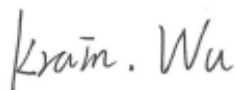


# FCC RF EXPOSURE REPORT

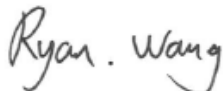
## FCC ID: KA2DIR2150A1

**Project No.** : 2004H020  
**Equipment** : 1) AC2100 Mesh Wi-Fi Gigabit Router  
2) AC2100 Wi-Fi Gigabit Router  
**Brand Name** : D-Link  
**Test Model** : DIR-2150  
**Series Model** : N/A  
**Applicant** : D-Link Corporation  
**Address** : 17595 Mt. Herrmann, Fountain Valley, California United States 92708  
**Manufacturer** : D-Link Corporation  
**Address** : 17595 Mt. Herrmann, Fountain Valley, California United States 92708  
**Date of Receipt** : April. 17, 2020  
**Date of Test** : May. 01, 2020~June 15, 2020  
**Issued Date** : Jul. 07, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SH2020041790  
**Standard(s)** : FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091  
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.



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**Approved by : Ryan Wang**



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**REPORT ISSUED HISTORY**

| Report Version | Description    | Issued Date   |
|----------------|----------------|---------------|
| R00            | Original Issue | Jul. 07, 2020 |

## 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) | Note |
|------|-------|------------|--------------|-----------|------------|------|
| 1    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |
| 2    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |

Note:

(1) CDD:

All antennas have the same gain, Directional gain = GANT+Array Gain,

For power spectral density measurements, NANT = 4, NSS = 1. So Directional gain = GANT + Array

Gain = 10log (NANT/ NSS) dB = 5+10log(2/1)dBi=8.01. Then, the power density limit is 8-(8.01-6)=5.99.

For power measurements, Array Gain = 0 dB (NANT ≤ 4), so the Directional gain=5.

For 5G

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | Note |
|------|-------|------------|--------------|-----------|------------|------|
| 1    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |
| 2    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |
| 3    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |
| 4    | N/A   | N/A        | Dipole       | N/A       | 5          | N/A  |

Note:

(2) Beamforming:

All antennas have the same gain, Directional gain = GANT + 10 log(NANT) dBi,

that is Directional gain=5 + 10log(4) dBi =11.02;

So output power limit is 30-11.02+6=24.98, the UNII-1 power density limit is 17-(11.02-6)=11.98. the

UNII-3 power density limit is 30-11.02+6=24.98.

(3) CDD:

All antennas have the same gain, Directional gain = GANT+Array Gain,

For power spectral density measurements, NANT = 4, NSS = 1. So Directional gain = GANT + Array

Gain = 10log (NANT/ NSS) dB = 5+10log(4/1)dBi=11.02. Then, the UNII-1 power density limit is

17-(11.02-6)=11.98. the UNII-3 power density limit is 30-11.02+6=24.98

For power measurements, Array Gain = 0 dB (NANT ≤ 4), so the Directional gain=5.

## 2. TEST RESULTS

For 2.4GHz:

| Antenna Gain (dBi) | Antenna Gain (numeric) | Max. tune up Power (dBm) | Max. tune up Power (mW) | Power Density (S) (mW/cm <sup>2</sup> ) | Limit of Power Density (S) (mW/cm <sup>2</sup> ) | Test Result |
|--------------------|------------------------|--------------------------|-------------------------|-----------------------------------------|--------------------------------------------------|-------------|
| 5                  | 3.1623                 | 28.00                    | 630.9573                | 0.23160                                 | 1                                                | Complies    |

For 5GHz :

| Antenna Gain (dBi) | Antenna Gain (numeric) | Max. tune up Power (dBm) | Max. tune up Power (mW) | Power Density (S) (mW/cm <sup>2</sup> ) | Limit of Power Density (S) (mW/cm <sup>2</sup> ) | Test Result |
|--------------------|------------------------|--------------------------|-------------------------|-----------------------------------------|--------------------------------------------------|-------------|
| 11.02              | 12.6474                | 25.00                    | 316.2278                | 0.46420                                 | 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                                    |         |                                                  |             |
| 0.23160                                 | 0.46420                                 | 0.69580 | 1                                                | Complies    |

Note: The calculated distance is 26 cm.  
Output power including tune up tolerance.

**End of Test Report**