion Battery Pack
Model No.:	JUMP Pack
Brand Name:	**JUMP**
FCC ID:	2ADEKJUMPPACK
Standards:	47 CFR Part 1.1307
	47 CFR Part 1.1310
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2019-12-11
Date of Test:	2019-12-11 to 2019-12-16
Date of Issue:	2019-12-16
Test Result :	**PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By：

(Tom Chen)

Reviewed By:

(Aaron Ma)

Approved By:

(Jack Ai)

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20191201301E-02	Rev.01	Initial report	2019-12-16

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3 General Information

3.1 Client Information

Applicant:	Social Bicycles LLC
Address of Applicant:	55 Prospect St. Suite 410 Brooklyn, NY 11201, United States
Manufacturer:	Fujian SCUD Power Technology Co.,Ltd
Address of Manufacturer:	No.135, Rujiang East Road, Mawei District, Fuzhou, Fujian

3.2 General Description of EUT

Product Name:	Rechargeable Li-ion Battery Pack
Model No.:	JUMP Pack
Trade Mark:	**JUMP**
Hardware Version:	U-10S4P-BMS-A06
Software Version:	V3.0
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Power Supply:	lithium battery:DC36V

3.3 General Description of NFC

Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type:	Induction coil

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [$\sqrt{f(GHz)}$] ≤ 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[17]
   The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion

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

Appendix C

SAR Test Exclusion Thresholds for < 100 MHz and < 200 mm

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	< 50	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	237	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	
50	308	617	625	634	643	651	660	669	677	686	695	703	712	721	729	738	
10	474	948	961	975	988	1001	1015	1028	1041	1055	1068	1081	1095	1108	1121	1135	
1	711	1422	1442	1462	1482	1502	1522	1542	1562	1582	1602	1622	1642	1662	1682	1702	mW
0.1	948	1896	1923	1949	1976	2003	2029	2056	2083	2109	2136	2163	2189	2216	2243	2269	
0.05	1019	2039	2067	2096	2125	2153	2182	2211	2239	2268	2297	2325	2354	2383	2411	2440	
0.01	1185	2370	2403	2437	2470	2503	2537	2570	2603	2637	2670	2703	2737	2770	2803	2837	

4.1.3 EUT RF Exposure

1) For NFC

eirp = pt x gt = (E x d)^2/30

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, ---10$^{((dB\mu V/m)/20)}$/10^6 ,

d = measurement distance in meters (m)---3m,

So pt = (E x d)^2/30 / gt

The worst case (refer to report CQASZ20191201301E-02) is below:

Frequency (MHz)	Level (dBuV/m)	Polarization
13.56	57.24	Peak

For 13.56MHz wireless:

Field strength = 57.24dBμV/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0

So pt={[10$^{(57.24)}$/10^{6}x3]^2/30 /1.0}x1000mW =0.0002mW

0.0002mW<Limit:308mW

So the SAR report is not required.