FCC RF EXPOSURE REPORT

FCC ID: KA2IRLX1870A2

Project No.	:	2005H044A
Equipment	:	1）AX1800 Whole Home Mesh Wi-Fi 6 Router 2）AX1800 Whole Home Mesh Wi-Fi 6 System
Brand Name	:	D-Link
Test Model	:	COVR-X1870
Series Model	:	COVR-X1872, COVR-X1873, DIR-LX1870, DIR-LX1872, DIR-LX1873
Applicant	:	D-Link Corporation
Address	:	17595 Mt. Herrmann,Fountain Valley,California United State 92708
Manufacturer	:	D-Link Corporation
Address	:	17595 Mt. Herrmann,Fountain Valley,California United State 92708
Date of Receipt	:	Jul. 31, 2020
Date of Test	:	Jul. 31, 2020~Sep. 4, 2020
Issued Date	:	Sep.28, 2020
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2020052550, SH2020052550-1, SH20200609295-2
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	Sep.28, 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 5G and 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	PCB	N/A	3	N/A
2	N/A	N/A	PCB	N/A	3	N/A

Note:

(1) Beamforming:

All antennas have the same gain, Directional gain = G_{ANT} + 10 log(N_{ANT}) dBi,

that is Directional gain=3 + 10log(2) dBi =6.01;

So output power limit is 24-6.01+6=23.99, the UNII-2A power density limit is 11-(6.01-6)=10.99. the UNII-2C power density limit is 24-6.01+6=23.99.

(2) Non-Beamforming:

All antennas have the same gain, Directional gain = G_{ANT}+Array Gain,

For power spectral density measurements, N_{ANT} =2, NSS = 1. So Directional gain = G_{ANT} + Array Gain =10log (N_{ANT}/ N_{SS}) dB =3+10log(2/1)dBi=6.01. Then, the UNII-2A power density limit is 11-(6.01-6)=10.99. the UNII-2C power density limit is 24-6.01+6=23.99

For power measurements, Array Gain = 0 dB ($N_{ANT} \leqslant 4$), so the Directional gain=3.

For 2.4G:

Operating Mode / TX Mode	Ant. 1	Ant. 2	Ant. 1 + Ant. 2
802.11b	✓	✓	×
802.11g	✓	✓	×
802.11n(20 MHz)	✓	✓	✓
802.11n(40 MHz)	✓	✓	✓

For 5G：

Operating Mode / TX Mode	Ant. 1	Ant. 2	Ant. 1 + Ant. 2
IEEE 802.11a	✓	✓	×
IEEE 802.11n (HT20)	✓	✓	✓
IEEE 802.11n (HT40)	✓	✓	✓
IEEE 802.11ac (VHT20)	✓	✓	✓
IEEE 802.11ac (VHT40)	✓	✓	✓
IEEE 802.11ac (VHT80)	✓	✓	✓
IEEE 802.11ax (HE20)	✓	✓	✓
IEEE 802.11ax (HE40)	✓	✓	✓
IEEE 802.11ax (HE80)	✓	✓	✓

2. TEST RESULTS

For 2.4GHz :

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
6.01	3.9902	26.00	398.1072	0.2612	1	Complies

For 5GHz :

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
6.01	3.9902	30.00	1000	0.6561	1	Complies

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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
0.2612	0.6561	0.9172	1	Complies

Note: The calculated distance is 22 cm.
Output power including tune up tolerance

End of Test Report