



RF Exposure Evaluation Declaration

FCC ID: ZMOFM101NA
Applicant: Fibocom Wireless Inc.

Application Type: Certification
Product: LTE Module
Model No.: FM101-NA
Brand Name: Fibocom
Test Procedure(s): KDB 447498 D01v06

Reviewed By: _____

Approved By: _____



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2110RSU053-U7	Rev. 01	Initial Report	12-17-2021	Invalid
2110RSU053-U7	Rev. 02	Updated B41/43 tune-up Power	12-23-2021	Valid

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	LTE Module
Model No.	FM101-NA
Brand Name	Fibocom
IMEI	Conducted Measurement: 867141050004112 Radiated Measurement: 867141050004062
Operating Temperature	-30 ~ 75 °C
Power Type	3.135 ~ 4.4Vdc, typical 3.8Vdc
UMTS Specification	
Single Band	Band 2, 4, 5
Modulation	Uplink up to 16QAM, Downlink up to 64QAM
E-UTRA Specification	
Single Band	Band 2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 30, 41, 42, 43, 48, 66, 71
HPUE Band	Band 41
Modulation	Uplink up to 16QAM, Downlink up to 64QAM

Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

3. RF Exposure Evaluation

3.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

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 is the limit of MPE, 1mW/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.

3.2. Test Result of RF Exposure Evaluation

Product	LTE Module
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	ERP (EIRP) (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
WCDMA B2	1850 ~ 1910	24.5	2.63	27.13	0.1027	1.0000
WCDMA B4	1710 ~ 1755	24.5	2.86	27.36	0.1083	1.0000
WCDMA B5	824 ~ 849	24.5	1.61	23.96	0.0495	0.5493
LTE B2	1850 ~ 1910	24.0	2.63	26.63	0.0916	1.0000
LTE B4	1710 ~ 1755	24.0	2.86	26.86	0.0965	1.0000
LTE B5	824 ~ 849	24.0	1.61	23.46	0.0441	0.5493
LTE B7	2500 ~ 2570	24.0	1.07	25.07	0.0639	1.0000
LTE B12	699 ~ 716	24.0	1.61	23.46	0.0441	0.4660
LTE B13	777 ~ 787	24.0	2.19	24.04	0.0504	0.5180
LTE B14	788 ~ 798	24.0	2.22	24.07	0.0508	0.5253
LTE B17	704 ~ 716	24.0	1.61	23.46	0.0441	0.4693
LTE B25	1850 ~ 1915	24.0	2.63	26.63	0.0916	1.0000
LTE B26	814 ~ 849	24.0	1.93	23.78	0.0475	0.5427
LTE B30	2305 ~ 2315	24.0	0.67	24.67	0.0583	1.0000
LTE B41	2496 ~ 2690	24.0	2.49	26.49	0.0887	1.0000
LTE B41_HPUE	2496 ~ 2690	27.0	2.49	29.49	0.1769	1.0000
LTE B42	3450 ~ 3600	24.0	-1.18	22.82	0.0381	1.0000
LTE B43	3600 ~ 3800	24.0	-0.13	23.87	0.0485	1.0000
LTE B48	3550 ~ 3700	24.0	-0.13	23.87	0.0485	1.0000
LTE B66	1710 ~ 1780	24.0	3.76	27.76	0.1188	1.0000
LTE B71	663 ~ 698	24.0	1.39	23.24	0.0419	0.4420

————— The End —————

Appendix A – EUT Photograph

Refer to “2110RSU053-UE” file.