TEST REPORT

Application No.:	SEWM2210000205RG
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.:	FG360-NA
Trade Mark:	Fibocom
FCC ID:	ZMOFG360NA08
Standards:	47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Date of Receipt:	2022/09/25
Date of Issue:	2022/12/05
Test Result:	**PASS***

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

Authorized Signature:

Panta Sun

Panta Sun
Wireless Laboratory Manager

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
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1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2022/12/05		Original

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

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Contents

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:	5G module			
Model No.:	FG360-NA			
Trade Mark:	Fibocom			
Hardware Version:	V1.0			
Software Version:	81112.7000.30.01.01.09			
Antenna Type:	☒External, ☐Integrated			
Antenna Gain:	LTE Band 2:	2.63dBi (Ant3)	LTE Band 4:	2.86dBi (Ant3)
	LTE Band 5:	1.61dBi (Ant8)	LTE Band 12:	1.61dBi (Ant8)
	LTE Band 25:	2.63dBi (Ant3)	LTE Band 48:	-0.13dBi (Ant3)
	LTE Band 66:	2.86dBi (Ant3)	LTE Band 71:	1.39dBi (Ant8)
	LTE CA_2C:	2.63dBi (Ant3)	LTE CA_48C:	-0.13dBi (Ant3)
	NR Band n25:	2.63dBi (Ant3)	NR Band n41:	1.52dBi (Ant3) 1.52dBi (Ant8)
	NR Band n48:	-0.13dBi (Ant3) -0.13dBi (Ant8)	NR Band n66:	2.86dBi (Ant3)
	NR Band n71:	1.39dBi (Ant8)	NR Band n77:	-1.13dBi (Ant3) -1.13dBi (Ant8)
	NR CA_n41C:	1.52dBi (Ant3)		
	LTE CA: LTE UL CA_2C; LTE UL CA_48C; LTE UL CA_2A-4A; LTE UL CA_2A-66A; LTE UL CA_2A-12A; LTE UL CA_12A-66A; ENDC: DC_12A_n25A; DC_48A_n25A; DC_66A_n25A; DC_2A_n41A; DC_66A_n41A; DC_2A_n48A; DC_66A_n48A; DC_2A_n66A; DC_12A_n66A; DC_48A_n66A; DC_2A_n71A; DC_66A_n71A; NR UL CA: NR CA_n41C; n25A-n41A; n25A-n48A; n41A-n48A; n25A-n66A; n48A-n66A; n41A-n66A; n25A-n71A; n41A-n71A; n66A-n71A; n25A-n77A; n41A-n77A; n66A-n77A; n71A-n77A; n48A-n71A;			
	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/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
LTE B2/CA_2C	1850.7	2.63	25.00	27.63	33.00	316.2278	0.1153	1.0000	8.00	12.01	8.00	Pass
LTE B4	1710.7	2.86	25.00	27.86	30.00	316.2278	0.1215	1.0000	5.00	12.01	5.00	Pass
LTE B5	824.7	1.61	25.00	26.61	38.45	316.2278	0.0911	0.5498	13.45	9.41	9.41	Pass
LTE B12	699.7	1.61	25.00	26.61	34.77	316.2278	0.0911	0.4665	9.77	8.70	8.70	Pass
LTE B25	1850.7	2.63	25.00	27.63	33.00	316.2278	0.1153	1.0000	8.00	12.01	8.00	Pass
LTE B48/CA_48C	3552.5	-0.13	22.00	21.87	23.00	158.4893	0.0306	1.0000	1.00	15.01	1.00	Pass
LTE B66	1710.7	2.86	25.00	27.86	30.00	316.2278	0.1215	1.0000	5.00	12.01	5.00	Pass
LTE B71	665.5	1.39	25.00	26.39	34.77	316.2278	0.0866	0.4437	9.77	8.48	8.48	Pass
NR Band n25	1852.5	2.63	25.00	27.63	33.00	316.2278	0.1153	1.0000	8.00	12.01	8.00	Pass
NR Band n41/CA_n41C	2501.01	1.52	24.50	26.02	33.00	281.8383	0.0796	1.0000	8.50	12.51	8.50	Pass
NR Band n41(PC2)	2501.01	1.52	27.00	28.52	33.00	501.1872	0.1415	1.0000	6.00	10.01	6.00	Pass
NR Band n41(PC2 MIMO)	2501.01	1.52	30.00	31.52	33.00	1000.0000	0.2823	1.0000	3.00	7.01	3.00	Pass
NR Band n48	3555.0	-0.13	22.00	21.87	23.00	158.4893	0.0306	1.0000	1.00	15.01	1.00	Pass
NR Band n48(MIMO)	3555.0	-0.13	22.00	21.87	23.00	158.4893	0.0306	1.0000	1.00	15.01	1.00	Pass
NR Band n66	1712.5	2.86	25.00	27.86	30.00	316.2278	0.1215	1.0000	5.00	12.01	5.00	Pass
NR Band n71	665.5	1.39	25.00	26.39	34.77	316.2278	0.0866	0.4437	9.77	8.48	8.48	Pass
NR Band n77 (3450-3550)	3455.01	-1.13	24.50	23.37	30.00	281.8383	0.0432	1.0000	5.50	12.51	5.50	Pass
NR Band n77 (3450-3550 PC2)	3455.01	-1.13	27.00	25.87	30.00	501.1872	0.0769	1.0000	3.00	10.01	3.00	Pass
NR Band n77 (3450-3550 PC2 MIMO)	3455.01	-1.13	30.00	28.87	30.00	1000.0000	0.1534	1.0000	0.00	7.01	0.00	Pass
NR Band n77 (3700-3980)	3705.0	-1.13	24.50	23.37	30.00	281.8383	0.0432	1.0000	5.50	12.51	5.50	Pass
NR Band n77 (3700-3980 PC2)	3705.0	-1.13	27.00	25.87	30.00	501.1872	0.0769	1.0000	3.00	10.01	3.00	Pass
NR Band n77 (3700-3980 PC2 MIMO)	3705.0	-1.13	30.00	28.87	30.00	1000.0000	0.1534	1.0000	0.00	7.01	0.00	Pass

Due to the EUT support NR ENDC and CA
Both LTE and NR/LTE band can transmit simultaneously, the formula of the calculated the MPE is:

$$\sum_{i=1}^{n} \frac{S_{E_i}(duty\,factor)}{MPE_{E_i}} < 1$$

NOTE The corresponding MEs must be expressed in terms of power density in the above summation
Therefore, the worst-case (NR UL CA_n41A-n71A) situation is 0.1415+0.1952=0.3367, which is less than "1", this confirmed that the device comply with MPE limit.

---End of Report---