RADIO TEST REPORT

Report No: STS2306111H01

Issued for

SIMCom Wireless Solutions Limited

Building 3, No.289 Linhong Road, Shanghai, China

Product Name:	LTE/WCDMA/GSM/GNSS MODULE
Brand:	SIMCom
Model Number:	SIM7600G-H
Series Model(s):	SIM7600G-H miniPCIE
FCC ID:	2AJYU-8PYA007
Test Standard:	FCC 47CFR §2.1091

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ,
Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

Test Report Certification

Applicant's Name	:	SIMCom Wireless Solutions Limited
Address	:	Building 3, No.289 Linhong Road, Shanghai, China
Manufacturer's Name	:	SIMCom Wireless Solutions Limited
Address	:	Building 3, No.289 Linhong Road, Shanghai, China
Product Description		
Product Name	:	LTE/WCDMA/GSM/GNSS MODULE
Brand	:	SIMCom
Model Number	:	SIM7600G-H
Series Model(s)	:	SIM7600G-H miniPCIE
Standards	:	FCC 47CFR §2.1091 447498 D04 Interim General RF Exposure Guidance v01

Date of Test	:	
Date of receipt of test item	:	16 June 2020
Date (s) of performance of tests	:	16 June 2020 ~ 12 July 2023
Date of Issue	:	12 July 2023
Test Result	:	**Pass**

Testing Engineer : Chris Chen

(Chris Chen)

Technical Manager : Sean She

(Sean she)

Authorized Signatory : Bovey Yang

(Bovey Yang)

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 July 2023	STS2306111H01	ALL	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	LTE/WCDMA/GSM/GNSS MODULE
Brand	SIMCom
Model Number	SIM7600G-H
Series Model(s)	SIM7600G-H miniPCIE
Model Difference	Only different in model name and appearance.
Product Description	The EUT is LTE/WCDMA/GSM/GNSS MODULE

Operation Frequency:	GSM 850: 824 MHz ~ 849MHz GSM 1900: 1850 MHz ~ 1910MHz WCDMA 1900: 1850 MHz ~1910MHz WCDMA 1700: 1710 ~1755 MHz WCDMA 850: 824 MHz ~849MHz LTE Band 2:1850~1910MHz LTE Band 4:1710~1755MHz LTE Band 5:824~849MHz LTE Band 12:699~716MHz LTE Band 13:777~787MHz LTE Band 25:1850~1915MHz LTE Band 26:814~849MHz LTE Band 41:2496~2690MHz LTE Band 66:1710~1780MHz
Modulation Type:	GSM: GMSK for GPRS; GMSK and 8PSK for EDGE WCDMA: QPSK; HSDPA:QPSK/16QAM;HSUPA:BPSK LTE: QPSK /16QAM
Antenna gain:	GSM850:1dBi, GSM1900:2dBi; WCDMA B2: 2dBi, WCDMA B4: 5dBi, WCDMA B5: 1dBi; LTE Band2:8dBi, LTE Band4:5dBi, LTEBand5:8dBi,LTE Band12:7dBi, LTE Band13:8dBi, LTE Band25:8dBi, LTE Band26:8dBi, LTE Band41:8dBi, LTE Band66:5dBi
Antenna Designation:	Dipole

Rating	Input: 3.8V
Hardware Version	V2.02
Software Version	SIM7600M22_V2.0

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD
Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

Follow the maximum permissible exposure (MPE) limits specified in 447498 D04 Interim General Radio Frequency Exposure Guidelines v01. The gain of the antenna used in the product was extracted from the supplied antenna data sheet and the maximum total power input to the antenna was also measured. Calculate the distance from the product to the MPE limit by the formula.

2.2 LIMIT

For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (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). Pth is given by:

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

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

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

d = the separation distance (cm);

(C) Or using below table 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 λ/2π, 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 λ/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(watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of Part 1.1307. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of Part 1.1307 for Pth, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of Part 1.1307 for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

Pi = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

Pth,i = the exemption threshold power (Pth) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERPj = the ERP of fixed, mobile, or portable RF source j.

ERPth,j = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least λ/2π according to the applicable formula of paragraph (b)(3)(i)(C) of Part 1.1307.

Evaluatedk = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limitk = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310.

2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
GPRS 850	AV	34±1dBm
GPRS 1900	AV	30±1dBm
WCDMA Band 2	AV	24±1dBm
WCDMA Band 4	AV	23±1dBm
WCDMA Band 5	AV	24±1dBm
LTE Band 2	AV	23±1dBm
LTE Band 4	AV	23±1dBm
LTE Band 5	AV	25±1dBm
LTE Band 12	AV	24±1dBm
LTE Band 13	AV	21±1dBm
LTE Band 25	AV	23±1dBm
LTE Band 26	AV	23±1dBm
LTE Band 26(Part 90)	AV	24±1dBm
LTE Band 41	AV	23±1dBm
LTE Band 66	AV	22±1dBm

Protocol	Fre. (MHz)	Separation distance (cm)	Max Turn up power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Ratio	Result
GPRS 850*	824	20	30	1	27.99	629.5	0.125	0.55	0.228	Pass
GPRS 1900*	1850	20	24	2	22.99	199.067	0.040	1	0.04	Pass
WCDMA Band 2	1850	20	25	2	27.00	501.187	0.100	1	0.1	Pass
WCDMA Band 4	1710	20	24	5	29.00	794.328	0.158	1	0.158	Pass
WCDMA Band 5	824	20	25	1	26.00	398.107	0.079	0.55	0.144	Pass
LTE Band2	1910	20	24	8	24.00	251.19	0.3153	1.00	0.315	Pass
LTE Band4	1755	20	24	5	24.00	251.19	0.1580	1.00	0.158	Pass
LTE Band5	849	20	26	8	26.00	398.11	0.4997	0.57	0.877	Pass
LTE Band12	716	20	25	7	25.00	316.23	0.3153	0.48	0.657	Pass
LTE Band13	787	20	23	8	23.00	199.53	0.2505	0.52	0.482	Pass
LTE Band25	1915	20	24	8	24.00	251.19	0.3153	1.00	0.315	Pass
LTE Band26	849	20	24	8	24.00	251.19	0.3153	0.57	0.553	Pass
LTE Band26(Part 90)	849	20	25	8	25.00	316.23	0.3969	0.57	0.696	Pass
LTE Band41	2690	20	24	8	24.00	251.19	0.3153	1.00	0.315	Pass
LTE Band66	1780	20	24	5	24.00	251.19	0.1580	1.00	0.158	Pass

Note: 1. The Maxinum Power Density is less than the limit, complies with the exemption requirements.

2.

Function	Duty cycle	Duty cycle fator
GSM	12.50%	-9.03
GPRS(1slot)	12.50%	-9.03
GPRS(2slot)	25.00%	-6.02
GPRS(3slot)	37.50%	-4.26
GPRS(4slot)	50.00%	-3.01
WCDMA/HSPA	100%	0.00
FDD-LTE	100%	0.00
TDD-LTE	63.30%	-1.99

3. “*”, the worst Fram- Average Power is 4-slot in GPRS 850 and GPRS 1900.

※※※※※END OF THE REPORT※※※※※