RF Exposure Evaluation Report

Applicant:	Baicells Technologies Co., Ltd.
Address of Applicant:	9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China
Equipment Under Test (EUT)	
Product Name:	LTE Base Station
Model No.:	sBS71010
Trade mark:	Baicells
FCC ID:	2AG32SBS71010
Applicable standards:	FCC CFR Title 47 Part 2 Subpart J Section 2.1091
Date of sample receipt:	17 Jun., 2021
Date of Test:	05 Jul., to 13 Sep., 2021
Date of report issue:	30 Sep., 2021
Test Result:	PASS*

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*30 Sep., 2021*	*Original*

Tested by: Mike.ou ***Date:*** *30 Sep., 2021*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *30 Sep., 2021*

Project Engineer

3 Contents

Page

4 General Information

4.1 Client Information

Applicant:	Baicells Technologies Co., Ltd.
Address:	9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China
Manufacturer:	Baicells Technologies Co., Ltd.
Address:	9-10F, 1stBldg., No.81BeiqingRoad, Haidian District, Beijing, China

4.2 General Description of E.U.T.

Product Name:	LTE Base Station	
Model No.:	sBS71010	
Operation Frequency:	LTE Band 48: TX: 3550MHz-3700MHz	RX: 3550 MHz-3700 MHz
Modulation type:	Uplink: QPSK, 16QAM, 64QAM, 256QAM	
	Downlink: QPSK, 16QAM, 64QAM, 256QAM	
Antenna Type:	External Antenna	
Antenna gain:	15.0 dBi(declare by Applicant)	
Antenna supports:	Single carrier 0-3 and 4-7 antenna 4x4MIMO, or single carrier 0-1 and 4-5 antenna 2x2MIMO	
Test Sample Condition:	The test samples were provided in good working order with no visible defects.	

4.3 Operating Modes

Operating mode	Detail description
LTE mode	Keep the EUT in continuously transmitting in LTE mode

4.4 Additions to, deviations, or exclusions from the method

No

4.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

4.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1091

5.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300–1500			f/300	6
1500–100,000			5	6
(B) 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

5.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

5.3 Result

Standalone Transmission Evaluation:

4*4 MIMO:

Frequency (MHz)	ANT No.	Maximum Output power (dBm)	Maximum Output power (mW)	Total Power (mW)	Ant Gain (dBi)	Ant Gain (numeric)	Distance (cm)	Result (mW/cm^2)	Limits for General Population/ Uncontrolled Exposure(mW/cm^2)
BW:20MHz(256QAM)									
3560.00	0	25.80	380.189	1499.66	15	31.62	100	0.38	1.0
	1	25.75	375.837						
	2	25.35	342.768						
	3	26.03	400.867						
3560.00	4	25.78	378.443	1510.45	15	31.62	100	0.38	
	5	26.10	407.380						
	6	25.81	381.066						
	7	25.36	343.558						

Simultaneous Transmission Evaluation:

ANT No.	Result (mW/cm2)	Result Ratio	Total Ratio	Simultaneous Transmission Ratio Limit
0	0.38	0.38	0.76	1.0
1				
2				
3				
4	0.38	0.38		
5				
6				
7				

2*2 MIMO:

Frequency (MHz)	ANT No.	Maximum Output power (dBm)	Maximum Output power (mW)	Total Power (mW)	Ant Gain (dBi)	Ant Gain (numeric)	Distance (cm)	Result (mW/cm^2)	Limits for General Population/ Uncontrolled Exposure(mW/cm^2)
BW:20MHz(QPSK)									
3690.00	0	28.63	729.458	1542.29	15	31.62	100	0.39	1.0
	1	29.10	812.831						
3560.00	4	29.16	824.138	1625.82	15	31.62	100	0.41	
	5	29.04	801.678						

Simultaneous Transmission Evaluation:

ANT No.	Result (mW/cm2)	Result Ratio	Total Ratio	Simultaneous Transmission Ratio Limit
0	0.39	0.39	0.80	1.0
1				
4	0.41	0.41		
5				

Note: Maximum Output power refer to JYTSZB-R12-2101180 report, Just the worst case mode was shown in report.

5.4 Conclusion

So the device is meets the RF exposure evaluation.

------End of report------