



Test Report No.:
FCCSZ2024-0037-H

RF Test Report

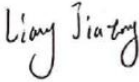
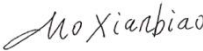
FCC ID : 2AJYU-8BAE003

NAME OF SAMPLE : Wireless Module

APPLICANT : SIMCom Wireless Solutions Limited

CLASSIFICATION OF TEST : N/A

CVC Testing Technology (Shenzhen) Co., Ltd.

Applicant		Name: SIMCom Wireless Solutions Limited	
		Address: Building 3, No.289 LinHong Road,Changning District,Shanghai,P.R.China	
Manufacturer		Name: SIMCom Wireless Solutions Limited	
		Address: Building 3, No.289 LinHong Road,Changning District,Shanghai,P.R.China	
Equipment Under Test		Name: Wireless Module	
		Model/Type: A7670G	
		Trade mark: N/A	
		Serial NO.: N/A	
		Sampe NO.:3-1	
Date of Receipt.	2024-05-28	Date of Testing	2024-05-28 ~ 2024-06-18
Test Specification		Test Result	
FCC Part 2 (Section 2.1091) KDB 447498 D04, IEEE C95.3		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied.		
	Seal of CVC Issue Date: 2024-06-20		
Tested by:  <u>Liang Jiatong</u> Name Signature	Reviewed by:  <u>Mo Xianbiao</u> Name Signature	Approved by:  <u>Dong Sanbi</u> Name Signature	
Other Aspects: NONE.			
Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCCSZ2023-0037-H	Original release	2024-06-20

1 GENERAL PRODUCT INFORMATION

PRODUCT	Wireless Module
BRAND	N/A
TEST MODEL	A7670G
ADDITIONAL MODEL	N/A
POWER SUPPLY	DC 3.8V From host unit
STANDARDS	FCC Part 2 (Section 2.1091)
	KDB 447498 D04
	IEEE C95.3

2 RF EXPOSURE LIMIT GENERAL INFORMATION

2.1 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.2 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(Option B) According to Part 1.1307b, or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz;

and

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

(Option C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda / 2 \pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda / 4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF SOURCE FREQUENCY (MHZ)	THRESHOLD ERP(W)
0.3 -1.34	$1,920 R^2$
1.34 - 30	$3,450 R^2 F^2$
30 -300	$3.83 R^2$
300-1500	$0.0128 R^2 F$
1500-100,000	$19.2 R^2$

2.3 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

Mode	Band	Maximum tune-up tolerance(dBm)	Division Factors (dB)	Maximum tune-up tolerance (dBm)
GSM	GSM 850	33	-9.03	23.97(Note)
	GSM 1900	29	-9.03	19.97(Note)

Note:

Division Factors

To average the power, the division factor is as follows:

1Tx slot = 1 transmit time slot out of 8 time slots

=> conducted power divided by (8/1) => -9.03 dB

Mode	Maximum tune-up tolerance	
	(dBm)	(mW)
LTE B2	24	251.19
LTE B4	25	316.23
LTE B5	24	251.19
LTE B7	22	158.49
LTE B12	25	316.23
LTE B13	24	251.19
LTE B17	25	316.23
LTE B25	24	251.19
LTE B26	24	251.19
LTE B38	24	251.19
LTE B40	23.98	250.00
LTE B41	24	251.19
LTE B66	25	316.23

2.4 RF EXPOSURE EVALUATION

Maximum Permissible Exposure (Base antenna gain)

