

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250200064404

Page: 1 of 8

TEST REPORT

Application No.: SZCR2502000644TL
Applicant: Connected Solutions Group, LLC
Address of Applicant: 8529 Meadowbridge Rd, suite 300 Mechanicsville, Va 23116 America
Manufacturer: GL Technologies (Hong Kong) Limited
Address of Manufacturer: Unit 601, Building 5W, Hong Kong Science Park, Shation, N.T., Hong Kong
EUT Description: DUAL-SIM LTE ROUTER
Model No.: CSG-m106 pro
Trade Mark: CSG
FCC ID: 2A5KA-M106P
Standards: FCC 47 CFR Part 2.1091
 FCC KDB 447498 D01 v06
Date of Receipt: 2025/02/21
Date of Issue: 2025/03/24

Test Result:	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu

EMC Laboratory Manager



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SGS-CSTC Standards Technical Services Co., Ltd.
 Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025/03/24		Original

Authorized for issue by:				
		Donjon Huang		
		Donjon Huang/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch Testing Center Laboratory

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Member of the SGS Group (SGS SA)

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3 General Information

3.1 General Description of EUT

EUT Description:	DUAL-SIM LTE ROUTER	
Model No.:	CSG-m106 pro	
Trade Mark:	CSG	
Hardware Version:	V1.0	
Software Version:	4.7.3	
Power Supply:	DC 3.7V from internal rechargeable battery which can be charge by AC/DC adapter Adapter model: ICP20-050-3000D	
Antenna Type:	☐ External, ☒ Integrated	
Operation Frequency:	802.11b/g/n(HT20):	2412MHz to 2462MHz
	802.11n(HT40):	2422MHz to 2452MHz
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.		



3.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

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

F=frequency in MHz
 *=Plane-wave equivalent power density
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

4.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
2.4G WiFi	2412.0	2.90	19.00	21.90	30.00	0.0308	1.0000	11.00	18.01	11.00	Pass



4.1.4 Exposure calculations for multiple sources

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN + WiFi 2.4G

No.	Mode	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 71*	0.0741	0.4437	0.1670	0.1978	1.0000	Pass
	WiFi 2.4G	0.0308	1.0000	0.0308			

Remark: This WWAN Band was recalculated on worst Band.

WWAN power comes from FCC ID: 2A5KA-EG120KNA

---End of Report---

