

# FCC RF EXPOSURE REPORT

## FCC ID: KA2IRX5460A1

**Project No.** : 2002H005  
**Equipment** : 1) AX5400 Wi-Fi 6 Router  
2) AX4800 Wi-Fi 6 Router  
**Brand Name** : D-Link  
**Test Model** : DIR-X5460  
**Series Model** : DIR-X4860  
**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** : Feb. 16, 2020  
**Date of Test** : Feb. 16, 2020~Mar. 19, 2020  
**Issued Date** : Apr. 02, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: SH2020021330, SH2020021330-1  
**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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## REPORT ISSUED HISTORY

| Report Version | Description    | Issued Date   |
|----------------|----------------|---------------|
| R00            | Original Issue | Apr. 02, 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       | IPEX      | 3         | N/A  |
| 2    | N/A   | N/A        | Dipole       | IPEX      | 3         | N/A  |

Note:

- (1) Antenna Gain=3 dBi. For 2.4G, this EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =GAnt.+10log(N)dBi, that is Directional gain=3+10log(2)dBi=6.01. So output power limit is 30-6.01+6=29.99, the power spectral density limit is 8-6.01+6=7.99.
- (2) Ant. 1 for 1TX was found to be the worst case and recorded.

For 5G

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

Note:

- (1) Antenna Gain=3 dBi. This EUT supports MIMO 4X4, any transmit signals are correlated with each other, so Directional gain = GAnt.+10log(N)dBi, that is Directional gain=3+10log(4)dBi=9.02; So,the UNII-1, UNII-3 output power limit is 30-9.02+6=26.98, the UNII-2A,UNII-2C output power limit is 24-9.02+6=20.98. The UNII-1 power spectral density limit is 17-9.02+6=13.98,UNII-2A,UNII-2C power spectral density limit is 11-9.02+6=7.98, the UNII-3 power spectral density limit is 30-9.02+6=26.98.
- (2) Ant. 1 for 1TX was found to be the worst case and recorded.

## 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 |
|--------------------|------------------------|--------------------------|-------------------------|---|--|-------------|
| 3                  | 1.9953                 | 28                       | 630.9573                | 0.25058                                 | 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 |
|--------------------|------------------------|--------------------------|-------------------------|---|--|-------------|
| 3                  | 1.9953                 | 27.5                     | 562.3413                | 0.22333                                 | 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                                    |         |  |             |
| 0.25058                                 | 0.22333                                 | 0.47391 | 1  | Complies    |

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

**End of Test Report**