

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

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240700291204

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TEST REPORT

Application No.: SZCR2407002912MO
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: 5G Module
Model No.: FG131-NA
Trade Mark: Fibocom
FCC ID: ZMOFG131NA
Standards: FCC 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2024/07/25
Date of Issue: 2024/08/16

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



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

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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

1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024/08/16		Original

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



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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. 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.



2.3 General Description of EUT

EUT Description:	5G Module			
Model No.:	FG131-NA			
Trade Mark:	Fibocom			
Hardware Version:	V1.1			
Software Version:	89170.1000.00.01.04.04			
Power Supply:	3.8V			
Antenna Type:	☒ External, ☐ Integrated			
Antenna Gain:	LTE Band 2:	2.85dBi	LTE Band 4:	2.98dBi
	LTE Band 5:	1.32dBi	LTE Band 7:	2.21dBi
	LTE Band 12:	1.61dBi	LTE Band 13:	1.83dBi
	LTE Band 14:	2.19dBi	LTE Band 17:	1.61dBi
	LTE Band 25:	2.88dBi	LTE Band 26:	1.32dBi
	LTE Band 30:	-2.22dBi	LTE Band 38:	1.71dBi
	LTE Band 41:	2.21dBi	LTE Band 42:	-4.13dBi
	LTE Band 43:	-4.13dBi	LTE Band 48:	-4.13dBi
	LTE Band 66:	2.98dBi	LTE Band 71:	1.61dBi
	NR Band n2:	2.85dBi	NR Band n5:	1.32dBi
	NR Band n7:	2.21dBi	NR Band n12:	1.61dBi
	NR Band n13:	1.83dBi	NR Band n14:	2.19dBi
	NR Band n25:	2.85dBi	NR Band n26:	1.32dBi
	NR Band n30:	-2.22dBi	NR Band n38:	1.71dBi
	NR Band n41:	2.21dBi	NR Band n48:	-4.13dBi
	NR Band n66:	2.98dBi	NR Band n70:	2.86dBi
	NR Band n71:	1.61dBi	NR Band n77:	-4.13dBi
	NR Band n78:	-4.13dBi		
		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.			



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/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.



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

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
LTE Band 2	1850.7	2.85	25.50	28.35	33.00	0.1361	1.0000	7.50	11.51	7.50	Pass
LTE Band 4	1710.7	2.98	25.50	28.48	30.00	0.1402	1.0000	4.50	11.51	4.50	Pass
LTE Band 5	824.7	1.32	25.50	24.67	38.45	0.0957	0.5498	15.10	8.91	8.91	Pass
LTE Band 7	2502.5	2.21	25.50	27.71	33.00	0.1174	1.0000	7.50	11.51	7.50	Pass
LTE Band 12	699.7	1.61	25.50	24.96	34.77	0.1023	0.4665	11.42	8.20	8.20	Pass
LTE Band 13	779.5	1.83	25.50	25.18	34.77	0.1076	0.5197	11.42	8.66	8.66	Pass
LTE Band 14	790.5	2.19	25.50	25.54	34.77	0.1169	0.5270	11.42	8.73	8.73	Pass
LTE Band 17	706.5	1.61	25.50	24.96	34.77	0.1023	0.4710	11.42	8.24	8.24	Pass
LTE Band 25	1850.7	2.88	25.50	28.38	33.00	0.1370	1.0000	7.50	11.51	7.50	Pass
LTE Band 26(814-824)	814.7	1.32	25.50	24.67	NA	0.0957	0.5431	NA	8.86	8.86	Pass
LTE Band 26(824-849)	824.7	1.32	25.50	24.67	38.45	0.0957	0.5498	15.10	8.91	8.91	Pass
LTE Band 30	2307.5	-2.22	25.50	23.28	23.98	0.0423	1.0000	-1.52	11.51	-1.52	Pass
LTE Band 38	2572.5	1.71	25.50	27.21	33.00	0.1046	1.0000	7.50	11.51	7.50	Pass
LTE Band 41	2498.5	2.21	25.50	27.71	33.00	0.1174	1.0000	7.50	11.51	7.50	Pass
LTE Band 41(PC2)	2498.5	2.21	28.50	30.71	33.00	0.2343	1.0000	4.50	8.51	4.50	Pass
LTE Band 42(3450-3550)	3452.5	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
LTE Band 42(3550-3600)(Part96)	3552.5	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
LTE Band 43(3700-3800)	3702.5	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
LTE Band 43(3600-3700)(Part96)	3602.3	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
LTE Band 48	3552.5	-4.13	25.50	21.37	23.00	0.0273	1.0000	-2.50	11.51	-2.50	Pass
LTE Band 66	1710.7	2.98	25.50	28.48	30.00	0.1402	1.0000	4.50	11.51	4.50	Pass
LTE Band 71	665.5	1.61	25.50	24.96	34.77	0.1023	0.4437	11.42	7.98	7.98	Pass



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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
NR Band n2	1852.5	2.85	25.50	28.35	33.00	0.1361	1.0000	7.50	11.51	7.50	Pass
NR Band n5	826.5	1.32	25.50	24.67	38.45	0.0957	0.5510	15.10	8.92	8.92	Pass
NR Band n7	2502.5	2.21	25.50	27.71	33.00	0.1174	1.0000	7.50	11.51	7.50	Pass
NR Band n12	701.5	1.61	25.50	24.96	34.77	0.1023	0.4677	11.42	8.21	8.21	Pass
NR Band n13	779.5	1.83	25.50	25.18	34.77	0.1076	0.5197	11.42	8.66	8.66	Pass
NR Band n14	790.5	2.19	25.50	25.54	34.77	0.1169	0.5270	11.42	8.73	8.73	Pass
NR Band n25	1852.5	2.85	25.50	28.35	33.00	0.1361	1.0000	7.50	11.51	7.50	Pass
NR Band n26(814-824)	816.5	1.32	25.50	24.67	NA	0.0957	0.5443	NA	8.87	8.87	Pass
NR Band n26(824-849)	826.5	1.32	25.50	24.67	38.45	0.0957	0.5510	15.10	8.92	8.92	Pass
NR Band n30	2307.5	-2.22	25.50	23.28	23.98	0.0423	1.0000	-1.52	11.51	-1.52	Pass
NR Band n38	2575.0	1.71	25.50	27.21	33.00	0.1046	1.0000	7.50	11.51	7.50	Pass
NR Band n41	2501.0	2.21	25.50	27.71	33.00	0.1174	1.0000	7.50	11.51	7.50	Pass
NR Band n48	3555.0	-4.13	25.50	21.37	23.00	0.0273	1.0000	-2.50	11.51	-2.50	Pass
NR Band n66	1712.5	2.98	25.50	28.48	30.00	0.1402	1.0000	4.50	11.51	4.50	Pass
NR Band n70	1697.5	2.86	25.50	28.36	30.00	0.1364	1.0000	4.50	11.51	4.50	Pass
NR Band n71	665.5	1.61	25.50	24.96	34.77	0.1023	0.4437	11.42	7.98	7.98	Pass
NR Band n77(3450-3550)	3455.0	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
NR Band n77(3700-3980)	3705.0	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
NR Band n78(3450-3550)	3455.0	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass
NR Band n78(3700-3800)	3705.0	-4.13	25.50	21.37	30.00	0.0273	1.0000	4.50	11.51	4.50	Pass

---End of Report---



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