No.I22Z62158-SEM01

TESTING
NVLAP LAB CODE 600118-0

RF Exposure Evaluation Report

No. I22Z62158-SEM01

for

Baicells Technologies Co., Ltd.

5G NR Base Station

Model Name: BSC7048A243

Hardware Version: Ver.A

Software Version: BaiBBU_QSS_1.1.7

FCC ID: 2AG32BSC7048A243

Issued Date: 2022-11-24

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel: +86(0)10-62304633-2512, Fax: +86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Issue Date	Description
I22Z62158-SEM01	Rev.0	2022-11-24	Initial creation of test report

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	CTTL
Address:	No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191
Postal Code:	100191
Telephone:	00861062304633
Fax:	00861062304793

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%

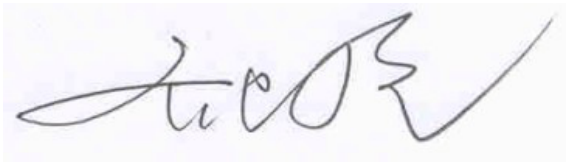
1.3. Project data

Project Leader:	Lin Hao
Testing Start Date:	2022-11-24
Testing End Date:	2022-11-24

1.4. Signature

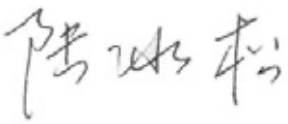
Lin Hao

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Baicells Technologies Co., Ltd.
Address /Post:	9-10F, 1stBldg., No.81 Beiqing Road, Haidian District, Beijing, China
City:	Beijing
Postal Code:	100094
Country:	China
Telephone:	010-62607100
Fax:	010-62607100

2.2. Manufacturer Information

Company Name:	Baicells Technologies Co., Ltd.
Address /Post:	9-10F, 1stBldg., No.81 Beiqing Road, Haidian District, Beijing, China
City:	Beijing
Postal Code:	100094
Country:	China
Telephone:	010-62607100
Fax:	010-62607100

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	5G NR Base Station
Model name	BSC7048A243
Operating Band	5G n48 Tx: 3550MHz – 3700MHz Rx: 3550MHz – 3700MHz
Modulations	QPSK, 64QAM, 256QAM
Number of Antenna ports	2
Antenna Gain	13dBi
Extreme Temperature(*)	-40/+50℃
Normal Voltage	48V DC

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version
EUT1	/	Ver.A	BaiBBU_QSS_1.1.7

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	/	/

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

CFR 47 Part2: FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

KDB 447498 D04 General RF Exposure Guidance v01: RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices

5. RF Exposure Limit

The limit for Maximum Permissible Exposure(MPE) is specified in FCC § 1.1310. according to FCC § 1.1310: the criteria listed below table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in § 1.1307(b).

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (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

f = frequency in MHz *Plane-wave equivalent power density

Friis transmission formula: $P_d = \frac{P_{out} * G}{4 * \Pi * r^2}$

where

P_d=power density (mW/cm^2)
P_{out} = output power to antenna (mW)
G = gain of antenna (linear scale)
r = distance between antenna and observation point (cm)

6. Classification

This product is a base station which is installed in fixed location and used in un-controlled environment, the antenna of this product, under normal use condition, is at least 150cm away from the body of the user as declared by manufacturer, thus this device is classified as Mobile Device.

7. Test Results

7.1. The maximum antenna gain

The maximum gain for each frequency band is:

Frequency band	Antenna	Antenna gain
n48	1	13
n48	2	13
n48	MIMO	13

7.2. The maximum rated power limits

Maximum peak output power for antenna:

Frequency band	Antenna	Maximum Rated Power (dBm)
n48	1	37
	2	37
	MIMO	40

7.3. Worst case Output Power Into Antenna & RF Exposure value

The worst cases conducted output power for every frequency band is:

Frequency band	Antenna	Maximum Power (dBm)	Maximum Power (mW)	Antenna gain(dBi)	d (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Conclusion
n48	MIMO(Rated)	40.00	10000.000	13	150	0.706	1.000	PASS
	MIMO (Measured)	39.85	9660.509	13	150	0.682	1.000	

According above test result, the device complies with the exposure requirements.

END OF REPORT