Technology	Band	Maximum conducted power (dBm)	Antenna Gain (dBi)	Pth(dBm)	Pth(mW)	Part1.1307b Threshold (mW)	Verify
LTE	LTE B2	24.00	1.87	25.87	386.37	3060.00	PASS
	LTE B4	25.00	3.12	28.12	648.63	3060.00	PASS
	LTE B5	24.00	0.91	24.91	309.74	1680.96	PASS
	LTE B7	22.00	2.90	24.90	309.03	3060.00	PASS
	LTE B12	25.00	0.22	25.22	332.66	1425.96	PASS
	LTE B13	24.00	2.23	26.23	419.76	1585.08	PASS
	LTE B17	25.00	0.07	25.07	332.66	1436.16	PASS
	LTE B25	24.00	1.87	25.87	386.37	3060.00	PASS
	LTE B26	24.00	1.40	25.40	346.74	1660.56	PASS
	LTE B38	24.00	0.91	24.91	309.74	3060.00	PASS
	LTE B40	23.98	1.64	25.62	364.75	3060.00	PASS
	LTE B41	24.00	-0.31	23.69	233.88	3060.00	PASS
	LTE B66	25.00	-0.19	24.81	302.69	3060.00	PASS
GSM	GSM 850	23.97	0.91	24.88	307.61	1680.96	PASS
	GSM 1900	19.97	1.87	21.84	152.76	3060.00	PASS

Pth(dBm)=Maximum conducted power(dBm) + Maximum Antenna Gain(dBi) -2.15

Maximum Antenna Gain - Base maximum RF output power

Frequency Band	Frequency Range(MHz)	Maximum conducted power(dBm)	Maximum ERP/EIRP Limit(mW)	Maximum ERP Limit(dBm)	Maximum EIRP Limit(dBm)	Maximum Antenna Gain for ERP/EIRP (dBi)
LTE B2	1850 ~ 1910	24.00	2000	/	33.01	9.01
LTE B4	1710 ~ 1755	25.00	1000	/	30.00	5.00
LTE B5	824 ~ 849	24.00	7000	38.45	/	16.60
LTE B7	2500 ~ 2570	22.00	2000	/	33.01	11.01
LTE B12	699 ~ 716	25.00	3000	34.77	/	11.92
LTE B13	777 ~ 787	24.00	3000	34.77	/	12.92
LTE B17	704 ~ 716	25.00	3000	34.77	/	11.92
LTE B25	1850 ~ 1915	24.00	2000	/	33.01	9.01
LTE B26	814~ 849	24.00	7000	38.45	/	16.60
LTE B38	2570 ~ 2620	24.00	2000	33.01	/	11.16
LTE B40	2305 ~ 2315 2350 ~ 2360	23.98	250	/	23.98	0.00
LTE B41	2496 ~ 2690	24.00	2000	/	33.01	9.01
LTE B66	1710 ~ 1780	25.00	1000	/	30.00	5.00
GSM850	824 ~ 849	23.97	7000	38.45	/	16.63
GSM1900	1850 ~ 1910	19.97	2000	/	33.01	13.04

NOTE:

1. The Maximum EIRP (dBm) = Maximum Conducted Power (dBm) + Antenna Gain (dBi)
2. The Maximum ERP (dBm) = Maximum Conducted Power (dBm) + Antenna Gain (dBi) - 2.15
3. Maximum Antenna Gain for EIRP = Maximum EIRP Limit(dBm)-Maximum conducted power(dBm)
4. Maximum Antenna Gain for ERP = Maximum ERP Limit(dBm)-Maximum conducted power(dBm)+2.15

Maximum Antenna Gain - Base Maximum Permissible Exposure

Frequency Band	Frequency Range(MHz)	Maximum Conducted Power (dBm)	Part1.1307b Threshold-ERP (mW)	Part1.1307b Threshold-ERP (dBm)	Maximum Antenna Gain for MPE (dBi)
LTE B2	1850 ~ 1910	24.00	3060.00	34.85	13.00
LTE B4	1710 ~ 1755	25.00	3060.00	34.85	12.00
LTE B5	824 ~ 849	24.00	1680.96	32.25	10.40
LTE B7	2500 ~ 2570	22.00	3060.00	34.85	15.00
LTE B12	699 ~ 716	25.00	1425.96	31.54	8.69
LTE B13	777 ~ 787	24.00	1585.08	32.00	10.15
LTE B17	704 ~ 716	25.00	1436.16	31.57	8.72
LTE B25	1850 ~ 1915	24.00	3060.00	34.85	13.00
LTE B26	814~ 849	24.00	1660.56	32.20	10.35
LTE B38	2570 ~ 2620	24.00	3060.00	34.85	13.00
LTE B40	2305 ~ 2315 2350 ~ 2360	23.98	3060.00	34.85	13.02
LTE B41	2496 ~ 2690	24.00	3060.00	34.85	13.00
LTE B66	1710 ~ 1780	25.00	3060.00	34.85	12.00
GSM850	824 ~ 849	23.97	1680.96	32.25	10.43
GSM1900	1850 ~ 1910	19.97	3060.00	34.85	17.03

