TEST REPORT

Application No.:	SEWM2207000119RG
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:	CAT-M module
Model No.:	FB520
Trade Mark:	Fibocom
FCC ID:	ZMOFB520
Standards:	47 CFR Part 2.1091
	FCC KDB 447498 D01 v06
Date of Receipt:	2022/07/14
Date of Issue:	2022/08/15
Test Result:	**PASS***

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

Authorized Signature:

Panta Sun

Panta Sun
Wireless Laboratory Manager

1 Version

Revision Record				
Version	***Chapter***	***Date***	***Modifier***	***Remark***
01		2022/08/15		Original

Prepared By		Weller Liu **(Weller Liu) / Test Engineer**
Checked By		Well Wei **(Well Wei) / Reviewer**

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 t (86–512) 62992980 www.sgsgroup.com.cn
中国·苏州·中国（江苏）自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000 t (86–512) 62992980 sgs.china@sgs.com

Contents

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2 General Information

2.1 Client Information

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

2.2 Test Facility

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

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327

2.3 General Description of EUT

EUT Description:	CAT-M module			
Model No.:	FB520			
Trade Mark:	Fibocom			
Hardware Version:	V1.4			
Software Version:	69400.1000.00.02.01.01			
Antenna Type:	External Antenna			
Antenna Gain*:	☒Provided by client			
	GSM850:	3dBi	GSM1900:	3dBi
	LTE Cat-M1 Band 2:	3dBi	LTE Cat-M1 Band 4:	3dBi
	LTE Cat-M1 Band 5:	3dBi	LTE Cat-M1 Band 12:	3dBi
	LTE Cat-M1 Band 13:	3dBi	LTE Cat-M1 Band 14:	3dBi
	LTE Cat-M1 Band 25:	3dBi	LTE Cat-M1 Band 26:	3dBi
	LTE Cat-M1 Band 66:	3dBi	LTE Cat-M1 Band 85:	3dBi

Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
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 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 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.

3.1.2 Test Procedure

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

3.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.
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 Average Output Power (dBm)	Output Power to Antenna (dBm)	EIRP(ERP) Limit (dBm)	Output Power to Antenna (mw)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
GSM850	824.2	3.00	34.50	37.50	38.45	339.6253	0.1348	0.5495	3.95	9.10	3.95	Pass
GSM1900	1850.2	3.00	30.00	33.00	33.00	120.5036	0.0478	1.0000	3.00	16.20	3.00	Pass
LTE Cat-M1 B2	1850.7	3.00	22.00	25.00	33.00	158.4893	0.0629	1.0000	11.00	15.01	11.00	Pass
LTE Cat-M1 B4	1710.7	3.00	22.00	25.00	30.00	158.4893	0.0629	1.0000	8.00	15.01	8.00	Pass
LTE Cat-M1 B5	824.7	3.00	22.00	25.00	38.45	158.4893	0.0629	0.5498	16.45	12.41	12.41	Pass
LTE Cat-M1 B12	699.7	3.00	22.00	25.00	34.77	158.4893	0.0629	0.4665	12.77	11.70	11.70	Pass
LTE Cat-M1 B13	779.5	3.00	22.00	25.00	34.77	158.4893	0.0629	0.5197	12.77	12.16	12.16	Pass
LTE Cat-M1 B14	790.5	3.00	22.00	25.00	34.77	158.4893	0.0629	0.5270	12.77	12.23	12.23	Pass
LTE Cat-M1 B25	1850.7	3.00	22.00	25.00	33.00	158.4893	0.0629	1.0000	11.00	15.01	11.00	Pass
LTE Cat-M1 B26 (814-824)	814.7	3.00	22.00	25.00	NA	158.4893	0.0629	0.5431	NA	12.36	12.36	Pass
LTE Cat-M1 B26 (824-849)	824.7	3.00	22.00	25.00	38.45	158.4893	0.0629	0.5498	16.45	12.41	12.41	Pass
LTE Cat-M1 B66	1710.7	3.00	22.00	25.00	30.00	158.4893	0.0629	1.0000	8.00	15.01	8.00	Pass
LTE Cat-M1 B85	700.5	3.00	22.00	25.00	34.77	158.4893	0.0629	0.4670	12.77	11.70	11.70	Pass

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

---End of Report---

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