

TEST REPORT

Report No.: SHATBL2406001W05

Applicant : Bolyga (Chongqing) New Energy Technology Co., Ltd

Product Name : Electric Bike

Brand Name : N/A

Model Name : Awaken-001

FCC ID : 2BH5Q-AWAKEN

Test Standard : 47 CFR Part 2.1091

Date of Test : 2024.7.3~2024.7.8

Report Prepared by : Peter Ling
(Peter Ling)

Report Approved by : Chris Xu
(Chris Xu)

Authorized Signatory : Terry Yang
(Terry Yang)



TABLE OF CONTENTS

REVISION HISTORY	3
DECLARATION OF REPORT	4
1. GENERAL DESCRIPTION	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Factory	5
1.1. General Information of EUT	6
1.2. Equipment Specification	7
1.3. Modification of EUT	8
1.4. Laboratory Information	8
1.5. Applicable Standards	8
2. RF EXPOSURE EVALUATION	9
2.1. Limits for Maximum Permissible Exposure (MPE)	9
2.2. Formula	9
2.3. MPE Result	10
2.4. Description	11

REVISION HISTORY

Rev.	Issue Date	Revisions	Revised by
00	2024.7.8	Initial Release	Chris Xu

DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 2.1093. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.

1. GENERAL DESCRIPTION

1.1. Applicant

Name : Bolyga(Chongqing) New Energy Technology Co. , Ltd
Address : No. 1, No. 3 Kangmao Road, Liangjiang new district, Chongqing, 7-11

1.2. Manufacturer

Name : Bolyga(Chongqing) New Energy Technology Co. , Ltd
Address : No. 1, No. 3 Kangmao Road, Liangjiang new district, Chongqing, 7-11

1.3. Factory

Name : Changzhou Merry E BIKE Co.,ltd
Address : No.6, hedian Rd. Tianning District, CHANGZHOU JIANGSU 213017, CHINA

1.1. General Information of EUT

General Information	
Equipment Name	Electric Bike
Brand Name	N/A
Model Name	Awaken-001
Series Model	N/A
Model Difference	N/A
SN or IMEI Code	240400531020001
Adapter	Model: DPLC165v55-M Input: AC 110-240 V,50/60 Hz Output: DC 54.6V,3.0A
Battery	Model: WDDBLJ-LXZ Rated Voltage: 48V Charge Limit Voltage: 54.6V Capacity: 25Ah
Hardware Version	BLJ-004
Software Version	LDCBB807C4825L1111212.
Connecting I/O Port(s)	Refer to the remark below.

Remark:

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

1.2. Equipment Specification

Equipment Specification		
NFC		13.56
Antenna Information	Antenna Type:	PCB coil antenna Antenna
	Antenna Gain:	The antenna gain of all bands is 3 dBi.

Equipment Specification		
WLAN	2.4GHz	2400 - 2483.5
Antenna Information	Antenna Type:	PCB Antenna
	Antenna Gain:	The antenna gain of all bands is 1.33 dBi.

Equipment Specification		
WWAN		LTE
Antenna Information	Antenna Type:	FPC Antenna
	Antenna Gain:	Band 2 : 1.55dBi Band 4: 0.92dBi Band 5: 0.21dBi

1.3. Modification of EUT

No modifications are made to the EUT during all test items.

1.4. Laboratory Information

Company Name	:	Shanghai ATBL Technology Co., Ltd.
Address	:	Building 8, No.160 Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai
Telephone	:	+86(0)21-51298625

1.5. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Standard	Description
47 CFR Part 15.247	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.
KDB 447498 D01 V06	Rf Exposure Procedures And Equipment Authorization Policies For Mobile And Portable Devices

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

2. RF EXPOSURE EVALUATION

2.1. Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f ²)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) 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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

Note:

f = frequency in MHz.

* = Plane-wave equivalent power density.

2.2. Formula

Below method describes a theoretical approach to calculate possible exposure to electromagnetic radiation around a base station transceiver antenna. Precise statements are basically only possible either with measurements or complex calculations considering the complexity of the environment (e.g. soil conditions, near buildings and other obstacles) which causes reflections, scattering of electromagnetic fields. The maximum output power (given in EIRP) of a base station is usually limited by license conditions of the network operator. A rough estimation of the expected exposure in power flux density on a given point can be made with the following equation.

$$Pd_{(mW/cm^2)} = \frac{P_{(mW)} * G_{numeric}}{4 * r^2_{(cm)} * \pi}$$

Pd = Power Density

P = Maximum output power

$G_{numeric}$ = Numeric gain of the antenna relative to isotropic antenna

r = distance between the antenna and the point of exposure

2.3. MPE Result

2.3.1. For NFC

Operating Band	Frequency (MHz)	Ant. Gain (dBi)	Max The field strength Power (dBμV/m)	Max The field strength Power (v/m)	Limit (v/m)	Result
NFC	13.56	3	53.7	0.000484	60.767	Pass

2.3.2. For BLE

Operating Band	Frequency (MHz)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Result
BLE	2440	1.12	1.29	0.0002566	1.0000	Pass

2.3.3. For LTE

Operating Band	Frequency (MHz)	Max Conducted Output Power (dBm)	Max Conducted Output Power (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Result
Band2	1850	21.71	148.25	0.0295	1.0000	Pass
Band4	1710	22.15	164.06	0.0326	1.0000	Pass
Band5	824	21.6	144.54	0.0288	0.549	Pass

Multiple Transmission

$$\text{BLE} + \text{LTE} = 0.0002566 + 0.052459 = 0.0527156 < 1$$

Note 1.NFC and BLE & LTE do not work simultaneously, NFC is only used for vehicle unlocking.

2.4. Description



According to the LTE & BLE & NFC transmission antenna positions shown in the picture, the distance from the vehicle to the human body during use is greater than 20cm.

*****END OF THE REPORT*****