

# 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

DISTRTCT, SHANGHAI

Manufacturer : CIG Shanghai Co., Ltd.

Address : 5F, Building 8, NO.2388 CHENGHANG ROAD, MINHANG

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**Factory**: CIG Shanghai Co., Ltd.

Address : 5F, Building 8, NO.2388 CHENGHANG ROAD, MINHANG

DISTRTCT, 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.

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IBC-MRA ACCREDITED

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## **REPORT ISSUED HISTORY**

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





## 1. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi r^2} = \frac{EIRF}{4\pi r^2}$$

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<sub>ANT</sub>, 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<sub>ANT</sub>, 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.

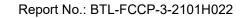


Table for Antenna Configuration: For 2.4G:

Operating Mode  TX Mode	Ant. 1	Ant. 2	Ant. 1+2
802.11b	✓	<b>~</b>	✓
802.11g	✓	✓	✓
802.11n(20 MHz)	✓	<b>√</b>	✓
802.11n(40 MHz)	✓	<b>√</b>	✓

For 5G:

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





## 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/cm²)	Limit of Power Density (S) (mW/cm²)	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/cm²)	Limit of Power Density (S) (mW/cm²)	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/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
3	1.9953	27	501.1872	0.1989	1	Complies

#### For 5GHz MIMO:

Antenna Gair (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
3	1.9953	28	630.9573	0.2505	1	Complies

### For the max simultaneous transmission MPE:

2.4G+5G

Power Density	Power Density		Limit of Power	
(S) (mW/cm2)	(S) (mW/cm2)	Total	Density (S)	Test Result
2.4GHz	5GHz		(mW/cm2)	
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**