

# FCC RF EXPOSURE REPORT

## FCC ID: SFK-M97RG2

**Project No.** : 2101H022  
**Equipment** : MoCa2.5 Wi-Fi Extender  
**Brand Name** : CIG  
**Test Model** : M-97RG2  
**Series Model** : N/A  
**Applicant** : CIG Shanghai Co., Ltd.  
**Address** : 5F, Building 8, NO.2388 CHENGHANG ROAD, MINHANG DISTRICT, SHANGHAI  
**Manufacturer** : CIG Shanghai Co., Ltd.  
**Address** : 5F, Building 8, NO.2388 CHENGHANG ROAD, MINHANG DISTRICT, SHANGHAI  
**Factory** : CIG Shanghai Co., Ltd.  
**Address** : 5F, Building 8, NO.2388 CHENGHANG ROAD, MINHANG DISTRICT, SHANGHAI  
**Date of Receipt** : Jan. 19, 2021  
**Date of Test** : Jan. 19, 2021~Mar. 05, 2021  
**Issued Date** : Mar. 18, 2021  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SH2021011390-5, SH2021011390-3  
**Standard(s)** : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091

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

Maker Qi

Prepared by : Maker Qi

Ryan. Wang

Approved by : Ryan Wang



Certificate # 5123. 03

Add: No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China

TEL: +86-021-61765666

Web: [www.newbtl.com](http://www.newbtl.com)

**REPORT ISSUED HISTORY**

Report Version	Description	Issued Date
R00	Original Issue.	Mar. 18, 2021

## 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

Table for Filed Antenna

For 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	3
2	N/A	N/A	PCB	N/A	3

Note:

- (1) The EUT incorporates a MIMO function. Physically, the EUT provides four completed transmitters and receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=3 dBi
- (2) Ant. 2 for 1TX was found to be the worst case and recorded.
- (3) The antenna gain is provided by the manufacturer.

For 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	3
2	N/A	N/A	PCB	N/A	3
3	N/A	N/A	PCB	N/A	3
4	N/A	N/A	PCB	N/A	3

Note:

- (1) The EUT incorporates a MIMO function. Physically, the EUT provides four completed transmitters and receivers (4T4R), all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=3 dBi
- (2) Ant. 3 for 1TX was found to be the worst case and recorded.
- (3) The antenna gain is provided by the manufacturer.

Table for Antenna Configuration:  
For 2.4G:

Operating Mode TX Mode	Ant. 1	Ant. 2	Ant. 1+2
802.11b	✓	✓	✓
802.11g	✓	✓	✓
802.11n(20 MHz)	✓	✓	✓
802.11n(40 MHz)	✓	✓	✓

For 5G:

Operating Mode TX Mode	1TX	2TX	3TX	4TX	Ant. 1 + Ant. 2+ Ant. 3 + Ant. 4
IEEE 802.11a	✓	✓	✓	✓	✓
IEEE 802.11n (HT20)	✓	✓	✓	✓	✓
IEEE 802.11n (HT40)	✓	✓	✓	✓	✓
IEEE 802.11ac (VHT20)	✓	✓	✓	✓	✓
IEEE 802.11ac (VHT40)	✓	✓	✓	✓	✓
IEEE 802.11ac (VHT80)	✓	✓	✓	✓	✓

## 2. TEST RESULTS

For 2.4GHz SISO:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	30	1000	0.3970	1	Complies

For 2.4GHz MIMO:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	30	1000	0.3970	1	Complies

For 5GHz SISO:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	27	501.1872	0.1989	1	Complies

For 5GHz MIMO:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
3	1.9953	28	630.9573	0.2505	1	Complies

**For the max simultaneous transmission MPE:**

2.4G+5G

Power Density (S) (mW/cm <sup>2</sup> )	Power Density (S) (mW/cm <sup>2</sup> )	Total	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2.4GHz	5GHz			
0.3970	0.2505	0.6475	1	Complies

Note: The calculated distance is 20 cm.  
Output power including tune up tolerance.

**End of Test Report**