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.

Krain. Wu

Prepared by : Krain Wu

Ryan. Wang

Approved by : Ryan Wang

Certificate # 5123.03

Add: No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China
TEL: +86-021-61765666
Web: www.newbtl.com

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