NOTE:

1. The Maximum EIRP (dBm) = Maximum Conducted Power (dBm) + Antenna Gain (dBi)
2. The Maximum ERP (dBm) = Maximum Conducted Power (dBm) + Antenna Gain (dBi) - 2.15
3. MaximumAntenna Gain for MPE(dBi)= Part1.1307b Threshold-ERP(dBm)-Maximum conducted power(dBm)+2.15

To comply with FCC regulations limiting both maximum RF output power and human exposure to RF radiation, [maximum antenna gain](#) must not exceed:

Frequency Band	Frequency Range(MHz)	Maximum Antenna Gain for MPE (dBi)	Maximum Antenna Gain for ERP/EIRP (dBi)	Maximum Antenna Gain (dBi)
LTE B2	1850 ~ 1910	13.00	9.01	9.01
LTE B4	1710 ~ 1755	12.00	5.00	5.00
LTE B5	824 ~ 849	10.40	16.60	10.40
LTE B7	2500 ~ 2570	15.00	11.01	11.01
LTE B12	699 ~ 716	8.69	11.92	8.69
LTE B13	777 ~ 787	10.15	12.92	10.15
LTE B17	704 ~ 716	8.72	11.92	8.72
LTE B25	1850 ~ 1915	13.00	9.01	9.01
LTE B26	814~ 849	10.35	16.60	10.35
LTE B38	2570 ~ 2620	13.00	11.16	11.16
LTE B40	2305 ~ 2315 2350 ~ 2360	13.02	0.00	0.00
LTE B41	2496 ~ 2690	13.00	9.01	9.01
LTE B66	1710 ~ 1780	12.00	5.00	5.00
GSM850	824 ~ 849	10.43	16.63	10.43
GSM1900	1850 ~ 1910	17.03	13.04	13.04

Maximum Permissible Exposure (Base maximum antenna gain)

Technology	Band	Maximum conducted power (dBm)	Maximum Antenna Gain (dBi)	Pth(dBm)	Pth(mW)	Part1.1307b Threshold (mW)	Verify
LTE	LTE B2	24.00	9.01	30.86	1218.99	3060.00	PASS
	LTE B4	25.00	5.00	27.85	609.54	3060.00	PASS
	LTE B5	24.00	10.40	32.25	1678.80	1680.96	PASS
	LTE B7	22.00	11.01	30.86	1218.99	3060.00	PASS
	LTE B12	25.00	8.69	31.54	1425.61	1425.96	PASS
	LTE B13	24.00	10.15	32.00	1584.89	1585.08	PASS
	LTE B17	25.00	8.72	31.57	1435.49	1436.16	PASS
	LTE B25	24.00	9.01	30.86	1218.99	3060.00	PASS
	LTE B26	24.00	10.35	32.20	1659.59	1660.56	PASS
	LTE B38	24.00	11.16	33.01	1999.86	3060.00	PASS
	LTE B40	23.98	0.00	21.83	152.41	3060.00	PASS
	LTE B41	24.00	9.01	30.86	1218.99	3060.00	PASS
	LTE B66	25.00	5.00	27.85	609.54	3060.00	PASS
GSM	GSM 850	23.97	10.43	32.25	1678.80	1680.96	PASS
	GSM 1900	19.97	13.04	30.86	1218.99	3060.00	PASS

$P_{th}(dBm) = \text{Maximum conducted power}(dBm) + \text{Maximum Antenna Gain}(dBi) - 2.15$

Conclusion:

Therefore, this confirmed that the device compliance with FCC RF exposure requirements.

----- End of the Report -----

Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

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