

FCC RF EXPOSURE REPORT

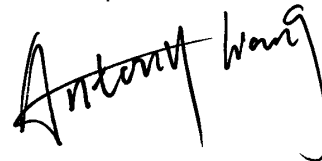
FCC ID: ZMOSC228GL

Project No. : 2403G086
Equipment : LTE Module
Brand Name : Fibocom
Test Model : SC228-GL
Series Model : N/A
Applicant : Fibocom Wireless Inc.
Address : 1101, Tower A, Building 6, Shenzhen International Innovation Valley,
Dashi 1st Rd, Nanshan, Shenzhen, China
Manufacturer : Fibocom Wireless Inc.
Address : 1101, Tower A, Building 6, Shenzhen International Innovation Valley,
Dashi 1st Rd, Nanshan, Shenzhen, China
Factory : Fibocom Wireless Inc.
Address : 1101, Tower A, Building 6, Shenzhen International Innovation Valley,
Dashi 1st Rd, Nanshan, Shenzhen, China
Date of Receipt : Mar. 14, 2024
Date of Test : Mar. 14, 2024 ~ Jul. 09, 2024
Issued Date : Sep. 23, 2024
Report Version : R00
Test Sample : Engineering Sample No.: SSL20240314110 for BT & BLE,
SSL20240314113 for WIFI, SSL20240314102 for WWAN.
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091
FCC Title 47 Part 2.1091 & KDB 447498 D01 v06

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL BTL Inc.

Prepared by

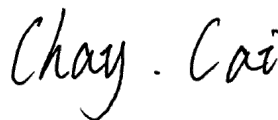
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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-11-2403G086	R00	Original Report.	Sep. 23, 2024	Valid

1. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$$

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

2. ANTENNA SPECIFICATION

For BT & BLE & 2.4GHz:

Ant.	Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)
1	Shenzhen Bogesi Communication Technology Co., Ltd	GHT-019A	Dipole	SMA Male J	3.02

Note: The antenna gain is provided by the manufacturer.

For 5GHz:

Ant.	Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)
1	Shenzhen Bogesi Communication Technology Co., Ltd	GHT-019A	Dipole	SMA Male J	6.30

Note: The antenna gain is provided by the manufacturer.

For GSM&WCDMA:

Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)	Note
Shenzhen Bogesi Communication Technology Co., Ltd	GHT-019A	Dipole	SMA Male J	1.32	GSM 850
				2.85	PCS 1900
				2.85	WCDMA Band II
				2.98	WCDMA Band IV
				1.32	WCDMA Band V

Note: The antenna gain is provided by the manufacturer.

For LTE:

Manufacturer	P/N	Antenna Type	Connector	Gain (dBi)	Note
Shenzhen Bogesi Communication Technology Co., Ltd	GHT-019A	Dipole	SMA Male J	2.85	LTE Band 2
				2.98	LTE Band 4
				1.32	LTE Band 5
				2.21	LTE Band 7
				1.61	LTE Band 12
				1.83	LTE Band 13
				2.19	LTE Band 14
				1.58	LTE Band 17
				2.77	LTE Band 25
				0.7	LTE Band 26 (814-824MHz)
				1.32	LTE Band 26 (824-849MHz)
				1.71	LTE Band 38
				2.21	LTE Band 41
				2.98	LTE Band 66
				1.61	LTE Band 71

Note: The antenna gain is provided by the manufacturer.

3. CALCULATED RESULT

For BT:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3.02	2.0045	8.76	7.5162	0.00300	1	Complies

For BLE:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3.02	2.0045	9.78	9.5060	0.00379	1	Complies

For 2.4GHz:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3.02	2.0045	17.18	52.2396	0.02084	1	Complies

For 5GHz:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
6.30	4.2658	16.59	45.6037	0.03872	1	Complies

For GSM:

GSM850	Max Burst Average Power (dBm)	Max Frame Average Power (dBm)
	Channel/Frequency(MHz)	Channel/Frequency(MHz)
	128 / 824.2	128 / 824.2
GSM (CS)	35	25.70
DCS1900	Max Burst Average Power (dBm)	Max Frame Average Power (dBm)
	Channel/Frequency(MHz)	Channel/Frequency(MHz)
	512 / 1850.2	512 / 1850.2
GSM (CS)	32	22.97

Note:

1. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power=10 x log (Burst-averaged power mW x Slot used/8)

2.Max. Output Power = Max Frame Average Power

Band	Frequency (MHz)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	Output Power to Antenna	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)	Test Result
GSM 850	824.2	25.70	1.32	1.3552	503.50	0.1002	0.5495	Complies
PCS 1900	1850.2	22.97	2.85	1.9275	381.94	0.0760	1.0000	Complies

For WCDMA:

Band	Frequency (MHz)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	Output Power to Antenna	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)	Test Result
Band II	1850.2	25	2.85	1.9275	609.54	0.1213	1.0000	Complies
Band IV	1712.4	25	2.98	1.9861	628.06	0.1249	1.0000	Complies
Band V	826.4	25	1.32	1.3552	428.55	0.0853	0.5509	Complies

For LTE:

Band	Frequency (MHz)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	Output Power to Antenna	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)	Test Result
Band 2	1850.7	25	2.85	1.9275	609.54	0.1213	1.0000	Complies
Band 4	1710.7	25	2.98	1.9861	628.06	0.1249	1.0000	Complies
Band 5	824.7	25	1.32	1.3552	428.55	0.0853	0.5498	Complies
Band 7	2502.5	25	2.21	1.6634	526.02	0.1046	1.0000	Complies
Band 12	699.7	25	1.61	1.4488	458.14	0.0911	0.4665	Complies
Band 13	699.7	25	1.83	1.5241	481.95	0.0959	0.4665	Complies
Band 14	790.5	25	2.19	1.6558	523.60	0.1042	0.5270	Complies
Band 17	699.7	25	1.58	1.4388	454.99	0.0905	0.4665	Complies
Band 25	1850.7	25	2.77	1.8923	598.41	0.1191	1.0000	Complies
Band 26 (814-824 MHz)	814.7	25	0.7	1.1749	371.54	0.0739	0.5431	Complies
Band 26 (824-849 MHz)	824.7	25	1.32	1.3552	428.55	0.0853	0.5498	Complies
Band 38	2572.5	25	1.71	1.4825	468.81	0.0933	1.0000	Complies
Band 41	2572.5	25	2.21	1.6634	526.02	0.1046	1.0000	Complies
Band 66	2572.5	25	2.98	1.9861	628.06	0.1249	1.0000	Complies
Band 71	2572.5	25	1.61	1.4488	458.14	0.0911	1.0000	Complies

For the max simultaneous transmission MPE:

Ratio		Total	Limit of Ratio	Test Result
5GHz	LTE			
0.03872	0.2056	0.24432	1	Complies

Note:

- (1) The calculated distance is 20 cm.
- (2) Ratio=Power Density (S) (mW/cm²)/Limit of Power Density (S) (mW/cm²)

End of Test Report