TEST REPORT

Report Number: C21T00135-SAR01-V02

Applicant	SIMCom Wireless Solutions Limited
Product Name	4G Wireless Smart Module
Model Name	SIM8905A-R2
Brand Name	SIMCom Wireless Solutions Limited
FCC ID	2AJYU-8PSA302

Industrial Internet Innovation Center (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC 47 CFR Part 2 2.1091.

Prepared by		Reviewed by	
Approved by		Issue Date	2022-01-26

Industrial Internet Innovation Center (Shanghai) Co., Ltd.

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Test Laboratory:
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Revision Version

Report Number	Revision	Date	Memo
C21T00135-SAR01-V00	00	2021-12-23	Initial creation of test report
C21T00135-SAR01-V01	01	2022-01-25	Chapter 5.3 is updated
C21T00135-SAR01-V02	02	2022-01-26	Applicant is updated

CONTENTS

1. Test Laboratory

1.1. Testing Location

Primary Lab:

Company Name	Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Address	Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
FCC Registration No.	958356
FCC Designation No.	CN1177

1.2. Testing Environment

Normal Temperature	18℃~25℃
Relative Humidity	25%RH~75%RH

1.3. Project Information

Project Leader	Xu Yuting

2. Client Information

2.1. Applicant Information

Company Name	SIMCom Wireless Solutions Limited
Address	Building 3, No.289 Linhong Road, ChangNing District, Shanghai, China
Telephone	15102196457

2.2. Manufacturer Information

Company Name	SIMCom
Address	8F, Bldg3 No.289 Linhong Rd, ChangNing District Shanghai, PRC China
Telephone	15102196457

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

3.1. About EUT

Product Name	4G Wireless Smart Module
Model name	SIM8905A-R2
Supported Radio Technology and Bands	LTE Band 2/4/5/7/12/13/17/25/26
Hardware Version	V1.03
Software Version	R2148.01
FCC ID	2AJYU-8PSA302

Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of Receipt
N/A	N/A	N/A	N/A	N/A

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN/Remark
N/A	N/A	N/A	N/A

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

4. Reference Documents

4.1. Reference Documents for testing

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

Reference	Title
FCC 47 CFR Part 2 2.1091	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS. Section 2.1091 Radiofrequency radiation exposure evaluation: mobile devices

4.2. Criteria

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with the reference this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

Limits for Occupational / Controlled Exposure				
Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Times |E|2, |H|2 or S (minitues)
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1824/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1	6
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	5	6
Limits for General Population / Uncontrolled Exposure				
Frequency (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm2)	Averaging Times |E|2, |H|2 or S (minitues)
0.3 – 1.34	614	1.63	(100)*	30
1.34 – 30	824/f	2.19/f	(180/f)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	F/1500	30
1500 - 100000	--	--	1	30
Note: f = frequency in MHz; * Plane-wave equivalent power density. For the DUT, the limits for General Population / Uncontrolled Exposure are applicable.				

4.3. Reference Information from client

All technical documents are supplied by the client or manufacturer, which is the basis of testing. (such as antenna gain, etc.)

4.4. Calculation Method

For conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.
Based on the FCC KDB 447498 D01 and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

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

Where
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

5. Test Summary

5.1. RF Power Output

Band	Max power(dBm)	Highest Output Power (dBm)	Antenna Gain(dBi)
LTE Band 2	25.7	25.7	11.0
LTE Band 4	25.7	25.7	10.6
LTE Band 5	25.7	25.7	7.5
LTE Band 7	25.7	25.7	11.0
LTE Band 12	25.7	25.7	7.5
LTE Band 13	25.7	25.7	7.5
LTE Band 17	25.7	25.7	7.5
LTE Band 25	25.7	25.7	11.0
LTE Band 26	25.7	25.7	7.5

5.2. Duty Cycle

Mode	Duty Cycle
LTE	1:1

5.3. Summary of Evaluation Results

Band	Frequency	Highest Output Power (dBm)	Highest Output Power (mW)	Antenna Gain(dBi)	Numeric antenna gain	Power density at 20cm	Limit W/cm²
LTE Band 2	1850.7	25.7	371.54	11.0	12.589	0.931	1.000
LTE Band 4	1710.7	25.7	371.54	10.6	11.482	0.849	1.000
LTE Band 5	824.7	25.7	371.54	7.5	5.623	0.416	0.550
LTE Band 7	2502.5	25.7	371.54	11.0	12.589	0.931	1.000
LTE Band 12	699.7	25.7	371.54	7.5	5.623	0.416	0.466
LTE Band 13	779.5	25.7	371.54	7.5	5.623	0.416	0.520
LTE Band 17	706.5	25.7	371.54	7.5	5.623	0.416	0.882
LTE Band 25	1850.7	25.7	371.54	11.0	12.589	0.931	1.000
LTE Band 26	814.7	25.7	371.54	7.5	5.623	0.416	0.543

The product is under the MPE limits. All is pass.

5.4. Statements

The SIM8905A-R2, manufactured by SIMCom Wireless Solutions Limited is a new product for testing.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

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