

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

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

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

Tested by: Mike OU
Test Engineer

Date: 30 Sep., 2021

Reviewed by: Winner Zhang
Project Engineer

Date: 30 Sep., 2021

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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

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● 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
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4.6 Laboratory Location

<p>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</p>
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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/cm ²)	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/cm ²)	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-----