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 DISTRTCT, SHANGHAI
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.

Maker Qi

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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:

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

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^2)	Limit of Power Density (S) (mW/cm^2)	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^2)	Limit of Power Density (S) (mW/cm^2)	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^2)	Limit of Power Density (S) (mW/cm^2)	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^2)	Limit of Power Density (S) (mW/cm^2)	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/cm2) 2.4GHz	Power Density (S) (mW/cm2) 5GHz	Total	Limit of Power Density (S) (mW/cm2)	Test Result
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