TEST REPORT

Application No.:	SZCR2505001933MO
Applicant:	Fibocom Wireless Inc.
Address of Applicant:	1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,Shenzhen, China.
Manufacturer:	Fibocom Wireless Inc.
Address of Manufacturer:	1101,Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,Shenzhen, China.
EUT Description:	LTE CatM1&NB-IoT&EGPRS Module
Model No.:	MA510-GL
Trade Mark:	Fibocom
FCC ID:	ZMOMA510GL
Standards:	FCC 47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Date of Receipt:	2025/05/18
Date of Issue:	2025/06/16
Test Result:	**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		*2025/06/16*		*Original*

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

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3 General Information

3.1 General Description of EUT

EUT Description:	LTE CatM1&NB-IoT&EGPRS Module
Model No.:	MA510-GL
Trade Mark:	Fibocom
Hardware Version:	V1.0.3
Software Version:	69400.1000.00.00.00.32
Antenna Type:	☒ External, ☐ Integrated
Antenna Gain:	GSM 850: -1.0dBi; GSM1900: 0.9dBi; LTE NB1 Band 2: 0.9dBi; LTE NB1 Band 4:1.6dBi; LTE NB1 Band 5: -1.0dBi; LTE NB1 Band 12: -1.4dBi; LTE NB1 Band 13: -0.7dBi; LTE NB1 Band 25: 0.9dBi; LTE NB1 Band 26（814-824）: -1.0dBi; LTE NB1 Band 26（824-849）: -1.0dBi; LTE NB1 Band 66: 1.6dBi; LTE NB1 Band 71: -1.5dBi; LTE NB1 Band 85: -0.7dBi; LTE CatM1 Band 2: 0.9dBi; LTE CatM1 Band 4: 1.6dBi; LTE CatM1 Band 5: -1.0dBi; LTE CatM1 Band 12: -1.4dBi; LTE CatM1 Band 13: -0.7dBi; LTE CatM1 Band 14: -0.7dBi; LTE CatM1 Band 25: 0.9dBi; LTE CatM1 Band 26（814-824）: -1.0dBi; LTE CatM1 Band 26（824-849）: -1.0dBi; LTE CatM1 Band 66: 1.6dBi; LTE CatM1 Band 85: -0.7dBi;
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.
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.

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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/cm2)	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/f2)	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/f2)	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: $Pd = (Pout*G)/(4* Pi * R^2)$

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd id 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/cm2)	Limit (mW/cm2)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
GSM850	824.20	-1.00	23.31	20.16	38.45	0.0041	0.5495	17.29	20.29	17.29	Pass
GSM1900	1850.20	0.90	20.81	21.71	33.00	0.0036	1.0000	12.19	25.39	12.19	Pass
LTE NB1 Band 2	1850.10	0.90	22.00	22.90	33.00	0.0388	1.0000	11.00	15.01	11.00	Pass
LTE NB1 Band 4	1710.10	1.60	22.00	23.60	30.00	0.0456	1.0000	8.00	15.01	8.00	Pass
LTE NB1 Band 5	824.10	-1.00	22.00	18.85	38.45	0.0250	0.5494	18.60	12.41	12.41	Pass
LTE NB1 Band 12	699.10	-1.40	22.00	18.45	34.77	0.0228	0.4661	14.92	11.69	11.69	Pass
LTE NB1 Band 13	777.10	-0.70	22.00	19.15	34.77	0.0268	0.5181	14.92	12.15	12.15	Pass
LTE NB1 Band 25	1850.10	1.60	22.00	23.60	33.00	0.0456	1.0000	11.00	15.01	11.00	Pass
LTE NB1 Band 26 (814-823.9)	814.20	-1.00	22.00	18.85	NA	0.0250	0.5428	NA	12.35	12.35	Pass
LTE NB1 Band 26 (824-849)	824.10	-1.00	22.00	18.85	38.45	0.0250	0.5494	18.60	12.41	12.41	Pass
LTE NB1 Band 66	1710.10	1.60	22.00	23.60	30.00	0.0456	1.0000	8.00	15.01	8.00	Pass
LTE NB1 Band 71	663.10	-1.50	22.00	18.35	34.77	0.0223	0.4421	14.92	11.46	11.46	Pass
LTE NB1 Band 85	698.10	-0.70	22.00	19.15	34.77	0.0268	0.4654	14.92	11.69	11.69	Pass
LTE CatM1 Band 2	1850.70	0.90	22.00	22.90	33.00	0.0388	1.0000	11.00	15.01	11.00	Pass
LTE CatM1 Band 4	1710.70	1.60	22.00	23.60	30.00	0.0456	1.0000	8.00	15.01	8.00	Pass
LTE CatM1 Band 5	824.70	-1.00	22.00	18.85	38.45	0.0250	0.5498	18.60	12.41	12.41	Pass
LTE CatM1 Band 12	699.70	-1.40	22.00	18.45	34.77	0.0228	0.4665	14.92	11.70	11.70	Pass
LTE CatM1 Band 13	779.50	-0.70	22.00	19.15	34.77	0.0268	0.5197	14.92	12.16	12.16	Pass
LTE CatM1 Band 14	790.50	-0.70	22.00	19.15	34.77	0.0268	0.5270	14.92	12.23	12.23	Pass
LTE CatM1 Band 25	1850.70	0.90	22.00	22.90	33.00	0.0388	1.0000	11.00	15.01	11.00	Pass
LTE CatM1 Band 26 (814-824)	814.70	-1.00	22.00	18.85	50.00	0.0250	0.5431	30.15	12.36	12.36	Pass
LTE CatM1 Band 26 (824-849)	824.70	-1.00	22.00	18.85	38.45	0.0250	0.5498	18.60	12.41	12.41	Pass
LTE CatM1 Band 66	1710.70	1.60	22.00	23.60	30.00	0.0456	1.0000	8.00	15.01	8.00	Pass
LTE CatM1 Band 85	700.50	-0.70	22.00	19.15	34.77	0.0268	0.4670	14.92	11.70	11.70	Pass

Remark: Frame-average power=Burst power+ Division Factors(-9.19)

---End of Report---