

FCC RF EXPOSURE REPORT

FCC ID: RRK-WMCAC15

Project No. : 1805H003A
Equipment : Wifi Card
Test Model : WMC-AC15
Series Model : N/A
Applicant : Alpha
Address : No. 8, Li-shing 7th Road, Science-based Industrial Park,
Hsinchu, Taiwan, R.O.C.

According: :FCC Guidelines for Human Exposure IEEE C95.1
& FCC Part 2.1091

B T L I N C .

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Certificate # 5123. 03

1. CERTIFICATION

Equipment : Wifi Card
Brand Name : Alpha
Test Model : WMC-AC15
Series Model : N/A
Applicant : Alpha
Date of Test : Oct. 19, 2018~Oct. 31, 2018
Test Sample : Engineering Sample No.: B180800106
Standards : FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-5-1805H003A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

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

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)	Note
1	CIU ANTENNE WIFI DUAL A01	296242441	PCB	N/A	0	N/A
2	CIU ANTENNE WIFI DUAL A01	296242441	PCB	N/A	0	N/A

Note: This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = $G_{ANT} + 10\log(N)$ dBi, that is Directional gain = $0 + 10\log(2)$ dBi = 3.01

For 5G

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	CIU ANTENNE WIFI DUAL A01	296242441	PCB	N/A	-2	N/A
2	CIU ANTENNE WIFI DUAL A01	296242441	PCB	N/A	-2	N/A

Note:

(1) This EUT supports MIMO 2X2, any transmit signals are correlated with each other and the Beamforming Gain is 3.0dBi, so Directional gain = $3 + (-2) = 1$.

3. TEST RESULTS

2.4G WIFI

Antenna Gain (dBi)	Antenna Gain (numeric)	Max Output Power (dBm)	AVG Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
3.01	1.9999	28.95	785.2356	0.31257	1	Complies

5G Band UNII-1

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
1	1.2589	25.92	390.8409	0.09794	1	Complies

5G Band UNII-2A

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
1	1.2589	22.89	194.5360	0.04875	1	Complies

5G Band UNII-2C

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
1	1.2589	23.22	469.8941	0.05260	1	Complies

5G Band UNII-3

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
1	1.2589	26.72	469.8941	0.11775	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4G	5G			
0.31257	0.11775	0.43032	1	Complies

Note: the calculated distance is 20 cm.